

Norwalk Tank Farm Update

*Presented to the Norwalk Tank Farm
Restoration Advisory Board*

October 23, 2003

Presentation Overview

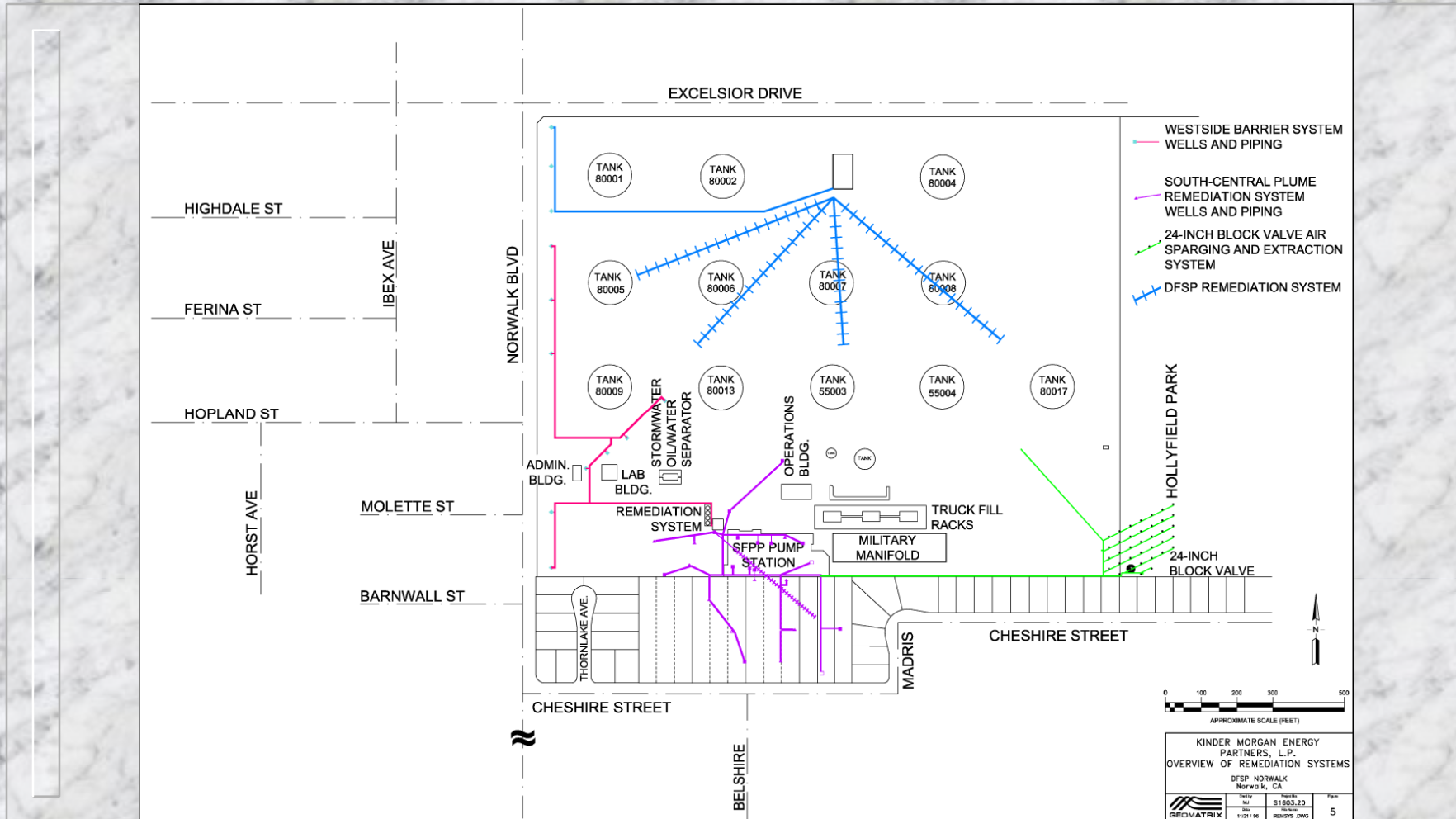
Topics to be Covered

- RBCA Update
- Remediation Operations Update
- Intermediate 24-Inch Block Valve Area Update
- Phytoremediation Update

RBCA Update

- The RWQCB accepted the responses on July 3, 2003 and authorized submittal of the final documents.
- The “Risk-Based Corrective Action, Western 1,2-DCA and MTBE Plumes” (RBCA) and “Revised Sensitivity Analysis of Fate and Transport Modeling” (Sensitivity Analysis) were finalized and submitted to the RWQCB on August 5, 2003.

