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**San Francisco Bay Regional Water Quality Control Board**

December 10, 2012 (EKW)  
GeoTracker Global ID: SL0608541147

Department of the Navy  
Base Realignment and Closure Program Management Office West  
Attn: Mr. Scott Anderson  
1455 Frazee Road, Suite 900  
San Diego, CA 92108-4310  
Scott.d.anderson@navy.mil

**Subject: No Further Action for Zook Road Fuel Spill Site, Former Naval Air Station  
Moffett Field, Santa Clara County**

Dear Mr. Anderson:

This letter confirms that based on the available information, and with the provision that the information provided is accurate and representative of site conditions, site investigation and corrective actions are complete and no further action (NFA) is required for the site summarized below:

Site Name	GeoTracker Case ID	Regional Water Board Case No.
Zook Road Fuel Spill Site	T0604192360	43D9025

**Basis and Assumptions**

This NFA status applies only to releases of petroleum fuel and fuel constituents associated with the site referenced above. While the information provided indicates that the above-referenced site is satisfactorily cleaned up to standards consistent with commercial/industrial land use, we may reconsider these findings should land use change or new information be discovered regarding previously undetected contamination.

This NFA is based on the assumption that shallow groundwater beneath the site is suitable for drinking water or other potential uses.

**Conditions and Requirements**

Residual petroleum contamination remains in the subsurface. To ensure protection of public health, safety, or the environment, and to be consistent with the land and groundwater use assumptions above, the following restrictions are required:

1. No residential land use: The site cannot support residential use due to potentially unacceptable direct contact risk from residual petroleum contamination in shallow (<10 feet below ground surface) soil.
2. No grading, excavation, or subsurface activities without a soil management plan: Any work must include procedures for proper notification, handling, and disposal of any potentially contaminated soil or groundwater encountered during construction or removed from the site. Current and future site workers, tenants, and landowners must be notified of the soil management requirements for the property.
3. Notify Regional Water Board - land use change: The Regional Water Board must be notified in writing of any proposed changes in future land or groundwater use at the site. Formal Regional Water Board concurrence may be required.
4. Decommission monitoring wells: Any monitoring wells that will no longer be used must be properly destroyed pursuant to requirements of the Santa Clara Valley Water District (SCVWD). For information regarding these requirements, please contact the Santa Clara Valley Water District at (408) 265-2600. Documentation of well destruction shall be submitted to the Regional Water Board.

### **Land Use Controls/Covenants**

This NFA status would typically require a deed restriction to secure the above conditions and requirements necessary to protect public health, safety, or the environment. However, in this case, the Regional Water Board does not require a deed restriction for this site because under the Record of Decision for the NASA Ames Development Plan (November 2002), land use is restricted to those uses outlined by Mitigated Alternative 5 in the NASA Ames Development Plan, Final Programmatic Environmental Impact Statement (Plan; July 2002). The Plan provides and equivalent degree of land use control and adequately addresses condition number 1.

In addition, NASA Ames, the property owner, requires a construction permit for all subsurface work. The permit application includes environmental review and NASA Ames requires that applicants follow appropriate environmental procedures at sites with residual contamination. This existing permitting process adequately addresses requirement number 2.

### **Closing**

The Regional Water Board may require a separate cost recovery agreement for regulatory oversight with the future landowner in order to evaluate the above work plans and conditions or to review any proposed change in land or groundwater use.

Attached please find the site closure summary. Please contact Elizabeth Wells of my staff at (510) 622.2440 or [EWells@waterboards.ca.gov](mailto:EWells@waterboards.ca.gov) if you have any questions regarding this matter.

Sincerely,

Bruce H. Wolfe  
Executive Officer

No Further Action for Zook Road Fuel Spill Site  
Moffett Field

Attachment: Site Closure Summary Form

Email distribution:

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Jim Blamey (Santa Clara County DEH): [jim.blamey@deh.sccgov.org](mailto:jim.blamey@deh.sccgov.org)

George Cook (Santa Clara Valley Water District): [gcook@valleywater.org](mailto:gcook@valleywater.org)

Lynne Kilpatrick (City of Sunnyvale): [lkilpatrick@ci.sunnyvale.ca.us](mailto:lkilpatrick@ci.sunnyvale.ca.us)

William Berry (RAB): [wmeberry@comcast.net](mailto:wmeberry@comcast.net)

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Peter Strauss (PM Strauss & Associates): [petestrauss1@comcast.net](mailto:petestrauss1@comcast.net)

**SITE CLOSURE SUMMARY**  
**ZOOK ROAD FUEL SPILL SITE**

December 10, 2012

1. AGENCY INFORMATION	
<b>Agency Name:</b> SF Bay Regional Water Quality Control Board	<b>Address:</b> 1515 Clay Street, Suite 1400
<b>City/State/Zip:</b> Oakland, CA 94612	<b>Phone:</b> (510) 622-2300
<b>Responsible Staff Person:</b> Elizabeth Wells, P.E.	<b>Title:</b> Water Resource Control Engineer
<b>Division:</b> Groundwater Protection	<b>Program:</b> DoD

2. SITE AND FILE INFORMATION	
<b>Site Name:</b> Zook Road Fuel Spill Site	
<b>Parent Military Base:</b> Former Naval Air Station Moffett Field	
<b>Site Address:</b> Zook Road, Former NAS Moffett Field, Mountain View, Santa Clara County, California 94035	
<b>Site Latitude (decimal degrees):</b> 37.4174	<b>Longitude:</b> -122.0541
<b>Site Type:</b> Military Cleanup Site	
<b>WB Case No.:</b> 43D9025	<b>GeoTracker Case ID:</b> T0604192360
<b>WB File No. :</b> 2189.8009	<b>Paperless Office ID:</b> SL0608541147

