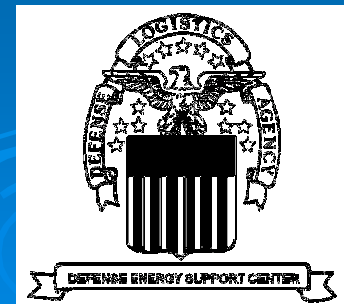


Norwalk Tank Farm Update

*Defense Energy Support Center-
Americas West
Norwalk Tank Farm
Restoration Advisory Board*

January 25, 2007

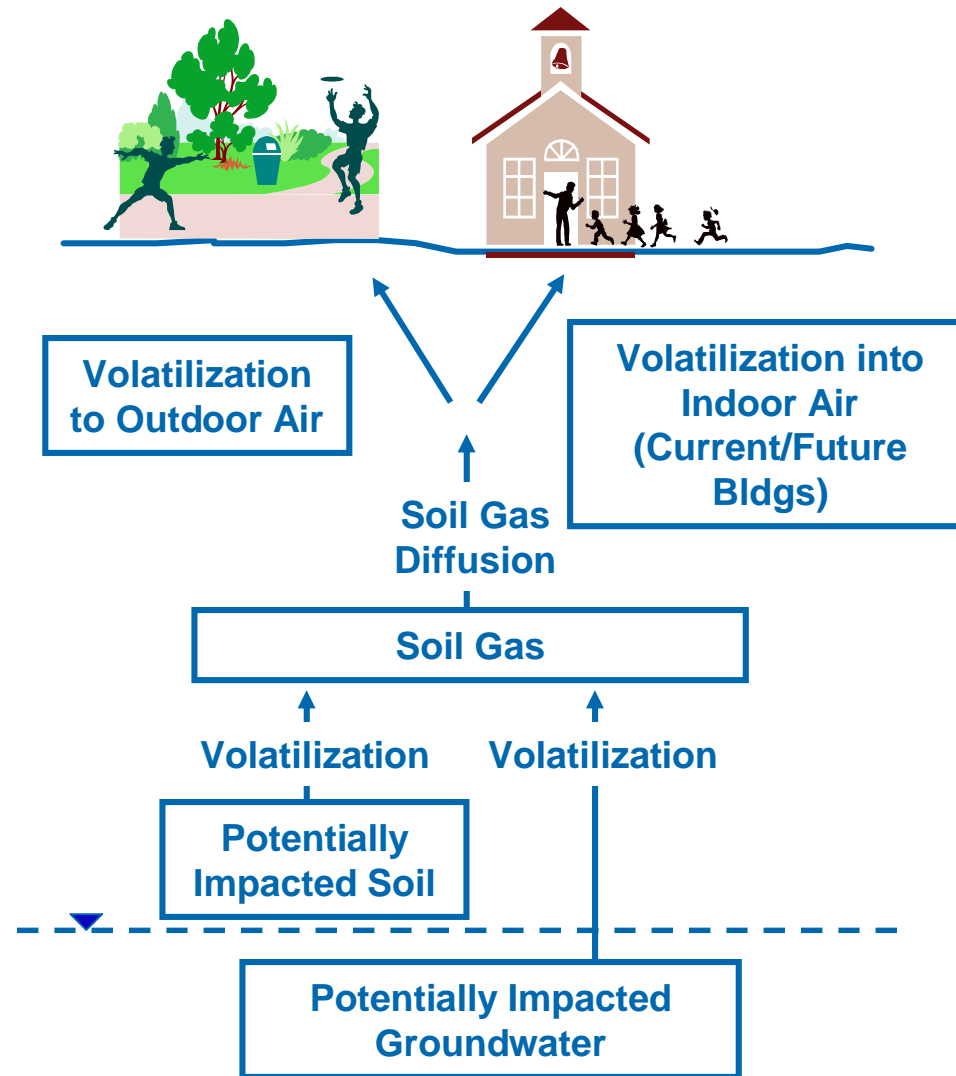


Presentation Overview

Topics to be Covered

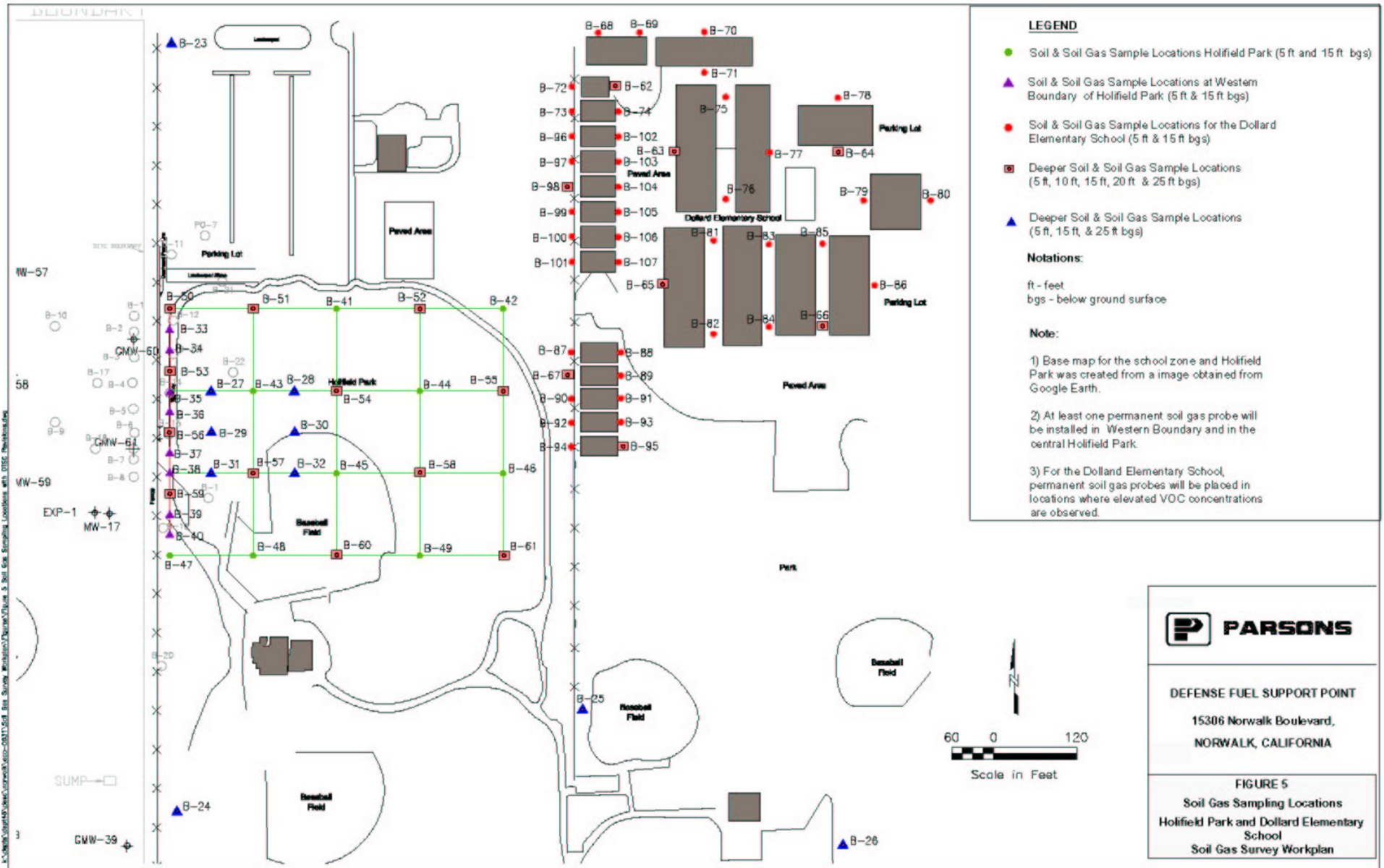
- Holifield Park & Dolland Elementary School Investigation Activities
- SVE & GWT System Performance
- 2nd Semiannual 2006 Groundwater Monitoring
- General Site Activities
- Planned Activities

