



DFSP NORWALK RESTORATION ADVISORY BOARD

**Defense Logistics Agency – Installation Support for Energy
Update**



August 24 , 2017

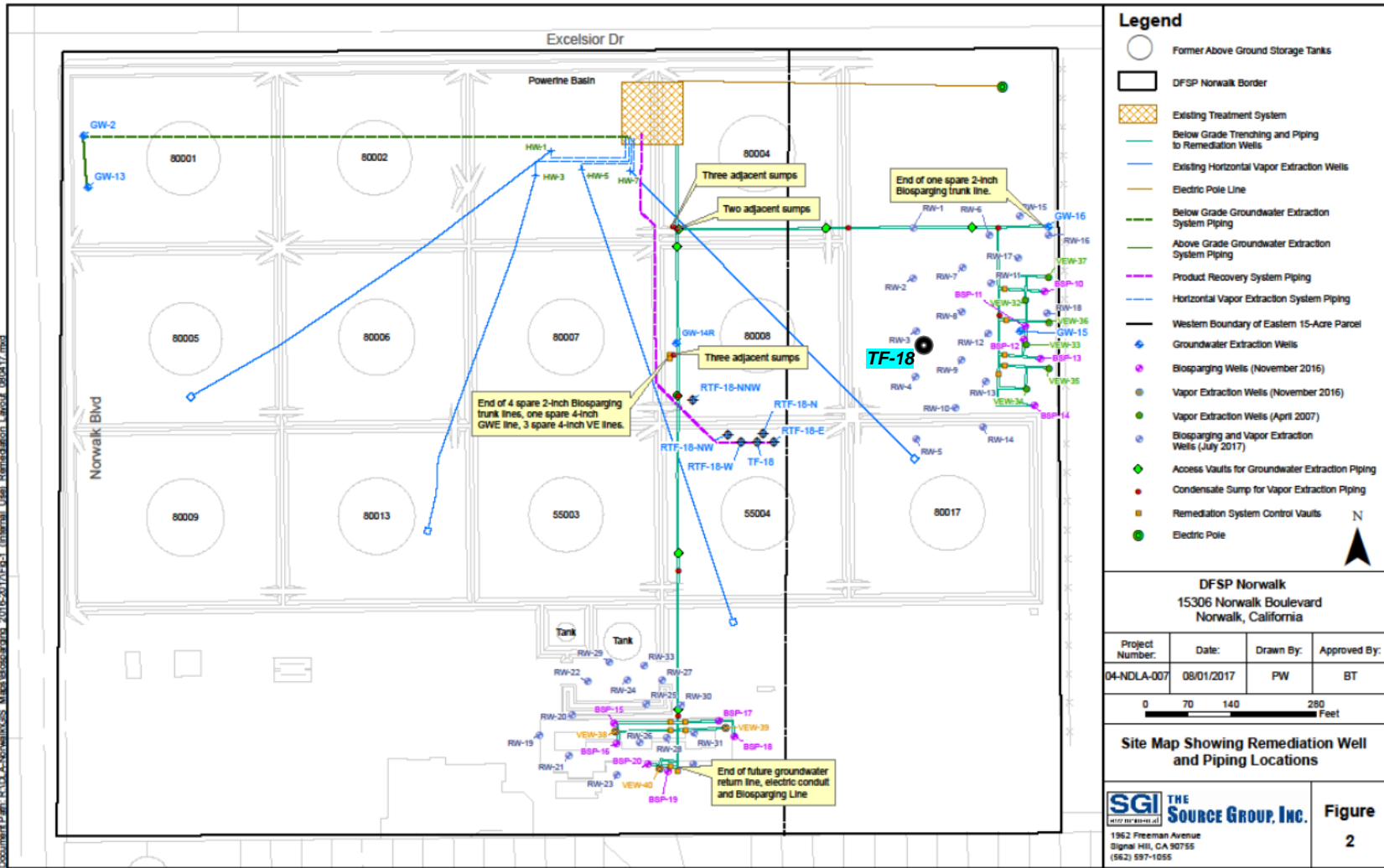
Status of Remediation System

Status of Soil and Groundwater Remediation System

- **Groundwater Remediation: Treated 76.8MM gallons since April 1996; 9,945 lbs of diesel removed since 1996**
- **SVE System: Recovered 2.96MM Pounds of Contamination (Hydrocarbon Equivalent) since April 1996**
- **SVE system is currently operating – from re-developed horizontal SVE wells and re-installed SVE wells in east and south parts of the Site**
- **LNAPL Recovery:**
 - **Reduced extracted volumes due to raising groundwater levels**
 - **Evaluating Options for next phase of *in-situ* LNAPL Removal**