Map of Current Remediation Systems



Soil Vapor Extraction System

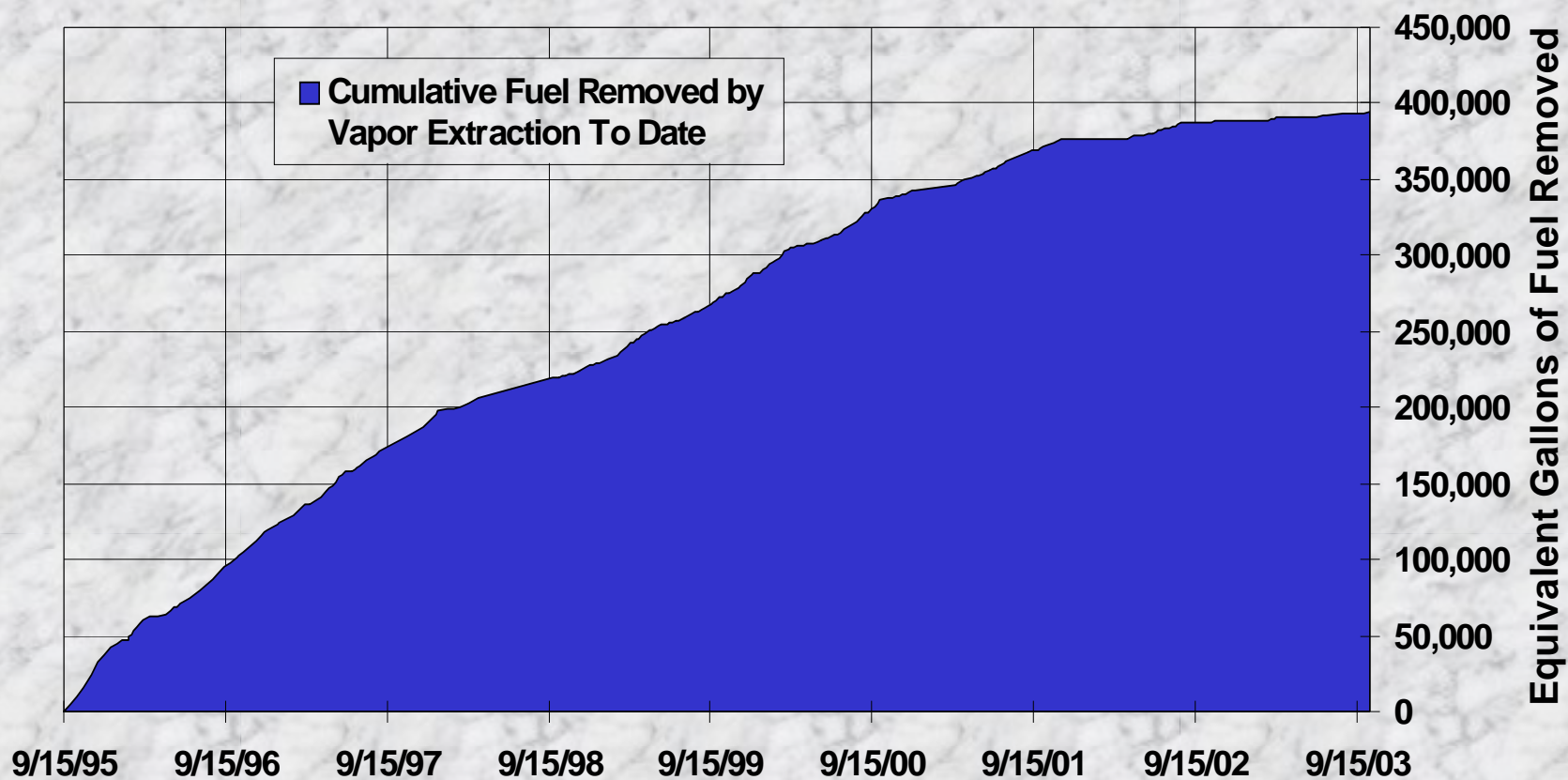
- 17 onsite and 6 off-site vapor extraction wells in the South-Central Plume area.
- 2 vapor extraction wells in the Southeastern 24-Inch Block Valve area.

