

# ***Norwalk Tank Farm Update***

*Presented to the Norwalk Tank Farm  
Restoration Advisory Board*

*October 25, 2007*

# Presentation Overview

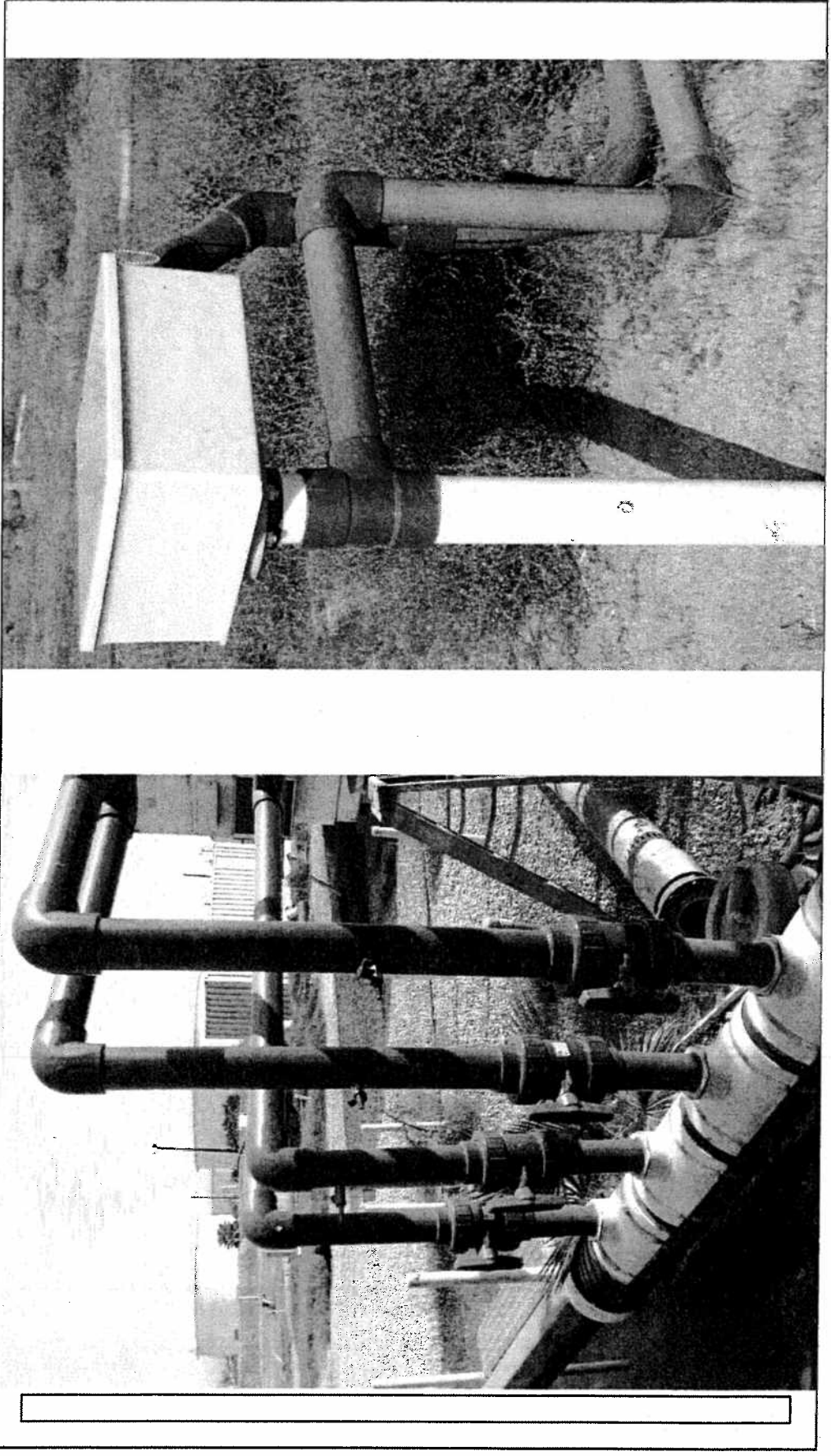
## Topics to be Covered

- Second Addendum to RAP Update
- Remediation Operations Update
- Sentry Groundwater Monitoring
- Conceptual Site Model Update

