



August 2, 2018

Ms. Carryl MacLeod (*Sent via E-mail to: cmacleod@chevron.com*)
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583

Mr. Eric Uranga (*Sent via E-mail to: ejuranga@cityoflivermore.net*)
City of Livermore Economic Development
1052 S. Livermore Ave.
Livermore, CA 94550

Subject: Conditional Approval of *Remedial Action Plan for Petroleum Impacted Soil, Remedial Action Implementation Plan for Petroleum Impacted Soil, Soil Vapor Sampling Report, and Well Destruction Work Plan* for Leaking Underground Storage Tank No. RO0002908 and GeoTracker Global ID T0600196622, Chevron #30-7233/Mills Square Park, 2259 1st Street, Livermore, CA 94550

Dear Ms. MacLeod and Mr. Uranga:

Alameda County Department of Environmental Health (ACDEH) has reviewed the case file in conjunction with the following documents prepared by Arcadis U.S. Inc. (Arcadis) on behalf of Chevron Environmental Management Company (CEMC):

- *Remedial Action Plan for Petroleum Impacted Soil (RAP)*, dated March 2, 2018
- *Remedial Action Implementation Plan for Petroleum Impacted Soil (RAIP)* dated May 14, 2018;
- *Soil Vapor Sampling Report (Report)*, dated April 30, 2018; and
- *Well Destruction Work Plan (Work Plan)* dated May 14, 2018.

ACDEH held a project meeting on April 23, 2018 with representatives from ACDEH, the City of Livermore (the City), CEMC and Arcadis to discuss the baseline project schedule regarding remediation activities at the subject site under two regulatory oversight programs including State Water Resources Control Board Leaking Underground Storage Tank (LUST) Case No. RO0003255 and Site Cleanup Program (SCP) Case No. RO0002908. Remediation of the petroleum impacted soil and groundwater (RO0002908) will be conducted in accordance with the *Remedial Action Plan for Petroleum Impacted Soil (Petroleum RAP)*, dated March 2, 2018 and subsequently approved for public comment by ACDEH via email on March 5, 2018. A fact sheet for public comments regarding the Petroleum RAP was issued by ACDEH on April 25, 2018 through May 25, 2018. No public comments were received by ACDEH.

Detections of total petroleum hydrocarbons (TPH) as gasoline (TPH-g), as diesel (TPH-d) and benzene, toluene, ethyl-benzene, and total xylenes (BETX) have been reported in soil and groundwater beneath the Site. Previous environmental investigations and remediation activities have been conducted at the Site since 2003 including the advancement of 61 soil borings, 3 dual nested soil vapor probes, 2 singled soil vapor probes, and 12 groundwater monitoring wells. Between 2005 and 2007 three underground storage tanks and associated product piping were removed for beneath Site. Additional investigations conducted between 2017 and 2018 included the further delineate of the vertical and lateral extent of the petroleum related potential chemicals of concern (PCOCs) in the subsurface and evaluate the associated risk to potential on- and off-site sensitive receptors in association with the proposed park redevelopment activities proposed at the Site.

Subsequent to ACDEH's meeting in April 2018, Arcadis on behalf of CEMC submitted additional documents associated with remediation and site conceptual model (SCM) understanding including the above mentioned RAIP, Report, and Work Plan. The scope of work and/or conclusions and recommendations from each document include the following:

- The RAIP includes a comprehensive and detailed plan for the selected remedy for petroleum hydrocarbon impacted soil and groundwater discussed in the Petroleum RAP including anaerobic biological oxidation (ABOx) via permeable filled borings (PFB) with gypsum in the areas of greatest hydrocarbon impacts. The primary method of delivery of gypsum to the subsurface will include the advancement of approximately 8-10 soil borings which will be backfilled with a mixture consisting of approximately 50 percent permeable aggregate and 50 percent gypsum between approximately 18 and 40 feet below ground surface (bgs), corresponding with depth to water. Following the backfill, approximately 2 feet of hydrated bentonite chips will be installed above the sand-gypsum mixture, and the borings will then be completed to 2 feet bgs using neat cement grout. The neat cement grout will consist of approximately 95 percent Portland cement and 5 percent bentonite powder. The remaining 2 feet will be backfilled with soil from the surrounding area to match surrounding conditions.
- The Report presents results of soil vapor samples collected on February 2, 2018 from two new soil vapor wells VP-4 and VP-5 and one existing vapor probe VP-1. Soil vapor sampling was conducted at the Site in accordance with the *Soil Vapor Sampling and Depth to Groundwater Report*, dated September 8, 2017 and *Soil Vapor and Investigation Work Plan* dated December 22, 2017 and prepared by GHD on behalf of the CEMC and subsequently approved by ACDEH on January 27, 2018.
- The Work Plan requests the destruction of six onsite groundwater monitoring wells (MW-4, MW-5, MW-6, MW-7, MW-9, and MW-12), and four soil vapor probes (SV-1 through SV-4) by pressure grout in preparation of park remediation and redevelopment activities.

