8.6 Non-Governmental Organization Comments and Responses

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8.6.1 Ag Land Trust
Letter 1 (ALT1)

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Karen Grimmer,
NEPA Lead Monterey Bay National Marine Sanctuary
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Karen.Grimmer@noaa.gov

First Letter of Objection to Monterey Peninsula Water Supply Project (MPWSP) CalAm's defective and incomplete draft EIR/EIS

Dear Ms. Borak and Ms. Grimmer:

This correspondence and letter of objection (and our subsequent additional letters of objection) to the massively incomplete and defective draft EIR/EIS prepared for the California American (CalAm) De-Salination Project/slant wells are hereby submitted by and on behalf of **the Ag Land Trust of Monterey County (Monterey County Agricultural and Historic Lands Conservancy)** and its' Board of Directors (Ag Land Trust).

Organized in 1984, the Ag Land Trust is a 501(c)(3) non-profit corporation which holds/owns over 32,000 acres both of fee title and permanent conservation easements to prime and productive coastal agricultural lands that are protected California coastal resources pursuant to adopted and enforceable certified California Local Coastal Plans, state statutes, and federal regulations and legally recorded easements. These real property ownership interests fully include our percolated potable groundwater rights and resources that we have jealously protected, preserved, and conserved for potable use and agricultural irrigation purposes for over 30 years.

For over three decades, the **Ag Land Trust** is and has acted as a multiple grant recipient, agent, and de-facto trustee for both the United States Government (U.S. Department of Agriculture, the U.S. Department of Homeland Security, and the U.S. Department of Defense/National Guard Bureau) and for the State of California (California Coastal Conservancy and California Department of Conservation). The Ag Land Trust acts in this capacity to implement and enforce both legally adopted federal and state mandatory policies and regulations for permanent agricultural land and natural resources preservation, including preservation of potable irrigation groundwater resources for continuing agricultural production of those farmlands that have been federally designated for preservation due to their remarkable productivity. These responsibilities are ongoing contractual obligations between the Ag land Trust and the identified federal and state agencies, and may not be impaired by other private or federal or state agencies. Further, the reversionary property rights (water rights) held by the U.S. Government in the potable groundwater resources of our Armstrong Ranch farm, which CalAm and the CPUC are intentionally polluting with its' slant well, may not be "taken" by either CalAm or the State of California using any kind of "made-up", contrived theory of "salvage water rights" that result from the intentional pollution of the aquifers that is resulting from CalAm and the CPUC's combined actions. The EIR/EIS has failed to even mention, let alone mitigate, that the massive environmental degradation and adverse impacts to our potable aquifers which is being caused by CalAm's CPUC authorized pumping. Again, this demonstrates the bias of the CPUC against the property owners whose property rights are being taken by the combined CalAm/CPUC actions.

ALT1-1

The CalAm slant well and CalAm's excessive and wasteful pumping thereof is directly, knowingly, and intentionally contaminating and permanently polluting both our potable groundwater supplies/aquifers and our two agricultural irrigation wells (and the potable water supplies thereof) that underlie our Armstrong Ranch property. Our Armstrong Ranch, to which we own fee title and in which the U.S. federal

government holds a reversionary ownership interest (including its' potable groundwater supplies and rights) is immediately adjacent to the CEMEX site upon which CalAm has built its' slant well which is wrongfully exploiting our overlying potable groundwater resources.

ALT1-1 cont.

CalAm has no groundwater rights in the Salinas Valley aquifers. None. It is undisputed law in California that in an overdrafted groundwater basin, a junior appropriator cannot acquire groundwater rights. Yet CalAm, by its' pumping of its' slant well is causing massive environmental damage, without any mitigation, tour potable groundwater aquifers. The EIR/EIS has systematically ignored the massive and adverse environmental impacts of CalAm's proposed project so as to avoid identifying the necessary and massively expensive mitigations that would be required of CalAm to actually mitigate CalAm's proposed wrongful exploitation of the protected Salinas Valley (coastal) groundwater aquifers and resources. Loss of prime coastal farmland and its attendant productivity of food crops (due to the unlawful and irreplaceable stealing of potable groundwater supplies and the resultant pollution of the potable aquifers by the excess pumping of the slant wells), along with the permanent and irreplaceable loss of farmworker jobs have not been addressed or mitigated in the draft EIR/EIS. The costs to purchase those prime and productive coastal farmlands and ranches that will have their potable groundwater supplies wrongfully taken by the ultra vires approval of the CPUC, without compensation to the innocent land owners, are not addressed in the EIR/EIS. Nor is the loss of employment and massive displacement of low-income, Latino farmworkers (and their families) who are employed on those farms and ranches even acknowledged, let alone mitigated in the draft EIR/EIS. Although the Ag Land Trust offered to discuss these issues with Mr. Zigas (as well as offered our water quality baseline test results going back to 2007 and our recorded title documents demonstrating the U.S. Governments reversionary interests in our farmland and groundwater rights) during his one visit to our Armstrong Ranch farm, **he never called us back**. This may be because, much to his and CalAm's consternation, we proved that our potable and operational irrigation wells actually existed (he had publicly denied their existence in the press) and that we use them to irrigate our farmland and our dune habitat restoration sites which are mandated by the terms of our federal grants. (SEE **http://www.montereybaypartisan.com/tag/marc-del-piero/** - **Monterey Bay Partisan (4 articles AND VIDEO included in** PUC experts finally track down the elusive Ag Land Trust wells by ROYAL CALKINS *on* DECEMBER 16, 2015). The impermissible continuing bias of the EIR/EIS consultants in favor of CalAm and its plans to wrongfully take groundwater to which it has no legal rights, to the massive economic and environmental detriment of landowners that actually own real potable groundwater resources and rights, continues to be demonstrated in the draft EIR/EIS by their ignoring of valid objections and their refusal to full investigate,characterize, and fully mitigate the massive and adverse environmental impacts that have been identified by the real parties in interest whose property rights are being taken, without compensation by the CPUC.

ALT1-2

ALT1-3

ALT1-4

The first letter of objection the **Ag Land Trust** sent to the CPUC in opposition to CalAm's plans to wrongfully exploit our potable groundwater supplies was in 2006. A copy of the original letter along with significant documentation of the illegality and adverse environmental impacts of CalAm's proposed "taking" (children call it "theft") of our groundwater (which documentation has previously been provided to the CPUC and the California Coastal Commission) is herewith attached. In spite of our objections, with the exception of the single field trip (wherein Eric Zigas finally was forced to acknowledge the existence of our large irrigation wells, although he declined to inspect our federally mandated and protected coastal sand dunes habitat restoration project), the CPUC and its' consultants have never responded in writing to any of our correspondence. .

Moreover, in violation of CEQA notice mandates, the CPUC has never sent the required mailed notices of the CalAm project (and its' massive cone of depression and resulting induced seawater intrusion into the potable aquifers) to the potentially affected real property owners whose potable overlying groundwater supplies and rights will clearly be polluted and compromised by the excessive and uncontrolled pumping by CalAm.

ALT1-5

Please accept this e-mail, and all the documents, statements, objections, references, and attachments thereto, as the first of three e-mails from the Ag Land Trust that are intended to demonstrate the massive illegalities of the CalAm project and the defects and failures of the draft

ALT1-6

EIR/EIS, and the huge legal deficiencies of that draft (that have been "ignored" or "whitewashed") that will subject that document to successful challenge in court unless the EIR/EIS is re-drafted to cure the deficiencies and re-circulated.

Further, by this correspondence, the Ag Land Trust hereby incorporates by reference, (and adopts as our own comments and our own criticisms and our own objections), the criticisms, comments, statements, asserted facts, correspondence, and objections, and all documents and attachments thereto, of the following parties which have submitted comments on the defects, omissions, and inadequacy of the draft EIR/EIS:

1. **The Water Ratepayers Association of the Monterey Peninsula (WRAMP) – Comment letter dated March 17-18, 2017, and all other comment letters submitted by WRAMP commenting on the EIR/EIS.**

2. **Comment Letter by Mr. Larry Parrish dated February 23, 2017 and all of the unanswered questions therein regarding unmitigated environmental impacts that have not been addressed in the draft EIR/EIS.**

3. **All comment letters and objections from Mr. David Beech (including Beech-1, Beech-2, Beech-3, Beech-4, Beech-5, and Beech-(5a)), dated Feb. 20, 2017 et seq..**

4. **Comment letter by Mr. Michael Baer dated February 24, 2017, and all additional comments and objections filed by Mr. Michael Baer regarding the draft EIR/EIS.**

5. **All correspondence and objections submitted by Nancy Selfridge, including but not limited to her e-mailed correspondence and objections dated February 22-23, 2017 sent by Mr. Steven Collins.**

6. **All correspondence from Kathy Biala, resident of Marina, Citizens for Just Water ("Just Water") - including but not limited to her correspondence, objections, and attachments dated 02.23.17.**

7. **All correspondence and comment letters from "Water Plus", including all correspondence and objections signed by George Riley, and including his correspondence dated 20 February 2017.**

8. **All comments and objection letters from and filed by Ms. Myrleen Fisher.**

The draft EIR/EIS is fatally flawed because of the bias of the consultants, the deficiencies in its' content, and their refusal to acknowledge, investigate, and document the identified significant adverse environmental impacts of the proposed project. The failure to acknowledge and fully characterize,and mitigate, these significant adverse environmental impacts will cause these documents to be over turned in court, unless they are fully and factually revised and recirculated in compliance with CEQA and NEPA. I will forward additional comments under a separate cover.

Most Respectfully, For the Ag Land Trust of Monterey County,

Marc Del Piero, Director

(SEE BELOW - Background environmental documents)

-----Original Message-----
From: MJDelPiero <MJDelPiero@aol.com>

ALT1-6 cont.

To: sarahcoastalcom <sarahcoastalcom@yahoo.com>; zimmerccc <zimmerccc@gmail.com>; mmcclureccc <mmcclureccc@co.del-norte.ca.us>; cgroom <cgroom@smcgov.org>; Gregcoastal <Gregcoastal@sdcounty.ca.gov>; tom.luster <tom.luster@coastal.ca.gov>; tluster <tluster@coastal.ca.gov>; virginia.jameson <virginia.jameson@gmail.com>
Sent: Mon, Nov 10, 2014 7:09 am
Subject: Objection to Cal-Am appeal/application for test slant well

TO: The California Coastal Commission (Please Distribute/Forward This to All Members and Staff)

FROM: Monterey County Agricultural and Historic Lands Conservancy (THE AG LAND TRUST)

RE: Opposition to Proposed California American Water Company Appeal/Application to Acquire a Well Site to Violate Mandatory Policies of the Certified Local Coastal Plan and to Prescriptively "Take" Groundwater from the Overdrafted Salinas Valley Groundwater Basin and our Farm
Herewith enclosed, please accept this notice/letter of opposition to the appeal/application by the California American Water Company, along with the herewith attached EXHIBITS A, B, AND C.

Notice of Objection to proposed Cal-Am "test" slant well (11 pages)

Exhibit A - Board of Directors bios.

Exhibit B - Maps (showing induced seawater intrusion area and undisclosed A.L.T. wells)

Exhibit C - Prior objections correspondence (2006 - present)

The flawed Cal-Am appeal/application proposes to directly violate multiple mandatory Local Coastal Plan policies and state groundwater rights laws, and proposes an illegal "taking" of private property/groundwater rights, to economically benefit the privately held California American Water Company at the expense of the Ag Land Trust.

The application even fails to identify one of our agricultural groundwater wells on our farm property (the "Big Well"), which is the closest to the so-called Cal-Am "test well" and which will be the first to be permanently and irreparably contaminated by Cal-Am's illegal conduct. The proposed environmental review is incomplete and flawed.

No Coastal Commission staff review of these reasonably anticipated, immitigable adverse impacts on our protected coastal agricultural groundwater resources and farmland has been conducted or presented to the Commission in anticipation of this appeal hearing. The failure to even identify these unmitigated adverse impacts in the staff report, we assume, is because the Commission staff has relied exclusively on the flawed (by omission) Cal-Am appeal/application that has tried to "downplay" its intended "taking" of our groundwater supplies and its adverse environmental effects on our prime farmland. Coastal Commission staff has not contacted our Ag Land Trust in spite of our prior correspondence (see Exhibit C).

We anticipate presenting testimony pursuant to our attached Letter of Opposition and Exhibits at your Wednesday meeting in Half Moon Bay.

Please distribute our full comments and all attachments to each and all commissioners prior to the day of the meeting so that they may fully understand and consider the potential consequences of their actions.

Most Respectfully, Marc Del Piero, Director

Second Letter of Objection to Monterey Peninsula Water Supply Project (MPWSP) CalAm's defective and incomplete draft EIR/EIS

As was previously indicated in the prior e-mail sent on behalf of the Ag Land Trust of Monterey County, although the Ag Land Trust offered to provide additional information to the CPUC EIR consultant (Eric Zigas) for the draft EIR/EIS, no request was ever received. No phone call, no letter, no request for the environmental information that we offer was received in the past 20 months from the CPUC or Mr. Zigas. ALT2-1

Our information includes baseline laboratory water quality test data from 2009 forward, and recorded title documents showing the real property interests of the U.S. federal government in our farmland and its' groundwater supplies and aquifers. The recorded documents preclude any party (private, state, or federal) from taking the real property interests, including water supplies and rights, of the federal government for private, for-profit uses, as is CalAm's and the CPUC's intent with their "salvaged water theory". ALT2-2

Moreover, we object to the defective "groundwater model" used by the Hydrologic Working Group, which is controlled by interests which are contractually obligated to support CalAm's project and which hold no groundwater rights in the basin, because the model established no baseline hydrologic condition before CalAm began its' excessive and irresponsible slant well pumping, and because it intentionally excluded all adverse impacts to our groundwater resources and potable irrigation wells. This is a major and intentional defect by omission in the draft EIR/EIS expressly for the benefit of CalAm and its proposal. ALT2-3

Consequently, the draft EIR/EIS is defective by the intentional refusal and omission of available data by the CPUC EIR consultants and the CalAm consultants and engineers who have refused from the beginning of the CEQA process to acknowledge the significant and adverse environmental impacts that they are causing to the potable aquifers of the Salinas Valley and the injury to the landowners and farmworkers whose livelihoods and food production are dependent upon the protection and preservation of those freshwater potable aquifers that are beneath the prime coastal farmland that is subject to both federal and state statutory and regulatory protections. ALT2-4

Mr. Zigas, who was under contract to prepare a fair and impartial EIR, has never called or requested the offered environmental data, and his associates from CalAm and the CPUC hand-picked review panel, euphemistically referred to as the Hydrologic Working Group, has never contacted the Trust for that data either. Given their collective refusal to even acknowledge the existence of our wells for months, because they were inconvenient impediments to their pre-conceived plan to "take water from the Salinas Valley aquifers" that they are now polluting by inducing seawater intrusion from their slant well pumping, the Ag Land Trust has concluded that the draft EIR/EIS is massively defective.

In the earlier e-mail, the Ag Land Trust provided a "link" to the website of the Monterey Bay Partisan and the articles that it carried about our irrigation wells. It also has a link to a video where proof of the fully operational nature of our potable irrigation wells is proven. The bias of Mr. ALT2-5

Zigas and his associates that was also referred to in the earlier e-mail is demonstrated in the newspaper articles attached hereto, wherein Mr. Zigas and his friends continued to assert that our potable irrigation wells were either: 1. non-existent, 2. impossible to find (they are fully visible from CA Highway 1, or 3. were "capped" wells that were non-operational. Mr. Zigas, and the County of Monterey, and CalAm's engineers of the Hydrologic Working Group, and the Carmel Pine Cone newspaper were proven wrong when they visited our farm and personally witnessed our potable irrigation wells in operation pumping over 2000 gpm. It was also at that time that Mr. Zigas declined to look at our federally mandated coastal dune habitat restoration plot that we irrigate with potable water from our irrigation wells. This issue, and the threat and impacts of Cal-Am's wrongful actions to our federally required dune restoration efforts, are not addressed in the draft EIR/EIS.

Please see the attachments and view the video link at the Monterey Bay Partisan website, and the four (4) articles therein that proved the truthfulness of our assertions and the impermissible bias of the CPUC consultant who has omitted important information regarding the unmitigated significant and adverse environmental impacts of CalAm's proposed project. These acts of omission and impermissible bias of the drafters cause the draft EIR/EIS to require re-drafting and re-circulation.

Respectfully, the Board of Directors of the Ag Land Trust of Monterey County

ALT2-5
cont.

Ag Land Trust
Letter 3 (ALT3)

From: mjdelpiero@aol.com
Subject: Supplimental documents re: federal rights and water quality
Date: March 29, 2017 at 4:51:11 PM PDT
To: Maryjo.Borak@cpuc.ca.gov, Karen.Grimmer@noaa.gov, MJDelPiero@aol.com, sdarington@redshift.com

Third Letter of Objection to Monterey Peninsula Water Supply Project (MPWSP) CalAm's defective and incomplete draft EIR/EIS

On behalf of the Ag Land Trust of Monterey County, and in order to offer proof of our previous assertions, herewith attached are excerpts from the recorded federal real property (including water rights) contract/deed documents that the federal government has with our Trust, and one sample of our original (2009) baseline water quality test data (that meets WHO drinking water standards) that the CPUC consultants, and CalAm's Hydrology working Group did not request, in spite of our offer to supply additional information to them for the draft EIR/EIS. ALT3-1

These documents demonstrate only a few of the intentional defects (by intentional omission of significant adverse impacts and lack of identified mitigations) in the draft EIR/EIS that necessitate re-drafting and re-circulation of the document. ALT3-2

Respectfully, The Ag Land Trust of Monterey County

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March 28, 2017

VIA EMAIL AND OVERNIGHT MAIL

Mary Jo Borak, CEQA Lead
California Public Utilities Commission
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Email: mpwsp-eir@esassoc.com

Karen Grimmer, NEPA Lead
Monterey Bay National Marine Sanctuary
99 Pacific Avenue
Building 455a
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Electronic Submission at: www.regulations.gov/#!docketDetail;D= NOAA-NOS-2016-0156

Re: Comments on the Draft Environmental Impact Report/ Draft Environmental Impact Statement for the Proposed Monterey Peninsula Water Supply Project

Dear Ms. Borak and Ms. Grimmer:

We are writing on behalf of California Unions for Reliable Energy ("CURE") to provide comments on the Draft Environmental Impact Report and Draft Environmental Impact Statement ("DEIR/EIS") prepared by the California Public Utilities Commission ("CPUC") and by the Monterey Bay National Marine Sanctuary ("MBNMS"), pursuant to the California Environmental Quality Act, and its regulations ("CEQA"),[1] and the National Environmental Policy Act, and its regulations ("NEPA"),[2] respectively, for the Monterey Peninsula Water Supply

[1] California Public Resources Code, §§ 21000 et seq.
[2] National Environmental Policy Act, 42 U.S.C. 4321 et seq.

1840-062acp

Project ("Project"). The Project is being proposed by the California American Water Company ("CalAm" or "Applicant") and will include the construction and operation of a seawater desalination plant and conveyance system with an initial capacity of 9.6 million gallons per day ("mgd") to provide a supplemental source of water to the Monterey Bay area.

The Project area extends approximately 18 miles, from the Project site located in the town of Castroville in the north to the City of Carmel in the south.[3] The Project would include:

- a seawater intake system (comprising of ten subsurface slant wells) extending offshore into submerged lands of MBNMS, and a Source Water Pipeline;[4]
- a 9.6 mgd desalination plant and related facilities (including pretreatment, reverse osmosis, and post-treatment systems), backwash supply and filtered water equalization tanks, chemical feed and storage facilities, brine storage and conveyance facilities, and other associated non-process facilities;[5]
- desalinated water conveyance facilities including pipelines and stand-alone pump station, and a Terminal Reservoir;[6]
- an expanded ASR system, including two additional injection/extraction wells, the ASR-5 and ASR-6 Wells, and three parallel pipelines, the ASR Conveyance Pipeline, ASR Pump-to-Waste Pipeline, and ASR injection/extraction wells and backwash effluent from the wells to an existing settling basin.[7]

The seawater intake system comprises of ten subsurface slant wells (eight active and two on standby), which would be constructed at the CEMEX sand mining site in the northern coastal area of the City of Marina.[8] An estimated 24.1 mgd of raw seawater — extracted through the seafloor in MBNMS — is needed to reliably generate 9.6 million gallons per day (mgd) of product water at the desalination

[3] DEIR/EIS, at p. ES-5.
[4] *Id.*
[5] *Id.*
[6] *Id.*
[7] *Id.*
[8] *Id.*

plant, which would be constructed in unincorporated Monterey County.[9] The plant would produce approximately 10,750 acre-feet per year ("afy").[10] The plant's related facilities include pretreatment, reverse osmosis ("RO"), and post-treatment systems; backwash supply and filtered water equalization tanks; chemical feed and storage facilities; brine storage and conveyance facilities; and other associated non-process facilities.[11]

The source water is conveyed through the slant well to the desalination plant and related facilities. There, it must first pass through a pretreatment system, which would remove suspended and dissolved contaminants and fine particulates. Backwash supply pumps would be used to clean the pretreatment system's filters. Next, the source water would pass through the RO system, which would remove salts and other minerals from the pretreated source water. Finally, the source water would pass through the post-treatment system, if necessary, to meet State Water Resources Control Board standards.[12]

Brine produced during the RO process and pretreatment backwash effluent (a total of approximately 13.98 mgd) would be stored at the desalination plant before being conveyed to the existing ocean outfall pipeline.[13] The brine may be blended with treated wastewater effluent to Monterey Bay.[14] During wet periods the brine would be blended with treated wastewater effluent from the MRWPCA Regional Wastewater Treatment Plant before discharge.[15] During dry months, the brine stream could be discharged without dilution.[16] The amount of treated wastewater effluent would vary throughout the year.[17] The salinity of the discharged brine would be roughly 71 to 74 percent higher than seawater.[18]

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[9] *Id.*
[10] *Id.*
[11] *Id.*
[12] *Id.*, at pp. 3-8-12 (Table 3-1).
[13] *Id.*, at p. 3-56.
[14] *Id.*, at pp. 3-8-12 (Table 3-1).
[15] *Id.*, at p. 3-56.
[16] *Id.*
[17] *Id.*
[18] *Id.*

The desalinated water would be held in holding tanks from which water would be pumped to either the CalAm water system, the existing Castroville Seawater Intrusion Project ("CSIP") or the Castroville Pipeline.[19] The Project includes other desalinated water conveyance and storage facilities, including treated water storage tanks, desalinated water pumps, a new desalinated water pipeline, a new transmission main, a terminal reservoir tank to store desalinated water and ASR product water, the Carmel Valley Pump Station to provide additional pressure needed to pump water, improvements to interconnection pipelines, the Castroville Pipeline, which would convey desalinated water to the CSIP and the Castroville Community Services District ("CCSD") Well #3, and a pipeline to the CSIP pond for subsequent delivery to agricultural users in the Salinas Valley.[20] The ASR system, includes two new ASR injection/extraction wells (named ASR-5 and ASR-6), which would inject desalinated water into the Seaside Groundwater Basin for storage.[21] Three parallel pipelines would also be constructed to convey water.[22]

The Project would return approximately 700 afy to the Seaside Groundwater Basin over 25 years.[23] It would also include improvements to the Seaside Groundwater Basin aquifer storage and recovery ("ASR") system facilities to enable CalAm to inject desalinated product water into the groundwater basin for subsequent extraction and distribution to customers.[24] The improved ASR system would include two additional injection/extraction wells, the ASR-5 and ASR-6 Wells, and three parallel pipelines, the ASR Conveyance Pipeline, ASR Pump-to-Waste Pipeline, and ASR Recirculation Pipeline, and would improve the reliability of the existing ASR system.[25]

The Project also includes over 21 miles of water pipelines that convey source water between the subsurface intakes and the desalination plant, and desalinated water from the plant to the Terminal Reservoir.[26]

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[19] *Id.*, at p. 3-10.
[20] *Id.*, at p. 3-7.
[21] *Id.*
[22] *Id.*
[23] *Id.*, at p. ES-3.
[24] *Id.*, at p. ES-5.
[25] *Id.*
[26] *Id.*

CalAm's application for the Project also includes an option that would combine a reduced-capacity desalination plant (6.4 mgd) with a water purchase agreement for 3,500 afy of product water from another source, the Pure Water Monterey Groundwater Replenishment ("GWR") Project.[27] The Monterey Regional Water Pollution Control Agency ("MRWPCA") certified the Final EIR and approved the GWR project in October 2015.[28]

Finally, CalAm constructed and operated a test slant well at the CEMEX sand mining site. A separate environmental review document covered the test slant well construction and operation.[29] This DEIR/EIS does not evaluate the test slant well.[30] If the project with subsurface slant wells at CEMEX is not approved and implemented, the test slant well will be decommissioned.[31]

The Project requires a number of permits and approvals including incidental take permits, a Biological Opinion, and waste discharge permits, among others.[32]

Based upon our review of the DEIR/EIS and pertinent agency records, we conclude that the DEIR/EIS fails to comply with CEQA and NEPA and must be withdrawn. The DEIR/EIS fails to include a complete project description, provide an adequate description of the environmental setting, adequately analyze and mitigate the project's potentially significant impacts, provides deferred, unenforceable, or otherwise inadequate mitigation measures, evaluate certain alternatives, and consider growth-inducing impacts. The CPUC and MBNMS must revise the DEIR/EIS and recirculate the revised DEIR/EIS for public review.

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[27] *Id.*
[28] *Id.*, at pp. ES-6, 1-2.
[29] DEIR/EIS, p. ES-6, fn. 2 ("In October 2014, MBNMS finished its NEPA review of the construction of the test slant well and the operation of the pilot program. In November 2014, the City of Marina and the California Coastal Commission completed their CEQA review."); California American Water Slant Test Well Project Draft Initial Study/Mitigated Negative Declaration (State Clearinghouse No. 2014051060) (City of Marina, 2014), **Attachment A**.
[30] DEIR/EIS, p. ES-6.
[31] *Id.*
[32] *Id*, pp. 3-62-67, Table 3-8.

We prepared these comments with the assistance of Phyllis Fox, Ph.D., Renée Owens, M.Sc., and Radoslaw Sobczynski, Ph.D. Their technical comments are attached hereto and submitted to the CPUC and MBNMS, in addition to the comments in this letter. [33] Accordingly, the CPUC and MBNMS must address and respond to the comments of Dr. Fox, Ms. Owens, and Dr. Sobczynski, separately.

I. STATEMENT OF INTEREST

CURE is a coalition of labor organizations whose members construct, operate, and maintain industrial facilities throughout California. CURE has an interest in enforcing environmental laws that encourage sustainable development and ensure a safe working environment for its members. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for industry to expand along the Monterey Bay, and by making it less desirable for businesses to locate and people to live in the area, including the Project vicinity. Continued degradation can, and has, caused construction moratoriums and other restrictions on growth that, in turn, reduce future employment opportunities.

CURE members live, work, recreate and raise their families in the Project vicinity along the Monterey Bay. Accordingly, CURE's members would be directly affected by the Project's adverse environmental impacts. The members of CURE's member organizations may also work on the Project itself. They will, therefore, be first in line to be exposed to any hazardous materials, air contaminants and other health and safety hazards that exist on the Project sites.

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[33] *See* Letter from Phyllis Fox, to Linda Sobczynski, re: Comments on Draft Environmental Impact Report/Environmental Impact Statement for the CalAm Monterey Peninsula Water Supply Project, February 27, 2017 (hereinafter, "Fox Comments"), **Attachment B** (letter provided in hard copy and references are enclosed on a CD). *See* Letter from Renee Owens, to Linda Sobczynski re: Comments on the CalAm Monterey Peninsula Water Supply Project Draft Environmental Impact Report/Environmental Impact Statement, February 24, 2017 (hereinafter, "Owens Comments"), **Attachment C** (letter provided in hard copy and references are enclosed on a CD). *See* Letter from Radoslaw Sobczynski, to Linda Sobczynski re: Comments on Draft Environmental Impact Report/Environmental Impact Statement for the CalAm Monterey Peninsula Water Supply Project, February 24, 2017 (hereinafter, "R. Sobczynski Comments"), **Attachment D** (letter provided in hard copy and references are enclosed on a CD).

II. LEGAL BACKGROUND

A. National Environmental Policy Act ("NEPA")

NEPA is "our basic national charter for protection of the environment."[34] Its purpose is "to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment."[35] NEPA therefore requires federal agencies to take a "hard look at [the] environmental consequences" of their proposed actions.[36] In so doing, NEPA makes certain "that environmental concerns will be integrated into the very process of agency decision-making."[37]

NEPA requires all agencies of the federal government to prepare a "detailed statement" that discusses the environmental effects of, and reasonable alternatives to, all "major Federal actions significantly affecting the quality of the human environment."[38] This statement is commonly known as an environmental impact statement ("EIS"). An EIS must describe: (1) the "environmental impact of the proposed action"; (2) any "adverse environmental effects which cannot be avoided should the proposal be implemented"; and (3) any "alternatives to the proposed action."[39] It further requires that "the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth" therein.[40] The environmental "effects" that must be considered in an EIS include both "direct effects which are caused by the action" and "indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable."[41]

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[34] 40 C.F.R. 1500.1(a).
[35] *Id.* § 1500.1(c).
[36] *Robertson v. Methow Valley Citizens Council* (1989) 490 U.S. 332, 350.
[37] *Andrus v. Sierra Club*, 442 U.S. 347, 350 (1979).
[38] 42 U.S.C. § 4332(2)(C).
[39] *Id.*
[40] *Id.*
[41] 40 C.F.R. § 1508.8(a), (b).

B. California Environmental Quality Act

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report ("EIR") (except in certain limited circumstances).[42] The EIR is the very heart of CEQA.[43] "The foremost principle in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language."[44]

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project.[45] "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR 'protects not only the environment but also informed self-government.'"[46] The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return."[47]

Second, CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring "environmentally superior" alternatives and all feasible mitigation measures.[48] The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced."[49] If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and

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[42] *See, e.g.,* Public Resources Code § 21100.
[43] *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652.
[44] *Communities. for a Better Env. v. Cal. Res. Agency* (2002) 103 Cal. App.4th 98, 109 ("*CBE v. CRA*").
[45] 14 Cal. Code Regs. § 15002(a)(1).
[46] *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564.
[47] *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs.* (2001) 91 Cal. App. 4th 1344, 1354 ("*Berkeley Jets*"); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.
[48] 14 CCR § 15002(a)(2) and (3); *see also Berkeley Jets*, 91 Cal.App.4th at 1354; *Citizens of Goleta Valley*, 52 Cal.3d at p. 564.
[49] 14 Cal. Code Regs. §15002(a)(2).

that any unavoidable significant effects on the environment are "acceptable due to overriding concerns."[50]

While the courts review an EIR using an "abuse of discretion" standard, "the reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position. *A clearly inadequate or unsupported study is entitled to no judicial deference.*"[51] As the courts have explained, "a prejudicial abuse of discretion occurs "if the failure to include relevant information precludes informed decision making and informed public participation, thereby thwarting the statutory goals of the EIR process."[52]

III. THE DEIR/EIS FAILS TO INCLUDE A COMPLETE PROJECT DESCRIPTION

The DEIR/EIS does not meet NEPA's or CEQA's requirements because it fails to include a complete project description, rendering the entire analysis inadequate. Without a complete project description, the environmental analysis under CEQA and NEPA will be impermissibly narrow, thus minimizing the project's impacts and undercutting public review.[53]

Under NEPA, a complete project description is necessary for the public and decision makers to understand the effects of the proposed action and its alternatives.[54] It follows that information in an EIS that is incomplete will skew the environmental consequences analysis and prevent informed public input. Courts have held that "[w]here the information in the initial EIS was so incomplete or misleading that the decision maker and the public could not make an informed comparison of the alternatives, revision of an EIS may be necessary to provide a

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[50] PRC § 21081; 14 CCR § 15092(b)(2)(A) & (B).
[51] *Berkeley Jets*, 91 Cal. App. 4th 1344, 1355 (emphasis added), *quoting, Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 391 409, fn. 12.
[52] *Berkeley Jets*, 91 Cal.App.4th at 1355; *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 722; *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal.App.4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 946.
[53] *See, e.g., Laurel Heights Improvement Assn. v. Regents of the Univ. of Cal.* (1988) 47 Cal.3d 376.
[54] *See* 40 C.F.R. § 1502.15; *see also Laguna Greenbelt v. U.S. Dept. of Transportation* (1994) 42 F.3d 517, 528-29 [reviewing plaintiff's claim that inconsistent definition resulted in misleading analysis of project's positive and negative effects].

reasonable, good faith, and objective presentation of the subjects required by NEPA."[55]

CEQA places the burden of environmental investigation on the government rather than the public. Accordingly, a lead agency may not hide behind its failure to obtain a complete and accurate project description.[56] CEQA requires that the project description contained in a CEQA document that is circulated for public review contain sufficiently detailed information to permit a meaningful evaluation and review of the potential environmental impacts of a proposed project.[57] California courts have repeatedly held that "an accurate, stable and finite project description is the sine qua non of an informative and legally sufficient [CEQA document]."[58] In contrast, an inaccurate or incomplete project description renders the analysis of environmental impacts inherently unreliable. Without a complete project description, the environmental analysis under CEQA will be impermissibly narrow, thus minimizing the project's impacts and undercutting public review.[59]

A. The DEIR/EIS Fails to Describe the Decommissioning Phase of the Project

NEPA and CEQA require a full description of the Project, including its decommissioning phase. Under NEPA, federal agencies must analyze and disclose the impacts of major Federal actions. They may not segment the project into separate components. The Council on Environmental Quality regulations state in relevant part that an EIS must consider the following types of actions:

> (1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they:

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[55] *Natural Resources Defense Council v. U.S. Forest Service* (2005) 421 F.3d 797, 811 (citing *Animal Defense Council v. Hodel* (1988) 840 F.2d 1432, 1439).
[56] *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 311.
[57] 14 Cal. Code Regs. § 15124 (hereafter "CEQA Guidelines").
[58] County of Inyo v. City of Los Angeles (3d Dist. 1977) 71 Cal.App.3d 185, 193.
[59] *See, e.g., Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d 376.

> (i) Automatically trigger other actions which may require environmental impact statements.
>
> (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.
>
> (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.
>
> (2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.
>
> (3) Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. An agency may wish to analyze these actions in the same impact statement. It should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement.[60]

In requiring agencies to analyze these types of actions in the same environmental review document, the agency is prevented from segmenting the project into multiple individual actions, each of which would have an insignificant impact, but collectively would have a significant one.[61]

CEQA is similar. It requires that a complete project description include the "later phases of the project, and any secondary, support, or off-site features necessary for its implementation."[62] The requirements of CEQA cannot be avoided

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[60] 40 C.F.R. § 1508.25; *see also Kentucky Coal Ass'n, Inc. v. Tennessee Valley Authority* (W.D. Ky. 2014) 68 F.Supp.3d 685, 696–97.
[61] *Kentucky Coal Ass'n, Inc. v. Tennessee Valley Authority* (W.D. Ky. 2014) 68 F.Supp.3d 685, 697 (citing *Delaware Riverkeeper Network,* 753 F.3d at 1314 (citing *NRDC v. Hodel,* 865 F.2d 288, 297 (D.C.Cir.1988))
[62] *Bozung v. Local Agency Formation Com.* (1975), 13 Cal.3d 263, 283-84.

by chopping a large project into many small parts or by excluding reasonably foreseeable future activities that may become part of the project.[63]

The DEIR/EIS must supply enough information so that the decision makers and the public can fully understand the scope of the Project.[64] The CPUC and MBNMS, as the lead agencies, must fully analyze the whole Project in a single environmental review document and may not piecemeal or split the Project into pieces for purposes of analysis.

Here, the DEIR/EIS fails to describe the full scope of the Project, and thus fails to disclose the full range and severity of the Project's environmental impacts. Throughout the document, the DEIR/EIS states that the Project will have an approximately "40-year operations phase."[65] The DEIR/EIS analyzes some of the impacts in this 40-year context. For example,

> The timeframe during which the MPWSP could contribute to cumulative surface water hydrology and water quality effects includes the 24-month construction period, as well as the estimated 40-year operations phase.[66]

Note, in the above example that the DEIR/EIS acknowledges that impacts will occur during the construction period and the 40-year operations phase, but not decommissioning. The DEIR/EIS must take into consideration impacts that occur during the decommissioning phase.

Where the DEIR/EIS does discuss decommissioning, the analysis is limited to coastal retreat — triggering decommissioning and abandoning the slant wells[67] —, and anticipated energy demand and energy efficiency of the proposed project as a whole, including decommissioning. This limited description and analysis of decommissioning is not enough to comply with CEQA's requirement to describe and analyze impacts from the whole project.

CURE-1

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[63] Pub. Resources Code § 21159.27 (prohibiting piecemealing); *see also Rio Vista Farm Bureau Center v. County of Solano* (1992) 5 Cal.App.4th 351, 370.
[64] *Dry Creek Citizens Coalition v. County of Tulare* (1999) 70 Cal.App.4th 20, 26.
[65] DEIR/EIS, at p. 4.18-14.
[66] *Id.*, at p. 4.3-120.
[67] *Id.*, at p. 4.2-71

1. Slant Wells' Decommissioning Is Not Adequately Described

For the slant wells, the DEIR/EIS admits that the presence of any slant well on the beach would result in a significant impact.[68] However, it states that "Mitigation Measure 4.2-9 (Slant Well Abandonment Plan) would reduce the impact to a less-than-significant level by requiring CalAm to monitor coastal retreat rates and initiate well decommissions before the beach migrates inland to the location of the subsurface slant wells."[69]

When it is anticipated that the slant well will become exposed in five years, "CalAm will implement the planning and permitting necessary to *abandon* the slant wells."[70] Then, the affected slant wells would be removed from service. Their casing would be pressure grouted such that the screened section would be sealed and the section well casing and pipelines at risk of exposure would be cut and removed to a depth of five feet below the 2060, 100 year lower profile envelope as determined by the 2014 Coastal Erosion Study or any permit condition.[71] Because "the rate of coastal retreat may vary due to unforeseen changes in climate change," this mitigation measure applies to all slant wells, even though the new slant wells would be located inland of the modeled anticipated inland extent of coastal retreat, unlike the test slant well, which might become exposed during the operational life of the project.[72]

CURE-2

This mitigation measure only appears to be triggered when there is a risk of exposure. The DEIR/EIS does not discuss what will be done with the slant wells at the decommissioning phase of the Project.[73] This is a significant, and unexplained, deviation from the test slant well's project description, discussing mitigation. In the 2014 Environmental Assessment for the test slant well, the lead agency, MBNMS, stated the well should be removed to an ultimate depth of no less than 40 feet below

[68] *Id.*
[69] *Id.*, at pp. 4.2-71-72.
[70] *Id.*, at p. 4.2-72 (italics added).
[71] *Id.*
[72] *Id.*, at pp. 4.2-71-72.
[73] *Id.*, at p. 4.2-72.

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existing ground surface at project decommissioning.[74] That document provided the following Mitigation Measure:

> At project decommissioning, the slant test well and all related infrastructure shall be removed to an ultimate depth of no less than 40 feet below existing ground surface to eliminate the possibility for future re-surfacing and exposure of submerged well casing or related project components as a result of coastal erosion and shoreline retreat. Removal of the well would take place upon completion of the test pumping and/or in segments over time as mutually agreed upon by MBNMS, MRWPCA, Cal Am, the California State Lands Commission, and other identified regulatory agencies. If removal to the total required depth of 40 feet below ground surface is not completed within 5 years following completion of the test pumping due to potential risk to the MRWPCA outfall, the applicant shall post a bond with the City to ensure future removal measures would be appropriately supported and timed to prevent any future resurfacing of the well casing or other project components and shall provide evidence of the bond to MBNMS.[75]

CURE-2 cont.

Unlike the description above for the test slant well, the DEIR/EIS does not provide an adequate project description by failing to provide an explanation of the decommissioning phase for this Project's test slant well (which will be converted to a permanent well) and the proposed wells. This is significant because, as a result of the inadequate project description, the DEIR/EIS fails to analyze significant impacts from decommissioning the wells and fails to require this or another mitigation measure for the test slant well and the proposed wells.

During Project decommissioning, well materials may have to be removed or destroyed in accordance with state well destruction standards. For example, California Well Standards Bulletin 74-81 and 74-90 requires removal or destruction

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[74] Final Environmental Assessment for the California American Water Slant Test Well Project, September 2014, *available at* http://montereybay.noaa.gov/resourcepro/resmanissues/desal_projects/pdf/140912calam-slantwell_ea-final.pdf ("NOAA EA, 2014"), at Appendix A. Avoidance, Minimization, and Mitigation Measures, at p. 121, Measure 28, **Attachment E.**

[75] *Id.*

of wells that are no longer useful or are abandoned.[76] The California Well Standards describe an intensive process for destroying wells, including cleaning, excavation, removing materials, filling, sealing and other activities.[77]

The DEIR/EIS fails to mention the common sense impact on the environment from decommissioning and abandoning slant wells in the event of coastal erosion. Given the real possibility decommissioning and abandonment may occur at least for the test slant well, this omission renders the project description inadequate. The DEIR/EIS must also evaluate if the decommissioned slant wells would need to be replaced with new slant wells in the event decommissioning and abandonment occurs during the 40-year operational lifetime of the Project.

CURE-2 cont.

Even though Mitigation Measure 4.2-9 (Slant Well Abandonment Plan) would bring the Project into conformance with a number of policies,[78] the DEIR/EIS cannot avoid providing a complete description of the Project and the Project's impacts from its construction, operation, and decommissioning and abandonment phases.[79] By recognizing that slant wells may need to be decommissioned and abandoned, but failing to describe the impact of these wells after their operating lifetime, the DEIR/EIS fails to adequately describe the project.

2. Other Desalination Facilities' Decommissioning Is Not Adequately Described

CURE-3

Although the DEIR/EIS discusses decommissioning of the slant wells and decommissioning in the context of energy demand and energy efficiency,[80] the DEIR/EIS must consider *all* potentially significant impacts from decommissioning

[76] California Well Standards, http://www.water.ca.gov/groundwater/well_info_and_other/california_well_standards/wws/wws_combined_sec20-22.html#22, **Attachment F-1**.
[77] California Well Standards, http://www.water.ca.gov/groundwater/well_info_and_other/california_well_standards/wws/wws_combined_sec23.html, **Attachment F-2**.
[78] DEIR/EIS, at p. 4.2-71.
[79] *Id.*, at p. 4.2-72.
[80] The DEIR/EIS states that the "amounts of direct energy consumption that would occur at the end of the useful life of the project (in approximately 40 years) related to decommissioning is unknown; however, it is anticipated that the amounts would be similar to those required for construction, discussed above." *Id.*, at p. 4.18-14.

the *entire* Project. Decommissioning the desalination plant and related facilities (including, in part, abandoning the subsurface slant wells) would result in environmental impacts, including impacts to air quality, biological resources, water, and solid waste capacity.

In short, the DEIR/EIS's description and analysis of Project decommissioning do not come close to satisfying NEPA's and CEQA's requirements. Where the DEIR/EIS acknowledges that some Project components could be decommissioned, it completely fails to analyze the associated impacts. Further, the DEIR/EIS fails to even mention, let alone analyze, impacts from decommissioning the rest of the Project. As a result, the DEIR/EIS fails to identify the Project's potentially significant impacts from Project decommissioning and fails to incorporate mitigation measures to reduce those impacts to a less than significant level.

CURE-3 cont.

An accurate and complete project description is necessary to perform an adequate evaluation of the potential environmental effects of a proposed project. The CPUC and MBNMS must prepare a revised DEIR/EIS that fully describes decommissioning for all Project components, including the plant, the slant wells, pipelines, injection wells and other associated materials. Only by doing so will the agencies be able to properly analyze and mitigate impacts from decommissioning the whole Project.

B. The DEIR/EIS Fails to Describe the Operating Life of the Slant Wells

The DEIR/EIS fails to include a complete project description with respect to the operating life of the slant wells. The Project is designed to draw 24.1 mgd through ten slant wells (eight would be active, two would be on standby).[81] Each slant well is capable of drawing approximately 3 mgd.[82] The existing test slant well would be converted to a permanent one, and nine additional slant wells would be constructed.[83] Slant well construction would take approximately 15 months to complete, and could take place anytime throughout the overall 24-month

CURE-4

[81] DEIR/EIS, at p. 3-56.
[82] *Id.*
[83] *Id.*, at p. ES-10.

construction duration for the proposed project.[84] Yet, the DEIR/EIS states that the proposed slant wells would have a productive span of only 20-25 years, far short of the Project's 40 year expected operating phase.

> [T]he proposed slant wells would now be located behind the predicted 2060, 100-year lower profile envelope. . . . The proposed slant wells would not be exposed during the operational life of the slant production wells (anticipated to be 20 to 25 years) and would not contribute to further coastal erosion or changes in the beach environment.[85]

Without providing further information, it is unclear how the Project will maintain consistent seawater intake over the 40-year operations phase if each well has a productive span of only 20-25 years. In order to maintain the Project's objective to draw 24.1 mgd over the span of 40 years, the Project would have to build another set of slant wells midway through the Project's operating phase.[86] The associated impacts with abandoning the no-longer-productive original slant wells, and building a new set of slant wells has not been evaluated, rendering the entire project analysis incomplete. What's more, the CPUC and MBNMS studied the location of the test slant well and proposed slant wells, but those studies never considered this possibility that more slant wells would need to be built to support the Project's objective to intake 24.1 mgd of water over the course of 40 years.[87]

CURE-4 cont.

The DEIR/EIS fails to describe and analyze the 20- to 25-year operational life of the slant production wells and the Project's need to build more than 10 slant wells over the 40-year operational life of the Project.

C. The DEIR/EIS Fails to Adequately Explain the Design of the Slant Wells

CURE-5

The DEIR/EIS fails to provide an adequate description of the slant wells to enable a meaningful evaluation and review of their associated environmental

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[84] *Id.*, at p. 3-47.
[85] *Id.*, at p. 4.2-70.
[86] *Id.*, at pp. 3-56; ES-3
[87] *See* DEIR/EIS, at Appendices E1 (Lawrence Berkeley National Laboratories Peer Review) and E2 (Draft North Marina Groundwater Model Review, Revision, and Implementation for Future Slant Well Pumping Scenarios).

impacts.[88] The test slant well's purpose was to inform the design of the proposed slant wells. The test slant well was analyzed in an Environmental Assessment by The National Oceanic and Atmospheric Administration and the MBNMS in 2014 ("NOAA EA").[89]

> Cal Am proposes to construct a slant test well in the coastal foredunes and conduct a 24- month pumping and testing program to obtain information regarding the geologic, hydrogeologic and water quality characteristics of the underlying aquifers in the project area. The data obtained over the 24-month test period would be used to facilitate the planning and final design of a proposed subsurface intake system and desalination plant to serve as the primary future water supply source for the Monterey Peninsula.[90]

CURE-5 cont.

The test slant well was drilled at a 19° angle and was 724 feet long.[91] The test slant well facilities include a "a submersible well pump, a wellhead vault, electrical facilities and controls, temporary flow measurement and sampling equipment, monitoring wells, and a temporary pipeline connection to the adjacent MRWPCA ocean outfall pipeline for discharges of the test water."[92]

In contrast, according to the DEIR/EIS, the proposed slant wells will be at a 14° angle and will extend 900 to 1,000 feet.[93] They would not extend beyond a depth of 190 to 210 feet below the seafloor.[94] The proposed slant wells would be screened for approximately 400 to 800 linear feet at depths corresponding to both the Dune Sand Aquifer and the underlying 180-Foot-Equivalent Aquifer of the Salinas Valley Groundwater Basin.[95] The decision to adjust the angle of the proposed slant wells by 5° is not explained in the DEIR/EIS.[96]

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[88] CEQA Guidelines, § 15124.
[89] NOAA EA, 2014, *supra*.
[90] *Id.*, at Summary.
[91] DEIR/EIS, at p. 3-15.
[92] *Id.*
[93] *Id.*, at pp. 3-8, 3-15.
[94] *Id.*, at p. 3-8.
[95] *Id.*
[96] *Id.*, at pp. 3-15-16, 3-47, 4.2-69, 4.4-42, 4.15-3 (discussing 14-degree and 19-degree slant well angles, but failing to explain rational for 5-degree difference).

The DEIR/EIS also lacks any reference to the location of the submersible well pump within the slant wells.[97] At most, the DEIR/EIS states that "[a] submersible pump would be lowered several hundred feet into each well."[98] As Dr. Sobczynski points out in his comment letter, the location of the submersible pump is important for calculating the vertical infiltration rate,[99] which is necessary for evaluating impacts. However, the DEIR/EIS fails to disclose the location of the pump, rendering this DEIR/EIS inadequate as an information disclosure document.

The NOAA EA stated that, for the test slant well, the "water flow rate during the operational period would vary from 1,000 gallons per minute (gpm) to 2,500 gpm."[100] According to the DEIR/EIS each proposed slant well would be equipped with a 2,500 gpm, 300 hp submersible well pump for a total feedwater supply of 24.1 mgd from 8 active slant wells;[101] each active well would pump approximately 2,100 gpm.[102] This raises the question as to when, if ever, the slant wells would run at their maximum capacity of 2,500 gpm, rather than their average operating rate of 2,100 gpm.

CURE-6

One possible time that the wells may run at maximum capacity may be after a shutdown, when the plant would need to "catch up on production" and produce 11.2 mgd of desalinated water, rather than its usual 9.6 mgd.[103] If, as the DEIR/EIS states, approximately 24.1 mgd of raw seawater is needed to produce 9.6 mgd of desalinated product water, then to produce 11.2 mgd of desalinated water after shutdown, approximately 28.11 mgd would be needed.[104] (Note, that the DEIR/EIS fails to provide a correct overall recovery rate. It states the recovery rate is 42 percent; however, 9.6 mgd out of 24.1 mgd is 39.8 percent.)[105] Under normal conditions, the eight active slant wells would draw approximately 3 mgd,[106] but in

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[97] *Id.*, at pp. 3-15-16; 3-48.
[98] *Id.*, at p. 3-48.
[99] R. Sobczynski Comments, pp. 7-8 (discussing the possible location of the submersible pump).
[100] NOAA EA, 2014, *supra*, at p. 39.
[101] DEIR/EIS, at p. 3-18.
[102] *Id.*, at pp. 3-15; 3-18; 4.12-52.
[103] *Id.*, at p. 3-57.
[104] *Id.*, at p. 3-56 (based on the proportion of 9.6 mgd out of 24.1 mgd).
[105] *Id.*
[106] *Id.*

this post-shutdown scenario, the eight wells would need to draw closer to 3.5 mgd. At a rate of 2,500 gpm, the eight slant wells could draw up to 3.6 mgd. Alternatively, all ten slant wells could be activated to draw approximately 2.8 mgd. Yet, none of this information regarding the water flow rate is adequately explained. In describing a shutdown situation, the DEIR/EIS only concerns itself with the RO modules stating:

> After a shutdown, CalAm might operate the plant with all RO modules in service (at the plant's maximum production capacity of 11.2 mgd) to catch up on production; however, the total annual production would not exceed 9.6 mgd.[107]

CURE-6 cont.

Dr. Sobczynski explains in his comment letter that the submersible pump will impact the vertical infiltration rate, which may result in an adverse impact to the environment.[108] In failing to disclose how the Project would "catch up on production,"[109] the DEIR/EIS leaves the public guessing as to how this would be achieved. As will be described in further detail below, the DEIR/EIS must consider these types of events in its impact analysis for the slant wells.

The NOAA EA also explained that the test well would feature a "packer device,"[110] which was used "to isolate one aquifer [either the Dune Sand or the 180-FTE] for testing and pumping."[111] As Dr. Sobczynski explains, this device alters the flow of water to the slant well intake, which can alter the vertical infiltration rate and thereby lead to environmental impacts.[112] Yet, the DEIR/EIS is silent as to whether this device would be utilized. The DEIR/EIS should inform the public and decision makers about whether this device would be installed, and if so, when it would be used.

CURE-7

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[107] *Id.*, at p. 3-57.
[108] R. Sobczynski Comments, at pp. 7-8.
[109] DEIR/EIS, at p. 3-57.
[110] NOAA EA, *supra*, at p. 39; *see also* Williams, D.E., 2011, Slant Well Desalination Feedwater Supply System and Method for Constructing Same, U.S. Patent 8,056,629 B2 *available at* https://www.google.com/patents/US8056629 (hereafter "Slant Well Patent") **Attachment G**; R. Sobczynski Comments, at pp. 14-16.
[111] NOAA EA, *supra*, at p. 39.
[112] R. Sobczynski Comments, at pp. 14-16.

An adequate description of the design of the slant wells is important because, without it, the DEIR/EIS contains no discussion about slant wells' biofouling or corroding over time. Despite analysis pertaining to:

- corrosion at the MRWPCA outfall or diffusor[113];
- corrosion in other Project components[114]; and
- fouling at the RO membranes due to "[t]he accumulation of salts or scaling (from to [*sic*] microbial contamination, turbidity, and other contaminants such as iron and manganese),"[115]

the DEIR/EIS leaves out long term degradation concerns regarding the slant wells. Even Dr. Williams (the slant well patent holder)[116] points out in his article about slant well technology, that the slant wells will experience biofouling and corrosion.[117] Dr. Williams writes: CURE-8

> The Monterey test slant well has an 18 in. pump house casing which can accommodate placement of large development pumps with capacities over 3,000 gpm. Properly developed wells constructed using corrosion resistant materials such as 2507 Super Duplex Stainless Steel minimize well deterioration due to corrosion and biofouling. As such, these design improvements result in less frequent well rehabilitation with intervals estimated at between 3–5 yrs.[118]

Though the DEIR/EIS does not provide the technical specifications of the slant well, the Request for Proposals call for the use of 2507 Super Duplex Stainless

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[113] DEIR/EIS, at p. 4.13-13.
[114] *Id.*, at p. 4.2-23 (Table 4.2-4).
[115] *Id.*, at p. 3-25.
[116] *See* Slant Well Patent, 2011, *supra.*
[117] Dennis Edgar Williams, President, Geoscience Support Services, Inc., USA, Yield And Sustainability of Large Scale Slant Well Feedwater Supplies For Ocean Water Desalination Plants, The International Desalination Association World Congress On Desalination And Water Reuse 2015/San Diego, CA, USA Ref: Idawc15_Williams_51564 Http://201.199.127.109/Textos/Desalinizacion/Tomas%20de%20agua/Slant%20wells%202015.Pdf, at p.4, (hereafter "Williams, Yield, 2015"), **Attachment H** .
[118] *Id.* at p. 4.

Steel,[119] assuming, for the same reason described above, that it minimizes deterioration due to corrosion and biofouling.[120] By not discussing the slant wells' degradation (even while admitting that certain materials would need to be used to minimize biofouling and corrosion), the DEIR/EIS fails as an information disclosure document because it leaves out information that is necessary for evaluating and reviewing an adverse environmental impact from the Project.

The courts may not look for "perfection" but would expect "adequacy, completeness, and a good faith effort at full disclosure,"[121] which has not occurred here. Incomplete information in an environmental review document will skew the environmental consequences analysis and prevent informed public input. The information described above about Project decommissioning, operating life, and design must be included in the DEIR/EIS because each component is necessary to inform the public and decision makers about the Project's potentially significant environmental impacts. By failing to provide an adequate and complete project description, the DEIR/EIS violates NEPA and CEQA.

CURE-8 cont.

IV. THE DEIR/EIS FAILS TO PROVIDE AN ADEQUATE DESCRIPTION OF THE ENVIRONMENTAL SETTING

The DEIR/EIS employs an incomplete baseline, thereby skewing the impact analysis. An accurate description of the environmental setting is important because it establishes the baseline physical conditions against which a lead agency can determine whether an impact is significant. The failure to adequately describe the existing setting contravenes the fundamental purpose of the environmental review process, which is to determine whether there is a potentially substantial, adverse change compared to the existing setting.

CURE-9

According to NEPA, an environmental review document must "succinctly describe the environment of the area(s) to be affected or created by the alternatives

[119] Monterey Peninsula Water Supply Project: Subsurface Source Water Slant Wells Design Documents, 2015, pdf. p. 7, *available at* https://www.dropbox.com/s/xs6tdmtg6qvk0fc/draft%20Source%20Water%20Slant%20Well%20supplemental%20conditions%20and%20tech%20specs%20and%20drawings.pdf?dl=0 (hereafter "MPWSP, Well Design, 2015"), **Attachment I-1**.

[120] Williams, Yield, 2015, *supra*, at p.4.

[121] CEQA Guidelines, § 15151.

under consideration."[122] Without a description of the areas to be affected by a proposal, the potentially significant effects resulting from a proposal cannot be determined.[123] Indeed, "without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment and, consequently, no way to comply with NEPA."[124] Moreover, adequate and accurate compilation of relevant data and information is critical in establishing whether the project would have a significant impact, while also allowing for public scrutiny and public participating in the decision-making process.[125]

CEQA requires the lead agency to include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time environmental review commences.[126] The EIR must also describe the existing environmental setting in sufficient detail to enable a proper analysis of project impacts. "The adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project."[127] "A legally adequate EIR . . . must contain sufficient detail to help ensure the integrity of the process of decision-making by precluding stubborn problems or serious criticism from being swept under the rug."[128] Furthermore, special emphasis should be placed on environmental resources that are rare or unique to that region and would be affected by the project.[129]

The description of the environmental setting in the DEIR/EIS is inadequate because it omits highly relevant information regarding existing water quality and biological and marine resources that may be significantly impacted by the Project.

CURE-9 cont.

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[122] 40 C.F.R. § 1502.15.
[123] *Half Moon Bay Fishermans' Marketing Ass'n v. Carlucci* (9th Cir.1988), 857 F.2d 505, 510.
[124] *Id.*; *see also Am. Rivers v. Fed. Energy Regulatory Comm'n* (9th Cir.1999) 201 F.3d 1186, 1195, n. 15.
[125] *Northern Plains Resource Council, Inc. v. Surface Transp. Bd.* (9th Cir. 2011) 668 F.3d 1067, 1083-1085 (discussing lack of data in evaluating and understanding impact on species before construction).
[126] CEQA Guidelines, § 15125, subd. (a); *see also Communities For A Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 321.
[127] CEQA Guidelines, § 15024 subd. (a).
[128] *Kings County Farm Bureau v. City of Handford* (1990) 221 Cal.App.3d 692, 733.
[129] CEQA Guidelines, § 15125.

The CPUC and MBNMS are required to gather the relevant data and provide an adequate description of the existing environmental setting in a revised DEIR/EIS. CURE-9 cont.

A. The DEIR/EIS Fails to Set Forth an Adequate Environmental Setting for Ocean Water Quality

In order to adequately determine the impacts of discharging brine, the DEIR/EIS must provide the ionic composition of the ocean water. Ocean water salts include much more than sodium and chloride ions, ex. Ba, Ca, K, Sr, Mg.[130]

This Project must disclose the ionic composition of the ocean water due to the common ion effect.[131] The common ion effect occurs when, by increasing the concentration of one ion, *i.e.*, chloride, another ion becomes more soluble or more insoluble.[132] The interactions among the ions in ocean water are complex and failing to disclose the ionic composition deprives the public from knowing if certain compounds will precipitate out. For this reason, only taking aqueous samples without taking seafloor samples to determine compliance with the Ocean Plan may not suffice as some ions may precipitate out.[133] The Ocean Plan is not site-specific and the ionic composition in Monterey Bay must be disclosed to determine if there may be an impact due to the high increase of chloride ions being discharged.[134] CURE-10

B. The DEIR/EIS Fails to Set Forth an Adequate Environmental Setting for Marine Resources

The CPUC and MBNMS failed to conduct the requisite due diligence to investigate and disclose in the DEIR/EIS the physico-chemical character of ocean CURE-11

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[130] State Water Resources Control Board, Appendix I Responses to the External Peer Review of the Proposed Desalination Amendment, *available at* http://www.waterboards.ca.gov/water_issues/programs/ocean/desalination/docs/amendment/150320_appendix_i.pdf, at pp. "I"-29-30 (responding to a comment by Dr. Lisa A. Levin, one of the external peer reviewers) (hereafter "SWRCB, Appx. I"), **Attachment J-2**.

[131] Chemistry: The Central Science, 12th Ed., pp. 703-704, 726-731, **Attachment K-1**; General Chemistry: Principles & Modern Applications, 9th Ed., p. 751 (showing that with the addition of iodide ion to an aqueous solution containing lead and iodide, the equilibrium shifts to form more lead iodide (solid)), **Attachment K-2.**

[132] *Id.*

[133] DEIR/EIS, at p. 4,3-98; *see also id.* at Appendix D-3; *id.* at p. 4.3-104.

[134] SWRCB, Appx. I, *supra*, at p. I-20.

water and sediment in the Sanctuary. As Dr. Sobczynski explains in his comment letter, the DEIR/EIS does not provide critical information about the marine setting, which is important for an adequate impact analysis.[135] Without an adequate environmental setting, the lead agencies' finding that there would be less than significant impacts for marine resources is inaccurate.

1. DEIR/EIS Fails to Provide an Adequate Environmental Setting Due to Inconsistency Regarding Clay, and Lack of Data on Organic Matter

The DEIR/EIS provides inconsistent information about the existence of clay in the subsurface in the specific area of the slant wells.[136] On the one hand, the DEIR/EIS states that there is little to no silt, clay, and organic materials in the subsurface that would impede infiltration.[137] But, on the other hand, the DEIR/EIS states that, during slant well construction, clay and silt would be produced from the subsurface.[138] In examining the lithological bore logs from the test slant well, Dr. Sobczynski highlights that there are clay layers, which the slant well transects.[139] In failing to fully acknowledge the existence of clay in the subsurface, the DEIR/EIS failed to provide critical information about the existing subsurface environment.

CURE-11 cont.

As Dr. Sobczynski explains in his comments, even small amounts of clay will result in colloid buildup when microorganisms pass through the material.[140] The DEIR/EIS fails as an information disclosure document by providing inconsistent and unclear statements about the presence of clay in the subsurface, in the area where the slant wells are located, leading to potential colloidal buildup.[141] This potentially significant impact is discussed in further detail below.

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[135] R. Sobczynski Comments, at p. 2, *passim*.
[136] DEIR/EIS, at p. 4.2-67; *see also id.*, at pp. 27-29.
[137] DEIR/EIS, at p. 4.2-67.
[138] *Id.*
[139] R. Sobczynski Comments, at p. 29; Monterey Peninsula Water Supply Project: Subsurface Source Water Slant Wells Design Documents, 2015, *supra,* at Appendix A *available at* http://media.wix.com/ugd/28b094_d40d9b99079e40a687789b86742c997b.pdf (Boring Logs), **Attachment I-1**.
[140] R. Sobczynski Comments, at pp. 27-28.
[141] *Id.*, at pp. 27-29; *see also* DEIR/EIS, at p. 4.2-67 ("Clayey soils are potentially corrosive.").

With respect to organic materials, the DEIR/EIS groups the existence of organic materials, or rather the lack thereof, with the existence of clay and silt.[142] Yet, as described above, Dr. Williams (the slant well patent holder) and Geosciences (Dr. Williams' company) anticipate biofouling to occur, which is why they call for the special construction materials (Super Duplex 2507) to minimize corrosion and biofouling for the slant well.[143]

The DEIR/EIS's unexplained silence on this issue of slant well biofouling is also evident in its minimal discussion about harmful algal blooms. The DEIR/EIS states that "Hazardous Algal Blooms would not be a reason for the [slant] wells to stop operating. Subsurface intakes are not affected by algal blooms."[144] Algae is organic matter and the location, quantity, intensity, and potential toxicity of algal blooms (including the extent of the dead algae's ultimate settling on the sea floor) should be adequately disclosed, particularly because the DEIR/EIS claims subsurface intakes would not be affected by algal blooms.[145] The DEIR/EIS must explain how this can be so. As is, the DEIR/EIS does not provide any evidence to reconcile the statement that organic matter would not impact slant well operations but that biofouling may occur at the slant well and its effects should be minimized through the use of Super Duplex 2507 stainless steel.[146]

CURE-11 cont.

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[142] DEIR/EIS, at p. 4.2-67.
[143] Williams, Yield, 2015, *supra*, at p. 4.
[144] DEIR/EIS, p. 4.5-6; *id.,* at p. 3-57, fn. 14.
[145] *See* Harmful Algal Blooms, NOAA, *available at* https://coastalscience.noaa.gov/research/habs/default, **Attachment L-1**; What is a Harmful Algal Bloom, NOAA, *available at* http://www.noaa.gov/what-is-harmful-algal-bloom, **Attachment L-2**; Ocean Acidification Promotes Disruptive and Harmful Algal Blooms on Our Coasts, NOAA, *available at* https://coastalscience.noaa.gov/news/climate/ocean-acidification-promotes-disruptive-and-harmful-algal-blooms-on-our-coasts/ (discussing that nutrient loading and acidification promote growth and increased toxicity of the red tide algal species *Alexandrium fundyense*), **Attachment L-3**; Impacts of Climate Change on the Occurrence of Harmful Algal Bolooms, U.S. EPA: Office of Water, *available at* https://www.epa.gov/sites/production/files/documents/climatehabs.pdf ("[acidification] can change the competitive relationships between HABs and other algae, and can also change the ability of zooplankton to control HABs through their grazing activity"), **Attachment L-4**; Hutchins, D., Toxic Algal Blooms in a Changing Coastal Ocean, Univ. of Southern California, *available at* https://dornsife.usc.edu/assets/sites/142/docs/Toxic_Algal_Blooms_in_a_Changing_Environment_-_Hutchins.pdf ("Domoic acid production increases dramatically at lower pH (higher CO2), especially during nutrient-limited growth"), **Attachment L-5.**
[146] *See* Williams, Yield, 2015, *supra*, at p. 4.

By failing to disclose the existing amount of dissolved organic matter, sedimentary organic matter, and microorganisms in the subsurface,[147] the DEIR/EIS fails to establish an adequate baseline. The DEIR/EIS's description that there is "little to no" organic material in the subsurface is not sufficiently detailed to enable an analysis of buildup, biofouling and algal blooms.[148] The DEIR/EIS's vague statements regarding existing subsurface material and organic matter conflict with the requirements of CEQA and NEPA because, without an adequate description of the existing setting, there is simply no way to determine what effect a project will have on the environment. This inhibits the decision makers and public from being able to determine if the Project will have significant impacts.

CURE-11 cont.

The DEIR/EIS must be revised and recirculated to adequately inform the public about the presence and extent of clay, and of organic matter, including the quantity and intensity of algal blooms.

C. The DEIR/EIS Fails to Set Forth an Adequate Environmental Setting for Biological Resources

CEQA requires agencies to place special emphasis on environmental resources that are rare or unique to a region.[149] According to independent expert biologist Renee Owens, the DEIR/EIS fails to acknowledge the high degree of importance of the Project area to conserving marine and terrestrial flora and fauna biodiversity.[150] As Ms. Owens explains, Monterey County has some of the most diverse flora in California.[151] It is a "hot spot" due in part to its high endemism of species, and it has been described as one of the most essential coastal regions in the world in terms of plant and wildlife biodiversity conservation.[152]

CURE-12

Both federal and state metrics indicate the biodiversity value of the Project area. The U.S. Fish and Wildlife Service reports that there are 35 listed threatened or endangered species within, or that may be affected by projects in, the Project

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[147] DEIR/EIS, at p. 4.2-67.
[148] *Id.*
[149] CEQA Guidelines, § 15125
[150] Owens Comments, at pp. 3-4.
[151] *Id.*
[152] *Id.*

area.[153] The California Natural Diversity Database ("CNDDB") denotes within the Project area quads 17 Federal Endangered Species Act ("ESA") listed species, 10 California Endangered Species Act ("CESA") listed species, and 24 Species of Special Concern.[154] Due to the overall biological importance of the terrestrial habitats and species included in the Project footprint and buffer zone, the DEIR/EIS must emphasize the importance and resultant fragility of the ecosystems, habits, and sensitive species populations in describing the environmental setting.[155] The DEIR/EIS must analyze the Project's biological impacts, mitigation measures, and cumulative impacts with respect to an accurate environmental setting, which should emphasize the Project area's high degree of biological importance.

CURE-12 cont.

1. Sensitive species highlighted in the City of Marina's Local Coastal Land Use Plan are not analyzed in the DEIR/EIS

Not only does the DEIR/EIS fail to provide an adequate environmental setting by minimally discussing the biological importance of the area, but the DEIR/EIS also fails to provide an adequate and accurate list of species in the area. Specifically, the DEIR/EIS fails to consider sensitive species highlighted in the City of Marina's Local Coastal Land Use Plan ("LCLUP"), such as the globose dune beetle (*Coelus globosus*), Salinas Kangaroo Rat (*Dipodomys heermanni goldmani*), seaside painted cup (*Castilleja latifolia ssp. Latifolia*), and Eastwood's Ericameria (*Ericameria fasciculate*).[156] These species are present in the region and the DEIR/EIS fails to explain why it did not include an analysis of impacts to these species.[157] As Ms. Owens explains, the DEIR/EIS must include these species in the environmental setting and evaluate the potential impacts to these species and their habitat,[158] as required by NEPA and CEQA.[159]

CURE-13

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[153] *Id.*, at p. 4.
[154] *Id.*
[155] *Id.*
[156] *Id.*, at pp. 4-9.
[157] *Id.*
[158] *Id.*, at pp. 8-9.
[159] *See Northern Plains Resource Council, Inc. v. Surface Transp. Bd.* (9th Cir. 2011) 668 F.3d 1067, 1085-1086 (finding that the agency's inability to conduct on-the-ground surveys as part of the EIS process, and instead relying on outdated aerial surveys, violated NEPA's requirement that the agency takes a "hard look" at the potential environmental consequences.)

2. The DEIR/EIS Fails to Adequately Survey Terrestrial Sensitive Species

For this Project's 2015 DEIR, Ms. Owens provided comments that protocol surveys should have been included.[160] Although the DEIR/EIS appears to acknowledge this need to provide project-level, protocol or focused surveys, the CPUC and MBNMS failed to obtain these adequate surveys.[161]

Instead, the DEIR/EIS relies largely on databases and outdated reports, rather than formal scientific observations made on the ground by permitted biologists who specialize in identifying species for which protocol surveys are required.[162] Furthermore, the DEIR/EIS's habitat assessment provides anecdotal observations or inferences from habitat onsite to make protected species status determinations.[163] As Ms. Owens explains, the CPUC and MBNMS must obtain results from protocol surveys to ensure specificity and accuracy in the DEIR/EIS for this Project, because many species may not actually be reported on the CNDDB or on the California Native Plant Society's Inventory of Rare and Endangered Species.[164] The CPUC and MBNMS must obtain site-specific, protocol level surveys in order to accurately describe species in the existing setting in order to analyze the Project's impacts on those species in a revised and recirculated DEIR/EIS.[165] CURE-14

Ms. Owens also explains that the DEIR/EIS still fails to provide a thorough, up-to-date, written biological report that describes in detail the results of project-wide, or facility-wide focused or protocol level surveys of special status plant or animal species.[166] Instead, the DEIR/EIS provides an impact analysis that is based on special-status species observations available to Environmental Science Associates ("ESA") as of June 20, 2016, and other documents from 2010 to 2014.[167] However, the 2016 ESA document only includes GIS shape files and does not

[160] *See* Owens Comments, at pp. 9-16; *see also* Owens, R. Comments on Draft Environmental Impact Report for MPWSP (2015), at p. 5, **Attachment M.**
[161] Owens Comments, at pp. 10-11.
[162] *Id*, at pp. 11-13.
[163] *Id.*, at p. 11.
[164] *Id.*
[165] *Id.*, at pp. 11-13.
[166] *Id.*, at p. 12.
[167] *Id.*, at pp. 12-13.

include a written analysis about the biological setting.[168] This haphazard compilation of GIS files deprives the public of the opportunity to participate in the decision-making process.[169]

"Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA."[170] The same is true for CEQA, which states that the purpose of the "EIR is to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action."[171] Here, as a result of the failure to provide data from surveys and an evaluation in a biological report, the information the DEIR/EIS provides is unverifiable and impossible to review for accuracy.[172] Ms. Owens summarizes this lack of data:

> Upon review of the entire discussion of terrestrial biological resources in the DEIR/S, it is apparent that every mention of focused, protocol, and most reconnaissance surveys for sensitive flora (not just habitat types) and fauna conducted for this Report hinge mostly upon data either not cited at all, vaguely alluded to by mentioning reports that covered only small sections of this Project footprint - some such report being 10 – 11 years old – and the citation of AECOM shape files, "AECOM 2016". In fact, "AECOM 2016" is cited at least 50 times throughout the document. Yet no report of data on individual species accounts are provided. For such a large, well-funded, and public Project that has had ample opportunity to contract biological specialists to conduct protocol level surveys for threatened, endangered, and Special Concern species, this is an overt oversight.[173]

CURE-14 cont.

To comply with NEPA and CEQA, the DEIR/EIS must adequately survey, and subsequently analyze the potential impact of the Project on, sensitive terrestrial species. As proposed, the DEIR/EIS fails to do so.

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[168] *Id.*
[169] *Id.*; *see Northern Plains Resource Council, Inc.*, *supra*, 668 F.3d 1067, 1085.
[170] 40 C.F.R. § 1500.1.
[171] CEQA Guidelines, § 15003.
[172] Owens Comments, at p. 12.
[173] *Id.*, at p. 13

3. The DEIR/EIS Biological Resources Maps are Inadequate for Determining Existing Conditions Regarding Special Status Species

The DEIR/EIS provides unclear maps to indicate the occurrences of animals and plants species. As Ms. Owens explains, the DEIR/EIS should provide maps that clearly indicate which, and how many species, occur in a given location in order to enable review of existing site conditions.[174] The DEIR/EIS's failure to include clear maps is indicative of a larger problem — the DEIR/EIS lacks focused and protocol level surveys of species in the Project area that are necessary to adequately inform the public and decision makers about the existing environment.[175] CURE-15

4. The DEIR/EIS Fails to Consider the Western Snowy Plover Background and Relative Status for the Project Region

Ms. Owens provides extensive background about the western snowy plover, its status relative to the Project region, and threats and types of impacts to the species.[176] Given the severity of impacts that this Project may pose to the western snowy plover,[177] the DEIR/EIS must provide detailed information about the species' status in the Project area.[178] Currently, the DEIR/EIS does not provide enough information to accurately assess the impact of the Project's activities on the area's snowy plover population, and thereby to the regional population as a whole.[179] CURE-16

D. The DEIR/EIS Fails to Set Forth an Adequate Environmental Setting for the Socioeconomics and Environmental Justice Impacts in the Area CURE-17

The DEIR/EIS should incorporate the Office of Environmental Health Hazard Assessment's CalEnviroScreen 3.0 tool to inform decision makers and the public of

[174] *Id.*, at p. 16.
[175] *Id.*
[176] *Id.*, at pp. 16-20
[177] *Id.*
[178] CEQA Guidelines, § 15024 subd. (a) ("The adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project.")
[179] Owens Comments, at p. 19.

the environmental burdens that the communities near the Project will face.[180] Since this information is available, and NEPA requires a socioeconomic and environmental justice analysis, the tool should be utilized to better describe the Project's setting.[181] By incorporating CalEnviroScreen 3.0, the DEIR/EIS can disclose relevant information needed to identify pollution burdens and vulnerabilities affecting communities near the Project. For example, the tool provides information such as potential burdens to communities posed by contaminants in drinking water, and potential social stressors relating to unemployment.[182] For a complete environmental setting, the DEIR/EIS should incorporate the CalEnviroScreen 3.0 information.

CURE-17 cont.

V. THE DEIR/EIS FAILS TO ADEQUATELY ANALYZE AND MITIGATE THE PROJECT'S POTENTIALLY SIGNIFICANT IMPACTS

NEPA requires a full and fair discussion of every significant impact, as well as disclosure to the decision makers and the public of reasonable alternatives, which would avoid or minimize adverse impacts.[183] The impacts analysis must include a discussion of the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented.[184] The discussion of impacts must include both "direct and indirect effects (secondary impacts) of a proposed project."[185] The agency need not speculate about all conceivable impacts, but it must evaluate the reasonably foreseeable significant effects of the proposed action.[186] In this context, reasonable foreseeability means that "the impact is sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision."[187]

CURE-18

[180] CalEnviroScreen 3.0 Report, CalEPA, *available at* https://oehha.ca.gov/media/downloads/calenviroscreen/report/ces3report.pdf, **Attachment N-1**; *see also id., available at* https://oehha.maps.arcgis.com/apps/webappviewer/index.html?id=4560cfbce7c745c299b2d0cbb07044f5 (Map), **Attachment N-2**.
[181] DEIR/EIS, at pp. 4.20-6, 4.20-22. (using U.S. Census Bureau data).
[182] *See generally,* CalEnviroScreen 3.0 Report, *supra*.
[183] 40 C.F.R. § 1502.
[184] *Id.*, at § 1502.16.
[185] *Id.*; *see also Sierra Club v. Marsh* (1st Cir. 1992) 976 F.2d 763, 767.
[186] *Sierra Club v. Marsh*, *supra*, 976 F.2d at p. 767.
[187] *Ibid*; *see also Dubois v. Dept. of Agriculture* (1st Cir. 1996) 102 F.3d 1273, 1286.

NEPA also requires a discussion regarding possible conflicts between the proposed action and the objectives of Federal, regional, State, and local land use plans, policies and controls for the area concerned.[188]

NEPA requires that agencies take a "hard look" at the environmental consequences of a proposed action.[189] A hard look is defined as a "reasoned analysis containing quantitative or detailed qualitative information."[190] The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of the impact caused by the proposed action and the alternatives.[191] An EIS must provide a "full and fair discussion of significant environmental impacts and shall inform the decision-makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment."[192] "General statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided."[193] "[L]ack of knowledge does not excuse the preparation of an EIS; rather it requires [the agency] to do the necessary work to obtain it."[194]

CURE-18 cont.

As described above in the legal background, CEQA has two basic purposes, neither of which the DEIR/EIS satisfies. First, CEQA is designed to inform decision-makers and the public about the potential, significant environmental effects of a project.[195] CEQA requires that an agency analyze potentially significant environmental impacts in an EIR.[196] The EIR should not rely on scientifically outdated information to assess the significance of impacts, and should result from

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[188] 40 C.F.R. § 1502.16.
[189] *Robertson v. Methow Valley Citizens Council* (1989) 490 U.S. 332, 350; *Dubois, supra*, 102 F.3d at p. 1284; *see also South Fork Band Council Of Western Shoshone of Nevada v. U.S. Dept. of Interior* (9th Cir. 2009) 588 F.3d 718, 727 ["NEPA requires that a hard look be taken, if possible, *before* the environmentally harmful actions are put into effect"].
[190] Bureau of Land Management, NEPA Handbook, at p. 55 (Jan. 2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.24487.File.dat/h1790-1-2008-1.pdf (hereinafter "NEPA Handbook").
[191] *Id.*, at p. 55; *see also* 40 C.F.R. § 1502.1
[192] 40 CFR § 1502.1.
[193] *Neighbors of Cuddy Mountain v. U.S. Forest Service* (9th Cir. 1998) 137 F.3d 1372, 1380.
[194] *National Parks & Conservation Association v. Babbitt* (9th Cir. 2001) 241 F.3d 722, 733.
[195] CEQA Guidelines, § 15002, subd. (a)(1).
[196] *See* Pub. Resources Code § 21000; CEQA Guidelines, § 15002.

"extensive research and information gathering," including consultation with state and federal agencies, local officials, and the interested public.[197] To be adequate, the EIR should evidence the lead agency's good faith effort at full disclosure.[198] Its purpose is to inform the public and responsible officials of the environmental consequences of their decisions *before* they are made. For this reason, the EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return."[199] Thus, the EIR "protects not only the environment but also informed self-government."[200]

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures.[201] The EIR serves to provide public agencies, and the public in general, with information about the effect that a proposed project is likely to have on the environment and to "identify ways that environmental damage can be avoided or significantly reduced."[202] If a project has a significant effect on the environment, the agency may approve the project only upon a finding that it has "eliminated or substantially lessened all significant effects on the environment where feasible," and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns" specified in CEQA section 21081.[203]

CURE-18 cont.

The DEIR/EIS fails to satisfy the basic purposes of CEQA. Specifically, the DEIR/EIS fails to reflect a good faith effort at public disclosure by failing to adequately analyze and mitigate the Project's potentially significant impacts to ocean water quality, marine resources, biological resources, air quality, public health, and vibration issues, and others. The DEIR/EIS also fails to propose measures that could reduce these Project impacts to a less than significant level. In sum, the DEIR/EIS fails to inform decision-makers and the public of the Project's

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[197] *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm.* (2001) 91 Cal. App.4th 1344, 1367; *Schaeffer Land Trust v. San Jose City Council* (1989) 215 Cal.App.3d 612, 620.
[198] CEQA Guidelines, § 15151; *see also Laurel Heights I* (1998) 47 Cal.3d 376, 406.
[199] *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.
[200] *Laurel Heights I* (1998), *supra*, at p. 392.
[201] CEQA Guidelines, § 15002(a)(2)-(3); *Berkeley Keep Jets Over the Bay Comm., supra*, 91 Cal.App.4th at p. 1354.
[202] CEQA Guidelines, § 15002, subd. (a)(2).
[203] *Id.*, at § 15092, subd. (b)(2)(A)-(B).

potentially significant environmental effects and to reduce damage to the environment *before* they occur. CURE-18 cont.

A. The DEIR/EIS Fails to Adequately Analyze and Mitigate Potentially Significant Impacts to Ocean Water Quality

The Ocean Plan's Desalination Amendment provides regulations for desalination operations.[204] Scientists reviewed and commented on the Desalination Amendment.[205] The State Water Resourced Control Board provided responses to the external, scientific peer review.[206] The DEIR/EIS states that it will comply with the California Ocean Plan: Desalination Amendment.[207] With respect to discharges the DEIR/EIS states:

> Typically, constituent concentrations are permitted to exceed water quality objectives within the [Zone of Initial Dilution ("ZID")], which is limited in size. Thus, in the case of MPWSP, the Ocean Plan water quality objectives would apply to the edge of the ZID (Flow Science, Inc., 2014 in Appendix D2). Dilution occurring within the ZID from an operational discharge is conservatively calculated as the minimum probable initial dilution (Dm). The water quality objectives established in the Ocean Plan are considered in the context of the calculated Dm to derive the NPDES effluent limits for a wastewater discharge in-pipe (i.e., prior to ocean dilution).[208]

CURE-19

Although the Ocean Plan may permit constituents (defined as bacterial, physical, chemical, biological and chemical constituents) to exceed water quality objectives at the point of discharge, the Ocean Plan provides general regulations and does not provide site-specific impacts analyses for this Project.[209] For example, Dr. Lisa A. Levin, in the external peer review for the Desalination Amendment,

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[204] State Water Resources Control Board (2015) Water Quality Control Plan: Ocean Waters of California, *available at* http://www.swrcb.ca.gov/water_issues/programs/ocean/docs/cop2015.pdf.
[205] SWRCB, Appx. I, *supra*.
[206] *Id.*
[207] DEIR/EIS, at pp. 4.3-27-28.
[208] *Id.*
[209] SWRCB, Appx. I, *supra*.

stated that "subsurface intake options need to be evaluated in light of cumulative impacts and habitat status." In response, the Water Board stated that:

> Cumulative impacts will be evaluated on a project-specific basis taking into consideration site-specific considerations during the CEQA process for each desalination facility.[210]

Thus, the DEIR/EIS must comply with the CEQA and NEPA and cannot rely on compliance with the Ocean Plan as a substitute for a site-specific impact analysis.[211]

Despite providing various modeling, the DEIR/EIS lacks evidence to support the statement that excessive constituents *within* the ZID would not result in a potentially significant impact. In fact, the DEIR/EIS seems to suggest the opposite that there would be a significant impact at the point of discharge, but because the Ocean Plan allows for water quality objectives to be exceeded at the point of discharge, the Project's impact would be less than significant.[212] Thus, all the DEIR/EIS commits to is that, in the case of the MPWSP, the Ocean Plan water quality objectives would apply to the edge of the ZID.[213] The DEIR/EIS completely omits any impact analysis and any identification of potential mitigation for the potential significant impact at the point of discharge.

CURE-19 cont.

The DEIR/EIS cannot "completely ignore[]" a potential impact.[214] For the purposes of NEPA and CEQA, the DEIR/EIS fails to adequately analyze and mitigate potentially significant impacts to ocean water quality *within* the ZID. The CPUC and MBNMS cannot rely on compliance with the Ocean Plan to avoid analyzing and mitigating significant impacts within the ZID.

As the DEIR/EIS points out, "[o]perational discharges of the MPWSP under certain scenarios may exceed Ocean Plan water quality objective thresholds.

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[210] *Id.*, at p. I-20.
[211] *See also* Guidelines for Desalination Plants in the Monterey Bay National Marine Sanctuary, NOAA (May 2010), *available at* http://montereybay.noaa.gov/resourcepro/resmanissues/pdf/050610desal.pdf, **Attachment O**.
[212] *See* DEIR/EIS, at pp. 4.3-27-28.
[213] *Id.*, at p. 4.3-28.
[214] *Citizens to Preserve the Ojai v. County of Ventura* (1985) 176 Cal.App.3d 421, 430.

Exceedances of these thresholds would be potentially inconsistent with Coastal Act policies."[215] However, the operational discharge scenarios all provide estimated concentrations at the *edge* of the ZID for Ocean Plan constituents.[216] The common-ion effect, described above, informs us that ions might become more or less soluble based on the influx of chloride ion at the point of discharge.[217] It does not appear from the DEIR/EIS that the various discharge scenarios considered an accumulation of constituents at the sea floor that had precipitated out at the point of discharge.[218] Certainly, accumulated constituents on the seafloor that are hazardous to marine (and human life) would pose a potentially significant effect. By failing to consider impacts at the point of discharge, and the complex chemical interactions due to the high level of chloride ions that would be discharged through the outfall, the DEIR/EIS fails to adequately analyze and mitigate potentially significant effects to ocean water quality.

CURE-19 cont.

Exacerbating matters regarding existing constituents, the DEIR/EIS proposes to add inert biodegradable additives for construction and cleaning, if needed.[219] CURE requested the Material Safety Data Sheets ("MSDS") for these chemicals and was informed that such documents were unavailable because "We [Environmental Science Associations] are not in possession of any MSDS(s). The exact products CalAm would use are unknown."[220] Even if those chemicals may be inert, that does not mean they may not have significant impacts. The DEIR/EIS lacks evidence to support its conclusions and must disclose this information in a revised and recirculated DEIR/EIS.

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[215] DEIR/EIS, at p. 4.3-24.
[216] *Id.*, at pp. 4.3-96-101 (Table 4.3-16).
[217] SWRCB, Appx. I, *supra.*
[218] DEIR/EIS, at p. 4.3-93 ("After compiling water quality data for the desalination brine and MRWPCA wastewater (described above), Trussell Tech (2016; Appendix D3) combined the data for the evaluated discharge scenarios.")
[219] 4.3-111.
[220] Letter from Eric Zigas to Linda Sobczynski (Feb. 13, 2017), **Attachment P**.

B. The DEIR/EIS Fails to Adequately Analyze and Mitigate Potentially Significant Impacts Related to Marine Resources

The DEIR/EIS fails to adequately analyze and mitigate potential significant impacts related to marine resources, particularly as those impacts are caused by the subsurface slant well technology.

1. Factors Influencing Vertical Infiltration Rates Are Not Adequately Analyzed

The DEIR/EIS does not include critical information, which will impact the vertical infiltration rate,[221] such as:

- the location of the submersible pump;[222]
- the sediment profile for the 19° test slant well and for 14° proposed slant wells;[223]
- the inflatable packers for the test slant well, and the possible packers in the proposed slant wells;[224] and
- the clogging in the seabed.[225]

CURE-20

According to independent expert physical chemist, Dr. Radoslaw Sobczynski, these factors will result in a higher vertical infiltration rate, which has not been adequately disclosed and may lead to a significant, undisclosed impact.[226] As Dr. Sobczynski provides in further detail in his letter, the vertical infiltration calculations were based on a calculation that Dr. Williams (the slant well patent holder) conducted based on site-specific information from the Doheny Desalination Plant's slant wells, and a calculation, which divided the amount of water (24.1 mgd) by the subsurface area above the slant wells (1,000,000 ft^2).[227] Because the CPUC and MBNMS considered these numbers to be sufficiently similar, it determined that

[221] R. Sobczynski Comments, at p. 7.
[222] *Id.*, at pp. 7-10.
[223] *Id.*, at pp. 10 -14.
[224] *Id.*, at pp. 14-16
[225] *Id.*, at pp. 16-17.
[226] *Id.*, at p. 17.
[227] *Id.*, at pp. 5-7.

this vertical infiltration range was adequate for purposes of impact analysis.[228] Dr. Sobczynski identifies a number of factors, which could change this vertical infiltration rate, and which have not been adequately disclosed in the DEIR/EIS.[229] The implication of failing to provide an accurate infiltration rate is that there may be a significant, undisclosed impact.[230]

CURE-20 cont.

a) Submersible Pump

Critically, the DEIR/EIS fails to provide information about the location of the submersible pump.[231] As Dr. Sobczynski explains in his comments, the submersible pump's location is critical in evaluating the intake's environmental impact.[232] Based on information gleaned from the DEIR/EIS, the slant well patent, and Dr. Williams' article about the Monterey test slant well, Dr. Sobczynski assumed that the submersible pump is located at a depth of approximately 60-70 feet.[233] The test slant well uses a telescoping design, meaning that the part of the well closest to the surface is progressively wider than it is at its lowest point.[234]

CURE-21

As Dr. Sobczynski describes in further details in his letter, the submersible pump will create a pressure gradient, which will draw most of the water in the area of the pump.[235] By drawing most of the water in a limited area directly above the pump, the vertical infiltration rate will be higher, an important fact that the DEIR/EIS failed to consider.[236]

b) Sediment Profile

Next, the slant well is constructed through the Older Dune Sand and Terrace Deposits.[237] The Older Dune Sand is described as having high permeability.[238] The

CURE-22

[228] *Id.*, at p. 7; *see also* DEIR/EIS, at p. 4.5-52.
[229] *Id.*, at pp. 17-23.
[230] *Id.*, at pp. 23-30.
[231] *Id.*, at pp. 7-10.
[232] *Id.*
[233] *Id.*, at p. 8.
[234] DEIR/EIS, at p. 3-48.
[235] R. Sobczynski Comments, at pp. 7-10 (Figures 2 and 3).
[236] DEIR/EIS, at p. 10.
[237] R. Sobczynski Comments, at pp. 10-14.
[238] DEIR/EIS, at p. 4.2-67.

DEIR/EIS views this as a positive characteristic stating, "[t]he high permeability of the dune sand would be suitable for the infiltration of water."[239] Notably, the DEIR/EIS does not make any statement about the permeability of the Terrace Deposits, yet this will impact the vertical infiltration rate. If water will flow more easily through the Older Dune Sand, then that portion of the well (approximately the upper third) will be more productive.[240] This will once again result in a higher infiltration rate because most of the water will flow through the Older Dune Sand into the upper third of the slant well.[241]

CURE-22 cont.

c) Inflatable Packers

Third, the test slant well had an inflatable packer feature.[242] This packer feature is also disclosed in Dr. Williams' slant well patent.[243] However, the DEIR/EIS is silent on whether the proposed slant wells would have this feature.

The packers may be on either, or both sides of the submersible pump.[244] The slant well operator may inflate either or both of these packers.[245] By inflating the lower packer, for example, any suction power from the pump would be lost and the lower portion of the slant well (below the submersible pump) would become inactive.[246] Without providing further information, it is unclear from the DEIR/EIS if the proposed slant wells would include this feature. If they do include the packers, then the DEIR/EIS should disclose when either or both packers would be inflated (*i.e.*, to deal with a clog, or for regular maintenance).

CURE-23

By concentrating the water's flow to the area directly above the submersible pump, the vertical infiltration rate might be higher.[247] However, because the DEIR/EIS is silent about the presence of the inflatable packers, even though they could increase the vertical infiltration rate, Dr. Sobczynski did not include the

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[239] *Id.*
[240] R. Sobczynski Comments, at p. 14.
[241] *Id.*
[242] *Id.*, at pp. 15-16.
[243] *Id.*, at p. 14.
[244] *Id.*
[245] *Id.*
[246] *Id.*, at p. 15.
[247] *Id.*, at p. 14.

packers' presence in his calculations to determine the vertical infiltration rate.[248] The CPUC and MBNMS must revise the DEIR/EIS to clarify whether and how the inflatable packers would be used and their effect on infiltration.

