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GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

San Francisco Bay Regional Water Quality Control Board

October 8, 2015 (EKW)
GeoTracker Global ID: T10000003442

Department of the Navy
Base Realignment and Closure Program Management Office West
Attn. Mr. Scott Anderson
33000 Nixie Way
Bldg 50 2nd Floor
San Diego, CA 92147
Via email: Scott.d.anderson@navy.mil

Subject: No Further Action for Former Waste Oil Transfer Sump Adjacent to Site 8, 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.
Former Waste Oil Transfer Sump Adjacent to Site 8	T10000003442	N/A

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 unrestricted land use, we may reconsider these findings should new information be discovered regarding previously undetected contamination.

Conditions and Requirements

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 SCVWD at (408) 265-2600. Documentation of well destruction shall be submitted to the Regional Water Board.

Attached please find the site closure summary. Please contact Elizabeth Wells of my staff at (510) 622-2440 or elizabeth.wells@waterboards.ca.gov if you have any questions regarding this matter.

Sincerely,

Bruce H. Wolfe
Executive Officer

Attachment: Site Closure Summary Form

Email distribution:

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SITE CLOSURE SUMMARY

Former Waste Oil Transfer Sump Adjacent to Site 8

October 7, 2015

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

2. SITE AND FILE INFORMATION	
Site Name: Former Waste Oil Transfer Sump Adjacent to Site 8	
Parent Military Base: Former Naval Air Station Moffett Field	
Site Address: Pollack Road, Mountain View, CA 94035	
Site Latitude (decimal degrees): 37.4203	Longitude: -122.0582
Site Type: Military Cleanup Site	
WB Case No.: NA	GeoTracker Case ID: T10000003442
WB File No. : 2189.8009	Paperless Office ID: SL0608541147

3. RESPONSIBLE PARTY:
Company/Agency: Base Realignment and Closure Program Management Office Contact Name: Scott Anderson Contact Title: BRAC Environmental Coordinator Street Address: 33000 Nixie Way, Bldg 50 2 nd Floor City, State, Zip Code: San Diego, CA 92147 Tel. No.: 619-524-5808 E-mail: Scott.d.anderson@navy.mil
Company/Agency: Base Realignment and Closure Program Management Office Contact Name: Wilson Doctor Contact Title: Remedial Project Manager Street Address: 33000 Nixie Way, Bldg 50 2 nd Floor City, State, Zip Code: San Diego, CA 92147 Tel. No.: 619-524-5940 E-mail: wilson.doctor@navy.mil

SITE CLOSURE SUMMARY

Former Waste Oil Transfer Sump Adjacent to Site 8

4. SITE DESCRIPTION, LAND USE, AND BENEFICIAL USE
<p>Site Size and Description: The former waste oil transfer sump was located in the northwestern portion of former NAS Moffett Field, west of the runways near the intersection of Zook Road and McCord Avenue, adjacent to Building 127. From the 1940s to 1980, waste oils were placed in the sump. The oils were periodically transferred from the sump to an aboveground tank (AST) in an adjacent surplus equipment storage yard for later disposal. The sump also received transformer oil and waste solvents periodically. Closure of the AST and mitigation of solvents and polychlorinated biphenyls (PCBs) were addressed separately as part of Installation Restoration Site 8 under CERCLA. An unpaved storm water drainage ditch overlies the former sump location between the fence of the surplus equipment yard and Pollack Road.</p>
<p>Vicinity: The former sump location is currently an unpaved drainage ditch. The site and vicinity are operated by NASA Ames Research Center and/or its tenants. The adjacent storage yard and road are paved. The nearest surface water body is NASA's storm water retention pond located approximately 2,300 feet north of the site.</p>
<p>Site Plan Map Attached: Yes</p>
<p>Current Site Use(s): Industrial/Commercial</p>
<p>Future Land Use(s): Industrial/Commercial</p>
<p>Beneficial Uses: Municipal and domestic groundwater use</p>
<p>Beneficial Use Exceptions: 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)
Sump	~400 gallons	Waste oil, transformer oil, waste solvents	Removed	2011	37.4203	-122.0582

6. SITE CHARACTERIZATION AND CONCEPTUAL SITE MODEL
<p>Cause and description of release: No known releases occurred from the sump. The sump and petroleum-contaminated soil were encountered by NASA while it was conducting remedial activities to address PCBs in soil in the drainage ditch. The sump was observed to be in good condition when removed.</p>