## Second Addendum to RAP Update

- Remediation System Enhancements
  - Connected seven new wells and MW-O-1 to the soil vapor and groundwater treatment systems to enhance product recovery.
  - Converted four existing soil vapor extraction (SVE) wells (GMW-9, MW-SF-2, MW-SF-3, and MW-SF-6) to dual-phase extraction (DPE) wells to lower the water table and promote product recovery.
  - These wells are located in the south-central area.

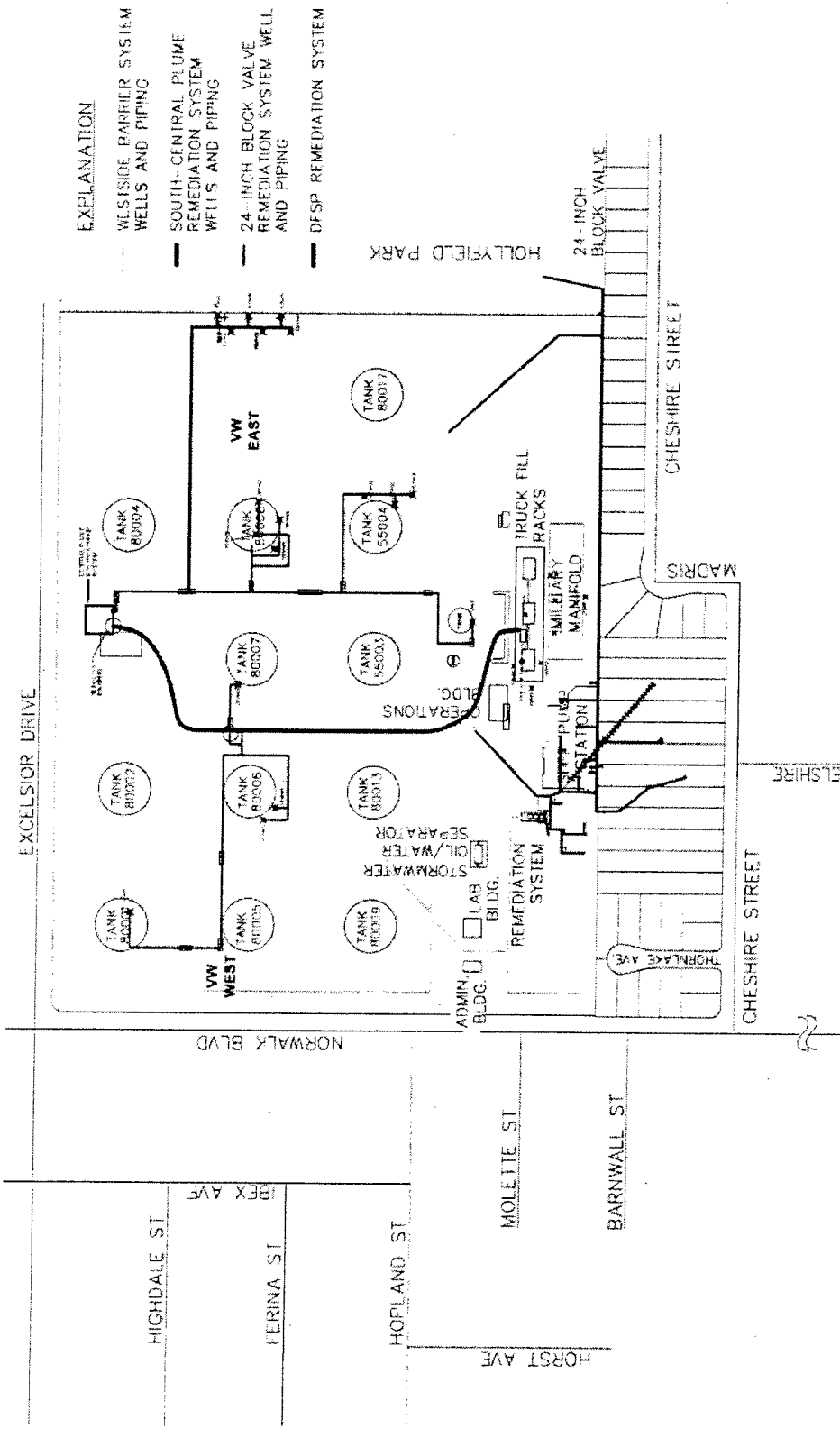
# Second Addendum to RAP Update



## Second Addendum to RAP Update

- **Other Remediation System Adjustments**
  - Groundwater extraction turned off in well GMW-SF-9 in southeastern area based on the reduction in the lateral extent of MTBE and to focus efforts on area of remaining product and MTBE.
  - Groundwater extraction turned off in three West Side Barrier wells based on reduced lateral extents of 1,2-DCA and MTBE and increased pumping in the south-central area.

# Map of Remediation Systems



## **Soil Vapor Extraction System**

- 24 onsite 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 514 gallons equivalent of fuel removed from soil and destroyed by catalytic oxidation since the July 2007 RAB meeting.
- Approximately 452,300 gallons equivalent of fuel removed from soil and destroyed by catalytic and thermal oxidation since September 1995.
- Approximately 57,814 hours of operation since September 1995.

