



Santa Ana Regional Water Quality Control Board

State of California
California Regional Water Quality Control Board
Santa Ana Region

IN THE MATTER OF:)	
)	
Cham-Cal Engineering Co. and)	Complaint No. R8-2020-0002
Western Avenue Associates, L.P.)	for
12722 Western Avenue)	Administrative Civil Liability
Garden Grove, CA 92841)	
)	
)	

CHAM-CAL ENGINEERING CO. AND WESTERN AVENUE ASSOCIATES, L.P. ARE HEREBY GIVEN NOTICE THAT:

1. This Administrative Civil Liability Complaint (Complaint) is issued to Cham-Cal Engineering Co., and Western Avenue Associates, L.P. (Dischargers) for the chronic delays in submitting an adequate Interim Remedial Action Plan (IRAP) and failure to implement the required vapor mitigation measures as required by Order R8-2016-0042 and Water Code § 13304. The Dischargers are in violation of California Water Code § 13304, for which the California Regional Water Quality Control Board, Santa Ana Region (Santa Ana Water Board) may impose administrative civil liability under California Water Code § 13350 subdivisions (a) and (e)(1).
2. Water Code § 13323 and Regional Board resolution R8-2019-0056 authorizes the Executive Officer of the Santa Ana Water Board (Executive Officer”) to issue this Complaint.
3. Western Avenue Associates, L.P. owns the property located at 12722 Western Avenue, Garden Grove, California, County of Orange (Cham-Cal property or Site). Cham-Cal Engineering Co. has operated at the at the Site since 1978. Mr. Edward Chambers is the President of Cham-Cal Engineering Co. and the registered agent for both Western Avenue Associates, L.P. and Cham-Cal Engineering Co. The Site consists of two buildings, one of which is occupied by Cham-Cal Engineering Co. (eastern building), which is a manufacturer of heavy-duty mirrors, brackets, and other accessories for commercial trucks. In general, the manufacturing operations have included stamping, grinding, polishing, electro-polishing, assembling, welding, and degreasing. The other building (western building) is occupied by a tenant of Western Avenue Associates, L.P., LX Machine, Inc.

WILLIAM RUH, CHAIR | HOPE SMYTHE, EXECUTIVE OFFICER

4. By letter dated July 18, 2016, the Executive Officer issued Water Code § 13304 "Cleanup and Abatement Order No. R8-2016-0042" (CAO), to the Dischargers via certified mail (mail return receipt requested).
5. The CAO required the Dischargers to conduct a series of investigations, submit an Interim Remedial Action Plan (IRAP) by March 20, 2017, and implement by July 3, 2017 adequate vapor mitigation measures to protect the human health of any occupants to both the western and eastern buildings on the Site.
6. Violation #1: The IRAP submittal deadline was March 20, 2017 and after numerous unwarranted delays an adequate IRAP was submitted on October 3, 2018. On April 2, 2019, Santa Ana Water Board staff concurred with the Revised IRAP, however there has been minimal progress on implementing the approved IRAP.
7. Violation #2: The vapor mitigation completion deadline was July 3, 2017. There has been minimal progress on completing the required vapor mitigation measures.

Background

8. Groundwater below the Site is typically encountered at 15 to 16 feet below ground surface (see "Phase II Investigation" by Avocet Environmental Inc. [Avocet], dated March 25, 2015). Several phases of soil and groundwater investigation at the Cham-Cal property detected volatile organic compounds (VOCs) in the groundwater beneath the Cham-Cal property at concentrations that exceed the State Water Resources Control Board (State Water Board) Division of Drinking Water (DDW) maximum contaminant levels (MCLs) for drinking water for the pollutants detected.
9. The solvent stabilizer 1,4-dioxane has also been detected in the groundwater beneath the Site, at concentrations that exceed the DDW notification level.
10. In March 2006, the owner of the property immediately north of the Cham-Cal property, Bazz Houston, conducted an off-site investigation, which included four boreholes at the Cham-Cal property (see "Re: Bazz Houston Company, Inc., Summary of Soil and Groundwater Investigations" by JE Compliance Services, Inc., dated December 23, 2008). The purpose of that investigation was to delineate groundwater contamination that is migrating from the Bazz Houston property and moving toward downgradient properties. VOC impacts to groundwater were confirmed beneath the Cham-Cal property, and in areas downgradient of Cham-Cal's property, but further investigation was necessary to determine the extent of the contamination. From March 2006 to September 2010, persistent difficulties in obtaining access to the Discharger's Site prevented Bazz Houston from continuing the off-site investigation on the Cham-Cal property.
11. In 2007, Bazz Houston provided Santa Ana Water Board staff with records of inspections of the Cham-Cal property by staff from the Orange County Health Care Agency (County Health) during the period between March 20, 1986 and April 2, 1991.

The County Health records documented the use, storage, and disposal of hazardous chemicals, including tetrachloroethene (PCE), at the Cham-Cal Site. County Health records indicate that in 1986, County Health staff observed at least 15 drums of waste and, on at least one occasion, PCE was observed leaking from a badly rusted drum at the Site. These inspection records also indicate that PCE, waste electropolish sludge, and waste oil were stored at the Site in open containers and in severely deteriorated drums.