SITE CLOSURE SUMMARY

Former Waste Oil Transfer Sump Adjacent to Site 8

Characterization:	
<ul style="list-style-type: none"> In June 2012, 20 borings were drilled at and in the vicinity of the former sump location to 16 feet below ground surface (bgs), from which 41 soil and 20 grab groundwater samples were collected. Samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline (TPH-g), TPH as diesel (TPH-d), TPH as motor oil (TPH-mo), PCBs, polynuclear aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), hexavalent chromium, and CAM 17 metals. For the soil samples, only TPH-g (one sample at 13 feet below ground surface [bgs]) and TPH-d (one sample at 13 feet bgs and three samples at 0-2 feet bgs) exceeded screening levels. TPH-g, TPH-d, TPH-mo, naphthalene, and lead were detected at concentrations greater than screening levels in select grab groundwater samples. In April 2013, three groundwater monitoring wells were installed to evaluate and monitor groundwater quality at (one well) and downgradient of (two wells) the former sump location. The wells were sampled for four quarters and analyzed for TPH-g, TPH-d, TPH-mo, PCBs, PAHs, VOCs, hexavalent chromium, and CAM 17 metals. Only TPH-d was detected; but at concentrations less than its screening level. 	
Groundwater (GW)	Depth to first GW: 7-8 feet bgs
	GW gradient direction: East-northeast
	GW sampled?: Yes
GW monitoring wells	GW monitoring wells installed?: Yes
	Total number of monitoring wells used in support of closure decision: 3
	Status of MWs: 3 wells remain

7a. CLEANUP STANDARDS AND SITE REMEDIATION AND
<p>Describe basis for cleanup standards: Analytical results for soil samples were compared against San Francisco Regional Water Board environmental screening levels (ESLs) for direct contact for unrestricted residential sites. Analytical results for groundwater samples were compared against Tier 1 ESLs for groundwater that is a current or potential drinking water source.</p>
<p>Describe risk-based approach to develop cleanup standards: ESLs</p>
<p>Describe remediation efforts for soil and groundwater:</p> <ul style="list-style-type: none"> In 2011, NASA removed soil containing PCBs from the drainage ditch. During removal activities, the waste oil sump was encountered and removed. The sump was observed to be structurally sound and no holes or corrosion was observed; visual evidence of petroleum-contaminated soils outside the sump and around piping that connected to the former AST was observed. A total of approximately 59 cubic yards of soil was excavated from beneath and around the sump to a depth of 7 feet bgs, and disposed of offsite. Confirmation soil samples collected from the former sump excavation contained TPH-d and TPH-mo up to concentrations of 3,400 and 2,000 mg/kg, respectively. In October and November 2012, approximately 140 cubic yards of soil containing TPH was excavated and disposed of offsite. Soil confirmation samples were collected from the sidewalls and bottom and analyzed for TPH-g, TPH-d, TPH-mo, PCBs, PAHs, VOCs, hexavalent chromium, and CAM 17 metals. Based on analytical results, further excavation was conducted at three locations and new confirmation soil samples

SITE CLOSURE SUMMARY
Former Waste Oil Transfer Sump Adjacent to Site 8

were collected and analyzed for TPH-d and TPH-mo. Only one of the three additional confirmation soil samples contained TPH-d at a concentration greater than screening levels. Prior to backfilling, Oxygen Release Compound (ORC) was applied to the bottom of the open excavation.

7b. RESIDUAL (MAX) CONTAMINANT CONCENTRATIONS

CONTAMINANT	SOIL (ppm)		GW (ppb)		SOIL VAPOR (ppb or $\mu\text{g}/\text{m}^3$)	
	Residual	Project Screening Level	Residual	Project Screening Level	Residual	Project Screening Level
TPH-gasoline	0.553	770	<25	100	NS	NA
TPH-diesel	299	240	31.4	100	NS	NA
TPH-motor oil	885	10,000	<59	100	NS	NA
Benzene	0.0031 J	0.74	<0.4	1	NS	NA
Toluene	0.0076	1,000	<0.4	40	NS	NA
Ethylbenzene	0.0120	4.8	<0.4	30	NS	NA
Xylenes	0.0318	600	<1.2	20	NS	NA
MTBE	0.0012 U	39	<0.4	5	NS	NA
Naphthalene	0.0193 J	3.1	<0.098	6.1	NS	NA
Lead	22.7	80	<3	15	NS	NA

8. CLOSURE CRITERIA CHECKLIST (include comments as necessary)

1a Pollutant sources are identified and evaluated

- √ **Leak/spill sources (tanks, sumps, pipelines, etc.) are identified and controlled**
- √ **The pollutant source zone (sorbed/entrained residual pollutants and free product that sustain groundwater & vapor plumes) is identified and delineated**

Comments: Yes. The sump adjacent to Site 8 was removed and soil containing elevated concentrations of petroleum hydrocarbons was excavated.