Based on ACDEH's file review and conversations held during a series of meetings over the last few months, ACDEH conditionally approves implementation of the RAIP, the well destruction Work Plan, and SGMP provided that the *Deliverables* below are incorporated. Additionally, ACDEH has evaluated the data and recommendations presented in the Soil Vapor Report under the State Water Resources Control Board's Low Threat Underground Storage Tank Case Closure Policy (LTCP). We have determined that the site meets the LTCP Media-Specific Criteria for Direct Contact and Outdoor Air Exposure (please refer to the LTCP Checklist on State Water Board's GeoTracker website). We request that you address perform the proposed work and upload all soil and groundwater analytical data, documents and reports, maps, and boring logs to the GeoTracker website.

DELIVERIBLES

Please submit the following deliverables to ACDEH in accordance with the compliance schedule provided below and the *Responsible Party (ies) Legal Requirement/Obligations Instructions* and *File Naming Conventions* which are included as Attachments 1 and 2 respectively. ACDEH requests email notification verifying the requested deliverables have been uploaded to Geotracker (e-mail preferred to: andrew.york@acgov.org).

1. **Soil and Groundwater Management Plan (SGMP) Certification Form** - A copy of the SGMP Certification Form signed by you (CEMC) and all your environmental professionals and contractors associated with implementation of corrective actions at the Site certifying that they agree to comply with the ACDEH-approved SGMP.

2. **Well Destruction Report** – All groundwater monitoring wells and soil vapor probes must be properly destroyed under permit by the appropriate well permitting agency. In order to expedite the this process, ACDEH requests that you initiate the well destruction permitting process upon receipt of this letter by contacting (Zone 7 Water Agency at (925) 454-5000) to obtain the necessary permits.

Please provide ACDEH a report describing the permitted destruction of the existing monitoring wells and vapor probes in accordance with the approved Work Plan. The report must include appropriate documentation (permits, waste disposal documentation, etc.). Final disposal documentation requires full and complete disposal forms, with a minimum of three accepting signatures. Documentation is not required for disposal of non-contaminated material such as well boxes.

3. **Remedial Action Completion Report for Anaerobic Biological Oxidation (ABOx)** - A comprehensive report documenting the soil and groundwater remediation activities and observation and findings during implementation. The report must include photo documentation and must include a certification by the remediation design engineer that the remedial measures were implemented in accordance with the approved RAIP. The report must also include copies of all permits and must document at a minimum

- Description of remediation activities including but not limited to ABOx application and remedial action summary, description of any changes to the remedial design or field activities; field data sheets with all observations, air monitoring results and a record of field and/or laboratory tests; field activities description, monitoring and analytical results of groundwater pre- and post-treatment, post treatment dissolved phase mass reduction calculations, figures depicting groundwater monitoring well network and contaminant isoconcentration contours, tabulated analytical results with ESLs, and laboratory analytical reports;
- Certification of compliance with the SGMP protocols during implementation of remedial measures including but not limited to agency notification and reporting requirements, pre-field activities (site security and access, traffic control, excavation permits, notification and utility clearance), waste management, soil and groundwater management, stormwater management, dust and odor emission control, and contingency measures for discovery of unexpected underground structures.

4. **Post Injection Groundwater Monitoring Reports** - Groundwater monitoring documents summarizing the findings of the sampling and data collected during the monitoring event. A tabularized summary of the: depth to water measurements and groundwater elevations; well construction details; dissolved phase mass reduction calculations, and analytical data. Groundwater elevations and chemical concentrations will be depicted on separate figures. Groundwater monitoring will be conducted and reported at the following frequency:

- Four times per year, during the first year of operation;
- Two times per year, for two years following injection; and
- Annually, thereafter as appropriate.

NOTIFICATION OF FIELDWORK ACTIVITIES

Provide ACDEH (attention andrew.york@acgov.org) with at least three (3) business days notification prior to conducting the fieldwork.