CURE-23 cont.

d) Clogging of the Seabed

Fourth, according to Dr. Sobczynski, there is a high likelihood that the slant wells' intake screens and seabed will clog over time.[249] In fact, the intake screens are specially designed to minimize biofouling and corrosion and thereby to reduce the need for more frequent cleaning.[250] Though the intake screens can be cleaned by lowering mechanical brushes and possibly adding inert chemicals, the seabed through which the water will be filtered cannot be cleaned in this way.[251]

Clogging was an issue at the Doheny wells at Dana Point where the test slant wells lost their efficiency from an original value of 95% in 2006 to 52% in 2012.[252] Dr. Williams stated that the reason why the Doheny wells failed is because of technical limitations.[253]

CURE-24

> "Due to the pump house casing limitation experienced at Dana Point and the inability to fully develop the well, the MPWSP test slant well included a larger diameter pump house casing. The Monterey test slant well has an 18 in. pump house casing which can accommodate placement of large development pumps with capacities over 3,000 gpm."[254]

The Monterey test slant well has allegedly not lost efficiency since beginning operations in 2015.[255] However, that is not to say clogging will not occur in the future for the test slant well and the proposed slant wells. The slant wells are

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[248] *Id.*, at p. 15.
[249] *Id.*, at pp. 16-17.
[250] Williams, Yield, 2015, *supra,* at p. 4.
[251] DEIR/EIS, at p. 3-57.
[252] R. Sobczynski Comments, at p. 16.
[253] Williams, Yield, 2015, *supra,* at p.4.
[254] *Id.*
[255] DEIR/EIS, at Appendix G2, p.5 ("By the end of September 2016, the test slant well had been operating continuously for 5 months and intermittently since April 2015.")

designed to draw brackish groundwater initially, but within 18 months[256] to 4 years[257] the slant wells should draw predominantly from ocean water that filters through the subsurface sediment (93% of source water).[258]

Assuming this is true, the buildup of sediment and organic matter traversing through the seabed will be at its highest when most of the source water will be coming from above the seafloor.[259] Additionally, an operational report for the Doheny wells stated that future wells must be carefully constructed so that the wells do not become immediately clogged.[260]

CURE-24 cont.

Yet, the DEIR/EIS does not disclose that there is a high likelihood that sediment and organic matter will build up in the subsurface, especially when after some time most of the source water will come from above the seafloor.[261] As Dr. Sobczynski points out, unless the mechanical cleaning process includes displacing the seabed above the intake, then the slant wells will likely become clogged over time.[262]

2. <u>The Recalculated Vertical Infiltration Rate is Higher than the Rate Provided</u>

CURE-25

Dr. Sobczynski recalculated the vertical infiltration rate.[263] He found that the infiltration rate was approximately ten times higher than what Dr. Williams calculated with respect to the Doheny wells and what the DEIR/EIS reported in its

[256] Final Summary Report for the Doheny Ocean Desalination Project Phase 3 Investigation: Extended Pumping and Pilot Plat Test Regional Watershed and Groundwater Modeling Full Scale Project Conceptual Assessment, January 2014. Municipal Water District of Orange County ("MWDOC"), at p.19, *available at* https://www.scwd.org/civica/filebank/blobdload.asp?BlobID=5592 ("MWDOC – Final Summary, 2014"), **Attachment Q.**
[257] DEIR/EIS, at Appendix G2, p. 5 ("Figure 3 shows that it could take up to four years for the slant well to be drawing 96% seawater . . .").
[258] DEIR/EIS, at Appendix G2, p. 3 ("The slant wells for the MPWSP are projected to pull 93 percent seawater from the Monterey Bay and 7 percent groundwater from the surrounding area when the MPWSP is operating (GeoScience 2014b)."); *see also* R. Sobczynski Comments, at p. 4.
[259] *See* R. Sobczynski Comments, at p. 26.
[260] *Id.*, at p. 17; *see also* MWDOC – Final Summary, 2014, *supra,* at p. 57.
[261] R. Sobczynski Comments, at p. 26.
[262] *Id.*, at p. 16.
[263] *Id.*, at pp. 17-23.

calculation dividing the area above the slant wells (one-million square feet) by the bulk flow of water (24.1 mgd).[264] Dr. Sobczynski found a vertical infiltration rate of 0.16 mm/sec.[265] Based on this new vertical infiltration rate, Dr. Sobczynski recalculated the ventilation parameter, which is important for determining whether microorganisms could be pulled into the seabed.[266] Dr. Sobczynski found that the infiltration rate will increase wave induced bottom stress by 10%, rather than the previously calculated 1%.[267] This increase was not adequately analyzed in the DEIR/EIS, because it was underestimated.[268] As a result, the DEIR/EIS failed to disclosed and evaluate significant impacts from the Project's higher infiltration rate. CURE-25 cont.

3. Accumulation of Biomatter Above the Slant Well is Not Adequately Analyzed and Mitigated

The DEIR/EIS fails to adequately analyze and mitigate potentially significant impacts related to marine resources as a result of the slant well.[269] Dr. Sobczynski describes the potential for the accumulation of biomatter above the slant wells.[270] The DEIR/EIS should account for how it will handle the sediment layer at the bottom of the seafloor. CURE-26

4. Impacts from Maintaining and Abandoning the Slant Well Have Not Been Adequately Analyzed and Mitigated

The DEIR/EIS fails to adequately analyze and mitigate potentially significant impacts related to maintaining[271] and abandoning the slant well materials in the ocean subsurface,[272] and to the wells' degradation over time. Whereas active slant wells would require maintenance every 5 years,[273] the DEIR/EIS does not mention CURE-27

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[264] *Id.*, at p. 19.
[265] *Id.*, at p. 20.
[266] *Id.*, at pp. 21-22.
[267] *Id.*, at p. 22.
[268] *Id.*
[269] *Id.*, at pp. 23-30.
[270] *Id.*, at p. 23.
[271] DEIR/EIS, at p. 3-57.
[272] *Id.*, at p. 4.2-72.
[273] *Id.*, at p. 3-57.

maintenance activities associated with the decommissioned, abandoned slant wells, which would likely foul and corrode for as long as they remain in the subsurface.[274] According to the abandonment plan, which does not consider removing abandoned slant wells, the wells would remain in the seabed in perpetuity, degrading over time.[275] By not analyzing this degradation over the time, particularly in the context of slant well abandonment, the DEIR/EIS fails to adequately analyze and mitigate potentially significant impacts from the whole Project.

CURE-27 cont.

Given Dr. Sobczynski's findings about accumulation of biomatter above the slant well,[276] the DEIR/EIS must also consider the impact of abandoning the slant wells and the resultant degradation arising from the wells' corrosion and biofouling, and the decomposing biomatter above the slant well.[277] The biomatter accumulation and subsequent decay can lead to a potentially significant impact (*i.e.*, toxic gases) that has not been adequately disclosed and mitigated.[278]

C. The DEIR/EIS Fails to Adequately Analyze and Mitigate Potentially Significant Cumulative Impacts Related to Marine Resources

CURE-28

In evaluating significance, NEPA requires consideration of whether the action is related to other actions with individually insignificant but cumulatively significant impacts.[279] The lead agency must make a finding of significance if it is "reasonable to anticipate a cumulatively significant impact on the environment."[280] The CEQ regulations further require that significance "cannot be avoided by terming an action temporary or by breaking it down into small component parts."[281]

An EIR is required to discuss the cumulative impacts of a project "when the project's incremental effect is cumulatively considerable."[282] An EIR is required to

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[274] Williams, Yield, 2015, *supra,* at p. 4.
[275] DEIR/EIS, at p. 4.2-72.
[276] R. Sobczynski Comments, at pp. 23-30.
[277] *Id.*
[278] *Id.*
[279] 40 C.F.R. § 1508.27.
[280] *Id.*
[281] *Id.*
[282] 14 C.C.R. § 15130(a).

discuss significant impacts that the proposed project will cause in the area that is affected by the project.[283] "This area cannot be so narrowly defined that it necessarily eliminates a portion of the affected environmental setting."[284]

The CEQA Guidelines specifically direct the lead agency to "define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used."[285] The courts have held that it is vitally important that an EIR avoid minimizing the cumulative impacts. Rather, it must reflect a conscientious effort to provide public agencies and the general public with adequate and relevant detailed information about them.[286] An EIR's cumulative impacts discussion "should be guided by the standards of practicality and reasonableness," but several elements are deemed "necessary to an adequate discussion of significant cumulative impacts" including "[a] list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency."[287]

Both the State Water Resources Control Board[288] and the MBNMS Desalination Guidelines establish subsurface intakes as the preferred technology for seawater intakes.[289] There are a number of desalination proposals for Monterey Bay and along the California Coast, which have considered or are evaluating the feasibility of subsurface intake systems.[290] Consequently, there may be a significant

CURE-28 cont.

[283] *Bakersfield Citizens*, 124 Cal.App.4th at p. 1216 (emphasis added); *see* 14 C.C.R § 15126.2(a).
[284] *Bakersfield Citizens*, 124 Cal.App.4th at p. 1216.
[285] *Id.*; 14 C.C.R § 15130(b)(3).
[286] Pub. Resources Code, § 21061; *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1984) 151 Cal.App.3d 61, 79; *see also Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 723.
[287] 14 C.C.R. § 15130(b); *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 928-29.
[288] Ocean Plan with Desalination Amendment, State Water Resources Control Board, p. 39, *available at* http://www.waterboards.ca.gov/water_issues/programs/ocean/docs/cop2015.pdf ("the regional water board in consultation with State Water Board staff shall require subsurface intakes unless it determines that subsurface intakes are not feasible . . ."). **Attachment J-1.**
[289] Guidelines for Desalination Plants in the Monterey Bay National Marine Sanctuary, NOAA, *supra,* at p. 6 ("Desalination project proponents should investigate the feasibility of using subsurface intakes as an alternative to traditional intake methods.").
[290] Resource Issues: Desalination, NOAA: MBNMS, *available at* http://montereybay.noaa.gov/resourcepro/resmanissues/desalination.html ("While only a few small-scale desalination facilities currently operate within the boundaries of the sanctuary, there has

cumulative impact from the subsurface slant wells due to bioaccumulation, as Dr. Sobczynski described.[291] Moreover, the Desalination Amendment uses the same Williams and Jenkins calculations, relied upon in this DEIR/EIS,[292] to demonstrate that there will be no impingement of organic matter on the seafloor.[293] Dr. Sobczynski demonstrates that these calculations may not be correct and that the vertical infiltration may be much higher.[294] Organic matter may become impinged and pulled through the sea floor.[295] During maintenance, or upon abandonment, the subsurface slant wells are deprived of dissolved oxygen that normally flows through the subsurface.[296] Multiple desalination plants with subsurface intakes — all of which draw organic matter through the subsurface — may lead to significant cumulative impacts, such as the ones Dr. Sobczynski described.

CURE-28 cont.

D. The DEIR/EIS Fails to Adequately Analyze and Mitigate Potentially Significant Impacts to Biological Resources

As described above, the DEIR/EIS fails to provide updated biological information in a meaningful way. Rather than provide an accurate analysis of the biological setting, the DEIR/EIS provides GIS shape files.[297] GIS shape files do not provide the level of detail necessary for thoroughly assessing what sensitive species are present throughout the project site, as a biological technical report (with focused and protocol surveys) would.[298] The DEIR/EIS's lack of focused and protocol surveys leads to an inability to accurately analyze the Project's impacts on biological

CURE-29

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recently been an increase in interest for both private and public desalination plants, with several new facilities being pursued in the Monterey Bay and in Cambria"), **Attachment R-1**; *see also* Desalination Map, *id.* (map), *available at* http://montereybay.noaa.gov/materials/mappages/desalinizationmap.html, **Attachment R-2**; Williams, Yield, 2015, *supra*, at p. 2.

[291] R. Sobczynski Comments, at pp. 23-30.

[292] DEIR/EIS, at p. 5.5-52-53.

[293] SWRCB, Appx. I, *supra,* at pp. I-19-20.

[294] R. Sobczynski Comments, at pp. 19-22.

[295] *Id.,* at p. 23, 27-30.

[296] *Id.,* at pp. 27-30.

[297] Owens Comments, at pp. 12-13.

[298] *Id.,* at p. 12.

resources.[299] Consequently, the DEIR/EIS fails to mitigate potentially significant impacts to biological resources.[300]

As Ms. Owens explains, an updated Biological Technical Report would provide real data from protocol surveys required for listed species, and details on how the surveys were conducted, so that others may determine if the methodology was done correctly.[301] Focused and protocol survey data are essential for conservation and mitigation analysis.[302] Not only are they important for an adequate CEQA review but also for section 7 and section 10 consultation under the federal ESA.[303] Since this Project may significantly impact ESA listed species, take is likely to occur.[304] The DEIR/EIS must require that qualified biologists conduct surveys not just at a habitat level, but also on an individual species level.[305] As is, the DEIR/EIS violates NEPA and CEQA by failing to adequately analyze and mitigate potentially significant impacts to biological resources.

CURE-29 cont.

1. Snowy Plover Impacts are Not Adequately Analyzed and Mitigated

Ms. Owens explains that the DEIR/EIS fails to adequately analyze and mitigation impacts to snowy plover critical habitat.[306] The snowy plover's critical habitat must be minimally disturbed.[307] Yet, the Project will border approximately 9 miles of coastal snowy plover critical habitat.[308] Additionally, to properly protect the snowy plover, the Project must avoid impacts to non-breeding season snowy plover habitat.[309] In failing to adequately analyze the impacts to plovers during both breeding and non-breeding season, the DEIR/EIS has not proposed sufficient mitigation measures to adequately protect the species.[310]

CURE-30

[299] *Id,* at p. 14.
[300] *Id.*, at p. 15.
[301] *Id.*, at p. 12; *see also id.,* at p. 31.
[302] *Id.*, at p. 15
[303] *Id.*
[304] *Id.*
[305] *Id.*
[306] *Id.*, at p. 21-22.
[307] *Id.*, at p. 22.
[308] *Id.*, at pp. 22-24.
[309] *Id.*, at p. 24.
[310] *Id.*, at p. 24-29.

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Additionally, the DEIR/EIS should provide a more accurate cumulative impact analysis with respect to snowy plovers.[311] There are a number of project in the coastal zone in the vicinity of the Project that have not been adequately analyzed to determine their contribution to the cumulative impact of the species.[312] Additionally, compensatory mitigation details are necessary for complete snowy plover impact analysis. Ms. Owens suggests that the compensatory mitigation measure should incorporate collaboration with local snowy plover conservationists.[313]

CURE-30 cont.

2. Wildlife Corridors Impacts are Not Adequately Analyzed and Mitigated

The DEIR/EIS states that there would be no significant impacts to species due to the lack of wildlife corridors.[314] This, however, is inaccurate as Ms. Owens explains.[315] According to Ms. Owens, species use wildlife corridors and nurseries in agricultural and industrial areas.[316] The DEIR/EIS's conclusion, therefore, is not supported.[317] Ms. Owens concludes that this impact must be analyzed with greater detail and supporting documentation.[318]

CURE-31

3. Coastal Dunes Impacts are Not Adequately Analyzed and Mitigated

The DEIR/EIS does not adequately analyze coastal dune habitat. This critical habitat must be managed pursuant to Environmentally Sensitive Habitat Area requirements.[319]

CURE-32

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[311] *Id.*, at p. 32-34.
[312] *Id.*, at p. 33.
[313] Owens Comments, at p. 34-35.
[314] DEIR/EIS, at p. 4.6-119.
[315] Owens Comments, at pp. 45-47.
[316] *Id.*, at p. 45.
[317] *Id.*, at p. 47.
[318] *Id.*
[319] *Id.*, at p. 47; *see also* DEIR/EIS, at p. 4.6-207 ("Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values . . .").

E. The DEIR/EIS Fails to Adequately Analyze and Mitigate Potentially Significant Impacts to Air Quality

The DEIR/EIS fails to adequately analyze and mitigate potentially significant impacts to air quality, with respect to significant pollutants, criteria pollutants, and indirect emissions.

1. Construction Criteria Pollutant Emissions are Significant and Unmitigated

The DEIR/EIS estimated maximum daily emissions of ROG, NO_x, CO, PM10, and PM2.5 from Project construction and concluded that emissions of NO_x and PM10 are significant and require mitigation.[320] Dr. Fox explains that the impact analysis is unsupported and the mitigation is inadequate to reduce impacts to less than significant.[321] CURE-33

First, the construction emissions from off-road and on-road construction equipment are not supported by substantial evidence.[322] As Dr. Fox states, the DEIR/EIR fails to provide adequate documentation for some of its off-road emissions estimates.[323] In addition, the DEIR/EIS does not include input and output sheets or provide adequate explanation for its on-road construction emissions estimates.[324] The DEIR/EIS's assumptions used in emissions modeling should be subject to public review.[325] As such, the DEIR/EIS fails to disclose information pertaining to construction emission calculations and should be recirculated to include identification of all Project-specific assumptions and input parameters, a copy of the model run inputs and outputs, and any documentation used to make the final construction emission calculations.[326]

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[320] Fox Comments, at p. 3.
[321] *Id.*
[322] *Id.*, at pp. 3-4.
[323] *Id.* at p. 3.
[324] *Id.*, at pp. 4-5.
[325] *Id.*
[326] *Id.*

Second, Dr. Fox explains that construction mitigation is not adequate to reduce impacts to less than significant.[327] The DEIR/EIS concludes that the air quality impact with respect to ozone and NO2 standards would be significant and unavoidable even with implantation of Mitigation Measures 4.10-1a and 4.10-1b.[328] However, the CPUC and MBNMS cannot simply conclude that an impact is significant and unavoidable without requiring all feasible mitigation. Additional feasible mitigation is possible to mitigate for ozone and NO2.[329]

Mitigation Measure 4.10-1a proposes the use of equipment that meets asserted high-tiered engine standards.[330] Dr. Fox explains that Tier 3 engines are not the highest tier (lowest emission) off-road engines available; rather, this measure should require Tier 4 engines.[331] If Tier 4 engines cannot be obtained, then the mitigation measure should be expanded to require the consideration of leasing or renting from private vendors within 1,000 miles of the Project site.[332] The request to deviate from the use of Tier 4 engines should only be considered after all feasible actions have been taken to comply.[333]

Mitigation Measure 4.10-1b establishes limits on idling time for on-road and off-road engines.[334] Idling should be limited to no longer than five minutes, which is consistent with California Code of Regulations, title 13, § 2449, subd. (d)(3).[335] Therefore, this is not a valid mitigation measure because this is already what the law requires.[336] Dr. Fox states that this mitigation measure should be modified to limit idling to two minutes, which has been required for other similar projects.[337] This policy should be distributed to employees and enforced by the on-site construction manager.[338]

CURE-34

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[327] *Id.*, at p. 6.
[328] *Id.*
[329] *Id.*
[330] *Id.*, at p. 7.
[331] *Id.*
[332] *Id.*
[333] *Id.*
[334] *Id.*, at p. 8.
[335] *Id.*
[336] *Id.*
[337] *Id.*
[338] *Id.*

Third, additional feasible mitigation for construction ozone and NO_2 emissions exists.[339] The Project's Draft Initial Study and Mitigated Negative Declaration provided feasible measures, which are not included in this DEIR/EIS.[340] Feasible mitigation measures for NO_x and ROG can also be found in the Monterey Bay Unified Air Pollution Control District's CEQA Guidelines, other projects (i.e., Chevron Modernization Program), and U.S. EPA programs.[341] In her letter, Dr. Fox includes these feasible mitigation measures for NO_x and ROG, which are not included in the DEIR/EIS.[342] The DEIR/EIS fails to include all feasible mitigation for an impact that is significant and unavoidable.

CURE-34 cont.

2. The DEIR/EIS Omits Indirect Operational Emissions

The DEIR/EIS estimates operational emissions from on-road vehicle exhaust, emergency generator testing, and slant well maintenance.[343] However, according to Dr. Fox, the major source of Project emissions is indirect emissions from the generation of electricity.[344] The DEIR/EIS does not include those emissions. The CPUC and MBNMS argue that "[i]t is generally not possible to determine the exact generator source(s) of electricity on the power grid that would supply the proposed project, or whether or not the electricity would even be generated within the Air Basin."[345] The lead agencies are wrong.

CURE-35

CEQA does not allow the CPUC and MBNMS to exclude this major source of emissions from the DEIR/EIS.[346] As noted by Dr. Fox, EIRs routinely include indirect emissions from electricity generation.[347] In fact, the GHG section of this DEIR includes indirect GHG emissions from power generation.[348] Furthermore, the Monterey Bay Unified Air Pollution Control District's ("MBUAPCD"). CEQA Guidelines state: "The following thresholds apply to all indirect and direct

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[339] *Id.*, at pp. 8-9.
[340] California American Water Slant Test Well Project Draft Initial Study/Mitigated Negative Declaration, *supra*; DEIR/EIS, at p. 4.15-21.
[341] Fox Comments, at p. 9.
[342] *Id.*, at 9-11.
[343] *Id.*, at p. 12 (citing DEIR/EIS, Table 4.10-7).
[344] *Id.*, at p. 12.
[345] *Id.*
[346] *Id.*
[347] *Id.*
[348] *Id.*

emissions, whether or not they are subject to District permit authority, unless noted otherwise."[349] The MBUAPCD's guidelines indicate that the NO_x and ROG significance thresholds should be compared to "direct + indirect" emissions.[350] Thus, Dr. Fox concludes that "the DEIR/EIS must include the increase in emissions from the net increase in power production to support the Project."[351]

Furthermore, Dr. Fox explains that indirect emissions need not be limited to the Project's Air Basin.[352] Dr. Fox states that "[e]lectricity from any generator in California could be used at the Project site. As the significance criteria are based on the maximum day, finding the 'maximum' is all that is required."[353]

The DEIR/EIS indicates that PG&E would supply the power for the Project. According to Dr. Fox, the sources of PG&E's power are known and "emissions should be estimated for the plausible worst case daily maximum emissions. . . ."[354] However, the DEIR/EIS does not include any of the information required to estimate these emissions.[355] Thus, the DEIR/EIS fails as an informational document under CEQA, leaving the public to generate independent emissions estimates in order to evaluate the Project's impacts.[356]

Dr. Fox provides her own estimates.[357] Dr. Fox finds that "the Project would increase NO_x emissions by up to 363 lb/day, which exceeds the MBUAPCD's NO_x significance threshold of 137 lb/day."[358] The NO_x emissions from producing a net increase of 51,698 MWh per year of electricity "is large enough taken alone to exceed the MBUAPCD's NO_x significance threshold."[359] This is a significant impact not disclosed or mitigated in the DEIR/EIS.

CURE-35 cont.

[349] *Id.* (citing Monterey Bay Unified Air Pollution Control District ("MBUAPCD") 2008), p. 5-4.
[350] *Id.* (citing MBUAPCD 2008, Table 5-3.)
[351] *Id.*
[352] *Id.*, at pp. 12-14.
[353] *Id.*, at p. 12.
[354] *Id.*, at p. 13.
[355] *Id.*
[356] *Id.*
[357] *Id.*, at pp. 13-14.
[358] *Id.*, at p. 13.
[359] *Id.*

In addition, Dr. Fox identified all PG&E owned power plants in California, determining the maximum daily emissions from each, using EPA's CAMD daily data for 2014.[360] She then concludes — assuming 1,152 lb of NO_x is emitted on the maximum day from the Gateway Generating Station — that operational NO_x emissions would increase to 1,179 lb/day,[361] which exceeds the MBUAPCD's NO_x threshold (137 lb/day) by a significant amount.[362] Thus, Dr. Fox concludes that operational NO_x emissions from power production are a significant impact not disclosed in the DEIR/EIS that must be mitigated.[363] This significant impact is not disclosed or mitigated in the DEIR/EIS.

CURE-35 cont.

Dr. Fox offers suggestions for mitigating this impact, including "purchasing local and contemporaneous emission reduction credits or by collaborating with a nearby NO_x source to reduce their NO_x emissions. Alternatively, the increase in electricity demand could be met by using 100% renewable sources of electricity."[364]

CEQA requires the lead agencies' to disclose, analyze, and require mitigation for the Project's indirect electricity generation emissions for all criteria pollutants and to require mitigation for the resulting significant NO_x impacts.

3. The DEIR/EIS Fails to Evaluate All Air Quality Impacts

Under CEQA, a lead agency has discretion to determine how to classify the significance of impacts.[365] However, an agency's judgment must be supported by scientific information and other factual data, and the agency does not have discretion to simply not evaluate the significance of impacts.[366] In her letter, Dr. Fox states that the DEIR/EIS fails to evaluate the significance of pollutants for which the Monterey Bay Unified Air Pollution Control District ("MBUAPCD") has not set official CEQA significance thresholds.[367] Specifically, the DEIR/EIS fails to evaluate the significance of impacts from two pollutants: NO_x emissions for impacts

CURE-36

[360] *Id.*, at p. 14.
[361] *Id.*
[362] *Id.*
[363] *Id.*
[364] *Id.*
[365] CEQA Guidelines, § 15064(b).
[366] *Id.*
[367] Fox Comments, p. 14.

other than its contribution to ozone, and ROG for its impacts other than its contribution to ozone.[368]

a) NO_x

The MBUAPCD's significance criteria for NO_x (137 lb/day) is based only on ozone.[369] Thus, the DEIR/EIS only evaluates NO_x as an ozone precursor.[370] However, as Dr. Fox points out, NO_x "can also causes adverse health effects, acid rain, form particulate matter, and contribute to global warming, water quality deterioration, and visibility impairment."[371] NO_x can damage lung tissue and reduce lung function.[372] The DEIR acknowledges that there are primary and secondary state and federal ambient air quality standards for nitrogen oxides established using NO_2 as a surrogate for all nitrogen oxides.[373] The primary standards (1-hour) are set to protect public health, including the health of sensitive populations.[374] The secondary standards (annual) are set to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.[375] The DEIR/EIS fails to evaluate these primary and secondary impacts of NO_x.[376]

CURE-36 cont.

The absence of a MBUAPCD "CEQA significance threshold" for non-ozone precursor NO_x impacts does not obviate the need to evaluate this impact as the ambient air quality standards themselves can be used as CEQA significance thresholds.[377] According to Dr. Fox, when a CEQA significance threshold is missing, a lead agency can model emissions to determine if they cause or contribute to an exceedance of the ambient standards or look to other sources, such as other air districts, for significance criteria expressed as emission rates.[378]

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[368] *Id.*, pp. 15-19.
[369] *Id.*, pp. 15-17.
[370] *Id.*
[371] *Id.*
[372] *Id.*
[373] *Id.* at p. 15 (citing DEIR/EIS, Table 4.10-2).
[374] *Id.*
[375] *Id.*
[376] *Id.*
[377] *Id.*, at p. 16.
[378] *Id.*, at pp. 16-17.

In *Bakersfield Citizens For Local Control v. City of Bakersfield*, the Fifth District appellate court held that an EIR was inadequate because it failed to correlate adverse air quality impacts to resulting adverse health impacts.[379] In that case, a local citizens group filed a CEQA petition challenging the EIRs for two retail shopping centers planned for the southwestern portion of Bakersfield, California.[380] Both EIRs concluded that the shopping center projects would have significant and unavoidable adverse impacts on air quality, yet the court found:

> neither EIR acknowledges the health consequences that necessarily result from the identified adverse air quality impacts. Buried in the description of some of the various substances that make up the soup known as 'air pollution' are brief references to respiratory illnesses. However, there is no acknowledgement or analysis of the well-known connection between reduction in air quality and increases in specific respiratory conditions and illnesses. After reading the EIR's, the public would have no idea of the health consequences that result when more pollutants are added to a nonattainment basin.[381]

CURE-36 cont.

The court concluded that the disclosures were inadequate and stated that the health impacts resulting from the adverse air quality impacts must be identified and analyzed in new EIRs.[382]

Here, although the DEIR/EIS acknowledges the impacts of NO_x as an ozone precursor, it fails to identify the respiratory impacts and other impacts resulting from NO_x emissions.[383] The CPUC and MBNMS must prepare a revised DEIR/EIS that adequately discloses, analyzes and mitigates all potentially significant impacts from the Project's NO_x emissions. Furthermore, and discussed in further detail below, the NO_x and Reactive Organic Gases emissions reported exceed the non-ozone significance thresholds established by four air districts pursuant to CEQA.[384]

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[379] *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219–1220.
[380] *Id.*, at p. 1193.
[381] *Id.*, at p. 1220.
[382] *Id.*
[383] Fox Comments, at pp. 15-16.
[384] *Id.*, at p. 17.

b) Reactive Organic Gases (ROG)

Reactive Organic Gases ("ROG"), in addition to forming ozone, can cause "severe eye, nose, and throat [irritation] and increases susceptibility to respiratory infections."[385] As with NO_x, the DEIR/EIS only evaluates ROG as an ozone precursor.[386] The Volatile Organic Compounds ("VOCs") present in ROG before it is converted into ozone include compounds that are hazardous to human health.[387] The DEIR/EIS's health risk assessment ("HRA") only evaluated diesel particulate matter; it did not evaluate the health impacts from toxic air pollutants ("TAC") subsumed in ROG that are not converted to ozone when they reach sensitive receptors.[388] According to Dr. Fox, these TACs include "acutely and chronically toxic chemicals such as toluene, xylene, ethylbenzene, and 1,3 butadiene and carcinogens such as benzene, formaldehyde, acrolein, and acetaldehyde."[389] CURE-37

Like the NO_x discussion above, Dr. Fox states that other air districts have established CEQA significance thresholds for ROG.[390] The DEIR/EIS does not take this approach and the DEIR/EIS must include TAC impacts in a revised HRA.[391] The DEIR/EIS fails to meet CEQA standards because it does not evaluate the Project's non-ozone impacts from ROG emissions.[392]

F. The DEIR/EIS Fails to Adequately Evaluate Health Risks

The DEIR/EIS evaluated health risks of Project construction from Diesel Particulate Matter ("DPM") at two sites, the Carmel Valley Pump Station and ASR Injection/Extraction Wells.[393] As Dr. Fox notes, this analysis concluded that cancer and chronic health risks are less than significant.[394] However, the analysis is flawed and when corrected, Dr. Fox finds that there would be a significant health impact. CURE-38

[385] *Id.*, p. 18.
[386] *Id.*, at pp. 17-18.
[387] *Id.* at p. 18.
[388] *Id.*
[389] *Id.*
[390] *Id.*, at p. 17.
[391] *Id.*, at p. 18.
[392] *Id.*
[393] *Id.*, at p. 20.
[394] *Id.*

Further, she finds that the HRA analysis is unsupported, incomplete, and fails to include acute impacts.[395]

First, all sensitive receptors were not evaluated.[396] As Dr. Fox points out, there are other facilities that are near sensitive receptors that were excluded from the HRA, including Wells ASR-5 and ASR-6, which would be constructed within 50 feet of existing residences.[397] The ASR Conveyance Pipeline, ASR Recirculation Pipeline, and the ASR Pump-to-Waste Pipeline would be within 250 feet of Seaside Middle School, and within 50 to 100 feet of residences in the Fitch Park military housing area along Hatten Road and Ardennes Circle.[398]

Second, the DEIR/DEIS did not follow OEHHA Guidelines, which resulted in the DEIR/EIS substantially underestimating the Project's health risk.[399] The OEHHA guidelines, adopted in March 2015, provide recommendations for preparing health risk assessments.[400] Dr. Fox points out that the DEIR/EIS analysis only evaluated risk for exposures of 0.25 years, or 3 months after birth.[401] However, if exposure is increased to 6 months after birth, per OEHHA guidance, then the cancer risk increases from 5.2 in one million to 10 in one million, which is per se significant.[402] The 10 in one million number is the significance threshold for a lifetime exposure, which dilutes the short term risk.[403] Instead, the DEIR/EIS should have a lower significance threshold than the 10 in one million used for a 70 year exposure.[404] Dr. Fox provides differing scenarios in evaluating the cancer risk.[405] In either scenario, however, the cancer risk from diesel exhaust alone would be highly significant and unmitigated. This significant impact is not disclosed in the

CURE-38 cont.

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395 *Id.*
396 *Id.*
397 *Id.*
398 *Id.*
399 *Id.*, at pp. 20-21.
400 *Id.*
401 *Id.*, at p. 21.
402 *Id.*
403 *Id.*
404 *Id.*
405 *Id.*, at pp. 21-22.

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DEIR/EIS.[406] At a minimum, all diesel fuel equipment should have diesel particulate traps to mitigate this significant impact.[407]

Third, all hazardous pollutants were not included in the HRA.[408] As already mentioned, the HRA only evaluated diesel exhaust, which is emitted from construction equipment and on-road vehicles.[409] But there are also VOCs, present in ROG before it is converted into ozone, which are hazardous to human health.[410] The HRA should have evaluated toxic air pollutants subsumed in ROG that are not converted to ozone when they reach sensitive receptors.[411] By failing to include unconverted VOCs, the HRA underestimates health impacts and further fails to evaluate acute health impacts.[412]

CURE-38 cont.

G. The DEIR/EIS Fails to Identify Significant Health Impacts Due to Valley Fever

Dr. Fox provided evidence in her 2015 comments that the DEIR/EIS fails to identify significant health impacts due to Valley Fever.[413] Yet the DEIR/EIS continues to dismiss the risk of Valley Fever to Project workers and nearby sensitive receptors.[414] In the attached comments, Dr. Fox provides evidence about the health risks associated with Valley Fever for this Project, which is located in an endemic zone.[415] Valley Fever is contracted by inhaling *Coccidioides ssp. (*"Cocci spores"*)*, a component of PM10, or PM2.5.[416]

CURE-39

First the DEIR/EIS misrepresents the status quo by stating that Valley Fever is declining.[417] However, the decline recorded in 2014 (to which the DEIR/EIS relies

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406 *Id.*
407 *Id.*, at p. 22.
408 *Id.*
409 *Id.*
410 *Id.*
411 *Id.*
412 *Id.*
413 *Id.*, at p. 25; *see* Dr. Fox Comments (2015) at p. 38, **Attachment S**.
414 *Id.*
415 *Id.*, at p. 23.
416 *Id.*, at p. 27.
417 *Id.*, at p. 25.

on for its support) was an anomaly.[418] In fact, there were 50% more cases in 2016 than in 2015.[419]

Second, the DEIR/EIS makes assertions that are inconsistent with CEQA and are unsupported and incorrect.[420] The DEIR/EIS concludes that much of the population of Monterey County has already been exposed to Cocci spores.[421] Valley Fever is contracted by inhaling Cocci spores, which become airborne during earth moving construction, which increases PM10 and PM2.5.[422] Project construction would disturb over 173 acres of endemic land, likely to contain spores.[423] Additional disturbance would occur during maintenance.[424] Therefore, the DEIR/EIS concludes that Valley Fever-related impacts would not be considered significant because residents are continually exposed to spores and construction would not represent an increased risk to public health.[425] Even if everyone in Monterey County has been exposed to Cocci spores, Dr. Fox states, this does not mean that an increase in the number of Cocci spores due to Project construction would not result in new cases, or that construction workers from non-endemic areas would not contract Valley Fever.[426]

CURE-39 cont.

Dr. Fox writes, "[w]hile some residents of Monterey County may have been exposed to Cocci spores as they live adjacent to agricultural fields or a construction site, this does not mean that an increase in the number spores due to Project construction would not result in an increase in Valley Fever cases."[427] Additionally, the record contains no evidence that all residents downwind of Project construction and all construction workers who would build the Project have in fact been exposed to Cocci spores in sufficient amounts to assure immunity.[428] Dr. Fox challenges this

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[418] *Id.*
[419] *Id.*
[420] *Id.*, at p. 26.
[421] *Id.*
[422] *Id.*
[423] *Id.*, at p. 28.
[424] *Id.*, at pp. 28-29.
[425] *Id.*, at p. 29.
[426] *Id.*, at p. 29.
[427] *Id.*, at p. 26.
[428] *Id.*

immunity argument, stating that being exposed to Cocci spores does not imply nor can it guarantee immunity to Valley Fever from increased exposure.[429]

Moreover, the Requests for Proposal for the slant wells and conveyance facilities state that the Contractor must make a good faith effort to employ individuals, who have lived for at least one year out of the three years prior to the opening of proposals, from Monterey, San Benito, or Santa Cruz Counties.[430] Therefore, Dr. Fox states that it is a highly unlikely scenario that all potentially exposed parties have already been exposed in Monterey County.[431]

The DEIR/EIS must evaluate the significance of Cocci spore exposure relative to the baseline, just as it had evaluated the significance of PM10 and PM2.5 emissions relative to the baseline.[432] By stating that residents have already been exposed to Cocci spores (present in PM10, or PM2.5) is a statement of the baseline.[433] It does not adequately inform the public about the Project's Valley Fever health risk.

Construction workers who would be exposed to land disturbance activities would be at considerable risk of catching Valley Fever.[434] Construction workers, alongside agricultural workers, are the most at-risk populations.[435] This is because these labor groups are in intimate contact with soil in a Valley Fever endemic area and many may be from non-endemic zones or may have never worked in an endemic area.[436] The DEIR/EIS fails to adequately evaluate this significant construction impact, not only on construction workers, but also on the nearby sensitive receptors and the larger population (spores can travel as much as 500 miles).[437] Since the DEIR/EIS evaluated the increase of PM10 and PM2.5, of which Cocci spores are a component, the DEIR/EIS should also disclose that Cocci spores will increase.[438]

CURE-39 cont.

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[429] *Id.*, at p. 27.
[430] *Id.*, at pp. 26-27.
[431] *Id.*, at p. 27.
[432] *Id.*
[433] *Id.*
[434] *Id.*, at p. 30.
[435] *Id.*
[436] *Id.*
[437] *Id.*, at pp. 29-30.
[438] *Id.*, at p. 31.

Third, the DEIR/EIS fails to mitigate the significant Valley Fever health risks.[439] Although the DEIR/EIS provides Mitigation Measure 4.10-1c (a conventional construction fugitive dust mitigation measure that would allegedly mitigate the risk to a less than significant level), this measure is ineffective at controlling Valley Fever.[440] Conventional dust control measures are effective at controlling visible dust or larger dust particles (PM10), but not the very fine particulate matter (PM2.5), where Valley Fever spores are found.[441] Dr. Fox states that the spores, which may be difficult to see and have low settling rates, are not controlled by conventional dust control measures.[442] Additionally, the Project's construction period coincides with a period when there might be a higher risk of catching Valley Fever.[443]

Dr. Fox provides a number of recommended mitigation measures to reduce the risk of Valley Fever.[444] These recommended measures go beyond the conventional dust control measures for controlling PM10 emissions.[445] These recommendations include continuously wetting the soil before and while digging, thoroughly cleaning equipment, vehicles and other items before they are moved off-site to other work locations, developing a protocol with medical professionals to medically evaluate employees who have symptoms of Valley Fever, and others.[446] Dr. Fox also identifies flaws in Mitigation Measure 4.10-1a, such as required daily sweeping, which generates fugitive dust that may contain spores.[447]

Not only do the PM10 mitigation measures not adequately control Valley Fever, but they also fail to mitigate PM10 impacts.[448] Projects that have implemented conventional PM10 dust control measures, like the ones for this Project, have experienced several incidences of severe dust storms and reported

CURE-39 cont.

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[439] *Id.*
[440] *Id.*
[441] *Id.*
[442] *Id.*, at pp. 31-32.
[443] *Id.*, at pp. 32-33.
[444] *Id.*, at pp. 33-36.
[445] *Id.*
[446] *Id.*
[447] *Id.*, at pp. 37-39.
[448] *Id.*, at p. 38.

cases of Valley Fever.[449] The DEIR/EIS must adopt an enhanced dust control plan, as suggested by Dr. Fox, to reduce the risk to construction workers, on-site employees and the public of contracting Valley Fever.[450] These measures are feasible as many of them have been adopted by the County of Monterey in other EIRs.[451] Still, even if all of the above feasible measures are adopted, a recirculated DEIR/EIS is required to analyze whether these measures are adequate to reduce the Valley Fever significant impact to a level below significance.[452]

CURE-39 cont.

H. The DEIR/EIS Fails to Adequately Explain Why the Project's GHG Impacts Are Significant and Unavoidable and Improperly Defers Mitigation

In *Keep Berkeley Jets Over the Bay Com. v. Board of Port Comrs.*, the First Appellate court concluded that "simply labeling the effect 'significant' without accompanying analysis" violates "the environmental assessment requirements of CEQA."[453] Before the lead agencies can make a "significant and unavoidable" finding, it must specifically identify the GHG mitigation measures and estimate the reduction in GHG achieved by each.[454]

CURE-40

An agency may defer mitigation only when three narrow, specific prerequisites are met: (1) an EIR contains criteria or performance standards to govern future actions implementing the mitigation; (2) practical considerations preclude development of the measures at the time of initial project approval; and (3) the agency has assurances that the future mitigation will be *both* "feasible and efficacious."[455] An agency may not satisfy its mitigation requirements by merely

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[449] *Id.*
[450] *Id.*
[451] *Id.*
[452] *Id.*, at pp. 38-39.
[453] *Berkeley Keep Jets Over the Bay Committee v. Board of Port Comrs.* (2001) 91 Cal.App.4th 1344, 1371 [111 Cal.Rptr.2d 598, 618], *as modified on denial of reh'g (Sept. 26, 2001)*; San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus (1996) 42 Cal.App.4th 608.
[454] *See Berkeley Keep Jets Over the Bay Com.*, *supra*, at p. 1373.
[455] *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 94-95; *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 669-71; CEQA Guidelines § 15126.4(a)(1)(B).

ordering a project proponent to "obtain a . . . report and then comply with any recommendations that may be made in the report."[456]

In *Communities for a Better Environment v. City of Richmond*,[457] an EIR for a Chevron refinery project was deemed legally inadequate in part because the mitigation measures for GHG emissions were impermissibly deferred. The EIR in that case was "legally required to describe, evaluate and ultimately adopt feasible mitigation measures which would 'mitigate or avoid' [GHG] impacts."[458]

The mitigation measure at issue in the Chevron project EIR stated that "[n]o later than one (1) year after approval of this Conditional Use Permit, Chevron shall submit to the City, for approval by the City Council, a plan for achieving complete reduction of GHG emissions. . ."[459] As the court explained, the mitigation measure "required Chevron, within one year of Project approval, to hire and fully fund 'a qualified independent expert' to complete an inventory of greenhouse gas emissions and to identify potential emissions reduction opportunities."[460] Furthermore, the measure stated that Chevron "shall consider implementation of measures that achieve GHG reductions including, but not limited to, the following measures . . ."[461] The measure then listed several potential mitigation measures. The respondents in the case argued that the EIR failed to adequately formulate a plan to mitigate GHG emissions, but instead offered "a menu of potential mitigation measures, with the specific measures to be selected by Chevron and approved by the City Council a year after Project approval."[462]

CURE-40 cont.

The court found that the measure was deferred mitigation, which is impermissible under CEQA. The court stated, in part, that the measure amounted to "a generalized goal of no net increase in greenhouse gas emissions and . . . a handful of cursorily described mitigation measures for future."[463] Furthermore, the court found that "[n]o effort [was] made to calculate what, if any, reductions in the

[456] *Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1275.
[457] *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 95.
[458] *Id.*, at p. 91.
[459] *Id.*
[460] *Id.*, at p. 92.
[461] *Id.*
[462] *Id.*
[463] *Id.*, at 93.

Project's anticipated greenhouse gas emissions would result from each of these vaguely described future mitigation measures" and that the list of potential mitigation measures was "nonexclusive, undefined, untested and of unknown efficacy."[464]

As Dr. Fox explains, the DEIR/EIS fails to substantiate that its GHG emissions cannot be reduced to an insignificant level and fails to include all feasible mitigation measures.[465] It also improperly defers mitigation by stating it will implement a GHG Emissions Reduction Plan and Construction Equipment Efficiency Plan prior to the start of construction, but after Project approval.[466]

The DEIR/EIS concludes that GHG emissions from construction and operation of the Project are significant and unavoidable.[467] The DEIR/EIS then proposes Mitigation Measure 4.11-1 to reduce the Project's GHG emissions from construction and operation and Mitigation Measure 4.18-1 for construction GHG emissions.[468] The DEIR/EIS concludes that even after complying with these measures, "it is not possible to substantiate numerically that the GHG emissions would be reduced to a less-than-significant level."[469] Consequently, the GHG emissions remain significant and unavoidable.[470]

CURE-40 cont.

The DEIR/EIS must provide further explanation for its conclusion that the Project's GHG emissions impacts are significant and unavoidable.[471] Furthermore, it must explain the Project's consistency with the State's energy and climate objectives.[472]

The CPUC's inability to numerically substantiate the Project's mitigated emissions is a result of its improper deferral of the identification of mitigation

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[464] *Id.*
[465] Fox Comments, at pp. 39-40.
[466] *Id.*, at pp. 40-47.
[467] *Id.*, at p. 40.
[468] *Id.*
[469] *Id.*, at p. 39 (citing DEIR/EIS, at p. 4.11-19).
[470] *See id.*
[471] *Id.*
[472] *Id.*, at p. 40.

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measures.[473] Indeed, as Dr. Fox points out, other applicants and lead agencies have successfully quantified GHG emission reductions.[474]

Mitigation Measure 4.11-1 requires that CalAm prepare a GHG Emissions Reduction Plan and submit it to the CPUC for approval prior to the start of construction.[475] CalAm shall also make a good faith effort to ensure that at least 20 percent of the approved project's operation energy use requirements are achieved with "clean" renewable energy.[476] Mitigation Measure 4.11-1 improperly defers mitigation and is inadequate for six reasons, which Dr. Fox explains in further detail in her letter.[477]

First, a "good faith effort" to use renewable energy for 20% of the Project's operational needs is not adequate CEQA mitigation because for a significant and unavoidable impact, all feasible mitigation under CEQA must be implemented.[478] One-hundred percent of the Project's operational electricity demand can be met through renewable energy.[479] The County of Monterey has also included a similar policy with respect to desalination plants.[480]

CURE-40 cont.

> The EIRs prepared for the desalination plants are expected to require that construction equipment use alternative fuels or other means to reduce their emissions of ozone precursors. Although, depending upon the intensity of construction, there is the potential for a significant impact on air quality from ozone precursors. . . Taking a conservative view, the indirect impacts of the water supply projects to be built would potentially make considerable contributions to air quality, biological, and electrical energy use.[481]

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[473] *Id.* at p. 39.
[474] *Id.*
[475] *Id.*, at p. 40.
[476] *Id.*
[477] *Id.*, at pp. 40-45.
[478] *Id.*, at pp. 40-41.
[479] *Id.*
[480] Monterey County General Plan EIR: Section 6.4.3.3, at p. 6-14, *available at* http://www.co.monterey.ca.us/planning/gpu/2007_GPU_DEIR_Sept_2008/Text/Sec_06_Other_CEQA.pdf. **Attachment T.**
[481] Fox Comments, at pp. 40-41.

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Second, preparing the Emissions Reduction Plan is improperly deferred until after Project approval.[482] This plan must be part of the DEIR/EIS and circulated for public review, as explained by the Court in *CBE v. Richmond*.[483]

Third, "good faith effort" measures are not adequate because they are not enforceable, as required under CEQA.[484] Under CEQA, an EIR must not only discuss measures to avoid or minimize adverse impacts, it also must ensure that mitigation measures are fully enforceable through permit conditions, agreements, or other legally binding instruments.[485] Mitigation measures cannot be vague or have uncertain effectiveness or feasibility.[486]

Fourth, the DEIR/EIS should require that a registered professional (mechanical) engineer in California confirm that the Plan includes all feasible measures.[487]

CURE-40 cont.

Fifth, the Plan should have ongoing monitoring by a registered professional engineer to ensure successful mitigation under CEQA.[488]

Sixth, and last, the Plan should include construction GHG emissions, and opportunities throughout the CalAm system, not just Project operational facilities.[489]

Mitigation Measure 4.18-1 requires that CalAm contract a "qualified professional" to prepare a "Construction Equipment Efficiency Plan" that will increase the efficient use of construction equipment to the maximum extent feasible.[490] This mitigation measure has some of the same deficiencies as Mitigation 4.11-1.[491]

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[482] *Id.*, at p. 41.
[483] *Id.*
[484] *Id.*, at pp. 41-42.
[485] *Id.* (citing CEQA Guidelines § 15126.4, subd. (a)(2).)
[486] *Id.* (citing *Kings County Farm Bur. v. County of Hanford* (1990) 221 Cal.App.3d 692, 727-28; *San Franciscans for Reasonable Growth v. City & County of San Francisco* (1984) 151 Cal.App.3d 61, 79.)
[487] *Id.*, at p. 42.
[488] *Id.*
[489] *Id.*, at pp. 42-45.
[490] *Id.*, at p. 45.
[491] *Id.*, at pp. 45-47.

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First, the Efficiency Plan is deferred until after the Project is approved, pre-empting public review.[492] This Plan must be part of the DEIR/EIS and circulated for public review, as required by the Court in *CBE v. Richmond*.[493]

Second, the measure should be modified to require that a registered professional (civil) engineer confirm that the Plan includes all feasible construction equipment efficiency measures.[494]

Third, the Plan must include all feasible mitigation measures, such as NO_x and ROG mitigation measures identified above.[495] Dr. Fox provides a list of additional measures that were recently required as GHG construction mitigation in the Chevron Modernization Final EIR,[496] including maintenance of construction equipment, further idling restrictions and other measures.[497]

Fourth, the measure fails to identify any method to verify compliance.[498] Dr. Fox proposes "a comprehensive inventory of all off-road equipment that will be used to construct the Project . . . The inventory should include the horsepower rating, engine production year, hours of use, and amount and type of fuel used."[499] Furthermore, "[a]t least 48 hours prior to the use of heavy-duty off-road equipment at a new construction site, the project representative shall provide the inspector and MBUAPCD with the construction timeline, including start date and name and phone number of project manager and on-site foreman."[500]

CURE-40 cont.

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[492] *Id.*, at p. 45.
[493] *Id.*
[494] *Id.*, at pp. 45-46.
[495] *Id.*, at p. 46.
[496] *Id.*
[497] *Id.* (citing Chevron Refinery Modernization Project EIR, March 2014, Chapter 4.8, Greenhouse Gases, *available at* http://chevronmodernization.com/wp-content/uploads/2014/03/4.8_Greenhouse-Gases.pdf and Chapter 5, Mitigation Measure Monitoring and Reporting Program, *available at* https://s3.amazonaws.com/chevron/Final+EIR/5_MMRP.pdf).
[498] *Id.*, at pp. 46-47.
[499] *Id.*
[500] *Id.*, at pp. 46-47.

Finally, the Efficiency Plan fails to provide adequate monitoring, according to Dr. Fox, who suggests a similar monitoring program as stated above.[501] Dr. Fox concludes that the Efficiency Plan "fails to adequately mitigate the air quality impacts resulting from Project construction."[502]

The CPUC must ensure that all feasible mitigation is incorporated in the DEIR to address the significant and unavoidable GHG impacts. As stated in *CBE v. Richmond*, "the time . . . to formulate mitigation measures to minimize or avoid those impacts [is] during the EIR process, before the Project was brought to the [approving body] for final approval."[503] The DEIR/EIS must be revised in accordance with these comments and recirculated before the Project can be lawfully approved under CEQA.

CURE-40 cont.

I. Vibration Impacts Are Significant and Unmitigated

The DEIR/EIS fails as an information document with respect to construction activities that can produce significant ground born vibration that can damage nearby buildings and annoy sensitive receptors.[504] The Project fails to provide supporting calculations, citations to specific pages from the methodology it used, or disclose input values used in calculations, which would have allowed Dr. Fox to reproduce and verify the vibration analysis.[505] The DEIR/EIS concluded that vibration from pipeline installation using both compactors and pile drivers would result in significant building damage and annoyance from constructing the Castroville Pipeline and Source Water Pipeline, the new Desalinated Water Pipeline, and the new Transmission Main where trenchless construction methods are required.[506] The DEIR/EIS imposes Mitigation Measures 4.15-1a and Measure 4.12-3, which it asserts would allegedly make the vibration impact no longer significant.[507] These, however, are fundamentally flawed and are not adequate to reduce vibration impacts to a less than significant level.[508]

CURE-41

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[501] *Id.*, at p. 47.
[502] *Id.*
[503] *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 95.
[504] Fox Comments, at pp. 47-48.
[505] *Id.*
[506] *Id.*
[507] *Id.*, at pp. 48-50.
[508] *Id.*, at p. 48.

Mitigation Measure 4.15-1a is not described.[509] Although there is an Impact 4.15-1, there is no mitigation measure associated with that impact and therefore no way to determine what Mitigation Measure 4.15-1a entails.[510]

Mitigation Measure 4.12-3 proposes vibration reduction measures, which are not practically enforceable.[511] Additionally, there are more aggressive mitigation measures that this city should comply with in order to mitigate the potentially significant vibration impact.[512] However, without supporting analysis to demonstrate that the vibration impacts would be less than significant with the proposed mitigation, the DEIR/EIS fails as an information disclosure document.[513] The City of Monterey includes a "Vibration Control Plan for Monterey Pipeline Project," which includes more aggressive mitigation measures for vibration impacts than what is identified in the DEIR/EIS.[514] The City's Vibration Control Plan should replace the weak measures in the DEIR/EIS and should be included for public review in an appendix to the DEIR/EIS.[515]

However, without providing reproducible analysis to demonstrate that the vibration impacts would be less than significant with the proposed mitigation, the DEIR/EIS fails as an information disclosure document.[516]

CURE-41 cont.

J. The DEIR Fails to Adequately Analyze and Mitigate Potentially Significant Impacts to Historic Resources

The DEIR/EIS states that construction will not cause an adverse impact to historical resources.[517] However, as Dr. Fox explains, this impact was narrowly evaluated.[518] The DEIR/EIS only looked at historical resources listed in or eligible

CURE-42

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[509] *Id.*
[510] *Id.*
[511] *Id.*, at p. 49.
[512] *Id.*, at pp. 49-50.
[513] *Id.*, at p. 48.
[514] *Id.*, at pp. 49-50.
[515] *See id.*
[516] *Id.*, at p. 47.
[517] *Id.*, at p. 50-51.
[518] *Id.*

for listing in the California Register or historic properties listed in or eligible for listing in the National Register that are within the Area of Potential Impact of all project components.[519] In so doing, the DEIR/EIS neglects evaluating the impact of construction equipment induced vibration on properties listed in the City of Monterey's Vibration Control Plan.[520] This list includes 24 historic structures that are close enough to be damaged — constituting a significant adverse impact to historical resources.[521] This new impact was not disclosed or mitigated in the DEIR/EIS.[522]

CURE-42 cont.

K. The DEIR/EIS Fails to Adequately Analyze and Mitigate Potentially Significant Impacts from Decommissioning Activities

At the end of the Project's 40-year life, the Project would be decommissioned. As explained above, the decommissioning phase of the Project is part of the whole Project.[523] CEQA requires the CPUC to analyze all phases of the Project. Similarly, NEPA requires that an environmental document analyze all stages of a project to the extent they are interdependent.[524] Despite this requirement, the DEIR/EIS provides no analysis of the Project's decommissioning activities and, therefore, violates CEQA and NEPA.

CURE-43

As explained above, the DEIR/EIS only briefly mentions decommissioning in the context of coastal erosion for the slant wells.[525] The CPUC and MBNMS must provide a complete description of the decommissioning activities necessary to assess all of the Project's impacts, including those that our independent experts identified (e.g., terrestrial sensitive species impacts, biomatter accumulation, Valley Fever.)[526]

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[519] *Id.*
[520] *Id.*
[521] *Id.*, at p. 51.
[522] *Id.*
[523] 40 C.F.R. § 1508.25; *see also Kentucky Coal Ass'n, Inc. v. Tennessee Valley Authority* (W.D. Ky. 2014) 68 F.Supp.3d 685, 696–97; *Bozung v. Local Agency Formation Com.* (1975), 13 Cal.3d 263, 283-84; Pub. Resources Code § 21159.27 (prohibiting piecemealing); *see also, Rio Vista Farm Bureau Center v. County of Solano* (1992) 5 Cal.App.4th 351, 370.
[524] *Thomas v. Peterson* 753 F.2d 754, 760 (9th Cir. 1985).
[525] DEIR/EIS, at pp. 4.2-64, 4.2-71-72.
[526] *See also* California American Water Slant Test Well Project Draft Initial Study/Mitigated Negative Declaration, *supra,* at p. 41 ("Earthwork (i.e., trenching and excavation) would generate

The public and decision makers cannot engage in a meaningful assessment of these potential impacts without a proper description and analysis of decommissioning-related impacts.

Furthermore, the CPUC and MBNMS have enough information, such as the type of equipment to be utilized and range of activities to be performed, as well as baseline knowledge of impacts resulting from the Project's construction and operation, to make a reasonable assessment of impacts from decommissioning.[527] For example, the DEIR/EIS fails to adequately investigate and mitigate air and water quality impacts related to decommissioning, which may be similar in nature to construction emissions and discharges.[528] For example, the construction phase already produces emissions beyond an acceptable threshold, and Dr. Fox identified problems with the Construction Equipment Efficiency Plan, which considers both construction and decommissioning activities.[529] The flawed equipment efficiency plan is inadequate as a mitigation measure.[530]

CURE-43 cont.

To properly disclose the Project's impacts from decommissioning, the CPUC and MBNMS must revise the DEIR/EIS to include the type (*i.e.*, direct, indirect, or cumulative), the duration (*i.e.*, temporary or permanent), the nature (*i.e.*, source) and extent (*i.e.*, scale) of the associated potential impacts.[531] The CPUC and MBNMS must then develop mitigation measures that are certain, enforceable and linked to measurable performance standards.[532] Absent additional information, the CPUC and MBNMS cannot conclude that the Project's impacts have been fully assessed and properly mitigated.

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fugitive dust during construction and decommissioning activities."); *see also* https://www.miga.org/documents/Befesa_Desalination_EIA_Report.pdf (international desalination plant that considered decommissioning), **Attachment U**.

[527] *See, e.g.,* DEIR/EIS, at p. 4.10-25 (describing construction equipment).

[528] *Id.*, at p. 4.18-14.

[529] *Id.,* at p. 4.18-14-15; *see also* Fox Comments, at pp. 45-47.

[530] Fox Comments, at pp. 45-47.

[531] *See* DEIR/EIS, at p. 4.1-2.

[532] *See* CEQA Guidelines, § 15126.4(a)(2).

VI. MITIGATION MEASURES PROPOSED IN THE DEIR/EIS ARE DEFERRED, UNENFORCEABLE OR OTHERWISE INADEQUATE

An EIS must include a discussion of "appropriate mitigation measures not already included in the proposed action or alternatives."[533] An EIS is not complete unless it contains "a reasonably complete discussion of possible mitigation measures."[534] Mitigation includes "avoiding the impact altogether by not taking a certain action or parts of an action."[535] It also includes "minimizing impacts by limiting the degree or magnitude of the action and its implementation."[536] The mandate to thoroughly evaluate all feasible mitigation measures is critical to NEPA's purposes.[537] Hence, a "perfunctory description" or a "mere listing" of possible mitigation measures is not adequate to satisfy NEPA's requirements.[538] That individual harms are somewhat uncertain due to limited understanding of the Project characteristics and baseline conditions does not relieve an agency of the responsibility under NEPA to discuss mitigation of reasonably likely impacts at the outset.[539]

CURE-44

Courts have interpreted these provisions further. In *Northern Plains Resource Council, Inc. v. Surface Transp. Bd.*, the agency provided a mitigation measure, which stated that the agency would gather baseline data at a later point.[540] The court found the agency's mitigation measures to be inconsistent with NEPA's requirements.[541] Consequently, the court found that the agency acted arbitrarily and capriciously.[542] Without baseline data, the agency could not have

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[533] 40 C.F.R. § 1502.14(f).
[534] *Robertson v. Methow Valley Citizens Council* (1989) 490 U.S. 332, 352.
[535] 40 C.F.R. § 1508.20(a).
[536] *Id.*, § 1508.20(b).
[537] *Id.*, § 1500.1(c).
[538] *Neighbors of Cuddy Mountain v. U.S. Forest Service* (9th Cir. 1998) 137 F.3d 1372, 1380; *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1151 (9th Cir. 1998).
[539] *See South Fork Band Council Of Western Shoshone of Nevada v. U.S. Dept. of Interior* (9th Cir. 2009) 588 F.3d 718, 727, citing *National Parks & Conservation Association v. Babbitt* (9th Cir. 2001) 241 F.3d 722, 733.
[540] *Northern Plains Resource Council, Inc. v. Surface Transp. Bd.* (9th Cir. 2011) 668 F.3d 1067, 1084–85.
[541] *Id.*
[542] *Id.*

carefully considered information about significant impacts.[543] Even if the mitigation measures guaranteed that data would be collected at some point in the future, the data was not available during the EIS process and was not available to the public for comment.[544] The EIS process, therefore, did not serve its larger informational role.[545] In essence, data must exist "*before approval* so that [an agency] can understand the adverse environmental affects *ab initio*."[546] Where baseline data exists through some scientific study or methodology that the agency's experts deem reliable, the court will not "act as a panel of scientists" instructing the agency how to make its scientific determinations.[547] However, where mitigation measures are deferred for gathering baseline data, or where the agency deprives the public of reviewing data, the EIS will not be sufficient for NEPA purposes.[548]

CURE-44 cont.

In enacting CEQA, the Legislature declared that it is "the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects."[549] An EIR is inadequate unless it includes "a detailed statement setting forth . . . mitigation measures proposed to minimize [the project's] significant effects on the environment."[550] CEQA requires lead agencies to incorporate all feasible mitigation measures into a project to reduce the project's potentially significant impacts to a level of insignificance.[551] Finally, CEQA requires the lead agency to find, based on substantial evidence, "that the mitigation measures are required in or incorporated into the project; or that the measures are the responsibility of another agency and have been, or can and should be, adopted by the other agency."[552]

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[543] *Id.*
[544] *Id.*
[545] *Id.*
[546] *Id.*, at p. 1085.
[547] *Id.*, at p. 1075.
[548] *Id.*
[549] Pub. Resources Code, § 21002.
[550] *Id.*, § 21100(b)(3); CEQA Guidelines, § 15126(e).
[551] *See* Pub. Resources Code, § 21081(a)(1)-(3); CEQA Guidelines, §§ 15002(a)(3), 15021(a)(2), 15091(a)(1).
[552] *Federation of Hillside & Canyon Associations v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1260 (internal quotations omitted).

Courts have imposed several parameters for the adequacy of mitigation measures. We address some of the relevant criteria here. First, the lead agency may not defer the formulation of mitigation measures until a future time, unless the EIR also specifies the specific performance standards capable of mitigating the project's impacts to a less than significant level.[553] Deferral is impermissible where an agency "simply requires a project applicant to obtain a . . . report and then comply with any recommendations that may be made in the report."[554] Second, a public agency may not rely on mitigation measures of uncertain efficacy or feasibility.[555] Third, "[m]itigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments."[556] Fourth, mitigation measures that are vague or so undefined that it is impossible to evaluate their effectiveness are legally inadequate.[557]

As explained in the following paragraphs, there are several mitigation measures in various sections of the DEIR/EIS that are deferred, unenforceable or otherwise inadequate. The DEIR/EIS must be revised to include effective and enforceable mitigation for all significant impacts.

CURE-44 cont.

A. Mitigation Measures Proposed for Terrestrial Biological Resources Are Inadequate to Reduce Impacts to Less-Than-Significant Levels

The DEIR/EIS provides a number of mitigation measures to address significant impacts to terrestrial species.[558] Ms. Owens addresses some of these measures and explains that the mitigation measures, which in some cases are improperly deferred, do not reduce the impacts to terrestrial species to a less-than-significant level.

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[553] CEQA Guidelines, § 15126.4(a)(1)(B); *Endangered Habitats League v. County of Orange* (2005) 131 Cal.App.4th 777, 793-94; *Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1275.
[554] *Defend the Bay*, *supra*, at p. 1275.
[555] *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 727 (finding groundwater purchase agreement inadequate mitigation measure because no record evidence existed that replacement water was available).
[556] CEQA Guidelines, § 15126.4(a)(2).
[557] *San Franciscans for Reasonable Growth v. City & County of San Francisco* (1984) 151 Cal.App.3d 61,79.
[558] *See* DEIR/EIS, at pp. 4.6-131-132.

Mitigation Measure 4.6-1a, states a lead biologist should be retained to oversee implementation of protective measures.[559] Ms. Owens states that this measure should have some standard or assurance within the mitigation measure to ensure that the lead biologist, onsite, has the irrevocable authority to stop work when needed.[560] Ms. Owens also explains that this mitigation measure is vague as it does not explain what "at risk" means with respect to relocating special status species that are at risk.[561]

Mitigation Measure 4.6-1d, aimed at addressing impacts to the Western Snowy Plover is improperly deferred.[562] Additionally, visual barriers will not serve to significantly reduce the direct and indirect impacts of noise on breeding birds.[563] Ms. Owens also challenges the DEIR/EIS's assertion that displacement can be easily mitigated, which she states is contrary to the Snowy Plover Recovery Plan.[564] Mitigation Measure 4.6-1n is inadequate because the measure should require collaboration with local snowy plover conservationists.[565]

Mitigation Measure 4.6-1e, which states that CalAm or its contractor shall conduct focused botanical surveys for special-species plants.[566] Ms. Owens states that these types of surveys are insufficient for sensitive species and their habitat protection.[567] The measures must include appropriate site-specific considerations, such as timing (*i.e.*, dormant season).[568] The DEIR/EIS fails to provide appropriate mitigation measures, which are specific to species, and to each site, including parcels set aside for habitat loss compensation.[569] Without sufficient information,

CURE-44 cont.

[559] Owens Comments, at p. 35.
[560] *Id.*
[561] *Id.*, at p. 36.
[562] *Id.*, at pp. 24 (consultation with USFWS is improperly deferred, onsite biologist survey for nests is improperly deferred, IIabitat Mitigation and Monitoring Plan is improperly deferred).
[563] *Id.*, at pp. 31-32.
[564] *Id.*, at p. 32.
[565] *Id.*, at p. 34.
[566] *Id.*, at p. 15.
[567] *Id.*, at pp. 15-16.
[568] *Id.*
[569] *Id.*, at p. 16.

the mitigation measure may not effectively reduce potential impacts for rare plants to below significant.[570]

Mitigation Measure 4.6-1f for the Smith's Blue Butterfly is premised on a lack of data, which skews the impact analysis and this mitigation measure.[571] Ms. Owens provides information about the species specific flight period, which is important for the species' success.[572] Yet, there is no information about this specific flight period and therefore the mitigation measure does not provide a way to avoid impacts.[573]

Mitigation Measure 4.6-1g for the Black Legless Lizard, Silvery Legless Lizard, and Coast Horned Lizard is inadequate for some of the same reasons mentioned above.[574] There is a lack of data on the reptiles, which deprives the public from being able to determine if the mitigation measures will be adequate.[575]

Mitigation Measure 4.6-1i for nesting birds should apply throughout the duration of construction to ensure that nesting birds are not impacted.[576] According to Ms. Owens continuous surveying will ensure the birds are not harassed by Project activities.[577]

Finally, Mitigation Measure 4.6-1n describes the Habitat Mitigation and Monitoring Plan, which Ms. Owens explains does not reduce impacts to below significant.[578] The compensatory mitigation lacks data, description, detail, and standard criteria to analyze its efficacy and success.[579]

CURE-44 cont.

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[570] *Id.*
[571] *Id.*, at p. 38.
[572] *Id.*, at pp. 39-40.
[573] *Id.*
[574] *Id.*, at pp. 40-41.
[575] *Id.*
[576] *Id.*, at p. 42.
[577] *Id.*, at pp. 42-43.
[578] *Id.*, at pp. 43.
[579] *Id.*

B. Substantial Evidence Shows the Project Would Result in Potentially Significant Impacts, Despite Compliance with Laws

The DEIR/EIS concludes in several sections that the Project's compliance with laws and regulations are sufficient to mitigate potentially significant impacts to a level of insignificance. In many cases, the DEIR/EIS simply concludes that impacts are less than significant by assuming compliance with laws. However, compliance with a regulation or law is not an indication of the sufficiency of mitigation measures where there is substantial evidence that the project may result in significant impacts.[580] CEQA requires a lead agency to fully assess the significance of a Project's impacts in light of substantial evidence "notwithstanding compliance with the adopted regulations or requirements."[581] Furthermore, the DEIR/EIS may not simply assert "a bare conclusion . . . not supported by facts or analysis."[582]

CURE-45

In *Communities for a Better Env't v. California Res. Agency*, the court struck down a CEQA Guideline because it "impermissibly allow[ed] an agency to find a cumulative effect insignificant based on a project's compliance with some generalized plan rather than on the project's actual environmental impacts."[583] The court concluded that "[i]f there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding that the project complies with the specified plan or mitigation program addressing the cumulative problem, an EIR must be prepared for the project."[584] Thus, the ruling supports the notion that compliance with an applicable standard outside of the CEQA process does not automatically obviate a lead agency's obligation to consider substantial evidence and analyze and mitigate potentially significant impacts.

In *Keep our Mountains Quiet v. County of Santa Clara*, neighbors of a wedding venue sued over the County's failure to prepare an EIR due to significant noise impacts. The court concluded that "a fair argument [exists] that the Project

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[580] *Keep our Mountains Quiet v. County of Santa Clara* (2015) 236 Cal.App.4th 714, 733; *Communities for a Better Env't v. California Res. Agency* (2002) 126 Cal.Rptr.2d 441.
[581] CEQA Guidelines § 15064.4.
[582] *Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1390-1391.
[583] *Communities for a Better Env't v. California Res. Agency* (2002) 126 Cal.Rptr.2d 441, 453.
[584] *Id.*

may have a significant environmental noise impact" and reasoned that although the noise levels would likely comply with local noise standards, "compliance with the ordinance does not foreclose the possibility of significant noise impacts."[585] The court ordered the County to prepare an EIR.

CURE-45 cont.

C. The DEIR Fails to Require Compliance with Laws as Enforceable Mitigation

1. Project Fails to Require Compliance with NPDES and the Ocean Plan

The DEIR/EIS states that the Project will be consistent with the Ocean Plan and the NPDES permit process:

> The MPWSP would be consistent with the Monitoring and Reporting Plan requirements of the Ocean Plan because such requirements form a part of the NPDES permit process and, further, CalAm would submit and, once approved by the RWQCB and MBNMS, execute a facility specific Monitoring and Reporting Plan.[586]

CURE-46

The Ocean Plan requires more than a monitoring and reporting plan. CalAm must also meet certain reporting requirements, such as providing a Marine Life Mortality Report. Based on the results of this Marine Life Mortality Report, CalAm must either complete a mitigation project or implement a fee-based mitigation program to mitigate for the mortality of all forms of marine life.[587]

2. Project Fails to Require Compliance with City of Marina Local Coastal Land Use Plan (LCLUP)

CURE-47

The Project fails to comply with habitat management and conservation plans, policies, or regulations in local regional land use plans.[588] The following regions

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[585] *Keep our Mountains Quiet*, *supra*, 236 Cal.App.4th, at p. 733.
[586] DEIR/EIS, at p. 4.3-34.
[587] SWRCB, California Ocean Plan, *supra,* at pp. 43-44.
[588] Owens Comments, at pp. 4-8.

have habitat management and conservation plans: the City of Marina General Plan, the City of Marina Local Coastal Land Use Plan, the Marina Municipal Code, the Fort Ord Dunes State Park General Plan and EIR, the Monterey City Code, the Seaside General Plan, the Seaside Municipal Code, Carmel Valley Master Plan, Greater Monterey Peninsula Area Plan, Monterey County Code, Monterey County General Plan, North County Land Use Plan, Fort Ord Reuse Plan.[589]

The DEIR/EIS concludes that where this Project may be inconsistent with the applicable plan, policy, or regulation, the impact will be separately identified.[590] Where the impact would be considered significant, then feasible mitigation would be identified to resolve or minimize that conflict.[591] Yet, the DEIR/EIS does not adequately address all of the potential conflicts with these plans and, as a result, fails to require mitigation measures to ensure consistency with those plans.

As Ms. Owens explains, the City of Marina Local Coastal Land Use Plan has very specific policies and mitigation measures regarding potential impacts to sensitive species and habitats.[592] These policies include establishing a list of biologists qualified to prepare habitat evaluation reports, determining the extent and landward boundary of a wetland, and identifying plant and animal species which are locally or generally rare, endangered, threatened, or are necessary for the survival of an endangered species.[593]

The City of Marina Local Coastal Land Use Plan has specific minimum habitat mitigation and restoration plan requirements to protect the biodiversity in the area.[594] All direct and potential impacts to primary and secondary habitats shall be fully mitigated.[595] Habitat restoration plans should be prepared by a qualified biologist, and where appropriate with a qualified hydrologist. Plans should be developed in consultation with the Department of Fish and Wildlife and the U.S. Fish and Wildlife Service in cases where these agencies have jurisdiction.[596] To

CURE-47 cont.

[589] *Id.*, at p. 4.
[590] *Id.*, at p. 5; *see also* DEIR/EIS, at p. 4.6-99.
[591] Owens Comments, at p. 5.
[592] *Id.*, at pp. 5-8.
[593] *Id.*
[594] *Id.*, at p. 6.
[595] *Id.*
[596] *Id.*

enforce these plans, they should be authorized by a coastal development permit and must be approved prior to issuance of any grading or building permits.[597] The plan shall include at a minimum: (1) a detailed site plan; (2) a baseline ecological assessment; (3) goals, objectives, performance standards and success criteria for the site; (4) management methods to ensure the site achieves the goals, objectives, and performance standards; (5) provisions for the full restoration of any impacts that are identifies as temporarily necessary to install the restoration or enhancement elements; (6) submitting documentation at the completion of initial restoration work; (7) provision for a detailed monitoring program to include a provision for assessing the initial biological and ecological status of the site; and (8) provision for the prompt remediation of a site if the monitoring results indicate the site does not meet the goals, objectives and performance standards identified in the approved mitigation program.[598]

The DEIR/EIS admits that it is potentially inconsistent with the City of Marina LCLUP with respect to installing the subsurface slant wells, source water pipeline, new desalinated water pipeline, and new transmission main, and maintenance of the subsurface slant wells.[599] These installations and maintenance will occur within special status species habitats, including wetlands and primary and secondary habitat in the City of Marina.[600] Ms. Owens notes that although the DEIR/EIS proposes mitigation measures to reduce or avoid impacts on special-status species, the measures are insufficient because they may not include all direct, indirect, and cumulative impacts.[601] Further, and as provided above, the DEIR/EIS must comply with the City of Marina's minimum habitat mitigation/restoration plan requirements, which are more aggressive at ensuring protection of biological resources than the mitigation measures provided in the DEIR/EIS.[602]

CURE-47 cont.

[597] *Id.*
[598] *Id.*, at pp. 6-8.
[599] DEIR/EIS, at p. 4.6-101 (Table 4.6-4).
[600] Owens Comments, at p. 8.
[601] *Id.*, at pp. 8-9.
[602] *Id.*

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3. Project Fails to Require Compliance with Other Laws

The DEIR/EIS abdicates its duty under CEQA in several resource areas. For example, under Impact 4.2-1 (increased soil erosion or loss of topsoil during construction), the DEIR/EIS finds that the Project could result in substantial soil erosion or loss of topsoil during construction."[603] However, the DEIR/EIS simply concludes that "the proposed project would be required to comply with the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ) (Construction General Permit), the Monterey County Grading Ordinance, and Monterey County Erosion Control Ordinance, all of which are described in Section 4.2.2, Regulatory Framework"; therefore, "impacts associated with substantial increases in soil erosion during construction would be less than significant for all project components."[604] The DEIR/EIS fails to provide further substantive analysis and mitigation for soil erosion impacts aside from requirements under the applicable laws. In addition, compliance with these laws is not encapsulated as enforceable mitigation. Simply assuming the Applicant will comply with laws outside of CEQA does not satisfy CEQA's requirement for a full analysis and mitigation of potentially significant impacts. CURE-48

Additional impacts that are assumed to be less than significant based on compliance with other laws include:

> damage to structural elements from earthquake (Impact 4.2-3);[605] exposure of people or structures to substantial adverse effects related to liquefaction and lateral spreading (Impact 4.2-4);[606] water quality impact associated with construction activities (Impact 4.3-1);[607] discharges of treated water and disinfectant from existing and newly

[603] DEIR/EIS, at p. 4.2-54.
[604] *Id.*
[605] DEIR/EIS, p. 4.2-59 (compliance with California Building Code).
[606] *Id.*, at p. 4.2-61 (compliance with Monterey County requirements for geotechnical study, standard engineering practices, implementation of design recommendations, and standard construction methods).
[607] *Id.*, at p. 4.3-58 (compliance with NPDES).

> installed pipelines during construction (Impact 4.3-3);[608] degradation of water quality due to discharges associated with maintenance of the subsurface intake wells and ASR injection/extraction wells (Impact 4.3-6);[609] alteration of drainage patterns such that there is a resultant increase in erosion, siltation, or the rate or amount of surface runoff (Impact 4.3-7);[610] and construction-related impact to water quality in jurisdictional waters related to increased soil erosion and/or inadvertent releases of toxic construction chemicals (Impact 4.6-3).[611]

In the analyses for all of these impacts, the DEIR/EIS acknowledges the impacts could be significant, but then concludes no significant impact based on compliance with laws without actually analyzing the impact and incorporating any enforceable mitigation. For example, under Impact 4.3-3, the DEIR/EIS states:

> The treated water generated from the draining of existing pipelines and the effluent generated from disinfection of newly installed pipelines would be discharged to the local storm drainage system. Without proper controls, these discharges could adversely affect water quality in downstream receiving water bodies by increasing turbidity (if discharged directly without appropriate treatment) or due to high chlorine (the primary disinfectant used for drinking water) concentrations.[612]

CURE-48 cont.

The DEIR/EIS further states that "General [Waste Discharge Requirements (Order No. R3-2011-0223, NPDES Permit No. CAG993001)] WDRs require that CalAm neutralize the residual chlorine remaining in disinfection effluent such that detectable chlorine levels are less than 0.02 mg/L, and require that the total dissolved solids be within surface water and groundwater quality objectives."[613] The DEIR then concludes that "[c]ompliance with the General WDRs and the conditions therein would protect water quality in receiving water bodies [and] the impact would be less than significant,"[614] without requiring any mitigation. Under

[608] *Id.*, at p. 4.3-65 (compliance with NPDES).
[609] *Id.*, at p. 4.3-110 (compliance with NPDES).
[610] *Id.*, at p. 4.3-112 (compliance with Construction General Permit requirements).
[611] *Id.*, at p. 4.6-209 (compliance with NPDES).
[612] *Id.*, at p. 4.3-65.
[613] *Id.*
[614] *Id.*

CEQA, the DEIR/EIS must actually analyze the potential for the increased turbidity and high chlorine levels, and incorporate compliance with the WDR standards as enforceable mitigation.

The CPUC and MBNMS may not rely solely on compliance with regulations or laws as reducing impacts to less than significant levels without a full analysis of impacts or enforceable mitigation. As the DEIR/EIS is currently presented, the CPUC and MBNMS cannot conclude that the Project's impacts have been fully assessed and properly mitigated to less than significant.

CURE-48 cont.

VII. THE DEIR/EIS FAILS TO EVALUATE CERTAIN ALTERNATIVES

NEPA regulations identify the need to consider reasonable alternatives.[615] NEPA requires consideration of all aspects that may be relevant and important to decision-makers, including factors that are not related to environmental quality. NEPA requires substantial treatment of each alternative, including the proposed action, so that reviewers may evaluate their comparative merits.[616]

Under CEQA, the lead agency is required to consider project alternatives that might eliminate or reduce the Project's significant adverse environmental effects. CEQA requires that an EIR "[d]escribe a range of reasonable alternatives . . . which could feasibly attain the basic objectives of the project and evaluate the comparative merits of the alternatives."[617] An EIR must "produce information sufficient to permit a reasonable choice of alternatives so far as environmental aspects are concerned."[618] The key issue is whether the alternatives analysis fosters informed decision-making and informed public participation.[619]

CURE-49

The discussion must focus on alternatives capable of either eliminating any significant adverse environmental effects or reducing them to a level of

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[615] 40 C.F.R. § 1502.14(c).
[616] *Id.*, at § 1502.14.
[617] CEQA Guidelines, § 15126(d); *Village Laguna of Laguna Beach v. Board of Supervisors* (1982)134 Cal.App.3d 1022, 1028; *Citizens of Goleta Valley v. Board of Supervisors (Goleta I)* (1988) 197 Cal.App.3d 1167, 1180-81.
[618] *San Bernardino Valley Audubon Soc'y v. County of San Bernardino* (1984) 155 Cal.App.3d 738, 750-51.
[619] CEQA Guidelines, § 15126.6.

insignificance, even if such alternatives would be more costly or to some degree would impede the project's objectives. One of the most substantive aspects of CEQA is that section 21002 of the statute forbids agencies from approving projects with significant adverse impacts when feasible alternatives (or feasible mitigation measures) can substantially lessen such impacts.[620]

Aside from the proposed Project and the No Project alternative, the DEIR/EIS provides six different alternatives:

- Alternative 1 – Slant wells at Potrero Road[621]
- Alternative 2 – Open-Water Intake at Moss Landing[622]
- Alternative 3 – Monterey Bay Regional Water Project (MBRWP or DeepWater Desal Project)[623]
- Alternative 4 – People's Moss Landing Water Desalination Project (People's Project)[624]
- Alternative 5a – Reduced Project 6.4-mgd Desalination Plant (Intake Slant Wells at CEMEX[625]
- Alternative 5b – Reduced Project 6.4-mgd Desalination Plant (Intake Slant Wells at Potrero Road)[626]

CURE-49 cont.

All of these project alternatives rely on the same basic technology: reverse osmosis. Yet, there is no discussion of other desalination technologies that would allow for CalAm to meet its water production objective, such as:

- Electrodialysis
- Multi-stage flash distillation
- Multiple effect distillation
- Vapor compression desalination[627]

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[620] *Sierra Club v. Gilroy City Council* (1990) 222 Cal.App.3d 30, 41; *Citizens for Quality Growth v. City of Mount Shasta* (1988) 198 Cal.App.3d 433, 440-41; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 711, 730-31; Pub. Resources Code, § 21081.
[621] DEIR/EIS, at § 5.4.3.
[622] *Id.*, at § 5.4.4.
[623] *Id.*, at § 5.4.5.
[624] *Id.*, at § 5.4.6.
[625] *Id.*, at § 5.4.7.
[626] *Id.*, at § 5.4.8.

Among these processes are also those that embrace renewable energy, such as:

- Solar humidification
- Membrane distillation[628]

The DEIR/EIS proposes a reduced project alternative, which is the environmentally superior option.[629] But it fails to consider aggregated, small scale desalination projects.[630] This is particularly relevant given that other desalination proposals are being considered in Monterey Bay, which may provide sufficient water quantities to the County.[631]

CURE-49 cont.

VIII. OTHER CONSIDERATIONS

A. Growth Related Impacts Must Be Adequately Considered

CEQA requires a separate and distinct analysis of growth-inducing impacts. The requirement to assess "growth-inducing impacts" must include the following:

> [T]he ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is

CURE-50

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[627] I. El Saliby et al., Desalination plants in Australia, Review and Facts, *Desalination 247 (2009) 1–14,* at p. 2, **Attachment V.**
[628] *Id.,* at p. 2.
[629] DEIR/EIS, at p. 1-2 (discussing Alternative 5a).
[630] I. El Saliby et al., *supra,* at p. 2.
[631] *See* Desalination Map, NOAA: MBNMS, *supra, available at* http://montereybay.noaa.gov/materials/mappages/desalinizationmap.html.

> necessarily beneficial, detrimental, or of little significance to the environment.[632]

In *City of Davis v. Coleman*, the court set aside a Negative Declaration and required preparation of an EIR where evidence supported the finding that the construction of a highway interchange would cause urban growth.[633] However, the court reached its holding in reliance on the common sense conclusion that a project that is intended to support future growth ***will*** also cause potentially significant urban growth impacts which must be analyzed in an EIR.[634] As articulated by the court:

> The growth-inducing effects of the Kidwell Interchange project are its raison d'etre, and with growth will come growth's problems: increased population, increased traffic, increased pollution, and increased demand for services such as utilities, education, police and fire protection, and recreational facilities.[635]

In Monterey, water scarcity has constrained development.[636] Removing this constraint would allow for development projects to move forward.[637] The impacts associated increased development, such as impacts on air quality and water quality, in particular, as compared to the current "constrained" environmental setting may be significant.[638] New building will lead to water quality impacts from urban runoff, which the DEIR/EIS has not considered.[639] With respect to ocean water quality, the levels of contaminants are already at the brink of exceeding Ocean Plan thresholds.[640] Allowing additional development to go forward, with the associated air and water impacts, will likely cause these thresholds to be exceeded.

CURE-50 cont.

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[632] CEQA Guidelines, § 15126.2(4) (emphasis added).
[633] *City of Davis v. Coleman* (1975) 521 F.2d 661, 674-76.
[634] *Id.*, at p. 675.
[635] *Id.*
[636] DEIR/EIS, at p. 6-5-6.
[637] *Id.*
[638] *See id.*
[639] *See* DEIR/EIS, Table 4.3-8
[640] *See id.*, Table 4.3-16.

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Although the DEIR/EIS claims that additional growth would be consistent with adopted land use plans, consistency with adopted goals, polices and guidelines is not a valid basis for finding that impacts of a Project are not cumulatively considerable.[641]

While an EIR's cumulative impact analysis generally may rely on a summary of projections contained in an adopted general plan or related planning document instead of on a list of past, present, and probable future projects[642], it may not do so if the projections in the general plan or related planning document are inaccurate or outdated and thus do not adequately evaluate the potentially significant cumulative impacts of the project.[643] The fact that a particular project's incremental impact may not have been found significant under old, out-of-date growth projections, does not mean that the same project will not contribute to a cumulatively considerable impact when development projections change. Accordingly, consistency with existing zoning, community plan or general plan policies does not relieve a lead agency from the requirement to conduct environmental review of potentially significant cumulative impacts that were not analyzed, discussed or identified in the EIR prepared for the planning document.[644] An EIR's reliance on out-of-date growth projections that do not take into account identified probable future projects thus violates CEQA.

CURE-50 cont.

In *Bakersfield Citizens for Local Control v. City of Bakersfield*, the court found that an agency's reliance on projections contained in a general plan was improper where the general plan's projections did not take into account new projects that were not identified at the time the general plan was prepared, but were reasonably foreseeable at the time of the current EIR.[645] In reaching this decision, the court held that "use of a planning document does not preclude challenge to the accuracy or sufficiency of the cumulative impacts analysis."[646] The Court further held that the "summary-of-projections approach may present problems if the projections in the general plan or related planning document are inaccurate or

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[641] DEIR/EIS, at p. 6-5.
[642] CEQA Guidelines § 15130, subd. (b).
[643] *Bakersfield Citizens for Local Control, supra,* 124 Cal.App.4th, at p. 1217
[644] CEQA Guidelines, § 15183, subd. (b).
[645] *Bakersfield Citizens for Local Control, supra,* 124 Cal.App.4th at p. 1217.
[646] *Id.*

outdated."[647] The Port's position is also inconsistent with the Court's decision in *Citizens to Preserve the Ojai v. County of Ventura*.[648] In that case, the Court held that an EIR's cumulative analysis of air quality impacts was inadequate where it relied upon a prior Air Quality Management Plan that did not take into account new evidence of the cumulative contribution to air pollution from offshore emissions.[649]

Consistency with adopted goals, polices and guidelines is not a valid basis for finding that impacts of a Project are not cumulatively considerable.[650] Impacts do not become automatically less than significant merely because the actions are consistent with adopted goals, polices and guidelines.

The same is true here. Lifting the water constraint will open the Monterey Peninsula to foreseeable growth that must be adequately accounted for, as required by NEPA and CEQA.

CURE-50 cont.

IX. CONCLUSION

The DEIR/EIS does not satisfy CEQA's procedural and evidentiary standards for preparing an EIR, or NEPA's standards for preparing an EIS. The DEIR/EIS fails to include an adequate description of the Project and fails to adequately describe the environmental setting. The DEIR/EIS also fails to address the Project's potentially significant impacts to biological resources, marine resources, air quality, public health, vibration issues, and others. Furthermore, the DEIR/EIS proposes mitigation measures that are deferred, unenforceable, or otherwise inadequate to mitigate impacts to below a level of significance. In the case of significant and unavoidable impacts, the DEIR/EIS fails to propose all feasible mitigation. It also fails to propose legally sufficient alternatives. For these reasons, the CPUC and MBNMS must withdraw the DEIR/EIS and prepare and recirculate

CURE-51

[647] *Id.* (emphasis added).
[648] *Citizens to Preserve the Ojai v. County of Ventura* (1985) 176 Cal.App.3d 421, 427.
[649] *Id.*
[650] *Bakersfield Citizens for Local Control v. City of Bakersfield*, *supra*, 124 Cal.App.4th at 1217.

a revised DEIR/EIS that adequately analyzes and proposes all necessary and feasible mitigation to reduce the Project's potentially significant environmental and public health impacts.

CURE-51 cont.

Sincerely,

Linda T. Sobczynski

LTS:acp
Attachments

1840-062acp

Comments

on

Draft Environmental Impact Report/

Environmental Impact Statement (DEIR/DEIS)

for the

CalAm Monterey Peninsula

Water Supply Project

Prepared

for

Adams Broadwell Joseph & Cardozo

Prepared by

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February 27, 2017

The California American Water Company (CalAm) is proposing to construct and operate the Monterey Peninsula Water Supply Project (MPWSP or Project) in the Monterey Bay Area. The California Public Utilities Commission (CPUC) as lead agency for the State and the National Oceanic and Atmospheric Administration for the United States (NOAA) have prepared a Draft Environmental Impact Report and Environmental Impact Statement (DEIR/EIS) for the Project.[1]

The purpose of the Project is to replace existing water supplies that were limited by the adjudication of the Carmel River and Seaside Groundwater Basin. The Project would replace the lost water with desalinated sea water and increase the CalAm storage capacity in the Seaside Groundwater Basin. CalAm proposes to build either a desalination plant with the capacity to produce up to 9.6 million gallons per day (mgd) of desalinated product water, or to build a smaller project that would include the purchase of product water from the proposed Pure Water Monterey Groundwater Replenishment (GWR) project and construction of a 6.4 mgd desalination plant.

The Project includes construction of up to ten subsurface slant wells, a 9.6-mgd desalination plant to produce about 10,267 ac-ft/yr of desalinated water, improvements to the existing Seaside Groundwater Basin Aquifer Storage and Recovery (ASR) system facilities, 30 miles of pipeline, two pump stations, a Terminal Reservoir, and water storage tanks.[2]

CURE-Fox-1

I reviewed the air quality, greenhouse gas, historic resources, and vibration sections of the DEIR/EIS for the Project as well as the 2015 DEIR.[3] My comments on the 2015 DEIR are incorporated here by reference.[4] My review of the DEIR/EIS indicates:

- The DEIR/EIS fails to evaluate all air quality impacts.
- Construction emissions are not supported by substantial evidence.

CURE-Fox-2

[1] ESA, CALAM Monterey Peninsula Water Supply Project Draft Environmental Impact Report/Environmental Impact Statement, Prepared for California Public Utilities Commission and Monterey Bay National Marine Sanctuary, January 2017; Available at: http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/deir-eis/1_CalAm_MPWSP_DEIR-EIS.pdf.

[2] DEIR/EIS, Table ES-2 & Chapter 2.

[3] ESA, Monterey Peninsula Water Supply Project Draft Environmental Impact Report, Prepared for California Public Utilities Commission, April 2015; Available at: http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/deir_toc.html.

[4] Phyllis Fox, Comments on Draft Environmental Impact Report for the CalAm Monterey Peninsula Water Supply Project, July 1, 2015, Attachment A to comments submitted by Adams Broadwell Joseph and Cardozo ("Fox 2015 DEIR Comments"); Available at: http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/deir_comments/G_CURE4_p1.pdf.

- The DEIR/EIS fails to require all feasible mitigation for significant and unavoidable construction ROG and NOx impacts.
- The DEIR/EIS fails to include indirect operational impacts from electricity generation, which are significant for NOx.
- The DEIR/EIS fails to identify and mitigate significant cancer health risks from diesel particulate matter emissions during Project construction.
- The DEIR/EIS fails to identify a significant risk of Valley Fever for construction and well maintenance workers as well as local residents.
- The DEIR/EIS relies on conventional dust control measure to mitigate Valley Fever impacts, which are well known to be ineffective due to the small size of the Cocci spores.
- The DEIR/EIS fails to adequately explain why the Project's GHG impacts are significant and unavoidable.
- The DEIR/EIS fails to require all feasible mitigation for significant GHG emissions.
- The DEIR/EIS fails to identify and mitigate significant vibration impacts.
- The DEIR/EIS fails to identify and mitigate significant adverse impacts to historical resources.

CURE-Fox-2 cont.

My resume is included in Exhibit 1 to these Comments. I have over 40 years of experience in the field of environmental engineering, including air emissions and air pollution control; greenhouse gas (GHG) emission inventory and control; water quality and water supply investigations; hazardous waste investigations; hazard investigations; risk of upset modeling; environmental permitting; nuisance investigations (odor, noise); environmental impact reports (EIRs), including CEQA/NEPA documentation; health risk assessments; and litigation support. I have M.S. and Ph.D. degrees in environmental engineering from the University of California at Berkeley with minors in Hydrology and Mathematics. I am a licensed professional chemical engineer in California.

CURE-Fox-3

I have prepared comments, responses to comments and sections of environmental impact reports (EIRs) for both proponents and opponents of projects on air quality, water supply, water quality, hazardous waste, public health, risk assessment, worker health and safety, odor, risk of upset, noise, land use and other areas for well over 500 CEQA documents. This work includes EIRs, Negative Declarations (NDs), and Mitigated Negative Declarations (MNDs). My work has been cited in two published CEQA opinions: (1) *Berkeley Keep Jets Over the Bay Committee, City of San Leandro, and City of Alameda et al. v. Board of Port Commissioners* (2001) 111 Cal.Rptr.2d 598 and *Communities for a Better*

Environment v. South Coast Air Quality Management Dist. (2010) 48 Cal.4th 310 and has supported the record in many other CEQA cases. CURE-Fox-3 cont.