Conceptual Site Model



SOIL GAS SURVEY (at Holifield Park and Dollard Elementary School)

Proposed Sampling Locations



Soil Gas Survey Summary

(as of December 28, 2006)

- 51 Boring Locations Installed in Holifield Park
- 33 Borings Locations still to be drilled in Dolland Elementary School; pending final access agreement
- 154 Probes Installed

Analytical Program

- 2 Different Methods for Soil Gas Analyses
 - Mobile Laboratory (to provide quick results)
 - Fixed Laboratory (for confirmation of the Mobile Laboratory results)
- Soil samples were collected at all locations and if there were any chemicals detected from the Mobile Laboratory, then the soil sample was analyzed.

Analytical Program

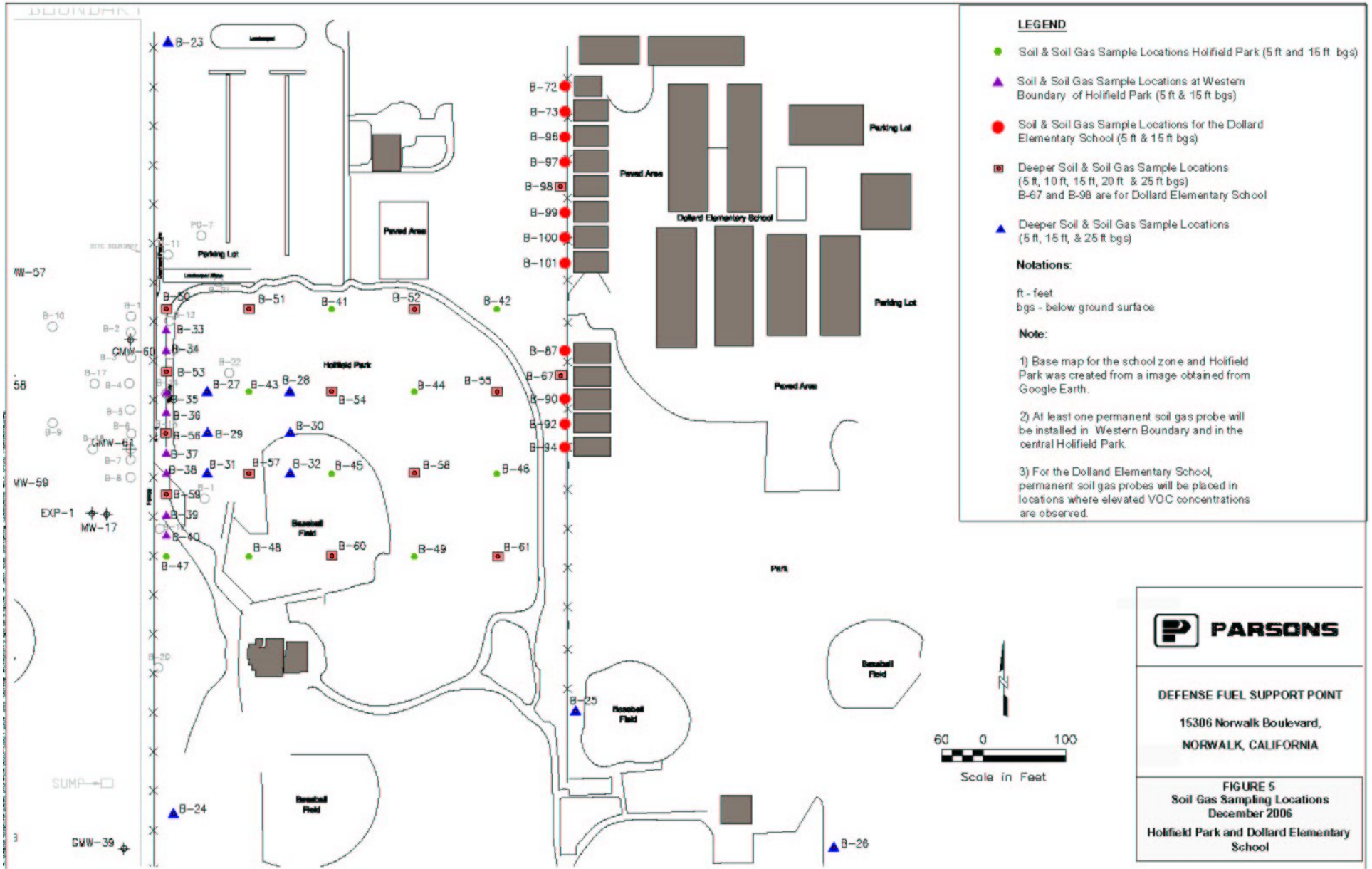
Target Compound List for Mobile Laboratory:

- Benzene
- ethylbenzene
- Isopropylbenzene
- n-Butylbenzene
- n-Propylbenzene
- o-Xylene
- m/p-Xylene
- p-Isopropyltoluene
- Toluene
- MTBE
- 1,2,4-Trimethylbenzene
- 1,3,5-Trimethylbenzene
- 1,2-dichloroethane
- 1,2-dibromoethane

Sampling Summary

- 154 Mobile Laboratory Soil Gas Samples
(plus duplicates)
- 17 Fixed Laboratory Confirmation Soil Gas Samples (at least 10% of Mobile Laboratory samples)
- 36 Soil Samples for Total Petroleum Hydrocarbons (TPH) as gasoline, TPH as fuel products, and Volatile Organic Compounds (VOCs) (plus duplicates)

Soil Gas Sampling – Drilled Locations



Mobile Laboratory Soil Gas Preliminary Results

- With one exception, all valid preliminary soil gas concentrations reported by the mobile laboratory were non-detect or less than risk-based California Human Health Screening Levels (CHHSLs).
- Benzene was detected [23 micrograms per liter ($\mu\text{g}/\text{L}$)] above its risk-based screening concentration in the sample collected at B-24 [25 feet below ground surface (ft bgs)]; however, it was not detected in soil gas samples collected at 5 and 15 ft bgs in the same location.
- Therefore, there are no risk concerns at B-24 because the samples collected above the 25-foot sample at 5 feet and 15 feet were non-detect and vapors move up.

Fixed Laboratory Soil Gas Preliminary Results

- Fixed laboratory results confirmed mobile laboratory results
- Fixed laboratory results provide supporting evidence for the false positive VOC (e.g., benzene) detections reported and rejected by the mobile laboratory chemist.

Soil Preliminary Results for TPHg, TPHfp, and VOCs

- All of the soil detections were below the available human-health or soil-to-groundwater screening levels.

