CITY OF HOUSTON

PUBLIC WORKS AND ENGINEERING
PLANNING & DEVELOPMENT DIVISION

Application for Approval of Municipal Setting Designation

APPLICANT INFORMATION

Applicant's Name: Mariner Village Shopping Center

☐Individual ■Private Entity ☐Public Entity ☐Non-Profit Entity ☐Other _____

Address: 6347-6383 Westheimer Road, Houston, Texas 77057
(Street) (City) (State) (Zip)

Phone No.: 212-277-3522 Fax No.: _____

Email: jmrakovcic@senencainsurance.com

Contact Information

Name of Contact: Blake Dinwiddie, Weston Solutions, Inc.

Title: Project Manager

Address: 5599 San Felipe, Suite 700, Houston, Texas 77056
(Street) (City) (State) (Zip)

Phone No.: 713-985-6678 Fax No.: 713-985-6703

Email: B.Dinwiddie@westonsolutions.com

SITE INFORMATION

Site HCAD No(s): CFT Mariners Limited, 0410280040162 TR15H

Site Name: Mariner Village Shopping Center

Site Size: 2.228 acres (Tract 2)

Site Address: 6347-6383 Westheimer Road, Houston, Texas 77057
(Street) (City) (State) (Zip)
(List all owners – additional sheet is attached, if needed)

Owner: DAR Mariners, Ltd., CFT Mariners, Ltd., and NAZ Mariners Ltd.

Owner Address: One Riverway, Suite 100 Houston TX 77056
(Street) (City) (State) (Zip)

Name of Contact: Dan Levy

Title: Vice President

Organization: Unilev Management Corp.

Phone No.: 713-850-7878 Fax No.: 713-850-0603

Email: _____

CITY OF HOUSTON

PUBLIC WORKS AND ENGINEERING
PLANNING & DEVELOPMENT DIVISION

EXECUTIVE SUMMARY

The Mariner Village Shopping Center property (designated property) is located at 6347 – 6437 Westheimer Road, Houston, Harris County, Texas 77057, and consists of three tracts. The Municipal Setting Designation application includes Tract 2 (6347-6383 Westheimer Road) only. The designated property is bordered to the north by Westheimer Road, to the east by a Harris County Flood Control drainage ditch, to the south by a residential apartment complex, and to the west by a private driveway and commercial/retail properties. The Mariner Village Shopping Center was constructed in the mid-1970s on undeveloped land that had previously been used for agricultural purposes. The shopping center contains multiple commercial tenant lease spaces and has housed retail outlets, restaurants, and other commercial facilities since initial operations. Dry cleaning operations occurred in one tenant space (6367 Westheimer Road) from approximately 1980 to 1998. The designated property has been enrolled in the Texas Commission on Environmental Quality (TCEQ) Voluntary Cleanup Program (VCP) since 1998 (VCP No. 903).

Environmental investigation activities conducted at the designated property have identified chemicals of concern (COCs) in the soil and shallow groundwater above the TCEQ Texas Risk Reduction Program (TRRP) Tier 1 residential protective concentration levels (PCLs). The primary COCs identified on the designated property resulted from releases of dry cleaning solvents, specifically tetrachloroethene (PCE) and its degradation products (trichloroethene [TCE], cis-1,2-dichloroethene [cis-1,2-DCE], 1,1-dichloroethene [1,1-DCE] and vinyl chloride) which are present in the shallow groundwater-bearing unit (GWBU). These chemicals are classified as chlorinated volatile organic compounds (VOCs). Chlorinated VOCs have not been identified in the deeper GWBU, and the affected shallow GWBU is limited to the designated property; however, affected groundwater may extend beneath a portion of Westheimer Road.

In March 2001, an approximate 10 foot by 10 foot section of the foundation, beneath the former dry cleaners tenant space where the dry cleaning machine was formerly located, was removed. Affected soil within this area was excavated to an average depth of four feet beneath the bottom

CITY OF HOUSTON

PUBLIC WORKS AND ENGINEERING
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EXECUTIVE SUMMARY (cont.)

of the former slab. Soil venting was performed from March 2003 through February 2004, and the venting system was abandoned in 2006. Following completion of the affected soil removal activities, groundwater treatment consisting of injections of methanol and chemical oxidants was conducted, significantly reducing the concentrations of VOCs in groundwater. Groundwater monitoring has been conducted to evaluate the effectiveness of the remedial action.

Based on the results of environmental site investigations conducted from 1998 through 2009, the plume of chlorinated VOCs appears to be stable and/or decreasing. Concentrations of PCE, TCE, cis-1,2-DCE, 1,1-DCE, and vinyl chloride have been reported in groundwater at concentrations greater than their respective TRRP Tier 1 groundwater residential ingestion PCLs. Environmental site investigations and frequent groundwater monitoring have shown that the PCL exceedance (PCLE) zone is decreasing and/or stable in size. COCs have not been reported in the shallow GWBU above the TRRP residential non-ingestion PCLs.

The shallow GWBU is encountered, on average, between 15 and 20 feet (ft) below ground surface (bgs) beneath the designated property. In the vicinity of the concrete-lined Harris County Flood Control ditch, groundwater is encountered at approximately 15 ft bgs, which is approximately 1 to 1.5 ft below the elevation of the bottom of the flood control ditch. Groundwater flow beneath the designated property is generally to the northeast toward Westheimer Road.

There are no municipalities located within a 0.5-mile radius of the designated property other than the City of Houston. In addition to the City of Houston, Bellaire, Bunker Hill Village, Hedwig Village, Hilshire Village, Hunter's Creek Village, Southside Place, Spring Valley, Piney Point Village, and West University Place are all located within a 5-mile radius of the designated property. Two registered water wells are located within 0.5 miles of the designated property. The water wells range in depth from 610 ft bgs to 1,335 ft bgs. There are no private water wells located within 0.5 miles of the designated property.

Appendix B

A description of the current use, and, to the extent known, the anticipated use(s), of the designated property and properties within 500 feet of the boundary of the designated property.

The designated property consists of a multi-tenant retail shopping center. The properties within 500 ft of the designated property are both commercial/industrial and multi-family residential as described below:

- The adjacent property located immediately to the south of the designated property is occupied by The Palms Apartment Complex.
- Westheimer Road is located adjacent to the north.
- Properties adjacent to the west of the designated property are commercial.
- The designated property is bordered to the east by a concrete-lined Harris County Flood Control ditch.

The future use of the designated property is expected to remain commercial, and surrounding properties are expected to remain mixed commercial and residential.

Appendix C

A site map showing:

a. *The location of the designated property.*
b. *The topography of the designated property as indicated on publicly available sources, which must note the watershed including the nearest surface water body and whether the designated property is located in a floodplain or floodway, as those terms are defined in Chapter 19 of the Code of Ordinances.*
c. *The detected area of groundwater contamination.*
d. *The location of all soil sampling locations and all groundwater monitoring wells.*
e. *Groundwater gradients, to the extent known, and direction of groundwater flow.*
f. *The ingestion protective concentration level exceedance zone (PCLE) for each contaminant of concern, to the extent known.*

Attached Figures

Figure C-1: Site Location Map
Figure C-2: Topography & Watershed Map
Figure C-3: PCE Groundwater PCLE Map – June 2009
Figure C-4: TCE Groundwater PCLE Map – June 2009
Figure C-5: Cis-1,2-DCE Groundwater PCLE Map – June 2009
Figure C-6: 1,1-DCE Groundwater PCLE Map – June 2009
Figure C-7: Vinyl Chloride Groundwater PCLE Map – June 2009
Figure C-8: Potentiometric Map – June 2009

