

Scope and Process: Scientific and technical review of the information and conclusions presented in the report *Review of Lease Obligations and Assessment of Impacts to Public Trust Resources and Values: State Oil and Gas Lease PRC 1824 and PRC 3150 Terminations and 4H Shell Mounds Disposition*

California Ocean Science Trust peer review on behalf of the California State Lands Commission

Project Background and Management Context

The California State Lands Commission (CSLC) provides the people of California with effective stewardship of the lands, waterways, and resources entrusted to its care based on the principles of equity, sustainability, and resiliency, through the preservation, restoration, enhancement, responsible economic development, and the promotion of public access. CSLC administers leases related to oil and gas operations located in and adjacent to the state’s waterways, beaches, and coastline. While CSLC placed a moratorium on new oil and gas leases in 1969, it still oversees the management, revenues, and regulation of leases issued prior to that time. This includes the State Oil and Gas Lease to Standard Oil Co. of California (now Chevron Corporation) and Humble Oil and Refining Co. (now ExxonMobil) issued in 1957, and the lease issued to Richfield Oil Corporation (now BP, PLC) and Standard Oil in 1964. These leases were associated with oil and gas production from Platforms Hilda, Hazel, Hope, and Heidi (collectively the 4H Platforms), which were installed in State waters offshore Santa Barbara County between 1958 and 1965.

In 1994, CSLC approved Chevron’s 4H Platform Removal Project, which did not specify removal of the “shell mounds” below the platforms. In 1996, Chevron removed the platforms, leaving the subsea shell mounds, consisting of empty mussel shells, sediment, and debris covering an inner layer containing drill muds and cuttings, on the seabed at each platform site and remnants of caissons in the mound at the Hazel site. A 2014 analysis suggests that the outer layer of shells may act as an armor, preventing release of contaminants to open waters, and removal of the shell mounds may result in the release of an unacceptable amount of contaminated material into the water column during the proposed dredging operation. Chevron maintains that it has met the lease obligations and has submitted a renewed petition to quitclaim its leases, which includes, among other stipulations, a proposal to keep the 4H shell mounds in place in their current configuration, unless otherwise specified by the CSLC.

Review Request and Scope

In order to ensure state decisions are grounded in sound scientific conclusions, CSLC has requested Ocean Science Trust (OST), a non-profit organization dedicated to convening science expertise to accelerate process toward a resilient coast and ocean, coordinate a peer review to evaluate the scientific and technical merits of the white paper *Review of Lease Obligations and Assessment of Impacts to Public Trust Resources and Values: State Oil and Gas Lease PRC 1824 and PRC 3150 Terminations and 4H Shell Mounds Disposition*, which includes an assessment of effects to public trust resources and values associated with the presence of the 4H shell mounds on the seafloor.

Reviewers will conduct an assessment of whether:

- 1) the scientific information presented within the report is sound and reasonable,
- 2) the relevant science included in the report is comprehensive and representative of existing knowledge in this field of research; and,
- 3) any interpretations and conclusions drawn in the report are appropriate given the available scientific information.

OST will coordinate all aspects of the review in alignment with our core review principles¹ - objectivity, transparency, reviewer candor, efficiency, and scientific rigor. OST will develop a public summary memo that appropriately represents individual reviewer assessments, and provide individual written reviews directly to CSLC and authors.

Roles and Responsibilities

California Ocean Science Trust

Ocean Science Trust will participate in the review process as follows:

1. *Design and implement a review process that addresses management needs.* OST will work with CLSC to formalize a review scope and process (this document) that meets our collective intention of promoting full candor among reviewers, scientific rigor, efficiency, and fulfills Ocean Science Trust and CSLC's shared commitment to public accountability and transparency. The review scope and process identifies the charge to reviewers and the scientific and technical issues on which CSLC would like feedback, specifies the roles and responsibilities of each party, and will be publicly available on the Ocean Science Trust website at <https://www.oceansciencetrust.org/seafloormounds>.
2. *Assemble reviewers.* OST will identify up to four reviewers that are subject matter experts in relevant and diverse scientific fields as applicable to the scope of this review. See section "Reviewer Selection" below for additional details.
3. *Conduct an independent review process.* OST will work with CSLC to inform the reviewers of the scope and purpose of their task, including how the information they produce will be used. OST will compile background information relevant to the review scope and propose a timeline that balances management deadlines for delivery of the final product and availability of appropriate experts.
4. *Produce and deliver final outputs.* OST will work with reviewers to prepare a brief public summary memo of the review process and resulting reviewer assessments, as well as provide to CSLC confidential individual written reviews (including track-change comments and edits within the draft white paper) and individual reviewer responses to a set of directed questions that address the scope outlined above.

¹ Carter, H., Knight, E., Meyer, R., and Whiteman, E. Peer Review: Developing Successful Scientific and Technical Review Processes to Advance Science in Marine and Coastal Decision-making. California Ocean Science Trust, Oakland, California, USA. June 2016. <https://www.oceansciencetrust.org/wp-content/uploads/2016/06/OST-Peer-Review-Guide-6-1-16.pdf>

5. Encourage candor among reviewers. To encourage unbiased and candid input, reviewer comments and feedback will not be attributed to the individual reviewer although reviewer names will be released following the close of the process. OST will honor and appropriately represent each reviewer's assessment, including any dissenting views, in the public summary memo.
6. Serve as an honest broker. OST will act as an honest broker between participating agency staff, authors, and reviewers to help strengthen collaboration and mutual understanding and promote clear communication.