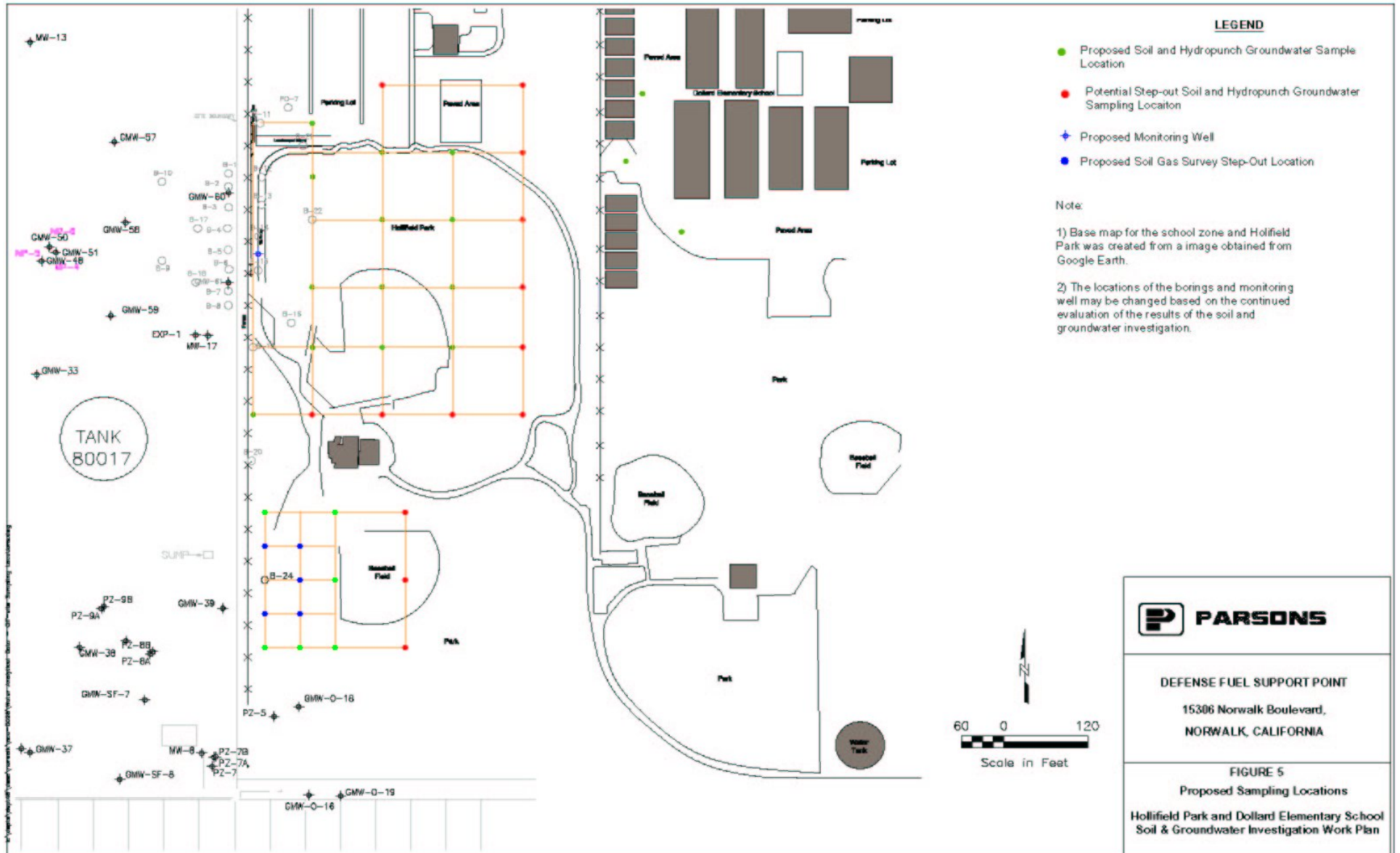
Overall Conclusions of Soil Gas Survey

- Volatilization of chemicals from beneath the park and school buildings adjacent to the park is not a health concern based on the results collected to-date.

SOIL AND GROUNDWATER INVESTIGATION at Holifield Park and Dolland Elementary School

- Proposed Sampling Locations
(shown on next Figure)
- During soil/groundwater investigation,
Step-outs around B-24 will be drilled:
 - Resulting from the Soil Gas Survey,
tentatively agreed to do 50-foot step-outs to
the north, south, and east
 - Soil gas sample collected at 5, 15, and 25
ft bgs

Proposed Sampling Locations for Soil and Groundwater Investigation



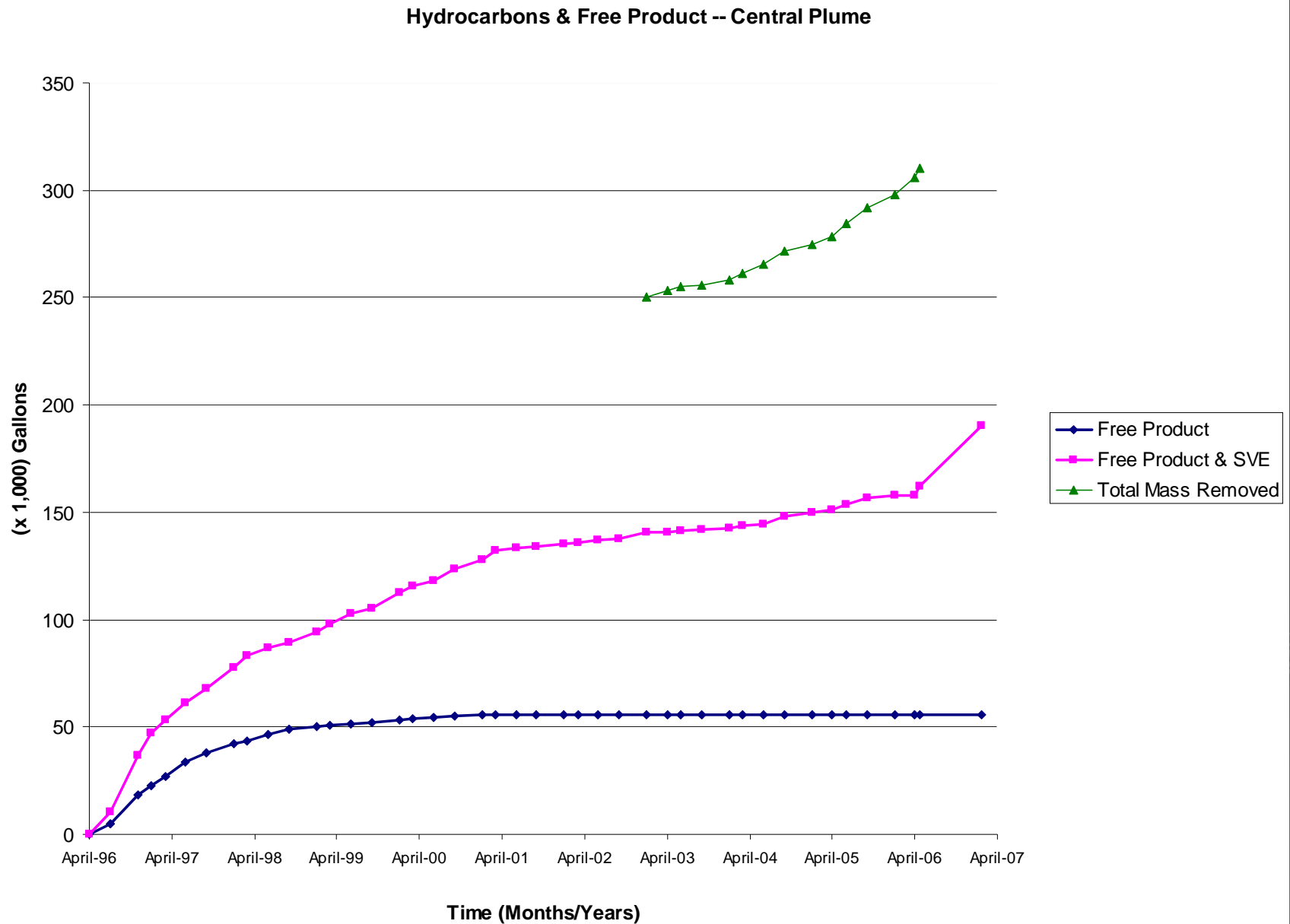
Remediation System Operation

- Soil Vapor Extraction Treatment Restarted in December 2006
 - Currently vapors extracted from HW wells and VEW West
 - VW East & TFS to be initiated soon
- Groundwater Extraction System Briefly Operated in October & November 2006
 - Currently working on system upgrades