I. AIR QUALITY IMPACTS

The Project would emit pollutants limited by state and federal ambient air quality standards during construction and operation. These include: carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NOx), sulfur oxides (SOx), particulate matter equal to or smaller than 10 microns (PM10), and particulate matter equal to or smaller than 2.5 microns (PM2.5). CURE-Fox-4

A. Construction Criteria Pollutant Emissions Are Significant And Unmitigated

The DEIR/EIS estimated maximum daily emissions of ROG, NOx, CO, PM10, and PM2.5 from Project construction, concluded emissions of NOx and PM10 are significant,[5] and proposed mitigation[6]. The proposed mitigation is inadequate. CURE-Fox-5

1. Construction Emissions Are Not Supported by Substantial Evidence

The construction emissions are summarized in Table 4.10-5. The DEIR/EIS summarizes the methods used to estimate construction emissions[7] and refers the reader to Appendix G1 for detailed assumptions and calculations.[8] However, Appendix G1 is not the starting point for all of the construction emission calculations.

For off-road construction equipment, Appendix G1 includes model inputs and outputs for most emission sources. However, Appendix G1 notes that some emissions were estimated outside of models, but fails to explain where or how.[9] This includes: CURE-Fox-6

- Operational emissions, DEIR/EIS, Appx. G1, pdf 35,78
- Worker and haul trips, DEIR/EIS, Appx. G1, pdf 36,79
- Grading, DEIR/EIS, Appx. G1, pdf 36, 79

[5] DEIR/EIS, Table 4.10-5, pp. 4.10-22 /24.

[6] DEIR/EIS, pp. 4.10-25/27.

[7] DEIR/EIS, p. 4.10-18, Section 4.10.4.2, Construction Emissions.

[8] DEIR/EIS, p. 4.10-22.

[9] DEIR/EIS, Appendix G1, pdf 36, 78,79 (worker and haul trips estimated outside of CalEEMod); 35, 78 (operational emissions are estimated outside of CalEEMod); 36, 78 (fugitive dust emissions estimated outside CalEEMod)

This lack of documentation deprives the public of the opportunity for independent review of the CPUC's conclusions regarding the significance of the Project's construction emissions. CURE-Fox-6 cont.

On-road operational and construction emissions were estimated using CARB's EMFAC2014 Burden Model.[10] This model generates emissions in (1) grams per mile for running exhaust, (2) grams per hour for running loss and diurnal/resting loss, (3) grams per idle-hour for idling exhaust, and (4) grams per trip for hot soak and start. These four sources of emissions cannot be simply summed to come up with a total emissions factor for on-road emissions as they are reported in different units. The starting point for the Appendix G on-road emissions is an emission factor in grams per mile.[11] However, the DEIR/EIS does not include the EMFAC input and output sheets or explain how it combined the EMFAC output, expressed in four different units, into grams per mile. CURE-Fox-7

While the use of models that have been approved by a regulatory agency is a reasonable starting point, the mere claim that such a model was used does not by itself establish substantial evidence to support the emission estimates and conclusions presented in DEIR/EIS Appendix G. Models are merely tools which can be used correctly or incorrectly depending on the assumptions made to develop project-specific input parameters and the accuracy of parameter inputs into the model. As such, the assumptions used to run EMFAC should be subject to public review. Here, they are not. CURE-Fox-8

The DEIR/EIS does not provide any support to demonstrate how ESA calculated the starting point for on-road construction emissions in Appendix G1 and other emissions calculated outside of models (grading, workers and haul trips, operational emissions). The DEIR/EIS should be recirculated with enough relevant information to verify the DEIR/EIS's estimates of construction emissions including: (1) identification of all Project-specific assumptions and input parameters; (2) a copy of the model run inputs and outputs; and (3) any other documentation prepared by ESA or other CPUC consultants, such as original Excel spreadsheet model inputs and outputs plus Appendix G1 spreadsheets used to make the final construction emission calculations, i.e., the record should include unlocked Excel spreadsheets that correspond to those in Appendix G1. These documents are routinely provided to support EIRs[12] and other CEQA-equivalent documents,[13] as required under CURE-Fox-9

[10] DEIR/EIS, Appendix G1, pdf 19, 23, 24-28, 31, 36.

[11] DEIR/EIS, Appendix G1, pdf 19.

[12] *See*, for example, City of Los Alamitos, General Plan Update, Draft Environmental Impact Report, August 2014, SCH No. 2013121055, Appendix C, Air Quality and GHG Modeling; Available at: http://cityoflosalamitos.org/?wpfb_dl=2323; County of Los Angeles, Los Angeles County General Plan Update, Draft Environmental Impact Report, SCH No. 2011081042, June 2014, Appendix G;

CEQA and California public records laws. They must be provided here to support the DEIR/EIS's conclusions regarding the significance of construction emissions. CURE-Fox-9 cont.

Thus, the DEIR/EIS's conclusions regarding construction impacts on air quality are not supported by substantial evidence. As it stands, the reviewer has no choice but to simply accept the DEIR/EIS's analysis without any opportunity to verify the CPUC's conclusions regarding the significance of construction CO, SO2, ROG, NOx, PM10, and PM2.5 emissions. This frustrates the public review requirements under CEQA. CURE-Fox-10

Available at: http://planning.lacounty.gov/generalplan/ceqa; The Town of Los Gatos, Los Gatos Sustainability Plan, October 15, 2012, Available at: Appendix B; http://www.losgatosca.gov/1860/Sustainability-Plan.

[13] **Victorville 2 Solar Gas-Hybrid Power Project**: Construction and operational criteria pollutant and TAC emission estimates were provided on CD as password-protected Excel spreadsheets in response to California Unions for Reliable Energy ("CURE") data requests. *See* http://www.energy.ca.gov/sitingcases/victorville2/documents/applicant/2007-07-02_APPLICANTS_OBJECTIONS_TO_CURE_DATA_REQUEST_SET_01.PDF and http://www.energy.ca.gov/sitingcases/victorville2/documents/applicant/2007-07-12_RESPONSES_TO_CURE_DATA_REQUEST_SET_01.PDF;

Blythe Solar Power Project: Operational emissions were provided as unprotected Excel spreadsheets in response to CEC staff data requests. http://www.energy.ca.gov/sitingcases/solar_millennium_blythe/documents/applicant/data_responses_set_1/Air%20Quality/Air%20Quality%20Supporting%20Documentation/Blythe%20DR%20Operating%20Emissions.xlsx and http://www.energy.ca.gov/sitingcases/solar_millennium_blythe/documents/applicant/data_responses_set_1/Air%20Quality/Air%20Quality%20Supporting%20Documentation/Blythe%20Data%20Rrespons e%20Emissions.xlsx;

Palen Solar Power Project: Construction and operational emission estimates were provided as unprotected Excel spreadsheets in response to CEC staff data requests. *See* http://www.energy.ca.gov/sitingcases/solar_millennium_palen/documents/applicant/data_responses_set_1/Air%20Quality/Air%20Quality%20Supporting%20Documentation/Palen%20DR%20Construction%20Emissions.xlsx and http://www.energy.ca.gov/sitingcases/solar_millennium_palen/documents/applicant/data_responses_set_1/Air%20Quality/Air%20Quality%20Supporting%20Documentation/Palen%20DR%20Operating%20Emissions.xlsx;

Bullard Energy Center: Operational emission estimates were provided as unprotected Excel spreadsheets in response to CEC staff data requests. *See* http://www.energy.ca.gov/sitingcases/bullard/documents/applicant/DA-response-1/appendix-A/Attachment-7-1.xls and http://www.energy.ca.gov/sitingcases/bullard/documents/applicant/DA-response-1/appendix-A/Attachment-19-1.xls; and

Riverside Energy Resource Center: Estimates for startup, shutdown, maintenance emissions from turbines and emissions estimates for on-road vehicle travel were provide as unprotected Excel spreadsheets in response to CURE data requests. *See* http://www.energy.ca.gov/sitingcases/riverside/documents/applicants_files/2004-08-10_CURE_DATA_REQ4.PDF and http://www.energy.ca.gov/sitingcases/riverside/documents/applicants_files/cure_set4.

2. Construction Mitigation Is Not Adequate

The DEIR/EIS concluded that "[s]hort-term emissions associated with construction of the proposed project could contribute to an exceedance of a state and/or federal standard for ozone, NO2, and PM10 based on the estimated maximum daily mass emissions levels presented in Table 4.10-5, which would exceed the MBUAPCD significance threshold for PM10."[14] Elsewhere, the DEIR/EIS concluded that construction activities could conflict with implementation of the MBUAPCD's Air Quality Management Plan (Impact 4.10-2).[15]

The DEIR/EIS then concludes that the significant air quality impact with respect to ozone and NO2 standards "would be significant and unavoidable even with implementation of Mitigation Measures 4.10-1a and 4.10-1b."[16] An EIR may conclude that an impact is significant and unavoidable only if all available and feasible mitigation measures have been proposed, but are inadequate to reduce the impact to a less than significant level.[17] If supported by substantial evidence, the lead agency may make findings of overriding considerations and approve the project in spite of the significant and unavoidable impact(s). However, the lead agency cannot simply conclude that an impact is significant and unavoidable without requiring all feasible mitigation, as here. As discussed below, the proposed mitigation for ozone and NO2 impacts from construction is not all feasible mitigation.

CURE-Fox-11

[14] DEIR/EIS, p. 4.10-24, pdf 1048.

[15] DEIR/EIS, p. 4.10-26, Impact 4.10-2.

[16] Ibid.

[17] See Cal. Code Regs. Titl.14 ("CEQA Guidelines"), § 15126.2.

a. Mitigation Measure 4.10-1a: Equipment with High-Tiered Engine Standards

Mitigation Measure 4.10-1a proposes the use of equipment that meets asserted high-tiered engine standards.[18] This mitigation measure stipulates:

> **Mitigation Measure 4.10-1a: Equipment with High-Tiered Engine Standards.**
>
> For diesel-fueled off-road construction equipment of more than 50 horsepower, CalAm and/or its construction contractor shall make a good faith effort to use available construction equipment that meets the highest USEPA-certified tiered emission standards. For all pieces of equipment that would not meet at least Tier 3 emission standards, CalAm or its construction contractor shall provide to the CPUC documentation from two local heavy construction equipment rental companies that indicates that the companies do not have access to higher-tiered equipment for the given class of equipment. Such documentation shall be provided to the CPUC at least two weeks prior to the anticipated use of those pieces of equipment.

CURE-Fox-12

This measure is inadequate as mitigation. First, Tier 3 is not the highest tier (lowest emission) off-road engines available. Tier 4 engines are the lowest polluting engines and are widely available in new construction fleets, such as that offered by Garney Pacific,[19] one of the contractors for the pipeline.[20]

Second, a "good faith" effort is not adequate to satisfy CEQA. The Request for Proposal (RFP) for this Project should specify the use of Tier 4 engines or control(s) that yield the Tier 4 emission standards. If no contractor can comply (which is highly unlikely), this mitigation measure should be expanded to require consideration of lease or rental from private vendors within 1,000 miles of the Project site if Tier 4 is not available in any contractor's fleet. If a Tier 4 engine is not available from a contractor or via lease/rental, the lowest emitting engine should be retrofit with pollution controls to meet Tier 4 standards, e.g., SCR, particulate trap. The request to deviate from the use of Tier 4 engines should only be considered after all feasible actions have been taken to comply, accompanied by a report certified by a licensed California professional engineer, listing all steps taken to acquire Tier 4 engines supported by correspondence from all contacted suppliers.

CURE-Fox-13

[18] DEIR/EIS, p. 4.10-25, pdf 1051.

[19] Garney Construction, Construction Equipment Efficiency Plan, Monterey Pipeline Project, October 24, 2016, pdf 3 ("The Garney Construction project maintenance program starts with reduction of potential mechanical issues by utilizing new equipment (4 years or newer) for all heavy equipment utilized in our fleet. This ensures all equipment used is in compliance with emission (Tier 4) and noise regulations…").

[20] Garney Construction, Garney Pacific Lands Monterey Peninsula Water Supply Project, January 2016; Available at: http://www.garney.com/garney-pacific-lands-monterey-peninsula-water-supply-project-2/.

Third, the IS/MND for this Project and other similar EIRs have required Tier 4 engines, as noted in Comment I.A.2.a. CURE-Fox-14

b. Mitigation Measure 4.10-1b: Idling Restrictions

Mitigation Measure 4.10-1b establishes limits on idling time for on-road and off-road engines[21]:

> **Mitigation Measure 4.10-1b: Idling Restrictions.**
>
> On road vehicle idling time shall be minimized and shall not exceed a five minute maximum. Additionally, off-road engines shall not idle for longer than five minutes per Section 2449(d)(3) of Title 13, Article 4.10, Chapter 9 of the California Code of Regulations. Clear signage of this requirement shall be provided for construction workers at all access points to construction areas.

CURE-Fox-15

Limiting idle time to 5 minutes is required by 13 CCR 2449[d][3], 2485 for off-road vehicles.[22] Thus, this is not valid CEQA "mitigation". This mitigation measure should be modified to lower the maximum idling time to 2 minutes, which has been required for other similar projects[23] . Some states, Connecticut, Delaware, the District of Columbia, and New Jersey, and some cities, Santa Barbara, Minneapolis, Burlington and Chicago, for example, limit idling to 3 minutes for all on- and/or off-road vehicles.[24] In addition to lowering the idling time, the construction contractor should be required to maintain a written idling policy and distribute it to all employees and subcontractors. The on-site construction manager shall enforce this limit.[25]

c. Additional Feasible Mitigation for Construction Ozone and NO_2 Emissions

CURE-Fox-16

The Draft Initial Study and Mitigated Negative Declaration for the slant test well (IS/MND)[26] concluded air quality impacts would be "less than significant with

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[21] DEIR/EIS, p. 4.10-25.

[22] https://govt.westlaw.com/calregs/Document/ID1C693E02DDD11E197D9B83B68A61150?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default).

[23] See, e.g., Chevron Refinery Modernization Project EIR, March 2014, Chapter 5, Mitigation Measure Monitoring and Reporting Program, p. 5-27; Available at: https://s3.amazonaws.com/chevron/Final+EIR/5_MMRP.pdf

[24] Idling Database; Available at: https://cleancities.energy.gov/files/docs/idlebox_idlebase_database.xlsx.

[25] CARB, Written Idling Policy Guidelines, June 2009; Available at: https://www.arb.ca.gov/msprog/ordiesel/guidance/writtenidlingguide.pdf.

[26] SWCA Environmental Consultants, Draft Initial Study and Mitigated Negative Declaration for the California American Water Slant Test Well Project, Prepared for City of Marina, May 20 (IS/MND).

mitigation incorporation"[27] and imposed mitigation measures for NOx and ROG impacts.[28] However, most of these measures were not included in the DEIR/EIS. The omitted measures are all feasible, are listed below, and identified by "(IS/MND)". Additional mitigation is identified in the MBUAPCD's CEQA Guidelines.[29] The recently approved FEIR for the Chevron Modernization Program (Chevron) also includes mitigation measures for NOx and ROG emissions from construction equipment.[30] Finally, EPA has identified feasible mitigation for NOx and ROG emissions from construction emissions. Feasible mitigation measures from these and other sources for NOx and ROG not included in the DEIR/EIS are: CURE-Fox-16 cont.

- Maintain all construction equipment in proper tune according to manufacturer's specifications. The equipment must be check by an ASE-certified mechanic and determined to be running in proper condition before it is operated. (IS/MND; Chevron). CURE-Fox-17
- Diesel powered equipment shall be replaced by electric equipment whenever feasible to reduce NOx emissions (IS/MND, Chevron) CURE-Fox-18
- Diesel-powered equipment shall be replaced by gasoline-powered equipment whenever feasible (IS/MND, Chevron) CURE-Fox-19
- The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time (IS/MND) CURE-Fox-20
- The engine size of construction equipment shall be the minimum practical size (IS/MND) CURE-Fox-21
- Catalytic converters shall be installed on gasoline-powered equipment (IS/MND) CURE-Fox-22
- Signs shall be posted in designated queuing areas and job sites to remind drivers and operators of the idling limit (IS/MND, Chevron) CURE-Fox-23
- Diesel equipment idling shall not be permitted within 1,000 feet of sensitive receptors (IS/MND) CURE-Fox-24
- Engine size of construction equipment shall be the minimum practical size (IS/MND) CURE-Fox-25

[27] IS/MND, p. 38.

[28] IS/MND, p. 44, AQ/mm-2.

[29] MBUAPCD 2008, Table 8-2 to 8-4, and 8-7.

[30] Chevron Refinery Modernization Project EIR, March 2014, Chapter 4.8, Greenhouse Gases; Available at: http://chevronmodernization.com/wp-content/uploads/2014/03/4.8_Greenhouse-Gases.pdf and Chapter 5, Mitigation Measure Monitoring and Reporting Program; Available at: https://s3.amazonaws.com/chevron/Final+EIR/5_MMRP.pdf.

- The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time (IS/MND) CURE-Fox-26
- Construction worker trips shall be minimized by providing options for carpooling and by providing for lunch onsite (ISMND, Chevron) CURE-Fox-27
- Use electric fleet or alternative fueled vehicles where feasible including methanol, propane, and compressed natural gas (Chevron) CURE-Fox-28
- Use alternative diesel fuels, such as Aquazole fuel, Clean Fuels Technology (water emulsified diesel fuel), or O2 diesel ethanol-diesel fuel (O2 Diesel) in existing engines (SCAQMD, Monterey County General Plan EIR) [31,32] CURE-Fox-29
- Modify engines with ARB verified retrofits CURE-Fox-30
- Repower engines with Tier 4 Interim diesel technology CURE-Fox-31
- Convert part of the construction truck fleet to natural gas[33] CURE-Fox-32
- Use new or rebuilt equipment CURE-Fox-33
- Use diesel-electric and hybrid construction equipment[34] CURE-Fox-34
- Use low rolling resistance tires on long haul class 8 tractor-trailers[35] CURE-Fox-35

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[31] SCAQMD, Mitigation Measure Resources, Construction Emissions Mitigation Measures, https://www.google.com/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=scaqmd%20ceqa%20construction%20mitigation.

[32] Monterey County General Plan EIR, Section 6.4.3.3, p. 6-14 (""The EIRs prepared for the desalination plants are expected to require that construction equipment use alternative fuels or other means to reduce their emissions of ozone precursors. Although, depending upon the intensity of construction, there is the potential for a significant impact on air quality from ozone precursors."); Available at: http://www.co.monterey.ca.us/planning/gpu/2007_GPU_DEIR_Sept_2008/Text/Sec_06_Other_CEQA.pdf.

[33] This is a mitigation measure used by PG&E to offset NOx emissions from its Otay Mesa Generating Project. See: GreenBiz, Natural Gas Trucks to Offset Power Plant Emissions, September 12, 2000; Available at: http://www.greenbiz.com/news/2000/09/12/natural-gas-trucks-offset-power-plant-emissions.

[34] Tom Jackson, How 3 Diesel-Electric and Hybrid Construction Machines are Waging War on Wasted Energy, Equipment World, June 1, 2014; Available at: http://www.equipmentworld.com/diesel-electric-and-other-hybrid-construction-equipment-are-waging-war-on-wasted-energy/; Kenneth J. Korane, Hybrid Drives for Construction Equipment, Machine Design, July 7, 2009; Available at: http://machinedesign.com/sustainable-engineering/hybrid-drives-construction-equipment; Caterpillar's D7E Electric Drive Redefines Dozer Productivity; Available at: http://www.constructionequipment.com/caterpillars-d7e-electric-drive-redefines-dozer-productivity.

[35] EPA, Verified Technologies for SmartWay and Clean Diesel, Learn About Low Rolling Resistance (LRR) New and Retread Tire Technologies; Available at: https://www.epa.gov/verified-diesel-tech/learn-about-low-rolling-resistance-lrr-new-and-retread-tire-technologies; EPA, Verified Technologies for SmartWay and Clean Diesel, SmartWay Verified List for Low Rolling Resistance (LRR) New and Retread Tire Technologies; Available at: https://www.epa.gov/verified-diesel-

- Use idle reduction technology, defined as a device that is installed on the vehicle that automatically reduces main engine idling and/or is designed to provide services, e.g., heat, air conditioning, and/or electricity to the vehicle or equipment that would otherwise require the operation of the main drive engine while the vehicle or equipment is temporarily parked or is stationary[36] CURE-Fox-36
- Convert part of the construction truck fleet to natural gas[37] CURE-Fox-37
- Implement EPA's National Clean Diesel Program.[38,39,40] CURE-Fox-38

To assure the construction mitigation program is carried out, all off-road diesel-powered equipment should be tested to assure tailpipe emissions do not exceed 20% opacity for more than 3 minutes in any hour. Any equipment found to exceed 20% opacity must be repaired immediately. A visual inspection of all in-operation equipment must be made at least daily by the contractor and witnessed monthly or more frequently by the MBUAPCD, and a periodic summary of the visual survey results must be submitted by the contractor throughout the duration of the project to the MBUAPCD. The summary should include the quantity and type of vehicles inspected and dates. CURE-Fox-39

All feasible mitigation must be required when an impact is significant and unavoidable. Thus, the DEIR/EIS must be revised to include these additional mitigation measures and recirculated for public review. CURE-Fox-40

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tech/smartway-verified-list-low-rolling-resistance-lrr-new-and-retread-tire.

[36] EPA Names Idle Reduction Systems Eligible for Federal Tax Exemptions, March 2009, Available at: http://www.greenfleetmagazine.com/channel/green-operations/article/story/2009/03/epa-names-idle-reduction-systems-eligible-for-federal-excise-tax-exemptions-grn.aspx. See also: Idle Reduction, Wikipedia; Available at: https://en.wikipedia.org/wiki/Idle_reduction and Diesel Emissions Reduction Program (DERA): Technologies, Fleets and Project Information, Working Draft Version 1.0; Available at: nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100CVIS.TXT.

[37] This is a mitigation measure used by PG&E to offset NOx emissions from its Otay Mesa Generating Project. See: GreenBiz, Natural Gas Trucks to Offset Power Plant Emissions, September 12, 2000; Available at: http://www.greenbiz.com/news/2000/09/12/natural-gas-trucks-offset-power-plant-emissions.

[38] Northeast Diesel Collaborative, Best Practices for Clean Diesel Construction.Successful Implementation of Equipment Specifications to Minimize Diesel Pollution; https://www.northeastdiesel.org/pdf/BestPractices4CleanDieselConstructionAug2012.pdf.

[39] U.S. EPA, Cleaner Diesels: Low Cost Ways to Reduce Emissions from Construction Equipment, March 2007; https://www.epa.gov/sites/production/files/2015-09/documents/cleaner-diesels-low-cost-ways-to-reduce-emissions-from-construction-equipment.pdf.

[40] NEDC Model Contract Specification, April 2008; http://www2.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf.

B. The DEIR/EIS Omits Indirect Operational Emissions

The DEIR/EIS estimated emissions from operation of the Project from three sources: on-road vehicle exhaust, emergency generator testing, and slant well maintenance.[41] However, the major source of Project emissions is indirect emissions from the generation of electricity. The DEIR/EIS did not include those emissions, arguing that "[i]t is generally not possible to determine the exact generator source(s) of electricity on the power grid that would supply the proposed project, or whether or not the electricity would even be generated within the Air Basin."[42] Further, the Monterey County General Plan EIR explicitly recognized that that ""Taking a conservative view, the indirect impacts of the water supply projects to be built would potentially make considerable contributions to air quality, biological, and electrical energy use."[43]

CURE-Fox-41

CURE-Fox-42

These are not valid reasons under CEQA to exclude the major source of emissions from this Project. EIRs routinely include indirect emissions from electricity generation.[44] In fact, the GHG section of this DEIR/EIS includes indirect GHG emissions from power generation.[45] Further, the MBUAPCD's CEQA guidelines state: "The following thresholds apply to all indirect and direct emissions, whether or not they are subject to District permit authority, unless noted otherwise."[46] The "following thresholds" are in Table 5-3, which indicates that the NOx and ROG significance thresholds of 137 lb/day are to be compared to "direct + indirect" emissions.[47] Thus, the DEIR/EIS must include the increase in emissions of criteria pollutants from the net increase in power production to support the Project.

CURE-Fox-43

Further, CEQA does not require that indirect emissions be limited to the Project's "Air Basin." Electricity from any generator in California could be used at the Project site. As the significance criteria are based on the maximum day, finding the "maximum" is all that is required.

CURE-Fox-44

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[41] DEIR/EIS, Table 4.10-7.

[42] DEIR/EIS, p. 4.10-29.

[43] Monterey County General Plan EIR, p. 6-14; Available at: http://www.co.monterey.ca.us/planning/gpu/2007_GPU_DEIR_Sept_2008/Text/Sec_06_Other_CEQA.pdf.

[44] See, e.g., The Carlsbad Desalination Project EIR, pp. 4.2-18/20 & Table 4.2-9; Available at: http://carlsbaddesal.com/eir.

[45] DEIR/EIS, p. 4.11-12/13, 4.11-16/18, Table 4.11-4.

[46] MBUAPCD 2008, p. 5-4.

[47] MBUAPCD 2008, Table 5-3. Table 5-3.

The DEIR/EIS indicates that PG&E would supply the power. The sources of PG&E's power are known. As any source within PG&Es system and elsewhere on the grid could be used via purchases by PG&E, unless the EIR includes a condition limiting power sources, emissions should be estimated for the plausible worst case daily maximum emissions, which is the basis of MBUAPCD's significance thresholds for NOx and ROG. As the DEIR/EIS does not provide substantial evidence that these emissions are de minimus, they must be estimated. Further, the DEIR/EIS does not include any of the information required to estimate these emissions. Thus, it fails as an informational document under CEQA and forces the public to generate its own estimates in order to properly evaluate the Project's impacts. CURE-Fox-45

As the DEIR/EIS contains none of the information required to estimate these emissions, I bounded the maximum plausible NOx emissions using two methods. CURE-Fox-46

First, I used AP-42 emission factors for natural gas fired turbines,[48] the most likely electricity source for the Project. The maximum daily emissions would occur at an uncontrolled gas turbine plant, i.e., during a startup/shutdown or uncontrolled operation. CURE-Fox-47

The NOx emission factor for an uncontrolled natural gas turbine plant is 2.56 lb/MWh.[49] The net increase in annual electrical power demand due to the Project is 51,698 MWh per year, relative to the baseline.[50] Thus, assuming a maximum day NOx emission factor of 2.56 lb/MWh, the Project would increase NOx emissions by up to 363 lb/day,[51] which exceeds the MBUAPCD's NOx significance threshold of 137 lb/day. Therefore, the NOx emissions from producing a net increase of 51,698 MWh per year of electricity to support the Project is large enough taken alone to exceed the MBUAPCD's NOx significance threshold. CURE-Fox-48

Therefore, the NOx emissions from producing a net increase of 51,698 MWh per year of electricity to support the Project is large enough taken alone to exceed the MBUAPCD's NOx significance threshold. This is a significant impact that was not disclosed in the DEIR/EIS and that must be mitigated. CURE-Fox-49

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[48] U.S. EP, Compilation of Air Pollutant Emission Factors, (AP-42), Chapter 3.1: Stationary Gas Turbines, April 2000, Table 3.1-1; Available at: http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s01.pdf.

[49] NOx emission factor from Table 3.1-1: (0.32 lb/10^6 Btu)(8000 Btu/KWh)(1000 KW/MW) **= 2.56 lb/MWh**.

[50] DEIR/EIS, p. 4.11-13.

[51] (2.56 lb/MWh)(51,698 MWh/yr)/365 day/yr = **363 lb/day NOx**.

Second, I identified all PG&E owned power plants in California.[52] I then determined the maximum daily emissions from each, using EPA's CAMD daily data for 2014. This analysis identified two fossil fuel fired PG&E owned power plants in California with the follow maximum daily emissions in 2014:

- Colusa Generating Station: 432 lb/day
- Gateway Generating Station: 1,152 lb/day

Thus, assuming 1,152 lb of NOx is emitted on the maximum day, operational NOx emissions would increase from 26.66 lb/day to 1,179 lb/day,[53] which exceeds the MBUAPCD's NOx significance threshold of 137 lb/day by a significant amount. Therefore, the NOx emissions from producing a net increase of 51,698 MWh per year of electricity is large enough taken alone to exceed the MBUAPCD's NOx significance threshold. This is a significant impact not disclosed in the DEIR/EIS that must be mitigated. CURE-Fox-50

This impact could be mitigated by purchasing local and contemporaneous emission reduction credits or by collaborating with a nearby NOx source to reduce their NOx emissions. Alternatively, the increase in electricity demand could be met by using 100% renewable sources of electricity. Comment IV.B. CURE-Fox-51

The DEIR/EIS should be revised to include indirect electricity generation emissions for all criteria pollutants and to mitigate the resulting significant NOx impacts. CURE-Fox-52

C. The DEIR/EIS Fails to Evaluate All Air Quality Impacts

The DEIR/EIS did not evaluate the significance of pollutants for which the Monterey Bay Unified Air Pollution Control District (MBUAPCD) had not set official CEQA significance thresholds. A lead agency has discretion to determine how to classify the significance of impacts. However, it does not have discretion to simply not evaluate the significance of impacts. Further, its judgment must be supported by scientific information and other factual data.[54] Here, the CPUC has simply failed to evaluate the significance of impacts from two pollutants: (1) NO_2 for impacts other than its contribution to ozone and (2) ROG for its impacts other than its contribution to ozone. CURE-Fox-53

[52] Power_Plants.xlsx; Available at: http://energyalmanac.ca.gov/powerplants/.

[53] Revised operational NOx emissions (DEIR/EIS, Table 4.10-7), to include electricity generation: 26.66 + 1,152 = **1,178.7 lb/day**.

[54] CEQA Guidelines §15064(b).

1. Nitrogen Oxides (NOx) Significance Criteria

Nitrogen oxides (NOx) is a family of seven highly reactive gases. The EPA only regulates nitrogen dioxide (NO_2) as a surrogate for this family, because it is the most prevalent in the atmosphere. NO_2 forms quickly from emissions from cars, trucks and buses; power plants; and off-road equipment. In addition to contributing to the formation of ground-level ozone, and fine particulate pollution, NO_2 is linked with a number of adverse effects on the respiratory system.[55] CURE-Fox-54

The DEIR/EIS only evaluated NOx as an ozone precursor, as the MBUAPCD's significance criteria for NOx (137 lb/day) is based only on this endpoint. However, NOx not only contributes to ground-level ozone, it can also causes adverse health effects, acid rain, form particulate matter, and contribute to global warming, water quality deterioration, and visibility impairment.

Thus, there are primary and secondary state and federal ambient air quality standards for nitrogen oxides established using NO_2 as a surrogate for all nitrogen oxides.[56] The primary standards (1-hour) are set to protect public health, including the health of sensitive populations. The secondary standards (annual) are set to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.[57] The DEIR/EIS did not evaluate these primary and secondary impacts of NOx. CURE-Fox-55

First, NOx is harmful to public health. Children, people with lung diseases such as asthma, people who work or exercise outside, children, and the elderly are susceptible to adverse effects such as damage to lung tissue and reduction in lung function.[58] Thus, the Project's NOx emissions also should have been evaluated to determine if the existing primary NO_2 ambient air quality standards, set to protect public health, would be violated. As these standards are based on a 1-hour average, it is plausible that they would be exceeded during construction. CURE-Fox-56

Second, some of the emitted NOx (as well as SO_2) can be converted in the atmosphere to sulfate and nitrates, which contribute to acid rain and fine particulate matter (PM10, PM2.5). These fine particulates can be breathed in and lodged deep in the lungs, leading to a variety of health problems and even premature death. The NOx and SOx contribution to PM10 and PM2.5 should have CURE-Fox-57

[55] EPA, Nitrogen Dioxide, Available at: http://www.epa.gov/airquality/nitrogenoxides/.

[56] DEIR/EIS, Table 4.10-2.

[57] National Ambient Air Quality Standards (NAAQS), Available at: https://www.epa.gov/criteria-air-pollutants#self.

[58] U.S. EPA, Integrated Science Assessment for Oxides of Nitrogen – Health Criteria, EPA/600/R-08/071, July 2008, Available at: http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=194645#Download.

been estimated and added to total PM10 and PM2.5 emissions, but was not. The DEIR/EIS failed to evaluate these impacts of NOx and (and SO2) thus fails as a public disclosure document.

CURE-Fox-57 cont.

Third, NOx emissions contribute to visibility reduction and damages animals, crops, vegetation, and buildings.[59] As the Project is near prime farmland, the DEIR/EIS should have evaluated the potential impacts of construction emissions on these endpoints to determine if the secondary NO_2 ambient air quality standards, set to protect public welfare, were violated. The DEIR/EIS failed to evaluate these secondary NOx impacts and thus is deficient as a public disclosure document.

CURE-Fox-58

Appendix G of the CEQA Guidelines indicates a project would have a significant impact if it also violates any air quality standard or exposes sensitive receptors to substantial pollutant concentrations. This determination can be made for NOx using dispersion modeling, which was not included in the DEIR/EIS, or CEQA significance thresholds from other air districts that are in attainment with ozone standards.

CURE-Fox-59

There are both federal and state 1-hour and annual average ambient NO_2 air quality standards, set to protect public health and welfare.[60] NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. Elevated concentrations increase the risk of acute and chronic respiratory disease. The annual average state NOx standard is 0.030 ppm.[61] The DEIR/EIS indicates that the maximum hourly average NOx concentration for the period 2011 to 2015 has been 0.04 ppm, but fails to report any annual average NOx concentration data.[62] As construction will last for more than one year and emissions from construction equipment are released at ground level, in the breathing zone of nearby sensitive receptors, the DEIR/EIS should have evaluated whether construction emissions violate the ambient NOx standards or expose sensitive receptors to substantial pollutant concentrations in the vicinity of construction activities.

CURE-Fox-60

The absence of a MBUAPCD "CEQA significance threshold" for non-ozone precursor NOx impacts is not an impediment to evaluating this impact as the ambient air quality standards themselves are the CEQA significance thresholds. A

CURE-Fox-61

[59] EPA, Review of the National Ambient Air Quality Standards for Nitrogen Dioxide: Assessment of Scientific and Technical Information, OAQPS Staff Paper, EPA-452/R-95-005, September 1995; Available at: http://www.epa.gov/ttn/naaqs/standards/nox/data/noxsp1995.pdf.

[60] DEIR/EIS, Table 4.10-2.

[61] DEIR/EIS, Table 4.10-2.

[62] DEIR/EIS, Table 4.10-1.

significance threshold is just a surrogate or short cut for avoiding the more time intensive modeling required to evaluate compliance with the ambient standard. When a CEQA significance threshold is missing, a lead agency must model emissions to determine if they cause or contribute to an exceedance of the ambient standards or look to other sources for significance criteria expressed as emission rates, e.g., other air districts.

CURE-Fox-61 cont.

CEQA significance thresholds established by other air districts that are in attainment with ozone standards could be used to evaluate NOx health and other impacts. Four air districts that are in attainment with ozone standards have established CEQA significance thresholds for NOx and ROG based on other considerations:

- Mendocino County AQMD construction: 110 lb/day[63] for NOx and ROG[64]
- Mendocino County AQMD operation: 180 lb/day for ROG and 42 lb/day for NOx[65]
- Colusa County APCD construction: 25 lb/day for NOx and ROG[66]
- Modoc County APCD construction & operation: 250 lb/day for NOx and ROG[67]
- Shasta County AQMD construction & operation: 25 – 137 lb/day for NOx and ROG[68]

CURE-Fox-62

As reported ROG emissions (34 lb/day) exceed the non-ozone significance thresholds of 25 lb/day for Colusa County APCD and Shasta County AQMD, non-ozone public health impacts for both ROG and NOx are significant. This is a new impact that was not disclosed in the DEIR/EIS.

2. Reactive Organic Gases (ROG) Significance Criteria

Reactive Organic Gases or ROG is a collection of volatile organic compounds (VOCs) that form ozone in the atmosphere in the presence of sunlight. The ROG

CURE-Fox-63

[63] BAAQMD, California Air District CEQA Significance Thresholds, Appendix A, Available at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Thresholds_Report_Revised_Appendices_082309.ashx?la=en.

[64] MCAQMD, Advisory, District Interim CEQA Criteria and GHG Pollutant Thresholds, Available at: http://www.co.mendocino.ca.us/aqmd/pdf_files/ceqa-criteria-and-ghg.pdf.

[65] BAAQMD, Appendix A.

[66] BAAQMD, Appendix A.

[67] BAAQMD, Appendix A.

[68] BAAQMD, Appendix A.

emissions from construction of the Project originate largely from diesel exhaust, which is a known Toxic Air Contaminant.[69] Ozone is an oxidant that attacks synthetic rubber, textiles, and other materials and causes extensive damage to plants by leaf discoloration and cell damage. It is also a severe eye, nose, and throat irritant and increases susceptibility to respiratory infections. Ozone is not emitted directly, but rather forms from photochemical reactions in the atmosphere involving VOCs and NOx.

However, the reactions can be slow and not all of the VOCs are converted into ozone under all conditions. The original VOCs emitted from the source can remain in the atmosphere for significant periods, where they result in health impacts of a different nature than ozone, depending upon the specific Toxic Air Pollutants (TAPs) present. The DEIR/EIS only evaluated ROG as an ozone precursor.

CURE-Fox-63 cont.

The VOCs present in ROG, before it is converted into ozone, include volatile organic compounds that are additionally hazardous to human health.[70] The DEIR/EIS's health risk assessment (HRA) only evaluated diesel particulate matter (DPM). It did not evaluate health impacts from toxic air pollutants subsumed in ROG that are not converted to ozone when they reach sensitive receptors, such those only 25 to 100 feet away from active construction sites. These include acutely and chronically toxic chemicals such as toluene, xylene, ethylbenzene, and 1,3 butadiene and carcinogens such as benzene, formaldehyde, acrolein, and acetaldehyde.

The conversion of ROG to ozone is a slow process, so nearby receptors would initially be exposed to unconverted VOCs. The significance thresholds discussed above for ROG by air districts that are in attainment with ozone standards can be used as a first step to evaluate non-ozone construction and operational ROG impacts of the Project. However, a health risk assessment should be conducted due

[69] California Air Resources Board (CARB), Initial Statement of Reasons for Rulemaking, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Staff Report, June 1998. See summary: Findings of the Scientific Review Panel on The Report on Diesel Exhaust as Adopted at the Panel's April 22, 1998, Meeting; Available at: http://www.arb.ca.gov/toxics/dieseltac/de-fnds.pdf.

[70] CARB 1998; H. Ogawa and T. Li, Volatile Organic Compounds in Exhaust Gas from Diesel Engines under Various Operating Conditions, International Journal of Engine Research, 2011, v. 12, 30-40; K. Tanaka et al., Simultaneous Measurements of the Components of VOCs and PAHs in Diesel Exhaust Gas using a Laser Ionization Method, SAE Technical Paper 2009-1, 2009; Y. Yamamoto et al., Measurement of Volatile Organic Compounds in Vehicle Exhaust Using Single-Photon Ionization Time-of-Flight Mass Spectrometry, Anal. Sci., v. 28, no. 4, 2012, 385-90; G.J. Sheng et al., GS-MS Determination of Volatile Organic Compounds in Gasoline and Diesel Emissions, Spring 2006; Available at: http://dujs.dartmouth.edu/wp-content/uploads/2008/05/sheng.pdf; K.E. Ho et al, Vehicular Emissions of Volatile Organic Compounds (VOCs) from a Tunnel Study in Hong Kong, Atmos. Chem. Phys., v. 9, 7491-7504, 2009, Available at: http://www.atmos-chem-phys.net/9/7491/2009/acp-9-7491-2009.pdf.

to the proximity of sensitive receptors. The health risk assessment in Appendix G1.4 only evaluated diesel particulate matter. CURE-Fox-63 cont.

In sum, the DEIR/EIS did not evaluate the significance of emissions if a pollutant, such as NOx as respiratory irritant, does not have a MCUAPCD significance threshold because it failed to perform air dispersion modeling. In summary, NOx emissions have three separate impacts, of which only the first was considered in the DEIR/EIS. CURE-Fox-64

First, NOx forms ozone in the atmosphere and thus contribute to violations of ozone ambient air quality standards. The MBUAPCD NOx significance threshold was developed specifically to address this impact.[71] CURE-Fox-65

Second, NOx is a respiratory irritant. Separate, air quality standards to protect public health and welfare apply to NO_2 as itself, rather than just as an ozone precursor. The MBUAPCD's CEQA significance threshold for NOx is based on its impacts as an ozone precursor.[72] The MBUAPCD CEQA Guidelines do not include a significance threshold for this second set of impacts. These impacts are addressed by the primary NO_2 ambient air quality standards. CURE-Fox-66

Third, NO_2 is a PM10/PM2.5 precursor, reduces visibility, and damages animals, crops, vegetation, and buildings. These impacts are addressed by the secondary NO_2 ambient air quality standards. CURE-Fox-67

The DEIR/EIS is totally silent on these additional NOx impacts. Thus, it fails as a public disclosure document. CURE-Fox-68

Other air districts that are in attainment with the state and federal ozone ambient air quality standards have established significance thresholds for NOx of 25 lb/day to 180 lb/day. The operational NOx emissions estimated in the DEIR/EIS of 26.66 lb/day[73] which excludes indirect emissions, exceed the 25 lb/day operational NOx significance threshold set by Shasta County AQMD. Thus they are *per se* significant without considering any other indiscretions. The DEIR/EIS failed to identify this significant impact, which must be mitigated. CURE-Fox-69

When indirect NOx emissions from power production are added (1152 lb/day), as discussed above, total NOx emissions increase from 26.66 lb/day to 1,179 lb/day, which exceeds the non-ozone attainment NOx significance thresholds of attainment air districts (25 lb/day to 250 lb/day) by a huge amount for all air districts that have CURE-Fox-70

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[71] MBUAPCD 2006, p. 5-3.

[72] MBUAPCD 2006, p. 5-5 ("Projects which would emit 137 pounds per day or more of direct and indirect VOC emissions would have a significant impact on regional air quality by emitting substantial amounts of ozone precursors." NOx is indirect ozone.)

[73] DEIR/EIS, Table 4.10-7.

established NOx significance thresholds for operational emissions and are attainment for ozone. Thus, NOx emissions from power production, when evaluated for impacts other than ozone formation are significant under the NOx significance thresholds established by other air districts. The DEIR/EIS must disclose and analyze this significant impact.

CURE-Fox-70 cont.

II. HEALTH RISKS

The DEIR/EIS evaluated health risks of Project construction for diesel particulate matter (DPM) at two sites, the Carmel Valley Pump Station and ASR Injection/Extraction Wells.[74] This analysis concluded that cancer and chronic health risks are less than significant.[75] However, there are many problems with the DEIR/EIS's analysis, which when corrected, would result in a significant health impact. Further, the HRA analysis is unsupported, incomplete, and failed to include acute impacts.

CURE-Fox-71

A. All Sensitive Receptors Were Not Evaluated

The DEIR/EIS only evaluated the Carmel Valley Pump Station and the ASR Injection/Extraction well site. However, there are other facilities that are near sensitive receptors that were excluded from the HRA, including:

CURE-Fox-72

- Wells ASR-5 and ASR-6 would be constructed within 50 feet of existing residences.[76]

- "The ASR Conveyance Pipeline, ASR Recirculation Pipeline, and the ASR Pump-to-Waste Pipeline would be within 250 feet of Seaside Middle School, and within 50 to 100 feet of residences in the Fitch Park military housing area along Hatten Road and Ardennes Circle."[77]

CURE-Fox-73

B. The DEIR/EIS Did Not Follow OEHHA Guidelines, Substantially Underestimating Health Risk

The OEHHA's guidelines for preparation of health risk assessments, adopted in March 2015, explain that for short-term projects, such as construction of various components of the Project:

CURE-Fox-74

[74] DEIR/EIS, p. 4.10-27/29; Appendix G1.4.1.

[75] DEIR/EIS, Table 4.10-6; Appendix G1.4.1.

[76] DEIR/EIS, pp. 4.10-7 and 4.8-11.

[77] DEIR/EIS, p. 4.10-7.

"We recommend that exposure from projects longer than 2 months but less than 6 months be assumed to last 6 months (e.g., a 2-month project would be evaluated as if it lasted 6 months). Exposure from projects lasting more than 6 months should be evaluated for the duration of the project
….

Finally, the risk manager may want to consider a lower cancer risk threshold for risk management for very short-term projects…There is a valid scientific concern that the rate of exposure may influence the risk – in other words, a higher exposure to a carcinogen over a short period of time may be a greater risk than the same total exposure spread over a much longer time period. In addition, it is inappropriate from a public health perspective to allow a lifetime acceptable risk to accrue in a short period of time (e.g., a very high exposure to a carcinogen over a short period of time resulting in a 1 x 10^{-5} cancer risk). Thus, consideration should be given for very short term projects to using a lower cancer risk trigger for permitting decisions."[78]

CURE-Fox-74 cont.

The DEIR/EIS's analysis only evaluated risk for exposures of 0.25 years or 3 months after birth.[79] If the 3 months post-birth is increased to 6 months[80] per OEHHA guidance, the cancer risk increases from 5.2 in a million to 10 in a million, which is per se significant.

CURE-Fox-75

Further, the DEIR/EIS used the significance threshold for a lifetime exposure, which dilutes the risk when it is received over a very short period of time, as here. Babies exposed during the construction period would receive a lifetime dose of diesel exhaust in a 3 month period. This requires a lower significance threshold than the 10 in one million used in the DEIR/EIS for a 70 year exposure.

CURE-Fox-76

Historically, the significance threshold for cancer risk has been one in a million and still is for criteria set elsewhere, including Clean Water Act 304(a), Safe Drinking Water Act, and the National Toxics Rule.[81] The short-term cancer risks

CURE-Fox-77

[78] OEHHA, Air Toxics Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments, February 2015, Section 8.2.10: Cancer Risk Evaluation of Short Term Projects, pp. 8-17/18; Available at: http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf.

[79] DEIR/EIS, Appendix G1.4.1, pdf 119/120.

[80] Excel Spreadsheet G1.4.1 Health Risk Assessment Calculations, tab "HRA Calcs", change cell E21 from 0.25 to 0.5. This increases the cancer risk from 5.2 per million to 10 per million.

[81] Cheryl Niemi, "Acceptable" Risk Levels for Carcinogens: Their History, Current Use, and How They Affect Surface Water Quality Criteria, Policy Forum #3, Human Health Criteria and Implementation Tools Rule-Makings, February 8, 2013; Available at: http://www.tmw-law.com/news-pdf/SWQSPolicyForumRiskLevel%2002-08-213.pdf.

estimated in the HRA are 5.2 to 6.4 in one million.[82] If the one in a million threshold were used to evaluate Project health impacts, these risk levels would be highly significant. Alternatively, if one assumes the risk is evenly spread out over a 70 year lifetime, the significant cancer risk threshold for a one-year-old would be 0.1 in one million. Under either scenario, cancer risk from diesel exhaust alone would be highly significant and unmitigated. This is a significant impact not disclosed in the DEIR/EIS. This impact could be and should be mitigated by requiring diesel particulate traps on all diesel fueled equipment.

CURE-Fox-77 cont.

C. All Hazardous Pollutants Were Not Included in the HRA

The HRA only evaluated diesel exhaust, which is emitted from construction equipment and on-road vehicles. As noted in Comment I.C, the VOCs present in ROG, before it is converted into ozone, include volatile organic compounds that are additionally hazardous to human health. The HRA only evaluated DPM and failed to evaluate the health impacts from toxic air pollutants subsumed in ROG that are not converted to ozone when they reach sensitive receptors. These include acutely and chronically toxic chemicals such as toluene, xylene, ethylbenzene, and 1,3 butadiene and carcinogens such as benzene, formaldehyde, acrolein, and acetaldehyde.

CURE-Fox-78

The conversion of ROG to ozone is a slow process, so nearby receptors would initially be exposed to unconverted VOCs. These should be included in the HRA, which as it standard, underestimates health impacts and further fails to evaluate acute health impacts.

III. VALLEY FEVER

Valley Fever, or *Coccidioidomycosis* (Cocci), is an infectious disease caused by inhaling the spores of *Coccidioides ssp. (*"Cocci spores"*)*[83], a soil-dwelling fungus. The fungus lives in the top 2 to 12 inches of soil. When soil containing this fungus is disturbed by activities such as digging, vehicles, construction activities, agricultural operations, dust storms, or during earthquakes, the fungal spores become air borne, exposing sensitive receptors. The Valley Fever fungal spores are too small to be seen by the naked eye, and there is no reliable way to test the soil for spores before working in a particular area.[84] The disease is endemic (native and

CURE-Fox-79

[82] DEIR/EIS, Table 4.10-6.

[83] Two species of *Coccidioides* are known to cause Valley Fever: *C. immitis*, which is typically found in California, and *C. posadasii*, which is typically found outside California. *See* Center for Disease Control, Coccidioidomycosis (Valley Fever), Information for Health Professionals; Available at: https://www.cdc.gov/fungal/diseases/coccidioidomycosis/health-professionals.html.

[84] California Department of Public Health, Preventing Work-Related Coccidioidomycosis (Valley Fever), June 2013; Available at: http://www.cdph.ca.gov/programs/hesis/Documents/CocciFact.pdf.

common, regularly found in a particular area) in the semiarid regions of the southwestern United States.[85] As there is no reliable test, presence is assessed based on the known occurrence of the disease in a particular area. Valley Fever is endemic to Monterey County where the Project will be constructed.[86]

Monterey County, including the Project site, is located within the established endemic range of Valley Fever, as shown in Figure 1 below, with one of the highest infection rates in California. The disease has become an increasing concern for Monterey County Health Department.[87] In 2013, there were 70 new cases of Valley Fever reported among Monterey County residents. The rate of new cases in 2013 was 15.7 cases per 100,000 individuals, well above the California statewide rate of 10.8 in 2012. Between 2009 and 2011, there were 145 hospital admissions in Monterey County, costing over $32 million. Forty one percent of these cases occurred in the north county area, which includes most of the project facilities. [88] There were 7 fatal cases in Monterey County between 2011 and 2013.[89] In recent years, reported Valley Fever cases in the southwestern United States have increased dramatically.[90]

CURE-Fox-79 cont.

[85] San Luis Obispo County Public Health Department, What Is Valley Fever? July 20, 2011; Available at: http://www.slocounty.ca.gov/Assets/PH/Epidemiology/ValleyFever_Info.pdf.

[86] CDPH June 2013.

[87] Valley Fever Cases Prompt Health Warning, Available At: http://www.valley-fever.org/.

[88] Monterey County Health Department (MCHD), Coccidioidomycosis in Monterey County. Quick Facts, May 2014, Available at: https://www.mtyhd.org/wp-content/uploads/2014/09/Cocci-Fact-Sheet-2013.pdf.

[89] DEIR/EIS, Appendix G1, Figure G1.1.2.

[90] *See* Center for Disease Control; Fungal Pneumonia: A Silent Epidemic, Coccidioidomycosis (Valley Fever); Available at: http://www.cdc.gov/fungal/pdf/cocci-fact-sheet-sw-us-508c.pdf.

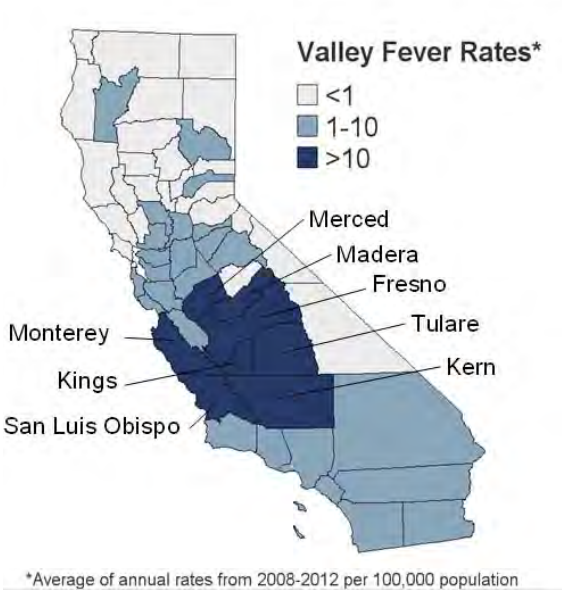


Figure 1. Endemic Areas for Valley Fever in California.[91]

Typical symptoms of Valley Fever include fatigue, fever, cough, headache, shortness of breath, rash, muscle aches, and joint pain. Symptoms of advanced Valley Fever include chronic pneumonia, meningitis, skin lesions, and bone or joint infections. The most common clinical presentation of Valley Fever is a self-limited acute or subacute community-acquired pneumonia that becomes evident 13 weeks after infection.[92] No vaccine or known cure exists for the disease.[93] Between 1990 and 2008, more than 3,000 people have died in the United States from Valley Fever with about half in California.[94]

CURE-Fox-80

[91] California Department of Public Health , What you Need to Know About Valley Fever in California, May 2014, Available at: http://www.cdph.ca.gov/HealthInfo/discond/Documents/EnglishValleyFeverBrochure.pdf.

[92] *See, e.g.*, Lisa Valdivia, David Nix, Mark Wright, Elizabeth Lindberg, Timothy Fagan, Donald Lieberman, Prien Stoffer, Neil M. Ampel, and John N. Galgiani, Coccidioidomycosis as a Common Cause of Community-acquired Pneumonia, Emerging Infectious Diseases, v. 12, no. 6, June 2006; Available at: http://europepmc.org/articles/PMC3373055.

[93] Rebecca Plevin, National Public Radio, Cases Of Mysterious Valley Fever Rise In American Southwest, May 13, 2013; Available at: http://www.npr.org/blogs/health/2013/05/13/181880987/cases-of-mysterious-valley-fever-rise-in-american-southwest.

[94] Jennifer Y. Huang, Benjamin Bristow, Shira Shafir, and Frank Sorvillo, Coccidioidomycosis-associated Deaths, United States, 1990–2008; Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3559166/.

The disease debilitates the population and thus prevents them from working.[95] The longest period of disability from occupational exposure in California is to construction workers, with 62% of the reported cases resulting in over 60 days of lost work.[96] Another study estimated the average hospital stay for each (non-construction work) case of Coccidioidomycosis at 35 days.[97]

CURE-Fox-80 cont.

In spite of this evidence, which I presented in my 2015 comments, incorporated here by reference, the DEIR/EIS dismisses the risk of Valley Fever to Project workers and nearby sensitive receptors by making two irrelevant arguments, discussed below.

A. The DEIR/EIS Fails To Identify Significant Health Impacts Due to Valley Fever

1. The DEIR/EIS Misrepresents Status Quo

First, the DEIR/EIS argues that cases of Valley Fever dropped substantially in 2014 (19 cases) compared to 2011-2013 (68-73 cases),[98] implying that Valley Fever is declining and thus not a concern. However, the Monterey County Health Department reported 73 confirmed cases in 2016, up more than 50% from 2015[99] and consistent with the 2011 to 2013 cases reported in the DEIR/EIS.[100] The decline in 2014 was an anomaly.[101] It is duplicitous for the CPUC to assert Valley Fever is declining based on an anomaly.

CURE-Fox-81

[95] Frank E. Swatek, Ecology of *Coccidioides Immitis*, Mycopathologia et Mycologia Applicata, v. 40, Nos. 1-2, pp. 3-12, 1970.

[96] Schmelzer and Tabershaw, 1968, Table 4.

[97] Demosthenes Pappagianis and Hans Einstein, Tempest from Tehachapi Takes Toll or Coccidioides Conveyed Aloft and Afar, West J. Med., v. 129, Dec. 1978, pp. 527-530; Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1238466/pdf/westjmed00256-0079.pdf.

[98] DEIR/EIS, p. 4.10-4.

[99] KION 5/46 News Channel, Valley Fever Cases up in Monterey County, Update, December 8, 2016; Available at: http://www.kion546.com/news/valley-fever-cases-up-in-monterey-county/201939326.

See also Pam Marino, Valley Fever on the Rise in the Salinas Valley and South County, December 10, 2016; Available at: http://www.kion546.com/news/valley-fever-cases-up-in-monterey-county/201939326.

[100] DEIR/EIS, p. 4.10-4.

[101] County of Monterey Health Department, Coccidioidomycosis – Local Data; Available at: http://www.co.monterey.ca.us/government/departments-a-h/health/diseases/coccidioidomycosis-valley-fever/coccidioidomycosis-local-data.

2. Valley Fever Impacts Are Significant

The DEIR/EIS argues that "much of the population of Monterey County has already been exposed to Valley Fever and would continue to be exposed because of the various earthmoving activities that have historically occurred and continue to occur as a result of agricultural and construction activities throughout the region. As a result of the endemic nature of the disease and the number of earthmoving activities in the County (e.g., grading and excavation for agriculture, as well as new residential, commercial, and industrial development and surface mining operations), there are new cases of Valley Fever documented in the County each year, however, many people who are exposed do not develop symptoms."[102] The DEIR/EIS then concludes, without conducting any analysis whatsoever, that[103]:

> Valley Fever-related impacts associated with the project would not be considered significant because ongoing ground-disturbing activities in the County currently represent a continual source of spores that contribute to the low number of Valley Fever cases reported each year. Construction activities associated with the project would result in similar localized ground disturbing activities to those that occur continually within the County and the project would not result in a substantial increase in spore release. Therefore, construction of the project would not represent an increased risk to public health. In addition, implementation of Mitigation Measure 4.10-1c (see above), which requires implementation of fugitive dust control measures, would ensure that fugitive dust that could contain coccidioides immitis spores would be controlled to the maximum extent feasible. Valley Fever-related impacts would be less than significant.

CURE-Fox-82

These assertions are inconsistent with CEQA, unsupported, and incorrect.

CEQA requires that impacts be evaluated relative to the baseline present at the time environmental review commenced. While some residents of Monterey County may have been exposed to Cocci spores as they live adjacent to agricultural fields or a construction site, this does not mean that an increase in the number spores due to Project construction would not result in an increase in Valley Fever cases. Even assuming, *arguendo*, that this line of argument is valid, the record contains no evidence that all residents downwind of Project construction and all construction workers who would build the Project have in fact been exposed to Cocci spores in sufficient amounts to assure immunity.

It is common, for example, to import construction workers when local skills are not available or cheaper wages can be gained by using out-of-state employees. The request for proposal for the slant wells, for example, requires that the Contractor "must make a good faith effort to employ qualified individuals who are, and have been for at least one year out of the three years prior to the opening of

[102] DEIR/EIS, p. 4.10-28.

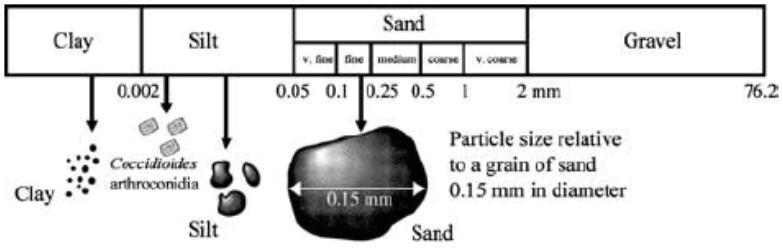
[103] DEIR/EIS, p. 4.10-28.

proposals, residents of Monterey County, San Benito County, or Santa Cruz County in sufficient numbers to achieve a goal of at least fifty percent of the Contractor's total construction work force, including any subcontractor work force."[104] The same condition is found in the RFP for the conveyance facilities.[105] Thus, it is duplicitous to suggest that all potentially exposed parties have already been exposed in Monterey County, which is a highly unlikely scenario.

Residents of the area also have been exposed to existing levels of PM10 and PM2.5, but the DEIR/EIS still evaluated the significance of an increase in PM10 and PM2.5 emissions relative to the baseline. The argument that County residents have been exposed to Cocci spores (a component of PM10, or PM2.5) (Figure 2) is simply a statement of the baseline or the status quo.

CURE-Fox-82 cont.

Figure 2. Size of cocci spores compared to soil particles (in mm)[106]



Valley Fever is contracted only by inhalation of Cocci spores, which are only inhaled when they become air borne, as during earth moving during construction of the Project, which increases PM10, PM2.5 and associated Cocci spores. If Cocci spores are present in the disturbed soil, which is highly likely given the Project location in an endemic area, they would increase in proportion to PM10 and PM2.5 emissions due to earth moving activities. Further, the fact that resident have been and are currently "exposed" to Cocci spores does not imply, nor can it guarantee, immunity to Valley Fever from increased exposure.

CURE-Fox-83

Digging, grading, trenching, and other earth disturbing activities will occur during construction of all Project's components over the 24 month construction period,[107] which will increase PM10, PM2.5 and associated Cocci spores, relative to

CURE-Fox-84

[104] CalAm, Monterey Peninsula Water Supply Project, Request for Proposals for the Construction of Source Water Slant Wells, September 24, 2015, Section 2.10, p. 2-7; Available at: http://www.watersupplyproject.org/about1.

[105] CalAm, Monterey Peninsula Water Supply Project, Request for Proposals for the Construction of Conveyance Facilities, August 17, 2015, Section 2.10, p. 2-10; Available at: http://media.wix.com/ugd/28b094_0f3fe76982564516a50c204aa1332cb1.pdf.

[106] Fisher et al., 2007, Fig. 3.

[107] DEIR/EIS, Appendix G1, Figure G1.1.2, pdf 3.

the CEQA baseline. These activities will disturb a significant amount of soil, including:

- slant wells (9 acres)[108];
- desalination plant (25 acres);[109]
- source water pipeline construction (16.4 acres);[110]
- desalinated water supply pipeline (35.4 acres);[111]
- Castroville pipeline (15 – 16 acres);[112]
- brine discharge pipeline/pipeline to CSIP Pond alignments (6.6 acres);[113]
- ASR pipelines (8.8 acres);[114]
- ASR 5/6 water retention depression (7.0 acres);[115]
- ASR wells (0.9 acres);[116]
- new transmission main (27.1 acres);[117]
- Ryan Ranch-Bishop Interconnection improvements (7.3 acres);[118]
- Terminal Reservoir (6-6.7 acres);[119] and
- Pump stations (>7 acres).[120]

CURE-Fox-84 cont.

In total, Project construction would disturb over 173 acres of endemic land, likely to contain Cocci spores. Additional intimate contact with soil would occur during spoils management and disposal and during periodic maintenance of the

[108] DEIR/EIS, pp. 3-47, 4.6-24, 4.6-70.

[109] DEIR/EIS, p. 3-49.

[110] DEIR/EIS, p. 4.6-76.

[111] DEIR/EIS, p. 4.6-78.

[112] DEIR/EIS, p. 4.6-79/80.

[113] DEIR/EIS, p. 4.6-81.

[114] DEIR/EIS, p. 4.6-82.

[115] DEIR/EIS, p. 4.6-82.

[116] DEIR/EIS, p. 4.6-215.

[117] DEIR/EIS, p. 4.6-83.

[118] DEIR/EIS, p. 4.6-86.

[119] DEIR/EIS, p. 3-54, 4.6-84.

[120] 2015 DEIR/EIS, p. 3-48.

slant wells, which would disturb roughly 6 acres every five years.[121] Thus, construction workers as well as maintenance workers during Project operation are at considerable risk of catching Valley Fever. This is a significant construction impact that was not identified in the DEIR/EIS. Further, many of the construction sites are very close to sensitive receptors, within 50 to 300 feet of residential areas, military housing, and schools, placing residents at risk.[122]

CURE-Fox-84 cont.

CURE-Fox-85

Further, the potentially exposed population is much larger than construction workers because the very small spores – 0.002-0.005 millimeters ("mm") – do not settle out as rapidly as other components of particulate matter and thus would be carried further, potentially into non-endemic areas, where they would expose large populations that may not have been previously exposed.[123,124] Valley Fever spores have been documented to travel as much as 500 miles[125] and, thus, dust raised during construction could potentially expose a large number of people hundreds of miles away, outside of endemic areas.

CURE-Fox-86

Further, there is no evidence that prior exposure to Cocci spores confers immunity, which is what the DEIR/EIS is arguing. *First*, this argument is fundamentally flawed because there is no "immunity" to Valley Fever. As explained by the Valley Fever Patient Advocacy Organization, "Once a person is infected with Valley Fever an immune resistance takes effect in the body, but this does not mean "immunity" in the sense that a person could never suffer from the disease again. Not only have reactivations occurred in many cases, but it has been proven that even "immune" hosts can suffer a severe case of Cocci if they inhale enough additional spores."[126] Thus, even if everyone in Monterey County has been exposed to Cocci spores, this does not mean that an increase in the number of Cocci spores due to Project construction would not result in new cases of Valley Fever, or that construction workers from a non-endemic area brought into the area to construct the Project would not catch Valley Fever.

CURE-Fox-87

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[121] DEIR/EIS, pp. 3-57, 4.3-110.

[122] DEIR/EIS, Tables 4.7-2, 4.12-10; Figure 4.7-2; p. 4.10-7.

[123] Schmelzer and Tabershaw, 1968, p. 110; Pappagianis and Einstein, 1978.

[124] Pappagianis and Einstein, 1978, p. 527 ("The northern areas were not directly affected by the ground level windstorm that had struck Kern County but the dust was lifted to several thousand feet elevation and, borne on high currents, the soil and arthrospores along with some moisture were gently deposited on sidewalks and automobiles as "a mud storm" that vexed the residents of much of California." The storm originating in Kern County, for example, had major impacts in the San Francisco Bay Area and Sacramento).

[125] David Filip and Sharon Filip, Valley Fever Epidemic, Golden Phoenix Books, 2008, p. 24.

[126] Valley Fever Survivor, Frequently Asked Question; Available at: http://www.valleyfeversurvivor.com/faq.html.

In fact, dust exposure, which occurs during construction, is one of the primary risk factors for contacting Valley Fever.[127] Specific occupations and outdoor activities associated with dust generation such as construction, farming, road work, military training, gardening, hiking, camping, bicycling, or fossil collecting increase the risk of exposure and infection compared to baseline exposure to individuals who do not engage in these activities.[128]

CURE-Fox-88

It is well known that the most at-risk populations are construction and agricultural workers,[129] the former being the very population that would be directly exposed by the Project. The Monterey County Health Department notes: "Workers who disturb the soil by digging, operating earth-moving equipment, driving vehicles, or working in dusty, wind-blown areas are more likely to breathe in the fungal spores and become infected."[130]

Similarly, a refereed journal article on occupational exposures notes that "[l]abor groups where occupation involves close contact with the soil are at greater risk, especially if the work involves dusty digging operations."[131] One study reported that at study sites, "generally 50% of the individuals who were exposed to the dust or were excavating dirt at the sites were infected."[132] The California Department of Public Health cites this as a typical example:

CURE-Fox-89

> "In October 2007, a construction crew excavated a trench for a new water pipe. Within three weeks, 10 of 12 crew members developed coccidioidomycosis (Valley Fever), an illness with pneumonia and flu-

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[127] Rafael Laniado-Laborin, Expanding Understanding of Epidemiology of Coccidioidomycosis in the Western Hemisphere, Ann. N.Y. Acad. Sci., v. 111, 2007, pp. 20-22; Frederick S. Fisher, Mark W. Bultman, Suzanne M. Johnson, Demosthenes Pappagianis, and Erik Zaborsky, Coccidioides Niches and Habitat Parameters in the Southwestern United States, a Matter of Scale, Ann. N.Y. Acad. Sci., No. 1111, 2007, pp. 47-72 ("All of the examined soil locations are noteworthy as generally 50% of the individuals who were exposed to the dust or were excavating dirt at the sites were infected."); Available at: http://www.researchgate.net/publication/6461426_Coccidioides_niches_and_habitat_parameters_in_the_southwestern_United_States_a_matter_of_scale/file/72e7e51c9b9f058a45.pdf?origin=publication_detail.

[128] CDPH June 2013; Center for Disease Control, Coccidioidomycosis (Valley Fever); Available at: https://www.cdc.gov/fungal/diseases/coccidioidomycosis/health-professionals.html and Kern County Public Health Services Department, Valley Fever (Coccidioidomycosis) in Kern County; Available at: http://kerncountyvalleyfever.com/what-is-valley-fever/risk-factors/.

[129] Lawrence L. Schmelzer and R. Tabershaw, Exposure Factors in Occupational Coccidioidomycosis, Am. J. Public Health Nations Health, v. 58, no. 1, 1968, pp. 107-113, Table 3; Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1228046/?page=1.

[130] MCHD 2014, p. 2.

[131] *Ibid*, p. 110.

[132] Fisher et al., 2007.

like symptoms. Seven of the 10 had rashes, and one had an infection that had spread beyond his lungs and affected his skin. Over the next few months, the 10 ill crew members missed at least 1660 hours of work and two workers were on disability for at least five months."[133]

Thus, the "potential" existing "background" exposure of the general population to Cocci spores is not a guarantee that Project construction workers, who are in intimate contact with soil in a Valley Fever endemic area, and many of whom may be from elsewhere or may have never worked in an endemic area, would not experience an increase in Valley Fever cases, relative to the baseline. The DEIR/EIS's assertions as to background exposures in Monterey Count is merely the statement of the baseline conditions. In fact, construction workers are in direct contact with soil and will inhale greater than baseline amounts of Cocci spores if construction occurs in an endemic area. Cocci spores are a component of PM10/PM2.5. Thus, it is indisputable that construction of the Project will increase not only PM10/PM2.5 but also Cocci spores.

CURE-Fox-89 cont.

[133] CDPH June 2013, p. 1.

B. The DEIR/EIS Fails to Mitigate Significant Valley Fever Health Risks

The DEIR/EIS asserts that Mitigation Measure 4.10-1c, a conventional construction fugitive dust mitigation measure[134], would contain *Coccidioides immitis* spores to the maximum extent feasible, resulting in a less than significant impact.[135] It is well known that conventional dust control measures that are included in the mitigation measures for the Project are not effective at controlling Valley Fever[136] as they largely focus on visible dust or larger dust particles, the PM10 fraction, not the fine particles where the Valley Fever spores are found. The DEIR/EIS does not contain any mitigation whatsoever for the very fine fraction of particulate matter, PM2.5, as the air quality analysis concluded this impact was not significant, without considering the fact that it harbors Cocci spores. CURE-Fox-90

While dust exposure is one of the primary risk factors for contacting Cocci spores and dust-control measures are an important defense against infection, it is important to note that PM10 and visible dust are only indicators that Cocci spores may be airborne in a given area. Freshly generated dust clouds usually contain a larger proportion of the more visible coarse particles. However, these larger particles settle more rapidly and the remaining fine respirable particles may be difficult to see and are not controlled by conventional dust control measures. CURE-Fox-91

Spores of *Coccidioides ssp.* have slow settling rates in air due to their small size (2 to 5 micrometers), low terminal velocity, and possibly also due to their buoyancy, barrel shape and commonly attached empty hyphae cell fragments.[137] Thus spores, whose size is well below the limits of human vision, may be present in air that appears relatively clear and dust free. Such ambient, airborne spores with their low settling rates can remain aloft for long periods and be carried hundreds of kilometers from their point of origin. Thus, implementation of conventional dust control measures will not provide sufficient protection for both on-site workers and the general public. CURE-Fox-92

Further, infections by *Coccidioides ssp.* frequently have a seasonal pattern with infection rates that generally spike in the first few weeks of hot dry weather that follow extended milder rainy periods. In California, infection rates are CURE-Fox-93

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[134] DEIR/EIS, p. 4.10-25/26.

[135] DEIR/EIS, p. 4.10-28.

[136] *See, e.g.*, Cummings and others, 2010, p. 509; Schneider et al., 1997, p. 908 ("Primary prevention strategies (*e.g.*, dust-control measures) for coccidioidomycosis in endemic areas have limited effectiveness.").

[137] Frederick S. Fisher, Mark W. Bultman, and Demosthenes Pappagianis, Operational Guidelines (version 1.0) for Geological Fieldwork in Areas Endemic for Coccidioidomycosis (Valley Fever), U.S. Geological Survey Open-File Report 00-348, 2000; Available at: https://pubs.usgs.gov/of/2000/0348/pdf/of00-348.pdf.

generally higher during the hot summer months especially if weather patterns bring the usual winter rains between November and April.[138] The majority of cases of Valley Fever accordingly occur during the months of June through December, when 16 of the 24 months of construction would occur. Typically, the risk of catching Valley Fever begins to increase in June and continues an upward trend until it peaks during the months of August, September and October.[139] The majority of the construction will occur during these dry summer months.[140]

CURE-Fox-93 cont.

Drought periods can have an especially potent impact on Valley Fever if they follow periods of rain.[141] It is thought that during drought years the number of organisms competing with *Coccidioides ssp.* decreases and the fungus remains alive but dormant. When rain finally occurs, the arthroconidia germinate and multiply more than usual because of a decreased number of other competing organisms. When the soil dries out in the summer and fall, the spores can become airborne and potentially infectious.[142] The anticipated end of the current drought conditions in California coincides with the start of construction and may well have created ideal conditions for a uptick in Valley Fever cases.

CURE-Fox-94

C. Recommended Mitigation Measures to Reduce Risk of Valley Fever

In response to an outbreak of Valley Fever in construction workers in 2007 at a construction site for a solar facility within San Luis Obispo County, its Public Health Department in conjunction with the California Department of Public Health developed recommendations to limit exposure to Valley Fever based on scientific information from the published literature.[143] The recommended measures go far beyond the conventional dust control measures recommended in the DEIR/EIS to control PM10 emissions. They include the following measures that are not required in the DEIR/EIS to mitigate PM10 emissions from the Project:

CURE-Fox-95

[138] *Ibid.*

[139] Kern County Public Health Services Department, What Is Valley Fever, Prevention, Valley Fever Risk Factors; Available at: http://kerncountyvalleyfever.com/what-is-valley-fever/risk-factors/.

[140] DEIR/EIS, Appendix G1. Figure G1.1.2. MPWSP Estimated Construction Phasing.

[141] Gosia Wozniacka, Associated Press, Fever Hits Thousands in Parched West Farm Region, May 5, 2013, citing Prof. John Galgiani, Director of the Valley Fever Center for Excellence at the University of Arizona; Available at: http://www.huffingtonpost.com/huff-wires/20130505/us-valley-fever/.

[142] Theodore N. Kirkland and Joshua Fierer, Coccidioidomycosis: A Reemerging Infectious Disease, Emerging Infectious Diseases, Vol. 3, No. 2, July-September 1996; Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2626789/pdf/8903229.pdf.

[143] San Luis Obispo County Health Agency, Recommendations for Workers to Prevent Infection by Valley Fever in SLO County; Available at: http://www.slocounty.ca.gov/Assets/PH/Epidemiology/Cocci+Recomendations.pdf.

1. *Implement comprehensive Injury and Illness Prevention Program (required by Title 8, Section 3203) ensuring safeguards to prevent Valley Fever are included.*
2. *Work with a medical professional with expertise in cocci to develop a training program for all employees discussing the following issues: potential presence of C. immites in soils; the risks involved with inhaling spores; how to recognize common symptoms (which resemble common viral infections, and may include fatigue, cough, chest pain, fever, rash, headache, and body and joint ache); requesting prompt reporting of suspected symptoms to a supervisor and health care provider; discussing worker entitlement to receive prompt medical care if they suspect symptoms of work-related Valley Fever; and requesting the use of personal protection measures as outlined below.*
3. *Control exposure to dust:*
   - Consult with local Air Pollution Control District Compliance Assistance programs and with California Occupational Safety and Health Administration ("Cal/OSHA") compliance program regarding meeting the requirements of dust control plans and for specific methods of dust control.
   - Continuously wet the soil before and while digging or moving the earth. Landing zones for helicopters and areas where bulldozers, graders, or skid steers operate are examples where wetting the soil is necessary.
   - Wetting methods should use processes that do not raise dust or adversely affect the construction process.
   - Provide high-efficiency particulate ("HEP")-filtered, air-conditioned enclosed cabs on heavy equipment. Train workers on proper use of cabs, such as turning on air conditioning prior to using the equipment and keeping windows closed.
   - Provide communication methods, such as 2-way radios, for use in enclosed cabs.
   - When exposure to dust is unavoidable, use National Institute for Occupational Safety and Health ("NIOSH")-approved respirators rated as N95, N99, N100, P100, or HEPA. Respirators must be used within a Cal/OSHA compliant respiratory protection program that covers all respirator wearers and includes medical clearance to wear a respirator, fit testing, training, and procedures for cleaning and maintaining respirators.
   - Employees should be medically evaluated, fit-tested, and properly trained on the use of the respirators, and a full

CURE-Fox-95 cont.

respiratory protection program in accordance with the applicable Cal/OSHA Respiratory Protection Standard (8 CCR 5144) should be in place.[144]

- Prohibit eating and smoking at the worksite, and provide separate, clean eating areas with hand-washing facilities.
- Promptly secure graded areas using seeding, soil binders or paving and by laying building pads as soon after grading as possible.
- When digging a trench or fire line or performing other soil-disturbing tasks, position workers upwind when possible.
- Place overnight camps, especially sleeping quarters and dining halls, away from sources of dust such as roadways.
- Stop outdoor construction operations during unusually windy conditions or in dust storms.
- Minimize the amount of digging by hand. Instead, use heavy equipment with operator in an enclosed, air-conditioned, HEP-filtered cab.
- Consider limiting outdoor construction during the fall to essential jobs only, as the risk of cocci infection is higher during this season.

CURE-Fox-95 cont.

4. *Prevent transport of cocci outside endemic areas:*
   - Thoroughly clean equipment, vehicles, and other items before they are moved off-site to other work locations.
   - Provide workers with coveralls daily, lockers (or other system for keeping work and street clothing and shoes separate), daily changing and showering facilities.
   - Keep street clothes and work clothes separate by providing separate lockers or other storage areas.
   - Clothing should be changed after work every day, preferably at the work site.
   - Encourage workers to shower and wash their hair at the workplace or as soon as they get home if no on-site facilities are available.

[144] Short-term skin tests that produce results within 48 hours are now available. See Nick VinZant, New Skin Test for Valley Fever Produces Results within 48 Hours, April 15, 2015, Available at: http://www.abc15.com/news/region-west-valley/sun-city/new-skin-test-for-valley-fever-produces-results-within-48-hours.

- Train workers to recognize that cocci may be transported offsite on contaminated equipment, clothing, and shoes; alternatively, consider installing boot-washing.
- Train workers to recognize symptoms and ways to minimize exposure.
- Post warnings onsite and consider limiting access to visitors, especially those without adequate training and respiratory protection.

5. *Improve medical surveillance for employees*
   - Employees should have prompt access to medical care, including suspected work-related illnesses and injuries.
   - Work with a medical professional to develop a protocol to medically evaluate employees who have symptoms of Valley Fever.
   - Consider preferentially contracting with 1-2 clinics in the area and communicate with the health care providers in those clinics to ensure that providers are aware that Valley Fever has been reported in the area. This will increase the likelihood that ill workers will receive prompt, proper and consistent medical care.
   - Respirator clearance should include medical evaluation for all new employees, annual re-evaluation for changes in medical status, and annual training, and fit-testing.
   - Skin testing is not recommended for evaluation of Valley Fever.
   - If an employee is diagnosed with Valley Fever, a physician must determine if the employee should be taken off work, when they may return to work, and what type of work activities they may perform.

CURE-Fox-95 cont.

Two other studies have developed complementary recommendations to minimize the incidence of Valley Fever. The U.S. Geological Survey ("USGS") has developed recommendations to protect geological field workers in endemic areas.[145] An occupational study of Valley Fever in California workers also developed recommendations to protect those working and living in endemic areas.[146] These two sources identified the following measures, in addition to those identified by the San Luis Obispo County Public Health Department, to minimize the exposure to Valley Fever:

[145] Fisher et al. 2000.

[146] Schmelzer and Tabershaw, 1968, pp. 111 - 113.

- Evaluate soils to determine if each work location is within an endemic area.
- Implement a vigorous program of medical surveillance.
- Implement aggressive enforcement of respiratory use where exposures from manual digging are involved.
- Test all potential employees for previous infection to identify the immune population and assign immune workers to operations involving known heavy exposures.
- Hire resident labor whenever available, particularly for heavy dust exposure work.
- All workers in endemic areas should use dust masks to protect against inhalation of particles as small as 0.4 microns. Mustaches or beards may prevent a mask from making an airtight seal against the fact and thus should be discouraged.
- Establish a medical program, including skin tests on all new employees, retesting of susceptibles, prompt treatment of respiratory illness in susceptibles; periodic medical examination or interview to discover a history of low grade or subclinical infection, including repeated skin testing of susceptible.

CURE-Fox-95 cont.

In addition to these generic measures that apply to all construction projects that disturb soil, others are feasible that specifically address Project components. For example, construction will generate 25,110 cubic yards of excess spoils and construction debris. The majority of this earthmoving is from pipeline construction, contributing 96% of total excess debris[147] and thus is a potential major source of exposure to Cocci spores. Further, sensitive receptors are 100 to 250 feet away from many pipeline construction sites.[148] Most of the pipeline s will be installed using conventional open-trench technology, except where these methods are not feasible. Where not feasible, trenchless methods would be used.[149]

CURE-Fox-96

However, trenchless methods are feasible for most all pipelines. These methods are preferable as they do not generate as much fugitive dust. These include jack-and-bore, drill-and-burst, horizontal directional drilling, and/or microtunnelling.[150] These alternate methods should be used to minimize fugitive dust and the release of Cocci spores. The applicant should evaluate each Project component to determine whether modifications in construction methods can be

[147] DEIR/EIS, Table 3-5.

[148] DEIR/EIS, p. 4.10-7.

[149] DEIR/EIS, Section 3.3.4.2.

[150] DEIR/EIS, p. 3-52.

implemented to minimize the amount of soil that will be disturbed and released into the atmosphere. CURE-Fox-96 cont.

The DEIR/EIS's PM10 control measures do not include the above listed measures specifically developed by regulatory agencies to control Valley Fever. Some similar measures are required in the DEIR/EIS to mitigate PM10 impacts, but they do not go far enough to control Valley Fever. Some examples follow. CURE-Fox-97

Mitigation Measures 4.10-1c (#1, #7) require that all active construction areas and stockpiles be watered at least twice daily. Mitigation Measure 4.10-1c (#3) requires the application of water three times daily on unpaved access roads, parking area, and staging areas.[151] The CDPH, on the other hand, recommends for Valley Fever control, that "[w]hen soil will be disturbed by heavy equipment or vehicles, wet the soil before disturbing it and continuously wet it while digging to keep dust levels down."[152] The watering trucks themselves used in twice daily watering generate fugitive dust, which is not addressed by the DEIR/EIS's measure, but is addressed by CDPH by requiring the use of wetting methods that do not raise dust. CURE-Fox-98

Mitigation Measure 4.10-1a (#4, #5) requires daily sweeping, which generates fugitive dust that may contain spores.[153] CURE-Fox-99

Mitigation Measure 4.10-1a (#6) only requires hydroseeding or use of soil stabilizers in inactive construction areas (defined as previously graded areas that are inactive for 10 days or more) while CDPH's Valley Fever controls require "prompt" securing of graded areas.[154] CURE-Fox-100

Mitigation Measure 4.10-1a (#11) only requires wheel washers on trucks[155] while CDPH Valley Fever control requires "[t]horoughly clean equipment, vehicles, and other items before they are moved off-site to other work locations."[156] CURE-Fox-101

In addition, major onsite and offsite soil-disturbing construction activities should be timed to occur outside of any prolonged dry period, when Cocci spores are most abundant. After soil-disturbing activities conclude, all disturbed soils should be sufficiently stabilized to prevent air-borne dispersal of Cocci spores. CURE-Fox-102

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[151] DEIR/EIS, p. 4.10-25.

[152] CDPH June 2013, p. 4.

[153] DEIR/EIS, p. 4.10-25.

[154] DEIR/EIS, p. 4.10-25.

[155] DEIR/EIS, p. 4.10-25.

[156] DEIR/EIS, p. 4.10-25.

In sum, the PM10 mitigation measures in the DEIR/EIS are not adequate to control Valley Fever or even PM10, as explained above. Projects that have implemented conventional PM10 dust control measures, such as those proposed here, have experienced several incidences of severe dust storms and reported cases of Valley Fever.

For example, construction of First Solar's Antelope Valley Solar Ranch One ("AVSR1") was officially halted in April 2013 due to the company's failure to bring the facility into compliance with ambient air quality standards, despite dust control measures similar to those proposed here. A dust storm in Antelope Valley on April 8, 2013 was so severe that it resulted in multiple car pileups in the sparsely populated region, as well as closure of the Antelope Valley Freeway. The company was issued four violations by the Antelope Valley Air Quality Management District. Dust from the project led to complaints of respiratory distress by local residents and a concern of Valley Fever. [157]

CURE-Fox-103

At two photovoltaic solar energy projects in San Luis Obispo County, Topaz Solar Farm and California Valley Solar Ranch, 28 construction workers contracted Valley Fever. One man was digging into the ground and inhaled dust and subsequently became ill. A blood test confirmed Valley Fever.[158]

CURE-Fox-104

All of the above health-protective measures recommended by the San Luis Obispo County Public Health Department and the California Department of Public Health are feasible for the Project and must be required in an enhanced dust control plan to reduce the risk to construction workers, on-site employees and the public of contacting Valley Fever. Many of these measures have been required by the County of Monterey in other EIRs.[159] Even if all of the above measures are adopted, a recirculated DEIR/EIS is required to analyze whether these measures are adequate to reduce this significant impact to a level below significance.

CURE-Fox-105

[157] Herman K. Trabish, Green Tech Media, Construction Halted at First Solar's 230 MW Antelope Valley Site, April 22, 2013, Available at: http://www.greentechmedia.com/articles/read/Construction-Halted-At-First-Solars-230-MW-Antelope-Valley-Site.

[158] Julie Cart, Los Angeles Times, 28 Solar Workers Sickened by Valley Fever in San Luis Obispo County May 01, 2013; available at http://articles.latimes.com/2013/may/01/local/la-me-ln-valley-fever-solar-sites-20130501.

[159] County of Monterey, California Flats Solar Project Final Environmental Impact Report, December 2014; Available at: http://www.co.monterey.ca.us/Planning/major/California%20Flats%20Solar/FEIR/FEIR_PLN120294_122314.pdf.

IV. GREENHOUSE GAS (GHG) EMISSIONS

The DEIR/EIS concluded that greenhouse gas (GHG) emissions from construction and operation of the Project are significant.[160] Thus, it imposed Mitigation Measure 4.11-1 for Project GHG emissions and Mitigation Measure 4.18-1 for construction GHG emissions.[161] The DEIR/EIS concludes that GHG emissions remain significant and unmitigated after compliance with these measures as "it is not possible to substantiate numerically that the mitigated GHG emissions would be reduced to a less-than- significant level."[162] CURE-Fox-106

The DEIR/EIS failed to substantiate that its GHG emissions cannot be reduced to an insignificant level and failed to include all feasible mitigation measures.

A. The DEIR/EIS Failed to Adequately Explain Why the Project's GHG Impacts Are Significant and Unavoidable

The DEIR/EIS jumps to the conclusion that GHG impacts are significant and unavoidable because "it is not possible to substantiate numerically that the mitigated GHG emissions would be reduced to a less-than- significant level."[163] The only reason the CPUC cannot substantiate mitigated emissions numerically is because it has improperly deferred identification of mitigation measures to a future plan, as discussed below.[164] Other applicants and lead agencies have succeeded in quantifying GHG emission reductions.[165] CURE-Fox-107

The DEIR/EIS must explain "why" the impact is significant and unavoidable. See *Keep Berkeley Jets Over the Bay Com. v. Board of Port Comrs.* (2001) which concluded: "simply labeling the impact "significant" without accompanying analysis" violates "the environmental assessment requirement of CEQA." Before the DEIR/EIS can make the "significant and unavoidable" finding, it must specifically identify the GHG mitigation measures and estimate the reduction in GHG achieved CURE-Fox-108

[160] DEIR/EIS, p. 4.11-18 and Table 4.11-5.

[161] DEIR/EIS, p. 4.11-18.

[162] DEIR/EIS, p. 4.11-19.

[163] DEIR/EIS, p. 4.11-19.

[164] DEIR/EIS, p. 4.11-19, Mitigation Measure 4.11-1

[165] See, for example, Chevron Refinery Modernization Project EIR, March 2014, Section 4.8, Available at: http://chevronmodernization.com/wp-content/uploads/2014/03/4.8_Greenhouse-Gases.pdf and resulting mitigation program, Final Environmental Impact Report, Chapter 5. Mitigation Measure Monitoring and Reporting Program, Available at: https://s3.amazonaws.com/chevron/Final+EIR/5_MMRP.pdf.

by each. Further, it must explain how the Project is or is not consistent with the State's energy and climate objectives.

CURE-Fox-108 cont.

B. The Proposed GHG Mitigation Measures Are Inadequate

The DEIR/EIS concluded that greenhouse gas (GHG) emissions from construction and operation of the Project (8,370 MT/yr)[166] are significant. Thus, it imposed Mitigation Measure 4.11-1 for Project GHG emissions and Mitigation Measure 4.18-1 for construction GHG emissions.[167] These mitigation measures are fundamentally flawed as they are unenforceable, ambiguous, and do not include all feasible mitigation that would allow impacts to reduced to a less than significant level.

CURE-Fox-109

1. Mitigation Measure 4.11-1: GHG Emission Reductions

This measure requires CalAm to do two things. First, it must prepare a "GHG Emissions Reduction Plan" and submit it to the CPUC for approval prior to start of construction. The Plan "shall include a commitment by CalAm to incorporate all available feasible energy recovery and conservation technologies…" Second, CalAm "shall make good faith efforts to ensure that at least 20 percent of the approved project's operational energy use requirements are achieved with "clean" renewable energy…"[168] This is not adequate mitigation under CEQA.

First, a "good faith effort" to use renewable energy to meet only 20% of the Project's operational energy demand is not adequate CEQA mitigation. The DEIR/EIS concluded the increase in GHG emissions was a significant and unavoidable impact, which requires all feasible mitigation under CEQA. The use of 100% renewable energy to meet the Project's demand of 51,698 MWh/yr[169] is feasible. The CPUC has procedures that would allow CalAm to pay to allow PG&E or other providers to build renewable generation to meet 100%of the Project's operational electricity demand as well as the increase in GHG emissions due to construction. The new renewable facilities would be dedicated to the Project, and any excess electricity could be sold, offsetting costs.

CURE-Fox-110

The GHG-free electricity generation required to offset the GHG emissions associated with the Project's electricity use and construction emissions would not have to be occur simultaneously with the emissions it would displace, since GHG emissions are a multi-year problem. Rather, the Applicant could procure

CURE-Fox-111

[166] DEIR/EIS, Table 4.11-5.

[167] DEIR/EIS, pp. 4.11-19/20.

[168] DEIR/EIS, p. 4.11-20.

[169] DEIR/EIS, p. 4.11-16.

incremental renewable generation sufficient to offset the annual GHG emissions that will result from its construction and operation, without regard to the intra-year timing of when that incremental generation would operate. The important point is that, in order to count as mitigation for the Project, the mitigation generation would have to be incremental generation that did not already exist and would not have been built but for its procurement by the Project.

The CPUC has previously addressed how to ensure that renewable generation that is dedicated to particular customers is indeed incremental. See D.15-01-051 creating a Green Tariff Shared Renewables (GTSR) program[170], a program which might be one way for the Project to procure the 100% renewables proposed here as mitigation (D.15-01-051 authorized up to 207 MW of unreserved new renewable capacity for PG&E customers (D.15-01-051, Table 1); 51,698 MWh/year corresponds to the output of approximately 25 MW of solar PV capacity).

CURE-Fox-111 cont.

Second, preparation of the Emissions Reduction Plan is deferred until after Project approval, pre-empting public review. The Plan must be prepared as part of the DEIR/EIS and circulated for public review. Otherwise, the public does not have an opportunity to evaluate the effectiveness of the GHG reduction measures.

CURE-Fox-112

Third, under CEQA, an EIR must not only discuss measures to avoid or minimize adverse impacts, it also must ensure that mitigation measures are fully enforceable through permit conditions, agreements, or other legally binding instruments.[171] Mitigation measures that are vague (e.g., "good faith effort") or so undefined [a future "plan"] that it is impossible to evaluate their effectiveness are inadequate.[172] A CEQA lead agency cannot make the required CEQA findings unless the record shows that all uncertainties regarding mitigation of impacts have been resolved. Further, an agency may not rely on mitigation measures of uncertain effectiveness or feasibility.[173] Thus, for example, "good faith efforts" to obtain "clean" renewable energy for project operation is not adequate. An enforceable condition requires that the CPUC obtain a commitment to use renewable energy, which is a feasible measure. The required findings cannot be made based on a Plan that will be prepared in the future, after the EIR has been certified, and "good faith efforts" to use "clean" renewable energy.

CURE-Fox-113

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[170] CPUC, Green Tariff/Shared Renewables Program (GTSR); Available at: http://www.cpuc.ca.gov/General.aspx?id=12181.

[171] CEQA Guidelines §15126.4, subd. (a)(2).

[172] See *San Franciscans for Reasonable Growth v. City & County of San Francisco* (1984) 151 Cal.App.3d 61, 79.

[173] *Kings County Farm Bur. v. County of Hanford* (1990) 221 Cal.App.3d 692, 727-28 ("a groundwater purchase agreement was inadequate mitigation because there was no record evidence that replacement water was available).

