Environmental Resources Management

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February 3, 2015

Mr. Rodney Bryant
Project Manager
Voluntary Cleanup Section
Texas Commission on Environmental Quality
Mail Code 221
12118 North IH 35, Building D
Austin, Texas 78753

Project No. 0260324

Subject: Second Half 2014 Monitoring Data Transmittal
Former Cameron Iron Works Facility, Houston, Texas
VCP No. 221

Dear Mr. Bryant:

On behalf of Cameron International Corporation (Cameron), Environmental Resources Management (ERM) is providing the Second Half 2014 Data Transmittal for the Former Cameron Iron Works Facility (the Facility) in Houston, Texas to the Texas Commission on Environmental Quality (TCEQ) for review and consideration. This report presents a summary of the ground water monitoring results during the second half of 2014. A summary table (Table 1, Attachment 1) has been created to convey this information, as well as the current response action for each area.

The semiannual ground water and surface water sampling event was conducted between November 17 and November 25, 2014. A total of 108 ground water monitor wells were gauged and 107 were sampled during this event. A total of six surface water locations were sampled in accordance with the Response Action Plan (RAP) dated August 28, 2003 and RAP Addenda. Based on a review of these results, the concentration trends of constituents of concern (COCs) were generally consistent with First Half of 2014 results across the majority of the on-site and off-site areas with some exceptions. The exceptions are discussed in detail below.

Evaluation of Plume Movement

The Texas Department of Transportation's (TxDOT) I-610/I-10 Interchange dewatering system (the dewatering system) continues to affect plume movement of impacted ground water both on site and off site. In accordance with the TCEQ's June 25, 2013 letter, Cameron submitted a RAP addendum dated March 12, 2014 that outlined a response to the plume movement induced by TXDOT's dewatering system. Cameron received comments on the RAP addendum in the TCEQ's letter dated July 22, 2014.

The plume movement on the western edge of the off-site property was first observed in July 2014. A review of the results from ground water samples collected in the second half of 2014 from MW-71 show the reported at concentrations of 1,1-dichloroethene (1,1-DCE) remain above the PCL. The ground water elevation data collected in this area since 2010 continues to support a northwest to southeast ground water flow direction and upgradient wells continue to report COCs as *Not Detected* since 2001. As proposed in the First Half of 2014 transmittal, this is the first of two routine sampling results to be reviewed to assess whether a response action is warranted in this area.

The movement of affected ground water was also noted in the southern portion of the off-site plume. At MW-168, concentrations of 1,1-DCE were reported above the PCL during the second half of 2014. A confirmation ground water sample was collected on December 22, 2014 and the reported concentrations of 1,1-DCE were consistent with the earlier results. The 1,1-DCE affected ground water in this area is associated with the eastward expansion of the plume caused by the dewatering system. The dewatering system induces a southeasterly gradient with implications to off-site wells downgradient of the dewatering system. MW-168 will be placed on the quarterly sampling schedule starting in the first quarter of 2015.

The concentrations of tetrachloroethene (PCE) at MW-97 were reported above the PCL in the second half of 2014. This monitor well is located near the Paraffine Partner's Ltd. ground water treatment system. Prior to November 2014, the PCE concentrations were slightly above the PCL. The most-recent data suggest that the increasing trends are continuing and MW-97 will be added to the quarterly sampling schedule.

The results from ground water samples collected at MW-168 and MW-97 were above the thresholds for notification of eight property owners along Stable Crest Lane, Crescent Gate Lane and Stable Lane in the Stablewood Subdivision. To date, the appropriate notifications have been made in accordance with TCEQ requirements to property owners who may potentially have affected ground water beneath their property. This process will continue as needed.

Evaluation of Analytical Results from the Second Half 2014

The ground water analytical results collected during the second half of 2014 were compared with the response action obligations outlined in the RAP and subsequent correspondence. The boundary wells are referred to as "trigger wells" because of their position on the plume boundary and their intended purpose to detect plume movement. Table 1 indicates which trigger wells require a response action and the proposed response action for each. The ground water analytical results for the trigger wells are presented in Table 2, and the analytical results for the non-trigger wells are presented in Table 3.

The reported surface water concentrations, summarized on Table 4, are below both the critical PCLs and 80% of the critical PCLs as established in the *Human Health and Ecological Risk Assessment for Surface Water and Sediment*, dated June 19, 2003.

Concentration versus time graphs for select site COCs for the wells listed in Table 1 are provided in Attachment 2.

The laboratory reports and data usability summaries will be provided in the 2014 Annual Ground Water Monitoring Report and Field Activities Summary.

Plume Concentration Trends by Area

In Attachment 2, Figure 1 illustrates the locations of the areas described below and the select monitor wells associated with each area for reference purposes. The following sections of the report present the results of the second half of 2014 monitoring event and the concentration trends observed to date.

Northern (On-Site) Area

There are currently no ground water wells that are monitored quarterly in the Northern Area (the former facility / on-site area). The southern boundary of the on-site area is being controlled by the ground water recovery and treatment component of the RAP. The COC concentrations remain generally stable to decreasing at levels above the PCLs.

The concentrations of site COCs are being monitored along the eastern site border with the AWTY International School (AIS) property because of the change in ground water flow direction caused by the dewatering system. AIS's border with the Site is monitored by three wells (MW-02(S), MW-03(S) and MW-130). MW-03(S) reported 1,1-DCA, 1,1-DCE, cis-1,2-DCE and PCE at levels below their PCLs in the second half of 2014. There have been no reported PCL exceedances on the AIS property to date.

Eastern (Off-Site) Area

The Eastern (off-site) Area is bound by the Harris County Flood Control Drainage Ditch (HCFCDD) to the west, I-10 to the north, Post Oak Lane to the east and Memorial Drive to the south. The concentrations of COCs are generally stable at levels above the PCLs along the eastern edge of the plume and decreasing trends are observed along the western edge of this plume area.

TxDOT's dewatering system is continuing to affect the ground water flow direction and the movement of the plumes in this area.

The eastern flank of the affected ground water is delineated along Post Oak Lane by MW-162 and MW-163.

In the Second Half 2014 sampling event, vinyl chloride (VC) was reported at MW-74 above the PCL. Concentrations of other site COCs (1,1-DCA, 1,1-DCE, cis-1,2-DCE, TCE and PCE) were reported above the detection limit but below their PCLs. MW-74 is influenced by the dewatering system and will remain on the quarterly sampling schedule.

The concentration of 1,1-DCE in the area of MW-84 was reported at 0.0097 mg/L in the Second Half 2014 - slightly above the PCL of 0.007 mg/L . 1,1-DCE shows a decreasing concentration trend and this well will remain on the quarterly sampling schedule.

The concentrations of 1,1-DCE and VC remain above the PCL at MW-174 and exhibit increasing trends over the past year. Trace amounts of the other site COCs have been reported in the ground water as well. MW-174 lies to the south (down gradient) of the Chatsworth Drive treatment gallery. MW-174 will remain on the quarterly sampling schedule.

Western (Off-Site) Area

The western area lies south of I-10 and to the west of the HCFCDD. The ground water plume generally remains within its historical footprint. A majority of the ground water sampling results continue to display stable to decreasing trends for the COCs.

The concentration of 1,1-DCE at MW-71 was first reported greater than the PCL during the first half of 2014 and a subsequent confirmation sample verified the PCL exceedance. The most-recent results at MW-71 continue to show the concentration of 1,1-DCE slightly above the PCL. MW-71 will be added to the quarterly schedule beginning in February 2015.

The concentrations of COCs were reported as *Not Detected* at MW-16R for the first time since its installation in 2003.

At quarterly trigger well MW-122, COC concentrations were reported as *Not Detected* except for 1,1-DCE (0.00085 J mg/L) and TCE (0.0012 J mg/L). No PCL exceedances were noted. MW-122 will remain on the quarterly sampling schedule.

Southern (Off-Site) Area

The southern area lies to the east of the HCFCDD and south of Memorial Drive and includes the areas near Carnarvon Drive and the Stablewood Subdivision. The affected ground water in this area generally remains consistent with previous extents.

The concentration of PCE in MW-125 decreased to below the PCL for the first time since 2005. The decreasing PCE trend will continue to be monitored and MW-125 will remain on the quarterly sampling schedule.

The movement of affected ground water was noted in the southern portion of the off-site plume. A review of the capture zone of the Paraffine Partners treatment system suggests that the 1,1-DCE in the ground water at MW-169 is, at least partially, being recovered and treated by the system.

At MW-168, concentrations of 1,1-DCE were reported above the PCL during the second half of 2014 and confirmed in a resampling event. MW-168 will be placed on the quarterly sampling schedule starting with the first quarter of 2015.

The affected ground water in the MW-168/MW-169 area is associated with the eastward expansion of the plume caused by the dewatering system. The dewatering system induces a southeasterly flow direction near I-10 which eventually returns to a southerly direction as the distance from the dewatering system increases and the influence of the dewatering system decreases.

The concentrations of tetrachloroethene (PCE) at MW-97 were reported above the PCL in the second half of 2014. This monitor well is located at the edge of the capture zone of the Paraffine Partner's Ltd. ground water treatment system. The most-recent data suggest that the increasing trends are continuing and MW-97 will be added to the quarterly sampling schedule beginning in 2015.

Conclusions

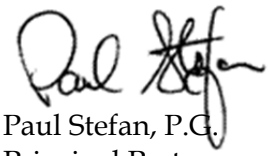
Ground water monitoring and remediation activities are continuing at the Former Cameron Iron Works. The evaluation of the data and information collected on the Texas Department of Transportation's (TxDOT) I-610/I-10 Interchange dewatering system continues to confirm that this system is the cause of the on-site and off-site plume movement observed to date. As the plume migration expands, Cameron is notifying property owners consistent with the requirements of 30 TAC 350.55.

The next sampling event is scheduled for February 2015.

Please contact Mr. Ted Fasting of Cameron International Corporation at (713) 513-3325 or me at (281) 600-1000 with any questions or comments.