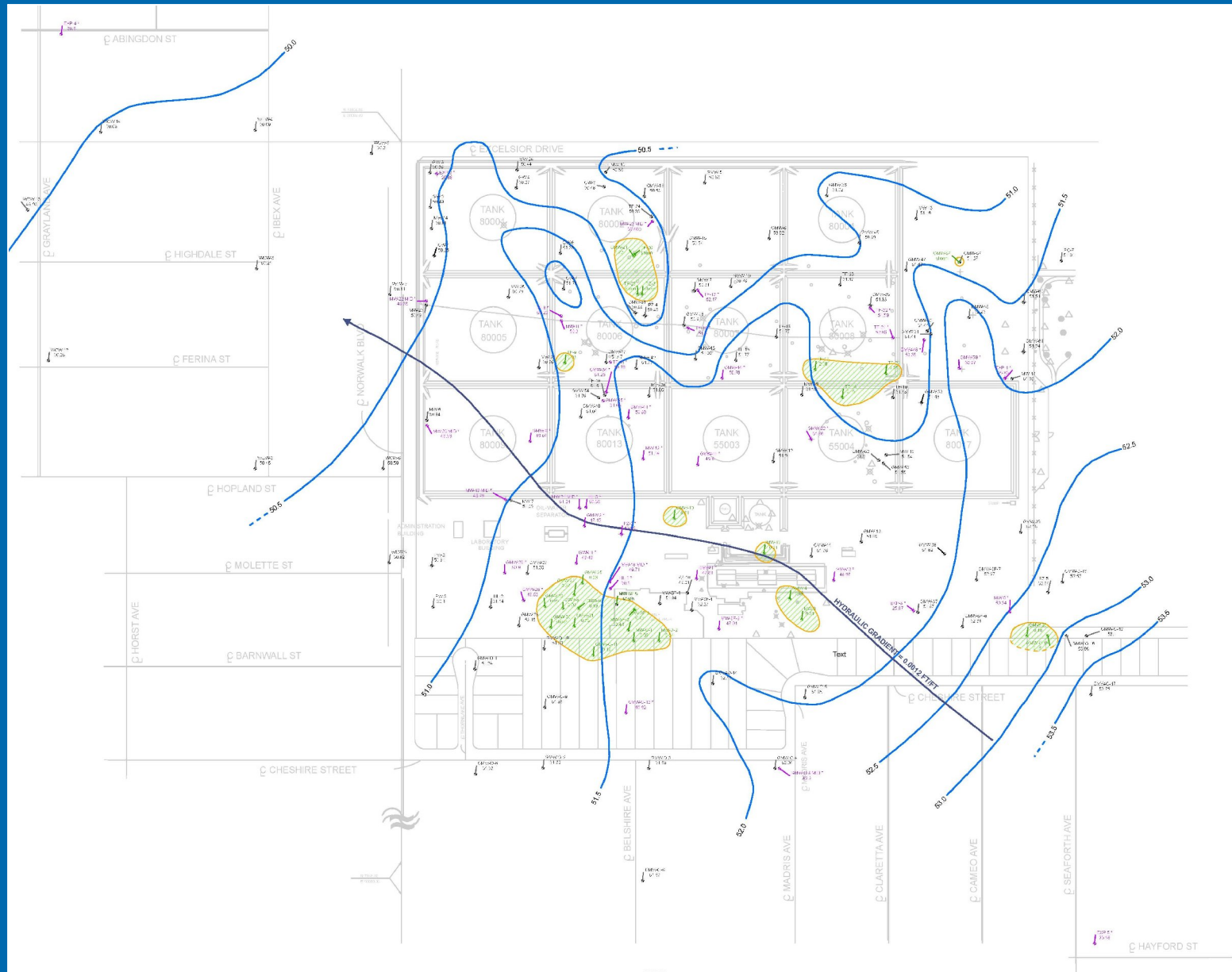
Hydrocarbon Mass Removal

- System Performance since April 1996
 - Total Hydrocarbons Mass Removed: 357,424 gallons.
 - Approx. 190,397 gallons recycled and destroyed
 - 55,538 gallons of free product recovered
 - 1,397 gallons of dissolved-phase hydrocarbons recovered
 - 133,462 gallons of volatile hydrocarbons recovered through SVE
 - Estimated 167,027+ gallons of hydrocarbons destroyed due to enhanced biodegradation
 - 42.2 M gallons of water treated