In-Situ Treatment System

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Soil Remediation – Site Wide

Soil Remediation:

- **Soil Remediation Accomplished by Excavation and On-site Bio-remediation**
- **All Soil Between 0 to 10 feet with *Contamination Above Cleanup Goals* have been Excavated and Treated:**
- **Deeper Soil (> 10 feet) with Highest Concentrations of Contamination (affecting groundwater) were Removed and Treated from Tank Basin 80008 and 55004, and Former Truck Rack Area**
- **Deeper Soil cleanup and LNAPL Removal: SVE, Air Sparging, and evaluating potential other options for LNAPL**

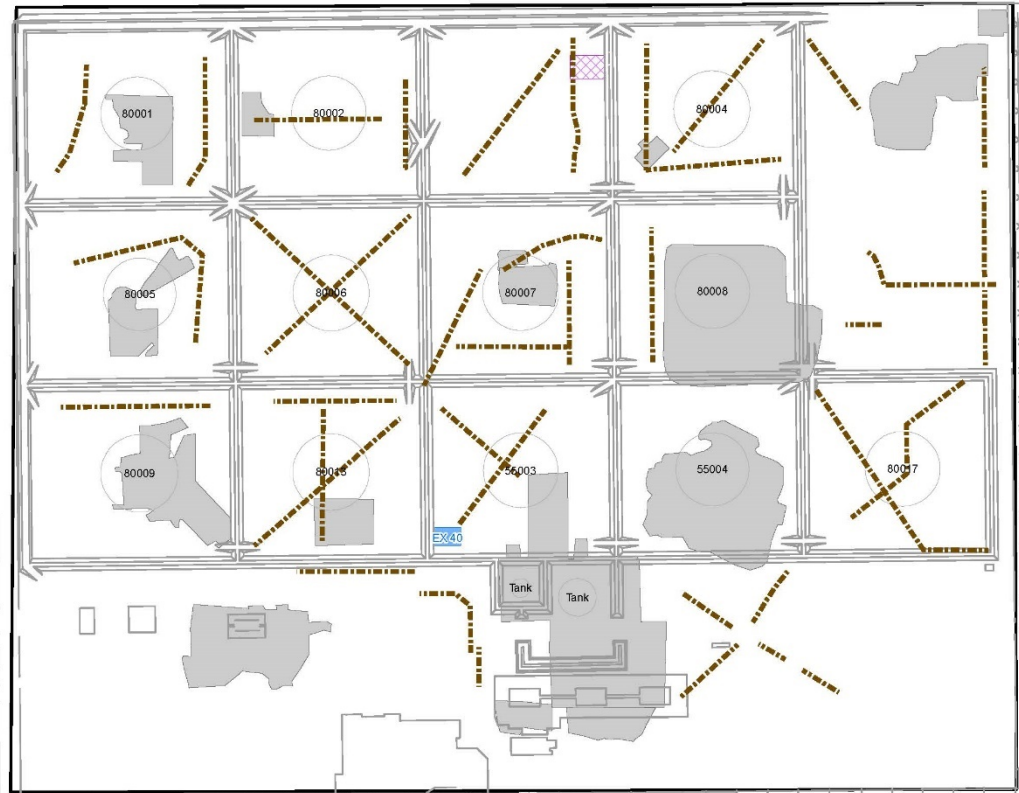
Soil Remediation – Status

Soil Remediation Project Progress:

- **All Planned Excavations Completed, All Cross Trenching Completed**
- **Approximately 175,000 tons of Soil Excavated**
- **77,000 tons of Cleaned Soil Tested and Approved for Backfill:**
- **98,000 tons Treated and Approved for Backfill**
- **All Excavations Backfilled**

Completed Excavations and Cross Trenching

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Legend

- Former Above Ground Storage Tanks
- Cross Trenches throughout the Site
- Excavation in Progress
- Existing SVE System
- Backfilled Excavation
- DFSP-Norwalk Border

Notes

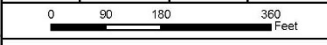
SVE = Soil Vapor Extraction

All cross trenches completed to 10 feet depth.



DFSP Norwalk
15306 Norwalk Boulevard
Norwalk, California

Project Number:	Date:	Drawn By:	Approved By:
04-NDLA-007	02/08/2017	PW	PP



Cross Trench and Excavation Locations

SGI THE SOURCE GROUP, Inc. <small>1962 Freeman Avenue Signal Hill, CA 90755 (562) 597-1055</small>	<p>Figure</p> <p>2</p>
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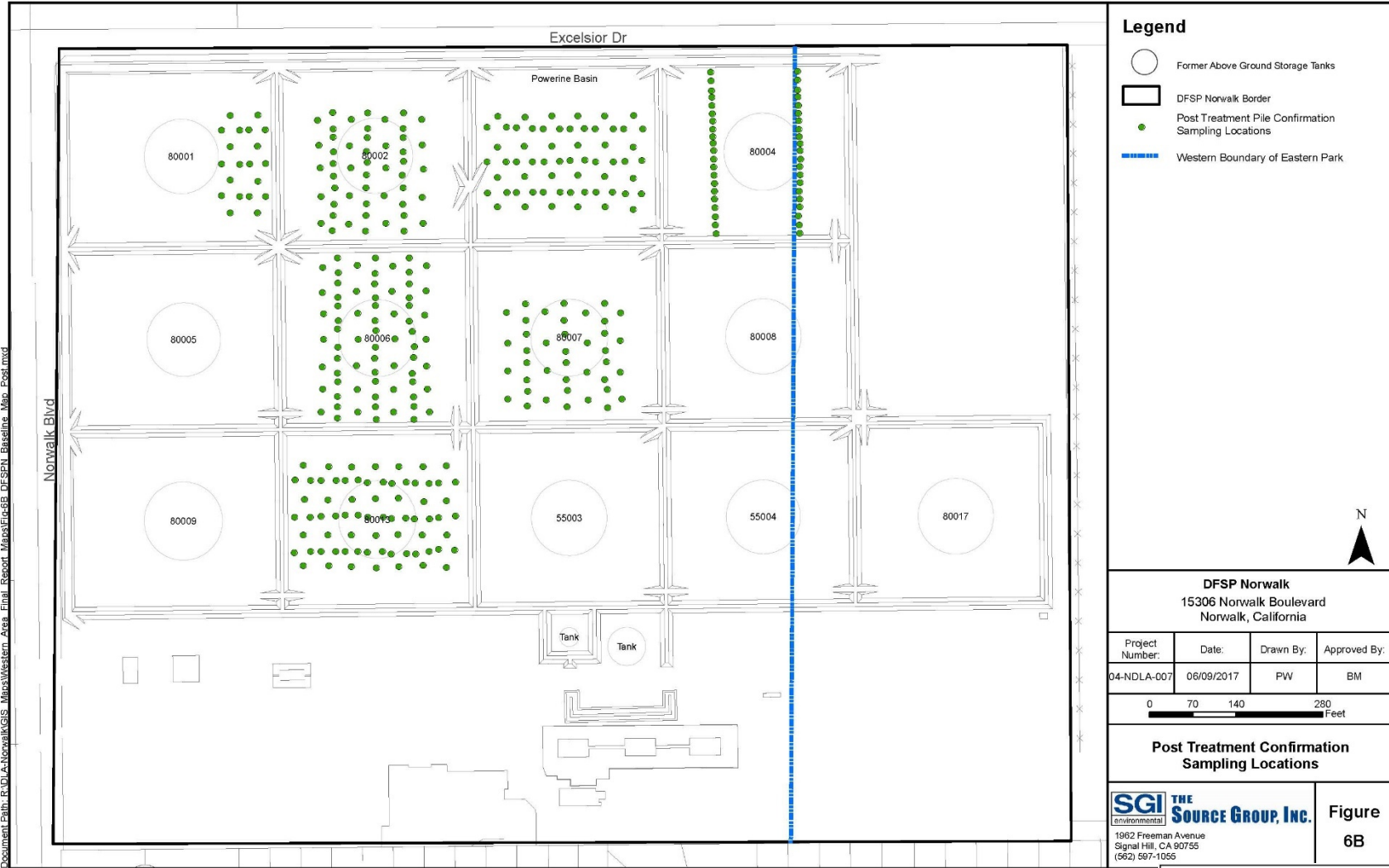
Confirmation Sampling