Sincerely,

Environmental Resources Management



Paul Stefan, P.G.
Principal Partner

PAS/hmh
Attachments

cc: Jason Ybarra, Texas Commission on Environmental Quality, Region XII
Ted Fasting, Cameron International Corporation
Mike Filla, Cameron International Corporation, (without attachment)

Tables

Attachment 1

February 3, 2015
Project No. 0260324

Environmental Resources Management
CityCentre Four
840 West Sam Houston Parkway North, Suite 600
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TABLE 1

Summary of Response Action Plan Implementation
Second Half 2014 Monitoring Data Transmittal

Former Cameron Iron Works Facility
Houston, Texas

Plume Area	Well [1]	COCs elevated above MQL	COCs elevated above PCL	Need for Additional Notification (Yes or No)	In-situ Treatment (Yes or No)	Sampling Frequency
Eastern	MW-74	1,1-dichloroethane		no (a)	no	Quarterly
	MW-74	1,1-dichloroethene	1,1-dichloroethene	no (a)	no	Quarterly
	MW-74	cis-1,2-dichloroethene		no (a)	no	Quarterly
	MW-74	triichloroethene		no (a)	no	Quarterly
	MW-74	vinyl chloride	vinyl chloride	no (a)	no	Quarterly
Eastern	MW-84	1,1-dichloroethane		no (a)	yes (c)	Quarterly
	MW-84	1,1-dichloroethene	1,1-dichloroethene	no (a)	yes (c)	Quarterly
Western	MW-122	1,1-dichloroethene		no (a)	no	Quarterly
	MW-122	cis-1,2-dichloroethene		no (a)	no	Quarterly
	MW-122	trichloroethene	trichloroethene	no (a)	no	Quarterly
Western	MW-125	tetrachloroethene		no (a)	yes (c)	Quarterly
Eastern	MW-134			no (a)	no	Quarterly
Eastern	MW-145	1,1-dichloroethane		no (a)	yes (c)	Quarterly
	MW-145	1,1-dichloroethene		no (a)	yes (c)	Quarterly
	MW-145	vinyl chloride		no (a)	yes (c)	Quarterly
Eastern	MW-146	1,1-dichloroethane		no (a)	yes (c)	Quarterly
	MW-146	1,1-dichloroethene	1,1-dichloroethene	no (a)	yes (c)	Quarterly
	MW-146	cis-1,2-dichloroethene		no (a)	yes (c)	Quarterly
	MW-146	vinyl chloride		no (a)	yes (c)	Quarterly
Eastern	MW-147	1,1-dichloroethane		no (a)	yes (c)	Quarterly
	MW-147	1,1-dichloroethene	1,1-dichloroethene	no (a)	yes (c)	Quarterly
	MW-147	cis-1,2-dichloroethene		no (a)	yes (c)	Quarterly
	MW-147	tetrachloroethene		no (a)	yes (c)	Quarterly
	MW-147	trichloroethene		no (a)	yes (c)	Quarterly
Southern	MW-168	1,1-dichloroethane		yes (a)	no	Quarterly
	MW-168	1,1-dichloroethene	1,1-dichloroethene	yes (a)	no	Quarterly
Southern	MW-169	1,1-dichloroethane		no (a)	no	Quarterly
	MW-169	1,1-dichloroethene	1,1-dichloroethene	no (a)	no	Quarterly
	MW-169	vinyl chloride		no (a)	no	Quarterly
Eastern	MW-174	1,1-dichloroethane		no (a)	yes (c)	Quarterly
	MW-174	1,1-dichloroethene	1,1-dichloroethene	no (a)	yes (c)	Quarterly
	MW-174	1,2-dichloroethane		no (a)	yes (c)	Quarterly
	MW-174	vinyl chloride		no (a)	yes (c)	Quarterly

NOTES:

COCs = Chemicals of Concern
MQL = Method Quantitation Limit
[1] - Quarterly trigger well list as provided in TCEQ letter dated October 14, 2013.
(a) Properties in the vicinity of the affected ground water have been previously notified.
(c) Injection wells located in this area were injected with sodium permanganate in March 2012. This area is being gauged periodically for the presence of permanganate. Additional permanganate will be injected as needed to reduce concentration levels to the PCL.
(d) Properties in the vicinity of the affected ground water have been notified.
(e) MW-169 lies within the capture zone EW-1 of the Stablewood Remediation System.

TABLE 2

Summary of Monitor Well Ground Water Data for Trigger Wells
Second Half 2014 Monitoring Data Transmittal

Former Cameron Iron Works Facility
Houston, Texas

Constituent	SDL	Critical PCLs (a)	Location:	MW-17R	MW-59	MW-71	MW-72	MW-74	MW-77		MW-80	MW-81	MW-84
			Depth: (b)	26.5'	27'	27'	29'	28'	30'	DUP-3	32.5'	27'	33'
			Date:	11/20/2014	11/20/2014	11/24/2014	11/20/2014	11/21/2014	11/24/2014	11/24/2014	11/18/2014	11/20/2014	11/20/2014
1,1-Dichloroethane	0.00040	4.9		ND(0.00040)	ND(0.00040)	0.00079 J	ND(0.00040)	0.043	ND(0.00040)	ND(0.00040)	0.026	ND(0.00040)	0.0022 J
1,1-Dichloroethene	0.00050	0.0070		ND(0.00050)	ND(0.00050)	**0.010**	ND(0.00050)	0.0067	ND(0.00050)	ND(0.00050)	**0.072**	ND(0.00050)	**0.0097**
1,2-Dichloroethane	0.00050	0.0050		ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)
cis-1,2-Dichloroethene	0.00060	0.070		ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	0.0024 J	ND(0.00060)	ND(0.00060)	0.0068	ND(0.00060)	ND(0.00060)
Tetrachloroethene	0.00060	0.0050		ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	0.00067 J	ND(0.00060)	ND(0.00060)	**0.0060**	ND(0.00060)	ND(0.00060)
Trichloroethene	0.00050	0.0050		ND(0.00050)	ND(0.00050)	0.00055 J	ND(0.00050)	0.00063 J	ND(0.00050)	ND(0.00050)	0.0034 J	ND(0.00050)	ND(0.00050)
Vinyl Chloride	0.00040	0.0020		ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	**0.0029**	ND(0.00040)	ND(0.00040)	**0.0052**	ND(0.00040)	ND(0.00040)

Constituent	SDL	Critical PCLs (a)	Location:	MW-85R	MW-86	MW-95	MW-97	MW-98	MW-99	MW-117	MW-122	MW-123	MW-125
			Depth: (b)	30'	33.5'	25'	BAILED	BAILED	34'	27'	29'	29'	BAILED
			Date:	11/19/2014	11/21/2014	11/24/2014	11/25/2014	11/25/2014	11/21/2014	11/20/2014	11/24/2014	11/24/2014	11/18/2014
1,1-Dichloroethane	0.00040	4.9		ND(0.00040)	ND(0.00040)	ND(0.00040)	0.00062 J	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)
1,1-Dichloroethene	0.00050	0.0070		ND(0.00050)	ND(0.00050)	ND(0.00050)	0.0013 J	0.00075 J	ND(0.00050)	ND(0.00050)	0.00085 J	0.00060 J	ND(0.00050)
1,2-Dichloroethane	0.00050	0.0050		ND(0.00050)	0.00084 J	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)
cis-1,2-Dichloroethene	0.00060	0.070		ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)
Tetrachloroethene	0.00060	0.0050		ND(0.00060)	ND(0.00060)	ND(0.00060)	**0.037**	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	**0.0061**
Trichloroethene	0.00050	0.0050		ND(0.00050)	ND(0.00050)	ND(0.00050)	0.00083 J	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.0012 J	ND(0.00050)	ND(0.00050)
Vinyl Chloride	0.00040	0.0020		ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)

Constituent	SDL	Critical PCLs (a)	Location:	MW-131	MW-134	MW-139		MW-145	MW-146	MW-147	MW-168	MW-169	MW-174
			Depth: (b)	25'	27'	25'	Dup-6	26'	30'	31'	35'	36'	34'
			Date:	11/24/2014	11/24/2014	11/18/2014	11/18/2014	11/19/2014	11/19/2014	11/20/2014	11/25/2014	11/25/2014	11/19/2014
1,1-Dichloroethane	0.00040	4.9		ND(0.00040)	0.00045 J	0.0029 J	0.0032 J	0.014	0.020	0.0051	0.0059	0.023	0.085
1,1-Dichloroethene	0.00050	0.0070		ND(0.00050)	ND(0.00050)	0.0059	**0.0071**	**0.0084**	**0.039**	**0.018**	**0.029**	**0.093**	**0.048**
1,2-Dichloroethane	0.00050	0.0050		ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)
cis-1,2-Dichloroethene	0.00060	0.070		ND(0.00060)	ND(0.00060)	0.0010 J	0.0010 J	0.0010 J	0.0017 J	ND(0.00060)	ND(0.00060)	0.00062 J	0.0052
Tetrachloroethene	0.00060	0.0050		ND(0.00060)	ND(0.00060)	0.0018 J	0.0020 J	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	0.00070 J	0.0020 J
Trichloroethene	0.00050	0.0050		ND(0.00050)	ND(0.00050)	0.0013 J	0.0014 J	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.0014 J
Vinyl Chloride	0.00040	0.0020		ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	0.0017 J	**0.0021**	ND(0.00040)	ND(0.00040)	0.00072 J	**0.0039**

NOTES:

The reported concentrations are in mg/L.
0.010 = exceedance of TCEQ Texas Risk Reduction Program (TRRP) Tier 1 Residential Class 2 Groundwater critical PCLs.
NA = Not Analyzed.
NS = Not Sampled.
ND(0.00050) = Not Detected at the Sample Quantitation Limit (SQL) given in parentheses.
(a) TCEQ Texas Risk Reduction Program (TRRP) Tier 1 Residential Class 2 Ground Water PCLs, Table 3, June 2012.
(b) The sample depths are reported in feet below ground surface.
(c) Not sampled due to permanganate in well.
(d) Monitor well was inaccessible and was not sampled.
J = Estimated data, the reported sample concentration is approximated due to amount reported or exceedance of QC requirements.

