



DEFENSE LOGISTICS AGENCY

AMERICA'S COMBAT LOGISTICS SUPPORT AGENCY



Norwalk Tank Farm Update

Norwalk Tank Farm
Restoration Advisory Board

August 9, 2012

WARFIGHTER SUPPORT

STEWARDSHIP EXCELLENCE

WORKFORCE DEVELOPMENT



Presentation Overview

- General Site Activities
- Soil Cleanup Goals
- Remediation Operations Update
- Concrete Demolition & Asbestos-Containing Material (ACM) Abatement Update
- Five-Year Action Plan Progress Report
- Planned Activities



General Site Activities

- Submitted quarterly NPDES Discharge Monitoring Reports (DMR) for 4th quarter 2011 and 1st quarter 2012
- Submitted Remediation Monthly Status Summary Reports
- Conducted Groundwater Monitoring (GWM) - 1st quarter 2012 event (Jan); 1st semiannual event (Apr); 3rd quarter 2012 event (Jul)
- Conducted site-wide weed abatement (Feb 1-10 and May 30-Jun 4) and perimeter tree trimming (Apr 23)
- Surplus government equipment delivered to Camp Pendleton (Mar 15 and 21)
- Electrical service and transformer relocated (Jun 1); new transformer energized (Jun 5)
- Tested on-site back-flow preventers (Jun 24 and Jul 26)



Soil Cleanup Goals

- Proposed soil cleanup goals submitted to RWQCB for all chemicals of concern, including TPH, BTEX, MTBE and TBA
- Calculated using the procedures prescribed in the RWQCB's May 1996 *Interim Site Assessment & Cleanup Guidebook*
- Jul 12, 2012 letter from RWQCB approved proposed soil cleanup goals as submitted



Soil Cleanup Goals for TPH, BTEX, MTBE and TBA

Depth Below Ground Surface	0.5	5	10	15	20	25
Depth to Groundwater	25.5	21	16	11	6	1
Constituent	Soil Cleanup Goal (mg/kg)					
TPH as Gasoline (C4-C12)	500	500	100	100	100	100
TPH as JP-5 (C8-C17)	500	500	100	100	100	100
TPH as Diesel (C5-C25)	1,000	1,000	100	100	100	100
Benzene	0.015	0.013	0.012	0.013	0.011	0.012
Toluene	0.614	0.440	0.391	0.423	0.356	0.367
Ethylbenzene	2.07	1.44	1.19	1.33	1.07	1.10
Xylenes	5.55	3.77	3.09	3.47	2.76	2.84
Methyl-t-Butyl Ether (MTBE)	9.07E-04	9.10E-04	8.43E-04	8.89E-04	6.97E-04	6.86E-04
Tert-Butyl Alcohol (TBA)	0.0010	0.0012	0.0013	0.0016	0.0014	0.0016