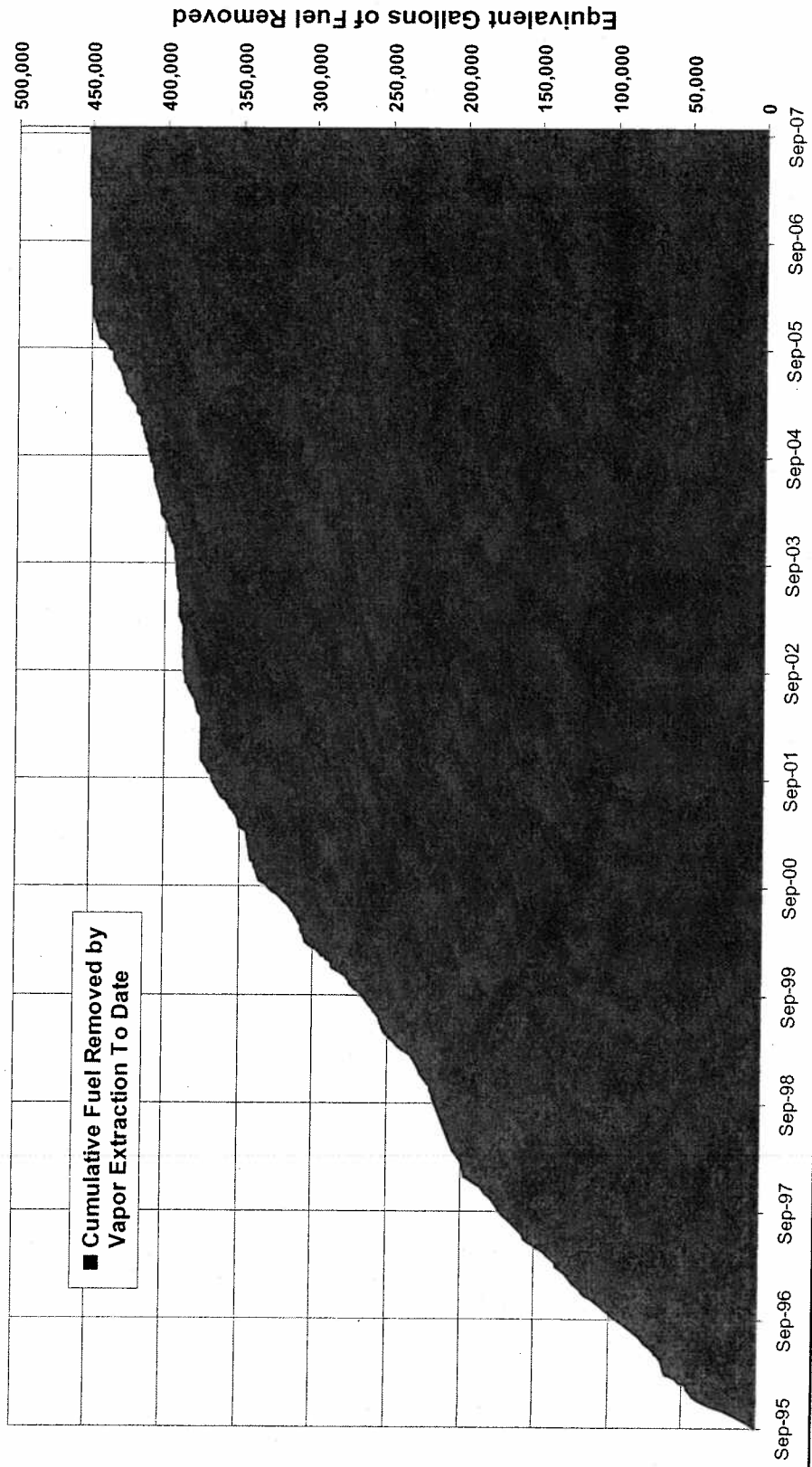


# Soil Vapor Extraction System Operations Summary

- The SVE system operated continuously since the July 2007 RAB meeting with the following exceptions:
