July 10, 2014

Ms. Dilan Roe
Site Cleanup Program Manager
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94501-6577

Subject: **Geotechnical Investigation Work Plan**
Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California
Fuel Leak Case No. RO0003014

Dear Ms. Roe:

Enclosed please find the *Geotechnical Investigation Work Plan* for the Crown Chevrolet Cadillac Isuzu site at 7544 Dublin Boulevard, in Dublin, California (Fuel Leak Case No. RO0003014, GeoTracker Global ID T10000001616). This document was prepared by WEST Environmental Services & Technology (WEST), on behalf of BWD Dublin LLC.

I declare under penalty of perjury that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Please contact me at (415) 602-8128 or Peter Krasnoff of WEST at (415) 971-1600 if you have any questions regarding this Work Plan.

Sincerely yours,

Sean Murphy
BWD Dublin LLC

Attachment: Geotechnical Investigation Work Plan

cc: Avery Whitmarsh, AMEC Environmental & Infrastructure, Inc.
Logan Medeiros, Rockridge Geotechnical

WEST Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
main@westenvironmental.com

July 10, 2014

Mr. Peter Beritzhoff
Bay West Development
2 Henry Adams Street, Suite 450
San Francisco, California 94103

Subject: *Geotechnical Investigation Work Plan,* 7544 Dublin Boulevard Dublin, California

Dear Mr. Bertizhoff:

Pursuant to your request, West Environmental Services & Technology, Inc., (WEST) has prepared this *Geotechnical Investigation Work Plan* ("*Work Plan*") to present the procedures and protocols for Rockridge Geotechnical to use while collecting soil sampling at 7544 Dublin Boulevard in Dublin, California ("Site;" Figure 1). This *Work Plan* was prepared in response to the Alameda County Environmental Health (ACEH) requirement for developing procedures and protocols for advancing borings in areas where Site groundwater contains volatile organic compounds (VOCs) including tetrachloroethene (PCE) and trichloroethene (TCE).

BACKGROUND

The Site was developed in 1968 as an automobile dealership. Operations conducted at the Site included automobile sales, repair and service. Soil, soil gas and groundwater have been impacted from on-Site and off-Site releases of VOCs. Further details regarding the Site background were previously presented in AMEC's May 2014 *Final Feasibility Study and Corrective Action Plan*.

SITE DESCRIPTION

The approximately 6.3-acre Site is located in Dublin, California and is divided by St. Patrick Way into the north parcel (approximately 5-acres) and south parcel (approximately 1.3-acres). The facility operations buildings are located on the north parcel included: offices and showrooms (Buildings A and D); automobile service areas and car wash (Building B); automobile body shops (Building C); parts department; and automobile detailing. The south parcel was used for vehicle parking. Further details regarding the Site were previously presented in AMEC's October 2012 *Soil, Groundwater, and Soil Vapor Investigation Report*.

SUMMARY OF INVESTIGATIONS

Investigations have been conducted at the Site since 2009. Based on the investigations, VOCs are present in the subsurface including shallow groundwater (between approximately 10-feet and 25-feet below ground surface) on the northern portion (north of Building B) of the north parcel. Shallow groundwater on the southern portion (south of Building B) and deeper groundwater bearing units beneath the Site (below approximately 30-feet below ground surface), do not contain VOCs including PCE and TCE above laboratory-reporting limits. Details of the investigations were presented in AMEC's October 2012 *Soil, Groundwater, and Soil Vapor*

Investigation Report. Figures depicting the lateral and vertical distribution of VOCs in the subsurface are attached.

PROPOSED GEOTECHNICAL INVESTIGATIONS

The scope of geotechnical investigation includes collecting soil samples to generate geotechnical data for future development of the north parcel. The geotechnical investigations will be conducted by Rockridge Geotechnical of Oakland, California by advancing borings on the north and south parcel using cone penetrometer test (CPT) equipment and hollow-stem auger drilling equipment (Figure 1).

North of Building B, Rockridge Geotechnical has proposed to advance CPT (CPT-RG-1, CPT-RG-2 and CPT-RG-3) and hollow stem auger borings (RG-1 and RG-2) to 25-feet in the area (Figure 1). South of Building B, Rockridge Geotechnical has proposed to advance CPT-RG-4 to 80-feet; CPT-RG-5, CPT-RG-6 and CPT-RG-7 to 50-feet; and hollow stem auger borings RG-3, RG-4 and RG-5 to 50-feet.

WORK PROCEDURES

To address the ACEH concern that the advancement of borings beneath the north parcel could cause cross-contamination of the deeper water bearing zone, the following procedures and protocols should be followed.