12. Bazz Houston continued its efforts to gain access to the Cham-Cal Site for the purpose of conducting additional soil and groundwater investigation. Santa Ana Water Board staff assisted with these efforts by contacting Mr. Chambers, on multiple occasions. On May 4, 2010, Mr. Chambers agreed to offer full access to the Site to Bazz Houston for the purpose of collecting samples in accordance with the Bazz Houston's work plan (see "*Re: Bazz Houston Company, Inc., Work Plan for Subsurface Investigation at Cham-Cal Engineering*" by JE Compliance Services, Inc., dated February 10, 2010) and Santa Ana Water Board staff comment letter (see *Comments on the Work Plan for Subsurface Investigation at Cham-Cal Engineering*, dated March 2, 2010). However, additional difficulties with the access agreement resulted in further postponement of the investigation. From May 26, 2010 to October 10, 2019, the Santa Ana Water Board has communicated with Cham-Cal approximately fifty-four times in order to persuade them to comply with access requests, submittal of technical reports, and Santa Ana Water Board directives including a 13267 Order and Cleanup and Abatement Order. However, to date, Cham-Cal has not made significant progress in meeting the requirements.
13. On July 26, 2010, Santa Ana Water Board staff notified Cham-Cal Engineering that operations at the Site have discharged or are suspected of discharging PCE, metals, and waste oil that could affect groundwater. The July 26, 2010 letter asked Cham-Cal Engineering to allow Bazz Houston access to conduct the investigation by August 9, 2010 or voluntarily conduct a soil and groundwater investigation on the Cham-Cal property; otherwise, Santa Ana Water Board staff would issue an investigative order pursuant to Water Code section 13267 ordering Cham-Cal Engineering to conduct the investigation.
14. On July 30, 2010, the Executive Officer sent an oversight cost reimbursement letter to Mr. Chambers, requesting that he enter into a voluntary agreement to reimburse the Santa Ana Water Board for the cost of Santa Ana Water Board staff's oversight of the investigation of contamination that is present at the Cham-Cal Site as a result of the unauthorized discharge(s) of wastes by Cham-Cal. On August 3, 2010, Santa Ana Water Board staff received a letter from Cham-Cal's attorney, Steven Silverstein, stating that Cham-Cal would agree to allow implementation of Bazz Houston's February 10, 2010 work plan for investigation of groundwater on the Cham-Cal Site. Neither Mr. Chambers nor Mr. Silverstein acknowledged the Santa Ana Water Board's request in the oversight Cost Reimbursement letter.

15. On September 9, 2010, Bazz Houston was allowed access to collect samples from 11 boring locations at the Cham-Cal Site, in accordance with Bazz Houston's February 10, 2010 work plan. According to the subsequent reports (see "*Re: Bazz Houston Company, Inc., Summary of Results for Subsurface Investigation at Cham-Cal Engineering*", by JE Compliance Services, Inc., dated November 3, 2010 and "*Re: Bazz Houston Company, Inc., Summary of Results for Subsurface Investigation at Cham-Cal Engineering*" by JE Compliance Services, Inc., dated November 29, 2010), the highest concentrations of VOCs in soil gas samples collected from within the footprints of the Cham-Cal buildings was 14,500 micrograms per liter ($\mu\text{g/L}$) of PCE, while the highest concentrations of PCE found in soil gas samples collected from the subsurface between the Bazz Houston and Cham-Cal Sites was 2,950 $\mu\text{g/L}$. PCE was found in all of the groundwater samples that were collected from soil borings at the Cham-Cal Site at concentrations between 6 $\mu\text{g/L}$ to 5,490 $\mu\text{g/L}$. These concentrations exceed the MCL of 5 $\mu\text{g/L}$ for PCE in drinking water.
16. Based on the depths of the multiple detections of PCE in soil and soil vapor samples at the Cham-Cal Site, and the distance of the Cham-Cal sampling locations relative to the known discharge locations on the Bazz Houston Site, Santa Ana Water Board staff believed that it was likely that a separate source of VOCs was present on Cham-Cal's property. In conjunction with the County Health inspection records for Cham-Cal, the presence of PCE in the shallow soil and soil vapor at the Cham-Cal Site is a strong indication that unauthorized discharge(s) of PCE-containing waste by Cham-Cal occurred at the Cham-Cal Site. Based on the available information, Santa Ana Water Board staff concluded that VOCs were discharged to soil and groundwater by the respective operators of both the Bazz Houston and Cham-Cal Sites.
17. On July 13, 2012, the Executive Officer sent a second oversight Cost Reimbursement letter to Mr. Chambers with a cc to his attorney, Mr. Silverstein. Neither Mr. Silverstein nor Mr. Chambers acknowledged the Executive Officer's request.
18. On February 21, 2014, Santa Ana Water Board staff issued a Draft Cleanup and Abatement Order (draft CAO) to Bazz Houston Company and Chester Houston Jr. Trust, the respective operator and property owner of the Bazz Houston site, and Cham-Cal Engineering Co. and Western Avenue Associates, L.P., the respective operator and property owner of the Cham-Cal Site. Both parties stated that they would voluntarily cooperate with the Santa Ana Water Board. Shortly thereafter on March 21, 2014, Mr. Chambers signed the oversight cost reimbursement letter.
19. Prior to commencement of any preliminary investigation, Santa Ana Water Board staff informed Mr. Chambers (in a conference call on October 16, 2014 and a letter dated November 10, 2014) of the likelihood that several phases of investigation would be necessary, in order to adequately delineate the full extent of contamination, and to develop a strategy for remedial action. On December 1, 2014, the Dischargers conducted a preliminary investigation on their property to assess the extent of their contamination. This investigation confirmed that degreasing operations at Cham-Cal

have significantly impacted soil, soil vapor, and groundwater beneath the Site. Avocet, the Dischargers' former consultant, recommended that the Dischargers evaluate remediation technologies that could be implemented in the near term to mitigate the very high PCE concentrations in soil, soil vapor, and groundwater in the source area centered on the former Cham-Cal degreaser. Furthermore, Avocet recommended that the Dischargers consider additional investigation in the former degreaser area to "define the PCE source area to be remediated". In lieu of performing the necessary investigation and remediation, the Dischargers changed environmental consultants from Avocet to The Reynolds Group (TRG).

20. The Dischargers did not voluntarily proceed in a timely fashion with the additional investigation to fully delineate the extent of VOCs that are present in the soil and groundwater as a result of the discharges of waste at the Site.
21. On September 15, 2015 Santa Ana Water Board staff issued a letter to the Dischargers notifying them of a forthcoming investigative order from the Santa Ana Water Board requiring the submission of an investigation work plan and related results.
22. On September 24, 2015 the Santa Ana Water Board Executive Officer issued "*California Water Code § 13267 Order – Directive for Site Investigation at Cham-Cal Engineering Co.*" (Investigative Order).
23. The Dischargers were required by October 20, 2015, to submit a work plan for a complete characterization of contamination and to submit related schedules for further investigative sampling and remediation. The Dischargers failed to submit technical and monitoring reports in accordance with the requirements in the 13267 Order and were issued an Administrative Civil Liability Complaint (ACLC) pursuant to Water Code § 13323 for violations of Water Code § 13268 (Administrative Civil Liability Complaint No. R8-2016-0005).
24. The Santa Ana Water Board adopted Order No. R8-2016-0030, a Settlement Agreement and Stipulation of Entry of Administrative Civil Liability, in the amount of forty-nine thousand seven hundred and sixty-four dollars (\$49,764) for failure to comply with the Investigative Order. Subsequently, the Executive Officer issued *Cleanup and Abatement Order R8-2016-0042* on July 18, 2016 with no objection from the Dischargers.
25. The CAO had several requirements, including a requirement to submit an IRAP to address the soil, soil vapor and ground water contamination at the site, and a vapor mitigation plan to address risks to the occupants of the building during the pendency of the cleanup. The IRAP was required to be submitted by March 20, 2017, according to Ordered Paragraph 12, subd. 4. d) of the CAO. The vapor mitigation plan required by Ordered Paragraph 12, subd. 4. c) and subsequent correspondence was required to be implemented by July 3, 2017.

