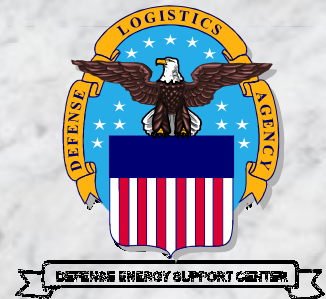


Norwalk Tank Farm Update

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

October 23, 2008



Presentation Overview

- General Site Activities
- Remediation System Update
- Respiration Monitoring & Testing
- Holifield Park Investigation
- Sentry Groundwater Monitoring
- Planned Activities

General Site Activities

- July 1 through September 30 – Conducted weekly system inspections
- July 2 & 18, August 27, September 3, 5, 8, 15 – System performance and compliance sampling
- July 2 – Absorbent sock monitoring/change out
- August 15 – Submitted the 2nd Quarter 2008 NPDES Discharge and Monitoring Report
- September 18 – Began soil gas baseline monitoring and respiration testing

Remediation System Update

- Installed granular activated carbon (GAC) vapor recovery for groundwater treatment system (GWTS) surge tank
- Elevated TBA concentrations were detected from samples collected on July 2 resulting in system shut down and GAC change out
- July 7, August 13, & September 9 – Replaced MYCELX filters at MX-7 unit
- August 22 – GAC change out conducted at both vessels

Remediation System Update Operations Summary

- Total groundwater extracted and treated third quarter 2008:
 - 627,030 gallons
- Total groundwater extracted and treated since April 1996:
 - 43.5 million gallons

Remediation System Update

Operations Summary (continued)

- GWTS Operations Summary:
 - July 1 through 11 & August 25 through September 15 – continuous operation from GW-2 & GW-13 in the northwest corner and GW-15 in the eastern area
 - July 11 – shut down for sentry monitoring and GAC vessels awaiting carbon change out
 - August 25 – system restarted
 - September 15 – system shut off for soil gas monitoring and respiration testing

Remediation System Update

Absorbent Sock Progress

Location	Initial Product Thickness (feet)^{1/}	Current Product Thickness (feet)^{2/}
GMW-4	0.39	0
GMW-21	1.33	0
MW-9	0.89	0
PZ-3	0.02	0
TF17	2.57	1.14
TF18	0.03	0
TF20	4.62	0

1. Measured on July 23, 2007 or October 10, 1007.

2. Measured on July 24, 2008.

Remediation System Update Performance Summary

- Soil vapor extraction system was not in operation this quarter
- System Performance since April 1996 through September 2008
 - Total Hydrocarbons Mass Removed: 428,719 gallons
 - Approx. 215,868 gallons recycled and destroyed
 - Estimated 212,850 gallons of hydrocarbons destroyed due to enhanced biodegradation