TABLE 3

Summary of Monitor Well Ground Water Data
Second Half 2014 Monitoring Data Transmittal

Former Cameron Iron Works Facility
Houston, Texas

Constituent	Critical PCLs (a)	Location:	KMW-01	KMW-07	MW-01	MW-02(S)	MW-02R	MW-03(S)		MW-07R	MW-15R	MW-16R
		Depth: (b)			25'	25'	23'	24.5'	DUP-1	27'	33.5'	26'
		Date:	PLUGGED	PLUGGED	11/19/2014	11/18/2014	11/20/2014	11/18/2014	11/18/2014	11/19/2014	11/20/2014	11/20/2014
1,1-Dichloroethane	4.9		NS	NS	NA	ND(0.00040)	NA	0.012	0.015	NA	0.0034 J	ND(0.00040)
1,1-Dichloroethene	0.0070		NS	NS	0.0041 J	ND(0.00050)	0.00066 J	0.0020 J	0.0027 J	ND(0.00050)	**0.018**	ND(0.00050)
1,2-Dichloroethane	0.0050		NS	NS	NA	ND(0.00050)	NA	ND(0.00050)	ND(0.00050)	NA	0.00082 J	ND(0.00050)
cis-1,2-Dichloroethene	0.070		NS	NS	ND(0.00060)	ND(0.00060)	ND(0.00060)	0.0016 J	0.0019 J	ND(0.00060)	ND(0.00060)	ND(0.00060)
Tetrachloroethene	0.0050		NS	NS	ND(0.00060)	ND(0.00060)	ND(0.00060)	0.00069 J	ND(0.00060)	ND(0.00060)	**0.0066**	ND(0.00060)
Trichloroethene	0.0050		NS	NS	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.0018 J	ND(0.00050)
Vinyl Chloride	0.0020		NS	NS	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)

Constituent	Critical PCLs (a)	Location:	MW-35	MW-43R	MW-50R	MW-52	MW-60	MW-61	MW-64	MW-65	MW-66	MW-67
		Depth: (b)		24'	23'	25'	34'	23'	25'	25'	27'	28'
		Date:	PLUGGED	11/19/2014	11/19/2014	11/19/2014	11/20/2014	11/20/2014	11/17/2014	11/17/2014	11/18/2014	11/18/2014
1,1-Dichloroethane	4.9		NS	NA	NA	NA	ND(0.00040)	ND(0.00040)	NA	NA	NA	NA
1,1-Dichloroethene	0.0070		NS	**0.014**	**0.049**	**0.039**	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.0029 J	**0.054**	ND(0.00050)
1,2-Dichloroethane	0.0050		NS	NA	NA	NA	ND(0.00050)	ND(0.00050)	NA	NA	NA	NA
cis-1,2-Dichloroethene	0.070		NS	ND(0.00060)	0.0093	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	0.0049 J	0.055	ND(0.00060)
Tetrachloroethene	0.0050		NS	ND(0.00060)	**0.0075**	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	**0.032**	0.00075
Trichloroethene	0.0050		NS	ND(0.00050)	**0.019**	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.00053 J	**0.0051**	ND(0.00050)
Vinyl Chloride	0.0020		NS	0.00063 J	**0.032**	0.00055 J	ND(0.00040)	ND(0.00040)	ND(0.00040)	0.0019 J	**0.036**	ND(0.00040)

Constituent	Critical PCLs (a)	Location:	MW-67	MW-70	MW-73	MW-75R	MW-76	MW-78	MW-79	MW-82	MW-83	MW-87
		Depth: (b)	DUP-4	27'	27'	34.5'	31'	27.5'	33'	31'	31.5'	33'
		Date:	11/18/2014	11/20/2014	11/24/2014	11/24/2014	11/17/2014	11/18/2014	11/18/2014	11/17/2014	11/20/2014	11/20/2014
1,1-Dichloroethane	4.9		NA	0.075	0.0016 J	0.0030 J	0.0084	ND(0.00040)	0.031	0.021	0.018	0.0039
1,1-Dichloroethene	0.0070		ND(0.00050)	**0.15**	**0.011**	0.0061	**0.018**	0.00054 J	**0.074**	**0.052**	**0.089**	**0.074**
1,2-Dichloroethane	0.0050		NA	0.0016 J	ND(0.00050)	0.00051 J	ND(0.00050)	ND(0.00050)	0.0020 J	ND(0.00050)	0.0024 J	0.00060
cis-1,2-Dichloroethene	0.070		ND(0.00060)	0.029	ND(0.00060)	0.0055	0.0011 J	ND(0.00060)	**0.16**	0.0064	**0.071**	ND(0.00060)
Tetrachloroethene	0.0050		ND(0.00060)	**0.034**	0.0013 J	**0.0060**	ND(0.00060)	ND(0.00060)	**0.29**	**0.076**	**0.34**	ND(0.00060)
Trichloroethene	0.0050		ND(0.00050)	**0.024**	ND(0.00050)	0.0044 J	0.00069 J	ND(0.00050)	**0.066**	**0.010**	**0.050**	ND(0.00050)
Vinyl Chloride	0.0020		ND(0.00040)	**0.0033**	ND(0.00040)	0.00068 J	ND(0.00040)	ND(0.00040)	**0.024**	0.0017 J	**0.015**	ND(0.00040)

NOTES:

The reported concentrations are in mg/L.
0.018 = exceedance of TCEQ Texas Risk Reduction Program (TRRP) Tier 1 Residential Class 2 Groundwater critical PCLs.
NA = Not Analyzed.
NS = Not Sampled.
ND(0.00050) = Not Detected at the Sample Quantitation Limit (SQL) given in parentheses.
(a) TCEQ Texas Risk Reduction Program (TRRP) Tier 1 Residential Class 2 Ground Water PCLs, Table 3, June 2012.
(b) The sample depths are reported in feet below ground surface.
(c) Not sampled due to permanganate in well.
(d) Monitor well was inaccessible and was not sampled.
J = Estimated data, the reported sample concentration is approximated due to amount reported or exceedance of QC requirements.
L = Biased Low.
U = Not detected, the SQL is estimated

TABLE 3 (Cont'd)

Summary of Monitor Well Ground Water Data
Second Half 2014 Monitoring Data Transmittal

Former Cameron Iron Works Facility
Houston, Texas

Constituent	Critical PCLs (a)	Location: / Depth: (b) / Date:	MW-88 BAILED 11/24/2014	MW-89 BAILED 11/19/2014	MW-90 BAILED 11/24/2014	MW-91 BAILED 11/24/2014	MW-92 GRAB 11/18/2014	MW-93 BAILED 11/18/2014	MW-94 25' 11/19/2014	MW-96R 35' 11/25/2014	MW-99 34' 11/21/2014	MW-100 32.5' 11/24/2014
1,1-Dichloroethane	4.9		0.0051	0.0050	0.014	0.011	0.00073 J	ND(0.00040)	ND(0.00040)	0.0014 J	ND(0.00040)	0.0025
1,1-Dichloroethene	0.0070		**0.031**	**0.026**	**0.057**	**0.046**	0.0040 J	0.0024 J	ND(0.00050)	0.0032 J	ND(0.00050)	**0.010**
1,2-Dichloroethane	0.0050		0.0022 J	0.00064 J	0.00051 J	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)
cis-1,2-Dichloroethene	0.070		0.024	0.00090 J	0.0070	0.0053	0.0017 J	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	0.0044
Tetrachloroethene	0.0050		**0.49**	0.0010 J	**0.063**	**0.061**	**0.26**	**0.019**	ND(0.00060)	ND(0.00060)	ND(0.00060)	0.0012
Trichloroethene	0.0050		**0.054**	0.0041 J	**0.018**	**0.012**	**0.012**	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.0018
Vinyl Chloride	0.0020		0.0017 J	ND(0.00040)	0.00047 J	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	0.00062

Constituent	Critical PCLs (a)	Location: / Depth: (b) / Date:	MW-101 33' 11/24/2014	MW-102 BAILED 11/17/2014	MW-106 BAILED 11/17/2014	MW-107 BAILED 11/17/2014	MW-108 27' 11/19/2014	MW-109 26' 11/18/2014	MW-110 27' 11/18/2014	MW-111 26' 11/18/2014	MW-112 26' 11/18/2014	MW-113 27' 11/17/2014
1,1-Dichloroethane	4.9		0.0027 J	ND(0.00040)	ND(0.00040)	0.0078	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	0.0070		0.0051	ND(0.00050)	0.0012 J	**0.054**	**0.17**	**0.070**	0.0042 J	**0.034**	**0.18**	0.00087
1,2-Dichloroethane	0.0050		ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	0.070		ND(0.00060)	ND(0.00060)	0.0014 J	0.0016 J	0.0070	**0.15**	0.018	0.0024 J	0.036	ND(0.00060)
Tetrachloroethene	0.0050		**0.017**	**0.12**	**0.19**	**0.084**	0.0017 J	**0.027**	ND(0.00060)	**0.083**	0.0020 J	ND(0.00060)
Trichloroethene	0.0050		0.0016 J	0.0016 J	**0.0064**	**0.0052**	**0.026**	**0.012**	0.0041 J	**0.0065**	0.0025 J	ND(0.00050)
Vinyl Chloride	0.0020		ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	**0.0068**	**0.032**	**0.0038**	**0.0031**	**0.056**	ND(0.00040)

Constituent	Critical PCLs (a)	Location: / Depth: (b) / Date:	MW-114 34' 11/19/2014	MW-115 35' 11/19/2014	MW-116 27' 11/25/2014	MW-116 DUP-2 11/25/2014	MW-118 29' 11/20/2014	MW-119 29' 11/20/2014	MW-120 25' 11/17/2014	MW-121 28' 11/24/2014	MW-124 29' 11/20/2014	MW-126 26' 11/20/2014
1,1-Dichloroethane	4.9		0.035	ND(0.00040)	0.0019 J	0.0020 J	0.0046 J	0.0012 J	ND(0.00040)	ND(0.00040)	0.021	ND(0.00040)
1,1-Dichloroethene	0.0070		**0.12**	**0.070**	**0.0094**	**0.010**	**0.027**	0.0015 J	ND(0.00050)	**0.010**	**0.065**	ND(0.00050)
1,2-Dichloroethane	0.0050		0.00077 J	0.0024 J	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.0018 J	ND(0.00050)
cis-1,2-Dichloroethene	0.070		0.040	ND(0.00060)	0.0010 J	0.0011 J	0.00088 J	0.0014 J	ND(0.00060)	ND(0.00060)	0.020	ND(0.00060)
Tetrachloroethene	0.0050		**0.081**	ND(0.00060)	0.0016 J	0.0017 J	0.0050	ND(0.00060)	0.0016 J	ND(0.00060)	**0.039**	ND(0.00060)
Trichloroethene	0.0050		**0.051**	0.0025 J	0.0016 J	0.0016 J	0.0011 J	0.00064 J	ND(0.00050)	ND(0.00050)	**0.016**	ND(0.00050)
Vinyl Chloride	0.0020		**0.0052**	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	0.0018 J	ND(0.00040)

