

Municipal Setting Designations



MSDs: Another tool for Houston

Richard Chapin
Sr. Project Manager

Jedediah Greenfield
Environmental Analyst

Municipal Setting Designations (MSDs)



Agenda

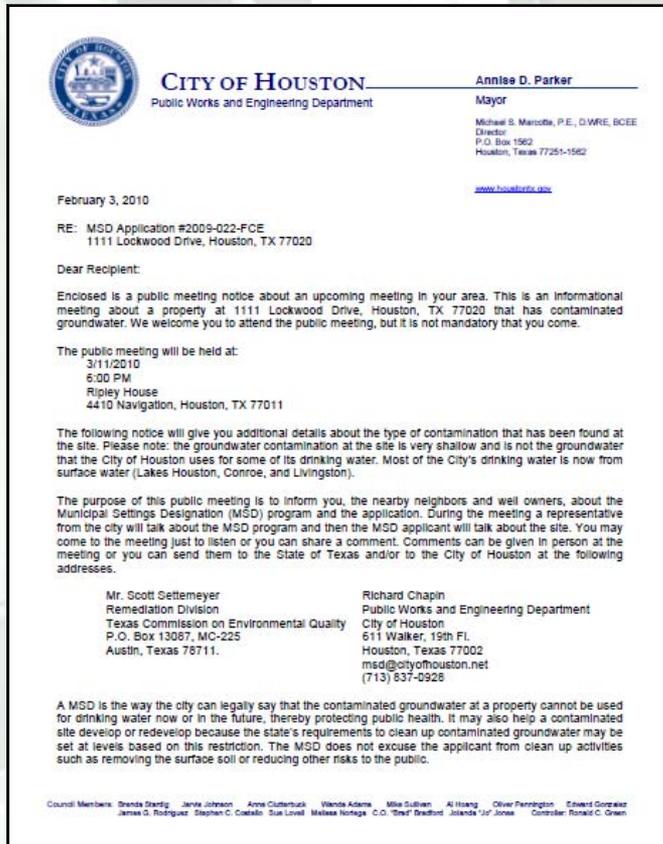
- City of Houston
 - Why we are here
 - Who the MSD impacts
 - What an MSD is
 - Why support an MSD
 - Steps in the MSD process
- MSD Applicant
 - Specific information on the site
4100 Clinton Dr., Houston, TX 77020
- Public comment and questions

Why Are We Here



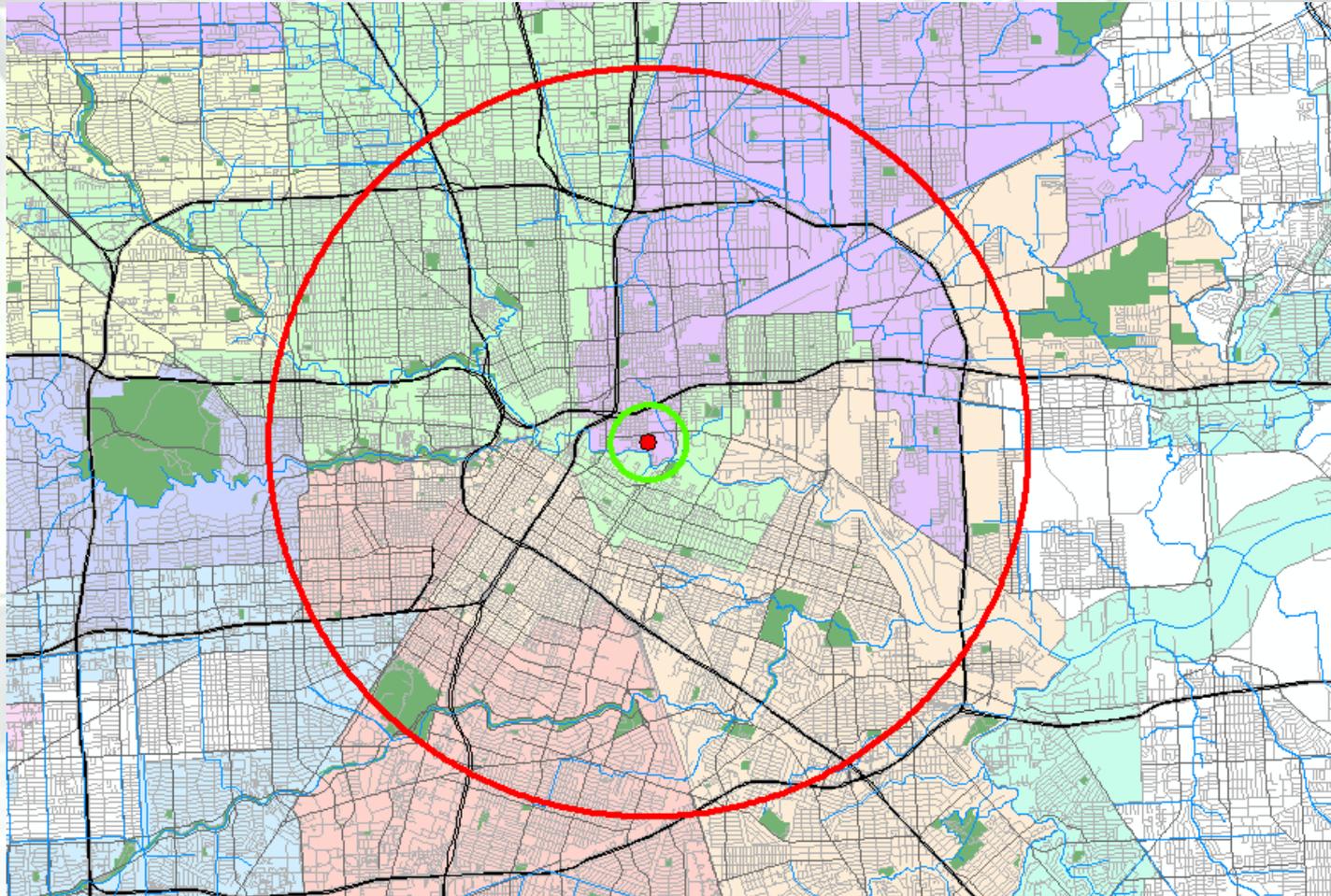
- Inform you about an MSD application
 - KBR
 - MSD #2009-023-KBR
- Explain what an MSD is and what it does for the applicant, the local community, and the City
- Receive public comments

MSD Notice Letters



- Public Notices:
 - Property owners
First Class Mail
1½-Mile Radius
 - Water well owners
Certified Mail
5-Miles Radius

1/2-Mile and 5-Mile Radius



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 (the State agency)
 - 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



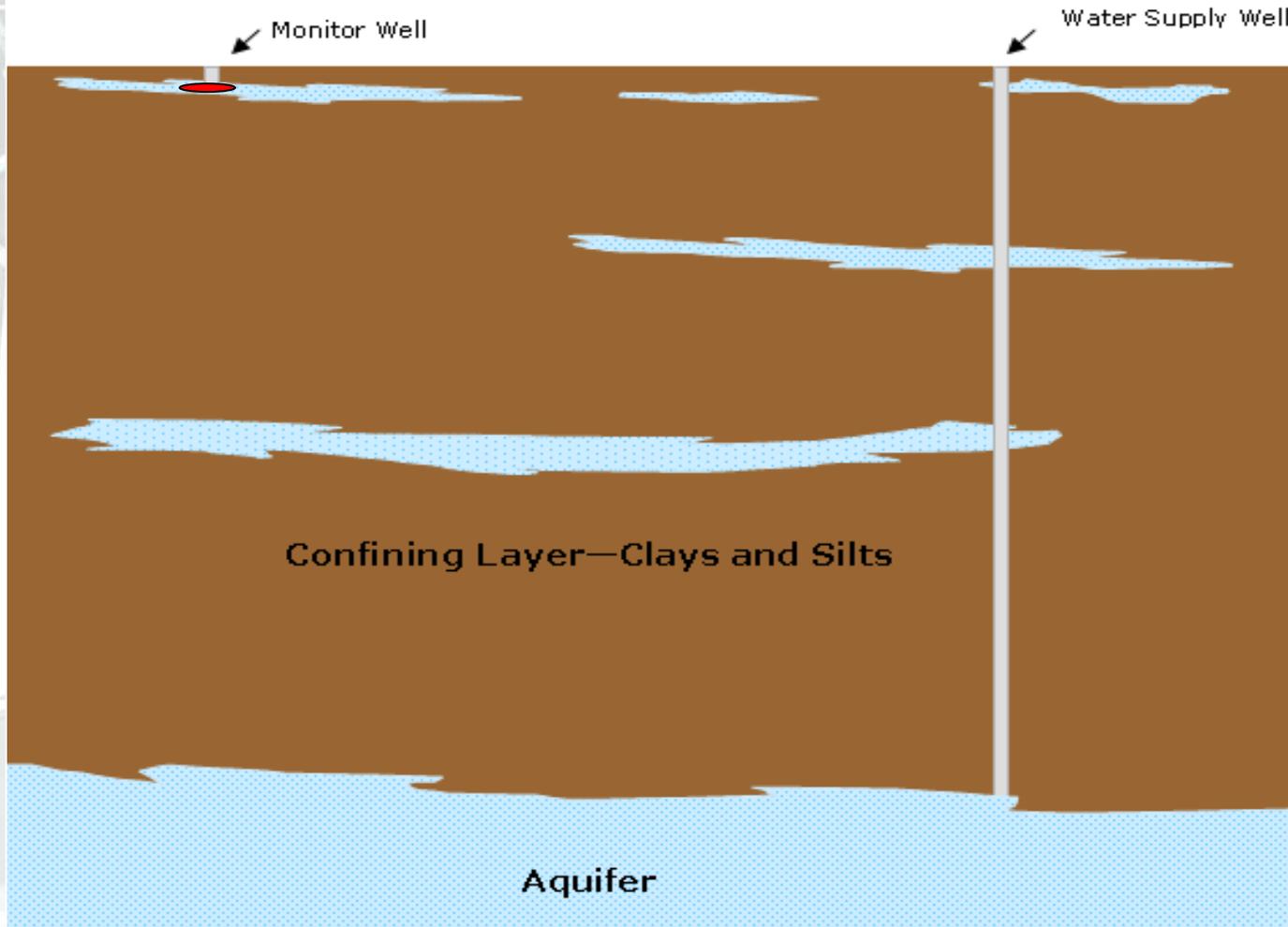
- An alternative method to address groundwater contamination
- Houston has shallow groundwater contamination scattered across the city
- This program only considers very shallow contamination (up to 200' below the surface)

