The following is an Adobe Acrobat reproduction of the

May 15, 2008
Slide Show Presentation
for the
Jones Road Public Meeting

Text explaining the slides and graphics is presented here in outline form. References to points or locations on the slides and graphics were explained interactively by the presenter to the audience and could not be included in the outline

Scroll Down to View

Jones Road Groundwater Plume Superfund Site

Community Meeting

May 15, 2008

Quarterly Monitoring Update

Quarterly Monitoring Events

- May 2007
- August 2007
- November 2007
- February 2008

Quarterly Monitoring Update (cont.)

Quarterly Monitoring Update (cont.)

- In May 2007, 181 water wells and 19 monitor wells were sampled
- Vinyl chloride concentrations exceeded the MCL of 2.0 ppb in two deep monitor wells: MW-12 and MW-18

Quarterly Monitoring Update (cont.)

- In August 2007, 183 water wells and 18 monitor wells were sampled
- Vinyl Chloride concentrations exceeded the MCL of 2.0 ppb in three deep monitor wells: MW-12 , MW-16 and MW-18

Quarterly Monitoring Update (cont.)

- In November 2007, 181 water wells and 19 monitor wells were sampled
- Vinyl Chloride concentrations exceeded the MCL of 2.0 ppb in four deep monitor wells: MW-11R, MW-12, MW-16, and MW-18

Quarterly Monitoring Update (cont.)

- In February 2008, 176 water wells and 19 monitor wells were sampled
- Vinyl Chloride concentrations did not exceed the MCL of 2.0 ppb in any of the deep monitor wells
- May 2008 groundwater monitoring event is now being completed

Project Update

Marilyn Czimer Long, P.G.
Subhash Pal, P.E.

TCEQ Notice to the Community

April 11, 2008

TCEQ Notice to the Community (cont.)

Changes after completion of the water line

- Groundwater Monitoring
- Filtration Systems & System Maintenance
- Water Line Connections
- Feasibility Studies/Pilot Studies

TCEQ Notice to the Community (cont.)

Groundwater Monitoring (Current)

- Sampling frequency is quarterly
- Number of wells sampled (179-185)
- Property owners receive TCEQ letter & analytical data

TCEQ Notice to the Community (cont.)

Groundwater Monitoring (Post-Water Line)

- Sampling program will start when water line is completed and operational
- Sampling program is currently under development
- Sampling frequency (may be flexible/contingent on data)
- Number of wells will be reduced
- Sampling data will be available on Jones Road web page

TCEQ Notice to the Community (cont.)

Filtration System & Filtration System Service

- Filtration systems have been an interim measure to protect human health
- TCEQ & EPA have installed and maintained the filtration systems
- After the water line is operational the continued need for the filtration systems will become the responsibility of the well owner

TCEQ Notice to the Community (cont.)

Filtration System & Filtration System Service (cont.)

- The TCEQ will discontinue providing filtration system service for those well owners who have chosen to NOT participate in the government-funded water line project
- TCEQ will coordinate with each affected well owner who has chosen to NOT participate in water line project and is currently on a filtration system

Alternative Water Connection Agreements

Statistics

- The following numbers are subject to change due to property transactions (±10%)
- Total number of tracts signed up = 155
- Total number of residential properties = 115
- Total number of commercial properties = 35
- Total number of zero lots = 5
- Total number of filtration systems = 35
- Number of well owners w/filtration systems = 26

Water Line Connections

- The EPA contractor is currently coordinating with each property/well owner regarding the individual water connection to the residence or commercial structure

What if I am not participating in the government-funded water line project?

Option 1 – Continue to use your water well

- Sampling and analysis of groundwater will be the option of the well owner
- Installation and/or maintenance of any filtration system will be the option of the well owner
- Well owner will be responsible for all costs

What if I am not participating in the government-funded water line project? (cont.)

