



Carryl MacLeod
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**Chevron Environmental
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October 19, 2016

Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

RECEIVED

By Alameda County Environmental Health 10:09 am, Oct 20, 2016

Dear Mr. Detterman:

Attached for your review is the *Response to Technical Comments* for former Chevron-branded service station 92029, located at 890 West MacArthur Boulevard in Oakland, California (Case #: RO0002438). This report was prepared by Stantec Consulting Services Inc. (Stantec), upon whose assistance and advice I have relied. I declare under penalty of perjury that the information and/or recommendations contained in the attached report are true and correct, to the best of my knowledge.

If you have any further questions, please do not hesitate to contact me or the Stantec project manager, Travis Flora, at (408) 356-6124 or travis.flora@stantec.com.

Sincerely,

A handwritten signature in cursive script that reads "Carryl MacLeod".

Carryl MacLeod
Project Manager



October 19, 2016

Attention: Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Reference: Response to Technical Comments
Former Chevron-Branded Service Station 92029
890 West MacArthur Boulevard, Oakland, CA (Case #: RO0002438)

Dear Mr. Detterman,

On July 7, 2016, Stantec Consulting Services Inc. (Stantec), on behalf of Chevron Environmental Management Company (CEMC), submitted the *Site Redevelopment Analysis and Request for Closure* for former Chevron-branded service station 92029, which was located at 890 West MacArthur Boulevard, Oakland, Alameda County, California (Site). In response, Alameda County Environmental Health (ACEH) provided technical comments in a letter dated August 26, 2016 (**Attachment A**) and requested a Soil Vapor Work Plan be submitted by October 21, 2016.

Based on ACEH review of the *Site Redevelopment Analysis and Request for Closure* and *Second Quarter 2016 Semi-Annual Groundwater Monitoring Report*, also dated July 7, 2016, ACEH stated that the Site fails to meet the State Water Resources Control Board (SWRCB) Low-Threat Underground Storage Tank (UST) Case Closure Policy (LTCP) media-specific criteria for vapor intrusion to indoor air due in part to ACEH not receiving updated plans for the Site redevelopment that provide added vapor mitigation and engineering control details on the proposed vapor barrier, waterproofing, and garage ventilation. In an April 8, 2016, meeting, the property owner indicated that they plan to update the design plans and it is expected that ACEH will consider the vapor intrusion to indoor air criteria met once these updated plans are received. It is the responsibility of the property owner to submit the updated plans and in the current absence of these plans, Stantec is submitting this document in lieu of the Soil Vapor Work Plan to respond to ACEH's technical comments, demonstrate that there is no risk to human health and that vapor assessment is not necessary, and to present how the Site meets the LTCP media-specific criteria for vapor intrusion to indoor air.

Please refer to the *Site Redevelopment Analysis and Request for Closure* for current tables and figures associated with the Site.

RESPONSES TO TECHNICAL COMMENTS

Stantec has reviewed ACEH's technical comments and has the following responses. The titles of ACEH's technical comments are provided in bold, with Stantec's responses in italics.



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1. LTCP Media-Specific Criteria for Vapor Intrusion to Indoor Air

ACEH states the Site does not meet LTCP media-specific requirements for vapor intrusion to indoor air because it does not meet the specifications of criteria a (Appendices 1 through 4); however, the LTCP stipulates that vapor intrusion to indoor air criteria can also be met through criteria b) site-specific risk assessment or c) exposure controlled through the use of mitigation measures or institutional or engineering controls. Due to the pending redevelopment, ACEH requested that the proposed redevelopment plans be used to evaluate the Site compared to the LTCP. As described in the following paragraph, criteria c will be met when the proposed engineering controls are implemented. It should also be noted that if redevelopment on Site does not occur, then the current Site use as a vacant lot should be used to evaluate the Site against the LTCP criteria, in which case vapor intrusion to indoor air criteria would be satisfied because there would be no indoor space to present a risk, and no mitigation measures would be required.

