

# **DFSP NORWALK**

**Facilities Planning, Construction and Management  
Defense Logistics Agency - Energy Update**

**February 26, 2015**

# Status of Remediation System

## ✦ Status of Remediation System

- **Groundwater Remediation: Treated 73 Million Gallons since April 1996 (182,000 gallons in fourth quarter of 2014)**
- **SVE System: Recovered 2.9 million pounds since April (10 lbs in fourth quarter of 2014)**
- **LNAPL Recovery: 934 gallons for the year of 2014 (146 for fourth quarter of 2014)**

# Soil Remediation – Site Wide

## Conducted Remedial Approach Screening w/ Goal:

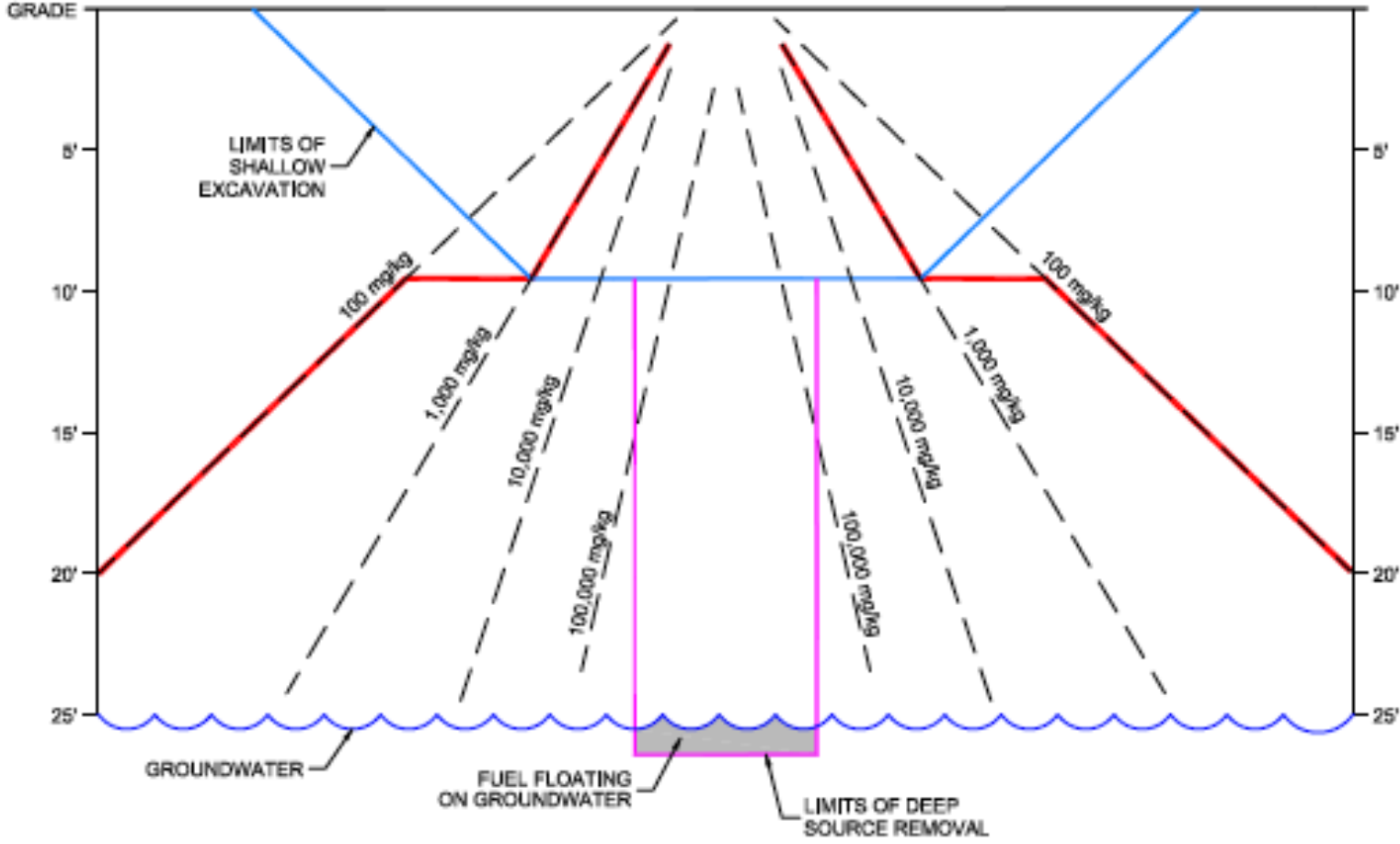
- ◆ **Ready Site for Conveyance to City for Use as Parkland and Remaining Land to GSA for Future Redevelopment**
- ◆ **Accelerate Groundwater Remediation**
- ◆ **Minimize Impact to the Norwalk Community**
- ◆ **Reduce Greenhouse Gas Emissions**
- ◆ **Address Groundwater Contamination Underlying Holifield Park in Northeast Corner**

# Soil Remediation – Site Wide

- ◆ **Soil Remediation:**
  - **Soil remediation will be accomplished via bio-remediation**
  - **Refined Areas of Shallow (0 to 10 feet) and Deep Soil (> 10 feet) Contamination**
  - **Will Include Treatment of Shallow “Oily Sand” Present Near Former Clarifier**