3. RESPONSIBLE PARTY:	
<b>Company/Agency:</b> Base Realignment and Closure Program Management Office West <b>Contact Name:</b> Scott Anderson <b>Contact Title:</b> BRAC Environmental Coordinator <b>Street Address:</b> 1455 Frazee Road, Suite 900 <b>City, State, Zip Code:</b> San Diego, CA 92108 <b>Tel. No.:</b> (619) 532-0938 <b>E-mail:</b> <a href="mailto:scott.d.anderson@navy.mil">scott.d.anderson@navy.mil</a>	
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<b>Company/Agency:</b> Base Realignment and Closure Program Management Office West <b>Contact Name:</b> Wilson Doctor <b>Contact Title:</b> Remedial Project Manager <b>Street Address:</b> 1455 Frazee Road, Suite 900 <b>City, State, Zip Code:</b> San Diego, CA 92108 <b>Tel. No.:</b> (619) 532-0928 <b>E-mail:</b> <a href="mailto:wilson.doctor@navy.mil">wilson.doctor@navy.mil</a>	

## SITE CLOSURE SUMMARY Zook Road Fuel Spill Site

4. SITE DESCRIPTION, LAND USE, AND BENEFICIAL USE
<p><b>Site Size and Description:</b> The Zook Road Fuel Spill Site includes the area midway between Bravo taxiway and Hall Road, adjacent to the east side of Zook Road. It is in the downgradient portion part of a larger area known as Site 20. Three aboveground storage tanks located south and upgradient of the fuel spill site were investigated as part of Site 20, which is addressed under separate cover.</p>
<p><b>Vicinity:</b> The Zook Road Fuel Spill Site is a relatively flat, open, vegetated area east of Zook Road. There are no water supply wells at Moffett field. The nearest surface water body is the Eastern Diked Marsh, approximately 3,000 feet north-northwest of the site.</p>
<p><b>Site Plan Map Attached:</b> Yes</p>
<p><b>Current Site Use(s):</b> Commercial/ Industrial</p>
<p><b>Future Land Use(s):</b> Commercial/Industrial</p>
<p><b>Beneficial Uses:</b> Municipal and domestic groundwater use</p>
<p><b>Beneficial Use Exceptions:</b> None</p>

5. RELEASE INFORMATION						
Source (e.g., UST, AGT, pipeline, sump, wash rack, etc.)	Capacity or dimensions	Contents	How Closed?	Date	Latitude (decimal degrees)	Longitude (decimal degrees)
AST	unknown	Aviation Gasoline	Removed	1982	37.4174	-122.0541

## SITE CLOSURE SUMMARY Zook Road Fuel Spill Site

### 6. SITE CHARACTERIZATION AND CONCEPTUAL SITE MODEL

**Cause and description of release:** According to NASA personnel, a former AST was used to store aircraft fuel that had become contaminated with water or sediment. Fuel was periodically spilled onto the ground when the AST was overfilled and accumulated in the low area adjacent to Zook Road. The AST installation date is unknown; it was moved from this location in 1982. While no records were kept on the amount of fuel spilled, accumulations were reportedly large enough to force temporary closure of the road. A 1967 aerial photograph of the site shows two dark colored area, a suspected burn pit, and a large stained area (suspected fuel spill).

- Investigation was conducted in 1992 and 1994 to evaluate the extent of site contaminants. This included drilling 21 soil borings and installing 3 groundwater monitoring wells. Soil samples collected from 12 of the borings were analyzed for total petroleum hydrocarbons-extractable (TPH-e), TPH-purgeable (TPH-p), and benzene, toluene, ethyl benzene, and xylenes (BTEX). Some soil samples were also analyzed for naphthalene. Analytical results indicated concentrations of kerosene and JP-5 up to 100,000 and 6,800 milligrams per kilogram (mg/kg), respectively. Gasoline-range organics (GRO), BTEX, and naphthalene concentrations were not reported above reporting limits.
- From September 1994 to June 1996, the three monitoring wells were sampled four times and analyzed for TPH-e, TPH-p, and BTEX. A diesel-range organics (DRO) concentration of 1,500 micrograms per liter (µg/L) was reported in the first quarterly sample from only one of the three wells. TPH-e characterized as other light components were reported in two wells, but decreased to below reporting limits by the last round of quarterly samples in one of these wells. TPH-p and BTEX were either reported as non-detect or were detected below the Environmental Screening levels (ESLs). The three wells were destroyed in 2005.
- In October 2009, six soil borings were advanced and soil samples were collected from 0 to 2 feet below ground surface (bgs) and from the interval exhibiting the highest photoionization detector reading or at the water table, whichever was shallower. Grab groundwater samples were collected from each boring. Soil and groundwater samples were analyzed for TPH-e and PAHs. JP-5 and kerosene were detected at concentrations greater than ESLs in one of the six borings; greater than the cleanup level in only one boring. Grab groundwater results were greater than ESLs for JP-5 and kerosene in two of six borings.
- In March 2010, four borings were drilled to characterize the extent of JP-5/kerosene contamination, four borings were drilled to investigate a possible burn pit area, and one boring was drilled to investigate downgradient of Site 20 (Site 20 addressed under separate cover and results for this boring are not discussed further). Soil samples from two depths as previously described, and grab groundwater samples, were collected. Soil and groundwater samples were analyzed for TPH-e (DRO, JP-5, kerosene) at all locations and PAHs at the possible burn pit. Soil results from all borings (ZR-SBHP-7 through ZR-SBHP-15) were below cleanup levels. Concentrations of JP-5/kerosene were reported in three groundwater samples. Based on investigation results, a source removal action for soil and the installation of a network of groundwater monitoring wells to characterize the extent of groundwater contamination were warranted at the site.
- In December 2010 five monitoring wells were installed within and downgradient of the excavation. Continuous soil cores were collected and examined for lithological interpretation and were field screened for VOCs. Soil with the highest PID measurement was tested for TPH-e. All results were below reporting limits. Reporting limits were below ESLs, except for JP-5/kerosene and motor oil, which had a method detection limit of 110 µg/L (ESL is 100 µg/L).