1b The site is adequately characterized

- √ **Site history, hydrology, and hydrogeology are characterized**

SITE CLOSURE SUMMARY
Former Waste Oil Transfer Sump Adjacent to Site 8

<ul style="list-style-type: none"> √ <i>The nature & extent (lateral and vertical) of pollutants are characterized in soil, groundwater & soil gas, as necessary</i>
<p>Comments: Yes. See Table 6.</p>
<p>1c Exposure pathways, receptors, and potential risks, threats, and other environmental concerns are identified and assessed</p> <ul style="list-style-type: none"> √ <i>Nearby receptors (wetlands, streams, wells, homes, schools, businesses, etc.) are identified</i> √ <i>Groundwater & vapor migration/exposure pathways, natural & artificial (storm drains, sewer lines, buried channels, abandoned wells, etc.) are assessed</i> √ <i>Reasonably anticipated land and water use scenarios have been considered</i> √ <i>Actual and potential risks to receptors and adverse effects to beneficial uses are assessed</i>
<p>Comments: Yes. There are no water supply wells at Moffett Field. The nearest surface water body is NASA's storm water retention pond, approximately 2,300 feet north of the site.</p>

<p>2a Pollutant sources are remediated to the extent feasible</p> <ul style="list-style-type: none"> √ <i>The technical and economic feasibility of source remediation methods/technologies have been evaluated</i> √ <i>Feasible source remediation technologies have been implemented</i> √ <i>Appropriate source remediation performance monitoring has been conducted</i> √ <i>Source mass removal has been documented</i> √ <i>The effects of source remediation on groundwater/vapor plume behavior have been evaluated</i>
<p>Comments: Yes. Primary (sump) and secondary (contaminated soil) sources have been removed.</p>
<p>2b Unacceptable risks to human health, ecological health, and sensitive receptors, considering current and future land and water uses, are mitigated</p> <ul style="list-style-type: none"> √ <i>Necessary & appropriate corrective actions have been implemented</i> √ <i>Confirmation sampling, monitoring, and/or risk management measures demonstrate that risks are mitigated</i>
<p>Comments: Yes. Based on soil and groundwater sampling results for petroleum hydrocarbons, this site does not pose a significant risk to human health, the environment, or water quality. Residual chemical concentrations in soil greater than ESLs are limited in extent and will degrade over time.</p>
<p>2c Unacceptable threats to groundwater and surface water resources, considering existing and potential beneficial uses, are mitigated</p> <ul style="list-style-type: none"> √ <i>Necessary & appropriate corrective actions have been implemented</i> √ <i>Confirmation sampling, monitoring, and/or risk management measures demonstrate that threats are mitigated</i>

SITE CLOSURE SUMMARY
Former Waste Oil Transfer Sump Adjacent to Site 8

Comments: Yes. Based on groundwater sampling results for petroleum hydrocarbons this site does not pose a significant risk to human health, the environment, or water quality. Petroleum hydrocarbons were not detected in groundwater samples collected from site monitoring wells.

3a Groundwater plumes are stable or decreasing¹

- √ *Appropriate plume monitoring has confirmed the lateral and vertical extent over time*
- √ *Spatial and temporal trends for pollutants, including parent and breakdown products, have been evaluated*
- √ *Spatial and temporal trends for natural attenuation indicators have been evaluated*
- √ *Evidence of breakdown to acceptable end products is documented*
- √ *Plume concentrations are decreasing and the plume is not moving or expanding*

Comments: Yes. Although petroleum hydrocarbons were detected in grab groundwater samples during site investigation activities, monitoring wells were installed to collect representative groundwater samples over four quarters. Petroleum hydrocarbons were not detected or were less than ESLs indicating no significant groundwater plume exists.

3b Cleanup standards have been met or can be met in a reasonable timeframe

- √ *The estimated timeframe to achieve cleanup standards throughout the affected area is evaluated*
- √ *The anticipated timeframe for beneficial use of the affected and nearby water resources is evaluated*
- √ *The potential to adversely affect beneficial uses is assessed considering cleanup and beneficial use timeframes, hydrogeologic conditions, and the CSM*

Comments: Petroleum hydrocarbons in soil exceeding ESLs are limited in extent (one confirmation soil sample) and will degrade over time. Because the primary and secondary sources of petroleum hydrocarbons have been removed, cleanup standards are expected to be met in a reasonable time frame.