Soil Vapor Extraction System Operations Summary

- 1,690 gallons equivalent of fuel removed from soil and destroyed by thermal oxidation since July 2003 RAB meeting.
- 393,910 gallons equivalent of fuel removed from soil and destroyed by thermal oxidation since September 1995.

Soil Vapor Extraction System Operations Summary

Cumulative Fuel Removed by Vapor Extraction To Date



Groundwater/Product Extraction System

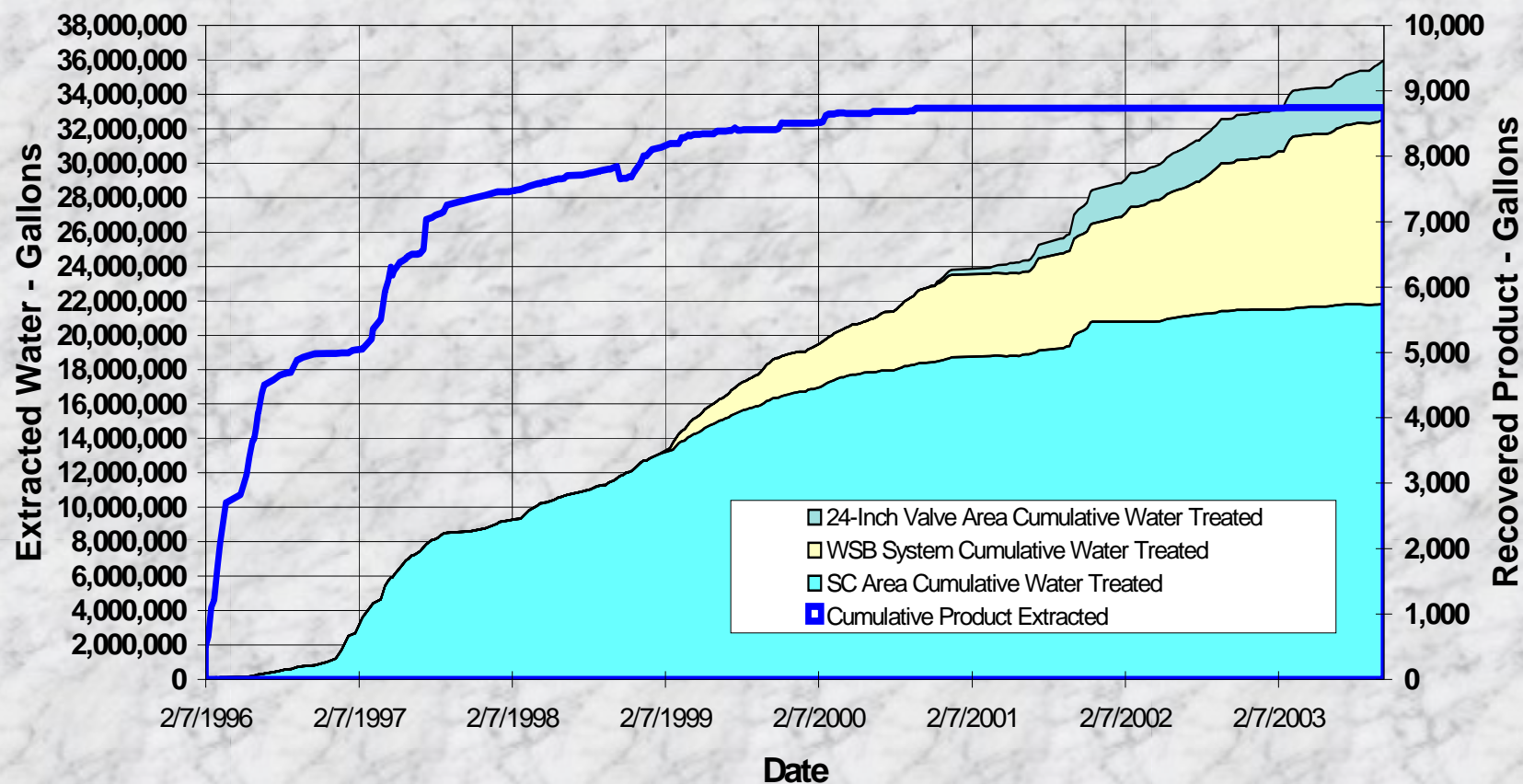
- 8 groundwater extraction wells in the West Side Barrier area
- 6 groundwater/product extraction wells in the South-Central Plume area
- 3 groundwater/product extraction wells and 2 groundwater extraction wells in the Southeastern 24-Inch Block Valve area