mg/kg = milligram per kilogram

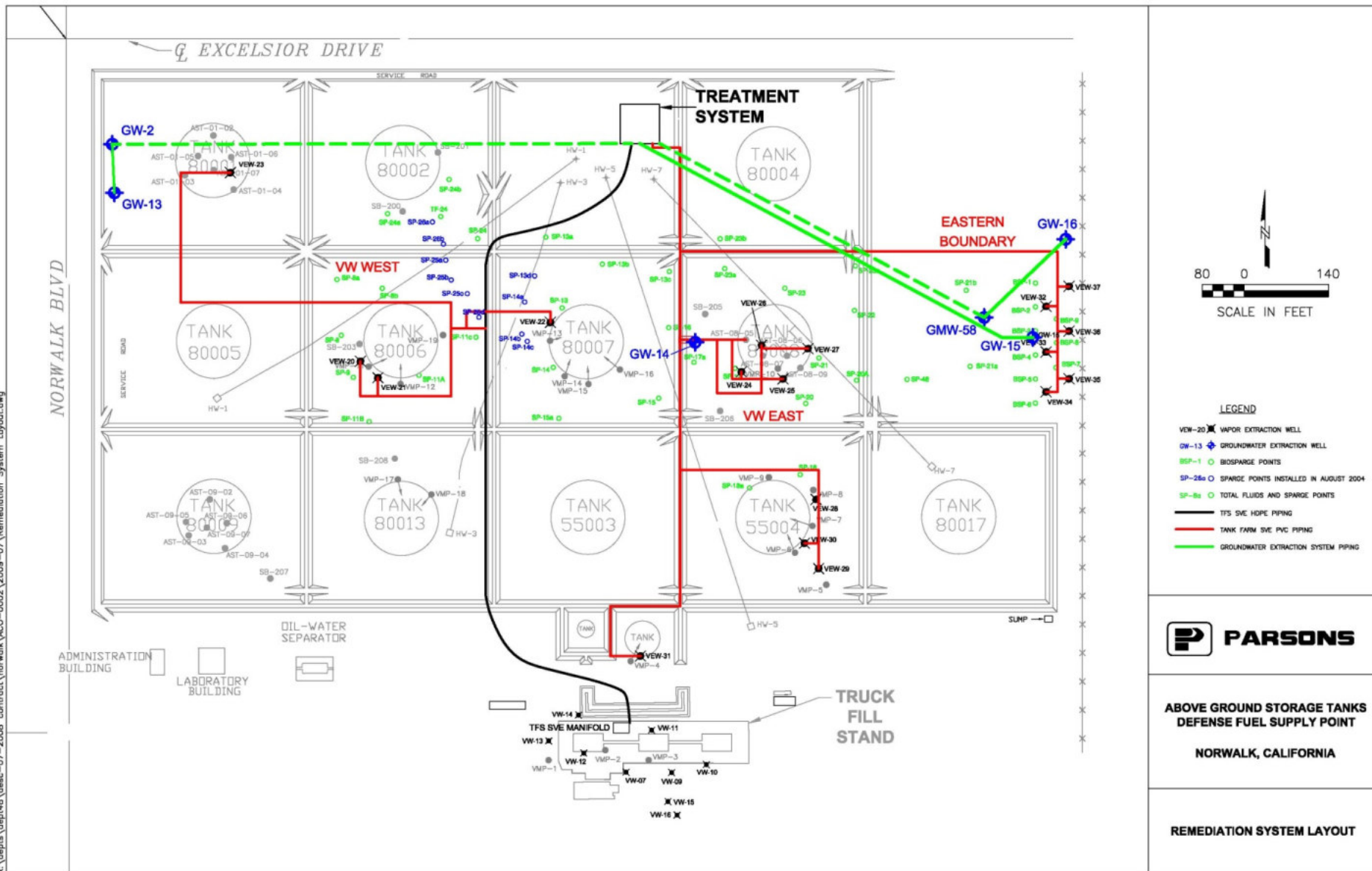


Remediation Operations Update

- Remediation Systems and Objectives
 - Groundwater extraction (GWE) for contaminant mass containment
 - Soil vapor extraction (SVE) for contaminant mass removal
 - Biosparging for contaminant mass removal



DLA Remediation System Layout



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Remediation Systems Monitoring & Sampling

- GWE & SVE daily and weekly system inspections
- SVE system performance & compliance sampling:
 - 1st quarter 2012: Jan 26, Feb 24, Mar 28
 - 2nd quarter 2012: Apr 27, May 31, Jun 28
- GWE system performance & compliance sampling:
 - 1st quarter 2012: Jan 20 and 26, Feb 3, 10, 17, 23, and 24, Mar 2, 6, 9, 16, 23 and 28
 - 2nd quarter 2012: Apr 5 and 27, May 18 and 31, Jun 15 and 28



GWE System Operations Summary

- GWE operated from 2 wells (GW-2 and GW-13) in the north-west area and from 2 wells (GW-15 and GW-16) in the north-eastern site area
- System **On** from Jan 1 through Jun 30, 2012 except for the following reasons and dates when it was **Off**:
 - Dec 30, 2011 – Jan 16, 2012: 1st quarter 2012 GWM event
 - Jan 12: granular-activated carbon (GAC) change-out
 - Apr 9-23: 1st semiannual 2012 GWM event
- GWE system operation time:
 - 1st quarter 2012: 72.2% of time / 89.2% of time excluding planned shutdowns for O&M, GAC change-out, permit compliance sampling and GWM events
 - 2nd quarter 2012: 84.2% of time / 99.8% of time excluding planned shutdowns