Option 2 – Contact the water service provider

- Well owner will be responsible for arrangements with water service provider
- Well owner will be responsible for all water line connection costs

Conceptual Site Model (CSM)

- May be a graphic representation of the subsurface conditions
- Is subject to revision as data becomes available
- Is integral to groundwater modeling, pilot studies and evaluation of potential remedies

CSM – Source Area

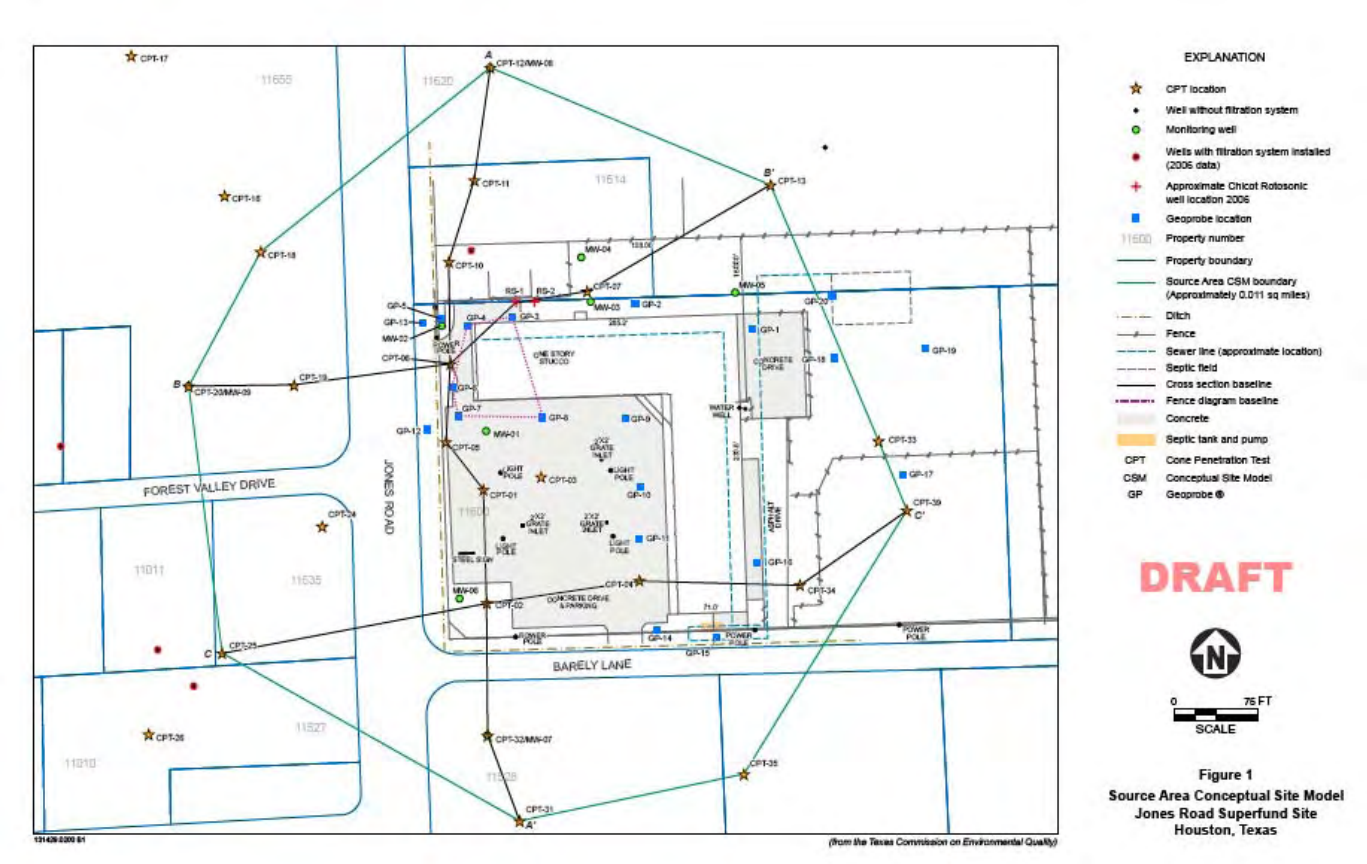
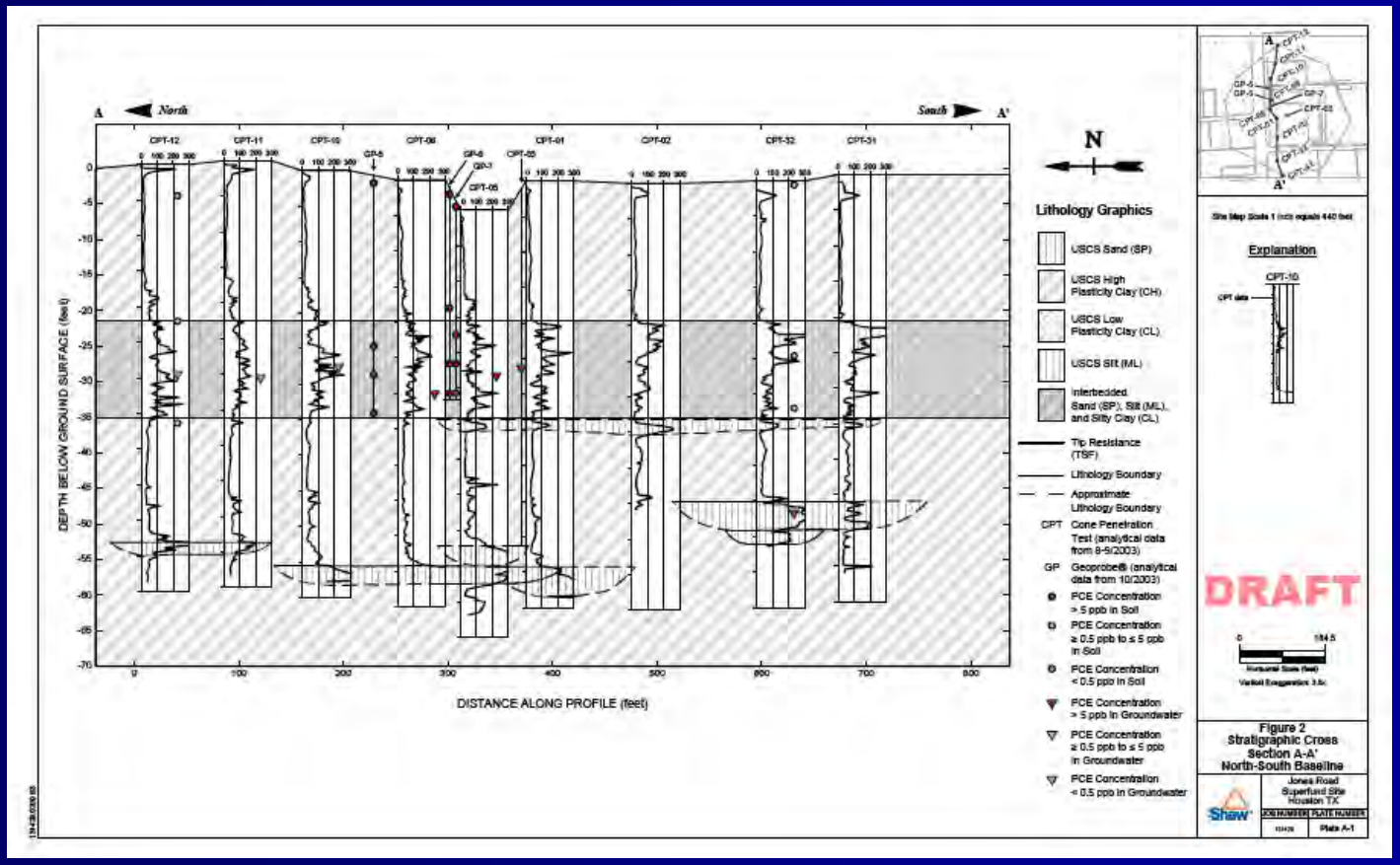