City Water Supply



- Houston's drinking water comes from either deep aquifers or surface water
 - Nearest public water supply well
 - D-82 #1, depth 565 ft.
 - D-82 #2, depth 503 ft.
 - Over 1 miles from the MSD site
 - Surface water supply
 - Lake Houston
 - Lake Conroe
 - Lake Livingston

Shallow Contamination



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

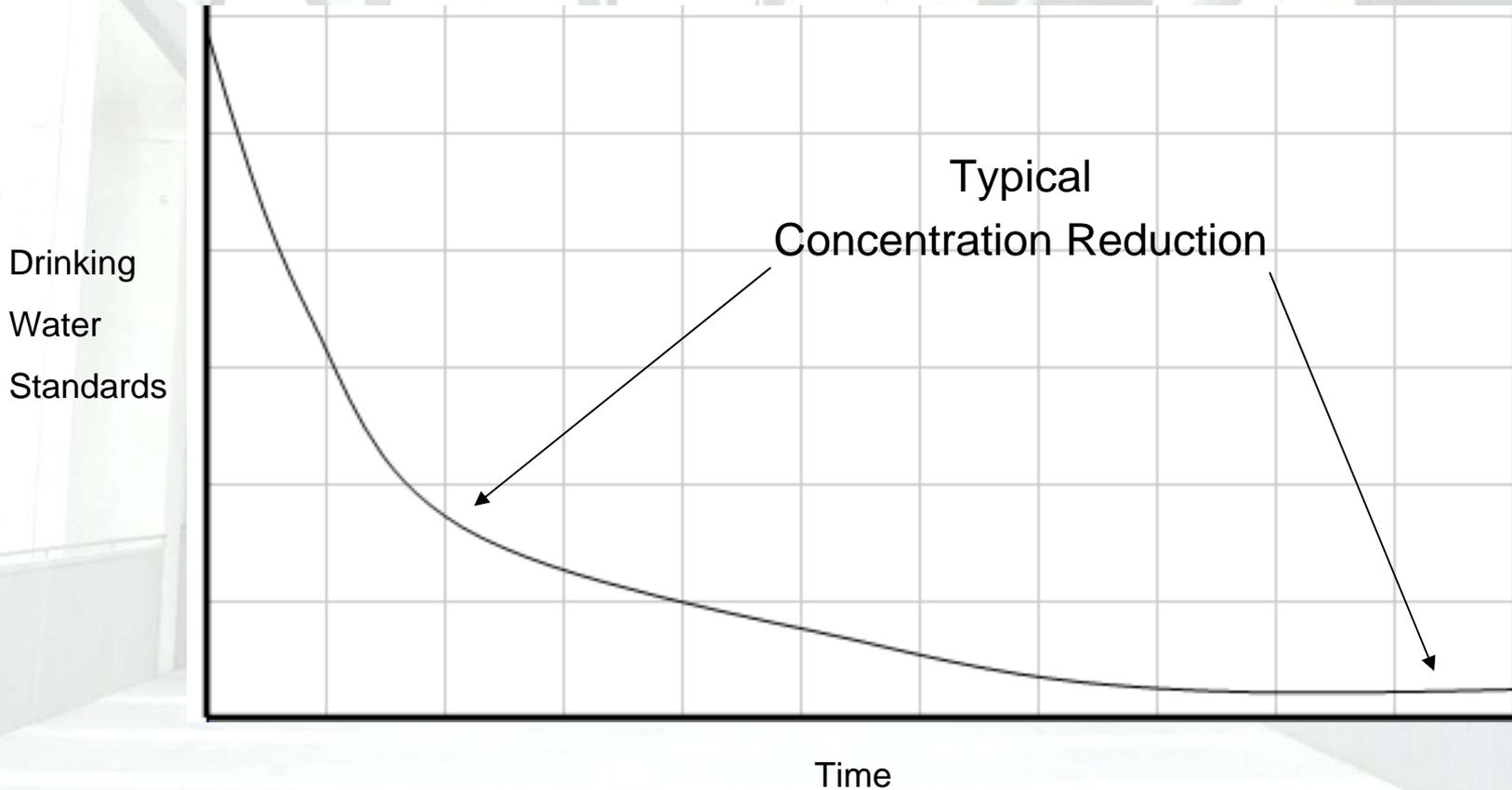
Drinking Water Supply Wells typically get water from 600 feet or deeper below the surface.

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



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:



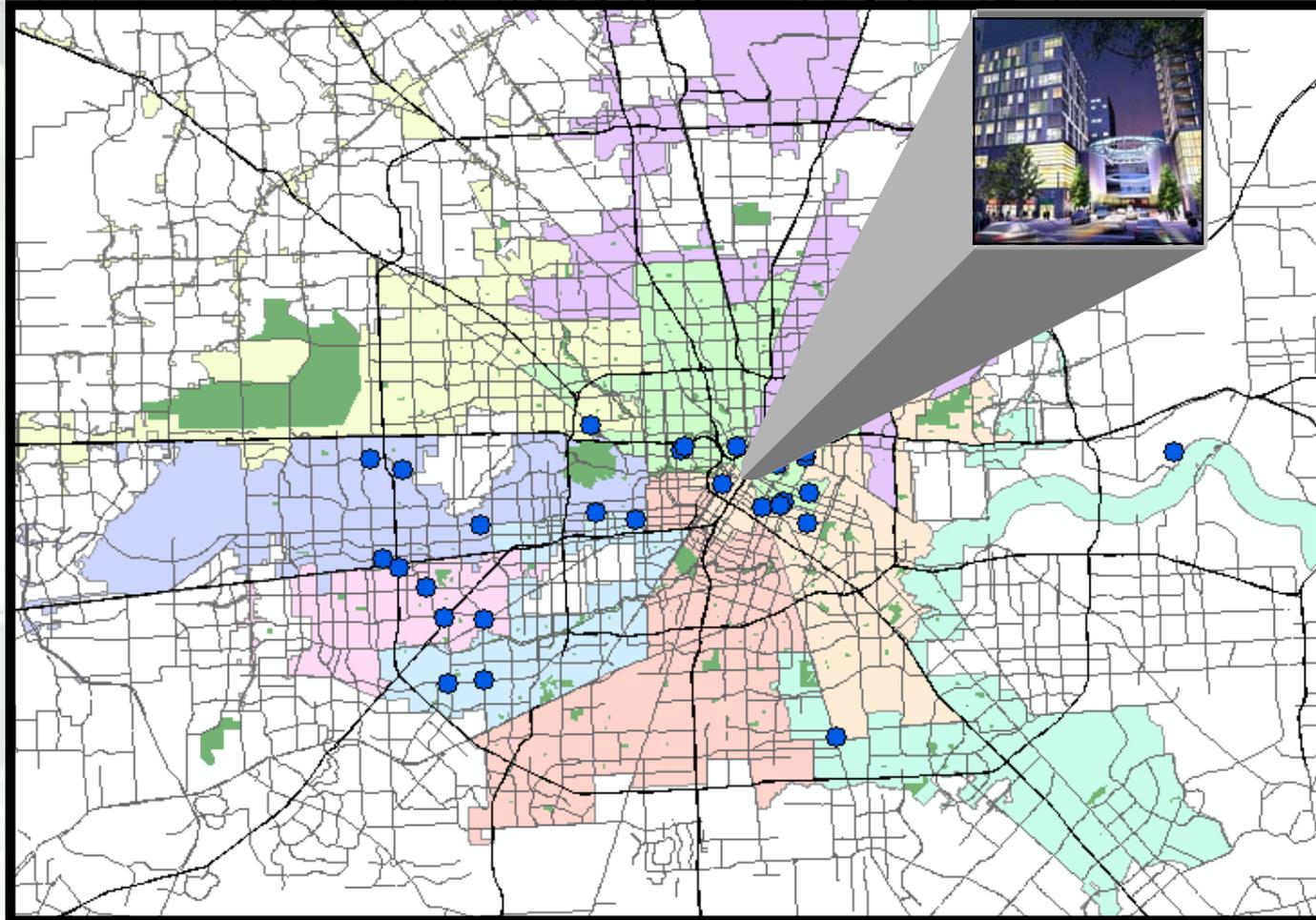
- Site must already be in a State or Federal clean up program
- Site must have been thoroughly investigated
- Data must show that the groundwater plume is stable or diminishing.
- A Professional Engineer (P.E.) or Professional Geologist (P.G.) must be willing to certify that the plume is stable or contracting.