# Soil and Groundwater Treatment



# Status of Pre-Field Activities



## Permits

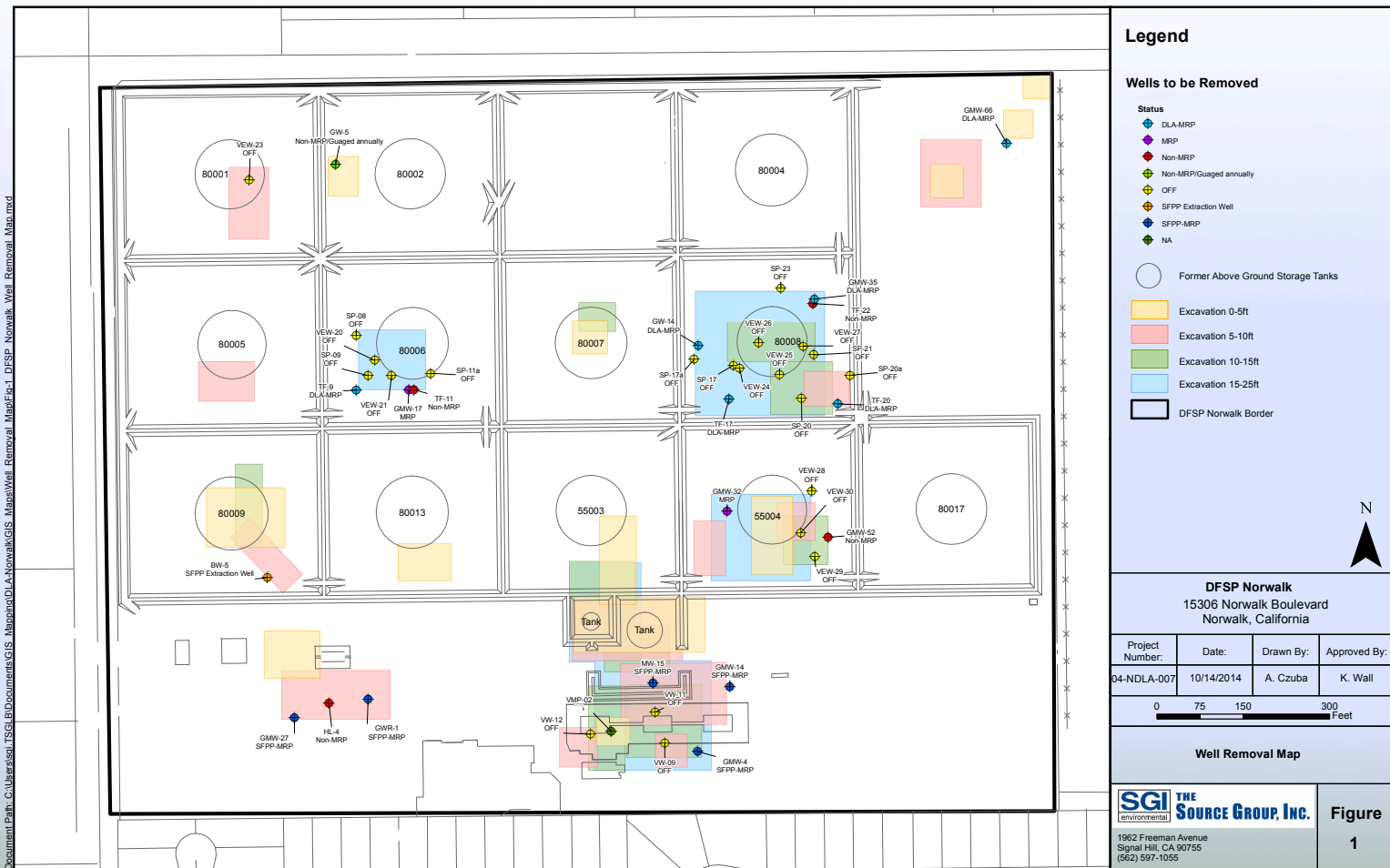
- **City of Norwalk Excavation Plan/Permit-Complete**
- **Remedial Action Plan; Los Angeles Regional Water Quality Control Board (LARWQCB)-Complete**
- **Waste Discharge Requirement (WDR); LARWQCB-Complete**
- **Well Removal Permit; LA County Department of Public Health-Complete**
- **Well Removal Work Plan; RWQCB-Complete**
- **Soil Management Plan (SMP)/Treatment Cell Operation Plan; LAWQCB-Complete**
- **Air Permits: Revised Permit to Operate and 1166 VOC Permit; South Coast Air Quality Management Plan – Draft**  
Permits have been received and currently working through final monitoring requirements

## Status of Pre-Field Activities (cont'd)

### ◆ Site Preparation

- **Surveying: corners of planned excavations, high concentration points locations, removed groundwater monitoring wells**
- **Utility clearance for excavations and well removals (USA Dig Alert and geophysical surveying)**
- **Removed 28 groundwater monitoring wells; submitted Well Removal Completion Report**
- **Constructed 6 treatment rows within treatment cell #1; Powerine Basin (central basin on north side of property where DLA's existing remediation treatment system is located)**
- **Field tested Earth Cleaning Machine (ECM) and mixing trailer with clean soil and surfactant only**

# Groundwater Monitoring Wells Removed and Later to Be Replaced



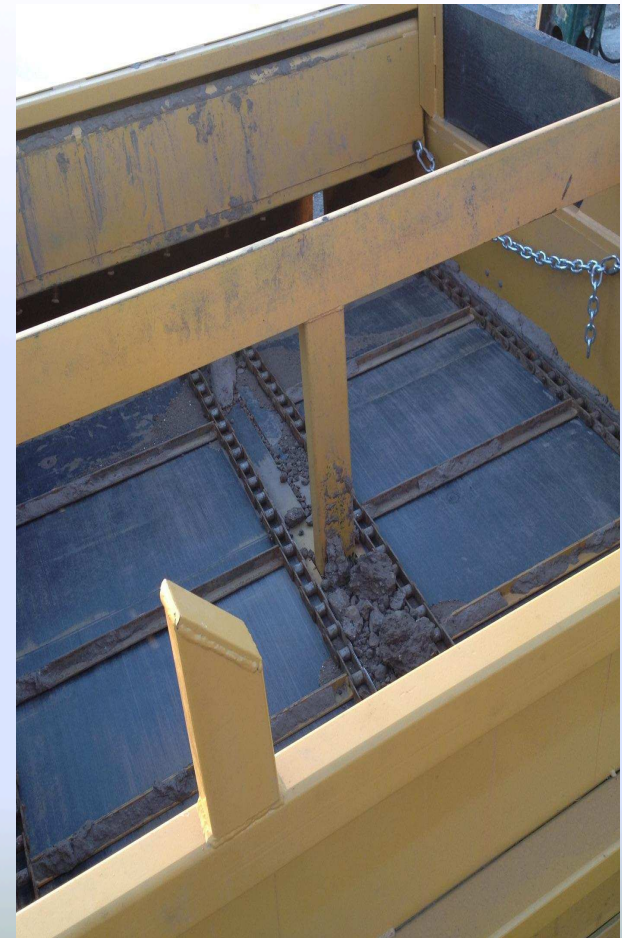
Document Path: C:\Users\slr\TSG\B\Documents\GIS\_Maps\NDLA\Norwalk\GIS\_Maps\Well\_Removal\_Map\EP-1\_DFSP\_Norwalk\_Well\_Removal\_Map.mxd

## Status of Pre-Field Activities (cont'd)

- ◆ **Site Preparation (continued)**
  - **Field measurement for fugitive air emissions:**
    - **To provide an additional factor of safety, the SCAQMD has requested an evaluation of field emissions prior to full-scale activity.**
    - **The objective is to obtain real-time empirical data as a Quality Assurance step to ensure compliance and safety.**