Figure 1
Source Area Conceptual Site Model
Jones Road Superfund Site
Houston, Texas

CSM – Source Area



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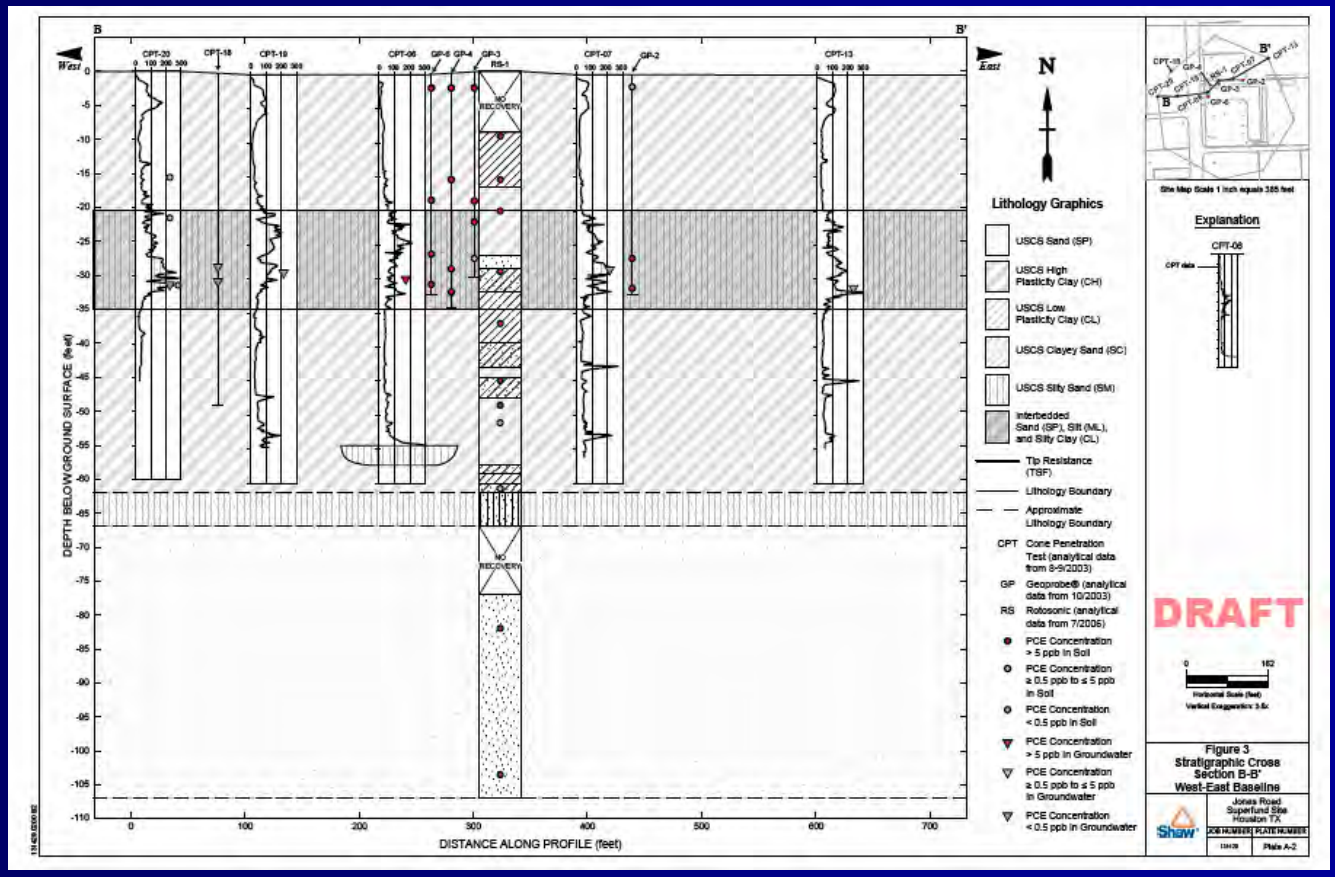

