

Municipal Setting Designations



MSDs: Another tool for Houston

Richard Chapin
Sr. Project Manager

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Environmental Analyst

Municipal Setting Designations (MSDs)



Agenda

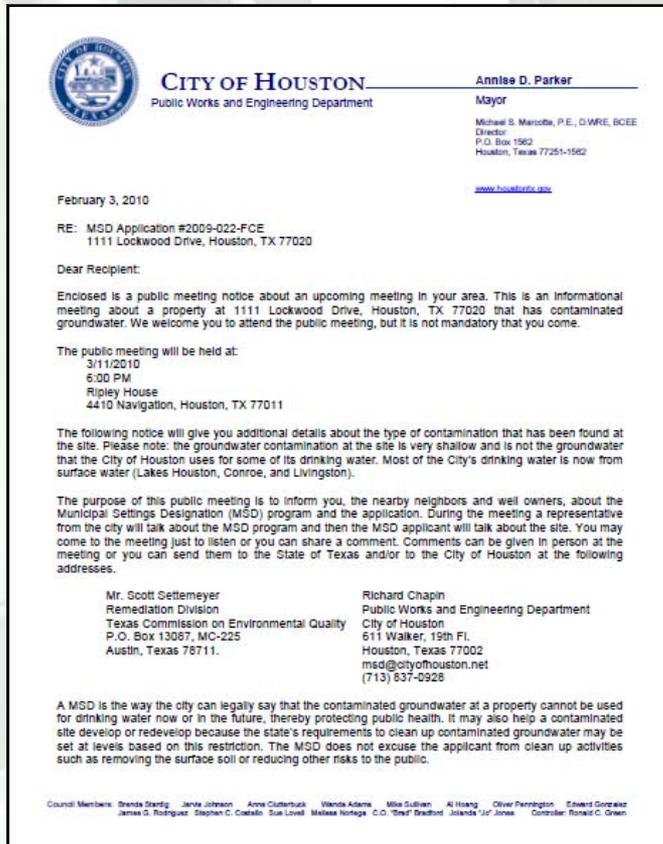
- City of Houston
 - Why we are here
 - Who the MSD impacts
 - What an MSD is
 - Why support an MSD
 - Steps in the MSD process
- MSD Applicant
 - Specific information on the site
6712 Telean Street
- Public comment and questions



Why Are We Here

- Inform you about an MSD application
 - FPA/PinPoint MyKawa, LLC
 - MSD # 2009-020-GMI
- Explain what an MSD is and what it does for the applicant, the local community, and the City
- Receive public comments

MSD Notice Letters



■ Public Notices:

Property owners

First Class Mail

½-Mile

Water well owners

Certified Mail

5-Miles

Who the MSD Impacts



- Unless you are the applicant:
 - An MSD does not affect your property
 - An MSD does not affect your water well
 - There are no requirements on you
- Drinking water supplied by the City is not affected

What an MSD is



- Voluntary deed restriction to prevent the use of contaminated groundwater
 - State program created in 2003, administered by TCEQ
 - City process created in November 2007, administered by Public Works & Engineering
- TCEQ cannot approve an MSD without the City Council's support

What an MSD is



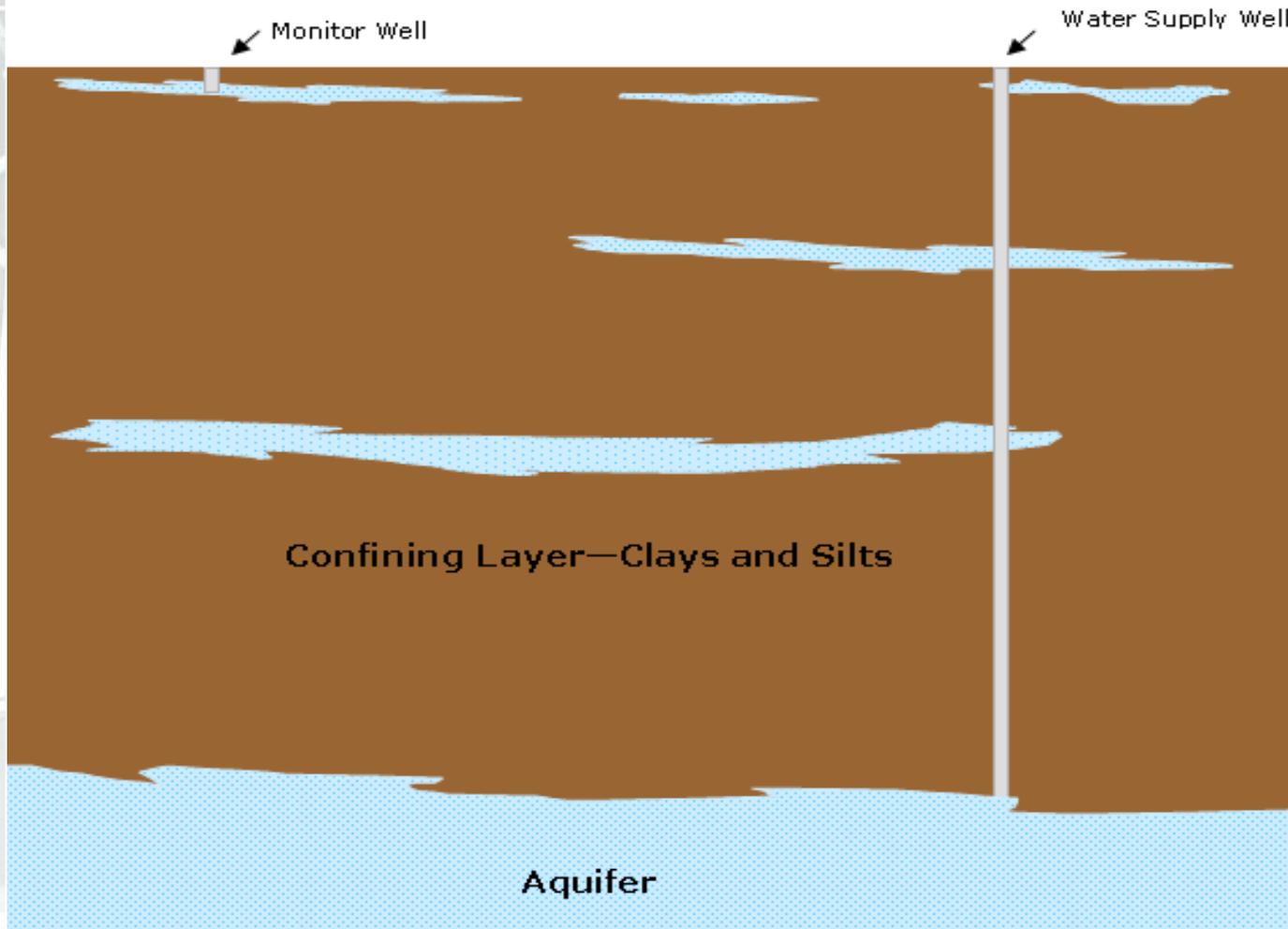
- An alternative method to address groundwater contamination
- Houston has shallow groundwater contamination scattered across the city
- This program only considers very shallow contamination (up to 200' below the surface)

City Water Supply



- Houston's drinking water comes from either deep aquifers or surface water
 - Nearest public water supply well
 - Hobby Well-01
 - 2 miles from site
 - Surface water supply
 - Lake Houston
 - Lake Conroe
 - Lake Livingston

Shallow Contamination



Impacted groundwater is typically between 20 and 60 feet below the surface.

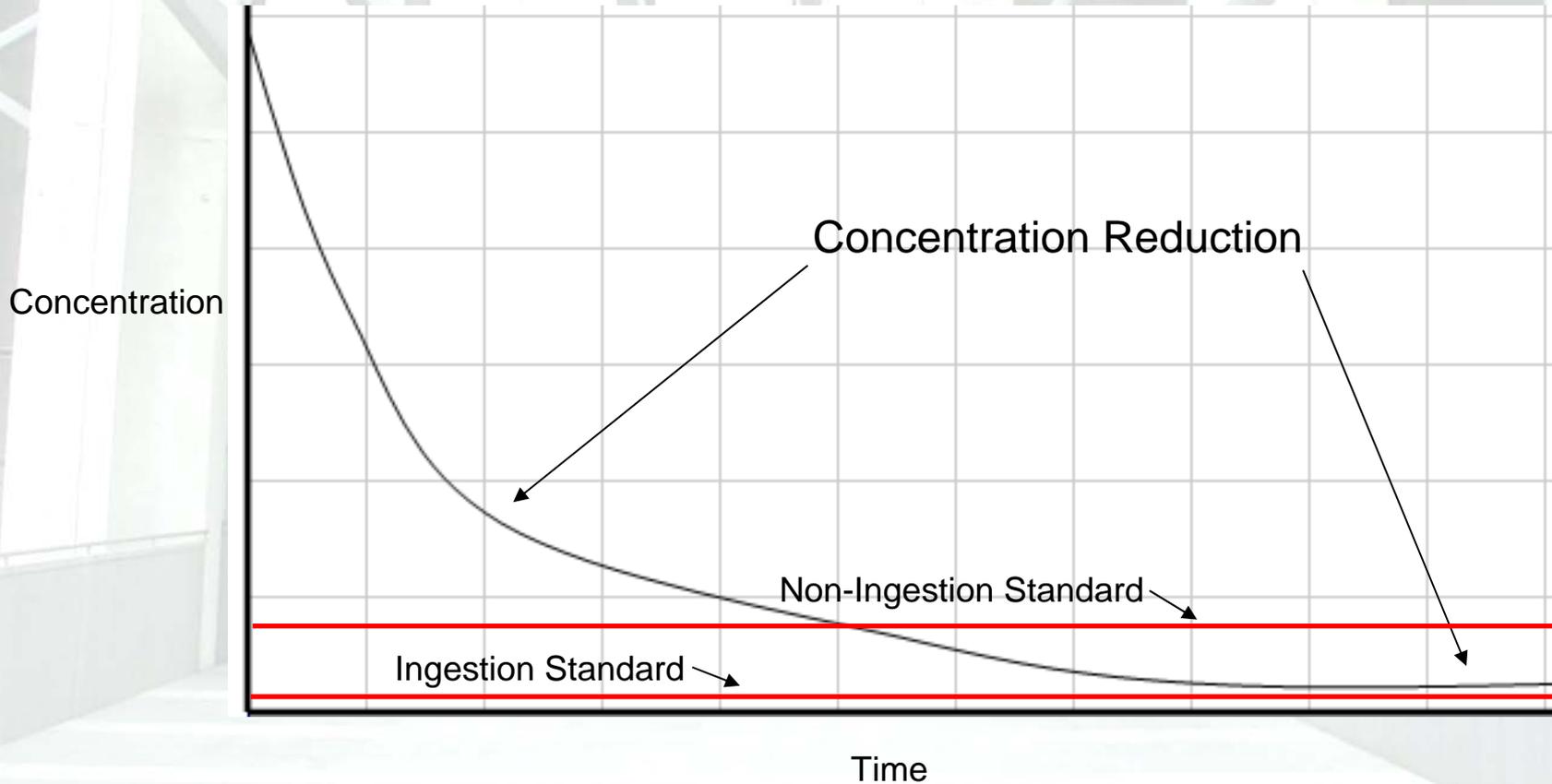
Drinking Water Supply Wells typically get water from 600 feet or deeper below the surface.