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



- Central Library reference desk
- 500 McKinney
Houston, TX 77002

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

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: May 19, 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 5/19/10.

Contact Information



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Senior Project Manager



&

Jedediah Greenfield
Environmental Analyst

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



**msd@cityofhouston.net
(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





KBR (Kellogg Brown and Root)
4100 Clinton Drive
Houston, Texas 77020

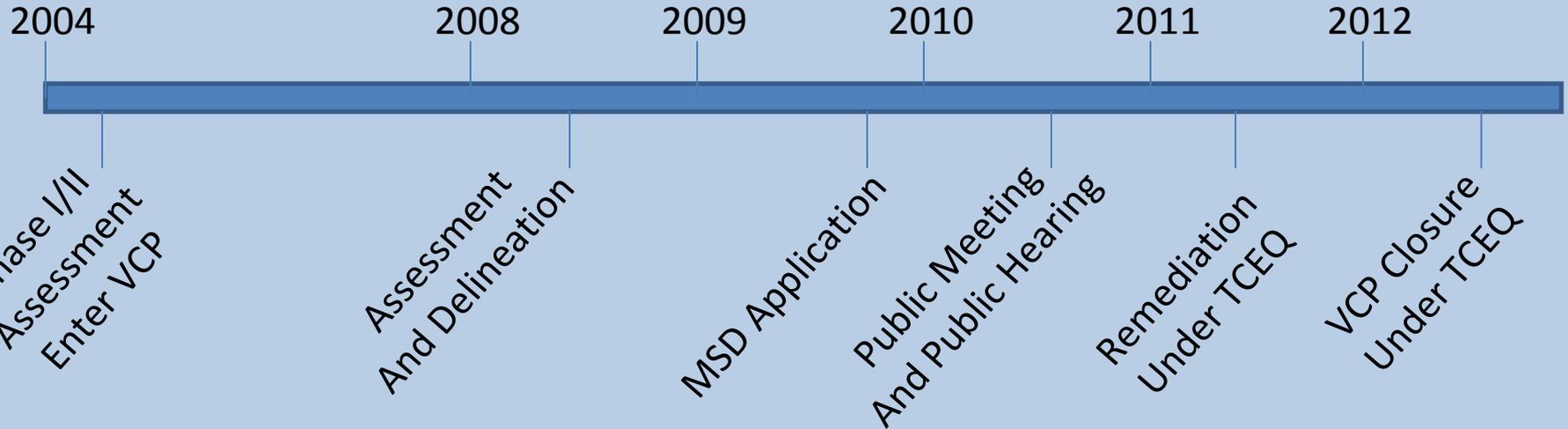
W&M Environmental Group
1215 Durham Drive
Houston, Texas 77007

W&M Environmental Group

- Gene Murray, PG
 - BS Geology, University of South Dakota
 - MS Geology, University of Nebraska
 - MS Management, University of Texas-Dallas
 - 30 years of experience
- Patrick Fortson, PG, EIT
 - BS Geosystems Engineering and Hydrogeology, University of Texas
 - On-site supervision of soil and groundwater investigations

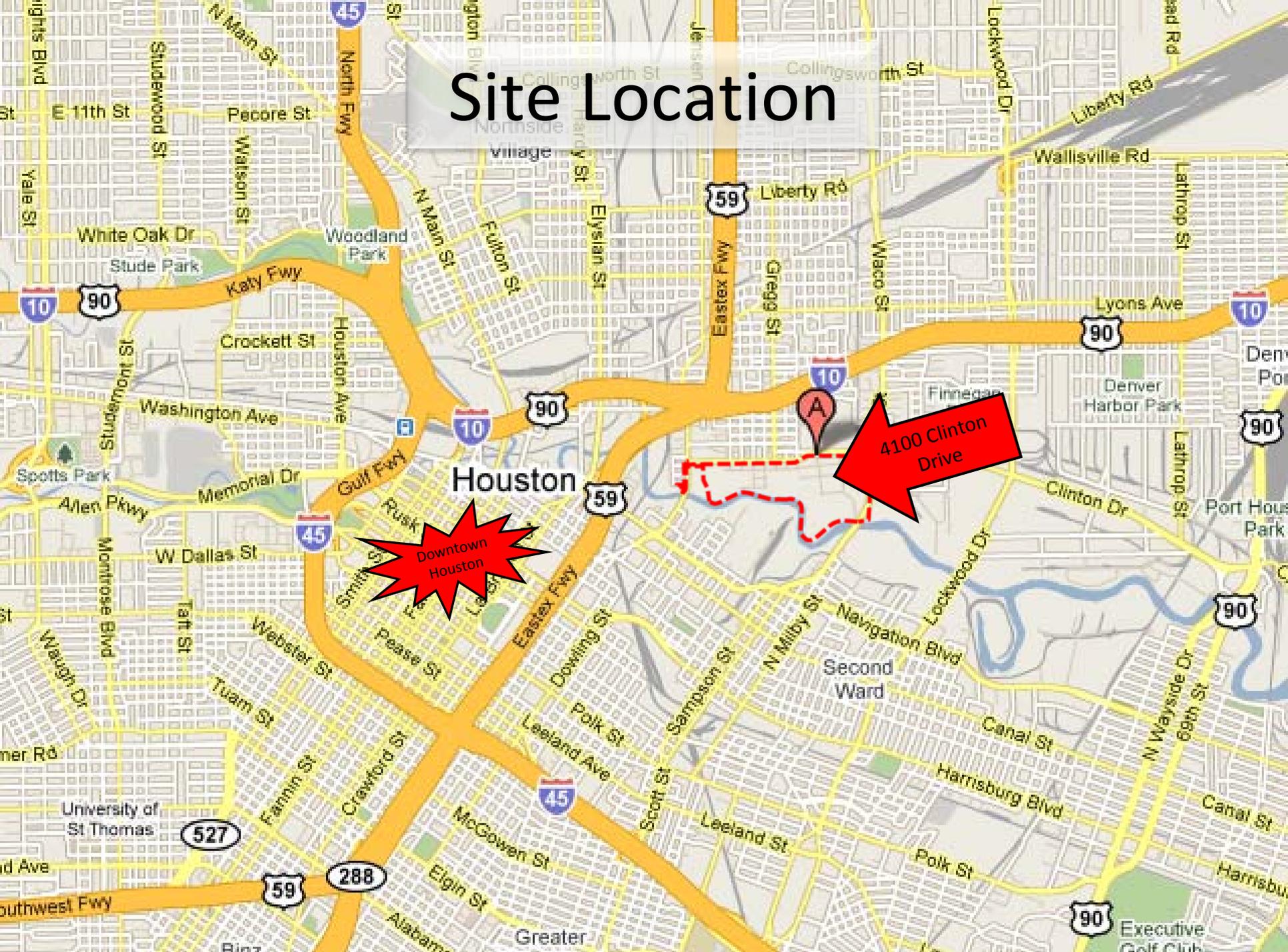


Assessment Timeline



Prior to 2004, assessment and remediation was conducted on 6 separate tank areas.