# The Earth Cleaning Machine (ECM)



# Brief Video of How it Works

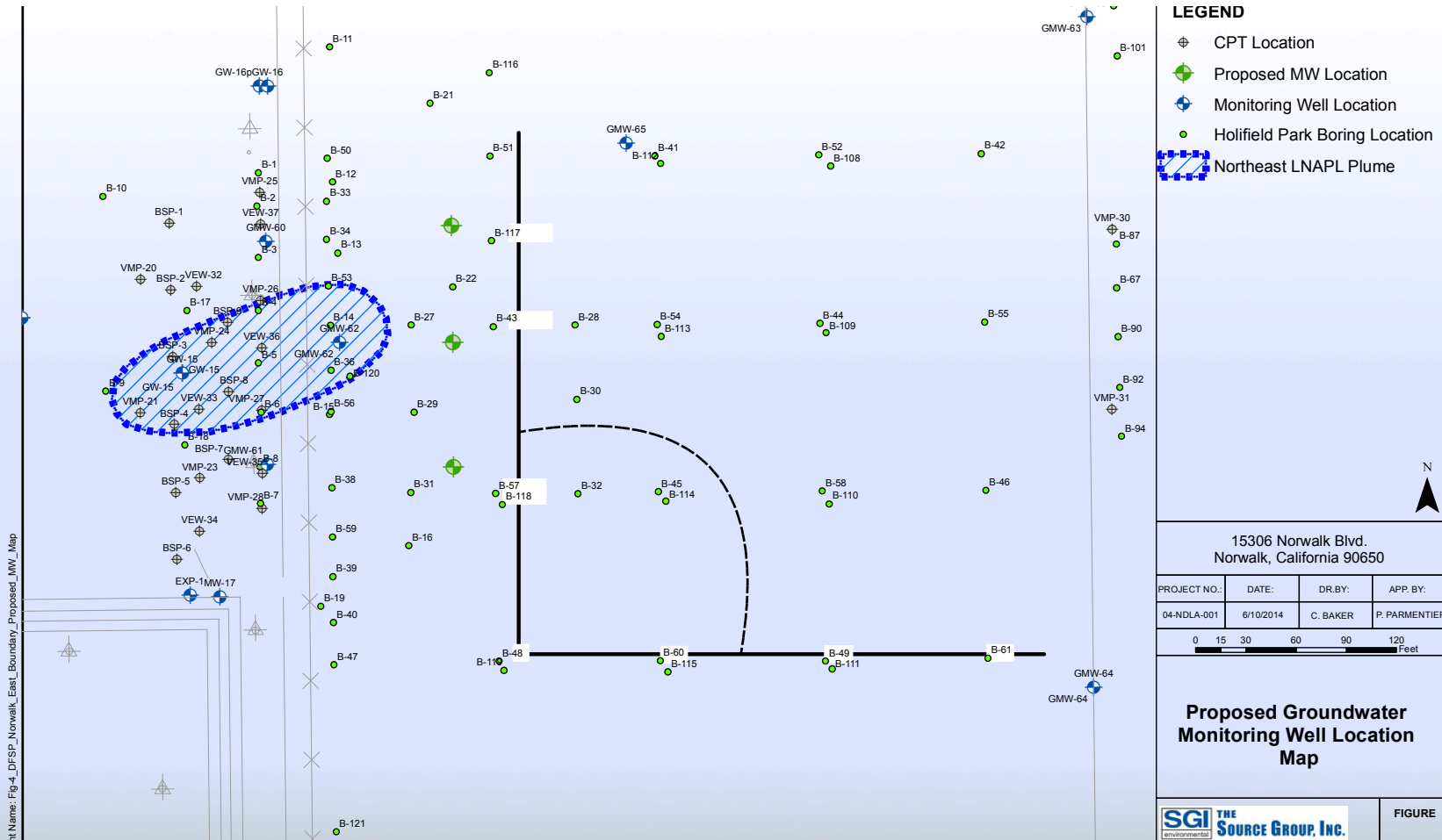
✦ <https://www.youtube.com/watch?v=r5LrxUeRBrI>

# Work Plan for Assessment at GMW-62

- ◆ **Evaluate Occurrence of Free Product**
  - **RWQCB Requirement**
  - **Objective is to:**
    - ❖ **Determine Distribution of Free Product & Evaluate Migration Pathways**
    - ❖ **Expand Free Product Recovery Efforts, if warranted**
  - **Three Wells Proposed on Holifield Park**
  - **Measure physical parameters of pore fluid saturation and free product mobility**
  - **Proposing Bench Scale Testing**
    - **Objective is understand physical parameters associated with LNAPL mobility and test possible injections options before field scale pilot testing**