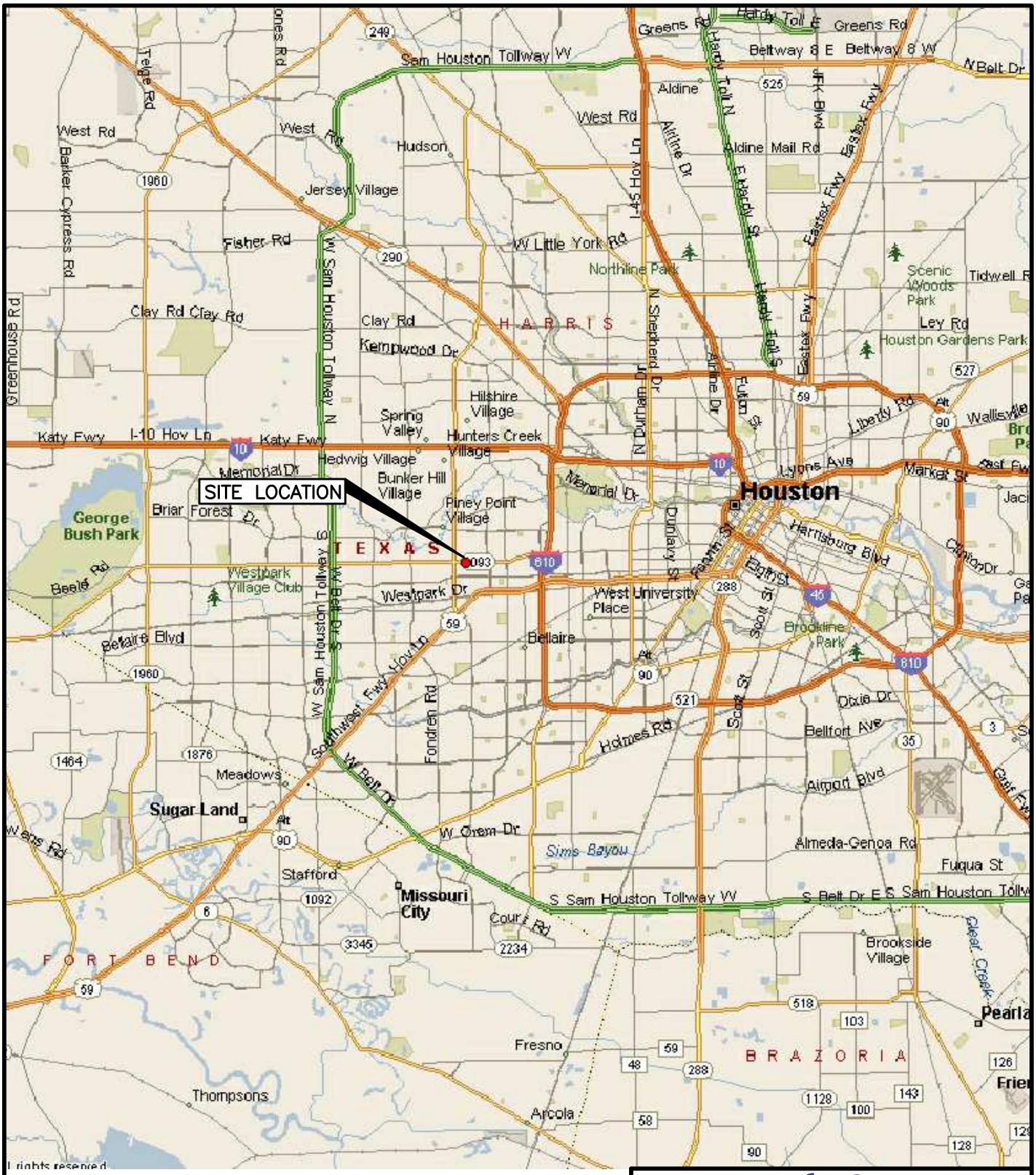

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FIGURE C–1

SITE LOCATION MAP

MUNICIPAL SETTING DESIGNATION
MARINER VILLAGE SHOPPING CENTER
6347–6383 WESTHEIMER ROAD
HOUSTON, TEXAS

DATE	PROJECT NO.	SCALE
OCT 12	13766.001.001.0060	NOT TO SCALE

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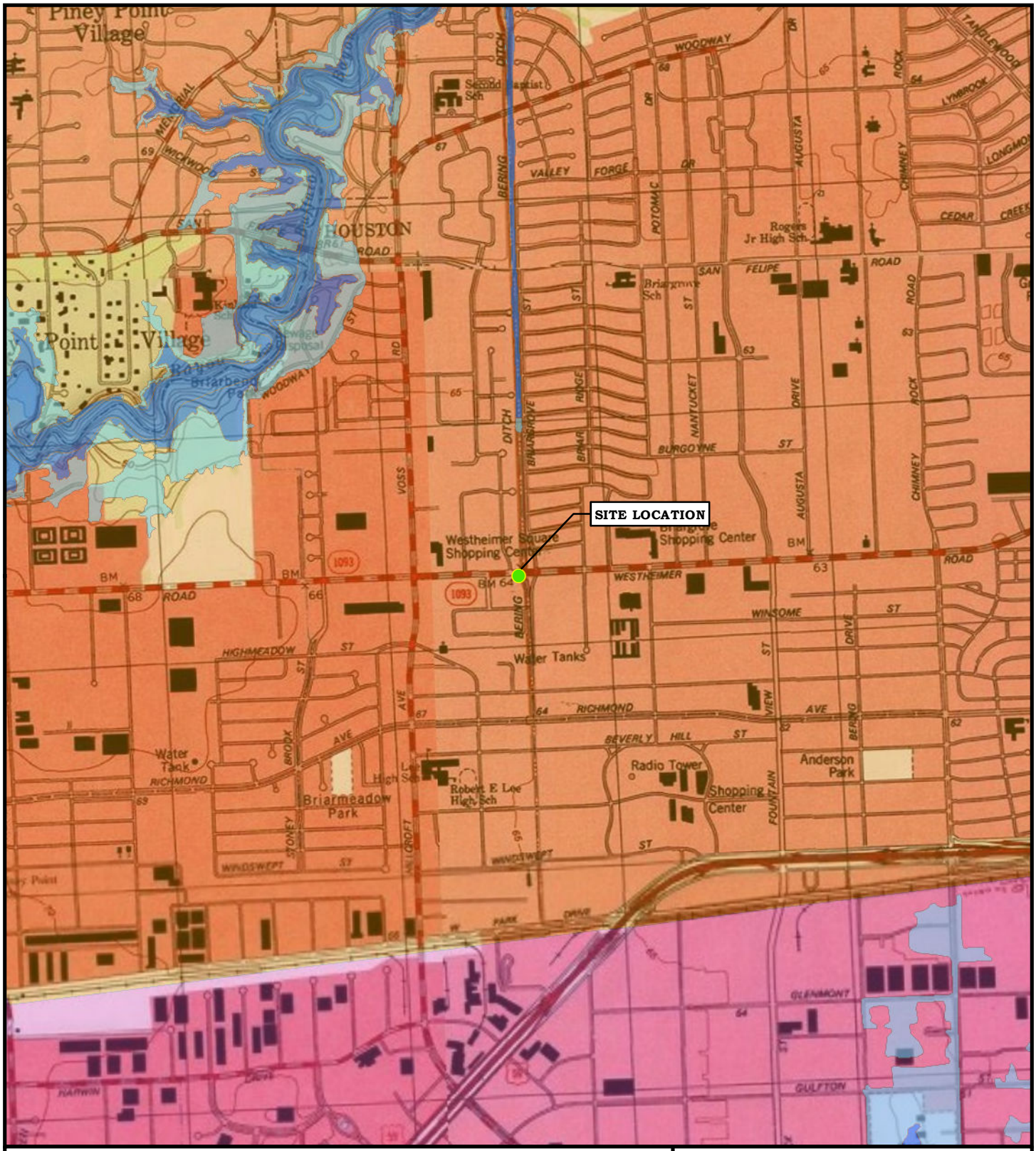

0 2,000 4,000

SCALE IN FEET

LEGEND

SITE LOCATION

FLOOD PLAIN DATA

100 YEAR FLOOD PLAIN

500 YEAR FLOOD PLAIN

WATERSHED

BRAYS BAYOU

BUFFALO BAYOU

N

SOURCE: USGS, FEMA/TSARP, HARRIS COUNTY ENGINEERING DIV.