26. By March 20, 2017, the Dischargers were not compliant with the terms of the CAO. The Dischargers failed to implement investigations and submit technical reports in accordance with the schedule defined in the CAO.
27. By letter dated April 7, 2017, the Santa Ana Water Board Chief of the Site Cleanup Section sent the Dischargers a *“Notice of Violation of Cleanup and Abatement Order No. R8-2016-0042”* for the failure to implement Phase C investigation (as described in the CAO), submit a Human Health Risk Assessment (HHRA), and submit an IRAP.
28. By letter dated July 18, 2017, the Santa Ana Water Board Chief of the Groundwater and Regulatory Division sent the Dischargers a *“Notice of Violation of Cleanup and Abatement Order No. R8-2016-0042”* for the failure to submit an adequate IRAP.
29. By letter dated August 7, 2017, the Santa Ana Water Board Chief of the Groundwater and Regulatory Division sent the Dischargers a *“Notice of Violation of Cleanup and Abatement Order No. R8-2016-0042”* for failure to implement the vapor mitigation measures required by the CAO. Vapor mitigation measures were required to be completed by July 3, 2017. The Santa Ana Water Board has issued correspondence to encourage compliance with the CAO on numerous dates.
30. On October 3, 2018, TRG submitted an acceptable revised IRAP. On April 2, 2019, the Santa Ana Water Board’s Executive Officer concurred with the revised IRAP. However, in lieu of implementing the approved IRAP, the Dischargers changed environmental consultants from TRG to Mission Geoscience, Inc. (Mission), causing additional delays in implementing the approved IRAP. Mission has indicated that they will propose an alternative method for the excavation activities defined in the approved IRAP, but to date, Mission has not either submitted a proposal for revised alternate methods, or implemented the approved IRAP.
31. On August 19, 2019, Santa Ana Water Board staff met with Mission at the Site to observe the progress of vapor mitigation and implementation of the IRAP. During this site visit, Santa Ana Water Board staff indicated that there has been minimal progress on implementation of the IRAP and completion of the required vapor mitigation measures. Santa Ana Water Board staff informed Mission that further delays for vapor mitigation in both buildings and implementation of the IRAP is not acceptable and would result in an enforcement action and monetary penalties would continue to accrue.

Alleged Violations Subject to Enforcement:

32. The CAO, in ordered Paragraph 12, subdivision 4, in relevant part, required the Discharger to:
 - “d) Submit an Interim Remedial Action Plan no later than 30 days after the Regional Board comments on the Phase B report. An interim remedy is necessary to clean up the high concentrations of contaminants that are present in the soil beneath the former degreaser, and thereby mitigate the impacts, and/or the risk of future impacts, to the health of workers at the Site. Cham-Cal has not committed to a specific technology for the interim remedy but has proposed to consider excavation or thermal remediation as

the most likely interim remedies. If Cham-Cal proposes an alternative remedial technology that is deemed feasible by the Regional Board, that remedy may be included in the Interim remedial Action Plan, subject to regional Board approval...”

The Santa Ana Water Board commented on the Phase B report on February 17, 2017, rendering the IRAP due on March 20, 2017. The Santa Ana Water Board received the IRAP on October 3, 2018.

33. **Violation #1:** The Dischargers failed to submit an adequate IRAP according to the timeline in the CAO. The Dischargers are in violation of the CAO for the failure to submit an adequate IRAP from March 20, 2017 to October 3, 2018. For the failure to submit an adequate IRAP, the Dischargers were in violation for a total of 562 days. These 562 days are subject to a maximum administrative liability of \$5,000 per day pursuant to Water Code § 13350(e)(1).
34. The CAO, in Ordered Paragraph 12, subdivision 2, stated that the purpose of “Phase B” of the required investigation “is to obtain data to evaluate potential human health risks due to vapor intrusion, and to determine the scope for interim remedial action.” In letter dated March 20, 2017, the Executive Officer ordered, in pertinent part, the following in response to the delayed submittal of the IRAP:
 - “3. A vapor mitigation plan must be submitted for our review no later than March 24, 2017, to ensure the protection of human health.
 4. The Vapor mitigation measures must be implemented within 3 days of our approval of the mitigation plan.
 5. By April 24, 2017, submit a report that includes a description and photographs of the mitigation measures that have been applied.”

The Santa Ana Water Board approved the Vapor Mitigation Plan with a letter from the Executive Officer on June 28, 2017.

35. **Violation #2:** The Dischargers failed to implement adequate vapor mitigation measures in accordance with the requirements in the CAO and addenda. The Dischargers have been in violation of the CAO for failure to implement the required vapor mitigation measures since July 3, 2017. As of November 15, 2019, the Dischargers have been in violation for a total of 865 days. These 865 days are subject to a maximum administrative liability of \$5,000 per day pursuant to Water Code § 13350(e)(1).

Legal Authority

36. Pursuant to Water Code section 13350, civil liability may be imposed for the following violations of CAO No. R9-2016-0042: failure to submit an adequate IRAP; failure to implement vapor mitigation requirements.
37. CWC section 13350 states, in part:
 - “(a) *Any person who (1) violates any ... cleanup and abatement order hereafter issued, reissued, or amended by a regional board ...shall be liable civilly, and remedies may be proposed, in accordance with subdivision (d) or (e).*

“(e) *The state board or a regional board may impose civil liability administratively pursuant to Article 2.5 (commencing with Section 13323) of Chapter 5 either on a daily basis or on a per gallon basis, but not both.*

(1) *The civil liability on a daily basis may not exceed five thousand dollars (\$5,000) for each day the violation occurs.*

(B) *When there is no discharge, but an order issued by the regional board is violated, except as provided in subdivision (f), the civil liability shall not be less than one hundred dollars (\$100) for each day in which the discharge occurs.*