Ms. MacLeod and Mr. Uranga

RO0003255

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TECHNICAL REPORT REQUEST

Please upload technical reports to the State Water Resources Control Board's GeoTracker website according to the following schedule and file-naming convention:

- **SGMP Certification Form** – Date to be determined and on going prior to any subsurface field activities
File to be named: RO2908_SGMP_CERT-yyyy-mm-dd
- **Monitoring Well & Soil Vapor Probe Destruction Report** - Monday October 1, 2018
File to be named: RO2908_WELL_DCM_R_2018-10-01
- **Remedial Action Completion Report for ABOx** - Date to be determined by park renovation schedule
File to be named: RO2908_RACR-yyyy-mm-dd

If you have any questions, please call me at (510) 639-1276 or send me an electronic mail message at andrew.york@acgov.org.

Sincerely,



Drew J. York
Senior Hazardous Materials Specialist



Dilan Roe, PE, C73703
Chief – Land Water Division

Enclosure: Attachment 1 – Responsible Party (ies) Legal Requirement/Obligations Instructions
Attachment 2 – Electronic File Naming Conventions

cc: Colleen Winey, QIC 80201, Zone 7 Water Agency, (*Sent via E-mail to: cwiney@zone7water.com*)
Cheri Sheets, City of Livermore, (*Sent via E-mail to: crsheets@cityoflivermore.net*)
Rosy Ehlert, City of Livermore, (*Sent via E-mail to: rmehlert@cityoflivermore.net*)
Natasha Molla, CEMC, (*Sent via E-mail to: NatashaMolla@chevorn.com*)
Katherine Szymanowski, Arcadis, (*Sent via E-mail to: Katherine.Szymanowski@arcadis.com*)
Paresh Khatri, ACDEH (*Sent via E-mail to: paresh.khatri@acgov.org*)
Drew York, ACDEH (*Sent via E-mail to: andrew.york@acgov.org*)
Dilan Roe, ACDEH (*Sent via E-mail to: dilan.roe@acgov.org*)
Electronic File, GeoTracker

ATTACHMENT 1

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| Alameda County Environmental Cleanup Oversight Programs (LOP and SCP) | REVISION DATE: December 14, 2017 |
| | ISSUE DATE: July 25, 2012 |
| | PREVIOUS REVISIONS: September 17, 2013, May 15, 2014, December 12, 2016 |
| SECTION: ACDEH Procedures | SUBJECT: Responsible Party(ies) Legal Requirements / Obligations |

REPORT & DELIVERABLE REQUESTS

Alameda County Department of Environmental Health (ACDEH) Cleanup Oversight Programs, Local Oversight Program (LOP) and Site Cleanup Program (SCP) require submission of all reports in electronic form to the State Water Board's (SWB) GeoTracker website in accordance with California Code of Regulations, Chapter 30, Division 3, Title 23 and Division 3, Title 27.

Leaking Underground Fuel Tank (LUFT) Cases

Reports and deliverable requests are 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 (RP) in conjunction with an unauthorized release from a petroleum underground storage tank (UST) system.

Site Cleanup Program (SCP) Cases

For non-petroleum UST cases, reports and deliverables requests are pursuant to California Health and Safety Code Section 101480.

ELECTRONIC SUBMITTAL OF REPORTS

A complete report submittal includes the PDF report and all associated electronic data files, including but not limited to GEO_MAP, GEO_XY, GEO_Z, GEO_BORE, GEO_WELL, and laboratory analytical data in Electronic Deliverable Format™ (EDF). Additional information on these requirements is available on the State Water Board's website (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/)

- Do not upload draft reports to GeoTracker
- Rotate each page in the PDF document in the direction that will make it easiest to read on a computer monitor.

GEOTRACKER UPLOAD CERTIFICATION

Each report submittal is to include a GeoTracker Upload Summary Table with GeoTracker valid values¹ as illustrated in the example below to facilitate ACDEH review and verify compliance with GeoTracker requirements.

GeoTracker Upload Table Example

| Report Title | Sample Period | PDF Report | GEO_MAPS | Sample ID | Matrix | GEO_Z | GEO_XY | GEO_BORE | GEO_WELL | EDF |
|---|---------------|------------|----------|-----------|--------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 2016 Subsurface Investigation Report | 2016 S1 | ✓ | ✓ | Effluent | SO | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ✓ |
| 2012 Site Assessment Work Plan | 2012 | ✓ | ✓ | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2010 GW Investigation Report | 2008 Q4 | ✓ | ✓ | SB-10 | W | ✓ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ✓ |
| | | | | SB-10-6 | SO | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ✓ |
| | | | | MW-1 | WG | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | SW-1 | W | ✓ | ✓ | ✓ | ✓ | ✓ |

¹ GeoTracker Survey XYZ, Well Data, and Site Map Guidelines & Restrictions, CA State Water Resources Control Board, April 2005