California State Lands Commission

CSLC will participate in the review process as follows:

1. Provide all relevant project documents and supporting materials. CSLC will identify and provide all project documents and other information necessary for reviewers to conduct a constructive assessment, including the underlying data and literature review that supports the product under peer review. CSLC will work to ensure all related materials are clear and accessible to reviewers in a realistic timeframe.
2. Constructively engage with Ocean Science Trust staff. CSLC staff most familiar with the project documents under review will engage in the process and be available to answer questions or provide additional materials requested by the reviewers as deemed necessary, with OST serving as the mediator between reviewers and CSLC. The CSLC project leads are Nicole Dobroski, Chief, Division of Environmental Planning and Management, and Eric Gillies, Assistant Chief, Division of Environmental Planning and Management, who have agreed to serve as the primary contacts during the review process with additional support from Mike Henry, Senior Ecologist, DUDEK, lead author(s) of the report under review. In order to adhere to review timelines, CSLC will respond to and provide feedback on requested materials from Ocean Science Trust in a reasonable, mutually agreed-upon timeframe.
3. Consider reviewer comments and recommendations. Mike Henry, DUDEK, and Nicole Dobroski, CSLC, intend to consider reviewer feedback to inform revisions to the document under review, as appropriate.

Review Process

Scoping the Review

Prior to engaging reviewers, OST will work closely with CSLC to develop and formalize the review scope and process (this document), identify reviewer expertise needs, and develop review instructions and guiding questions for reviewers that focus their efforts on the appropriate scientific and technical aspects of the work product.

Reviewer Selection

OST will assemble a review committee composed of **up to four external scientific experts**. OST will solicit reviewer recommendations from our own professional network, including from the Ocean Protection Council Science Advisory Team. Reviewers may include subject matter experts from academia, research institutions, consulting, and government agencies as appropriate to deliver balanced feedback and multiple perspectives. Reviewers will be considered based on two key criteria:

- **Expertise:** The reviewer should have demonstrated knowledge, experience, and skills in one or more of the following areas:
 - Geologist with related expertise for assessing the potential impacts to the mounds due to earthquakes
 - Marine toxicologist and/or geochemist with expertise related to the toxicity of the spoils imbedded in the mounds
 - Marine ecologist and/or oceanographer (generalist) with broad expertise and knowledge of the local region where the shell mounds are located
- **Conflict of Interest:** Reviewers will be asked to disclose any potential conflicts of interest to determine if they stand to financially gain from the outcome of the process (i.e., employment and funding). The reviewer should be independent from the generation of the product under review, free from institutional or ideological bias regarding the issues under review, and able to provide an objective, open-minded, and thoughtful review in the best interest of the review outcome(s). In addition, the reviewer should be comfortable sharing his or her knowledge and perspectives and openly identifying his or her knowledge gaps. Conflicts will be considered by OST on a case-by-case basis and may exclude a potential reviewer's participation.

Final selections of reviewers will be made by OST, also in consideration of our commitments to Diversity, Equity and Inclusion in all scientific panels and convenings.

To encourage unbiased and candid input, the reviewer names, comments and feedback will be kept anonymous to CSLC and the public during the course of the review. Reviewer names will be released following the close of the process, but comments and feedback will not be attributed to the individual reviewer. Given that the assessment will focus on key scientific and technical elements (and not on management or regulation), maintaining individual reviewer anonymity during the review will encourage unbiased and candid input, as well as ensure this review is conducted in a timely and efficient manner.

Assembling Review Materials and Engaging Reviewers

CSLC will be asked to deliver all materials for review, along with any background information or underlying data, to OST in Excel and Word documents (with line numbers where feasible).

Ocean Science Trust will provide reviewers with:

- Project document(s), underlying data, and any supporting materials, including ROV survey results and a side scan sonar report

- Review scope and process (this document)
- Review instructions and guiding questions

Reviewer Assessment

Reviewers will be asked to prepare individual written responses based on guiding questions in the review instructions. Reviewer responses and comments will be submitted electronically; however, OST will be responsive to the need to schedule a remote call should the level of complexity within the responses warrant it. We request that reviewers support their comments, positive or negative, with specific evidence and suggestions for improvement, and identify within the project documents where additional relevant sources of information could be integrated. In addition to their direct responses to specific questions, reviewers will be asked to provide specific in-text comments directly on the project document(s) in the form of “track-changes.”

Developing Review Outputs

OST will organize reviewer assessments into two review outputs to be provided to CSLC:

1. A brief public summary of the review process and resulting reviewer assessments to be made available on the Ocean Science Trust website upon completion of the review.
2. Anonymous collated reviews, including individual reviewer in-text comments on the draft and responses to guiding questions from the review instructions. We acknowledge that reviewers may provide recommendations beyond the given charge; such recommendations will be honored and represented in the public memo as well as provided anonymously to CSLC.

Timeline

The review will take place from August through December 2022. A timeline of each milestone is provided below.

Milestone	2022					2023
	Aug	Sept	Oct	Nov	Dec	Jan
Finalize Review Scope & Develop Review Instructions						
Reviewer Selection						
<i>CSLC delivery of project document(s) to OST</i>						
Reviewer Assessment						
Develop Deliverables						
Publish summary memo and individual reviews submitted to CSLC						

Contact Information

- **For information related specifically to the scientific review process:** Monica LeFlore, Science Officer, California Ocean Science Trust (monica.leflore@oceansciencetrust.org)
- **For information related to the report under review and other management inquiries:** Nicole Dobroski, Chief, Division of Environmental Planning and Management, California State Lands Commission (Nicole.Dobroski@slc.ca.gov)