3c 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: Not applicable.

¹ For petroleum groundwater plumes, stability is usually a sufficient criterion. For solvent or other non-petroleum groundwater plumes, closure should be supported by evidence of a decreasing plume in time and space.

SITE CLOSURE SUMMARY
Former Waste Oil Transfer Sump Adjacent to Site 8

9. NFA 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 unrestricted land use, we may reconsider these findings should new information be discovered regarding previously undetected contamination.

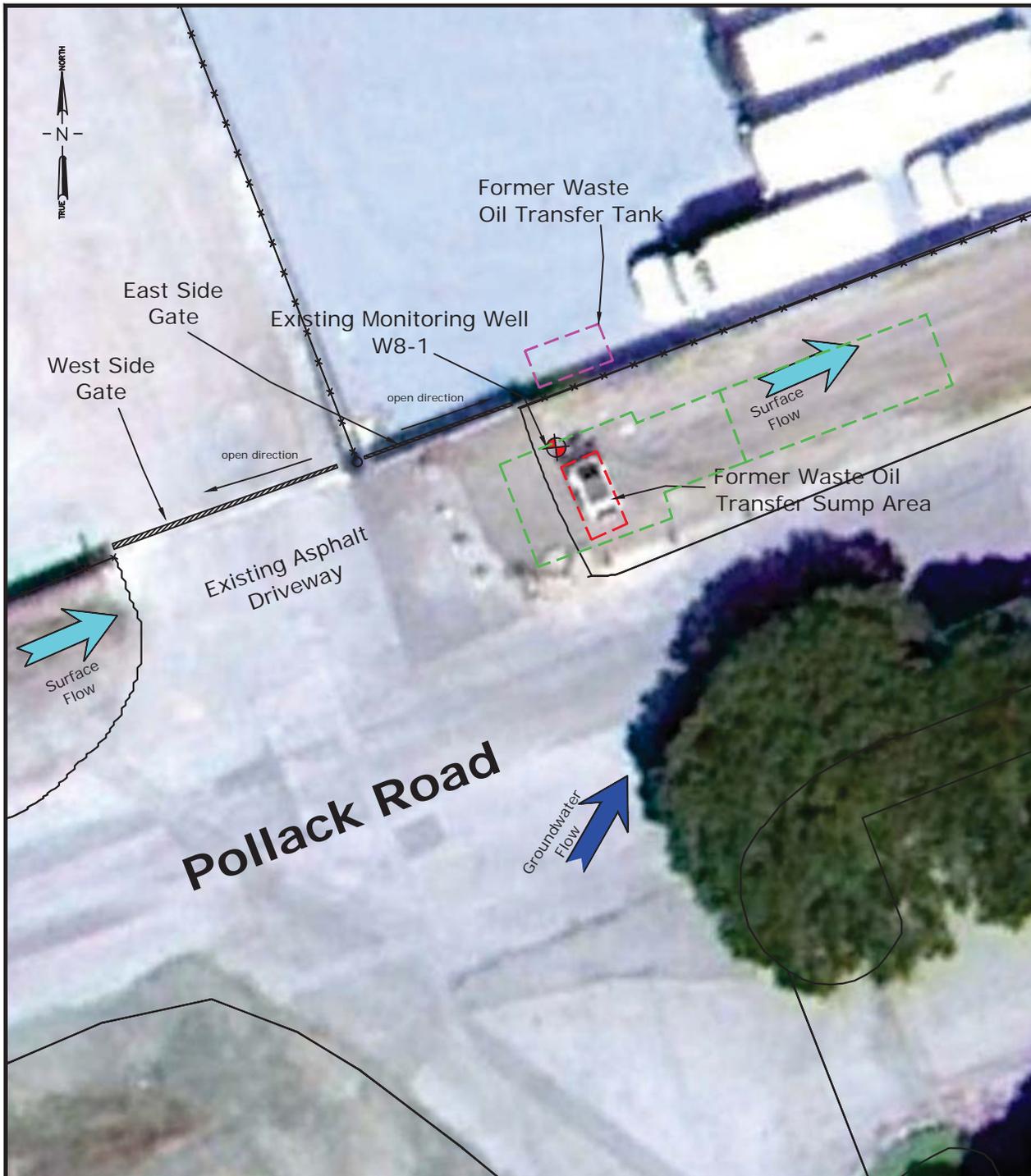
10a. NFA CONDITIONS AND REQUIREMENTS
None
10b. LAND USE CONTROLS/COVENANTS
None