<b>Groundwater (GW)</b>	<b>Depth to first GW:</b> Approximately 7 feet bgs
	<b>GW gradient direction:</b> North
	<b>GW sampled?:</b> Yes
<b>GW monitoring wells</b>	<b>GW monitoring wells installed?:</b> Yes
	<b>Total number of monitoring wells used in support of closure decision:</b> 5

## SITE CLOSURE SUMMARY Zook Road Fuel Spill Site

	<b>Status of MWs:</b> 5 wells remain
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### 7a. CLEANUP STANDARDS AND SITE REMEDIATION

**Describe basis for cleanup standards:** Analytical results for soil were compared against San Francisco Water Board ESLs for petroleum hydrocarbons and EPA Regional Screening Levels (RSLs) for other chemicals for industrial land use. Results for groundwater were compared against ESLs for groundwater that is a current or potential source of drinking water.

**Describe risk-based approach to develop cleanup standards:** RSLs and ESLs

**Describe remediation efforts for soil and groundwater (e.g., depth of remediation, approach/technology used, confirmation sampling, etc.):** In November 2010, soil removal was conducted around one boring where elevated concentrations of JP-5/kerosene in soil and groundwater were detected. Groundwater was observed in a saturated sand zone from 7.5 to 8 feet bgs. Soil from 0 to 4-5 feet bgs was void of contamination and was segregated from contaminated soil. Soil below approximately 6 feet bgs exhibited field evidence of contamination, including discoloration and petroleum odor with strongest evidence from 7.5 to 8 feet bgs. Confirmation soil samples were collected from excavation sidewalls and bottom and analyzed for TPH-e. TPH-e was not detected or was reported below cleanup goals. Approximately 150 cubic yards of soil were excavated in total; 90 cubic yards of contaminated soil was disposed of off-site. As part of the removal action, 4,500 gallons of groundwater were extracted and of 225 pounds of ORC were placed in the excavation bottom.

### 7b. PRE- AND POST-REMEDIATION (MAX. RESIDUAL) CONTAMINANT CONCENTRATIONS

CONTAMINANT	SOIL (ppm)		GW (ppb)		SOIL VAPOR (ppb or µg/m <sup>3</sup> )	
	Before	After	Before	After	Before	After
TPH-gasoline	ND (<48)	NS	ND (<50)	NS	NS	NS
TPH-diesel	72	16	47,000	ND (<50)	NS	NS
JP-5/Kerosene	100,000	120	170,000	ND (<110)	NS	NS
TPH-motor oil	270	ND (<14)	ND (<500)	ND (<110)	NS	NS
PAHs	0.0059	NS	ND (<0.2)	NS	NS	NS
Benzene	ND (<0.24)	NS	1	NS	NS	NS
Toluene	ND (<0.24)	NS	0.7	NS	NS	NS
Ethylbenzene	0.51	NS	ND (<10)	NS	NS	NS
Xylenes	ND (<0.24)	NS	ND (<10)	NS	NS	NS
MTBE	NS	NS	NS	NS	NS	NS
Naphthalene	0.0011	NS	ND (<10)	NS	NS	NS
Lead	NS	NS	NS	NS	NS	NS

## SITE CLOSURE SUMMARY Zook Road Fuel Spill Site

<b>8. CLOSURE CRITERIA CHECKLIST</b> (include comments as necessary)	
<p><b>a) Pollutant sources are identified and evaluated</b></p> <ul style="list-style-type: none"> <li>√ <i>Leak/spill sources (tanks, sumps, pipelines, etc.) are identified and controlled</i></li> <li>√ <i>The pollutant source zone (sorbed/entrained residual pollutants and free product that sustain groundwater &amp; vapor plumes) is identified and delineated</i></li> </ul>	
<b>Comments:</b> None	
<p><b>b) The site is adequately characterized</b></p> <ul style="list-style-type: none"> <li>√ <i>Site history, hydrology, and hydrogeology are characterized</i></li> <li>√ <i>The nature &amp; extent (lateral and vertical) of pollutants are characterized in soil, groundwater &amp; soil gas, as necessary</i></li> </ul>	
<b>Comments:</b> None	
<p><b>c) Exposure pathways, receptors, and potential risks, threats, and other environmental concerns are identified and assessed</b></p> <ul style="list-style-type: none"> <li>√ <i>Nearby receptors (wetlands, streams, wells, homes, schools, businesses, etc.) are identified</i></li> <li>√ <i>Groundwater &amp; vapor migration/exposure pathways, natural &amp; artificial (storm drains, sewer lines, buried channels, abandoned wells, etc.) are assessed</i></li> <li>√ <i>Reasonably anticipated land and water use scenarios have been considered</i></li> <li>√ <i>Actual and potential risks to receptors and adverse effects to beneficial uses are assessed</i></li> </ul>	
<b>Comments:</b> None	
<p><b>d) Pollutant sources are remediated to the extent feasible</b></p> <ul style="list-style-type: none"> <li>√ <i>The technical and economic feasibility of source remediation methods/technologies have been evaluated</i></li> <li>√ <i>Feasible source remediation technologies have been implemented</i></li> <li>√ <i>Appropriate source remediation performance monitoring has been conducted</i></li> <li>√ <i>Source mass removal has been documented</i></li> <li>√ <i>The effects of source remediation on groundwater/vapor plume behavior have been evaluated</i></li> </ul>	
<b>Comments:</b> None	