“(f) *A regional board may not administratively impose civil liability in accordance with paragraph (1) of subdivision (e) in an amount less than the minimum amount specified, unless the regional board makes express findings setting forth the reasons for its action based upon the specific factors required to be considered pursuant to Section 13327.*”

Administrative Civil Liability Calculation

38. Pursuant to Water Code § 13327, in determining the amount of any civil liability, the Santa Ana Water Board is required to take into account the nature, circumstances, extent, and gravity of the violations, whether the discharges are susceptible to cleanup or abatement, the degree of toxicity of the discharges, and, with respect to the violator, the ability to pay, the effect on its ability to continue its business, any voluntary cleanup efforts undertaken, any prior history of violations, the degree of culpability, economic benefit or savings, if any, resulting from the violations, and other matters that justice may require.
39. On April 4, 2017, the State Water Board adopted Resolution No. 2017-0020 amending the Water Quality Enforcement Policy (Enforcement Policy). The Enforcement Policy was approved by the Office of Administrative Law and became effective on October 5, 2017. The Enforcement Policy establishes a methodology for assessing administrative civil liability. The use of this methodology addresses the factors that are required to be considered when imposing a civil liability as outlined in Water Code § 13385, subdivision (e), and § 13327.

The entire Enforcement Policy can be found at:

https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2017/040417_9_final%20adopted%20policy.pdf

40. The required facts, including the Findings above, have been considered for the violations alleged herein using the discretionary penalty assessment methodology in the Enforcement Policy, as explained in detail in Attachments A and B (Penalty Calculation), which are incorporated herein and made a part of this Complaint.

Maximum Administrative Civil Liability

41. Pursuant to Water Code § 13350(e)(1) and as described in detail in Attachment A, the base administrative civil liability for the violations of the IRAP submittal and implementation of the vapor mitigation measures are \$5,563,800 and \$8,563,500, respectively. The combined base administrative liability for both violations is \$14,127,300. This total exceeds the statutory maximum administrative civil liability that may be imposed are \$2,810,000 and \$4,325,000, respectively for each violation. Therefore, the total statutory maximum civil liability for both violations is \$7,135,000.

Minimum Administrative Civil Liability the Santa Ana Water Board Must Assess

42. The Enforcement Policy requires that the minimum liability imposed must be at least 10% higher than the economic benefit so that liabilities are not construed as the cost of doing business.
43. The economic benefit considered in this Complaint were the costs that were avoided as a result of not submitting the required technical and monitoring reports, and conducting the necessary investigations and remediation to protect the beneficial uses of groundwater, protect human health, and prevent further migration of groundwater contamination off-Site. The failure to submit the IRAP has resulted in missed and delayed fieldwork, including quarterly sampling and analysis, and irreplaceable data, etc. The economic benefit is estimated to be **\$712,865** and the minimum liability is calculated to be \$784,152.

Proposed Administrative Civil Liability

44. After consideration of the factors in accordance with the Water Code § 13327 and § 13350, and the Enforcement Policy, the Santa Ana Water Board Prosecution Team proposes that civil liability be imposed on the Dischargers in the amount of **\$1,140,000**. The specific factors considered in this penalty are detailed in Attachments A and B, incorporated herein, and made part of this Complaint by reference.
45. Notwithstanding the issuance of this Complaint, the Regional Water Quality Control Board, Santa Ana Region, retains the authority to assess additional penalties or an amount greater than the proposed amount set forth above, up to the maximum provided by law.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

46. Issuance of this Complaint is an enforcement action and is, therefore, exempt from the California Environmental Quality Act (Pub. Res. Code § 21000 et seq.), pursuant to title 13, California Code of Regulations, § 15321, subsection (a)(2).

THE DISCHARGERS ARE HEREBY GIVEN NOTICE THAT:

1. The Prosecution Team of the Santa Ana Water Board proposes that the Dischargers be assessed an administrative civil liability in the amount of **one million one-hundred forty-thousand dollars** (\$1,140,000). The amount of the proposed liability is based on

a review of the factors for violations of Water Code § 13327 as well as the Enforcement Policy as set forth in Attachment A.

2. Water Code § 13323(b) provides that a hearing concerning this Complaint will be held before the Santa Ana Water Board within ninety (90) days of the date of issuance of this Complaint. Such a hearing shall be held unless the Dischargers choose either of the following two options as further explained in the enclosed Waiver:
 - a. Waive the Right to a Hearing before the Santa Ana Water Board and pay the proposed penalty of \$1,140,000 in full; or
 - b. Waive the right to a Hearing before the Santa Ana Water Board within 90 days after service of this Complaint to engage the Santa Ana Water Board Prosecution Team in settlement discussions. Waiver of the right to a Hearing before the Santa Ana Water Board within 90 days does not preclude the Santa Ana Water Board Prosecution Team from proceeding to a Hearing within 90 days.
3. If the Dischargers choose the option in paragraph 2.a, above, an authorized representative must sign the enclosed waiver and return it along with a check for the full amount of the proposed liability in accordance with the enclosed Waiver and Hearing Procedures. Payment will be deemed settlement of this Complaint, but the settlement shall not become final until thirty (30) days from the date of Public Notice to allow the public and other interested persons to comment on this action.
4. If the Dischargers choose the option in paragraph 2.b, above, an authorized representative must sign the enclosed waiver and submit in accordance with the enclosed Waiver and Hearing Procedures. The Dischargers must also submit a settlement proposal to the Santa Ana Water Board within thirty (30) days of this Complaint. The waiver and settlement proposal must be mailed to the Santa Ana Water Board at 3737 Main Street, Suite 500, Riverside, CA 92501-3348.
5. If a hearing is held on this matter, the Santa Ana Water Board will consider whether to affirm, reject, or modify the proposed administrative civil liability or whether to refer the matter to the Attorney General for recovery of judicial civil liability. If this matter proceeds to hearing, the Prosecution Team reserves the right to amend the proposed amount of civil liability to conform to the evidence presented, including but not limited to, increasing the proposed amount to account for the costs of enforcement (including staff, legal, and expert witness costs) incurred after the date of issuance of this Complaint through completion of the hearing.
6. Payment of the assessed liability amount does not absolve the Discharger from complying with the CAO issued on July 18, 2016, the terms of which remain in effect. Additional civil liability may be assessed in the future if the Discharger fails to comply with the CAO, and/or future orders issued by the Santa Ana Water Board.

