Norwalk Tank Farm Update

Presented to the Norwalk Tank Farm Restoration Advisory Board

April 24, 2008

Presentation Overview

Topics to be Covered

- Review of Second Addendum to RAP (Second Addendum) Implementation
- Remediation Operations Update
- First Quarter 2008 Sentry Monitoring Event Update
- Additional Assessments (Southeastern 24-Inch Block Valve Area)

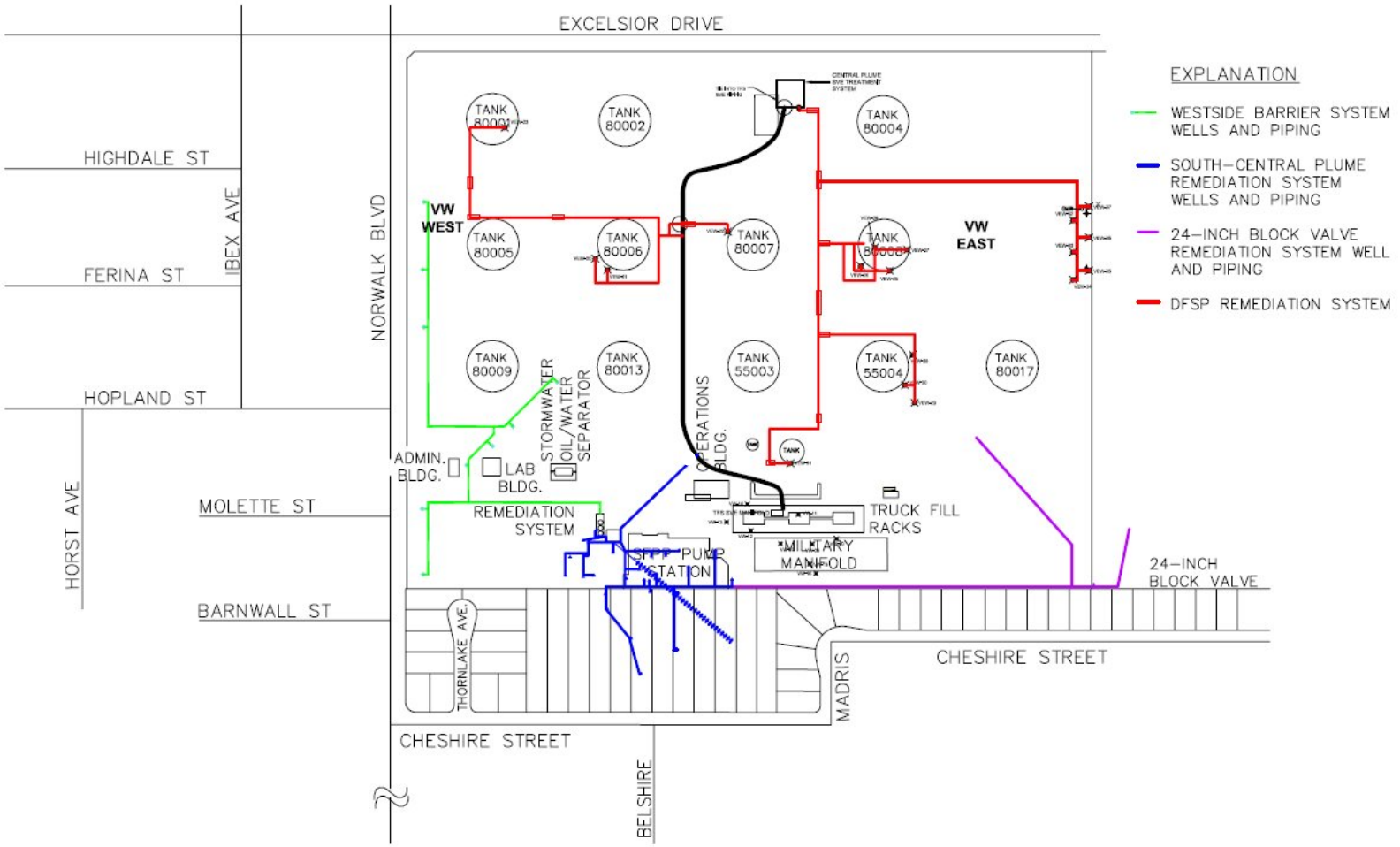
Review of Second Addendum Implementation