## SITE CLOSURE SUMMARY Zook Road Fuel Spill Site

<p><b>e) Unacceptable risks to human health, ecological health, and sensitive receptors, considering current and future land and water uses, are mitigated</b></p> <ul style="list-style-type: none"> <li>√ <b>Necessary &amp; appropriate corrective actions have been implemented</b></li> <li>√ <b>Confirmation sampling, monitoring, and/or risk management measures demonstrate that risks are mitigated</b></li> </ul>
<p><b>Comments:</b> Based on soil and groundwater sampling results for petroleum hydrocarbons, cleanup to industrial/commercial standards, and the restrictions on residential use, this site does not pose a significant risk to human health, the environment or water quality. Residual chemical concentrations in soil are limited in extent and do not appear to be impacting groundwater.</p>
<p><b>f) Unacceptable threats to groundwater and surface water resources, considering existing and potential beneficial uses, are mitigated</b></p> <ul style="list-style-type: none"> <li>√ <b>Necessary &amp; appropriate corrective actions have been implemented</b></li> <li>√ <b>Confirmation sampling, monitoring, and/or risk management measures demonstrate that threats are mitigated</b></li> </ul>
<p><b>Comments:</b> Based on soil and groundwater sampling results for petroleum hydrocarbons, cleanup to industrial/commercial standards, and the restrictions on residential use, this site does not pose a significant risk to human health, the environment or water quality. Residual chemical concentrations in soil are limited in extent and do not appear to be impacting groundwater.</p>
<p><b>g) Groundwater plumes are stable or decreasing<sup>1</sup></b></p> <ul style="list-style-type: none"> <li>√ <b>Appropriate plume monitoring has confirmed the lateral and vertical extent over time</b></li> <li>√ <b>Spatial and temporal trends for pollutants, including parent and breakdown products, have been evaluated</b></li> <li>√ <b>Spatial and temporal trends for natural attenuation indicators have been evaluated</b></li> <li>√ <b>Evidence of breakdown to acceptable end products is documented</b></li> <li>√ <b>Plume concentrations are decreasing and the plume is not moving or expanding</b></li> </ul>
<p><b>Comments:</b> No groundwater plume has been detected.</p>
<p><b>h) Cleanup standards have been met or can be met in a reasonable timeframe</b></p> <ul style="list-style-type: none"> <li>√ <b>The estimated timeframe to achieve cleanup standards throughout the affected area is evaluated</b></li> <li>√ <b>The anticipated timeframe for beneficial use of the affected and nearby water resources is evaluated</b></li> <li>√ <b>The potential to adversely affect beneficial uses is assessed considering cleanup and beneficial use timeframes, hydrogeologic conditions, and the CSM</b></li> </ul>
<p><b>Comments:</b> Groundwater contaminant concentrations are below reporting limits. Reporting limits were below ESLs, except for JP-5/kerosene and motor oil, which had a method detection limit of 110 µg/L (ESL is 100 µg/L). Cleanup standards are expected to be met in a reasonable timeframe.</p>

## SITE CLOSURE SUMMARY Zook Road Fuel Spill Site

i) **Risk management measures are appropriate, documented, and do not require future Water Board oversight**

√ **Necessary risk management measures (land use restrictions, engineered vapor barriers, soil management plans, etc.) are implemented and documented**

√ **Risk management measures do not require future Water Board oversight**

**Comments:** Under the Record of Decision for the NASA Ames Development Plan (November 2002), land use is restricted to those uses outlined by Mitigated Alternative 5 in the NASA Ames Development Plan, Final Programmatic Environmental Impact Statement (July 2002). No residential land use is allowed.

<sup>1</sup> For petroleum groundwater plumes, stability is a sufficient criterion. For solvent or other non-petroleum groundwater plumes, closure should be supported by evidence of a decreasing plume.

### 9. NFA BASIS AND ASSUMPTIONS

This no further action status applies only to releases of petroleum fuel and fuel constituents at the subject site.

Cleanup standards for this site were based on commercial/industrial land use, and that groundwater is a potential source of drinking water.

### 10a. NFA CONDITIONS AND REQUIREMENTS

1. No residential land use.
2. No grading without Soil Management Plan.
3. Notify Regional Water Board staff of any changes in land or groundwater use.
4. Any monitoring wells no longer used should be properly decommissioned in accordance with the substantive requirements of local regulatory agency monitoring well abandonment/destruction/decommissioning requirements. Please submit documentation of well decommissioning to the Regional Water Board.

### 10b. LAND USE CONTROLS/COVENANTS

Residential land use is not allowed under the *Record of Decision for the NASA Ames Development Plan* (November 2002).

### 11. ADDITIONAL COMMENTS

In accordance with the "Regional Board Supplemental Instructions to State Water Board December 8, 1995, Interim Guidance on Required Cleanup at Low-Risk Fuel Sites" (Water Board, January 5, 1996), this site is considered a low-risk fuel site.

