California Regional Water Quality Control Board
Santa Ana Region

Linda S. Adams
Secretary for
Environmental Protection

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Arnold Schwarzenegger
Governor

M60050_004425
MCAS EL TORO
SSIC NO. 5090.3.B

September 10, 2008

Base Realignment and Closure
Attn: Ms. Debra Theroux (debra.theroux@navy.mil)
Deputy Base Closure Manager
7040 Trabuco Road
Irvine, California 92618

DETERMINATION OF NO FURTHER ACTION, FORMER UNDERGROUND STORAGE TANK RELEASE SITE 206, FORMER MARINE CORPS AIR STATION, EL TORO
GeoTracker No. T0605902152

Dear Ms. Theroux:

This letter confirms the completion of the site investigation and remedial action which were required to mitigate the release of aviation fuel, jet fuel and gasoline from the underground storage tank (UST) formerly located at the above described site. Enclosed is the Case Closure Summary for the referenced site for your records.

Based on the available information, including the current land use, and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground storage tank release is required. If a change in land use is proposed, the owner must promptly notify this agency.

This notice is issued pursuant to a regulation contained in Title 23, California Code of Regulation, Division 3, Chapter 16, Section 2721 (e).

Please telephone John Broderick of my staff at (951) 782-4494, or send email to jbroderick@waterboards.ca.gov, if you have any questions regarding this matter.

Sincerely,

Gerard J. Thibeault
Executive Officer

Enclosure: Case Closure Summary

cc via electronic copy w/attachment:
Ms. Lynn Hornecker, BRAC PMO West – lynn.hornecker@navy.mil
Ms. Lilly Lee, SWRCB, Cleanup Fund – LLLEE@waterboards.ca.gov

CASE CLOSURE SUMMARY
Leaking Underground Fuel Tank Program

I. Agency Information DATE: September 8, 2008

AGENCY NAME	California Regional Water Quality Control Board - Santa Ana Region	STAFF	John Broderick
ADDRESS	3737 Main St. Suite 500	TITLE	Engineering Geologist
CITY/STATE/ ZIP	Riverside CA 92501-3348	PHONE	(951) 782-4494, main # 782-4130

II. Case Information

SITE NAME	former Underground Storage Tank Farm 6, UST 206 Site		
LOCATION	Former Marine Corps Air Station, El Toro, Irvine		
REGIONAL BOARD CASE #	T0605902152	LOCAL AGENCY CASE # 083003163T	
RESPONSIBLE PARTIES	ADDRESS	PHONE NUMBER	
Attn: Ms. Debra Theroux Deputy Base Closure Manager	BRAC PMO West 1455 Frazee Road, Suite 900	(619) 532-0919	
	San Diego, CA 92108		

TANK NO.	SIZE IN GALLONS	CONTENTS	CLOSED IN PLACE/ REMOVED	DATE
206	50,000	Aviation and jet fuel, unleaded gasoline	Removed for disposal	8/31/1999

III. Release and Site Characterization Information

CAUSE AND TYPE OF RELEASE:	Fuel oil or heating oil fuel release to soil				
MONITORING WELLS INSTALLED?	Yes	NUMBER	2	PROPER SCREEN INTERVAL?	
DEEPEST GW DEPTH		SHALLOWEST GW DEPTH	≈190 feet		
GROUNDWATER, MOST SENSITIVE CURRENT USE:	Municipal	GW FLOW DIRECTION	West		
DRINKING WATER WELL(S) AFFECTED?	No	AQUIFER NAME	Irvine Groundwater Management Zone		
IS SURFACE WATER AFFECTED?	No	NEAREST/AFFECTED SW NAME			
OFF-SITE BENEFICIAL USE IMPACTS (ADDRESSES/LOCATIONS):	None				
REPORT(S) ON FILE?	Yes	WHERE IS/ARE REPORT(S) FILED?	RWQCB – Santa Ana Region		

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

MATERIAL	AMOUNT	ACTION (TREATMENT, DISPOSAL)/ DESTINATION	DATE
TANK/PIPING	1/unknown	Transported off site for disposal	8/31/1999
FREE PRODUCT			
SOIL		Transported for disposal at a recycling facility	4/2008
GROUNDWATER			

III. Release and Site Characterization Information (Continued)

Maximum Document Contaminant Concentration – Before and After Cleanup

CONTAMINANT	SOIL (mg/kg)		WATER (µg/L)	
	INITIAL	CURRENT	INITIAL	CURRENT
BENZENE	27	27	160	<0.05
TOLUENE	640	640	ND	<0.5
ETHYLBENZENE	280	280	ND	<0.5
XYLENE	840	840	ND	<0.5
MTBE	180	180	ND	<10
TPRH				
TPH – G	11,000	11,000	1,100	30
TPH – D	4,700	4,700	4,500	<94
Acetone	6.4			8.6
Methylene chloride	4.3			
TBA				6.9

COMMENTS REGARDING INVESTIGATION AND REMEDIATION

Former UST 206 was installed in 1943 in the northwestern corner of Former Tank Farm 6 (TF-6), Former Marine Corps Air Station, El Toro, City of Irvine. Former UST 206 was a 33-foot diameter and 8-foot high concrete structure. TF- 6 contained four large USTs. It was used to store aviation and jet fuel, and later unleaded gasoline. The UST and associated piping were removed on August 31, 1999 under oversight of Orange County Health Care Agency. The excavation was 42 feet in diameter and 14 feet deep. Approximately 240 cubic yards of soil were removed and replaced back in the excavation as backfill. Four soil confirmation samples were collected form the excavation floor, and two soil samples were collected from the soil stockpile. The maximum detected contaminant concentrations were: gasoline – 9,300 mg/kg; diesel – 530 mg/kg, total recoverable petroleum hydrocarbons – 8,240 mg/kg; benzene – 10.5 mg/kg; toluene – 45 mg/kg; total xylenes – 434 mg/kg; methyl tertiary butyl ether (MTBE) – 24.9 mg/kg; and tertiary butyl alcohol (TBA) – 0.42 mg/kg.