Problems of Traditional Remediation Methods

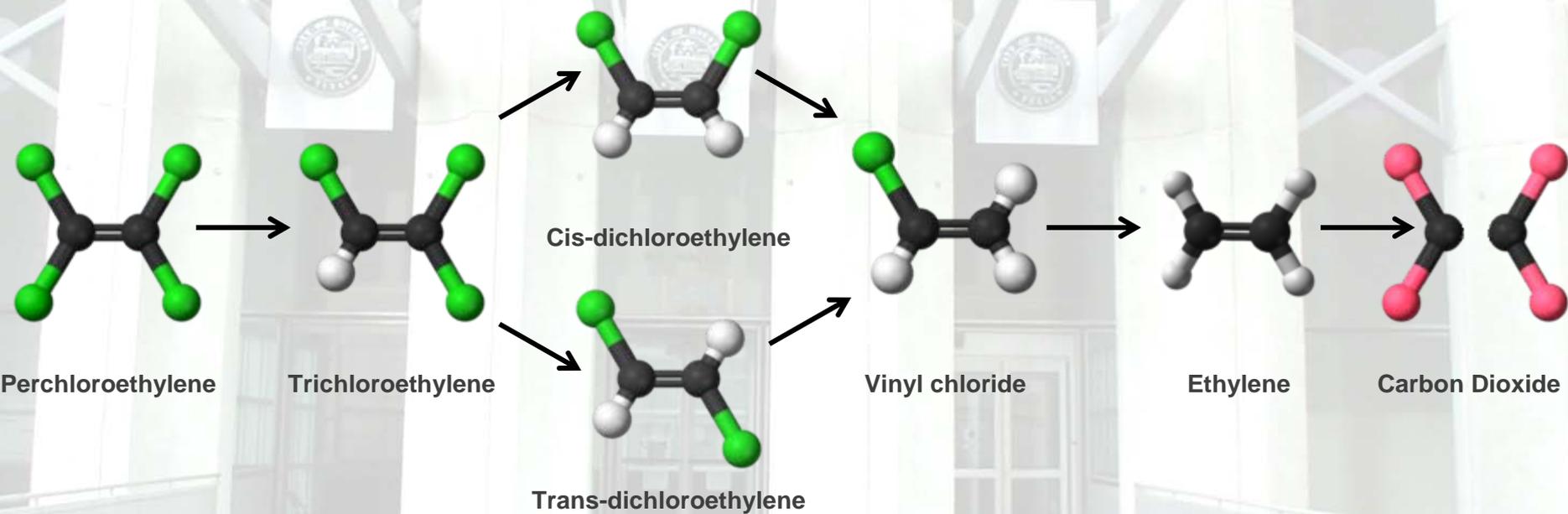
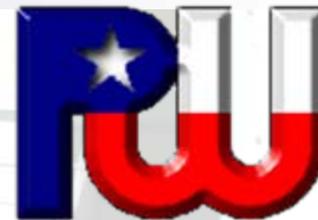


- Groundwater must be cleaned to drinking water standards even if:
 - There is no need or desire to use it, or
 - Water bearing zone is too silty, too salty, or low producing
- Groundwater remediation to drinking water standards is inefficient, costly, and can take decades

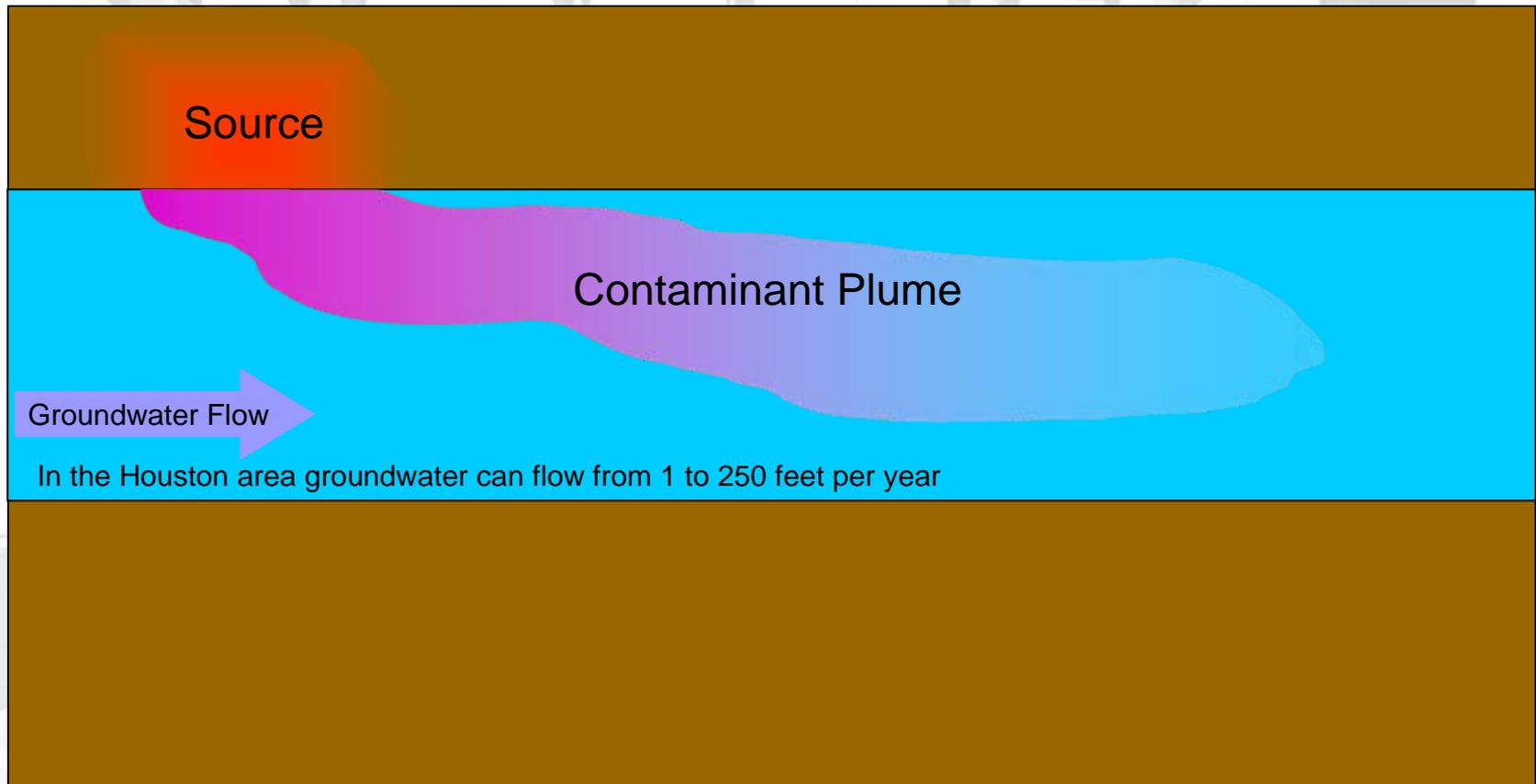
Groundwater Remediation



Natural Attenuation



Contaminant Flow



Source

Contaminant Plume

Groundwater Flow

In the Houston area groundwater can flow from 1 to 250 feet per year

Applicant's Responsibility



- An MSD does **NOT** excuse the applicant from reducing other risks to the public

- Owner must still address:
 - Non-Ingestion
 - Soil
 - Vapors
 - Runoff and other flows

City's Requirements of the Applicant:



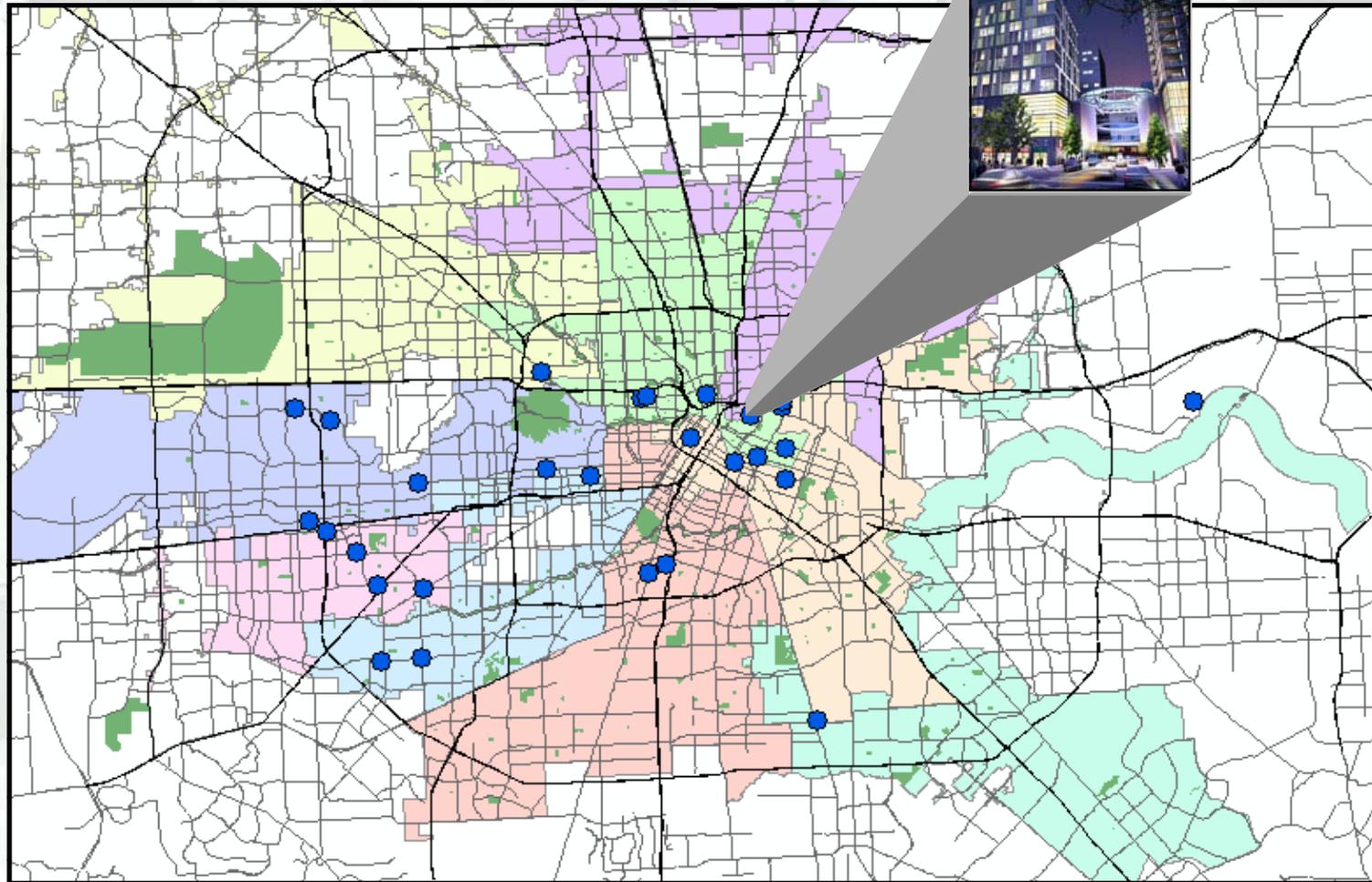
- Site must already be in a State or Federal clean up program
- Site must have been thoroughly investigated
- Data must show that the groundwater plume is stable or diminishing.
- A Professional Engineer (P.E.) or Professional Geologist (P.G.) must be willing to certify that the plume is stable or contracting.