NOTES:

The reported concentrations are in mg/L.
0.018 = exceedance of TCEQ Texas Risk Reduction Program (TRRP) Tier 1 Residential Class 2 Groundwater critical PCLs.
NA = Not Analyzed.
NS = Not Sampled.
ND(0.00050) = Not Detected at the Sample Quantitation Limit (SQL) given in parentheses.
(a) TCEQ Texas Risk Reduction Program (TRRP) Tier 1 Residential Class 2 Ground Water PCLs, Table 3, June 2012.
(b) The sample depths are reported in feet below ground surface.
(c) Not sampled due to permanganate in well.
(d) Monitor well was inaccessible and was not sampled.
J = Estimated data, the reported sample concentration is approximated due to amount reported or exceedance of QC requirements.
L = Biased Low.
U = Not detected, the SQL is estimated

TABLE 3 (Cont'd)

Summary of Monitor Well Ground Water Data
Second Half 2014 Monitoring Data Transmittal

Former Cameron Iron Works Facility
Houston, Texas

Constituent	Critical PCLs (a)	Location: / Depth: (b) / Date:	MW-127 32' 11/19/2014	MW-127 DUP-5 11/19/2014	MW-128 BAILED 11/20/2014	MW-129 BAILED 11/19/2014	MW-130 27' 11/18/2014	MW-132 27.5' 11/21/2014	MW-133 27.5' 11/24/2014	MW-135 27.5' 11/19/2014	MW-140 26' 11/18/2014	MW-141 30' 11/20/2014
1,1-Dichloroethane	4.9		ND(0.00040)	ND(0.00040)	0.0011 J	0.011	ND(0.00040)	ND(0.00040)	0.00054 J	ND(0.00040)	0.0069	0.035
1,1-Dichloroethene	0.0070		ND(0.00050)	ND(0.00050)	**0.0079**	**0.0090**	ND(0.00050)	ND(0.00050)	0.0035 J	ND(0.00050)	0.0065	**0.073**
1,2-Dichloroethane	0.0050		ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.00080 J	0.0021
cis-1,2-Dichloroethene	0.070		ND(0.00060)	ND(0.00060)	0.0019 J	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	0.010	**0.10**
Tetrachloroethene	0.0050		ND(0.00060)	ND(0.00060)	0.00081 J	0.00064 J	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	**0.0051**	**0.17**
Trichloroethene	0.0050		ND(0.00050)	ND(0.00050)	**0.0091**	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.0014 J	**0.038**
Vinyl Chloride	0.0020		ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	**0.0029**	**0.031**

Constituent	Critical PCLs (a)	Location: / Depth: (b) / Date:	MW-142 33.5' 11/18/2014	MW-143 26' 11/18/2014	MW-144 30' 11/18/2014	MW-149 27.5' 11/19/2014	MW-160 29' 11/19/2014	MW-161 30' 11/19/2014	MW-162 33.5' 11/20/2014	MW-163 28' 11/20/2014	MW-166 BAILED 11/25/2014	MW-167 BAILED 11/25/2014
1,1-Dichloroethane	4.9		0.0080	0.0011 J	0.054	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	0.00088 J	0.020
1,1-Dichloroethene	0.0070		**0.013**	0.0018 J	**0.057**	ND(0.00050)	ND(0.00050)	0.00081 J	ND(0.00050)	ND(0.00050)	0.0033 J	**0.070**
1,2-Dichloroethane	0.0050		ND(0.00050)	ND(0.00050)	0.00085 J	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.00067
cis-1,2-Dichloroethene	0.070		0.015	ND(0.00060)	0.039	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	0.0012 J	ND(0.00060)
Tetrachloroethene	0.0050		**0.050**	**0.0058**	**0.21**	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	ND(0.00060)	**0.039**	0.00095
Trichloroethene	0.0050		**0.013**	0.0015 J	**0.053**	ND(0.00050)	ND(0.00050)	0.00065 J	ND(0.00050)	ND(0.00050)	0.0034 J	0.00053
Vinyl Chloride	0.0020		**0.0028**	ND(0.00040)	**0.0050**	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	0.00049 J	ND(0.00040)

Constituent	Critical PCLs (a)	Location: / Depth: (b) / Date:	MW-170 25' 11/24/2014	MW-171 24' 11/24/2014	MW-172 25' 11/24/2014	MW-173 BAILED 11/25/2014	MW-175 BAILED 11/25/2014	MW-176 BAILED 11/25/2014	MW-177 BAILED 11/25/2014
1,1-Dichloroethane	4.9		0.021	0.00096 J	ND(0.00040)	ND(0.00040)	0.00055 J	ND(0.00040)	0.00069 J
1,1-Dichloroethene	0.0070		**0.092**	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.0038 J	0.00071 J	**0.015**
1,2-Dichloroethane	0.0050		0.00089 J	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)
cis-1,2-Dichloroethene	0.070		0.012	ND(0.00060)	ND(0.00060)	ND(0.00060)	0.0019 J	ND(0.00060)	ND(0.00060)
Tetrachloroethene	0.0050		**0.0093**	ND(0.00060)	ND(0.00060)	ND(0.00060)	**0.18**	**0.013**	ND(0.00060)
Trichloroethene	0.0050		**0.015**	ND(0.00050)	ND(0.00050)	ND(0.00050)	**0.012**	0.0013 J	ND(0.00050)
Vinyl Chloride	0.0020		0.00079 J	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)	ND(0.00040)

NOTES:

The reported concentrations are in mg/L.
0.018 = exceedance of TCEQ Texas Risk Reduction Program (TRRP) Tier 1 Residential Class 2 Groundwater critical PCLs.
NA = Not Analyzed.
NS = Not Sampled.
ND(0.00050) = Not Detected at the Sample Quantitation Limit (SQL) given in parentheses.
(a) TCEQ Texas Risk Reduction Program (TRRP) Tier 1 Residential Class 2 Ground Water PCLs, Table 3, June 2012.
(b) The sample depths are reported in feet below ground surface.
(c) Not sampled due to permanganate in well.
(d) Monitor well was inaccessible and was not sampled.
J = Estimated data, the reported sample concentration is approximated due to amount reported or exceedance of QC requirements.
L = Biased Low.
U = Not detected, the SQL is estimated

TABLE 4

Summary of Surface Water Data
Second Half 2014 Monitoring Data Transmittal

Former Cameron Iron Works Facility
Houston, Texas

Constituent	Critical PCLs (a)	80% Critical PCL (a)	Location:	SWD-12	SWD-14	SWD-15	SWD-15 Dup
			Date:	12/10/2014	12/10/2014	12/10/2014	
1,1-Dichloroethane	5.13	4.10		ND(0.00040)	0.00063 J	0.00063 J	0.0010 J
1,1-Dichloroethene	0.06	0.05		ND(0.00050)	0.0019 J	0.0019 J	0.014 J
1,2-Dichloroethane	0.554	0.443		ND(0.00050)	ND(0.00050)	ND(0.00050) J	ND(0.00050)
cis-1,2-Dichloroethene	9.36	7.49		ND(0.00060)	0.0011 J	0.0010 J	0.00081 J
Tetrachloroethene	0.790	0.632		ND(0.00060)	0.00069 J	0.00073 J	0.00072 J
Trichloroethene	1.110	0.888		ND(0.00050)	0.0019 J	0.0017 J	0.0023 J
Vinyl Chloride	0.0336	0.0269		ND(0.00040)	ND(0.00040)	ND(0.00040) J	ND(0.00040)

Constituent	Critical PCLs (a)	80% Critical PCL (a)	Location:	SWD-17	SWD-18	SWD-20
			Date:	12/10/2014	12/10/2014	12/10/2014
1,1-Dichloroethane	5.13	4.10		ND(0.00040)	ND(0.00040)	ND(0.00040)
1,1-Dichloroethene	0.06	0.05		0.0041 J	0.0028 J	0.0011 J
1,2-Dichloroethane	0.554	0.443		ND(0.00050)	ND(0.00050)	ND(0.00050)
cis-1,2-Dichloroethene	9.36	7.49		ND(0.00060)	ND(0.00060)	ND(0.00060)
Tetrachloroethene	0.790	0.632		0.0057	0.0041 J	0.0022 J
Trichloroethene	1.110	0.888		0.00058 J	ND(0.00050)	ND(0.00050)
Vinyl Chloride	0.0336	0.0269		ND(0.00040)	ND(0.00040)	ND(0.00040)

NOTES:

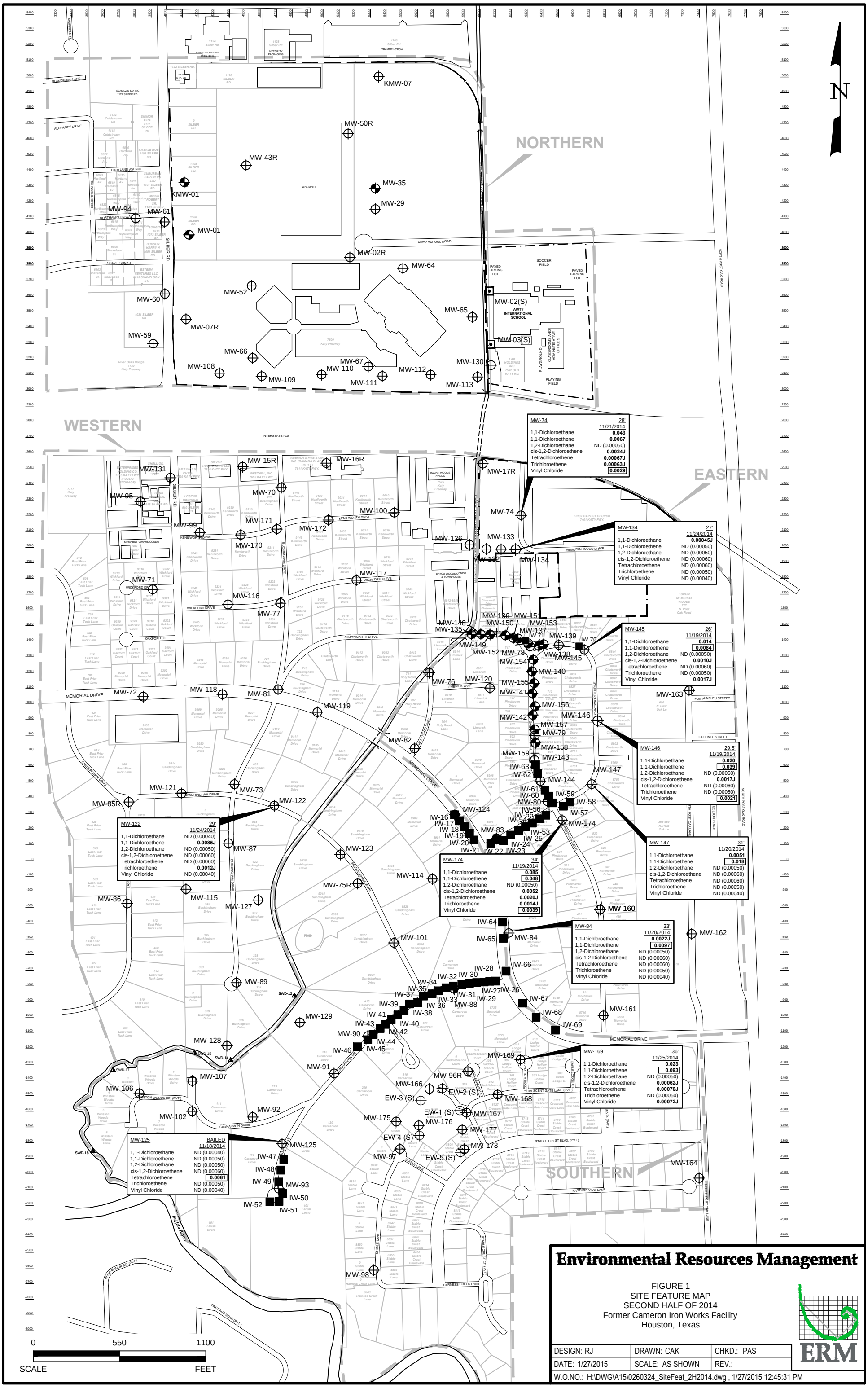
The reported concentrations are in mg/L.
ND(0.00050) = Not Detected at the Reporting Limit given in parentheses.
J = Estimated data, the reported sample concentration is approximated due to amount reported or exceedance of QC requirements.
U = Not detected, the SQL is estimated
(a) Taken from the critical PCLs calculated in the *Human Health Ecological Risk Assessment for Surface Water and* Sediment, dated June 2003.
SWD = Surface Water Harris County Flood Control Ditch.

Figures and Graphs

Attachment 2

February 3, 2015
Project No. 0260324

Environmental Resources Management
CityCentre Four
840 West Sam Houston Parkway North, Suite 600
Houston, Texas 77024-3920
(281) 600-1000



ERM-Southwest, Inc. TX PE Firm No. 2393

Environmental Resources Management

FIGURE 1
SITE FEATURE MAP
SECOND HALF OF 2014
Former Cameron Iron Works Facility
Houston, Texas

DESIGN: RJ	DRAWN: CAK	CHKD.: PAS
DATE: 1/27/2015	SCALE: AS SHOWN	REV.:

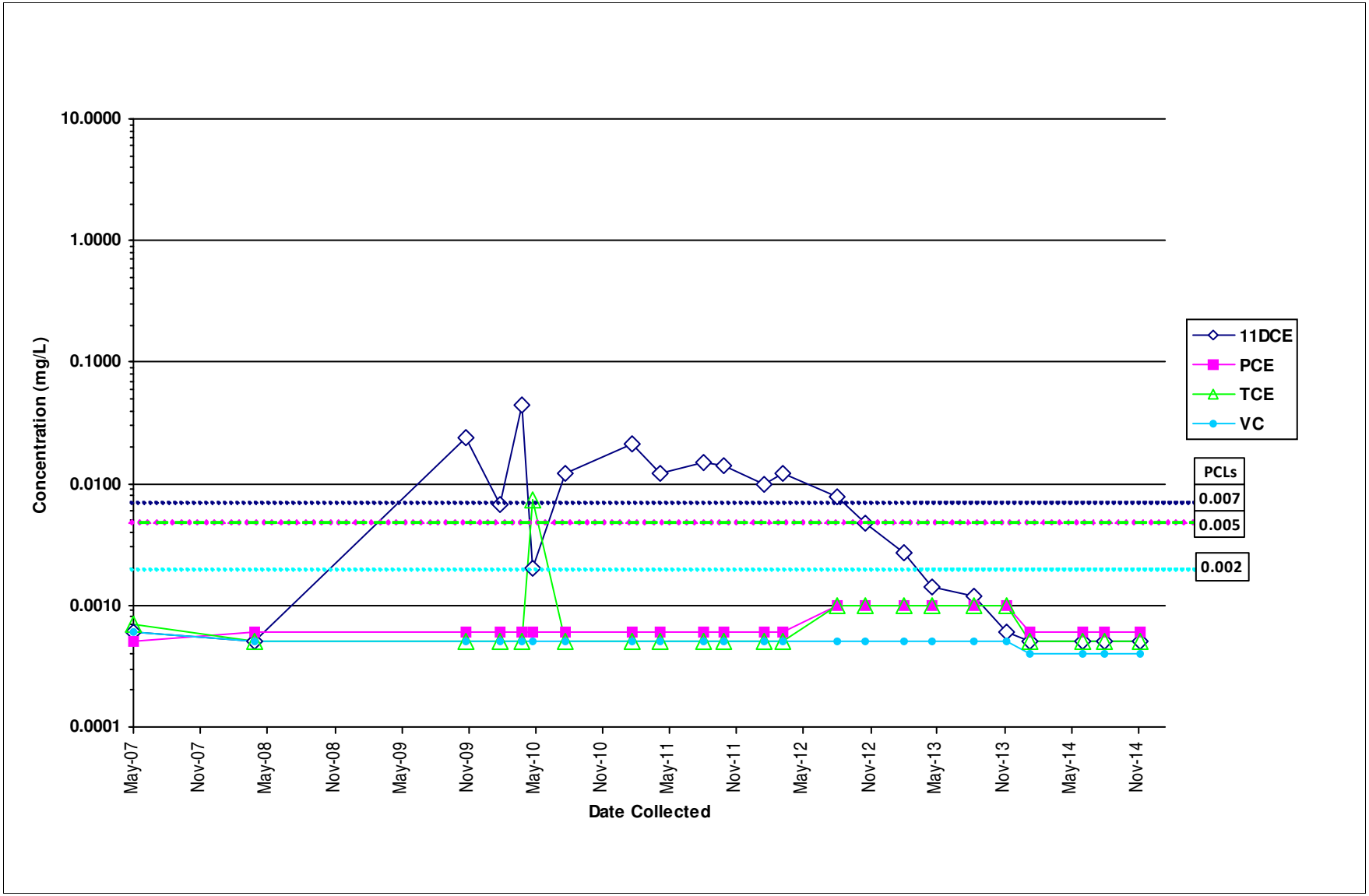
W.O.NO.: H:\DWG\A15\0260324_SiteFeat_2H2014.dwg , 1/27/2015 12:45:31 PM