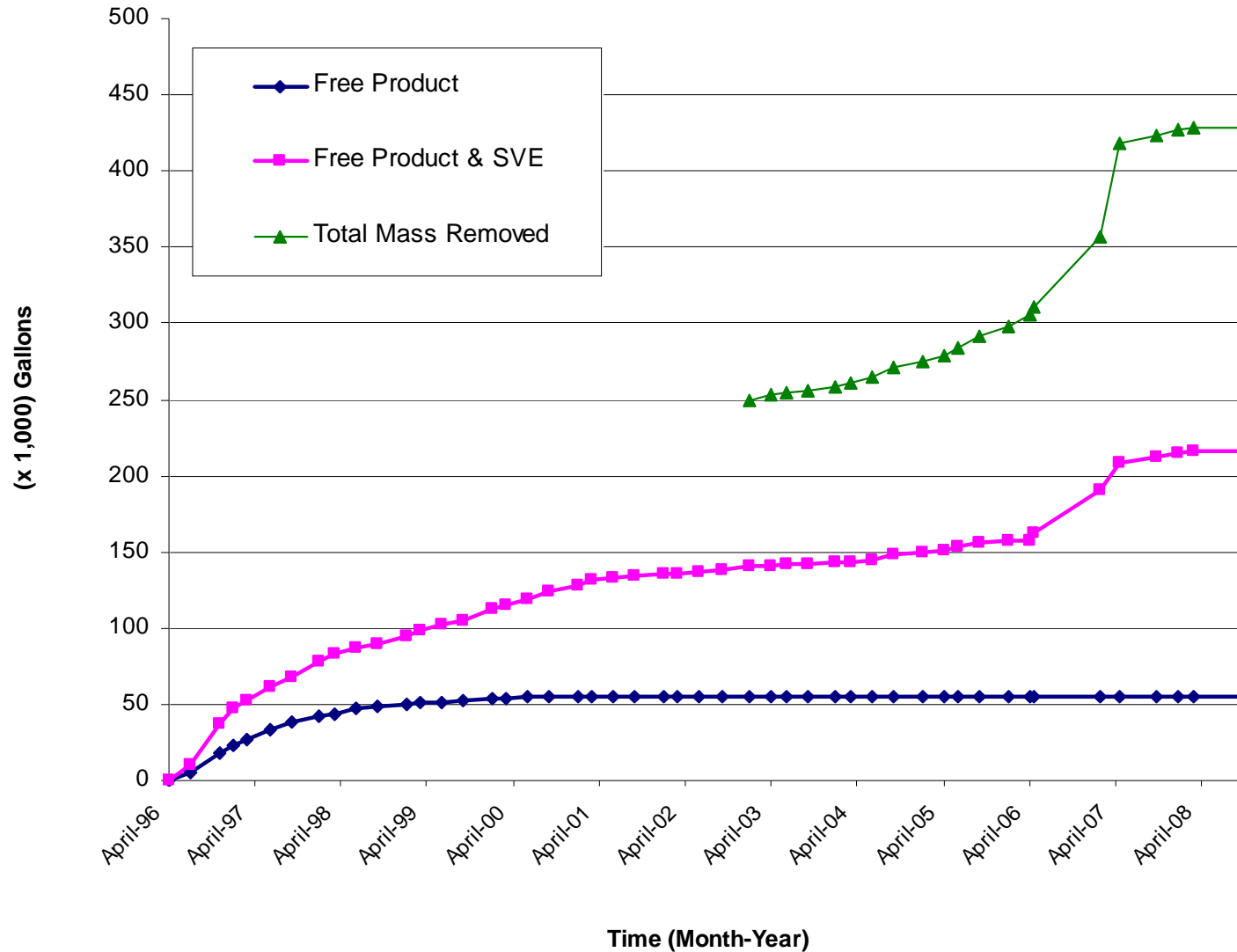
Remediation System Update

Performance Summary (continued)

- Detailed breakdown of the 215,868 gallons that has been recycled and destroyed:
 - 55,568 gallons of free product recovered and recycled (including absorbent sock recovery)
 - 1,400 gallons of dissolved-phase hydrocarbons recovered and treated through onsite treatment system
 - 158,900 gallons of volatile hydrocarbons recovered through SVE and treated through onsite treatment system

Remediation System Update

Hydrocarbon Mass Removed



Respiration Monitoring & Testing

- September 18 through 26 – conducted soil gas baseline monitoring throughout the site which consisted of collecting field measurements at each location (VMP-1 through VMP-28 where feasible) for:
 - pressure,
 - oxygen,
 - carbon dioxide, and
 - total volatile hydrocarbons

Respiration Monitoring & Testing

(continued)

- Laboratory samples were also collected and analyzed for TO-15 at 14 locations:
 - VMP-1-20
 - VMP-2-19
 - VMP-227
 - VMP-3-7
 - VMP-3-16
 - VMP-4-8
 - VMP-5-7
 - VMP-5-15
 - VMP-8-15
 - VMP-9-15
 - VMP-10-8
 - VMP-10-18
 - VMP-10-27
 - VMP-15-27

Respiration Monitoring & Testing

(continued)

- September 29th began respiration tests at 9 locations:
 - VMP-2-11
 - VMP-2-19
 - VMP-2-27
 - VMP-3-7
 - VMP-3-16
 - VMP-8-15
 - VMP-9-10
 - VMP-9-15
 - VMP-14-8