Why Support An MSD?



- Protects the public from consumption of shallow contaminated groundwater
- Encourages clean-up of contaminated sites through participation in a State or Federal program
- Promotes redevelopment of under-utilized properties

MSD Sites in Houston



Municipal Setting Designations (MSDs)

Steps in the Process



- Based on input from this meeting and the public hearing, the City will consider supporting an MSD
- If supported, the applicant submits its application to the TCEQ
- TCEQ grants or denies the MSD
- If granted, the City files a deed restriction on the property

MSD Application



- Mancuso Library
reference desk
- 6767 Bellfort
Houston, TX 77087

The MSD Website



www.houstonmsd.org

City of Houston

Home | About Us | Administration | Resources | Business | Departments | Services

Search: [Enter Site] [My ZIP Code] [Print]

Business

Field Name: []

Engineering and Construction

Planning and Development Services

Public Utilities

Resource Management

Right-of-Way and Fleet Maintenance

Traffic and Transportation

Director's Office

Chief of Staff

Information Technology

Programs

Houston Business

Control the Green

Water Education

Site Map

Site Map

You are here: Home > Links > MSD Settings > Municipal Settings Designation > Municipal Settings Designation

Carol Ellinger Haddock, Assistant Director, PE

History:

In 2003, the Texas Legislature authorized the creation of MSDs, which would designate an area in which the use of contaminated groundwater is prohibited from use as potable water. The law is administered by TCEQ. The intent of the legislation is to encourage redevelopment of vacant or abandoned properties while protecting the public health.

On August 22, 2007, City Council approved an ordinance amending Chapter 47 of the Code of Ordinances by adding article MSD relating to groundwater, which will provide a process for supporting or not supporting a Municipal Setting Designation (MSD) application to the State. The City's program becomes effective November 1, 2007.

General Information:

- The sites that could apply for a MSD are already contaminated.
- The process requires that an applicant must participate in one of the cleanup programs administered by Texas Commission on Environmental Quality (TCEQ) or EPA.
- A MSD only eliminates the requirement that property owners address the risk of consuming groundwater. Assessment would still be required for other means of exposure such as:
 - Inhalation of vapors
 - Contact with contamination during construction projects
 - Ecological impacts, such as, seepage into nearby waterways

Forms and Information

- Application Form
- City Ordinance

FAQ:

- Frequently Asked Questions for Application Process
- Frequently Asked Questions for MSD's (English)
- Frequently Asked Questions for MSD's (Spanish)

Other Websites of Interest:

TCEQ - Application Form
TCEQ - A Guide for Cities

You can request an electronic copy of the full application by e-mail to: msd@cityofhouston.net

For more information concerning the application or process of an MSD in Houston, call:

Carol Ellinger Haddock
Senior Assistant Director, PE
PW&E/Planning & Development Services Division
PH 713.837.0928
FX 713.837.0658

1 Article Title

1 MSD Calendar

2 MSD Completed

3 MSD in Review

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#	Article Title
1	MSD Calendar
2	MSD Completed
3	MSD in Review



Municipal Setting Designations (MSDs)

The MSD Website



Westbrook Investments, LP, # 2009-022-FCE (Former Cooper Energy Services Facility)
Executive Summary
Full Application
Public Meeting Notice
KBR Technical Services, Inc. # 2009-023-KBR (KBR Clinton Drive Facility)
Executive Summary
Full Application
Public Meeting Notice
Weingarten Realty Investors # 2010-024-FSW (Fondren Southwest Village Shopping Center Site)
Executive Summary
Full Application
Silver Bishop Holdings, LP # 2010-025-NOR (Navigation-Norwood Site)

Date	Time	Event
3/11/2010	6:00 PM	Public Meeting: Westbrook Investmetns, LP (MSD # 2009-022-FCE) Ripley House, 4410 Navigation, Houston, TX 77011
4/6/2010	6:00 PM	Public Meeting: KBR Technical Services, Inc. (MSD # 2009-023-KBR) Ripley House, 4410 Navigation, Houston, TX 77011
4/14/2010	9:00 AM	Public Hearing: Flex Tank Systems, LLC (MSD #2009-021-DZR) City Hall Council Chambers, 2 nd Floor, 901 Bagby, Houston, TX 77002
4/14/2010	9:00 AM	Public Hearing: Westbrook Investments, LP (MSD #2009-022-FCE) City Hall Council Chambers, 2 nd Floor, 901 Bagby, Houston, TX 77002
4/20/2010	6:00 PM	Public Meeting: Weingarten Realty Investors (MSD # 2010-024-FSW) Bayland Community Center, 6400 Bissonnet, Houston, TX 77074
5/06/2010	6:00 PM	Public Meeting: Silver Bishop Holdings, LP (MSD #2010-025-NOR) Ripley House Community Center, 4410

Public Hearing



- Date: August 4, 2010
- Time: 9:00 am
- Place: City Council Chamber
- Address: 901 Bagby, Second Floor
Houston, Texas 77002

Any person wishing to speak on this issue must contact the City Secretary's office at (832) 393-1100 to reserve time not later than 8:30 am on 8/4/2010.

Contact Information



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Senior Project Manager



&

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**Public Works & Engineering
City of Houston,
611 Walker, 19th Floor
Houston, Texas 77002**



msd@houstontx.gov
(713) 837-0928

Municipal Setting Designations (MSDs)

Contact Information



Scott Settemeyer

Remediation Division

Texas Commission on Environmental Quality

P.O. Box 13087, MC-225

Austin, Texas 78711



Municipal Setting Designation (MSD) Public Meeting June 15, 2010

Former Gulf Metals Industries Landfill Site
6712 Telean St.
MSD #2009-20-GMI

Applicant:
FPA/PinPoint Mykawa, LLC
675 Bering, Suite 550
Houston, TX

Presenter: Mr. James Kendrick, P.E., NewFields

MSD Location



- Site Currently Undeveloped
- About 18.6 Acres
- Owned by:
 - FPA/PinPoint Mykawa, LLC
 - FPA/PinPoint Hobby, LLC
 - City of Houston (Telean Street R.O.W.)

Historical Site Use

<u>Date</u>	<u>Description</u>
1940s–'50s	Sand mining
1950s-'60s	Oily/organic waste disposal
1965-70s	Solid waste disposal landfill, under state permit
Early-Mid '70s	Texas Water Commission (now known as TCEQ) inspects landfill and recommends filling waste pits with slag material

Site Contamination

Investigation of historical constituents of concern (COCs) in soil, groundwater, surface water, and sediment between 1992 and 1999 included:

30+ Volatile Organic Compounds (VOCs)

50+ Semi-Volatile Organic Compounds (SVOCs)

25+ Pesticides

20+ Metals

Polychlorinated biphenyls (PCBs)

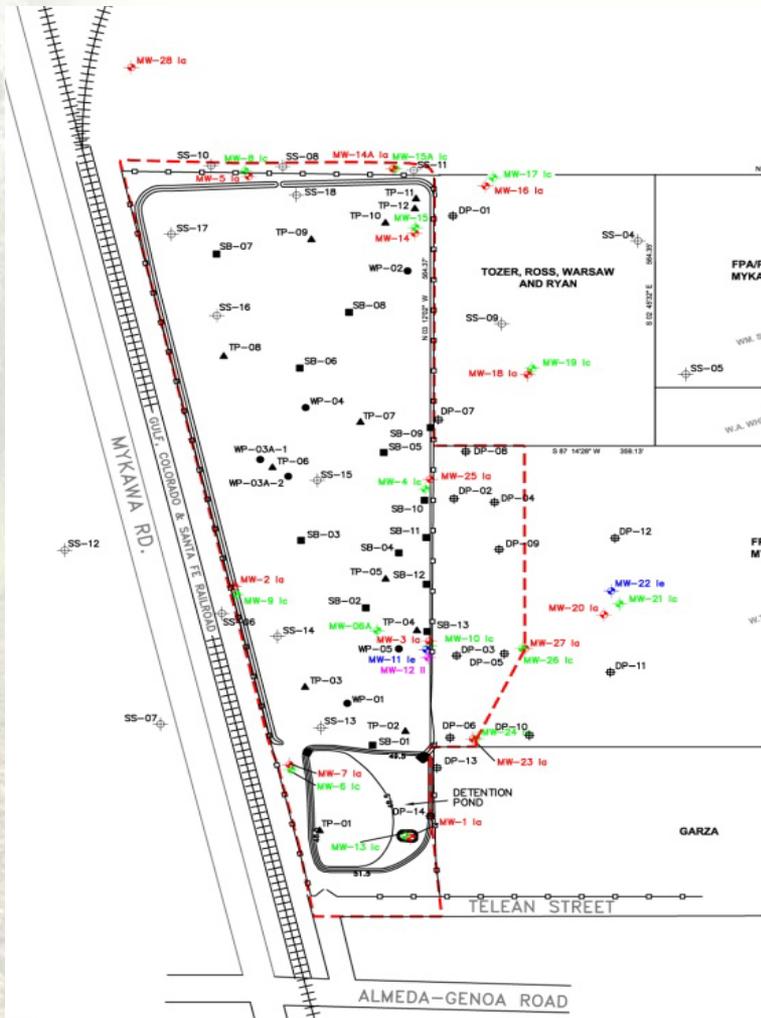
Current COCs that are still monitored in groundwater:

VOCs: Benzene, Trichloroethylene (TCE), Vinyl Chloride (VC)

SVOCs: Bis(2-chloroethyl)ether

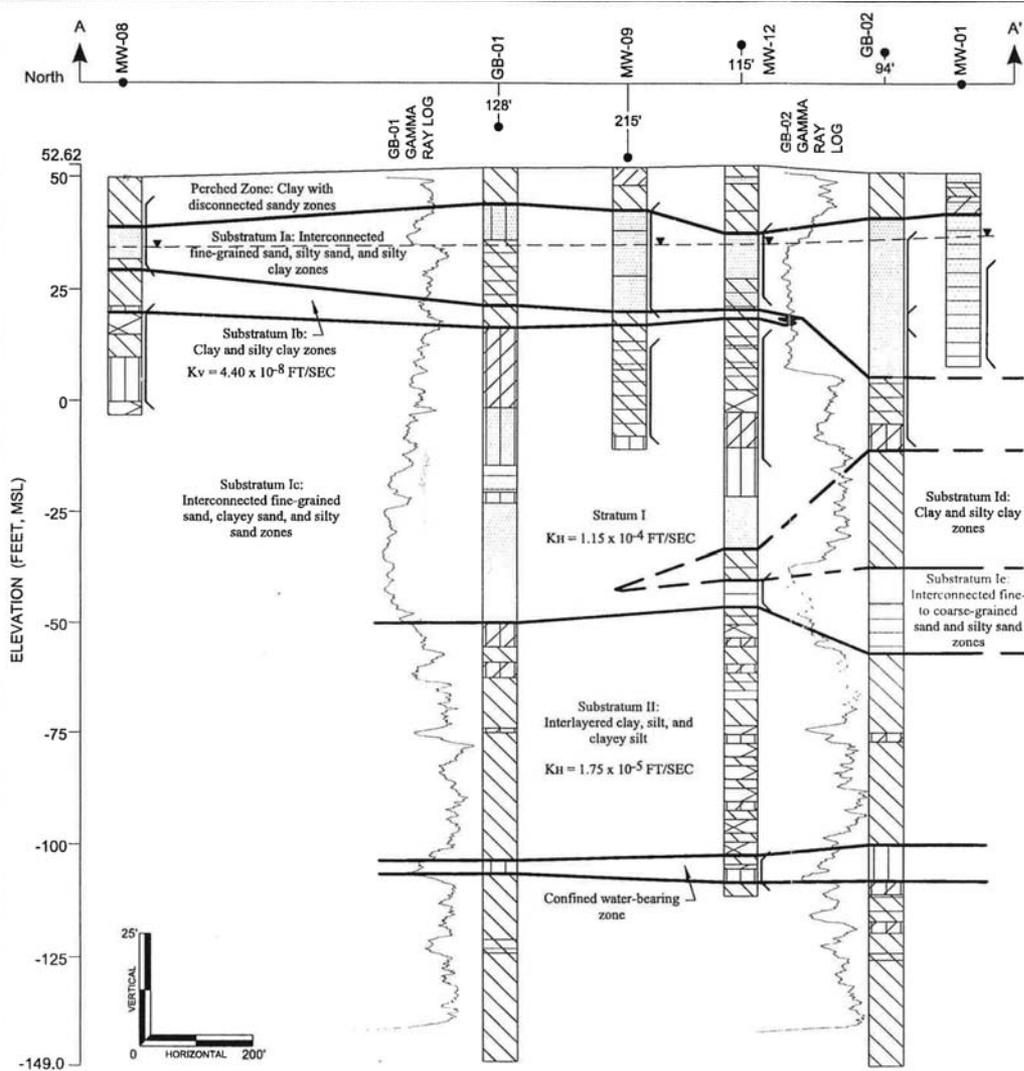
Metals: Arsenic, Lead

Site Investigation

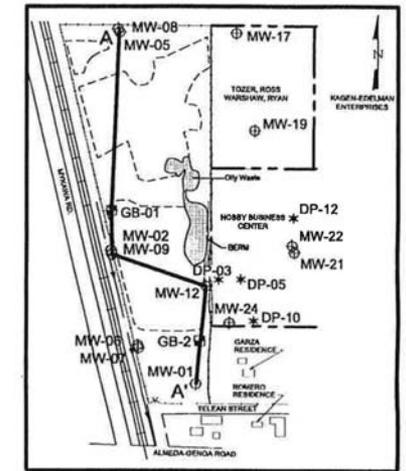


- Remedial Investigation and Feasibility Study (RI/FS) conducted from 1992 to 1999
- 42 surface soil samples
- 58 sub-surface soil samples
- 28 monitor wells installed
- 3 residential wells sampled
- 14 temporary groundwater sampling points installed in 1999
- 10 sediment sample locations
- 6 surface water sample locations
- In January 2000, state agency (TCEQ) confirmed RI/FS phase of work completed

Geologic Cross-Section



- LEGEND**
- CLAY
 - SILT
 - SAND
 - SANDY CLAY
 - SILTY CLAY
 - SANDY SILTY CLAY
 - CLAYEY SILT
 - SANDY SILT
 - SILTY SAND
 - CLAYEY SAND
 - SILTY CLAYEY SAND
 - NO RECOVERY
 - FILL
 - GROUND WATER ELEVATION (FEET, MSL) RECORDED 10/07/99
 - SCREENED INTERVAL
 - STRATA DIVIDE (DASHED WHERE INFERRED)
 - K_h ESTIMATED HORIZONTAL HYDRAULIC CONDUCTIVITY
 - K_v ESTIMATED VERTICAL HYDRAULIC CONDUCTIVITY



CROSS-SECTION LOCATION

- NOTES:**
1. ELEVATION REFERENCED TO MEAN SEA LEVEL (MSL).
 2. CROSS-SECTION LOOKS NORTH TO SOUTH.
 3. THE FOLLOWING MULTIPLE-SCREEN INTERVALS ARE REPRESENTED ON THE LISTED WELLS AND BORINGS:
 - MW-8: SUBSTRATUM Ia = MW-05; SUBSTRATUM Ic = MW-08;
 - MW-9: SUBSTRATUM Ia = MW-02; SUBSTRATUM Ic = MW-09;
 - MW-12: SUBSTRATUM Ia = MW-03; SUBSTRATUM Ic = MW-10; SUBSTRATUM Ie = MW-11;
 - GB-02: SUBSTRATUM Ia = MW-07; SUBSTRATUM Ic = MW-06.

Soil Remediation Activities (2002)



- Air, Water and Construction Permits obtained
- Public meeting held on June 4, 2002
- Over 15,000 cubic yards (CY) of organic waste solidified with 1,100 tons of Portland Cement
- Landfill Cap - two feet of clay (51,000 CY)
- One foot of topsoil (23,000 CY)
- Vegetative cover (about 16 acres)

Soil Remediation Activities (2002)

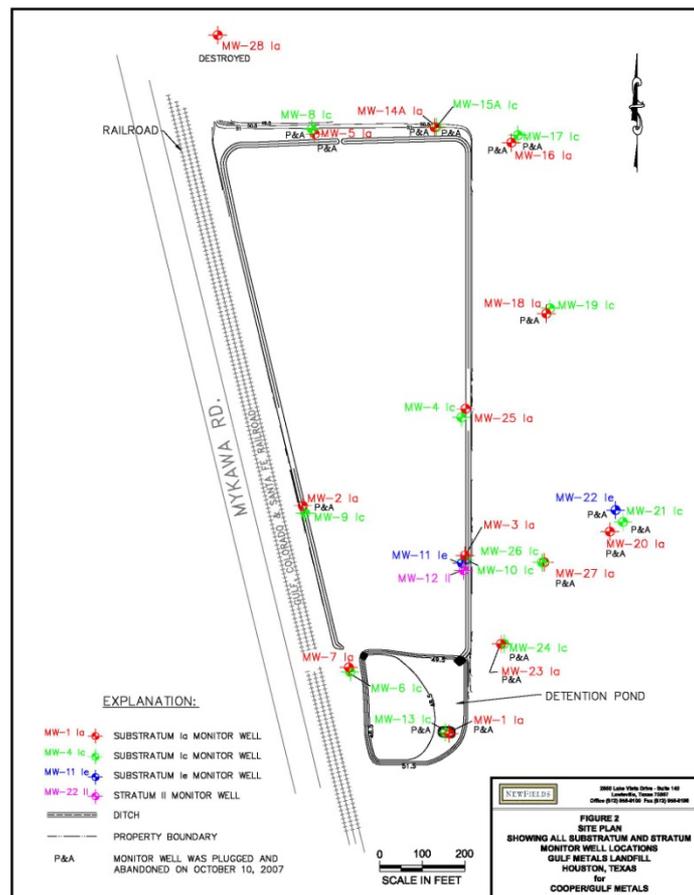


- Landfill Cap Completed on August 12, 2002
- Constructed Stormwater Detention Pond (1.35 Acres)
- Houston Flood Control District Approved Design
- Discharge pipe from detention pond to stormwater ditch

Results of Remediation

- TCEQ confirmed that the site met soil cleanup requirements in 2003.
- Remediation reduced ability for contaminants to leach from soils to groundwater.
- Landfill cap and detention pond prevent contact of surface water with wastes.
- Residual COC concentrations in groundwater not suitable for ingestion, but concentrations below state-approved levels for other exposure pathways:
 - Vapors
 - Worker Direct Exposure
 - MSD will be placed in City's Utility database so any utility workers would be notified prior to doing any digging on the property, utilizing proper personnel protection.