Hydrocarbon Mass Removal

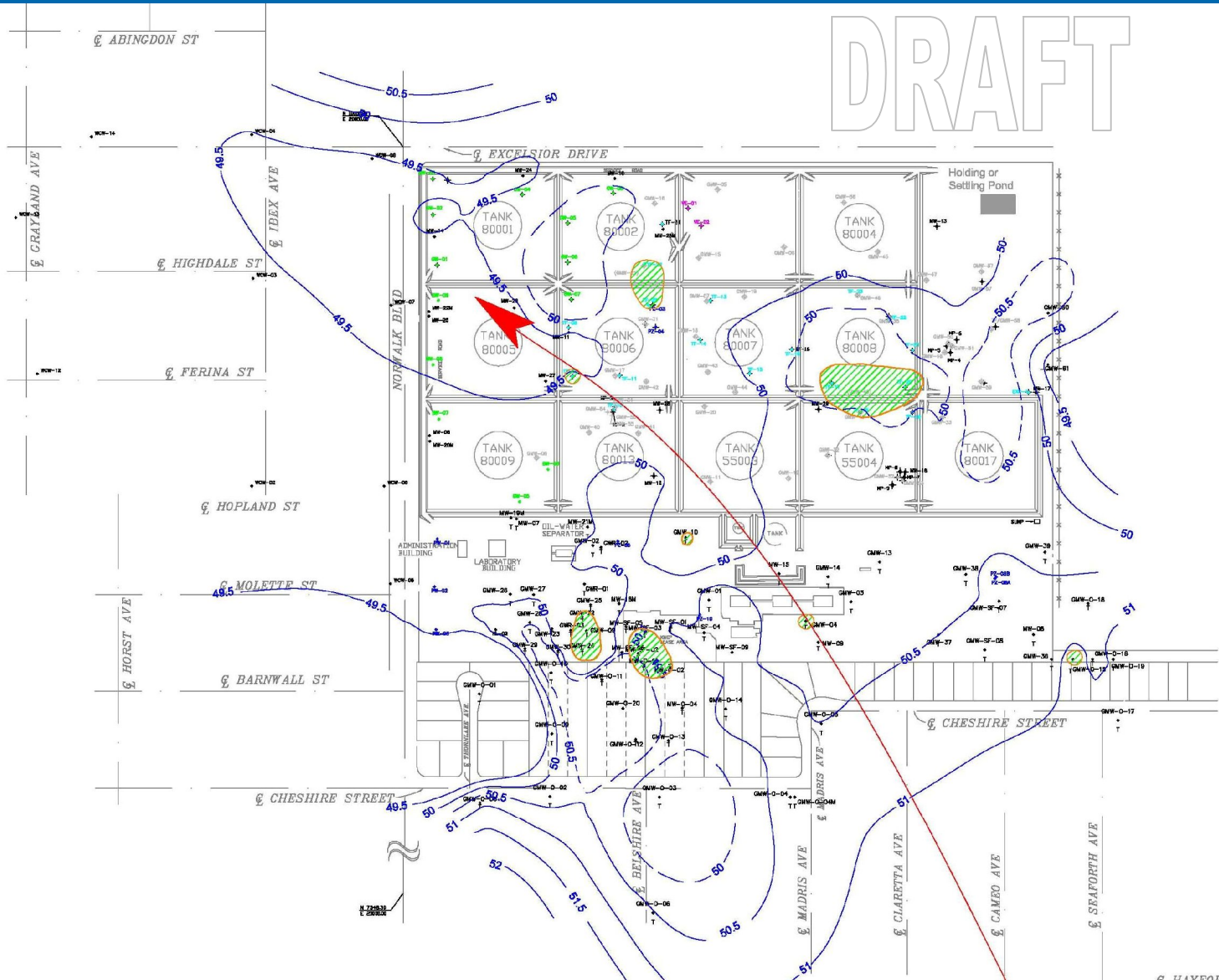


Groundwater Equipotential Map and Limits of Measurable Liquid-Phase Hydrocarbons October/November 2005

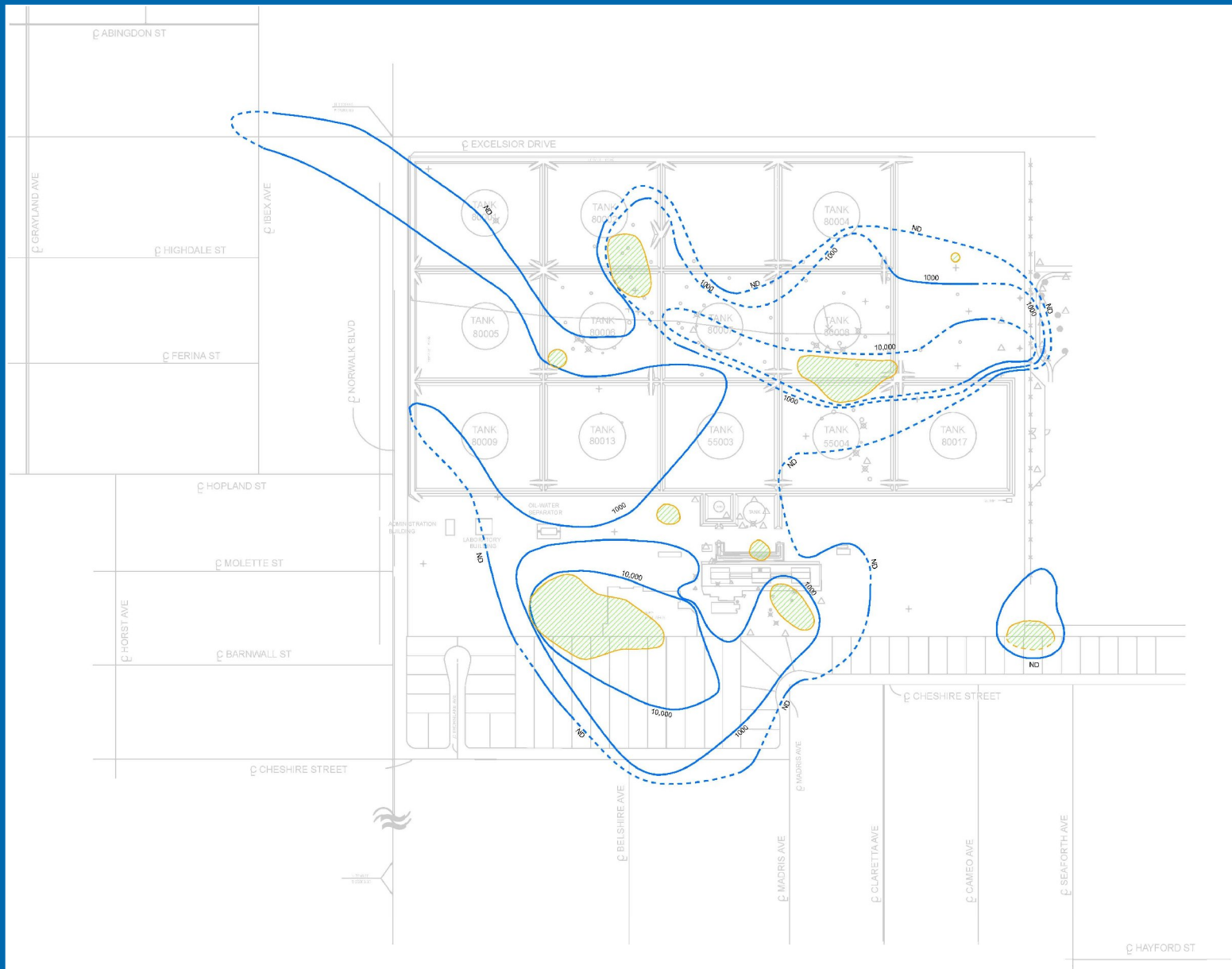


Groundwater Equipotential Map and Limits of Measurable Liquid-Phase Hydrocarbons December 2006