Details within the redevelopment plans call for a vapor barrier in the typical slab-on-grade detail and a waterproofing membrane in the foundation details, which would control potential vapor intrusion to indoor air. In addition, the plans include a ventilation system for the ground floor parking garage, which would also control potential vapor intrusion to indoor air. However, Stantec notes that the minimum air flow for the parking garage ventilation system appears to be based on a calculation using 33 cars without factoring in the car stacker. Factoring in the car stacker, it appears that a maximum of 39 cars may occupy the parking garage. Furthermore, no provision is made for ventilating the pit areas (elevator and car stacker) located below the parking garage floor level. Stantec previously recommended that the design plans be reevaluated by the property owner to include minimum air flow calculations based on a total of 39 cars and that the two pit areas be ventilated with air flow calculated as the larger of 1 cubic foot per minute (cfm) of air per square foot of area, or 4 to 6 air changes per hour (one every 10 to 15 minutes) based on pit volume. During the meeting on April 8, 2016, these recommendations were again discussed with the property owner and ACEH. With these considerations incorporated into the parking garage ventilation system, along with the planned vapor barrier and waterproofing membrane, exposure to potential petroleum hydrocarbon vapors migrating from soil and groundwater will be sufficiently controlled such that the vapors will have no significant risk of adversely affecting human health.

ACEH stated that they do not recognize mitigation as a stand-alone solution, but recognize vapor mitigation as a part of a solution. In response to this statement, Stantec would like to clarify that the proposed vapor barrier and waterproofing membrane are mitigation controls; however, the proposed ventilation system is an engineering control. The ventilation system in the garage would operate 24 hours a day to prevent accumulation of carbon monoxide from vehicle exhaust and would therefore remove



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any potential petroleum vapors, should they migrate from the subsurface. It is not a requirement of LTCP vapor intrusion to indoor air criteria c to use both mitigation and engineering controls, but the use of these controls in combination at the Site is sufficient to protect human health from potential migration of petroleum vapors from soil or groundwater thereby satisfying LTCP vapor intrusion to indoor air criteria c.

ACEH requested additional investigation (including soil, groundwater, and soil vapor samples) into the elevated photoionization detector (PID) values observed at boreholes MW-2 and MW-3 in 2002. While PID readings are a useful screening tool, results are qualitative and most often used in the absence of quantitative laboratory analytical data. Quantitative laboratory analytical data should be used to evaluate Site conditions when available. Quantitative laboratory analytical data were obtained in boreholes MW-2 and MW-3 through soil sampling at the same depths the PID readings were collected. As ACEH noted in their letter, the laboratory analytical data for borehole MW-2 were non-detect at all depths. In addition, soil boring SB-14 was advanced adjacent to the location of borehole MW-3 in 2015 to investigate current Site conditions in that area, and all PID readings were 0 parts per million (ppm), and all laboratory soil concentrations were below Environmental Screening Levels (ESLs). Based on this information, additional investigation into the historical elevated PID values is not warranted.

ACEH requested vapor samples be collected below the future depth of the elevator pit; however, it is not technically feasible to do this, because the foundation of the elevator pit is planned to be at approximately 12 feet below ground surface (bgs), and Site groundwater levels are shallower. Depth-to-groundwater (DTW) levels in wells nearest the Site (MW-5 and MW-6) were 7.48 and 6.78 feet below top of casing (TOC), respectively, when last measured on May 18, 2016. Vapor samples cannot be collected below groundwater. And shallower vapor samples are not necessary because, as described above, LTCP vapor intrusion to indoor air criteria c will be met when the proposed engineering controls are implemented.

2. Annual Groundwater Monitoring

CEMC and Stantec acknowledge that the groundwater monitoring frequency has been reduced to annual during the month of December. The next groundwater monitoring event is scheduled for December 2016, with the subsequent groundwater monitoring report to be submitted to ACEH by February 17, 2017.

3. Phase 1 Reports

Submittal of a Phase 1 report for the purchase of the property is the responsibility of and would be at the discretion of the property owner. Stantec can assist with electronic



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submission of the report to ACEH, but it would be a conflict of interest for Stantec to have any association with the production of a Phase 1 report for this property.

Based on current conditions and also considering the proposed future land use and proposed redevelopment plans, the LTCP general and media-specific criteria are satisfied, and there is a low threat to human health, safety, and the environment. No additional Site assessment is warranted. Stantec recommends that ACEH reconsider low-threat case closure and provide assistance to the property owner so that they can proceed with their redevelopment plans. If ACEH is not satisfied with the additional clarification provided herein, Stantec recommends that any future directives be postponed until the SWRCB completes their mandatory review of this case, triggered by the ACEH low-threat case closure denial.

If you have any questions, please contact the Stantec Project Manager, Travis Flora, at (408) 827-3876 or travis.flora@stantec.com.