  - construction period for connecting wells to existing manifolds
  - SVE system shutdown pending SCAQMD's confirmation of permit renewal
- Percent operation: 86%

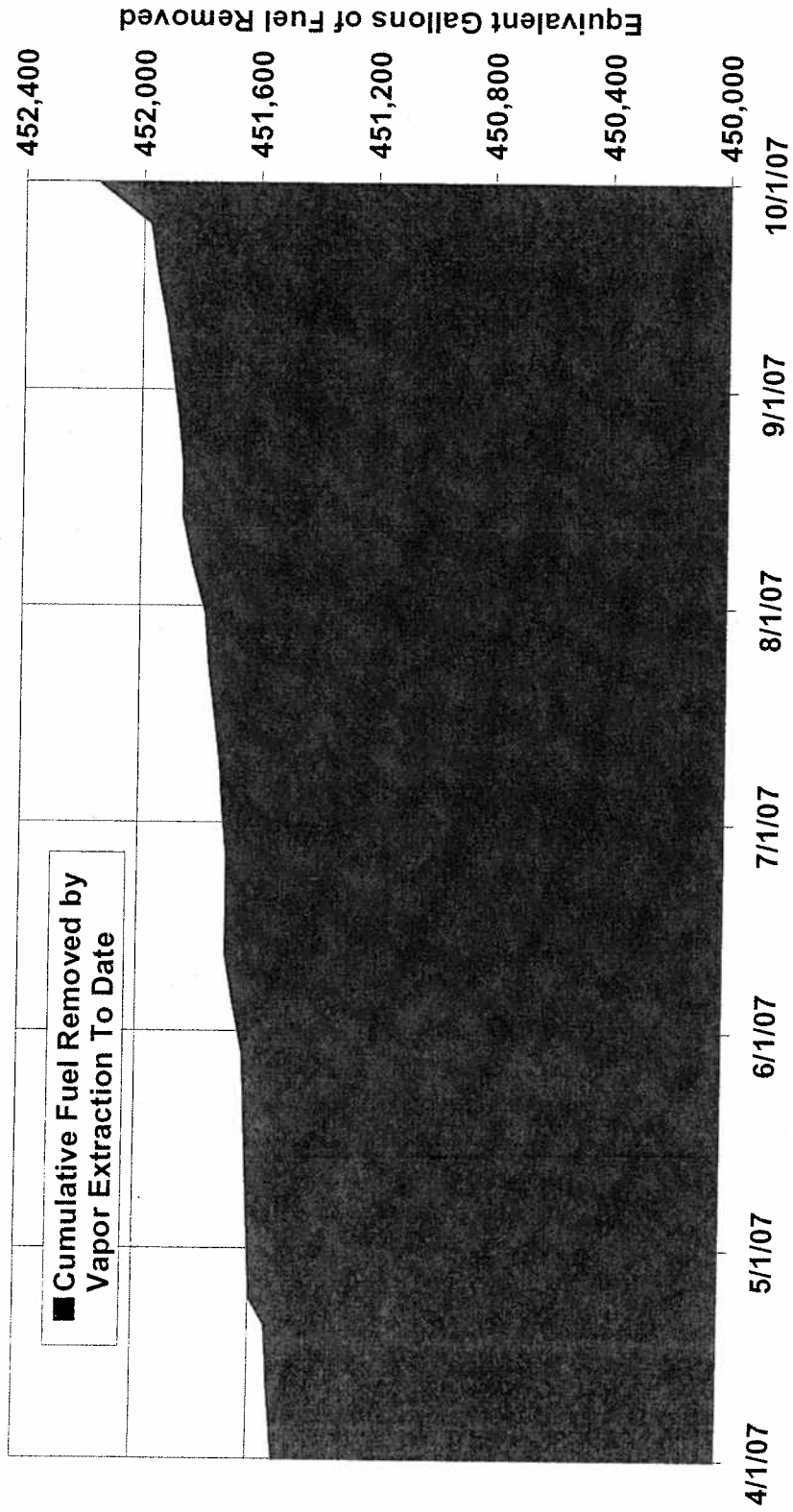
# Soil Vapor Extraction System Operations Summary