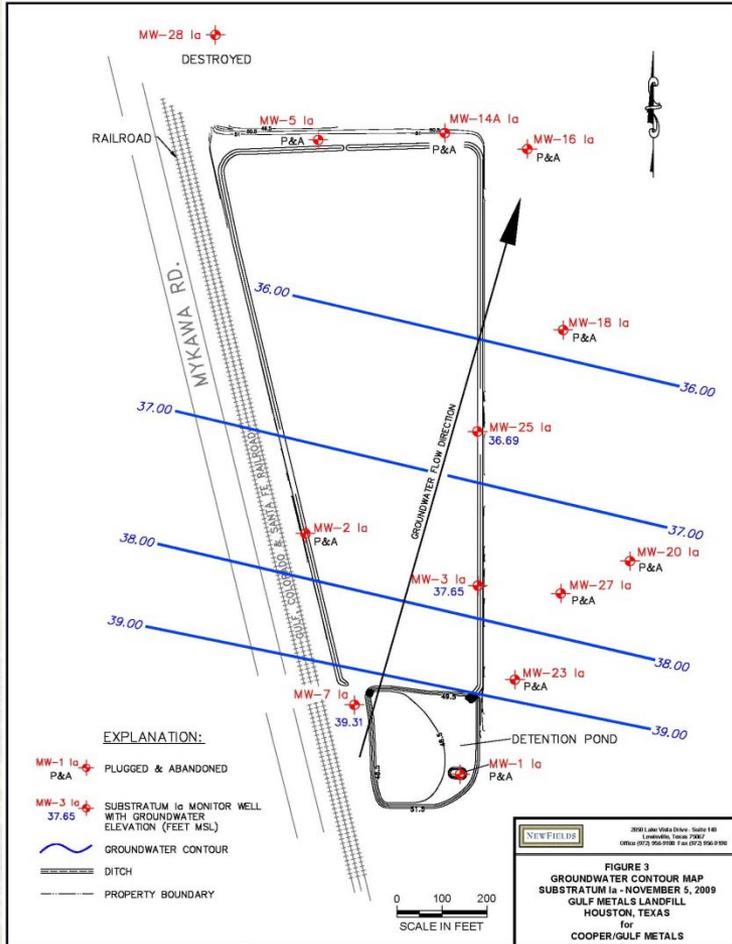
Groundwater Monitored Natural Attenuation (2003-Present)



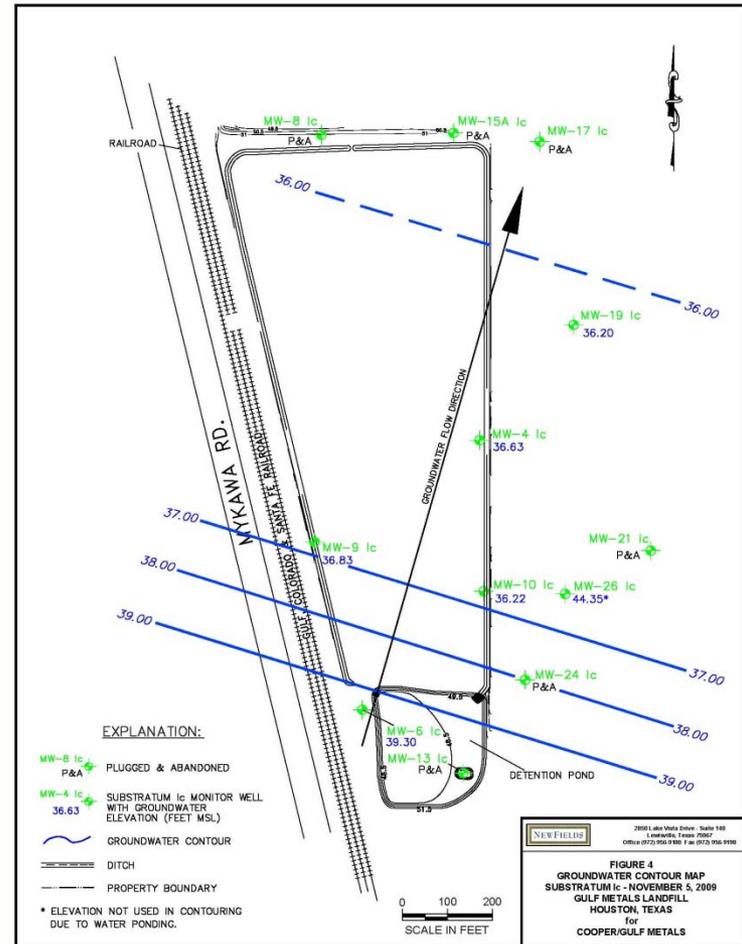
- Selected Groundwater Remedy – Monitored Natural Attenuation (MNA)
- TCEQ approved MNA in 2002
- MNA work started in April 2003
- Semi-Annual Sampling 2003-2006
- Annual Sampling 2007-present

Shallow Groundwater Gradient Maps

Zone 1a



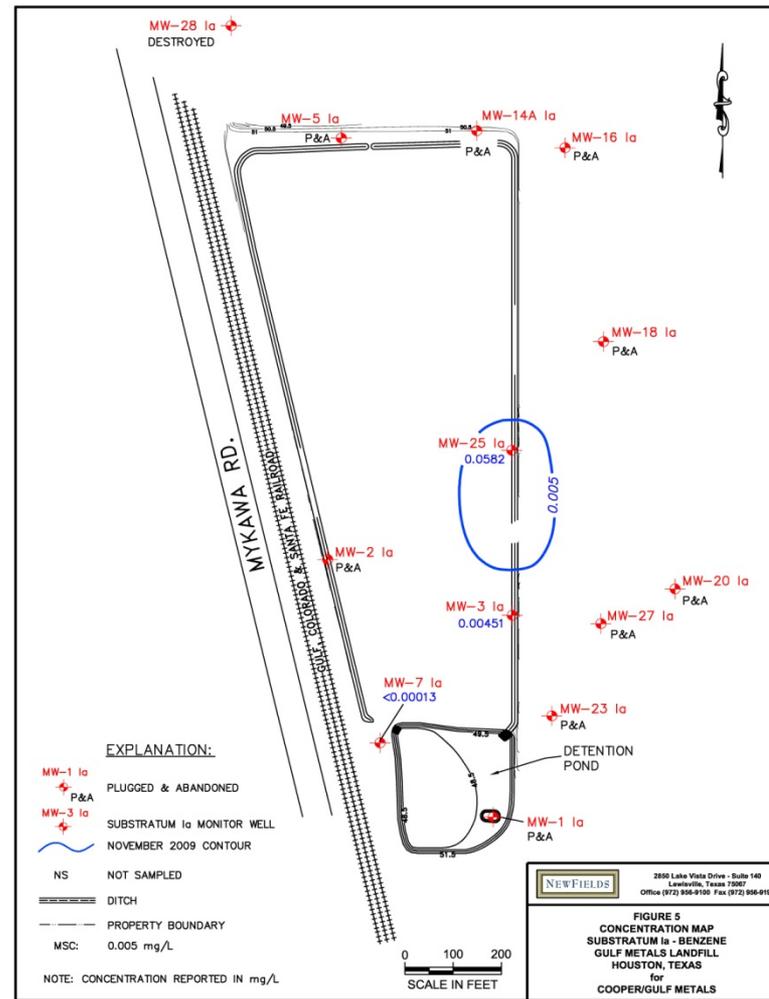
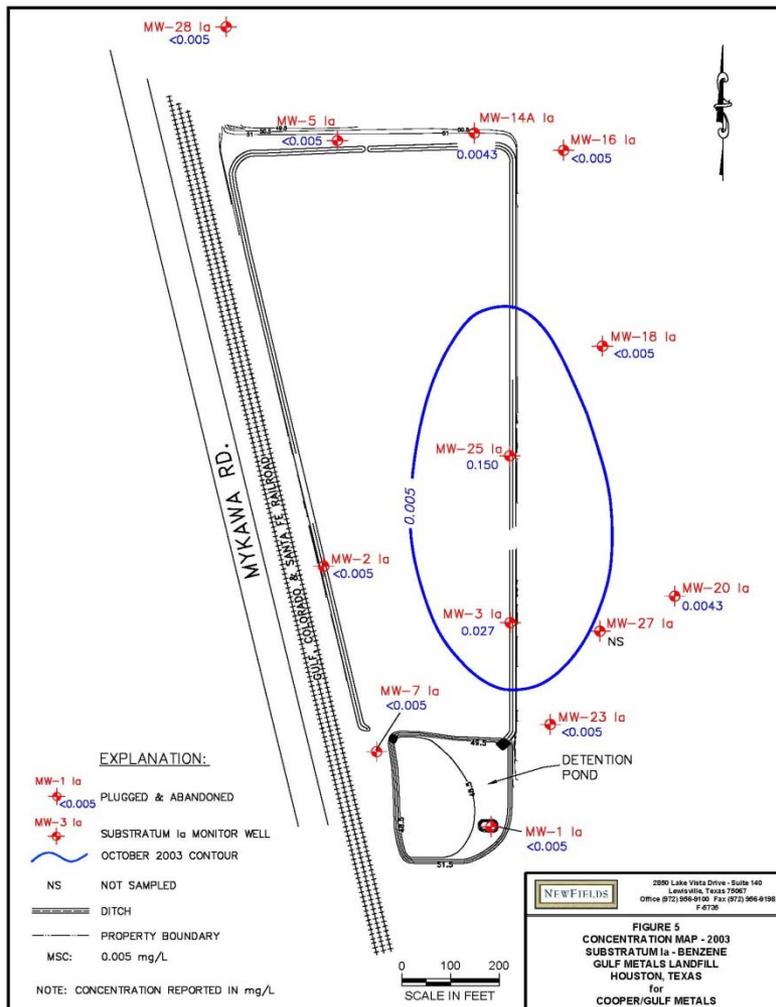
Zone 1c