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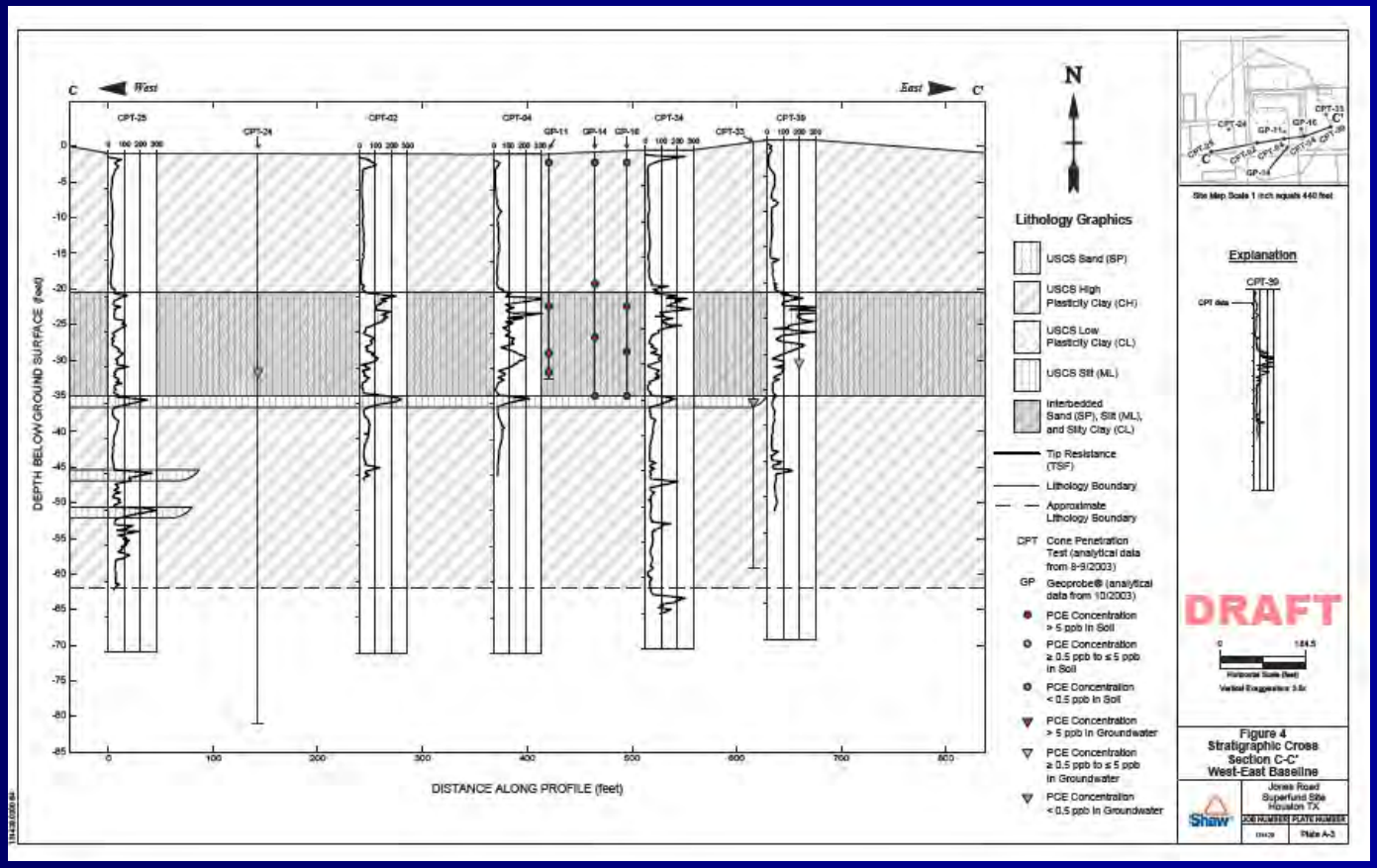


Groundwater Model

- Based on available field data, CSM & literature/published data
- Selection of model is based on site-specific needs
- Identify current and future contaminant transport
- Model scenarios:
  - 0% water line participation
  - 50% water line participation
  - 100% water line participation
- Support Feasibility Study
- Identify & evaluate potential remedies

Bench Scale Treatability Study

Purpose

- Conduct laboratory tests to evaluate potential remedies for PCE contaminated soil and groundwater
- Soil and ground water samples were collected from the source area

Bench Scale Treatability Study (cont.)

Two remedies were evaluated

- Insitu Chemical Oxidation
- Bioremediation

Insitu Chemical Oxidation

- Potassium Permanganate
- Activated Sodium Persulfate

Insitu Chemical Oxidation (cont.)

Laboratory Test Procedures

- 100 g soil @ 15°C
- 150 mL groundwater @ 15° C

Insitu Chemical Oxidation (cont.)

Laboratory Results

- The permanganate treated samples had no detectable VOC's after 1 day
- Permanganate consumption was low with 80% of the originally dosed permanganate remained after 14 days of treatment
- Most of the oxidation occurred in first 24 hours for permanganate
- The persulfate treated samples had 96.9% PCE reduction after 21 days

Insitu Chemical Oxidation (cont.)

Insitu Chemical Oxidation Results

- Permanganate oxidation is very effective to treat PCE and daughter products with 100% reduction in 24 hours in the laboratory

Bioremediation

- Biostimulation
- Bioaugmantation

Bioremediation (cont.)

Laboratory Test Procedures

- 30 g soil @ 15°C
- 143 mL groundwater @ 15° C

Bioremediation (cont.)

- **Biostimulation – Nutrients Added**

Laboratory Test Procedure

- Lactate and edible oil
- Yeast extract
- Analyses were performed at 1,5,7,9, and 13 weeks of incubation

Bioremediation (cont.)

Biostimulation Results (Laboratory)

- Successful using lactate in treating PCE and daughter products
- Unsuccessful using edible oil
- Dechlorination stalled at DCE

Bioremediation (cont.)