Groundwater/Product Extraction System Operations Summary

- Total groundwater extracted since July 2003 RAB meeting:
 - South-Central Plume area, 138,730 gallons
 - Southeastern 24-Inch Valve area, 582,900 gallons
 - West Side Barrier area, 360,200 gallons
 - No free product was recovered
- Total groundwater extracted since September 1995:
 - South-Central Plume area, 21.9 million gallons
 - Southeastern 24-Inch Valve area, 3.4 million gallons
 - West Side Barrier area, 10.7 million gallons
 - Total groundwater extracted, 35 million gallons
 - 8,745 gallons free product removed

Groundwater/Product Extraction System Operations Summary

Producted Extracted and Water Treated Summary



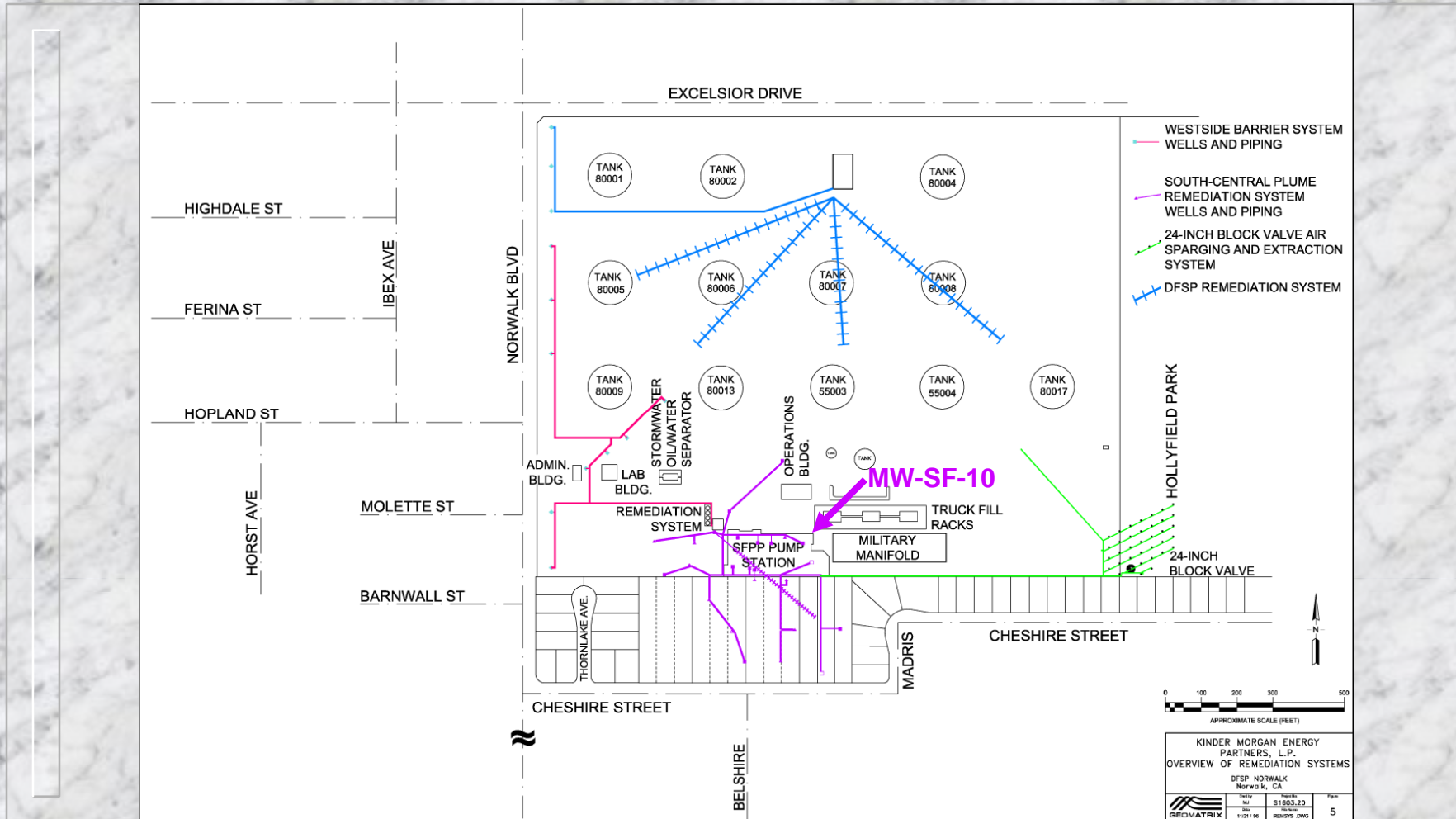
Access to Southern Off-Site Wells

- Obtained access agreement with Cheshire Meadows HOA in September 2003 to maintain and monitor wells on their property located south of the DFSP facility.
- KMEP can now access those wells for groundwater monitoring.
- Wells were included in the October 2003 semi-annual groundwater monitoring event.