Attachments:

Attachment A – ACEH Correspondence, dated August 26, 2016

cc. Ms. Carryl MacLeod, Chevron Environmental Management Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583 – Electronic Copy

Mr. Buyandalai Itgel, 787 Marlesta Road, Pinole, CA 94564 – Electronic Copy



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Mr. Mark Detterman
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890 West MacArthur Boulevard, Oakland, CA

LIMITATIONS

This document entitled *Response to Technical Comments* was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Chevron Environmental Management Company (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by Erin O'Malley
(signature)

Erin O'Malley
Project Engineer

Reviewed by [Signature]
(signature)

Travis L. Flora
Senior Project Manager

Reviewed by Dorota Runyan
(signature)

Dorota Runyan, P.E.
Senior Engineer



ATTACHMENT A
ACEH Correspondence, dated August 26, 2016



ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

August 26, 2016

Mr. Carryl MacLeod
Chevron Environmental Management Co.
6001 Bollinger Canyon Road
San Ramon, CA 94583
(Sent via electronic mail to:
CMacleod@chevron.com)

WestMac LLC
1842 21st Avenue
San Francisco, CA 94122
(Sent via electronic mail to:
gathconstruc@aol.com) and
sokaneconst@hotmail.com)

Mr. Buyandalai Itgel
787 Marlesta Road
Pinole, CA 94564
(Sent via electronic mail to:
teamsprit74@yahoo.com)

Subject: Path to Closure and Request for Work Plan; Fuel Leak Case No. RO00002438; Chevron #9-2029 (Global ID #T0600173887), 890 MacArthur Blvd, Oakland, CA 94608

Dear Ms. MacLeod, WestMac LLC, and Mr. Itgel:

Alameda County Department of Environmental Health (ACDEH) staff has reviewed the case file including the Second Quarter 2016 Semi-Annual Groundwater Monitoring Report, and *Site Development Analysis and Request for Closure*, both dated July 7, 2016. The reports were prepared and submitted on your behalf by generated by Stantec Consulting Services, Inc (Stantec). Thank you for submitting them. They have helped move the site towards closure.

ACDEH has not received updated site development plans for the proposed multi-unit residential complex that provide added vapor mitigation details as discussed in the April 8, 2016 meeting, including details on a proposed vapor barrier, waterproofing, and garage ventilation from the project proponent.

ACDEH has evaluated the data and recommendations presented in the above-mentioned reports, in conjunction with the case files, to determine if the site is eligible for closure as a low risk site under the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP). Based on ACDEH staff review, and due in part to the lack of all information discussed in the meeting, we have determined that the site fails to meet the LTCP Media-Specific Criteria for Vapor Intrusion to Indoor Air (see Geotracker and as detailed below).

Therefore, at this juncture and based on the review of the case file ACDEH requests that you address the following technical comments and send us the documents requested below.

TECHNICAL COMMENTS

- 1. LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air** – The LTCP describes conditions, including bioattenuation zones, which if met will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to human occupants of existing or future site buildings, and adjacent parcels. Appendices 1 through 4 of the LTCP criteria illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario.

Our review of the case files indicates that the site data collection and analysis fail to support the requisite characteristics of one of the four scenarios. As you are aware, residual Total Petroleum Hydrocarbon (TPH) contamination remains at the site above 100 milligrams per kilogram (mg/kg) between 0 to 5 and 5 to 10 feet below grade surface (bgs; see for example recent data collected at SB-15 and SB-18, and older data at MW-3, MW-4, EX36, and others) and groundwater benzene concentrations remain stable above 100 micrograms per liter (µg/l; see MW-6). No onsite soil vapor samples have been collected.

There appear to be two vapor intrusion areas of concern that remain unaddressed at the site:

- Soil bores for wells MW-2 and MW-3 document photoionization detector (PID) readings consistently above 1,000 parts per million (ppm) response units, and as high as 4,500 ppm, with no corresponding detections of significant hydrocarbon contamination, especially volatile hydrocarbons (highest documented at MW-2 were <1.0 mg/kg TPHg, and <0.005 to < 0.05 mg/kg benzene, toluene, ethylbenzene, and total xylenes; data at MW-3 is more complex) These data can suggest the potential for other volatile organic compounds (VOCs), potentially including chlorinated compounds to be present at these two locations. ACDEH recognizes that soil samples from bore B-4, positioned immediately to the east of the former waste oil underground storage tank (UST), were analyzed for VOCs and semi-volatile organic compounds (SVCOs); however, based on this PID data, additional unsuspected sources may have been present at the site in soil or groundwater and have the potential to impact the planned residential redevelopment. Vapor sampling in these areas, below the future planned foundation, will also determine the risk of vapor intrusion from residual hydrocarbons to the planned development and the extent the discussed soil removal under a Site Management Plan (SMP) or vapor mitigation may be warranted for that building.
- The planned development includes one elevator on the eastern edge of the garage level to residential occupation levels. It is appropriate to investigate the risk for vapor intrusion from residual contamination at the site into the elevator pit and sump. Per LTCP guidance, vapor samples should be collected a minimum of five feet below the future elevation of the elevator pit, unless depth to water precludes this approach.

