

CITY OF OAKLAND



DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA • SUITE 5301 • OAKLAND, CALIFORNIA 94612-2034

Public Works Agency
Environmental Services Division

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RECEIVED

8:41 am, Dec 15, 2011

Alameda County
Environmental Health

December 14, 2011

Mr. Paresh Khatri
Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, Ca 94502

Re: Fuel Leak Case No. RO0000293 and GeoTracker Global ID T0600100375, City of Oakland Municipal Service Center, 7101 Edgewater Drive, Oakland, CA- Revised Groundwater Monitoring Plan

Dear Mr. Khatri:

The City of Oakland is pleased to submit this revised groundwater monitoring plan for the above referenced site. The report has been prepared by Arcadis, Inc. under a consultant service contract with the City of Oakland.

Certification

I certify under penalty of law that this document and attachments are prepared under my direction or supervision in accordance with the system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing the violations.

If you have questions or comments, please contact me at (510)238-6361.

Sincerely

A handwritten signature in black ink that reads "Gopal Nair".

Gopal Nair
Environmental Program Specialist



An American Public Works Association Accredited Agency



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Mr. Paresh Khatri
Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, Ca 94502

SER4

Subject:

Revised Groundwater Monitoring Plan for Fuel Leak Case No. RO0000293 and GeoTracker Global ID T0600100375, City of Oakland Municipal Service Center, 7101 Edgewater Drive, Oakland, California 94621

Date:
December 14, 2011

Dear Mr. Khatri:

Contact:
Chuck Pardini

ARCADIS U.S., Inc. (ARCADIS) is submitting this revised groundwater monitoring plan on behalf of the City of Oakland ("the City") Public Works Agency, Environmental Services Division (ESD) for the City of Oakland Municipal Service Center, located at 7101 Edgewater Drive, Oakland, California ("the Site"). This letter is being submitted in response to the November 3, 2011 Alameda County Environmental Health Services' (ACEHS) "Post-Remediation Monitoring for Fuel Leak Case No. RO0000293 and GeoTracker Global ID T0600100375, City of Oakland Municipal Service Center, 7101 Edgewater Drive, Oakland, CA 94621" (the "ACEHS Letter").

Phone:
(510) 596-9536

Email:
Chuck.pardini@arcadis-us.com

Our ref:
LC010060.0016.00001

The ACEHS letter included the response to the human health risk assessment conducted for the Site, as well as recent groundwater monitoring reports. ARCADIS understands that you had a phone conversation with Mr. Gopal Nair of the City on November 4, 2011. Based on this conversation and the ACEHS letter, you have concurred with the conclusions of the Site risk assessment, but have indicated that the frequency of groundwater sampling should be increased at the MSC to demonstrate the concentrations and mobility of the contaminants of concerns have stabilized. We further understand that the ACEHS anticipates this increased monitoring frequency will allow for the better definition of chemical concentration trends, including potential seasonal variations, and will facilitate an expedited path towards the Site closure consideration.

In response to the ACEHS letter and November 4, 2011 phone conversation between Mr. Khatri and Mr. Nair, ARCADIS proposes monitoring of select wells to

Imagine the result

take place on a quarterly basis for one year: in September 2011 (already completed as part of the 2011 annual monitoring event); December 2011; March 2012; and June 2012.

The proposed groundwater monitoring program is summarized in Attachment 1 and includes the sampling of 8 monitoring wells and 8 remediation wells in the third quarter of 2011 and 6 monitoring wells and 8 remediation wells in each quarterly event thereafter. The monitoring and remediation wells to be sampled were selected based on location and historical chemical concentrations. In general wells were selected to monitor the potential for offsite contaminant migration and provide representative samples from within each of the identified plumes at the Site. Groundwater elevations and floating product (if any) will continue to be measured in all monitoring and remediation wells during the quarterly monitoring events. Attachments 2 and 3 provide maps showing the monitoring and remediation well locations.

Groundwater monitoring reports will be prepared semiannually and discuss the previous two quarterly sampling events. ARCADIS anticipates the semiannual reports will be submitted to ACEHS in February and August 2012. The August 2012 report will also include a discussion of the chemical concentration trends observed over the previous four quarters and provide a request for site closure if the trends are stable and/or decreasing.

ARCADIS would appreciate an expedited review and approval of this proposed monitoring plan as we would like to conduct the December 2011 sampling event the week of December 19, 2011.

If you have any questions, please contact the undersigned at (510) 596-9536 or Gopal Nair at (510) 238-6361.

Sincerely,

ARCADIS U.S., Inc.