Fourth, there is no assurance that all feasible measures will be identified unless the Plan is developed by a "qualified professional" as required in Mitigation Measure 4.18-1. The analyses and judgements required to draft this Plan fall under California's engineering licensing laws[174], specifically for Mechanical Engineers. This measure should be modified to require that a registered professional engineer (mechanical) in California confirm by stamp and signature that the Plan includes all feasible measures. CURE-Fox-114

Fifth, the Plan does not require any post-Project construction confirmation and on-going verification that the approved Plan has in fact has been implemented and is being complied with. Monitoring is a key component of successful mitigation under CEQA. This measure should therefore be modified to require that a registered professional engineer (mechanical) in California confirm by stamp and signature that the Plan has been implemented. Further, annual tracking/reporting on implementation of all measures should be required via a compliance checklist or similar documentation. CURE-Fox-115

Sixth, the Plan focuses only on Project operational facilities, i.e., "operational components" including the desalination plant, pipelines, and pumping system. It is silent as to construction GHG emissions. Further, there are other opportunities for CalAm to reduce GHG emissions. CURE-Fox-116

CalAm provides water and wastewater services to over 600,000 people at multiple locations in California. It operates other water facilities in the Monterey area, including facilities to secure water from the Carmel River and Seaside Groundwater Basin.[175] CalAm also operates water and wastewater facilities elsewhere including in Sacramento, San Diego, Larkfield, Los Angeles, and Ventura[176] and is actively acquiring additional water production and service facilities elsewhere in California[177]. Thus, CalAm has opportunities throughout its system to reduce GHG emissions, not only at the Project facilities. These opportunities include: CURE-Fox-117

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[174] Business & Professions Code §§ 6700 – 6799. See especially, §6731.6 (Mechanical Engineering Defined) and 6735.4 (Signing and Sealing of Mechanical Engineering Documents).

[175] DEIR/EIS, Sections 2.4.1 and 2.4.2.

[176] CalAm News, See: http://www.amwater.com/caaw/About-Us/news.html.

[177] See, e.g., California American Water Enters into Contract to Purchase Adams Ranch Mutual Water Company, June 16, 2015; Available at: http://files.shareholder.com/downloads/AMERPR/337273308x0x835654/79470B9D-7EE8-488D-9392-66C25DA01B25/Adams_Ranch_Acquisition_PR_FINAL_061615.pdf and California Public Utilities Commission Approves California American Water Acquisition of Ox Bow Marina Mutual Water Company, June 15, 2015; Available at: http://files.shareholder.com/downloads/AMERPR/337273308x0x835474/94F6DA33-7B68-4E41-87E6-49F5499C9777/AL_1066_-_Ox_Bow_PR_FINAL_061115_CS.pdf.

- **Energy Audits and Retrofits at Existing CalAm Buildings:** Mitigation could include offsetting the Project's GHG emissions through a comprehensive audit of existing buildings owned by CalAm throughout California and processes to identify and implement energy saving measures, including improving the efficiency of existing equipment so that it uses less electricity or burns less fuel. As an example, in September 2007, the California Attorney General's office came to an agreement with ConocoPhillips, in which ConocoPhillips agreed to mitigate greenhouse gas emissions for a planned hydrogen facility by, among other measures, undertaking an energy efficiency audit and carbon emissions audit for all of its California facilities.[178] CURE-Fox-118

- **Community Energy Efficiency Building Retrofits:** Mitigation could include funding programs that provide for energy efficiency retrofits of existing buildings and housings in the local Project area, with a particular focus on rental and low-income housing. As one example, the Chula Vista Energy Upgrade Project included $210,000 worth of mitigation funds "for energy efficiency and related improvements to local homes and business, … intended to directly benefit the residents potentially most affected by the proposed project."[179] These upgrades could include installation of a heat-reflecting "cool roof" and heat-reducing window awnings, high-efficiency air conditioning systems with programmable thermostats, and energy-saving fluorescent lighting fixtures that feature daylight and occupancy sensors. CURE-Fox-119

- **Funding of Carbon Offset Programs:** Mitigation could include providing funds to the MBUAPCD, Audubon Society, California Wildlife ReLeaf, or other organizations to fund off-site carbon reduction or sequestration projects. AB 32 allows CARB to give credit for voluntary GHG reductions that are undertaken before the regulations require specific GHG reductions are adopted.[180] For example, the 2007 ConocoPhillips settlement included an agreement to mitigate and offset greenhouse gas emissions by providing: (1) $7 million to the BAAQMD to create a fund for carbon offsets, (2) $200,000 to the Audubon Society for restoration of wetlands in the San CURE-Fox-120

[178] ConocoPhillips and California Attorney General Settlement Agreement, September 10, 2007); Available at: http://ag.ca.gov/globalwarming/pdf/ConocoPhillips_Agreement.pdf.

[179] California Energy Commission, Docket No. 07-AFC-4, Chula Vista Energy Upgrade Project, Final Staff Assessment, Addendum, p. 3, September 30, 2008; Available at: http://www.energy.ca.gov/sitingcases/chulavista/documents/2008-09-29_FINAL_STAFF_ASSESSMENT_ADENDUM_TN-48266.PDF.

[180] Health & Safety Code, §38562, subd. (b)(2).

Pablo Bay for purposes of carbon sequestration, and (3) $2.8 million to California Wildlife ReLeaf for reforestation projects, estimated to sequester 1.5 million metric tons of CO_2 over the lifetime of the forest. As another example, Chevron agreed to a $30 million GHG reduction plan to offset the increase in GHG from its modernization project which included working with others to develop transportation and transit programs and a roof-top solar and energy retrofit program.[181] These programs also could include electric vehicle (EV) rebate; installation of EV charging stations; reserved parking for EV vehicles; clunker scraping programs with incentives for purchasing or leaving new or used EVs; and financing options for EVs for people with limited credit, among many other.

CURE-Fox-120 cont.

- **Water Conservation**: CalAm's Monterey system is among the best in California at conserving water. Its daily per-capita water use in the SWRCB's most recent statewide survey for October 2014 to April 2015 is 55.8 gallons per person, while its facilities in San Diego reported 65 gallons per person; in Sacramento 80.2 gallons per person; and in Los Angeles, 126.2 gallons per person.[182] The Monterey Division has implemented an aggressive water conservation program under a settlement agreement.[183] This program includes residential audits, leak detection, a house call pilot program, residential and commercial plumbing retrofits, large landscape audits and water budgets, a landscape grant program, and rain sensor and soil moisture sensor installation programs. CalAm should expand these measures to its other systems which use substantially more water. This would significantly reduce GHG emissions by reducing water demand, which requires significant amounts of electricity to supply. Reducing electrical demand throughout CalAm's system could significantly offset GHG emissions from the Project. CalAm should also agree to make these measures in its Monterey District permanent.

CURE-Fox-121

[181] Chevron Richmond Refinery Modernization, Environmental and Community Investment Agreement, October 7, 2014; Available at: http://www.ci.richmond.ca.us/DocumentCenter/View/29755 and Chevron Refinery Modernization Project Environmental and Community Investment Agreement between City of Richmond, CA and Chevron Products Company, pp. 12-15, Available at: http://www.ci.richmond.ca.us/DocumentCenter/View/30667.

[182] Excel Spreadsheet: October 2014 – April 2015 Urban Water Supplier Report, Available at: http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.

[183] 2014 Monterey Peninsula Water Conservation Program Annual Report, Available at: http://www.montereywaterinfo.org/documents/2014%20Conservation%20Report_FINAL%20SUBMITTED.pdf.

- **On-Site Solar:** A UC Berkeley study found that in order to meet the State of California's existing goal of 80% GHG reduction by 2050,[184] California must: (1) completely phase out fossil-fueled *electricity* and (2) electrify *transportation*. Thus, to comply with Executive Order S-3-05, the Project could install and operate a solar plant and battery storage facility on City property to supply 100% of its electricity needs.

CURE-Fox-122

2. Mitigation Measure 4.18-1: Construction Equipment Efficiency Plan

This measure requires CalAm to contract a "qualified professional" to prepare a "Construction Equipment Efficiency Plan" to identify specific measures that CalAm will implement as part of Project construction "to increase the efficient use of construction equipment to the maximum extent feasible."[185] This measure has the same deficiencies as Mitigation Measure 4.11-1, discussed above.

CURE-Fox-123

First, preparation of the Efficiency Plan is deferred until after the Project is approved, pre-empting public review. The Plan must be prepared as part of the DEIR/EIS and circulated for public review.

Second, the measure does not clarify what constitutes a "qualified professional". This measure should be modified to require that the qualified professional be a registered professional engineer (civil[186]) in California and the Efficiency Plan should be confirmed by stamp and signature that the Plan includes all feasible construction equipment efficiency measures.

CURE-Fox-124

Third, the Efficiency Plan[187] does not include all feasible mitigation measures. Many other such measures should have been identified in the DEIR/EIS as all feasible mitigation is required when the impact is not fully mitigated. These include the NOx and ROG mitigation measures identified above, plus measures recently required as GHG construction mitigation in the Chevron Modernization FEIR[188] (annotated here by "Chevron"):

CURE-Fox-125

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[184] James H. Williams et al., The Technology Path to Deep Greenhouse Gas Emissions Cuts, Science, v. 335, pp. 53-59, January 6, 2012; Abstract available at http://www.sciencemag.org/content/335/6064/53.

[185] DEIR/EIS, p. 4.18-15.

[186] Business & Professions Code §§ 6700 – 6799. See especially, §6731 (Civil Engineering Defined) and 6735 (Preparation, Signing, and Sealing of Civil Engineering Documents).

[187] DEIR/EIS, p. 4.18-15.

[188] Chevron Refinery Modernization Project EIR, March 2014, Chapter 4.8, Greenhouse Gases; Available at: http://chevronmodernization.com/wp-content/uploads/2014/03/4.8_Greenhouse-Gases.pdf and Chapter 5, Mitigation Measure Monitoring and Reporting Program; Available at: https://s3.amazonaws.com/chevron/Final+EIR/5_MMRP.pdf.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator (Chevron). CURE-Fox-126
- The idling time of diesel-powered construction equipment shall be limited to 2 minutes rather than the 5 minutes in Mitigation Measure 4.10-1c, as required in the Chevron FEIR. Clear signage shall be provided for construction workers at all access points as required in the Chevron FEIR (Chevron). CURE-Fox-127
- All contractors shall be required to use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines (Chevron). CURE-Fox-128
- Reuse and recycle construction and demolition waste, including, but not limited to soil, vegetation, concrete, lumber, metal, and cardboard (Chevron). CURE-Fox-129
- Using alternative fueled, e.g., biodiesel, construction vehicles/equipment on at least 15% of the fleet (Chevron). CURE-Fox-130
- Consolidate truck deliveries. CURE-Fox-131
- Require a certified on-site inspector (licensed general contractor or similar) to confirm that the construction mitigation program is properly implemented. CURE-Fox-132
- Reduction in worker trips using carpooling or vans to transport construction workers from regional hubs. CURE-Fox-133

Fourth, no method to verify compliance is identified. To facilitate confirmation of compliance with the construction mitigation measures, and to verify the DEIR/EIS's estimated construction emissions, the FEIR should include a comprehensive inventory of all off-road equipment that will be used to construct the Project. The inventory should include the horsepower rating, engine production year, hours of use, and amount and type of fuel used. At least 48 hours prior to the use of heavy-duty off-road equipment at a new construction site, the project representative shall provide the inspector and MBUAPCD with the construction timeline, including start date and name and phone number of project manager and on-site foreman. CURE-Fox-134

Fifth, the Efficiency Plan does not require any monitoring during construction to assure that the measures are implemented. The Efficiency Plan should require an on-site construction mitigation manager to oversee and enforce implementation of all mitigation measures and to proactively ensure that construction activities do not result in noise, odor, dust, or other complaints. The monitor should be a licensed and qualified professional (QEP, CIH, PE) who is CURE-Fox-135

driving to daytime hours, require vibration monitoring for the first 700 feet of pipeline construction and restrict the location of sheet piles, if necessary.[195]

However, the DEIR/EIS does not include any analysis to demonstrate that vibration impacts would be less than significant with the proposed mitigation. Further, the proposed mitigation is not adequate to reduce significant vibration impacts to a less than significant level, as asserted in the DEIR/EIS.[196] The DEIR/EIS proposes two mitigation measures to reduce significant vibration impacts to less than significant. These are both fundamentally flawed and not adequate to reduce vibration impacts to a less than significant level.

CURE-Fox-138 cont.

A. Avoidance Mitigation Measures

The DEIR/EIS proposes Mitigation Measure 4.15-1a: "Avoidance and Vibration Monitoring for Pipeline Installation in the Lapis Sand Mining Plant Historic District."[197] It then refers the reader to Impact 4.15-1 in the Cultural and Paleontological Resources section for a description of this mitigation measure. However, this section does not propose any mitigation for Impact 4.15-1 (cause a substantial adverse change in significance of a historical resource) and thus proposes no mitigation.[198] Therefore, the DEIR/EIS contains no description of Mitigation Measure 4.15-1a and thus no explanation of what is encompassed in "avoidance and vibration monitoring for pipeline installation in the Lapis Sand Mining Plant Historic District". In fact, this measure asserts, wrongly, that there are no historic resources within the direct or indirect APE of all project components. See Comment VI.

CURE-Fox-139

B. Vibration Reduction Mitigation Measures

The DEIR/EIS next proposes a series of vibration reduction measures in Mitigation Measure 4.12-3.[199] These have many of the problems previously discussed elsewhere for other impacts (Comment I.A.2) because they are not practically enforceable. Further, the City of Monterey's files include a "Vibration Control Plan for Monterey Pipeline Project,"[200] which identifies much more

CURE-Fox-140

[195] DEIR/EIS, p. 4.12-45,

[196] DEIR/EIS, 4.12-48.

[197] DEIR/EIS, p. 4.12-48.

[198] DEIR/EIS, p. 4.15-45.

[199] DEIR/EIS, pp. 4.12-48/49.

[200] Response Dynamics, Vibration Control Plan for Monterey Pipeline Project, As Per Technical Specifications, Division 1: General Requirements, 01062: Environmental Requirements, November 14, 2016 (Vibration Control Plan) (Exhibit 1).

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CURE-Fox-138 cont.

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CURE-Fox-140

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[200] Response Dynamics, Vibration Control Plan for Monterey Pipeline Project, As Per Technical Specifications, Division 1: General Requirements, 01062: Environmental Requirements, November 14, 2016 (Vibration Control Plan) (Exhibit 1).

aggressive mitigation for vibration impacts than identified in the DEIR/EIS. These include: CURE-Fox-140 cont.

- Use construction practices that do not generate vibration levels at the closest sensitive land use above 0.1 in/se PPV (continuous of frequent intermittent level CURE-Fox-141
- Avoid use of impact sheet piles unless needed in situations in which the soil cannot be stabilized by standard methods, such as by use of manual shoring jacks; CURE-Fox-142
- Sheet pile installation will be minimized and if needed, shall be conducted during daytime hours and access pits shall be located greater than 45 ft from standard structures and 80 feet from any listed historic resource CURE-Fox-143
- Wet-saw cutting shall be used before excavations, to minimize the need for jackhammer use CURE-Fox-144
- Whenever possible, the compaction requirement will be met by using a non-vibratory excavator-mounted compaction wheel, and a small smooth drum roller will be used for final compaction of asphalt base and asphalt concrete. If needed to meet compaction requirements, smaller vibratory rollers will be used to minimize vibration levels during repaving activities where needed to meet vibration standards CURE-Fox-145
- Contractor will provide no less than 30 days notification prior to beginning improvements at all listed historic resources. CURE-Fox-146

In addition, the City's vibration monitoring plan includes the following requirements omitted from the DEIR/EIS:

- Monitor vibration at adjacent historic resources during compaction efforts in close vicinity of any listed historic resource. If measured vibration exceeds the threshold for historic structures, construction will be stopped and alternate methods of compaction used. CURE-Fox-147
- If impact sheet pile installation is needed within 80 feet of any historical resource or within 80 feet of a historical district, vibration levels will be monitored to insure that the 0.12 in/sec PPV damage threshold is not exceeded. If vibration levels exceed the applicable threshold, alternate construction methods, such as vibratory pile drivers, will be used. CURE-Fox-148
- The vibration monitoring will be conducted using calibrated, industry standard, Instantel Series portable seismograph units with redundant CURE-Fox-149

internal batteries and the measures will be achieved for the project duration.

CURE-Fox-149 cont.

The City's Vibration Control Plan should replace the weak mitigation measures in the DEIR/EIS and the Plan itself should be included in full in an appendix to the DEIR/EIS.

CURE-Fox-150

VI. HISTORIC RESOURCES

The DEIR/EIS asserts in Impact 4.15-1 that construction will not cause an adverse impact to historical resources. This potential impact was narrowly evaluated only for historical resources listed in or eligible for listing in the California Register or historic properties listed in or eligible for listing in the National Register that are within the direct or indirect Area of Potential Impact of all project components.[201] However, CEQA Section 15064.5 defines "historical resources" much more broadly to include:

> (1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4850 et seq.).
>
> (2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
>
> (3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 4852) including the following:

CURE-Fox-151

[201] DEIR/EIS, p. 4.15-45.

(A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Is associated with the lives of persons important in our past;

(C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(D) Has yielded, or may be likely to yield, information important in prehistory or history.

CURE-Fox-151 cont.

The City of Monterey's Vibration Control Plan includes a list of historic architectural resources within the direct and indirect Area of Potential Impact (APE) of the Project. The list includes 24 historic structures that are close enough to be damaged from construction equipment induced vibration, based on the DEIR/EIS's analysis.[202] Thus, the Project would result in a significant adverse impact to historical resources. This is a new impact that was not disclosed or mitigated in the DEIR/EIS.

[202] DEIR/EIS, Table 4.15-3, p. 4.15-43 and Figure 4.15-2.

February 24, 2017

Linda Sobczynski
Adams Broadwell Joseph & Cardozo
601 Gateway Blvd., Suite 1000
South San Francisco, CA 94080

Subject: Comments on the CalAm Monterey Peninsula Water Supply Project Draft Environmental Impact Report/Environmental Impact Statement

Dear Ms. Sobczynski,

This letter contains my comments on the Draft Environmental Impact Report / Environmental Impact Statement (DEIR/S) for the Monterey Peninsula Water Supply Project (Project or proposed Project).

Professional Background

I am a conservation biologist and environmental consultant with 25 years of professional experience in wildlife ecology and natural resource management, and since 1994 have maintained U.S. Fish and Wildlife (USFWS) Recovery permits for listed species under the federal Endangered Species Act (ESA). In addition to these I hold several California state and federal certifications for surveys and monitoring of protected and special status species. I have extensive experience monitoring and studying many species across several taxa, including reptiles and amphibians, passerines and raptors, and marine and terrestrial mammals. I have served as a biological resources expert on over a hundred projects involving water projects, urban and rural residential developments, and industrial scale energy projects; on private, public, and military lands; in California, the southwest, and Latin America.

The scope of work I have conducted as an independent environmental contractor, supervisor, and full time employee has included assisting clients to evaluate and achieve environmental compliance, restoration, mitigation, and research as related to biological resources; as well as submitting written reports and comments for such work. This work often included analyzing and reviewing actions pursuant to the California Environmental Quality Act CEQA and the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Clean Water Act, the Migratory Bird Treaty Act (MBTA), and other regulations, along with surveying for, and preparing Biological Technical Reports and Assessments. I have been

contracted as an environmental consultant and biologist by the USFWS, the USDA Forest Service, Ultrasystems, ICF, Helix Environmental, URS, AECOM, AMEC, GeomorphIS, DUDEK, ESA, Brian Smith and Associates, Tetra Tech, Bridgenet Bioacoustics, among others. I am also a core member of the National Sierra Club's Wildlife and Endangered Species Advisory Committee and Marine Advisory Committee.

My conservation and natural history research on endangered vertebrate species in Latin America has received various awards, including the National Geographic Research and Exploration Award and the National Commission for Scientific and Technological Research Award. My research has been featured on National Geographic Television and Discovery Channel documentaries, and I have served as an on- and off-camera technical consultant for wildlife documentaries filmed by National Geographic Television, Discovery Channel, BBC, and Animal Planet.

I have a Master's degree in Ecology and my professional experience includes college instruction at the college level since 1991. I was an adjunct instructor in Biology and Zoology at Palomar Community College and San Diego State University between 1991 and 1995, where I authored a laboratory text for Biology majors. In 1999-2000 I taught semester-long field courses in Tropical Ecology in Ecuador and the Galapagos for Boston University. In 2008 I was a Visiting Full Time Professor in Environmental Science and Botany at Imperial Valley College (IVC), and since 2012 have been teaching Environmental Science at IVC as an Adjunct Professor. At present I am completing a MS degree program in Environmental Studies from Green Mountain College, focusing on developing a Program in Environmental Science field study.

I have gained particular knowledge of the biological resource issues associated with the Project through my work on numerous other projects in California, including several years of surveys on coastal projects for pre-, ongoing, and post-construction activities. My comments are based upon first-hand observations, review of the environmental documents prepared for the Project, review of scientific literature pertaining to biological resources known to occur in and near the Project area, consultation with other biological resource experts, and the knowledge and experience I have acquired throughout my 25 years of working in the field of natural resources research and management.

Finally, pursuant the species discussions below, it is important to note that I have extensive experience conducting focused and protocol-level surveys for sensitive wildlife in various marine and terrestrial California ecosystems, including species of cetaceans, pinnipeds, eagles and other raptors (i.e. burrowing owls, Swainson's hawks), lizards, butterflies, frogs, plovers and terns, many nesting bird species protected under the Migratory Bird Treaty Act., and rare plants.

I. PROJECT SCOPE

According to the DEIR/S the California-American Water Company's (CalAm or Applicant) proposed Project area extends about 18 miles from the from the town of Castroville in the north to the City of Carmel in the south (DEIR Figure ES-1)[1], from the northern site of the proposed desalination plant to the western end of the associated proposed pipeline, and east approximately eight miles to the community of Hidden Hills. In addition to the construction of the desalination plant located on the Salinas River in unincorporated Monterey County northeast of the City of Marina, with related facilities that include pretreatment, reverse osmosis, and post-treatment systems; backwash supply and filtered water equalization tanks; chemical feed and storage facilities; brine storage and conveyance facilities; and other associated non-process facilities[2]. The Project's vast scope also includes development of ten subsurface slant wells in the northern coastal area of the City of Marina and extending offshore into the submerged lands of the Monterey Bay National Marine Sanctuary (MBNMS), approximately 21 miles of pipelines with associated pump stations and water storage tanks. The project also includes improvements to the existing Seaside Groundwater Basin (SGB) aquifer storage and recovery system facilities (ASR); including two new additional injection/extraction wells and various related pipelines.

II. THE DEIR/S PROJECT FAILS TO ACKNOWLEDGE THE HIGH DEGREE OF IMPORTANCE OF THE PROJECT AREA TO REGIONAL CONSERVATION OF BIODIVERSITY

The area proposed for the Project is incredibly rich in biological terms, both in marine and terrestrial flora and fauna. The DEIR/S does mention how the MBNMS' biological marine communities host one of the highest levels of marine biodiversity in the world, including 27 federally listed threatened and endangered species. The report does not, emphasize the overall biological importance of the terrestrial habitats and species included in the Project footprint and buffer zone. Not only does Monterey County have some of the most diverse flora in California, the area has been identified as an important conservation "hot spot" due in part to its high endemism of species, and it has been described as one of the most essential coastal regions in the world in terms of conservation of biodiversity of plants and wildlife.[3,4,5] Biologists

CURE-Owens-1

[1] DEIR/S ES-5

[2] DEIR/S ES-5

[3] Davis, E. B., Koo, M. S., Conroy, C., Patton, J. L., & Moritz, C. 2008. The California hotspots project: Identifying regions of rapid diversification of mammals. *Molecular Ecology, 17*(1), 120-138. doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1111/j.1365-294X.2007.03469.x

[4] Keledjian, A. J., & Mesnick, S. 2013. The impacts of El Niño conditions on California sea lion (*Zalophus californianus*) fisheries interactions: Predicting spatial and temporal hotspots along the California coast. *Aquatic Mammals, 39*(3), 221-232. Retrieved from http://search.proquest.com.jerome.stjohns.edu:81/docview/1439262501?accountid=14068

[5] Maxwell, S. M. 2010. *Effectiveness of marine protected areas for top predators along the central west African and US west coasts* (Order No. 3421299). Available From ProQuest Dissertations & Theses Full

recognize the importance of thorough and enlightened management conservation strategies in the region, especially where coastal development pressures are increasing, stating that for this area's rare habitats

> "Habitat conversion will clearly outpace expansion of formal protected-area networks, and conservationists must augment this traditional strategy with new approaches to sustain the Mediterranean biota."[6]

This statement emphasizes the importance of protections prescribed and implemented in areas exactly such as those proposed for development by this Project. Historical and recent data reflect the biological sensitivity of this area for both aquatic and terrestrial habitats and species. The U.S. Fish and Wildlife Service (2013)[7] reports no fewer than 35 listed threatened or endangered species that "occur within or may be affected by projects in the area". In terms of terrestrial species only, the California Natural Diversity Database (CNDDB) denotes within the Project area the occurrence of 17 Endangered Species Act (ESA) listed species, 10 California Endangered Species Act (CESA) listed species, and twenty-four Species of Special Concern. As such the DEIR/S should emphasize the importance, *and resultant fragility*, of the ecosystems, habitats, and sensitive species populations that are impacted by this project and incorporate this reality in impact analyses and mitigation measures discussions, especially in consideration of cumulative impacts.

CURE-Owens-1 cont.

III. THE PROJECT PROPOSAL FAILS TO COMPLY WITH LOCAL REGIONAL LAND USE PLAN(S)

This high degree of importance of the local biota to conservation is reflected in how many habitat management and conservation plans already exist in the region; including habitat and species protections within the City of Marina General Plan, the City of Marina Local Coastal Land Use Plan, the Marine Municipal Code, the Ford Od Dunes State Park General Plan and EIR, the Monterey City Code, the Seaside General Plan, the Seaside Municipal Code, Carmel Valley Maser Plan, Greater Monterey Peninsula Area Plan, Monterey County Code, Monterey County General Plan, North County Land Use Plan, For Ord Reuse Plan.[8]

CURE-Owens-2

In the DEIR/S' review (4.6.2.3) of these applicable regional and local land use plans, the authors identify where they believe the Project may be inconsistent with any given plan. They then state that, "Where the analysis concludes the proposed project would be potentially

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Text; ProQuest Dissertations & Theses Global. (751629118). Retrieved from http://search.proquest.com.jerome.stjohns.edu:81/docview/751629118?accountid=14068

[6] Cox, R. L., & Underwood, E. C. 2011. The importance of conserving biodiversity outside of protected areas in Mediterranean ecosystems. *PLoS One, 6*(1) doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1371/journal.pone.0014508

[7] USFWS. 2013. Endangered Species Division, Letter to Michelle Giolli. (Document Number 130408113454). 8 April. TS.

[8] DEIR/S table 4.6-4

inconsistent with the applicable plan, policy, or regulation, the reader is referred to Section 4.6.5, Direct and Indirect Effects of the Proposed Project. In that subsection, the significance of the potential conflict is evaluated. Where the effect of the potential conflict would be significant, feasible mitigation is identified to resolve or minimize that conflict."[9]

Despite this claim, the DEIR/S does not adequately address each and every potential conflict ("inconsistency") with these plans in future discussions by way of its proposed mitigation measures, thus leaving insufficient information regarding how impacts will be minimized. Additionally, some Plans intend for most impacts not simply to be minimized but avoided altogether, with very specific standards set regarding mitigation, success criteria, if and when it must occur prior to issuance of a development permit.

For example: The City of Marina Local Coastal Land Use Plan (CMLCLUP) has very specific policies regarding potential impacts to sensitive species and habitats, and any mitigation coinciding with such. Specifically, it states,

> *"Much of the Marina Coastal Zone either is environmentally sensitive because of the presence of rare and endangered species or has the potential for supporting a rare and endangered species. In Marina, environmentally sensitive habitats include, but are not limited to area of undisturbed native dune vegetation [and other wetland habitats].... The precise limits of such habitats shall be confirmed by professional on-site evaluation at the time development is proposed and before a Coastal Development permit is issued. In addition to indicating the location of primary habitat areas for rare and endangered plant and animal species (which are to be protected), the evaluation shall address protective measures, such as setbacks, restoration of habitat areas where natural dune landform remains, and limitations to uses in secondary and/or support areas which are necessary to the health of the identified primary habitat area.* ***Because of the variety of plants and animals involved, the secondary or support area will have to be individually identified and specifically protected on a site-by-site or case-by-case basis.*** *For this reason, it is important that the City establish a list of biologists qualified to prepare habitat evaluation reports within the City's Coastal Zone. Developers may then choose specialists from these lists.* ***In the case of wetlands, the biologists will have to determine the extent and landward boundary of the wetland. The biologist will then establish a 100 foot setback line from the boundary of the wetland.*** *This entire area, pond, wetland and setback, will be subject to Coastal Development Permit requirements as well as being in the Coastal Permit Appeal Zone.* ***In the case of dune habitat areas, the Environmental Analysis Report prepared for this plan identified a number of plant and animal species which are locally or generally rare, endangered, threatened, or are necessary for the survival of an endangered species. The habitats of these species, collectively referred to throughout this plan as "rare and endangered", warrant protection as environmentally sensitive...the list***

CURE-Owens-2 cont.

[9] *Ibid*, 4.6-99

presently includes:

1. Smith's Blue Butterfly (Shijimiaeoides enoptes smithi)
2. Globose Dune Beetle (Coelus globosus)
3. Black Legless Lizard (Anniella pulchra nigra)
4. Salinas Kangaroo Rat (Dipodomys heermanni goldmani)
5. Seaside Painted Cup (Castilleja latifolia ssp. Latifolia)
6. Monterey Spine Flower (Chorizanthe pungens var. pungens)
7. Eastwood's Ericameria (Ericameria fasciculate)
8. Coast (sand-loving) Wallflower (Erysimum ammophilum)
9. Menzies' Wallflower (Erysimum menziesii)
10. Coastal Dunes Milk Vetch (Astragalus tener var. titi)
11. Dune (Sand) Gilia (Gilia tenuiflora var. arenaria)
*12. Wild Buckwheat (Eriogonum latifolium)**
*13. Wild Buckwheat (Eriogonum parvifolium)**
14. Bush Lupine (Lupinus ssp.) +
** only within the range of Smith's Blue Butterfly.*
+ only within the range of the Black Legless Lizard.

Minimum Habitat Mitigation/Restoration Plan Requirements

All direct and potential impacts to primary and secondary habitats shall be fully mitigated**. Appropriate acreage replacement/restoration ratios for any unavoidable direct impacts to habitat areas and buffer areas shall be applied to fully protect identified habitat. **Habitat restoration plans shall be prepared and approved prior to issuance of any grading or building permits.

Habitat Restoration Plan Requirement

All habitat restoration, enhancement and/or buffering plans shall be prepared by a qualified biologist and where appropriate, with the assistance of a qualified hydrologist. Plans shall be developed in consultation with the Department of Fish and Game and the U.S. Fish and Wildlife Service in cases where these agencies have jurisdiction. The plans and the work encompassed in the plans shall be authorized by a coastal development permit. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the City. No changes to the approved final plans shall occur without a City-approved amendment. ***The elements of such plan shall at a minimum include**:*

a. A detailed site plan of the entire habitat and buffer area, with a topographic base map;

CURE-Owens-2 cont.

b. A baseline ecological assessment of the habitat and buffer area, including but not limited to, assessment of biological, physical and chemical criteria for the area;

c. ***The goals, objectives, performance standards and success criteria for the site, including specific coverage and health standards for any areas to be planted. At a minimum, explicit performance standards for vegetation, hydrology, sedimentation, water quality and wildlife and a clear schedule and procedure for determining whether they are met shall be provided. Any such performance standards shall include identification of minimum goals for each herbaceous species, by percentage of total planting and by percentage of total cover when defined success criteria are met; and specification of the number of years active maintenance and monitoring will continue once success criteria area met. All performance standards shall state in quantifiable terms the level and extent of the attributes necessary to reach the goals and objectives. Sustainability of the attributes shall be a part of every standard. Each performance standard shall identify:***

1. ***The attribute to be achieved;***
2. ***The condition or level that defines success; and***
3. ***The period over which success must be sustained.***

The performance standards must be specific to provide for the assessment of habitat performance over time through the measurement of habitat attributes and functions including, but not limited to, wetland vegetation, hydrology and wildlife abundance.

CURE-Owens-2 cont.

d. The final design, installation and management methods that will used to ensure the mitigation site achieves the defined goals, objectives and performance;

e. Provision for the full restoration of any impacts that are identified as temporary necessary to install the restoration or enhancement elements;

f. Provisions for submittal: Within 30 days of completion of initial (and subsequent phases, if any of) restoration work, of "as built" plans demonstrating that the restoration and enhancement has been established in accordance with the approved design and installation methods;

g. ***Provision for a detailed monitoring program to include, at a minimum, provision for assessing the initial biological and ecological status of the site. The assessment shall include an analysis of the attributes that will be monitored pursuant to the program, with a description of the methods for making that evaluation****;*

h. Provision to ensure that the site will be promptly remediated if the monitoring results indicate that the site does not meet the goals, objectives and performance standards identified in the approved mitigation program and provisions for such remediation. If the

final report indicated that the mitigation project has been unsuccessful, in part or in whole, based on the approved performance standards, the applicant shall submit a revised or supplemental mitigation program to compensate for those portions of the original program which did not meet the approved performance standards. Provisions for submission of annual reports of monitoring results to the City for the first five years after all restoration and maintenance activities have concluded (including but not limited to watering and weeding, unless weeding is part of an ongoing long-term maintenance plan) and periodic monitoring after that time, beginning that first year after submission of the "as-built" assessment. Each report shall also include a "Performance Evaluation" section where information and results from the monitoring program are used to evaluate the status of the project in relation to the performance standards. [Resolution No. 2001-118 (October 16, 2001); approved by CCC November 14, 2001]"[10] (bold emphasis only added).

The DEIR/S notes that the Project is "potentially inconsistent" with the CMLCLUP by way of these project components: the installation of the subsurface slant wells, source water pipeline, new desalinated water pipeline, and new transmission main, and maintenance of the subsurface slant wells, since these developments would occur within special status species habitats, including wetlands and including those defined as primary and secondary habitat in the City of Marina LCLUP. The DEIR/S goes on to say these inconsistencies are addressed by way of mitigation measures that are "provided to reduce or avoid impacts on special-status species habitats. However, as described in Impact 4.6-4, construction of these facilities, and maintenance of the subsurface slant wells, would be inconsistent with the City of Marina LCLUP, a significant and unavoidable impact."[11]

CURE-Owens-2 cont.

The DEIR/S's mitigation measures provided may indeed reduce some of the impacts on special-status species and habitats, however they are not inclusive or detailed enough to demonstrate that all direct, indirect, and cumulative impacts can and will be reduced to below significant in a manner consistent with the City Plan. Additionally, the DEIR/S proposed mitigation measures fail to adequately comply with, or fulfill, the City of Marina's minimum habitat mitigation/restoration plan requirements as described above, requirements approved and certified by the City Council and the California Coastal Commission[12]. The detailed standards iterated above (items a – h) require mitigation protocols be prepared according to standards with vastly greater detail than the DEIR/S provides in its mitigation measures. The "minimal requirements" drafted by the City of Marina must be described in detail according to the City's (and possibly other) land use plans prior to any development permitting, not deferred

[10] City of Marina Local Coastal Program Volume II Implementation Plan, 2013. pp 5-7. Retrieved from: http://www.ci.marina.ca.us/DocumentCenter/View/4491

[11] DEIR/S p. 4.6-104

[12] City of Marine Local Coastal Program Volume II Implementation Plan, 2013. pp 5-7. Retrieved from: http://www.ci.marina.ca.us/DocumentCenter/View/4491

until a later date after permit approval as the DEIR/S seeks to do. The Applicant does not provide data necessary to develop such detailed mitigation protocols, including a lack of wetland delineation report[13], lack of reporting of protocol or focused surveys.

CURE-Owens-2 cont.

a. Sensitive Species Highlighted in the City of Marina's LCLUP Are Not Analyzed in the DEIR/S

The DEIR/S fails to analyze potential impacts to some species highlighted as of importance and required for minimum in the Coastal Land Use Plan's requirements for mitigation with their district, namely, the globose dune beetle (*Coelus globosus*), Salinas kangaroo rat (*Dipodomys heermanni goldmani*), seaside painted cup (*Castilleja latifolia ssp. Latifolia*), and Eastwood's Ericameria (*Ericameria fasciculate*). The Applicant's review should include analysis of the potential for impacts to these species. These species are present in the region covered by the City's Plan, therefore the burden is on the Applicant to explain why they are not necessary for consideration, including current ground-truthed evidence that potentially impacted habitat for these species does not exist within any of the Project's footprint. If such habitat does exist, the Applicant must present data and reports of recent focused surveys (not merely reconnaissance surveys or habitat assessments) that demonstrate that these species are not present, along with a record in the database that shows them to be consistently absent in focused surveys for many years.

CURE-Owens-3

Therefore the DEIR/S fails to provide essential data necessary to analyze the degree of significant biological impacts imposed by the Project, and thus how to adequately mitigate them. The Project's lack of compliance with the City of Marina's land conservation plan is not only of issue for state and federal statutory fulfillment, it represents a potential and serious precedent that could serve to diminish community efforts for conservation of biodiversity overall. Regardless of how much effort it may take for the Project Applicant to script specific plans that satisfy compliance, community plans like that of the City of Marina are agreements crafted, deliberated upon, and certified by many authorities and scientific experts throughout a long period of time, and thus have a weighty investment of deliberation whose purpose is to drive the actions and decisions for permitting of projects just like that of the one proposed in this DEIR/S. For this reason alone this project should be required to provide the necessary detail in its mitigation measures to meet the standards set by the City of Marina's land use plan detailed above, and all other land use and conservation plants respective to the Project sites.

The DEIR/S correctly states that the City of Marina has jurisdiction via their Local Coastal Program and must permit development proposed in the Coastal Zone, where the CCC retains jurisdiction over appeals[14]. Therefore permission from the City to move forward for coastal

[13] DEIR/S p. 4.6-35.
[14] DEIR/S 3-65

development is required, further reason for the Applicant to commit to fulfilling consistency with the City's Land Use Plan.

CURE-Owens-3 cont.

IV. THE DEIR/S FAILS TO ADEQUATELY SURVEY AND ANALYZE THE POTENTIAL IMPACT OF THE PROJECT ON TERRESTRIAL SENSITIVE SPECIES

a. Protocol and Focused Surveys Are Necessary To Establish Existing Conditions and Sufficient Mitigation Measures and Standards

Studies in the Monterey Bay area show not only abundance but presence of coastal species of various taxa can be highly variable from year to year based upon factors such as drought, El Niño conditions, and related prey-predator cycles.[15] And yet, instead of conducting project level, protocol or focused surveys for the majority of the many sensitive wildlife species potentially present onsite as should have occurred, the DEIR/S relies largely on databases and outdated reports (some over 10 years old) not only to predict presence/absence of species, but for the degree to which such a predicted species' status may be mitigated if and when Project impacts to the species are deemed significant based upon this prediction. Such predictions are not supported by actual, ground-truthed observations made by biologists who specialize in detecting the species for which protocol surveys have been required due to their protected status and resultant sensitivity to harassment.

CURE-Owens-4

For federally endangered and threatened species, protocol surveys are conducted by permitted biologists as they have the proven experience (as verified by USFWS, the permitting agency) to be able to detect the species and other essential characteristics important to individual and subpopulations assessments, including density, behavioral factors, breeding status, etc. Permitted biologists not only have the responsibility of formally reporting all such observations to USFWS, but also to insure harassment of species during surveys is minimized by default of their knowledge and training for the species in question.

The DEIR/S, however, does not recognize this important and widely accepted aspect of protected species surveys, and made little attempt to use focused surveys to determine the most current site-specific status threatened or endangered wildlife species on or near the site. It instead referred to habitat assessments to indicate, via anecdotal observations or assumptions from habitat onsite, to make protected species status determinations – and resultant creations of mitigation measures. This is a clear oversight in the DEIR/S, as species presence/ absence, and indications of 'likelihood to occur" are guidelines intended to assist consultants in determining where site-specific, protocol level surveys are warranted in order to determine essential details required for adequate mitigation analyses, such as current species

[15] Benson, S. R. 2002. *Ecosystem studies of marine mammals and seabirds in Monterey bay, California, 1996--1999* (Order No. 1408777). Available From ProQuest Dissertations & Theses Full Text; ProQuest Dissertations & Theses Global.

density, nesting or breeding status, species richness, and all of the other components that are part of a protocol survey and cannot be completely derived from any given database.

CURE-Owens-4 cont.

b. Databases and Reconnaissance Level Surveys (habitat assessments) Do Not Provide a Complete Assessment to Determine Baseline, Existing Conditions for the Project

Using databases is a standard part of gathering site-specific data, but it cannot replace focused or protocol surveys in its specificity or accuracy. For example, the CNDDB is relied upon heavily by the DEIR/S to make species impact determinations. However, the CNDDB is limited in its ability to predict species currently present at any given locale; instead it presents at best a conservative description of what may or may not be present on site. Many species sightings are not actually reported on the public CNDDB. For instance, according to the California Department of Fish and Wildlife CNDDB coordinator, for most birds the CNDDB keeps track of and maps only those occurrences that can be associated with "evidence of nesting". Observations of flyovers or foraging are generally not mapped into CNDDB as an 'Element Occurrence', the standard mapping unit, based on NatureServe natural heritage program methodology.[16] The CNDDB biologists state that the database represents summaries of species occurrences; not individual detections. "Given limited resources to map submissions, the CNDDB tries a best to map occurrences that relate to an important aspect of life history." (*pers. comm,* P. McIntyre, CDFW, June 6, 2015).

CURE-Owens-5

As importantly, CNDDB records are voluntarily reported and only exist for locations that have been surveyed to varying degrees. As a result, the lack of CNDDB records, or records from any other database, does not mean a species is absent. To reinforce this fact the California Department of Fish and Wildlife posts a disclaimer on its CNDDB website:

> *"We work very hard to keep the CNDDB and the Spotted Owl Database as current and up-to-date as possible given our capabilities and resources. However, we cannot and do not portray the CNDDB as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers."*[17]

Similarly, the California Native Plant Society's Inventory of Rare and Endangered Species states the following: "A reminder: Species not recorded for a given area may nonetheless be present, especially where favorable conditions occur."[18] The DEIR/S repeatedly mentions that they conducted "botanical" surveys. However, when focused surveys for sensitive species are conducted, they are termed rare plants species, yet this term is not used in the Report, and numbers (even estimates) of abundance, density, individual numbers of rare plants are not

[16] http://www.natureserve.org/conservation-tools/standards-methods. (Retrieved June 18, 2015)
[17] http://www.dfg.ca.gov/biogeodata/cnddb/cnddb_info.asp (Retrieved June 18, 2015)
[18] https://archive.is/northcoastcnps.org (Retrieved June 20, 2015)

provided or mapped in any documents with the DEIR/S. Once again the Report is lacking in specificity of on-the-ground data for protected species.

The DEIR/S does, however, recognize the difference between habitat assessments and focused, or protocol-level surveys where it states,

> *"Reconnaissance-level field surveys are conducted for the purpose of generally describing the vegetation communities present within a project area and assessing the potential for special-status species to occur within the project area plus a 50-foot buffer (i.e., the survey area). Focused surveys are conducted to determine the presence or absence of a certain species or habitat type. Protocol level surveys are a type of focused survey using specific survey protocol as defined by a regulatory agency".*[19]

The DEIR/S also acknowledges that reviewer comments to the previous DEIR for this Project (released in 2015) indicated that protocol surveys should have been included in the Draft EIR, and claims that such surveys have been completed and the "results are reflected in discussions of special status species and critical habitat in sections 4.6.1.4 and 4.6.1.10"[20]. Also, section 4.6.1.2 states that "The impact analysis described in this section [on terrestrial biological resources] is based on special-status species observations available to Environmental Science Associates (ESA) as of June 20, 2016." However, observations or data from ESA surveys are not made available anywhere in the DEIR/S or its Appendices. There is one citation for ESA 2016 that lists GIS shapefiles. All other ESA citations are dated between 2010 and 2014 but only cite reconnaissance level survey shapefiles, a memorandum about the test well sites surveys, and an email about a rare plant survey in 2010. Nowhere is there a thorough, written biological technical report made available that describes in detail the results of project-wide, or facility-wide focused or protocol level surveys of special status plant or animal species.

The DEIR/S refers to sections 4.6.1.4 and 4.6.1.10 for details on the purported additional surveys. 4.6.1.4 discusses vegetation communities and habitat mapping surveys as follows: "This mapping was conducted by AECOM between 2013 and 2015 in support of federal and state regulatory permit applications (AECOM, 2016). ESA verified this survey data in the field in 2016." Maps are provided that show habitat types throughout the Project, citing AECOM 2016, which it cited as *"GIS shapefiles from biological surveys conducted by URS within the Monterey Peninsula Water Supply Project area"*[21]. It is unclear what exactly is meant by the statement that ESA "verified" the survey data in the field in 2016; in fact it is impossible to analyze since no biological technical report (BTR) was presented for this entire DEIR/S, there is no citation for this 2016 reference cited, and the citation of shapefiles from "AECOM 2016" was also not provided for review in any Appendix. This omission will be discussed further below.

CURE-Owens-5 cont.

[19] DEIR/S 4.6-5
[20] *Ibid* 4.6-1
[21] DEIR/S 4.6-262

Section 4.6.1.10 discusses sensitive terrestrial biological resources in the study area, and states that the potential for terrestrial biological resources to occur at each facility in the study area are based upon databases, "site-specific **reconnaissance level (habitat assessments) of the project area, and focused and protocol-level surveys of special-status species at select facility locations**"[22]. However, a search for "focused" level surveys reveals only vague inferences, again relying on the same cited shapefiles for botanical surveys (not even "rare plant surveys" specifically) for sections, not all, of the Project; i.e. "focused botanical surveys of the project area [were conducted] along General Jim Moore Boulevard (ESA, 2016; AECOM, 2016)";[23] and "coast horned lizard has been observed during focused surveys of the Terminal Reservoir site (AECOM, 2016)"[24].

Mention of protocol level surveys in the DEIR/S are in the same preliminary section where it states that such surveys were conducted by AECOM, cites the same shapefile citations noted above, but provides no further evidence or detailed discussion regarding the results of any Project-wide rare plant surveys or habitat-wide special status animal surveys, and despite stating that "new" habitats were assessed and measured including wetlands, the DEIR/S claims that no wetland delineation report is available.

CURE-Owens-5 cont.

Not having, or providing for review, a formal wetland delineation report is an oversight that prevents the reviewer to adequately assess analyses, or subsequent mitigation, of any and all wetlands for this Project. Its absence may also preclude issuance of a 404 permit since this Project will impact waters of the U.S. for which a permit it required, as the DEIR/S states "The proposed project has potential to result in fill of wetlands or other waters regulated under Section 404 of the CWA or activities in, over, or under navigable waters regulated under Section 10 of the Rivers and Harbors Act, which would be inconsistent with each of these regulations."[25]

Upon review of the entire discussion of terrestrial biological resources in the DEIR/S, it is apparent that every mention of focused, protocol, and most reconnaissance surveys for sensitive flora (not just habitat types) and fauna conducted for this Report hinge mostly upon data either not cited at all, vaguely alluded to by mentioning reports that covered only small sections of this Project footprint - some such report being 10 – 11 years old – and the citation of AECOM shapefiles, "AECOM 2016". In fact, "AECOM 2016" is cited at least 50 times throughout the document. Yet no report of data on individual species accounts are provided. For such a large, well-funded, and public Project that has had ample opportunity to contract biological specialists to conduct protocol level surveys for threatened, endangered, and Special Concern species, this is an overt oversight.

[22] *Ibid*. 4.6-70
[23] *Ibid* 4.6-82
[24] *Ibid* 4.6-85
[25] DEIR/S 4.6-3

c. The DEIR/S Lacks the Necessary Data to Assess Existing Conditions of the Project

The lack of focused and protocol surveys discussed above prevents the public reviewer of the DEIR/S from thoroughly assessing exactly what sensitive species are present throughout the Project site, and in what density or abundance. As noted, reconnaissance surveys, databases, and historic records are an important part of determining whether or not the habitat for special status species exists on site. However, they do not, and cannot, determine how many individuals of a species may be present, when, where, in what density, status of breeding and nesting, life stage (i.e. larvae or adult), and other important details that are necessary for developing an accurate impact assessment and, where necessary, developing appropriate standards and details for impact mitigation, including the type, size, and location of mitigation parcels designated to offset habitat and impacts that could result in 'take' for species listed under the federal and state Endangered Species Act.

A citation of a shapefile (a geospatial vector data format for GIS software, such as "AECOM 2016") does not provide this type of necessary information the same as a standard Biological Technical Report (BTR) can. A standard BTR provides thorough data on protocol surveys required for listed species, and includes details on how the surveys were conducted so that others can determine if they were done adequately to detect species as prescribed by the lead wildlife permitting agencies. Dates, times, weather conditions, duration, and other important information regarding behavior, breeding status, exact location, territory use, etc. are all types of information that are required for preparation of site-specific mitigation measures, protocols, plans, including selection of specific parcels for mitigation banking or habitat offset.

CURE-Owens-6

The necessity of this type of data is underscored by the DEIR/S own claim that "the definition of a substantial [impact analyses] as used in the significance criteria above has three principal factors: magnitude or intensity and duration of the impact; rarity and context of the affected resource; and susceptibility of the affected resource to disturbance"[26] and, "The evaluation of significance must also consider the interrelationship of these three factors. **For example, a relatively small-magnitude impact on a state- or federally listed species could be considered significant if the species is rare and highly susceptible to disturbance".**[27] This is true not only for determining significance of impact, but degree of significance in respect to what mitigation measures would be adequate. One cannot completely determine factors such as context and susceptibility of an entire population regarding impacts of the development of the Project if one does not know whether there may be one, ten, one hundred, or one thousand individuals of a special status species present. It is also impossible to determine, without such data, if any given mitigation measure can specifically reduce the Project impacts to below significant when the measure is based upon the assumption that the protected

[26] DEIR/S 4.6-121
[27] DEIR/S 4.6-121

species is present, as opposed to how many may be present, and under what conditions they are present as iterated above.

Focused and protocol surveys are key for conservation and mitigation analyses and subject to agency oversight; the California and federal Fish and Wildlife Agencies require them for development permits where the habitat of protected species is at risk by a given project. Therefore, focused and protocol survey data are essential not only for adequate CEQA review of the analysis of potential impacts, such surveys are required for section 7 and section 10 consultation under the ESA, and will be necessary for this Project as it has the potential to impact ESA listed species a and definitely their habitat. Focused and protocol surveys are conducted by biologists who have extensive and otherwise appropriate experience enabling them to observe and record all detectable individuals of the species in question, and are regulated by the agencies with certifications and permits. Reconnaissance surveys make observations at the habitat level, and any individual species observed are done so incidentally, not with a thorough procedure for which training and oversight (via project and annual reports) are required as is the case with biologists who hold ESA recovery permits (and certifications) for specific rare, threatened, and endangered species.

CURE-Owens-6 cont.

d. Incomplete Assessments of Special Status Species and Deferred Mitigation Contingent on Such Assessments and Surveys. This Results in an Incomplete Impact Analyses.

The DEIR/S states that for Mitigation Measure 4.6-1e: Avoidance and Minimization Measures for Special-status Plants that prior to construction "CalAm or its contractor shall conduct focused botanical survey(s) for special-status plants in all potentially suitable habitat during the appropriate blooming period for each species. Special-status plant species are widespread throughout the project area, and could occur at the following facility locations subsurface slant well site, MPWSP Desalination Plant site, ASR-5 and ASR-6 Wells sites, Terminal Reservoir site, and along the Source Water Pipeline, new Desalinated Water Pipeline and new Desalinated Water Pipeline Optional Alignment, the Castroville Pipeline and Castroville Pipeline Optional Alignments, new Transmission Main and new Transmission Main Optional Alignment, ASR Conveyance Pipeline, ASR Pump-to-Waste Pipeline, and ASR Recirculation Pipeline, Ryan Ranch-Bishop Interconnection Improvements, and Main System-Hidden Hills Interconnection Improvements, and at proposed staging areas. The results of these final surveys shall be combined with previous survey results to produce habitat maps showing habitat where the special status plants have been observed during either of the focused botanical surveys conducted for each facility site." Although future surveys as described are indeed helpful, what is missing are detailed accounts of the focused surveys already conducted.

CURE-Owens-7

Simply stating that surveys revealing potential presence of a sensitive species in a particular habitat provides only a partial picture of what is necessary to develop baseline mitigation plans. For instance, the DEIR/S mitigation measures briefly describe rare plant relocation and/or avoidance as the foundation of impact reduction. However, a mitigation protocol that is effective for one to a dozen individual plants on a given site may be very

different, and thus ineffective, for a site that hosts a special status species that has several hundred or more individuals on the same size site. Whereas on a site with very low occurrence and density of rare plants avoidance of these plants may be feasible, a site with high rare plant density and occurrence may well require additional mitigation measures, including specific restoration or other kinds of compensatory mitigation, not detailed by this DEIR/S' impact reduction analyses, including things like requiring significant alteration or movement of soils, roads, access to roads, impacts to ephemeral ponds and puddles, etc. Appropriate timing of such measures is specific to accurate impact analyses as well, since, for example, some species are blooming while others are still dormant or not yet merged, contained mostly in soils and undetectable at certain times by even the most attentive onsite botanist conducting last minute pre-construction surveys as is typical in many such projects. In summary, simply assuming presence of a special status species is clearly inadequate for mitigation planning that is species and site appropriate. Not having such accuracy in mitigation measures precludes the Applicant from correctly claiming that such measures will indeed reduce potential impacts to below significant.

CURE-Owens-7 cont.

Such information is necessary to draft appropriate mitigation measures **specific to species, and to each site, including parcels set aside for habitat loss compensation**. Such has not been provided in this DEIR/S, therefore it cannot be determined if proposed mitigation measures will effectively reduce potential impacts for rare plants to below significant, or if proposed measures are truly feasible, efficacious, and within the capabilities or expertise of the staff on hand to carry them out.

e. DEIR/S Biological Resource Maps are Inadequate for Determining Existing Conditions Regarding Special Status Species Calling Attention to Need for Focused and Protocol Surveys

The DEIR/S provides maps (figures 4.6-2a, 2b, 2c) that are of very limited utility regarding the existing status of sensitive species for the Project. The maps show circles and polygons to indicate presence of CNDDB listed plants and animals, however the "occurrences" do not indicate which animals or plant species correspond to which circle or polygon, therefore one can only determine from these maps that some unspecified species from the long list on the map legend was recorded for a given area on the Project. To enable thorough review of the existing site conditions, the Applicant should present maps of known locations within each Project site of each of these sensitive species, labeled appropriately (especially for those for which mitigation is deemed required), including representations of how many individuals occur in any given location. At this point it should be obvious that focused and protocol level surveys of species are necessary to create such maps that are current for this Project footprint.

CURE-Owens-8

V. THE DEIR/S FAILS TO ADEQUATELY ANALYZE AND MITIGATE IMPACTS ON SNOWY PLOVER

a. Western Snowy Plover Background and Relative Status for the Project Region

Historically, thousands of snowy plovers nested along the California coast, however by the late 1970s the snowy plover had disappeared from significant parts of its coastal California breeding range, and biologists estimate the breeding population along the coast has now dwindled to fewer than 1,500 birds. [28, 29, 30] The Pacific Coast population of the western snowy plover (*Charadrius nivosus nivosus*) was federally listed as Threatened in 1993,[31] and is a Bird Species of Special Concern in California. A Recovery Plan for the species was finally published in 2007, and a Final Rule for the revised designation of critical habitat was published in June 2012. [32]

CURE-Owens-9

b. Threats and Types of Impacts to the Snowy Plover

The primary threats to Pacific coast population of the western snowy plover are decreased habitat availability and anthropogenic disturbances to habitat.[33] Specific causes and effects vary geographically, but include fragmentation, degradation, and loss of habitat due to encroachment, habitat erosion, expansion of urban development and increased recreational beach use.[34] Increasingly, the impacts of climate change and resultant sea level rise are contributing to the cumulative impacts on populations. These adverse effects often are exacerbated by various anthropogenic influences that benefit or attract predators of the snowy plover.[35]

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[28] WesternSnowyPlover.org. n.d. Western Snowy Plover Natural History and Population Trends. *Adapted from U.S. Fish and Wildlife Western Snowy Plover Pacific Coast Population Draft Recovery Plan*, May 2001. Available at: <http://www.westernsnowyplover.org/pdfs/plover_natural_history.pdf> Retrieved June 20 2015. *See also* Thomas SM, JE Lyons, BA Andres, EE T-Smith, E Palacios, JF Cavitt, JA Royle, SD Fellows, K Maty, WH Howe, E Mellink, S Melvin, T Zimmerman. 2012. Population Size of Snowy Plovers Breeding in North America. *Waterbirds* 35(1):1-14.

[29] *Ibid.*

[30] Morrison RIG, BJ McCaffery, RE Gill, SK Skagen, SL Jones, GW Page, CL Gratto-Trevor, BA Andres. 2006. Population estimates of North American shorebirds. Wader Study Group Bulletin 111:66-84.

[31] http://www.fws.gov/arcata/es/birds/WSP/documents/1993Mar5%20Determination%20of%20Threatened%20Status%20for%20WSP%2058%20FR%2012864.pdf (Retrieved June 20, 2015).

[32] http://www.fws.gov/arcata/es/birds/WSP/documents/WSPCH_June2012/6-19-2012_FR_rule.pdf (Retrieved June 21, 2015)

[33] MacDonald B, Longcore, T Dark, S. 2010. Habitat suitability modeling for Western Snowy Plover in Central California. The Urban Wildlands Group, Los Angeles, California, 129 pp. *See also* United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover *(Charadrius alexandrinus nivosus).* Sacramento, California. xiv + 751.

[34] United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover *(Charadrius alexandrinus nivosus).* Sacramento, California. xiv + 751.

[35] *Ibid.*

The Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (Recovery Plan) specifically identifies habitat degradation caused by **human disturbance, urban development, introduced species** such as beachgrass, and expanding predator populations as resulting in significant decline in active nesting areas and in the size of the breeding and wintering populations, **while contributing to poorly analyzed, cumulative type of habitat loss for western snowy plovers.**[36] **In addition to causing direct loss of habitat, urban development causes a suite of other direct and indirect impacts that adversely affect plovers**. For example, increased development increases human use of the beach, thereby increasing disturbance to plovers.[37] In addition, the value of breeding and wintering habitat is diminished by increased levels of illumination at night (e.g., for parking, construction activities); increased sound and vibration levels; increased attraction of predators due to increased sources of garbage and other anthropogenic food attractants, and pollution drift.[38] Finally, activities such as beach raking and debris (e.g., driftwood) collection remove habitat features for both plovers and their prey, and precludes nests from being established.[39]

The Pacific coast population of the western snowy plover (SNPL) has continued to decline despite its listed status protections and development of the Recovery Plan. Point Blue Conservation Science (Point Blue), in collaboration with the USFWS and California Department of Parks and Recreation, has been monitoring the status of nesting snowy plovers along the coast of Monterey Bay and for the past 30 years, and in northern Santa Cruz County since 1988.[40] At the end of 2012 they issued a report of the snowy plover's nesting status in these areas, including an assessment of the species' response to management agencies efforts to enhance breeding success and population size.[41] According to the report the plovers experienced a 10% decrease from the previous year, with no plovers detected in Santa Cruz beaches for the third year, thus reinforcing the elevated importance of the nearby population in Monterey Bay area where the Project site is located. Specifically, the report stated, "The plovers experienced subpar breeding success in 2012. Their clutch-hatching rate was 51.0 % on Monterey Bay beaches. These rates were well below their respective averages from 1999-2011. The hatching rate on the beaches was 21% below the 64% average of the previous 13 years." They also reported that only 28-30% of the chicks that hatched on the beaches fledged; a rate about 32% below the average of 42.4% from 1999-2011. Fledging rates were below 10% at one survey site (Martin Property) that is in close proximity to the Project's proposed slant well site.

CURE-Owens-9 cont.

[36] *Ibid.*
[37] *Ibid.*
[38] *Ibid.*
[39] *Ibid.*
[40] Point Blue Conservation Science. 2014. Nesting of the Snowy Plover in the Monterey Bay Area, California in 2013. Point Blue Conservation Science, Petaluma (CA). 32 pp.
[41] Page G. W, Neuman K. K., Warriner J. C., Warriner J. S., Eyster C., Erbes, Dixon D., and Palkovic A., (December 2012). Nesting of the Snowy Plover in the Monterey, California in 2012. PRBO Conservation Science Publication # 1898.

The sensitivity of this species, and its slow progress in recovering even under ESA protections, demonstrate the need for detailed information regarding just how close nesting birds are to the Project prior to issuance of a permit that approves scripted mitigation measures. However due to the DEIR's:

(a) Complete lack of focused, protocol surveys for snowy plovers, or

(b) Lack of provisioning of data for public review regarding nest monitoring by other research agencies, including specific nesting grounds locations and numbers of breeding pairs over the past 5 plus years by other researchers, and

(c) Poor map detail and quality regarding adequate location details of Project components and proximity of current breeding pairs,

it is impossible to make such a determination, thus making it impossible for the public to thoroughly and accurately assess the impact of the Project's activities in this area to this segment of the plover population, and thus the regional population as a whole. This same argument can be made project-wide, since within the DEIR/S no such recent, detailed data regarding the specific subpopulation status of breeding pairs were provided for review, nor were protocol surveys conducted, or directly reported and mapped in detail for any segment of the Project, including Project development sites in close proximity to snowy plover critical habitat.

CURE-Owens-9 cont.

The Point Blue researchers concluded that the consequence of the low number of fledglings in 2012 will likely be a smaller breeding population in the Monterey Bay area in 2013, and their prediction was correct. The authors released a monitoring update for the 2013 breeding season, where once again breeding success was reported as declining compared to previous years: "Plovers experienced another year of subpar breeding success in the Monterey Bay area in 2013. Clutch hatching rate was 54% and chick fledging rate 31% below the prior 14-year average. As a result, the total of 116 fledges was 51% lower than the average of the prior 14 years. The consequence of the low number of fledglings produced in 2013 will likely be a smaller breeding population in the Monterey Bay area in 2014. One fledged young per male is necessary to sustain a population experiencing average mortality levels but only 0.6 chicks per male fledged in 2013."[42] Poor reproductive success has contributed to the decline and low population size of the western snowy plover, especially where it breeds on coastal beaches used by humans for recreation.[43] Due to increasingly low reproductive success, the Pacific coast population of the western snowy plover has become a management-dependent species.

[42] *Ibid.*

[43] Colwell MA, CB Millett, JJ Meyer, JN Hall, SJ Hurley, SE McAllister, AN Transou, RR LeValley. 2005. Snowy Plover reproductive success in beach and river habitats. Journal of Field Ornithology 76(4):373-382.

To sustain the breeding population requires provision of undisturbed nesting areas and wintering habitat, as well as protection from predators.[44]

The DEIR/S states that, "Western snowy plover are known to nest in the beach and sand dunes between Reservation Road and the Salinas River National Wildlife Refuge (Page et al., 2015). In 2015 there were 469 individual snowy plovers in the Monterey Bay breeding population. During surveys conducted for the MPWSP in 2012 (ESA, 2012) and 2013 (ESA, 2013), western snowy plovers were observed at the beach located north and south of the CEMEX sand mining facility, respectively. Multiple western snowy plover nests have been observed on the beach and foredunes within and at the proposed northernmost subsurface slant well cluster in the CEMEX active mining area (PRBO, 2012 in Zander Associates, 2013). Several western snowy plovers were observed among the sparse central dune scrub and iceplant mats of the CEMEX active mining facility during reconnaissance surveys in May 2016 (ESA, 2016). Western snowy plover has a high potential to nest along the beach and foredunes in the vicinity of the northernmost subsurface slant well cluster at the western terminus of the proposed Source Water Pipeline alignment. Additionally, western snowy plover may use the beach and dunes within all subsurface slant well and Source Water Pipeline work areas for wintering, roosting, and foraging. Western snowy plover has potential to nest in the backdunes in the proposed subsurface slant well area."[45]

CURE-Owens-10

This reviewer is unable to confirm any details about the current existing conditions (numbers and status of breeding and non-breeding, abundance, etc.) of SNPL on the project footprint and its buffer zones, since the surveys cited here are not focused or protocol level but instead are habitat assessments conducted near, but not on the site. The most detailed record of such available is from Point Blue's annual report from 2015[46], however it is important to note: (a) Point Blue's surveys did not cover all of the potential SNPL winter and breeding habitat potentially impacted by the Project, (b) Point Blue's report says that only *preliminary results* are printed in their report, and that the results are not to be cited in other reports or the scientific literature without the authors' permission. Also, the DEIR/S excuses the existence of a 2016 data on focused surveys of nesting or wintering SNPL by saying that, "ESA requested western snowy plover occurrence data from Point Blue Conservation Science, but Point Blue Conservation Science was unable to provide this data prior to publication of this EIR/EIS."[47] It is not, however, the responsibility of Point Blue to render services for this Project's timeline, and it appears nothing precluded the Applicant from hiring another biologist to conduct protocol

[44] Colwell M, NS Burrell, MA. Hardy, K Kayano, JJ Muir, WJ Pearson, SA Peterson, KA Sesser. 2010. Arrival times, laying dates, and reproductive success of Snowy Plovers in two habitats in coastal northern California. Journal of Field Ornithology 81(4):349-360. *See also* Point Blue Conservation Science. 2014. Nesting of the Snowy Plover in the Monterey Bay Area, California in 2013. Point Blue Conservation Science, Petaluma (CA). 32 pp.

[45] DEIR/S 4.6-50

[46] Retrieved from: https://www.fws.gov/arcata/es/birds/wsp/documents/siteReports/California/2015_SNPL_Report_MBarea_Final_Jan.pdf. Report citation not permitted by the author without permission.

[47] *Ibid*. 4.6-2

surveys during breeding season to determine the number, and exact locations, of SNPL within and surrounding the Project footprint. Since Point Blue consistently publishes their annual reports in January for the previous year surveys, and since the Applicant has referenced these previous reports and is aware of this timeline, they could have predicted that a 2016 report from Point Blue would not be available for the DIER/S timeline and thus hired an independent permitted biologist to conduct the necessary surveys.

In regards to the slant well construction and its impacts to SNPL, the DEIR/S compares results of mitigation for a single test well with this proposed development of ten wells by saying "...the analysis and findings from the test slant well support the conclusion that impacts to plovers can be reduced through implementation of avoidance and minimization measures." Again the authors blur the lines of adequate mitigation and impact reduction by comparing site conditions and development impacts that are not equivalent, and fail to demonstrate that impacts can be reduced to below significant when the report does not describe what that the conditions are in respect to exact numbers of terns impacted, breeding, overwintering, etc. within and near the Project footprint.

CURE-Owens-10 cont.

c. The DEIR Fails to Adequately Mitigate Impacts to Snowy Plover Critical Habitat

The Project site not only supports snowy plovers, but as mentioned above is also located adjacent to federally designated critical habitat for the species. Critical habitat is defined as "a specific geographic area that is essential for the conservation of a threatened or endangered species and that may require special management and protection."[48] Within designated critical habitat, the USFWS protects areas that provide **primary constituent elements** (PCEs), which are the physical and biological features of a landscape that a species needs to survive and reproduce.[49] PCEs of critical habitat for the western snowy plover include:

1. Areas that are below heavily vegetated areas or developed areas and above the daily high tides;
2. Shoreline habitat areas for feeding, with no or very sparse vegetation, that are between the annual low tide or low-water flow and annual high tide or high-water flow, subject to inundation but not constantly under water, that support small invertebrates, such as crabs, worms, flies, beetles, spiders, sand hoppers, clams, and ostracods, that are essential food sources;
3. Surf- or water-deposited organic debris, such as seaweed (including kelp and eelgrass) or driftwood located on open substrates that supports and attracts small invertebrates described in PCE 2 for food, and provides cover or shelter from predators and weather, and assists in avoidance of detection (crypsis) for nests, chicks, and incubating adults; and
4. **Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted**

CURE-Owens-11

[48] USFWS. 2002. Critical Habitat: What is it? Publication 703/358 2105. http://endangered.fws.gov. (Retrieved Jun 14, 2015).

[49] *Ibid.*

predators, which provide relatively undisturbed areas for individual and population growth and for normal behavior.[50] (Emphasis added).

Snowy plover critical habitat is within close proximity to the Project site, which currently provides these PCEs. It is essential to note that construction sites consistently create impacts that extend beyond the footprint boundaries in the form of temporary roads, parking areas, poorly contained construction vehicles, noise, erosion, dust and other pollutants that can markedly diminish the minimally disturbed quality of critical habitat as described above. It is therefore possible that the Project site could significantly reduce the quality of snowy plover critical habitat as defined by these PCEs.[51]

The Project proposes construction bordering critical habitat:

(a) At the proposed slant well site,

(b) At the west end of the proposed seawater intake system, and

(c) Along approximately **9 miles of coastal snowy plover critical habitat** from the northern slant well proposed site to Monterey State Beach, at times within less than 400 feet of the development footprint, with virtually no major visual, structural, or auditory barriers (from existing development or geographic topography) between the proposed construction footprint and critical habitat. The majority of this critical habitat has historically been occupied by nesting plovers, and was recorded as having active nesting during breeding season 2012 and 2013 by Point Blue researchers. Also, the site of the proposed seawater intake system pipeline where it runs west from the shoreline is historic nesting habitat for the snowy plover, according to Point Blue studies (*pers. comm.* Kriss Neuman June 23, 2015).[52,53]

CURE-Owens-11 cont.

d. The Importance of Avoiding Impacts to Non-breeding Season Snowy Plover Habitat is Underestimated

It is important to note that critical habitat provision #4 above does not distinguish between breeding and non-breeding season; in other words minimization of disturbance to critical habitat is important regardless of the time of year. Western snowy plovers are non-migratory residents along the Monterey coast, studies of banded birds demonstrate that many individuals occupy the same general habitat with little to no migration to other locales;

CURE-Owens-12

[50] Federal Register. 2012 Jun 19. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover; Final Rule. Federal Register 77(118):36728-36869.

[51] USFWS. 2014 Apr 7. Letter to the California Coastal Commission. Attachment to Staff Report Addendum for April 8, 2014 for April 9, 2014 Hearing.

[52] Point Blue Conservation Science. 2014. Nesting of the Snowy Plover in the Monterey Bay Area, California in 2013. Point Blue Conservation Science, Petaluma (CA). 32 pp.

[53] Page G. W, Neuman K. K., Warriner J. C., Warriner J. S., Eyster C., Erbes, Dixon D., and Palkovic A., (December 2012). Nesting of the Snowy Plover in the Monterey, California in 2012. PRBO Conservation Science Publication # 1898.

researchers have discovered that banded plovers exhibited high site faithfulness, occupying small linear stretches of beach (752 +/- +/- 626 m).[54]

Successful management of highly sensitive, reduced populations such as those found along the Monterey coast require equal attention paid to avoiding significant impacts to occupied nesting habitat year-round, since the specific habitat, foraging, and predation factors continue to play a key role in population size and viability despite the time of year or breeding status of the individuals. In their Final Recovery Plan, the USFWS state that species' social factors play a role in attracting plovers to nest in any given area, and that the management of wintering flocks can be important relative to plover nesting sites.[55] In response to comments of their Final Recovery Plan, USFWS states that "Our designation of critical habitat recognizes the importance of both wintering and breeding areas."[56]

Western snowy plover research emphasizes the importance of careful management of habitat and nest sites during both breeding and non-breeding season, and how mitigation for impacts is not nearly as straightforward as avoiding major impacts during breeding season only, or relying on implementing avoidance measures for impact mitigation during breeding season only, such as fencing, nest exclosures, or 'educating' on-site workers about the presence of plovers.

CURE-Owens-12 cont.

Some snowy plover management scenarios have demonstrated that lethal predator removal and reducing human disturbance facilitate population recovery and may partially alleviate the reliance upon immigration of birds from other areas, a necessary function to maintain a viable subpopulation. However, in some cases the use of nest exclosures reduced population growth because they were found to compromise *adult* survival, thus highlighting the importance of maintaining viable source populations and re-evaluating the recovery objectives for plovers during both breeding and non-breeding seasons.[57]

It has been demonstrated that conservation of snowy plover populations in California, characterized by those located near and within the Project site, "requires managing habitat throughout the year, especially during winter when northern populations may be limited by

[54] Brindock, K. M., & Colwell, M. A. 2011. Habitat selection by western snowy plovers during the nonbreeding season. Journal of Wildlife Management, 75(4), 786-793. doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1002/jwmg.106

[55] USFWS. 2007. Western snowy plover (*Charadrius alexandrinus nivosas*). Pacific coast population Recovery Plan, Portland, Oregon, USA.

[56] *Ibid.*

[57] Eberhart-Phillips, L., & Colwell, M. A. 2014. Conservation challenges of a sink: The viability of an isolated population of the snowy plover. *Bird Conservation International*, 24(3), 327-341. doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1017/S0959270913000506

food and predation".[58] **Specific, often seemingly minor attributes of wintering sites can make a significant difference in survival and fecundity of individuals.** Northern coastal sites occupied by plovers had more brown algae (e.g., *Macrocystis, Nereocystis, Postelsia,* and *Fucus*) and associated invertebrates (e.g., amphipods and flies), were wider, and had less vegetation than unoccupied sites, suggesting that wintering plovers select habitats with more food and where they could more easily detect predators.[59] Maintaining habitat year-round with attributes that support abundant food and reduce predation risk (i.e., wide beaches, limited obstructive cover) is important to individual survival and maintaining the Pacific Coast population of snowy plovers. Specifically, researchers concluded that,

> *"Protecting occupied sites from human disturbance, which adversely alters nonbreeding habitat and directly causes mortality, may be essential for conserving the Pacific coast population of the snowy plover, and it may benefit other shorebirds."*[60]

CURE-Owens-12 cont.

For these highly sensitive nesting populations that occur near and on the Project site, within critical habitat, mitigation of the significant temporary, indirect, direct, and cumulative impacts of the Proposed Project requires more than is prescribed by the DEIR to reduce impacts below significant.

e. Mitigation Measure 4.6-1d: Protective Measures for Western Snowy Plover is Inadequate to Reduce Impacts Below Significant

The DEIR/S defers the mitigation impact analysis of the SNPL by stating that "for work that cannot be completed during the non-nesting season" SNPL surveys will be conducted as part of attempts to obtain approval by USFWS to develop SNPL habitat during breeding season. This infers that some construction must occur during breeding season. It goes on to say that "If nests are observed within 300 feet of construction activities, the qualified biologist shall notify and consult with USFWS to determine whether construction may proceed, based on detailed information on location of nest(s), proximity to construction, site lines and topography, and noise environment. Any additional avoidance or minimization measures shall be implemented prior to initiating construction activities."[61]

CURE-Owens-13

What if the Applicant does not receive permission to continue with construction activities due to presence of too close, or too many nesting SNPL immediately prior to development commencement, or during development? Or if such is the case and the developer is not given permission to continue, will the developer then pressure USFWS to allow such, claiming to delay construction for months is an undue hardship (for the company, or for the

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[58] Brindock, K. M., & Colwell, M. A. 2011. Habitat selection by western snowy plovers during the nonbreeding season. Journal of Wildlife Management, 75(4), 786-793. doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1002/jwmg.106

[59] *Ibid.*

[60] *Ibid.*

[61] DEIR/S 4.6-169

community's water needs), especially if it is for the duration of nesting and fledging as the mitigation measure explains could be the case? Such a tactic by developers is one I have commonly witnessed as a consulting biologist, increasingly so over the years, wherein the developer's mitigation measures are insufficient for various reasons including poor ground-truthing and poor knowledge of existing conditions for any given sensitive species. Despite this, permits are approved based upon vaguely described, deferred mitigation. And yet this deferred mitigation has less than rigorous oversight for many reasons, is lacking in details and insight, and sometimes the result is that construction must be temporarily halted to avoid take of a species. This incurs pushback from the developer claiming hardship, and such delays are often not upheld by USFWS due to this pressure.

In my years as an environmental consultant I have witnessed that it is far more common for the agency to give a "variance" of a permit and defer to the complaints of the developer when construction is at risk of being seriously delayed. These variances for the prescribed mitigation can and do lead to mitigation measures that are altered and diminished in effectiveness from their written prescriptions on paper, resulting in unmitigated, significant impacts, unanticipated (and sometimes unreported) take of species. This is an all-too common practice among developers and environmental consultants that I have personally witnessed as an independent biologist for construction sites with sensitive species of nesting birds and other rare animals present. Certain actions by the developer, including violations of regulations and mitigation measures, go unreported in part due to environmental consultants' ubiquitous use of extreme and rigid non-disclosure agreements (NDA), where biologists are required to sign strict NDAs to be employed and subsequently are at risk of losing their jobs, or worse, if they report any unpermitted harassment or take of protected species.

CURE-Owens-13 cont.

In short, these mitigation measures that seek to develop SNPL habitat during breeding season are unacceptable for reasons outlined above. To ensure adequate mitigation of indirect, direct, and cumulative impacts, the Applicant should commit to withholding all construction activities within SNPL habitat during SNPL breeding season, without exception.

The DEIR/S concludes impacts to SNPL would be significant throughout at least 9 acres of the Project footprint, yet they do not describe in detail the degree of such an impact since they do not provide any data on exactly how many of the birds have nested within and near the SNPL habitats within the Project footprint. The Report states, "Construction of the slant wells in the CEMEX active mining area could occur year-round"[62] where impacts could result in flight of breeding birds, nest abandonment, or nest failure, and "construction activities would be implemented in or around areas where plovers may occur during the winter. Construction during the snowy plover wintering season (October 1 through February 28) could directly or indirectly impact individual birds if present within or adjacent to the construction area. Human presence and construction noise and activities can cause roosting plovers to fly and disturb resting or foraging activities. This would be a significant impact."[63]

[62] *Ibid*. 4.6-129
[63] DEIR/S 4.6-130

The DEIR/S acknowledged impacts to wintering plovers would be significant, and states its primary mitigation measure to reduce ongoing construction during non-breeding season impacts as follows: "For work conducted during the non-nesting season, a qualified biologist will evaluate the nature and extent of wintering plover activity in the project area several days prior to construction and inform CalAm so they can make construction decisions that avoid or minimize disturbance to plovers. The biologist shall conduct periodic monitoring during construction to ensure that minimization measures are implemented to avoid or minimize disturbance to plovers."

This measure is not specific enough to ensure confidence in avoidance measures for temporary impacts that include harassment and possibly species take. Details must be provided as to exactly how the developers will avoid harassment, and to what degree of impact. For instance, to avoid one or two plovers may be easier than if many are found to be using the area to forage regularly on and near the site. If the latter is the case, what measures can be taken to avoid a moving target of foraging plovers, especially given the natural history details provided above regarding plover sensitivity to human disturbance, and importance of lack of disturbance of wintering habitat for breeding success?

The DEIR/S infers that direct, indirect, and cumulative impacts to SNPL by development of their habitat may be partly minimized by the simple fact that they have abundant habitat to the north and south of the site in which to relocate, forage, and breed; and that they would only be temporarily displaced by construction. They claim that harassed ("displaced") birds can simply move elsewhere due to there being abundant habitat nearby. This argument is biologically flawed and should be summarily dismissed. If impacts to species could be avoided simply by default of the existence of the presence of similar habitat nearby, much of the impacts of any given development on a given species could be ignored by default.

There is abundant evidence demonstrating how erroneous the DEIR's assumption here regarding how an animal (not just the SNPL) can simply just "go elsewhere" thanks to nearby habitat that it can use being present. It is an assumption that affects mitigation analyses and thus should not be ignored as minor. Nearby habitat of the same category may or may not be as adequate for an individual's needs as habitat already occupied. There is no way for the Applicant to determine to what degree 'nearby' habitat destinations for displaced birds may be occupied by conspecifics that may defend resources, or to what density predators may occur, or if, for instance, whether nearby habitat may or may not have adequate microsites or other resources for optimal foraging, thus potentially impacting foraging success and fecundity.[64] For instance, years of personal observations have revealed that Diegan coastal sage scrub, the habitat used by breeding California gnatcatchers (CAGN) (a federally threatened ESA species), can be quite different from one location to the next. Whether or not the CAGN chooses to use a

CURE-Owens-13 cont.

[64] Nol, E., MacCulloch, K., Pollock, L., & McKinnon, L. 2014. Foraging ecology and time budgets of non-breeding shorebirds in coastal Cuba. *Journal of Tropical Ecology, 30*(4), 347-357. doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1017/S0266467414000182

particular causal sage scrub habitat for nesting depends invariably on characteristics including dominant shrub species, grade, slope, percentage of bare ground, and sometimes heterogeneity of the shrub habitat. Such choosiness for appropriate breeding, and nesting microhabitats is common for many species within all taxa. This factor is an important one when it comes to mitigation prescriptions for impacted habitats, including selection and analysis of efficacy of parcels for compensatory mitigation that are species-specific.

Additionally, research demonstrates that when birds and other vertebrates emigrate to a new location, risk of mortality increases due to factors such as increased visibility, decreased familiarity with a new area relative to competitors, predators, and resources.[65] Mortality for passerine juveniles during their first year, including during non-breeding season, is typically very high and based on many factors that can be compromised by anthropogenic influences. [66, 67, 68, 69] The Applicant provides no way of determining the degree to which direct and indirect impacts from harassment will reduce survival of first year juveniles, especially given the DEIR/S makes little attempt to discuss actual site population details such as number of breeding pairs, local breeding success in terms of chicks fledged in a given area each year, etc. Such oversights in isolation may appear minor, however when considered as part of a cumulative impact over time, especially in light of the difficulty of recovering threatened and endangered species that reside in areas increasingly urbanized and developed as California is, they become significant. As the USFWS Recovery Plan indicates, snowy plover population recovery requires undisturbed wintering as well as breeding habitat; this fact must be taken into consideration for impact analysis. (See below for additional supporting evidence regarding wintering habitat, cumulative impacts, and resultant inadequacy of snowy plover impact analysis.)

CURE-Owens-13 cont.

[65] Guy Morrison, R.I., R, K. R., & Niles, L. J. 2004. Declines In Wintering Populations Of Red Knots In Southern South America. *The Condor, 106*(1), 60-70. Retrieved from http://search.proquest.com.jerome.stjohns.edu:81/docview/211249469?accountid=14068

[66] Vitz, A. C., & Rodewald, A. D. 2011. Influence of condition and habitat use on survival of post-fledging songbirds. *The Condor, 113*(2), 400-411. doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1525/cond.2011.100023

[67] Cano, L. S., Franco, C., Doval, G., Torés, A., Carbonell, I., & Tellerãa, J. L. 2013. Conservation of iberian black storks (*Ciconia nigra*) outside breeding areas: Distribution, movements and mortality. *Bird Conservation International*, 23(4), 463-468. doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1017/S0959270912000482

[68] Tökölyi, J., Mcnamara, J. M., Houston, A. I., & Barta, Z. 2012. Timing of avian reproduction in unpredictable environments. *Evolutionary Ecology, 26*(1), 25-42. doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1007/s10682-011-9496-4

[69] Sandercock, B. K., Székely, T., & Kosztolányi, A. 2005. The Effects Of Age And Sex On The Apparent Survival Of Kentish Plovers Breeding In Southern Turkey. *The Condor, 107*(3), 583-596. Retrieved from http://search.proquest.com.jerome.stjohns.edu:81/docview/211305157?accountid=14068

f. Plover Mortality Will Increase Due to Increase in Human Disturbance Despite Proposed Mitigation Measures

Disturbance by humans is a key factor in reducing or eliminating snowy plover nesting habitat.[70] Humans negatively impact plovers by causing: (1) destruction of nests and chicks; (2) increased disturbance leading to reduced incubation or brooding constancy; and (3) decreased foraging opportunities by adults and chicks.[71]

Direct mortality can occur when humans inadvertently step on chicks or them with mechanized vehicles.[72] Neither is mortality to birds due to nearby construction activities limited to chicks. As a professional environmental consultant specializing (in part) in wildlife monitoring for over 20 years, I have personally witnessed, as have other biologist construction monitors I have communicated with over time, that for various types of development - including pipeline installation – that despite a myriad of mitigation protocols and best management approved and imposed under standard multi-agency permitting processes, mortalities of ground nesting and foraging birds, along with reptiles and rodents, are an inevitable result of construction traffic on any given construction site that occurs in a species habitat (*pers. comm*, Patrick Hord, Jan 2014; Jane Higginson June 2015; Dr. Kelly Smith May 2015). These mortalities occur despite imposed speed reductions, fencing, signage, right-of-way-restrictions, imposed nest 'buffers', educational trainings for workers, pre-construction nest surveys, and other typical mitigation measures that purport to reduce impacts during both breeding and non-breeding season development. For instance, on one construction site for a large industrial complex, within the span of one month along one dirt road designated for construction traffic, over 30 flat-tailed horned lizards (a special status species) were inadvertently run over and killed due to their cryptic nature and attraction to the moisture provided by erosion control water trucks. The degree to which this phenomenon occurred was partly due to the construction site occurring near, but not within, occupied critical habitat for the species, and had little to do with breeding season or status of the individuals.

CURE-Owens-14

Although it can be argued whether or not such inevitable mortalities are significant based on the numbers of individuals injured or killed, it cannot be denied that when the mortalities occur among individuals of endangered or threatened species such as the Western snowy plover, it must be concluded that each breeding individual loss results to some degree in reduced viability of the population.

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[70] MacDonald B, T Longcore, S Dark. 2010. Habitat suitability modeling for Western Snowy Plover in Central California. The Urban Wildlands Group, Los Angeles, California, 129 pp.

[71] Colwell MA, CB Millett, JJ Meyer, JN Hall, SJ Hurley, SE McAllister, AN Transou, RR LeValley. 2005. Snowy Plover reproductive success in beach and river habitats. *Journal of Field Ornithology* 76(4):373-382. *See also* United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover *(Charadrius alexandrinus nivosus)*. Sacramento, California. xiv + 751.

[72] *Ibid.*

As significantly, indirect mortality occurs because high levels of human activity hinder normal brooding, foraging, and sheltering activities. As mentioned above, snowy plover chicks are precocial. After hatching, the male bird cares for the chicks for approximately 28 days.[73] However, the chicks quickly must learn how to feed themselves, balance thermoregulatory needs, and avoid predators without assistance. Human activities can be especially detrimental to survivorship during this critical period in the species' life cycle. When a brooding adult is disturbed, it often leaves chicks exposed, and hence vulnerable to predation, inclement weather, and reduced foraging time.[74] Human activity may also cause brood movement, resulting in the separation of one or more chicks from the rest of the brood.[75] In addition, movement into adjacent territories can result in attacks on the young by other adult plovers, resulting in chick death and abandonment.[76]

Predation, by both native and nonnative species, has also been identified as a cause of mortality to plovers even in the presence of applied certain mitigation measures to reduce impacts of development projects, and is a major factor limiting western snowy plover reproductive success at many Pacific coast sites.[77]

While predominantly a natural phenomenon, predation is enhanced through the introduction of nonnative predators and unintentional human encouragement of larger populations of native predators (e.g., by providing supplemental food, water, and nest sites). Elevated predation pressures result from both temporary and permanent landscape-level alterations in coastal dune habitats that, in turn, now support increased predator populations within the immediate vicinity of nesting habitat for western snowy plovers.[78]

Because anthropogenic disturbance is the primary threat to the western snowy plover, numerous biologists have concluded that protecting occupied sites from human disturbance during both breeding and non-breeding season is essential to the conservation and recovery of the species.[79]

CURE-Owens-14 cont.

g. Case Studies Substantiating the Effects of Snowy Plover Disturbance

CURE-Owens-15

Numerous studies have demonstrated that human activities are affecting the

[73] Colwell MA, SJ Hurley, JN Hall, SJ Dinsmore. 2007. Age-Related Survival and Behavior of Snowy Plover Chicks. *Condor* 109(3):638-647.

[74] *Ibid.*

[75] Ruhlen TD, S Abbott, LE Stenzel, GW Page. 2003. Evidence that human disturbance reduces snowy plover chick survival. *Journal of Field Ornithology* 74(3):300-304.

[76] *Ibid.*

[77] *Ibid.*

[78] *Ibid.*

[79] United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover *(Charadrius alexandrinus nivosus).* Sacramento, California. xiv + 751. *See also* Brindock KM, MA Colwell. 2011. Habitat Selection by Western Snowy Plovers During the Nonbreeding Season. *Journal of Wildlife Management* 75(4):786-793.

survivorship, numbers, and activity patterns of western snowy plovers. Escofet and Espejel concluded that human encroachment has caused nesting snowy plovers to completely disappear from many coastal breeding locations in California. Habitat that is opened to human disturbance, such as the Project construction proposed over a minimum of a six month period in occupied plover nesting habitat, even while temporary and possibly during non-breeding season may have permanent impacts on snowy plovers. Lafferty reported that snowy plovers immediately stopped breeding at the Reserve when it was opened to recreation, and ultimately permanently abandoned the site for wintering.[80] Page et al. observed western snowy plovers' response to human disturbance at two coastal beaches where normal beach use ranged from light to heavy.[81] When humans approached western snowy plovers, adults left their nests 78% of the time when people were within 50 meters and 34% of the time when people were over 100 meters away. Ruhlen et. al. examined the effects of human disturbance on snowy plover chick survival at Point Reyes National Seashore, California.[82] Chick loss on weekends and holidays was 72% greater than expected in 1999 and 69% greater than expected in 2000. This suggested that increased human recreation on Point Reyes beaches over weekends and holidays negatively affected snowy plover chick survival, even though humans were not observed to cause direct impacts to chicks. Rather, results suggest that the increased associated potential for anthropogenic disturbance (noise, predator attraction) was primarily responsible for chick mortality.

CURE-Owens-15 cont.

h. Summary about Impacts to Snowy Plover

First, Mitigation Measure 4.6-1d defers aspects of mitigation to consultation with USFWS. This prohibits the reviewer to analyze the efficacy of details of mitigation protocols (or success criteria for such), as they cannot be provided when they are as of yet to be determined. Deferment of mitigation measures and relevant details to some point in the future does not allow for adequate impact analysis as required under CEQA, and provides no guarantee such measures will even be undertaken.

CURE-Owens-16

Second, for construction during the breeding season, visual barriers are proposed to reduce impacts. In light of the complex causes and results of anthropogenic disturbances to breeding pairs and chicks, such barriers will not serve to significantly reduce the direct and indirect impacts of noise on breeding birds. Based upon the abundant evidence regarding the negative impact of human proximity to nesting birds, all construction during breeding season

[80] Lafferty KD. 2001. Human disturbance to wintering western snowy plovers at a southern California beach. *Biological Conservation* 10:1-14. *See also* University of California, Santa Barbara Natural Reserve System. 2001. Snowy Plover Management Plan (SPMP) – 2001. Available at: <http://coaloilpoint.ucnrs.org/SnowyPloverProgram.html>. (Retrieved Jun 19, 2015).

[81] Page GW, JS Warriner, JC Warriner, RM Halbeisen. 1977. Status of the snowy plover on the northern California coast. Part I: Reproductive timing and success. California Department of Fish and Game Nongame Wildlife Investigations, Sacramento, CA. 6 pp.

[82] Ruhlen TD, S Abbott, LE Stenzel, GW Page. 2003. Evidence that human disturbance reduces snowy plover chick survival. *Journal of Field Ornithology* 74(3):300-304.

should simply be avoided, as impacts will be inevitable and unavoidable despite construction of a barrier, or the presence of a biologist on-site to detect breeding birds. The Applicant should be reminded that detection, imperfect avoidance mechanisms, and reporting cannot and will not serve to restore the impacts that will inevitably occur to birds in the form of harassment, injury, and possibly mortality if construction occurs within their nesting area during breeding season.

The DEIR/S states that impacts will be minimized, under Measure 4.6-1d, by having an onsite biologist survey for nests and then consult with experts to determine any additional avoidance or minimization measures should be implemented prior to initiating construction activities. Once again mitigation is deferred to a future consult / plan, thus making it impossible for the public to review the efficacy proposed mitigation. This is important because although agency consultation for protected species take is required under the ESA, the agencies do not conduct oversight of all mitigation measure for such species, therefore confirming due diligence of mitigation detail is necessary prior to issuance of a development permit while oversight is still a reality.

CURE-Owens-16 cont.