- April 2007 – Received approval from RWQCB to implement the Second Addendum
- May 2007 – Performed dual-phase extraction test
- May-July 2007 – Incorporated four existing soil vapor extraction (SVE) wells into total fluids extraction (TFE) system
- June 2007 – Installed seven new remediation wells
- June-July 2007 – Connected new remediation wells to SVE system
- August-December 2007 – Performed upgrades to groundwater treatment system to increase treatment capacity

Review of Second Addendum Implementation

- December 2007 – Incorporated seven new SVE wells and one existing SVE well into TFE system
- January 2008 – Completed startup of expanded remediation system
- April 2008 – Replaced original air compressor (installed in 1995) with new air compressor. Currently two air compressors operating south-central wells.

Map of Remediation Systems



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
- 3 groundwater extraction wells in the West Side Barrier area

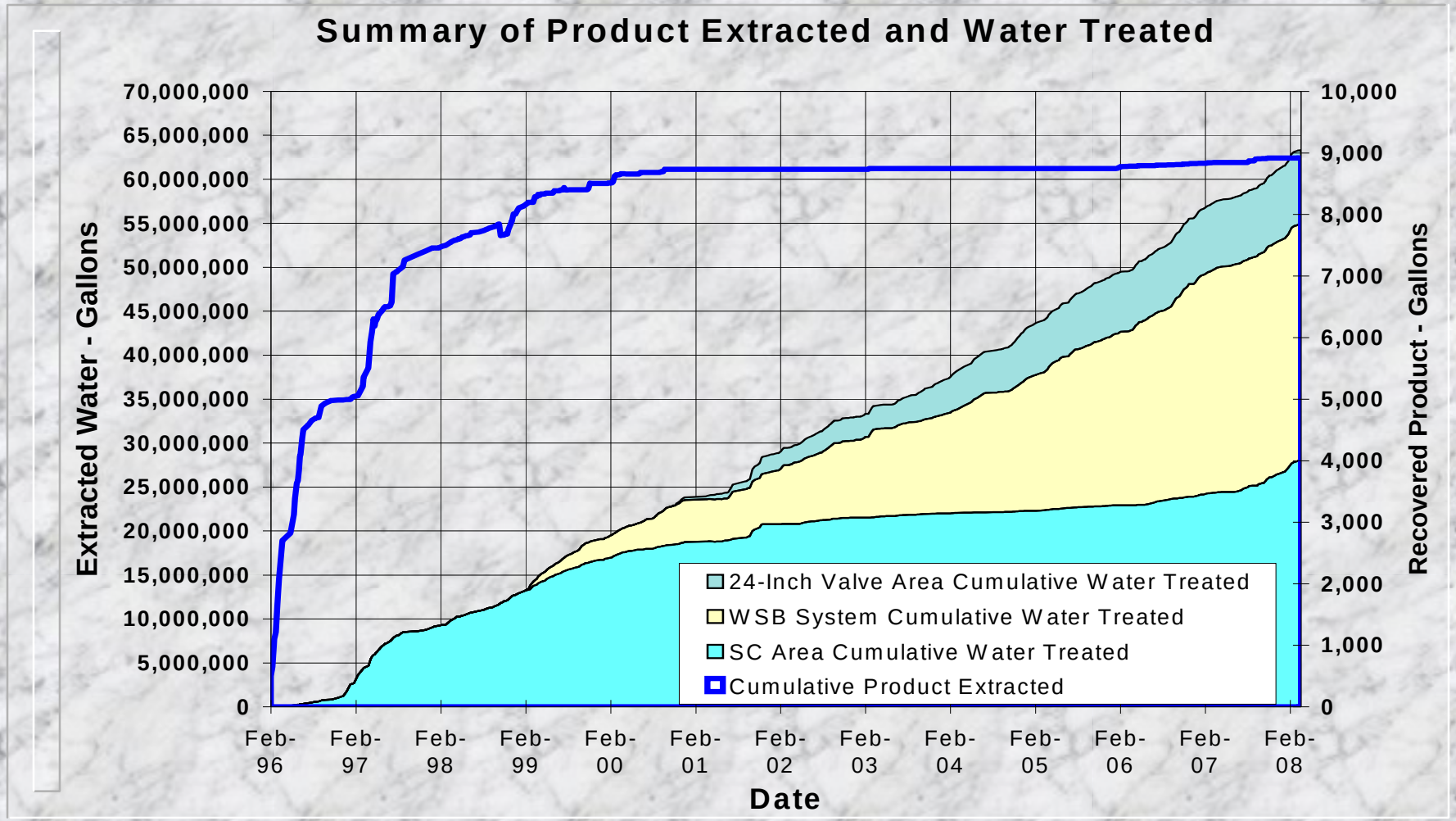
Groundwater/Product Extraction System Operations Summary