WESTON SOLUTIONS

FIGURE C-2
TOPOGRAPHY & WATERSHED MAP
MUNICIPAL SETTING DESIGNATION
MARINER VILLAGE SHOPPING CENTER
6347-6383 WESTHEIMER ROAD
HOUSTON, TEXAS 77057

DATE	PROJECT NO	SCALE
MAR. 2012	13766.001.001.0080	AS SHOWN

File: L:\13766 Seneca\GIS\FIGURE_C-2_TOPOGRAPHY_AND_WATERSHED_MAP.mxd 10/30/2012 9:14:53 AM bondp

EL PATIO MEXICAN RESTAURANT

RUCHI'S TAQUERIA

WINROCK ROAD

CLUB

MW16 <0.005

WESTHEIMER ROAD

WESTHEIMER ROAD

PARKING

PARKING

MW05 <0.005

MW13 1.3

MW02 0.00130

MW14 <0.005

MW17 0.025

MW01 3.5

MW12 0.42

MARINER VILLAGE SHOPPING CENTER

PRIVATE DRIVE

MARINER VILLAGE SHOPPING CENTER

FORMER DRY CLEANER TENANT SPACE

0.005

MW11 0.018

MW15 <0.005

MW04 <0.005

ALLEY

ALLEY

ALLEY

MW09 <0.005

MW03 <0.050

PARKING LOT

PARKING LOT

APARTMENTS

APARTMENTS

BRIARGROVE DRIVE

N

STATE OF TEXAS
DAWN DENHAM
GEOLOGY
344
LICENSED
PROFESSIONAL GEOSCIENTIST

Dawn Denham

LEGEND:

MW17 0.025 — MONITOR WELL WITH CONCENTRATION OF DISSOLVED PCE (mg/L)

—x— FENCE

CONCRETE–LINED DRAINAGE DITCH (FLOOD CONTROL)

ESTIMATED EXTENT OF PCE PLUME

J — ESTIMATED VALUE BELOW LABORATORY DETECTION LIMIT

< — VALUE BELOW LABORATORY DETECTION LIMIT

0 40 80

SCALE IN FEET
APPROXIMATE

DATE SAMPLED: 25–26 JUNE 2009.

WESTON SOLUTIONS, INC.
REGISTRATION NO.: 50258

WESTON SOLUTIONS

FIGURE C–3
PCE GROUNDWATER PCLE MAP
JUNE 2009

MUNICIPAL SETTING DESIGNATION
MARINER VILLAGE SHOPPING CENTER
6347–6383 WESTHEIMER ROAD
HOUSTON, TEXAS

DATE	PROJECT NO.	SCALE
OCT 2012	13766.001.001.0080	AS SHOWN

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EL PATIO MEXICAN RESTAURANT

RUCHI'S TAQUERIA

WINROCK ROAD

CLUB

MW16 <0.005

WESTHEIMER ROAD

WESTHEIMER ROAD

N

STATE OF TEXAS
DAWN DENHAM
GEOLOGY
344
LICENSED
PROFESSIONAL GEOSCIENTIST

Dawn Denham

PARKING

PARKING

MW05 0.014

MW13 0.50

MW02 0.0019J

MW17 0.0088

MW01 2.2

MW12 0.17

MW14 <0.005

MARINER VILLAGE SHOPPING CENTER

PRIVATE DRIVE

MARINER VILLAGE SHOPPING CENTER

FORMER DRY CLEANER TENANT SPACE

MW04 <0.005

MW11 0.14

MW15 <0.005

0.005

ALLEY

ALLEY

ALLEY

MW09 <0.005

MW03 <0.050

PARKING LOT

PARKING LOT

APARTMENTS

APARTMENTS

BRIARGROVE DRIVE

LEGEND:

MW05 0.014	MONITOR WELL WITH CONCENTRATION OF DISSOLVED TCE (mg/L)
—x—	FENCE
	CONCRETE–LINED DRAINAGE DITCH (FLOOD CONTROL)
0.005	ESTIMATED EXTENT OF TCE PLUME
J	ESTIMATED VALUE BELOW LABORATORY DETECTION LIMIT
<	VALUE BELOW LABORATORY DETECTION LIMIT

0 40 80

SCALE IN FEET
APPROXIMATE

DATE SAMPLED: 25–26 JUNE 2009.

WESTON SOLUTIONS, INC.
REGISTRATION NO.: 50258

WESTON SOLUTIONS

FIGURE C–4

TCE GROUNDWATER PCLE MAP JUNE 2009

MUNICIPAL SETTING DESIGNATION
MARINER VILLAGE SHOPPING CENTER
6347–6383 WESTHEIMER ROAD
HOUSTON, TEXAS

DATE	PROJECT NO.	SCALE
OCT 2012	13766.001.001.0080	AS SHOWN

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EL PATIO MEXICAN RESTAURANT

RUCHI'S TAQUERIA

WINROCK ROAD

CLUB

MW16
<0.005

WESTHEIMER ROAD

WESTHEIMER ROAD

N

STATE OF TEXAS
DAWN DENHAM
GEOLOGY
344
LICENSED
PROFESSIONAL GEOSCIENTIST

Dawn Denham

PARKING

PARKING

MW05
0.0046J

MW13
0.053

MW02
<0.005

MW17
0.054

0.070

MW01
1.2

MW12
0.0037

MW14
<0.005

MARINER VILLAGE SHOPPING CENTER

PRIVATE DRIVE

MARINER VILLAGE SHOPPING CENTER

FORMER DRY CLEANER TENANT SPACE

MW04
<0.005

MW11
0.43

MW15
<0.005

ALLEY

ALLEY

ALLEY

MW09
<0.005

MW03
<0.050

PARKING LOT

PARKING LOT

APARTMENTS

APARTMENTS

BRIARGROVE DRIVE

LEGEND:

- MW13 0.053 — MONITOR WELL WITH CONCENTRATION OF DISSOLVED cis-1,2-DCE (mg/L)
- —x— FENCE
- CONCRETE-LINED DRAINAGE DITCH (FLOOD CONTROL)
- 0.070 — ESTIMATED EXTENT OF cis-1,2-DCE PLUME
- J — ESTIMATED VALUE BELOW LABORATORY DETECTION LIMIT
- < — VALUE BELOW LABORATORY DETECTION LIMIT

0 40 80

SCALE IN FEET

APPROXIMATE

DATE SAMPLED: 25-26 JUNE 2009.

WESTON SOLUTIONS, INC.
REGISTRATION NO.: 50258

FIGURE C-5
cis-1,2-DCE GROUNDWATER PCLE MAP JUNE 2009

MUNICIPAL SETTING DESIGNATION
MARINER VILLAGE SHOPPING CENTER
6347-6383 WESTHEIMER ROAD
HOUSTON, TEXAS

DATE	PROJECT NO.	SCALE
OCT 2012	13766.001.001.0080	AS SHOWN

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EL PATIO MEXICAN RESTAURANT

RUCHI'S TAQUERIA

WINROCK ROAD

CLUB

MW16 <0.005

WESTHEIMER ROAD

WESTHEIMER ROAD

N

STATE OF TEXAS
DAWN DENHAM
GEOLOGY
344
LICENSED
PROFESSIONAL GEOSCIENTIST

Dawn Denham

PARKING

PARKING

MW05 <0.005

MW13 0.008

0.007

MW02 <0.005

MW17 <0.005

MW01 0.0055

MW12 <0.005

MW14 <0.005

MARINER VILLAGE SHOPPING CENTER

PRIVATE DRIVE

MARINER VILLAGE SHOPPING CENTER

FORMER DRY CLEANER TENANT SPACE

MW11 0.0011J

MW04 <0.005

MW15 <0.005

ALLEY

ALLEY

MW09 <0.005

MW03 <0.050

ALLEY

PARKING LOT

PARKING LOT

APARTMENTS

APARTMENTS

BRIARGROVE DRIVE

LEGEND:

- MW13 0.008 — MONITOR WELL WITH CONCENTRATION OF DISSOLVED 1,1–DCE (mg/L)
- —x— FENCE
- CONCRETE–LINED DRAINAGE DITCH (FLOOD CONTROL)
- ESTIMATED EXTENT OF 1,1–DCE PLUME
- J — ESTIMATED VALUE BELOW LABORATORY DETECTION LIMIT
- < — VALUE BELOW LABORATORY DETECTION LIMIT

0 40 80

SCALE IN FEET

APPROXIMATE

DATE SAMPLED: 25–26 JUNE 2009.

WESTON SOLUTIONS, INC.
REGISTRATION NO.: 50258

WESTON SOLUTIONS

FIGURE C–6
1,1–DCE
GROUNDWATER PCLE MAP
JUNE 2009

MUNICIPAL SETTING DESIGNATION
MARINER VILLAGE SHOPPING CENTER
6347–6383 WESTHEIMER ROAD
HOUSTON, TEXAS

DATE	PROJECT NO.	SCALE
OCT 2012	13766.001.001.0080	AS SHOWN

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EL PATIO MEXICAN RESTAURANT

RUCHI'S TAQUERIA

WINROCK ROAD

CLUB

MW16 <0.002

WESTHEIMER ROAD

WESTHEIMER ROAD

PARKING

PARKING

MW05 <0.002

MW17 0.0014J

MW13 0.37

MW02 <0.002

MW14 <0.002

0.002

MW01 0.066

MW12 0.002

MARINER VILLAGE SHOPPING CENTER

PRIVATE DRIVE

MARINER VILLAGE SHOPPING CENTER

FORMER DRY CLEANER TENANT SPACE

MW04 <0.002

MW11 0.017

MW15 <0.002

ALLEY

ALLEY

MW09 <0.002

MW03 <0.050

ALLEY

PARKING LOT

PARKING LOT

APARTMENTS

APARTMENTS

BRIARGROVE DRIVE

N

STATE OF TEXAS
DAWN DENHAM
GEOLOGY
344
LICENSED
PROFESSIONAL GEOSCIENTIST

Dawn Denham

LEGEND:

- MW13 0.37 — MONITOR WELL WITH CONCENTRATION OF DISSOLVED VINYL CHLORIDE (mg/L)
- —x— FENCE
- CONCRETE–LINED DRAINAGE DITCH (FLOOD CONTROL)
- 0.002 — ESTIMATED EXTENT OF VINYL CHLORIDE PLUME
- J — ESTIMATED VALUE BELOW LABORATORY DETECTION LIMIT
- < — VALUE BELOW LABORATORY DETECTION LIMIT

0 40 80

SCALE IN FEET
APPROXIMATE

DATE SAMPLED: 25–26 JUNE 2009.