>6,150 Soil Samples, including 816 Samples from Excavations



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and 418 Soil Samples in Areas of Soil Treatment Stockpiles



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Before: Soil Treatment Cells



After:



Cross Trenching– Looking Northeast



Western Part Soil Gas: 171 samples from 71 locations: No Significant Human Health Risks

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Legend

- SV-56 Soil Vapor Probe Locations
- Western Part Boundary

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DFSP Norwalk
15306 Norwalk Boulevard
Norwalk, California

Project Number:	Date:	Drawn By:	Approved By:
04-NDLA-007	07/06/2017	P. W	P. P

0 70 140 280 Feet

Soil Gas Sampling Locations and Results

 <small>1962 Freeman Avenue Signal Hill, CA 90755 (562) 587-1055</small>	Figure
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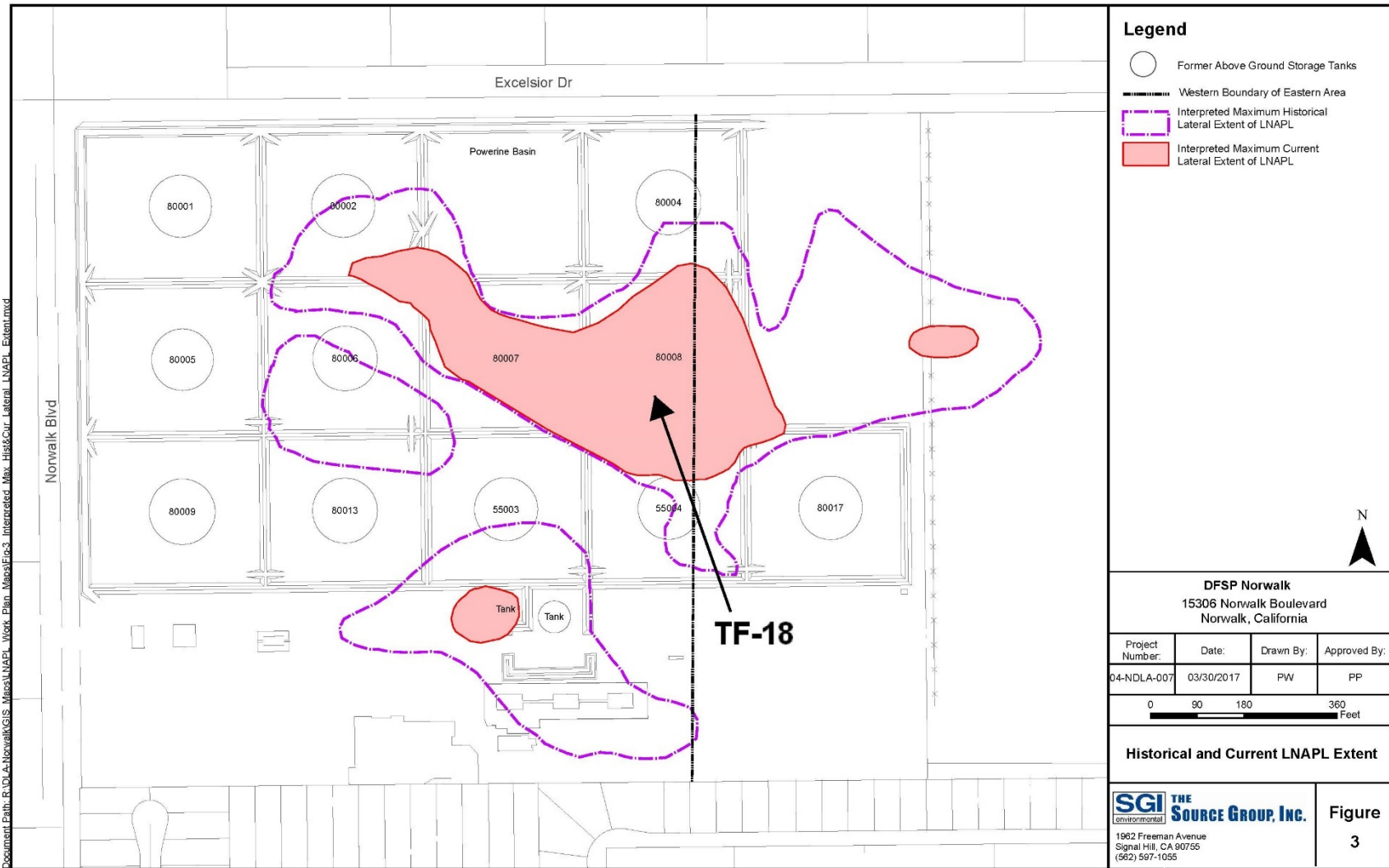
Western Area Shallow Soil Completion Report

- **Report Currently Being Prepared**
- **Report Includes an Evaluation of Risk to:**
 - **Future On-Site Workers**
 - **Off-Site, Residential Receptors**
 - **Results Indicate no Significant Risk**
- **Anticipate RWQCB's Concurrence with Recommendation for No Further Action for the Shallow Soil**

Groundwater Monitoring and Subsurface Remediation Wells Replacement

- **Replaced 18 Groundwater Wells That had been Abandoned Prior to Soil Treatment**
- **Installed New 3 SVE, and 11 Sparge Wells, conducted Sparge Tests in East and South Areas**
- **Installed 34 dual-use Sparge/SVE wells in Eastern and Southern Areas; re-started SVE from these areas**
- **Installed and Operated 4 LNAPL Pilot Test Recovery wells near Recovery Well TF-18**