- Total groundwater extracted first quarter 2008:
  - South-Central Plume area: 1,404,000 gallons
  - Southeastern 24-Inch Valve area: 267,000 gallons
  - West Side Barrier area: 360,000 gallons
- Total groundwater extracted since September 1995:
  - South-Central Plume area: 28 million gallons
  - Southeastern 24-Inch Valve area: 8.5 million gallons
  - West Side Barrier area: 26.9 million gallons
  - Total groundwater extracted: 63.3 million gallons
  - 8,917 gallons free product removed

Groundwater/Product Extraction System Operations Summary

- The groundwater/product extraction system operated continuously during first quarter 2008 with the following exceptions:
  - System shut down for Southern California Edison (SCE) activities (approximately 13 days)
  - System shut down for system maintenance (approximately 13 days for carbon changeout, repair of transfer pump, reconfiguration of effluent water storage tanks)
  - System shut down pending further evaluation of a suspect result indicating the reported presence of benzene in a sample of treated groundwater (approximately 2 days)
- Percent operation: 65%
  - (potentially 83% without SCE-related shutdowns)

Groundwater/Product Extraction System Operations Summary



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.

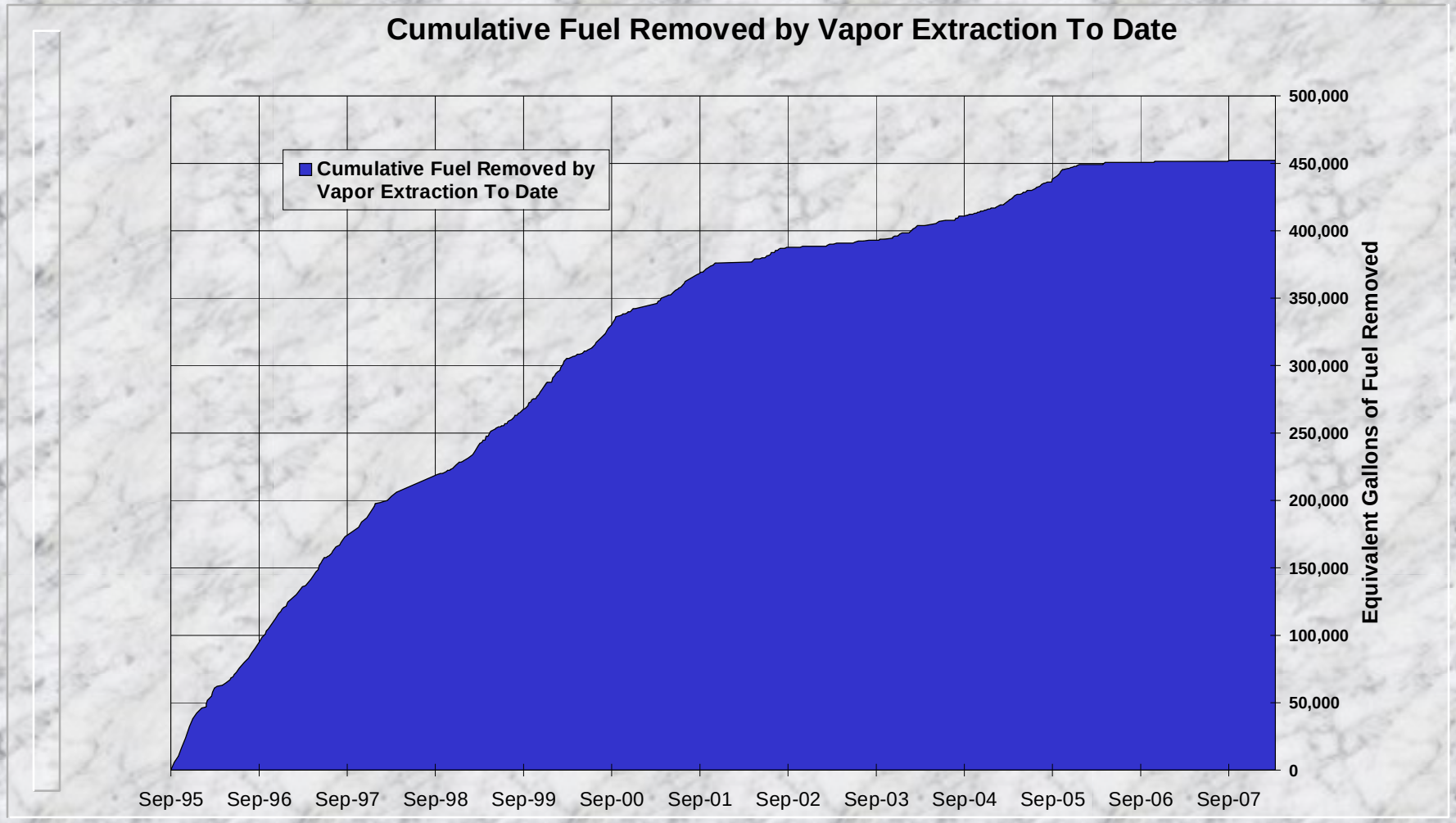
Soil Vapor Extraction System Operations Summary