WESTON SOLUTIONS, INC.
REGISTRATION NO.: 50258

WESTON SOLUTIONS

FIGURE C–7
VINYL CHLORIDE GROUNDWATER PCLE MAP JUNE 2009

MUNICIPAL SETTING DESIGNATION
MARINER VILLAGE SHOPPING CENTER
6347–6383 WESTHEIMER ROAD
HOUSTON, TEXAS

DATE	PROJECT NO.	SCALE
OCT 2012	13766.001.001.0080	AS SHOWN

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EL PATIO MEXICAN RESTAURANT

RUCHI'S TAQUERIA

CLUB

WINROCK ROAD

MW16
85.63

85.5
85.0
84.5
84.0

WESTHEIMER ROAD

WESTHEIMER ROAD

PARKING

PARKING

MW05
84.36

MW13
84.24

MW02
84.04

MW14
84.34

MW17
84.25

MW01
84.18

MW12
83.98

MARINER VILLAGE SHOPPING CENTER

PRIVATE DRIVE

MARINER VILLAGE SHOPPING CENTER

FORMER DRY CLEANER TENANT SPACE

MW04
83.79

MW11
84.31

MW15
85.13

ALLEY

ALLEY

ALLEY

MW03
84.43

MW09
84.83

PARKING LOT

PARKING LOT

APARTMENTS

APARTMENTS

BRIARGROVE DRIVE

84.0
84.5
85.0

N

STATE OF TEXAS
DAWN DENHAM
GEOLOGY
344
LICENSED
PROFESSIONAL GEOSCIENTIST

Dawn Denham

LEGEND:

MW04 83.79 — MONITOR WELL LOCATION WITH RELATIVE GROUNDWATER ELEVATION

—X— FENCE

CONCRETE LINED DRAINAGE DITCH (FLOOD CONTROL)

85.0 — GROUNDWATER CONTOUR AND RELATIVE ELEVATION (FEET)

85.0 — INFERRED GROUNDWATER CONTOUR AND RELATIVE ELEVATION (FEET)

GROUNDWATER FLOW DIRECTION

0 40 80

SCALE IN FEET

APPROXIMATE

DATE SAMPLED: 25–26 JUNE 2009.

WESTON SOLUTIONS, INC.
REGISTRATION NO.: 50258

FIGURE C–8

POTENTIOMETRIC SURFACE MAP JUNE 2009

MUNICIPAL SETTING DESIGNATION
MARINER VILLAGE SHOPPING CENTER
6347–6383 WESTHEIMER ROAD

HOUSTON, TEXAS

DATE	PROJECT NO.	SCALE
OCT 2012	13766.001.001.0080	AS SHOWN

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Appendix D

For each contaminate of concern within the ingestion protective concentration level exceedence zone provide the following:

a. *A description of the ingestion protective concentration level exceedence zone and the non-ingestion protective concentration level exceedence zone, including a specification of the horizontal area and the minimum and maximum depth below ground surface.*
b. *The level of contamination, the ingestion protective concentration level, and the non-ingestion protective concentration level, all expressed as mg/L units.*
c. *Its basic geochemical properties (e.g., whether the contaminant of concern migrates with groundwater, floats, or is soluble in water).*

Based on the most recent environmental investigation conducted on the designated property (June 2009), five COCs have been identified above the residential PCL and the commercial/industrial ingestion PCLs in the shallow GWBU. The plume of affected groundwater is encountered, on average, between approximately 15 and 20 ft bgs beneath the designated property. Figures C-3, C-4, C-5, C-6, and C-7 in Appendix C illustrate the current ingestion PCLE zones for PCE, TCE, cis-1,2-DCE, 1,1-DCE, and vinyl chloride in groundwater. There are no non-ingestion PCLE zones.

A description of each COC, the maximum concentration detected during the most recent environmental investigation, the ingestion and non-ingestion PCLE zones, and geochemical properties are provided in the table below.

COC: Tetrachloroethene	
Maximum Concentration in most recent analytical data	3.5 mg/L
Ingestion-Based PCL (Residential $^{GW}GW_{Ing}$)	0.005 mg/L
Ingestion-Based PCLE Zone: (Approximate)	Total Area: 0.84 acres
Non-Ingestion - Based PCL ($^{Air}GW_{Inh\text{-}V}$)	500 mg/L
Non-Ingestion - Based PCLE Zone	None
Geochemical/Physical Properties	
Molecular Weight	165.8
Specific Gravity	1.62
Solubility in Water	Low solubility (0.02%)
Groundwater Migration	Variable
COC: Trichloroethene	
Maximum Concentration in most recent analytical data	2.2 mg/L
Ingestion-Based PCL (Residential $^{GW}GW_{Ing}$)	0.005 mg/L
Ingestion-Based PCLE Zone (Approximate)	Total Area: 0.90 acres
Non-Ingestion - Based PCL ($^{Air}GW_{Inh\text{-}V}$)	120 mg/L
Non-Ingestion - Based PCLE Zone	None

Geochemical/Physical Properties	
Molecular Weight	131.4
Density/Specific Gravity	1.46
Solubility in Water	Moderate (0.1%)
Groundwater Migration	Variable
COC: cis-1,2 Dichloroethene	
Maximum Concentration in most recent analytical data	2.6 mg/L
Ingestion-Based PCL (Residential $^{GW}GW_{Ing}$)	0.07 mg/L
Ingestion-Based PCLE Zone (Approximate)	Total Area: 0.37 acres
Non-Ingestion - Based PCL ($^{Air}GW_{Inh-V}$)	1200 mg/L
Non-Ingestion - Based PCLE Zone	None
Geochemical/Physical Properties	
Molecular Weight	97
Density/Specific Gravity	1.27
Solubility in Water	Moderate (0.4%)
Groundwater Migration	Variable
COC: 1,1-DCE	
Maximum Concentration in most recent analytical data	0.008 mg/L
Ingestion-Based PCL (Residential $^{GW}GW_{Ing}$)	0.007 mg/L
Ingestion-Based PCLE Zone (Approximate)	Total Area: 0.33 acres
Non-Ingestion - Based PCL ($^{Air}GW_{Inh-V}$)	3.8 mg/L
Non-Ingestion - Based PCLE Zone	None
Geochemical/Physical Properties	
Molecular Weight	62.489
Density/Specific Gravity	0.91
Solubility in Water	Slightly soluble in water
Groundwater Migration	Variable
COC: Vinyl Chloride	
Maximum Concentration in most recent analytical data	0.45 mg/L
Ingestion-Based PCL (Residential $^{GW}GW_{Ing}$)	0.002 mg/L
Ingestion-Based PCLE Zone (Approximate)	Total Area: 0.73 acres
Non-Ingestion - Based PCL ($^{Air}GW_{Inh-V}$)	3.8 mg/L
Non-Ingestion - Based PCLE Zone	None
Geochemical/Physical Properties	
Molecular Weight	62.489
Density/Specific Gravity	0.91
Solubility in Water	Slightly soluble in water
Groundwater Migration	Variable

Appendix E

5. Provide for each contaminant of concern within the designated groundwater:

a. *A description of the ingestion protective concentration level exceedance zone and the non-ingestion protective concentration level exceedance zone, including a specification of the horizontal area and the minimum and maximum depth below ground surface.*

b. *The level of contamination, the ingestion protective concentration level, and the non-ingestion protective concentration level, all expressed as mg/L units.*

c. *Its basic geochemical properties (e.g., whether the contaminant of concern migrates with groundwater, floats or is soluble in water).*

A description of each COC within the designated groundwater and corresponding basic geochemical properties are presented in Appendix D. A tabular listing of cumulative groundwater analytical results highlighting exceedances of PCLs is attached as Table G-1 in Appendix G.