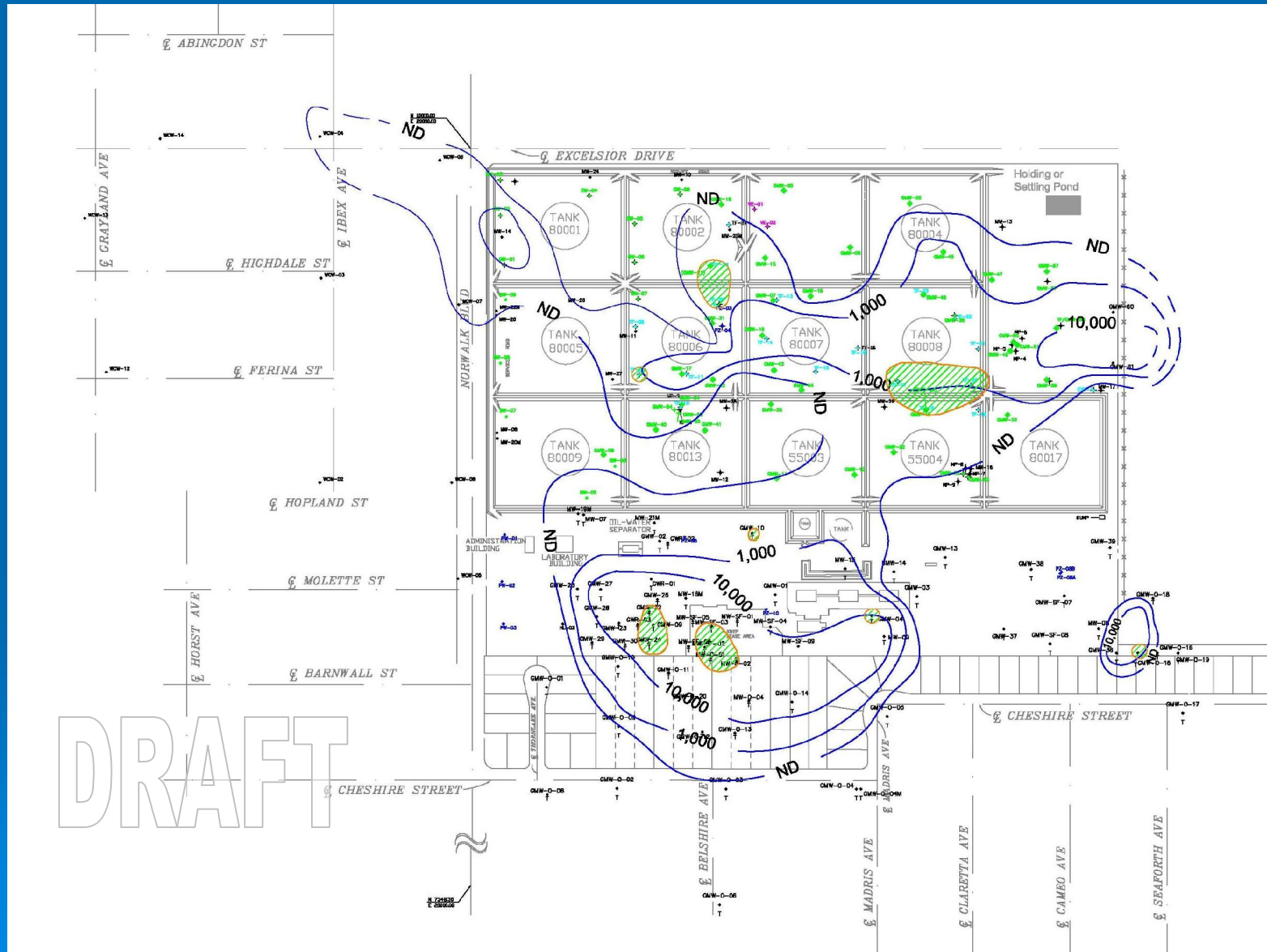
DRAFT



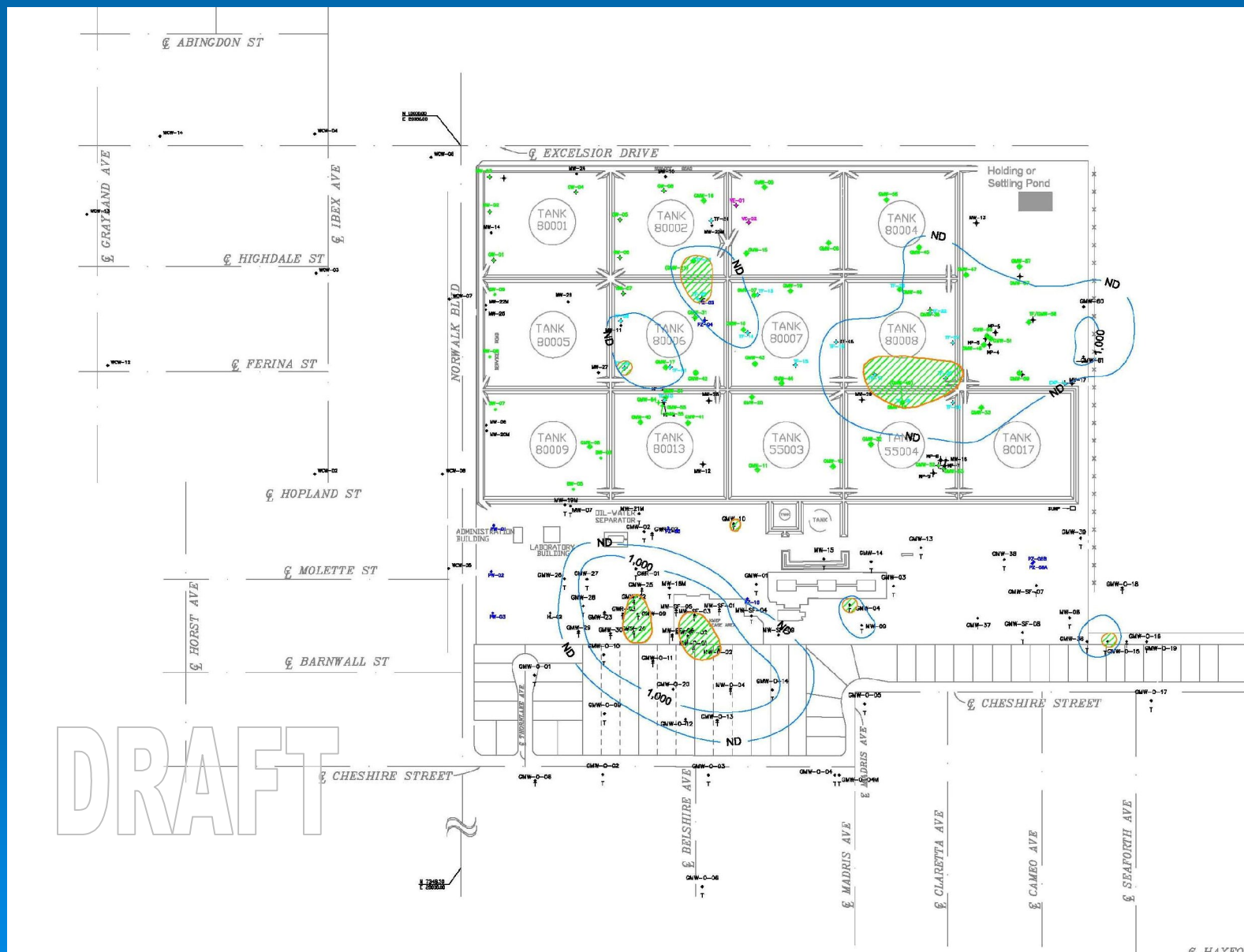
TPH Isoconcentration Map November 2005



