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ENVIRONMENT

Ms. Barbara J. Jakub, PG
Alameda County Health Care Services
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject:
Response to the Alameda County Environmental Health Services Comments on the Subsurface Investigation and Product Recovery Work Plan dated September 7, 2012;

Date:
November 29, 2012

Contact:
Ron Goloubow

Phone:
510.596.9550

Email:
ron.goloubow@arcadis-us.com

Our ref:
EM001048.0001

Dear Ms. Jakub:

ARCADIS U.S., Inc. (ARCADIS) has prepared this letter on behalf of CBRE – Global Corporate Services (CBRE) and the Volkswagen Group of America (VWoA) for the Volkswagen Automobile Dealership located at 2740 Broadway Avenue, Oakland, California ("the Site"). The Site is identified as Fuel Leak Case No. RO0000400 and GeoTracker Global ID T0600100227. This letter responds to comments provided by the Alameda County Environmental Health (ACEH) Services in a November 15, 2012 letter ("the ACEH Comment Letter") regarding the Subsurface Investigation and Product Recovery Work Plan, dated September 7, 2012 ("Work Plan").

The Work Plan included details of the June 2012 groundwater sampling event, the scope of the planned free product recovery investigation, and the scope of the additional soil and groundwater subsurface investigation. In addition to responding to the specific comments provided in the ACEH Comment Letter, a revised Site plan indicating the locations of focus of the subsurface investigation is included as Figure 1. The ACEH's comments are provided below followed by the response to each comment.

ACEH Comment #1 – GeoTracker Compliance

A review of the State Water Resources Control Board's (SWRCB) GeoTracker website indicates the site has not been claimed, rendering the site to non-compliance status. Pursuant to California Code of Regulations, Title 23, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1, beginning September 1, 2001, all analytical data, including monitoring well samples, submitted in a report to a regulatory agency as part of the UST or LUST program, must be transmitted electronically to the SWRCB GeoTracker system via the internet. Also, beginning January 1, 2002, all

permanent monitoring points utilized to collect groundwater samples (i.e. monitoring wells) and submitted in a report to a regulatory agency, must be surveyed (top of casing) to mean sea level and latitude and longitude to sub-meter accuracy using NAD 83. A California licensed surveyor may be required to perform this work. Additionally, pursuant to California Code of Regulations, Title 23, Division 3, Chapter 30, Articles 1 and 2, Sections 3893, 3894, and 3895, beginning July 1, 2005, the successful submittal of electronic information (i.e. report in PDF format) shall replace the requirement for the submittal of a paper copy. Please claim your site and upload all future submittals to GeoTracker and ACEH's ftp server by the date specified below. Electronic reporting is described below.

Response

ARCADIS has claimed the Site within the SWRCB GeoTracker system in association with the owner's representative. Recent documents produced by ARCADIS will be uploaded to GeoTracker in an effort to maintain a complete document reference list. Additionally, all future submittals will be completed via GeoTracker and ACEH's ftp server as requested.

ACEH Comment #2 – Groundwater Monitoring Well and Boring Locations

The proposed groundwater monitoring well locations should be based on the results of the MIP study. The borings that have the maximum concentrations should be the ones that are converted to monitoring points. In particular, the proposed well on Broadway appears to be a poor location based on the fact that VW-1 and MW-3 define the downgradient extent of the plume in that general direction. A well closer to former well MW-5 would seem to be more appropriate. Also, please adjust the spacing of your borings so that all four borings are more closely spaced, are positioned along a transect, and are all located on 28th Street. Submit a revised map to ACEH for approval prior to performing the borings. Then upon receiving the results of the MIP, please propose an appropriate location for the well based on those results.

Response

As requested by the ACEH, ARCADIS will adjust the scope of the Work Plan so that the MIP borings and grab groundwater sampling is completed prior to installing the proposed groundwater monitoring wells. This will allow for ARCADIS to submit the preliminary results of the MIP investigation, the proposed well locations, and the well

construction details for ACEH review and approval prior to installing the groundwater monitoring wells.