During May and October 2000, four exploratory borings were drilled to depths of approximately 31 to 190.5 below ground surface (bgs). One boring drilled near the center of the excavation was extended, using air rotary casing hammer drilling, to a depth of 200 feet bgs to collect a HydroPunch® groundwater sample. The maximum detected contaminant concentrations in soil samples were: gasoline – 11,000 mg/kg; diesel – 47,000 mg/kg; benzene - 27 mg/kg, MTBE – 180 mg/kg; total xylenes – 840 mg/kg; toluene – 640 mg/kg; ethylbenzene – 280 mg/kg; acetone – 6.4 mg/kg; and methylene chloride – 4.3 mg/kg. The maximum detected contaminant concentrations in the groundwater sample were: diesel – 4.5 mg/L; gasoline 1.1 mg/L; benzene – 160 µg/L; and MTBE - <10 µg/L.

During July 2007, a soil gas survey was conducted in specific areas within TF-6. Former UST 206 and monitoring well TF6MW-02 were areas included in the investigation. Direct-push borings were advanced to approximately 25 feet bgs for collection of soil gas samples. Six soil gas borings were in the vicinity of former UST 206, and three borings were in the vicinity of the monitoring well. BTEX concentrations up to 28.5 µg/L were detected, and no MTBE was detected above reporting limits in the vicinity of former UST 206.

From February 4 to 6, 2008, petroleum-impacted soil at former UST 206 was excavated. The excavation was approximately 58 feet long by 45 feet wide and approximately 35 feet deep. Soils were screened utilizing a photo ionization detector (PID). Soil readings of 50 ppm or higher were considered petroleum impacted. Readings below 50 ppm were considered clean, and used as backfill. Approximately 695 tons of petroleum-impacted soil were transported off-site for disposal on April 28, 2008. One composite soil sample was collected from the clean soil stockpile and the petroleum-impacted soil stockpile. Three confirmation soil samples were collected from the deepest portions of the excavation. Samples were analyzed for diesel, JP5 (jet propulsion fuel, grade 5), and gasoline by Method 8015M, volatile organic compounds by Method 8260B, and the synthetic precipitation leaching procedure (SPLP - Method 1312/5030B) for TPH-g, TPH-d, & TPH-jp5. Gasoline and diesel were detected at maximum concentrations of 780 mg/kg

and 140 mg/kg respectively. Total xylenes, ethylbenzene, TBA, and acetone were detected at maximum concentrations of 30,000 µg/kg, 2,100 µg/kg, 850 µg/kg, and 430 µg/kg respectively.

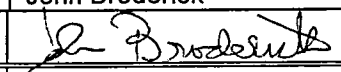
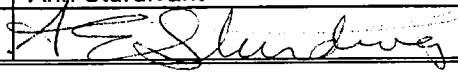
In 1996, two groundwater monitoring wells were installed within the southeast and northwest sites of TF-6, to depths up to 230 feet bgs. Depth to groundwater measured in the wells was approximately 189 to 192 feet bgs in April 2008. Former UST 206 is located within the footprint of the nearby Truck Fueling Area (TFA) plume and TF-6 plume. On August 31, 2007, Regional Board staff approved the groundwater Remedial Action Plan for the TFA groundwater plume of monitored natural attenuation. Monitoring well TF6MW-02 is one of the designated long-term monitoring locations for natural attenuation. As of April 24, 2008, the detected contaminants for TF6MW-02 were: gasoline – 0.3 mg/L; diesel - <0.94 mg/L; TBA – 6.9 µg/L; and acetone – 8.6 µg/L

Closure of UST Site 206 is recommended, based on the removal of the significant mass of petroleum impacted soil. This site's impact to the underlying groundwater quality is being address with the approved ongoing remedial action for the TFA plume. This site is no longer believed to be a threat to beneficial uses, and the environment.

IV. Closure

DOES COMPLETED CORRECTIVE ACTION PROTECT *EXISTING* BENEFICIAL USES PER REGIONAL BOARD BASIN PLAN?				Yes	
DOES COMPLETED CORRECTIVE ACTION PROTECT *POTENTIAL* BENEFICIAL USES PER THE REGIONAL BOARD BASIN PLAN?				Yes	
MONITORING WELLS	2	NUMBER DECOMMISSIONED		NUMBER RETAINED	2
LIST ENFORCEMENT ACTIONS TAKEN		None			
LIST ENFORCEMENT ACTIONS RESCINDED		n/a			

V. Regional Board Representative Data

STAFF	John Broderick	TITLE	Engineering Geologist
SIGNATURE		DATE	9/8/2008
SUPERVISOR	Ann Sturdivant	TITLE	Senior Engineering Geologist
SIGNATURE		DATE	9/8/2008

VI. Additional Comments, Data etc.

None.