Appendix F

(TCEQ MSD Reference No. 5)

A table displaying the following information for each contaminant of concern, to the extent known:

a. *The maximum concentration level for soil and groundwater, the ingestion protective concentration level, and the non-ingestion protective concentration level, all expressed as mg/L units.*
b. *The critical protective concentration level without the municipal setting designation, highlighting any exceedances.*

Attached Tables

Table F-1 - Summary of Maximum Groundwater Concentrations
Table F-2 - Summary of Soil Confirmation Sample Results

Based on the most recent site investigation results (June 2009), PCE, TCE, cis-1,2-DCE, 1,1-DCE, and vinyl chloride have been detected in groundwater at concentrations greater than their respective TRRP Tier 1 residential groundwater ingestion PCLs. Based on the residential PCL exceedances, the only on-site human receptors that could potentially be at risk from the groundwater pathway would be those who participate in groundwater sampling activities. Exposure to off-site human or ecological receptors is not anticipated since the shallow GWBU is not a usable water supply source.

Table F-1 in Appendix F presents the most recent and maximum concentration of each COC in the groundwater at the designated property. Table F-2 presents the soil confirmation results from the source excavation activities that were completed beneath the slab of the former dry cleaner tenant space.

Appendix F
Table F-1
Summary of Maximum Groundwater Concentrations
Mariner Village Shopping Center
Houston, Texas

Chemical of Concern	CAS Number	$^{GW}GW_{Ing}$ (w/o MSD) (mg/L)	$^{Air}GW_{Inh-V}$ (w/ MSD) (mg/L)	Maximum Concentration (mg/L)	Well ID	Date	Most Recent Concentration (mg/L)	Date
Tetrachloroethene	127-18-4	0.005	500	46	MW01	12/21/1998	3.5	6/26/2009
Trichloroethene	79-01-6	0.005	120	9.2	MW13	11/7/2002	0.62	6/26/2009
cis-1,2-Dichloroethene	156-59-2	0.07	1200	9.6	MW13	12/2/2004	2.6	6/26/2009
1,1-Dichloroethene	75-35-4	0.007	170	0.02	MW13	12/2/2004	0.008	6/26/2009
Vinyl Chloride	75-01-4	0.002	3.8	2.2	MW01	6/20/2002	0.066	6/26/2009

Appendix F
Table F-2
Summary of Soil Confirmation Sample Results
Mariner Village Shopping Center
Houston, Harris County, Texas

Sample/Location ID	Sample Depth (ft)	Collection Date	Analytical Results (mg/kg)			
			PCE	TCE	DCE	VC
RRS2 GWP-Ind (mg/kg)			**0.5**	**0.5**	**7.0**	**0.2**
Wall (E)	2	3/15/2001	0.012	<0.005	<0.005	<0.010
Wall (W)	2	3/15/2001	0.007	<0.005	0.11	<0.010
Wall (S)	2	3/15/2001	0.06	0.013	0.34	<0.010
Wall (N)	2	3/15/2001	0.012	<0.005	0.079	<0.010
Floor	4	3/15/2001	<0.005	<0.005	0.013	<0.010

PCE = tetrachloroethene
TCE = trichloroethene
DCE = cis-1,2-dichloroethene
VC = vinyl chloride

Appendix G

*A statement as to whether the plume of contamination is stable (i.e., no change), or contracting, and delineated**, with the basis for that statement.** Please include historical sampling data.*

Attached Tables

Table G-1 - Cumulative Summary of Groundwater Analytical Results

Attached Figures

Figure G-1 – MW01 Trend Graph
Figure G-2 – MW11 Trend Graph
Figure G-3 – MW12 Trend Graph
Figure G-4 – MW13 Trend Graph

Based on the groundwater monitoring performed from 1998 through 2009, the following conclusions have been drawn for the designated property:

- The gradient in the shallow GWBU is toward the northeast beneath the property but does not continue north across Westheimer Road.
- The plume of affected groundwater continues to remain stable in size, and no plume movement has been observed in the downgradient direction. The affected groundwater does not extend off-site east of the storm water drainage ditch or north across Westheimer Road, as indicated by analytical results from monitor wells MW02, MW14, MW15, and MW16; however, the downgradient edge of the plume may extend beneath a portion of Westheimer Road.
- The presence of PCE degradation products indicates that some degree of degradation is still occurring naturally after in-situ chemical oxidation. Overall concentrations of PCE and TCE have decreased significantly since 2001, as illustrated in trend graphs G-1 through G-4.
- The chemical constituents do not present an unacceptable risk in the shallow groundwater, as long as there is no ingestion of the groundwater. Ingestion of the groundwater is highly unlikely since the property uses public-supplied water.

TABLE G-1
CUMULATIVE SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
MARINER VILLAGE SHOPPING CENTER
HOUSTON, TEXAS

Monitor Well ID	Sampling Date	PCE	TCE	cis-DCE	trans-DCE	1,1-DCE	VC
		0.005 500	0.005 120	0.07 1200	0.1 770	0.007 1700	0.002 3.8
MW01	12/21/1998	46.0	7.4	4.3	0.380	0.017	0.290
	6/4/1999	44.0	7.0	5.2	0.330 J	0.016	0.270
	9/1/1999	29.0	4.7	3.4	0.240 J	0.013	0.140
	12/14/1999	30.0	5.6	4.1	<2.5	0.012	0.170
	3/21/2000	26.0	6.1	4.4	<1.0	0.014	0.230 J
	6/28/2000	38.0	6.5	3.6	0.19 J	0.013	0.25 J
	10/5/2000	28.0	5.4	3.0	0.22J	0.009	0.190
	1/4/2001	35.0	6.6	3.4	<2.5	0.010	0.780
	3/28/2001	40.0	7.0	4.1	<2.5	0.014	1.000
	6/21/2001	25.0	5.4	3.2	<2.5	0.009	<0.002
	10/12/2001	16.0	5.6	3.6	0.190	0.011	0.170
	12/17/2001	22.0	6.4	2.8	<1.00	0.008	0.680
	4/3/2002	18.0	5.8	3.4	1.2	0.010	0.540
	6/20/2002	17.0	5.9	2.7	<2.5	0.009	2.2
	11/7/2002	12.0	6.9	2.4	<0.250	<0.250	0.2
	12/11/2002	21.0	4.8	1.4	<0.120	<0.120	1.4
	6/23/2003	14.0	3.8	1.7	<0.120	0.007	0.037
	11/19/2003	13.0	3.8	3.0	<2.5	0.007	0.038
	11/19/2003	12.0	3.9	3.2	<2.5	0.007	0.040
	2/22/2004	12.0	4.4	2.6	0.096	0.007	0.066
	3/10/2004	6.4	2.8	2.5	0.090	0.006	0.045
	6/8/2004	3.5	2.4	1.8	0.043	0.006	0.017
	12/2/2004	3.3	2.6	3.3	0.1	0.008	0.06
	6/30/2005	4.9	3.3	3.8	0.079	0.007	0.041
	12/7/2005	5.5	3.6	4.1	0.071	0.008	0.037
	2/16/2006	2.4	1.4	2.0	0.024	<0.005	0.006
	6/7/2006	4.1	1.6	2.4	0.046	0.005	0.022
	3/20/2009	3.0	2.0	1.4	0.059	0.0061	0.140
	6/26/2009	3.5	2.2	1.2	0.041	0.0055	0.066
MW02	12/22/1998	0.013	0.006	<0.005	<0.005	<0.005	<0.005
	6/4/1999	0.044	0.016	0.007	<0.005	<0.005	<0.010
	8/13/1999	0.070	0.026	0.010	<0.005	<0.005	<0.010
	8/31/1999	0.070	0.026	0.010	<0.005	<0.005	<0.010
	12/14/1999	0.053	0.021	0.009	<0.005	<0.007	<0.002
	3/21/2000	0.062	0.025	0.007	<0.005	<0.005	<0.002
	6/28/2000	0.098	0.035	0.008	<0.005	<0.005	<0.002
	10/4/2000	0.057	0.024	0.006	<0.005	<0.005	<0.002
	1/4/2000	0.042	0.025	<0.005	<0.005	<0.005	<0.002
	3/28/2001	0.028	0.016	<0.005	<0.005	<0.005	<0.002
MW-2D	3/28/2001	0.030	0.016	<0.005	<0.005	<0.005	<0.002
	6/21/2001	0.012	0.008	<0.005	<0.005	<0.005	<0.002
	12/17/2001	0.005	0.005	<0.005	<0.005	<0.005	<0.010
	6/20/2002	<0.005	0.004J	<0.005	<0.005	<0.005	<0.005
	6/20/2002	<0.005	0.005	<0.005	<0.005	<0.005	<0.002

