

STAFF REPORT

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REQUEST AUTHORITY FOR THE EXECUTIVE OFFICER TO SOLICIT PROPOSALS FOR CONSULTANT SERVICES, NEGOTIATE FAIR AND REASONABLE PRICES, AWARD AND EXECUTE AGREEMENTS, AND TAKE OTHER STEPS NECESSARY FOR THE PLUG AND ABANDONMENT OF LEGACY OIL AND GAS WELLS IN SANTA BARBARA AND VENTURA COUNTIES

PARTY:

California State Lands Commission

BACKGROUND:

Historical Overview

In the late 1800s, the area offshore of Summerland Beach in Santa Barbara County contained hundreds of oil wells and related drilling infrastructure. Today, the coastline area retains the vestiges of that extensive offshore oil production. These are the unfortunate legacy of the rapid and intensive offshore oil development along the coastline that began just before the turn of the twentieth century, primarily at Summerland Beach in Santa Barbara County.

Per Public Resources Code section 6212, a legacy well is one that was drilled before current abandonment standards, where there is little or no information on the well's abandonment procedure available, and a responsible party cannot be found. The legacy wells are also sometimes called orphan wells. Most legacy oil and gas wells were abandoned in the early 1900s when oversight was nonexistent. Virtually no records exist regarding the drilling and abandonment of these wells. Removal, if any, varied from well-to-well and involved rudimentary procedures that fell short of current health, safety, and environmental protection requirements. Based on the Commission's research, there are approximately 200 high priority legacy oil and gas wells (identified as Category 1 wells), that could, depending on their condition, leak oil into the marine environment, negatively impacting swimmers, surfers, recreational users, and marine and coastal wildlife and fish and their habitats, as well as causing environmental degradation and public health and safety hazards. There is little or no information on the abandonment procedure for these wells and no viable company with the responsibility to re-abandon any of these wells should they start leaking or pose

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a threat to the environment or to public health and safety. Several hundred other wells are categorized as medium (Category 2) to low (Category 3) priority wells because more information is available about the integrity and abandonment of these wells or because a responsible party is or may be available to address any leak that may occur.¹

SB 44 - Coastal Hazard and Legacy Well Removal and Remediation Program

In 2017, the Legislature passed SB 44 (Jackson), finding a critical need for funding to remove coastal hazards, to identify exact locations of legacy oil and gas wells that may be leaking, and to prioritize remediating wells with the highest risk. The funding enables the Commission to gather data to address the presence of oil along the coastline, determine where legacy wells are located and whether they are leaking oil, and prioritize remediation to address the highest risk wells first. The funding also enables the Commission to survey and monitor offshore oil seeps in State waters, to contract for studies to determine oil seepage locations, rates, and environmental impacts, and pursue innovative solutions to address natural seeps.

SB 44 added section 6212 to the Public Resources Code, which states that when the Legislature appropriates revenue the Commission shall, within 2 years, administer a coastal hazard and legacy oil and gas well removal and remediation program. SB 44 authorizes up to \$2 million annually from the General Fund to the Commission's Kapiloff Land Bank Fund, beginning in Fiscal Year 2018-19 and through Fiscal Year 2027-28, to administer the program. In July 2018, the Commission received the first \$2 million appropriation.

Becker Well Plug and Abandonment and Subsequent Remediation Efforts

On August 17, 2017, the Commission certified an Environmental Impact Report for the Becker and Legacy Wells Abandonment and Remediation Project (CSLC EIR No. 792, State Clearinghouse No. 2016101008) (Becker EIR) and authorized staff to hire a contractor to plug and abandon the Becker well, a leaking legacy well located in the tidal zone on Summerland Beach ([Item 82, August 17, 2017](#)). The Becker well was successfully plugged on March 1, 2018, after 4 days and \$192,000 (or 14 percent) under the \$1,400,000 budget. The project used an innovative approach involving installation of a cofferdam and pipe pile that entombed the well head in cement to bedrock.

Building on the success of the Becker well project, the Commission authorized staff to secure a contractor to develop plans to abandon additional legacy wells ([Item 93, June 21, 2018](#)). The Commission's contractor, InterAct PMTI, Inc., has since developed abandonment plans for the Treadwell Number 10 well,

¹ More information on the program can be found on the Commission's website at <https://www.slc.ca.gov/coastal-hazards-legacy-wells/>.

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Duquesne Number 910 well, and the C.H. Olsson Number 805 well, all located at Summerland Beach. Staff is investigating other identified and suspected legacy wells within the region as candidates for future abandonment operations. In addition, staff developed an Addendum to the Becker EIR that analyzes applying the approach used on the Becker well to other legacy wells located on Summerland Beach (EIR Addendum).