Task 1.0: Permitting, Health and Safety, Utility Clearance

Prior to subsurface investigations, boring permits will be obtained from the Alameda County Zone 7 Water Agency. A Site-specific *Health and Safety Plan* ("*HASP*") will be prepared to address worker health and safety during investigation activities. The *HASP* will be prepared in accordance with the California Occupational Health and Safety Administration (CalOSHA) Title 8 §5192 Hazardous Waste Operations and Emergency Response and United States OSHA 29 CFR 1910.120, Hazardous Waste Operations and Emergency Responses. The *HASP* will be approved by the Project Manager, a Quality Assurance Reviewer and the onsite Safety Officer. The *HASP* will be read and signed by all onsite workers and Site visitors prior to entering the work area. Pursuant to California Assembly Bill AB 73, Underground Services Alert (USA) will be contacted to locate and clear work areas for underground utilities at the Site. A private utility locator will be retained to check the borings and CPT locations for the presence of underground utilities.

Task 2.0: Geotechnical Investigation – North of Building B

Based on our review of AMEC's findings, we have concluded the potential for cross-contamination of the shallow and deeper groundwater bearing units from advancing borings on the northern portion of the north parcel should be minimized to control the potential for cross-contamination of the deeper (greater than 50-feet) water bearing zone.

The current geotechnical investigation plan includes terminating the geotechnical borings at 25-feet north of Building B. However, if geotechnical borings will be advanced deeper than 25-feet

below ground surface north of Building B, then procedures should be implemented to isolate the shallow groundwater bearing unit. The procedures should include installation of a temporary outer casing prior to advancing below 25-feet below ground surface as discussed in the following two sections.

Pilot Boring

Borings will be advanced at the Site to characterize the contact between the base of the shallow groundwater bearing zone and the underlying low permeable fine grained sediments. The borings will be drilled using direct-push equipment operated by a California C-57 licensed well drilling contractor. Soil cores should be collected continuously and logged using the Unified Soil Classification System to identify the lithologic contact between the base of the shallow groundwater-bearing zone and the underlying low-permeable fine-grained sediments. Descriptions of the subsurface lithology will be recorded on boring logs using the Unified Soil Classification System.

Outer Casing Installation

Following completion of the pilot boring, an outer casing should be installed using direct-push dual tube or mud-rotary drilling equipment. The temporary outer casing will be comprised of direct-push outer dual tube drilling rods or steel pipe.

Installation of the outer dual tube drilling rods will be performed by advancing the drill rods into the subsurface to a minimum of approximately 2-feet into the low-permeable fine-grained sediments present below the base of the shallow groundwater-bearing zone. Following placement of the outer dual tube rods, smaller diameter direct push rods, e.g., CPT, will be advanced to depths greater than 25-feet below ground surface.

Mud rotary drilling equipment should be used when installing steel pipe for advancing hollow-stem auger equipment to greater depths. The outer casing should then be placed into the borehole and sealed with grout. The borehole and outer casing should extend into a minimum of two feet into the low-permeable fine-grained sediments.

The size of the outer casing should be of sufficient inside diameter to facilitate the drilling equipment. In addition, the size of borehole should be of sufficient to contain the outer casing and the 2-inch minimum outer annular space. The outer casing should be driven into place and a grout seal placed in the bottom of the casing. The outer casing should also be grouted by pumping into the annular space between the outer casing and the borehole wall using a tremie pipe. The grout mixture should consist of a Type II Portland cement/bentonite or cement/sand mixture. A minimum of 24 hours should be allowed for the grout to cure (USEPA, 2013).

Task 3.0: Geotechnical Investigation – South of Building B

Based on AMEC's groundwater investigation findings, VOCs do not appear in the shallow water bearing zone near south of Building B (see Figure 6 from AMEC); therefore, measures to control the potential for cross-contamination during advancement of the borings south of Building B do not appear necessary.

WEST
Environmental Services & Technology

Task 4.0: Management of Investigation-Derived Waste

Investigation-derived wastes (IDWs), those materials generated during the process of sampling and investigation at the Site will be managed in accordance with applicable regulatory requirements. IDWs are anticipated to include: concrete dust, soil, groundwater, decontamination fluids, personal protective equipment (PPE) and disposable sampling equipment.

Management of IDW must comply with applicable regulations. Potential applicable regulations include: the Resource Conservation and Recovery Act (RCRA), Clean Air Act (CAA), Clean Water Act (CWA), Safe Drinking Water Act (SDWA) and legally enforceable state regulations.

Waste generated during implementation of the work will be containerized in USDOT-approved containers, labeled and stored in a secure area at the Site. The containers will be labeled including USEPA generator ID, generator contact information, accumulation date and type of waste, i.e., purge water, solid waste and PPE. The IDWs will then be characterized to determine appropriate waste disposal options.

Please call either of the undersigned at 415/460-6770, if you have any questions or wish to discuss further.