Benzene Plume Map – Zone 1a

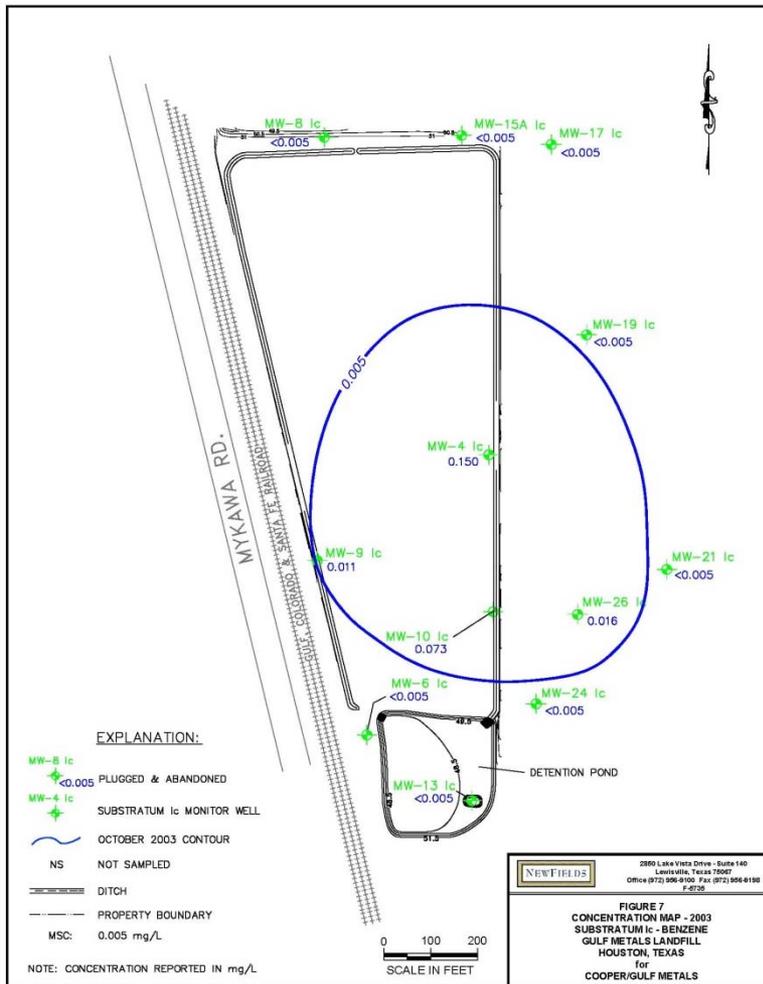
2003

2009

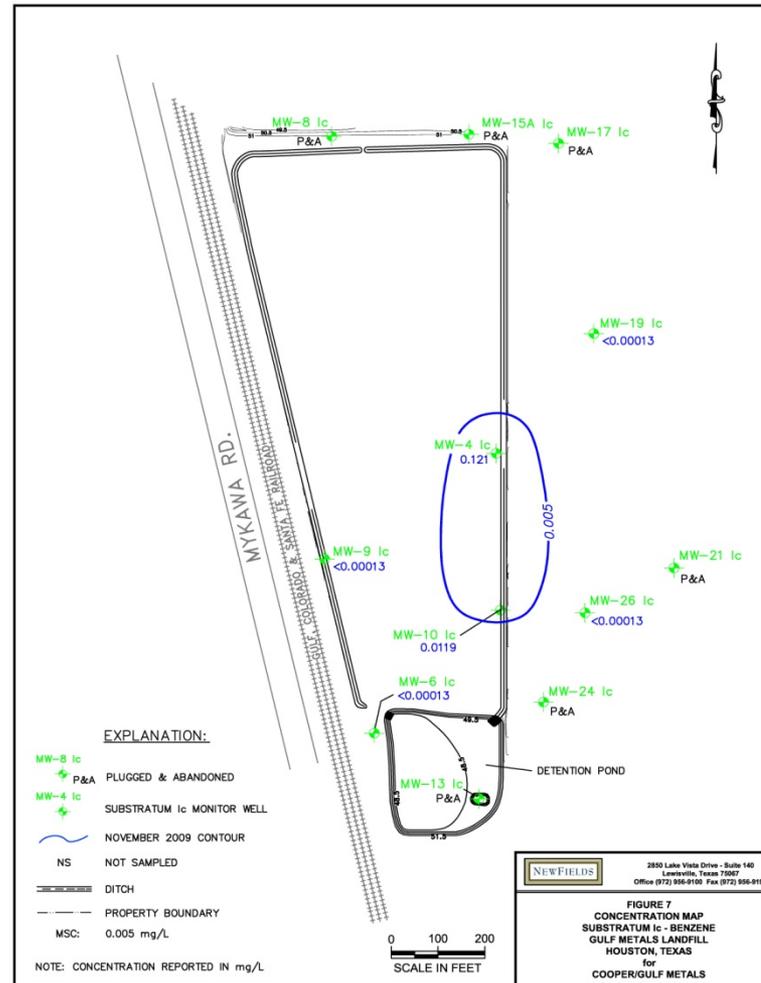


Benzene Plume Map – Zone 1c

2003

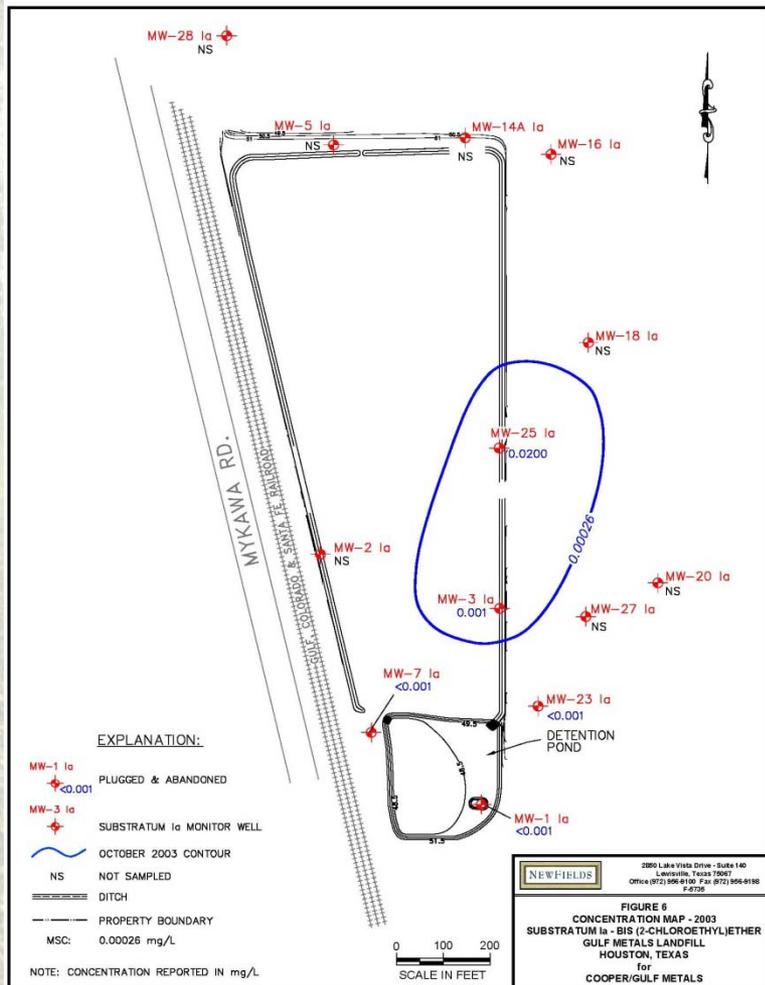


2009

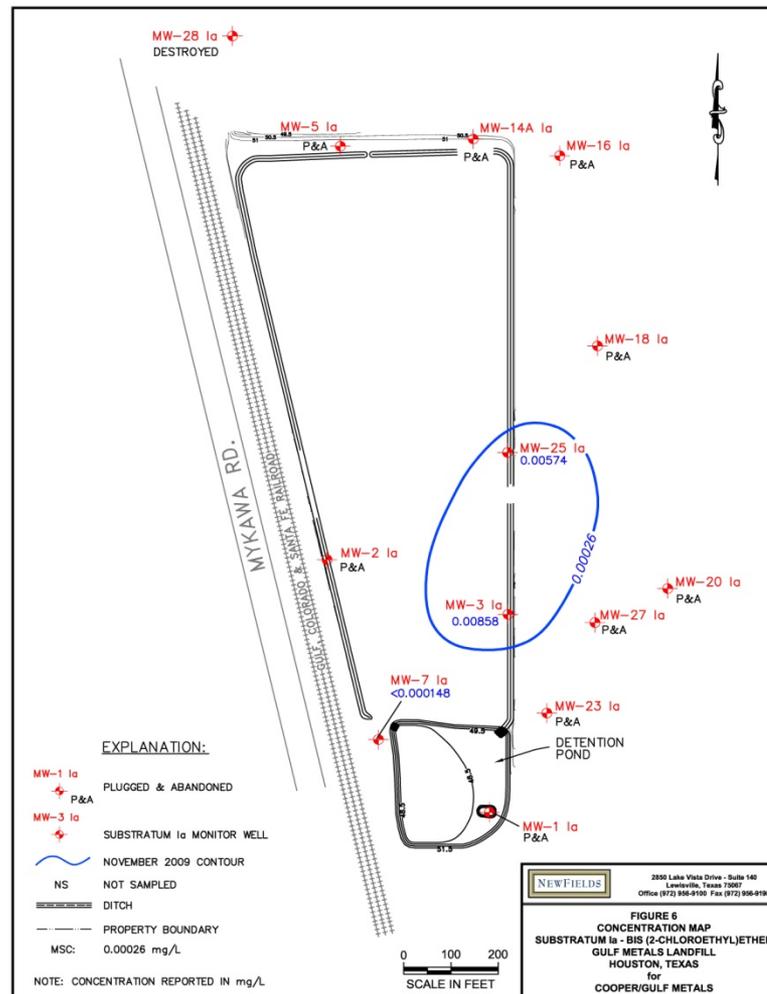


Bis(2-Chloroethyl)Ether Plume Map Zone 1a

2003



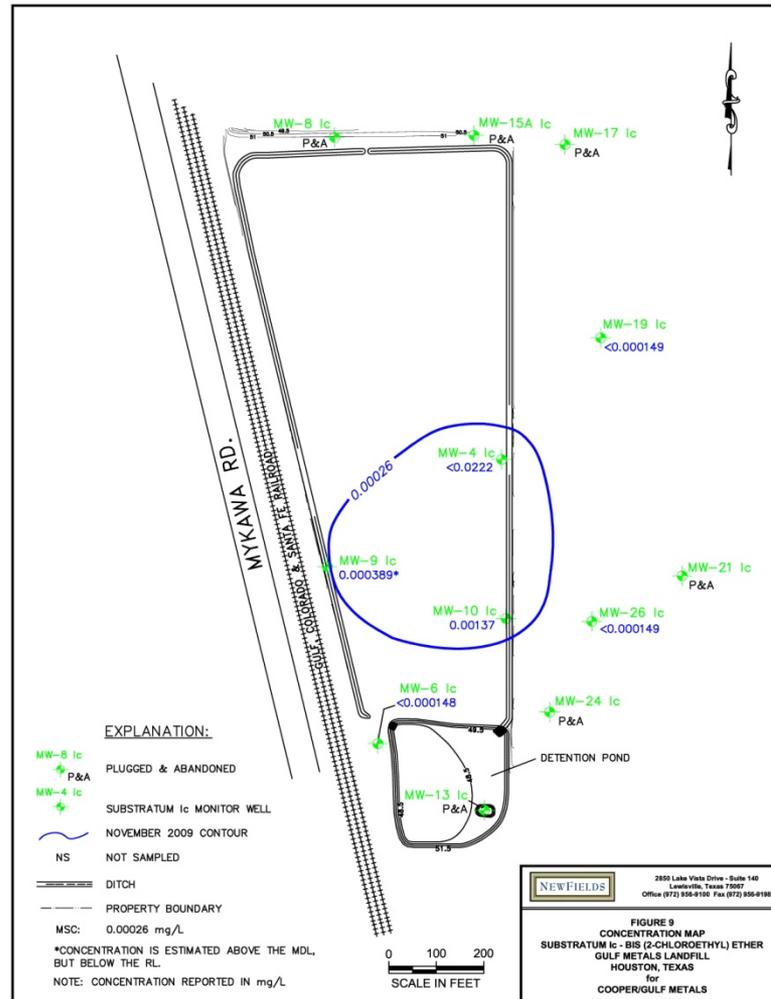