Ground Water Progress Graph

Former Cameron Iron Works Facility
Houston, Texas

Plume Area: EASTERN

Client Sample ID: MW-134

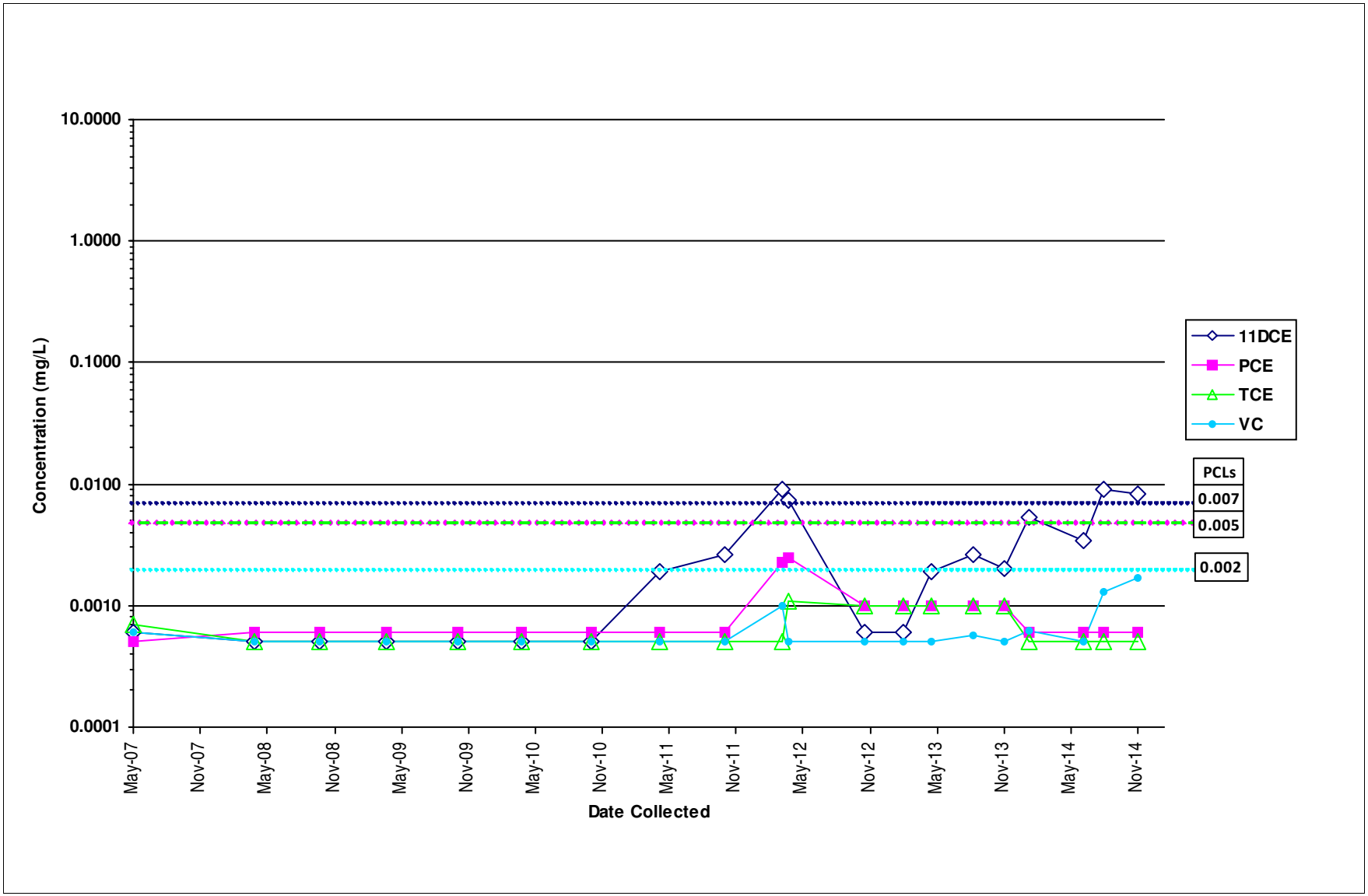


Ground Water Progress Graph

Former Cameron Iron Works Facility
Houston, Texas

Plume Area: EASTERN

Client Sample ID: MW-145

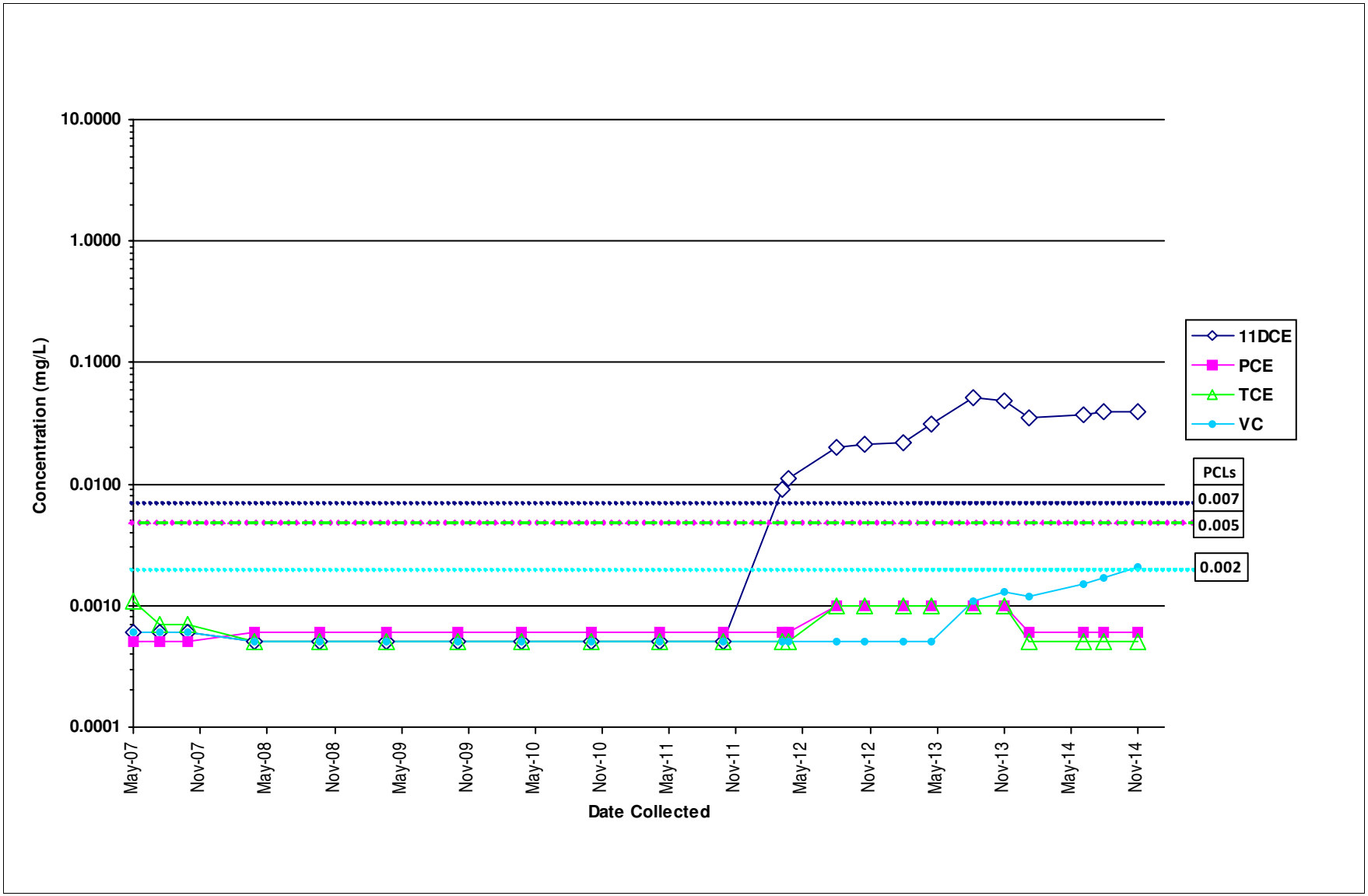


Ground Water Progress Graph

Former Cameron Iron Works Facility
Houston, Texas

Plume Area: EASTERN

Client Sample ID: MW-146

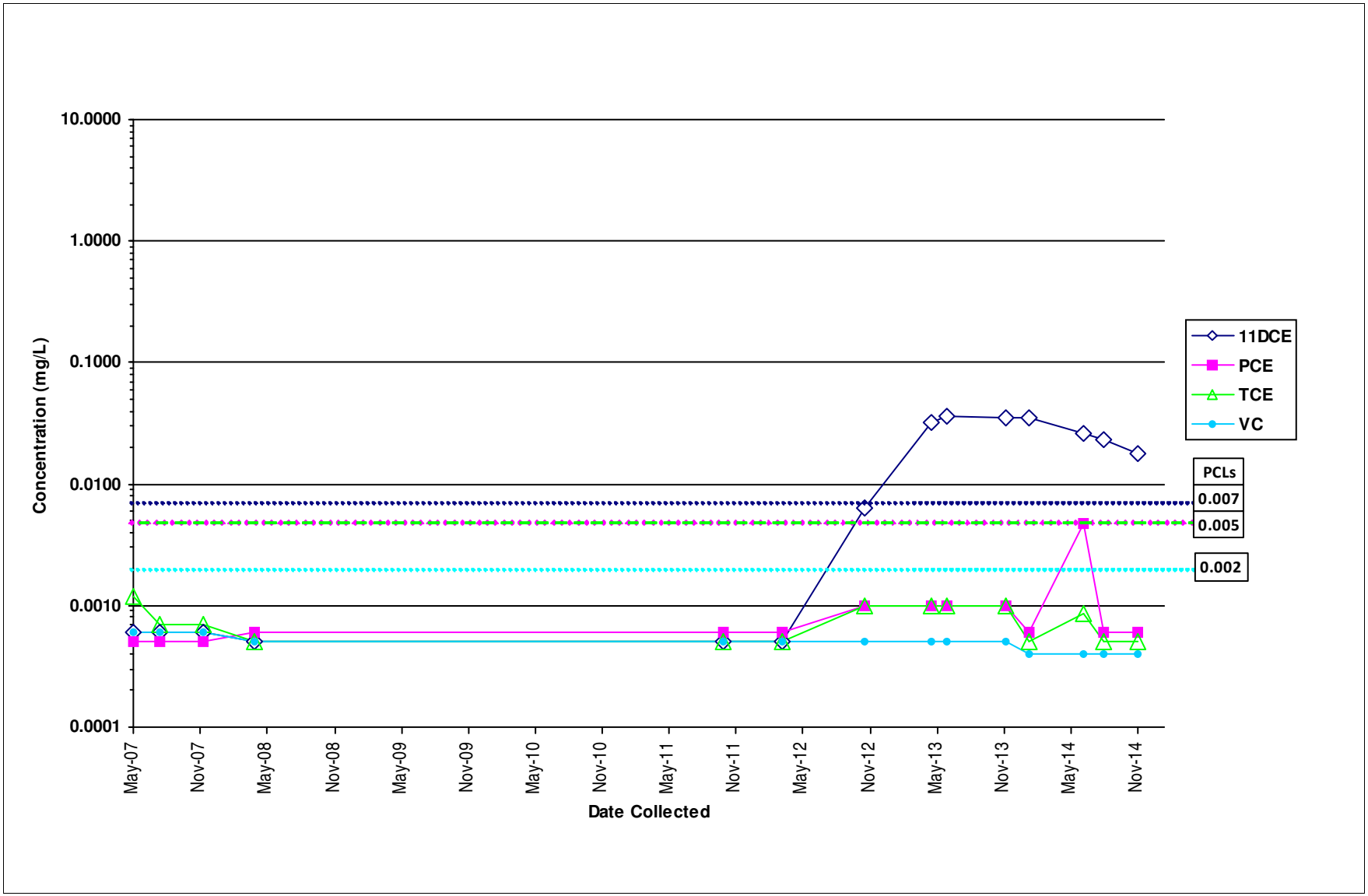


Ground Water Progress Graph