# Work Plan for Assessment at GMW-62

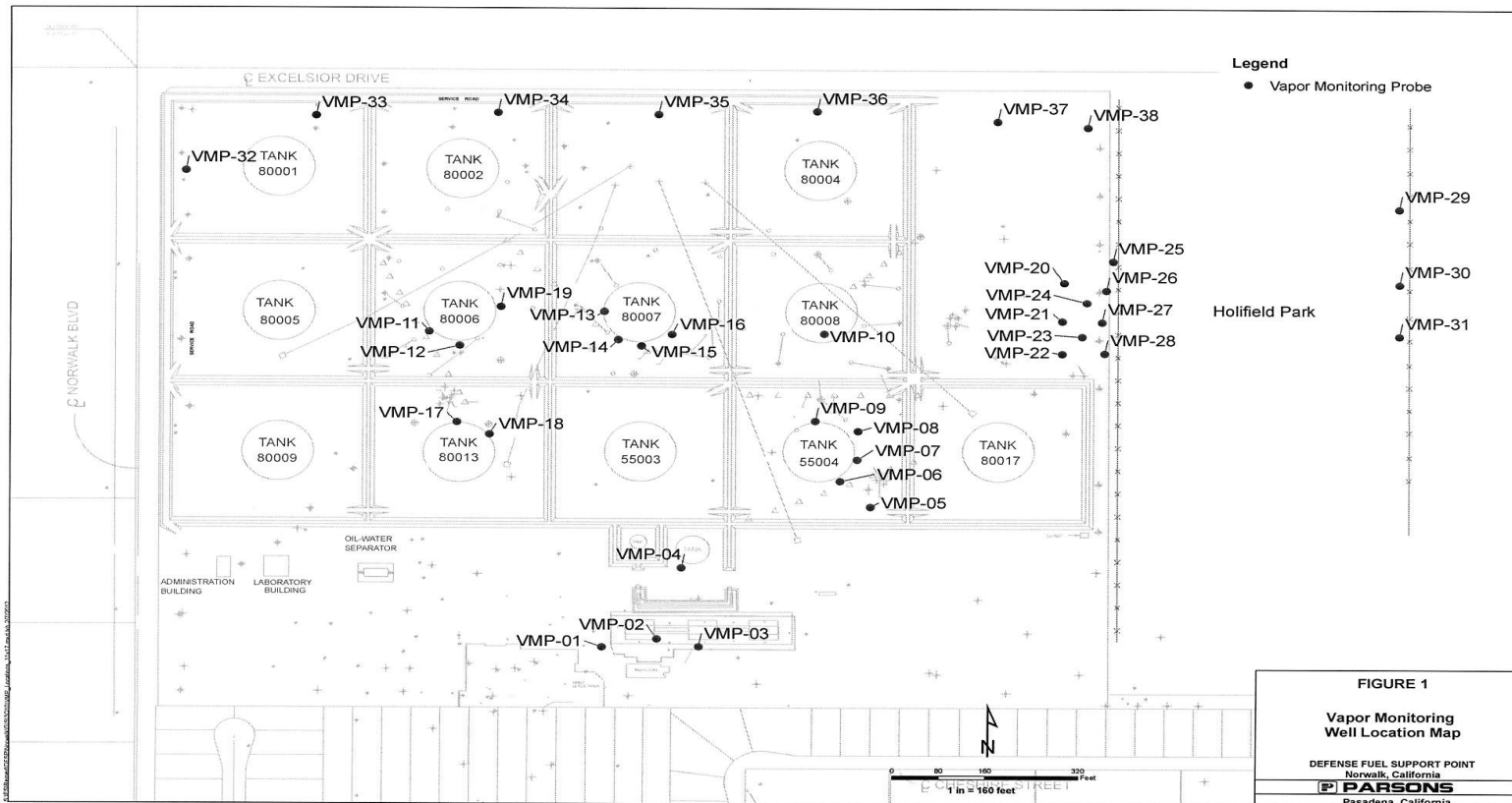


File Name: Fig\_4\_DFSP\_Norwalk\_East\_Boundary\_Proposed\_MW\_Map

# Soil Gas Survey

- ✦ To get a current baseline of soil gas conditions

# Soil Gas Survey Locations





# DLA Update

 **Questions and Discussion**



# **Second Semiannual 2014 Groundwater Monitoring Event**

**Presented by Daniel Swensson**

# Overview

- **Fieldwork conducted October 27 through November 3, 2014. Holifield Park wells sampled on December 17, 2014.**
- **Well gauging and groundwater sample collection conducted by The Source Group, Inc., and Blaine Tech.**
- **166 wells were gauged (treatment systems were offline).**
- **Groundwater samples were collected from 108 wells using low-flow methodology (including duplicate and split samples, 125 groundwater samples were analyzed).**

# Groundwater Elevations and Gradient

## – Uppermost Aquifer

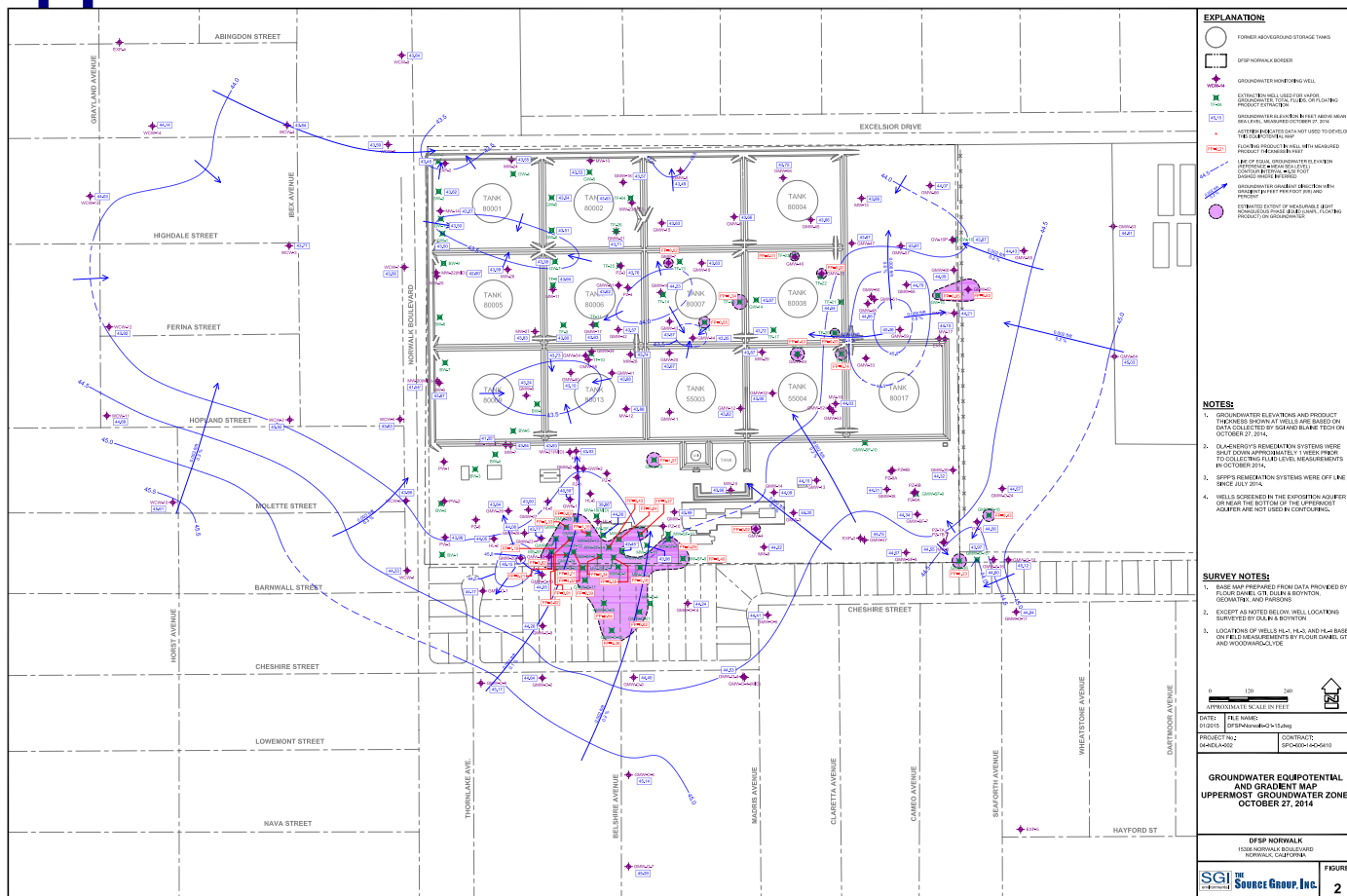
- ◆ Depth to Groundwater ranged from 25.59 to 37.57 feet below top of well casings.
- ◆ Elevations ranged from 39.86 to 46.59 feet above mean sea level.
- ◆ Elevations dropped an average of 0.41 foot since the April 2014 monitoring event.
- ◆ Gradients generally converge toward the site from the west, south, and east.
- ◆ The dominant gradient direction was northward (northwest to northeast) ranging from 0.001 to 0.003 ft/ft.