- **Bioaugmantation – Nutrients Added**

Laboratory Test Procedure

- Edible oil
- Yeast extract
- Bacterial inoculation
- Analyses were performed at 1,5,7,9, and 13 weeks of incubation

Bioremediation (cont.)

Bioaugmantation Results (Laboratory)

- PCE & TCE reduced to ND in one week using lactate
- DCE & VC reduced to ND within 5 weeks using lactate
- Dechlorination stalled at DCE using edible oil

Pilot Scale Study

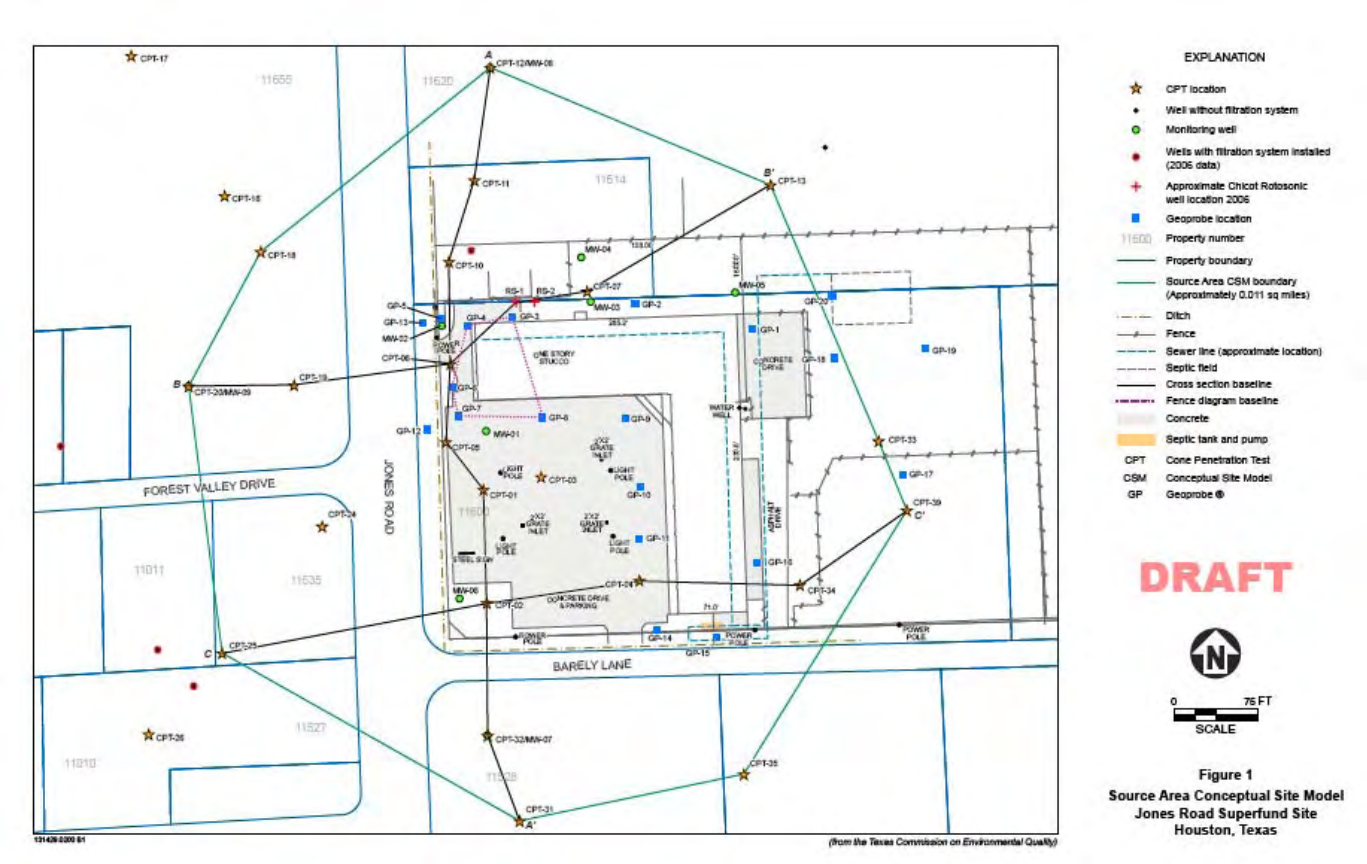
- Insitu chemical oxidation with permanganate, and
- Bioaugmentation with lactate