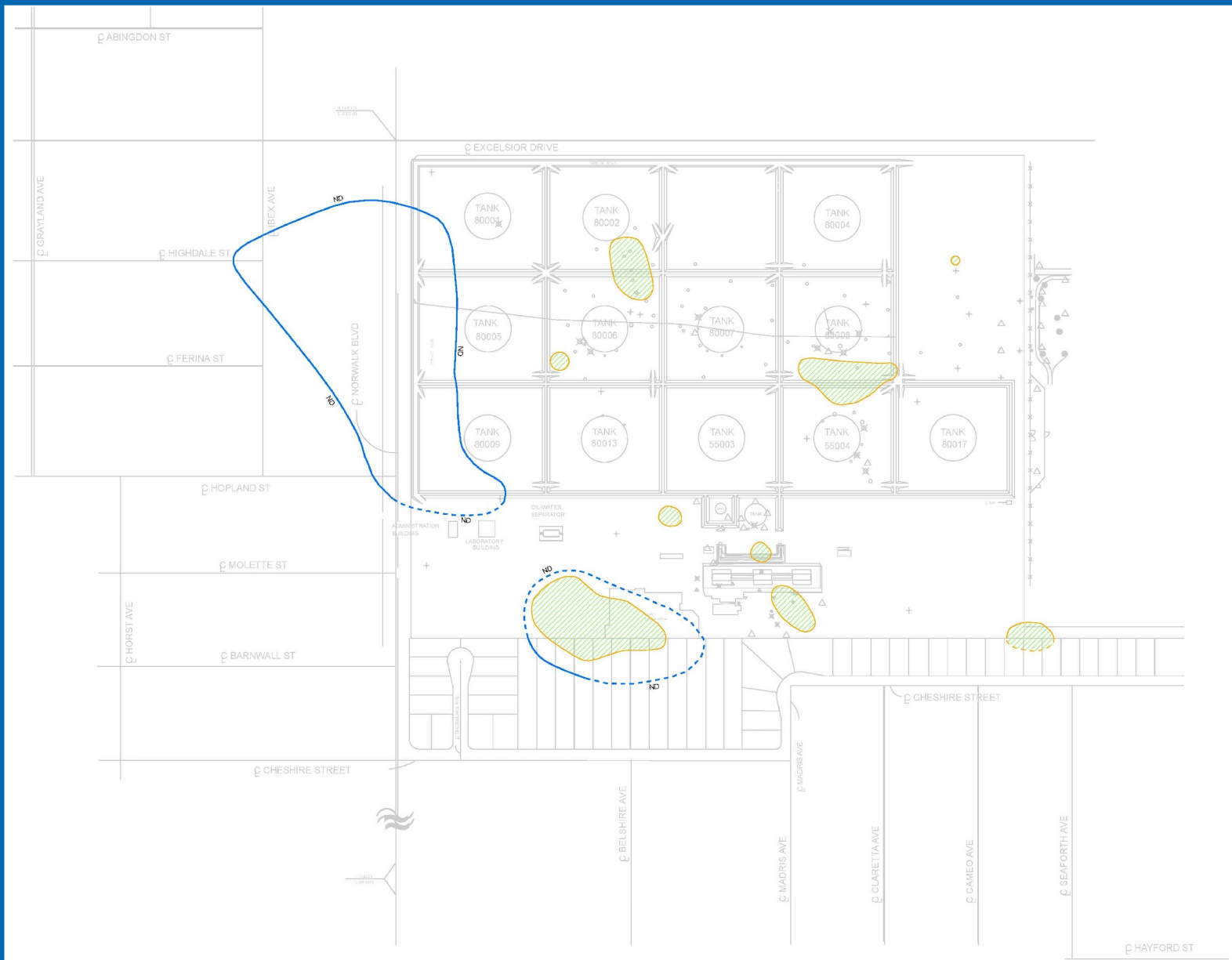
TPH Isoconcentration Map December 2006



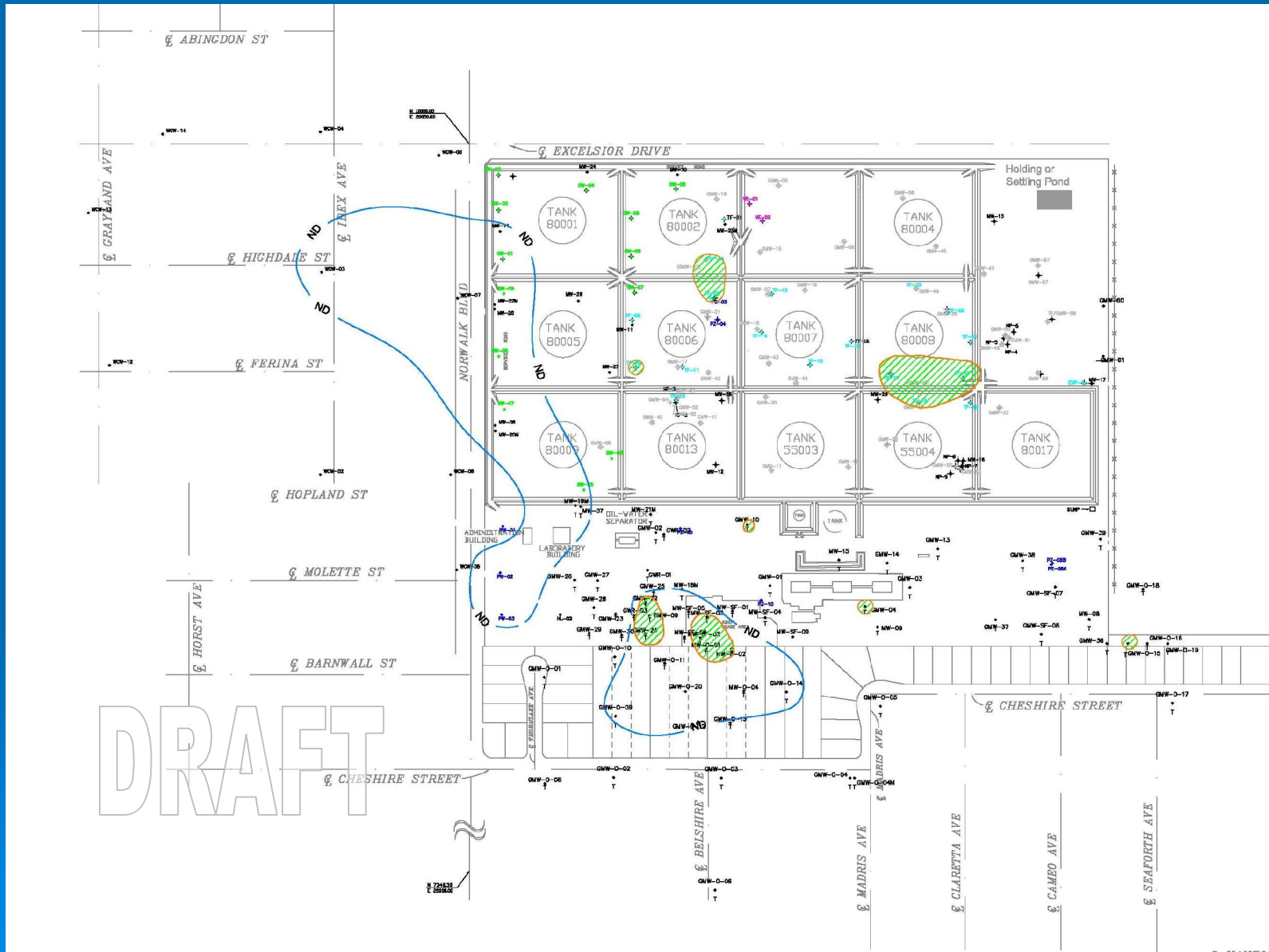
Benzene Isoconcentration Map December 2006