# Floating Product

- ✦ **Floating product was measured in 36 of the 166 wells gauged during this monitoring event.**
- ✦ **Since April 2014, measured product thicknesses increased in 15 wells, decreased in 27 wells, and remained the same in TF-20.**
- ✦ **Product was observed in five areas of the site:**
  - **North-Central Area: Floating product in eight wells ranging from 0.01 to 1.43 feet,**
  - **Eastern Area: Floating product in two wells (5.63 feet in GMW-62 and 0.05 foot in GW-15),**
  - **Truck Rack Area: Floating product in one well (0.02 foot in GMW-4),**
  - **South-Central Area: Floating product in 23 wells ranging from 0.16 to 4.38 feet, and**
  - **Southeastern Area: Floating product in two wells (1.23 feet in GMW-26 and 0.43 foot in GMW-O-18).**

# Figure 2: Groundwater Equipotential and Gradient Map – Uppermost Groundwater Zone

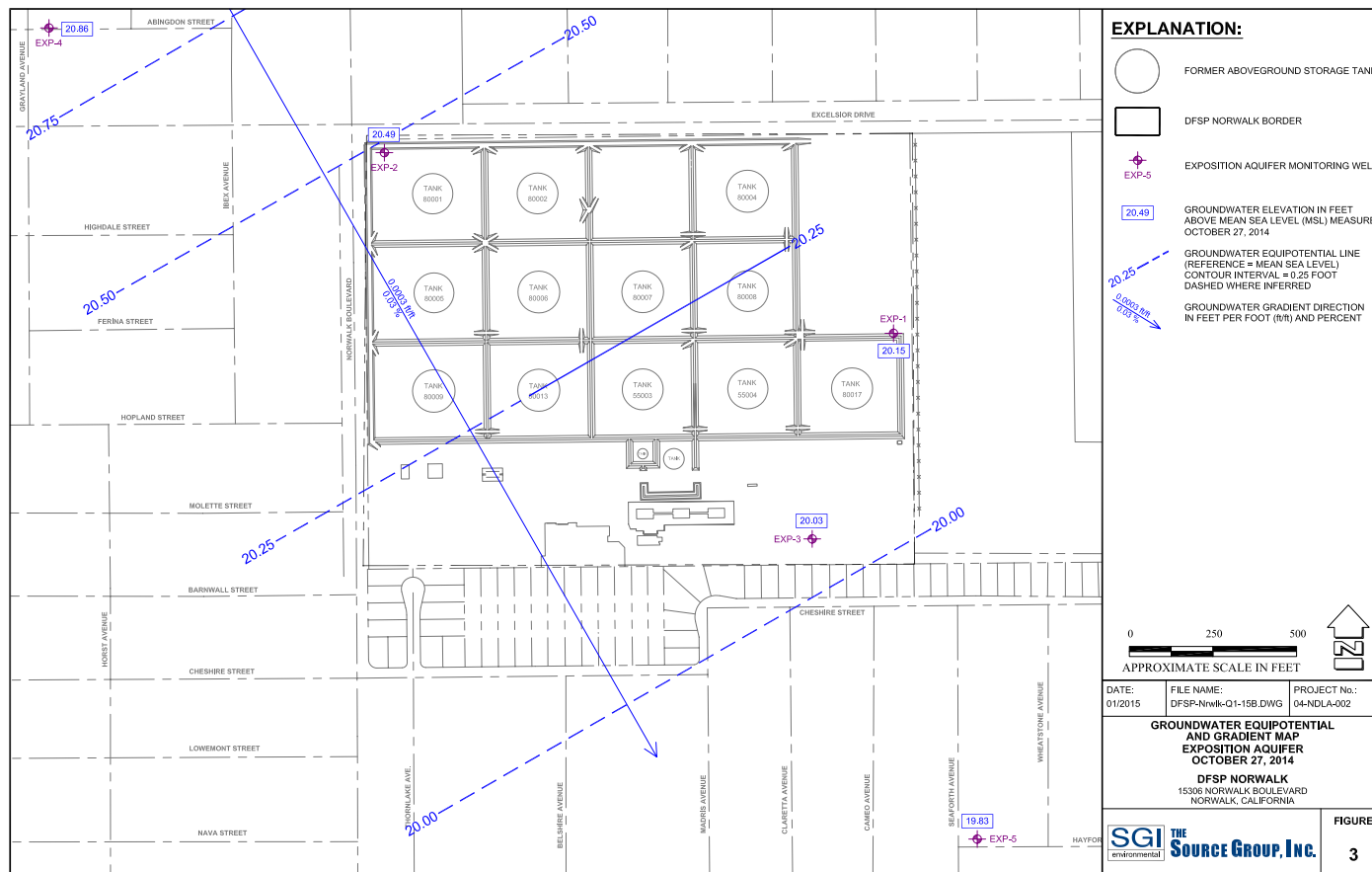


# Groundwater Elevations and Gradient

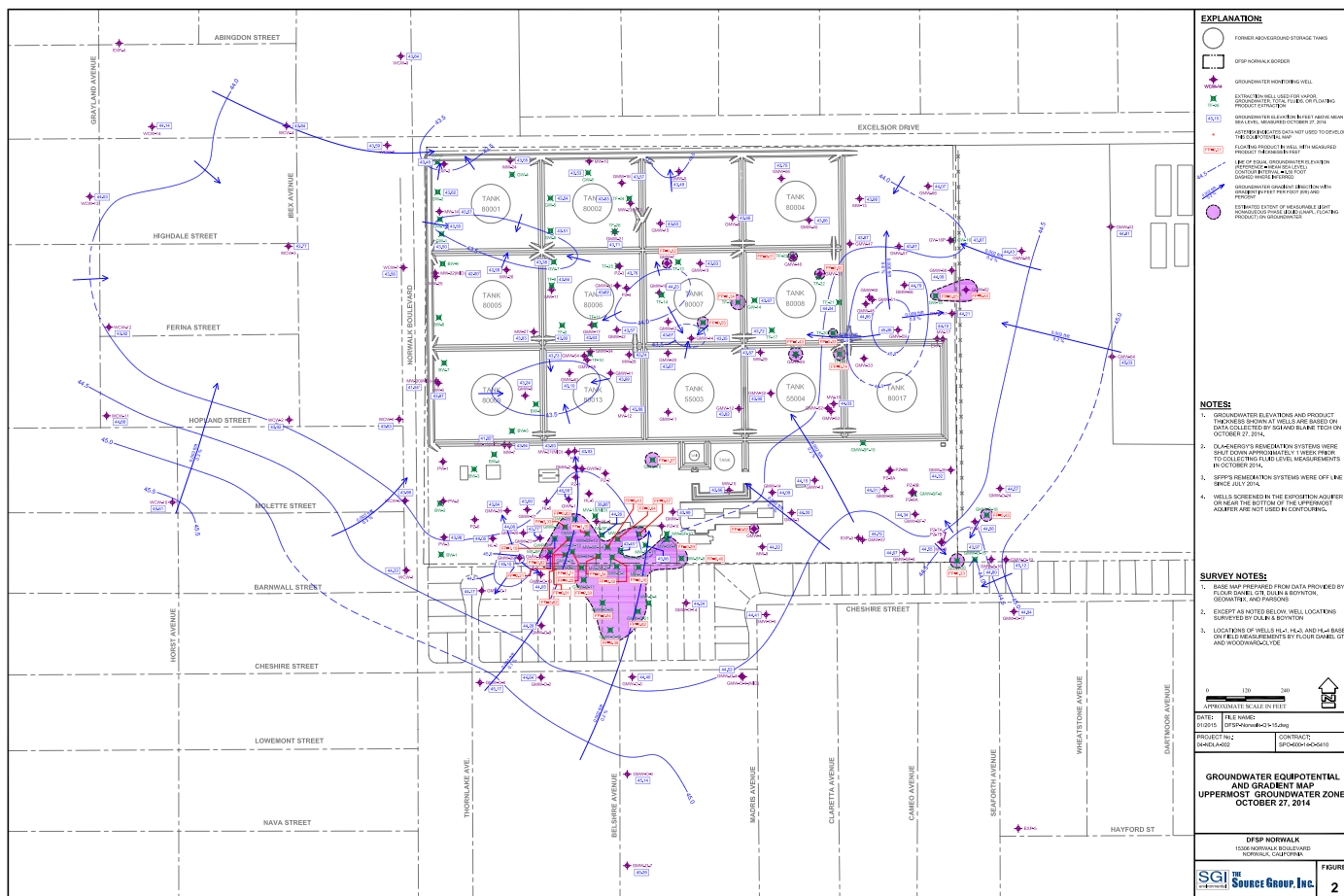
## – Exposition Aquifer

- ◆ Depth to Groundwater ranged from 52.58 to 59.11 feet below top of well casings.