Sincerely,

Peter M. Krasnoff, P.E.
Principal Engineer

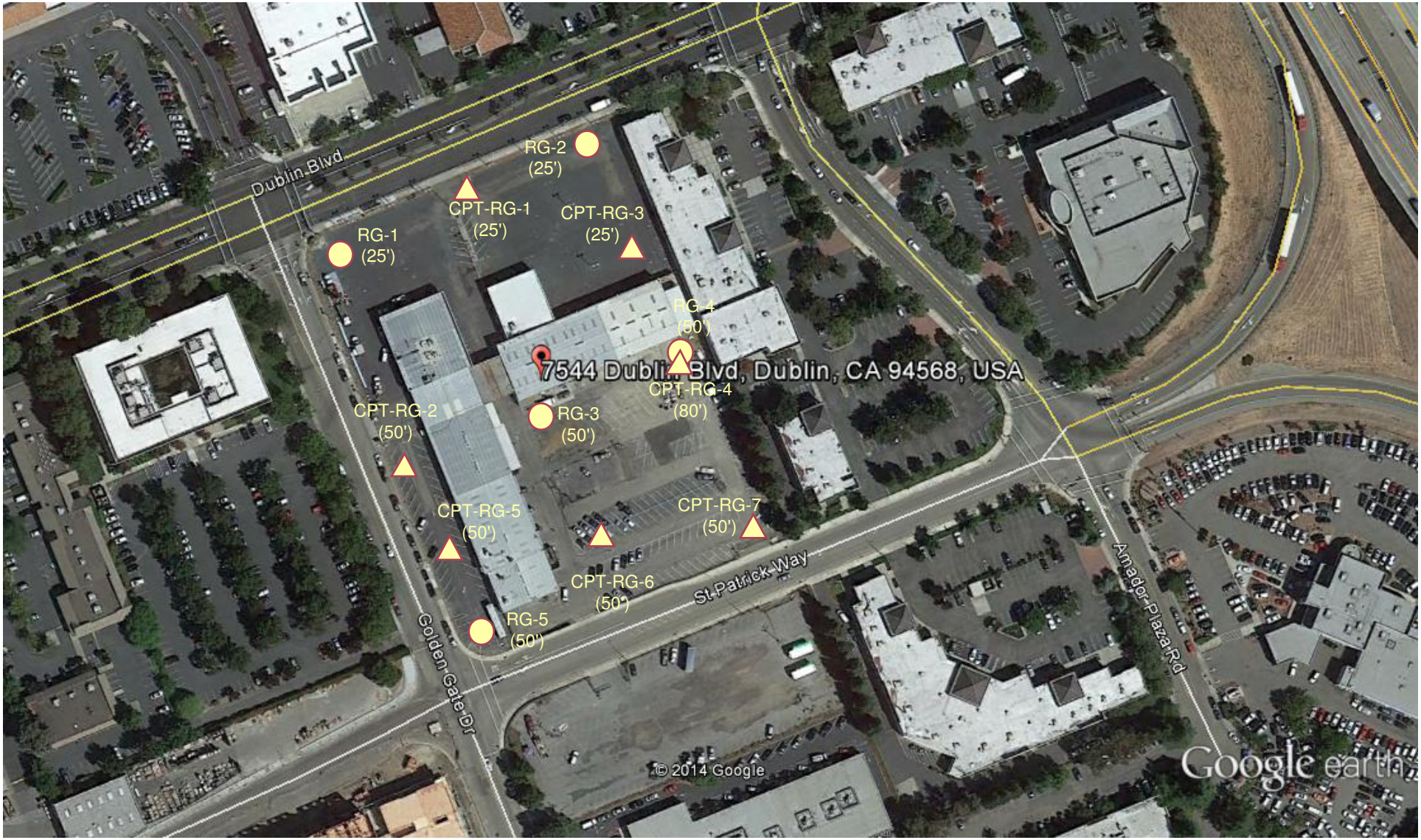
REGISTERED PROFESSIONAL ENGINEER
PETER KRASNOFF
C44031
EXP. 6/30/15
CIVIL
STATE OF CALIFORNIA

Peter E. Morris, P.G.
Senior Geologist

PROFESSIONAL GEOLOGIST
PETER E. MORRIS
7084
Exp. 4/30/15
STATE OF CALIFORNIA

Attachments

cc: Ms. Dilan Roe, P.E., ACEH
Mr. Logan Medeiros, Rockridge Geotechnical



Google earth

feet 1000
meters 300

RG-1 (50') — Approximate location and depth of proposed hollow-stem auger exploratory boring for geotechnical investigation.

CPT-RG-1 (50') — Approximate location and depth of proposed cone penetration test (CPT) for geotechnical investigation.