The proposed locations for the MIP borings have been revised so that the four MIP locations proposed to be drilled along 28th Street are spaced closer together and in a transect on 28th Street (see Figure 1). The fifth MIP boring location is still proposed to be drilled near former groundwater monitoring well MW-4. The original Work Plan included the collection of grab groundwater samples from three of the five MIP boring locations. In an effort to better identify the locations for the future groundwater monitoring wells and based on the revisions described above, grab groundwater samples will be collected from each of the five proposed MIP locations.

The results of this MIP investigation and grab groundwater sampling will help direct the locations of soil sampling and installation of groundwater monitoring wells. As requested by ACEH, ARCADIS will prepare a brief data transmittal report of the preliminary results of the MIP investigation and proposed well locations and construction details for ACEH approval before installing the groundwater monitoring wells.

ACEH Comment #3 – Groundwater Monitoring Well Construction

Arcadis does not specify the depth of the well installation but proposes using 5 to 10 foot screens. ACEH requires shorter screen intervals in order to collect more representative groundwater samples, generally with no more than 5 foot of sand interval; however, ACEH recognizes that fully screened water-bearing zones are appropriate in thinner permeable zones. ACEH requests an effort to minimize the screen length at each well location to the extent possible, with well screens minimally longer than the water-bearing zone, including the capillary fringe. If longer screen intervals are judged appropriate well clusters or multilevel wells (e.g. CMT) may be appropriate. The screen interval should straddle the groundwater table, especially in this case where separate phase hydrocarbons have been encountered. Please submit your well screen length proposal upon completion of the MIP borings and when the new well location is proposed.

Response

As described above, ARCADIS will prepare a brief data transmittal report to include the following:

- the preliminary results for the MIP investigation (including the analytical results for grab groundwater samples)

- proposed locations and construction details for the groundwater wells

The groundwater monitoring wells will be installed following the ACEH's review and approval of the data transmittal report and proposed locations for the monitoring wells. Currently, one of the groundwater monitoring wells is anticipated to be along 28th Street while the other well is anticipated to be located in the vicinity of former monitoring well MW-4. These locations will be finalized based on the results of the MIP investigation and the analytical results of the grab groundwater samples.

The details of the monitoring well construction, including the screen interval, will be communicated to ACEH. Based on the recommendations in the ACEH Letter, ARCADIS anticipates the groundwater monitoring wells will be constructed using approximate 5-foot long well screens that will straddle the groundwater table/water bearing sediments. ARCADIS does not anticipate the need for well clusters or multilevel wells to appropriately characterize the petroleum-related impacts within the shallow groundwater aquifer. ARCADIS will ensure to minimize the screen length at each well location, to the extent possible.

ACEH Comment #4 – Soil Sampling

In addition to collecting groundwater samples from the boring near MW-4, please collect and analyze soil samples at areas of obvious contamination, the soil/groundwater interface, significant changes in lithology and at a minimum of five foot intervals. The Low-Threat Closure policy (LTCP) identifies the need for shallow soil data in the source area. Since this location is the closest of the five proposed borings to the source area, additional soil samples appear to be appropriate.

Response

The Work Plan, as submitted by ARCADIS, did not include collection of soil samples from the proposed MIP borings or monitoring well locations. At ACEH's request, ARCADIS will expand the scope of the Work Plan to include soil sampling at the soil boring to be drilled for the proposed groundwater monitoring well locations. The depth of the soil samples to be retained and submitted for laboratory analyses will be based on the results of the MIP investigation. As requested by the ACEH, soil samples collected from areas that have elevated MIP measurements, the

soil/groundwater interface, significant changes in lithology, and at a minimum of five-foot intervals will be retained, preserved, and submitted for laboratory analysis. The maximum total depth of each soil boring is anticipated to be less than 25 feet below ground surface. Special focus will be given to collection of shallow soil data for potential future use under the LTCP.

Soil samples will be collected in laboratory-cleaned sample containers, stored on ice, and shipped under chain-of-custody procedures to a California-certified laboratory. Samples will be analyzed for volatile organic compounds via United States Environmental Protection Agency (USEPA) Method 8260; and gasoline-range total petroleum hydrocarbons (TPHg), diesel-range TPH (TPHd), and motor-oil-range TPH (TPHmo) via USEPA Method 8015.

