Norwalk Tank Farm Update

Presented to the Norwalk Tank Farm Restoration Advisory Board

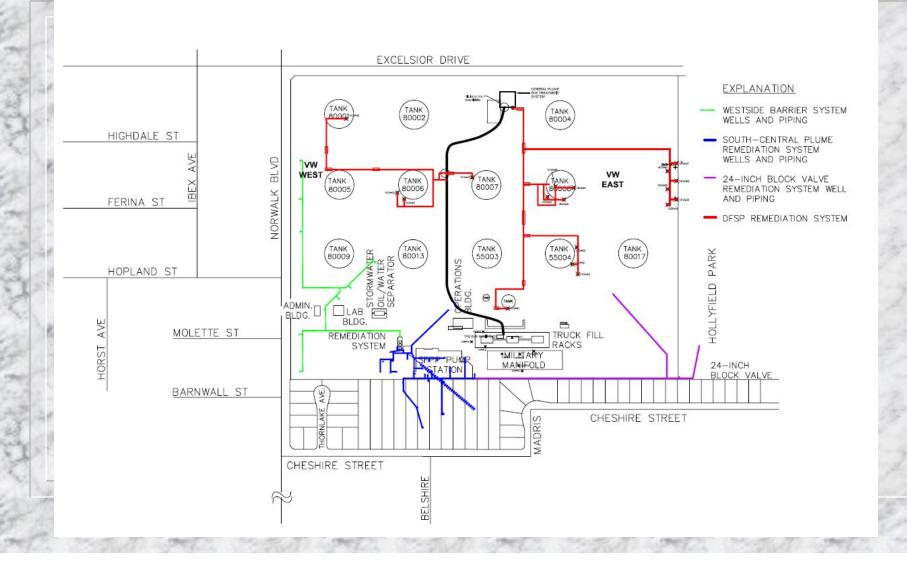
January 22, 2009

Presentation Overview

Topics to be Covered

- Remediation Operations Update
- Additional Assessment Update
- Conceptual Site Model Development

Map of Remediation Systems



Soil Vapor Extraction System

• 24 on-site and 6 off-site vapor extraction wells in the South-Central Plume area.

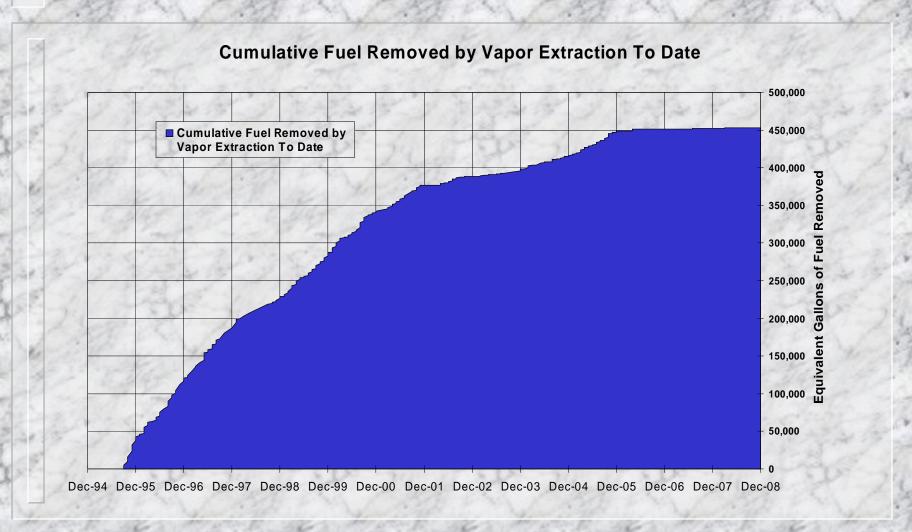
2 vapor extraction wells in the Southeastern
 24-Inch Block Valve area.

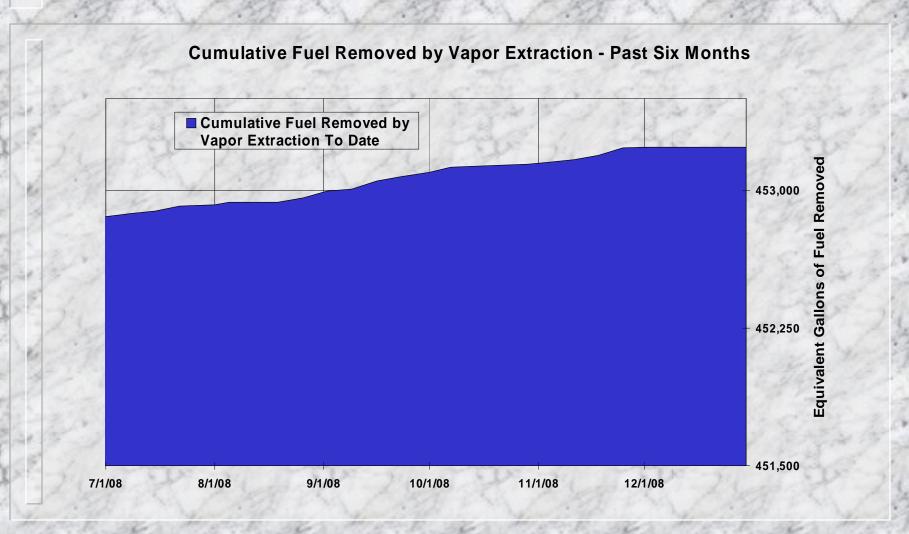
- Approximately 160 gallons equivalent of fuel removed from soil and destroyed by catalytic oxidation during fourth quarter 2008.
- Approximately 453,200 gallons equivalent of fuel removed from soil and destroyed by catalytic and thermal oxidation since September 1995.
- Approximately 64,200 hours of operation since September 1995.