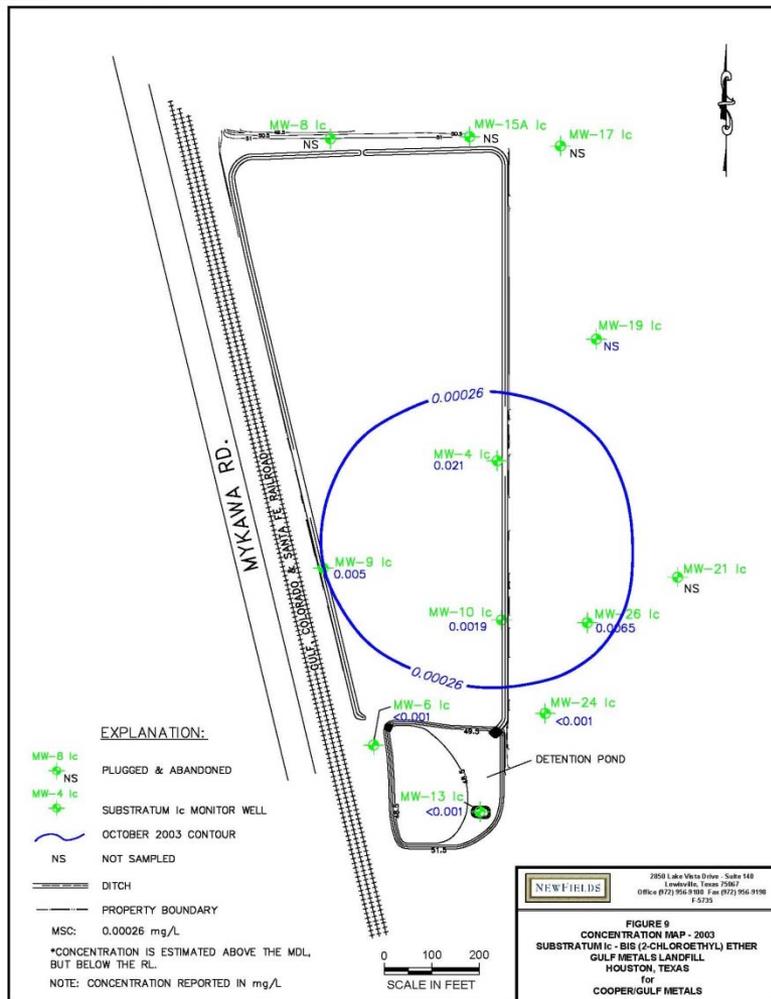
2009



Bis(2-Chloroethyl)Ether Plume Map Zone 1c

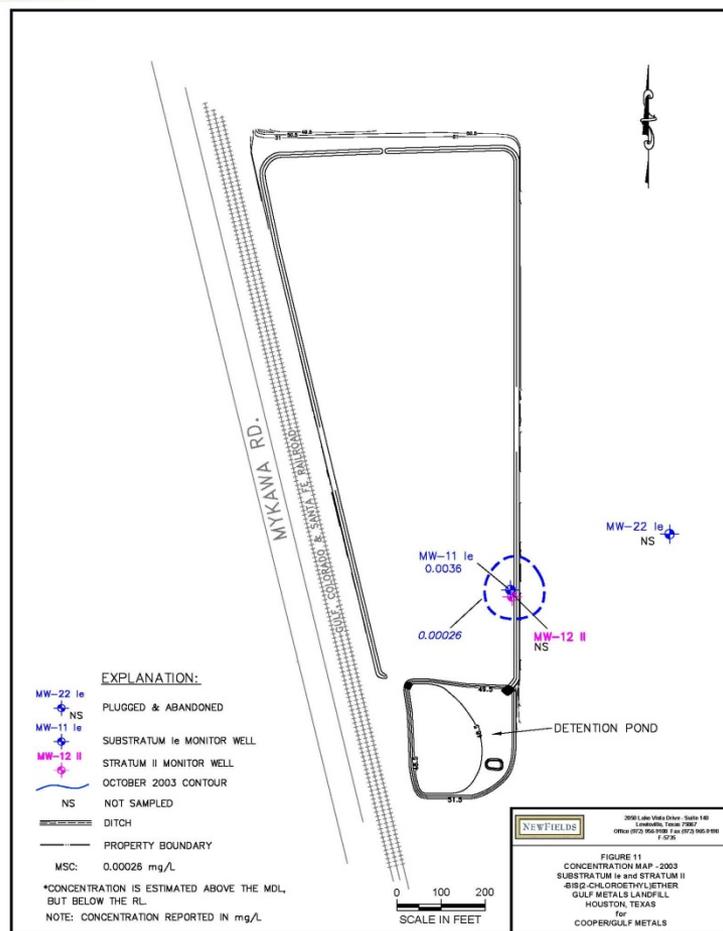
2003

2009

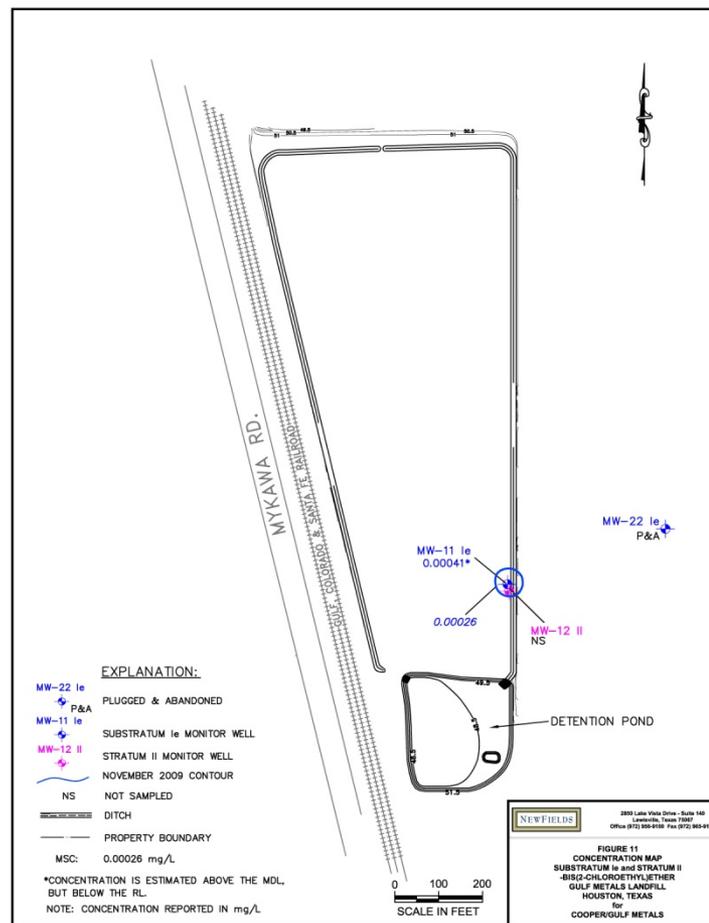


Bis(2-Chloroethyl)Ether Plume Map Zones Ie and II

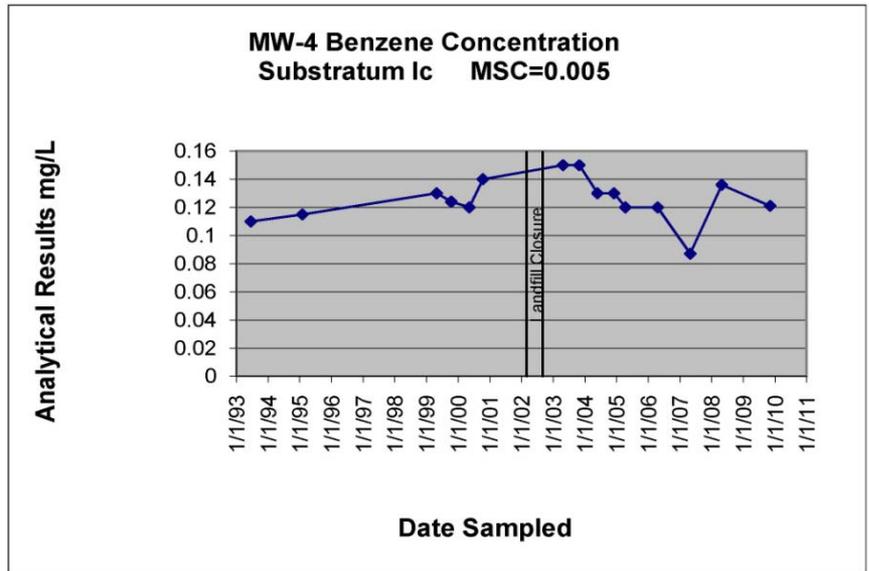
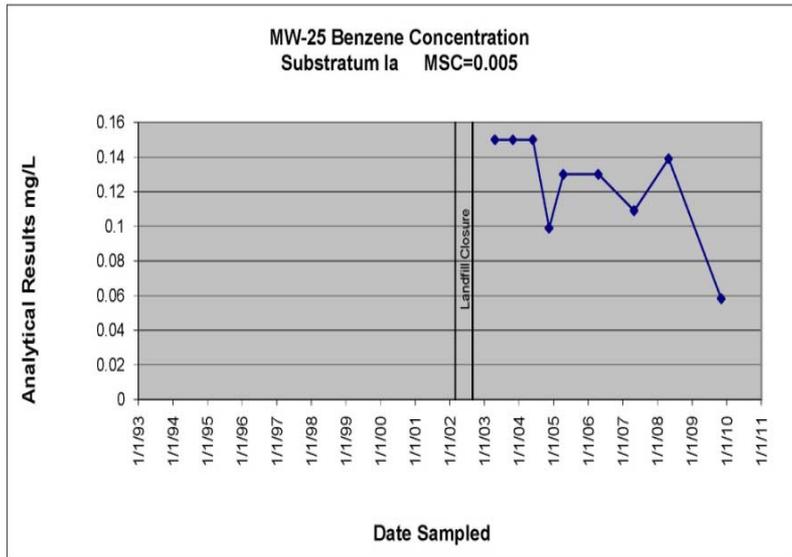
2003