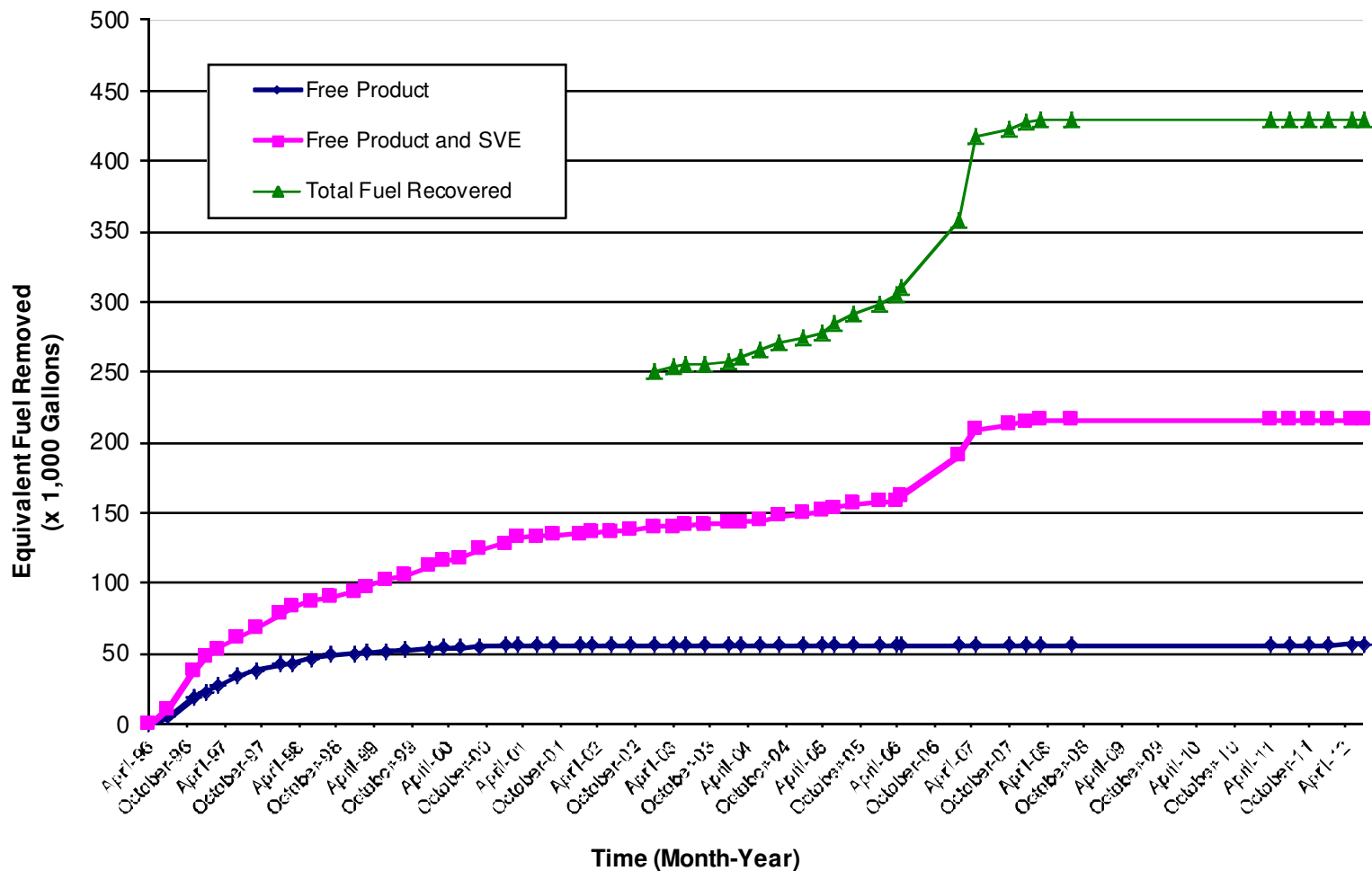


SVE System Operations Summary

- SVE operated from four horizontal wells (HW-1, HW-3, HW-5 and HW-7) spanning the entire former tank farm area and from 6 wells (SVE-32 through SVE-37) in the north-eastern site area
- System **On** from Jan 1 through Jun 30, 2012 except for the following periods when it was **Off**:
 - Dec 30, 2011 – Jan 16, 2012: 1st quarter 2012 GWM event
 - Apr 9-23: 1st semiannual 2012 GWM event
- SVE system operation time:
 - 1st quarter 2012: 84.9% of time / 98.7% of time excluding planned shutdowns
 - 2nd quarter 2012: 83.2% of time / 99.9% of time excluding planned shutdowns