Cumulative Fuel Removed by Vapor Extraction To Date



# Soil Vapor Extraction System Operations Summary

Cumulative Fuel Removed by Vapor Extraction - Past Six Months



## Groundwater/Product Extraction System

- 5 groundwater extraction wells in the West Side Barrier area
- 10 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

# Groundwater/Product Extraction System Operations Summary

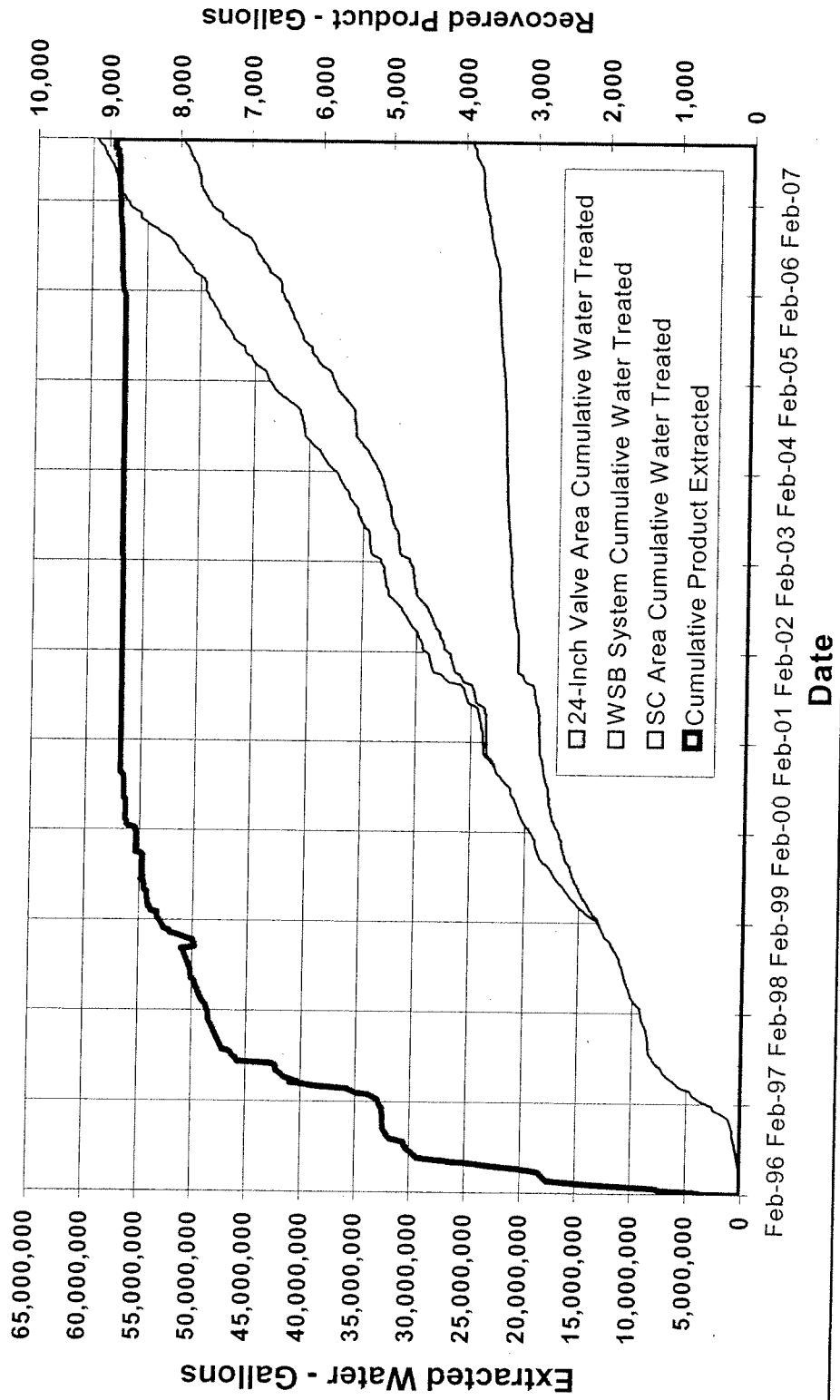
- Total groundwater extracted since the July 2007 RAB meeting:
  - South-Central Plume area: 817,000 gallons
  - Southeastern 24-Inch Valve area: 93,000 gallons
  - West Side Barrier area: 258,000 gallons
  - Manual product recovery: 61 gallons
- Total groundwater extracted since September 1995:
  - South-Central Plume area: 25.5 million gallons
  - Southeastern 24-Inch Valve area: 7.8 million gallons
  - West Side Barrier area: 26.3 million gallons
  - Total groundwater extracted: 59.6 million gallons
  - 8,909 gallons free product removed