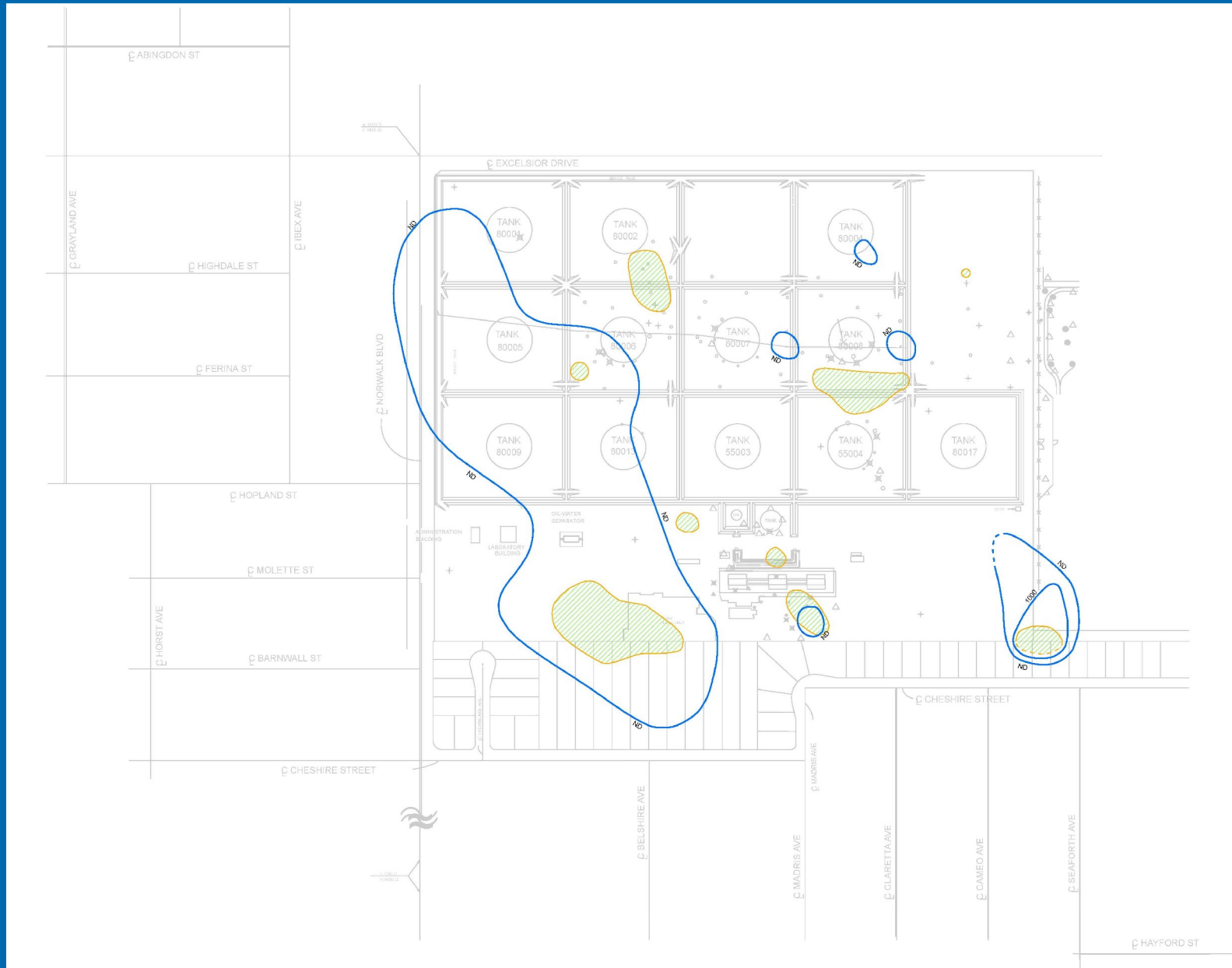
1,2-Dichloroethane Isoconcentration Map November 2005



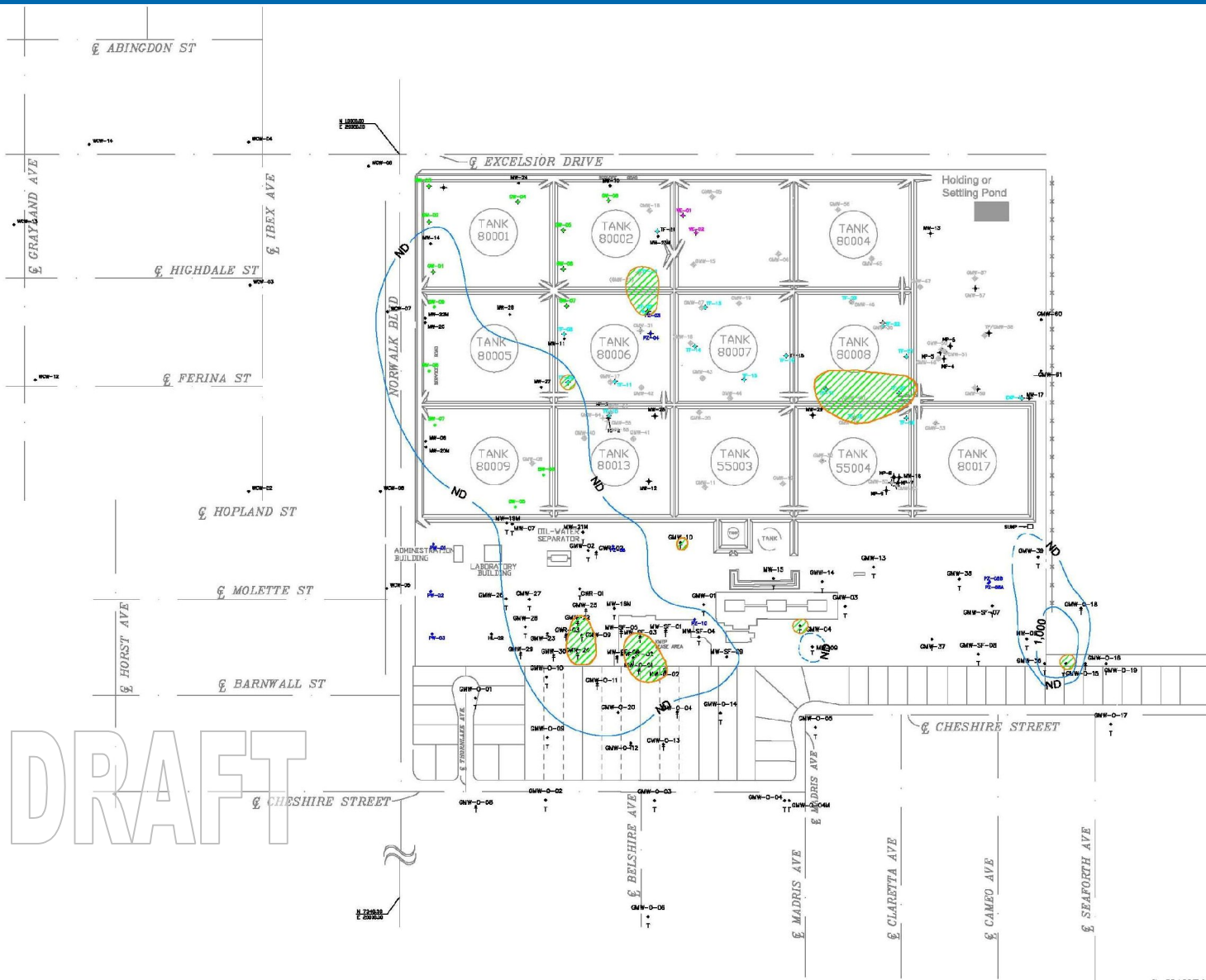
1,2-Dichloroethane Isoconcentration Map December 2006



MTBE Isoconcentration Map November 2005



MTBE Isoconcentration Map December 2006



Summary of GW Monitoring

- Groundwater elevations, free-product conditions similar to those observed in May 2006
- Lateral extent and concentrations of the dissolved-phase TPH, benzene, 1,2-DCA, and MTBE plumes were similar to those detected during the previous monitoring events.
 - The MTBE plume near the southeastern 24-inch valve area is interpreted to have a reduced extent
- TPH not detected in Exposition Aquifer

General Site Activities

➤ Conducted Backflow Testing
(12/7/2006)

➤ Weed Abatement
(1/19/2007)

Weed Abatement

Before

(Looking North)



After

(Looking South)



Weed Abatement

Before



After



Planned Activities

- Install GW Extraction Wells
- Expand the GWT system
- Regular Monitoring & Sampling for SVE & GWT systems
- Perform Risk Assessment based on the Holifield Park data

Discussion