Former Cameron Iron Works Facility
Houston, Texas

Plume Area: EASTERN

Client Sample ID: MW-147

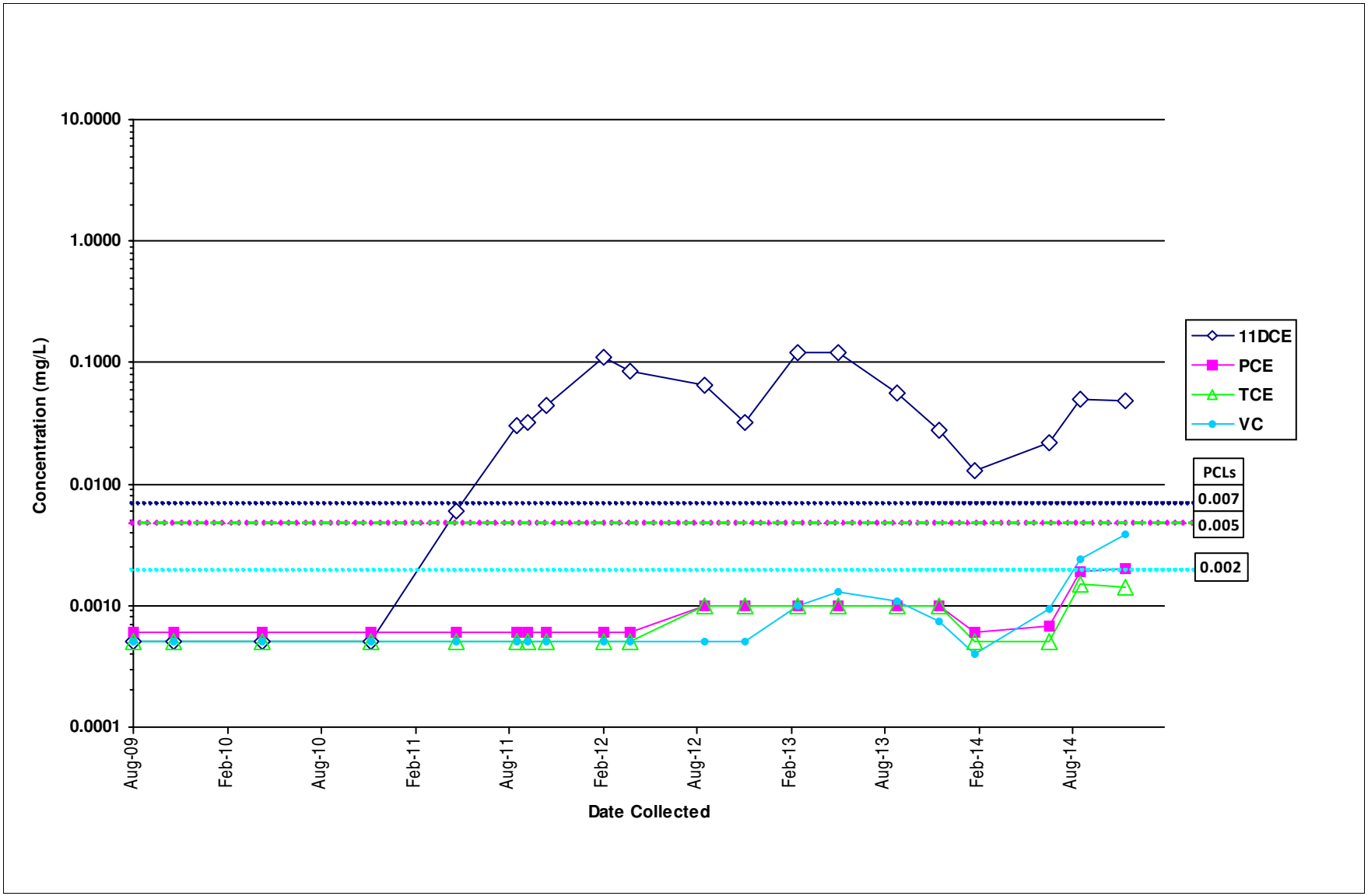


Ground Water Progress Graph

Former Cameron Iron Works Facility
Houston, Texas

Plume Area: EASTERN

Client Sample ID: MW-174

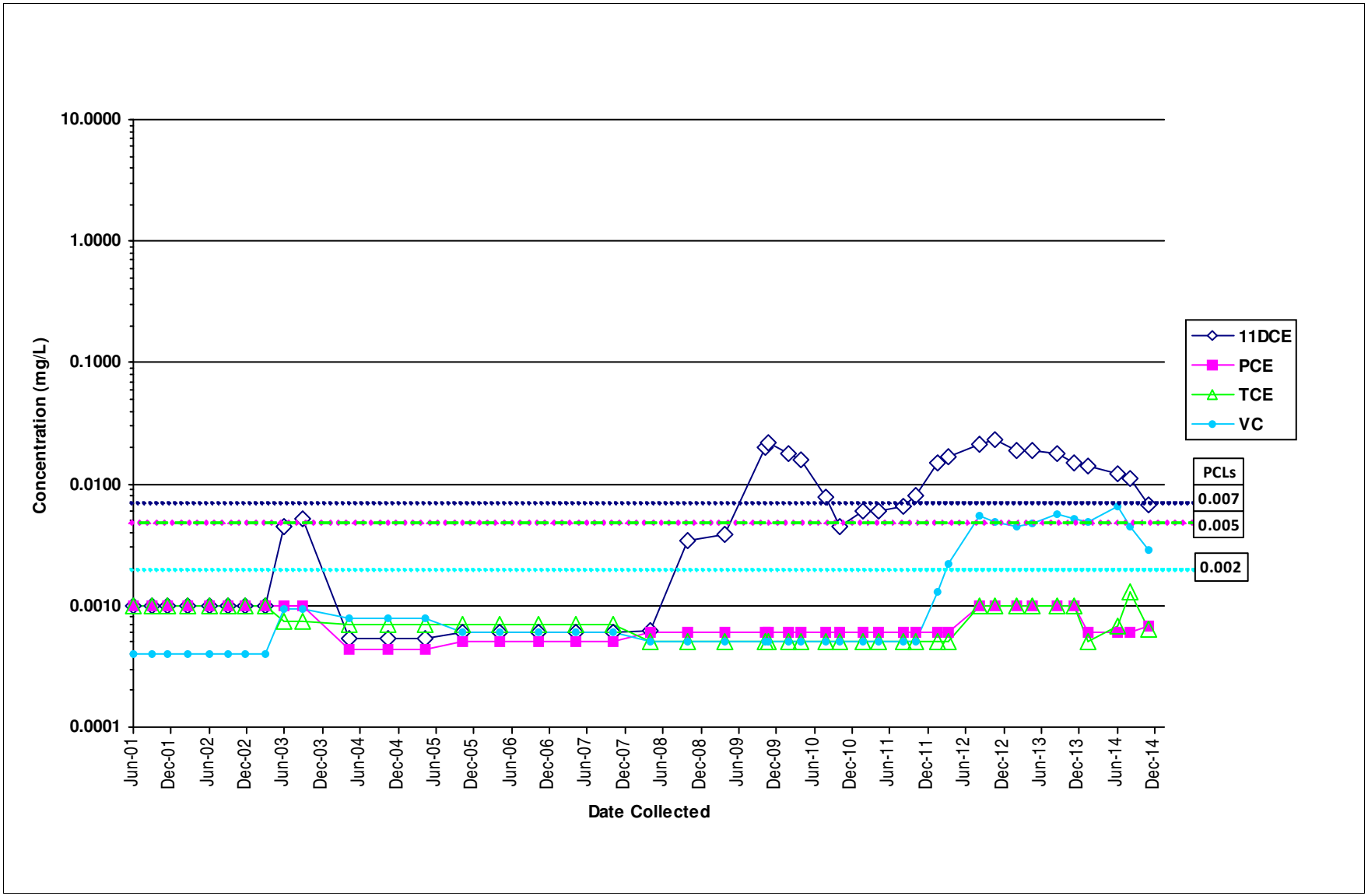


Ground Water Progress Graph

Former Cameron Iron Works Facility
Houston, Texas

Plume Area: EASTERN

Client Sample ID: MW-74

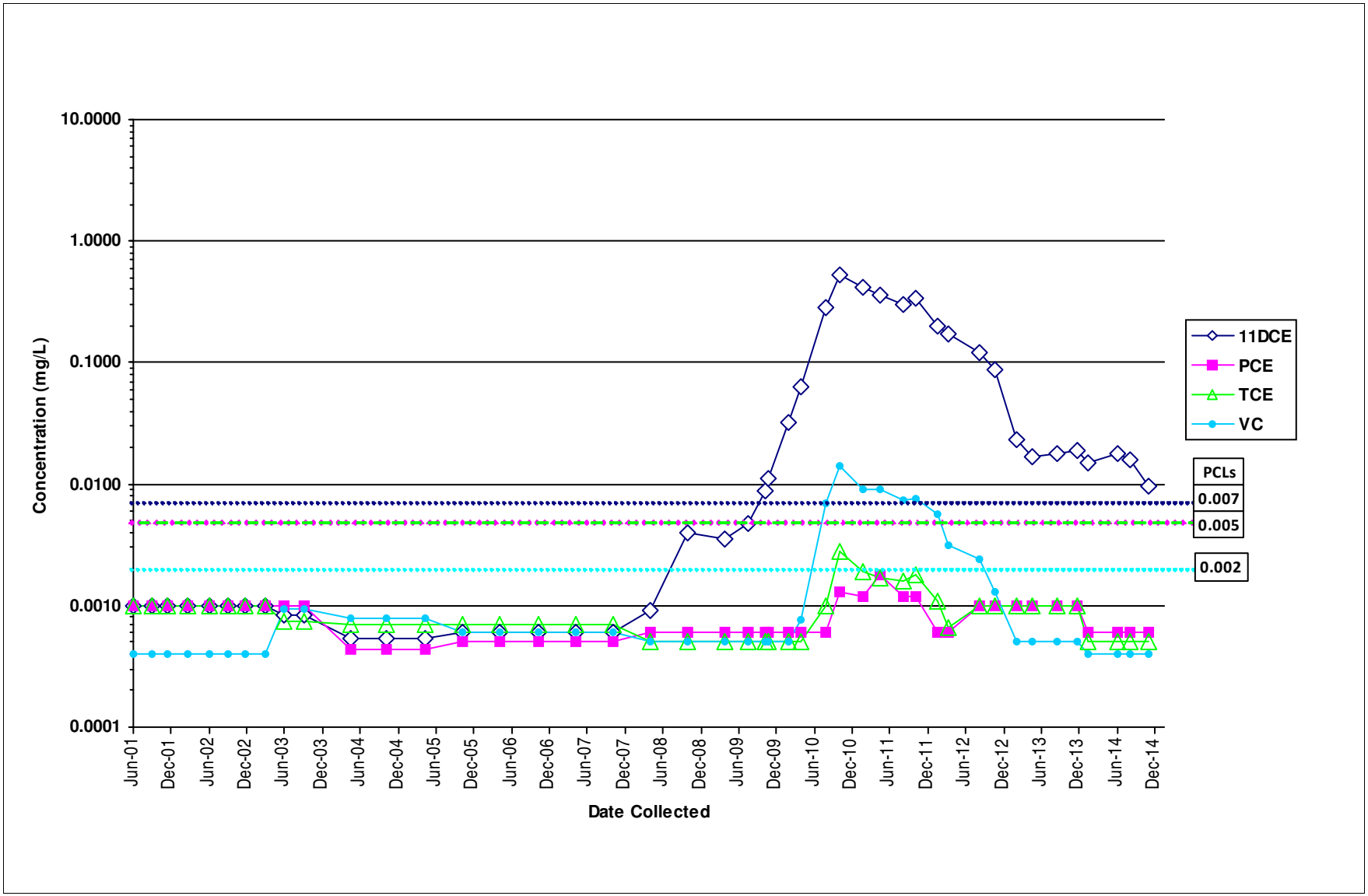


Ground Water Progress Graph

Former Cameron Iron Works Facility