# Groundwater/Product Extraction System Operations Summary

- The groundwater/product extraction system operated continuously since the July 2007 RAB meeting with the following exceptions:
  - construction period for connecting wells to existing manifolds
  - South-central and southeastern systems shutdown pending SCAQMD's confirmation of permit renewal
  - Southeastern remediation wells shut down to replace solenoid valve
  - West Side Barrier system shut down for maintenance
  - South-central and southeastern systems shut down for third quarter 2007 groundwater monitoring
  - South-central and southeastern systems shut down to replace level sensor and controller components
- Percent operation: 54%

# Groundwater/Product Extraction System Operations Summary

Summary of Product Extracted and Water Treated

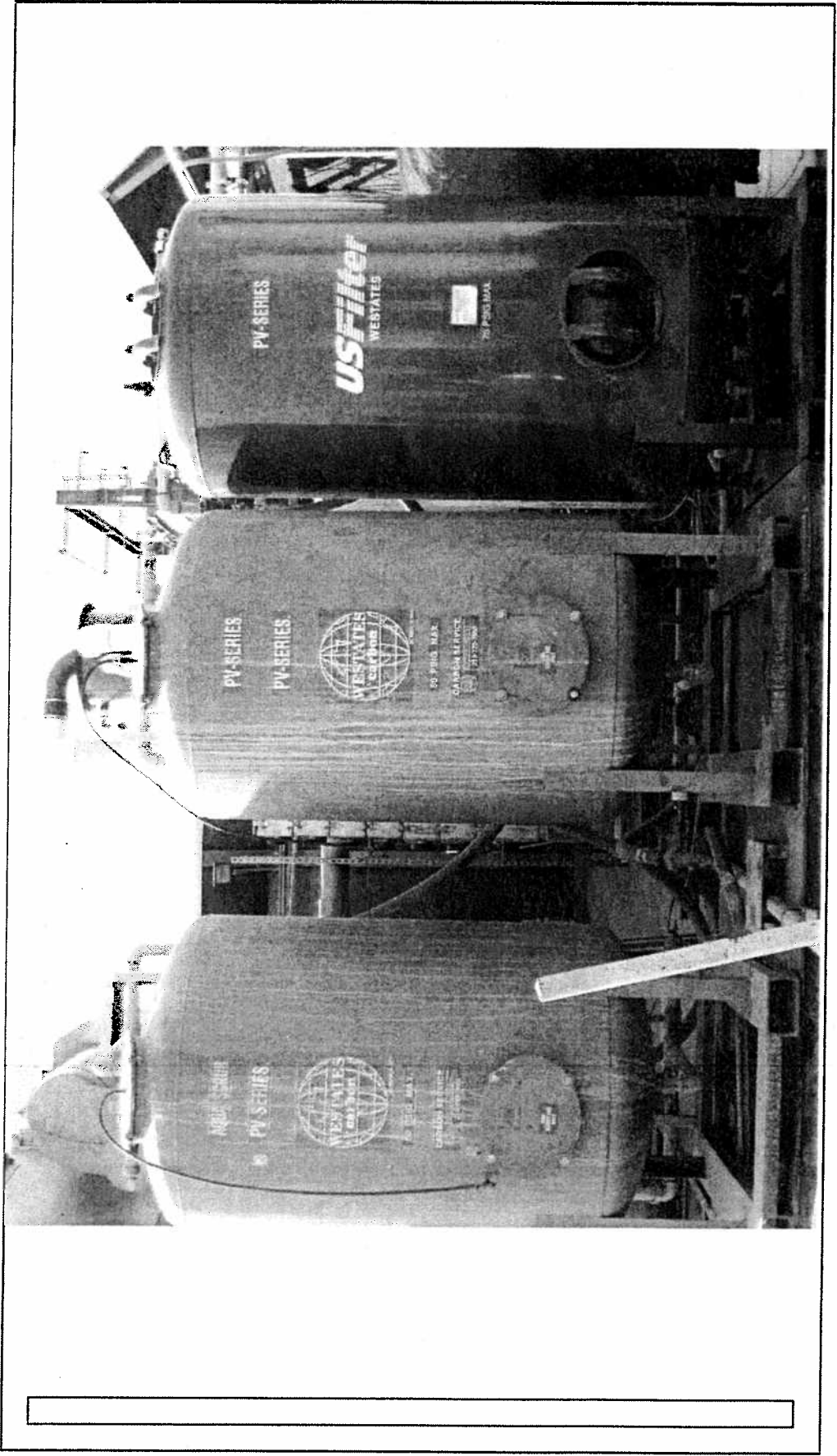


## Planned Activities

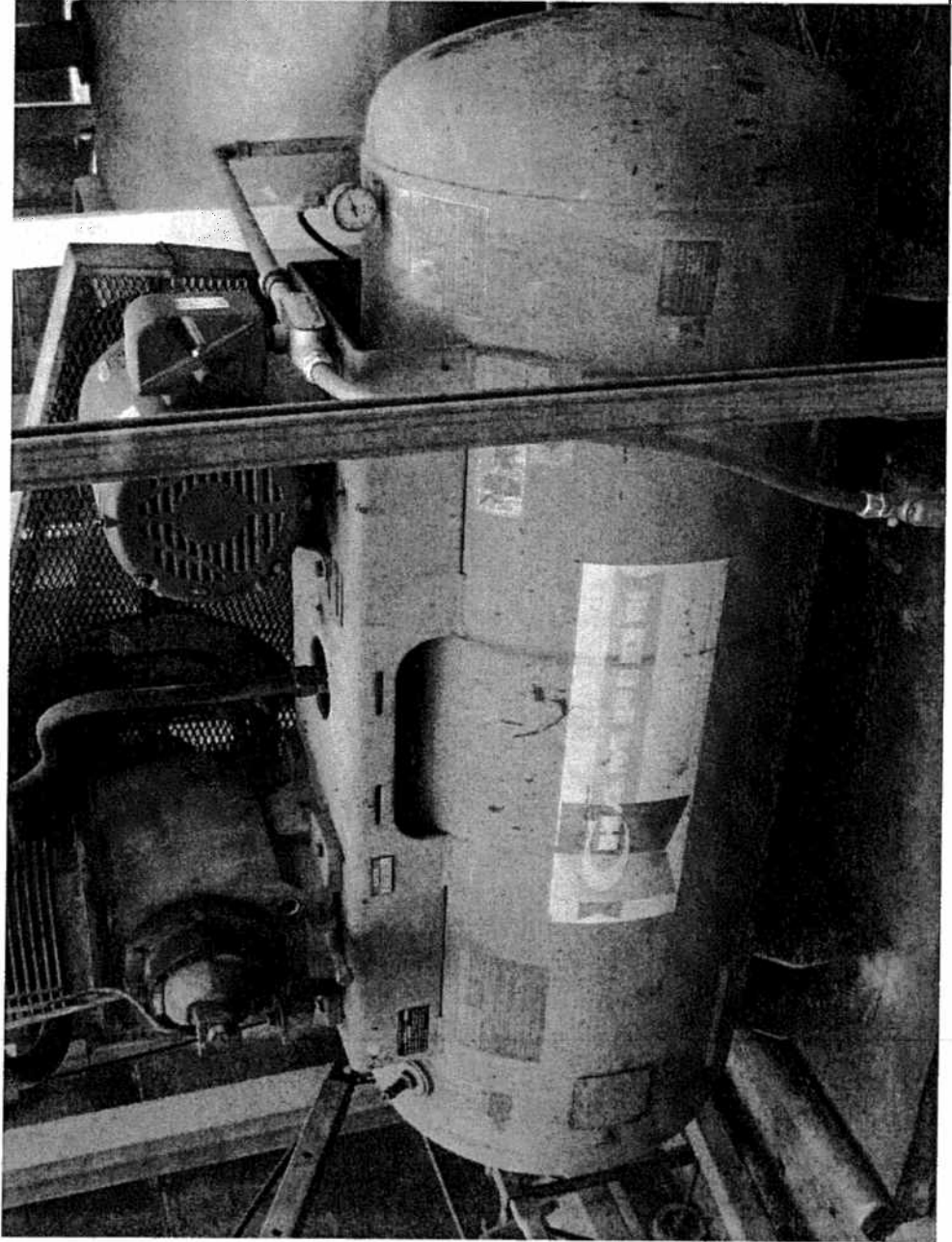