11. ADDITIONAL COMMENTS

12. TECHNICAL REPORTS, CORRESPONDENCE, ETC., THAT THIS CLOSURE RECOMMENDATION WAS BASED UPON	
REPORTS ON FILE	Where is report(s) filed?: Water Board, Oakland
RORE, Inc. 2015. Final Annual Report, Groundwater Monitoring, Former Waste Oil Transfer Sump Adjacent to Site 8, Former Naval Air Station Moffett Field, Moffett Field, California.	April, 2015
RORE, INC. 2012. Final Work Plan, Site Characterization and Soil Removal Work Plan, Former Waste Oil Transfer Sump Adjacent to Site 8, Former Naval Air Station Moffett Field, Moffett Field California.	May, 2012
RORE, Inc. 2012. Site Characterization Phase 1 Recommendation Letter Report – June 2012, Former Waste Oil Transfer Sump Adjacent to Site 8, Former Naval Air Station Moffett Field.	August 23, 2012
NASA Ames Research Center and Integrated Science Solutions, Inc., Final Implementation Report, Navy Upland PCB Source Soils Remediation, Navy Site 8 Waste Oil Transfer Sump and Adjacent Drainage Ditch Area, Former Navy Buildings 26, 45, 525, 583c, and 950/951, Former Naval Air Station Moffett Field, NASA Ames Research Center, Moffett Field, CA	August 2012

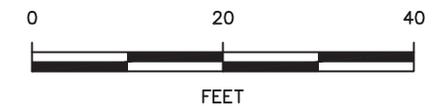
SITE CLOSURE SUMMARY
Former Waste Oil Transfer Sump Adjacent to Site 8

Attachments: Site Plans



LEGEND

-  Existing Well
-  Former Sump Location
-  Former AST Location
-  Former Excavation Area
-  Existing Chain Link Fence
-  Existing Gate
-  Existing Paved Driveway



Sources: Google earth 2011, mfa_basemap.gdb

SITE MAP
 SITE CHARACTERIZATION AND SOIL REMOVAL
 FORMER WASTE OIL TRANSFER SUMP ADJACENT TO SITE 8
 FORMER NAVAL AIR STATION MOFFETT FIELD
 CONTRACT No. N62473-11-C-5012
 MOFFETT FIELD, CALIFORNIA

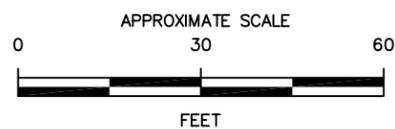
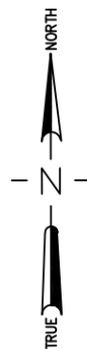
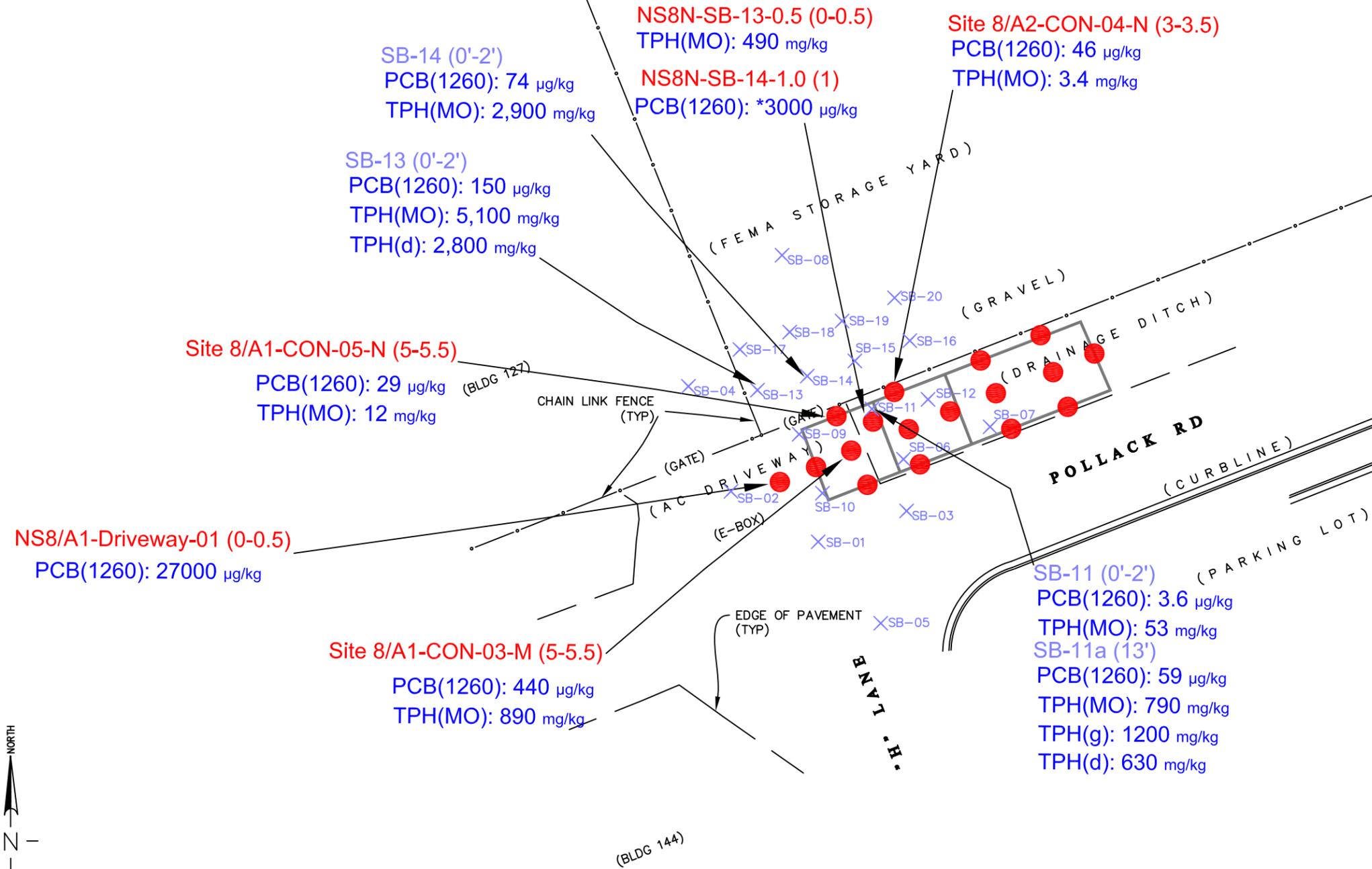