- Approximately 266 gallons equivalent of fuel removed from soil and destroyed by catalytic oxidation during first quarter 2008.
- Approximately 452,600 gallons equivalent of fuel removed from soil and destroyed by catalytic and thermal oxidation since September 1995.
- Approximately 59,630 hours of operation since September 1995.

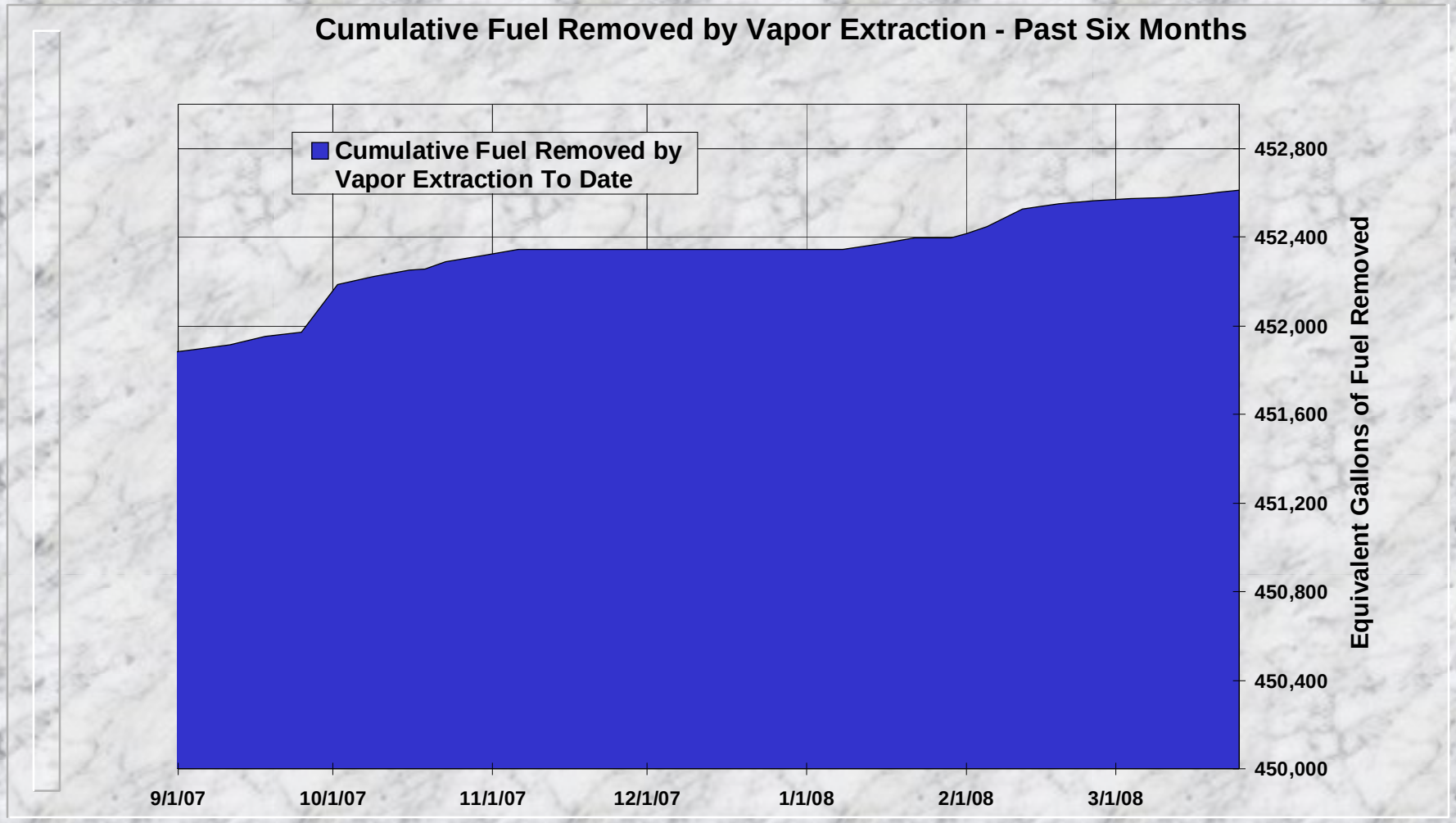
Soil Vapor Extraction System Operations Summary