Intermediate 24-Inch Block Valve Area Update

- Installed SVE well MW-SF-10 in the vicinity of the intermediate 24-inch block valve on September 23, 2003.
- Connection of the new SVE well to the existing remediation system was completed on September 26, 2003.

Intermediate 24-Inch Block Valve Area Update cont.



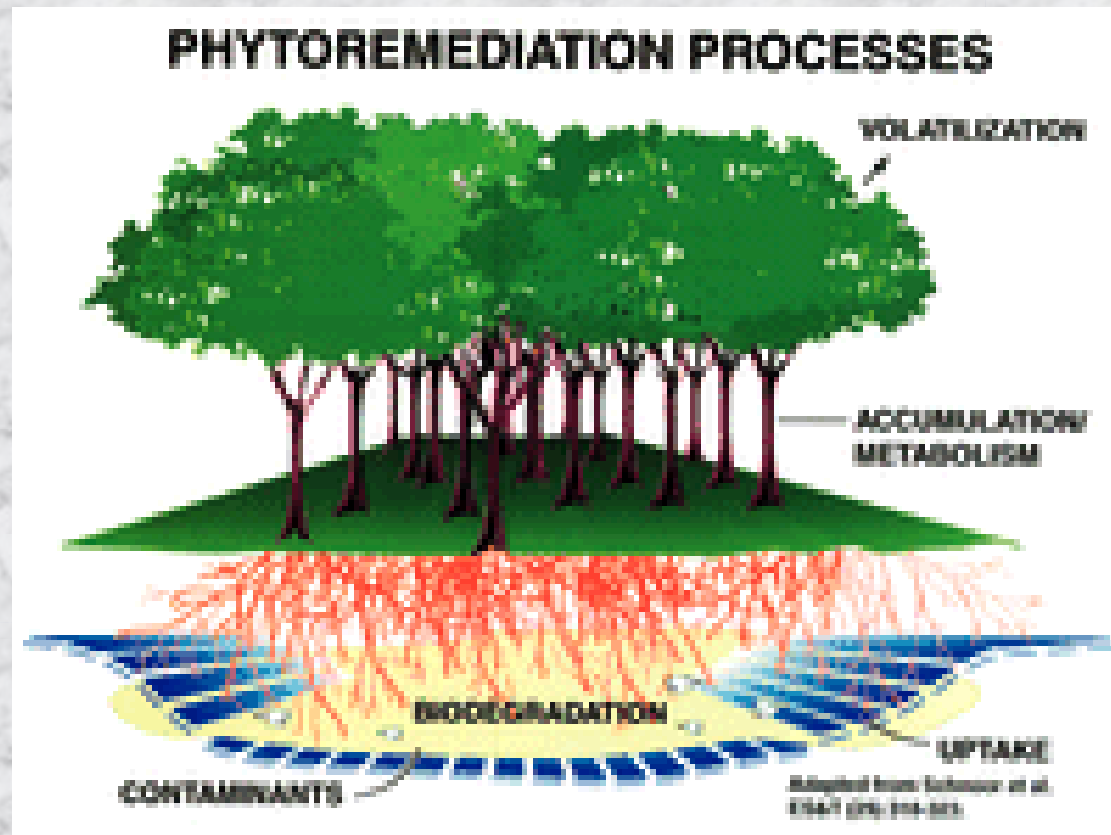
Summary of Remediation System Expansions and Upgrades

- Installed two groundwater extraction wells and six piezometers in southeastern part of the site to address MTBE in groundwater.
- Installed one soil vapor extraction well and one groundwater monitoring well to address the release from the intermediate 24-inch block valve.
- Installed moisture separator downstream of air stripper to prevent damage to catalytic oxidizer.
- Installed transfer tank to the West Side Barrier system to reduce pressure buildup in conveyance pipelines to improve pump performance.