Charles Pardini, P.G.
Vice President, Principal Geologist

Attachments:

- Attachment 1 – Proposed Sample Matrix
- Attachment 2 – Site Map
- Attachment 3 – Detailed Plume Map

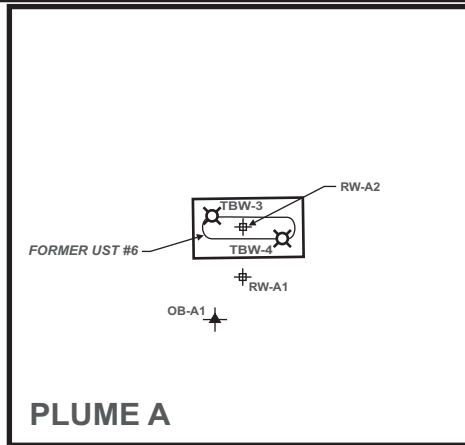
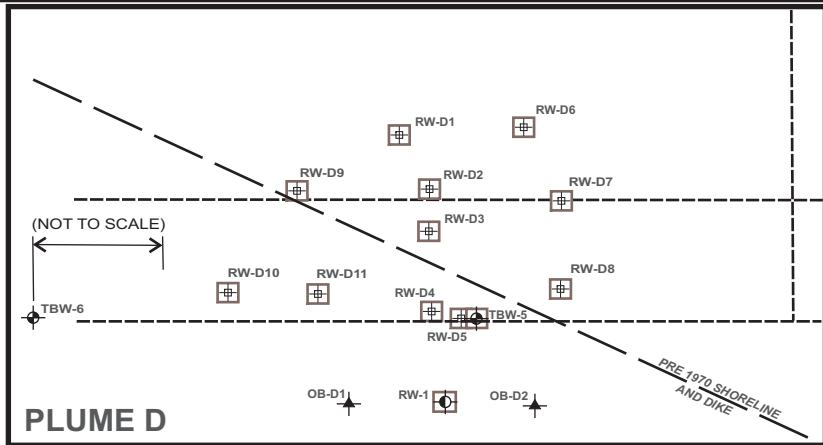
Copies:

- Mr. Gopal Nair – City of Oakland, Public Works Agency, Environmental Services
- Mr. Xinggang Tong – OTG EnviroEngineering Solutions, Inc
- Ms. Amy Goldberg-Day – ARCADIS

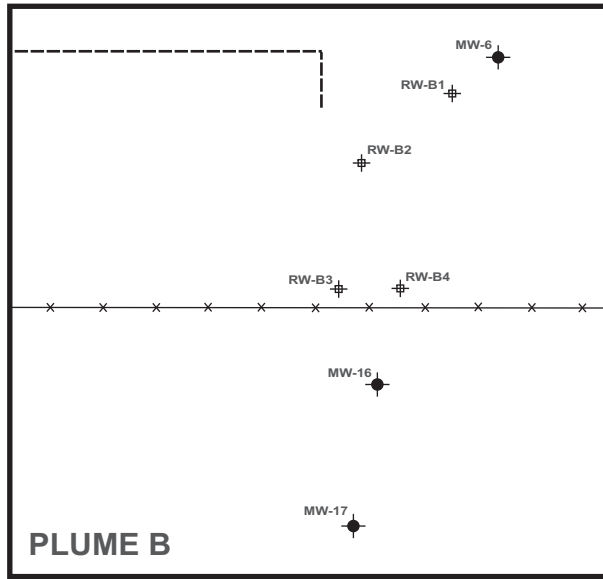
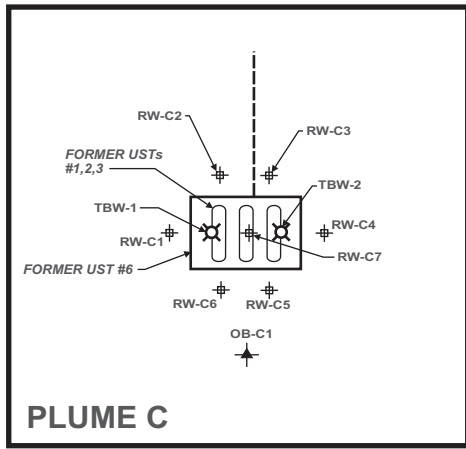
Table 1 - New Well Sampling Schedule and Protocol