TABLE G-1
CUMULATIVE SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
MARINER VILLAGE SHOPPING CENTER
HOUSTON, TEXAS

Monitor Well ID	Sampling Date	PCE	TCE	cis-DCE	trans-DCE	1,1-DCE	VC
		0.005 500	**0.005 120**	**0.07 1200**	**0.1 770**	**0.007 1700**	**0.002 3.8**
	12/11/2002	0.007	0.008	<0.005	<0.005	<0.005	<0.002
	6/23/2003	<0.005	<0.005	<0.005	<0.005	<0.005	0.002
	11/19/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/8/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/2/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	7/1/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/7/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/7/2006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/20/2009	<0.005	0.0011 J	<0.005	<0.005	<0.005	<0.002
	6/25/2009	0.0013 J	0.0019 J	<0.005	<0.005	<0.005	<0.002
MW03	12/21/1998	0.071	0.019	0.010	<0.005	<0.005	<0.005
	6/4/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	8/30/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/13/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/21/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/28/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	10/3/2000	<0.005	<0.005	<0.005	<0.005	<0.005	0.002
	1/4/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/26/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/21/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/14/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/20/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/10/2002	<0.005	<0.005	0.014	<0.005	<0.005	0.006
	6/23/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	11/20/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/3/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/30/2005	<0.005	<0.005	0.007	<0.005	<0.005	0.004
	12/7/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/8/2006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/19/2009	<0.005	<0.005	0.00072 J	<0.005	<0.005	0.0052
	6/25/2009	<0.050	<0.050	<0.050	<0.050	<0.005	<0.050
MW04	12/21/1998	0.043	0.007	<0.005	<0.005	<0.005	<0.005
	6/4/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	8/30/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/13/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/21/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/27/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	10/4/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	1/4/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/26/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/21/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/14/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	6/21/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/11/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/23/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002

TABLE G-1
CUMULATIVE SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
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Monitor Well ID	Sampling Date	PCE	TCE	cis-DCE	trans-DCE	1,1-DCE	VC
		0.005 500	**0.005 120**	**0.07 1200**	**0.1 770**	**0.007 1700**	**0.002 3.8**
	11/20/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/9/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/3/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/30/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/7/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/8/2006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/19/2009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/25/2009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
MW05	12/21/1998	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	6/4/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	8/31/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	12/13/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/22/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/28/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	10/4/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	1/4/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/27/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/22/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/14/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	6/20/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/10/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/23/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	11/19/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/8/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/2/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/30/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/6/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/7/2006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/20/2009	<0.005	0.011	0.0042 J	<0.005	<0.005	<0.002
	6/25/2009	<0.005	0.014	0.0046 J	<0.005	<0.005	<0.002
MW09	6/4/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	8/31/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/13/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/21/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/27/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	10/3/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	1/4/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/26/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/21/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/14/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	6/20/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/10/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/23/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	11/20/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/8/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002

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MARINER VILLAGE SHOPPING CENTER
HOUSTON, TEXAS

Monitor Well ID	Sampling Date	PCE	TCE	cis-DCE	trans-DCE	1,1-DCE	VC
		0.005 500	**0.005 120**	**0.07 1200**	**0.1 770**	**0.007 1700**	**0.002 3.8**
	12/3/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/30/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/7/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/8/2006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/19/2009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/25/2009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
MW10	6/4/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	8/31/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/13/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/21/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/27/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	10/4/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	1/4/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
MW11	6/4/1999	6.2	0.64	0.67	<0.250	<0.005	0.055
	8/31/1999	2.0	0.56	2.20	<0.120	0.005	0.075
	12/14/1999	1.7	0.49	1.20	<0.050	<0.005	0.047
	3/21/2000	1.8	0.76	1.20	<0.120	<0.005	0.066
	6/28/2000	3.2	0.80 J	0.79 J	<0.120	<0.005	0.043
	10/5/2000	1.4	0.36	0.54	<0.12	<0.005	0.016
	1/4/2001	2.4	0.76	0.83	<0.12	<0.005	0.04
	3/28/2001	3.7	0.84	0.91	<0.25	<0.005	0.068
	6/21/2001	1.6	0.66	0.99	<0.25	<0.005	<0.002
	12/17/2001	1.3	0.68	0.72	0.25	<0.005	0.04
	6/20/2002	0.8	0.29	0.49	<0.100	<0.005	0.017
	12/11/2002	1.1	0.16	0.12	0.007	<0.005	0.028
	12/11/2002	0.86	0.12	0.08	0.007	<0.005	0.03
	6/23/2003	1.6	0.50	0.52	<0.250	<0.005	0.024
	11/19/2003	1.6	0.64	0.67	<0.250	<0.005	0.024
	6/9/2004	0.39	0.43	0.64	0.110	<0.005	0.040
	12/3/2004	0.39	0.2	0.44	0.008	<0.005	0.026
	6/30/2005	1.6	0.54	1	0.015	<0.005	0.059
	12/7/2005	0.97	0.44	1.1	0.016	<0.005	0.057
	6/8/2006	0.068	0.07	0.19	<0.005	<0.005	0.012
	3/19/2009	0.5	0.27	0.60	0.0085	0.0013 J	0.033
	6/26/2009	0.18	0.14	0.43	0.0065	0.0011 J	0.017
MW12	6/4/1999	3.6	0.78	0.58	<0.250	<0.005	0.033
	8/14/1999	3.9	0.70	0.49	0.019 J	<0.005	0.034
	9/1/1999	5.6	0.83	0.42 J	<0.500	<0.005	0.034
	12/14/1999	2.2	0.41	0.42	<0.100	<0.005	0.024
	3/21/2000	3.4	0.70	0.46	<0.120	<0.005	0.016
	6/28/2000	3.1	0.74	0.44	0.011 J	<0.005	0.011
	10/5/2000	5.6	0.92	0.50	<0.500	<0.005	0.025
	1/4/2001	3.1	0.63	0.39	<0.250	<0.005	0.026
	3/27/2001	3.9	0.76	0.44	<0.250	<0.005	0.012
	6/21/2001	5.9	0.90	0.51	<0.500	<0.005	<0.002

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MARINER VILLAGE SHOPPING CENTER
HOUSTON, TEXAS

Monitor Well ID	Sampling Date	PCE	TCE	cis-DCE	trans-DCE	1,1-DCE	VC
		0.005 500	**0.005 120**	**0.07 1200**	**0.1 770**	**0.007 1700**	**0.002 3.8**
	12/17/2001	2.4	0.72 J	0.40 J	<0.100	<0.005	<0.010
	6/21/2002	3.0	0.72	0.52	<0.250	<0.005	0.014
	12/11/2002	3.0	0.63	0.46	<0.025	<0.025	0.021
	6/23/2003	0.86	0.30	0.20	<0.050	<0.005	0.002
	11/19/2003	2.2	0.80	0.40	<0.250	<0.050	0.012
	6/9/2004	1.1	0.40	0.22	0.009	<0.005	0.010
	12/3/2004	1.3	0.61	0.39	0.013	<0.005	0.013
	7/1/2005	1.6	0.63	0.42	0.013	<0.005	0.016
	12/6/2005	2.8	0.82	0.60	0.017	<0.005	0.020
	2/16/2006	1.4	0.48	0.37	0.01	<0.005	0.007
	6/8/2006	0.93	0.33	0.36	0.007	<0.005	0.006
	3/19/2009	0.68	0.27	0.26	0.0084	0.00062 J	0.0088
	6/26/2009	0.42	0.17	0.16	0.0037	<0.005	0.0020
MW13	9/1/1999	15	2.8	2.4	0.091 J	0.011	0.17
	12/14/1999	29	5.9	5.1	<2.5	0.018	0.29
	3/21/2000	27	6.3	4.5	0.200 J	<0.050	0.25
	6/28/2000	33	6.7	4.3	<0.5	0.016	0.23 J
	10/5/2000	37	5.4	3.1	0.15J	0.011	0.2J
	1/4/2001	33	6.3	3.7	<2.5	0.014	1.5
	3/27/2001	42	8.3	5.0	<2.5	0.016	1.2
	6/21/2001	35	7.0	4.9	<1.2	0.015	<0.002
	10/12/2001	19	6.5	5.6	0.220	0.016	0.270
	12/17/2001	36	8.8	5.0	<1.0	0.015	0.720 J
	12/17/2001	4	2.9	3.8	<1.0	<0.005	0.680 J
	4/3/2002	29	7.2	6.3	0.28J	0.017	0.72
	4/3/2002	30	7.5	6.2	0.29J	0.017	0.70
	6/20/2002	30	6.5	5.5	<2.5	0.017	2.2
	11/7/2002	18	9.2	7.0	0.43	<0.250	0.29
	12/11'2002	27	5.6	8.1	0.36	<0.250	0.33
	6/23/2003	22	4.9	3.7	<1.2	0.012	0.17
	6/23/2003	22	5.0	3.6	<1.2	0.013	0.18
	11/19/2003	19	4.6	4.3	<2.5	0.010	0.12
	2/22/2004	16	5.3	4.2	0.160	0.012	0.23
	3/10/2004	15	5.4	3.7	0.140	0.010	0.17
	6/9/2004	9.7	3.7	3.2	0.140	0.010	0.17
MW-18	6/9/2004	8.2	3.2	3.4	0.140	0.010	0.16
	12/2/2004	10.0	3.6	9.6	0.19 J	0.019	0.23 J
MW-08	12/2/2004	9.5	3.6	9.1	0.18 J	0.020	0.2 J
	6/30/2005	10.0	4.2	5.6	0.140	0.012	0.19
MW-13B	6/30/2005	11.0	4.2	5.8	0.130	0.011	0.18
	12/6/2005	12.0	4.2	5.8	0.150	0.013	0.210 J
MW-13A	12/6/2005	13.0	4.4	6.2	0.150	0.013	0.240 J
	2/16/2006	3.9	2.2	6.2	0.071	0.011	0.11
	6/7/2006	3.1	2.0	5.3	0.066	0.011	0.14
MW-23	6/7/2006	3.2	2.0	5.4	0.066	0.011	0.14