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| Alameda County Environmental Cleanup Oversight Programs (LOP and SCP) | REVISION DATE: NA |
| | ISSUE DATE: December 14, 2017 |
| | PREVIOUS REVISIONS: September 17, 2013, May 15, 2014, December 12, 2016 |
| SECTION: ACDEH Procedures | SUBJECT: Responsible Party(ies) Legal Requirements / Obligations |

ACKNOWLEDGEMENT STATEMENT

All work plans, technical reports, or technical documents submitted to ACDEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to the State Water Board's GeoTracker website." This letter must be signed by the Responsible Party, or legally authorized representative of the Responsible Party.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6731, 6735, and 7835) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately licensed or certified professional and include the professional registration stamp, signature, and statement of professional certification. Additional information is available on the Board of Professional Engineers, Land Surveyors, and Geologists website at: <http://www.bpelsg.ca.gov/laws/index.shtml>.

UNDERGROUND STORAGE TANK CLEANUP FUND

For LUFT cases, RP's non-compliance with these regulations may result in ineligibility to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse the cost of cleanup. Additional information is available on the internet at: https://www.waterboards.ca.gov/water_issues/programs/ustcf/

AGENCY OVERSIGHT

Significant delays in conducting site assessment/cleanup or report submittals may result in referral of the case to the Regional Water Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

ATTACHMENT 2

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| Alameda County Environmental Cleanup Oversight Programs (LOP and SCP) | REVISION DATE: August 1, 2017 |
| | PREVIOUS REVISIONS: July 17, 2017, November 8, 2016, December 15, 2015, December 16, 2014, June 19, 2013, June 15, 2011, March 26, 2009, April 29, 2008 |
| | ISSUE DATE: June 16, 2006 |
| SECTION: Miscellaneous Administrative Topics & Procedures | SUBJECT: File Names for Electronic Reports |

Format: REPORT_NAME_R_YYYY-MM-DD
Ex: SWI_R_VOL1_2006-05-25

| LOP and SCP (VRAP) INCOMING REPORTS AND LETTERS | |
|---|---|
| Document Name | Abbreviation File Name= Abbreviation + Date (yyyy- mm-dd) |
| Abandoned Well Information/Water Supply Well Information | ABWELLINF_R |
| Addendum | ADEND_R (added after report name) |
| Additional Information Report | ADD_R |
| Analytical Reports (Loose data sheets not in report) | ANALYT_R |
| As Built Drawings (or Plans) | AS_BUILT |
| Case File Scanned By OFD | CASE_FILE |
| Cleanup and Abatement Report | CAO_R |
| Case Transfer Form (from CUPA) | CASE_TRNSFR_F |
| Conduit Study/Well Search/Sensitive Receptor/Well Survey/Preferential Pathway Study | COND_WELL_R |
| Corrective Action Plan (CAP) | CAP_R |
| Correspondence | CORRES_L |
| Court Injunctions | INJ_L |
| Development Plans (Includes Plan Set, Cross-sections, and Related Drawings) | DEV_PLAN_date |
| Development Schedule (Project Schedule, Gant Chart, etc.) | DEV_SCHD_date |
| DWR Confidential Well Logs (Report containing) | report name_R_CONFIDENTIAL_YYYY-MM-DD (Ex: SWI_R_CONFIDENTIAL_YYYY-MM-DD) |
| DWR Well Completion Report-Confidential (Loose well logs) | DWR_WELL_CONFIDENTIAL_YYYY-MM-DD (Date of Well Log) |
| ESI/DAR (Environmental Site Investigation, Data Assessment Report) | ESI_R |
| Excavation Report | EX_R |
| Extension Request Letter | EXT_RQ_L |
| Fact Sheet | FACT_SHT |

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|--|-----------------|
| Feasibility Study | FEASSTUD_R |
| Groundwater Monitoring/Quarterly Summary Report | GWM_R |
| Financial Assurance/Letter of Credit | FNCL_ASSRNC_LOC |
| Interim Remedial Action Plan | IRAP_R |
| Interim Remediation Results (Includes Pilot Test Reports, Vapor Mitigation Reports, Soil Reports, Free Product Removal Reports, & Dual-Phase Extraction Reports) | IR_R |
| Lawsuit | LAWSUIT_R |
| Migration Control Report | MIG_R |
| Miscellaneous Report/Soil Sample | MISC_R |
| Miscellaneous Sample Report (analytical results) | MISC_SAMP_R |
| Notification Letter | NOT_L |
| NPDES Miscellaneous Reports | NPDES_R |
| Operations & Maintenance Plan | OM_P |
| Operations & Maintenance Report | OM_R |
| Pay for Performance | PFP_R |
| Petition | PETITION_R |
| Phase 1 Environmental Assessment Report | PHASE1_R |
| Photos | PHOTO_date |
| Preliminary Site Assessment Report/Phase 2 (historic reports only) | PSA_R |
| Remedial Action Plan | RAP_R |
| Remedial Design & Implementation Plan | RDIP_R |
| Remediation Progress Report | REM_R |
| Request for Closure | RFC(_L or _R) |
| Risk Assessment Report | RISK_R |
| Risk Based Corrective Action | RBCA_R |
| List of Landowners Forms | LNDOWNR_F_DATE |
| SB2004 Letter of Commitment | LOC_L |
| Site Conceptual Model/Conceptual Site Model | SCM_R |
| Site Health & Safety Plan | SFTY_PLAN_R |
| Site Management | SITE_MANAGE_R_ |
| Site Management Plan | SMP_R |
| Site Summary Report | SITE_SUM_R |