- The SVE system operated continuously during fourth quarter 2008 with the following exceptions:
 - Second semi-annual 2008 groundwater monitoring event (approximately 14 days).
 - SVE rebound testing starting on November 26, 2008.
- Percent operation for fourth quarter 2008: 44%
- Percent operation excluding planned shutdown period for groundwater monitoring and rebound testing: 100%

Soil Vapor Extraction Rebound Testing

- The SVE system was shut down on November 26, 2008 based on low VOC concentrations in vapor samples from the system influent and several SVE wells.
- During the rebound test, concentrations of VOCs, oxygen, and carbon dioxide were monitored at the SVE wells.
- The SVE system was restarted on January 20, 2009 based on VOC concentration rebounds observed in several SVE wells.
- Additional SVE rebound tests will be performed when VOC concentrations decrease and remain low.





Groundwater/Product Extraction System

- 18 total fluids (product and groundwater) extraction wells and 2 groundwater extraction wells in the South-Central Plume area
- 2 total fluids (product and groundwater) extraction wells in the Southeastern 24-Inch Block Valve area
- Operation of the West Side Barrier system was discontinued in August 2008.

Groundwater/Product Extraction System Operations Summary

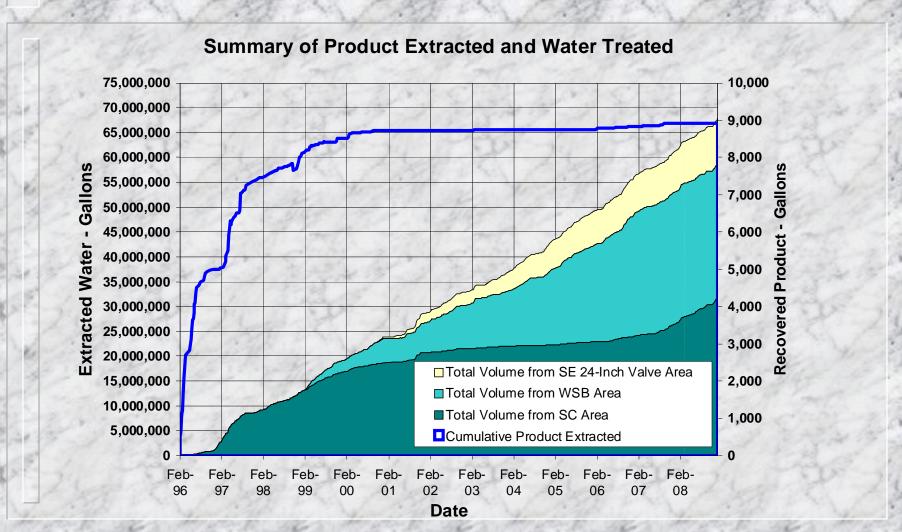
- •Total groundwater extracted during fourth quarter 2008:
 - South-Central Plume area: 1,720,000 gallons
 - Southeastern 24-Inch Valve area: 64,000 gallons
 - West Side Barrier area: 0 gallons
- •Total groundwater extracted since September 1995:
 - South-Central Plume area: 32.0 million gallons
 - Southeastern 24-Inch Valve area: 8.9 million gallons
 - West Side Barrier area: 26.9 million gallons
 - Total groundwater extracted: 67.8 million gallons
 - 8,917 gallons free product removed*

^{*} The total volume of free product removed is estimated based on measurements of free product accumulation in the product holding tank and measurements of free product removed manually from individual wells. This estimate does not account for free product that is removed via total fluids extraction and becomes emulsified in the relatively larger volume of groundwater extracted.

Groundwater/Product Extraction System Operations Summary

- The groundwater/product extraction system operated continuously during fourth quarter 2008 with the following exceptions:
 - Second semi-annual 2008 groundwater monitoring event (approximately 14 days).
 - Liquid-phase granular activated carbon changeout (approximately 3 days)
 - Power interruption (approximately 6 days)
 - Treatment system maintenance (approximately 10 days)
- Percent operation for fourth quarter 2008: 61%
- Percent operation excluding planned shutdown period for groundwater monitoring: 75%

Groundwater/Product Extraction System Operations Summary



Planned Remediation Activities

- Continue TFE and GWE in the South-Central and Southeastern areas.
- Continue to monitor concentrations of dissolved
 1,2-DCA and MTBE in western area.
- Continue routine system inspections.
- Continue data collection for monitoring and evaluation of remediation systems.
- Continue adjustments to remediation wells to optimize remediation.
- Continue SVE rebound tests as appropriate.

Additional Assessment Update

- In a letter dated November 26, 2008, the RWQCB commented on the report titled "Additional Off-Site Assessment Report, Off-Site 24-Inch Block Valve Area" dated August 28, 2008.
- The RWQCB questioned the presence or continuity of an aquitard in the vicinity of the block valve and requested a work plan for further vertical delineation of contaminants in that area.
- The work plan will be submitted to the RWQCB by January 26, 2009.

Conceptual Site Model Development

- In a letter dated November 26, 2008, the RWQCB requested KMEP to work jointly with DESC to develop a conceptual site model (CSM).
- Development of the CSM is underway and includes the following tasks:
 - Scoping and Database Review and Update
 - Development of Conceptual Lithologic Model
 - Development of Contaminant Distribution Models
 - Preparation of CSM Report