FIGURE 2
 RORE PROJECT NO.
 11HW020
 APRIL 2013

LEGEND

- NS8/A1 NASA Samples
- × SB-01 Navy Samples

Note: Only analytical detections are shown.



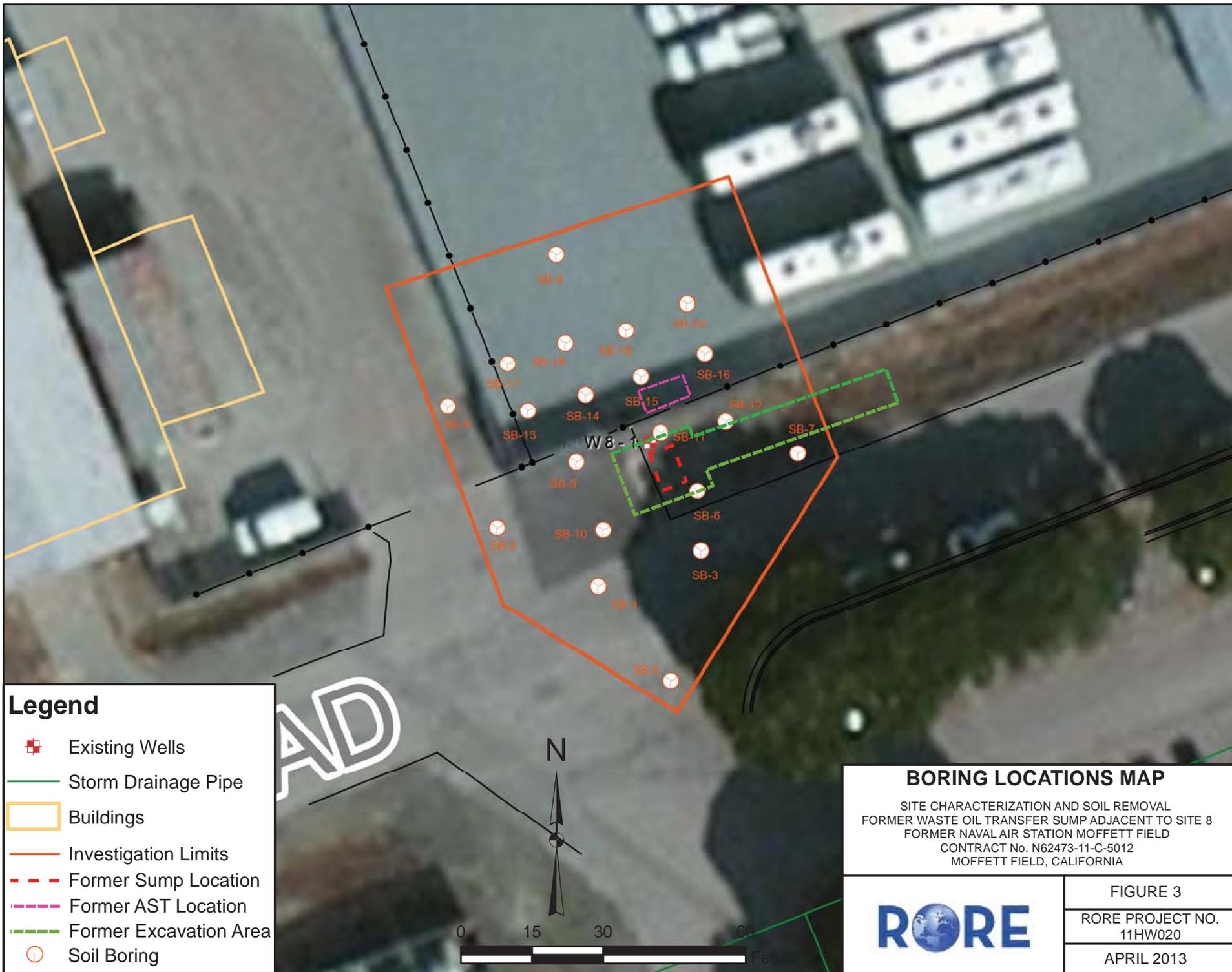
HISTORICAL SOIL SAMPLING LOCATIONS
FORMER WASTE OIL TRANSFER SUMP ADJACENT TO SITE 8
FORMER NAVAL AIR STATION MOFFETT FIELD
MOFFETT FIELD, CALIFORNIA