Site Location

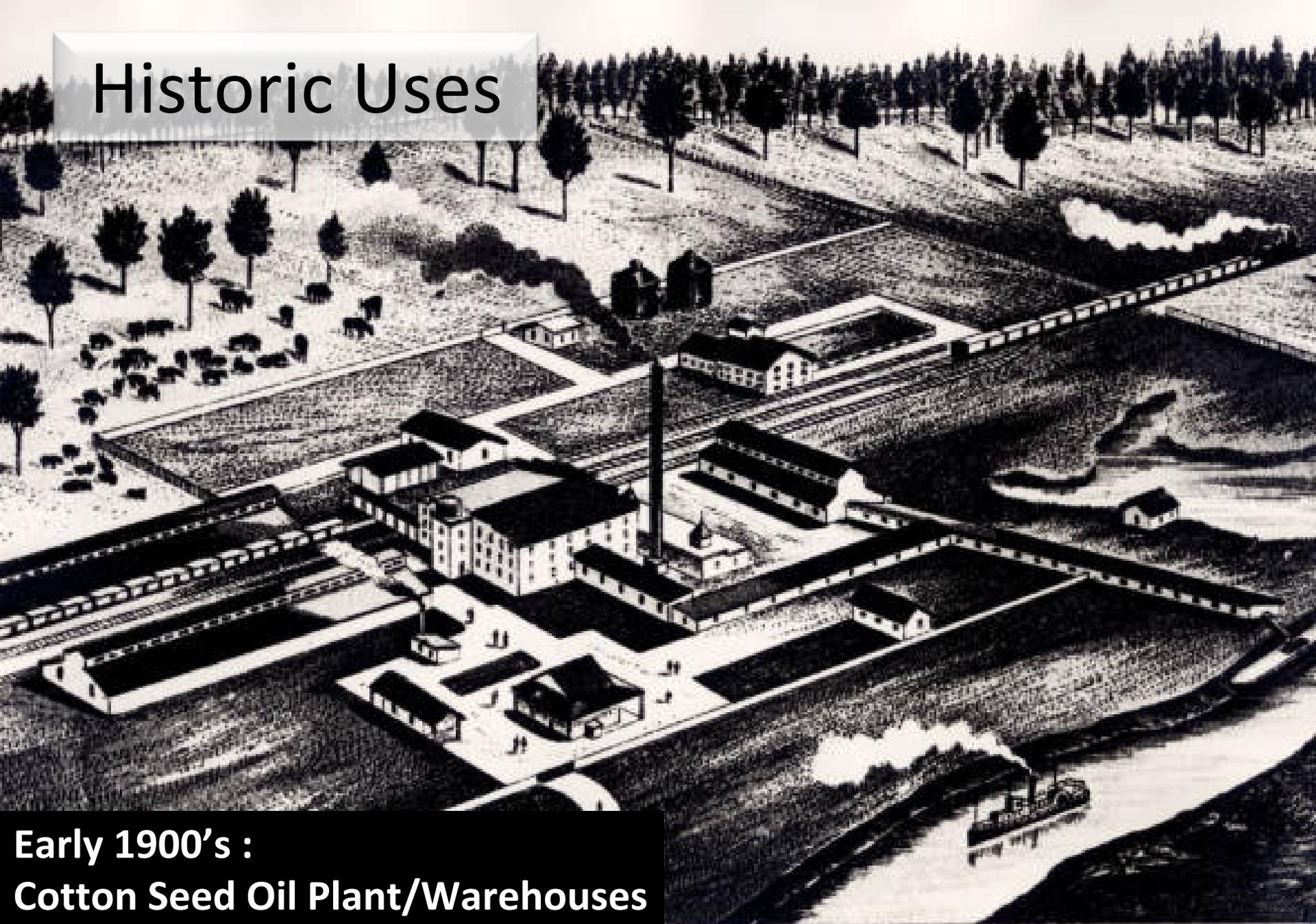


Downtown
Houston

4100 Clinton
Drive

A

Historic Uses



**Early 1900's :
Cotton Seed Oil Plant/Warehouses**

MERCHANTS & PLANTERS OIL MILL.

Historic Uses

Other Historic Uses:

- Pipe Manufacturing
- Trash Incineration
- Truck Repair
- Fleet Refueling
- Landfill
- Paint Shop
- Sand Blasting
- Hazardous Waste Storage
- Cotton Compress
- Warehousing

Buffalo Bayou

Asphalt Plant

Military Tank Fabrication

Lumber Yard

Ingram's Gully

Clinton Drive

Gas Station

Current Uses

Commercial Office Space



Warehouses



Current Uses

Current Uses



Vacant Buildings

Current Uses



Sheriff's Station

Regional Geology

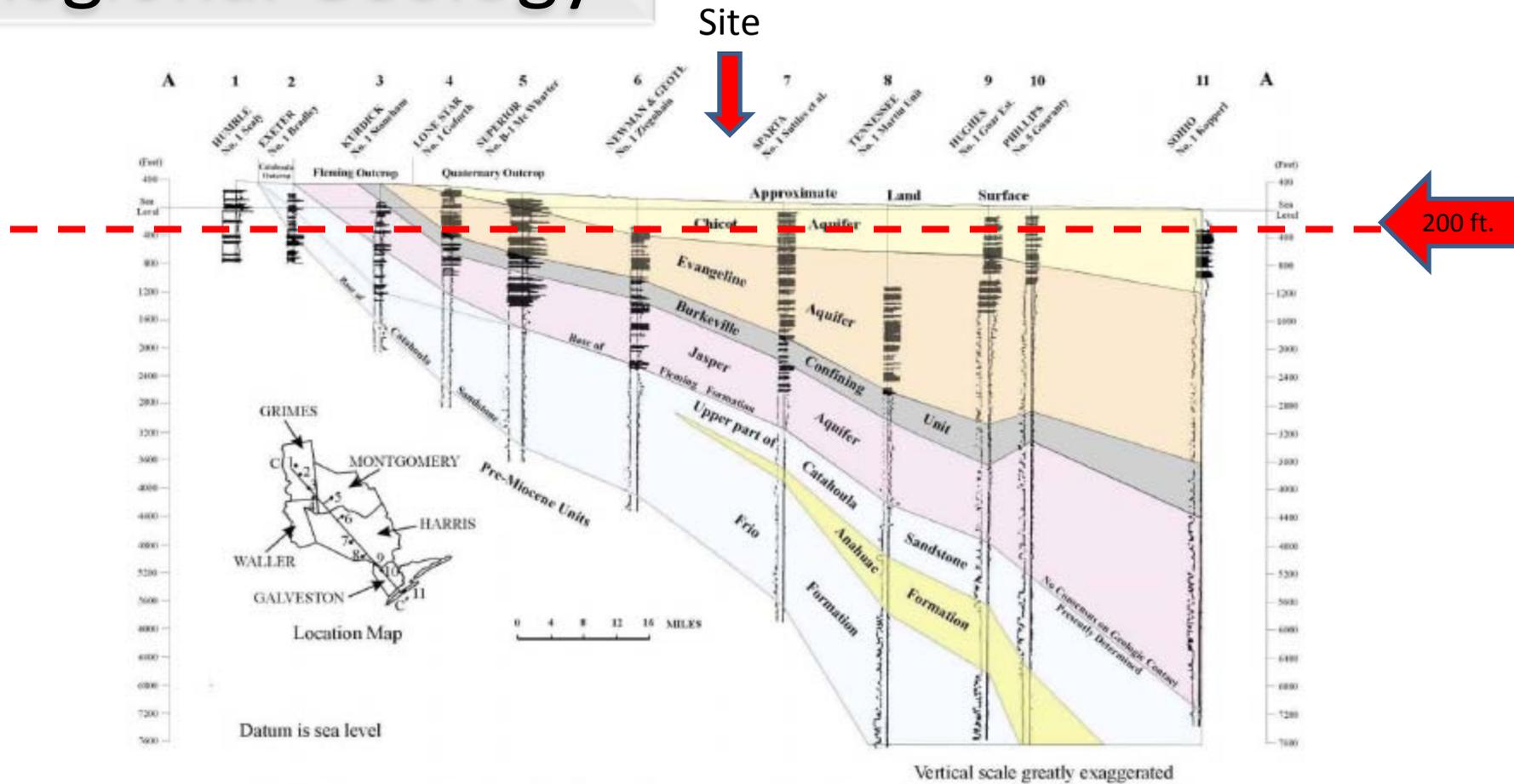


Figure 2-14. Cross-section showing thicknesses of the aquifers down-dip in the northern part of the Gulf Coast (after Baker, 1979; Kasmarek, unpublished data).