- The SVE system operated continuously during first quarter 2008 with the following exceptions:
  - SVE system was shut down for troubleshooting and repair of the oxidizer's combustion system (approximately 14 days).
  - SVE system was shut down by Southern California Edison (SCE) for maintenance of SCE facilities (approximately 13 days).
- Percent operation: 62%
  - (potentially 83% without SCE-related shutdowns)

Soil Vapor Extraction System Operations Summary



Soil Vapor Extraction System Operations Summary



Planned Remediation Activities

- Continue weekly system inspections.
- Continue data collection for monitoring and evaluation of remediation systems.
- Continue adjustments to remediation wells to optimize remediation (i.e., turn pumps on/off, open/close wells to SVE, adjust pump intake depths).
- Evaluation of southeastern area.

First Quarter 2008
Sentry Monitoring Event

- 20 wells sampled, including 4 Exposition wells.
- Groundwater elevations generally decreased in the uppermost aquifer and increased in the Exposition aquifer beneath the site since November 2007.
- No VOCs detected in Exposition wells.
- In the southern off-site area, VOCs were not detected in wells GMW-O-1, GMW-O-2, GMW-O-3.
- In the southeastern block valve area, free product was not detected in GMW-36 where it was detected in November 2007. 1,2-Dichloroethane was not detected in wells sampled in the southeastern area.

First Quarter 2008
Sentry Monitoring Event

- Wells GMW-1, MW-SF-1, MW-SF-4, and PZ-10 near intermediate 24-inch block valve area were monitored voluntarily by KMEP during the sentry event. No free product was detected in the intermediate block valve area.
- In western off-site area, 1,2-DCA and MTBE detected in only one well (WCW-7) at concentrations below RBCA levels.

Additional Assessments
(Southeastern 24-Inch Block Valve Area)

- In a letter dated December 3, 2007, the RWQCB requested two work plans for the off-site 24-inch block valve area.
- The work plan for soil gas sampling and surface emission testing was submitted to the RWQCB on December 14, 2007.
- The work plan for additional subsurface assessment was submitted to the RWQCB on January 25, 2008.
- The RWQCB granted verbal approval of these work plans on April 22, 2008.

Additional Assessments
(Southeastern 24-Inch Block Valve Area)

- Objectives are to:
  - Further assess the presence of volatile fuel constituents in soil gas
  - Evaluate potential surface emissions of volatile fuel constituents if indicated by results of soil gas survey
  - Delineate the lateral extent of dissolved fuel constituents
  - Delineate the vertical extent of dissolved fuel constituents
  - Confirm the depth and presence of the Bellflower Aquitard