FIGURE 5

RORE PROJECT No.
11HW020

APRIL 2015



Legend

-  Existing Wells
-  Storm Drainage Pipe
-  Buildings
-  Investigation Limits
-  Former Sump Location
-  Former AST Location
-  Former Excavation Area
-  Soil Boring

BORING LOCATIONS MAP
 SITE CHARACTERIZATION AND SOIL REMOVAL
 FORMER WASTE OIL TRANSFER SUMP ADJACENT TO SITE 8
 FORMER NAVAL AIR STATION MOFFETT FIELD
 CONTRACT No. N62473-11-C-5012
 MOFFETT FIELD, CALIFORNIA

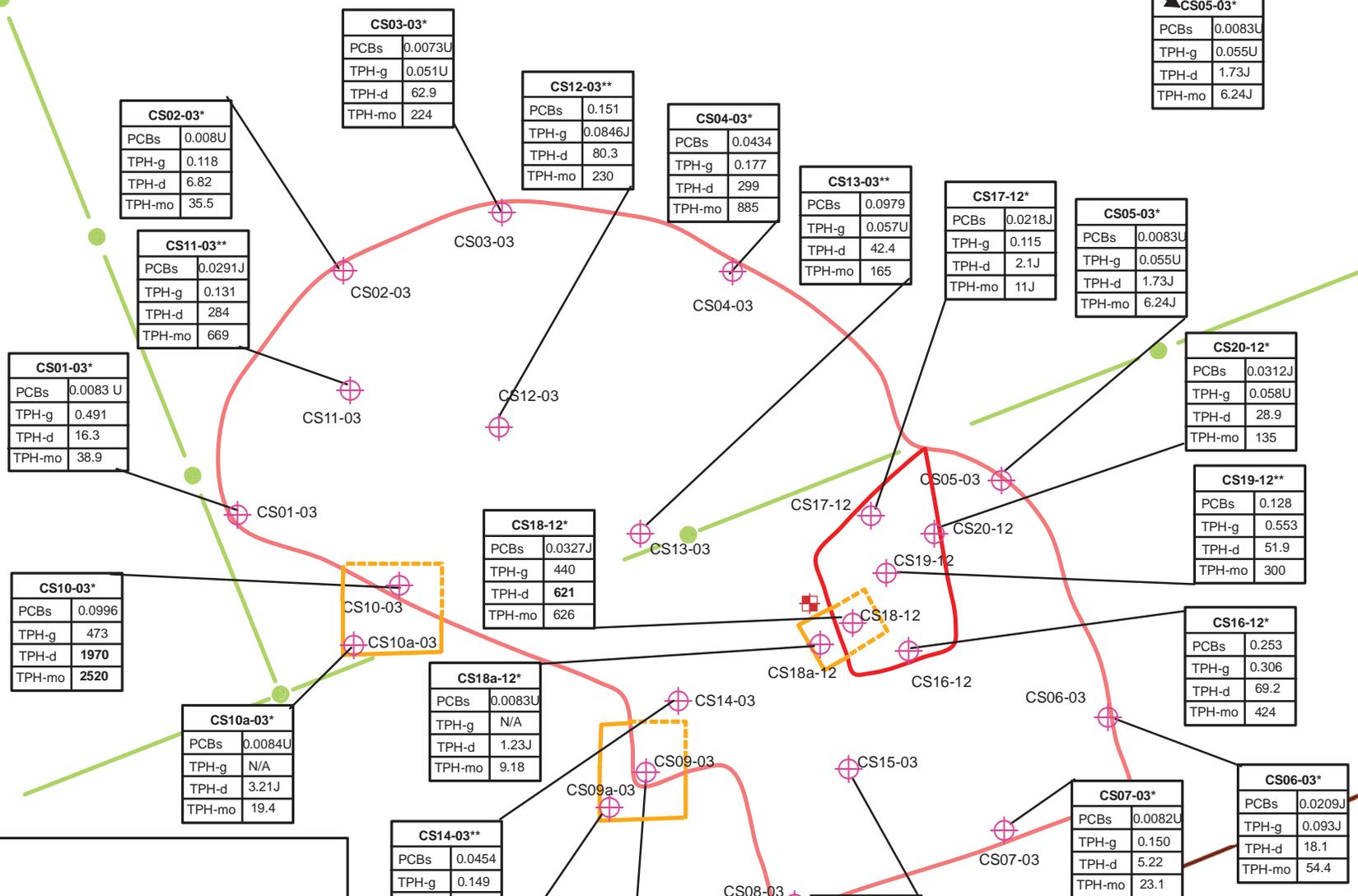


FIGURE 3
RORE PROJECT NO. 11HW020
APRIL 2013



Sample ID Sample Depth in Feet

PCBs	0.0083U
TPH-g	0.055U
TPH-d	1.73J
TPH-mo	6.24J



Legend

- Existing Wells
- Fence
- 12' Depth Excavation
- Excavation Limits
- Over-Excavation
- Soil Sample Location

* - Sidewall Samples

** - Bottom Excavation Samples

All results are in mg/kg Results that exceed PALs are shown in **BOLD**



CONFIRMATORY SOIL SAMPLE RESULTS MAP

SITE CHARACTERIZATION AND SOIL REMOVAL