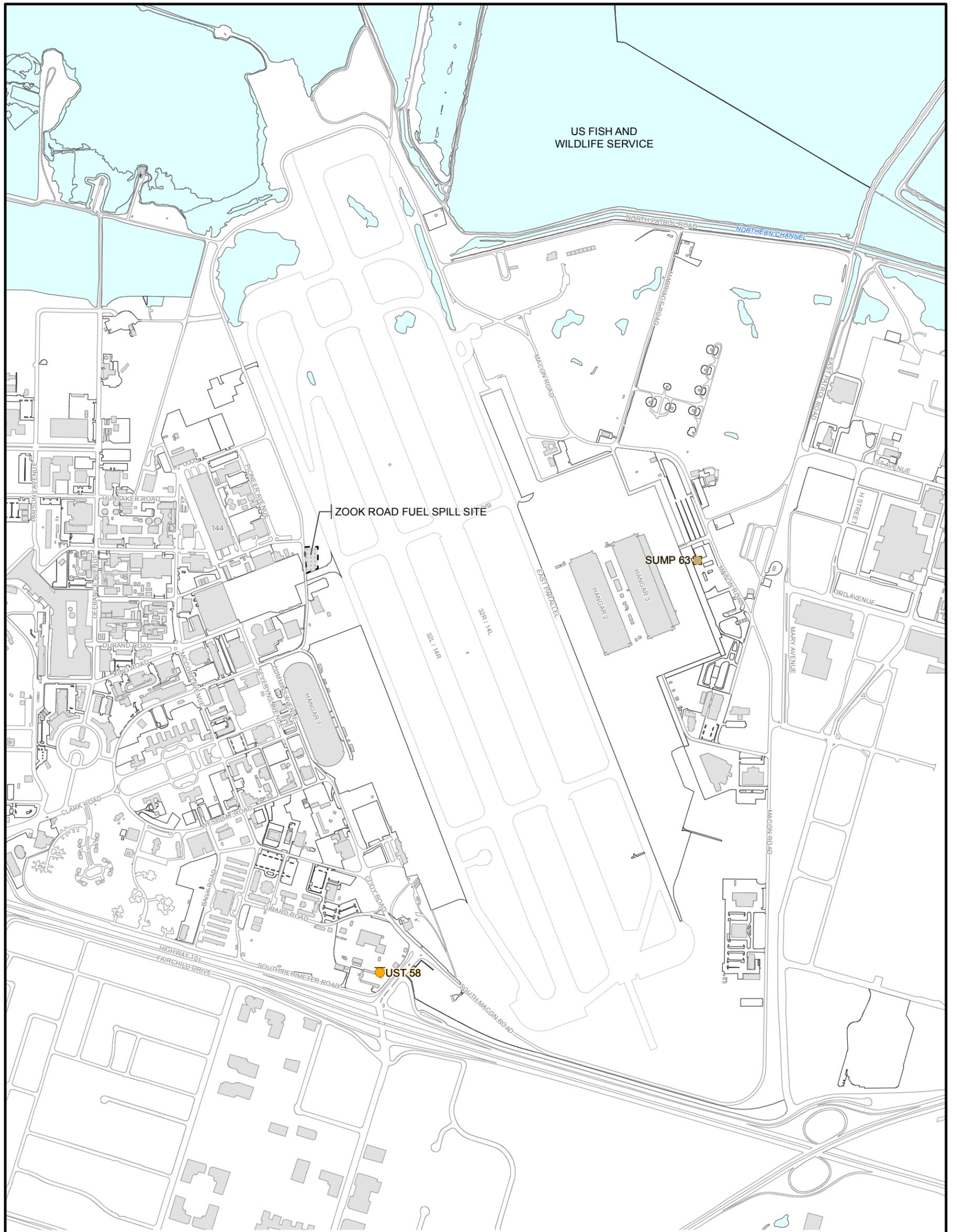
## SITE CLOSURE SUMMARY Zook Road Fuel Spill Site

12. TECHNICAL REPORTS, CORRESPONDENCE, ETC., THAT THIS CLOSURE RECOMMENDATION WAS BASED UPON	
REPORTS ON FILE	Where is report(s) filed?: Water Board, Oakland
Draft Basewide Petroleum Site Evaluation Methodology Technical Memorandum, Appendix I, Site 20 Petroleum Evaluation, Tetra Tech EM Inc.	June 2, 2000
Final Work Plan For Petroleum Site Sampling and Evaluation for Closure or Removal Actions, Tetra Tech EC Inc.	August 28, 2009
Final Completion Report and Request for Closure or No Further Action for Moffett Petroleum Sites, Tetra Tech EC Inc.	August, 2012

**Attachments:** Site Location Map  
Site Sampling Location Maps

**Notes and Abbreviations:**

GW – Groundwater  
TPH – Total Petroleum Hydrocarbons  
AST – Aboveground Storage Tank