Houston, Texas

Plume Area: EASTERN

Client Sample ID: MW-84

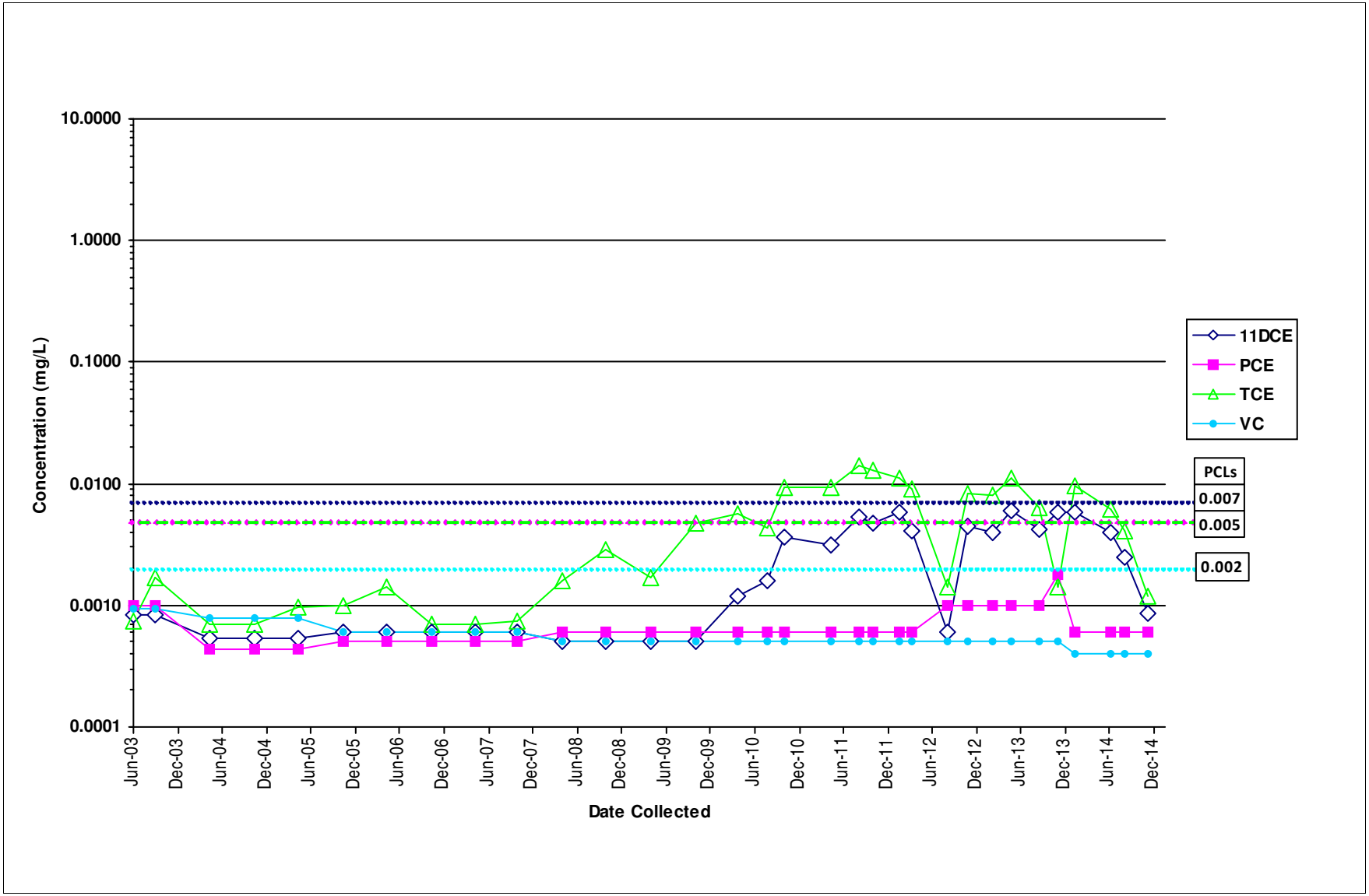


Ground Water Progress Graph

Former Cameron Iron Works Facility
Houston, Texas

Plume Area: WESTERN

Client Sample ID: MW-122

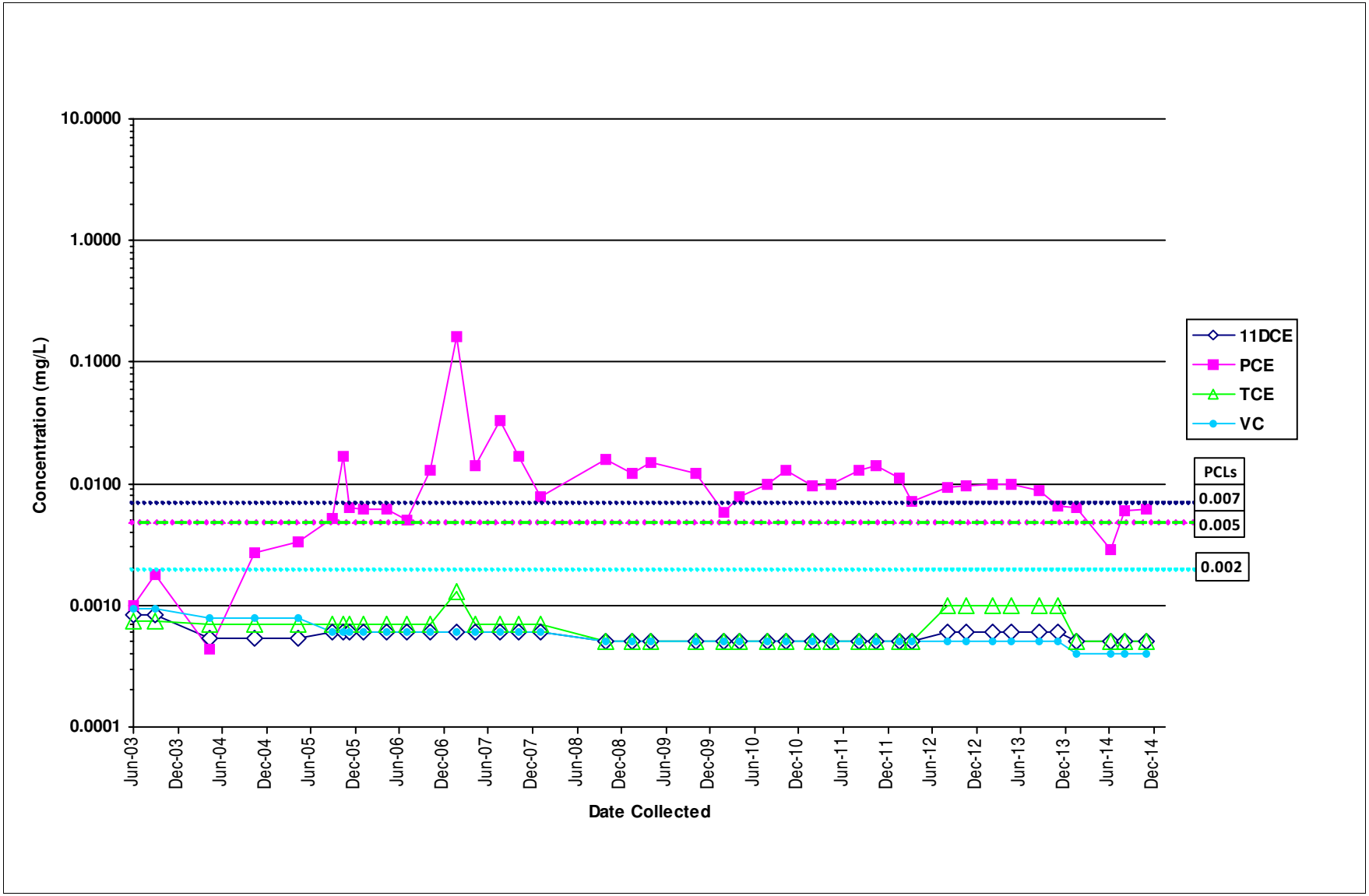


Ground Water Progress Graph

Former Cameron Iron Works Facility
Houston, Texas

Plume Area: SOUTHERN

Client Sample ID: MW-125



Ground Water Progress Graph

Former Cameron Iron Works Facility
Houston, Texas

Plume Area: SOUTHERN

Client Sample ID: MW-169