Purpose of the Pilot Study

Field Study

- Gather site-specific data for full scale design implementation
- Inject chemicals (1-2% solution) near MW-1 in the source area
- Monitor the effect of chemicals at 1, 2, and 4 weeks after injection
- Monitor the effect of chemicals six months after injection

CSM Source Area



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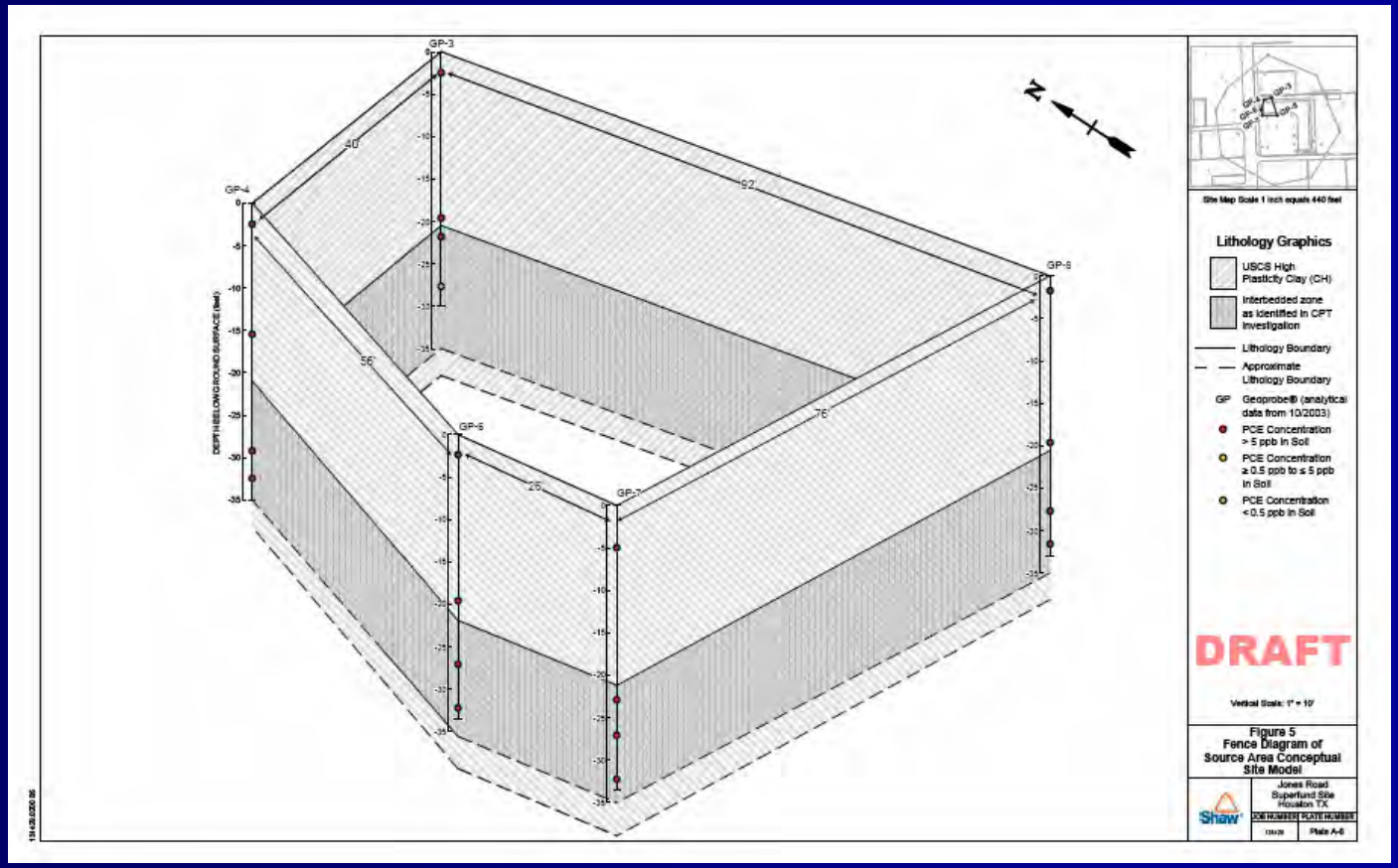

Jones Road Groundwater Plume Superfund Site

Web Site

http://www.tceq.state.tx.us/remediation/superfund/jonesroad/index.html

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Thank You