Geology

Alluvium

Beaumont
Clay

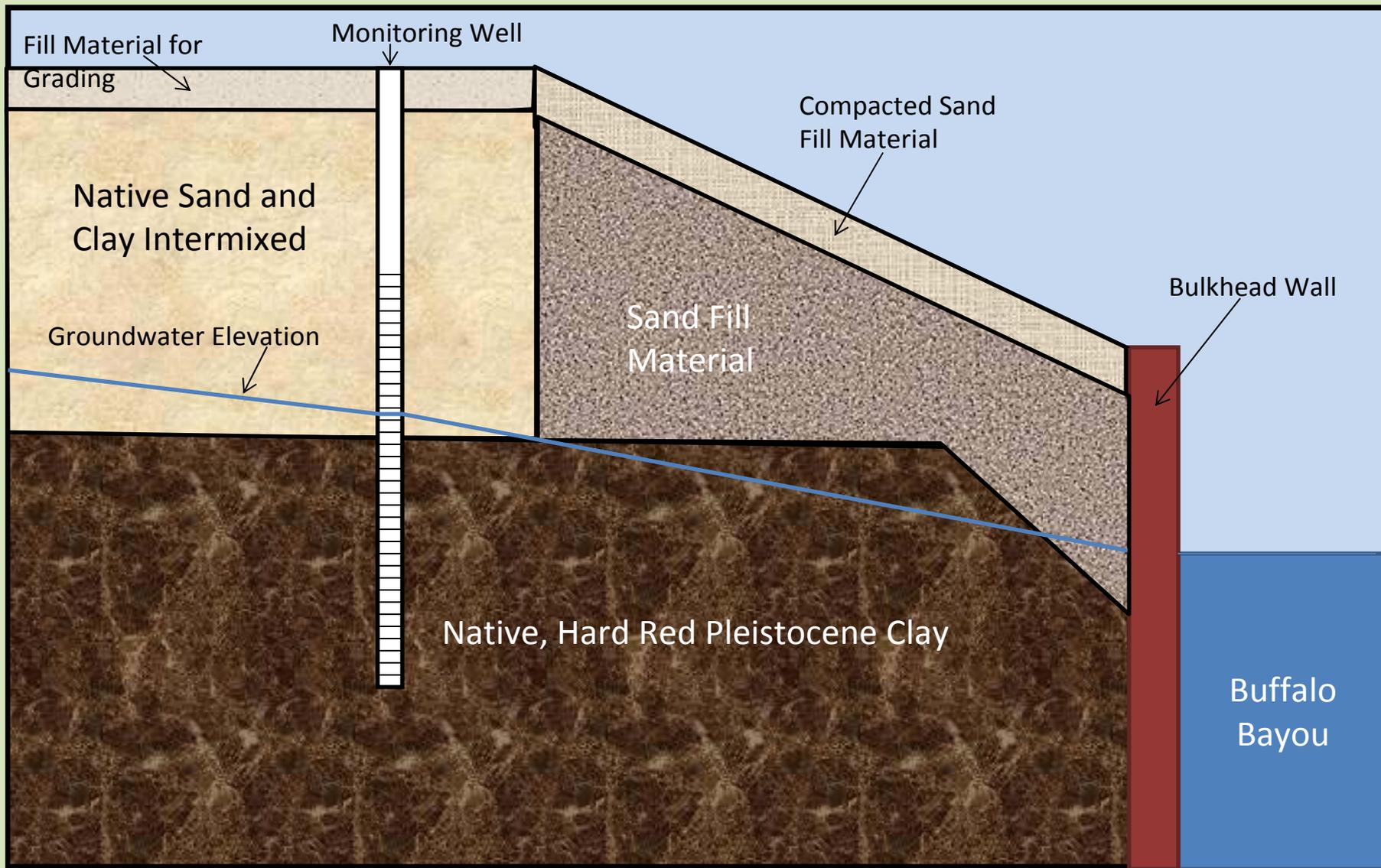
Montgomery
Clay

Bentley
Formation

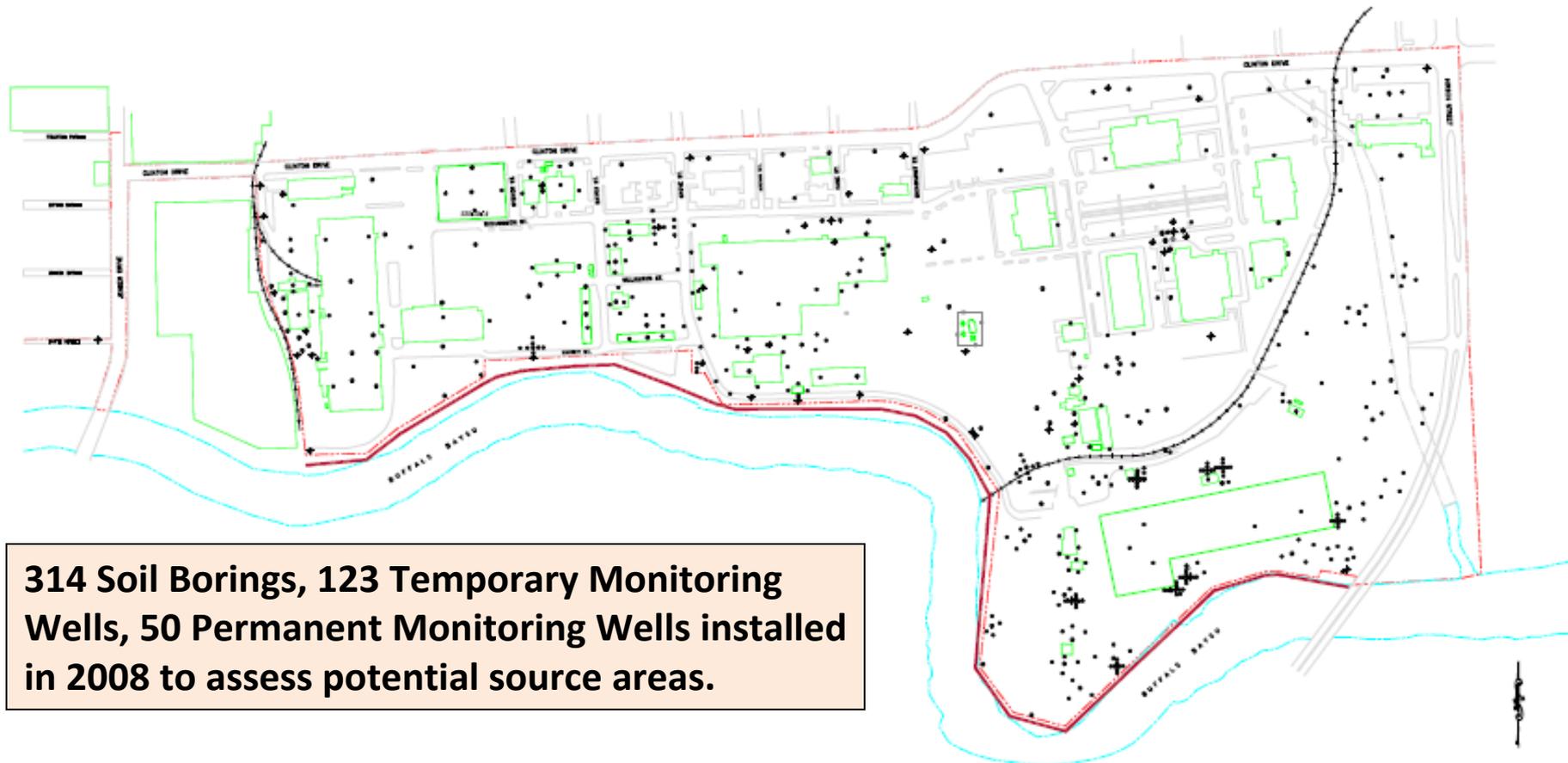
Willis Sand

Hard red clay serves as confining layer from 35 to over 100 feet below ground surface, protecting deeper water bearing units.

Buffalo Bayou Bulkhead



Site Layout Map



314 Soil Borings, 123 Temporary Monitoring Wells, 50 Permanent Monitoring Wells installed in 2008 to assess potential source areas.

LEGEND

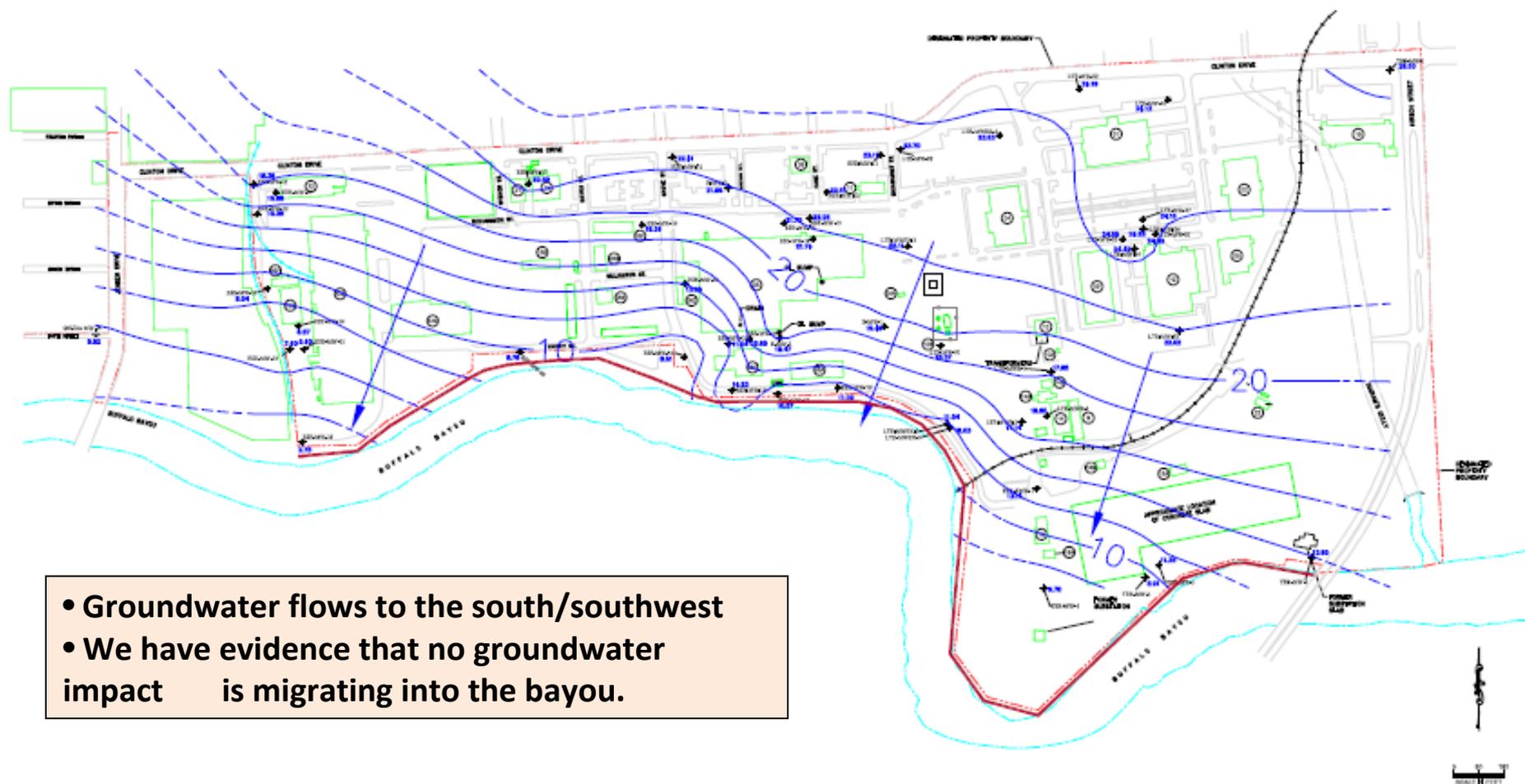
- - - DESIGNATED PROPERTY BOUNDARY
- SOIL BORING
- + PERMANENT MONITORING WELL
- TEMPORARY MONITORING WELL

ASSESSMENT SAMPLING LOCATIONS

KBR - CLINTON DRIVE FACILITY
4100 CLINTON DRIVE
HOUSTON, TEXAS



Groundwater Flow



- Groundwater flows to the south/southwest
- We have evidence that no groundwater impact is migrating into the bayou.