If you have any questions, please contact Chuck Griffin at (951) 782-4996 or by email at chuck.griffin@waterboards.ca.gov. For legal questions, contact Nickolaus Knight, in State Water

Cham-Cal Engineering Co.,
Western Avenue Associates, L.P.
R8-2020-0002

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November 15, 2019

Board's Office of Enforcement by phone at (916) 327-0169 or by email at
nickolaus.knight@waterboards.ca.gov.

November 15, 2019
Date

Original Signed By _____
Hope A. Smythe
Executive Officer
Santa Ana Water Board Prosecution Team

Attachment A: Penalty Calculation Methodology
Attachment B: Spreadsheet of Penalty Calculation

Attachment A
Specific Factors Considered for Administrative Civil Liability
Cham-Cal Engineering Co. and Western Avenue Associates, L.P.

The Santa Ana Water Board alleges that the Dischargers failed to submit an adequate Interim Remedial Action Plan (IRAP) by March 20, 2017 and implement the required vapor intrusion mitigation measures by July 3, 2017, as required in the July 18, 2016 Cleanup and Abatement Order R8-2016-0042 (CAO) and letter addendum to the CAO dated March 20, 2017 (addendum) that was issued by the Santa Ana Water Board's Executive Officer pursuant to California Water Code section 13304. The CAO directed Western Avenue Associates, L.P. (property owner) and Cham-Cal Engineering Co. (operator) to investigate and remediate on-site contamination. Specifically, the CAO and addendum directed the Dischargers to submit an adequate IRAP and implement vapor mitigation measures for the protection of human health. For the purpose of applying the Enforcement Policy's administrative civil liability methodology, the alleged violation is a non-discharge violation. Each factor of the Enforcement Policy and its corresponding score for each violation are presented below:

Violation No. 1: Failure to submit required IRAP: In accordance with the requirement set forth in the July 30, 2016 CAO pursuant to Water Code section 13304, the Dischargers failed to submit an IRAP by March 20, 2017.

Penalty Calculation

Step 1. Potential for Harm for Discharge Violations

This step is not applicable because the violation is a not a discharge violation.

Step 2. Assessment for Discharge Violations

This step is not applicable because the violation is a not a discharge violation.

Step 3. Per Day Assessment for Non-Discharge Violations

The initial liability factor must take into consideration the Potential for Harm and the extent of deviation from applicable requirements.

The per day factor is 0.8.

This factor is determined using the potential for harm of the violation and the extent of the Dischargers' deviation from requirements. The potential for harm was determined to be "Major" due to the following: The beneficial uses for the Orange County Groundwater Management Zone are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply. The concentrations of volatile organic compounds (VOCs) in shallow groundwater exceed drinking water standards, and therefore may be impacting, and threaten to impact, the deeper groundwater aquifer which has beneficial

ATTACHMENT A
Cham-Cal Engineering Co.
Western Avenue Associates, L.P.

uses. Furthermore, the extent of off-site groundwater impacts is undetermined. No groundwater monitoring wells have been installed at the site. This highlights the need for additional investigation and groundwater monitoring. Significant levels of soil contamination are still present on-site and continues to impact groundwater. Despite significant risks to groundwater, the Dischargers have continuously delayed the submittal of an interim remedial action plan (IRAP) to address the soil contamination and, to date, did not submit one that met minimum requirements until October 3, 2018. Until the site is remediated, VOCs will remain in groundwater at concentrations that exceed the State Water Resources Control Board Division of Drinking Water (DDW) maximum contaminant levels (MCLs) for drinking water. Since the violation thwarts the Santa Ana Water Board's ability to identify water quality risks, the violation has the potential to exacerbate the presence, accumulation, and related risks associated with contaminants of concern. The continued presence of contamination, as well as the unknown extent of migration, present a particularly egregious threat to beneficial uses. Therefore, the violation presents a major potential for harm.

The deviation from requirements was determined to be major, as the requirement to submit an adequate IRAP has been rendered ineffective. The Dischargers have received multiple Notice of Violations (NOVs) for noncompliance (April 7, 2017 and July 18, 2017). Therefore, because the Dischargers failed to submit an adequate IRAP until October 3, 2018, the Dischargers were assessed a major deviation from the requirement for that period of time.

Initial Liability

Failure to comply with the requirements of the CAO is subject to civil liability under Water Code section 13268(b)(1) and 13350 in an amount which shall not exceed five thousand dollars (\$5,000) for each day in which the violation occurs. The Dischargers failed to submit the IRAP by March 20, 2017, which is five hundred and sixty-two (562) days late (March 21, 2017 – October 3, 2018). Therefore, the Per Day Assessment is calculated as (0.8 factor from Table 3) X (562 days) X (\$5,000 per day). The Initial Liability Value is \$2,248,000.

Step 4. Adjustment Factors

The Enforcement Policy allows for multi-day violations to be consolidated, provided specific criteria are satisfied. The Enforcement Policy also describes three factors related to the Dischargers' conduct that should be considered for modification of the initial liability amount: the Dischargers' culpability; the Dischargers' efforts to clean up or cooperate with regulatory authorities after the violation; and the Dischargers' history of violations. After each of these factors is considered for the violation alleged, the applicable factor should be multiplied by the proposed liability amount for the violation.

ATTACHMENT A
Cham-Cal Engineering Co.
Western Avenue Associates, L.P.

a) *Multiple Day Violations*

The Enforcement Policy provides that for violations lasting more than 30 days, the Santa Ana Water Board may adjust the per-day basis for civil liability if certain findings are made and provided that the adjusted per-day basis is no less than the per-day economic benefit, if any, resulting from the violation. The Prosecution Team elected to collapse the days to 104 days of violation. The maximum amount that days could be collapsed according to the Enforcement Policy would be to 52 days of violation, and 104 days represents twice that amount, which is a reasonable amount to achieve the enforcement goals of the Santa Ana Water Board.

b) *Culpability: 1.5*

Discussion: The Dischargers were assessed a score of 1.5, which increases the liability amount. Cham-Cal Engineering Co. has historically stored, used, and disposed of hazardous chemicals, including tetrachlorethene (PCE), at its facility. As a facility responsible for or contributing to the contamination of a groundwater source beneficial use, it is imperative that steps are taken toward remediation of the constituents of concern (COCs). The refusal of the Discharger to implement the requirements of the CAO, despite prior enforcement, and repeated contacts by the Santa Ana Water Board to assist and encourage compliance is intentional misconduct and requires the highest adjustment for culpability.