Respiration Monitoring & Testing Sampling Locations



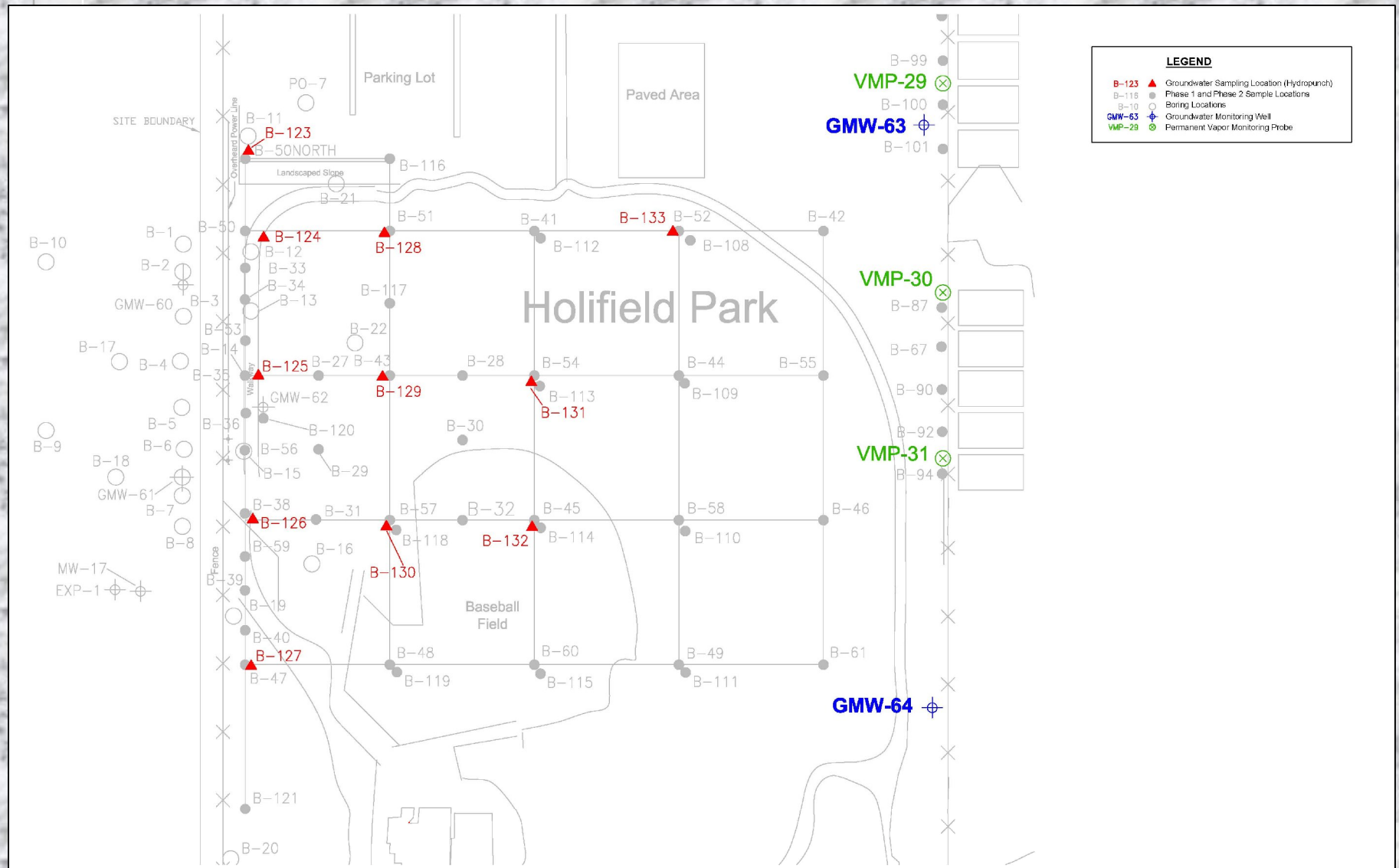
Respiration Monitoring & Testing Evaluation

- Once respiration tests have been completed respiration rates will be calculated and the field and laboratory data will be compared with historical results
- Performance of remediation system will be evaluated and summary report generated
- Updated strategy for soil remediation will be proposed

Holifield Park Investigation

- September 22 through October 10 – conducted supplemental investigation
- Scope:
 - 11 hydropunch groundwater sampling locations
 - 2 groundwater monitoring wells
 - 3 soil vapor sampling locations

Holifield Park Investigation Sampling Locations



Holifield Park Investigation Photographs

GMW-64 Hollow Stem
Auger Drilling



B-124 Hydropunch
Groundwater Sampling

Holifield Park Investigation

Hydropunch Groundwater Results

- 11 sampling locations (B-123 through B-133)
- Samples collected at approximately 44-48 feet and 54-58 feet below ground surface at each location.
- Results indicate the chemicals of potential concern were detected above cleanup goals in the north and northeast sampling locations (B-128 and B-133); therefore the objective of defining the plume extent has not been met in this area and additional investigation is required.
- Groundwater plume has been defined to the south and east both horizontal and vertical and no additional investigation is needed in these areas.