SVE System Operations Summary





Overall Operations Summary

- Groundwater extracted:
 - 1st quarter 2012: 1,335,625 gallons
 - 2nd quarter 2012: 1,620,296 gallons
 - 61.7 million gallons since Apr 1996
- Soil vapor extraction system equivalent fuel removed:
 - 1st quarter 2012: 4.5 gallons (29.7 pounds)
 - 2nd quarter 2012: 4.3 gallons (28.3 pounds)
 - 215,883 gallons (1.4 million pounds) since Apr 1996

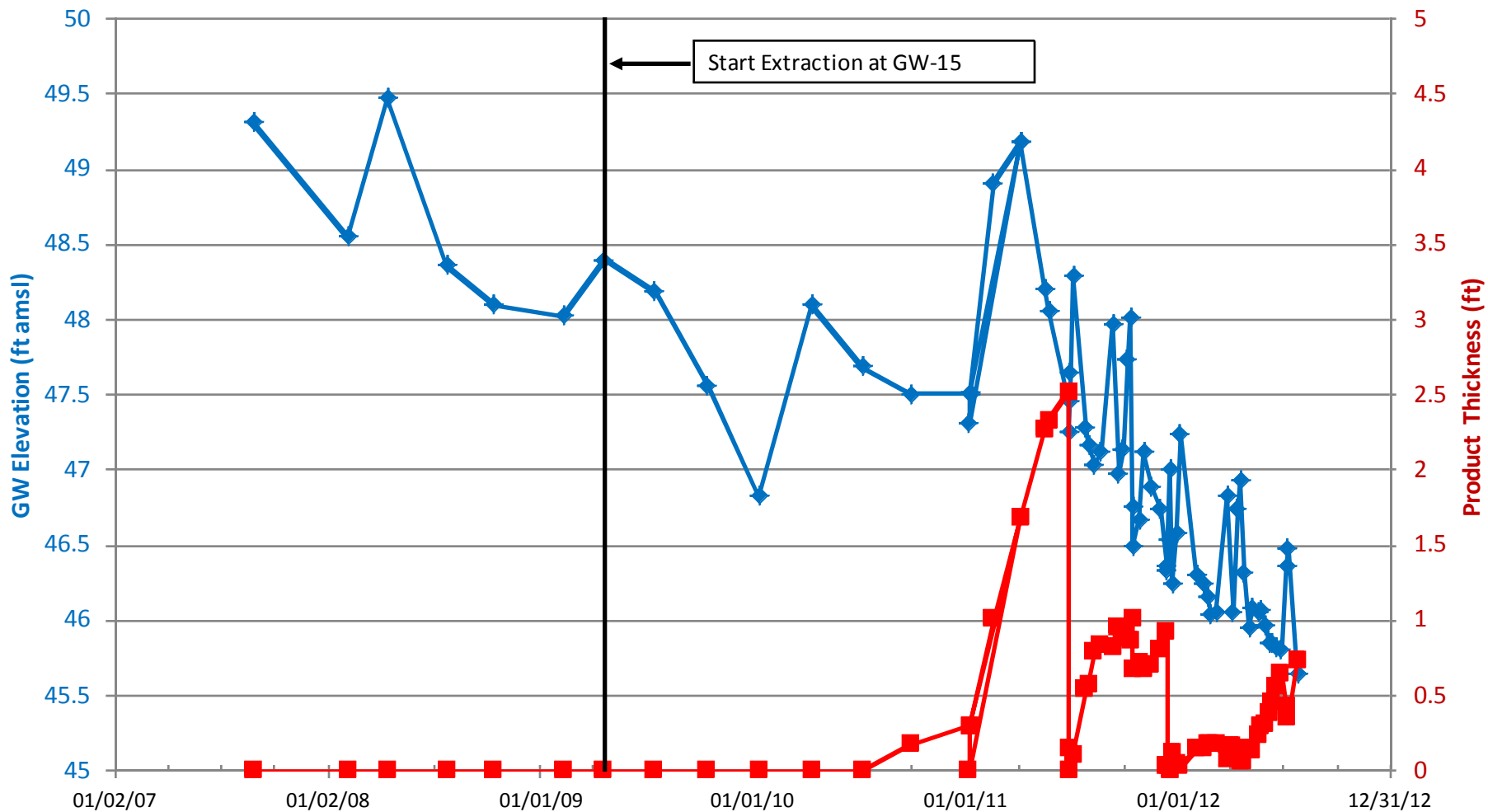


GMW-62 Free Product Monitoring

- GMW-62 is located in Holified Park just adjacent to the eastern site property fence
- Since Jan 2011 free product has been measured at GMW-62
- GMW-62 quarterly gauging results:
 - 1st quarter Jan 2012: 0.03 feet of product
 - 2nd quarter Apr 2012: 0.10 feet of product
 - 3rd quarter Jul 2012: 0.43 feet of product
- Bi-monthly gauging will continue and once thickness reaches 1 foot of free product it will be recovered