The Dischargers did not submit an acceptable IRAP until October 3, 2018. The October 3, 2018 IRAP was still deficient, but Board staff approved the IRAP on April 2, 2019, provided that the Dischargers addressed additional deficiencies as detailed in the response letter. The Dischargers' failure to timely comply with the CAO given that they have known about the severity of water quality impacts to soil and groundwater and potential risks to human health is intentional misconduct. A factor of 1.5 is appropriate where the Dischargers' conduct amounted to intentional misconduct.

c) *Cleanup and Cooperation: 1.5*

Discussion: The Dischargers were assessed a score of 1.5, which increases the penalty. Santa Ana Water Board staff has invested a great amount of time and resources to communicate with and notify the Dischargers of the requirement to conduct additional remediation activities to comply with the CAO. Despite these attempts, the Dischargers have refused to take the necessary steps to comply, despite the serious water quality impacts. Since the issuance of the CAO, the Dischargers have complied with a few of the requirements and provisions of the CAO. To date, the Dischargers have not

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demonstrated compliance with all of the requirements of the CAO, including the submission of an adequate IRAP. A multiplier of 1.5 has been assessed.

d) *History of Violations:* 1.1

Discussion: The Dischargers were assessed the factor of 1.1. Board staff has sought voluntary compliance from the Dischargers for years. The Dischargers have a history of violations due to noncompliance with the 13267 Order for the Site. On October 20, 2015, the Dischargers violated the 13267 Order and the Santa Ana Water Board issued a Notice of Violation on October 27, 2015. The Dischargers were assessed monetary penalties for violation of the 13267 Order.

Step 5. Determination of Total Base Liability Amount

The Total Base Liability is determined by applying the adjustment factors from Step 4 to the Initial Liability Amount determined in Step 3.

- a) *Total Base Liability Amount:* **\$5,563,800** [Initial Liability (\$2,248,000) x Adjustments (1.5)(1.5)(1.1) = \$5,563,800]. The maximum statutory liability amount is \$2,810,000 [(\$5,000/day)(562 days of violation = \$2,810,000)]. The Santa Ana Water Board applied a reduction of days of violation for the multiple day violation resulting in the following *Total Base Liability Amount:* (0.8 daily factor)(5000/day)(104 days of violation)(1.5)(1.5)(1.1) = \$1,029,600. The maximum statutory violation amount for 104 days of violation is \$520,000, so the *Total Base Liability* for this violation is **\$520,000**.

Violation No. 2: Failure to implement the required vapor mitigation measures: In accordance with the requirement set forth in the July 30, 2016 CAO and Addendum from March 20, 2017 pursuant to Water Code section 13304, the Dischargers failed to implement the required vapor mitigation measures by July 3, 2017.

Penalty Calculation

Step 1. Potential for Harm for Discharge Violations

This step is not applicable because the violation is a not a discharge violation.

Step 2. Assessment for Discharge Violations

This step is not applicable because the violation is a not a discharge violation.

Step 3. Per Day Assessment for Non-Discharge Violations

The initial liability factor must take into consideration the Potential for Harm and the extent of deviation from applicable requirements.

The per day factor is 0.8.

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This factor is determined using the potential for harm of the violation and the extent of the Dischargers' deviation from requirements. The potential for harm was determined to be "Major" due to the following: VOCs detected in indoor air has the potential to pose a significant risk to human health of the indoor occupants. Indoor air sampling results confirm that vapor intrusion is occurring and vapor mitigation is necessary. The Dischargers attempted to mitigate vapor intrusion by having their staff apply sealant to the floors. However, the seals were poorly installed and neither adequate nor effective at mitigating vapor intrusion. We informed the Dischargers that the vapor mitigation measures were required to be supervised by a licensed environmental professional and professionally installed. However, the Dischargers have continuously delayed the implementation of the required vapor mitigation measures without providing a sound reason. The failure to implement the vapor mitigation plan is an immediate threat to the health of the occupants of the Site. Therefore, the violation presents a major potential for harm.

The deviation from requirements was determined to be major, as the requirement to implement the vapor mitigation measures has been rendered ineffective. The Dischargers received an NOV on August 7, 2017 and remains noncompliant. Therefore, because the Dischargers failed to implement the required vapor mitigation measures, the Dischargers were assessed a major deviation from the requirement.

Initial Liability

Failure to comply with the requirements of the CAO is subject to civil liability under Water Code section 13268(b)(1) and 13350 in an amount which shall not exceed five thousand dollars (\$5,000) for each day in which the violation occurs. The Dischargers failed to implement the vapor mitigation measures by July 3, 2017, and is eight hundred and sixty-five (865) days late (July 4, 2017 – November 15, 2019). Therefore, the Per Day Assessment is calculated as (0.8 factor from Table 3) X (865 days) X (\$5,000 per day). The Initial Liability Value is \$3,460,000.

Step 4. Adjustment Factors

The Enforcement Policy allows for multi-day violations to be consolidated, provided specific criteria are satisfied. The Enforcement Policy also describes three factors related to the Dischargers' conduct that should be considered for modification of the initial liability amount: the Dischargers' culpability; the Dischargers' efforts to clean up or cooperate with regulatory authorities after the violation; and the Dischargers' history of violations. After each of these factors is considered for the violation alleged, the applicable factor should be multiplied by the proposed liability amount for the violation.

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a) *Multiple Day Violations*

The Enforcement Policy provides that for violations lasting more than 30 days, the Santa Ana Water Board may adjust the per-day basis for civil liability if certain findings are made and provided that the adjusted per-day basis is no less than the per-day economic benefit, if any, resulting from the violation. The Prosecution Team has elected to collapse the days of violation to 124 days. The maximum collapse of days under the Enforcement Policy would be to 62 days for this violation; 124 days of violation represents twice the number of days of violation as the minimum allowable under the Enforcement Policy.

b) *Culpability: 1.5*

Discussion: The Dischargers were assessed a factor 1.5, which increases the liability amount. Cham-Cal Engineering Co. has historically stored, used, and disposed of hazardous chemicals, including PCE, at its facility. As a facility responsible for or contributing to the contamination that poses a risk to human health, it is imperative that steps are taken to mitigate exposure to the COCs. The refusal to implement the vapor mitigation plan for this period is intentional conduct.