Thus it appears reasonable to request additional investigation into the elevated PID values associated with soil bores MW-2 and MW-3. This is likely to include soil, groundwater, and soil vapor sampling at these locations. This is particularly important at the location of MW-2, but is not limited to the location only, due to the proposed development's basement excavation to a depth of approximately 12 feet bgs adjacent to this location. An excavation of this depth results in the complete removal of any separation distance between a receptor and any VOC contamination.

Evaluation of the risk of vapor intrusion relative to the future proposed foundation, including the elevator pit, is necessary to determine the potential vapor concentration magnitude, the associated adequacy of a vapor mitigation barrier, the potential to evaluate an option for the removal by excavation of any residual contamination to mitigate the vapor intrusion risk, and provide the basis for evaluating the need for a vapor barrier for the proposed site redevelopment. This request is intended to provide multiple lines of evidence that the proposed ventilation, waterproofing, and vapor barrier will be sufficient for the proposed redevelopment.

As has been previously communicated, and consistent with Department of Toxic Substance Control (DTSC) guidance, ACDEH does not recognize mitigation as a stand-alone solution, but recognizes vapor mitigation as a part of a solution. The requested investigation is intended to provide an additional evaluation basis for defining SMP goals.

Please ensure that your strategy is consistent with the field sampling protocols described in the Department of Toxic Substances Control's Final Vapor Intrusion Guidance (October 2011). Consistent with the guidance, ACDEH the installation of permanent vapor wells to assess temporal and seasonal variations in soil gas concentrations is appropriate. Please provide a soil vapor work plan by the date identified below.

- 2. Annual Groundwater Monitoring** – The referenced groundwater monitoring report recommended the cessation of groundwater monitoring at the subject site based on the recommendation for case closure. Due in part to the long planned change in land use to residential, the site does not appear to meet the LTCP at this time. ACDEH is in agreement that a further reduction in the groundwater monitoring interval is appropriate, and therefore requests the site move to an annual basis. To capture worst case groundwater concentrations, please sample the site in the month of December until further notice.
- 3. Phase 1 Reports** – Reviewing the subject site case file, it appears that a Phase 1 report for the purchase of the property has not been submitted. ACDEH requests that the Phase 1 be submitted in order to determine if other additional Recognized Environmental Conditions (RECs) were reported.

ACDEH additionally requests that any Phase 1 updates be submitted in order to determine if any changes have been noted since the initial documents were generated.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACDEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with Attachment 1 and the following specified file naming convention and schedule:

- **October 21, 2016** – Soil Vapor Work Plan
File to be named: RO2438_WP_R_yyyy-mm-dd
- **February 17, 2017** – Annual Groundwater Monitoring Report
File to be named: RO2438_GWM_R_yyyy-mm-dd
- **60 Days After Work Plan Approval** – Soil Vapor Investigation
File to be named: RO2438_SWI_R_yyyy-mm-dd
- **60 Days After Work Plan Approval** – Site Management Plan
File to be named: RO2438_SITE_MANAGE_R_yyyy-mm-dd

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Online case files are available for review at the following website: <http://www.acgov.org/aceh/index.htm>. If your email address does not appear on the cover page of this notification, ACDEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

Thank you for your cooperation. If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,



Digitally signed by Mark Detterman
DN: cn=Mark Detterman, o=ACEH,
ou=ACEH,
email=mark.detterman@acgov.org, c=US
Date: 2016.08.26 11:14:46 -07'00'

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations and Electronic Report Upload (ftp) Instructions

cc: Travis Flora, Stantec Consulting Services, Inc, 15575 Los Gatos Blvd, Bldg C, Los Gatos, CA 95032 (Sent via electronic mail to: Travis.Flora@Stantec.com)

Dan McGue, Paragon Real Estate Group, 1400 Van Ness Avenue, San Francisco, CA 94109
(Sent via electronic mail to: DanMcGue@paragon.re.com)

Dilan Roe; ACDEH; (Sent via electronic mail to: dilan.roe@acgov.org)
Mark Detterman; ACDEH; (Sent via electronic mail to: mark.detterman@acgov.org)
Electronic File, GeoTracker