The results of this soil sampling effort will be included as part of the requested Soil and Water Investigation Report, to be submitted via GeoTracker and the ACEH ftp server by February 15, 2013. As part of this submittal, ARCADIS will contract with a California-licensed surveyor to survey the existing and newly-installed groundwater monitoring wells per the California Code of Regulations.

ACEH Comment #5 – Soil Vapor Characterization

Soil vapor characterization was requested in ACEH's April 6, 2012 letter. Yet no proposal was submitted to evaluate vapor intrusion at the building. Please submit your proposal to evaluate vapor intrusion of volatile organic compounds including BTEX and chlorinated solvents with the results of the investigation requested below.

Response

The additional soil and groundwater investigation described in the Work Plan and amended herein is anticipated to serve as a resource for refining a soil vapor sampling plan. As requested, ARCADIS will prepare a soil vapor sampling plan to be included as part of the Soil and Water Investigation Report that is to be submitted to the ACEH by February 15, 2013.

ACEH Comment #6 – Free Product Bail Down Test

The proposed methodology of extracting fluids using a vac truck does not allow for accurate extracted SPH and liquid volume measurement. However, this test may

indicate the rate of SPH return. Please ensure that both extracted water and SPH are measured separately and accurately recorded on a data sheet.

Response

Because the thickness of non-aqueous phase liquid (NAPL) measured within vapor extraction well VW-3 in June 2012 was small (i.e., 0.02 feet), ARCADIS originally focused the free product bail down test on assessing the potential for NAPL recovery. Based on the ACEH's request, the approach detailed in the Work Plan will be revised to forego use of a vac truck to conduct the extraction in favor of a method that will better allow for the quantification of NAPL and water removed from vapor extraction well VW-3.

The revised approach will include use of a centrifugal pump to remove the NAPL present on the surface of the water table in vapor extraction well VW-3, or any other well with a measureable amount of NAPL. An oil/water interface probe will be used to quantify the thickness of NAPL within the well prior to initiating the bail down test. Then the tubing will be lowered to the oil/water interface and the NAPL will be removed. The amount of NAPL removed from the well will be recorded on a data sheet, as requested by ACEH. Additionally, 6 to 10 well casing volumes of water will be removed from the well using a centrifugal pump, in order to serve as redevelopment in preparation for the planned quarterly groundwater monitoring program that has been requested for this project. This volume of groundwater removed will also be recorded on a data sheet as requested by ACEH.

Per the original Work Plan, ARCADIS will record the depth to the NAPL and depth to water levels within the well at the time of the NAPL extraction, as well as following the extraction event. ARCADIS will mobilize to the Site to take these measurements daily for at least a week after the NAPL extraction, or until the observed NAPL level is stable. Observation will continue on a weekly basis, if warranted.

Closing

ARCADIS plans on submitting the requested reports via both GeoTracker and ACEH's ftp server by the deadlines indicated in the ACEH Comment Letter. If you have any questions or comments regarding this letter or the project in general, please feel free to contact me at 510.596.9550.

Sincerely,

ARCADIS U.S., Inc.