On July 18, 2016, the Santa Ana Water Board issued CAO R8-2016-0042. On March 20, 2017, because of the ongoing failure to submit the IRAP, the Executive Officer of the Santa Ana Water Board issued an addendum to the CAO directing the Discharger to submit a vapor mitigation plan, and to implement that plan three days after receiving concurrence from the Santa Ana Water Board. The Santa Ana Water Board approved the plan on June 28, 2017, which required the Dischargers to implement the plan on or before July 3, 2017. On July 3, 2017, the Dischargers violated the CAO for continued failure to implement the required vapor mitigation measures and were issued an NOV on August 7, 2017. The Santa Ana Water Board reminded the Dischargers of the noncompliance and provided the Dischargers with multiple opportunities to come into compliance with subsequent deadlines of December 13, 2017, January 15, 2019, and April 16, 2019, however the Dischargers continually failed to comply.

Despite these efforts, as of the date of the issuance of this Complaint, the Dischargers have not yet implemented the required vapor mitigation measures. The Dischargers' failure to timely comply with the CAO given that they have known about the severity of water quality impacts to soil and groundwater and potential risks to human health indicates intentional misconduct. A factor of 1.5 is appropriate for the intentional conduct of refusing to comply with CAO and addendum.

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c) *Cleanup and Cooperation: 1.5*

Discussion: The Dischargers were assessed a factor 1.5, which increases the penalty. Santa Ana Water Board staff has invested a great amount of time and resources to communicate with and notify the Dischargers of the requirement to conduct mitigation activities to comply with the CAO and addendum. Despite these attempts, the Dischargers have refused to take the necessary steps, despite the serious water quality impacts, and the likely threat to human health from the COCs to building occupants. Since the issuance of the CAO, the Dischargers have complied with a few of the requirements and provisions of the CAO. To date, the Dischargers have not demonstrated compliance with all of the requirements of the CAO, including implementation of vapor mitigation measures. A multiplier of 1.5 has been assessed.

d) *History of Violations: 1.1*

Discussion: The Dischargers were assessed the factor of 1.1. Board staff has sought voluntary compliance from the Dischargers for years. The Dischargers have a history of violations due to noncompliance with the 13267 Order for the Site. On October 20, 2015, the Dischargers violated the 13267 Order and the Santa Ana Water Board issued a Notice of Violation on October 27, 2015. The Dischargers were assessed monetary penalties for violation of the 13267 Order.

Step 5. Determination of Total Base Liability Amount

The Total Base Liability is determined by applying the adjustment factors from Step 4 to the Initial Liability Amount determined in Step 3.

b) *Total Base Liability Amount: \$8,563,500* = Initial Liability (\$3,460,000) x Adjustments (1.5)(1.5)(1.1) = \$8,563,500]. The maximum statutory liability amount is \$4,325,000 [(\$5,000/day)(865 days of violation = \$4,325,000). The Santa Ana Water Board applied a reduction of days of violation for the multiple day violation resulting in the following *Total Base Liability Amount:* (0.8 daily factor)(5000/day)(124 days of violation)(1.5)(1.5)(1.1) = \$1,227,600. The maximum statutory violation amount for 124 days of violation is \$620,000; therefore, the *Total Base Liability* for this violation is **\$620,000** because the maximum statutory violation amount cannot be exceeded.

The following penalty methodology steps apply to all prior violations.

Step 6. Ability to Pay and Continue in Business

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The Enforcement Policy requires the consideration of the Dischargers' ability to pay and continue in business. The Santa Ana Water Board has the initial burden of producing information in the public record demonstrating the Dischargers' ability to pay and continue in business. During the period provided to submit evidence and at hearing, the Dischargers may submit information that it believes supports its position.

The Prosecution Team sets forward the following information in satisfaction of its initial burden. Cham-Cal Engineering Co. is a manufacturer of heavy-duty mirrors, brackets, and other accessories for commercial trucks. Cham-Cal Engineering Co. operates a business with between 50 to 99 employees and has been in business for over 30 years. Cham-Cal Engineering Co. receives income from its business.

Western Avenue Associates, L.P. owns the parcel, assessor's parcel number 215-033-03, where Cham-Cal Engineering Co. has conducted its operations. The property is approximately 2.2 acres of land designated for single family residence use. According to the Orange County tax assessor's office, the assessed total value of the land as of 2016 is \$1,829,209. This information in the public record is indicative of the Dischargers' available assets to pay the total proposed penalty and continue in business.

- a) Combined Base Liability Amount for both violations with the application of the date compression: **\$ 1,140,000.**

Step 7. Other Factors as Justice May Require

- a) *Discussion:* No adjustment to the Combined Total Base Liability Amount has been made based on "other factors as justice may require."

Step 8. Economic Benefit

- a) *Estimated Economic Benefit:* **\$712,865**

Discussion: The CAO required installation and sampling of groundwater monitoring wells, soil vapor probes, and indoor air monitoring. Santa Ana Water Board staff estimated avoided costs associated with these actions to be approximately \$712,865. The actual economic benefit realized is derived by adjusting the avoided costs for inflation and tax deductibility, assuming the Discharger operates as a tax-paying entity. The BEN financial model provided by the United States Environmental Protection Agency was used to compute the total economic benefit of noncompliance. The total economic benefit of noncompliance was estimated to be \$712,865. The Dischargers have received an economic benefit from the costs saved by:

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1. Delaying the submittal of an acceptable IRAP that meets all the CAO requirements and the implementation of that IRAP;
2. Delaying the Phase D investigation;
3. Delaying the Feasibility Study;
4. Delaying the Remedial Action Plan (RAP);
5. Delaying the investigation of deep groundwater impacts;
6. Delaying the required vapor mitigation measures at the Site buildings;
7. Avoiding the collection of groundwater samples and analysis;
8. Avoiding the collection of soil vapor samples and analysis;
9. Avoiding the collection of indoor air samples and analysis;
10. Failing to pay the Santa Ana Water Board staff oversight costs that would have been necessary for both the delayed and avoided activities.

Note the costs considered for calculating the economic benefit are conservative and do not include potentially substantial costs associated with scenarios/conditions that cannot be reasonably calculated based on the information currently available.

The adjusted combined total base liability amount of \$1,140,000 is more than the economic benefit plus 10% or \$784,152 (\$712,865 + \$71,287), as required by the Enforcement Policy.