Adequate details for analysis are not only preferable, but essential. For example, the snowy plover management plans for the proposed Monterey Bay Shores Resort – to be constructed in snowy plover occupied habitat in proximity to the Project's western Source Water pipeline - prescribed establishing exclosures around the nesting area "during fledging" (the interval between hatching and flight) as a method to reduce breeding season construction impacts.[83] However, this has little value as a take avoidance measure because snowy plovers have precocial chicks that leave the nest within hours after hatching.[84] Snowy plover chicks coming from nests on the project site or adjacent areas would be susceptible to direct (e.g., crushing) and indirect (heightened vigilance that precludes normal foraging activities) impacts from Project construction activities.[85]

Additionally, Muir and Colwell (2010) studied the response of incubating plovers to an observer approaching the nests. Incubating plovers ceased incubation and left nests when an observer approached to within a mean distance of 80 ± 33 meters,[86] thus further demonstrating the ease at which harassment to plovers can occur with the presence of humans in the general area. This is just one example of where a thorough analysis of mitigation protocols is essential for determining adequacy of mitigation measures; without such an accurate assessment of impact reduction is impossible. **Ultimately, the only reliable way to prevent such impacts is to prohibit construction activities during the entire snowy plover breeding season.**

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[83] http://www.landwatch.org/pages/issuesactions/gm-ecoresort.html Retrieved June 22, 2015.
[84] Precocial chicks are well developed, feed themselves, run about, and regulate their body temperature.
[85] Muir JT, MA Cowell. 2010. Snowy Plovers Select Open Habitats for Courtship Scrapes and Nests. *Condor* 112(3):507-510.
[86] *Ibid.*

Third, the Applicant proposes to develop a Habitat Mitigation and Monitoring Plan (HMMP) to complete its obligation to reduce impacts to below significant for sensitive species including the snowy plover. Once again the description of adequate impact reduction is deferred, and as a result the reviewer is unable to determine the adequacy of the measures given that no site-specific or species-specific details or methodology have been provided for a plan that has yet to be created. This prohibits adequate review by the public to determine if impacts will satisfactorily be reduced to below significant as required. Not only does it prohibit thorough analysis, it provides no guarantee that the HMMP will actually be developed and function as promised to reduce impacts as proposed, nor are any standard success criteria for such presented. The DEIR/S states the HMMP will be given to the appropriate agencies for approval, but it does not discuss what, if any, actions will be taken if any of the "appropriate" agencies (such as USFWS, or CDFW, or a local jurisdiction) do not all approve the final HMMP, nor how such an impasse would affect impact mitigation as the DEIR/S asserts will occur be default of the mention of a Plan that has yet to be created.

Fourth, in respect to movement of SNPL and assuming that displacement can be easily mitigated partly because it is a temporary impact: it is important to note that the USFWS Recovery Plan specifically states,

> *"A portion of the Pacific coast population of western snowy plovers do not migrate up or down the coast and are year round residents. Additionally, the majority of western snowy plovers that do migrate are site-faithful, returning to the same breeding areas in subsequent breeding seasons (Warriner et al. 1986, Stenzel et al. 1994). Western snowy plovers occasionally nest in exactly the same location as the previous year (Warriner et al. 1986)."*[87]

The USFWS Snowy Plover Recovery Plan concludes that to bring the snowy plover population back to numbers above threatened status, it is essential to

> *"prevent disturbance of breeding* ***and wintering*** *western snowy plovers by people and domestic animals.* ***Disturbance by humans and domestic animals causes significant adverse impacts to breeding and wintering western snowy plovers****. Because human disturbance is a primary factor affecting western snowy plover reproductive success, land managers should give the highest priority to implementation of management techniques to prevent disturbance of breeding birds. Management plans (Actions 3.3.1, 3.3.2, and 3.4) should include appropriate human/domestic animal access restrictions to prevent disturbance of western snowy plovers* [emphasis added]".

CURE-Owens-16 cont.

i. Cumulative Impacts to Snowy Plovers are Not Adequately Analyzed

CURE-Owens-17

[87] USFWS. 1986. Snowy Plover Recovery Plan. p. 138

Several other projects have been proposed for the coastal zone in the vicinity of the Project site, and proximal to snowy plover critical habitat, including:[88]

1. The Collection at Monterey Bay Project (development of a 342-room coastal resort on a 26.46-acre site located west of State Route 1 in Sand City).
2. A new campground at Fort Ord Dunes State Park (development of 100 campsites, parking areas, an internal trail network with beach access, and various other infrastructures).
3. The Monterey Bay Shores Resort Project (development of a 40 acre parcel in Sand City, including approximately 680,000 cubic yards of grading)

The Fort Ord coastal HCP includes the creation of a new campground at Fort Ord beach and will greatly increase human use in plover habitat, causing significant impacts to wintering and breeding birds and habitat within the general region of this Proposed Project's pipeline development.

The Monterey Bay Shores Resort, an exceedingly large coastal hotel to be constructed at the southern boundary of Fort Ord, will preclude nesting and wintering of plovers within and adjacent to the Project footprint, thus causing permanent direct and long term impacts to nesting to the regional population. The California Coastal Commission, amazingly, did not require any sort of concurrence with USFWS when it issued its conditional development permit, and as a result impacts to snowy plovers (and other resident sensitive species) remain inadequately mitigated, thus contributing further to local impacts to plovers in close proximity to the Project proposal. The Collections is another hotel proposed slightly south of the Monterey Bay shores Resort, and is also in Sand City, with similar significant impacts to snowy plovers.

CURE-Owens-17 cont.

The DEIR/S acknowledges the potential for cumulative impacts as follows, "Specifically, the Monterey Shores Resort (No. 19), 90-Inch Bay Avenue Outfall Phase 1 (No. 43), Slant Test Well Project (No. 47), Moss Landing Community Plan (No. 37), and The Collection at Monterey Bay Resort (No. 56) would affect beach or dune areas that may support western snowy plover. Implementation of the Monterey Bay Shores Resort and Moss Landing Community Plan projects could occur at the same time as the proposed MPWSP construction and therefore could adversely affect western snowy plover and its habitat through heavy equipment use, dust generation, elevated noise levels, and increased human activity" but claims that the mitigation measures provide will reduce impacts to below significant. However, what is not addressed is that a comprehensive strategy for the conservation of western snowy plover breeding and wintering locations has not been incorporated into the Sand City General Plan, Local Coastal Program, or their implementing ordinances. The USFWS has expressed concern about the

[88] DEIR p. 5-4

aforementioned projects being addressed in a piecemeal fashion, **which does not allow an adequate assessment of their cumulative effects.**[89] **As a result, the USFWS and others have recommended the preparation of a habitat conservation plan (HCP) to adequately address cumulative effects.**[90] The City of Sand City, City of Marina, and the Monterey Bay Shores Resort developers each committed to preparing an HCP for the western snowy plover. None of these entities have fulfilled their commitment. To date, there exists no definitive habitat plan by any of these entities that addresses cumulative impacts to the plover, or proposes a strategy for conserving snowy plovers in the specific region. In light of these oversights the DERI/S has not provided a complete discussion of all projects and development plans that contribute to cumulative impacts of the species.

CURE-Owens-17 cont.

j. Compensatory Mitigation Details are Necessary for Complete Snowy Plover Impact Analysis.

Under Mitigation Measure 4.6-1n (discussed above) the DEIR/S does state that the HMMP would include a description of any compensation in the form of land purchase or restoration. Not only should a land purchase or restoration be considered with appropriate compensation ratios of habitat gained to habitat lost of a least 2:1, but ideally would collaborate with local SNPL conservationists. According to Point Blue snowy plover biologist Kriss Neuman (*pes. comm.* June 23, 2015),

> *"There is currently no dedicated funding to support the monitoring and conservation activities that are conducted to support this regional plover population and in particular at this site. The landowner [of the Cemex site] gladly allows Point Blue, California State Parks, and USFWS refuge staff to access habitat, and we jointly install protective fencing, manage habitat and predators, and monitor nesting. A dedicated conservation fund supporting these activities on the site and possibly in the region as well would help to ensure population stability in the region."*

CURE-Owens-18

Given that the Point Blue, in coordination with California State Parks, and the local USFWS Wildlife Refuge have been working to monitor and conserve snowy plovers for the past 30 years, it would appear that two of the most effective measures that could be taken to truly reduce the cumulative impacts to this sensitive species would be for the applicant to

(1) Contribute to a conservation fund, to be overseen by the appropriate oversight agency, that will be used for monitoring, habitat restoration, and other conservation actions that are key to the populations' viability over time, and

(2) Contribute to a region-wide Snowy plover Habitat Management Plan that incorporates

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[89] United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover *(Charadrius alexandrinus nivosus).* Sacramento, California. xiv + 751.

[90] *Ibid.*

all of the relevant municipalities and agencies that are stakeholders for this regional plover population's habitat and conservation. Any such Plan should coordinate and consult with the Point Blue, California State Parks, and USFWS biologists who have been researching this region's snowy plovers for decades.

CURE-Owens-18 cont.

The hydrology of sand systems such as those found in dune habitats in complicated.[91] In a coastal setting such as this, the dune plants are typically neither xerophytic nor halophytic.[92] They typically germinate during a rain event and rapidly send down a fine root through wet sand until it reaches the water table. Fresh water "floats" on the salt. The ground water is drawn toward the surface, and if the dune gets built higher, complicated physics results in the water being drawn up so that the freshwater lens used by the plants stays a relatively stable distance from the surface of the dune, whether the dune is being built higher, or eroded lower.[93] In short, the effect and resultant impacts of imposing the construction of ten extraction wells through this intricate and sensitive hydrological system, and providing a strong pull toward the ocean, is not addressed but should be for adequate impact analysis.

CURE-Owens-19

VI. ADDITIONAL MITIGATION MEASURES PROPOSED FOR TERRESTRIAL BIOLOGICAL RESOURCES IMPACTS ARE INADEQUATE

In addition to those discussed above, there are other incidences where impacts proposed as significant are considered mitigated to below significance with the following measures, despite the fact that the specifics of these measures and their standard criteria for success are not adequately identified, and at times deferred to the future, preventing complete analysis of their efficacy.

CURE-Owens-20

a. Mitigation Measure 4.6-1a. Retain a Lead Biologist to Oversee Implementation of Protective Measures[94]

First, in the case of a potential sensitive species take or harassment, the lead biologist is said to have direct stop work authority, as is a typical prescription for construction sites, and most onsite mitigation protocols and potential actions rest on this unadulterated authority of the lead biologist. However in reality the lead biologist is often not actually onsite, and his/her responsibilities are handed to a subordinate who theoretically has power to stop work, but in reality does not due to the realities of who is asserting authority over construction, aggressive

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[91] Zarnetske, P. L. 2011. *The influence of biophysical feedbacks and species interactions on grass invasions and coastal dune morphology in the pacific northwest, USA* (Order No. 3492886). Available From ProQuest Dissertations & Theses Full Text; ProQuest Dissertations & Theses Global. (918818070). Retrieved from http://search.proquest.com.jerome.stjohns.edu:81/docview/918818070?accountid=14068

[92] Martinez, M. L. and Psuty, N.P. (eds.) 2004. Coastal Dunes: Ecology and Conservation. Ecological Studies Vol. 171, Springer-Verlag Berlin.

[93] *Ibid.*

[94] DEIR/S 4.6-164

pressure from the developer to never stop work more than momentarily, and other pressures including the NDAs mentioned above that tie the hands of biologists who observe violations of permits but are at risk of losing jobs if they report them. This reality is the norm, not the exception (*pers. comm.* Patrick Hord, Sage Wildlife Biology; Kim Davis, Helix Environmental; Frank Dittmer, AECOM, 2016).

I have witnessed this scenario many times in my experience as an environmental consultant, where the onsite lead biologist is not in reality given full authority to cease any actions that threaten or are in the process of causing impact to sensitive species or their habitats, or any other related environmental violations of air or water. This remains a growing and serious problem on these construction sites, due largely to the delays inherent within the process, and the conflicts inherent when relying on construction or operational site supervisors to stop work on projects for which their primary responsibility, reinforced by their employer, is ensuring work proceeds with no interruption or delays. This scenario is ripe for conflict, and more often than not results in the impacts to species and habitats going unreported, under-reported, or the situation being settled in a manner that does not comply with the spirit or intent of the mitigation measure or protocol(s). The Applicant may claim that they have little control of conflicting parties onsite, but by default they do have authority of oversight to fix these problems given that as part of CEQA compliance they are tasked with creating mitigation measure that are actually effective, with criteria for measuring success that are relevant and enforceable.

CURE-Owens-20 cont.

Therefore the Applicant should provide some standard or assurance within the mitigation measures that insures that the lead biologist, onsite, has the un-revocable authority to stop work when needed, and is **working as an independent third party** (independent of the primary environmental consultant, and of the developer) assigned to such a duty with the responsibility of reporting violations or takes of species to the agencies. As importantly, any reports of mitigation monitoring, violations, daily or monthly activities, etc. related to biological resource protection shall be given to the agencies first, developer second. The developer should not be allowed to alter or suggest alterations to any reports prior to delivery to the regulatory agency(ies). As a consultant for a quarter of a century observing the on-the-ground interactions on construction sites, I can say with confidence that without such measures in place, the role of the lead biologist is often reduced to that of a paper tiger, one hired to appease the developer as employer, and not one hired to adequately comply with all mitigation measures and standards.

Second, according to this mitigation measure it appears that the lead biologist is expected to relocate any special status species that are 'at risk'. The DEIR/S does not specify what 'at risk' entails, yet such a definition for plants and animals of different taxa is extremely broad, nor any protocol for relocation methodology, nor even which species or taxa are being referred to in the first place. Confusingly, Mitigation Measure 4.6-1c(10) says that if special

status species are found on site during construction, construction activities shall cease (under whose authority it does not say) while everyone waits for the animal to move "on its own outside of the project area (if possible)". What makes this impossible, what are the parameters? If a sensitive species of reptile is sleeping under the parked truck of a construction worker - a common occurrence on some site - does s/he have to wait until the lizard moves before he can drive his vehicle? If a burrowing owl takes up residence overnight next to a pipeline trench, what then? If it is a plant species to be relocated, which is an almost inevitable reality, the DEIR/S does not identify to where the plant species shall be relocated, or with what methodology, despite the fact that areas of the Project site have been determined to be occupied by threatened and endangered plants species for which the risk of impacts on site could arise frequently, and despite the fact that different species can require vastly different relocation protocols. Consideration of where to relocate the animal to has been deferred and delegated to the field biologist, and thus goes undescribed. There is no consideration that it might not be possible to easily locate certain species, nor any discussion of what measures would be undertaken to reduce impacts if such is the case. This results in a failure to meet the assumption of these measures reducing impacts below significant.

CURE-Owens-20 cont.

b. Mitigation measure 4.6-1e Avoidance and Minimization Measures for Special-status Plants.[95]

First, the DEIR/S states that focused surveys will be conducted in the future prior to development. However, it also says that based upon the results of these surveys, sensitive plants will be flagged and avoided where possible, *or* salvaged, *or* a take permit may be solicited, and impacts may be mitigated as a result of a consult with USFWS and/or CDFW, the details for which are not provided to any degree[96]. At present, focused, protocol level, and rare plant surveys have not been conducted in the recent past, and therefore no data is available for review, beyond some predictions of presence and likelihood to occur. As iterated previously, the lack of data on existing conditions at the species-specific level makes it impossible for the reviewer to predict the efficacy of these mitigation measures that are mostly deferred to the future. It is inevitable that mitigation measures' efficacy can be quite different based upon how many individuals of a sensitive species are present.

CURE-Owens-21

Second, the DEIR/S also states that "compensation for temporary or permanent loss of special status plant occurrences, in the form of land purchase or restoration [on or off site], shall be provided to a level acceptable to the resource agencies with jurisdiction over those species." This is also deferment of mitigation prescriptions, it also provides no information for the reviewer to determine if and how impacts will be adequately reduced below significant, nor does it make any mention of what success criteria will be used to determine impacts have been adequately reduced, or for which species specifically. It additionally puts the entire burden of

[95] DEIR/S 4.6-171
[96] *Ibid.*

determining this Project's mitigation efficacy on one or a few individuals assigned to this project within a given lead agency. This negates the role of CEQA here, which exists in part to allow the public to provide input to impact mitigation including its applicability and efficacy, presuming the public has been provided with sufficient data to make such a review.

Experts on measuring effectiveness of mitigation measures, especially ones regarding compensatory tradeoffs as alluded to here, correctly state that, "Public choice theory suggests officials and traders have more incentive to facilitate barter than to ensure biodiversity protection. Thus, given the option of saying to developers "yes, with conditions" rather than "no," officials will prefer "yes, with conditions"— particularly when compliance with conditions cannot be credibly measured and officials can avoid accountability for outcomes. Legitimized bartering can thus create a policy situation "obscure enough to please all parties . . . and so ill-defined that failures will be difficult to detect."[97] This statement speaks profoundly to why so many compensatory conservation deals have failed to meet the goals of mitigation for projects over the years. If the CPUC and the Monterey Bay National Marine Sanctuary are truly concerned with their role in insuring adequate mitigation of all of the significant impacts described herein to plants and animal species, they will require detailed description and discussion of the adequacy of compensatory mitigation plans (such as funds for sensitive specie s research, HMPs, HCPs) and parcels prior to issuance of a development permit, and not leave all such prescriptions solely up to individuals of a lead agency.

CURE-Owens-21 cont.

c. Mitigation measure 4.6-1f Avoidance and Minimization Measures for Smith's Blue Butterfly.[98]

As with most if not all other special status species discussed in this document, the DEIR/s fails to conduct focused or protocol-level surveys for the Smith's Blue butterfly throughout any of the Project site. For reason already discussed above, such lack of data prevents the reviewer from adequately assessing existing status and resultant measures and standards necessary to mitigate potential impacts to this ESA listed species. The DEIR/S indicates that Slant Wells, Pipelines, Transition main, the CEMEX active mining area, CEMEX access road and the surrounding sand dunes, and staging areas all have Smith's Blue butterfly habitat (its host planta, coast and seacliff buckwheat, specifically). It states that construction within these areas has the potential to "temporarily impact" Smith's blue butterfly habitat, "which would be a significant impact. The impact is considered temporary because coast

CURE-Owens-22

[97] Walker, S.; Brower, A.; Stephens, R,T.; and Lee, W. 2009. Why Bartering Biodiversity Fails. *Conservation Letters* 2:149–157. Retrieved from: http://www.azoresbioportal.angra.uac.pt/files/publicacoes_Walker%20et%20al%202009.pdf

[98] DEIR/S 4.6-172

buckwheat is relatively easy to cultivate and reestablish in dune scrub habitat, and would be returned to pre-construction conditions".[99]

As its primary mitigation measure the Applicant states it will conduct a section 7 consultation implement all measures required by USFWS. This amounts to mitigation measures being deferred, unspecified, and thus impossible to assess for efficacy, regardless of a statement that purports compliance with the ESA contingent on future discussions.

Measure 4.6-1f states that 'floristic botanical surveys of all suitable habitat for coast buckwheat and seacliff buckwheat, both of which are host plants to Smith's blue butterfly, shall be conducted by a qualified biologist during project design and prior to project implementation. Maps depicting the results of these surveys shall be prepared to document the location of the host plants within or adjacent to the project area. Construction of project elements shall be planned to avoid mapped host plants for Smith's blue butterfly whenever feasible."[100] This is also deferral of mitigation planning and descriptions, and prevents thorough analysis of mitigation efficacy. Minimum required impact reduction actions can vary widely from standard avoidance procedures if just a few host species are present, to major changes necessary in development footprint and design and/or timing of construction if there are many host plants and even butterflies on site. The Applicant needs to provide not only complete habitat maps of the host plants, but also focused butterfly surveys, especially considering the sensitivity of this species and its slow road to recovery since its listing in 1976.

CURE-Owens-22 cont.

The unique natural history of the Smith's blue butterfly is important to be aware of, since it represents some of the difficulties in relying on mitigation measures whose details are generic or deferred to the future in order to address reduction in impacts to the species and its host plants. For example, individual adult males and females live approximately one week, therefore detecting them at the adult stage can be very difficult and depend on long term surveys efforts. Therefore presence of butterflies can be easily missed.[101] Young larvae feed on the pollen and developing flower parts, while older larvae feed on the seeds. Older larvae are tended by ants, which may provide some protection from parasites and predators. Upon maturing in about one month, the larvae pupate in the flowerheads or in the leaf litter and sand at the base of the buckwheat plant. Pupae that form in the flowerheads later drop to the ground. Some adults are quite sedentary, with home ranges no more than a few acres, however others may disperse farther and use home ranges between 20-30 acres.[102] This species prefers

[99] DEIR/S 4.6-129

[100] *Ibid*. 4.6-172

[101] Arnold, R.A. 1983b. Ecological studies of six endangered butterflies: Island biogeography, patch dynamics, and the design of habitat preserves. Univ. of Calif. Publications in Entomology 99: 1-161. Retrieved from: https://searchworks.stanford.edu/view/1049101

[102] USFWS. 2006. Smith's Blue Butterfly Five Year Review: Summary and Evaluation. Retrieved from: https://www.fws.gov/cno/es/Smith's%20blue%20butterfly%205-year%20review.FINAL.pdf

to feed on mature, robust individuals of the perennial buckwheats because they produce more flowers. Thus buckwheat stands that consist of younger or older, senescent individuals, which produce fewer flowers, may not be visited by the butterfly, and are of lesser value for this species' conservation.

These characteristics demonstrate that (a) detection of the species requires very specific training and a knowledge of the species natural history, and (b) host plants and habitats are not all alike in terms of viability and resultant importance for the species conservation. Thus treating any and all buckwheat habitats equally, especially in terms of both construction mitigation and parcel selection for compensatory mitigation, can result in failure to reduce potential impacts. Additionally, USFWS recommends that grading involving motor vehicles, heavy equipment, or ground disturbance will be scheduled outside the potential flight period of the Smiths blue butterfly (June-September)[103], and yet there is no mention of construction avoidance during this specific flight period in the mitigation measures. Also, since there are no surveys that provide estimates of the numbers of Smith's blue butterflies that might exist within or bordering the Project site, it is not possible to quantify the exact number of individual butterflies or host plants that could be taken, and thus impacted, by the removal of buckwheat in the area. Thus overall impacts and resultant detailed mitigation analyses for the Smith's blue butterfly by the Project cannot be thoroughly assessed.

CURE-Owens-22 cont.

d. Mitigation measure 4.6-1g Avoidance and Minimization Measures for Black Legless Lizard, Silvery Legless Lizard, and Coast Horned Lizard.[104]

Due to their cryptic nature and difficulty to detect without conducting focused surveys for such, reptiles are historically underestimated in all aspects of conservation, including surveys, monitoring, and impact analysis. I was co-researcher on the world's most extensive study in the wild of the world's largest snake species, the green anaconda (*Eunectes murinus*). This species had not been studied to any extent previously due primarily to the false belief that they were not in high abundance anywhere and thus difficult to observe for research. Even expert herpetologists recommended against commencing the study, convinced we would find very few of the snakes in the wild. However, once we began focused surveys in their known habitat, as just two researchers we caught and released over 800 green anacondas within a small region (a few square kilometers). We found the snakes primarily by tactile searching (walking the shallow wetlands until we stepped on them), due to the fact that visual searching of this cryptic predator would result in missing up to 90% of the individuals we encountered.[105] I mention this research to underscore the reality that even one of the largest reptile species in

CURE-Owens-23

[103] USFWS. 1984. Smith's Blue Butterfly Recovery Plan.

[104] DEIR/S 4.6-173

[105] Rivas, J. A. (1999). *The life history of the green anaconda (Eunectes murinus), with emphasis on its reproductive biology* (Order No. 9973496). Retrieved from: http://www.anacondas.org/diss/disser.pdf

the world can be very difficult to detect if one is not conducting focused surveys with a protocol designed for species-specific detection. Even during my research on the Orinoco crocodile – a species that can get upwards of 800 pounds – our biggest research challenge was visually locating them in known occupied habitats.[106]

This Project's underestimation of the impacts to reptiles – by way of zero attempts to survey them anywhere, or create species-specific mitigation protocols - falls within this sort of erroneous assumption that if individuals are not detected anecdotally, they are likely not abundant or not present, and/or can easily be detected in a very short period of time when construction monitoring requires such. Reptiles have a wide range of preferences for heat tolerance, some being purely nocturnal, while many will retreat into shallow burrows or rapidly shuffle from side to side to burrow into the sand in order to avoid extreme heat and cold, including sensitive lizard species including the black legless lizard, silvery legless lizard, and coast horned lizard. Environmental impacts assessments are notorious for underestimating, undervaluing, and under-mitigating reptile species, and this Project's Report is no different.

CURE-Owens-23 cont.

These lizard species forage and move within a broad range of habitats, beyond those identified in the DEIR/S as preferred habitats or optimal foraging habitats, and as a result the impact analyses estimating the "potential to occur" of these species based only such assertions of "preferred habitat" in the literature, and not focused field ground-truthing, fall short of accurate site assessments regarding species presence, density, and abundance.[107,108,109,110] For instance, I have observed flat-tailed horned lizards and fringe-toed lizards – both sensitive species that prefer small dunes and loose sandy soils– frequent very rocky and disturbed habitats. The fact that the Applicant also failed to conduct any focused migratory bird or raptor surveys only reinforces the importance of reptiles surveys, as these provide an important prey item for many species of birds.

Additionally, unexpected consequences of other practices on construction sites can negatively impact local species. On one such site I repeatedly observed workers spreading insecticide to kill all species of ants, in areas proximal to critical habitat occupied by protected flat-tailed horned lizards whose primary prey are various ant species. Avoidance of such actions

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[106] Rivas, J.A. and Owens, Renee Y. 2002. Orinoco crocodile (*Crocodylus intermedius*): Age at First Reproduction. *Herpetological Review*. 33 (3): 203.

[107] Gerson, M. M. 2004. *Aspects of the ecology of a desert lizard, Callisaurus draconoides (blainville 1835), in Joshua Tree National Park with an emphasis on home range and diet* (Order No. 3146172).

[108] Heaton, J. S. 2002. *The LizLand model: Geomorphic landform and surface composition analysis of lizard habitat in the California Mojave desert* (Order No. 3029564).

[109] Williams, A. K. 2004. *The influence of probability of detection when modeling species occurrence using GIS and survey data* (Order No. 3123715).

[110] Rosen, P. C. 2000. *A monitoring study of vertebrate community ecology in the northern Sonoran desert, Arizona* (Order No. 9965915).

are one of the specific details that are important, but consistently omitted, by mitigation protocols for reptiles.

The lead biologist for this Project is presumed to prepare a relocation plan, and use relocation as a primary mitigation measure. The DEIR/S states that "only relocation sites that are not over-populated and have suitable habitat conditions (e.g., soils, moisture content, vegetation, aspect) shall be used", however provides inadequate details on how these conditions may be determined, which is important considering preferred habitats and prey items are different for each species of lizard. There is no information provided about the existence of such sites nearby, nor is there data, criteria, or standards established on likelihood of survival via relocation. The DEIR/S says the biologist shall survey for lizards by raking under bushes and walking "appropriately spaced transects" prior to construction. These mitigation descriptions and methods are inadequate, partly for the same reasons described above, since no ground-truthing has been conducted to assess or estimate whether or not these species are present and to what degree, result in the reviewer being unable to reasonably determine the efficacy of mitigation based upon generic protocols. Each species has different natural histories, and different characteristics in respect to detectability during any given time, temperature, and type of habitat. To assume the same protocol will work in detecting, not to mention relocating, these species will be adequate is unsupported. In my experience the taxa most susceptible to incidental mortality on construction sites are snakes and lizards, due to difficulty of detection by biologists and ease of hidden movements on the part of the animal. I have caught, documented, and released over 1,000 reptiles in the course of my natural history and consulting research, and to say these animals are highly susceptible to anthropogenic impacts would be an understatement. Such realities must be taken into consideration when reviewing mitigation measures, something the reviewing public cannot do in this case because no necessary details are provided.

CURE-Owens-23 cont.

e. Mitigation Measure 4.6-1i: Avoidance and Minimization Measures for Nesting Birds

This measure states that, "For all construction activities scheduled to occur during the nesting season (February 1 to September 15), the qualified biologist shall conduct a preconstruction avian nesting survey within 14 days of site clearing and/or ground disturbance. Copies of the survey results shall be submitted to the CPUC. If construction activities at any given facility site begins in the non-breeding season and proceeds continuously into the breeding season, no surveys are required. However, if there is a break of 14 days or more in construction activities during the breeding season, a new nesting bird survey shall be conducted before reinitiating construction."[111]

CURE-Owens-24

[111] DEIR/S 4.6-176

1. Pre-construction nesting survey reports must also be provided to the USFWS, since they have primary jurisdiction over enforcement and implementation of the Migratory Bird Treaty Act, and would be the agency providing a take permit if the developer seeks approval for any activities that risk violation of the MBTA.

2. There is no reason why ongoing construction activities that proceed into breeding season should not require nesting bird surveys; such surveys are required to insure nesting birds are not harassed by Project actions. As someone who has conducted hundreds of MBTA breeding bird surveys on and near construction sites, I can say with complete confidence that birds can, and often do, commence nesting within construction footprints, sites, and along construction access roads due to many species having high natal site fidelity, philopatry, and established territoriality, even despite human interference.[112,113,114]

CURE-Owens-24 cont.

Therefore any and all development activities can significantly impact a breeding bird regardless of when the actual construction began onsite, and nesting / breeding bird surveys should be conducted not only prior to any activities during breeding season, but throughout construction activities during breeding season. Sweeps for nesting birds should be made on a daily basis, and more thorough surveys conducted weekly. This includes surveys for ground-nesting birds as well as others.

f. Mitigation Measure 4.6-1n: Habitat Mitigation and Monitoring Plan

This Measure states that part of its criteria for reduction of significant impacts to special status species includes the "Description of any other compensatory mitigation in the form of land purchase, establishment of conservation easements or deed restrictions, contribution of funds in lieu of active restoration, or purchase of mitigation bank credits, or other means by which the mitigation site will be preserved in perpetuity."[115]

CURE-Owens-25

This Measure is inadequate for CEQA purposes of review and analysis since it is based upon deferral of mitigation, thus lacking in data, description, detail, and standard criteria to even begin to analyze its efficacy and success. Compensatory mitigation is highly variable in its targets (species and habitats) goals, efficacies, and prescriptions, and the reviewer is unable to make any determinations regarding the success when no further detail is provided on a habitat and species-specific basis. As such, this measure's contribution to impact reduction fails, and considering what a key part of most mitigation reductions compensatory tradeoffs must be, this

[112] Sedgwick, J. (2004). Site Fidelity, Territory Fidelity, and Natal Philopatry in Willow Flycatchers (*Empidonax traillii*). *The Auk, 121*(4), 1103-1121. doi:10.2307/4090479

[113] Reed, J., & Oring, L. (1993). Philopatry, Site Fidelity, Dispersal, and Survival of Spotted Sandpipers. *The Auk, 110*(3), 541-551. doi:10.2307/4088418

[114] Robert A. James, Jr. (1995). Natal Philopatry, Site Tenacity, and Age of First Breeding of the Black-Necked Stilt. *Journal of Field Ornithology, 66*(1), 107-111.

[115] 4.6-181

means the Applicant has failed to demonstrate impacts have been reduced below significant for every species and habitat for which this measure is used.

CURE-Owens-25 cont.

g. Field Case Study Supporting the Problem of Deferral of Mitigation Prescriptions to the Future

The following example demonstrates how:

(a) Mitigation measure deferred to the future can fail to reduce impacts including sensitive species mortality,
(b) Failure to recognize the importance of nearby critical habitat to a Project footprint can cause unanticipated sensitive species mortalities, and
(c) Failure to consider the natural history of lizard species or creating species-specific mitigation measures can result in species mortalities.

I and my biologist colleagues have witnessed an important phenomenon on project construction sites in arid regions, and during warmer spring and summer seasons in semi-arid temperate regions similar to that of this Project, where lizard species are present, and pre-construction surveys require minimal pre-construction surveys for reptiles along roads and within construction zones (similar to the mitigation measure for lizards discussed above for this DEIR/S regarding pre-construction survey to be conducted immediately before and during construction). Specifically, I have observed that lizards are directly and immediately attracted to roads on and around construction sites where trucks spraying water and other erosion control liquids are used to reduce airborne dust. We have observed that this practice serves to attract lizards of a variety of species, including coast horned lizards, to the higher moisture levels on the roads, resulting in marked increased lizard mortality and injury due to being hit by construction site traffic that use the roads subsequent to the water trucks passing. For instance, within the course of one month this phenomenon resulted in the mortality of over 20 flat-tailed horned lizards (*Phrynosoma mcallii*) (FTHL) (a state Species of Special Concern and previously petitioned for listing under the CESA and FESA) on one construction site in Southern California during the summer of 2014, and where an additional 110 FTHLs were relocated to avoid injury or mortality from vehicle impacts during several weeks of the construction phase.[116] During the construction of the Sunrise Powerlink gen-tie line just April to November, 103 flat-tailed horned lizards were relocated and 25 mortalities were recorded.[117]

CURE-Owens-26

[116] Wilton, Ben. Tenaska (*Pers. comm.*, March 19, 2015)

[117] [FTHLICC] Flat-tailed Horned Lizard Interagency Coordinating Committee. (2011). Annual Progress Report: Implementation of the Flat-tailed Horned Lizard Rangewide Management Strategy, January 1, 2010 to December 31, 2010. Report prepared by the Flat-tailed Horned Lizard Interagency Coordinating Committee. Retrieved from: https://webcache.googleusercontent.com/search?q=cache:swX3uX5D8OsJ:https://www.fws.gov/sout

What is key here is that this industrial project failed to anticipate significant impacts to lizards due primarily to the phenomenon described above, despite the site bordering habitat known to be occupied and critical to the species, despite recommendations by conservationists that mitigation measures as written in the EIR/S were inadequate, and as a result the developer had to completely stop work for at least two weeks. One independent contractor reported losing an alleged $146,000 a week due to the unexpected delay.[118] It is also important to note that because the FTHL mortalities were vastly beyond any predicted by the EIR/S and its mitigation measures for the project, the lead biologist was unable to compensate for the additional time requirements needed to relocate lizards, thus four more biologists had to be hired simply to monitor and relocate lizards. However, even despite this, the mortalities of lizards resulted in failed mitigation. Additionally relocations were haphazard and not assessed for success, and now the already at-risk population of this species has been reduced by this oversight that began with a lack of focused surveys, ignoring the importance of FTHL critical habitat proximal to the site, and providing vague mitigation measures mostly deferred to the future for development.

CURE-Owens-26 cont.

In order to adequately mitigate for such potential risks to the sensitive lizards species with high potential to occur on site, this phenomenon must be taken into consideration, and mitigation measures to reduce resultant impacts may include additional biologists, enhanced traffic restrictions, and a reptile relocation Plan and Monitoring Strategy during the construction phase.

VII. WILDLIFE CORRIDORS IMPACTS INAPPROPRIATELY DISMISSED AS NOT SIGNIFICANT

The DEIR/S asserts that there would be no significant impacts to species due to the lack of established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites because "the proposed project does not include the placement of structures within creeks, rivers, or other waterways and there are no established native resident or migratory wildlife corridors or wildlife nurseries within the project area[119]...The terrestrial wildlife habitat in the project area is fragmented by agricultural fields, residential developments, commercial / industrial developments, and roads and does not serve as wildlife movement corridors."[120]

CURE-Owens-27

There is abundant evidence in the literature regarding species that use wildlife corridors and nurseries in agricultural and industrial areas. The highest incidence of **burrowing owls** in

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hwest/es/arizona/Documents/SpeciesDocs/FTHL/FTHL_Annual_report_2010_Final.pdf+&cd=1&hl=en&ct=clnk&gl=us

[118] Clarke, C. March 2015. Work on Solar Project Halted to Protect Lizard. KCET. Retrieved from: http://www.kcet.org/news/redefine/rewire/solar/work-on-solar-project-halted-to-protect-lizard.html

[119] DEIR/S 4.6-119

[120] *Ibid.*

the state of California – almost 70% - occur and move throughout agricultural regions in Imperial county, and utilize the soft soils from agricultural disturbance in which to establish burrows and raise young.[121,122,123] As a biologist I have spent many months studying burrowing owls and other species, including American kestrels, cattle egrets, gray foxes, and various other passerines, that use corridors primarily within agricultural areas, bordering urbanized areas, to travel and get from one destination to the next for foraging and other territory requirements. For instance, research on peregrine falcons - a sensitive species known to have occurred recently within or near the Project area according to the CNDDB - have been observed to utilize non-forested and agricultural habitat as important post-fledgling corridors.[124] Red-tailed hawks and owls that live in highly urbanized areas travel between their urban nest sites and less urbanized areas to forage[125]. Snakes have been found to use agricultural habitats as important corridors, particularly in urbanized landscapes.[126] Movement corridors for various taxa often occur along (not just within) watercourses, coastal borders, or follow the cover of shrubs or trees; especially hedgerows or grassy areas between developed habitat, often found along roadsides to block residences from a view of the road. Such vegetation corridors bordering roads are characteristic of the footprint to be impacted by the pipeline development of the Project.

CURE-Owens-27 cont.

Corridors and nursery areas vary widely in characteristics and type of wildlife species that use them, and include movement to and from nesting areas to foraging areas, feeding areas to hilltopping areas, one part of range to another part of range, allowing genetic

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[121] Poulin, R. G. (2003). *Relationships between burrowing owls (Athene cunicularia), small mammals, and agriculture* (Order No. NQ87138). Available from ProQuest Dissertations & Theses Global. (305315258). Retrieved from http://jerome.stjohns.edu:81/login?url=http://search.proquest.com.jerome.stjohns.edu:81/docview/305315258?accountid=14068

[122] Estabrook, T. S. (1999). Burrow selection by burrowing owls in an urban environment (Order No. 1394137). Available from ProQuest Dissertations & Theses Global. (304494873). Retrieved from http://jerome.stjohns.edu:81/login?url=http://search.proquest.com.jerome.stjohns.edu:81/docview/304494873?accountid=14068

[123] Moulton, C., Brady, R., & Belthoff, J. (2006). Association between Wildlife and Agriculture: Underlying Mechanisms and Implications in Burrowing Owls. *The Journal of Wildlife Management, 70*(3), 708-716.

[124] Dzialak, M. R. (2003). *Peregrine falcon, Falco peregrinus, reintroduction in cliff habitat in Kentucky* (Order No. 3117498). Available From ProQuest Dissertations & Theses Full Text; ProQuest Dissertations & Theses Global. (305319211).

[125] William F. Minor, Maureen Minor, & Michael F. Ingraldi. (1993). Nesting of Red-Tailed Hawks and Great Horned Owls in a Central New York Urban/Suburban Area (Anidamiento de Buteo jamaicensis y de Bubo virginianus en un area urbana/suburbana de la parte central de New York). *Journal of Field Ornithology, 64*(4), 433-439. Retrieved from http://proxy.greenmtn.edu:2074/stable/4513852

[126] Andrus, W. (2011). *Ecology and conservation of prairie rattlesnakes (Crotalus viridis viridis) in relation to movement in a fragmented urban environment* (Order No. MR80171). Available From ProQuest Dissertations & Theses Full Text; ProQuest Dissertations & Theses Global. (895976697). Retrieved from http://search.proquest.com.jerome.stjohns.edu:81/docview/895976697?accountid=14068

exchange and viability.[127, 128] Considering that the Project includes at least 18 miles of more or less linear development along and near the coast, there is actually a high potential for construction, with its requisite erosion control fencing, other physical barriers, noise, and lighting to cause displacement and avoidance of wildlife along their habitual corridors, resulting in a significant impact including death due in part to the phenomenon that animals displaced in areas with many roads significantly increase their likelihood of being hit by traffic[129]. Therefore this development certainly could impact corridors by impeding movement of wildlife moving within in established territories.

Therefore the conclusion that the project does not significantly impact corridors is not supported. Existing corridors within and next to the project, including those incorporating agricultural, partly developed, and disturbed habitat, must be assessed with greater detail and supporting documentation, and mitigated with appropriate actions to allow movement and dispersal of native wildlife along this 18 + miles of Project development. Mitigation should include an analysis of the potential for increased mortality and harassment of native species due to various factors including time duration of development, acreage impacted, sensitive species potentially present, and ways to reduce the negative impact of movement barriers within corridors that cross and parallel the project footprint and buffer zones.

CURE-Owens-27 cont.

VIII. IMPACTS TO COASTAL DUNES NOT ADEQUATELY ANALYZED

Coastal dune habitat has been virtually extirpated from most parts of southern California. As such, in California it is one of our most impacted, most rare, and most fragile habitats. Yet because it is critical as a barrier to the sea, it is also one of our most important habitats.[130] Part of the project site is considered mostly primary habitat according to the City of Marina's Local Coastal Plan, with some secondary habitat (habitat adjacent to primary), and constitutes an environmentally sensitive habitat area" pursuant to the Coastal Act.[131] The habitat should thus by definition be protected against habitat losses; where only uses dependent on coastal resources shall be permitted in such areas.[132] The DEIR/S's proposed

CURE-Owens-28

[127] Nabe-Nielsen, J., Sibly, R. M., Forchhammer, M. C., Forbes, V. E., & Topping, C. J. (2010). The effects of landscape modifications on the long-term persistence of animal populations. *PLoS One, 5*(1) doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1371/journal.pone.0008932

[128] Sales, J. (2007). *Determining the suitability of functional landscapes and wildlife corridors utilizing conservation GIS methods in Denton County, Texas* (Order No. 1449625). Available From ProQuest Dissertations & Theses Full Text; ProQuest Dissertations & Theses Global. (304827551). Retrieved from http://search.proquest.com.jerome.stjohns.edu:81/docview/304827551?accountid=14068

[129] Garrah, E., Danby, R. K., Eberhardt, E., Cunnington, G. M., & Mitchell, S. (2015). Hot spots and hot times: Wildlife road mortality in a regional conservation corridor. *Environmental Management, 56*(4), 874-889. doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1007/s00267-015-0566-1

[130] Martinez, M. L. and Psuty, N.P. (eds.) 2004. Coastal Dunes: Ecology and Conservation. Ecological Studies Vol. 171, Springer-Verlag Berlin.

[131] DEIR/S 4.6-70

[132] *Ibid.*

actions appear to conflict with this description of this Environmentally Sensitive Habitat Area required management.

CURE-Owens-28 cont.

IX. CONCLUSION

Based on the issues described in this letter, it is my professional opinion that the Applicant has not met the obligations of CEQA, and that the Project would result in significant and unmitigated impacts to several sensitive biological resources.

Sincerely,

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Comments
on
Draft Environmental Impact Report/
Environmental Impact Statement
for the
CalAm Monterey Peninsula
Water Supply Project

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February 24, 2017

I. Introduction

California American Water Company (CalAm) has proposed a desalination plant for Marina City, California: the CalAm Monterey Peninsula Water Supply Project (Project or MPWSP). This Project will utilize subsurface slant wells as the water intake points. In 2014, the National Oceanic and Atmospheric Administration (NOAA) and the Monterey Bay National Marine Sanctuary (MBNMS) evaluated the impact of installing one test slant well in an Environmental Assessment (EA).[1] The test slant well was built in Monterey Bay at the CEMEX sand mining site to inform the geologic conditions for the full-scale project. If this Project is approved the test slant well will be converted to a permanent well and nine other wells will be built. The draft Environmental Impact Report/Environmental Impact Statement (DEIR/EIS) evaluates the impact of the full-scale Project, *i.e.,* the Proposed Project, as well as alternatives to the Proposed Project.[2] This letter evaluates the slant well intake technology.

The subsurface slant wells will draw from subsea aquifers. Due to the risk to marine life as a result of open-water intakes, several agencies have shown a preference for subsurface intake systems:

> *Several state and federal regulatory and permitting agencies (SWRCB, California Coastal Commission (CCC)) will not consider permitting an open-water intake unless a subsurface intake has been deemed infeasible or would result in greater environmental impacts. NOAA's MBNMS and National Marine Fisheries Service also established guidelines for discretionary approvals for new intake structures stating that subsurface intakes should be used where feasible and beneficial.*[3]

However, as I will set out below, I demonstrate that the DEIR/EIS fails to consider a number of conditions which may lead to an adverse environmental impact in the Monterey Bay National Marine Sanctuary.

I am qualified to evaluate the technical merits of the subsurface slant well, the potential physical and chemical impacts resulting from the slant well intake, and identify where the DEIR/EIS should disclose additional information. I have over thirty-five years of experience in the field of physical and natural sciences. I earned a doctorate degree in plasma chemistry diagnostics and laser spectroscopy, and a master's degree in spectroscopy and physical chemistry. I hold two US patents and one International and two more are pending. I have subject matter expertise in evaluating prior art patents and public domain proposals in spectroscopy and physical chemistry, and in utilizing high

[1] Draft Environmental Impact Report/ Environmental Impact Statement for the Monterey Peninsula Water Supply Project, January, 2017. California Public Utilities Commission and National Oceanic and Atmospheric Administration: Monterey Bay National Marine Sanctuary, *available at* http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/deir-eis_toc.html ("DEIR/EIS") at ES-6.
[2] DEIR/EIS, ES-9-10.
[3] DEIR/EIS, ES-16.

performance computational methods for imaging and analytical chemistry applications.

My curriculum vitae is attached to this letter.

II. Background: Slant Well Technology

Dennis Edgar Williams, Ph.D., holds the patent for subsurface slant wells.[4] The patent was published on November 15, 2011, but has a priority date of January 7, 2010.[5] In 2015, Dr. Williams presented a paper entitled "Yield and Sustainability of Large Scale Slant Well Feedwater Supplies for Ocean Water Desalination Plants" for the International Desalination Association World Congress on Desalination and Water Reuse in San Diego.[6] In that paper Dr. Williams discussed the slant well technology. He begins:

> *Originating out of the necessity to explore subsea aquifers near Dana Point, CA, the first test slant well was constructed in 2006. . . . As of this writing, a 724 ft test slant well completed in March of 2015 near Monterey, California as part of the Monterey Peninsula Water Supply Project (MPWSP) is currently undergoing long-term test pumping.*[7]

Unlike open-ocean intakes, which draw water from above the sea floor, subsurface slant wells draw water from aquifers.

> *Slant wells receive recharge from vertical leakage through the sea floor (i.e., benthic zone) and horizontal flow from subsea and near shore aquifer system*s.[8]

The aquifer water is drawn through the seabed, through an artificial filter, and then finally through a mesh screen. The intake is made possible by a high power 300 hp submersible pump contained within the slant. Each slant well is capable of drawing in 3-4 million gallons of water per day of untreated ocean water, which equates to four-and-a-half Olympic swimming pools or a cube that is 74 feet long, 74 feet wide, and 74 feet high. The Project calls for a total of ten slant wells with eight operating at any given time.

Overtime, the slant well technology should draw primarily from "young" ocean water.

> *Geochemical tracers used to quantify water sources to the Doheny test*

[4] Williams, D.E., 2011. Slant Well Desalination Feedwater Supply System and Method for Constructing Same, US Patent 8,056,629 B2 ("Slant Well Patent, 2011").
[5] Slant Well Patent, 2011.
[6] Williams, D.E, 2015. Yield and Sustainability of Large Scale Slant Well Feedwater Supplies for Ocean Water Desalination Plants, *available at* http://201.199.127.109/textos/Desalinizacion/Tomas%20de%20agua/slant%20wells%202015.pdf, ("Williams 2015").
[7] Williams, 2015, at pg. 2.
[8] Williams, 2015, at pg. 2.

slant well during an almost two year pumping test (2010-2012) were used to estimate slant well connectivity to the ocean and relevant amounts of water sources.

Test results support the increased capture of shallow, young marine ground water. Natural isotope data showed after one year of pumping, recharge to the slant well consisted of a mixture of brackish ground water (which showed a decreasing trend), ocean water (which showed an increasing trend), and old marine ground water which initially increased and then slightly decreased as it was being removed from the aquifer. This reflected the fresh/salt interface being induced to migrate toward the well. The geochemical data combined with a three-dimensional variable density flow and solute transport model predicted that the old marine ground water would be fully removed from the subsea aquifer within approximately one year at the full scale production rate of 30 mgd. Furthermore, upon reaching steady state conditions, (approximately one year), and after removal of the old marine ground water, the source of water to the feed water supply wells was predicted to consist of 95% "younger" ocean water (with very low levels of dissolved iron/manganese, ~ 2 µg/L), and 5% brackish ground water (~2 mg/L of dissolved iron/manganese), resulting in a blended concentration of approximately 0.10 mg/L.[9]

The anticipated hydrogeologic transition is illustrated in the Figure 1 below, which is from the Final Summary Report for the Doheny Ocean Desalination Project Phase 3 Investigation, prepared by the Municipal Water District of Orange County (MWDOC) in 2014.[10] This report for the Doheny wells indicated that the wells would draw 95% young ocean water once the project reached steady state operations. For the MPWSP, the slant wells "are projected to pull 93 percent seawater from the Monterey Bay and 7 percent groundwater from the surrounding area when the MPWSP is operating (GeoScience 2014b)."[11]

[9] Williams, 2015, pg. 5, 15 ("Slant wells completed in subsea aquifers typically produce over 95% of their supply from ocean water sources (vertical leakage through the sea floor) and lateral flow from subsea aquifers.")
[10] Final Summary Report for the Doheny Ocean Desalination Project Phase 3 Investigation: Extended Pumping and Pilot Plat Test Regional Watershed and Groundwater Modeling Full Scale Project Conceptual Assessment, January 2014. Municipal Water District of Orange County (MWDOC), *available at* https://www.scwd.org/civica/filebank/blobdload.asp?BlobID=5592 ("MWDOC – Final Summary, 2014"); *see also* Williams, 2015, at pg. 3 (evaluating the Doheny wells at Dana Point and the Monterey test slant well).
[11] DEIR/EIS, at Appx. G2, pg. 3.

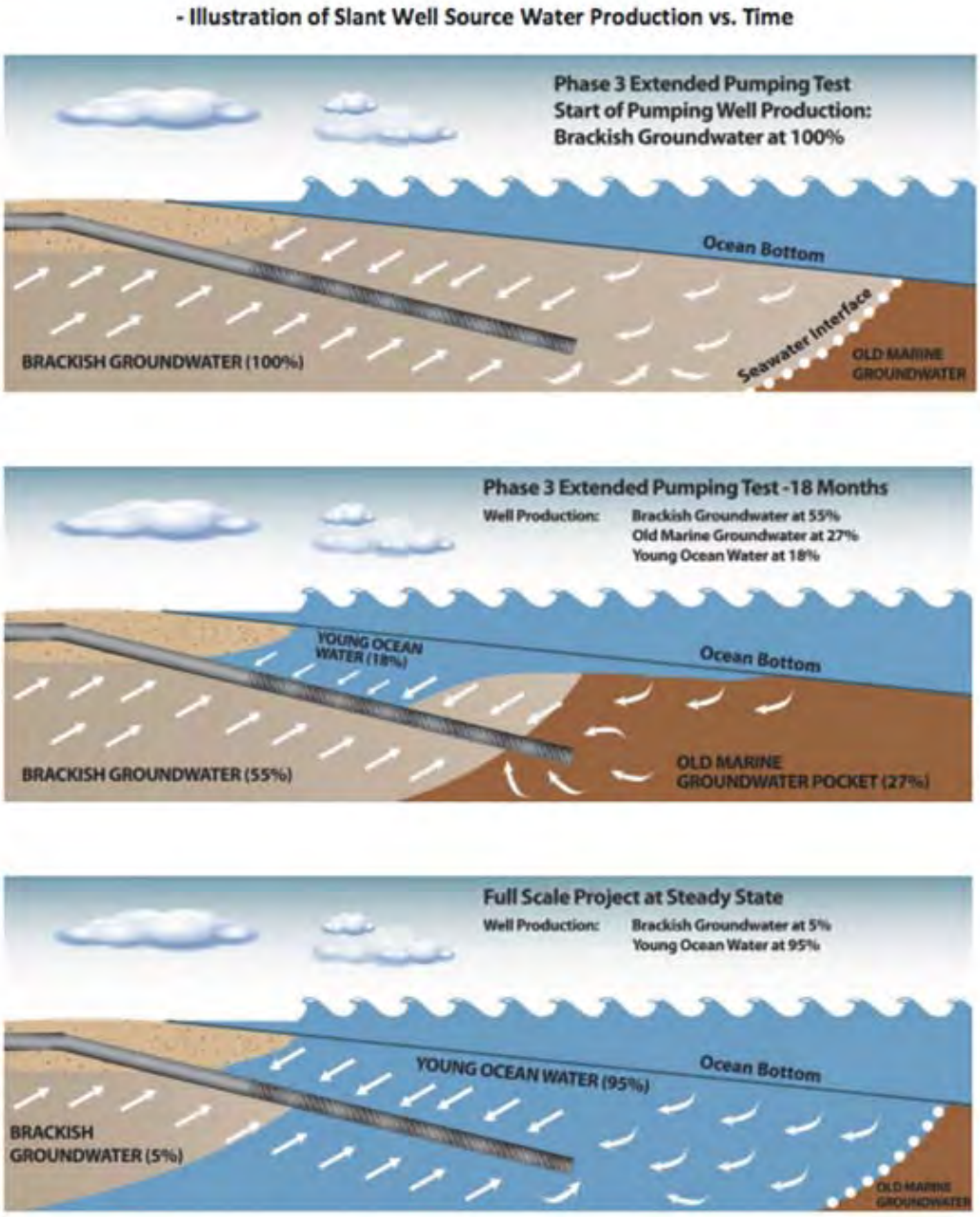


Figure 1. Final Summary Report Doheny Wells[12]

CURE-Sobczynski-1

III. Analysis

First, the DEIR/EIS underestimates the actual infiltration rate of water through the seafloor to the slant well. This estimation is based on the average bulk flow rate of the

[12] MWDOC – Final Summary, 2014, at pg. 19.

water over a 1,000,000 square foot area[13] and calculations done by Williams with respect to the Doheny slant wells.[14]

In reality, the flow rate will vary along the length of the slant well. The following factors will vary the flow rate: the utilization of the submersible pump in the slant well, filter medium and composition, the use of inflatable packers to limit flow to certain sections of the well, and the accumulation of suspended organic material (SOM), detritus and other biomass which would lower hydraulic conductivity of the medium around the slant well. Additionally, the DEIR/EIS does not consider the flow rate as it changes due to erosion, compaction, strong wave action, or violent storm events over the 40 year lifetime of the project.

When each factor is considered, the infiltration rate based on preliminary flow modeling of a 19-degree[15] axis angle slant well, will be 0.00052 ft/sec ($1.6x10^{-4}$ m/s) at its peak above the submersible pump and 0.000033 ft/sec ($1.0x10^{-5}$ m/s) at the well bore end. The infiltration rate for 14-degree axis angle yielded 0.0016 ft/sec ($5x10^{-4}$ m/s), see Figure 11. The DEIR/EIS is therefore deficient as it does not properly analyze the specific factors along each slant well which will create drastically higher infiltration rates at the slant well intake sites.

As a consequence of failing to accurately calculate the vertical infiltration rate, the DEIR/EIS also does not account for accumulation of biomatter in the seabed.[16] The DEIR/EIS states that biomatter will not accumulate because strong wave actions will prevent accumulation.[17] This statement is unsupported, as I will examine in further detail below.

CURE-Sobczynski-1 cont.

[13] DEIR/EIS, at pg. 4.5-52.

[14] Williams, D.E., 2010. South Orange Coastal Ocean Desalination Project – Vertical Infiltration Rate of Ocean Water Migrating Through the Seafloor in the Vicinity of the Slant Well Intake System*, available at* http://www.mwdoc.com/cms2/ckfinder/files/files/Evaluation%20of%20Potential%20Impacts%20%20to%20Marine%20Life%20by%20Slant%20Wells%20-%20MLPA%20DEIR%20Comment%202010-10-13.pdf, at pgs. 2-3 ("Williams, 2010"). The Williams, 2010 paper, and the Jenkins, 2010 paper (cited later) are included as support in the State Water Resources Control Board (SWRCB), 2015. California Ocean Plan, *available at* http://www.swrcb.ca.gov/water_issues/programs/ocean/docs/cop2015.pdf and in this DEIR/EIS at pg. 4.2-52. Collectively, the Williams, 2010, and Jenkins, 2010 papers, and a cover letter written by Dr. Noel Davis, are referred to as "MWDOC, 2010." The full citation for this document is Davis, N., 2010, Memorandum to Richard Bell, P.E., Municipal Engineer, Municipal Water District of Orange County (MWDOC), Subject: Evaluation of Potential Impacts to Marine Life Due to Operation of Slant Beach Wells, *available at* http://www.mwdoc.com/cms2/ckfinder/files/files/Evaluation%20of%20Potential%20Impacts%20%20to%20Marine%20Life%20by%20Slant%20Wells%20-%20MLPA%20DEIR%20Comment%202010-10-13.pdf.

[15] The test slant well was installed at a 19-degree angle, the proposed slant wells will be installed at 14-degree angle. The DEIR/EIS does not account for how this angle change may impact the vertical infiltration rate. The DEIR/EIS does not inform the public if the1,000,000 square foot area was derived based on the 19 degree test slant well, the 14 degree proposed wells, or a combination.

[16] DEIR/EIS, at pgs. 4.5-53.

[17] DEIR/EIS, at pgs. 4.5-52-53; *see also* State Water Resources Control Board, 2014. Appendix I Responses to the External Peer Review of the Proposed Desalination Amendment Associated with the Draft Staff Report Including the Draft Substitute Environmental Documentation For the Proposed Desalination Amendment, *available at* http://www.waterboards.ca.gov/water_issues/programs/ocean/desalination/docs/amendment/150320_appendix_i.pdf, at pg. I-19-20 (citing Williams, 2010.)

A. The DEIR/EIS underestimates the infiltration rate through the sea floor. In actuality, the infiltration rate at some sections of the well will be much higher.

The DEIR/EIS calculates the vertical infiltration rate by taking the entire 24.1 mgd amount of seawater and dividing approximately 1,000,000 square feet by that amount.[18] Using this method, the DEIR/EIS arrives at a vertical infiltration rate of 0.0000373 ft/sec or 0.011 mm/sec.[19] The DEIR/EIS compares this number to the infiltration rate, which Williams calculated in 2010[20] with site specific information for the Doheny wells. Williams used an entirely different methodology to calculate the infiltration rate, examining the hydraulic conductivity of seafloor sediments, effective porosity of seafloor sediments, hydraulic head difference between the ocean surface, and groundwater levels in the vicinity of feed water supply wellfield, and the average vertical distance from the seafloor to the middle of the intake well screen sections.[21] Williams arrived at an infiltration rate of 0.000051 ft/sec or 0.016 mm/sec, and 0.00000078 ft/sec at the outer limits of the ocean water source area.[22] The DEIR/EIS then proclaims because its number is "very similar" to the Williams' calculation, it will use a potential infiltration rate band of 0.011 to 0.016 mm/sec.[23]

CURE-Sobczynski-1 cont.

This methodology fails to take into consideration fundamental physical and chemical properties. As such, the DEIR/EIS is deficient at properly disclosing impacts.

1. Factors that Influence Infiltration Rate: Submersible Pump

The DEIR/EIS does not fully disclose the fluid mechanics along the screened segment of the slant well. We know from the patent that inventions incorporated into the well construction are important in terms of controlling the flow (*i.e.*, utilizing a submersible pump, inflatable/deflatable packers).[24] As is, the DEIR/EIS fails to recognize that the greatest draw of water will be above the submersible pump.

Based on the 2015 Williams White Paper[25], descriptions of the slant well in the patent[26], geometries from a 2006 test slant well drawing ("Well As Built, Test Slant Well

[18] DEIR/EIS, at pg. 4.5-52.
[19] *Id.*
[20] Williams, 2010, at pgs. 1-4; see also Jenkins, S. A., 2010. Potential Impact on Wave and Current Transport Process Due to Infiltration Rates Induced by the South Orange Coastal Ocean Desalination Project, available at http://www.mwdoc.com/cms2/ckfinder/files/files/Evaluation%20of%20Potential%20Impacts%20%20to%20Marine%20Life%20by%20Slant%20Wells%20-%20MLPA%20DEIR%20Comment%202010-10-13.pdf ("Jenkins, 2010").
[21] *Id.*
[22] *Id.*
[23] DEIR/EIS, at pg. 4.5-52
[24] Slant Well Patent, 2011.
[25] Williams, 2015, at pg. 4 ("The Monterey test slant well has an 18 in. pump house casing which can accommodate placement of large development pumps with capacities over 3,000 gpm.")
[26] Slant Well Patent, 2011 ("In one embodiment of the invention, the slant wells include a unique telescoping set of casings and screens. This design allows for a larger pump house casing near the land surface, with successively smaller casing and screen diameters as the well extends downward. The telescoping casings and screens facilitate extending the well to lineal lengths of 1,000 feet or greater beneath the floor of the saline water body, with angles below horizontal ranging from zero to ninety degrees.")

SL-1")[27], and the Request for Proposals (RFP) for the Project's slant wells[28], we have assumed that the submersible pump location is at the vertical depth of approximately 60-70 feet in the dune sand zone. This Project's RFP do not clearly identify the location of the submersible pump, but based on information from the documents above, the pump might possibly be as shallow as 48 feet for one of the proposed slant wells.[29] But, most submersible pump locations in the RFP appear to be at a depth of 65-76 feet, which is consistent with my assumption.[30] Similarly, it seems most pumps would be located 140-280 lineal feet.[31] Based on the RFP and the documents above, I assume that the pump is located at a depth of about 62 feet (19 meters) and a length of about 230 feet (70 meters). The DEIR/EIS should accurately disclose the location of the submersible pump because the submersible pump creates a pressure zone, which pulls seawater from above the seafloor via induced infiltration. This pressure zone should be adequately disclosed to the public in order to accurately evaluate the Project's impacts.

CURE-Sobczynski-1 cont.

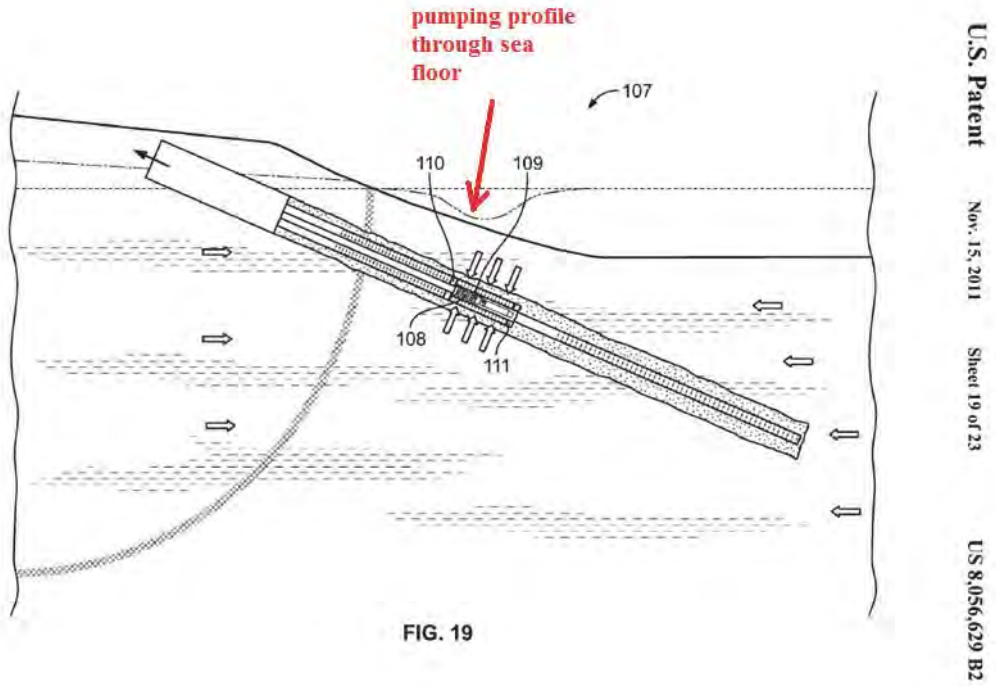
[27] Municipal Water District of Orange County, Well as Built Test Slant Well SL-1, http://www.mwdoc.com/cms2/ckfinder/files/files/Test%20Slant%20Well%20-%20As%20Built%20Drawing.pdf (the geometry of the well to estimate the location of the submersible pump and other relevant parameters were taken from this drawing).

[28] Monterey Peninsula Water Supply Project: Subsurface Source Water Slant Wells Design Documents, 2015, *available at* https://www.dropbox.com/s/xs6tdmtg6qvk0fc/draft%20Source%20Water%20Slant%20Well%20supplemental%20conditions%20and%20tech%20specs%20and%20drawings.pdf?dl=0, at pgs. 108-116 (showing the location of the "18 in. id well casing 2507 super duplex ss, 0.25 in. wall thickness, 18.500 in.od," which is a possible location of the submersible pump at 140-355 lineal feet (34-55 meters) and at a depth ranging from 48feet to 76 feet, with most locations [8 out of 9] at a depth of 65-76 feet (20-23 meters).

[29] *Id.* at pg. 102

[30] *Id.* at pgs. 108-116

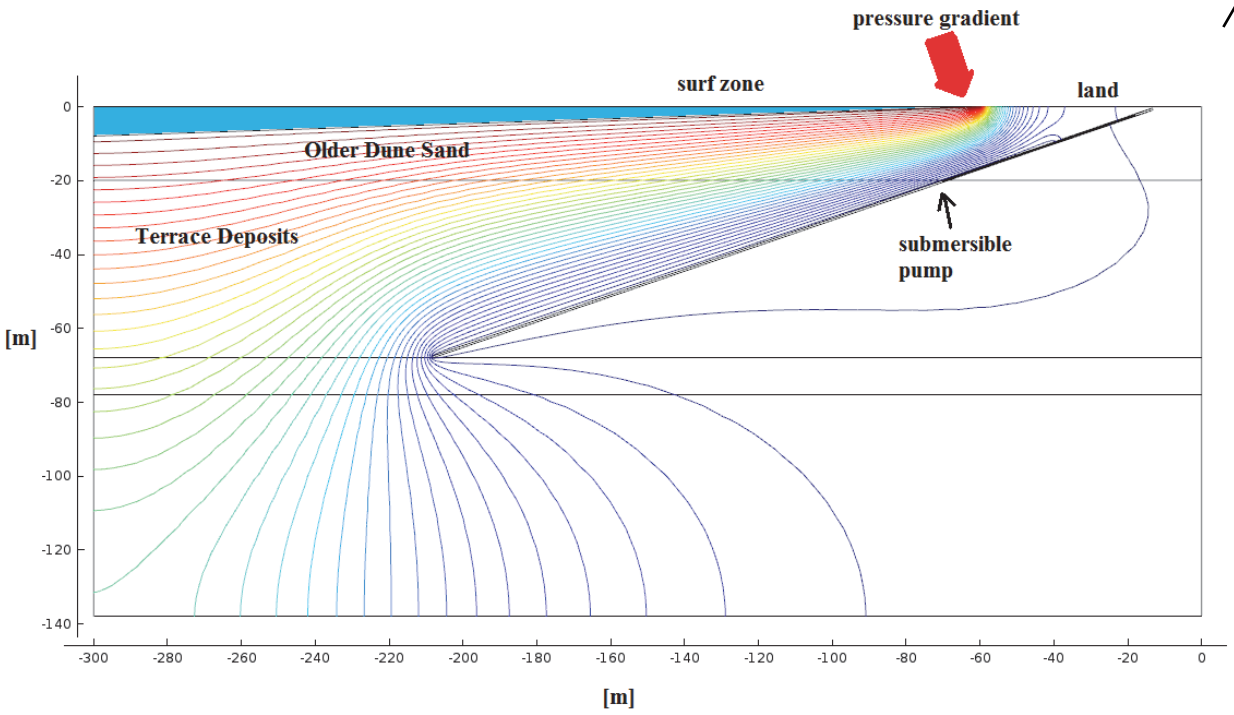
[31] *Id.*



CURE-Sobczynski-1 cont.

Figure 2. Slant Well Patent, 2011,[32] showing the inflow directly above the submersible pump. The presented upside down bell curve (red arrow), is the anticipated pumping profile through the sea floor. More elaboration about induced infiltration can be found in Williams 2015. [33]

[32] Slant Well Patent, 2011.
[33] Williams, 2015.



CURE-Sobczynski-1 cont.

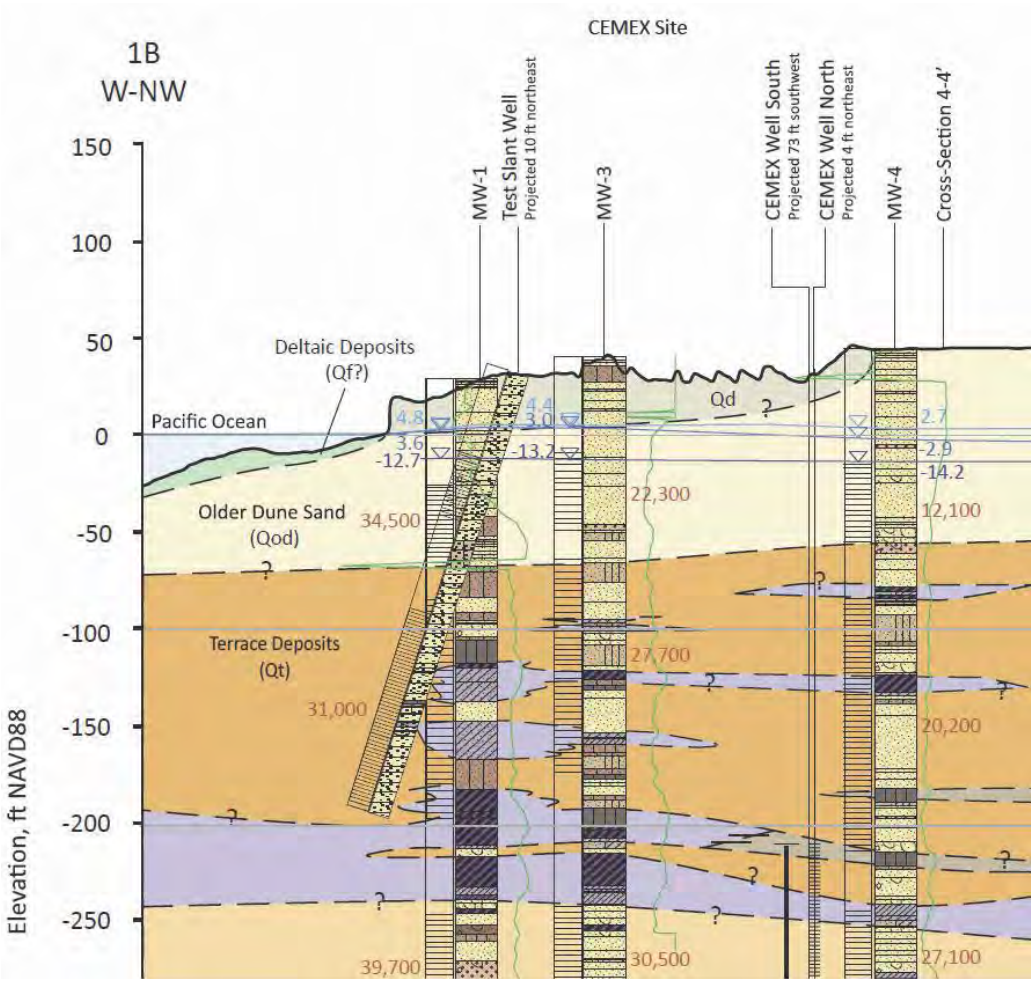
Figure 3. Qualitative illustration of pressure gradient present at pumping speed of 0.132m^3/s by the submersible pump. Position of submersible pump is at x=-70m, and y=-19m

2. Factors that Influence Infiltration Rate: Location of Slant Wells With Respect to the Sediment Profile

The DEIR/EIS analysis of the infiltration rate is flawed because it does not account for the sediment composition of the Monterey Bay which will direct the flow of water to specific parts of the slant well as opposed to evenly distributing the infiltration rate force along the entirety of the well. Therefore, the DEIR/EIS's assumption that water will flow evenly through 1,000,000 square feet, is inaccurate.[34]

Section 4.2.1.1 of the DEIR/EIS presents a diagram for where the test slant well exists in the Monterey Bay geology.[35]

[34] DEIR/EIS, at pg. 4.5-52
[35] DEIR/EIS, at pg. 4.2-5.

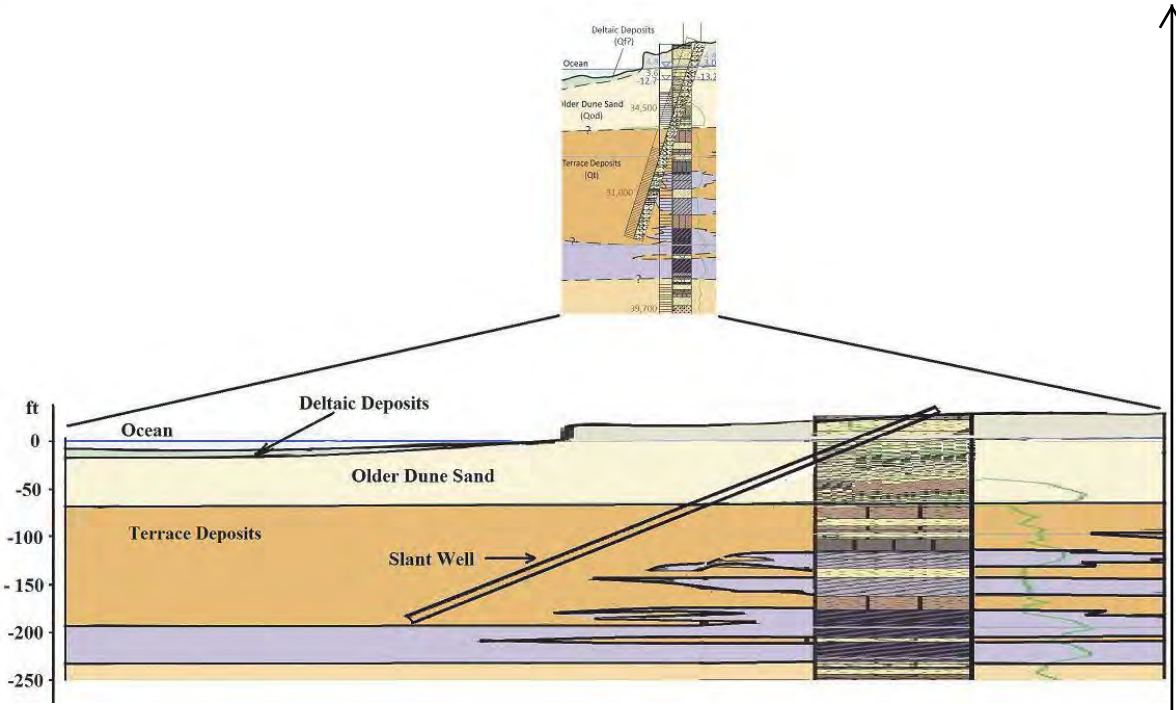


CURE-Sobczynski-1 cont.

Figure 4. Geological cross section through the project site. The drawings aspect ratio has not been preserved.[36]

Note, however, that this picture does not preserve the actual angle the test slant well was designed to operate at. When accounting for the approximate 19 degree angle, the picture of the slant well becomes clearer.

[36] DEIR/EIS, at pg. 4.4-9.

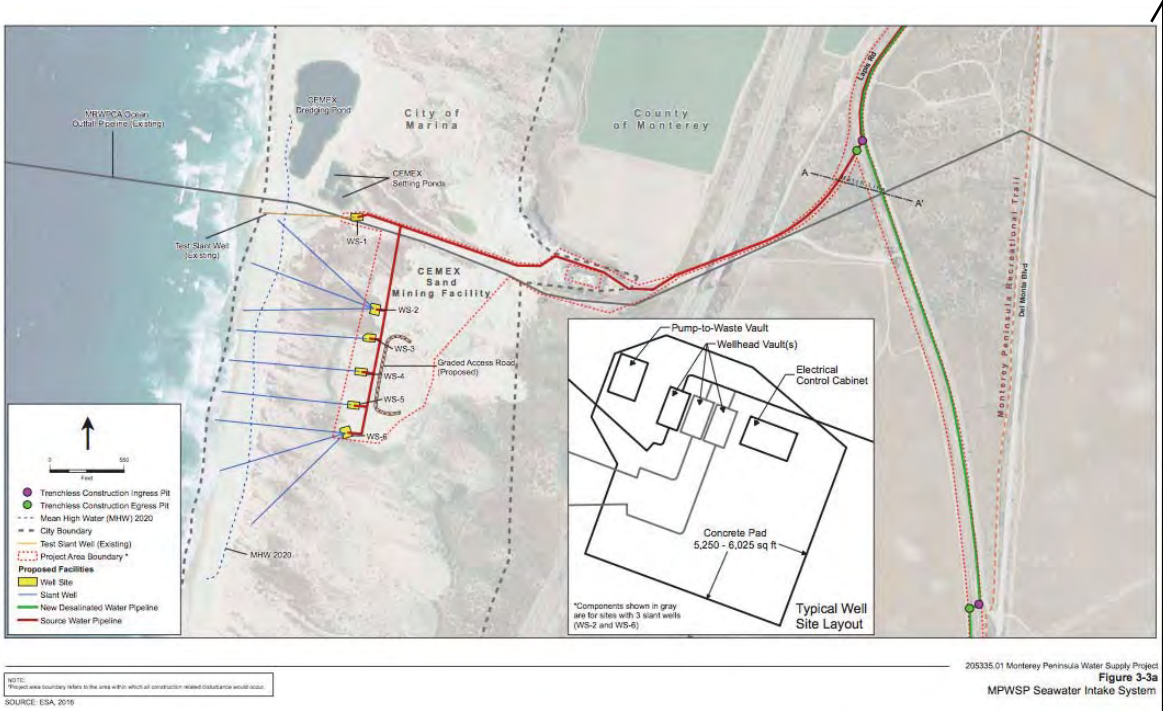


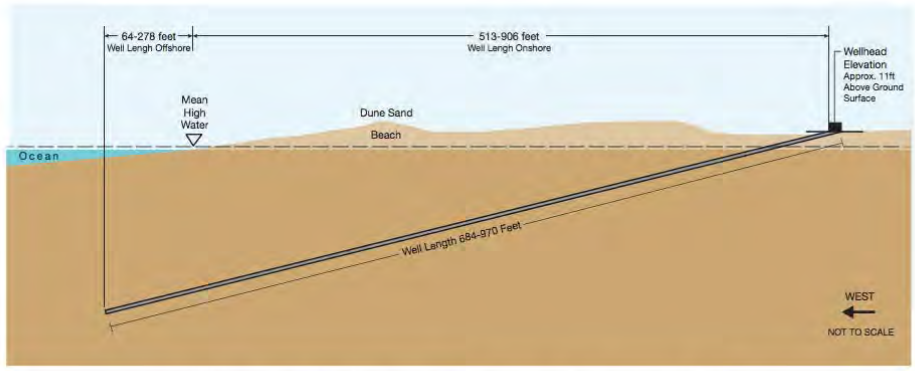
CURE-Sobczynski-1 cont.

Figure 5. Regenerated aspect ratio of the hydro-geological cross section based on 4.2-9 CalAm MPWSP DEIR/EIS Chapter 4 for the test slant well.[37] Restoration of aspect ratio gives better perception of the hydro geological composition.

It is important to note, however, the test slant well is not representative of the final locations and angle of the proposed wells. Figure 6 below from the DEIR/EIS provide information about the location of the proposed slant wells.

[37] DEIR/EIS, at pg. 4.4-9.





WELL NUMBER	DEPTH OF WELL CASING (BELOW WELL HEAD)	WELL LENGTH (PLAN)	WELL LENGTH ONSHORE (PLAN)	WELL LENGTH OFFSHORE (PLAN)
1	242'	970'	906'	64'
2	242'	970'	757'	213'
3	242'	970'	830'	140'
4	242'	970'	826'	144'
5	242'	970'	780'	190'
6	242'	970'	725'	245'
7	242'	970'	736'	234'
8	242'	970'	NA	NA
9 (Stand-by-2)	242'	970'	692'	278'
Test Slant Well	263'	684'	513'	171'

SOURCE: ESA, 2015

205335.01 Monterey Peninsula Water Supply Project
Figure 3-3b
Illustrative Cross-Sectional View of Subsurface Slant Wells

3-17

Figure 6. Project's slant well array.[38]

CURE-Sobczynski-1 cont.

[38] DEIR/EIS, at pgs. 3-15, 3-17.

As one can see, the slant wells will traverse the older dune sand. This dune sand has "high permeability … suitable for the infiltration of water."[39] The proposed slant wells are at an even shallower angle (14 deg) than the test slant well (19 deg).[40] Therefore a greater percentage of the proposed slant wells will traverse the dune sand.

Utilizing the DEIR/EIS's maps and the models below, we have determined that most of the water will be drawn through this older dune sand, which is highly permeable and closest to the submersible pump, thus rendering only the upper third, approximately, of the well productive, unless the packers will be engaged.[41] Without additional details, which the DEIR/EIS does not provide, it is difficult to estimate the intake zone. Well's location figure 14 (see Appendix section in this report) is departing from conceptual presentations in figure 4, patent US 8,056,629 B2, William's 2015 white paper.

By averaging the expected infiltration rate,[42] the DEIR/EIS does not take into account the fact the infiltration rate will vary dramatically based on the sediment profile of the ocean floor and the location of the submersible pump, which will draw water along the shortest path of least resistance. The water flow will not be evenly distributed along the length of the slant well.

CURE-Sobczynski-1 cont.

3. Factors that Influence Infiltration Rate: Inflatable/Deflatable Packers

The DEIR/EIS fails to consider the distribution of infiltration rate due to the internal flow pattern controlled by inflatable/deflatable "packers." The patent describes this packer device as follows:

> *The slant well can be equipped with a submersible pumping system fitted with a dual-packer shroud assembly. Using the dual-packer shroud assembly, the slant well can selectively pump from upper or lower portions of the subsea aquifer, thereby varying feedwater salinity as required to help minimize variations in feedwater salinity due to hydrologic cycles. The dual-packer shroud assembly (DPSA) allows selective production from well screens both above and below the packers (maximum production), well screens above the upper packer only (lower salinity), well screens below the lower packer only salinity), or well screens between the packers (focused salinity).*[43]

Figures 17, 18, 19 of the slant well patent[44] show infiltration zones depending on the packer's activations. Whether the slant well deploys inflatable packers to block the well

[39] DEIR/EIS, at pg. 4.2-67.
[40] Final Environmental Assessment for the California American Water Slant Test Well Project, September 2014, *available at* http://montereybay.noaa.gov/resourcepro/resmanissues/desal_projects/pdf/140912calam-slantwell_ea-final.pdf ("EA, 2014"), at pg. 43.
[41] For a discussion about the packers, see Section III.C. Factors that Influence Infiltration Rate: Inflatable Packers.
[42] DEIR/EIS, at pg. 4.5-52.
[43] Slant Well Patent, 2011, column 3, row 25-40
[44] *Id.*

will impact how the water flows into the slant well. Figure 7 demonstrates the flow rate assuming both packers are deflated, so the entire length of the well is participating as the water feeding source. Even so, my results suggest preferential flow in close proximity of the submersible pump. Since details about inner flow are missing from DEIR/EIS, I cannot provide detailed evaluation of the infiltration zones.

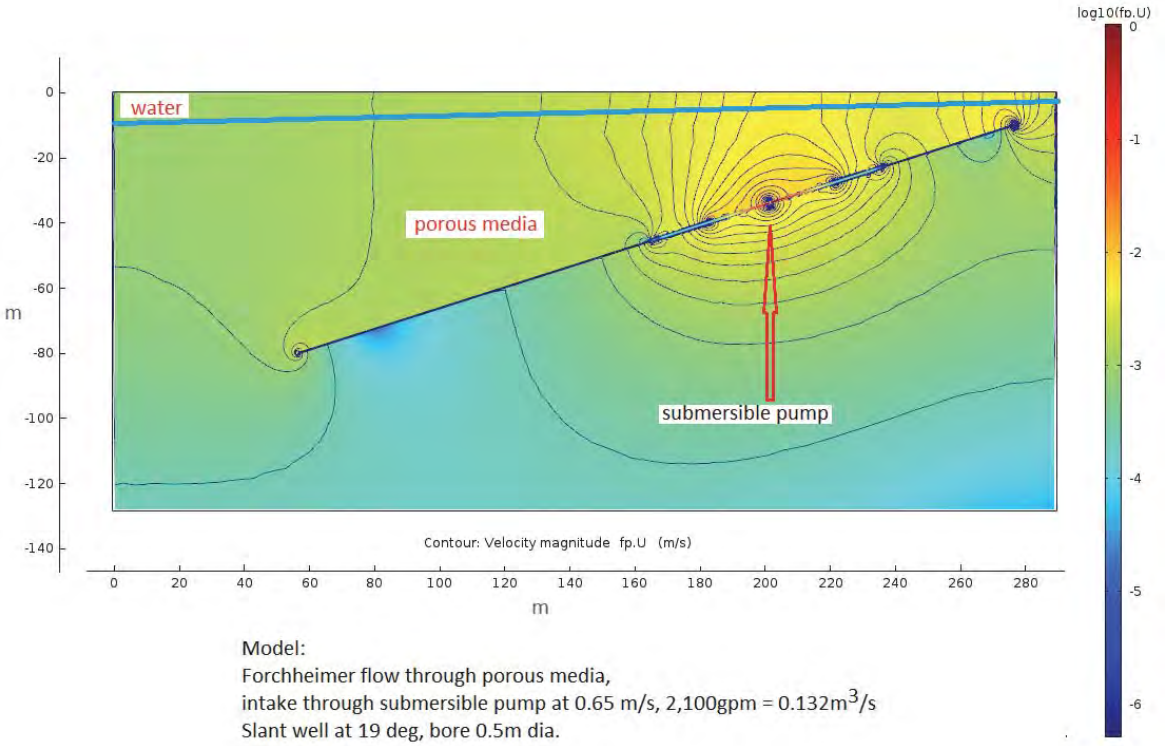


Figure 7. Illustrative model of intake zone velocity field for single slant well, per assumption that all packers are deflated, however it can be noticed that the strongest intake velocity field is above the submersible pump. It is not clear from the DEIR/EIS, how effective the control of the flow inside the bore is and which part of well is active. The invention disclosed in the patent clearly identifies the use of packers as an improvement in slant well technology.[45]

The test slant well appears to have had inflatable packers, but the DEIR/EIS is silent about this feature for the proposed slant wells.

> *This [operations] phase may also include a one-time repositioning of the packer device that is used to isolate one aquifer for testing and pumping. This special operation would involve removal of the submersible pump and pump column, removal of the initial packer, insertion of the second packer, and replacement of the pump. This modification would take 2 to 3 days to accomplish. Equipment and operations required for the repositioning of the device, including temporary laydown of the pump*

CURE-Sobczynski-1 cont.

[45] Slant Well Patent, 2011.

column, would be located within the original construction footprint shown in Figure 3a.[46]

By failing to disclose whether the proposed wells, like the test slant well, will have inflatable packers, and whether they would be deployed, the DEIR/EIS is factually insufficient. If the packers are used, the vertical infiltration rate would be far higher.

4. Factors that Influence Infiltration Rate: Clogging in the Seabed

The most glaring hindrance to water flow is clogging. This can occur at the intake screens and throughout the seabed. To maintain the intake screens, the DEIR/EIS states that the slant wells will need regular cleaning by using mechanical brushes, and possibly inert chemicals.[47] This requires taking the well out of service and brushing the screens. However the slant wells can only be cleaned from the inside, while the subsurface filter media and outer shell will still have substantial and permanent waste buildup.

Dr. Williams admits that clogging can be an issue for slant wells. In his patent, he claims:

CURE-Sobczynski-1 cont.

> *In the past, slant well technology has not been successfully applied to subsea construction of desalination feedwater supplies, as the well screen slots have become clogged during pumping. Once the well screen slot openings are clogged, it becomes difficult or impossible to continue to pump water. Accordingly, there is a need for a reliable slant well system that is able to supply water from near-shore or subsea aquifers to a desalination plant without becoming clogged with fine-grained materials (e.g., fine sands and silts) over time. There is also a need for a method of constructing such a system—especially at low angles below horizontal in order to minimize impacts to inland fresh water sources. <u>The present invention satisfies these needs and provides further related advantages, especially with regard to regulation of feedwater salinity.</u>* [48]

Despite his assurances, the invention did not prevent clogging at the Doheny wells at Dana Point.

> *During the two year pilot testing, the Doheny test slant well produced approximately 3 mgd with relatively stable drawdowns. When it was constructed in 2006, it was test pumped at approximately 2,100 gpm and displayed a well efficiency of 95%. During the extended pilot testing the well efficiency dropped from the original value of 95% in 2006 to 52% in 2012.*[49]

[46] EA, 2014, *available at* pg. 39.
[47] DEIR/EIS, at pg. 3-57.
[48] Slant Well Patent, 2011.
[49] Williams, 2015, at pg, 3.

Lessons learned from the Doheny wells indicated that the pump casing was too small, causing the loss of efficiency,[50] and that sand clogging can impair the well at the construction stage.[51]

> *Design and construction of the full scale slant wells will need to be approached similarly to conventional water well design and drilling, but since the wells will be relatively flat in slope, additional care must be taken in gravel placement and well development. The design and construction will be aided through the experience gained in design and construction of the Test Slant Well. A key to the long-term success of the wells will be to provide thorough development work to assure minimum levels of sand clogging to the gravel pack. Sand clogging can occur over time in a well when it is not properly designed, constructed and/or developed. Causes include too large of well screen slot spacing, too large of gravel size in the gravel pack, gaps in the gravel pack, and most commonly, insufficient development of the well. The well screen and gravel pack size can be properly sized assuming the well designer has good technical capability and experience. Improper well development can occur due to insufficient swabbing, bailing and/or air lifting and due to insufficient development pumping rate and time.*[52]

CURE-Sobczynski-1 cont.

Though Williams has claimed "improvements" that assure clogging will not be a problem for this Project, I challenge his assumptions in Section II, Calculating the Adjusted Infiltration Rate.[53]

Additionally, the DEIR/EIS does not consider the flow rate as it changes due to erosion, compaction, strong wave action, or violent storm events over the 40 year lifetime of the project. This is discussed in further detail in Section B and Section C, below.

B. Calculating the Adjusted Infiltration Rate

My analysis examines the effect of the flow dynamics and water intake pattern through the ocean floor driven by the required pumping rate. By reconstructing models and conducting computational hydro-dynamical flow analysis by the methods of Finite Element Analysis, I have estimated that the infiltration rate of the water through sea floor interface, presented in Figure 9, is a nonlinear function. This has not been adequately explained in the DEIR/EIS.

First, my analysis examines the well geometry in reference to the sea floor slope. Bathymetric charts of the project area and descriptions provided in patent[54], and the

[50] Williams, 2015, at pg. 4.
[51] MWDOC – Final Summary, 2014, at p. 57.
[52] *Id.*
[53] Williams, 2015, at pg. 3.
[54] Slant Well Patent, 2011

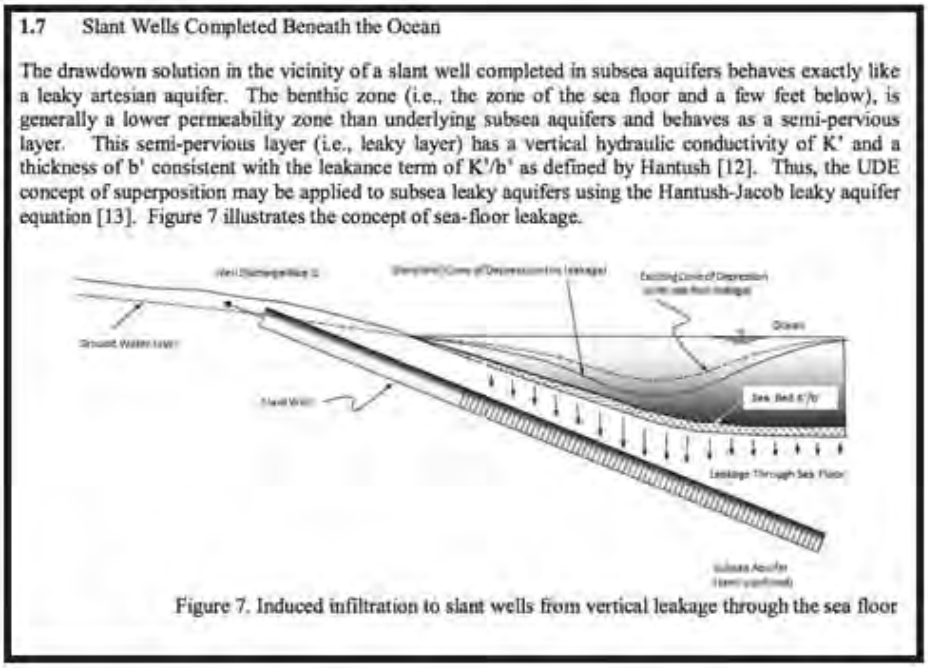
2015 Williams White Paper[55] were used. Second, the analysis looks at the slant wells' pump outflow rate. Third, the analysis applies the hydraulic conductivities of the media, Darcy's and Forchheimer physics laws.[56] Finally, and fourth, computational fluid dynamics (CFD), based on Finite Element Analytical (FEA) method to determine zonal vertical infiltration rates. Note, the DEIR/EIS fails to mention the exact operational flow pattern and does not discuss the inflatable packers. Therefore my modeling did not consider flow control by inflatable packers, rather my modeling assumed only the full well length. If inflatable packers are used, the flow distribution will have to be recalculated.