GMW-62 Hydrograph





Concrete Demolition & ACM Abatement Update

- Oct 7, 2011 – Last day of concrete demolition due to the discovery of ACM
- ACM abatement began Feb 12, 2012
- ACM abatement stopped pending concrete removal at pump houses to expose remaining ACM pipes (Jul 13)



ACM Abatement Progress Summary

- 14-inch fuel transfer pipe ~ 1,025 liner feet (LF)
- 14-inch fuel transfer pipe ~ 312 LF
- 10-inch fuel transfer pipe ~ 696 LF
- 8-inch fuel transfer pipe ~ 66 LF
- 6-inch miscellaneous pipe ~ 652 LF
- 4-inch miscellaneous pipe ~ 10 LF
- 2-inch miscellaneous pipe ~ 386 LF
- 18-inch storm drain transite pipe ~ 929 LF
- 14-inch storm drain transite pipe ~ 456 LF
- 10-inch water main transite pipe ~ 471 LF
- 6-inch fire water suppression system pipe ~ 7,890 LF
- 4-inch fire water suppression system pipe ~ 165 LF
- 6-inch fire water suppression system transite pipe ~ 1,342 LF
- 14-inch non-ACM steel ~ 30 LF



Five-Year Action Plan Progress Report

- Free product recovery
 - Fuel thickness and extent of free product in wells throughout the site have decreased
 - Apr 2012 free product only detected in five wells in the north-eastern/Holifield Park area and one well in the truck fueling area
 - GMW-62 located in Holifield Park is gauged bi-monthly and vacuum-truck free product recovery is conducted once one foot thickness is measured



Five-Year Action Plan Progress Report

- Soil vapor extraction
 - SVE began continuous operation from the north and north-eastern areas in Jan 2011
 - During the first semiannual period in 2012, approximately 58 pounds of contaminant mass has been destroyed by SVE and approximately 1.4 million pounds since Apr 1996



Five-Year Action Plan Progress Report

- Groundwater extraction
 - Effectively decreased free product plumes
 - Extraction from north-west corner and north-eastern area for containment has been effective
 - Off-site wells continue to show non-detect or decreasing trends in TPH and BTEX concentrations
 - Although TPH concentrations in most wells are lower and/or are declining, GWE is used for plume containment



Remedial Action Plan Update

- Jul 12, 2012 letter from RWQCB approved proposed soil cleanup goals for all chemicals of concern including TPH, BTEX, MTBE and TBA
- **Soil Remediation Schedule**
 - SVE &/or bioventing operation: Jan 2012 - May 2014
 - Conduct additional soil investigation (under concrete foundations): Jan 2012 – Sep 2012
 - Respiration test, soil confirmation sampling and reporting: May 2014 – Dec 2014
 - Potential new remedial solution: TBD



Remedial Action Plan Update

- **Groundwater Remediation Schedule**
 - GWE for containment will continue
 - Evaluate groundwater remediation technologies
 - Remedial action will be proposed and implemented: project for the second half of 2012 thru the end of 2014



Planned Activities

- Continue operation, weekly system inspections, required sampling, evaluation and optimization of GWE and SVE systems
- Conduct 3rd quarter 2012 GWM sentry event (Jul); conduct 2nd semiannual 2012 event (Oct); and 1st quarter 2013 GWM sentry event (Jan)
- Prepare and submit NPDES DMR for 2nd, 3rd and 4th quarters 2012



Planned Activities

- Concrete demolition and ACM abatement tasks:
 - Finalize all concrete demolition at pump house and truck fueling areas
 - Finalize removal of all non ACM pipelines throughout the site, including the pump house areas
 - Continue with DPT soil confirmation sampling at the former truck fueling area and pump houses
 - Green waste removal from all steel tank and concrete demolition activities

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