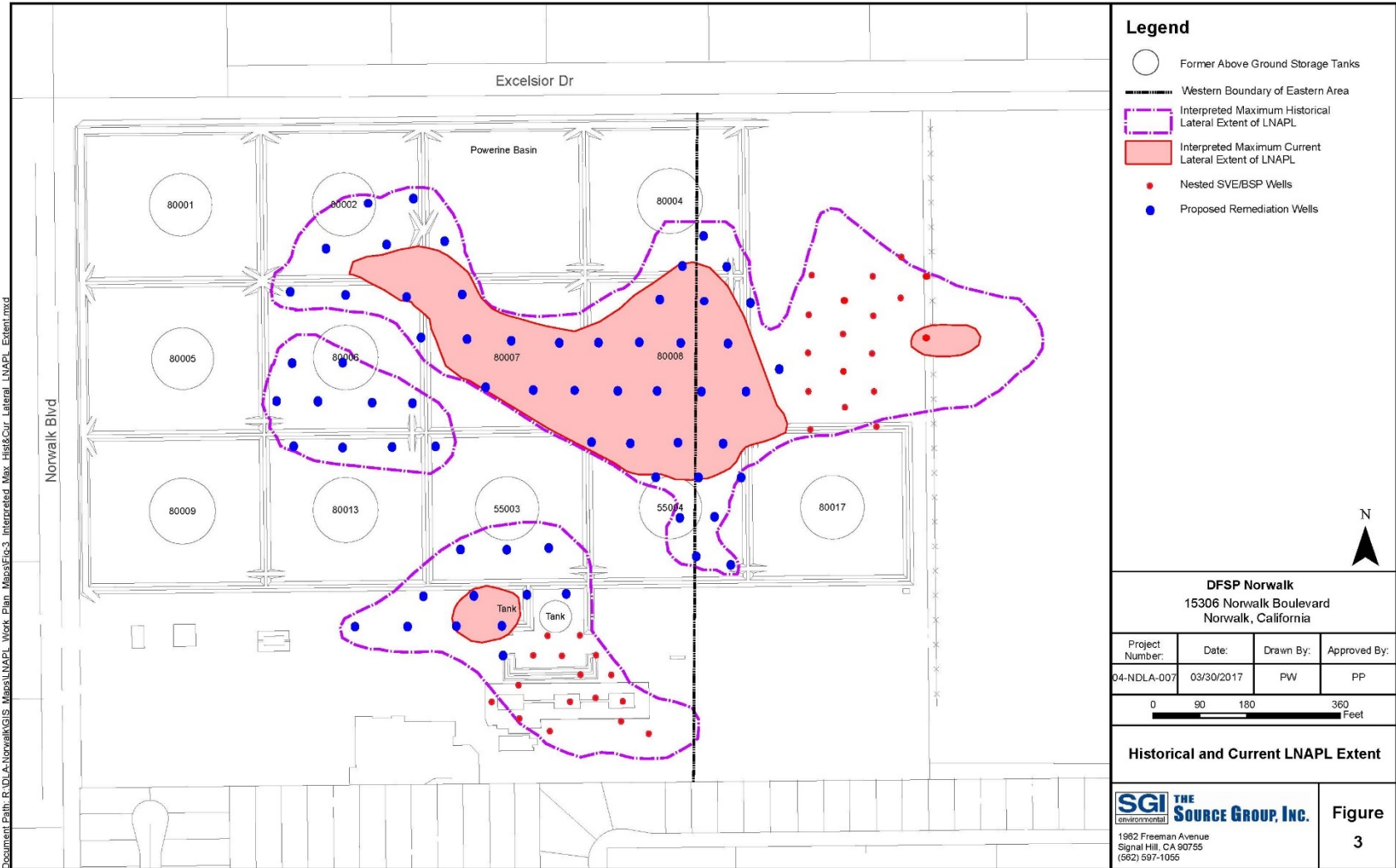
Focus of Future Remediation Efforts: LNAPL



Groundwater – Planning for Next Phase

- **Submit a Revised LNAPL CSM and Present a Subsurface Remediation Approach**
- **Currently Re-Starting Expanded SVE Well Network and Biosparging**
- **Increasing Air Sparge Capacity and Evaluating Replacement of 3,000-scfm Soil Treatment Equipment**
- **LNAPL Bench Test for Surfactant Completed: Evaluation of Potential Flushing of LNAPL- Possible Pilot Test to Evaluate LNAPL Recovery Methods and Options for Enhancements**
- **Install and Commission New and Replacement Vertical Air Sparge Wells – Throughout Tank Farm**

Focus of Future Remediation Efforts: LNAPL



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DLA Update

Questions & Discussion