The initial modeling was performed for a single well pumping with a rate of 2,100 mgd based on the 2015 Williams White Paper.[57] For my qualitative results, I can only compare with the drawings in the patent[58], and drawings published in the 2015 Williams, My qualitative results confirmed that the pumping profile is non linear. Though the proposed slant wells can have a pumping rate of up to 2,500 mgd,[59] the purpose of this initial modeling was to qualitatively demonstrate the pumping profile using CFD[60] methods. The flow profile, is non linear function, which in my expert opinion should apply to the test slant well and the proposed slant wells.

My decision to use the CFD method is to provide more detail about flow dynamics than the general draw down equations used by Williams.[61] Williams refers to this equation as "UDE" in his 2015 White Paper.[62]

CURE-Sobczynski-1 cont.

[55] Williams, 2015.
[56] See Glossary of Terms in Section V.
[57] Williams, 2015, at pg. 3 ("When it was constructed in 2006, it was test pumped at approximately 2,100 gpm and displayed a well efficiency of 95%."); see also EA, 2014 at pg. 39 ("The water flow rate during the operational period would vary from 1,000 gallons per minute (gpm) to 2,500 gpm.")
[58] Slant Well Patent, 2011.
[59] DEIR/EIS, at pg. 4.12-52.
[60] See Glossary of Terms in Section V.
[61] Williams, 2015, at pgs. 7,8.
[62] *Id.* at pgs. 5-7.



1.7 Slant Wells Completed Beneath the Ocean

The drawdown solution in the vicinity of a slant well completed in subsea aquifers behaves exactly like a leaky artesian aquifer. The benthic zone (i.e., the zone of the sea floor and a few feet below), is generally a lower permeability zone than underlying subsea aquifers and behaves as a semi-pervious layer. This semi-pervious layer (i.e., leaky layer) has a vertical hydraulic conductivity of K' and a thickness of b' consistent with the leakance term of K'/b' as defined by Hantush [12]. Thus, the UDE concept of superposition may be applied to subsea leaky aquifers using the Hantush-Jacob leaky aquifer equation [13]. Figure 7 illustrates the concept of sea-floor leakage.

Figure 7. Induced infiltration to slant wells from vertical leakage through the sea floor

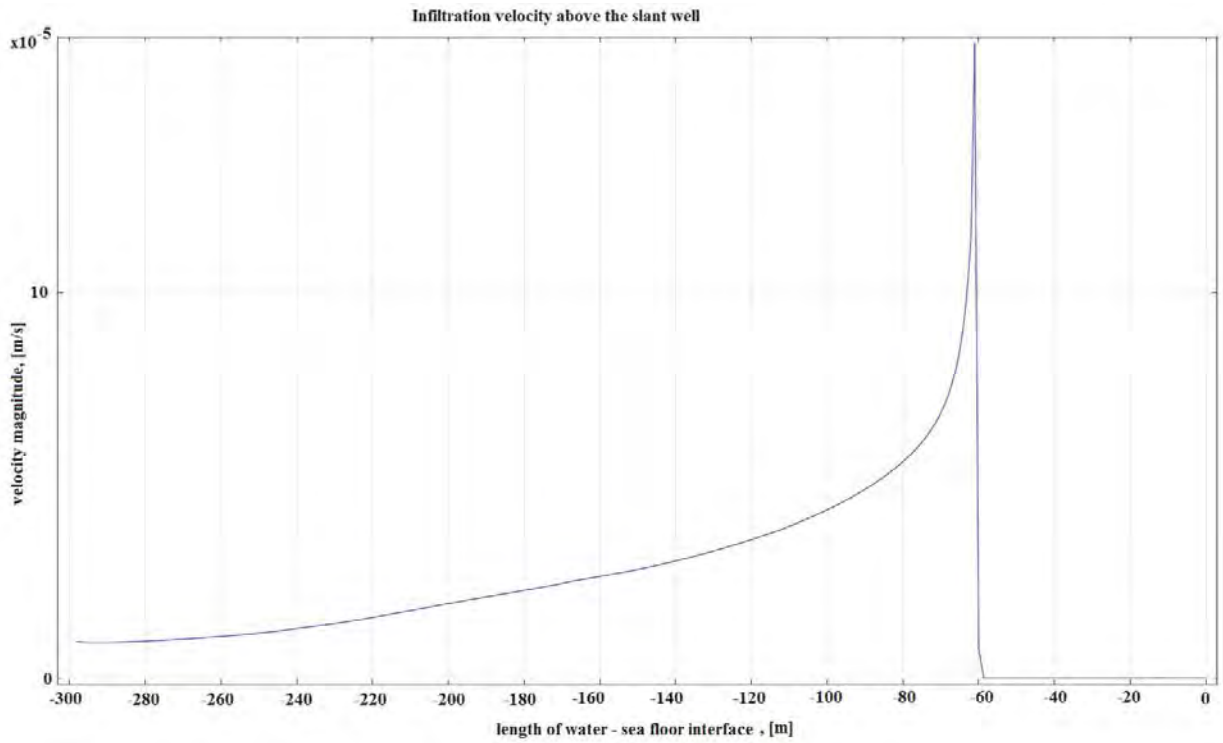
CURE-Sobczynski-1 cont.

Figure 8. 2015 Williams White Paper, figure explaining infiltration.[63]

Contrary to the DEIR/EIS, the flow velocities cannot be approximated by averaging total volume over the area of project field.[64] In fact, other literature has put the infiltration rate at a much higher rate than the DEIR/EIS's estimate of 0.011 mm/sec – 0.016 mm/sec. Inflow rates of 0.1- 2mm/sec are typical with rapid infiltration rates through the sand medium.[65]

However, for the purposes of being conservative in my calculations I did not use this much faster infiltration rate, and rather used the infiltration rate the DEIR/EIS provides. Thus, my calculations started with an infiltration rate based on the average bulk volume flow over 1,000,000 ft^2 flow provided by DEIR/EIS which I selected at 0.015mm/sec, which is within the range provided. I allowed the computational model to self adjust flow dynamics through the iterative steps, without any additional bias or intervention. The result is presented in Figure 9, which shows that at the peak (located at -60 meters or -196 feet) the infiltration velocity is 10x higher than the average infiltration published by EIR/EIS. For this modeling, the submersible pump was modeled at -70m along the x-axis and -18m along the y-axis.

[63] *Id.* at pg. 7.
[64] DEIR/EIS, at pg. 4.5-52.
[65] *Ives, K J (1990). "Deep Bed Filtration." Chap. 11 of Solid-Liquid Separation, 3rd Ed., Svarovsky L (ed). Butterworths. ISBN 0-408-03765-2*; Sand Filter, Wikipedia, *available at* https://en.wikipedia.org/wiki/Sand_filter, and references therein.



CURE-Sobczynski-1 cont.

Figure 9. Infiltration profile above the slant well through the water sea floor interface.

For this modeling, the submersible pump was set at x=-70, y=-18m. I obtained an infiltration rate at the -60m point, which is equal to 0.16 mm/s which is about 10x larger values reported by DEIR/EIS.

Our infiltration rate resulting from careful modeling shows a 10x higher number than what is provided by GeoScience in 2010[66], and which was then used in Jenkins's calculations to determine impacts to marine biology.[67]

[66] Williams, 2010, at pgs. 1-4; Jenkins, 2010., at pgs. 1-8.
[67] Jenkins, 2010, at pgs. 1-8

Calculation of Vertical Infiltration Rate of Ocean Water Migrating Through the Seafloor

The vertical infiltration rate of ocean water migrating through the seafloor in the vicinity of the slant well intake system under full-scale project conditions (30 mgd) can be calculated using the following equation:

$$w = \frac{Kv}{\theta} \bullet \frac{\Delta h}{\Delta x}$$

Where:

- w = Vertical infiltration rate of ocean water migrating through the seafloor (ft/sec),
- Kv = Vertical hydraulic conductivity of seafloor sediments (0.000014 ft/sec),
- θ = Effective porosity of seafloor sediments (0.15),
- Δh = Hydraulic head difference between the ocean surface and ground water levels in the vicinity of feedwater supply wellfield (65 ft),
- Δx = Average vertical distance from the seafloor to the middle of the intake well screen[2] sections (120 ft)

Figure 10. GeoSciences Vertical Infiltration Rate Calculation of Ocean Water Migrating Through the Seafloor, 2010.[68]

CURE-Sobczynski-1 cont.

This vertical infiltration rate 0.016 mm/sec, which Dr. Williams calculated in his 2010 White Paper,[69] was then used to calculate the potential for seabed erosion by Dr. Scott A. Jenkins.[70] Jenkins's calculation for ventilation parameter and infiltration rate is below:

Analysis of Potential for Seabed Erosion: Figure 3 and equation (1) indicate that the percentage increase in wave induced bottom stress grows linearly with the ventilation parameter, $\tilde{V} = w_m / u_m$. To quantify the potential for seabed erosion we calculate this parameter in terms of the size of the reported infiltration rates w_m over the slant well field relative to the threshold velocity for transport, $u_m = u_{crit}$, of the native beach sediment. Figure 4 plots the grain size distribution of the native beach sand taken from the surf zone at Doheney Beach by Reed, et al, 1975. The median grain size is shown to be 0.22 mm (220 microns). Figure 5 gives the threshold velocity for transport (black curve) as a function of median grain size. Inspection of Figure 5 indicates that the threshold velocity for transport for 0.22 mm sized sand is $u_m = u_{crit} = 0.6$ ft/sec. Therefore the ventilation parameter directly over the well field when the wave oscillatory velocity is at the threshold of beach scour is:

$$\tilde{V} = w_m / u_m = \frac{5.1 \times 10^{-5}}{6 \times 10^{-1}} = 8.5 \times 10^{-5} \qquad (2)$$

With this value of ventilation parameter inserted into equation (1) or plotted in Figure 3, the infiltration rate over the well field will cause a net increase in wave induced bottom stress of $\langle \tau_w \rangle / \langle |\tau_0| \rangle = 1\%$.

Jenkins determined that the infiltration rate will increase in wave induced bottom stress

[68] Williams, 2010, at pg. 2.
[69] *Id.*
[70] Jenkins, 2010, at pg. 4.

of 1%.[71] However, if the Williams's infiltration rate is higher than 5.1 x 10^{-5} ft/s, which I demonstrate is possible in my modeling, then this implies a significantly higher stress than what Jenkins calculated. In fact, I calculated the ventilation parameter (to then determine bottom stress) using the same assumption as Jenkins, above, but I was using the infiltration rate from our model.[72] I found that the ventilation parameter yields 9x10^{-4}. This would imply a 10% stress value at the intake zone directly above the well, not 1%.

Since the DEIR/EIS is relying on Williams's and Jenkins's calculation[73] for the impact analysis for this Project, it is in my professional opinion that closer scrutiny and reexamination of the erosion — based on specifics of the actual site — is needed and such request is justified. I have shown that the value of infiltration can be 10x larger than what has been reported, and thus the bottom stress of 1%, calculated by Jenkins and later used by DEIR/EIS is underestimated.

CURE-Sobczynski-1 cont.

[71] *Id.*
[72] *See id.*
[73] DEIR/EIS, at pg. 4.5-52 (referring to the Municipal Water District of Orange County (MWDOC) document which includes Jenkins, 2010 and Williams, 2010 papers); *see also* State Water Resources Control Board, 2014. Appendix I Responses to the External Peer Review of the Proposed Desalination Amendment Associated with the Draft Staff Report Including the Draft Substitute Environmental Documentation For the Proposed Desalination Amendment, *available at* http://www.waterboards.ca.gov/water_issues/programs/ocean/desalination/docs/amendment/150320_appendix_i.pdf, at pg. I-19-20 (citing Williams, 2010 and Jenkins, 2010.)

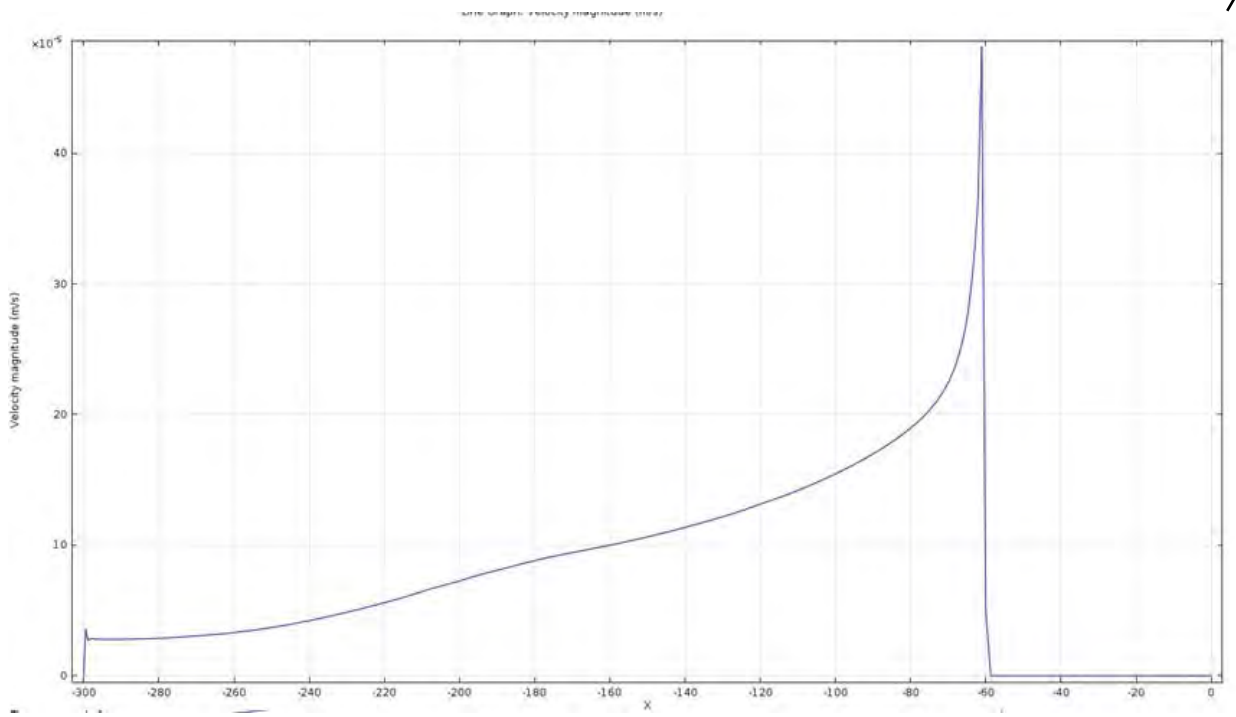


Figure 11. Infiltration rate, modeling of well drilled at 14 deg.

The modeling of the well drilled at 14 degrees, resulted in a peak infiltration rate five times higher than my calculations for the 19-degree well. I found the 14-degree well could have an infiltration rate equaling 0.5mm/s. The reason behind such further infiltration increase is that the well will be, in this instance, closer to the sea floor. This result raises a concern that if the pump is operating during a storm then violent wave actions could pierce through the seafloor and be in close proximity to the slant well's screened intake. In such a case high turbidity water will enter the slant well (foregoing the usual natural filtration process)[74] and enter the desalination facilities.[75] This could damage the pre-treatment systems and the RO membrane. However an economical analysis of such catastrophic event is outside my expertise.

CURE-Sobczynski-1 cont.

C. The DEIR/EIS fails to accurate evaluate the potential buildup of biomass.

The DEIR/EIS fails to account for the buildup of biomass within the sedimentary strata. The buildup of biomass in the sedimentary strata over time will result in a lower infiltration rate, thus restricting the flux of dissolved oxygen, which can lead to anaerobic conditions for bacteria respiration. A possible result is the release of toxic hydrogen sulfide and other chemicals.

CURE-Sobczynski-2

To accurately analyze this impact, the DEIR/EIS must provide existing dissolved

[74] DEIR/EIS, at pg. 1-6 ("The proposed slant wells would draw ocean water through the seafloor sediments, which would pre-filter the seawater for use at the desalination plant.")
[75] DEIR/EIS, at pg. ES-5.

oxygen levels (which it does in 4.3-8, but primarily in the context of salinity and temperature), and the Dissolved Organic Matter (DOM) or Suspended Organic Matter (SOM) levels. The DEIR/EIS proposes that the Dissolved Oxygen level is not less than 7.0 mg/L.[76] However, critically, the DEIR/EIS does not include the Dissolved Organic Matter (DOM), or Suspended Organic Matter (SOM) levels.

The DEIR/EIR does not adequately analyze the issue of biomatter accumulation. It focuses on entrainment and impingement issues of marine organisms in evaluating the marine impact.[77] It provides the following explanation for why entrainment and impingement, will not occur.[78] First, the DEIR/EIS argues the orbital currents at the sea floor are so aggressive that any small micro-organisms near the sea floor will be swept away and will not have the opportunity to settle on the sea floor before being pulled into the sedimentary layers.[79] Second, the DEIR/EIS states the infiltration rate is so low that those forces will be overwhelmed by the orbital currents and thus the slant well's suction will play no role in pulling micro-organisms into the sea floor.[80] These conclusions[81] are based on the work of Jenkins,[82] discussed above, which relied on the infiltration rate (5.1 X 10^{-5} ft/sec) that Williams's found in his 2010 White Paper.[83] Jenkins's conclusion is as follows:

CURE-Sobczynski-2 cont.

> **Conclusions:** Analytic calculations were made to determine the potential for seabed erosion and micro-organism impingement on the seabed due to infiltration rates and pressure gradients induced by the slant well field of the South Orange Coastal Ocean Desalination Project. The calculations were based on infiltration rates and seabed pressure gradients modeled by Geoscience. (2010). While the modeled infiltration rates were found to increase net bottom shear stress by no more than 1% at the onset of erosion, this value is considered statistically insignificant as it is nine times smaller than the error implicit in the net shear stress increases determined under controlled laboratory conditions. Even then, whatever sediment transport is attributable to this 1% increase in bottom stress is both limited to the immediate vicinity of the slant well intake and is insignificant in comparison to naturally occurring seasonal beach profile variation and storm induced erosion. Force balance calculations show that the ocean would have to become perfectly quiescent in order for nano- and netplankton and other neutrally buoyant, freely drifting micro-organisms to become impinged or trapped on the seabed by the vertical pressure gradient induced by the slant well field. Such a quiescent wave climate has never been measured or observed at this site.

In his analysis, Jenkins examines the effects of orbital velocities on organisms occupying the area just above the sea floor. Based on his equations and examination of vertical pressure gradients, Jenkins concludes that nanoplankton and net plankton of a spherical size between 5μm and 20-30μm have no chance of being impinged or trapped

[76] DEIR/EIS, at pg. 4.3-36.
[77] DEIR/EIS, at pg. 4.5-52-53.
[78] DEIR/EIS, at pg. 4.5-53 ("Even though impingement of plankton and larval fish is not expected to occur from the intake of ocean water into the slant wells, the operation of the slants wells could impinge fine organic matter against the sea floor, cause a build-up and change the normal distribution of sediment grain size.")
[79] *Id.* ("Consequently, normal wave generated water velocities at the sea floor locations of the slant wells is predicted to be 8 to 20 times greater than that required for fine-grained material to accumulate on the sea floor over the subsurface slant wells. As a result, there would be no potential for the impingement of fine organic matter on the sea floor or changes to soft substrate habitat.")
[80] *Id.*
[81] DEIR/EIS, at pgs. 4.5-52-53 (referring to SWRCB, 2015 and MWDOC, 2010, which includes Jenkins, 2010 and Williams, 2010 – see explanation of relationship among these references in fn. 14.).
[82] Jenkins, 2010.
[83] Williams, 2010.

on the seabed unless the ocean is completely still.[84]

This, however, is an oversimplification of the fluid mechanics operating on these creatures. I utilized hydro-mechanical theories to demonstrate that particles as large as 10μm can still be trapped in vortices on the sea floor even when the current is at 10m/s. The particles will be caught in a vortex. They may then be subject to the vertical forces of the infiltration rate and will be drawn into the sea floor.

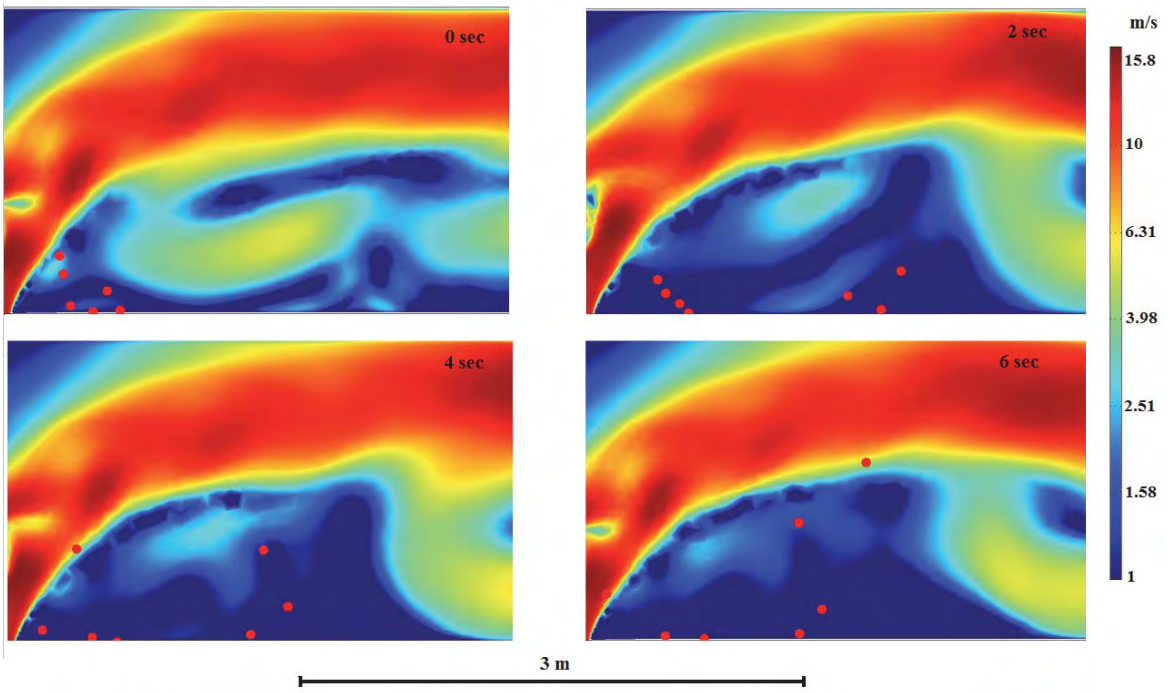


Figure 12. Numerically modeled snapshots of the particles (red dots) of size 10μm trapped by vortexes in highly turbulent current, the pseudo-color surface encodes velocity field ranging from 1 to 15.8 m/s, (3 to 47 ft/s)

CURE-Sobczynski-2 cont.

The DEIR/EIS relies on Jenkins's assertion that no biomatter could ever make it into the sea floor. This is inaccurate. First, the DEIR/EIS should provide existing levels of SOM and DOM from the sea floor to the intake. Second, the DEIR/EIS should reconsider the possibility that SOM and DOM can permeate the sea floor and build up in the sediment above the slant wells. Though the slant wells may be cleaned, the DEIR/EIS provides no proposal for cleaning the subsurface sediment.

This assumption that biomass need not be considered is undermined by the DEIR/EIS itself, which seeks to use the seabed as a "pre-filter"[85]:

[84] Jenkins, 2010, at pg. 8.

[85] Bar-Zeev, E., Belkin, N., Liberman, B., Berman, T., Berman-Frank, I. (2012). *Rapid sand filtration pretreatment for SWRO: Microbial maturation dynamics and filtration efficiency of organic matter.*

The Applicant proposes to use subsurface intakes (slant wells) to supply the desalination plant with source water. The well casings, or pipes, would extend seaward of MHW and would require a Special Use Permit to be present within MBNMS. The proposed slant wells would draw ocean water through the seafloor sediments, which would pre-filter the seawater for use at the desalination plant.[86]

Use of the sediment seafloor as a natural filter to remove bacteria, parasites, and other organic and inorganic impurities, besides sourcing the ocean water is the major driving force for the filtration, see illustration of source water in Figure 1. This is to ensure the water can be treated at the desalination plant without requiring extensive filtering.

Natural filtration in the subsea permeable deposits results in low turbidity and reduction or elimination of seawater reverse osmosis (SWRO) pretreatment.[87]

CURE-Sobczynski-2 cont.

Additionally, studies by Borodovskiy[88] and references contained within that study conclude that one cubic meter of surface sea water contains 0.5-1.5 grams of SOM. The estimated total mass of SOM above this Project's infiltration zone is 90 to 150kg/day. Based on our models, 50% of the SOM's flux will become concentrated within the 30 meter (98 foot) radius in the sand stratum above the highest water intake.

Distribution of the infiltered organic matter in sediment may vary, however once matter enters the filter medium it has no chance to escape, unless the deposit is scrubbed or dredged[89]. The rapid infiltration rate caused by the submersible pump only accelerates the process.

This result — i.e., the sand medium surrounding the intake zone has a high potential for plugging — is seen in other intake systems[90] with engineered filtering medium, such as infiltration gallery systems, not just slant wells.

[86] DEIR/EIS, 1-6.
[87] Williams, 2015 at pg. 1.
[88] Bordovskiy, O. K., 1965. Marine Geology 3 at 33-82 – Elsevier Publishing Company
[89] Hendrix, D., 2010. Fundamentals of Water Treatment Unit Processes, Physical, Chemical , Biological, IWA Publishing, CRC Press ISBN- 978-1-4200-6192-5
[90] Scwd2 Seawater Desalination Intake Technical Feasibility Study, by Kennedy/Jenkins Consultants – September 2011. KIJ Project No. 0868005*03, *available at* http://www.swrcb.ca.gov/water_issues/programs/peer_review/desalination/docs/reports/intake_feasibility_study.pdf. ("Scwd2, 2011")

Offshore Engineered Infiltration Gallery – An offshore engineered infiltration gallery is not expected to be able to reliably provide the required production capacity. The gallery would likely be plugged by fine sediment from winter storm discharge from the San Lorenzo River, which would reduce the production capacity and reliability. The engineered media would likely need to be dredged and replaced every few years, at great expense, and production would be stopped during those periods. Further, large storm events could also potentially reduce production capacity by eroding away the engineered media. Therefore, because an offshore infiltration gallery would have a high potential for plugging and erosion, and would not provide reliable production capacity, this alternative fails the screening level criterion, is not technically feasible and therefore is eliminated from further consideration.

In the case of strong storms, the layers covering the waste can be uncovered, see excerpt from section 7.1.1.1 below.[91] Based on USGS data to protect engineered media for an infiltration gallery, the gallery should be place 30 to 40 feet deep and 3,000 feet offshore. The slant well array is not being proposed to be built at distances of 3000 ft offshore. Therefore there is a risk that storm flows could "dig up" sediment that has accumulated. If toxic material has accumulated due to vertical infiltration, a storm will release the accumulated toxic material, which will spread and contaminate waters severely impacting the environment.[92]

CURE-Sobczynski-2 cont.

7.1.1.1 Wave Energy and Storm Flow Impacts on an Engineered Infiltration Gallery

Section 4 describes the impacts of wave and storm flows on the seafloor off the Santa Cruz coastline. Because wave energy could "dig up" an engineered infiltration gallery in the near-shore area, depending on where the waves are breaking and the orbital energy levels from the waves at the seafloor, an engineered infiltration gallery would need to be located farther offshore in deeper water. In the area near the Santa Cruz Municipal Wharf, Point Santa Cruz helps to protect this area from the predominant ocean wave energy. USGS data indicate that in the area of the offshore alluvial channel, approximately 3,000 ft offshore and approximately 30 to 40 ft depth, the typical wave energy does not cause significant erosion of the seafloor. Therefore, an engineered infiltration gallery would need to be placed at least 3,000 feet offshore (past the end of the wharf) to protect the engineered media from being scoured out by typical storm waves.

Based on this concern raised for infiltration galleries, it is in my opinion that the project has severe deficiencies in terms of planning for long term operations and storm events.

1. <u>Additional Factors that Lead to Bioaccumulation Impact: Colloidal Buildup</u>

CURE-Sobczynski-3

Compounding the issue of collected SOM is the problem of colloidal buildup of organic matter.[93] Colloidal buildup occurs when SOM attaches to clays contained within the sedimentary layers.[94] Once the SOM attaches to the clay, it can continue to grow

[91] *Id.* at pg. 7-2.
[92] *Id.*
[93] Moe, M. A., 1993.The Marine Aquarium Reference Systems and Invertebrates,. ISBN-0-939960-05-2
[94] Stevenson F.J., 1994. Humus Chemistry: Genesis, Composition, Reactions. New York: John Wiley & Sons.

and flourish[95], being supplied by oxygen pulled into the sedimentary layers by the slant well operations.

Thus, as the SOM follows hydrodynamic laws[96] it will bond to clays that are in the soil and directly above the submersible pump. As this detritus builds up above the pump, it will lead to reduced efficiency of the well resulting in clogging. The DEIR/EIS claims it will solve the issue of clogging through the application of mechanical brushes.[97] However, the DEIR/EIS does not account for how it will remove the organic detritus from the sediment above the slant wells. Without cleaning the sediment, the wells will continue to operate at low capacity.

The DEIR/EIS is inconsistent with respect to the presence of clay, stating "in the specific area of the slant wells, the materials are dune sands with little to no fine-grained components (silt and clay) or soil components (organic materials) that would impede infiltration."[98] However, the test slant well's borehole lithologic log indicates that clay is present, see borehold lithologic log below.[99] The DEIR/EIS also states that "muds and clay slurry would be generated during the drilling and development of the subsurface slant wells." [100] Thus, the DEIR/EIS recognizes that clay will be present in the sedimentary layers around the well, but then provides no explanation as to how the project will address the buildup of organic matter that adheres to that clay.

CURE-Sobczynski-3 cont.

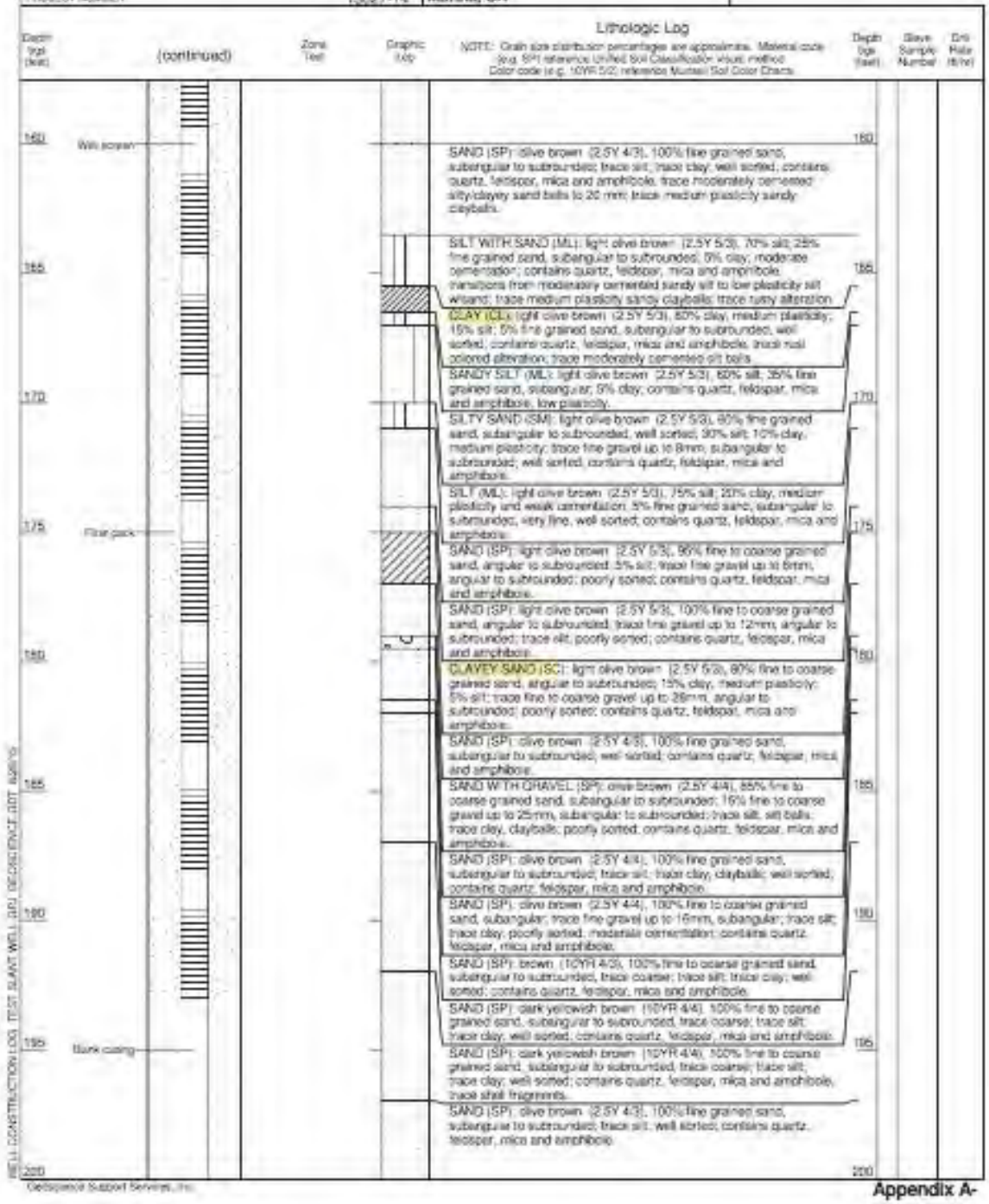
[95] Thurman, E.M., 1985. Organic Geochemistry of Natural Waters. Kluwer Academic, Boston.
[96] Sirivithayapakorn, S., & Keller, A. 2003. Transport of colloids in saturated porous media: A pore-scale observation of the size exclusion effect and colloid acceleration, Water resources research, vol 39 issue 4;. Auset, M, & Keller, A., 2004. Pore-scale processes that control dispersion of colloids in saturated porous media. Water resources research, vol. 40.
[97] DEIR/EIS, at pg. 3-57
[98] DEIR/EIS, at pg. 4.2-67.
[99] MPWSP, Procurement: Source Water Slant Wells RFP, *available at* http://media.wix.com/ugd/28b094_d40d9b99079e40a687789b86742c997b.pdf, at Appx. A (Well Number: Test Slant Well).
[100] DEIR/EIS, at pg. 4.3-39.

GEOSCIENCE P.O. Box 220
Claremont, CA 91711
Telephone: (909) 451-6850
Fax: (909) 451-6638
www.gssiwater.com

WELL NUMBER: **Test Slant Well**

BOREHOLE LITHOLOGIC LOG (continued)

CLIENT: RBF/Cal Am
PROJECT NUMBER: 13027-14
LOCATION: **Marina, CA**



CURE-Sobczynski-3 cont.

2. **Additional Factors that Lead to Bioaccumulation Impact: Gas Discussion**

In addition to reduced slant well efficiency, the presence of accumulated bio-matter in the sediment presents the threat of the creation of toxic gas. As the bio-matter builds up on the colloidal deposits, it will serve as a nutrient for bacteria. This does not present a problem at first. As long as the slant wells are operational, then fresh, oxygenated sea water will be pulled through the sediment and supply the bacteria with oxygen. However, the DEIR/EIS admits the wells will periodically need maintenance and assumingly those wells would be taken offline.[101] At any given time, only eight wells will be operational, meaning the two on standby can be activated, while one of the eight deactivates.

When the wells go offline, the supply of oxygen will be cut off to the now thriving bacteria colonies. The bacteria will switch to anaerobic respiration. In anaerobic decay, the bacteria reduces organic matter to methane (CH_4), hydrogen sulfide (H_2S), ammonia (NH_3), amines (RNH_2), and methanethiol (CH_3SH).[102] Very few lifeforms can exist in this kind of a toxic environment.[103] CURE-Sobczynski-4

It is unclear how these gases will affect both the Monterey Bay environment as well as the quality of the water extracted by the desalination plant. While any slant well is offline, the hazardous gases will outgas through the sedimentary layers, entering back into the ocean water supply. However, once the slant wells are turned back on, the chemicals can potentially be taken in by the slant wells, leading to toxic corrosion of the slant well itself.

Regardless of the eventual effects, the DEIR/EIS should have considered the presence of these gases, estimated the quantity of the gases, determined how those gases would interact with the environment and the slant well equipment, and provided a mitigation plan. The DEIR/EIS does not account for even the presence of the gas. As such, it is once again deficient.

IV. Conclusion

The DEIR/EIS paints a rosy picture of the functioning of the slant wells in Monterey Bay. It underestimates the vertical infiltration rate and does not considering accumulation of any detritus, and permanent attachment of humic acids in the natural filter body. In reality, and without having been provided the necessary information, we can expect a negative impact on the environment from the slant wells. As it is, the DEIR/EIS fails to consider numerous environmental impacts generated as part of this project and is deficient as a public disclosure document. CURE-Sobczynski-5

[101] DEIR/EIS, at pg. 3-57.
[102] Methanethiol, PubChem, *available at* https://pubchem.ncbi.nlm.nih.gov/compound/methanethiol
[103] Center for Disease Control and Prevention: Environmental Data, Biologic Effects of Exposure, Publication number 74-136, https://www.cdc.gov/niosh/pdfs/78-213b.pdf

If you have any questions about this analysis, I can be reached at rs@chemled-technologies.com.

V. Glossary [104]

- **Forchheimer** assumption requires that the water table will be flat, and groundwater be hydrostatic, i.e. equipotential lines are vertical to water table.

$$\frac{\partial P}{\partial z} = -\gamma = -\rho g$$

$$\frac{\partial h}{\partial z} = 0$$

where $\partial P/\partial z$ is the vertical pressure gradient, γ is the specific weight ρ is the density of water, g is the standard gravity and $\partial h/\partial z$ is the vertical hydraulic gradient.

- **Darcy's law**, at constant elevation is a proportional relationship between the instantaneous discharge rate through a porous medium, the viscosity the fluid and the pressure drop over a given distance.

$$Q = -\frac{\kappa A\,(p_b - p_a)}{\mu L}.$$

Q (units of volume per time, e.g., m^3/s) is equal to the product of the intrinsic permeability of the medium, κ (m^2), the cross-sectional area to flow, A (units of area, e.g., m^2), and the total pressure drop $p_b - p_a$ (pascals), all divided by the viscosity, μ (Pa·s) and the length over which the pressure drop is taking place (L).

- **Computational fluid dynamics** (**CFD**) is a branch of fluid mechanics that

[104] Based in full or partially on articles published in Wikipedia. Forchheimer Assumption, Wikipedia, https://en.wikipedia.org/wiki/Dupuit%E2%80%93Forchheimer_assumption; Darcy's Law, Wikipedia, https://en.wikipedia.org/wiki/Darcy%27s_law; Computational Fluid Dynamics, Wikipedia, https://en.wikipedia.org/wiki/Computational_fluid_dynamics.

uses numerical analysis and data structures to solve and analyze problems that involve fluid flows. Computers are used to perform the calculations required to simulate the interaction of liquids and gases with surfaces defined by boundary conditions. With high-speed supercomputers, better solutions can be achieved. Ongoing research yields software that improves the accuracy and speed of complex simulation scenarios such as transonic or turbulent flows. Initial experimental validation of such software is performed using a wind tunnel with the final validation coming in full-scale testing, e.g. flight tests.

Appendix

Figure 3-9: Infiltration gallery in operation (LBWD, 2008)
(a) Note: At low tide the area above the infiltration gallery is apparent from the "drier sand"

Figure 13. Scwd2,2011 – Seawater Desalination Intake Technical Feasibility Studies, picture shows sand morphology change due to infiltration.[105]

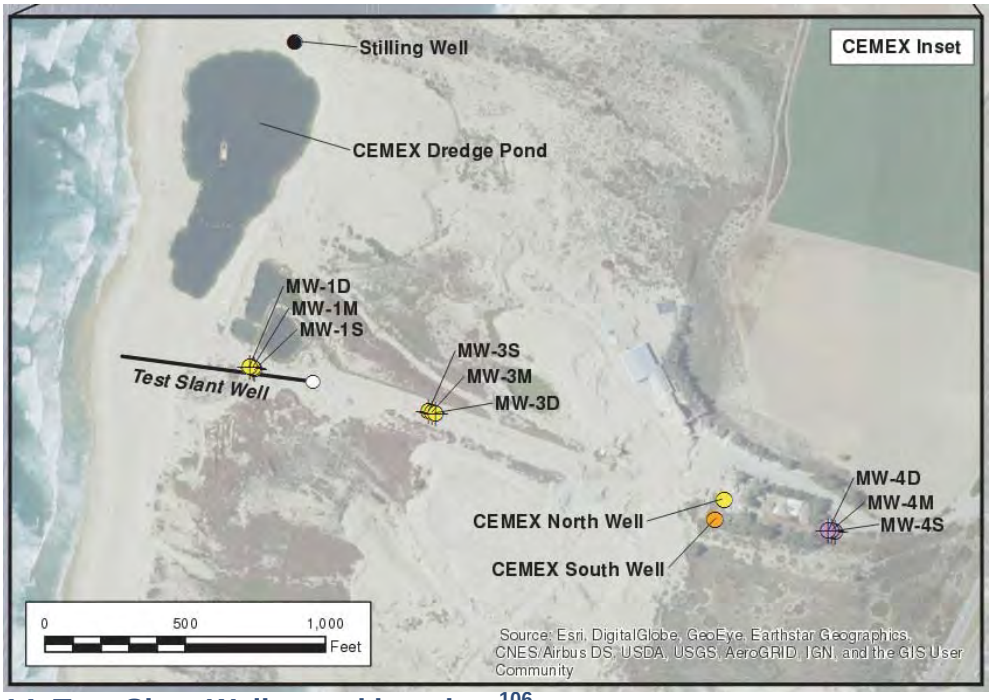
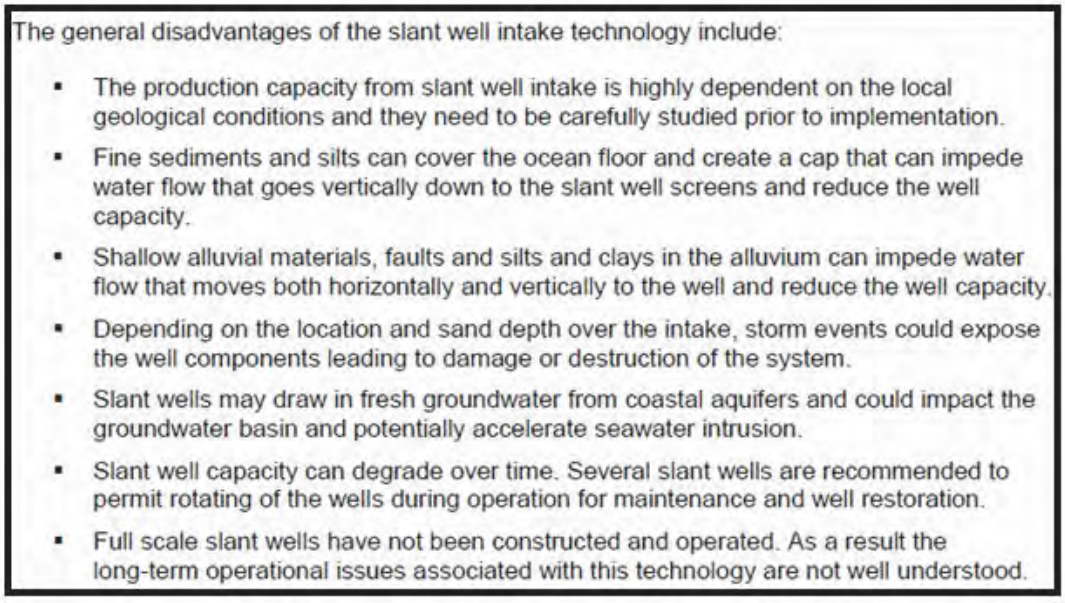


Figure 14. Test Slant Well actual location.[106]

[105] Scwd2, 2011, at pg. 3-11.


The general disadvantages of the slant well intake technology include:

- The production capacity from slant well intake is highly dependent on the local geological conditions and they need to be carefully studied prior to implementation.
- Fine sediments and silts can cover the ocean floor and create a cap that can impede water flow that goes vertically down to the slant well screens and reduce the well capacity.
- Shallow alluvial materials, faults and silts and clays in the alluvium can impede water flow that moves both horizontally and vertically to the well and reduce the well capacity.
- Depending on the location and sand depth over the intake, storm events could expose the well components leading to damage or destruction of the system.
- Slant wells may draw in fresh groundwater from coastal aquifers and could impact the groundwater basin and potentially accelerate seawater intrusion.
- Slant well capacity can degrade over time. Several slant wells are recommended to permit rotating of the wells during operation for maintenance and well restoration.
- Full scale slant wells have not been constructed and operated. As a result the long-term operational issues associated with this technology are not well understood.

Figure 15. Bullet points from Scwd2, 2011[107]

In my professional opinion each presented bullet point[108] is valid and supports my independent analysis.

[106] MPWSP, Test Slant Well Long Term Pumping, Dec 27th, 2016 pg. 14 available from http://media.wix.com/ugd/28b094_e431fc8629c04f13bc89f8e35a047870.pdf.
[107] Scwd2, 2011, at pg. 62.
[108] *Id.*

8.6.3 California-American Water Company (Cal-Am)

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March 29, 2017

Mary Jo Borak, CEQA Lead
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Karen Grimmer, NEPA Lead
Monterey Bay National Marine Sanctuary
99 Pacific Avenue
Building 455a
Monterey, CA 93940

Re: Monterey Peninsula Water Supply Project Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS)

Dear Ms. Borak and Ms. Grimmer:

On behalf of California-American Water Company (Cal-Am), the Applicant for the Monterey Peninsula Water Supply Project (Project), we appreciate the opportunity to provide written comments on the Draft EIR/EIS for the Project prepared jointly by the California Public Utilities Commission (CPUC) and Monterey Bay National Marine Sanctuary (MBNMS).

Cal-Am supports the analysis in the Draft EIR/EIS and believes the CPUC and MBNMS have performed an extremely thorough analysis of the Project and fully complied with their responsibilities under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), respectively, to assess the Project's potential adverse environmental impacts.

We understand that the CPUC, through its environmental consultants at Environmental Science Associates, and MBNMS will now begin the process of preparing the Final EIR/EIS for the Project, including responses to comments made on the Draft EIR/EIS, and any necessary corrections and additions to the Draft EIR/EIS. In reviewing the Draft EIR/EIS, Cal-Am identified various areas in the document that would benefit from some technical corrections, clarifications, and/or revisions. Accordingly, to assist the CPUC and MBNMS in preparing the Final EIR/EIS, we are attaching to this letter, as **Exhibit 1**, a matrix containing Cal-Am's suggested technical corrections, clarifications, and/or revisions to the Draft EIR/EIS.

CalAm-1

We believe that the comments and suggestions set forth in the attached matrix are technical corrections that fall within the scope of items to be addressed in the Final EIR/EIS. We have identified no issues that would warrant recirculation of the EIR/EIS per Public Resources Code section 21092.1 and CEQA Guidelines section 15088.5, and 40 Code of Federal Regulations section 1502.19.

CalAm-1 cont.

In addition, as **Exhibit 2** to this letter we are providing you with a summary of Cal-Am's legal ability to develop water rights for the Project. This summary is intended to respond to several questions and comments that were raised by members of the public during public workshops on the Draft EIR/EIS in February 2017. As described in detail in this summary, Cal-Am can develop appropriative groundwater rights for the Project with respect to any water it may incidentally pump from the Salinas Valley Groundwater Basin as part of the Project. We hope that this summary helps clarify Cal-Am's position concerning groundwater rights.

CalAm-2

Cal-Am fully supports the Project and looks forward to the CPUC's and MBNMS's continued review of the Project. Cal-Am would be happy to respond to any further questions you may have during the CEQA/NEPA process for the Project.

Very truly yours,

Duncan Joseph Moore
of LATHAM & WATKINS LLP

cc: Richard Svindland, California-American Water Company
Kathryn Horning, California-American Water Company
Ian Crooks, California-American Water Company
Robert Donlan, Ellison Schneider Harris & Donlan LLP

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
ES – Executive Summary						
1.	Dear Reviewer Letter	N/A	N/A	CalAm is not defined.	Please define CalAm as California American Water Company.	CalAm-3
2.	ES.2 Project Background	ES-2	First paragraph	The current language is in the Draft EIR/EIS is somewhat vague about exactly what kind of entity CalAm is, and what it provides to customers.	Please clarify that CalAm is a public water utility and that its Service District is the geographic area where it provides water to customers consisting of residential, commercial and industrial uses, among others.	CalAm-4
3.	ES.5.1 Description of Proposed Project	ES-5	First paragraph	Current description should explain what the Source Water Pipeline would do and to where it would convey water.	We suggest clarifying that Source Water Pipeline would convey water from the slant wells to the proposed desalination facility.	
4.	ES.5 The Proposed Project	ES-5	Second paragraph; sentence 2	Current description of the desalination plant should also discuss the proposed treated water storage tanks.	Consider adding text in **bold** to sentence 2 "… equalization tanks, **treated water tanks**, chemical feed . . ."	
5.	ES.5.1 Description of the Proposed Project	ES-6	Footnote 2	The City of Marina did not complete CEQA review of the test slant well project because its MND was not adopted, and instead its denial of the CDP was appealed to the Coastal Commission. The Coastal Commission then became the lead agency for CEQA review of the test well project.	Request that this be clarified in Footnote 2.	CalAm-5
6.	ES.6.5 Alternative 4	ES-10	First sentence	Typo – says Alternative 3 instead of Alternative 4.	Please correct typo.	CalAm-6
7.	ES Summary of Impacts and Mitigation Measures	ES-42	Table ES-2	There is an incorrect reference to the Presidio of Monterey Historic District, which would not be affected by the proposed project.	We request that the text be modified to read: "4.15-1a: Avoidance and Vibration Monitoring for Pipeline Installation in the ~~Presidio of Monterey Historic District, Downtown Monterey, and the~~ Lapis Sand Mining Plant Historic District."	CalAm-7
1. Introduction						
8.	1.4.2 The Monterey Peninsula Water Supply Project	1-9	Paragraph 7; Item 2	Current description of the desalination plant should also discuss the proposed treated water storage tanks.	Consider adding text in bold to sentence 2: "… equalization tanks, **treated water tanks**, chemical feed …"	CalAm-8
9.	1.4.4 Revisions Made in This EIR/EIS	1-11	Footnote 7	Similar to the comment in Executive Summary above, the City of Marina did not complete CEQA review of the test slant well project because its MND was not adopted, and instead its denial of the CDP was appealed to the Coastal	Request that this be clarified in Footnote 7.	CalAm-9

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
				Commission. The Coastal Commission then became the lead agency for CEQA review of the test well project.		CalAm-9 cont.
10.	References – Introduction and Background	1-18		NOAA 216-6A is cited but not placed in the List of References for that section.	Suggest adding citation to NOAA 216-6A.	CalAm-10
2. Water Demand, Supplies, and Rights						
11.	2.4.5 Groundwater Replenishment Project	2-20	Last paragraph of section	The Draft EIR/EIS references a September 15, 2016 CPUC decision allowing Cal-Am to enter a Water Purchase Agreement with the MRWPCA and MPWMD. The decision citation is not provided, although other CPUC decision citations are provided in this chapter. The correct citation is D.16-09-021.	We suggest that CPUC include the citation to this CPUC decision, which is D.16-09-021.	CalAm-11
12.	2.4.6.2 Malpaso Water Company LLC	2-21	Second paragraph of section	We note that the SWRCB recognizes that CalAm's interim use is offsetting Carmel River diversions.	We suggest a minor clarification to describe that excess water not used by Malpaso may be diverted for CalAm's use, and that such diversion offsets CalAm's Carmel River diversions. In other words, it is not an unauthorized diversion by CalAm, because it is under Malpaso's license.	CalAm-12
13.	2.5.3.3 Non-revenue Water Reduction	2-26	Footnote 29	Reference to Section 2.2.2 should be to 2.2.3.	Please revise Footnote 29 to correct reference.	CalAm-13
14.	2.6 Water Rights	2-31	First full paragraph	This paragraph discusses "[n]umerous court cases" but does not cite any cases.	Suggest adding citation to relevant court cases in References section.	CalAm-14
15.	2.6 Water Rights	2-31	Footnote 33	Footnote 33 repeats text in the previous paragraph.	Suggest deleting footnote.	CalAm-15
3. Project Description						
16.	3.1 – Introduction	3-2	First new paragraph	The proposed project would require 10 wells in total, and not nine wells	Suggest addition of a footnote to clarify that the existing test well would be converted to permanent 10th well if project is approved.	CalAm-16
17.	3.1 Introduction	3-2	Footnote 2	Similar to comments above, the City of Marina did not complete CEQA review because its MND for the test slant well project was not adopted, and instead its denial of the CDP was appealed to the Coastal Commission. The Coastal Commission then became the lead agency for CEQA review of the test well project.	Clarify in footnote.	CalAm-17
18.	3.2 Project Components	3-7	First paragraph; Bullet 2	Current description of the desalination plant should also discuss the proposed treated water storage tanks.	Consider adding text in bold to sentence 2: "… equalization tanks, **treated water tanks**, chemical feed …"	CalAm-18

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
19.	3.2 Project Components	3-8	Table 3-1; Row 6, Column 2, Bullet 1	The pretreatment building will be approximately 4,000 sf; not 6,000 sf.	Suggest changing "6,000-square foot" to "4,000-square foot."	CalAm-19
20.	3.2 Project Components	3-8	Table 3-1	Table 3-1 should be updated to clarify the nature of specific project components. Specific text revisions are recommended as noted in the following column.	The description of subsurface slant wells in Table 3-1 should be modified as follows: • Each well site would have one wellhead ~~**vault**~~ (Sites 1, 3, 4, and 5) or three wellhead**s** ~~**vaults**~~ (Sites 2 and 6), ~~**aboveground**~~ mechanical piping **vault** (meter, valves, gauges), one electrical control cabinet, and one pump-to-waste ~~**vault**~~ **basin**. • ~~Except for Site 1 (test slant well site), the aboveground facilities (at Sites 2 through 6) would be built on a concrete pad ranging between 5,250 and 6,025 square feet in area.~~	CalAm-20
21.	Section 3.2 Project Components	3-8	Table 3-1	Table 3-1 should be updated to show the need for two (2) surge vessels on site.	The DESCRIPTION SECTION of source water pipeline in Table 3-1 should be modified as follows: "~~**A**~~ **Two (2)** hydraulic surge ~~**facility comprising valves or hydro-pneumatic**~~ tanks would be located near the collector pipe/Source Water Pipeline connection point, south of the CEMEX access road and inland of the dunes." The PURPOSE SECTION of source water pipeline in Table 3-1 should be modified as follows: "The surge ~~**facility**~~ **tanks** would ~~**control the**~~ **protect the wells and pipeline infrastructure from** hydraulic **surge events (i.e., power loss) that could occu**r in the Source Water Pipeline."	CalAm-21
22.	3.2 Project Components	3-8 & 3-15	Table 3-1	Under the Subsurface Slant Wells portion of the table, the term "#8" is used without further explanation. This also occurs on page 3-15 under the Permanent Slant Wells discussion.	We believe this reference is to well 8 out of the 10 slant wells. We ask that this please be clarified, and suggest that a notation be added to a figure identifying which of the wells is being addressed here.	CalAm-22
23.	3.2 Project Components	3-10	Table 3-1	Brine Storage and Disposal – Brine Discharge Pipeline listed as 30 inch diameter. Correct diameter is 36 inch.	Please revise Brine Discharge Pipeline diameter to 36 inch.	CalAm-23
24.	3.2 Project Components	3-10	Table 3-1; Row 10, Column 2	The current design includes two (not four) large treated water pumps (each 4.8 mgd and 600 hp).	Request changing "- Four 4.8 mgd, 600 hp treated water pumps . . ." to "- Two 4.8 mgd, 600 hp treated water pumps . . ."	CalAm-24
25.	3.2.1 Seawater Intake System	3-13	Figure 3-3a	We believe some minor corrections to this Figure are necessary to show the current slant well layout.	See redlined figures provided. Please see Attachment A to this chart for corrections to this Figure.	CalAm-25
26.	3.2.1 Seawater Intake	3-13	Figure 3-3a	Sizing and specific project components require minor clarifications in this Figure.	We request the following additional minor clarifications to the Figure:	

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
	System				Pump-to-Waste ~~**Vault**~~ **Basin (Rip Rap) (12' x 8')** **Mechanical Piping** ~~**Wellhead**~~ Vault(s) **(14' x 8')** Electrical Control Cabinet **– Concrete Pad (12' x 4')** **Graded Area** ~~**Concrete Pad**~~ 5,250 – 6,025 sq ft **ADD:** "Surge Tank Location 1" (See Attachment A – marked-up Figure 3-3a) **ADD:** "Surge Tank Location 2" (See Attachment A – marked-up Figure 3-3a) **ADD:** "HDD Pipeline Route" (See Attachment A – marked-up Figure 3-3a) **ADD:** "Alternative (NO HDD) Pipeline Route" (See Attachment A – marked-up Figure 3-3a). In addition, revise line type to **dashed** for alternative route (Attachment A – marked-up Figure 3-3a) **ADD:** "HDD Pipeline Route" (See Attachment A – marked-up Figure 3-3a) **ADD:** "Typical Surge Tank Layout" (See Attachment B provided with this chart)	CalAm-25 cont.
27.	3.2.1.1 Subsurface Slant Wells	3-15	First paragraph	Reference to City of Marina in CEQA process for the test slant well.	Suggest removing reference to City of Marina in discussion of test well evaluation in accordance with CEQA, since the Coastal Commission was the lead agency.	CalAm-26
28.	3.2.1.1 Subsurface Slant Wells	3-17	Figure 3-3b	The lengths listed for onshore and offshore well lengths appear to require minor corrections. Please see table attached as Attachment C to this chart for values calculated by GEOSCIENCE (and refer to Attachment A – marked-up Figure 3-3a for well naming used for measurements/calculations). The updated well layout was used for the measurements. For comparison, lengths were calculated for current (2015) Mean High Water and the 2020 MHW used on Figure 3-3a.	The markups, from north to south, are: SW-1 Stand-by-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 Stand-by-2 Stand-by-3	CalAm-27
29.	3.2.1.1 Subsurface Slant Wells	3-18	First paragraph	Clarifications to certain project components are needed.	Sites 1 through 6 include the following ~~**aboveground**~~ facilities: **aboveground wellhead(s)**, ~~**one wellhead vault per slant well,**~~ **a below ground** mechanical piping **vault (12' x 6' x 6') for** ~~**(**~~meters, valves, gauges**, etc.)** ~~**)**~~ **per well**, an electrical **enclosure** ~~**control cabinet**~~, and a pump-to-waste **basin** ~~**vault**~~. Each wellhead would be ~~**enclosed in an**~~ **located** aboveground **for ease of maintenance**. ~~**12 foot long, 6 foot wide, and 8 inch**~~	CalAm-28

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
					~~**tall precast concrete vault.**~~ Each slant well would be equipped with **up to** a 2,500 gpm, 300 hp submersible well pump. The electrical controls for operation of the slant wells would housed in a single story, ~~**16**~~**17**-foot long, by ~~**7**~~**10**-foot wide**, 10 foot high** fiberglass ~~**electrical control cabinet**~~ enclosure located at each of the six well sites. Each site would also have a pump-to-waste ~~**vault**~~ **basin** for the percolation of turbid water produced during slant well startup and shutdown. The pump-to-waste ~~**vault**~~ **basin** would **be constructed of Rip Rap material, approximately 1-2 feet deep (12' x 8')** ~~**be a precast 12 foot long, 8 foot wide, and 1 foot tall concrete vault covered with a metal grate and underlain by clean gravel and permeable textile fabric**~~. The new permanent slant wells and associated ~~**aboveground**~~ infrastructure at Sites 2 through 6 would be constructed on a 5,250- to 6,025-square foot ~~**concrete**~~ **graded** pad located above the maximum high tide elevation on the inland side of the dunes ~~**(no concrete pad would be built at Site 1)**~~. A 750-foot long, 42-inch diameter buried ~~**NSF/ANSI 615**~~ certified pipe would collect the seawater pumped from Sites 2 to 6 and convey it to the proposed buried Source Water Pipeline located at the existing CEMEX access road.	CalAm-28 cont.
30.	3.2.1.2 Source Water Pipeline	3-18	Line 1	Source Water Pipeline incorrectly listed as NSF/ANSI 61	Remove NSF/ANSI 61	CalAm-29
31.	3.2.1.2 Source Water Pipeline	3-18	Line 8	"The alignment would continue north along Lapis Road for 0.5 miles."	Revise to "The alignment would continue north within the TAMC ROW, along Lapis Road for 0.5 miles."	CalAm-30
32.	3.2.2.1 Pretreatment System	3-21	First paragraph; Sentences 3 and 4	Sentence 3 describes pretreatment requirements and identifies "membrane filtration" but not multimedia gravity filtration.	Consider revising the text to read "The pretreatment requirements for seawater collected by the proposed slant wells has been determined through operation of the test slant well and pilot program, and would likely include pressure filters or multimedia gravity filters, a backwash supply storage tank, and backwash settling basins. If necessary, the pretreatment system could also include coagulation, flocculation, or membrane filtration."	CalAm-31
33.	3.2.2.5 Brine Storage and Disposal	3-27	First paragraph; line 8	Brine Discharge pipeline listed as 30-inch diameter. Correct diameter is 36 inch.	Please revise to 36-inch diameter.	CalAm-32
34.	3.2.3.2 Desalinated Water Pumps	3-28	First paragraph; Sentence 3	The current design includes two (not four) large treated water pumps (each 4.8 mgd and 600 hp).	Suggest changing "There would be four 4.8 mgd, 600 hp pumps …" to "There would be two 4.8 mgd, 600 hp pumps …"	CalAm-33
35.	3.2.3.3 New Desalinated Water Pipeline	3-29	First paragraph	Minor correction needed to the following language: "… approximately 800 feet to Lapis Road, and continue south along Lapis Road …"	Request revising this language to read "… approximately 800 feet to Lapis Road, and continue south within TAMC ROW along Lapis Road …"	CalAm-34
36.	3.2.3.7	3-35	Second	The draft EIR/EIS should also consider alternative placement of water pipe in the	We request expanding the discussion to include the potential alternative placement of	CalAm-35

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
	Castroville Pipeline		paragraph	county road ROW instead of within the TAMC.	pipeline within the County Road ROW along the same general route from Lapis Road and Del Monte, north on Monte Road, across county bridge, continue north in Monte Road ROW to Nashua Road and then continue back to TAMC route.	CalAm-35 cont.
37.	3.2.3.9 Interconnections with Highway 68 Satellite Systems	3-36	Last paragraph	The pipeline route does not include Blue Larkspur Lane, which is currently referenced.	Please revise as follows: "The pipeline would be installed within the rights-of-way of Ragsdale Drive, Lower Ragsdale Drive, and Wilson Drive~~, and Blue Larkspur Lane~~."	CalAm-36
38.	3.2.3.9 Interconnections with Highway 68 Satellite Systems Main System-Hidden Hills Interconnection Improvements	3-43	First paragraph	There are currently four pump stations in this area: Tierra Grande, Lower Tierra Grande, Middle Tierra Grande, and Upper Tierra Grande. The Tierra Grande and Lower Tierra Grande are new pump stations and appear to have been recently upgraded. The Lower Tierra Grande has two pumps with Pump 1 rated at 328 gpm at 195 ft TDH and Pump 2 rated at 370 gpm at 200 ft TDH. The Upper Tierra Grande Booster Station appears to have been recently upgraded to two 237 gpm pumps (not the 350 gpm mentioned in the Draft EIR/EIS). The Middle Tierra Grande Booster Station does require upgrades, as its pumps appear to be in the 165 gpm range.	Please consider revising as follows: "The existing interconnection between the main CalAm distribution system and the Hidden Hills system would be improved by installing approximately 1,200 feet of 6-inch-diameter pipeline along Tierra Grande Drive~~, with a connection to the existing Upper Tierra Grande Booster Station. The Upper Tierra Grande Booster Station has an existing capacity of 129 gpm. A new 350 gpm pump would be added to the booster station. In Addition, the existing pump capacity of the Middle Tierra Grande Booster Station, located on lower Casiano Drive, would be upgraded from 161 gpm to 400 gpm by adding a new 350 gpm pump (CalAm, 2013a)~~ **There are four pump stations in this area (from lowest to highest): Tierra Grande, Lower Tierra Grande, Middle Tierra Grande, and Upper Tierra Grande. The lowest station pumps into the next station and so on. The Middle Tierra Grande Booster Station pumps require an upgrade in capacity to approximately 400 gpm**."	CalAm-37
39.	3.2.4 Proposed ASR Facilities	3-43	General	The Draft EIR/EIS contains a very short discussion of the ASR system.	Suggest describing purpose and function of the existing ASR system so that the reader understands more clearly what the ASR system does.	CalAm-38
40.	3.2.4 Proposed ASR Facilities	3-44	Second paragraph	ASR 5 and 6 wells are incorrectly listed to have a combined injection capacity of 2.2 mgd (1,050 gpm).	Request that the text be revised to explain that the combined injection capacity is 4.3 mgd (3,000 gpm), which is the same as the extraction capacity.	CalAm-39
41.	3.3.2.1 Subsurface Slant Wells	3-48	Second full paragraph	Clarifications to certain project components are needed.	Please consider revising as follows: "The slant wells would be completed using telescoping casing ranging from 22 to 36 inches in diameter and super-duplex 12- to 20-inch diameter stainless steel well screens. A submersible pump would be lowered several hundred feet into each well. To develop the slant wells, each well would be pumped for 2 to 6 weeks during slant well completion and initial well testing. The groundwater pumped from the wells during well development would be discharged to the ocean within the waters of MBNMS via the test slant well discharge pipe and the existing MRWPCA ocean outfall. This well development process would produce a volume of water too great to percolate into the ground at the CEMEX mining area, as compared to the drill phase described above. Once built, **each** ~~**the**~~ well~~**heads**~~ would include **up to** 12-inch-diameter **mechanical** discharge piping (i.e., flow meter, isolation valve, check valve, pump control valve, air **release** valve, and pressure gauge). This discharge **mechanical** piping would **be located in a below ground vault (12' x 6'). The electrical controls would be located in a fiberglass enclosure** ~~**approximately 2 to 3 feet above the ground on an estimated**~~	CalAm-40

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
					~~**6,000-square foot concrete pad, with some of the mechanical and electrical gear covered by a pre-manufactured shelter to protect them from the elements**~~. The discharge piping would then transition underground via trenching and connect to the buried source water pipeline. The wellheads would be accessible and grade level once completed."	CalAm-40 cont.
42.	3.3.4 Pipeline Installation	3-50	Table 3-5	The table shows that construction of the desalination plant would result in 0 cy of excess spoils or construction debris, which is correct. However, we suggest a minor revision to the text associated with construction. In addition, there is an errant comment remaining in the document that needs to be removed. (see LB1 in last row).	It would be helpful in the construction description of the plant to note that cut and fill on the project site will not result in off-site transport of soils	CalAm-41
43.	3.4.1 Operation of the Seawater Intake System, etc.	3-58	Table 5-7	Table includes a typo and references 9.5 mgd for daily production. Daily production is 9.6 mgd as correctly noted in the remainder of the section..	Please correct typo in Table 5-7, as 9.6 mgd is the correct number.	CalAm-42
44.	3.4.5 Power Demand	3-60 to 3-61	First Paragraph	Clarification to power demand numbers is necessary due to the metrics used.	We request the following changes: • "Under existing conditions, the electrical power needed to operate the water supply system in CalAm's Monterey District Service Area is 11,466,000 ~~million~~ kilowatt hours per year (kWh/yr)." • "…the average annual power demand for the Monterey District Service Area would be 63,164,000 ~~million~~ kWh/yr." • "Therefore, the net increase in annual electrical power demand for water production would be approximately 51,698,000 ~~million~~ kWh/yr."	CalAm-43
45.	3.5 Permits, Approvals, and Regulatory Requirements	3-65	Table 3-8; Row 3	CDPH no longer regulates public water systems. The California Environmental Protection Agency, State Water Resources Control Board, Division of Drinking Water regulates public water systems.	Suggest replacing references to "CDPH" with "Division of Drinking Water."	CalAm-44
4. Environmental Setting, Impacts, and Mitigation Measures						
4.1 Overview						
46.	4.1 Overview	4.1-24	Table 4.1-2, Row 60	No location is listed for the Monterey Pipeline and Pump Station	Suggest including location for Monterey Pipeline and Pump Station	CalAm-45
47.	4.1 Overview	4.1-25	Figure 4-1	The Monterey Pipeline is not shown on map with cumulative projects	Suggest including Monterey Pipeline on map.	

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
4.2 Geology, Soils, and Seismicity						
48.	4.2.2.3 Applicable Land Use Plans, Policies, and Regulations	4.2-37 to 4.2-43	Table 4.2-6	Discussions of certain relevant policies disclose a "potential inconsistency" between the project and such policies. The Table is confusing because the project would be consistent with the applicable policies upon the implementation of mitigation (i.e., Impact 4.2-10's conclusion is that the project will be consistent with such policies upon implementation of Mitigation Measure 4.2-9).	Suggest revising Table 4.2-6 to note – for those policies where the project would be potentially inconsistent – that the project would be consistent with implementation of the applicable mitigation measure.	CalAm-46
49.	4.2.4.1 Geotechnical Investigations for Project Facilities	4.2-46	First paragraph	The Draft EIR/EIS indicates that it "used geotechnical information and data derived from project-specific geotechnical studies, including geotechnical investigations conducted for the proposed MPWSP Desalination Plant at Charles Benson Road (PCE, 2014; Zinn, 2014) and the conveyance pipelines (AECOM, 2015)." However, none of these studies are incorporated into the EIR/EIS as an appendix.	Consider including these studies as appendices or providing weblinks to the studies if they are available online.	CalAm-47
50.	4.2.5.2 Operational and Facility Siting Impacts	4.2-69	Impact 4.2-10 (Coastal Erosion/Sea Level Rise)	Although the Draft EIR/EIS correctly describes how the profiles for erosion/sea level rise/storm events established in the modeling for the 2014 study caused CalAm to resite the slant well clusters, the Draft EIR/EIS does not state that the Figures (Profiles 4a and 4b) from the 2014 study (which is attached as Appendix C2) are now no longer current.	Consider revising this in the Final EIR/EIS.	CalAm-48
4.3 Surface Water Hydrology and Water Quality						
51.	4.3.1.3 Surface Water Quality	4.3-9	Footnote 11	Typo - reference to Section 4.3.2.1 should be 4.3.2.2	Please correct typo in Final EIR/EIS.	CalAm-49
52.	4.3.2 Regulatory Framework	4.3-17	Figure 4.3-3	This figure shows areas subject to sea level rise in the Project Area. This figure should also be included and/or referenced in the discussion of sea level rise impacts in Section 4.2.	Please include reference to Figure 4.3-3 (or actual figure) in Section 4.2.	CalAm-50
53.	4.3.2.1 Federal Regulations	4.3-21	Fourth bullet	"EHF" is not defined.	Please define "EHF" in Final EIR/EIS.	CalAm-51
54.	4.3.2.2 State Regulations	4.3-34	First paragraph	Typo requiring minor correction.	Please correct in Final EIR/EIS as follows: "The Monitoring and Reporting Plan would require review and approval by the RWQCB and MBNMS prior to implementation of the MPWSP, and **be** revised if necessary, as part of the NPDES permit process."	CalAm-52
55.	4.3.5.2 Operational and Facility Siting Impacts	4.3-71	Impact 4.3-3	Sentence lacks units of measurement: "Seasonal average temperatures ranged between 11.5 and 14.5 and seasonal salinity levels ranged from 33.3 to 33.9 at the depth of the diffuser."	Please add measurement units.	CalAm-53

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
4.4 Groundwater Resources						
56.	4.4 Groundwater Resources	4.4-1	First paragraph, second sentence	Typo requiring minor correction.	Please revise sentence to read: "Specifically, this analysis focuses on how the proposed subsurface slant wells and aquifer storage and recovery (ASR) system improvements would change the groundwater aquifers adjacent to the coast **and** further inland beneath the Salinas Valley, and would change the groundwater levels, flow direction, and water quality within the Seaside Groundwater Basin."	CalAm-54
4.6. Terrestrial Biological Resources						
57.	4.6.2.2 State Regulations	4.6-99	Second paragraph	The Draft EIR/EIS states that FORA's Draft Habitat Conservation Plan for the former Fort Ord military base is expected to be complete in late 2016.	Determine whether an update to the schedule for the HCP can be provided in the Final EIR/EIS. [Note: This statement is also repeated on page 4.6-252.]	CalAm-55
58.	4.6.5.1 Construction Impacts	4.6-170	Mitigation Measure 4.6-1d	Mitigation Measure 4.6-1d requires that, for work conducting during the non-nesting season, a qualified biologist will evaluate the nature and extent of wintering plover activity in the project area "several days" prior to construction.	We request that a specific number of days or range of days prior to construction be provided for clarity.	CalAm-56
59.	4.6.5.1 Construction Impacts	4.6-179	Mitigation Measure 4.6-1l	Mitigation Measure 4.6-11 requires pre-construction surveys for special-status bats, but does not specifically state when the surveys should occur.	We request that a specific number or days or range of days prior to construction be provided for clarity.	CalAm-57
60.	4.6.5.1 Construction Impacts	4.6-231	Mitigation Measure 4.6-4	Mitigation Measure 4.6-4 requires Cal-Am to perform a comprehensive survey within the project footprint to identify, measure, and map trees subject to local tree removal ordinances, but does not specify when such surveys should be conducted.	We request that a specific number or days or range of days prior to construction be provided for clarity..	CalAm-58
4.8 Land Use, Land Use Planning, and Recreation						
61.	4.8.1 Setting	4.8-5	Figure 4.8-1	The Coastal Zone boundary does not clearly identify that Coastal Zone extends over the ocean.	Suggest revising figure to make clear that Coastal Act governs the area that is seaward of beach.	CalAm-59
62.	4.8.1 Setting	4.8-8	Figure 4.8-3	The Main System-Hidden Hills Interconnection is missing from figure due to the location of the legend.	Suggest providing an alternate figure in the Final EIR/EIS that includes Main System-Hidden Hills Interconnection.	CalAm-60
63.	4.8.1.3 to 4.8.1.12	4.8-9 to 4.8-13	General	Descriptions of pipeline segments do not expressly state that pipelines would be subterranean.	Suggest clarifying that pipelines would be constructed underground and note which pipelines are being constructed in public rights of way.	CalAm-61
64.	4.8.2.1 State Regulations	4.8-16	Fort Ord Reuse Plan	The Draft EIR/EIS is not clear what type of development is allowed within areas governed by Fort Ord Reuse Plan	Suggest clarifying any applicable use requirements/allowances for these properties.	CalAm-62
65.	4.8.2.1 State Regulations	4.8-17	Coastal Act	The discussion of Coastal Act does not make clear that the Coastal Commission has appeal authority over LCP determinations for major public works projects like the MPWSP.	Suggest addressing this fact in technical correction to the text in the Final EIR/EIS.	CalAm-63

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution
66.	4.8.2.3 Local Regulations	4.8-19	Monterey County Municipal Health & Saf. Code	The discussion of CPUC preemption mentions the CalAm Settlement Agreement.	Consider including the Settlement Agreement as an appendix to the Final EIR/EIS, given that it is being relied on in the analysis.
4.11. Greenhouse Gas Emissions					
67.	4.11.1.1 Climate Change	4.11-2	4.11.1.1	There is no framing of the role desalination can fill in response to a changing climate.	We suggest including a discussion of how desalination is addressed favorably in state policy documents regarding climate change. For example, see *Safeguarding California: Reducing Climate Risk – An update to the 2009 California Climate Adaptation Strategy*, California Natural Resources Agency, at 233-234 (July 2014) ("Droughts are also expected to increase in frequency, duration, and intensity; and drought affects all sectors - impacting public health, biodiversity, agriculture, and the economy. … To mitigate potential shortages during drought, a variety of measures may be utilized. State, regional and local agencies have increasingly been pursuing a strategy of making regions more self-reliant by developing new or underused water resources locally; improving water storage capacity may be another important strategy for preparing for drought risks. For instance, new or underused water resources may come from including: improved water conservation and water use efficiency, expanded water recycling, improved stormwater management, conjunctive use (coordinated management of local surface and groundwater), desalination, and groundwater remediation.")(emphasis added). The *Safeguarding California* Plan also identifies "Actions Needed to Prepare for Climate Risks to California Water Resources." One of those actions is "Diversify Local Supplies and Increase Water Use Efficiency," which provides: "Increasing regional self-reliance and diversification of local water supplies will enable Californians to better respond to changing economic and climactic conditions while ensuring a reliable water supply for the diversity of the state's water needs. California's water agencies utilize a variety of water management measures to improve local water supply reliability. These measures include agricultural and urban water use efficiency, local storage, conjunctive use, increasing stormwater capture and infiltration, recycled water, and ocean and brackish water desalination." *Id.* at 247 (emphasis added). One recommendation to achieve this action is "Develop a coordinated streamlined permitting process for desalination projects that provides strong environmental protection." *Id.* at 249. Another action is "Prepare California for hotter and dryer conditions and improve water storage capacity," which provides "[A] variety of measures may be utilized to mitigate potential shortages during drought, including minimizing reliance on imported water, improved water conservation and water use efficiency, expanded water recycling,

CalAm-64

CalAm-65

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
					improved stormwater management, <u>desalination</u>, groundwater remediation, conjunctive use, firming up existing water transfer agreements, and entering into spot transfer or short-term water transfer agreements." *Id.* (emphasis added).	CalAm-65 cont.
68.	4.11.2.2 State Regulations	4.11-8	Mandatory Reporting Requirements	The Draft EIR/EIS contains an imprecise discussion of the applicability of MRR.	We request adding the following sentence to the end of the paragraph: "In addition, many of the proposed project's sources of GHG emissions are not directly subject to CARB's reporting program."	CalAm-66
69.	4.11.2.2 State Regulations	4.11-9	Market-Based "Cap-and-Trade" Compliance Mechanism	The Draft EIR/EIS contains an imprecise discussion of the applicability of cap-and-trade program.	We request adding the following sentence to the end of the paragraph: "In addition, many of the proposed project's sources of GHG emissions are not directly subject to the cap-and-trade program."	CalAm-67
70.	4.11.4.3 Evaluation of GHG Emissions	4.11-14	First paragraph	The last sentence of the paragraph does not flow well from the prior sentence.	Suggest revising sentence to read: "While ~~this particular~~ <u>the 10,000 metric tons CO2e per year</u> significance threshold is not used, indirect emissions associated with electricity consumption are calculated and impacts are fully assessed in this chapter."	CalAm-68
71.	4.11.5 Operational Emissions	4.11-17	Bottom of page	The Draft EIR/EIS incorrectly states: "As of July 2016, state policymakers have not enacted this RPS program expansion into law."	We suggest replacing this sentence with the following: "Senate Bill 350 was signed by Governor Brown on October 7, 2015, codifying the 50% RPS."	CalAm-69
4.12. Noise and Vibration						
72.	4.12.6 Direct and Indirect Effects of the Proposed Project	4.12-34	Mitigation Measure 4.12-1d	The last sentence of Mitigation Measure 4.12-1d states that "Barrier blankets are available with a sound transmission class rating of 32, providing 16 to 40 dBA of sound transmission loss, depending on the frequency of the noise source (ENC, 2014)." It is not clear whether blankets meeting this rating are required.	Recommend clarifying whether blankets meeting this rating will be required.	CalAm-70
4.13. Public Services and Utilities						
73.	4.13.2.2 State Regulations	4.13-7	California Coastal Act	The first paragraph states that a preliminary assessment of MPWSP consistency with Coastal Act priorities concerning designing and limiting new or expanded public works facilities such that they are protective of costal resources "is provided here."	As written, it is unclear what "here" refers to. Consider adding a reference to particular section in which these priorities are discussed, or if discussed in the subsequent paragraphs of Section 4.13.2.2, consider changing "here" to "below." If "here" refers to the entire EIR, consider changing "here" to "in this EIR/EIS."	CalAm-71
74.	4.13.5.1 Construction Impacts	4.13-17	Consistency with Regulatory Requirements	Typo of "L-U6.1."	Revise to "LU-6.1."	CalAm-72
75.	4.13.5.1 Construction	4.13-18	Mitigation Measure 4.13-	Typo. MM 4.13-1c provides: "Construction managers shall hold regular tailgate meetings with construction staff on days when work near high-priority utilities will	Remove em-dash at the end of the sentence.	CalAm-73

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
	Impacts		1c	occur to review all safety measures regarding such excavations, including measures identified in the Mitigation Monitoring and Reporting Program and in construction specifications—."		CalAm-73 cont.
76.	4.13.5.1 Construction Impacts	4.13-18	Mitigation Measure 4.13-1e	MM 4.13-1e states that "CalAm or its contractor(s) shall notify local fire departments in advance of any time work that is to be performed in close proximity to a gas utility line, or any time damage to a gas utility line results in a leak or suspected leak, or whenever damage to any utility results in a threat to public safety."	We request that the phrase "close proximity" be made more specific so that it provides an objective standard/distance. In addition, please revise sentence as follows: "CalAm or its contractor(s) shall ~~**notify**~~ **meet with** local fire departments in advance of ~~**any time**~~ **commencing** work that is to be performed in close proximity to a gas utility line **to establish a protocol and procedures for notification of work occurring near gas utility lines and a list of emergency contacts, and to provide the local fire department with a copy of the Emergency Response Plan required by Mitigation Measure 4.13-1d**~~**, or any time damage to a gas utility line results in a leak or suspected leak, or whenever damage to any utility results in a threat to public safety**~~."	CalAm-74
4.14. Aesthetic Resources						
77.	4.14.3.2 State Regulations	4.14-22	California Coastal Act	The Draft EIR/EIS states that the operation of the project would be potentially inconsistent with Coastal Act policies re: scenic resource protection. Table 4.14-2, which contains a comparison of plans, policies, and goals against the project, does not include Coastal Act policies.	While Table 4.14-2 does include some LCP policies, if there is no desire to include actual policy sections of the Coastal Act, we suggest modifying the language on p. 4.7-22 to clarify that the policies in the table are LCP policies re: scenic resource protection that implement the Coastal Act.	CalAm-75
78.	4.14.6.1 Construction Impacts	4.14-29	Subsurface Slant Wells – Second Paragraph	The Draft EIR/EIS states, "Construction of the remaining subsurface slant wells in the CEMEX active mining area would take approximately 15 months to complete, and could take place anytime throughout the overall 24-month construction duration for the proposed project." However, this sentence does not take into account the durational limitations on slant well construction due to restrictions in the terrestrial bio mitigation measures.	Clarify that construction timing is subject to mitigation measures governing terrestrial bio impacts.	CalAm-76
4.18. Energy Conservation						
79.	4.18.2.2 State Regulations	4.18-6	State of California Integrated Energy Policy	The Draft EIR/EIS only discusses the 2013 Integrated Energy Policy Report (IEPR). The 2015 IEPR was adopted 2/10/2016 and the 2016 IEPR Update is scheduled to be considered for adoption at the CEC's 2/15/2017 meeting.	Update language to address 2015 IEPR and 2016 IEPR Update.	CalAm-77
4.19. Population and Housing						
80.	4.19.1.2 Employment	4.19-3	2nd on page	In the second sentence, the Draft EIR/EIS states that "the county" lost about 1,500 jobs, but does not specify which county.	The language should be clarified (appears to be Monterey County based on context).	CalAm-78
81.	4.19.5 Direct and Indirect Effects of Proposed	4.19-5	Header	Inconsistency noted: the header of section 4.19.5 includes "Indirect Effects," but section 4.19.3 states that indirect impacts are analyzed in the Growth Inducement chapter.	Address inconsistency.	CalAm-79

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
	Project					CalAm-79 cont.
4.20. Socioeconomics and Environmental Justice						
82.	4.20.2.3 Local Regulations	4.20-12	Settlement Agreement on MPWSP Desalination Plan Return Water	The first paragraph of section states that "[u]nder this agreement, CCSD will purchase water at a discounted cost pursuant to Item 4, Payment Provisions."	Consider defining CCSD. Also, is the title of subsection should read "Desalination Plant," not "Desalination Plan"	CalAm-80
5. Alternatives Screening and Analysis						
83.	5.3.5 Desalination Plan Site Options Screening Results	5.3-27	First paragraph	The Draft EIR/EIS assumes that a minimum of 10 acres is needed to accommodate desalination plant facilities, but does not explain why this minimum acreage is used.	Recommend providing additional information in comment letter to explain why an alternative site must be at least 10 acres.	CalAm-81
84.	5.4.2.4 Ability to Meet Project Objectives	5.4-11	Second paragraph	The sentence that reads "The GWR Project, when constructed, would provide 3,500 of potable supply for the CalAm service area" contains a typo.	This should read "The GWR Project, when constructed, would provide 3,500 **afy** of potable supply for the CalAm service area."	CalAm-82
85.	5.4 Description of Alternatives Evaluated in Detail	5.4-53	Table 5.4-9 Alternative 5A Facilities Subsurface Slant Wells	Number of well sites needs to be corrected.	We request the following clarifications to the text: • Seven slant wells located the CEMEX site, extending offshore beneath Monterey Bay (the conversion of an existing test slant well into a permanent well plus six new wells at ~~four~~ **five** new well sites) into MBNMS, with four to five wells operating under normal operating conditions but all wells could under certain operating conditions at any given time and two wells maintained on standby. • The slant wells would be grouped into ~~five~~ **six** wells: ~~four~~ **five** sites with one well each and one site with ~~three~~ **two** wells. Each well would have a wellhead ~~vault~~, and ~~aboveground~~ mechanical piping **vault** (meter, valves, and gauges); each well would have one electrical ~~control cabinet~~ enclosure, and one pump-to-waste ~~vault~~ **basin** (same as proposed project).	CalAm-83
86.	5.4 Description of Alternatives Evaluated in Detail	5.4-53	Table 5.4-9 Alternative 5A Facilities Source Water Pipeline	Minor clarifications required	We request the following clarifications to the text: • 2.7 mile longs versus 2.2 miles long in Table 3.1. Verify. • **ADD:** "Two (2) hydraulic surge tanks would be located near the collector pipe/Source Water Pipeline connection point, south of the CEMEX access road and inland of the dunes."	CalAm-84
87.	5.4.7.1	5.4-54	Table 5.4-9;	The current design does not include a "Clearwell Pump Station."	Consider the following changes:	CalAm-85

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
	Overview – Description of the Reduced Project		Row 6, Columns 1 and 2		Column 1: Change "Clearwells (Water Storage Tanks) and Clearwell Pump Station" to "Treated Water Storage Tanks" Column 2: Delete "6.4 mgd capacity, 120-horsepower pump"	CalAm-85 cont.
88.	5.4.7.1 Overview – Description of the Reduced Project	5.4-54	Table 5.4-9; Row 7, Columns 1 and 2	Descriptions of the treated water pumps for the 6.4 mgd plant need to be clarified.	Consider the following changes: Column 1: Change "Desalinated Water Pump Station" to "Desalinated Water Pumps" Column 2, Bullet 1: Change "6.4 mgd capacity, 800-horsepower pump . . ." to "Two 3.2 mgd capacity, 400-horsepower pumps and two 1.6 mgd capacity, 200-horsepower pumps" Column 2, Bullet 2: Change "1.4 mgd capacity, 20-horsepower pump …" to "Two 1.4 mgd capacity, 10-horsepower pumps …"	CalAm-86
89.	5.5.5.5 Direct and Indirect Effects of Project Alternative 2 – Open-Water Intake at Moss Landing	5.5-116 to 5.5-117	Mitigation Measure ALT 2-Marine-1: Marine Construction Measures	The Draft EIR/EIS includes mitigation measures that apply only to certain alternatives. For example, Mitigation Measure ALT 2-Marine-1: Marine Construction Measures, only applies to alternatives with open-water intakes.	Suggest clarifying that these measures do not apply to the proposed project or any ultimately-approved project that does not include an open-water intake.	CalAm-87
90.	5.5.5.5 Direct and Indirect Effects of Project Alternative 2 – Open-Water Intake at Moss Landing	5.5-119	Mitigation Measure ALT 2-Marine-2: Minimization of and Mitigation for Loss of Marine Life and Habitat	The Draft EIR/EIS includes mitigation measures that apply only to certain alternatives. For example, Mitigation Measure ALT 2-Marine-2: Minimization of and Mitigation for Loss of Marine Life and Habitat, only applies to alternatives with open-water intakes.	Suggest clarifying that these measures do not apply to the proposed project or any ultimately-approved project that does not include an open-water intake.	CalAm-88
91.	5.5.6.5 Direct and Indirect Effects of Project Alternative 2 – Open-Water Intake at Moss Landing	5.5-144	Last paragraph	There appears to be a missing word in the sentence: "Construction of the Alternative 2 intake would have the potential for indirect impacts on sensitive habitats, as none are located adjacent to sites where construction of the intake would occur."	May need to be revised to say: "Construction of the Alternative 2 intake would **not** have the potential for indirect impacts on sensitive habitats, as none are located adjacent to sites where construction of the intake would occur.	CalAm-89
92.	5.5.12.6 Direct and Indirect Effects of	5.5-250 to 5.5-251	Mitigation Measure ALT 3-NO:	The Draft EIR/EIS includes mitigation measures that apply only to certain alternatives. For example, Mitigation Measure ALT 3-NO: Operational Performance Noise Standard for Data Center Generators, only applies to	Suggest clarifying that this measure does not apply to the proposed project.	CalAm-90

Comment #	Section Name	Page #	Paragraph or Table #	Issue	Suggested Resolution	
	Alternative 3 - the Monterey Bay Regional Water Project		Operational Performance Noise Standard for Data Center Generators	Alternative 3.		CalAm-90 cont.
93.	5.5.12.7 Direct and Indirect Effects of Alternative 4 - the Peoples' Moss Landing Water Desalination Project	5.5-253 to 5.5-254	Mitigation Measure ALT 4-NO: Operational Performance Noise Standard for Desalination Facilities and Pump Station	The Draft EIR/EIS includes mitigation measures that apply only to certain alternatives. For example, Mitigation Measure ALT 4-NO: Operational Performance Noise Standard for Desalination Facilities and Pump Station, only applies to Alternative 4.	Suggest clarifying that this measure does not apply to the proposed project.	CalAm-91
94.	5.5.15.4 Direct and Indirect Effects of Alternative 1 – Slant Wells at Potrero Road	5.5-298	Mitigation Measure ALT 1-CULT (Conduct Subsurface Investigation)	The Draft EIR/EIS includes mitigation measures that apply only to certain alternatives. For example, Mitigation Measure ALT 1-CULT (Conduct Subsurface Investigation), only applies to Alternatives 1, 2, 3, and 4.	Suggest clarifying that this measure does not apply to the proposed project.	CalAm-92
Appendix G2						
95.	Appendix G2		Title Page	The word "Trussel" is misspelled in the title of Appendix G2.	The title should read: "Trussel**l** Technologies Inc. Technical Memorandum, Response to CalAm MPWSP DEIR"	CalAm-93

From: Ian Crooks [mailto:Ian.Crooks@amwater.com]
Sent: Tuesday, March 13, 2018 2:58 PM
To: Eric Zigas <EZigas@esassoc.com>
Subject: APM

Eric –

CalAm submits the attached revised Applicant Proposed Measure 4.4-3 for inclusion in the Final EIR/EIS. Also attached is a redline comparing the revised measure to the version included in the Draft EIR/EIS. CalAm-94

Please let me know if you have any questions.

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Applicant Proposed Measure 4.4-3: Groundwater Monitoring and Avoidance of Well Damage.

Prior to the start of MPWSP slant well construction, CalAm, working with MCWRA, shall develop a groundwater monitoring and reporting program (the "Program") to the satisfaction of MCWRA. All costs of Program development and implementation shall be borne by CalAm either directly or through funding of MCWRA's staff, consultants and Program activities. The Program shall augment the MCWRA's existing regional groundwater monitoring network to focus on the area that could be affected by the proposed slant wells. The geographic area of the Program shall be within the model domain of the North Marina Groundwater Model, also referred to as NMGWM^{2016} and include the Dune Sand Aquifer, the 180-Foot Aquifer, the 400-Foot Aquifer and the Deeper Aquifer (i.e., the 900-Foot Aquifer) of the Salinas Valley Groundwater Basin (the "Monitoring Area"). The purpose of the Program is to ensure that owners of existing public or private groundwater supply wells within the Monitoring Area on the date the MPWSP commences slant well pumping ("Active Supply Wells") suffer no harm as a result of MPWSP slant well pumping. The elements of the Program proposed under this measure are described below.

1. A network of monitoring wells has been completed on and near the CEMEX property as part of the CalAm test slant well project. These well clusters monitor water elevation and quality at various depth intervals within the Dune Sand Aquifer, the 180-Foot Aquifer, and the 400-Foot Aquifer and shall be included in the Program's monitoring network. These existing monitoring wells are subject to relocation, replacement, or substitution by new or other monitoring wells developed as part of the Program as determined by MCWRA.