- ◆ Elevations ranged from 19.83 to 20.86 feet above mean sea level.
- ◆ Elevations dropped an average of 3.01 feet since the April 2014 monitoring event.
- ◆ Groundwater gradient was toward the southeast at 0.0003 ft/ft.

# Figure 3: Groundwater Equipotential and Gradient Map – Exposition Aquifer



# Figure 2: Floating Product Plumes – October 2014



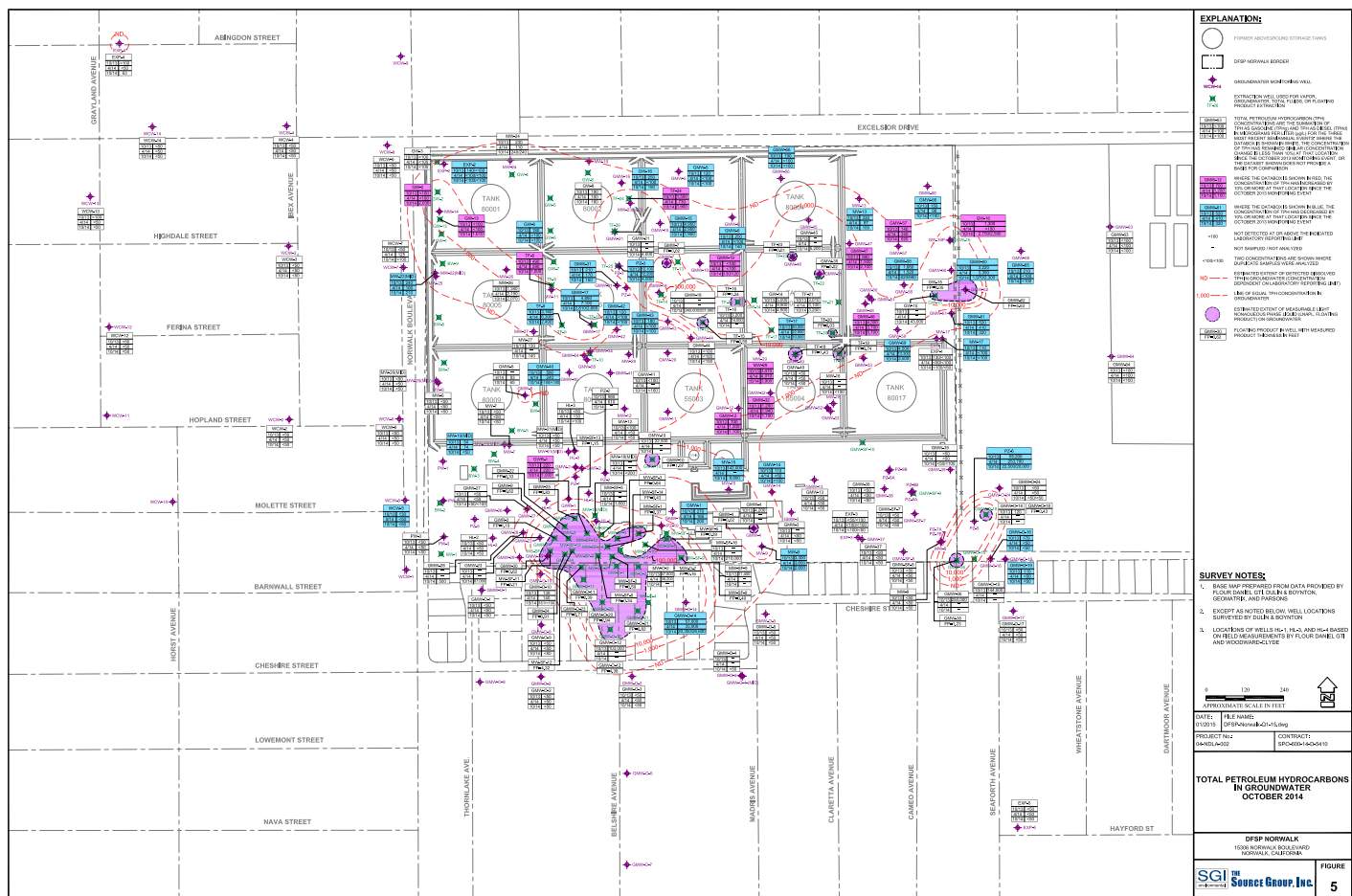
# Groundwater Sampling – Uppermost Groundwater Zone

- Duplicate samples collected from 14 wells.
- TPH as Gasoline reported in 30 of the 108 sampled wells (maximum: 100,000 µg/L in MW-SF-16).
- TPH as Diesel reported in 49 of the 108 sampled wells (maximum: 230,000 µg/L in GMW-18).
- Benzene reported in 25 of the 108 sampled wells (maximum: 11,000 µg/L in GMW-23).
- 1,2-DCA reported in 12 of the 108 sampled wells (maximum: 10 µg/L in MW-20[MID]).
- MTBE reported in 26 of the 108 sampled wells (maximum: 440 µg/L in PZ-5).
- TBA reported in 20 of the 108 sampled wells (maximum: 110,000 µg/L in PZ-5).