TABLE G-1
CUMULATIVE SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
MARINER VILLAGE SHOPPING CENTER
HOUSTON, TEXAS

Monitor Well ID	Sampling Date	PCE	TCE	cis-DCE	trans-DCE	1,1-DCE	VC
		0.005 500	**0.005 120**	**0.07 1200**	**0.1 770**	**0.007 1700**	**0.002 3.8**
	3/20/2009	0.53	0.49	2.8	0.060	0.0085	0.31
MW-13D	3/20/2009	0.53	0.50	2.9	0.064	0.0088	0.33
	6/26/2009	1.3	0.54	2.6	0.053	0.0076	0.37
MW-13D	6/26/2009	1.7	0.62	2.6	0.049	0.0065	0.45
MW14	8/31/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	1/14/2000 [3]	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/21/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/28/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	10/4/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	1/4/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	1/4/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/27/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/21/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/17/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	6/21/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/10/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/23/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	11/19/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/9/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/2/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/30/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/6/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/7/2006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/20/2009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/25/2009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
MW15	8/31/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	1/14/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/21/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/27/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	10/4/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	1/4/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/27/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/21/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/17/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	6/21/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/10/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/23/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	11/19/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/9/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/2/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/30/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/6/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/7/2006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/20/2009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/25/2009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002

TABLE G-1
CUMULATIVE SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
MARINER VILLAGE SHOPPING CENTER
HOUSTON, TEXAS

Monitor Well ID	Sampling Date	PCE	TCE	cis-DCE	trans-DCE	1,1-DCE	VC
		0.005 **500**	**0.005** **120**	**0.07** **1200**	**0.1** **770**	**0.007** **1700**	**0.002** **3.8**
MW16	3/22/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/28/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	10/4/2000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	1/4/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/26/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/21/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/17/2001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010
	6/21/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/11/2002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	11/19/2003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/8/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/2/2004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	7/1/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	12/6/2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/8/2006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	3/20/2009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
	6/26/2009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002
MW17	6/23/2003	0.009	0.02	0.032	<0.005	<0.005	0.004
	11/19/2003	0.010	0.02	0.032	<0.005	<0.005	0.007
	6/9/2004	0.015	0.009	0.017	<0.005	<0.005	0.005
	12/2/2004	0.049	0.015	0.031	<0.005	<0.005	0.006
	6/30/2005	0.031	0.011	0.064	<0.005	<0.005	0.006
	12/6/2005	0.016	0.012	0.067	<0.005	<0.005	0.007
	2/16/2006	0.041	0.014	0.025	<0.005	<0.005	<0.002
	6/7/2006	0.036	0.016	0.038	<0.005	<0.005	0.006
	3/20/2009	0.047	0.016	0.043	0.0025 J	<0.005	0.0018 J
	6/26/2009	0.025	0.0088	0.054	0.0025 J	<0.005	0.0014 J

Notes:

J = Estimated value reported less than the PQL.

NA = Not analyzed.

NM= Not measured.

< Constituent was not reported above the detection limit shown.

'-' = information was not available during document review

TOC = Top of Well Casing (Measuring Point)