2. In addition, using information from the Groundwater Extraction Management System (GEMS) maintained by MCWRA and from the State Water Resources Control Board's Division of Drinking Water, CalAm, in coordination with MCWRA, shall identify Active Supply Wells in the Monitoring Area and offer to owners of identified Active Supply Wells the opportunity to participate in the Program for groundwater elevation and water quality monitoring. The owners of Active Supply Wells in the Monitoring Area will receive at least 60 days' notice (via email, if available, and via certified mail) of the opportunity to participate in the Program, and may elect in writing to participate in the Program as to their Active Supply Wells ("Participating Active Supply Wells"). This opt-in process must occur sufficiently in advance of MPWSP slant well pumping so that information on pre-MPWSP conditions can be obtained for each Participating Active Supply Well. Prior to the start of MPWSP slant well pumping, an independent California-certified hydrogeologist retained and directed by MCWRA (the "Hydrogeologist") shall evaluate the conditions and characteristics (e.g., well depth, well screen interval, pump depth and condition, flow rates, and drawdown) of each Participating Active Supply Well to develop pre-pumping data for each well. Water elevation and quality monitoring pursuant to the Program shall begin

following initial groundwater well assessment, and shall continue at intervals specified in the Program (e.g., more frequently at the beginning of MPWSP slant well pumping and less often after stabilization of groundwater levels) until the well owner ceases pumping from the monitored well, or until the well owner agrees that monitoring is no longer required.

3. Prior to the start of MPWSP slant well pumping, CalAm and MCWRA shall review the current (as updated if needed) inventory of monitoring wells within the Monitoring Area, and identify locations within the Monitoring Area lacking monitoring coverage and that warrant monitoring in order to evaluate potential effects on Participating Active Supply Wells from MPWSP slant well pumping. Based upon that review, MCWRA may require that CalAm fund the installation of new monitoring wells in the Monitoring Area to be installed before MPWSP slant well pumping begins. The number of new monitoring well sites in the Monitoring Area and the location of those new monitoring well sites shall be determined by MCWRA. The area of groundwater monitoring under the Program may be extended outside of the Monitoring Area if warranted to evaluate potential MPWSP slant well pumping effects on Participating Active Supply Wells and recommended by the Hydrogeologist.

4. The groundwater data developed through the Program shall be collected by or provided to MCWRA at intervals identified in the Program, but in no event longer than 45 days from such data being obtained, to evaluate whether MPWSP slant well pumping is causing consistent and measurable drawdown of local groundwater levels that is distinguishable from seasonal or multi-year groundwater level fluctuations. In the event that MCWRA identifies a consistent and measurable drawdown in groundwater levels and determines that such drawdown is potentially attributable to MPWSP slant well pumping and independent of seasonal or multi-year groundwater level fluctuations or any regional trends, the Hydrogeologist shall then determine if the observed degree of drawdown would damage or otherwise adversely affect any existing Participating Active Supply Wells. Adverse effects from lowered groundwater levels in Participating Active Supply Wells may include water elevation acute and long-term declines that draw water below pump intakes, causing cavitation due to exposure of the well screen, reduced well yields and pumping rates, increased energy costs to power the well, or changes in groundwater quality indicating that MPWSP slant well pumping is drawing lower quality water toward the well. Active Supply Wells that are not Participating Active Supply Wells will be considered for a determination by the Hydrogeologist of potential damage or adverse effects reasonably attributable to MPWSP slant well pumping (as described above) if substantial, credible evidence is submitted by the owners of such Active Supply Wells concerning damage or adverse effects at such wells, and such effects are verified by CalAm and the Hydrogeologist.

5. If the Hydrogeologist determines that a Participating Active Supply Well or an Active Supply Well that Cal-Am and the Hydrogeologist have verified for damage or adverse effects pursuant to Section 4 above has been damaged or otherwise negatively affected by MPWSP slant well pumping, CalAm and the Hydrogeologist shall coordinate with the well owner to develop and implement a mutually agreed upon course of action. Such course of action may include but not be limited to repairing or deepening the existing well, restoring groundwater yield by improving well efficiency, facilitating an interim or long-term replacement of water supply, constructing a new well, or compensating the owner for increased pumping costs. Any interim or long-term replacement water supply shall be of the same or better quality (i.e., potable or non-potable) and predicted quantity as the existing supply of the Active Supply Well and shall be suitable for the purposes served by the existing Active Supply Well. Before CalAm undertakes any course of action to remedy the MPWSP slant well pumping effects on an Active Supply Well, the Hydrogeologist shall authorize such action and provide notice of such action to MCWRA.

Applicant Proposed Measure 4.4-3: Groundwater Monitoring and Avoidance of Well Damage.

Prior to the start of MPWSP slant well construction, ~~the project applicant~~CalAm, working with ~~the~~ MCWRA, shall ~~fund and~~ develop a groundwater monitoring and reporting program ~~that expands the current~~(the "Program") to the satisfaction of MCWRA. All costs of Program development and implementation shall be borne by CalAm either directly or through funding of MCWRA's staff, consultants and Program activities. The Program shall augment the MCWRA's existing regional groundwater monitoring network to ~~include~~focus on the area ~~near~~that could be affected by the proposed slant wells. ~~Once expanded, the program will monitor groundwater levels and water quality within the area where groundwater elevations are anticipated to decrease in~~ The geographic area of the Program shall be within the model domain of the North Marina Groundwater Model, also referred to as NMGWM^{2016} and include the Dune Sand Aquifer ~~and~~, the 180-~~FTE~~Foot Aquifer, the 400-Foot Aquifer and ~~within at least one mile outside of the predicted radius of influence. The area of groundwater monitoring shall be determined by MCWRA and the MPWSP HWG.~~the Deeper Aquifer (i.e., the 900-Foot Aquifer) of the Salinas Valley Groundwater Basin (the "Monitoring Area"). The purpose of the Program is to ensure that owners of existing public or private groundwater supply wells within the Monitoring Area on the date the MPWSP commences slant well pumping ("Active Supply Wells") suffer no harm as a result of MPWSP slant well pumping. The elements of the ~~groundwater monitoring program~~Program proposed under this measure are described below.

~~• Using a current survey of wells within the pumping influence of the slant wells, CalAm will offer to private and public well owners the opportunity to participate in a voluntary groundwater monitoring program to conduct groundwater elevation and quality monitoring. The voluntary groundwater monitoring program shall include retaining an independent hydrogeologist to evaluate the conditions and characteristics (e.g., well depth, well screen interval, pump depth and condition, and flow rate) of participating wells prior to the start of slant well pumping. Water elevation and quality monitoring shall begin following initial groundwater well assessment.~~

~~• Based on a review of the well network of voluntary well owners, CalAm will identify areas lacking adequate groundwater data and if deemed necessary, install new monitoring wells. These new wells would be in the 180-Foot Aquifer.~~

1. ~~• Seven clusters~~A network of monitoring wells ~~were recently~~has been completed on and near the CEMEX property as part of the CalAm test slant well project. These well clusters monitor water elevation and quality at various ~~depths~~depth intervals within the Dune Sand Aquifer, the 180-Foot Aquifer, and the 400-Foot Aquifer and shall be included in the Program's monitoring network. These existing monitoring wells are subject to relocation, replacement, or substitution by new or other monitoring wells developed as part of the Program as determined by MCWRA.

2. **In addition, using information from the Groundwater Extraction Management System (GEMS) maintained by MCWRA and from the State Water Resources Control Board's Division of Drinking Water, CalAm, in coordination with MCWRA, shall identify Active Supply Wells in the Monitoring Area and offer to owners of identified Active Supply Wells the opportunity to participate in the Program for groundwater elevation and water quality monitoring. The owners of Active Supply Wells in the Monitoring Area will receive at least 60 days' notice (via email, if available, and via certified mail) of the opportunity to participate in the Program, and may elect in writing to participate in the Program as to their Active Supply Wells ("Participating Active Supply Wells"). This opt-in process must occur sufficiently in advance of MPWSP slant well pumping so that information on pre-MPWSP conditions can be obtained for each Participating Active Supply Well. Prior to the start of MPWSP slant well pumping, an independent California-certified hydrogeologist retained and directed by MCWRA (the "Hydrogeologist") shall evaluate the conditions and characteristics (e.g., well depth, well screen interval, pump depth and condition, flow rates, and drawdown) of each Participating Active Supply Well to develop pre-pumping data for each well. Water elevation and quality monitoring pursuant to the Program shall begin following initial groundwater well assessment, and shall continue at intervals specified in the Program (e.g., more frequently at the beginning of MPWSP slant well pumping and less often after stabilization of groundwater levels) until the well owner ceases pumping from the monitored well, or until the well owner agrees that monitoring is no longer required.**

3. **Prior to the start of MPWSP slant well pumping, CalAm and MCWRA shall review the current (as updated if needed) inventory of monitoring wells within the Monitoring Area, and identify locations within the Monitoring Area lacking monitoring coverage and that warrant monitoring in order to evaluate potential effects on Participating Active Supply Wells from MPWSP slant well pumping. Based upon that review, MCWRA may require that CalAm fund the installation of new monitoring wells in the Monitoring Area to be installed before MPWSP slant well pumping begins. The number of new monitoring well sites in the Monitoring Area and the location of those new monitoring well sites shall be determined by MCWRA. The area of groundwater monitoring under the Program may be extended outside of the Monitoring Area if warranted to evaluate potential MPWSP slant well pumping effects on Participating Active Supply Wells and recommended by the Hydrogeologist.**

4. ~~• Using the~~**The** groundwater data developed through the ~~**voluntary well monitoring program and data gathered at the new monitoring wells, CalAm will**~~**Program shall be collected by or provided to MCWRA at intervals identified in the Program, but in no event longer than 45 days from such data being obtained, to** evaluate whether ~~**project**~~**MPWSP slant well** pumping is

causing ~~a~~**consistent and** measurable ~~**and consistent**~~ drawdown of local groundwater levels ~~**in nearby wells**~~ that is distinguishable from seasonal **or multi-year** groundwater level fluctuations. In the event that **MCWRA identifies** a consistent and measurable drawdown ~~**is identified, CalAm will**~~**in groundwater levels and determines that such drawdown is potentially attributable to MPWSP slant well pumping and independent of seasonal or multi-year groundwater level fluctuations or any regional trends, the Hydrogeologist shall then** determine if the observed degree of drawdown would damage or otherwise adversely affect ~~**active water supply wells**~~**any existing Participating Active Supply Wells**. Adverse effects from lowered groundwater levels in ~~**existing active groundwater supply wells can**~~**Participating Active Supply Wells may** include ~~**cavitation26 due to exposure of the well screen,**~~ water elevation **acute and long-term** declines that draw water below pump intakes, **causing cavitation due to exposure of the well screen,** reduced well yields and pumping rates, ~~**and**~~**increased energy costs to power the well, or** changes in groundwater quality indicating that ~~**project**~~**MPWSP slant well** pumping is drawing lower quality water toward the well. ~~**Adverse effects would only occur in active wells; inactive wells would not**~~ **Active Supply Wells that are not Participating Active Supply Wells will** be considered for ~~**mitigation.**~~**a determination by the Hydrogeologist of potential damage or adverse effects reasonably attributable to MPWSP slant well pumping (as described above) if substantial, credible evidence is submitted by the owners of such Active Supply Wells concerning damage or adverse effects at such wells, and such effects are verified by CalAm and the Hydrogeologist.**

~~**• If it is determined that a nearby active groundwater well has been damaged or otherwise negatively affected by the project pumping of the slant wells, the project applicant shall coordinate with the well owner to arrange for an interim water supply and begin developing a mutually agreed upon course of action to repair or deepen the existing well, restore groundwater yield by improving well efficiency, provide long term replacement of water supply, or construct a new well.**~~

5. If the Hydrogeologist determines that a Participating Active Supply Well or an Active Supply Well that Cal-Am and the Hydrogeologist have verified for damage or adverse effects pursuant to Section 4 above has been damaged or otherwise negatively affected by MPWSP slant well pumping, CalAm and the Hydrogeologist shall coordinate with the well owner to develop and implement a mutually agreed upon course of action. Such course of action may include but not be limited to repairing or deepening the existing well, restoring groundwater yield by improving well efficiency, facilitating an interim or long-term replacement of water supply, constructing a new well, or compensating the owner for increased pumping costs. Any interim or long-term replacement water supply shall be of the same or better quality (i.e., potable or non-potable) and predicted quantity as the existing supply of the Active Supply Well and shall be suitable for the purposes served by the existing Active Supply Well. Before CalAm undertakes any course of action to

remedy the MPWSP slant well pumping effects on an Active Supply Well, the Hydrogeologist shall authorize such action and provide notice of such action to MCWRA.

8.6.4 Carmel River Steelhead Association (CRSA)

Carmel River Steelhead Association
501 (c)(3) TIN 77-0093979
P.O. Box 1183
Monterey, CA 93942

CPUC/MBNMS
c/o ESA
550 Kearney
San Francisco, CA 94108

March 22, 2017

RE: DEIR/DEIS MONTEREY PENINSULA WATER SUPPLY PROJECT

Gentleman:

The Carmel River Steelhead Association (CRSA) has been involved in water issues on the Monterey Peninsula, especially in regards the Carmel River, for forty years and makes the following comments on the Draft EIR/EIS for the Cal-Am Monterey Peninsula Water Supply Project.

CRSA has been in favor of this project since the beginning and is still in favor of the project. We do have one comment or item we would like added to the Final EIR/EIS when issued.

In reading the document we fail to see where it notes how Cal-Am will use its remaining legally permitted water; specifically when the pumping of that water will occur. We have been told on many occasions that Cal-Am will pump the majority of its legally permitted water during the wet season or when the river is running above 120 cubic feet per second. We have also been told that Cal-Am must pump some water during the dry season to keep their pumps and treatment facilities operational, but that necessary summer pumping would be at a minimum.

CRSA feels it is necessary to include language in the Final EIR/EIS that spells out the Cal-Am pumping regime once the Monterey Peninsula Water Supply Project is complete or the benefit to Carmel River Steelhead will not be as significant as required. If such a request is in the scope of this EIR/EIS then CRSA insists it be added to the document.

CRSA-1

Sincerely,

Brian LeNeve
President CRSA

Carmel River Watershed Conservancy
PO Box 223833, Carmel, CA 93922

February 27, 2017

CPUC/Monterey Bay National Marine Sanctuary
c/o Environmental Science Associates
550 Kearney Street, Suite 800
San Francisco, CA 94108

RE: Draft Environmental Impact Statement for the Monterey Peninsula Water Supply Project

The Carmel River Watershed Conservancy wishes to express its support for the Monterey Peninsula Water Supply Project and in particular the proposed desalination plant with subsurface seawater intake system.

It is our strong belief that this Project is the most likely project that has been proposed that will increase the in-stream flows in the Carmel River and improve the chances of recovery of the South Central California Steelhead (a federally listed threatened species). Like any project, there are obstacles that must be overcome (such as permits to be issued) and mitigations that will be necessary, but the alternative proposed water supply project would also be required to test subsurface intake wells and that would greatly delay that project, possibly beyond the extension that has been granted by the SWRCB.

CRWC-1

Our Conservancy conducted the first watershed-wide assessment of the Carmel River Watershed in 2004-05 with a grant from the SWRCB, and developed the Watershed Assessment and Action Plan from that project. That Action Plan was revised in 2007 and 2015, and one of the highest-priority actions was "Support implementation of a water supply project that minimizes the export of water from the Carmel River basin during the dry season that causes a chronic reduction in flow and meets the goals of State Water Resources Control Board Order 95/10." In addition, the NOAA's National Marine Fisheries Service has issued a South-Central California Steelhead Recovery Plan (December 2013) that recommends as a "Critical Recovery Action" for the Carmel River to "Develop and implement alternative off channel water supply project to eliminate or decrease water extractions from the channel…" (page 7-12). The Carmel River has been over-drafted for decades to supply the water needs of the

Carmel River Watershed Conservancy
PO Box 223833, Carmel, CA 93922

Monterey Peninsula, and to eliminate such over-drafting an alternative water supply is absolutely essential.

The Water Supply Project's desalination plant is the only proposed project that is likely to provide such an alternative water supply source in sufficient quantity to preclude further over-drafting of the Carmel River and its acquifer and thereby restore high stream flows for much of the year that are critical to the recovery of our steelhead populations. Supplemented by the Aquifer Storage and Recovery (ASR) and the Pure Water Monterey Groundwater Replenishment (GWR) projects, this proposed desalination plan would enable California American Water to choose to take only its legal right of 3,376 acre feet of water annually from the Carmel River and its acquifer. While the River might still dry up in portions during the dry season and in drier water years, the amount of water flowing in the River will be substantially higher than it is now during those times. That is our goal if we are to accomplish our mission to restore the health and beauty of the Carmel River and watershed.

CRWC-1 cont.

Sincerely,

Lorin Letendre
Executive Director

MITCHELL CHADWICK

Patrick G. Mitchell
pmitchell@mitchellchadwick.com
916-462-8887
916-788-0290 Fax

March 29, 2017

VIA ELECTRONIC MAIL AND U.S. MAIL

Mary Jo Borak
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Karen Grimmer
Monterey Bay National Marine Sanctuary
99 Pacific Ave.
Building 455a
Monterey, CA 93940

Re: CalAm Monterey Peninsula Water Supply Project Revised Draft EIR-EIS

Dear Ms. Borak and Ms. Grimmer:

I submit this letter on behalf of my client, CEMEX, for public comment on the Revised Draft Environmental Impact Report Environmental Impact Statement (DEIR/EIS) prepared for the Monterey Peninsula Water Supply Project (MPWSP or "Project"). The Project is proposed by California American Water Company ("CalAm"). The DEIR/EIS was prepared jointly by the California Public Utilities Commission (the "Commission"), as the lead agency under the California Environmental Quality Act (CEQA), and the National Oceanic and Atmospheric Administration (NOAA), Monterey Bay National Marine Sanctuary (MBNMS), as the lead agency under the National Environmental Policy Act (NEPA). The DEIR/EIS was released for public review and circulation in January 2017, and the public review period was subsequently extended until March 29, 2017. If, after public comment and review, the Commission approves the Project as proposed, CalAm will install ten subsurface slant wells on an existing CEMEX property with an active sand mine, known as the Lapis Site. The slant wells would provide water to a new desalination plant capable of producing 10,750 acre-feet per year of potable water.

The Commission previously issued a Draft EIR for the Project on April 30, 2015. CEMEX reviewed that Draft EIR and, on September 30, 2015, submitted a timely formal comment letter to the Commission. (Attachment A hereto.) CEMEX notes that, unfortunately, many of the concerns raised in that prior letter almost one and a half years ago still have not been addressed in the DEIR/EIS. As summarized in CEMEX's prior comment letter, CalAm proposes co-locating the slant wells and other Project-critical infrastructure on CEMEX's 400-acre Lapis Site, which CEMEX currently uses for active mining operations. The Lapis Site, which is located in the northern part of the City of Marina, has been actively and continuously mined since 1906 under a constitutionally-protected vested right to operate a sand production business. (See, e.g., Lapis Site Reclamation Plan approved by City of Marina in August 1989.) In addition, the Lapis

{00028949;6 }

Site is subject to an approved reclamation plan pursuant to the Surface Mining and Reclamation Act (SMARA). (See Cal. Pub. Res. Code §§ 2710 et seq.)

To the extent that any of CEMEX's prior comments from 2015 are not addressed in the DEIR/EIS, CEMEX reincorporates those comments with this letter. Furthermore, the failure of this letter to comment on any other DEIR/EIS inconsistencies with CEMEX's operation processes and rights and CEMEX's property rights should not be considered agreement by CEMEX with any such misstatements or construed as a waiver of any rights or remedies to which CEMEX may be entitled. In this context I submit the following comments for the Commission's consideration when preparing the Final EIR/EIS.

I. CEMEX's Global Comments on the DEIR/EIS Regarding Project Use of CEMEX Property

A. The 1996 Annexation Agreement speaks for itself, and the DEIR/EIS must analyze the impacts of a potential injection well on CEMEX property.

The DEIR/EIS states that an "issue to be resolved" and an "area of controversy" regarding CalAm's proposed use of subsurface slant wells to withdraw source water for the Project includes "whether CalAm has the legal right to extract groundwater from the Salinas Valley Groundwater Basin (SVGB)." (DEIR/EIS, p. ES-13.) This issue implicates the *Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands* (the "Annexation Agreement") executed in 1996 by the Marina Coast Water District (MCWD), the Monterey County Water Resources Agency (MCWRA), the owners of the Armstrong Ranch, RMC Lonestar ("RMC," CEMEX's predecessor in interest for the Lapis Site), and the City of Marina. The DEIR/EIS discusses the Annexation Agreement in section 2.6.4.

DEIR/EIS section 2.6.4 includes an additional discussion of whether CalAm has the legal right to extract groundwater from the SVGB. The DEIR/EIS concludes that implementation of the Project will be compatible with the Annexation Agreement, because CalAm "could conceivably construct and employ an injection well on CEMEX property." (DEIR/EIS, p. 2-42.) First, the Annexation Agreement speaks for itself, so CEMEX does not consider the DEIR/EIS's interpretations to be binding in any way regarding that Agreement. Second, the DEIR/EIS must analyze the impacts on CEMEX's property and active sand production operations of constructing an injection well on CEMEX property, since the DEIR/EIS acknowledges construction of the well is a reasonably foreseeable outcome of the Project.

CEMEX-1

B. CalAm's construction and Project operation ground disturbance will need to be addressed in a reclamation plan amendment.

Disturbance of land proposed by CalAm for construction and operation of the subsurface slant wells and the source water pipeline on the Lapis Site will need to be accounted for and addressed by a reclamation plan amendment in effect for CEMEX's operations pursuant to the

CEMEX-2

requirements of SMARA. (See Cal. Pub. Res Code § 2777.) DEIR/EIS section 4.17.1.2 states that "CEMEX, as the land owner, would need to amend the Reclamation Plan to include the construction and operation of the slant wells in the retired portion of CEMEX property and the source water pipeline underneath the CEMEX access road." (DEIR/EIS p. 4.17-3.) The DEIR/EIS does not address necessary coordination or cost of this undertaking. As CalAm is proposing this Project necessitating a reclamation plan amendment, CalAm must indemnify CEMEX for the monetary cost of any increase in CEMEX's reclamation obligations. As noted previously, CEMEX has an established vested right to mine the property, so the DEIR/EIS's reference to potential review by state and federal agencies does not reduce CalAm's obligations to either prepare or bear the cost of a reclamation plan amendment.

CEMEX-2 cont.

C. Project construction, operation, and mitigation must be consistent with the Mine Safety and Health Administration Requirements.

As previously noted by CEMEX, the DEIR/EIS does not address how CalAm will ensure compliance with the federal Mine Safety and Health Administration (MSHA) and the California Division of Occupational Safety and Health (also known as "Cal/OSHA"), Division of Mining and Tunneling, mine safety requirements. Section 4.7 should be revised to address this issue, and its current failure to do so is improper.

The proposed siting of the Project on an active mine site requires compliance during construction, operation, and decommissioning with MSHA and Cal/OSHA. The DEIR/EIS fails to address site-specific safety issues in any appreciable detail. For example, the DEIR must include a mitigation measure that commits CalAm to chocking tires of parked construction vehicles.

CEMEX-3

Considering the fundamental importance of safe operations on an active mine site and CEMEX's potential MSHA liability for CalAm's actions relating to the Project, the Commission must ensure through a condition of approval or other legal instrument that CalAm both indemnifies CEMEX for its actions and obtains its own Mine Identification Number from MSHA, so that CalAm will be the entity cited for any potential violations it commits, rather than CEMEX. This revision to the DEIR/EIS could be coordinated with the Health and Safety Plan required by DEIR/EIS mitigation measure 4.7-2a. (DEIR/EIS p. 4.7-29.) For these same reasons, CalAm must coordinate with CEMEX personnel to review the Traffic Control and Safety Assurance Plan, and the DEIR/EIS mitigation measure 4.9-1 should be updated to reflect this requirement.

CEMEX-4

D. CalAm's revisions to the Project, including well and pipeline locations and construction schedules, should be coordinated with CEMEX to ensure they do not interfere with operations and reclamation activities.

CEMEX-5

Due to revisions to the locations and configurations of the slant wells, CalAm must coordinate with CEMEX to review the revised Project design and ensure that no adverse impacts to

CEMEX's sand production operations and reclamation activities will occur. (DEIR/EIS p. 3-13, Figure 3-3a.) Additionally, the DEIR/EIS now describes the need for new aboveground and underground power lines at the Lapis site. (DEIR/EIS p. 3-44.) The location of these power lines should also be reviewed by and coordinated with CEMEX to ensure that the location will not interfere with its operations and reclamation activities. Finally, sections 3.3.2, 3.3.9, and 3.4 of the DEIR/EIS describe the construction activities and schedule associated with construction and maintenance of the slant wells. (DEIR/EIR pp. 3-47, 3-55, 3-57.) Construction activities and maintenance, as well as the location of temporary facilities, should also be coordinated with CEMEX to ensure locations and activities will not interfere with its operations and reclamation activities. CEMEX-5 cont.

II. The DEIR/EIS Does Not Sufficiently Address Potentially Significant Geologic, Soils, and Seismicity impacts

The geology and soils analysis concludes that there will be no impact from subsidence associated with the subsurface slant wells on CEMEX's property. (DEIR/EIS p. 4.2-66.) This conclusion is based on the assumption that the slant wells will be drawing water from offshore coastal aquifers. However, the groundwater resources section acknowledges the slant wells could draw some portion of inland groundwater from the underlying aquifer. (DEIR/EIS p. 4.4-60.) Thus, potential impacts to CEMEX's property due to subsidence from the slant wells drawing some portion of groundwater must be analyzed. CEMEX-6

In addition, the slant wells appear to be located in an area of moderate to high liquefaction susceptibility, but the potential impacts of liquefaction on the slant wells, including associated above-ground structures, are not addressed. (DEIR/EIS p. 4.2-60 to 4.2-61.) The potential for seismic influence to damage the slant wells, and any related impacts to CEMEX's on-going mining operations must be addressed. CEMEX-7

Furthermore, the DEIR/EIS concludes that, based on the relocation of slant wells, the wells would remain buried and not exposed until sometime after 2060. (DEIR/EIR p. 4.2-70.) However, Mitigation Measure 4.2-9 requires that the wells be abandoned before the slant wells are exposed. (DEIR/EIS p. 4.2-71.) Thus, the DEIR/EIS must address necessary coordination with CEMEX on the abandonment procedure for the slant wells. CEMEX-8

III. The DEIR/EIS Does Not Adequately Address Potentially Significant Hydrology Impacts to CEMEX's Property and Active Operations

A. Potential surface hydrology impacts to CEMEX's property must be analyzed.

The DEIR/EIS states that any flood flows diverted by the electrical control cabinets "would not affect other properties or structures." (DEIR/EIS p. 4.3-117.) However, the DEIR/EIS does not CEMEX-9

address whether flows diverted by the electrical control cabinets and other surface infrastructure will have an impact within the CEMEX active mining area or otherwise interfere with CEMEX's operations. The DEIR/EIS should be revised to address this issue. CEMEX-9 cont.

The DEIR/EIS also states that the slant wells would be designed to withstand inundation, so that there would be no significant risk of damage from flooding due to sea level rise. (DEIR/EIS p. 4.3-119.) Elsewhere, the DEIR/EIS concludes that impacts to the slant wells due to sea level rise will be insignificant because the wells will be decommissioned before sea level rise impacts occur. (DEIR/EIS p. 4.2-71 to 4.2-72.) Due to this inconsistency, the DEIR/EIS must consider the potential impacts to CEMEX's property of operating inundated slant wells in flood conditions. CEMEX-10

B. The Groundwater Monitoring Program must be expanded to account for CEMEX's water supply well and drawdown impacts in the 400-foot aquifer.

The DEIR/EIS discussion for Impact 4.4-3 notes that aquifers underlying the slant wells, including the 400-foot aquifer, "are projected to exhibit a response to MPWSP slant well pumping." (DEIR/EIS, p. 4.4-59.) As demonstrated in Figure 4.4-16, CEMEX's production well will be subject to a one foot drawdown under both the 0% and 3% return water scenarios. To reach this estimate, the DEIR/EIS analysis for Impact 4.4-3 relies on modeling for the extent of pumping influence in the 180-FTE Aquifer. (DEIR/EIS p. 4.4-57, citing Appendix E2.)

As noted in CEMEX's comment letter on the prior draft EIR, the reliability of the groundwater drawdown model was assessed using well pumping data from the test slant well. (Appendix E2.) Based on this model, the DEIR/EIS concludes that groundwater drawdown impacts, including impacts to CEMEX's well, will be less than significant. (DEIR/EIS p. 4.4-68.) Despite this conclusion, the DEIR/EIS includes an applicant proposed mitigation measure to expand an existing regional groundwater monitoring program to include the Dune Sand Aquifer and the 180-FTE Aquifer. CEMEX-11

Specifically, Mitigation Measure 4.4-3 proposes an expansion of the current regional groundwater monitoring network to include monitoring of groundwater levels "in the Dune Sand Aquifer and the 180-FTE Aquifer." (DEIR/EIS, p. 4.4-74.) While the measure references well monitors in the 400-foot aquifer, it is not clear that the measure applies to the 400-foot aquifer. Since the Project could result in drawdown under 0% and 3% water return scenarios, Mitigation Measure 4.4-3 must be revised to include monitoring of the 400-foot aquifer to ensure that the Project does not adversely impact CEMEX's existing water production well. In addition, the Mitigation Measure only requires mitigation if CalAm determines drawdown is resulting in adverse impacts. This measure fails to identify a performance standard for measuring when an adverse effect might trigger mitigation. Since this determination is left to CalAm's discretion, the mitigation measure is unenforceable and illusory.

Furthermore, as noted in CEMEX's prior comment letter on the 2015 draft EIR, Mitigation Measure 4.4-3 must not only be developed prior to Project construction, the requisite agency must also *approve* the submitted plans prior to Project construction. Agency approval of an applicant-developed mitigation program is necessary to ensure mitigation is not impermissibly deferred. CEMEX-12

C. The DEIR/EIS should be revised to sufficiently analyze and address Project drawdown impacts on the Lapis site.

i. The DEIR/EIS geologic description of CEMEX's dredge pond is not accurate.

The DEIR/EIS analysis of Impact 4.4-3 also considers whether the Project will have an impact on CEMEX's existing dredge pond or on the current sand mining operations. The DEIR/EIS states that the water level for CEMEX's dredge pond is assumed to be 10 to 20 feet deep. (DEIR/EIS, pp. 4.4-70 to 4.4-71.) CEMEX-13

The DEIR/EIS assumptions regarding the dredge pond and related settling ponds for analysis of Impact 4.4-3 is not accurate. As noted in CEMEX's prior comment letter, the depth of the dredge pond is allowed to 30 feet, not 10 to 20 feet as assumed in the DEIR/EIS. In addition, CEMEX's property consists of either "Qd" (seafloor deltaic deposits) or "Qd" (dunes) , as shown on Figure 4.4-3. Therefore, the DEIR/EIS should be revised to reflect appropriate assumptions for CEMEX's site, including the allowable 30 foot depth of the dredge pond and appropriate hydrogeologic layers underlying the site.

ii. The DEIR/EIS fails to analyze impacts that drawdown could have on vegetation.

The DEIR/EIS analysis lacks an evaluation of the impacts that drawdown would have on existing vegetation at the Lapis site. The DEIR/EIS must be revised to ensure that CalAm is responsible for adverse impacts that drawdown may have on vegetation on CEMEX's property. At minimum, Mitigation Measure 4.4-3 should be extended to monitor drawdown impacts on vegetation and provide remediation for adverse impacts to the extent that monitoring determines that any impacts are caused by drawdown. CEMEX-14

iii. The DEIR/EIS modeling of impacts to CEMEX's dredge pond is insufficient.

The DEIR/EIS concludes drawdown impacts to CEMEX's dredge pond will be less than significant, despite the potential for pumping at the slant wells to cause a drawdown response. The DEIR/EIS reasons that tidal influences and recharge will offset any drawdown impacts. CEMEX-15

(DEIR/EIS pp. 4.4-71 to 4.4-72.) CalAm supports this conclusion by extrapolating results from pumping the test slant well.

In September 2014, CalAm simulated test slant well pumping for eight months at 2,500 gpm and determined that a drawdown of 1 foot at the dredge pond was attributable to pumping at the test well. Based on the measured results and localized model, the DEIR/EIS concludes that "there is a possibility that additional drawdown would occur" during the Project's operation of 10 slant wells. (DEIR/EIS, p. 4.4-71.) The DEIR/EIS reaches this conclusion based on the localized CEMEX model, which is intended to simulate "the response of the Dune Sand Aquifer in its second, third, and fourth vertical layers." (*Ibid.*) Thus, the DEIR/EIS still appears to assume that the depth of CEMEX's dredge pond corresponds to the second and third layers. (*Ibid.*) However, during Hydrogeology Working Group sessions, suggestions were made that the dredge pond is more appropriately assigned to the first layer (Ocean Floor), which suggestion is reflected in Table 3.1 of Appendix E-2. (DEIR/EIS, Appendix E-2, p. 15.) However, it does not appear that the updated 2016 model was incorporated in the analysis of drawdown impacts to CEMEX's dredge pond, or that the first layer is modeled at all. (DEIR/EIS pp. 4.4-71 to 4.4-72.)

The modeling cited in the DEIR/EIS focuses on the aquifer response, rather than providing any localized models of the dredge pond response. As a result, the DEIR/EIS fails to identify or analyze estimated drawdown at the dredge pond during operation of all 10 slant wells. Rather, the DEIR/EIS concludes that tidal fluctuations in the dredge pond water levels of up to eight feet per year, along with recharge, would mask any drawdown impacts associated with operating the Project. (DEIR/EIS pp. 4.4-71 to 4.4-72.) This conclusion does not appear to be consistent with the DEIR/EIS or physical conditions on CEMEX's site. For example, aquifer drawdown in the area of the slant wells could reach 10 to 20 feet or more, as shown in Figure 4.4-13, but no similar estimates are provided for drawdown at the dredge pond. In addition, tidal fluctuations in the dredge pond are not eight feet, which actually represents the maximum amplitude of the open ocean tide.

CEMEX-15 cont.

The DEIR/EIS asserts that data collection from a water-level transducer indicated that "the water level in the dredge pond was not being influenced by the pumping of the test slant well." (DEIR/EIS p. 4.4-71.) This statement is inconsistent with the prior statement in the DEIR/EIS that test slant well pumping resulted in a one-foot drawdown in the dredge pond. (*Ibid.*) Discrepancies such as these call into question the DEIR/EIS's current analysis and reliance on aquifer modeling of drawdown impacts to estimate potential impacts to CEMEX's dredge pond.

The DEIR/EIS cumulative impacts analysis also concludes that the Project will not result in significant adverse cumulative impacts. However, the DEIR/EIS notes that groundwater pumping from this Project and a potential MCWD desalination plant could cause "some degree of well interference and increased drawdown." (DEIR/EIS p. 4.4-90.) Localized impacts to CEMEX's well and dredge pond are not modeled or analyzed. Thus, it's unclear how the

DEIR/EIS reaches the conclusion that cumulative drawdown impacts to CEMEX's dredge pond or ongoing mining operations will be less than significant without mitigation.

Ultimately, the DEIR/EIS does not sufficiently connect the dots between its analysis of drawdown impacts on CEMEX's dredge pond and the DEIR/EIS conclusion that any such impacts will be less than significant. CEMEX recommends that the groundwater monitoring program required by Mitigation Measure 4.4-3 also be extended to CEMEX's dredge pond to ensure that Project operations do not actually result in significant impacts to CEMEX's operations. Specifically, Mitigation Measure 4.4-3 should be revised to also include ongoing monitoring of the water level transducer in the dredge pond. In addition, at specified levels of dredge pond drawdown, the CalAm wells should have to be shut down until the water level recovers in the dredge pond.

CEMEX-15 cont.

IV. The DEIR Should Be Revised to Ensure That Mitigation for Biological Resource Impacts Will Not Interfere With CEMEX's Operations and Obligations

A. Mitigation measures for biological resource impacts should be revised in coordination with CEMEX.

The DEIR/EIS discussion for Impact 4.6-1 concludes that impacts due to construction of the subsurface slant wells and the source water pipeline will result in significant impacts for certain species and habitats. (DEIR/EIS pp. 4.6-124 to 4.6-132; pp. 4.6-134 to 4.6-138; pp. 4.6-186 to 4.6-188; pp. 4.6-189 to 4.6-190.) The DEIR/EIS concludes that these impacts can be reduced to less than significant upon implementation of certain mitigation measures. (*Id.* at p. 4.6-131; p. 4.6-136; p. 4.6-204.) These same mitigation measures are applied to ensure other impacts, such as periodic maintenance of the slant wells, will not result in significant impacts to terrestrial biological resources. (See DEIR/EIS pp. 4.6-235; 4.6-244 to 4.6-255.)

CEMEX-16

As a general matter, DEIR/EIS discussion of these Mitigation Measures does not address whether implementation of the Mitigation Measures are consistent with or otherwise will not interfere with CEMEX's pre-existing operations on the Lapis Site. Therefore, CalAm should revise these Mitigation Measures in coordination with CEMEX. At a minimum, the terrestrial biological Mitigation Measures applicable to construction, operation, or maintenance of the subsurface slant wells and the source water pipeline should be revised to account for CEMEX's pre-existing operations on the Lapis Site as follows:

- Avoidance and minimization measures required under Mitigation Measure 4.6-1c (general avoidance and minimization measures) should not affect CEMEX's operations and reclamation activities;
- Seasonal construction limitations under Mitigation Measure 4.6-1d should not interfere with, and should be distinguished from, existing operations;

- The habitat mitigation and monitoring plan under Mitigation Measures 4.6-1d (Protective Measures for Snowy Plover), 4.6-1e (Avoidance and Minimization Measures for Special-Status Plants), 4.6-1f (Avoidance and Minimization Measures for Smith's Blue Butterfly, 4.6-1h (Avoidance and Minimization Measures for Western Burrowing Owl) and 4.6-1n should be reviewed and developed for consistency with CEMEX's already-existing reclamation plan;
- Habitat restoration efforts under Mitigation Measure 4.6-1f that are proposed to occur onsite at the Lapis Site, if any, must be coordinated with CEMEX and limited to areas disturbed by CalAm operations within the Lapis Site; and
- Any relocation efforts under Mitigation Measure 4.6-1g that are proposed to occur onsite at the Lapis Site, if any, must be coordinated with CEMEX as CalAm does not own the Lapis Site and has limited rights with respect to its activities on the Lapis Site and its ability to encumber, access, or otherwise use the surface property at the site.

In addition, all biological mitigation measures need to be consistent with CEMEX's usage of existing operational areas and access roads. For example Mitigation Measures 4.6-1d, 4.6-1e, and 4.6-1f all call for restoration of habitat impacted during construction. These Mitigation Measures should be revised in coordination with CEMEX to ensure that any rehabilitation or restoration efforts do not improperly affect the portions of the Lapis Site that CEMEX uses for its active operations (*e.g.*, no rehabilitation of the mining access road). In addition, any rehabilitation must be consistent with existing reclamation requirements for the site under SMARA. Failure to coordinate with CEMEX's existing sand production activities and obligations could render the mitigation measure ineffective or illusory (e.g., a mitigation on surface property impacted by on-going mining operations would not actually result in any effective mitigation).

CEMEX-16 cont.

Similarly, the Project Description section of the DEIR states that for site clearing and preparation generally, "[u]pon completion of construction activities, the construction contractor would … contour the construction work areas and staging areas to their original profile, and hydroseed or repave the areas, as appropriate." (DEIR/EIS, p. 3-46.) CalAm has not consulted with CEMEX regarding the timing, location, or scope of any proposed reclamation or re-contouring of the Lapis Site. The DEIR/EIS should be revised to require that, after full construction buildout on the Lapis Site, CalAm must reclaim the Project area to an appropriate end use consistent with CEMEX's existing use or otherwise coordinate with CEMEX regarding its role and share of responsibility/obligations under a reclamation plan amendment.

B. CEMEX disagrees with the DEIR's characterization of jurisdictional water features on the Lapis Site.

The DEIR/EIS states that "surface waters within the study area [are regarded] as potentially jurisdictional." (DEIR/EIS p. 4.6-2.) This includes the dredge pond and related facilities located on CEMEX's property. (DEIR/EIS pp. 4.6-210 to 4.6-211; see also DEIR/EIS p. 4.6-248.)

CEMEX-17

CEMEX disagrees with any implication in the DEIR/EIS that these areas within CEMEX's property are wetlands and with the DEIR/EIS's overall characterization of waters on the Lapis Site as jurisdictional. The subject features are all industrial process ponds. In addition, the DEIR/EIS statements regarding the water features on the Lapis Site are unwarranted because none of the described water features are within the Project's construction/ground disturbance footprint. (*See* DEIR Figure 4.6-1a, p. 4.6-11.)

CEMEX-17 cont.

In any case, the DEIR/EIS concludes that impacts to all described features would either be less than significant or reduced to less than significant following implementation of mitigation measures. (*See generally* DEIR/EIS Impact 4.6-3, pp. 4.6-209 to 4.6-212.) As noted above, implementation of any such mitigation measures must be coordinated with CEMEX's active operations and the existing reclamation plan requirements for the site.

V. CEMEX Disagrees With the DEIR's Characterization of Structures on the Lapis Site as Potentially Significant Cultural Resources

The DEIR/EIS states that the CEMEX facility was determined to be a Historic District eligible for listing in the National Register and California Register under Criteria A/1 (association with an important event) and Criteria C/3 (architectural merit). (DEIR/EIS p. 4.15-21.) The DEIR/EIS further states that the direct and indirect area of potential effects ("APE") for the source water pipeline encompasses the Lapis Sand Mining Plant Historic District (the "Mining District"). (See DEIR/EIS, p. 4.15-23.) Though survey efforts did not identify any archaeological resources in the portion of the source water pipeline direct APE located within the CEMEX facility, the DEIR/EIS states that the area surrounding the pipeline alignment is generally considered to have a high potential for buried cultural resources associated with prehistoric populations and Native Americans. (DEIR, p. 4.15-29.)

CEMEX-18

CEMEX disagrees with the DEIR/EIS analysis and conclusion that the CEMEX facility is eligible for listing in the National and California Registers. CEMEX does not believe that the site is properly considered a historic district, especially because the facility is currently in operation and has been a working facility since its inception.

In the end, the DEIR/EIS concludes that "[n]o historical resources listed in or eligible for listing in the California Register or historic properties listed in or eligible for listing in the National Register are within the direct or indirect APE of all project components." (DEIR/EIS p. 4.15-45.) CEMEX agrees with this conclusion and requests that the earlier analysis suggesting that the facility is eligible for listing be updated for consistency with the DEIR/EIS conclusion for impact 4.15-1.

VI. The DEIR/EIS Analysis of Potential Impacts to Mineral Resources in Section 4.17 is Inaccurate and Not Supported by Substantial Evidence

DEIR/EIS section 4.17 acknowledges that Project construction could delay movement of vehicles at the site and otherwise cause minor disruptions to CEMEX's operations. (DEIR/EIS, pp. 4.17-8 to 4.17-9.) However, the DEIR/EIS concludes that these construction-related impacts and any temporary loss of mineral resources would be less than significant. (*Ibid.*) The DEIR/EIS reaches this conclusion without providing any substantial evidence. In fact, the Project would interfere with a valuable operation that produces sand for numerous needs in our society. The current DEIR/EIS's failure to understand that impact is inaccurate and legally incorrect.

CEMEX-19

We request that the DEIR/EIS be revised to address all of these issues. Thank you for your consideration of these comments on behalf of CEMEX.

Sincerely yours,

MITCHELL CHADWICK LLP

Patrick G. Mitchell

Enclosures: Attachment A [CEMEX 2015 Draft EIR Comment Letter]

cc: Michael Egan
Jerae Carlson
Steve Grace

{00028949;6 }

Citizens for Just Water

March 20, 2017

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Re: Draft Environmental Impact Report/Environmental Impact Statement
Monterey Peninsula Water Supply Project

Dear Ms. Borak and Ms. Grimmer:

Citizens for Just Water is a citizens group on the Monterey Peninsula and an identified party by the CPUC in this matter. Just Water provides the following written comments regarding the Draft Environmental Impact Report/Environmental Impact Statement (hereinafter DEIR/EIS) issued in January 2017 for the above-referenced California American Water Company (CalAM) project. Just Water respectfully requests these comments be made part of the administrative record for all state and federal proceedings relating to this project.

CALAM HAS NO WATER RIGHTS IN THE SALINAS VALLEY GROUNDWATER BASIN AND HAS NO VIABLE LEGAL CLAIM TO ACQUIRE RIGHTS

CalAM erroneously represents that the MPSWP is "designed to take supply water from the ocean via underground slant wells that draw water from the earth underneath the ocean" (DEIR/EIS p. 2–30). The proponent's statement that the source water is from "the submerged lands of the Monterey Bay National Marine Sanctuary" is a *flagrant misrepresentation* (DEIR/EIS p. 3–15), but necessary to the assertion that it is pumping seawater, and that no water right is needed for seawater extraction (See 2–37).

CJW-1

The brackish water of the SVGB is the intended water source for the project—not the ocean. This is even more obvious as "the slant well clusters were moved farther inland" to address the issue of coastal erosion (DEIR/EIS p. ES–16).

The DEIR/EIS makes clear the Project will extract and export groundwater from the Salinas Valley Groundwater Basin and specifically the 180' aquifer—not the ocean. In fact, all

subsurface slant well pumping by the MPWSP will be from the 180' aquifer of the SVGB. CalAM has no overlying rights, no prescriptive rights, and no appropriative rights to groundwater in the SVGB (see DEIR/EIS 2-30 to 2-31). The Project seeks certification of its DEIR/EIS on *an unsupported assertion* that there "is a sufficient degree of likelihood" that CalAM will have the necessary water rights (see DEIR/EIS 2-30). The absurdity of Project approvals under these circumstances is obvious.

CJW-1 cont.

The SVGB is already critically overdrafted. **There is no surplus water.** Thus, CalAM will not be able to perfect water rights in the basin.

The overdraft has contributed to the eastward (inland) intrusion of seawater in both the 180' and the 400' aquifers for at least 70 years. Since the planning for the Project commenced, there has been new intervening legislation on groundwater management. In September 2014, the State of California passed the Sustainable Groundwater Management Act (SGMA) and the Department of Water Resources designated the 180'/400' subbasin of the Salinas Valley Groundwater Basin as **among 21 basins that are "critically overdrafted" in California**. **SGMA directs restoration of these basins as a top priority**.

According to this first-ever regulatory legislation enacted by the state as to groundwater, local governments are to manage groundwater supplies, including the adoption of a "groundwater management plan." The management plan is to maintain and maximize long-term reliability of groundwater resources, prevent significant depletion of groundwater over the long term, and prevent degradation of groundwater quality. The 180'/400' "critically overdrafted" subbasin of SVGB is assigned by SGMA for immediate improvement. It is also the proposed site for this Project, *owing to the asserted degradation of its water quality.* **The DEIR/EIS fails to address this conflict of interests.**

CJW-2

In the DEIR/EIS, the proponent relies on its conclusion that water in the aquifer at the CEMEX site is useless to those with rights to it. The SGMA directive to restore the SVGB sits in direct contradiction to CalAM's *proclaimed ability* to acquire water rights due to the brackish condition of the aquifer. In this instance, the quality of the water is not determinative of rights to the aquifer water.

The DEIR states (page 4–37),

> The proposed project would not adversely affect groundwater management in the Basin, because it would be extracting groundwater that is not presently being used as a potable or an

> irrigation supply. Rather, when considering seawater intrusion and water surface elevations in the 400-Foot Aquifer, the proposed project may have a positive contribution to the sustainable management of groundwater.

This is untrue. SVGB users continue to pump from the 180' and the 400' aquifers. The aquifer water has beneficial uses to those with water rights, including MCWD. With the development and implementation of the required groundwater sustainability plan, that pumping will continue and foreseeably increase.

Secondly, the assertion that the Project may have a positive contribution to the sustainable management of groundwater is *unsubstantiated* in the DEIR/EIS and is included simply as a gratuitous statement. A self-serving, unsupported claim needs to be deleted from the document.

CJW-2 cont.

The DEIR/EIS is silent as to a basis in the law for the acquisition of water rights in the Basin. Rather, the allegation of an ability to acquire legal rights to water in the near future is premised upon proponent's self-serving assertions in a convoluted narrative in the DEIR/EIS. The DEIR/EIS does little more than dismiss the project opponents' concerns about CalAM's lack of rights to source water in the SVGB. Although the writers of the DEIR/EIS attempt to obfuscate this legal issue, **CalAM has failed consistently to make a credible legal argument for the acquisition of any rights to pump from the SVGB.** CalAM has had years to try, and had it the ability to do so under California law, it would have. The extraordinary expenditure of ratepayer funds on this Project without water rights is egregious. The CPUC should not allow CalAM to continue expending additional funds on a Project without water rights. There are alternatives available for CalAM to develop its Project with legally acquired source water.

The CPUC is not the arbiter of whether CalAM possesses water rights for the project, and nothing in the DEIR/EIS should be construed as the CPUC's opinion regarding such rights (see Chapter 2.6). The Project should not move forward. **All approvals, including certification of the DEIR/EIS should be stopped immediately.** The project is not feasible without water rights (see Chapter 2.6).

CJW-3

THE EXPORT OF WATER TO THE CAL AM SERVICE AREA IS PROHIBITED BY CALIFORNIA LAW.

As clearly shown in Appendix E-2, all Project wells are, in fact, in the 180' layer of the aquifer. The slant design does not achieve the objective of ocean intake.

CJW-4

Monterey County Water Resources Agency Act provides:

> The Legislature finds and determines that the agency is developing a project which will establish a substantial balance between extraction and recharge within the Salinas River Groundwater Basin. For the purpose of preserving that balance, **no groundwater from that basin may be exported for any use outside the basin, except that use of water from the basin on any part of Fort Ord shall not be deemed such an export.** If any export of water from the basin is attempted, the agency may obtain from the superior court, and the court shall grant, injunctive relief prohibiting that exportation of groundwater. [Emphasis added.]

Basin groundwater may not be exported for use outside the Basin for any purpose. This prohibition is certainly applicable both to the selling and the arrogation of Basin water.

In support of its arrogation of Basin water, CalAM asks the CPUC to accept a distinction between "brackish/ unusable" water (pumped from their slant wells) versus potable, fresh water. In the section 2.6.2 (Pg. 127), CalAM accurately states **brackish water is "a combination of ocean water and water that originated from the inland aquifers of the Basin".** Whether drawing water from the aquifer inland from the mean high tide or seaward of mean high tide, the source water is from the same aquifer at the Project's CEMEX location. However, CalAM continues to focus exclusively on the "unusable" aspect of brackish water and not on the association of brackish water with fresh water aquifers. This distinction between brackish water as completely different from fresh water is intentionally promoted to support the *false claim* that "fresh water is not withdrawn by the project". **Contrary to CalAM's position, water quality is not determinative of the right to export. The prohibition against exportation of water under the Agency Act is applicable to any and all water extracted from the Basin.**

CJW-4 cont.

CalAM has *neither* the right to pump water from the SVGB, nor the right to export Basin water to sell in its service area to customers. Conversely, MCWD has no right to take water from the Carmel River or the Seaside Basin, which CalAM does. MCWD may not take source water protected for other public and private water agencies defined by law regardless of need. Reciprocity of enforcement of these legislative protections is critical throughout the State of California. It is not within the authority of the CPUC to make exceptions, or ignore the law. Changes to state legislation is the only means to remove the prohibition for the export of SVGB water.

The Project proposes to return to the SVGB a small fraction of the water extracted and exported. [DEIR/DEIS 2-22 to 2-23] **The Project proponent erroneously assumes it is required to**

return *only* that percentage of water it characterizes as "fresh water" to the Basin. CalAM's plan to return the "fresh water" to Castroville Seawater Intrusion Project Distribution Systems [DEIR/EIS 1-12] does not ameliorate the Agency Act prohibition to exporting water. The majority of the water will be exported to the CalAM customers on the Monterey Peninsula, matched by an approximate equal amount exported to the bay. The amount the project intends to return is a very small percentage of the amount taken. The Project's scheme of amelioration is creative, but woefully inadequate to protect those harmed by an unlawful taking. The lack of concern for the harm to MCWD ratepayers is spotlighted by the Project's failure to consider delivery (return) of the fresh water to the local purveyor from which it was taken – MCWD. This fact is yet another example of the overall failing of the DEIR/EIS to identify the harm this Project will wreak if sited at the CEMEX property.

If there is scientific evidence that water extracted from Marina and returned to Castroville will "benefit" the water source of MCWD it is not set forth in the DEIR/EIS.

CJW-4 cont.

In Section 4.4.2.3 the proponent makes the following statement relative to the Agency Act:

> The Agency Act further authorizes the MCWRA to commission groundwater studies to determine whether any portion underlying its territory is threatened with the loss of useable groundwater supply and to adopt an ordinance prohibiting further extraction of groundwater from an area and depth defined by the MCWRA.

The proposed CEMEX location is within the jurisdiction of the MCWRA and the Agency Act. Not only does the Agency Act apply, but the MCWRA is empowered to prohibit further extraction of groundwater at the CEMEX location. CalAM's self-proclaimed exclusion of its geographical location from the Act is without merit. The CPUC is *without authority* to make a ruling as to whether the 180'/400' subbasin of the SVGB at the CEMEX property is beyond the scope of the Agency Act and the authority of the MCWRA.

SVGB Users Have Been Assessed Millions of Dollars, Over Decades, for the Protection and Recharge of SVGB Aquifers

CJW-5

Monterey County Water Resources Agency levies assessments on water consumers within Zones 2 and 2A to fund its efforts to manage the quality and quantity of water within these zones. Millions of dollars have been assessed and invested in projects intended to ensure the SVGB provides a long-term, sustainable water supply for Basin users. CalAM has contributed nothing to the protection of this groundwater resource. The foreseeable impact of the Project is adverse to the investment made to date and counterproductive to continuing efforts supported by public tax

dollars. The Project's end users (CalAM ratepayers) are not required to pay their fair share of these taxes. Ratepayers within Zones 2 and 2A will bear the tax obligation for them. **This is harm.**

CJW-5 cont.

CalAM Fails to Establish No Harm to Legal Users of SVGB

As clearly shown in Appendix E–2, all Project wells are, in fact, in the 180' layer of the aquifer, regardless of slant design. The CalAM MPWSP mischaracterization of brackish water as "unusable" water attempts to obfuscate that the slant wells are accessing the 180' aquifer, a current source of regional water and a prospective source for additional users with the buildout of former Fort Ord properties. MCWD has previously demonstrated its ability to restore brackish water to potable with its own small desalinization plant (located within a ½ mile of the Project's current test well).

With rights to the water and as a Groundwater Sustainability Agency under the Sustainable Groundwater Act, MCWD is obligated to manage and improve water quality in the 180' aquifer. As the 180' and 400' aquifers will be the source of an additional 5200 AFY to meet production requirements, any increase in salinity and any reduction in available water in the Basin will be harmful. **The taking of water by CalAM's project is harmful.**

CJW-6

Concerns regarding an inadequate water supply for everyone with rights in the SVGB are not new; nor were these concern precipitated by the siting of the Project at the CEMEX property. But the Project's location at CEMEX and the planned pumping of source water from SVGB have elevated fears of an inadequate supply to a top priority.

It is well accepted by every agency, entity, and user that the SVGB is in overdraft—simply stated, the demands on the Basin exceed its yield of potable water. Experts from many scientific disciplines have reviewed the same materials and given opinions as to the ability of the Basin to provide water for the our increasing needs over time. The Army knew it had water problems on Fort Ord at least a decade before base closure. At page 86 of a study done by the Army Corps of Engineers in 1986, entitled "Long-range Water Supply Development for Fort Ord, California," seawater intrusion is identified as the adverse outcome of increased pumping near the coast, and is credited with fouling wells on the fort. Seawater contamination resulted in the Army's drilling of a new well field further inland. The ineffectiveness of this corrective measure as a long-term solution is noted in the report. "The installation realizes that this is an interim measure and the Army needs to eliminate the reliance on local groundwater for other than backup supplies." **The recognition of a regional problem is made clear with the inclusion of this observation in the 1986 Army report, "Marina's water problems are very similar."**

The Army abandoned the installation without a new water project. Now in 2017, MCWD stands in the shoes of the Army as the water purveyor for 28,000 acres of land. In place and instead of 13,500 soldiers and fewer than 4000 civilian workers on the base, the Fort Ord Reuse Plan assumes growth to a population of 37,000 and the creation of 18,000 jobs. Thirty years later, there is no new water project for those dependent upon the SVGB aquifers.

In 1993, the U.S. Army and Monterey County Water Resources Agency executed an agreement setting forth how MCWD will take over water services for the 28,000 acres of land. Therein the right to pump 6600 AFY is "transferred" and a pumping limit for the former fort property is established. 6600 AFY was the highest volume ever pumped by the Army (in 1984)—not a historical average. The agreement specifically states that the pumping of 6600 AFY is permissible until a new water supply project becomes available. The Basin's ability to provide the source of 6600 AFY was unsupported and dubious in 1993.

Clearly, the demands of *another water purveyor* in the Basin is inadvisable at present. ***There is no more water.***

CJW-6 cont.

The reports issued over the last thirty years, including those whose data is represented in the "Historic Seawater Intrusion Map[s]" for the 180' and 400' aquifers produced by the Monterey County Water Resource Agency, affirm more pumping from the Basin is irresponsible, as the threatened harm is irreversible. The DEIR/EIS do not provide sufficient scientific proof that an alternative result will occur with a significant increase in pumping. Those dependent upon the Basin for survival and livelihood need the CPUC to demand that CalAM meet the legal requirement of proving "no harm." The degree of review in the DEIR/EIS fails miserably to establish that proof.

Any increased salinity in the Basin constitutes harm, as the cost of purification increases and MCWD necessarily passes that added expense to its ratepayers. Any lowering of the water level in the aquifer is harm, as the cost of extraction will increase and MCWD will necessarily pass the added expense to its ratepayers. Any need for wells to be sited in more remote locations to avoid conflict with the Project will necessitate higher costs for pipes and pumping—again, harm.

The ability of MCWD to rely on the SVGB to continue to provide water to its *existing 30,000 ratepayers and deliver water to its reasonably foreseeable customer increase* (to whom delivery commitments have been made)—*at reasonable rates*—is questionable in 2017. The limitations of the SVGB are presently undefined; there is simply a lack of information. This lack of information precludes any finding that the Project will cause no harm.

Representations and Omissions in the DEIR/EIS Are Misleading.

The footnote on page 1–11 of the DEIR/EIS states, "In November 2014 the City of Marina and the California Coastal Commission completed their CEQA review." This statement infers that both the California Coastal Commission and the City of Marina approved some aspect of the test-well project. This representation ignores City of Marina's rejection of the permit for the test slant well. The DEIR gives the impression that this is a non-controversial project. **This is not true.** CJW-7

The April 2012 CalAM Application A.12-04-019 (CalAM, 2012) seeking CPUC approval to build, own, and operate a desalination facility for water supply (the MPWSP) incorporates many of the same elements previously analyzed in the Coastal Water Project EIR. What the DEIR/EIS fails to identify, however, are the significant differences between the Coast Water Project EIR and the MPWSP, all of which are critical to any proof of "no harm" to current users of the SVGB. Namely, this Project is an invasion of a neighboring water jurisdiction without invitation, without water rights, without compliance with state law and county ordinance, and without regional benefits within the invaded jurisdiction. CJW-8

CalAM Fails to Utilize and Rely on Accepted Standards of Good Scientific Inquiry

CalAM has short-shrifted standard research protocol.

- **CalAM Failed to Establish Meaningful Baseline Information as Required Before Installing the Test Slant well**

The DEIR states that "the EIR/EIS takes as its baseline the existing condition on or about October 5, 2012" (Section 4.1.3). Protocol and common sense indicate that sampling one day's data as a baseline for a complex system with fluctuations as to season, tide, rainfall, etc., will not yield a meaningful baseline for analysis. Without such a baseline, projections cannot be made with confidence. The Hydrogeologic Working Group does not present or explain its baseline. Without this information, there is no basis to evaluate impacts. The omission of this analysis is reason to reject certification. CJW-9

- **Failure to Exploit Electrical-Resistivity Tomography Imaging**

CalAM unreasonably rejects use of electrical-resistivity tomography (ERT) for mapping seawater intrusion and the fragile hydrogeology of the SVGB. ERT is readily available, data rich, non-intrusive, and low cost. ERT data can be expected to significantly reduce the degree of uncertainty. Readily attainable imaging is especially critical in the high-risk context of water. CalAM's failure to use ERT amounts to gross negligence in today's technological environment. CJW-10

The proponents of the project knew of the availability of this technology and the value it would add to the preparation of the DEIR/EIS for the Project in 2014. A degree of certainty as to the predicted outcomes is necessary for any CEQA review and for the determination that no harm will result if the Project is approved. The *degree of uncertainty in predicted outcomes* would be greatly reduced with use of ERT mapping of seawater intrusion and the fragile hydrogeology of the SVGB at the CEMEX property and surrounding area. The DEIR/EIS is silent as to any degree of uncertainty in its predicted outcomes.

The DEIR/EIS warns the siting of the intake wells is critical to preventing increased seawater intrusion and further harm to the aquifer. The following cautionary statement is found in Subsurface Intakes, Appendices I1-3.

> In general, source water derived from subsurface intakes requires significantly less filtration when compared to raw seawater (SGD, 1992). **However, if not appropriately sited, subsurface intakes can adversely affect coastal aquifers and increase the risk of saltwater intrusion in freshwater aquifers** (CCC, 2004). [Emphasis added.]

CJW-10 cont.

Better knowledge of the hydrogeology of the SVGB for placement of Project intakes in the aquifer is a significant benefit ERT mapping would reveal.

A Stanford University research team under the leadership of Professor Rosemary Knight was denied access to the location of the Project when it collected imaging of the Monterey Bay coastline. Inclusion of the CEMEX property within the scope of the Stanford research was free, and was readily understood to produce beneficial understanding of the aquifer where the Project is intended. Use of the imaging at CEMEX in 2015 would also have added to the knowledge and understanding of the SVGB aquifers, the interrelations between its shallow and deeper layers, and the impacts of the test slant well.

CalAM's failure to take advantage of available and affordable scientific study likely to produce relevant data is inexcusable. It is a fair inference that denial of access at CEMEX in 2015 for collection of relevant data was antagonistic to the standards for rigorous study of impacts when preparing environmental impact reviews.

Should the proponent assert it was solely the decision of CEMEX to deny access to the site of the Project, **CalAM has had the ability to utilize ERT technology independent of the Stanford study and opted not to.** The DEIR/EIS does nothing more than acknowledge the availability of the technology and the work of Rosemary Knight. The Project proponent elected to summarily dismiss ERT, which has been proven to be a tool that would provide a greater degree of certainty

as to the effects of the project on the Basin. CPUC should not endorse this selective review. If selective inquiry and review is allowed by the CPUC, environmental impact reports become a meaningless exercise. The DEIR/EIS is incomplete without requiring ERT mapping. CJW-10 cont.

- **There Are No Successful, Operating Slant Wells for Subsurface Ocean Desalination Anywhere in the World**

The DEIR/EIS offers no historical data or refers to any successful operation of sub surface ocean intake slant well for use in desalination. The one test slant well at the CEMEX site is the only feasible source for data relevant to this Project, and this well has had multiple disruptions in its operation. The proponent provides no other data regarding the viability and long term performance of slant wells delivering desalinated water to customers—because none exist.

Use of slant well technology for subsurface ocean desalination has been resoundingly unsuccessful or infeasible. A review of slant well projects in an article *Yield and Sustainability of Large Scale Slant Well Feedwater Supplies for Ocean Water Desalination Plants* (2015) by Dennis Edgar Williams identified communities considering slant well projects in the State of California. As of 2016 the following communities mentioned in the article rejected use of slant well technology for production of water to meet municipal demands.

- Cambria opted for a brackish-water-reclamation plant in 2014.
- Oxnard is developing a treatment facility for brackish groundwater without use of slant-wells.
- Huntington Beach rejected the Poseidon slant well in 2014 after tests showed unacceptable amounts of groundwater uptake and increased salt water intrusion.
- Dana Point had test wells and began the EIR process in June 2016. No slant well providing water to the community to date.
- Camp Pendleton is still in feasibility studies.
- Long Beach has not adopted or completed any slant well project.
- Oceanside is developing a desalinater without slant well technology.
- The Santa Cruz Water District 2 Task Force dropped consideration of slant wells in 2013.

CJW-11

The DEIR/EIS's silence as to examples of existing use of slant well technology for subsurface ocean intake in similar circumstances cannot be ignored by the CPUC when weighing and considering the Project alternatives. Other communities concluded slant wells are costly, experimental and not equal to less costly, proven technologies to meet municipal water demands.

Without historical use in other communities and data from successful projects, the DEIR/EIS offers little proof that placement of slant wells into the 180' layer of the aquifer will not increase seawater intrusion. Nor is the proponent able to support the continued investment of vast amounts of money into unproven slant well intakes. Approval for this project cannot be based

on the modeling of its one test well at CEMEX. This test well has provided insufficient data for (a) a predictable outcomes to be extrapolated; and (b) information necessary for siting of the multiple intakes proposed by the Project *so as to avoid the harm of increased seawater intrusion.* The lack of data creates an unacceptable degree of uncertainty and leaves the SVGB users with an unacceptably high risk of harm.

CJW-11 cont.

The CPUC should exclude an unproven technology in an environment where risk to existing water sources, dependent populations, and the operations of existing water purveyors is high.

CalAM has Alternatives

Just Water supports CalAM in its endeavor to secure a new water supply. This must not be achieved at the expense of other water purveyors and citizens who will be adversely affected. CalAM has alternative technologies available and alternative source-water locations, which are less likely to harm the SVGB or any other protected water source. Pursuit of an alternative less likely to impair MCWD's ability to supply affordable, sustainable, long-term water to Marina and Fort Ord populations is mandatory.

CJW-12

With the lack of success of slant well technology, a different location and a different extraction are much more likely to succeed in the delivery of water to those needing it on the Monterey Peninsula.

For the reasons set forth above, Just Water respectfully requests you deny certification of the DEIR/EIS and reject any other pending approvals of the Project.

Very truly yours,

Just Water
By Juli Hofmann
C4JustWater@gmail.com

Just Water
By Kathy Biala

Coalition of Peninsula Businesses

A coalition to resolve the Peninsula water challenge to comply with the CDO at a reasonable cost

Members Include: Monterey County Hospitality Association, Monterey Commercial Property Owners Association, Monterey Peninsula Chamber of Commerce, Carmel Chamber of Commerce, Pacific Grove Chamber of Commerce, Monterey County Association of Realtors, Community Hospital of the Monterey Peninsula, Associated General Contractors – Monterey District, Pebble Beach Company

March 28, 2017

CPUC/MBNMS

c/o Environmental Science Associates

550 Kearney Street, Suite 800

San Francisco, California 94108

Transmitted by fax to 415-896-0332 and e-mail to MPWSP-EIR@esassoc.com

Comments on draft EIR/EIS for Monterey Peninsula Water Supply Project

Dear ESA:

The Coalition of Peninsula Businesses submits these comments on the draft Environmental Impact Report/draft Environmental Impact Statement (EIR/EIS) prepared for the Monterey Peninsula Water Project on behalf of the Monterey Peninsula organizations and entities listed above and their thousands of members, associates, and employees.

Generally speaking, the EIR/EIS seems well-prepared and comprehensive. We find some parts a little troubling and those are listed below.

Chapter 2 - Water Demand, Supplies, and Water Rights

Operating the desal modules at full capacity was earlier estimated to require operation at 98% of capacity all day every day of the year. That strikes us as an unrealistic method of operation that far exceeds the optimum operation of 80% of capacity and further dictates that a more relaxed schedule be planned. CPB-1

The water supply schedules reflect a slight excess of proposed supply over the ten-year average of experienced demand, but the ten-year period includes years of increasing demand for water conservation to the point where average water per capita consumption is among the lowest, possibly the lowest, in California. It is necessary to plan a water supply for a more relaxed water conservation ethic in the future after the Peninsula's water supply is no longer constrained by extreme conservation measures or legal decisions. CPB-2

The demand schedules do not seem realistically to reflect the need to return fresh water to the Salinas Valley Groundwater Basin to avoid legally prohibited exportation of water from that basin and to avoid harm to basin water users. CPB-3

The demand schedules also do not seem to reflect non-revenue water. Cal Am has rarely met its goal of reduced non-revenue (unaccounted for water or system losses of water). CPB-4

Chapter 6 – Other Considerations at Section 6.3 et seq and Appendix J2

The Monterey Peninsula Water Supply Project does not anticipate developing enough water to supply various local jurisdictions within the Cal Am service area for their General Plan Build-out needs; this seems extremely shortsighted.

The marginal costs of planning and building enough capacity now are small in comparison to the eventual cost of adding that capacity later.

The increase in environmental damage would also be marginal if sufficient capacity were planned now. CPB-5

The Cal Am service area would be far better served if the General Plan Build-out needs are addressed now so that the area avoids another expensive (multi-million dollars) and time consuming process (a decade or more) later.

An added benefit of adding the increased capacity now is that the desal modules could be operated for the immediate future on a much more relaxed schedule than the required and unrealistic 98% of capacity currently anticipated according to the testimony of Cal Am's Director of Engineering Richard Svindland.

Section 6.3 et seq. of Chapter 6 and Appendix J2 do a reasonable good job of analyzing the impacts of future development planned for in the General Plans of the various local CPB-6

jurisdictions within the Cal Am service area. With a little minor tweaking this EIR/EIS combined with the local jurisdiction certified General Plans (and their equivalents) could be sufficient to provide a reasonable basis for a small expansion of the Monterey Peninsula Water Supply Project to eventually provide enough water for all the Monterey Peninsula area's foreseeable future needs.

CPB-6 cont.

Appendix E-1 – Lawrence Berkeley National Laboratories Peer Review

The vetting of the work of the Hydrologic Working Group (HWG) by Lawrence Berkeley National Laboratories (LBNL) was encouraging in the sense that the results of the work paralleled closely the original findings of the (HWG) but one finding in the peer review report was troubling. LBNL found what could be a serious shortcoming in the hydrostratigraphy modeling – the absence of the Salinas Valley-Fort Ord Aquitard (SV-FOA) – and states the absence "could potentially change the impact assessments." It is incredibly important that the absence of the SV-FOA be explained in more detail and the resulting impact assessments changes, if any, be detailed.

CPB-7

Chapter 5.6 – Environmentally Superior Alternative/Preferred Alternative

We note that early on this section states that "… no alternative stands out from the others as eliminating all significant and unavoidable, long-term environmental effects." The combination of a smaller desal with the purchase by Cal Am of GWR water is given the nod as superior/preferred but this judgment ignores some key facts.

The now-approved water purchase agreement whereby Cal Am is committed to buying GWR water contains several provisions that allow for less than expected GWR water production for limited periods of time (essentially two or three year periods of production of significantly less than the 3,500 acre feet per year of "normal" production relied on to determine the size of the smaller desal interspersed with the anticipated "normal" production).

How is the Monterey Peninsula to deal with less water production than needed for up to several years at a time – go into emergency rationing again and again? That seems a poor way to plan for the Monterey Peninsula's water supply and contradictory to the goal of the California Public Utilities Commission to ensure adequate water service to Cal Am customers.

CPB-8

Brine discharge issues

We are not expert in analyzing brine disposal issues, so we leave those areas to the Monterey Peninsula Regional Water Authority and others to comment on.

Coalition of Peninsula Businesses comments are intended to be helpful

We offer these comments to be helpful and help strengthen the EIR/EIS. We are very much in favor of the project and want it to be constructed as quickly as possible.

Very truly yours,

John Narigi, Chair
General Manger, Monterey Plaza Hotel and Spa

Bob McKenzie
Consultant to the Coalition of Peninsula Businesses

DeepWater DESAL

January 17, 2017

CPUC/MBNMS
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

To whom it may concern:

DeepWater Desal LLC (DWD) is currently developing the Monterey Bay Regional Water Project (MBRWP) in Moss Landing, California. MBRWP would consist of a drinking water desalination plant co-located with a seawater-cooled data center. The objective of the MBRWP is to provide a reliable water supply to the entire region, which is affected by seawater intrusion and surface water shortages. The MBRWP is currently undergoing a very thorough environmental review of the project that includes information that was not yet available to Environmental Science Associates (ESA) at the time of their preparation of the DEIR/DEIS. The MBRWP sponsors believe it is premature to make determinations of significance on a project without having all the information on that project. DWD-1

While DWD understands the logic in comparing the impacts of the Cal Am proposed project to a version of the MBRWP scaled down to supply only the Monterey Peninsula, DWD is not proposing a scaled down desalination facility. A scaled down desalination facility would not meet the objective of being a regional water source. The region has water challenges that extend beyond the peninsula, and DWD feels strongly that water customers who are outside of CalAm's more affluent Monterey Peninsula franchise, many of whom reside in disadvantaged communities, deserve to have their needs treated with equal importance. DWD-2

Finally, it is DWD's belief that the scenario in the Draft Environmental Impact Report/Draft Environmental Impact Statement (DEIR/DEIS) of "either/or" is not correct. It is highly likely, as the DEIR/DEIS points out in several places that both projects will be constructed. This means that the construction of the CalAm Desalination project would not result in the avoidance of the impacts related to the DWD project. While understanding the DEIR/DEIS process has a very specific set of requirements for how projects are compared, we feel it necessary to point out that there are no additional environmental impacts that would arise from CalAm entering into a water purchase agreement with the MBRWP. It would result in the avoidance of the impacts related to construction of the CalAm project, except the construction of a single pipeline, while still providing potable water to the remainder of the region not served by the CalAm desalination project DWD-3

With those caveats, DWD submits the following comments on the DEIR/DEIS for the CalAm Monterey Peninsula Water Supply Project.

7532 Sandholdt Rd., Suite 6, Moss Landing, CA 95039 Phone: 831-632-0616

General Project Description/Scaled Alternative Description

Comments 1 – 6 are strictly technical in nature and related to the DEIR/DEIS description of the MBRWP. As stated above, while we are providing information about a scaled down version of our desalination project, there is no proposal to build such a plant since it would not be a regional facility. DWD-4

1. Table 5.3-1 (p. 5.3-11):

Table 5.3-1 on p. 5.3-11 of the DEIR/DEIS referring to Intake 9 states:

> *"From the screened intakes, raw seawater would flow by gravity through the intake pipeline to an onshore wet well and pump station."*

The proposed MBRWP does not include a wet well at the pump station on Dolan Road. Water is pumped, rather than gravity flow, due to the significant depth that would be required at the pump station for a wet well.

Strike "flow by gravity through the intake pipeline to an onshore wet well and pump station" and replace with "would be pumped to an onshore pump station." DWD-5

2. Section 5.3.3.9 p. 5.3-17 (para. 2):

Paragraph 2 on p. 5.3-1 of the DEIR/DEIS referring to Intake 9 states:

> *"Seawater would be conveyed from the intake structure to an onshore pump station via a 42-inch diameter subsurface intake pipeline."*

The DEIR/DEIS states on page 5.3-16, paragraph 4, that for analysis of the MBRWP as an alternate project, the size would be scaled down to 9.6 MGD water production. A 9.6 MGD plant would require a 36" diameter intake pipeline.

Change pipeline size to 36" diameter.

3. Table 5.3-2 (p. 5.3-20):

Table 5.3-2 on p. 5.3-20 of the DEIR/DEIS referring to Outfall Option 7 states: DWD-6

> *"Brine would discharge from the desalination facility to the offshore discharge diffuser structure via one proposed subsurface 36-inch-diameter discharge pipeline."*

"Operation of the outfall would include a multi-jet linear diffuser that would be located on the seafloor, and that would consist of five separate standing pipe risers emerging from a single 36-inch pipe manifold."

The DEIR/DEIS states on page 5.3-16, paragraph 4, that for analysis of the MBRWP as an alternate project, the size would be scaled down to 9.6 MGD water production. A 9.6 MGD plant would require a 24" diameter discharge pipeline. A 9.6 MGD plant would require a single 24" pipeline manifold and three standing pipe risers.

Change pipeline size to 24" diameter. **Change** pipeline manifold size to 24". **Change** number of standing pipe risers to three.

4. Section 5.3.4.7
p. 5.3-26 (para. 5):

DWD-6 cont.

Paragraph 5 on p. 5.3-26 of the DEIR/DEIS referring to Outfall Option 7 states:

"The multi-jet diffuser structure would be located on the seafloor and would consist of standing pipe risers emerging from a single 36-inch pipe manifold that would be connected to the end of the discharge pipeline."

The DEIR/DEIS stated that for analysis of the MBRWP as an alternate project, the size would be scaled down to 9.6 MGD water production. A 9.6 MGD plant would require a 24" diameter discharge pipeline.

Change pipeline size to 24" diameter.

5. Section 5.4.5.1
p. 5.4-21 (para. 2):

Paragraph 2 on p. 5.4-21 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

"Also, the intake design would be similar to the intake facility design in Alternative 2, but the Alternative 3 structures would be larger (two intake pipes for Alternative 3 versus one intake pipe for Alternative 2) to accommodate a larger project."

DWD-7

The dual pipelines for the MBRWP are for 100% redundancy to allow for maintenance or in case of failure. Either one of the two pipelines will handle the entire flow needed for the larger project.

Change "to accommodate a larger project" to read "to provide redundant intake and discharge ability."

6. Section 5.4.5.1
p. 5.4-31 (para. 5):

DWD-8

Paragraph 5 on p. 5.4-31 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

> *"Three data center buildings are planned and a fourth building would be a modular data center that could be constructed in the future."*

The modular data center is a landing pad for portable, self-contained server modules. The landing pad consists of a concrete pad and utility connections for the server modules. The landing pad will be completed with initial construction.

Change sentence to read "Three data center buildings and a concrete landing pad for modular data center equipment are planned."

DWD-8 cont.

Geology, Soils, and Seismicity

7. Table 5.3-4 (p. 5.3-31):

Table 5.3-4 on p. 5.3-31 of the DEIR/DEIS referring to Intake Option 9, referring to impacts related to exposure of people or structures to seismically induced ground-shaking, liquefaction and lateral spreading, and exposure of structures to coastal erosion and bluff retreat caused by sea level rise, states:

> *"**Decreased.** No coastal erosion or bluff retreat impact. All other impacts would be similar to those of the proposed project."*

It is our understanding that the slant wells identified for the proposed project are located in an identified liquefaction zone. Because sands or other saturated granular layers are required for liquefaction, and they are also required for the passage of seawater through the ground into a slant well, the potential for damage to the proposed project intake from liquefaction is high. This could result in permanent damage to slant wells and could constitute a public health emergency if an alternate source of water is not available.

DWD-9

The Liquefaction Map cited in the document is Ninyo & Moore, 2005. The more recent 2015 Stanford University Liquefaction Susceptibility Zones map for Monterey County (Attachment 1) shows that the DWD pipelines pass through two small areas of liquefaction susceptibility. One area is at the HDD launch site, and the other is the Moss Landing sand spit.

Studies conducted after the 1989 Loma Prieta earthquake involving boreholes on the Moss Landing sand spit show that there is liquefaction potential in the upper 30' of soils. At the sand spit, the pipeline is nearly 200 feet below grade. It is also approximately 160 feet directly below the power plant discharge pipelines which were not damaged during the Loma Prieta earthquake because they were well below the liquefaction zone. The intake pump station at Dolan Road is located on the Moss Landing Power Plant facility in an area

with a lower water table and medium-dense to dense sands. During the Loma Prieta earthquake, there was no evidence of liquefaction on the plant site (Mejia, 1998). The pump station structure extends to 30' below ground, well below any possible liquefaction zone.

Following the Loma Prieta earthquake, side scan sonograms also documented liquefaction that took place offshore. Evidence of liquefaction was seen at depths of 9-12 meters, much shallower than the proposed intake (Greene, 1991)

Based on data collected following the Loma Prieta earthquake, damage to the intake as a result of liquefaction is geologically unlikely. This is a lesser impact than the possible impact of liquefaction on the proposed slant well intakes. Failure of the intake would result in a threat to health and human safety.

DWD-9 cont.

Change "No coastal erosion or bluff retreat impact" to read "No coastal erosion or bluff retreat impact and reduced impact related to liquefaction."

Mejia, Lelio H. "Liquefaction at Moss Landing." *The Loma Prieta, California, Earthquake of October 17, 1989—Liquefaction* 1551-B (1998)

Greene, H. Gary, et al. "Offshore and onshore liquefaction at Moss Landing spit, central California—Result of the October 17, 1989, Loma Prieta earthquake." *Geology* 19.9 (1991)

8. Table 5.3-6 (p. 5.3-44):

Table 5.3-6 on p. 5.3-44 of the DEIR/DEIS referring to Desalination Plant Site Option 3 states:

> *"**Increased** --In addition to the impacts identified for the proposed project, this desalination site option could expose people or structures to a significant risk of loss, injury, or death from flooding due to sea level rise and coastal flooding. Other surface water hydrology and water quality impacts would be similar to the proposed project."*

DWD-10

The MBRWP plant site is outside of both the tsunami inundation area and the 100-year flood zone. The Pacific Institute California Flood Risk: Sea Level Rise Moss Landing Quadrangle (Attachment 2) places the plant site outside of the 100-year floodplain even with the inclusion of a 55" sea level rise as well.

Strike "In addition to the impacts identified for the proposed project, this desalination site option could expose people or structures to a significant risk of loss, injury, or death from flooding due to sea level rise and coastal flooding", **add** "The plant site is not located in a 100-year flood zone, even considering sea level rise." and **change** impact to "Similar".

Terrestrial Biological/Land Use

9. Table 5.3-4 (p. 5.3-36):

Table 5.3-4 on p. 5.3-36 of the DEIR/DEIS referring to Intake Option 9 states:

> *"**Increased.** Intake location would conflict with agricultural zoning and the potential to otherwise result in the conversion of farmland to nonagricultural use. New mitigation measure(s) would be required."*

DWD-11

Monterey County Land Use Plan North County (1982) designates all property to be disturbed for the intake as Industrial - Coast Dependent – Heavy (Attachment 3). The developed areas of the intake consist only of the pump station site. Even if this site were not zoned Industrial - Coast Dependent – Heavy, the location is an existing rail line on power plant property, and the location could not be used for agriculture due to past contamination (soil and water) and compaction issues. No construction activities are proposed for any lands zoned Agricultural. No mitigation would be required.

Strike sentence and **change** impact to "Similar."

Marine Biological Resources

10. Table 5.3-4 (p. 5.3-32):

Table 5.3-4 on p. 5.3-32 of the DEIR/DEIS referring to construction activities of Intake Option 9 states:

> *"**Increased.** Impacts would be increased, except for the impact on the movement of fish or wildlife species during construction. New mitigation measures would be required to reduce the impacts resulting from entrainment and impingement to less than significant."*

DWD-12

The DEIR/DEIS incorrectly identifies entrainment and impingement in impacts related to the construction of the MBRWP seawater intake. Entrainment and Impingement are operational impacts but are not construction related impacts.

Strike the words "resulting from entrainment and impingement."

11. Table 5.3-4 (p. 5.3-32):

DWD-13

Table 5.3-4 on p. 5.3-32 of the DEIR/DEIS referring to operational impacts of Intake Option 9 states:

"Operational impacts associated with impingement and entrainment would be greater and could be substantial if feasible mitigation were not available."

See response to Item 13 below.

Strike "and could be substantial if feasible mitigation were not available," **add** "and would require mitigation to reduce impacts to less than significant."

DWD-13 cont.

12. Section 5.5.5.6
p. 5.5-122 (para. 5):

Paragraph 5 on p. 5.5-122 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

"Additionally, Alternative 3 would draw up to 55 mgd of source water (compared to 24.1 mgd for the proposed project and Alternatives 1 and 2) through a screened open-water intake. A preliminary assessment determined that northern anchovy, Pacific sardines, white croaker, sanddab, rockfish, smelt, sculpin, Dungeness crab, cancer crabs, and unidentified larval fish would all be entrained (Tenera Environmental, 2014)."

The Tenera report (Tenera, 2014, p ES-12) identifies the marine impact due to entrainment and impingement as less than significant due to ". . . a combination of low flows of the proposed intake relative to a large source water volume, the abundances and life history characteristics of fish species susceptible to entrainment, and the siting characteristics of the intake in deeper water and at the head of Monterey Submarine Canyon ". The report details the source water studies completed by DWD that led to this determination. Samples were collected at two different depths, day and night, between June 2012 and June 2013. Samples were taken to the laboratory, where all fish and target invertebrate larvae were removed, counted, and identified. Length was determined for a representative number of larval fish during each survey using an image capture and analysis system. The length data and estimates of larval growth rates were used to determine the age of the larval fish captured. Individuals longer than 30 mm (1.18 in) were considered non-entrainable because of their size. This is because they would be too large to physically pass through the proposed 1mm wedgewire screen on the intake or they have reached the stage in development that would allow them to swim away from the intake.

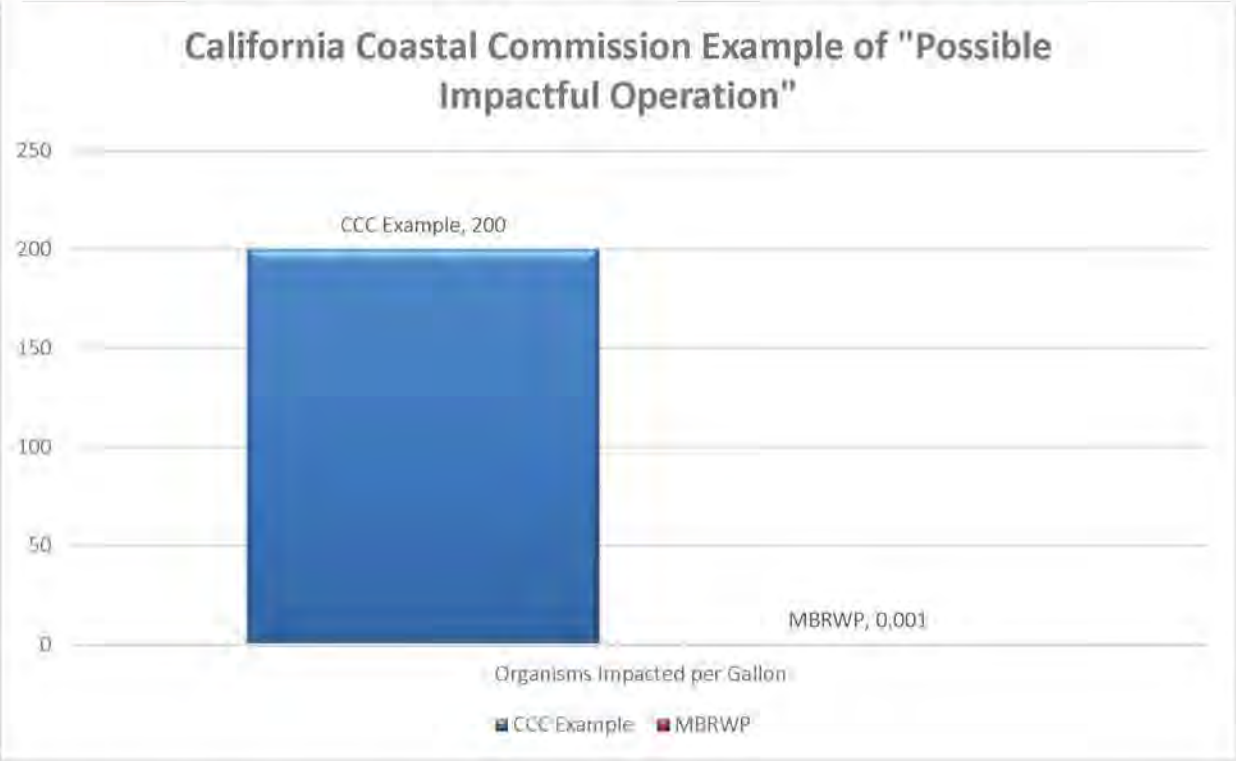
DWD-14

The best method, according to California State environmental agencies and scientists working in the field (see Steinbeck et al. ; Desal amendment, etc.), for assessing the intake impact due to entrainment is to calculate an estimate of proportional mortality. This estimate represents the number of deaths within a fish or invertebrate population due to effects of the intake relative to the estimated number in the source water population that is at risk of entrainment. The estimates of larval losses in the Tenera (2014) report ranged

from 0.009 – 0.109% for the various fishes analyzed based on an intake volume of 63 MGD. An addendum to the report (Tenera, 2016) was prepared using the final intake volume of 49 MGD and included adjustments to account for the depth of the intake and the use of a 1.0 mm wedgewire screen at the intake. The proportional mortality estimates for the six main species identified in the addendum ranged from 0.007 – 0.077%. In other words, between seven-thousandths, and seventy-seven hundredths of one percent of the larval populations identified within the source water would be at risk due to the intake, dependent on species. The high estimate was for CIQ goby and the low estimate for KGB rockfish. The estimates in the addendum were lower because the average concentration of total fish larvae through the entire water column at the intake site was estimated at 0.002088 larvae per gallon, while the estimate of number of larvae in deep water at the intake location was 0.001026, approximately half the number of larvae per gallon in the entire water column. This concentration is also less than a third of the estimated average concentration inside Moss Landing Harbor (0.003615 larvae per gallon). Based on this information, the intake for the MBRWP is proposed to be located at a depth that minimizes impacts.

DWD-14 cont.

While there is no direct quantitative threshold for significance, Chapter 5 of the Seawater Desalination and the California Coastal Act report (CCC, 2004) states "a desalination facility producing 50 million gallons per day of drinking water would pull in at least 100 million gallons per day of seawater and discharge at least 50 million gallons per day of highly saline brine. Since each gallon of seawater can contain hundreds of organisms, this amount of water could have significant adverse effects on marine life and water quality at the local or regional level." It is unclear what the estimate of hundreds of organisms cited in the CCC report represents, but since zooplankton and diatoms have such large numbers and reproduce rapidly, they typically would not be included in the number of organisms that would be impacted. Therefore, the assumption can be made that this number only includes fish and target invertebrate larvae, which are the focus of all scientific impact assessments done to date in California. For comparison to hundreds of organisms per gallon which "may be significant," the MBRWP intake assessment shows that only a single fish larva will be entrained per approximately 1,000 gallons of intake water. Clearly not significant compared to the CCC example.



DWD-14 cont.

Fisheries Management Plans

Intake assessments in California and throughout the United States have historically been focused on fishes because of the potential for impacts to fish populations if large losses occurred to a severely depleted or listed population. One of the reasons that the proportional mortality estimates discussed above provide the best basis for determining the significance of the effects of the intake is because the results provide the same type of information used in fishery management. Groundfish fisheries in Washington, Oregon, and California are managed under the Pacific Coast Groundfish Fishery Management Plan (FMP) (PSFC 2016). This approach to fisheries management was approved by the U.S. Secretary of Commerce and implemented in 1982. The plan was implemented to better manage fish populations that overlapped state boundaries. Before the FMP, there was a lack of uniform of regulations across states. The plan covers all the Federal waters between the borders with Canada and Mexico and separates the coast into five management areas. Monterey Bay is part of the Monterey management area which extends from just south of Point Sur north to approximately Cape Mendocino. The FMP covers 85 species including all species of rockfish, and species such as cabezon, kelp greenling, and lingcod that are usually associated with shallow habitats.

The FMP, which is updated on a regular basis, is used as the guidance document in setting fishing limits. The current plan was issued in March 2016 with the most recent amendment (Magnuson-Stevens Act Provisions; Fisheries off West Coast States; Pacific Coast Groundfish Fishery; 2017–2018 Biennial Specifications and Management Measures; Amendment 27) published in February 2017. This amendment established allowable fishing limits for 2017–2018. The catch limits established by the regular plan amendments are designed to prevent overfishing while achieving the optimum yield from each fish species.

The goal of the FMP is to provide planning information for the seafood industry, protect recreational fishing, and maintain the health of fish populations. It develops allocation and harvest targets for each species that support a maximum sustainable yield (F_{MSY}) while allowing for self-sustaining fish populations. The plan is based on a conservative approach that assumes a high degree of uncertainty in the accuracy of the estimates used in the models.

Blue Rockfish

For impact comparison purposes, we will look at blue rockfish. This is an important fishery species with a management plan, which is largely restricted to nearshore areas along the central coast which are most likely to be subject to entrainment. While there is also information on pacific sanddab and northern anchovy, these species have distributions out into deeper water and over large areas of the coast. Because of the much larger geographic distribution of these species compared with blue rockfish, any project impacts on these species would be less than the impacts on blue rockfish. The Addendum identified a proportional mortality for blue rockfish due to MBRWP intake of 0.014%, meaning that the increased mortality of blue rockfish larvae due to effects of the intake is 14-hundredths of one percent of the local source population.

DWD-14 cont.

The maximum sustainable yield of 50% for rockfish that was identified in the 2016 FMP, was also used in a stock assessment for blue rockfish (Key et al. 2008). It identified the threshold biomass impact for overfishing as follows:

"This assessment uses the default target rate of F50% (equivalent to F_{MSY} of 50%) used for rockfishes on the West coast of the US. Under Pacific Fishery Management Council (PFMC) Groundfish management policy, if the current spawning biomass of the stock falls at or below 25% of the unexploited biomass, the stock is considered overfished. Under the state's guidelines, the stock is considered overfished at or below 30% of the unexploited biomass. Unfished spawning biomass was estimated to be 2077 million larvae in the base model, with the target stock size at 831 million larvae. The base model estimated that the stock could support a maximum sustainable yield (MSY) of 275 metric tons."

The implementation of management controls on several fisheries in California based on information in stock assessments has helped the recovery of many populations. For example, the blue rockfish sport catch from Monterey Bay area ports has increased over the five years from 2011 to 2015 by 300% (RecFin data accessed February 7, 2017).