FORMER WASTE OIL TRANSFER SUMP ADJACENT TO SITE 8
FORMER NAVAL AIR STATION MOFFETT FIELD
CONTRACT No. N62473-11-C-5012
MOFFETT FIELD, CALIFORNIA

FIGURE 8

RORE PROJECT NO.
11HW020

APRIL 2013

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

SMW-2	
TPH-g	25 U
TPH-d	29 U

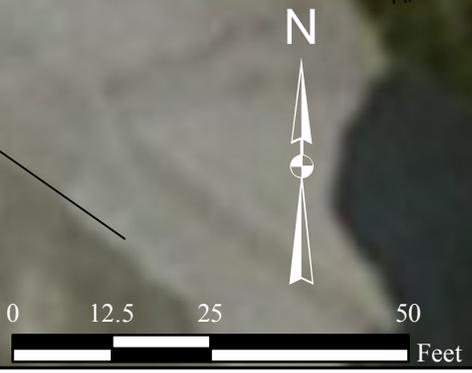
SMW-1	
TPH-g	25 U
TPH-d	28 U

SMW-3	
TPH-g	25 U
TPH-d	31.4J



Legend

- SMW-1 Sump Characterization Wells *
 - W8-1 Existing Wells
 - Buildings
 - - - Former Sump Location
 - J Estimated Result. Result is < Reporting Limit
 - U Non detect result. Result is < Method Detection Limit
- *Well locations surveyed by RORE on 17 April 2013



FOURTH QUARTER COC CONCENTRATION MAP
 SITE CHARACTERIZATION AND SOIL REMOVAL
 FORMER WASTE OIL TRANSFER SUMP ADJACENT TO SITE 8
 FORMER NAVAL AIR STATION MOFFETT FIELD
 CONTRACT No. N62473-11-C-5012
 MOFFETT FIELD, CALIFORNIA

	FIGURE 4d
	RORE PROJECT NO. 11HW020
	APRIL 2015