Step 9. Maximum and Minimum Liability Amounts

a) *Minimum Liability Amount: \$784,152*

Discussion: The Enforcement Policy requires that the minimum liability amount imposed not fall below the economic benefit plus ten percent. As discussed above, the Santa Ana Water Board Prosecution Team's estimate of the Dischargers' economic benefit obtained from the alleged violation plus ten percent is \$784,152.

b) *Maximum Liability Amount: \$7,135,000*

Discussion: The maximum administrative liability amount is the maximum amount allowed by Water Code section 13268(b)(1) and 13350: five thousand dollars (\$5,000) for each day in which each violation occurs. The violation alleged in this Complaint occurred for 562 and 858 days, respectively for Violations No. 1 and 2. The Total Base Liability Amount for Violation No. 1 exceeds the statutory maximum liability amount of \$2,810,000. Therefore, the maximum liability amount for Violation No. 1 is \$2,810,000. The Total Base Liability Amount for Violation No. 2 also exceeds the statutory maximum liability amount of \$4,325,000. Therefore, the maximum liability amount for

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Violation No. 2 is \$3,405,000. The combined maximum liability amount is \$7,135,000.

Step 10. Final Liability Amount

Based on the foregoing analysis, and consistent with the Enforcement Policy, the Santa Ana Water Board applied a reduction of days for both violations. The days of violation for Violation No. 1 was reduced from 562 days to 104 days and resulted in a liability of \$520,000. The days of violation for Violation No. 2 was reduced from 865 days to 124 days and resulted in a liability of \$620,000. The proposed final liability amount is **\$1,140,000** [\$520,000 (Violation No. 1) + \$620,000 (Violation No. 2)].

Attachment B

Penalty Calculation Methodology Worksheet - Version Date: 9/25/2017

Instructions

1. Select Degree of Toxicity of the Discharge
2. Select Actual or Potential Harm to Beneficial Uses
3. Select Susceptibility to Cleanup or Abatement
4. Select Deviation from Requirement
5. Click "Determine Harm & per Gallon/Day..."
6. Enter Values into the Yellow highlighted fields

Select Item 4 = Discharged material poses significant risk
 Select Item 5 = Major
 Select Item < 50% of Discharge Susceptible to Cleanup or is
 Select Item Major

Select Item 4 = Discharged material poses significant risk
 Select Item 5 = Major
 Select Item < 50% of Discharge Susceptible to Cleanup or is
 Select Item Major

Discharger Name/ID:

		Violation 1		Violation 2		
Discharge Violations	Step 1	Actual or Potential Harm Factor (Generated from Button)	IRAP		Vapor Mitigation	
	Step 2	Per Gallon Factor (Generated from Button)				
		Gallons				
		Statutory Maximum				
		High Volume				
	Total		\$ -		\$ -	
	Per Day Factor (Generated from Button)	Per Day Factor (Generated from Button)	0		0	
		Total Days				
		Multiple Day Violation Reduction				
		Statutory Max per Day				
Total			\$ -		\$ -	
Non-Discharge Violations	Step 3	Per Day Factor	0.8	0.8		
		Total Days	104	124		
		Multiple Day Violation Reduction				
		Statutory Max per Day	\$ 5,000	\$ 5,000		
	Total		\$ 416,000.00		\$ 496,000.00	
Initial Amount of the ACL			\$ 416,000.00		\$ 496,000.00	
Add'l Factors	Step 4	Culpability	1.5	1.5		
		History of Violations	1.1	1.1		
		Cleanup and Cooperation	1.5	1.5		
	Total		\$ 1,029,600.00		\$ 1,227,600.00	
Maximum for this Violation		\$ 520,000.00		\$ 620,000.00		
Amount for this Violation			\$ 520,000.00		\$ 620,000.00	

Step 5	Total Base Liability Amount		\$ 1,140,000.00
Step 6	Ability to Pay & to Continue in Business		\$ 1,140,000.00
Step 7	Economic Benefit		
Step 8	Other Factors as Justice May Require		\$ 1,140,000.00
	Staff Costs		\$ 1,140,000.00
Step 9	Minimum Liability Amount	\$ -	
	Maximum Liability Amount	\$ 1,140,000.00	
Step 10	Final Liability Amount		\$ 1,140,000.00

IRAP

Start Date of Violation= 3/21/17
 End Date of Violation= 10/3/18

Vapor Mitigation

7/4/17
 11/15/19

Attachment C

Economic Benefit Analysis												
Cham-Cal												
Compliance Action	One-Time Non-Depreciable Expenditure				Annual Cost			Non-Compliance	Compliance	Penalty Payment	Discount	Benefit of Non-
	Amount	Basis	Date	Delayed?	Amount	Basis	Date	Date	Date	Date	Rate	Compliance
Vapor Mitigation	\$ 760,284	ECI	11/30/2019	Y				7/4/2017	11/30/2019	11/30/2019	7.80%	
IRAP	\$ 1,784,714	ECI	11/30/2019	Y				3/20/2017	11/30/2019	11/30/2019	7.80%	
Phase D	\$ 141,559	ECI	11/30/2019	Y				3/20/2017	11/30/2019	11/30/2019	7.80%	
FS	\$ 264,699	ECI	11/30/2019	Y				3/20/2017	11/30/2019	11/30/2019	7.80%	
RAP	\$ 17,523	ECI	11/30/2019	Y				3/20/2017	11/30/2019	11/30/2019	7.80%	
Deep MW Wells	\$ 233,706	ECI	11/30/2019	Y				3/20/2017	11/30/2019	11/30/2019	7.80%	
GWM					\$ 144,617	ECI	11/30/2019	3/20/2017		11/30/2019	7.80%	287,019
SVM					\$ 137,214	ECI	11/30/2019	3/20/2017		11/30/2019	7.80%	272,326
Indoor Air Monitoring					\$ 77,352	ECI	11/30/2019	3/20/2017		11/30/2019	7.80%	153,519
Income Tax Schedule: Corporation											Total Benefit: \$	712,865
USEPA BEN Model Version: Version 2019.0.0 (March 2019)												
Analyst: Bryan Elder												
Date/Time of Analysis: 8/29/19 8:44												
Assumptions:												
1 Cost estimates provided by Regional Board staff.												
2 Costs indexed using Gross Domestic Product (GDP) index.												
3 Delayed costs are neglected from analysis due to changes in the 2018 federal tax laws that result in zero or negative economic benefit using BEN.												
4 Non-compliance date based on Regional Board input.												
5 Compliance date assumed to be approximately 90 days from date of analysis.												
6 Penalty payment date assumed to be approximately 90 days from date of analysis.												
7 Cham-Cal is a California corporation.												