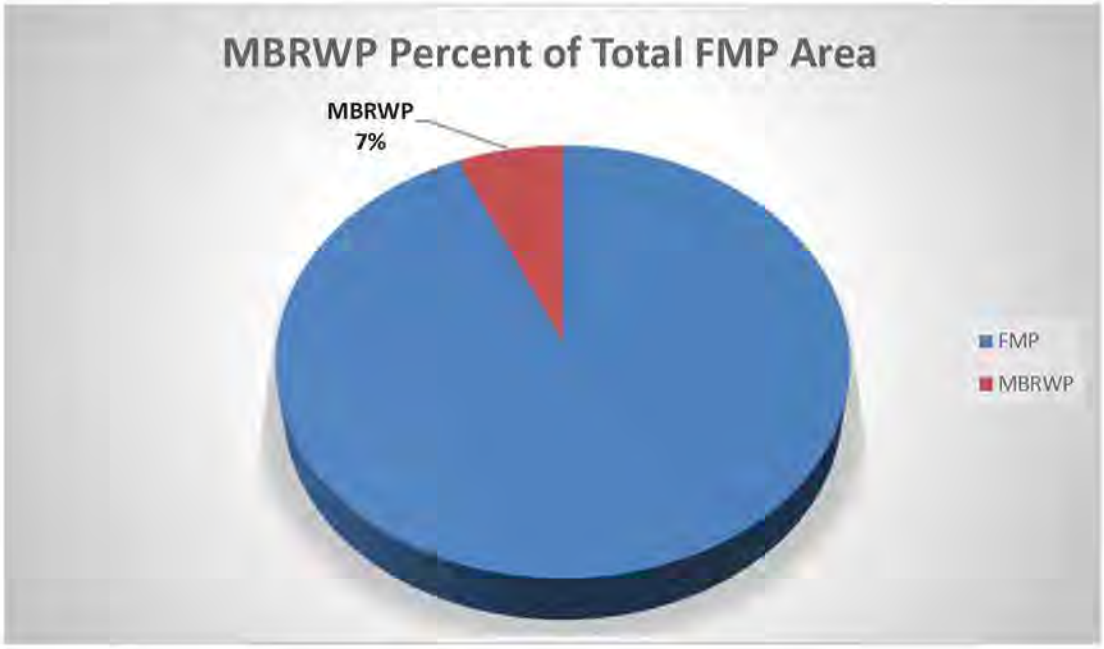
The FMP recognizes that recommended levels of fishing will result in a reduction in both the spawning biomass and the average lifetime egg production of the females in the population. Using this same logic, the proportional mortality estimate used in the intake assessment for the MBRWP can be compared to acceptable fishing mortality within a population. A proportional loss due to intake entrainment will also translate directly to an equivalent loss in the adult population.

The fishing mortality of 50% used in the blue rockfish stock assessment model is over 3500 times higher than the estimated loss to blue rockfish due to entrainment of 0.014%. As noted in the blue rockfish stock assessment (Key et al. 2008), fisheries managers are concerned when the stock falls below levels representing 25–30% of the estimated unfished biomass. As you can see from the pie chart below, .014% is such a small portion of the allowable FMP impact that it is difficult to see. An additional source of local population mortality of 0.014% due to entrainment is not significant. It would have no material effect on the population when fishery managers are evaluating population effects with a fishing mortality rate of 50%.

DWD-14 cont.

It is also important to recognize that the estimated proportional mortality from the MBRWP intake on a species such as blue rockfish would occur in a limited area of approximately 8 to

12 mi (13 to 19 km) of shoreline inside Monterey Bay. Although this represents 20 to 25% of the shoreline of Monterey Bay, the actual rocky reef or kelp bed adult habitat for blue rockfish along this area of Monterey Bay is much smaller. As shown in the back-projections from the intake and map of hard substrate in Monterey Bay (Attachment 4), the areas with natural hard rocky substrate in Monterey Bay are limited to the north and south edges of the Bay and not the area potentially subject to entrainment. We have concluded that most rockfish larvae collected during sampling were probably spawned along the breakwater and other rocky locations associated with the Moss Landing Harbor. Including this additional Moss Landing Harbor habitat, the total shoreline area of Monterey Bay that could potentially be subject to entrainment due to the MBRWP intake represents approximately 7% of the coastline from Point Conception to the Oregon border used in the blue rockfish assessment.



DWD-14 cont.

The previously discussed entrainment loss impacts compared to the acceptable FMP impacts are reduced even further due to the small area impacted. **Entrainment losses represent an additional source of mortality to the population of less than a thousandth of a percent (0.14% entrainment over only 7% of total planning habitat). This number is much too small to show graphically in comparison to the levels of fishing mortality used in the blue rockfish FMP, and therefore not a material impact.**

In addition to comparing the expected mortality rate due to entrainment with rates of fishing mortality, the estimated mortality can also be compared with the range of variation in the population. Since fishing mortality affects adult and juvenile populations, a more valid

comparison of the effects of entrainment is the variation in the numbers of fish larvae that successfully develop into juvenile fish. This transition is also referred to as "recruitment." The blue rockfish assessment (Key et al., 2008) includes estimates of recruitment from 1998–2007, the life stage potentially subject to increased larval mortality due to entrainment. The estimates ranged from low of 735,000 in 2006 to a high of 7,792,000 in 1998. With a 95% confidence interval, the estimates range from approximately 50% of the annual estimate of recruitment, to greater than 100%. Given this range of variation in the annual estimate of recruitment, a 0.014% increase in larval mortality due to entrainment would not have any effect on the larger population subject to the FMP. The same type of information presented here could also be compiled for the other fishes included in the assessment to support the conclusion that the entrainment losses due to the DWD intake would be less than significant.

The finding of a "substantial" or "significant" effect under CEQA should have some basis. Applying scientific principles to the determination of a "substantial" or "significant" effect would require that an effect is compared to some baseline number and assessed regarding an identified threshold for impact. When fisheries managers set a threshold for overfishing for blue rockfish, it is to maintain a sustainable population. That identified threshold is the allowable fishing catch limit. In the absence of any established threshold for entrainment losses, fishing limits provide a guide for determining the magnitude of actual effects on fish populations. An increase of 0.014% in mortality of blue rockfish larvae due to entrainment, along 8 to 12 mi (13 to 19 km) of shoreline inside Monterey Bay, is more than 3500 times lower than the allowable levels of fishing mortality over the hundreds of miles of coastline from Point Conception north to the Oregon border. This level of loss could never be detectable given the variation in the annuals levels of recruitment to the population. The independent comparisons with allowable fishing mortality and the variation in recruitment, as well as the other information presented in the intake assessment, support the conclusion that the effects of the intake would be less than significant.

DWD-14 cont.

Add "These impacts are less than significant due to the small proportion of the larval populations subject to entrainment mortality, either on the local population or the larger population subject to the Fisheries Management Plan."

California Coastal Commission. "Seawater Desalination and the California Coastal Act." (2004).

Key, M., A. D. MacCall, J. Field, D. Aseltine-Neilson, and K. Lynn. 2007. The 2007 Assessment of Blue Rockfish (Sebastes mystinus) in California. Available at: http://www.pcouncil.org/wp-content/uploads/KeySAFE_BlueRF_Jan08.pdf

Pacific Fishery Management Council. 2016. Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery. Portland, OR. March 2016. Available at: http://www.pcouncil.org/wp-content/uploads/2016/03/GF_FMP_FINAL_Mar2016_Mar282016.pdf

DWD-14 cont.

13. Section 5.5.5.6 p. 5.5-122 (para. 6):

Paragraph 6 on p. 5.5-122 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

> *"The potential ETM/APF for this alternative was estimated at greater than 40 acres (Luster, 2016), and similar to Alternative 2, would require mitigation.* ***Mitigation Measure ALT 2-Marine-2*** *would be required to minimize and mitigate for impacts on marine biological resources, but similar to Alternative 2, residual impacts may remain due to the uncertainty of the efficacy of the mitigation."*

NOAA implementation of NEPA requires the analysis of "the direct, indirect, and cumulative environmental impacts of the proposed action and the alternatives in clear terms and with sufficient information to ensure the professional and scientific integrity of the discussion and analysis" (NOAA, 2017). CEQA requires an agency to evaluate the factual and scientific data to determine whether an impact may be significant. Impacts, in either case, can be determined to be significant (requiring mitigation) or insignificant. The Ocean Plan Amendment, in contrast, treats all marine life impacts as requiring offsetting mitigation through the ETM/APF approach at a 95% confidence level ***regardless of significance***. Therefore, there is neither a legal or practical justification for basing a significance determination on the extent of ETM/APF calculations resulting from Ocean Plan Amendment required mitigation. Where scientific information on the actual impacts of impingement and entrainment are available, as in this case, they are required to be used to determine significance under CEQA/NEPA.

DWD-15

Also, the ETM/APF estimate was based on preliminary information, before finalization of the Tenera Intake Assessment and Addendum which includes the reduction of impact related to the wedgewire screen and is calculated based on the final proposed plant flow. This document was made available to ESA for review. This document is the basis for the required ETM/APF calculation. The California Coastal Commission is currently peer reviewing this document to assure there is adequate information to calculate the ETM/APF. An opinion based on preliminary documentation in the absence of a completed ETM/APF calculation does not meet the legal standard of "the direct, indirect, and cumulative environmental impacts of the proposed action and the alternatives in clear terms and with sufficient information to ensure the professional and scientific integrity of the discussion and analysis" (Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities, (NOAA, 2017).

National Oceanic and Atmospheric Administration. "Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities." (2017)

Strike entire paragraph and **change** finding to less than significant based on results and conclusions in Tenera Intake Assessment.

DWD-15 cont.

14. Section 5.5.5.6 p. 5.5-124 (para. 2):

Paragraph 2 on p. 5.5-124 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

> *"In addition to physical impacts, Alternative 3 may be inconsistent with MBNMS Desalination Guidelines (NOAA, 2010), with regard to its open water intake and lack of a combined discharge. Guidelines state:*
>
> - *All desalination plants should be designed and sited to avoid and minimize impingement and entrainment to the extent feasible. Project proponents should investigate the feasibility of using subsurface intakes as an alternative to traditional intake methods.*
> - *Project proponents should investigate the feasibility of diluting brine effluent by blending it with other existing discharges."*

DWD-16

The DWD project was determined by the proponent, partially using CalAm scientific evidence of bore hole analysis, to not be feasible for meeting project objectives using a subsurface intake. Initial subsurface feasibility material was available to ESA for review. In addition, locations available to DWD for subsurface intake have either been identified in this DEIR/DEIS prepared by ESA as infeasible due either to hydrogeological conditions or failure of the option to provide enough water for even the smaller CalAm plant due to pulling in 12% groundwater from the critically over drafted, and soon to be regulated, Salinas Basin. The proponent is coordinating with the State Water Resources Control Board to finalize a subsurface feasibility study for review. DWD also spent a year doing marine testing to determine the least impactful site for the intake. These activities show compliance with the Ocean Plan. See comments addressing Discharge feasibility in Item 16.

Strike entire section, **add** "MBRWP is expected to be in compliance with regard to its open water intake and lack of combined discharge due to current, ongoing regulatory activities, and **reevaluate** without assuming inconsistence with MBNMS Desalination Guidelines (NOAA, 2010) in Whole Project Analysis.

Brine Discharge

15. Section 5.5.3.6 p. 5.5-49 (para. 4):

DWD-17

Paragraph 4 on p. 5.5-49 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

"Model analysis (Jenkins, 2016) identified discharges from Alternative 3 would occasionally (1 day out of 3.4 years) exceed the significance threshold of 2 ppt above natural background salinity at the BMZ boundary by a small margin (i.e., by 0.15 ppt)."

The model analysis provided to ESA identified that under a very particular set of circumstances, there is a 0.08% chance of exceeding 2ppt at the BMZ by 0.15. Circumstances required for this situation include the data center using no water for cooling, a Davidson current, and the desalination plant undergoing start-up activities. Jenkins goes on to say "This amount is within the sampling error of standard monitoring equipment. Possible over limit cases are not statistically significant, therefore under all practical, measurable, long-term ocean conditions, DWD meets the dilution standards of the Ocean Plan Amendment" (Jenkins, 2016, pp 129-131).

DWD-17 cont.

The discharge louvers have been modified slightly in a recently revised report. The current diffuser design has more jets at a lower velocity which minimize the size of the BMZ while simultaneously minimizing turbulent shear impacts and sediment resuspension. There are no longer any modeled exceedance outcomes. This report will be provided for your review under separate cover.

Jenkins, Scott. "Brine dilution analysis for DeepWater Desal, LLC." (2016).

Delete sentence: "Model analysis (Jenkins, 2016) identified that under very specific operational circumstances, there is a 0.08% (1 day out of 3.4 years) probability that discharges from Alternative 3 would exceed the significance threshold of 2 ppt above natural background salinity at the BMZ boundary by a small margin (i.e., by 0.15 ppt).

Add sentence: "Option 3 meets all measurable dilution standards of the Ocean Plan Amendment".

16. Section 5.5.3.6 p. 5.5-52 (para. 3):

Paragraph 3 on p. 5.5-52 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

"In addition to physical impacts, Alternative 3 may be inconsistent with MBNMS Desalination Guidelines (NOAA, 2010), with regard to its lack of a combined discharge compared to the proposed project, which would use an existing outfall. One of the guidelines states: "project proponents should investigate the feasibility of diluting brine effluent by blending it with other existing discharges.""

DWD-18

The MBRWP EIR/EIS is evaluating a combined discharge using the power plant cooling water. This was identified in the Project Narrative provided to ESA. This option is only feasible if the Moss Landing Power Plant will agree to allow it, which they have not done to

date. If MLPP agrees, MBRWP will use this discharge method. Therefore, MBRWP is following the requirement to investigate the feasibility of diluting brine effluent by blending. The Ocean Plan Amendment states that "Multiport diffusers are the next best method for disposing of brine when the brine cannot be diluted by wastewater and when there are no live organisms in the discharge (California Ocean Plan, 2015, p. 41)." If the Moss Landing Power Plant isn't agreeable to accepting brine for blending, a multiport diffuser will be used (the proposed project since the MLPP has not agreed to accept the brine). Therefore, the DWD project is not inconsistent with the Ocean Plan Amendment.

DWD-18 cont.

Strike entire paragraph, **add** "MBRWP is expected to be in compliance with MBNMS Desalination Guidelines (NOAA, 2010) based on current, ongoing regulatory activity."

17. Section 5.5.3.6
p. 5.5-49 (para. 5):

Paragraph 5 on p. 5.5-49 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

> *"As described in detail in Section 4.3.2.2 for the proposed project, the Ocean Plan includes monitoring and reporting requirements for the operation of new desalination facilities (Section III.M.4, "Monitoring and Reporting Program" ; SWRCB, 2016b). A monitoring and reporting plan has not been defined and proposed as part of Alternative 3; as such and similar to the proposed project, Alternative 3 would not be consistent with the Plans, Policies, and Regulations described in Section 4.3, Surface Water Hydrology and Water Quality. This would be a significant impact and would result in an increased level of impact compared to the proposed project, which could be reduced to less than significant with the implementation of* ***MM 4.3-4****. Therefore, Alternative 3 would result in the* ***same impact conclusion*** *for salinity compared to the propose project, less than significant with mitigation. "*

DWD-19

DWD agrees with this statement, but it conflicts with the statement quoted in Item 18. **Correct** contradictory statement on page 5.5-53, paragraph 4 (see Item 18).

18. Section 5.5.3.6
p. 5.5-53 (para. 4):

Paragraph 4 on p. 5.5-53 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

> *"As discussed above, Alternative 3 discharges would exceed the 2 ppt salinity significance threshold by 0.15 ppt and could exceed Ocean Plan water quality objectives for PCBs. Because proponents of the DeepWater Desalination Project have not demonstrated methods of compliance with the Ocean Plan objectives that are protective of beneficial uses, and feasible mitigation strategies have not yet been identified, Alternative 3 in combination with other cumulative projects would result in significant and unavoidable cumulative impacts on ocean water quality and Alternative 3 would*

have a cumulatively considerable contribution to such effects (significant and unavoidable)."

Paragraph 3 on page 4.3-124 of the DEIR/DEIS states that "it is conservatively determined that under the assessed discharge scenarios, operational discharges from implementation of the MPWSP could exceed Ocean Plan water quality objectives for certain constituents. This would result in a significant impact, and because the Ocean Plan water quality objectives are based on the effects of cumulative impacts on ocean water quality, an exceedance of water quality objectives also would represent a cumulatively considerable contribution to a potential significant cumulative impact. The proposed project contribution would be minimized to a less-than-significant level by implementation of **Mitigation Measure 4.3-4 (Operational Discharge Monitoring, Analysis, Reporting, and Compliance)** and **Mitigation Measure 4.3-5 (Implement Protocols to Avoid Exceeding Water Quality Objectives).**" This statement recognizes that even though the proposed CalAm project discharges could exceed water quality objectives, mitigation measures would reduce impacts to less than significant.

Paragraph 2 of pas 4.3-91 says "The analysis and reporting conducted as part of the Plan shall determine the need for corrective actions to be implemented in the form of the design features and operational measures prescribed in **Mitigation Measure 4.3-5** to reduce identified impacts to less-than-significant levels." The plan referenced is the Water Quality Monitoring Plan identified in Mitigation Measure 4.3-4. The DEIR/DEIS recognizes that this plan is required to receive an NPDES permit, (para. 4, p. 4.3-124). Therefore, MBRWP, if permitted, will have a plan for water quality monitoring in place that has been reviewed and approved by the RWQCB and MBNMS.

DWD-19 cont.

The DEIR/DEIS recognizes the use of granular activated charcoal as a method of removal for PCB's (para. 5, p. 4.3-105). It also recognized that actions required for Mitigation Measure 4.3-5, such as the use of granular activated charcoal to remove PCB's, must be informed by the results of Mitigation Measure 4.3-4, the monitoring plan.

Paragraph 3 of page 5.5-3 of the DEIR/DEIS states "Where applicable, mitigation measures that are applied to the proposed project in Chapter 4 are applied to potentially significant impacts of the alternatives." Mitigation Measure 4.3-4 is clearly applicable to MBRWP and Mitigation Measure 4.3-5 can't be determined until 4.3-4 is in place, it would be inconsistent with the rest of the document to not provide credit for Mitigation Measures 4.3-4 and 4.3-5,

Strike "Because proponents of the DeepWater Desalination Project have not demonstrated methods of compliance with the Ocean Plan objectives that are protective of beneficial uses, and feasible mitigation strategies have not yet been identified, Alternative 3 in combination with other cumulative projects would result in significant and unavoidable cumulative impacts on ocean water quality and Alternative 3 would have a cumulatively considerable contribution to such effects (significant and unavoidable)." **Add** "The implementation of **Mitigation Measure 4.3-4 (Operational Discharge Monitoring, Analysis, Reporting, and Compliance)** and **Mitigation Measure 4.3-5 (Implement Protocols to Avoid Exceeding**

Water Quality Objectives) would ensure that brine constituents from Alternative 3, such as PCBs, are discharged at concentrations below Ocean Plan requirements. Thus, Alternative 3 in combination with other cumulative projects would not have a cumulatively considerable contribution to a potential significant cumulative impact related to such effects."

DWD-19 cont.

Whole Project Comparison

19. Section 5.4.5.4
p. 5.4-38 (para. 5):

Paragraph 5 on p. 5.4-38 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

> *"An additional 6.5 miles of product water pipeline would be required to connect the alternative to the proposed project's pipelines in Marina;"*

The proposed pipeline routing between Castroville and the connection to the CalAm project in Marina has been revised to match the proposed Castroville Pipeline (CalAm project). This pipeline will connect to the Salinas Pipeline which is included in the 25 miles of additional pipeline for the project. Since the Castroville pipeline is included in the CalAm DEIR/DEIS to deliver return water to Castroville, the impacts of the pipeline between Castroville and the point of connection in Marina have already been considered in the proposed project. No additional "new" pipeline is needed to connect the peninsula to the MBRWP transmission line in Castroville.

DWD-20

Strike this portion of the sentence.

20. Section 5.5.2.6
p. 5.5-17 (para. 3):

Paragraph 3 on p. 5.5-17 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

> *"The alternative would also include 6.5 miles of desalinated water pipeline to connect with the CalAm system and up to an additional 25 miles of pipelines to convey the desalinated water to other areas (total of 31.5 miles of additional pipeline)."*

No additional pipeline is required between Castroville and the point of connection in Marina (see item 19).

Strike "6.5 miles of desalinated water pipeline to connect with the CalAm system and".

21. Section 5.5.2.6
p. 5.5-17 (para. 3):

Paragraph 3 on p. 5.5-17 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

"The alternative would also include 6.5 miles of desalinated water pipeline to connect with the CalAm system and up to an additional 25 miles of pipelines to convey the desalinated water to other areas (total of 31.5 miles of additional pipeline)."

DWD-20 cont.

No additional pipeline is required between Castroville and the point of connection in Marina (see item 19).

22. Section 5.5.5.6 p. 5.5-122 (para. 2):

Paragraph 2 on p. 5.5-122 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

*"Similar to Alternative 2, mitigation would be required to reduce the short and long-term impacts of construction on marine biological resources in MBNMS. Although implementation of **Mitigation Measure ALT 2-Marine-1** or similar measures would reduce this impact, it would not be reduced to a less-than-significant level for the same reasons described for Alternative 2. Therefore, compared to the proposed project, the construction of Alternative 3 could result in a substantially increased impact on marine biological resources including candidate, sensitive, or special-status species identified in local or regional plans, policies, regulations or conservation plans during construction and would result in an **increased impact conclusion** compared to the proposed project; significant and unavoidable even with implementation of **Mitigation Measure ALT 2-Marine 1**."*

DWD-21

The reasons referenced for Alternative two in this paragraph state "residual impacts may remain significant due to the sensitivity of the resources. Therefore, the construction of Alternative 2 could result in an increased impact on marine biological resources including candidate, sensitive, or special-status species identified in local or regional plans, policies, regulations or conservation plans during construction". Potential effects from Alternative 3 construction include temporarily suspended sediment, underwater noise, and burial or displacement of organisms in the construction areas. Tenera in the MBRWP Marine Resources Assessment (2016) states "The degree of effect depends on the relative area of disturbance compared to the overall habitat and community, either locally or regionally, and the types of species." They found that "effects are also considered temporary and localized and would not result in substantial effects on marine resources."

NOAA has provided the following Interim Sound Threshold Guidance:

For continuous and intermittent sound sources, the Level A (injury) and Level B (behavioral disruption) thresholds for marine mammals are 180-, and 120-dB re 1 µPa root mean square (RMS), respectively (NOAA Interim Sound Guidance). NOAA Fisheries and USFWS have used 150 dBRMS as the threshold for behavioral effects on ESA-listed fish species, such as salmon for most biological opinions evaluating pile driving (Technical Guidance for Assessment and

Mitigation of the Hydroacoustic Effects of Pile Driving on Fish. California Department of Transportation November 2015). This was based on information that sound pressure levels above 150 dBRMS can cause temporary behavioral changes that could affect the ability of fish to avoid predators. NOAA Fisheries staff indicated at the June 2008 FHWG meeting that they do not expect exceedance of the 150 dBRMS behavior threshold to trigger any mitigation requirement (Fisheries Hydroacoustic Working Group 2008). Underwater noise levels from HDD installation will not be of concern until the ocean floor is breached. Noise levels related to this are typically less than those for vibratory installation of piles (120 dB re 1 micropascal) and for a much shorter duration. Therefore the sound associated with HDD drilling is expected to be below Level B thresholds.

DWD-21 cont.

Suspended sediments would also be a temporary effect "because of the localized nature of the disturbance (area of the HDD drill head where it emerges) compared to the very large areas of undisturbed habitat in the project region, and because recolonization and recovery would likely occur within a year or less. Also, mobile individuals such as fishes, marine mammals, and sea turtles would be able to leave disturbed areas during construction and return to these areas after construction is completed." (Tenera 2016).

Based on this information, construction impacts should have been found to be LSM.

Change "significant and unavoidable" to "less than significant with mitigation."

23. Section 5.5.18.6 p. 5.5-330 (para. 3):

Paragraph 3 on p. 5.5-330 of the DEIR/DEIS referring to Whole Project Alternative 3 states:

> *"Operations and maintenance of the data center and cooling system would require 150 megawatts (MW) of electrical power) resulting in a substantial increase compared to the proposed project, which requires less than 6 MW. This energy demand would be 25 times the net energy demand of the proposed project, and represents approximately half of the County's electricity usage in 2014 (PG&E, 2015). This additional energy load could substantially constrain local and/or regional energy supplies if not adequately addressed by PG&E."*

DWD-22

The MBRWP is proposing to connect directly into PG&E's Coburn tower transmission line and be transferred through a new dedicated distribution line to a dedicated substation. DWD has met with PG&E to discuss the best way to connect to their system and will follow up with a formal Interconnect Study that will identify any impacts. The loads for Monterey County are a small portion of the capacity in the Moss Landing transmission infrastructure, which was designed to handle the production of the Moss Landing Power Plant, and the MBRWP load will be half again as small. PG&E has indicated there are currently no power constraint issues in the Moss Landing transmission system. As the offtaker DWD will be required to pay for any upgrades to the PG&E system as a result of system transmission

constraints due to the project. MBRWP will also purchase power from the wholesale market, rather than directly from PG&E. So there will be no effect to PG&E supplied power available to the region.

Change "This additional energy load could substantially constrain local and/or regional energy supplies if not adequately addressed by PG&E." to "Any constraint on local and/or regional power transmission will be identified by PG&E and mitigated by MBRWP" before interconnection.

DWD-22 cont.

DeepWater Desal, LLC appreciates the opportunity to comment on the DEIR. To reiterate, the objective of the MBRWP is to provide a regional water supply, not just a supply for the Monterey Peninsula. For this reason, while MBRWP may be a suitable alternative to the CalAm project, the CalAm project would not meet the project objective of MBRWP. We do not believe it is accurate to present the projects as an either/or scenario. It is highly likely, as the DEIR/DEIS points out in several places that both projects will be constructed. This means that the construction of the CalAm Desalination project would not result in the avoidance of the impacts related to the DWD project.

DWD-23

We understand that the DEIR/DEIS process has a very specific set of requirements for how projects are compared, but feel it necessary to point out that CalAm entering into a water purchase agreement with the MBRWP would not result in any environmental impacts over and above the CalAm proposed project. Also, while DWD understands the logic in comparing the impacts of the Cal Am proposed project to a scaled down version of the MBRWP, a scaled down desalination facility would not meet the objective of being a regional water source. In reality, the projects are complimentary and address the many water challenges of the greater region.

DWD-24

If you have any questions regarding these comments, please contact me at (831) 632-0616 or by email at kim@dwdesal.com.

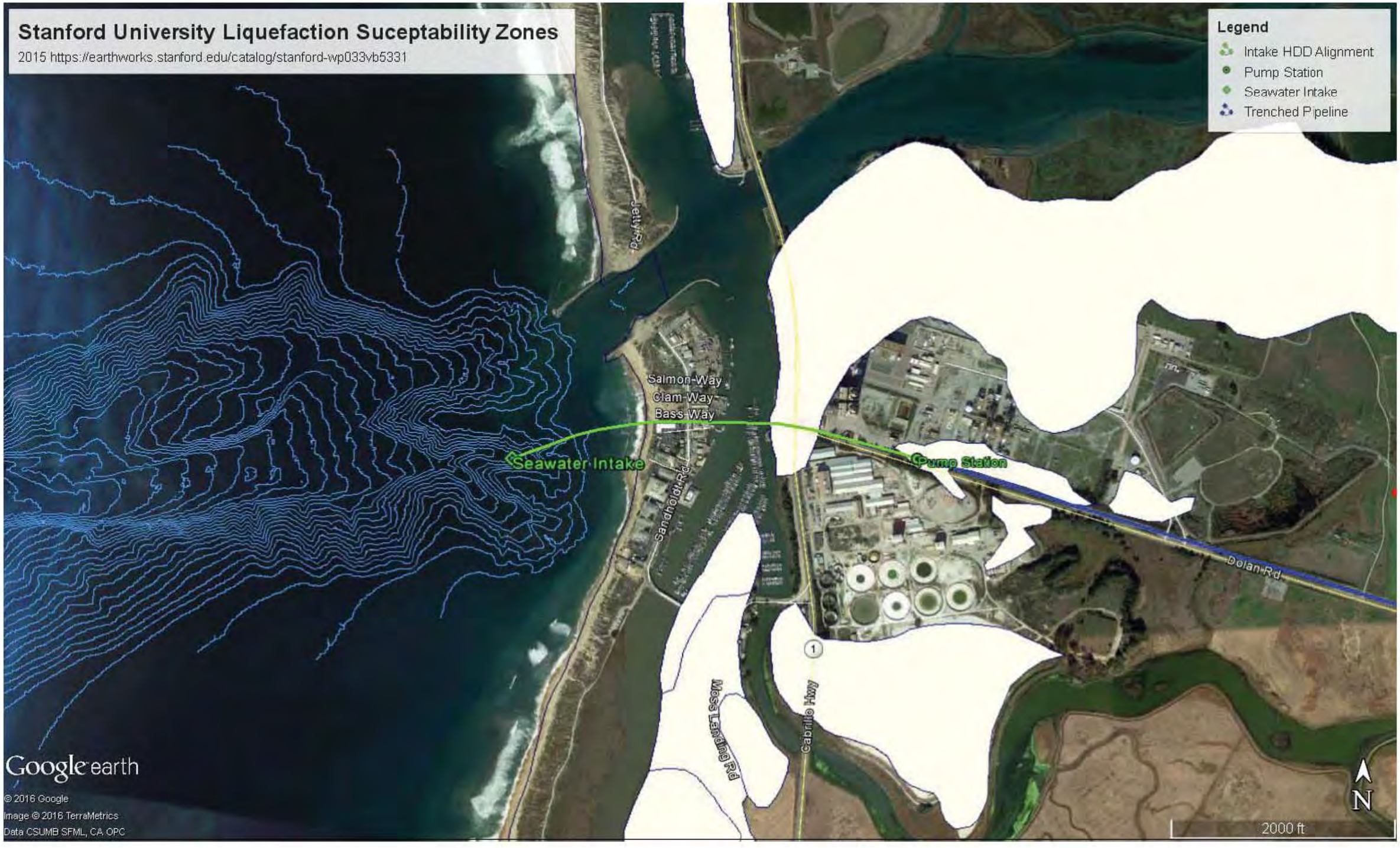
Sincerely,

Kim Adamson
General Manager
DeepWater Desal LLC

Attachments:
1.) Stanford University Liquefaction Susceptibility Zones map
2.) Pacific Institute California Flood Risk: Sea Level Rise Moss Landing Quadrangle map
3.) Monterey County Local Coastal Plan Land Use Designations map
4.) Back Projections and Rocky Habitat for Blue Rockfish map

DWD-25

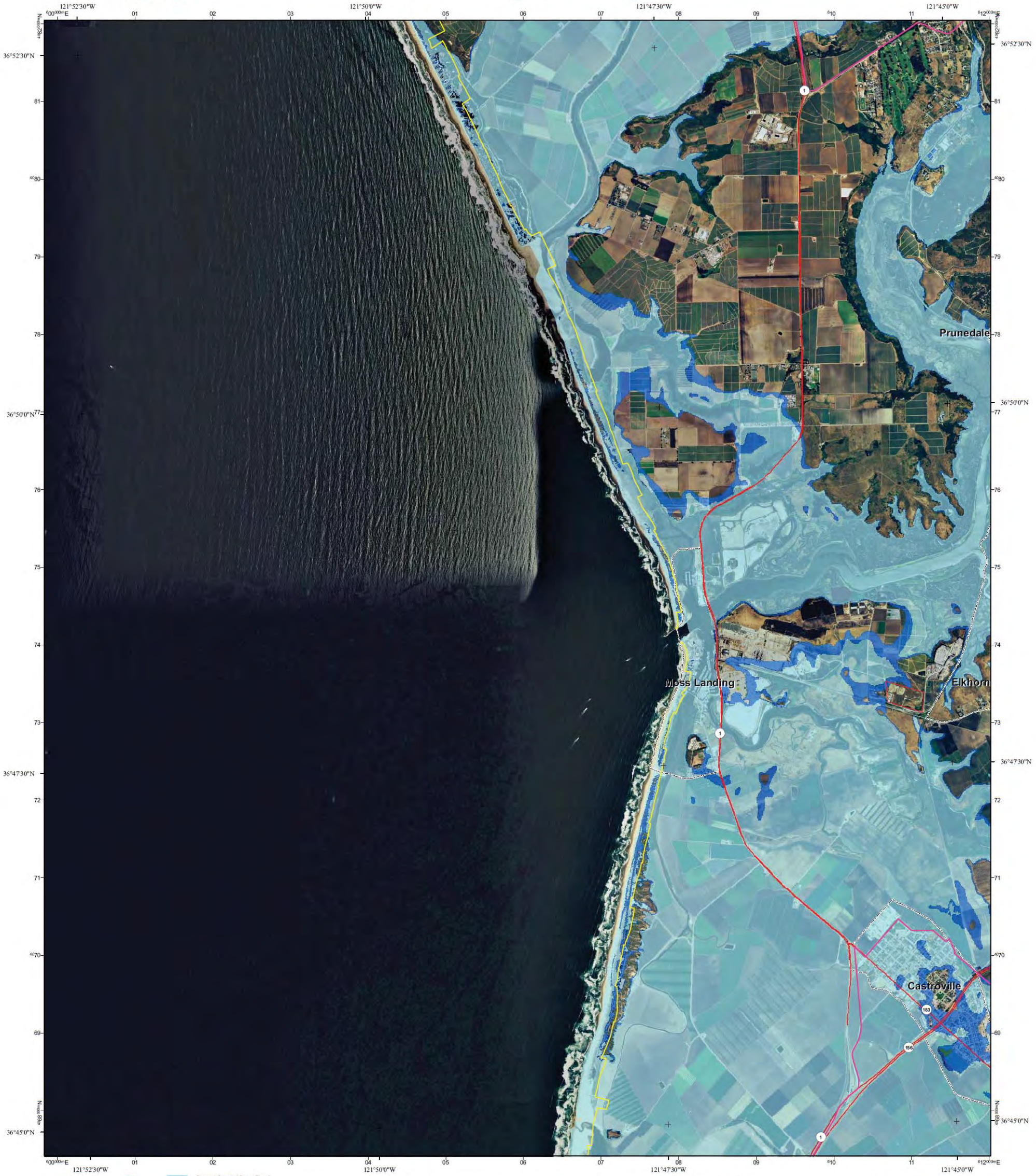
ATTACHMENT 1


Stanford University Liquefaction Suceptability Zones
2015 https://earthworks.stanford.edu/catalog/stanford-wp033vb5331
Legend
Intake HDD Alignment
Pump Station
Seawater Intake
Trenched Pipeline
Jetty Rd
Salmon Way
Clam Way
Bass Way
Seawater Intake
Pump Station
Sandhold Rd
Dolan Rd
1
Moss Landing Rd
Cabrillo Hwy
Google earth
© 2016 Google
Image © 2016 TerraMetrics
Data CSUMB SFML, CA OPC
N
2000 ft

ATTACHMENT 2

PACIFIC INSTITUTE

California Flood Risk: Sea Level Rise
Moss Landing Quadrangle



Interstate
US Highway
State Highway
County Highway

Current Coastal Base Flood (approximate 100-year flood extent)
Sea Level Rise Scenario Coastal Base Flood + 1.4 meters (55 inches)
Landward Limit of Erosion High Hazard Zone in 2100
Coastal Zone Boundary

0 0.25 0.5 1 1.5 2
Miles
0 0.5 1 2 3
Kilometers

Data Sources: US Geological Survey, Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Coastal ServicesCenter (CSC), Scripps Institution of Oceanography, Phillip Williams and Associates, Inc. (PWA), US Department of Agriculture (USDA), California Coastal Commission, and National Aeronautics and Space Administration (NASA). Imagery from ESRI and i-cubed.

Created by the Pacific Institute, Oakland, California, 2009.

Project funded by the California Energy Commission's Public Interest Energy Research Program, CalTrans, and the California Ocean Protection Council

Grid coordinates:
UTM Zone 10N meters
NAD83 GCS degrees

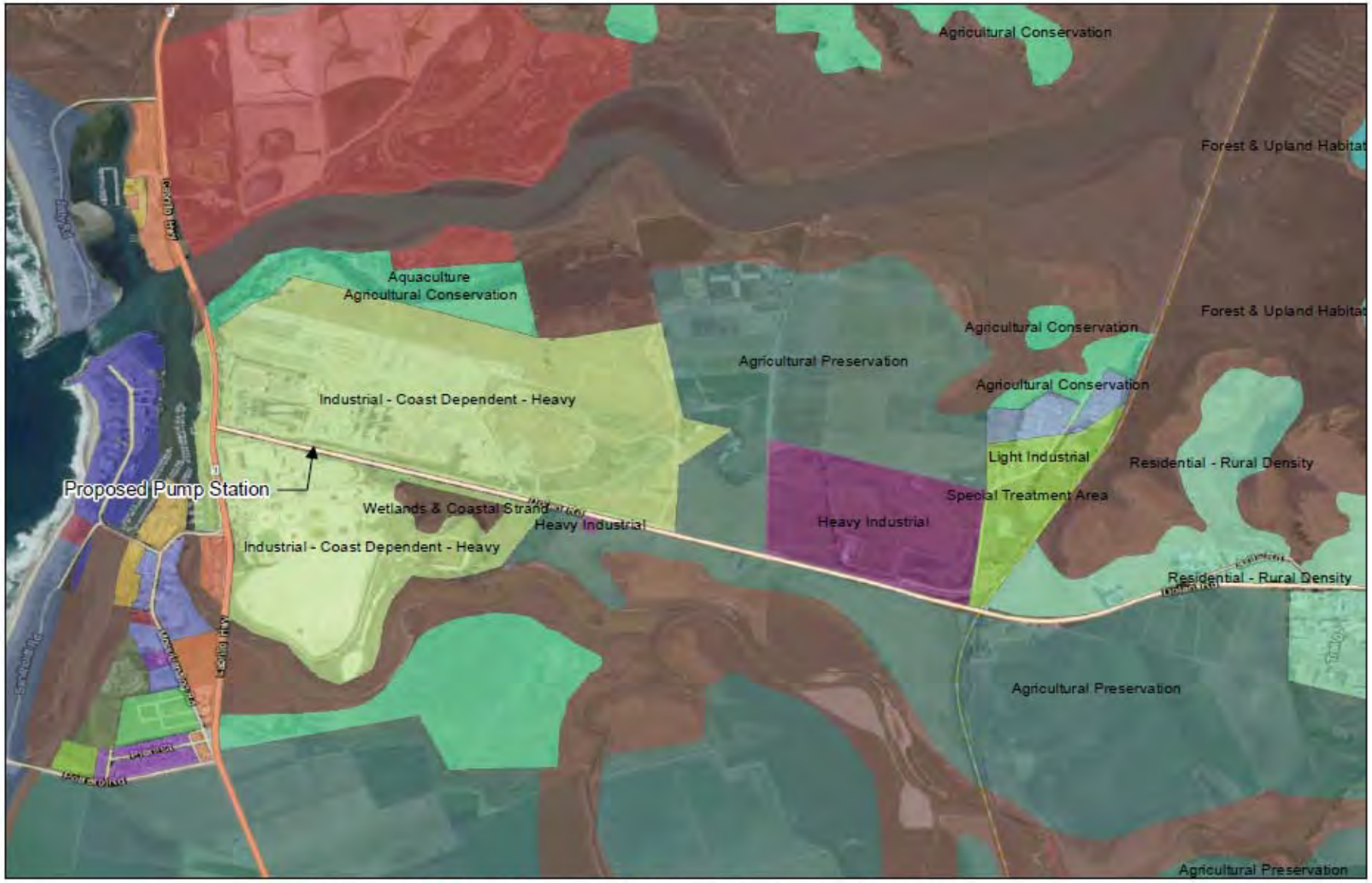
Adjoining Quadrangles:

1	2	3
4		5
6	7	8

1: Soquel
2: Watsonville West
3: Watsonville East
4: *not printed*
5: Prunedale
6: Monterey OE N
7: Marina
8: Salinas

Map extents match USGS 7.5 minute topographic maps

ATTACHMENT 3



Source: Monterey County 2016

E M C

Monterey County Local Coastal Plan Land Use Designations

Monterey Bay Regional Water Project

8.6.10 Ecological Rights Foundation (ERF), the Center for Biological Diversity (CDB), and Our Children's Earth Foundation (OCEF)

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March 29, 2017

Mary Jo Borak, CEQA Lead
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Karen Grimmer, NEPA Lead
Monterey Bay National Marine Sanctuary
99 Pacific Avenue, Bldg 445a
Monterey, CA 93940

Dear Ms. Borak and Ms. Grimmer:

I submit these comments on behalf of Ecological Rights Foundation, the Center for Biological Diversity, and Our Children's Earth Foundation, regarding the Draft Environmental Impact Report/ Environmental Impact Statement ("EIR/EIS") for the Monterey Peninsula Water Supply Project (Project), and proposed desalination plant ("Facility"). As described in detail below, the EIR/EIS is fundamentally inadequate, and meaningful public review and comment are precluded given its flawed analyses. Once the EIR/EIS is fixed, under CEQA and NEPA it must be recirculated for public review and comment. ERF-1

The EIR/EIS Insufficiently Describes Baseline Environmental Conditions

CEQA requires an accurate description of the existing "baseline" environmental conditions in order to understand a project's potential impacts. CEQA Guidelines § 15125(a). The EIR must describe the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published. CEQA Guidelines § 15125(a). Similarly, under NEPA, agencies must identify baseline environmental values in adequate detail. 40 C.F.R. §1501.2(b). To determine whether a project may cause significant impacts, an Environmental Assessment must consider the context and the intensity of impacts. Id. at 1508.27. As "significance" varies with a project's setting, "context" includes the affected region, the affected interests, and the locality. *Id.* "Intensity" refers to impact severity and requires consideration of an area's unique characteristics." *Id.*, 1508.27(b)(3). ERF-2

The EIR/EIS does not satisfy these basic requirements in its descriptions of marine and terrestrial environments. For example, the EIR/EIS reports that the largest source of contaminants is agricultural runoff into the Pajaro and Salinas Rivers. Seasonal data collected by the Central Coast Long-term Environmental Assessment Network (CCLEAN) between 2001 and 2013 indicate numerous instances where water quality objectives and human health alert levels in Monterey Bay were exceeded due to the presence of contaminants (CCLEAN, 2011 and 2014). Nearshore waters of Monterey Bay have failed to meet the Ocean Plan water quality objective for the protection of human health (i.e., concentrations are higher than numeric water quality objectives) for PCBs, Dieldrin, chlordanes, and DDTs. PCBs in the northern portion of Monterey Bay have increased significantly since 2006 and annual average concentrations across all samples have increased exponentially (CCLEAN, 2014). Yet, despite the Project's proximity to the Salinas River, and despite the acknowledgment that Monterey Bay water quality and contaminant concentrations are relevant, since the seawater extracted from the

bay through the subsurface intakes would be used as source water for the MPWSP Desalination Plant, the EIR/EIS does not discuss the concentrations of these contaminants of concern in the water or sediments near the proposed slant wells or outfall.

The EIR/EIS states that the Ocean Plan and NPDES permit monitoring requirements will require the facility operator to establish baseline biological conditions at the discharge location as well as at a reference location outside the influence of the discharge prior to commencement of construction. "To achieve this requirement, the owner or operator is required to conduct biological surveys (e.g., Before-After Control-Impact studies) that evaluate the differences between biological communities at a reference site and at the discharge location before and after the discharge commences. The pertinent regional water board uses the data and results from the surveys and any other applicable data for evaluating and renewing the requirements set forth in a facility's NPDES permit (in the case of the proposed project, the MRWPCA's outfall)." EIR/EIS 4.3-33. The same baseline environmental information is necessary to the evaluation of potential environmental impacts under CEQA and NEPA.

Local, site-specific baseline data on chemical concentrations in water and sand/sediment is particularly needed in this instance, due to the Project's co-location with the MRWPCA Regional Wastewater Treatment Plant. In winter months, secondary treated wastewater from the Treatment Plant is discharged to Monterey Bay through a diffuser positioned 11,260 feet offshore at a depth of approximately 100 feet. The Wastewater Treatment Plant is a source of numerous pollutants, and thus the water quality and sediment quality in the local environment may be significantly different, with likely higher concentrations of chemical and biological contaminants, than the water and sediment quality of Monterey Bay generally. The EIR/EIS acknowledges that the amendment process for the Wastewater Treatment Plant's NPDES Permit "would require an extensive water quality assessment, which would involve MRWPCA (as the discharger defined in the current NPDES Permit) and/or CalAm (as a contributor of a new discharge) to perform testing and monitoring of the water quality of the discharges, including the testing of the source water drawn from the subsurface water intake wells and piped to the MPWSP Desalination Plant and assessing the resulting water quality of the discharges from the MPWSP Desalination Plant." A similar water and sediment quality assessment is necessary at this stage, to establish the environmental baseline, and to adequately evaluate the Project's potential impacts.

ERF-2 cont.

The EIR/EIS unjustifiably relies on what it describes as a "long-term monitoring study of the ocean outfall," for the assertion that there have been "no effects from the outfall discharge on benthic communities, or biological accumulation of contaminants in tissue" and that "[n]o effects were observed on the physical and chemical properties of the sediments and water column except adjacent to the outfall." In fact, the cited report, "Analysis of MRWPCA Marine Outfall Benthic Monitoring Program" was prepared for Monterey Regional Water Pollution Control Authority by ABA Consultants in 1999, identifies scores of reasons why the existing monitoring data is flawed and insufficient to establish a baseline of environmental data for assessing marine impacts. The ABA report makes the following conclusions:

- The sampling methodology and design has changed over the time frame of sampling, between 1977 and 1994. This limits the comparisons that can be done within the data set and severely restricts the utility of the data. It cannot be emphasized strongly enough that a consistent sampling design is necessary for long term studies to be useful.

ERF-3

- Chemical analysis of sediments followed a standardized list of metals that was derived from studies at other sites and was inapplicable for the local area. It is not clear whether these trace metals have elevated concentrations in the effluent reaching Monterey Bay. Properly conducted chemical analysis require clean techniques, well-trained researchers, and are expensive, so it is important that we be sure that the analyses conducted are pertinent. The chemicals currently analyzed are simply a generic "laundry list" compiled from requirements in other areas that may not be of concern in this location. Carefully selecting appropriate indicators that may include chemicals not on the EPA list and may not include some standard tests as relevant for the area is an important way to customize a sampling strategy.

- Bioaccumulation studies were discontinued after 1991 and only conducted for metals.

- Arsenic concentrations increased over time at all sediment sampling stations.

- The species used for the bioaccumulation work, *Citharichthys stigmaeus* and *Crangon nigromarnlata*, were usually the most abundant species captured in trawls near the outfall. Unfortunately, these are highly mobile species whose chemical body burden may not reflect the local conditions accurately. Since these species are known to undergo substantial seasonal migrations, the concept of adjacent "impacted" and "control" stations was inappropriate.

- There has been an increase in the abundance of crustaceans and a decrease in the numbers of echinoderms. The general pattern suggested is an increase in mobile epifauna *(Hemilamprops californica, Zeugophilomedes oblonga)* and opportunistic species (magelonids) and a decrease in sessile species *(Dendraster excentriws, Tellina modesta)*, predators *(Nephtys cornuta)* and sensitive species *(Rlzepoxynius abronius)* (Figure 14). Together, the results suggest increasing disturbance in the benthic community within 2 m of the outfall;

- Because of the change in station locations in 1994, comparisons with previous years' data must be made with caution. The value of the data set for detecting changes and long-term patterns is greatly reduced by the location change; only when no station differences are found can data sets be compared between years, and there is no way to look for potential effects of the outfall. Less than half of the groupings (11 of 25) can be compared over the entire time frame of data collection; 10 more partial comparisons can be made. The station location change has greatly compromised the utility of the data, both for outfall monitoring, and for comprehensive long-term ecological research.

- The stations would be particularly useful if the scope of the chemical analyses was enlarged to include pesticide screening; pesticides are of far more concern in Monterey Bay then the metals analysed for around the outfall.

ERF-3 cont.

The Federal Register Notice for this Project was issued on August 26, 2015. The EIR/EIS uses a 2012 baseline and does not provide adequate support for the assertion that "environmental conditions in the study area have been relatively static such that 2012 conditions remain representative of meaningful baseline conditions." By relying on a 2012 baseline, rather than a 2015 baseline, the EIR/EIS may not

ERF-4

neglect recent changes in relevant environmental factors, such as habitat use or loss, and recent increases in Monterey Bay shoreline erosion. ERF-4 cont.

The EIR/EIS Is Vague and Inconsistent as to the Purpose and Need for the Project.

Under CEQA an EIR must include a statement of objectives sought by the proposed project. The statement of objectives should include the underlying purpose of the project. CEQA Guideline 15124 (b). Under NEPA the agency must provide consistent information about important aspects of the Project that are crucial for an informed consideration of project impacts.

The EIR/EIS is vague and inconsistent as to the purpose of the Project. After review of the EIR/EIS, the reader does not know if the purpose is (1) to replace existing water supplies or (2) replace existing supplies and expand water supplies, or (3) authorize otherwise prohibited activities.

The EIR/EIS at pdf 3 states "The purpose of the MPWSP is to replace existing water supplies for CalAm's Monterey District service area."

The EIR/EIS at section "ES.3.1 Cal Am Project Objectives" doesn't state the purpose of the Project, but does state 9 primary and 3 secondary objectives.

The EIR/EIS at section "ES.3.2 MBNMS Purpose and Need" states the "purpose of these proposed [federal] actions are to authorize otherwise prohibited activities to occur within MBNMS, to ensure that the State and Federal permits and the proposed project comply with MBNMS regulations, and to ensure that MBNMS resources are protected by requiring terms and conditions that may be necessary. The need for MBNMS action is to respond to CalAm's request in accordance with NMSA regulations and to protect sanctuary resources." ERF-5

EIR/EIS section 1.3 states that "The MPWSP is needed to replace existing water supplies" that have been constrained by legal decisions affecting the Carmel River and Seaside Groundwater Basin water resources.

Yet, EIR/EIS section 2.3 states that "Based on State Water Board Orders 95-10 and 2009-0060 and the Seaside Groundwater Basin adjudication, CalAm must develop a replacement water supply to meet existing demand in its Monterey District service area. **In addition, CalAm proposes** to provide sufficient supply to meet demand associated with the development of existing legal lots of record, Pebble Beach water entitlements in the Del Monte Forest area, and tourism demand under improved economic conditions within its service area."

These are not hypothetical concerns. As a factual matter if the Project purpose is to replace existing water supplies approximately 12,351 acre feet per year (afy) will be required, however if the purpose includes expanding water supply an additional 2,005 afy is required.

As a legal matter, CEQA Guideline 15124 (b) explain that a clearly written statement of objectives, that includes the project purpose, aids in development of a reasonable range of alternatives, as well as any statement of overriding considerations.

The EIR/EIS Fails to Adequately Analyze the Project's Potential Adverse Impacts on Monterey Bay Marine Life

Impingement of Organisms

Desalination intake technologies can pose major mortality threats to marine organisms if they impinge species on the seafloor or entrain species. Impingement occurs when organisms are trapped against the seafloor or the screens of intake pipes due to the constant force of water being drawn in. Entrainment occurs when very small organisms are sucked through the screens, into the pipes, and are killed within the facility during the desalination process. It is acknowledged that CalAm's proposed slant well intake design is meant to have a lessened effect on marine life by not intruding into the ocean and reducing impingement and entrainment. The EIR/EIS claims that the project will completely "eliminate" the risk of impingement or entrainment of marine life, (though sources indicate a slant well system has never been used in a full-scale desalination plant).[1] In a seeming contradiction, the 2015 DEIR concluded that "impacts from the operation of the slant wells could involve impingement of organisms against the seafloor."[2] Eliminating impingement may be true of larger marine life that typically fall prey to open water intake systems, but this technology may introduce its own negative impacts on epifaunal and infaunal organisms that live on and within the seafloor sediment, respectively. Plankton, eggs, and fish larvae are common inhabitants of this zone and may be threatened by a slant well intake pipe.[3] Subsurface slant well intake systems utilize the sandy seafloor as a preliminary filter, but also draw in organisms that inhabit this zone.[4] Squid are a valuable commodity in Monterey Bay.[5] The species *Dorytheuthis opalescens*, a native to the North American coast, for example, is protected from commercial fishing outside of fisheries because squid "demand…now exceeds supply."[6] Because squid lay their eggs in the sediment of the seafloor, they may be more greatly impacted by a subsurface intake system if they are harmed by impingement and are trapped on the seafloor. As noted in the DEIR, "a relatively small magnitude effect…could be considered significant if the species is rare and highly susceptible to disturbance."[7]

ERF-6

Brine Discharge and Hypoxia

The Project will produce up to 14 million gallons per day of high-salinity brine during the desalination process. EIR/EIS 4.3-64. The Project plans to discharge that brine through the Monterey Regional Water Pollution Control Agency's existing outfall and into Monterey Bay. Id. 4.3-64. The discharge will occur within the federally protected Monterey Bay National Marine Sanctuary, which contains "habitats that support extensive marine life," including "numerous special-status" marine species. Id. 4.5-2, 4.5-8.

ERF-7

1 Cooley, H., Ajami, N., and Heberger, M., Key Issues in Seawater Desalination in California, December 2013:9.
2 Draft Environmental Impact Report for the Monterey Peninsula Water Supply Project, State of California Public Utilities Commission, 2015:4.5-25.
3 Dickie, P., Making Water: Desalination: Option or Distraction for a Thirsty World, 2007:13.
4 Paper, W., *Overview of Desalination Plant Intake Alternatives*, June 2011:2.
5 Latham, B. and Reeb, C., Inked in Black: The value of market squid in Monterey Bay.
6 Ibid.
7 Draft Environmental Impact Report for the Monterey Peninsula Water Supply Project, State of California Public Utilities Commission, 2015:4.5-25.

Brine byproduct may not be easily dispersed in the ocean. According to Carol Reeb (a marine scientist at Stanford Hopkins Marine Lab), the density of concentrated brine causes it to sink and form an oxygen-starved layer, "like Saran Wrap,"[8] that suffocates marine life; brine discharge is "the most immediate threat to marine/estuarine life."[9] This dense byproduct accumulates on the seafloor, restricting oxygen exchange and creating hypoxic (oxygen deficient) environments. "Hypoxia is lethal to squid eggs, halibut, Dungeness crab and anything else that lives on the sandy seafloor."[10] The discharge can also contain "caustic chemicals"[11] at dangerously concentrated levels which can harm benthic organisms in ways that are not yet entirely understood. Squid, for example, lay their fragile eggs in the sandy seafloor of this benthic zone for protection, and detecting the impacts that brine has on them and other organisms "may take many years to observe."[12] These smaller benthic organisms, which may provide food sources to countless other marine species,[13] are potentially the most at-risk species and have not received adequate attention in the Cal Am DEIR. The EIR/EIS addresses the possibility of brine sinking to the seafloor. After hearing public concerns about an effect known as "Coanda attachment" which could result in substantially reduced dilution, or a dense saline plume that forms a connection to and travels along the sea floor. In response to this concern, modeled the anticipated discharge to see if this effect was likely to occur. Roberts (2016). It is unclear, however, whether the model considered the impact of the slant wells vertical infiltration rate in the area of sea floor through which seawater would be taken into the wells – approximately 1,000,000 square feet.

ERF-7 cont.

The EIR/EIS analysis of potential brine discharge impacts were based on predicted salinity at the edge of the Zone of Initial Dilution (ZID), 100 meters from the point of discharge. EIR/EIS at 4.5.4. The EIR/EIS cites the Ocean Plan limits on salinity of receiving water from desalination plant discharges - a daily maximum of 2 parts per thousand (ppt) above natural background salinity as measured no further than 100 meters (328 ft) horizontally from each discharge point (known as the brine mixing zone [BMZ]). For the MPWSP, the BMZ represents an area of approximately 27 acres based on the existing outfall diffuser structure. EIR/EIS Figure 4.3-7. This approach is insufficient as it ignores potential impacts that may occur within the BMZ, including impacts on special-status species including the California gray whale, the Southern sea otter, and bottom dwelling and foraging fish, which may live in or pass through the BMZ, as well as impacts benthic organisms and the reef-like marine community that has developed on the discharge outfall itself.

ERF-8

The EIR/EIS acknowledges, elevated salinity and its impact on marine ecology, both within and outside of the ZID, is one of the "major concerns associated with coastal desalination projects." A report commissioned by the State Water Resources Control Board to evaluate the impacts and management of brine discharges, (cited in the EIR/EIS) found "benthic infaunal communities and sea grasses are the most sensitive to the acute effects of concentrate discharge." Management of Brine Discharges to Coastal Waters: Recommendations of a Science Advisory Panel, Southern California Coastal Water Research Project ("SCCWRP Report") at 9. Yet "very few studies" have examined the sublethal impacts of long-term brine exposure on marine life and data on impacts to California biota

ERF-9

8 Reeb, Carol, Letter to State Water Board Members, April 5, 2012:3.
9 Ibid:1.
10 Abraham, Kara, Company says it can flip one of desal's biggest problems, brine discharge, into an asset, July 16, 2015.
11 Ibid.
12 Abraham, Kara, Company says it can flip one of desal's biggest problems, brine discharge, into an asset, July 16, 2015.
13 Ibid.

"are extremely limited." SCCWRP Report at 9, 11. Given this uncertainty, the SCCWRP Report recommends that salinity levels at the ZID boundary be limited to an increase of either 2 parts-per-thousand ("ppt") or 5% above pre-project ambient salinity levels, whichever is less. The EIR/EIS acknowledges that a 5% increase would be the equivalent of a 1.7 ppt salinity increase above ambient conditions, but instead basis its impact analysis on the 2 ppt threshold of significance, which represents more than a 17% increase over the 1.7 ppt threshold recommended by the SCCWRP Report. While the 2 ppt threshold aligns with the regulatory standard adopted in the recent Ocean Plan Amendment, the EIR lacks substantial evidence to justify why the 2 ppt threshold is more appropriate for the Project than a 5% increase above ambient salinity (1.7 ppt) threshold recommended by the SCCWRP Report. CEQA and NEPA analyses require such an explanation. ERF-9 cont.

The public has also raised concerns that the Project's brine analysis is susceptible to modeling error because the existing outfall and its diffusers were not designed for brine discharge. There is limited scientific literature studying mixing scenarios for a horizontal discharge of undiluted brine like the discharge that the Project proposes, as most existing studies have been conducted for inclined jets which increase the initial mixing of the plume. Fewer studies are available to characterize the mixing of negatively buoyant plumes from horizontally-oriented discharge ports. Additionally, most of the studies looking at desalination impacts on marine environments lack quantitative data, adding uncertain and demanding caution when making environmental decisions about introducing this technology at such a large scale.[14] Due to the importance and sensitivity of the Monterey Bay marine environment, the cost of developing the Facility, and the fact that it will produce and discharge such significant amounts of brine each day, the Project must be held to rigorous standards for its potential impacts. ERF-10

Another common critique of brine byproduct disposal is that the salt can be harnessed and used for other purposes. For example, salt extraction technology may triple the revenue of desal facilities, while eliminating brine byproduct altogether.[15] Alternatives to brine disposal are not sufficiently evaluated in the EIR/EIS. ERF-11

Toxic Substances

As reported in the Monterey Peninsula Water Supply Project Hydrogeologic Investigation Technical Memorandum, results of water quality sampling in isolated aquifer zones at the Cemex facility, collected via exploratory boreholes between February and March 2014, found elevated levels of hydrocarbons throughout the aquifer zones, including 1,2-Dichlorobenzene-d4; 1,3-Dimethyl-2-nitrobenzene; 1-Br-2-Nitrobenzene; Tetrachloro-meta-xylene (TCMX). The sampling also discovered elevated levels of pesticides, including aminomethylphosphonic acid (AMPA) and 2,4-dichlorophenoxyacetic acid (DCPAA). AMPA, the primary degradation product of glyphosate in plants, soil and water. AMPA's chemical structure is very similar to that of glyphosate, recently determined by the International Agency for Research on Cancer to be a probable human carcinogen. The State of California has determined it will include glyphosate on its list of known carcinogens. Elevated levels of AMPA were found throughout the aquifer layers at every screen interval sampled. ERF-12

14 Roberts, D.A., Knott, N.A., and Johnston, E.L. Impacts of Desalination Plant Discharges on the Marine Environment: A Critical Review of Published Studies, October 2010.
15 Abraham, Kara, Company says it can flip one of desal's biggest problems, brine discharge, into an asset, July 16, 2015.

The EIR/EIS states that "former industrial, commercial, and military activities in the region have resulted in soil and groundwater contamination from spills, leaking underground tanks, unlined chemical disposal sites, and inadvertent disposal of chemicals". The EIR/EIS also concludes that "within the CEMEX area, the NMGWM projects that groundwater elevations could decrease and that decrease could incrementally affect groundwater flow directions. If there are nearby inland sites that are remediating contaminated groundwater in the same aquifers and that are located within the radius of influence of the slant wells, then the pumping of the slant wells could potentially interfere with those remediation activities, pulling contaminated groundwater into currently uncontaminated areas and degrading the existing water quality. This would violate the state policy of maintaining the existing water quality. A significant impact would occur if the proposed project created a condition that would violate water quality standards or otherwise degrade water quality." However, the EIR/EIS makes no mention of the contaminants found in the local aquifer. At a minimum, the environmental impacts analysis should 1) identify possible sources of the contaminants, including any known plumes that may migrate toward the slant wells, 2) discuss relevant water quality screening values, 3) analyze the impacts of the contaminants on the source water, and 4) discuss the potential for the contaminants to concentrate in brine, and, if so, any potential adverse impacts to marine life from the brine disposal. Additionally, the Cemex Lapis Sand Plant, which has been in operation since 1906, is a potential source of groundwater contamination that is not addressed in the EIR/EIS.

ERF-12 cont.

ERF-13

The EIR/EIS Table 4.7-1 incorrectly appears to incorrectly identify the Fort Ord Operable Unit 1 as "Closed – Groundwater cleanup completed". According to the State Water Resources Control Board GeoTracker database, Operable Unit 1 (OU1) is the Fritzsche Army Airfield Fire Drill Area site. It originally consisted of a groundwater plume (primarily TCE) and some source area soil contamination (primarily TCE). The soil contamination has been successfully remediated, leaving only the groundwater plume. Since identification of an off-site (outside the former Ft. Ord boundaries) portion of the groundwater plume in 2005, this plume is typically defined as consisting of two parts: the on-site and off-site portions. See, https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=DOD100220600

ERF-14

The EIR/EIS states that "[r]outine backwashing of the pretreatment filters would occur each day. Backwashing the pretreatment filters would require that a chlorine solution (sodium hypochlorite, similar to bleach) be added to the backwash water supply to control bacterial growth on the filters. . . [a]pproximately 0.4 million gallons per day (mgd) of decanted backwash water may be pumped to the Brine Discharge Pipeline, blended with brine produced by the RO system, and discharged to the existing MRWPCA ocean outfall. The volume of sodium hypochloride to be used, its likely concentrations in discharge water and potential adverse impacts to the marine environment are not adequately addressed.

ERF-15

Additional Flaws in the Analysis of Biological Impacts

The EIR/EIS does not disclose that California fully protected species are present in the study area, nor consider the impacts of the Project on these species. The EIR/EIS entirely fails to consider the impacts of the Project on the fully protected California Brown Pelican. Calif. Fish & Game Code §3511. The California Brown Pelican roosts in the Monterey Bay National Marine Sanctuary. Nor does the EIR/EIS disclose that the Pacific right whale, the northern elephant seal (Mirounga angustirostris), and Southern sea otters (Enhydra lutris nereis) are California fully protected mammals. Calif. Fish & Game

ERF-16

Code §4700. The EIR/EIS does not consider whether the Project violates their California fully protected species status. The EIR/EIS also fails to discuss potential impacts to dungeness crab, a species with high ecological and regional economic importance.

There could be unanticipated effects on benthic and pelagic communities in the vicinity of the discharge, or on individual members of protected species that feed, pass through or otherwise spend time in high brine concentration areas near the Facility's outfall. Yet, there is insufficient discussion and support for findings regarding impacts of elevated brine concentrations on these animals and their food sources.

ERF-16 cont.

The EIR/EIS Fails to Adequately Analyze the Potential Adverse Impacts on Snowy Plovers

A portion of the Project will occur on land currently used by the western snowy plover, a threatened species under the federal Endangered Species Act (ESA). Due to significant concerns with the Project detailed in the below comments, we urge the Commission to modify Project approval for the following reasons:

• The Commission has failed to meet its obligations under state and federal law by not analyzing all Project impacts on the plover, including slant well maintenance and operational activities, permanent loss of western snowy plover habitat, beach erosion, sea level rise and cumulative impacts from neighboring property.

• The Project, as currently proposed, will result in the likely take of the threatened western snowy plover, which is an important coastal natural resource. Because mitigation measures are likely insufficient to avoid take of listed species caused by construction and operation of the Project, CalAm needs to prepare a Habitat Conservation Plan (HCP) in support of an application for an Incidental Take Permit to avoid liability under the Endangered Species Act (ESA).

ERF-17

Endangered Species Act

The Endangered Species Act (ESA) affords broad protections to threatened and endangered species. The ESA is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation."[16] Its fundamental purposes are "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved [and] to provide a program for the conservation of such endangered species and threatened species . . . ."[17]

To achieve these objectives, the ESA directs the USFWS to determine which species of plants and animals are "threatened" and "endangered" and place them on the list of species afforded protection under the ESA.[18] An "endangered" species is one "in danger of extinction throughout all or a significant portion of its range," and a "threatened" species is "likely to become endangered in the near future throughout all or a significant portion of its range."[19] Once a species is listed, the ESA provides

16 *Tennessee Valley Auth. v. Hill* ("Hill"), 437 U.S. 153, 180 (1978).
17 16 U.S.C. § 1531(b).
18 16 U.S.C. § 1533.
19 *Id.* at §§ 1532(6), (20).

a variety of procedural and substantive protections to ensure not only the species' continued survival, but also its ultimate recovery. The Supreme Court has noted that "Congress has spoken in the plainest words, making it clear that endangered species are to be accorded the highest priorities."[20]

Section 9 of the ESA prohibits any "person" from "taking" or causing take of any member of an endangered species.[21] This take prohibition also applies to threatened species such as the western snowy plover.[22] The term "take" is defined broadly, need not be lethal, and includes to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" or cause another to do so.[23] The USFWS has further defined "harass" to include "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, including breeding, feeding, or sheltering."[24] In addition, "harm" is defined to "include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."[25]

The ESA's legislative history supports "the broadest possible" reading of the prohibition against take.[26] "Take" includes direct as well as indirect harm and need not be purposeful.[27] Present or future harms qualify as take: "an imminent threat of harm . . . falls easily within the broad scope of Congress' definition of 'take.'"[28]

The ESA authorizes private enforcement of the take prohibition through a broad citizen suit provision. "[A]ny person may commence a civil suit on his own behalf to enjoin any person, including . . . any . . . governmental instrumentality or agency . . . who is alleged to be in violation of any provision of [the ESA] . . . ."[29] Citizens may seek to enjoin both present activities that constitute an ongoing take and future activities that are reasonably likely to result in a take.[30] Courts have held that "the language and legislative history of the ESA, as well as applicable case law, support our holding today that a showing of a future injury to an endangered or threatened species is actionable under the ESA [citizen suit provisions]."[31] 50 F.3d at 783. Upon a showing of "imminent threat of injury to wildlife," the injury requirement of the Secretary's definition of "take" and "harm" would be satisfied.[32] The ESA's citizen suit provision also provides for the award of costs of litigation, including reasonable attorney and expert witness' fees.[33]

ERF-17 cont.

20 *Hill*, 437 U.S. at 194.
21 16 U.S.C. § 1538(a).
22 *Id.* at § 1533(d); 50 C.F.R. § 17.31.
23 16 U.S.C. § 1532(19).
24 50 C.F.R. § 17.3.
25 *Id.*
26 *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687, 704-05 (1995).
27 *Id.* at 704; *see also Nat'l Wildlife Fed'n v. Burlington N. R.R.*, 23 F.3d 1508, 1512 (9th Cir. 1994).
28 *Forest Conservation Council v. Rosboro Lumber Co.*, 50 F.3d 784, 785 (9th Cir. 1995).
29 16 U.S.C. § 1540(g).
30 *Nat'l Wildlife*, 23 F.3d at 1511.
31 *Forest Conservation Council v. Rosboro Lumber Company*, 50 F.3d 781, 783 (9th Cir. 1995)
32 *Id.*; see also *Animal Welfare Institute v. Beech Ridge Energy*, 675 F.Supp 2d 540 (D. Md. 2009) (enjoining construction of wind turbines until an ITP is obtained by developer to protect Indiana Bat).
33 16 U.S.C. § 1540(g)(4).

Under section 10 of the ESA, a non-federal entity such as a developer can avoid potential liability for taking a threatened species by obtaining an incidental take permit.[34] In exchange for permission to "take" a listed species pursuant to an ITP, the permit applicant must commit to implement a plan that "conserv[es]" – *i.e.*, facilitates the recovery of – the species.[35] This plan is called a Habitat Conservation Plan and it must delineate "the impact which will likely result from such taking" and the "steps the applicant will take to minimize and mitigate such impacts . . . ."[36]

Snowy Plover Background

The western snowy plover (*Charadrius nivosus nivosus*) is one of the least numerous shorebirds in North America and the Pacific coast population of the western snowy plover was federally listed as threatened in 1993.[37] Historically, thousands of western snowy plovers nested along the California coast.[38] However, by 1980, the western snowy plover had disappeared from significant parts of its coastal California breeding range, and biologists estimate the breeding population along the coast has now dwindled to less than 1,500 birds.[39]

The population has continued to decline despite publication of the recovery plan and protection under the ESA. Habitat degradation – often from beach-front recreation and development – has caused the western snowy plover's population to decline over the past century.[40] Because western snowy plover habitat consists of unstable sandy shorelines, it is "highly susceptible to degradation by construction of seawalls, breakwaters, jetties, piers, homes, hotels, parking lots, access roads, trails, bike baths, day-use parks, marinas, ferry terminals, recreational facilities, and support services."[41] Unstable coastal habitat also makes western snowy plovers vulnerable to climate change, since sea level rise and erosion decrease their habitat area.[42]

ERF-17 cont.

Insufficient Analysis of Impacts to Snowy Plover

The EIR/EIS insufficiently examines the impacts of the Project on the snowy plover. First, the Project will significantly reduce important western snowy plover habitat along the shoreline of Monterey Bay, including historic nesting and foraging habitat on and immediately adjacent to the Project site.

ERF-18

34 16 U.S.C. § 1539(a)(1)(B).
35 *Id.* at §§ 1539(a)(1)(B), (a)(2)(A); *see also Sierra Club v. U.S. Fish & Wildlife Serv.*, 245 F.3d 434, 441-42 (5th Cir. 2001) ("'[c]onservation' is a much broader concept than mere survival" because the "ESA's definition of 'conservation' *speaks to the recovery of a threatened or endangered species*" (emphasis added)).
36 16 U.S.C. § 1539(a)(2)(A).
37 Morrison RIG, BJ McCaffery, RE Gill, SK Skagen, SL Jones, GW Page, CL Gratto-Trevor, BA Andres. 2006. Population estimates of North American shorebirds, 2006. Wader Study Group Bulletin 111:66-84; 58 Fed. Reg. 12864 (Mar. 5, 1993)
38 WesternSnowyPlover.org. n.d. Western Snowy Plover Natural History and Population Trends. *Adapted from U.S. Fish and Wildlife Western Snowy Plover Pacific Coast Population Draft Recovery Plan*, May 2001. Available at: <http://www.westernsnowyplover.org/pdfs/plover_natural_history.pdf> (Accessed 14 Nov 2014). *See also* Thomas SM, JE Lyons, BA Andres, EE T-Smith, E Palacios, JF Cavitt, JA Royle, SD Fellows, K Maty, WH Howe, E Mellink, S Melvin, T Zimmerman. 2012. Population Size of Snowy Plovers Breeding in North America. Waterbirds 35(1):1-14.
39 *Ibid.*
40 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover *(Charadrius alexandrinus nivosus)*. Sacramento, California. xiv + 751,.
41 *Id.*, 34.
42 Thomas 2012, Population Size of Snowy Plovers Breeding in North America (2012).

As the EIR/EIS recognizes, impacts from construction of the nine subsurface slant wells and conversion of the test well to a permanent well "would be significant." EIR/EIS 4.6-129. The nine acre construction footprint for the wells is located within potential nesting habitat and the construction would result in the temporary loss of eight acres and the permanent loss of one acre of potential wintering habitat. In addition, "construction noise and vibration, earthmoving activities, vegetation clearance, and nigh lighting associated with installation of the [wells] . . . could also impact plovers by causing temporary flight of breeding birds, nest abandonment, or nest failure." *Id.* "Human presence and construction noise and activities" would be a significant impact. *Id.* at 4.6-130. In addition to the direct impacts of the Project that reduce western snowy plover habitat, sea level rise and erosion linked to climate change will also contribute to reduction of plover habitat.

The EIR/EIS states that mitigation measures, such as construction during non-breeding season and other avoidance techniques, will reduce impacts to the western snowy plover to below the level of significance. *See* Mitigation Measure 4.6-1d: Protective Measures for Snowy Plover. However, even if this is true for construction activities, the EIR/EIS inadequately evaluates the impacts to plovers during maintenance and operational activities. Because anthropogenic disturbance is the primary threat to the western snowy plover, numerous biologists have concluded that protecting occupied sites from human disturbance and associated domestic animals may be essential to the conservation and recovery of the species.[43] Operational and maintenance activities have the potential to cause significant impacts and must be more closely examined.

ERF-18 cont.

As the EIR/EIS states, continual disturbance of this six-acre slant well site for maintenance purposes "may preclude plovers from nesting in this location in the future." EIR/EIS 4.6-235. "Therefore, this would be a permanent loss of up to 6 acres of western snowy plover habitat." *Id.* However, unlike the discussion of mitigation measures to be adopted for construction activities, the EIR/EIS limits mitigation resulting from maintenance activities to restoration actions beyond the Project site. "Permanent loss of western snowy plover habitat will be compensated, at a minimum ratio of 2:1, or as otherwise negotiated with USFWS, through actions to enhance existing degraded habitat." EIR/EIS 4.6-170. The EIR/EIS does not attempt to analyze mitigation measures that could be taken on-site to reduce take of endangered plovers. Nor is there a discussion on whether enhancement of degraded habitats would fully compensate for the loss of the six acres lost due to Project activities.

In addition, the EIR/EIS fails to examine the operational impacts of the Projects, and the slant wells in particular, to snowy plovers. While the simultaneous operation of the 10 wells pumps "would generate a noise level of approximately 66 dBA at 50 feet," and 57 dBA at 150 feet, the EIR/EIS concludes that the pumps would not impact plovers at the site. However, plovers may be significantly closer than 50 feet away from the well pumps, and the examples the EIR/EIS uses to justify the cumulative impacts are not persuasive. For example, while crashing waves of the Pacific Ocean may register at 57 dBA at 300 feet, and machinery and mining vehicles associated with CEMEX operations register at 85 dBA at 50 feet, and there is noise associated with traffic on Highway 1, the impacts from noise sources may be as much related to proximity as they are decibel level, and there is no analysis in the EIR/EIS which suggests that snowy plovers could tolerate yet another source of anthropogenic noise. Just because the

ERF-19

43 United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover *(Charadrius alexandrinus nivosus)*. Sacramento, California. xiv + 751. *See also* Brindock KM, MA Colwell. 2011. Habitat Selection by Western Snowy Plovers During the Nonbreeding Season. Journal of Wildlife Management 75(4):786-793.

"noise level from pump operations would be less than the combination of these existing sources" does not mean that pump noises would have no impact – if anything, the cumulative effects of these noise sources in combination with the new pumps may drive plovers away from the site. EIR/EIS 4.6-237. These cumulative effects from the pumps and neighboring properties must be considered in the analysis of noise impacts. Additionally, the EIR/EIS fails to analyze the potential impacts on snowy plovers from the vibrations caused by the well pumps. ERF-19 cont. ERF-20

CalAm Must Prepare a Habitat Conservation Plan

As a result of the activities associated with the slant wells and pumps, the incidental take of snowy plovers is highly likely. To comply with the mandates of the ESA, CalAm must prepare a HCP in support of an application for an Incidental Take Permit (ITP) to avoid liability under the ESA.

Incidental take of a snowy plover is likely to occur as a result of habitat displacement, construction and maintenance activities, and operation noise and vibrations from the well pumps. Not only will the Project permanently and temporarily remove habitat from plover use, but the impacts of the Project in combination with other neighboring uses, in addition to the ongoing threats of sea level rise and beach erosion, will harm the plover and contribute to its population decline. Because "take" is broadly defined to "include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering," and the mitigation measures proposed are unlikely to bring impacts to a less-than-significant level, resulting in take in the form of harm and harassment, CalAm must fulfill its obligations under the ESA Section 10 and apply for an ITP. 16 U.S.C. § 1539(a)(1)(B). ERF-21

The Analysis of Cumulative Marine Biological Impacts is Flawed.

CEQA Guideline 15130(b)(3) requires an EIR to define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.

There is no explanation of why the geographic area (north of Moss landing Harbor south to the northern limits of Sand City) is chosen, nor why the "area within 5 miles of shore" is chosen. EIR/EIS 4.5-67. ERF-22

The EIR/EIS posits a 2 step filter for whether projects are considered as part of the cumulative marine impact analysis: projects (1) within the [unexplained] geographic scope and (2) whose impacts could overlap with those of the Project. This second step - impacts which overlap - is not an approach explained in the EIR/EIS, nor sanctioned by CEQA or NEPA, and therefore appears improper. Further, the EIR/EIS seems to exclude projects characterized as having "very localized construction impacts," without any rationale or explanation why. ERF-23

The EIR/EIS improperly excludes from the cumulative marine impact analysis the City of Sand City Coastal Desalination Project (No. 6) which will utilize four seawater extraction wells. ERF-24

The EIR/EIS also improperly excludes the 90-inch Bay Avenue Outfall Phase I (No. 43) which will discharge and breach the sand bar periodically. ERF-25

In identifying potential cumulative growth-inducing effects, the EIR/EIS states that "[s]everal of the planned future cumulative projects identified in Table 4.1-2 would provide new sources of potable water supply in Monterey County. The Monterey Bay Regional Water Project (DeepWater Desal) (No. 34) would provide water to the City of Salinas as well as parts of Santa Cruz County. If both the MPWSP and DeepWater Desal were approved, water from DeepWater Desal could be used to support growth in other nearby areas such as northern Monterey County." Yet the EIR/EIS improperly excludes from the cumulative marine impact analysis the Peoples' Moss Landing Desal Project. The EIR/EIS states the Peoples' Moss Landing Water Desal Project and the proposed Project "would not both be implemented to serve the same customers." EIR/EIS 4.1-21. The Draft Process Design Report for The People's Moss Landing Water Desal Project does not so limit the People's Desal Project or mention the Monterey Peninsula Water Supply Project. ERF-26

Similarly, the EIR/EIS states that "it is expected that either the DeepWater Desal Project (No. 34) or The Peoples' Moss Landing Desal Project (No. 57), but not both, would be constructed and operated in the reasonably foreseeable future." EIR/EIS 4.5-70. The Draft Process Design Report for The People's Moss Landing Water Desal Project does not support this asserted limitation. It is not certain if multiple desalination sites will or will not be constructed, but because they have also begun their CEQA environmental review processes, they are legitimate and "reasonably foreseeable and probable future" projects that need to be considered. Combined, the impacts from the Cal Am project and these other proposed sites may be "considerable...or...increase other environmental impacts. CEQA Guidelines, § 15355. ERF-27

In fact, it appears that the EIR/EIS has focused on the DeepWater Desal Project to the exclusion of The Peoples' Moss Landing Desal Project because "the DeepWater Desal is the largest of the other two desal projects and further along in environmental review." EIR/EIS 4.5-67-68. This "larger and farther along" approach for excluding projects from cumulative analysis is not condoned by CEQA or NEPA.

By excluding The People's Moss Landing Water Desal Project, the EIR/EIS has not considered the People's open bay seawater collection and brine discharge in its cumulative marine impact analysis.

The EIR/EIS appears to individually consider the other projects (No. 31, 35, 47, and 34) "in the evaluation of the proposed project," but fails to consider the Project **in combination with** all of these projects. For example, the EIR/EIS states that the "test slant well (No. 47) was considered in the evaluation of the proposed project." Separately, the RUWAP Recycled Water Element (No. 35) was considered "in combination with the proposed project," but not in combination with all of the identified projects. ERF-28

In considering the RUWAP Recycled Water Element (No. 35), the EIR/EIS appears to improperly terminate any consideration of whether cumulative impacts would be significant after stating that the "RUWAP Recycled Water Element in combination with the proposed project would be **within the range** analyzed under Impact 4.5-4; that impact was determined to be less than significant." This "within the range" approach contradicts CEQA - which defines cumulative impacts as the change in ERF-29

the environment resulting "from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." CEQA Guideline 15355, subd. (b). Simply because the project specific impacts were insignificant does not mean that the cumulative impacts will be insignificant, nor that the Project impacts will not make a considerable contribution to cumulative impacts.

Further, the EIR/EIS fails to disclose which Impact 4.5-4 "range" it is referring to. The reader does not know if the EIR/EIS is referring to impingement of marine organisms, entrainment, to impingement of fine organic matter, salinity, dissolved oxygen, or some other criteria. This is important information. Salinity effects, for example, are species-specific. Within the Zone of Initial Dilution, the EIR/EIS admits that areas could be unsuitable for spawning of squid as a result of the Project alone. EIR/EIS 4.5-60.

ERF-29 cont.

The EIR/EIS repeatedly avoids consideration of cumulative impacts by improperly relying on findings of Project-specific insignificance determinations. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. CEQA Guideline 15355, subd. (b). Simply because the Project-specific impacts were insignificant does not mean that the cumulative impacts will be insignificant nor that the Project impacts will not make a considerable contribution to cumulative impacts.

ERF-30

The cumulative **construction** impacts discussion is flawed as it only considers the impacts of construction of the Monterey Peninsula Water Supply Project. The cumulative construction impacts discussion is further flawed because while the EIR/EIS acknowledges potential impacts from release of drilling fluids, it does not consider the cumulative impacts from such releases.

ERF-31

In considering the cumulative salinity impacts of the DeepWater Desal project, the EIR/EIS improperly considers only "the two projects," (EIR/EIS p. 4.5-69), not the cumulative impacts of these two projects with all other reasonably foreseeable projects.

ERF-32

The EIR/EIS is flawed as it minimizes the cumulative salinity impacts based on "the distance between the DeepWater Desal proposed outfall and the existing outfall proposed for use by the MPWSP (i.e., 31,511 feet; 9,605 meters) leads to the determination that there is no expectation of the two BMZs [brine mixing zones] reaching each other or intermixing discharge waters." The 2012 Science Advisory Panel technical report prepared for the California Water Resources Control Board, entitled "Management of Brine Discharges to Coastal Waters" explains that "brine mixing zone" may be too myopic a focus and suggests that brine "far field" impacts should also be consider. The paper explains at section 6.1 that

> It is important to understand the distinctions between near field, mixing zones, and other related terms that are often associated with wastewater discharges. These are discussed further in Appendix D. The near field is a hydrodynamic, or physical, concept. It is the region where mixing of the effluent is influenced and affected by

ERF-33

> discharge parameters. The physical processes are primarily entrainment caused by shear between the buoyant jet (either positively or negatively buoyant), an internal hydraulic jump where the plume impacts a boundary (e.g., sea floor) or water surface and transitions to horizontal flow, and entrainment in the horizontally spreading layer. The near field ends where the self-induced turbulence collapses under the influence of the induced density stratification. **The layer then spreads as a density current of some finite thickness.** Ultimately, ambient diffusion due to oceanic turbulence is responsible for most mixing and dilution; this region is known as the far field. **The rate of mixing and dilution in the far field is much slower than in the near field**. A mixing zone is a regulatory concept that will generally encompass most, or all, of the near field.

ERF-33 cont.

Appendix D of that same paper explains that "the mixing zone may not correspond to actual physical mixing processes."

The EIR/EIS Does Not Sufficiently Address the Project's Energy Use or Cumulative Impacts from Greenhouse Gas Emissions

The high energy requirements of desalination contribute to climate change and ocean acidification, using desalination is a tradeoff of a short-term water problem for a long-term climate disruption. Action to address climate change has become ever more urgent with each passing day. The federal government confirmed that 2014 was the hottest year ever recorded. (NASA 2015.) In the National Climate Assessment released by the U.S. Global Change Research Program, experts make clear that "reduc[ing] the risks of some of the worst impacts of climate change" will require "aggressive and sustained greenhouse gas emission reductions" over the course of this century (Melillo, 2014.) California has a mandate under AB 32 to reach 1990 levels of greenhouse gas emissions by the year 2020, equivalent to approximately a 15 percent reduction from a business-as-usual projection. (Health & Saf. Code § 38550.) The state Legislature has found that failure to achieve greenhouse gas reduction would be "detrimental" to the state's economy. (Health & Saf. Code § 38501(b).) Most recently, Governor Brown issued Executive Order B-30-15 establishing that California must reduce greenhouse gas emissions 40 percent below 1990 levels by 2030 to avoid major climate disruptions, resulting in such impacts as increased temperatures and wildfires, and a reduction in snowpack and precipitation levels and water availability.

ERF-34

Although some sources of greenhouse gas emissions may seem minor, climate change is a problem with cumulative impacts and effects. (*Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, (9th Cir. 2008) 538 F.3d 1172, 1217 ("the impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis" that agencies must conduct).) One source or one small project may not appear to have a significant effect on climate change, but the combined impacts of many sources can drastically damage California's climate as a whole. Therefore, CEQA and NEPA require that an EIR/EIS fully disclose and analyze a project's greenhouse gas emissions and contribution to climate change and ocean acidification, including both direct and indirect impacts. (CEQA Guidelines, § 15064.)

Desalination facilities are notorious energy hogs. The EIR/EIS notes the facility would result in "long-term high energy consumption of substantial amounts of electricity, including electricity produced from non-renewable resources." The reverse osmosis process to remove the salt from seawater

involves passing the water through a series of filters at very high pressures which, at such a large scale of production, requires an enormous amount of energy. The proposed slant well subsurface intake technology will require even more energy to haul source water into the facility. In both economic and environmental terms, the desalination process is costly.

Although the desalination process would not itself emit greenhouse gases, the high energy use means a high consumption of fossil fuels and extensive environmental impacts associated with their use. The greenhouse gas emissions associated with increased consumption of fossil fuels may actually contribute to water shortages,[44] and thus solidify desalination as only a temporary fix and actually counter-productive in the long-run. The project will produce significant and unavoidable impacts even with mitigation on climate change and emissions.[45]

Energy intensive desalination may make sense to combat water shortages in certain areas of the world, where population already vastly exceeds available water resources because the cost of "the energy and CO2 for desalination [is] comparable to current values obtained from importing water hundreds of miles overland"[46] but this is not the case in Northern California, and is certainly not the case here, where the desalination facility is specifically sized to service future development and population growth.

ERF-34 cont.

CEQA requires that an EIR to discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. CEQA Guideline 15130, subd. (a). The EIR/EIS determines that the Project's greenhouse gas effect is cumulatively considerable, but fails to properly discuss the cumulative impacts. This EIR improperly focuses solely on construction and operational impacts of the Project alone - without consideration of the greenhouse gas effect of the Project **in combination with** past, present and reasonably foreseeable project. By definition, the "cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects." CEQA Guideline 15355, subd. (b).

Further, CEQA requires that the discussion of cumulative impacts reflect the severity of the impacts and their likelihood of occurrence. CEQA Guideline 15130(b). The Draft EIR contains no discussion of the severity of the cumulative greenhouse gas impacts.

The DEIR/DEIS Fails in its Assessment Growth Inducing Impacts

To comply with CEQA, an EIR must discuss the ways in which the proposed project could affect economic or population growth in the vicinity of the project and how the characteristics of the project could result in other activities with adverse impacts to the environment [CEQA Guidelines Section 15126.2(d)].

ERF-35

Specifically, CEQA Guidelines Section 15126.2(d) states that an EIR must:

44 Dickie, Phil, Making Water: Desalination: Option or Distraction for a Thirsty World?, June 2007.
45 Draft Environmental Impact Report for the Monterey Peninsula Water Supply Project, State of California Public Utilities Commission, 2015:4.11-15.
46 Reeb, Carol, Letter to State Water Board Members, April 5, 2012.

> "Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects, which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment"

Economic growth refers to the extent to which a proposed project could cause increased activity in the local or regional economy. Economic and population growth can be induced in a number of ways, including through the elimination of obstacles to growth, or through the stimulation of economic activity. Elimination of obstacles to growth refers to the extent to which a proposed project removes infrastructure limitations or removes regulatory constraints that could result in growth. For example, an increase in the capacity of utility or road infrastructure that is installed as part of the proposed project could allow either new or additional development in the surrounding areas. Increases in the population may tax existing community service facilities, requiring new facilities, the construction of which could cause potentially significant environmental impacts.

ERF-35 cont.

This is clearly the case in the Monterey Bay Area, which currently suffers from traffic congestion, overcrowded schools, depleted water basins, urban and industrial stormwater pollution, and overtaxed wastewater treatment and conveyance facilities. In short, the region's infrastructure is inadequate to accommodate current demands. Yet, as proposed, the Facility is designed to produce significantly more water than the current service area demand. The Facility's capacity was specifically designed to include estimated water needs for developing all currently vacant lots of record, and "bounce back" of the area's tourism industry, in addition to a replacement supply. In fact, providing sufficient water supplies to serve existing vacant legal lots of record, and accommodating tourism demand under recovered economic conditions, are stated "fundamental" objectives of the Project. (Goals that are perhaps at odds with another "fundamental" objective of minimizing project costs and associated water rate increases.) As the CEQA Guidelines recognize, development and population growth have numerous primary and secondary environmental impacts that must be analyzed in an EIR, including traffic impacts, air pollution, greenhouse gas emissions, and water pollution. Instead of evaluating these reasonably foreseeable impacts of the project, the EIR/EIS improperly writes off that analysis as an obligation of municipal planning processes.

In addressing potential cumulative growth-inducing effects, the EIR/EIS identified a number of planned projects that would provide new sources of potable water supply in Monterey County. "The Monterey Bay Regional Water Project (DeepWater Desal) (No. 34) would provide water to the City of Salinas as well as parts of Santa Cruz County. If both the MPWSP and DeepWater Desal were approved, water from DeepWater Desal could be used to support growth in other nearby areas such as northern Monterey County. The RUWAP Desalination Element (No. 31) would serve the Marina Coast Water District's Ord Community with approximately 1,000 afy of potable supply." It concludes that "[g]rowth induced by one or more of these cumulative water supply projects in combination with the proposed project would result in secondary effects of growth in Monterey County that are similar to,

ERF-36

but would likely be more severe and widespread than, those summarized above in Table 6.3-9; these impacts including increased traffic, noise, and air pollution and loss of open space and biological resources." However, none of these, or other likely impacts, are adequately described or analyzed in the EIR/EIS. ERF-36 cont.

The EIR/EIS Provides Insufficient Analysis of Preferred Alternatives to Desalination

There is general consensus that brine discharge, and entrainment/ impingement from intake systems are serious threats to marine life. These concerns are reflected in California's recently adopted desalination policy. Monterey Bay is a particularly valuable environment, for both ecological and commercial reasons. In 2010, MBNMS, in collaboration with the California Coastal Commission, California Central Coast Regional Water Quality Control Board, and NOAA Fisheries, published Guidelines for Desalination Plants in Monterey Bay National Marine Sanctuary which implement the desalination action plan included in the MBNMS Final Management Plan. Stressing the importance and sensitivity of the Monterey Bay environment, the Guidelines state:

- Desalination should only be considered when other preferable alternatives for meeting water needs, such as increased conservation and wastewater recycling are maximized or otherwise determined not feasible, and it is clear that desalination is a necessary component of the region's water supply portfolio;

- Project proponent should provide a complete evaluation of the need for a desalination plant. This should include a background of the water supply situation and discussion and evaluation of alternatives that have been considered to obtain the necessary volume of water; including the potential to use other economically and environmentally preferable alternatives including increased conservation, brackish water desalination, and wastewater recycling to meet some or all of the water needs of a proposed project;

ERF-37

The EIR/EIS does not adequately consider the New Monterey Peninsula Water Conservation and Rationing Plan, which outlines a target water production goal of 12,002 afy,[47] nearly satisfying the service area demand of 12,270 afy, and fails to adequately evaluate the feasibility of desalination alternatives, such as wastewater and storm water reclamation, watershed restoration, and climate appropriate landscaping.

Thank you for your consideration of these issues.

Sincerely,

Fredric Evenson, for
Ecological Rights Foundation
Center for Biological Diversity
Our Children's Earth Foundation

47 2016 Monterey Peninsula Water Conservation and Rationing Plan. February 17, 2016.

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