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|--|----------------------|
| Soil and Water Investigation Report (Includes soil gas/vapor reports, indoor, additional site investigation, well installation, site characterization, cross section, indoor air, additional onsite investigation, Phase II/preliminary site assessment) | SWI_R |
| Soil Disposal Report | SOIL_DSPL_R |
| Source Area Characterization | SOURCAREA_R |
| State Information | STATE_INFO (no date) |
| Status Report(monthly remediation status reports addressed to sanitary district requires no stamp/perjury) | STAT_R |
| Tank/Tank System Removal Report | TNK_R |
| Tentative Order Report | TENT_R |
| Unauthorized Release Form | URF_R |
| UST Sampling Report | UST_SAMP_R |
| USTCF 5 Year Review | USTCF_5YR |
| USTCF issued Public Notice | USTCF_PP_L |
| Well Construction Report (limited to water supply wells) | WELL_CST_R |
| Well Decommissioning Report/Letter (well destruction/abandonment) | WELL_DCM_R |
| Work Plan | WP_R |

**LOP and SLIC
ACEH OUTGOING LETTERS AND CASE FILE DOCUMENTATION**

| Document Name | Abbreviation File Name= Abbreviation + Date (yyyy-mm-dd) |
|---|---|
| 90 Day Letter | 90D_L |
| CAP Approval | CAP_AP_L |
| RP Certification of Public Notice | CAP_CERT_L |
| CAP Public Participation Letter | CAP_PP_L |
| CAP Public Participation Letter to RP | CAP_PPRP_L |
| Certified Mail Receipt | CERT_MAIL_RECEIPT |
| Cleanup and Abatement Order | CAO_L |
| Closure Public Participation Letter | CL_PP_L |
| Closure Package (Letter, RACC, Summary, Deed Restriction) | CLOS_L |
| Correspondence | CORRES_L |
| Deed Restriction | DEED_L_ (Copied from CLOS_L_) |
| Directive Letter containing Public Notice and/or Landowner request form | DIR_PP_L |
| Directive Letter (Landowner form, site management requirements, well decommission scheduling prior to closure of PP, copy of PP to all RPs) | DIR_L |
| Enforcement | ENF_L |
| Enforcement Referral Letter | ENF_REF_L |
| Extension Approval Letter | EXT_AP_L |
| Extension Denial Letter | EXT_DNY_L |
| Fund Requests | FUND_REQ_L |
| Final Voluntary Remedial Action Agreement | FVRAA_date |
| GeoTracker info | GEOTRACK_R |
| Late Letter | LATE_L |
| List of Landowners Forms | LNDOWNR_F_DATE |
| Mailing List for Public Notice in Excel Format | MAIL_PP_DATE |
| Maps & Assessor's Parcel Information | MAPS_ASSESSOR (no date) |
| Meeting Agenda, Minutes, Sign in Sheet | MEETING |
| Miscellaneous Letter | MISC_L |
| New Landowner Letters | LNDOWNR_REQ_L |
| Notice of Responsibility | NOR_L |
| Notice of Violation | NOV_L |
| Phone Log | PHONE_LOG |
| Photos | PHOTO_date |
| Post Closure Monitoring | PCMP_L |
| QA/QC Checklist (confidential) | QAC_report name_date |
| Responsible Parties Information | RPINFO_L_DATE OF THE LETTERHEAD |
| Returned Mail | RTN_MAIL_date |

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|--|-------------|
| Site Visit/Inspection Report | SITEVISIT_R |
| Transfer Letter | TRANS_L |
| UST Permit | UST_PRMT |
| Voluntary Remedial Action Notice to State Agencies | VRA_NOTICE |
| Voluntary Remedial Action Request Form from RP | VREQ_F |