Rockridge Geotechnical, Inc.
July 10, 2014

Dublin Boulevard

Golden Gate Drive

Offices and Showroom

Building A

Building B

Building C

Building D

Parts Department

Service Area 1

Service Area 2

Sump excavation boundary

Sump

Former Sump

Drain from Former Sump to Sanitary Sewer

Compressor Storage Area

1,000-Gallon Waste Oil UST

1,000-Gallon Gasoline UST

Front-end alignment pit excavation boundary

Auto Detailing

Drive-Through Car Wash

planter

NM-B-27W <0.50 <0.50

SB-01 44 3.7

SB-46 45 8.5

SB-45 70 0.59

NM-B-34W 27 0.50

NM-B-33-W 25 2.1

NM-B-25-W 48 12

SB-38 100 2.0

SB-33 130 0.57

MP-01-1 (120) (<0.5)

SB-34 210 <2.5

SB-39 120/140 2.0/1.8

NM-B-23E-W 130 2.0

MW-01 150/160/150 1.2/1.3/1.1

SB-35 170 0.58

NM-B-32A-W 72 0.71

NM-B-32-W 190 1.0

SB-42 140 <0.5

SB-40 160 <0.5

NM-B-23B 98 0.89

NM-B-23B-W 120 1.7

MW-02 16/18 6.9/9.2

NM-B-26-W 1.7 56

NM-B-28-W 16 48

SB-02 15 60

MP-02-1 (1.2)/(1.6) (15)/(19)

NM-B-24-W 65 5.6

NM-B-29-W 53 3.7

NM-B-30-W 58 18

MP-04-1 (4.0) (1.3)

MP-03-1 (120) (6.4)

NM-B-22-W 42 16

SB-43 25 <0.5

SB-41 53 <0.5

NM-B-20-W 6.4 0.52

NM-B-21-W 2.4 0.51

SUMP-EXB-WATER-1-16 <5.0 <5.0

SB-15-GW 19 1.0

SUMP-EXB-WATER-2-16 6.5 <0.5

SB-16-GW 37 1.5

SB-44 7.3 <0.5

NM-B-31-W 1.3 <0.50

NM-B-6-GW 3.5 1.4

SB-18 <0.5 <0.5

MW-03 3.2/9.3 <0.5/0.59

SB-28 4.6 <0.5

SB-23 3.6 <0.5

SB-03 3.2 0.96

NM-B-7-W <0.50 <0.50

NM-B-9-W 0.87 <0.50

NM-B-18-W 0.98 <0.50

B8-W 9.6 <5.0

SB-19 1.1/1.1 0.51/0.53

SB-13-GW-3 <0.5 <0.5

B5-W 1.6 <0.5

SB-21-GW 1.0 <0.5

SB-26 0.98 <0.5

NM-B-5-GW 1.5 <0.50

B10-W 1.9 <0.5

NM-B-17-W <0.50 <0.50

SB-27 1.0 <0.5

B7-W <0.5 <0.5

SB-20 1.4 <0.5

SB-13-GW-2 <0.5 <0.5

SB-31 <0.5 <0.5

SB-25 0.62 <0.5

NM-B-13-W <0.50 <0.50

B9-W <0.5 <0.5

SB-17-GW <0.5 <0.5

0 40

APPROXIMATE SCALE IN FEET

S:\OD10\160070\task_00002\12_0910_ir_fig_06.mxd

Explanation

- 50 — Approximate line of equal PCE concentration
- 50 — Approximate line of equal TCE concentration
- MW-01 — Well/Boring ID
- 150/160/150 — PCE concentration in µg/L
- 1.2/1.3/1.1 — TCE concentration in µg/L
- Grab groundwater sample
- Duplicate data

Drinking Water ESLs (µg/L)	
PCE	5.0
TCE	5.0

- Shallow monitoring well location
- Multi-port monitoring well (3-channel) location
- Soil and/or grab groundwater sample location
- Approximate excavation boundary (October 2011)
- Approximate property line
- Approximate sump location
- Storm drain inlet
- Manhole
- Utility vault
- EL — Electric line
- NG — Natural gas line
- SS — Sanitary sewer line
- SS LAT — Sanitary sewer lateral line
- SD — Storm drain line
- T — Telecommunications line
- T? — Suspected telecommunications line
- UU — Undifferentiated utility line
- XJT — Joint trench
- WL — Water line

Abbreviations:
ESL = environmental screening level
PCE = tetrachloroethene
TCE = trichloroethene
UST = underground storage tank
µg/L = micrograms per liter
< = not detected at laboratory reporting limit indicated

Note:
Results, shown in parenthesis, from multi-port wells were not used in contouring, due to the small screen interval.

PCE AND TCE IN SHALLOW GROUNDWATER
NORTH PARCEL
Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard and 6707 Golden Gate Drive
Dublin, California

By: AWP	Date: 10/18/2012	Project No. OD10160070
amec		Figure 6