# Groundwater Sampling – Exposition Aquifer

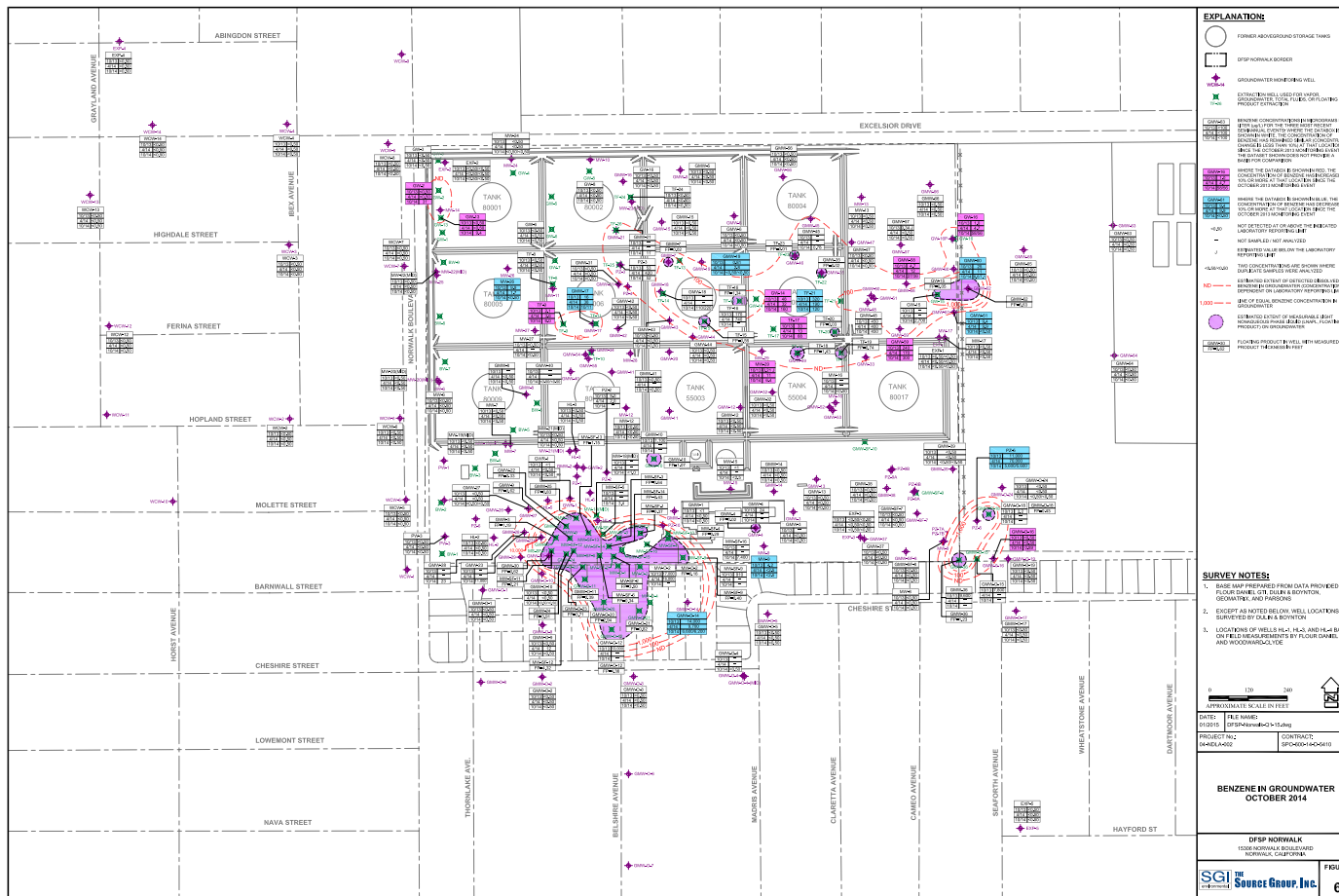
- ✦ **Split samples collected from EXP-1, EXP-2, and EXP-3 by both The Source Group, Inc., and Blaine Tech.**
- ✦ **Samples collected from EXP-4 and EXP-5 by Blaine Tech.**
- ✦ **All results were non-detect with the following exceptions:**
  - **1.3 µg/L MTBE in Blaine Tech’s sample from EXP-1 (<2.0 µg/L in SGI’s sample),**
  - **0.52 µg/L 1,2-DCA in Blaine Tech’s sample from EXP-3 (<0.50 µg/L in SGI’s sample), and**
  - **63 µg/L TPH as Diesel in the sample from EXP-4 (first time TPHd reported in EXP-4).**