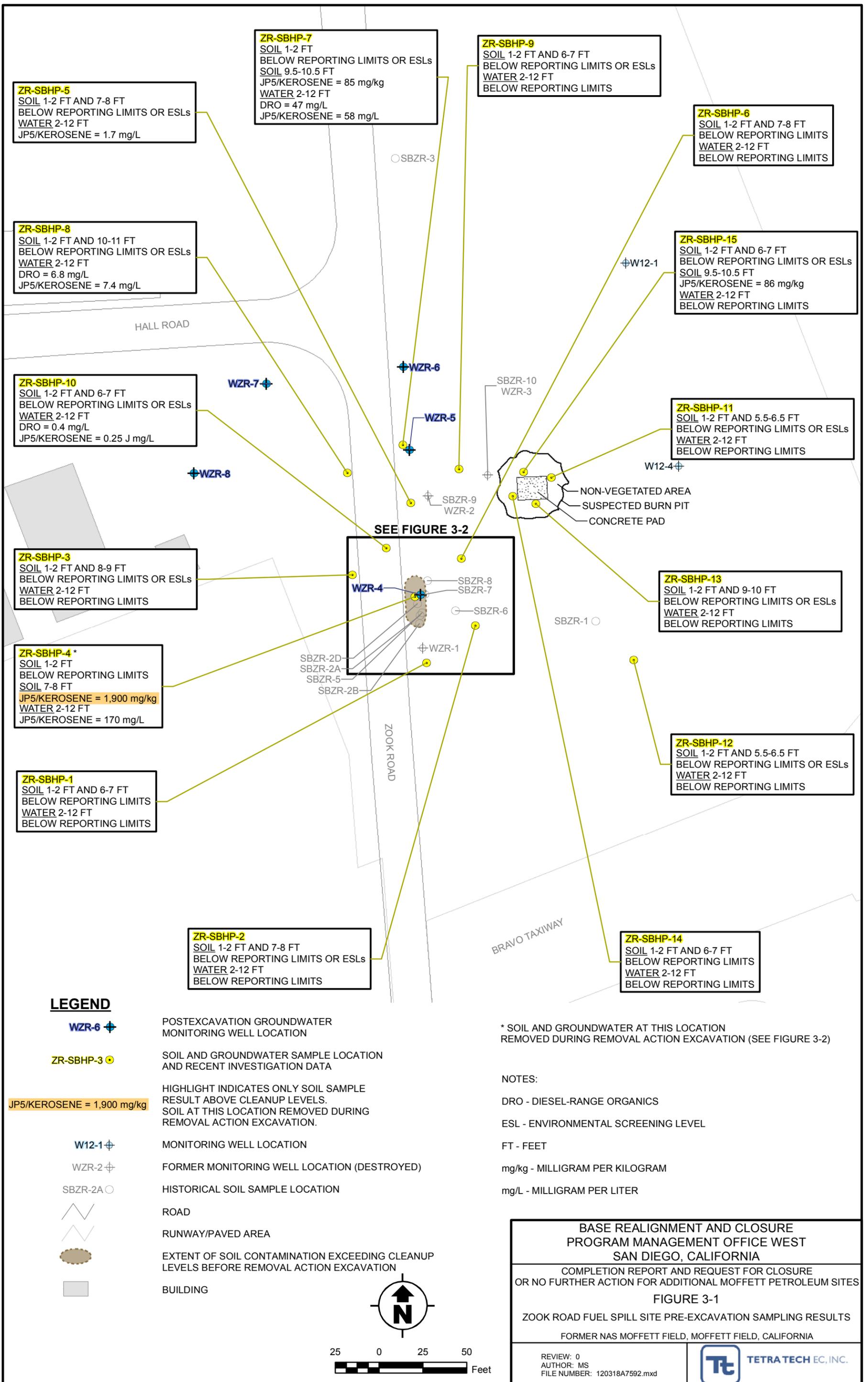
**LEGEND**

- UST 58 FORMER UST LOCATION
- SUMP 63 FORMER SUMP OR VAULT LOCATION
- ROAD
- RUNWAY
- BUILDING
- WATER

NOTES:  
UST - UNDERGROUND STORAGE TANK



<p><b>BASE REALIGNMENT AND CLOSURE PROGRAM MANAGEMENT OFFICE WEST SAN DIEGO, CALIFORNIA</b></p>	
<p>COMPLETION REPORT AND REQUEST FOR CLOSURE OR NO FURTHER ACTION FOR MOFFETT PETROLEUM SITES</p>	
<p><b>FIGURE 1-3</b></p>	
<p>PETROLEUM SITES FOR CLOSURE REQUEST FORMER NAS MOFFETT FIELD, MOFFETT FIELD, CALIFORNIA</p>	
<p>REVIEW: 0 AUTHOR: GFG FILE NUMBER: 110584L7455.mxd</p>	<p><b>TETRA TECH EC, INC.</b></p>



**ZR-SBHP-5**  
 SOIL 1-2 FT AND 7-8 FT  
 BELOW REPORTING LIMITS OR ESLs  
 WATER 2-12 FT  
 JP5/KEROSENE = 1.7 mg/L

**ZR-SBHP-7**  
 SOIL 1-2 FT  
 BELOW REPORTING LIMITS OR ESLs  
 SOIL 9.5-10.5 FT  
 JP5/KEROSENE = 85 mg/kg  
 WATER 2-12 FT  
 DRO = 47 mg/L  
 JP5/KEROSENE = 58 mg/L

**ZR-SBHP-9**  
 SOIL 1-2 FT AND 6-7 FT  
 BELOW REPORTING LIMITS OR ESLs  
 WATER 2-12 FT  
 BELOW REPORTING LIMITS

**ZR-SBHP-6**  
 SOIL 1-2 FT AND 7-8 FT  
 BELOW REPORTING LIMITS  
 WATER 2-12 FT  
 BELOW REPORTING LIMITS

**ZR-SBHP-8**  
 SOIL 1-2 FT AND 10-11 FT  
 BELOW REPORTING LIMITS OR ESLs  
 WATER 2-12 FT  
 DRO = 6.8 mg/L  
 JP5/KEROSENE = 7.4 mg/L

**ZR-SBHP-15**  
 SOIL 1-2 FT AND 6-7 FT  
 BELOW REPORTING LIMITS OR ESLs  
 SOIL 9.5-10.5 FT  
 JP5/KEROSENE = 86 mg/kg  
 WATER 2-12 FT  
 BELOW REPORTING LIMITS

**ZR-SBHP-10**  
 SOIL 1-2 FT AND 6-7 FT  
 BELOW REPORTING LIMITS OR ESLs  
 WATER 2-12 FT  
 DRO = 0.4 mg/L  
 JP5/KEROSENE = 0.25 J mg/L

**ZR-SBHP-11**  
 SOIL 1-2 FT AND 5.5-6.5 FT  
 BELOW REPORTING LIMITS OR ESLs  
 WATER 2-12 FT  
 BELOW REPORTING LIMITS

**ZR-SBHP-3**  
 SOIL 1-2 FT AND 8-9 FT  
 BELOW REPORTING LIMITS OR ESLs  
 WATER 2-12 FT  
 BELOW REPORTING LIMITS

**ZR-SBHP-13**  
 SOIL 1-2 FT AND 9-10 FT  
 BELOW REPORTING LIMITS OR ESLs  
 WATER 2-12 FT  
 BELOW REPORTING LIMITS

**ZR-SBHP-4\***  
 SOIL 1-2 FT  
 BELOW REPORTING LIMITS  
 SOIL 7-8 FT  
 JP5/KEROSENE = 1,900 mg/kg  
 WATER 2-12 FT  
 JP5/KEROSENE = 170 mg/L

**ZR-SBHP-1**  
 SOIL 1-2 FT AND 6-7 FT  
 BELOW REPORTING LIMITS  
 WATER 2-12 FT  
 BELOW REPORTING LIMITS

**ZR-SBHP-2**  
 SOIL 1-2 FT AND 7-8 FT  
 BELOW REPORTING LIMITS OR ESLs  
 WATER 2-12 FT  
 BELOW REPORTING LIMITS

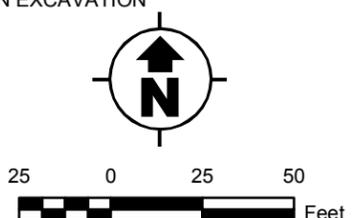
**ZR-SBHP-14**  
 SOIL 1-2 FT AND 6-7 FT  
 BELOW REPORTING LIMITS  
 WATER 2-12 FT  
 BELOW REPORTING LIMITS