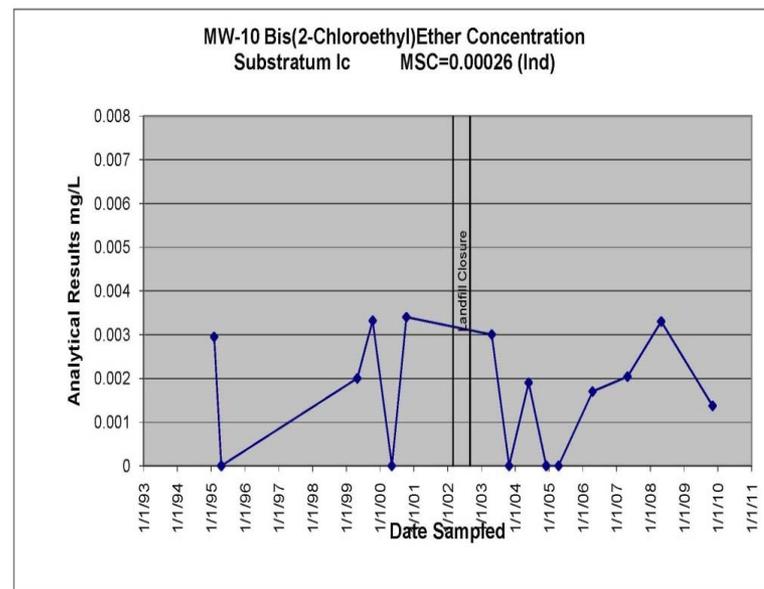
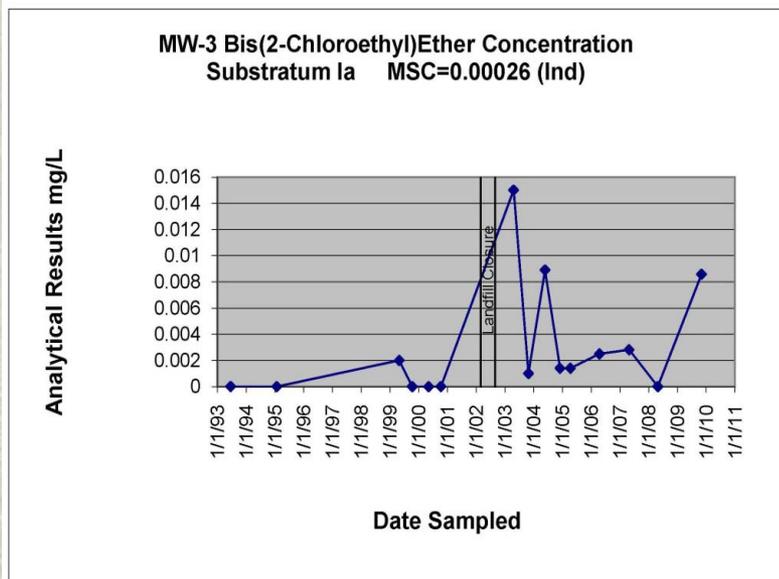
2009



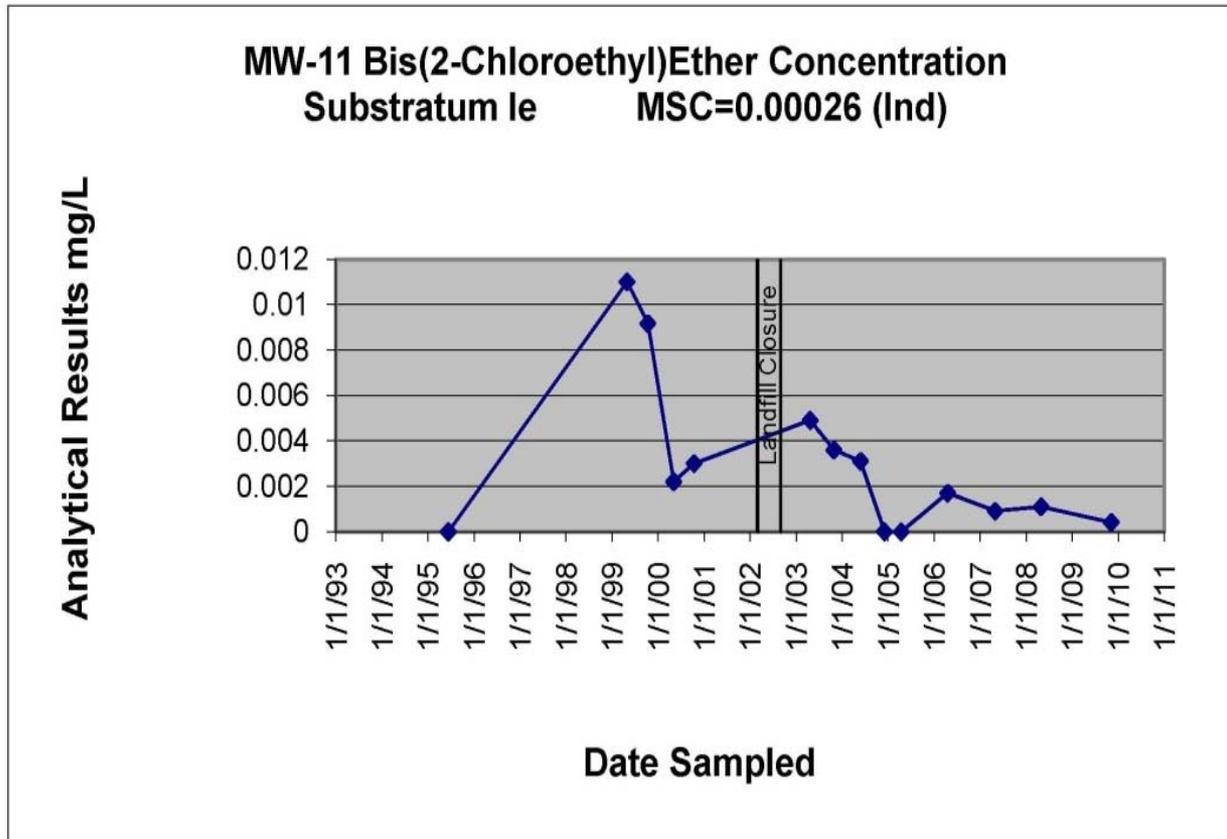
Benzene Concentration vs. Time Graphs



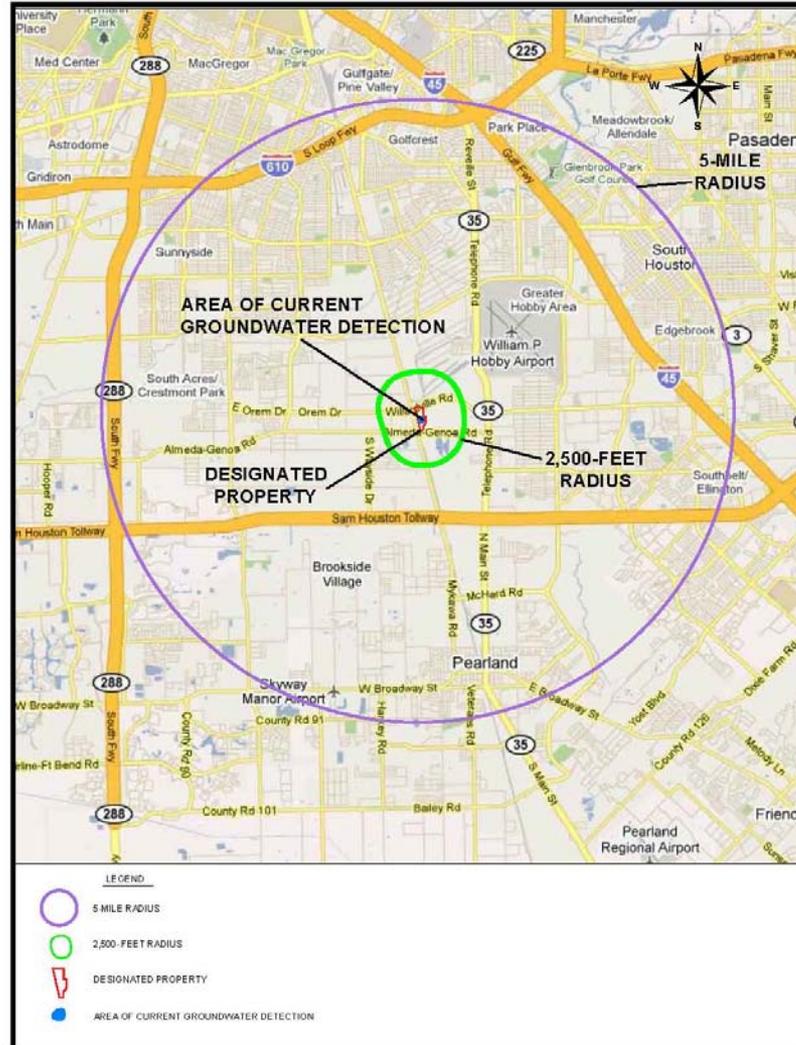
Bis(2-Chloroethyl)Ether Concentration vs. Time Graphs



Bis(2-Chloroethyl)Ether Concentration vs. Time Graph



MSD and Surrounding Properties



MSD and Surrounding Properties



Summary

- Site Description
 - Site about 18.6 acres, not currently developed
- Contamination
 - RI/FS completed in 1999, approved by TCEQ in 2000.
 - Current COCs that are still monitored in groundwater include low levels of benzene, bis(2-chloroethyl)ether, VC, arsenic, and lead.
 - TCE concentrations were not detected in 2009.
 - VC and lead concentrations were below regulatory criteria in 2009.
- Remediation
 - Soil remediation completed in 2002 – solidification and cap
 - Groundwater remediation - MNA from 2003 to present
 - On-going landfill cap maintenance activities will continue

Summary

- TCEQ
 - Actively working with TCEQ since 1992 under Consent Order, and in Voluntary Cleanup Program (VCP) since 2001 (No. 1430).
- COC Plumes Decreasing
 - Remaining concentrations in groundwater not suitable for ingestion, but concentrations are well below state-approved levels for other exposure pathways .
 - Investigation activities and MNA data demonstrate that the COC plumes have been delineated and are shrinking.
- MSD will allow for site closure through the TCEQ VCP, which will ensure that groundwater and soil are protective of human health and the environment .
- Progress to date has encouraged site development, and VCP Closure will further promote development for approved land uses.

A vertical image on the left side of the slide shows a path through a forest. The path is covered in fallen yellow and orange leaves. Tall, thin trees line both sides of the path, and the scene is shrouded in a light mist or fog, creating a serene and somewhat ethereal atmosphere.

Thank You & Questions