LEGEND

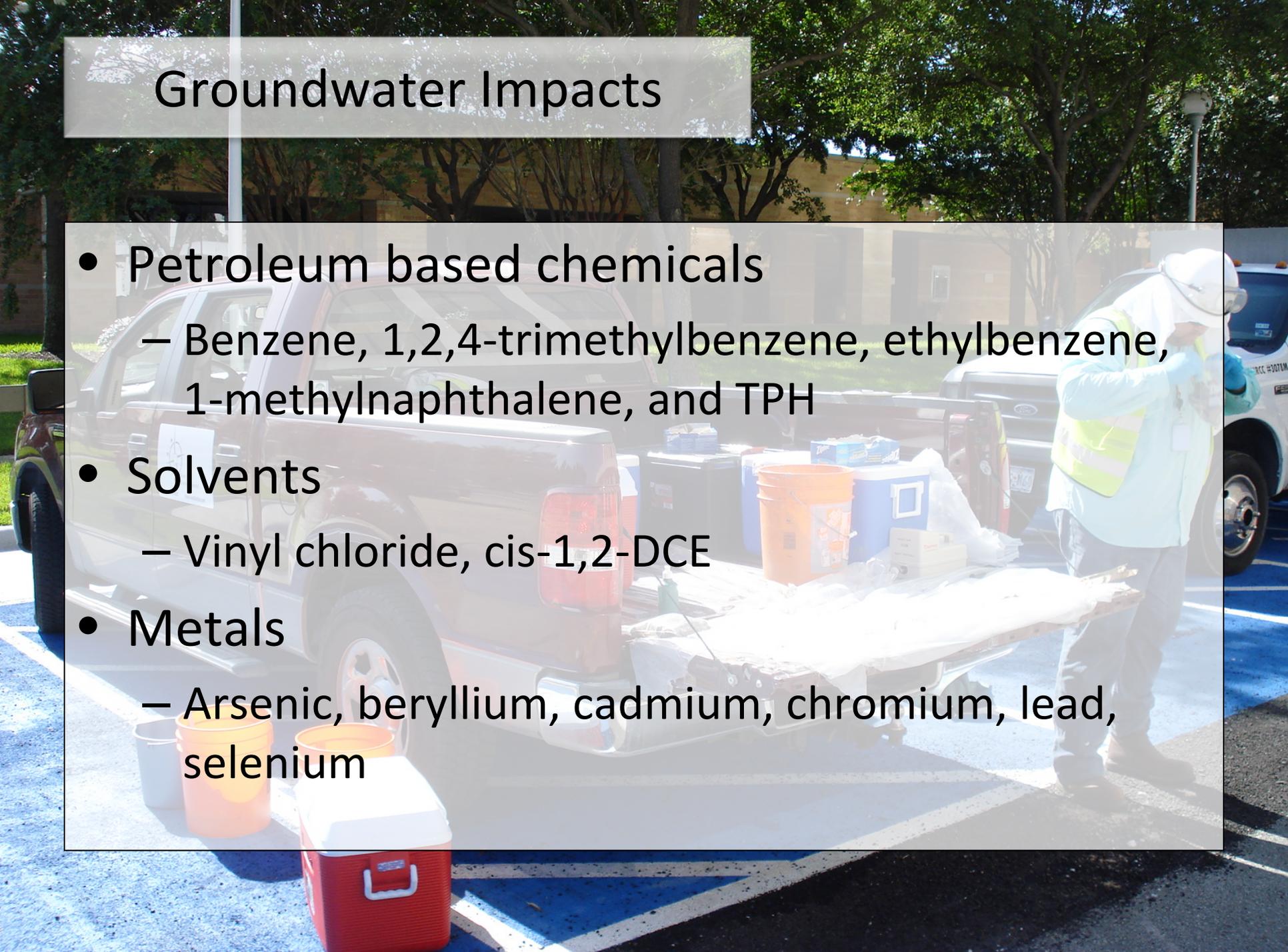
- DESIGNATED PROPERTY BOUNDARY
- GROUNDWATER ELEVATION CONTOUR (2 FT CONTOURS)
- SOIL BORING
- ◆ PERMANENT MONITORING WELL
- TEMPORARY MONITORING WELL
- GROUNDWATER FLOW DIRECTION

FIGURE 5
GROUNDWATER FLOW MAP
KBR — CLINTON DRIVE FACILITY
4100 CLINTON DRIVE
HOUSTON, TEXAS

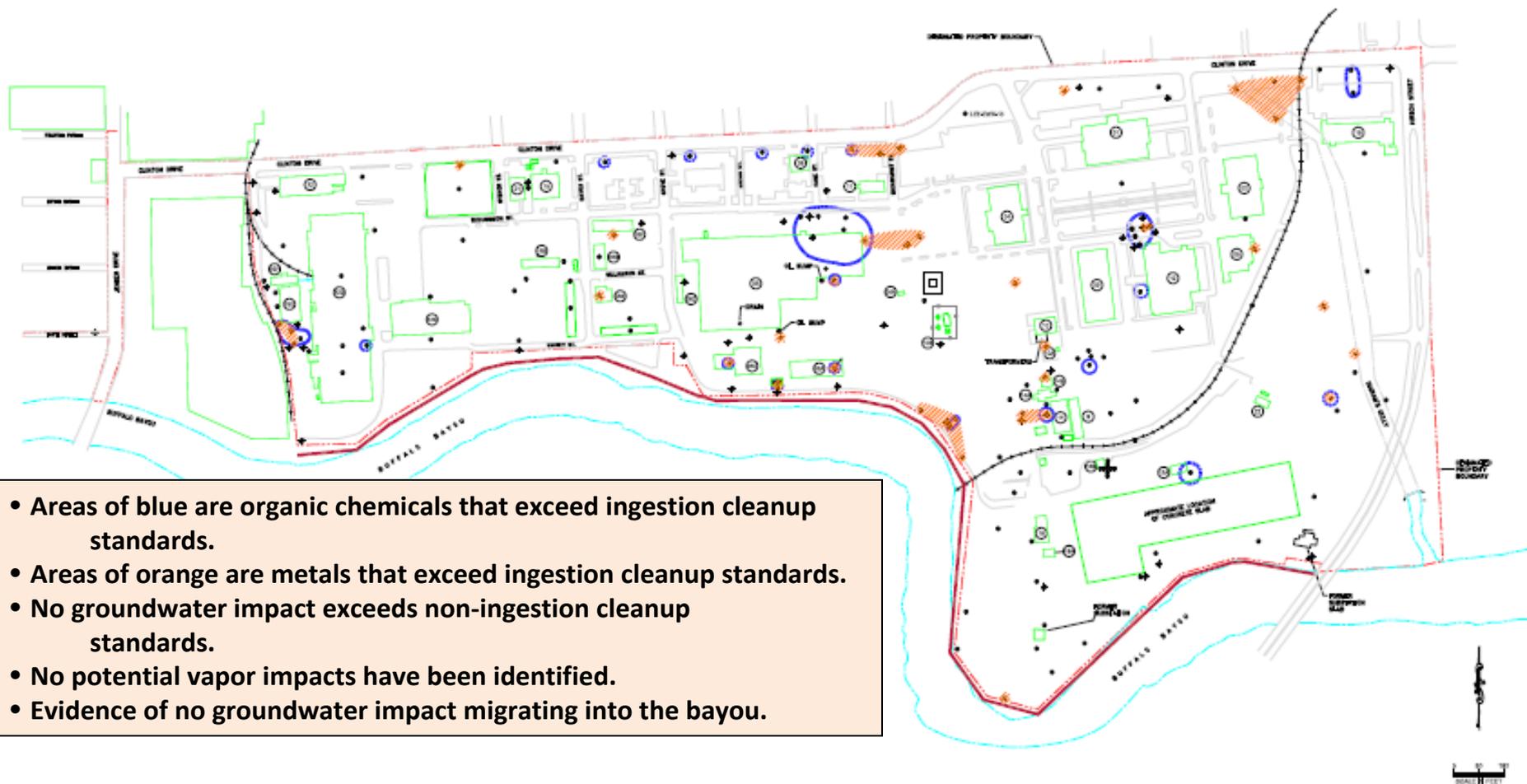


Groundwater Impacts

- Petroleum based chemicals
 - Benzene, 1,2,4-trimethylbenzene, ethylbenzene, 1-methylnaphthalene, and TPH
- Solvents
 - Vinyl chloride, cis-1,2-DCE
- Metals
 - Arsenic, beryllium, cadmium, chromium, lead, selenium