Holifield Park Investigation

Hydropunch Groundwater Results (cont)

Location	TPH as Gasoline	TPH as JP5	Benzene	Toluene	Ethylbenzene	Total Xylenes
B123 (46-50)	< 100	< 100	< 0.50	< 0.50	< 0.50	< 0.50
B123 (56-60)	< 100	< 100	< 0.50	0.52	< 0.50	< 0.50
B124 (44-48)	< 100	< 100	< 0.50	< 0.50	< 0.50	< 0.50
B124 (54-58)	< 100	< 100	< 0.50	< 0.50	< 0.50	< 0.50
B125 (44-48)	440	440	5.8	32	7.6	42
B125 (54-58)	700	390	31	85	9.7	50
B126 (44-48)	< 100	< 100	< 0.50	< 0.50	< 0.50	0.59
B126 (54-58)	< 100	< 100	< 0.50	< 0.50	0.63	2.25
B127 (44-48)	< 100	< 100	0.91	< 0.50	< 0.50	0.65
B127 (54-58)	< 100	< 100	< 0.50	< 0.50	< 0.50	< 0.50
B128 (44-48)	120	130	0.95	4.9	1.3	7.2
B128 (44-48) Dup	120	140	0.66	3.3	1.1	6.4

Samples collected September 24 and 25; results reported in micrograms per liter.

Holifield Park Investigation

Hydropunch Groundwater Results (cont)

Location	TPH as Gasoline	TPH as JP5	Benzene	Toluene	Ethylbenzene	Total Xylenes
B128 (54-58)	520	160	2.1	9.3	1.3	6.1
B129 (44-48)	< 100	< 100	< 0.50	1.7	0.79	4.4
B129 (54-58)	< 100	< 100	3.5	16	2.3	10
B130 (44-48)	< 100	< 100	< 0.50	< 0.50	< 0.50	< 0.50
B130 (54-58)	< 100	< 100	< 0.50	< 0.50	< 0.50	< 0.50
B131 (44-48)	< 100	< 100	< 0.50	< 0.50	< 0.50	< 0.50
B131 (55-59)	< 100	140	< 0.50	< 0.50	< 0.50	< 0.50
B132 (44-48)	< 100	< 100	< 0.50	0.74	< 0.50	2.26
B132 (44-48) Dup	< 100	< 100	< 0.50	0.66	< 0.50	2.16
B132 (55-59)	< 100	< 100	< 0.50	< 0.50	< 0.50	< 0.50
B133 (44-48)	740	160	0.55	5	1.6	10.9
B133 (55-59)	< 100	< 100	< 0.50	1.9	< 0.50	0.98

Samples collected September 24 and 25; results reported in micrograms per liter.

Holifield Park Investigation

Groundwater Monitoring Wells

- 2 groundwater monitoring wells (GMW-63 and GMW-64) were installed in Holifield Park along the fence bordering Dolland Elementary School
 - Groundwater from these two new wells were sampled during the semiannual monitoring event (week of October 13)
 - Results indicate that all parameters (TPH as gasoline, TPH as JP5, and BTEX) were not detected above the laboratory detection limits