**LEGEND**

- POSTEXCAVATION GROUNDWATER MONITORING WELL LOCATION
- SOIL AND GROUNDWATER SAMPLE LOCATION AND RECENT INVESTIGATION DATA
- HIGHLIGHT INDICATES ONLY SOIL SAMPLE RESULT ABOVE CLEANUP LEVELS. SOIL AT THIS LOCATION REMOVED DURING REMOVAL ACTION EXCAVATION.
- MONITORING WELL LOCATION
- FORMER MONITORING WELL LOCATION (DESTROYED)
- HISTORICAL SOIL SAMPLE LOCATION
- ROAD
- RUNWAY/PAVED AREA
- EXTENT OF SOIL CONTAMINATION EXCEEDING CLEANUP LEVELS BEFORE REMOVAL ACTION EXCAVATION
- BUILDING

\* SOIL AND GROUNDWATER AT THIS LOCATION REMOVED DURING REMOVAL ACTION EXCAVATION (SEE FIGURE 3-2)

- NOTES:
- DRO - DIESEL-RANGE ORGANICS
  - ESL - ENVIRONMENTAL SCREENING LEVEL
  - FT - FEET
  - mg/kg - MILLIGRAM PER KILOGRAM
  - mg/L - MILLIGRAM PER LITER



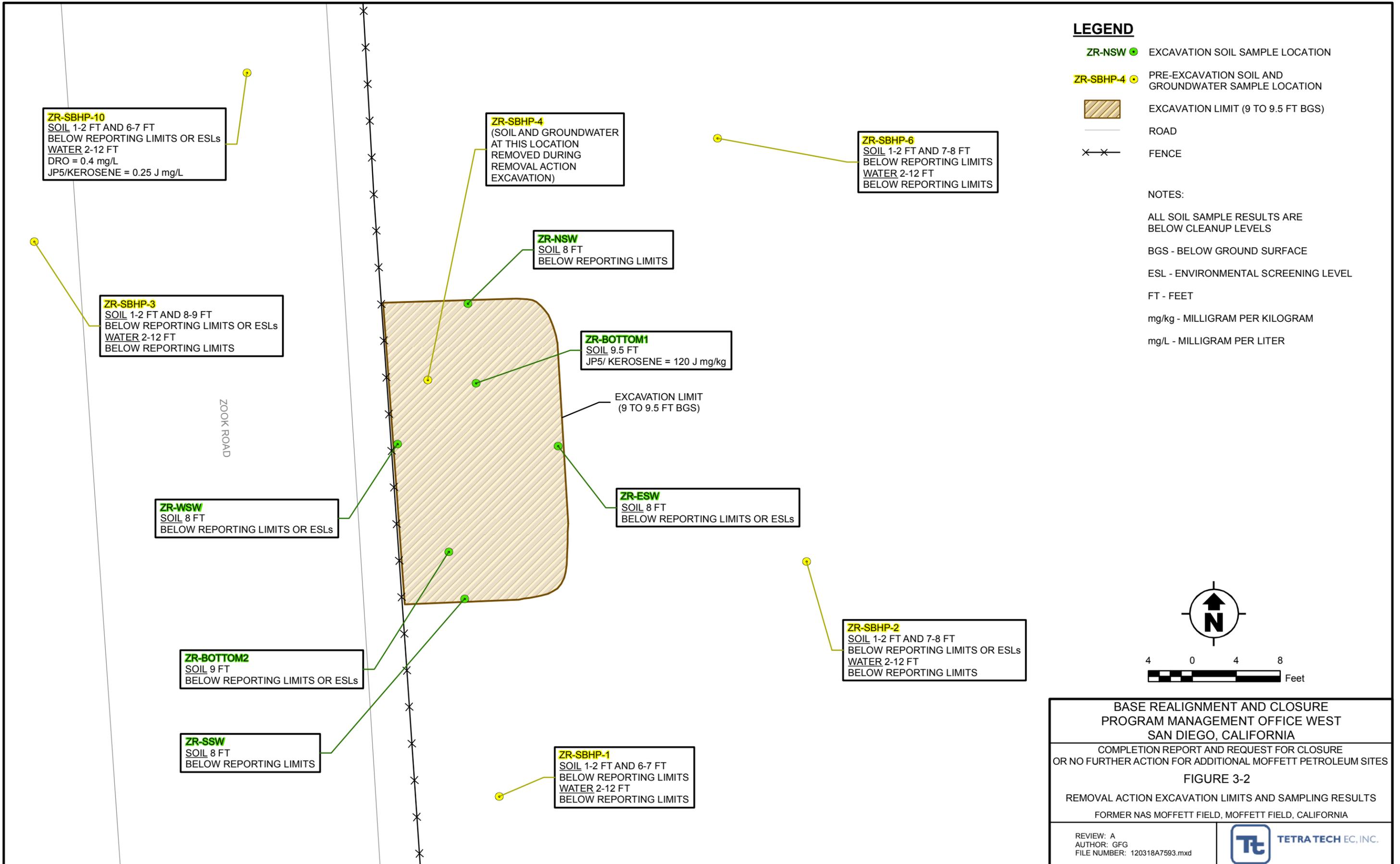
**BASE REALIGNMENT AND CLOSURE  
 PROGRAM MANAGEMENT OFFICE WEST  
 SAN DIEGO, CALIFORNIA**