Groundwater Impacted Areas



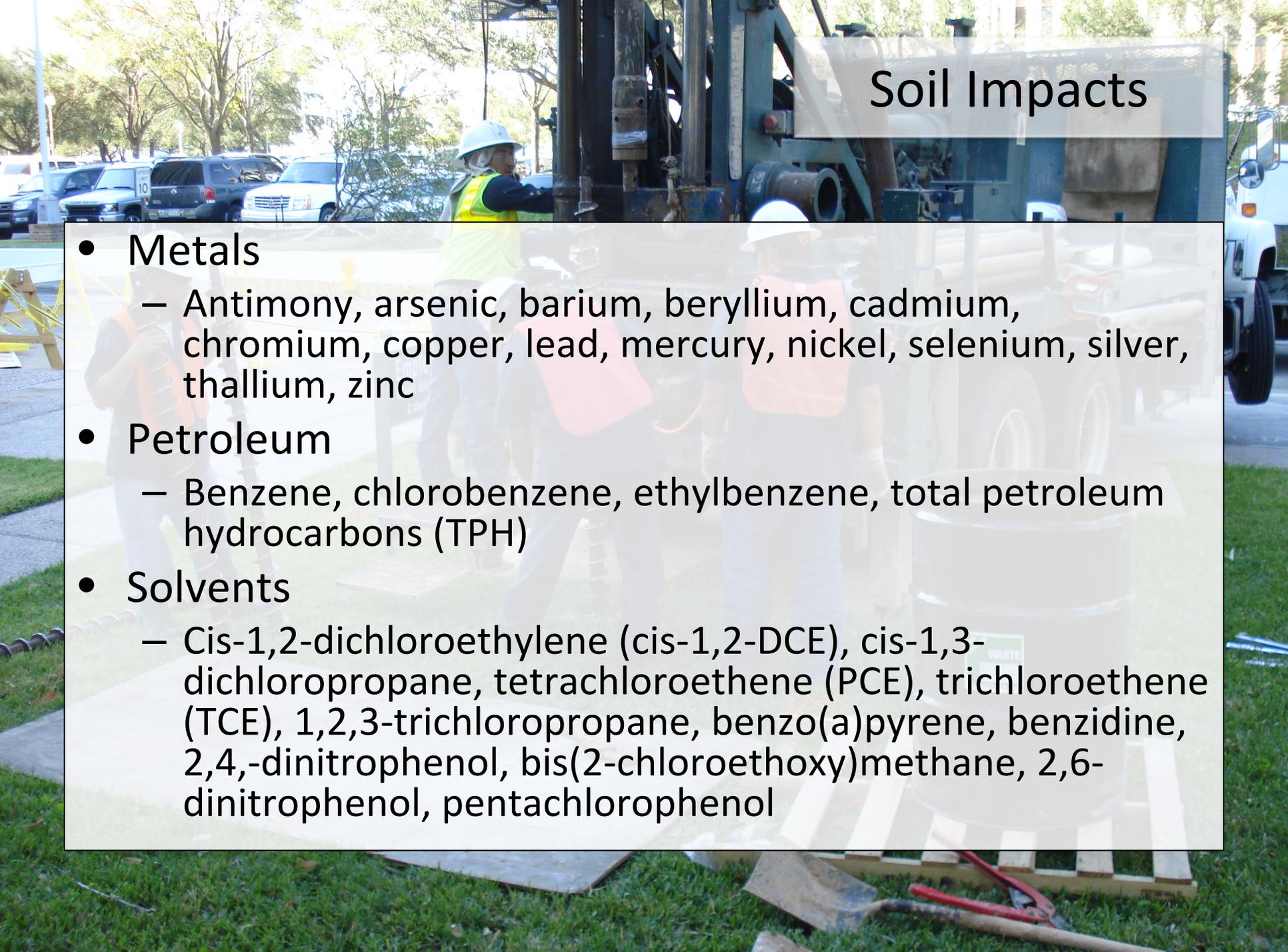
LEGEND

- DESIGNATED PROPERTY BOUNDARY
- PERMANENT MONITORING WELL
- — NON-METALS IMPACTED GROUNDWATER
- — METALS IMPACTED GROUNDWATER
- — TEMPORARY MONITORING WELL

GROUNDWATER PCLZ ZONES

KBR — CLINTON DRIVE FACILITY
4100 CLINTON DRIVE
HOUSTON, TEXAS





Soil Impacts

- Metals

- Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, zinc

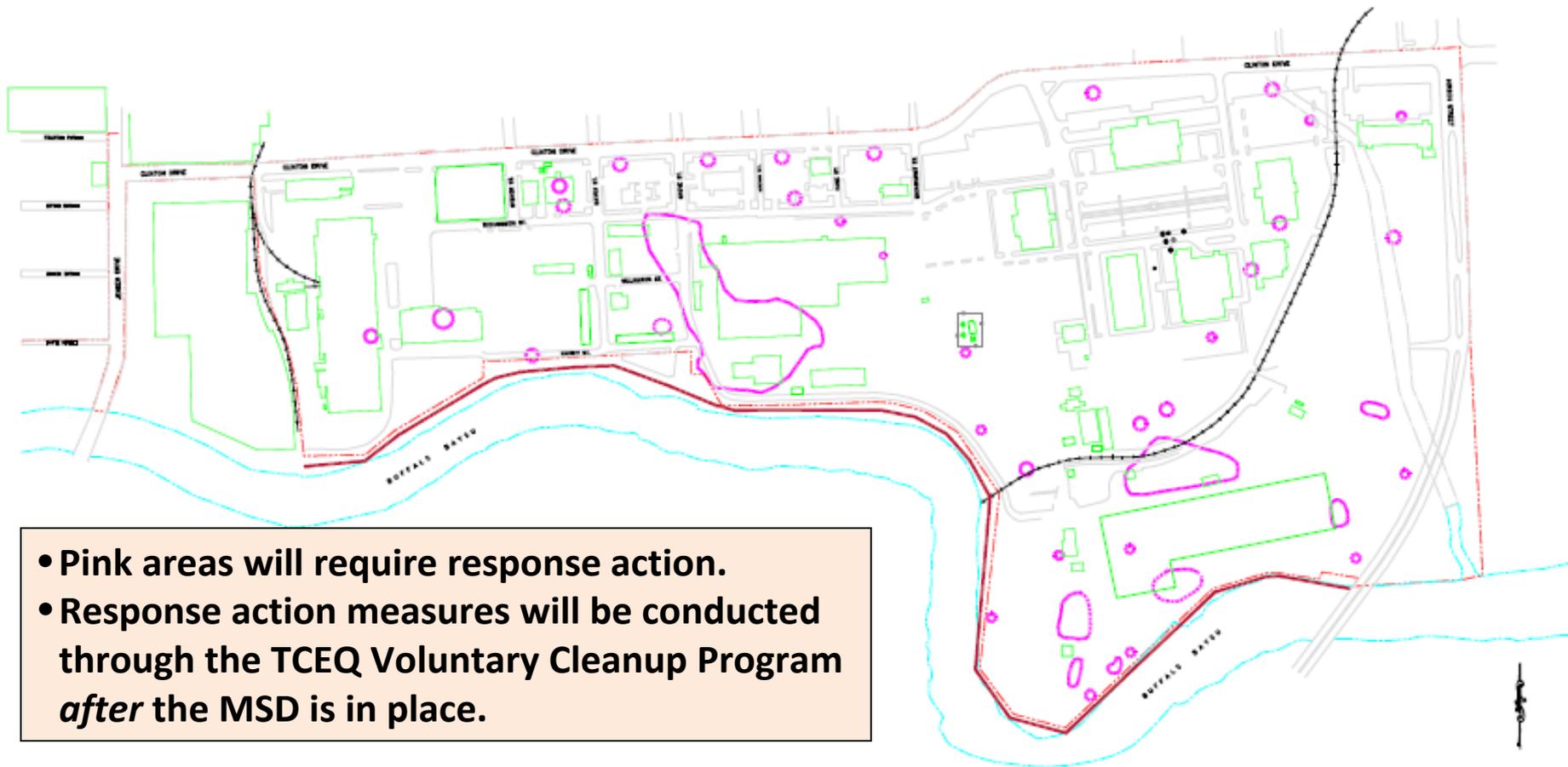
- Petroleum

- Benzene, chlorobenzene, ethylbenzene, total petroleum hydrocarbons (TPH)

- Solvents

- Cis-1,2-dichloroethylene (cis-1,2-DCE), cis-1,3-dichloropropane, tetrachloroethene (PCE), trichloroethene (TCE), 1,2,3-trichloropropane, benzo(a)pyrene, benzidine, 2,4,-dinitrophenol, bis(2-chloroethoxy)methane, 2,6-dinitrophenol, pentachlorophenol

Areas of Soil Requiring Response Action



- Pink areas will require response action.
- Response action measures will be conducted through the TCEQ Voluntary Cleanup Program *after* the MSD is in place.