DCE = Dichloroethene

PCE = Tetrachloroethene

1 Relative surface elevation of concrete lined ditch is 83.82 feet.

2 RRS #2 MSC in (mg/L). Shaded values exceed these concentrations.

Figure G-1
Mariner Village Shopping Center
MW01 Tend Graph

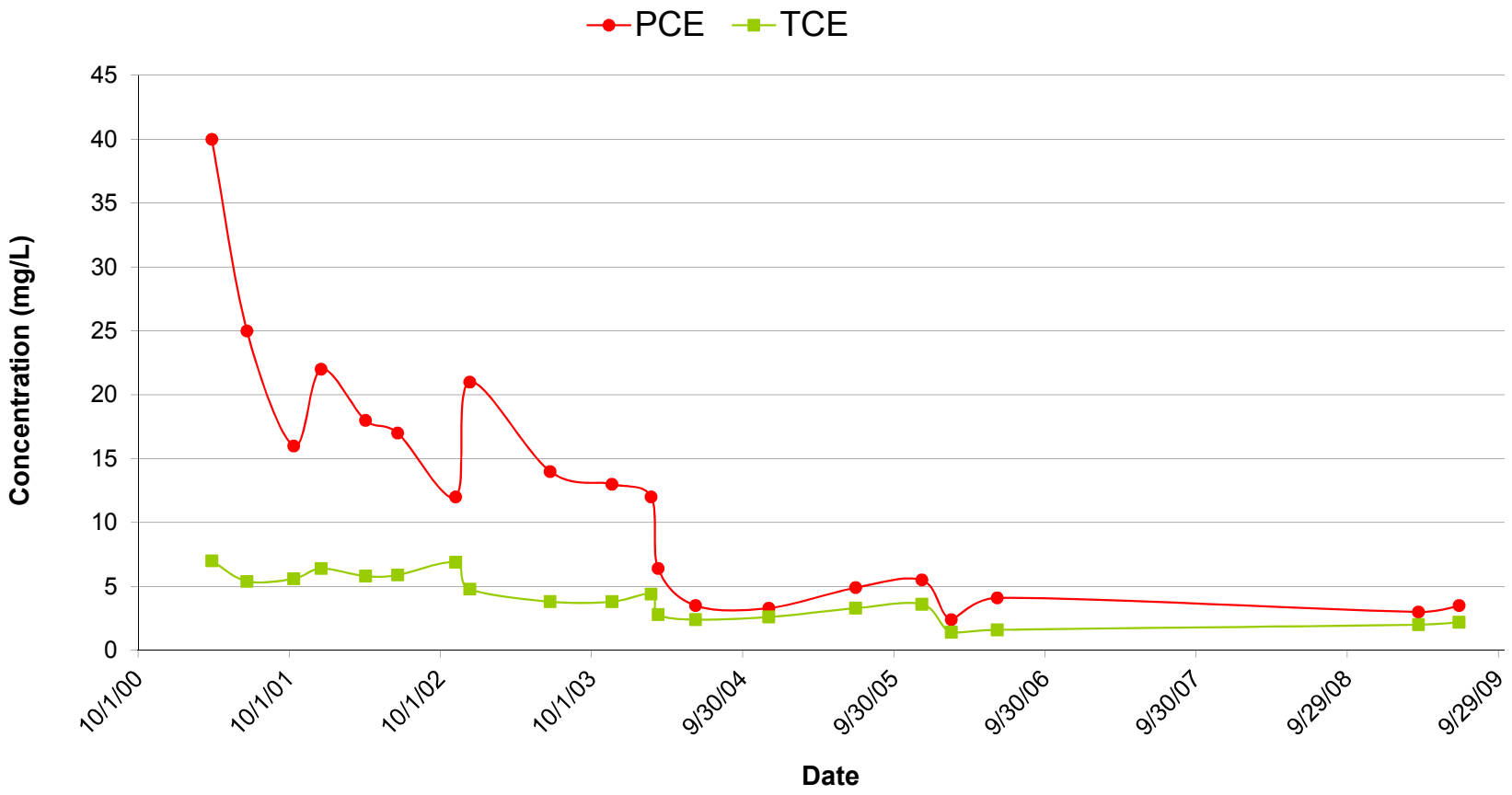

Figure G-2
Mariner Village Shopping Center
MW11 Tend Graph

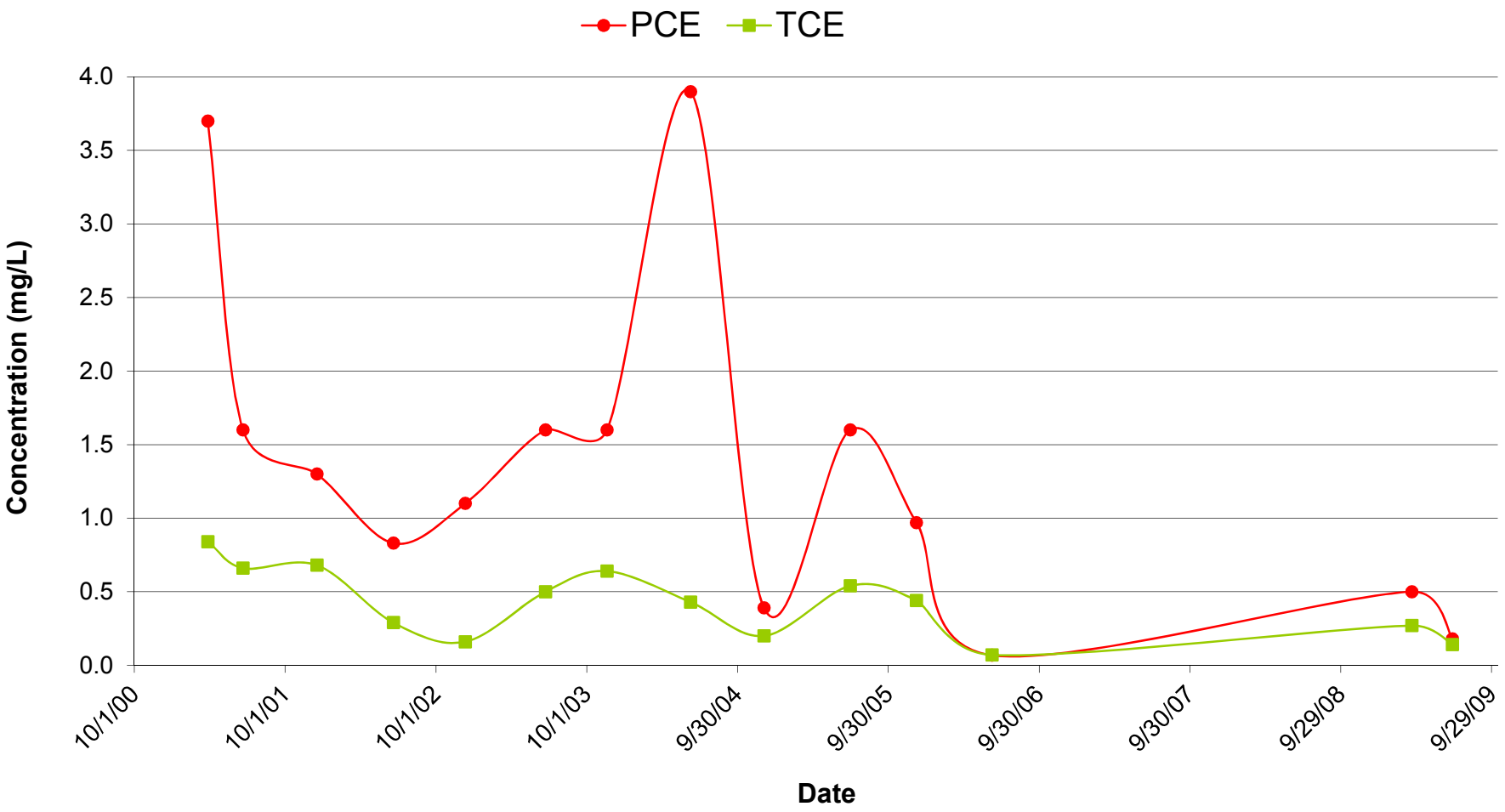

Figure G-3
Mariner Village Shopping Center
MW12 Tend Graph

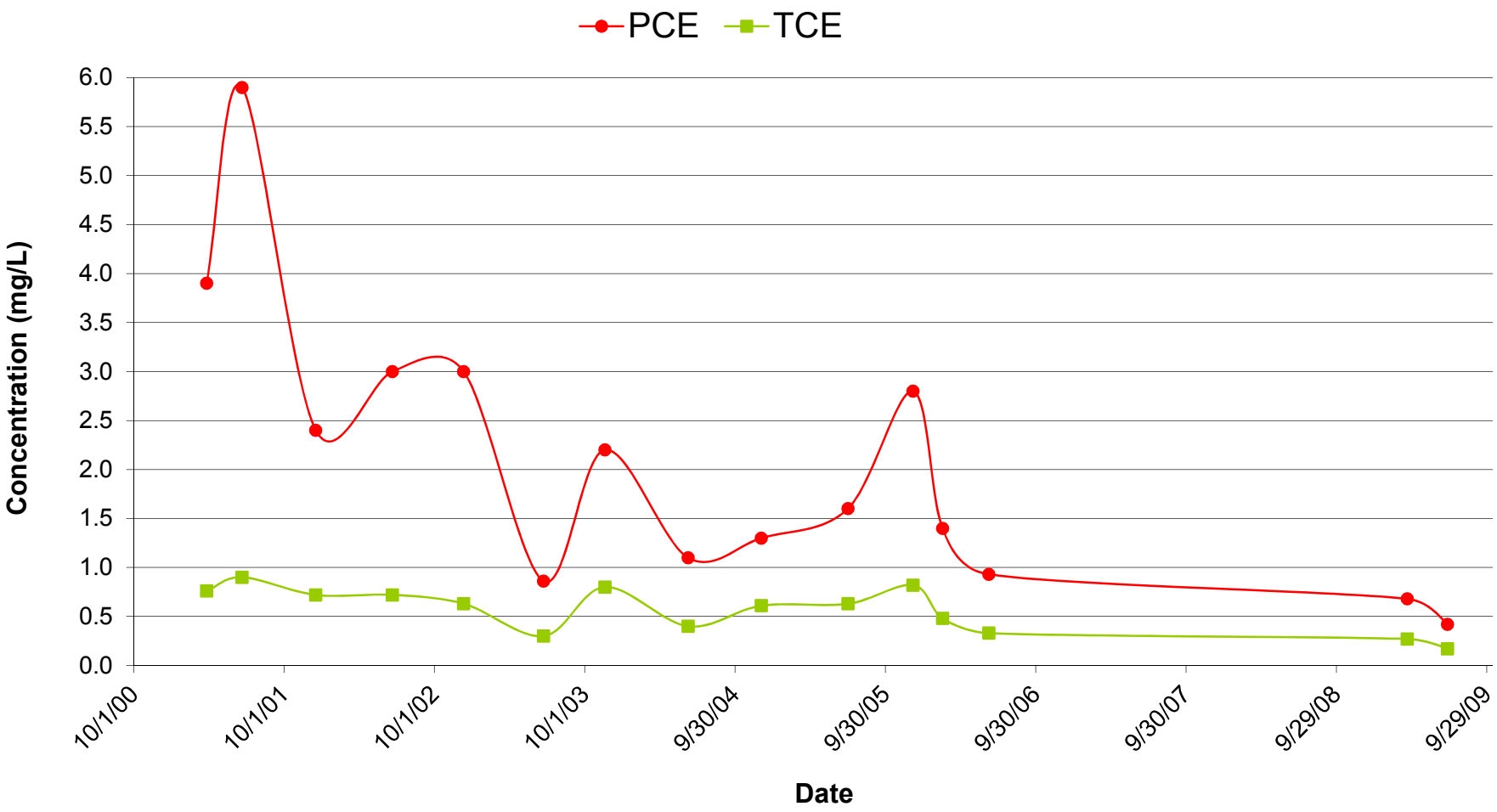

Figure G-4
Mariner Village Shopping Center
MW13 Tend Graph