Holifield Park Investigation

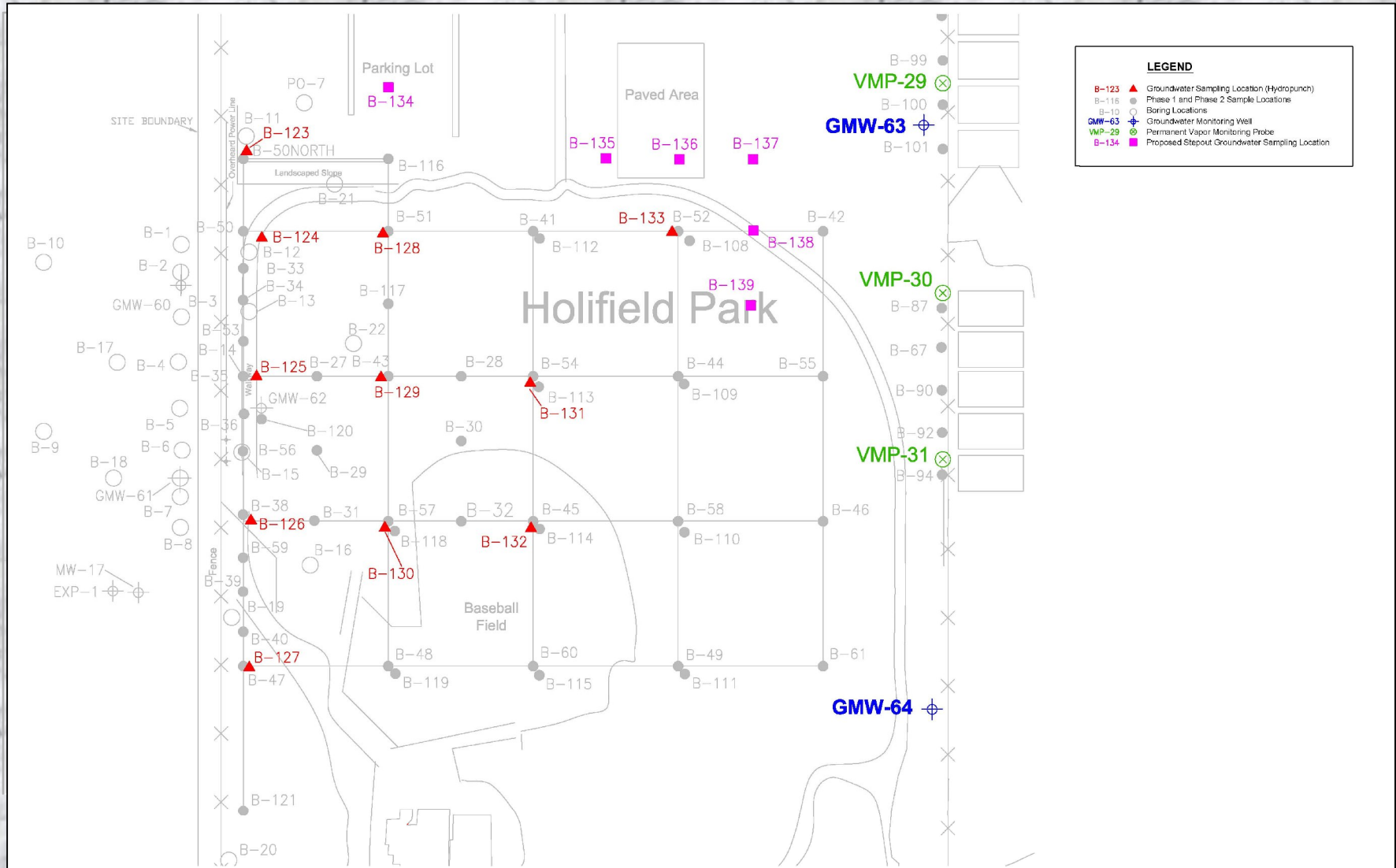
Vapor Monitoring Probes

- 3 soil vapor sampling locations (VMP-29 through VMP-31) were completed in Holifield Park along the fence bordering Dolland Elementary School
 - Soil gas samples were collected at 5 feet and 15 feet below ground surface at each location (October 10)
 - Results indicate that none of the detected chemicals of potential concern concentrations exceeded approved corresponding screening levels.
 - Therefore, adverse health effects associated with subsurface volatilization and subsequent inhalation of chemicals of potential concern are not expected for park users or school children/staff.

Holifield Park – Proposed Additional Investigation

- Six step-out hydropunch groundwater sampling locations are proposed in Holifield Park to define the north/northeastern plume extent
- Groundwater samples will be collected from the following depths: 24-28 feet, 31-35 feet, 36-40 feet, 44-48 feet, and 55-58 feet below ground surface at each proposed location
- Samples to be analyzed for: TPH as JP5, TPH as gasoline, and volatile organic compounds

Holifield Park – Proposed Sampling Locations



Sentry Groundwater Monitoring

- 70 wells gauged
- 8 wells sampled (plus one duplicate)
- Groundwater elevations have generally decreased in both the uppermost and Exposition aquifers since April 2008

Sentry Groundwater Monitoring Results

Location	TPH as Gasoline	TPH as Fuel Products	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,2-DCA	MTBE
GMW-14	210	810	< 0.50	< 0.50	< 0.50	< 1	< 0.50	2.2
GMW-14 Dup	180	720	< 0.50	< 0.50	< 0.50	< 1	< 0.50	2.3
GMW-47	< 100	450	< 0.50	< 0.50	< 0.50	< 1	< 0.50	< 0.50
GMW-57	< 100	390	< 0.50	< 0.50	< 0.50	< 1	< 0.50	< 0.50
GMW-58	870	750	45	< 0.50	< 0.50	< 1	< 0.50	0.77
GMW-59	2300	2900	580	< 2.5	< 2.5	< 5	< 2.5	3.3
GMW-60	2000	610	240	< 1.0	3.9	< 2	< 1.0	< 1.0
GMW-61	1500	790	400	< 2.5	28	129.3	< 2.5	< 2.5
GMW-62	2400	1000	1300	33	160	109	< 2.5	< 2.5

Samples collected on July 29, 2008. Results in milligrams per liter.

Planned Activities for Next Quarter

- Continue weekly system inspections, required sampling, evaluation, and optimization
- Conduct eastern boundary aquifer test
- Complete vapor respiration test, evaluation, and summary report
- Conducted step-out groundwater sampling at Holifield Park
- Conduct semiannual groundwater monitoring (completed week of October 13th)
- Conduct weed abatement and tree trimming (began October 20th)
- Prepare 2nd Semiannual GWM Report

Discussion