LEGEND

--- DESIGNATED PROPERTY BOUNDARY

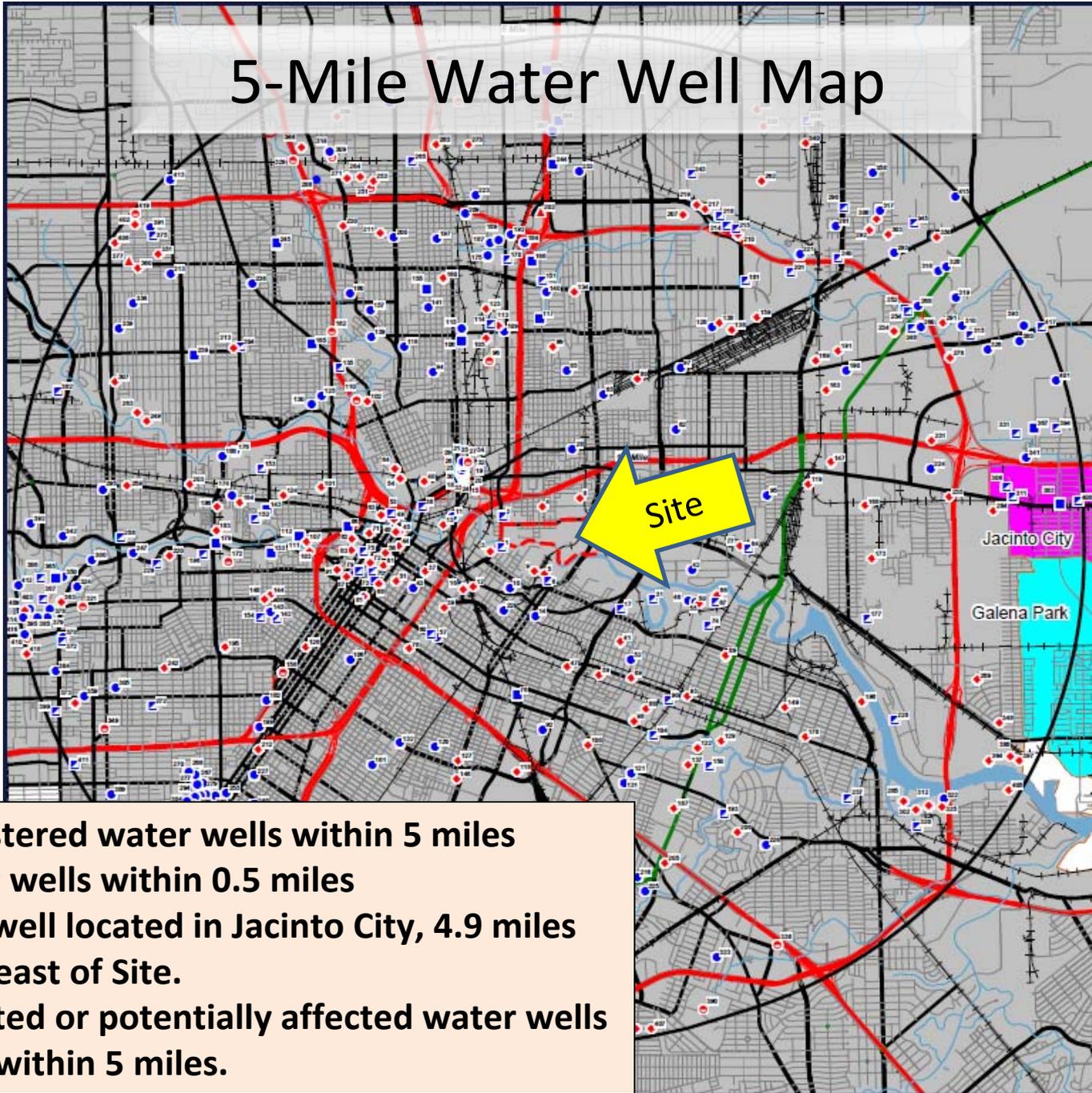
○ Impacted Soil Areas Requiring Response Action

IMPACTED SOIL AREAS
REQUIRING RESPONSE ACTION

KBR - CLINTON DRIVE FACILITY
4100 CLINTON DRIVE
HOUSTON, TEXAS



5-Mile Water Well Map



Drinking Water Sources

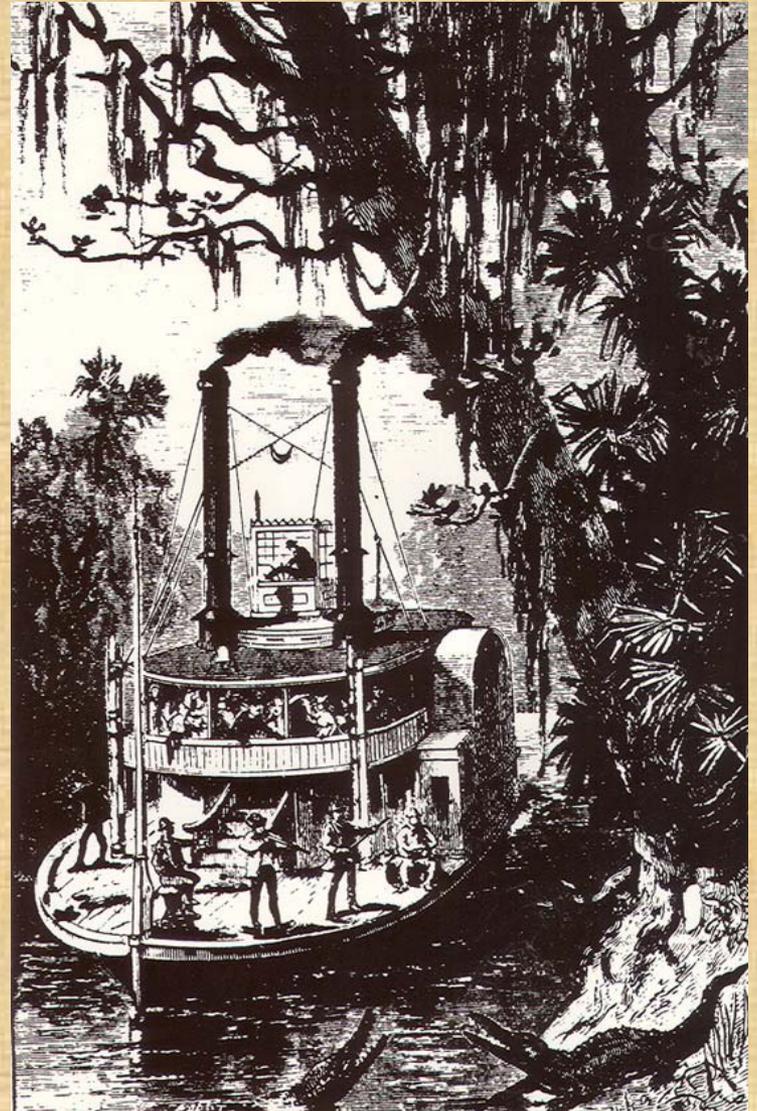
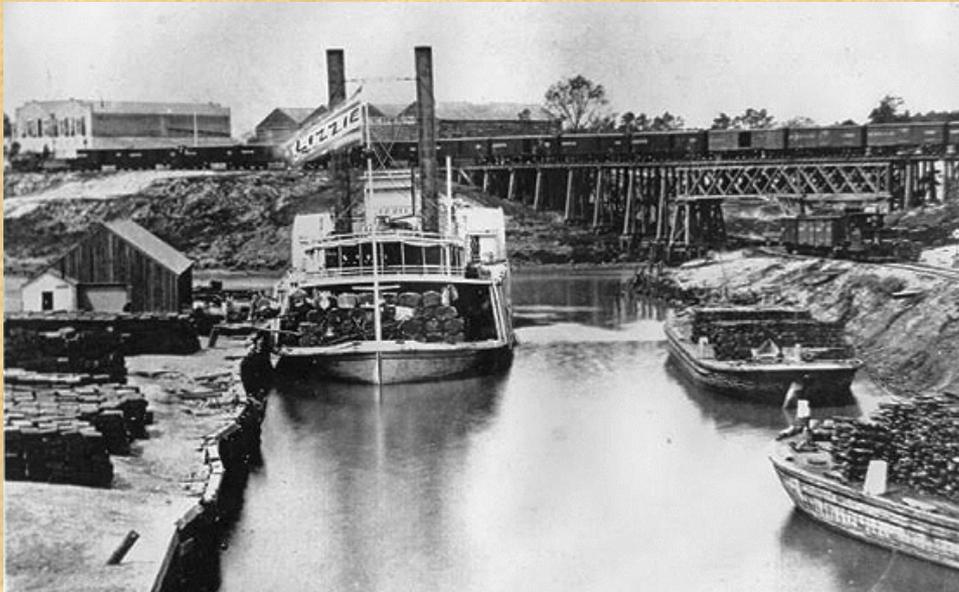


The KBR Clinton Drive facility and surrounding 5-mile area are serviced by the City of Houston Surface Water Main System.

Summary

- No active potential source areas.
- Old, small, and shrinking groundwater plumes.
- No contaminated groundwater migrating into Buffalo Bayou from Site.
- No potential vapor impacts have been identified.
- Response actions will be required for some impacted soil areas after MSD is established.
- Site is in the Voluntary Cleanup Program moving towards closure.
- No affected or potentially affected water wells.
- Water for the Site and surrounding area provided by City of Houston.

Buffalo Bayou – The Early Years



Buffalo Bayou Today