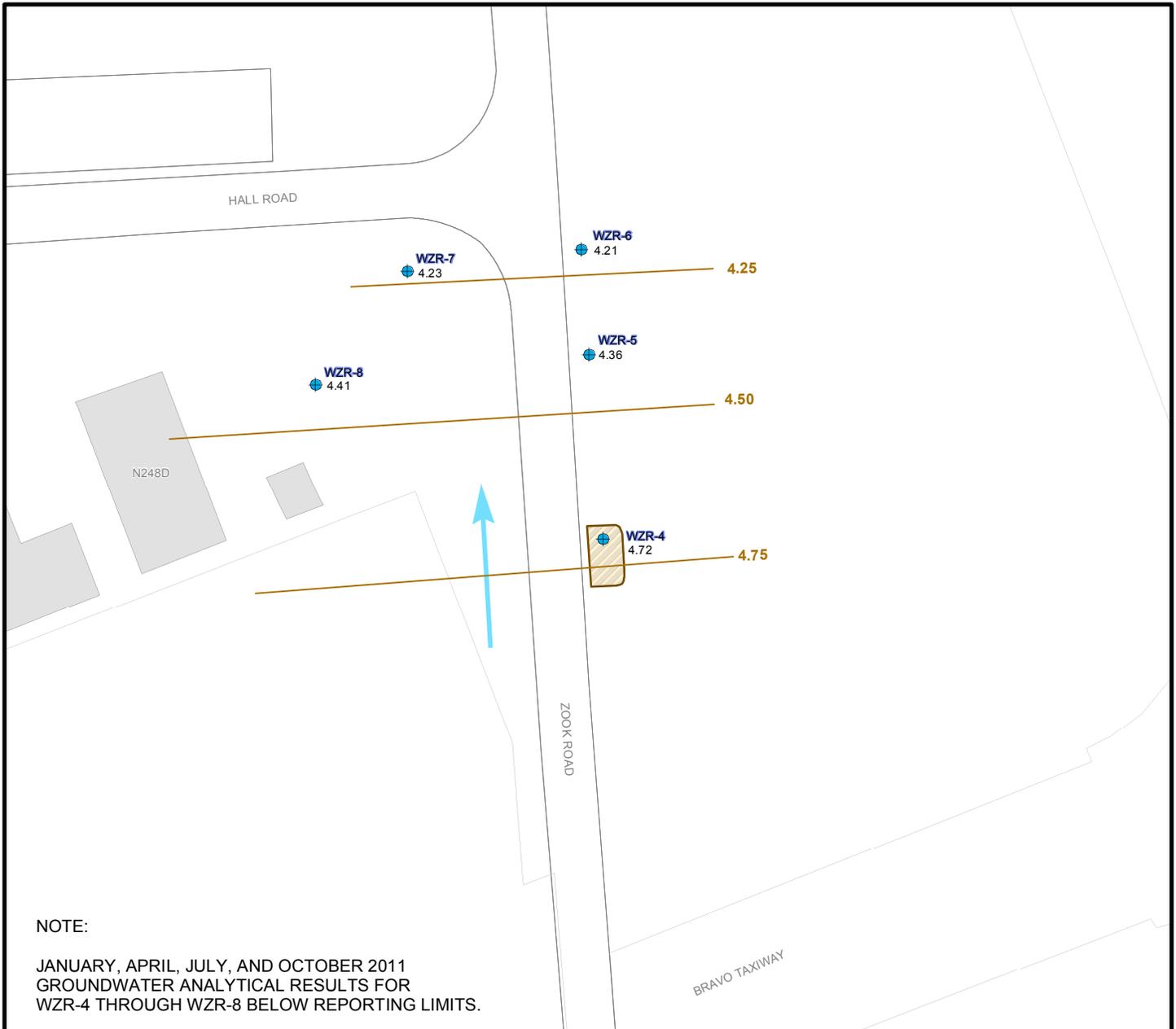
COMPLETION REPORT AND REQUEST FOR CLOSURE  
 OR NO FURTHER ACTION FOR ADDITIONAL MOFFETT PETROLEUM SITES

**FIGURE 3-1**

ZOOK ROAD FUEL SPILL SITE PRE-EXCAVATION SAMPLING RESULTS  
 FORMER NAS MOFFETT FIELD, MOFFETT FIELD, CALIFORNIA

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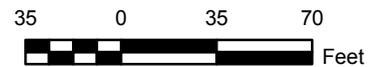
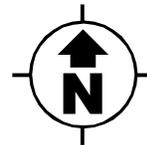


**NOTE:**

JANUARY, APRIL, JULY, AND OCTOBER 2011 GROUNDWATER ANALYTICAL RESULTS FOR WZR-4 THROUGH WZR-8 BELOW REPORTING LIMITS.

**LEGEND**

-  POSTEXCAVATION GROUNDWATER MONITORING WELL LOCATION AND GROUNDWATER ELEVATION (ABOVE MSL)
-  APPROXIMATE GROUNDWATER FLOW DIRECTION
-  ROAD
-  RUNWAY/PAVED AREA
-  EXCAVATION LIMIT
-  BUILDING
-  4.25 GROUNDWATER ELEVATION CONTOUR
- MSL - MEAN SEA LEVEL



<p><b>BASE REALIGNMENT AND CLOSURE PROGRAM MANAGEMENT OFFICE WEST SAN DIEGO, CALIFORNIA</b></p>	
<p>COMPLETION REPORT AND REQUEST FOR CLOSURE OR NO FURTHER ACTION FOR ADDITIONAL MOFFETT PETROLEUM SITES</p>	
<p><b>FIGURE 3-4</b></p>	
<p>ZOOK ROAD POTENTIOMETRIC SURFACE MAP UPPER A AQUIFER - APRIL 2011 FORMER NAS MOFFETT FIELD, MOFFETT FIELD, CALIFORNIA</p>	
<p>REVIEW: 0 AUTHOR: MS FILE NUMBER: 120318A7597.mxd</p>	 <p><b>TETRA TECH EC, INC.</b></p>