# Figure 5: Total Petroleum Hydrocarbons in Groundwater – October 2014



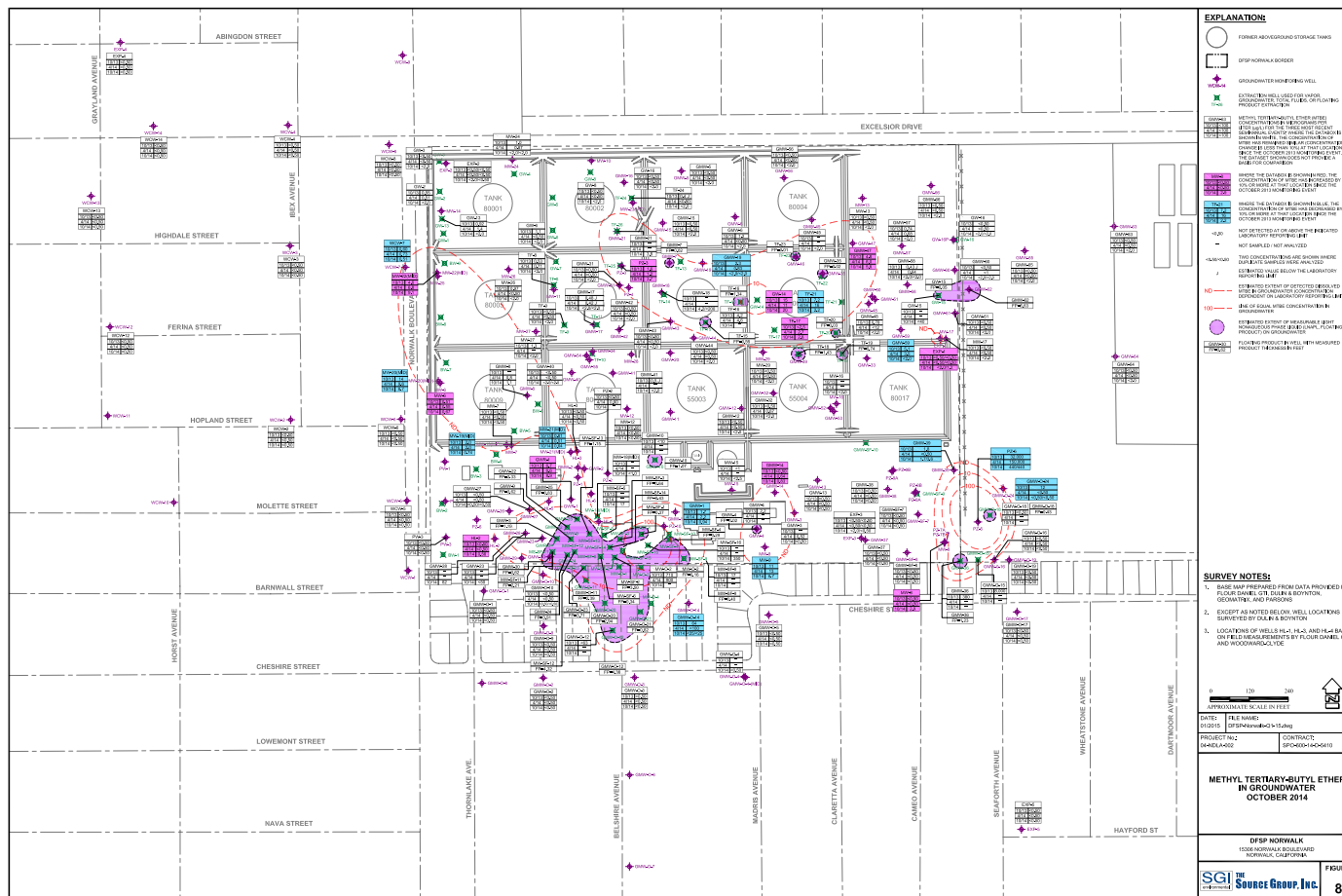


# Figure 6: Benzene in Groundwater – October 2014

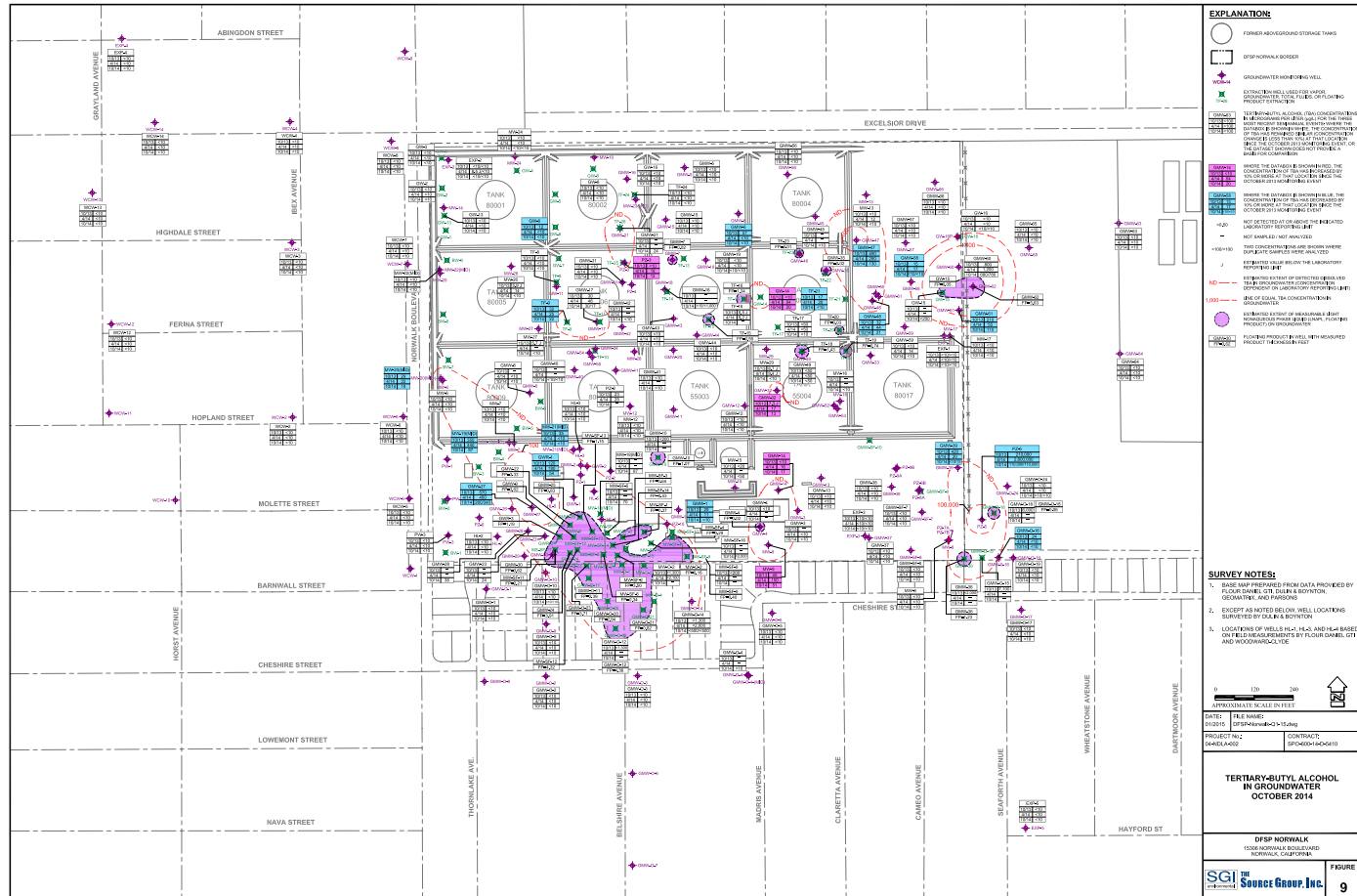




# Figure 8 - Methyl tertiary-Butyl Ether in Groundwater – October 2014



# Figure 9: tertiary-Butyl Alcohol in Groundwater – October 2014



**Questions?**