- Continue with weekly inspections
- Continue with data collection for monitoring and evaluation of remediation systems
- Convert eight SVE wells to DPE wells in south-central area
- Upgrades on existing treatment system:
  - Second transfer pump
  - Liquid-phase carbon vessels
  - Install a second air compressor



# Planned Activities



# Planned Activities



## Sentry Groundwater Monitoring

- 20 wells sampled, including 4 Exposition wells.
- Groundwater elevations generally increased since April 2007 in the uppermost aquifer beneath the site.
- No VOCs detected in Exposition wells.
- In the southern off-site area, benzene concentrations decreased or remained non-detected since May 2007.
- In the southeastern block valve area, free product was again not detected in GMW-36. MTBE concentrations have generally decreased in this area since May 2007.
- In western off-site area, 1,2-DCA and MTBE detected in one well (WCW-7) at concentrations below RBCA levels.

## Sentry Groundwater Monitoring

- MW-9 near the truck rack area was monitored at the RAB's request. This well contained free product during third quarter 2007 and was not sampled. Product has been measured historically in this well since 1999. Based on recent and historical laboratory analyses, the product observed in well MW-9 has been characterized as weathered fuel.
- In the intermediate block valve area, concentrations of TPH decreased since May 2007 and BTEX and MTBE were not detected. MW-SF-4 contained product and was not sampled. This well historically has contained product and the increase in apparent product thickness was likely a result of increased pumping in the south-central area.

## Conceptual Site Model

- Currently working with the RWQCB to develop a conceptual model showing generalized lithologic conditions and remediation progress.