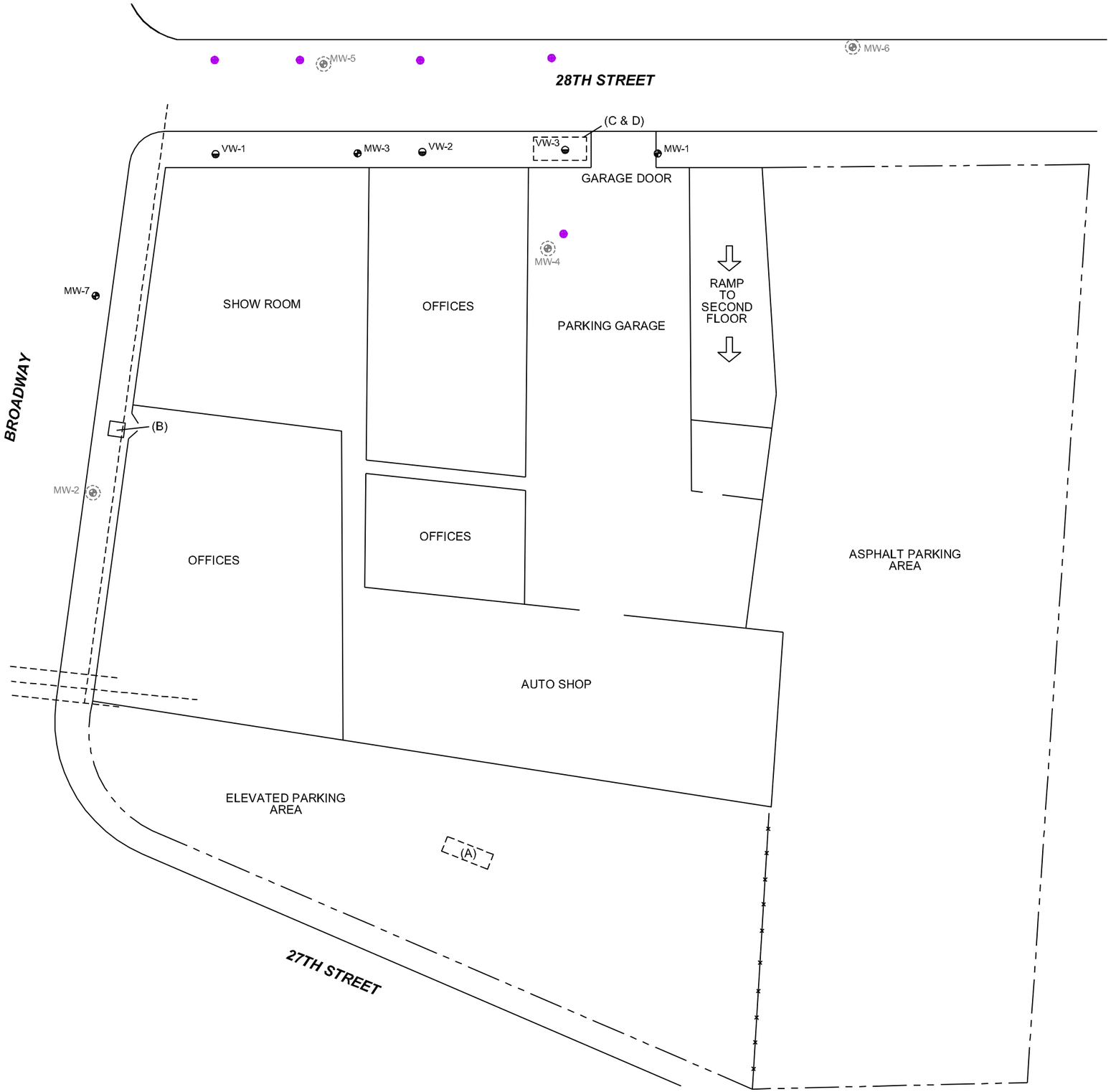
Ron Goloubow
Principal Geologist

cc:
Eric Carlson – Volkswagen
Sandra Jouhet – CBRE

Attachment:
Figure 1 - Revised MIP Investigation Locations

Figure 1

Revised MIP Boring Locations



LEGEND

- PROPERTY LINE
- FENCE LINE
- UTILITY LINE
- MW-3 MONITORING WELL LOCATION
- MW-5 ABANDONED MONITORING WELL
- VW-1 VAPOR EXTRACTION WELL
- FORMER UNDERGROUND STORAGE TANK LOCATION
  - (A) WASTE OIL (1,000 GAL); TANK REMOVED, SITE CLEAN
  - (B) WASTE OIL (550 GAL); TANK REMOVED
  - (C&D) WASTE OIL (550 GAL) AND UNLEADED GASOLINE (3,000 GAL); TANKS REMOVED
- PROPOSED MEMBRANE INTERFACE PROBE (MIP) BORING LOCATION

0 30 Feet

REFERENCES:
MAP DIGITIZED FROM A SITE PLAN BY ENVIRONMENTAL SCIENCE & ENGINEERING (6/91) AND A SITE PLAN BY QST ENVIRONMENTAL (12/02/96 - REVISED 12/28/98)

2740 BROADWAY
OAKLAND, CALIFORNIA

REVISED MIP BORING LOCATIONS

ARCADIS

FIGURE 1