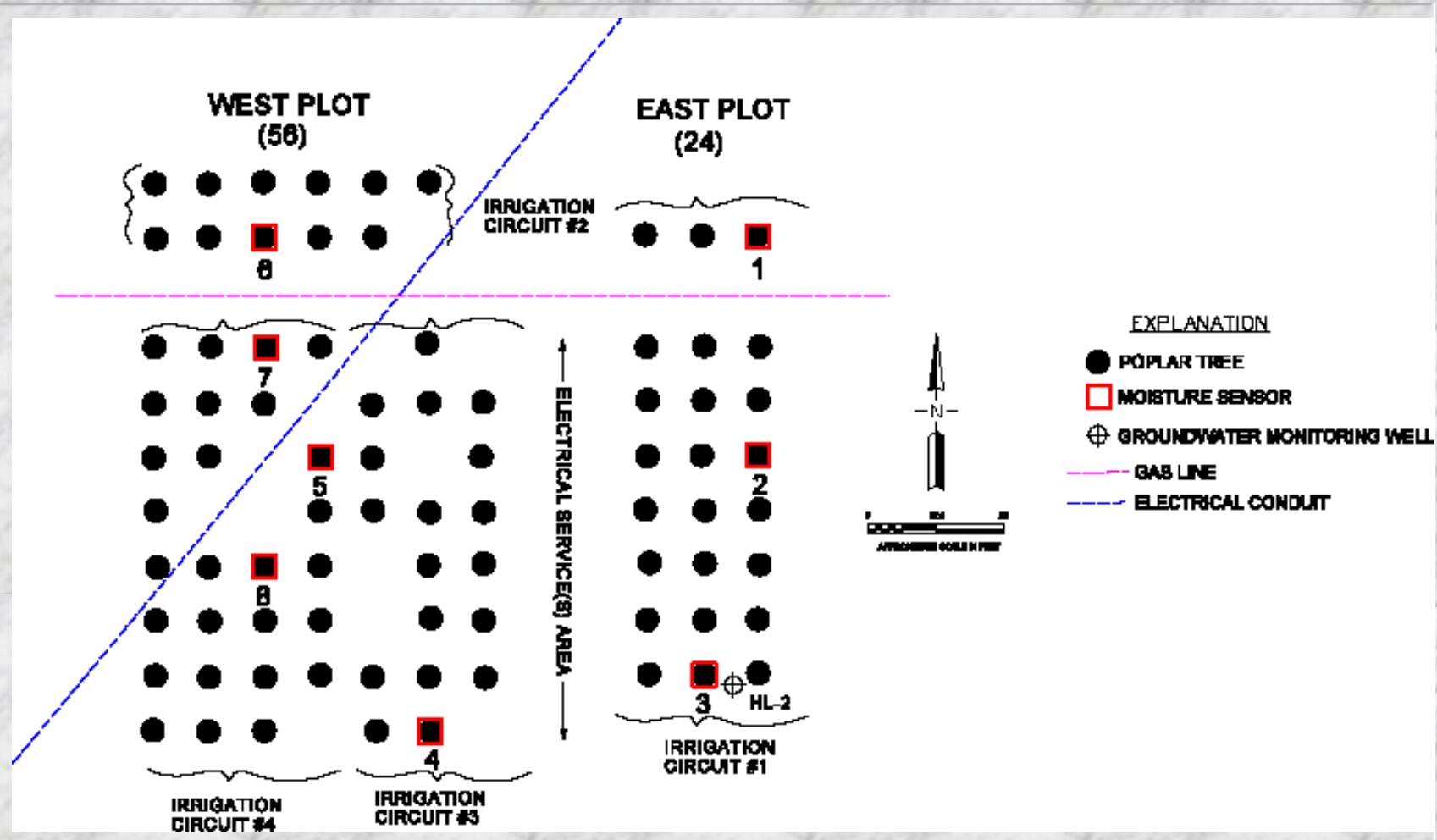
Phytoremediation Update

- Performed inspection of the plantation and identified 60 to 65 viable trees; remaining trees are stunted or stressed, possibly due to poor soil conditions, lack of water, or water hardness.
- Collected baseline groundwater samples from seven wells located in vicinity of plantation in July 2003. Will continue to monitor these wells for a minimum of four quarters to evaluate seasonal changes. Water quality will be evaluated for bioremediation parameters and for parameters that might affect plant growth (i.e. salinity, chloride, TDS).
- Performed cleanup activities in plantation area in August 2003 in preparation for further phytoremediation evaluation activities.

The Phytoremediation Process



Phytoremediation Areas



Poplars