City of Oakland Municipal Services Center

Well ID					Parameters to be Monitored								Notes
	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	Elevation	Floating Product Thickness	pH	Dissolved Oxygen	Temp.	Specific Conduct.	TPH gas BTEX & MTBE	TPH d/k/mo	
	2011	2011	2012	2012									
MW-1	X	X	X	X	X	X	X	X	X	X	X	X	benzene at 79 ug/L in April 09; interior well
MW-2	gauge only	gauge only	gauge only	gauge only	X	X							up/cross gradient well, benzene <2 ug/L since 07
MW-3													
MW-4													
MW-5	X	X	X	X	X	X	X	X	X	X	X	X	TPH-g still over 2,000 ug/L; near active USTs
MW-6	X	gauge only	gauge only	gauge only	X	X							
MW-7	gauge only	gauge only	gauge only	gauge only	X	X							upgradient well, only MTBE around 2 ug/L since 06
MW-8	gauge only	gauge only	gauge only	gauge only	X	X							ND for all constituents since Sept 02
MW-9	X	gauge only	gauge only	gauge only	X	X							benzene still at 82 ug/L in April 09; perimeter/sentinel well
MW-10	X	X	X	X	X	X	X	X	X	X	X	X	ND for everything except benzene around 10 ug/L since 08
MW-11	gauge only	gauge only	gauge only	gauge only	X	X							interior/upgradient well, only benzene around 5 ug/L since 05
MW-12	gauge only	gauge only	gauge only	gauge only	X	X							TPH-g around 150 ug/L, benzene ND (<0.5) since 2002
MW-13	X	X	X	X	X	X	X	X	X	X	X	X	only TPH-d around 100 ug/L, TPH-mo 600 ug/L since 06; perimeter/sentinel well
MW-14	X	X	X	X	X	X	X	X	X	X	X	X	all ND in April 09, but TPHmo at 660 ug/l in Nov 08; perimeter/sentinel well
MW-15	gauge only	gauge only	gauge only	gauge only	X	X							only TPH-d around 100 ug/L since Sept 02; benzene ND since 04
MW-16	gauge only	gauge only	gauge only	gauge only	X	X							often dry/no water, MW-17 directly downgradient as sentinel well
MW-17	X	X	X	X	X	X	X	X	X	X	X	X	ND for all since 02, but directly downgradient of Plume B; perimeter/sentinel well
MW-18	gauge only	gauge only	gauge only	gauge only	X	X							not located since 2003, seach & apply for closure in 2010
TBW-1													
TBW-2													
TBW-3													
TBW-4													
TBW-5	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
TBW-6	gauge only	gauge only	gauge only	gauge only	X	X							excavation backfill well
RW-A1	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-A2	gauge only	X	X	X	X	X	X	X	X	X	X	X	remediation well
OB-A1	gauge only	gauge only	gauge only	gauge only	X	X							remediation observation well
RW-B1	gauge only	X	X	X	X	X	X	X	X	X	X	X	remediation well
RW-B2	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-B3	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-B4	gauge only	X	X	X	X	X	X	X	X	X	X	X	remediation well
RW-C1	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-C2	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-C3	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-C4	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-C5	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-C6	X	X	X	X	X	X	X	X	X	X	X	X	remediation well
RW-C7	X	X	X	X	X	X	X	X	X	X	X	X	remediation well
OB-C1	gauge only	gauge only	gauge only	gauge only	X	X							remediation observation well
RW-D1	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-D2	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-D3	X	gauge only	gauge only	gauge only	X	X							remediation well
RW-D4	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-D5	X	X	X	X	X	X	X	X	X	X	X	X	remediation well
RW-D6	X	gauge only	gauge only	gauge only	X	X							remediation well
RW-D7	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-D8	X	gauge only	gauge only	gauge only	X	X							remediation well
RW-D9	X	X	X	X	X	X	X	X	X	X	X	X	remediation well
RW-D10	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-D11	gauge only	gauge only	gauge only	gauge only	X	X							remediation well
RW-1	X	X	X	X	X	X	X	X	X	X	X	X	remediation well
OB-D1	gauge only	gauge only	gauge only	gauge only	X	X							remediation observation well
OB-D2	gauge only	gauge only	gauge only	gauge only	X	X							remediation observation well
Notes:													
gauge only = measure groundwater elevation and floating product thickness only													
TPH d/k/mo = total petroleum hydrocarbons as diesel, kerosene, and motor oil after silica gel cleanup.													
an "X" in the column means the well will be sampled.													



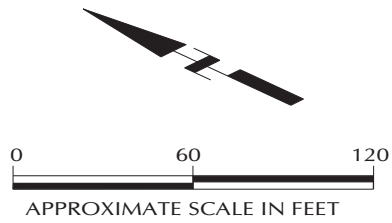
- EXPLANATION**
- RW-D1 [Symbol] EXTRACTION WELL LOCATION
 - RW-A1 [Symbol] TEST/OBSERVATION WELL LOCATION
 - OB-A1 [Symbol] OBSERVATION WELL LOCATION
 - MW-A6 [Symbol] MONITORING WELL LOCATION
 - RW-1 [Symbol] REMEDIATION WELL LOCATION
 - TBW-1 [Symbol] TANK BACKFILL WELL
 - [Symbol] ABANDONED WELL
 - x-x- FENCE
 - - - - FORMER UNDERGROUND PIPING



NOTES:

SPH WAS NOT DETECTED IN ANY WELLS WHERE DEPTH-TO-SPH MEASUREMENTS WERE COLLECTED IN OCTOBER 2010

SPH = SEPARATE PHASE HYDROCARBONS



NOTE: ALL DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE
SOURCE: NINYO & MOORE - JULY 2004

MUNICIPAL SERVICE CENTER
7101 EDGEWATER DRIVE, OAKLAND, CALIFORNIA

**DETAIL PLUME MAP
OCTOBER 2010**

FIGURE
3