PROPOSED ACTIVITY:

Staff seeks a delegation of authority to the Executive Officer to secure the services of a qualified engineering consultant firm to plug and abandon legacy wells located at and near Summerland Beach. Staff anticipates a 3-year contract term to abandon legacy wells located in and near the Santa Barbara Channel, depending on unit cost and available SB44 funding.

The objective of the proposed activity is to stop oil releases from up to eight legacy Summerland area oil wells (Project). As previously described, these are orphan wells, meaning there is no responsible private party for the State to require to abandon the wells. These wells are thus the responsibility of the State and abandonment is paid for with funds allocated in the State budget by SB 44. The Project objectives include minimizing environmental impacts with a proven, cost-effective approach.

Well abandonment typically begins with the installation of a cofferdam around the legacy well, in this case an 8-foot-diameter cofferdam. The cofferdam isolates the well area from the ocean, creating a workspace for welders and a platform from which to weld joints of pipe pile together. The cofferdam also prevents spills or releases of oily material from entering the ocean. A cylindrical cofferdam approach is planned, as it proved very effective for the Becker well abandonment. During abandonment, oil would be periodically skimmed from the water surface inside the cofferdam and stored in a storage tank on a barge. Fluid not contaminated with hydrocarbons would be returned to the ocean prior to barge departure.

A vibratory hammer or diesel impact hammer would (if necessary) then be employed to drive in one 24-inch hollow steel pipe pile around the well to a depth approximately 93 feet below the mud line (15 feet into the surface of the impermeable Blue Clay bedrock) at the Treadwell location. During vibratory pile driving, obstructive resistance may be encountered that prevents the pipe pile from penetrating any deeper even after realignment of the pipe pile has been performed. A diesel impact hammer may then be utilized to drive the pipe pile to the required depth. All pipe pile-driving activities involving the combination of a vibratory hammer and impact hammer are anticipated to take between 45 and 90 minutes.

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Pile-driving activities would occur between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. Soft start methods would be used for both vibratory hammer and impact hammer pile-driving activities. Soft start procedures include beginning with reduced force and ramping up gradually to the necessary force. These soft start procedures would be implemented at the start of each day's pile driving and at any time following the cessation of pile driving for a period of 30 minutes or longer (up to a maximum duration of approximately 90 minutes). For soft start procedures, the sound would be initiated for 15 seconds at reduced energy followed by a 30-second waiting period; this procedure would then be repeated two additional times prior to pile driving at maximum hammer performance. Pile driving would be continued until the required embedment is achieved.

Once the pipe pile has been set at the required depth, a high-pressure jetting tool would be employed, as needed, to remove sand from between the pipe pile and the wellbore. With the annular space between the pipe pile and the well casing cleared out, cement would then be pumped into the pipe pile and would act as a first barrier to migration of hydrocarbons up the annular space. The final step of well abandonment would be to weld a steel plate on top of the pipe pile. The plate would act as a secondary barrier to migration of hydrocarbons.

Once the well abandonment is complete, cofferdam removal would begin. The same vibratory hammer used to install the cofferdam would also be utilized during removal, with the cofferdam being lifted by the vibratory driver and placed onto the barge. Fluid stored in the holding tank of the barge that is not contaminated with hydrocarbons would be discharged overboard prior to barge departure. If the cofferdam becomes stuck and is unable to be removed, the cofferdam would be cut 5 feet below the mud line (if feasible), removed, and stored on the barge. The low portion of the cofferdam would be left in place.

All work would be performed in consultation with the California Geologic Energy Management Division (formerly known as the California Division of Oil, Gas and Geothermal Resources) and conducted pursuant to the Mitigation Monitoring Program adopted by the Commission as part of the Becker EIR and as modified by the EIR Addendum.

STAFF ANALYSIS AND RECOMMENDATION:

Authority:

Public Resources Code sections 6005, 6212, 6216, and 6301; California Code of Regulations, title 2, section 2980 et seq.

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Public Trust and State's Best Interests Analysis:

The Legislature, when it passed SB 44, found that there is a critical need for funding to remove coastal hazards, to identify exact locations of legacy oil and gas wells that may be leaking, and to prioritize remediating wells with the highest risk. SB 44 granted the Commission both the authority and funding to establish a coastal hazard and legacy oil and gas well removal and remediation program. The proper abandonment of legacy wells will reduce and eliminate oil discharges at or near public beaches. This will improve the public's access to, and enjoyment of, the State's coastal resources.

To this end, the EIR Addendum (published January 9, 2020 and found on the [Commission website https://www.slc.ca.gov/cega/becker/](https://www.slc.ca.gov/cega/becker/)) builds on the Becker EIR by analyzing the Becker well abandonment approach to legacy wells located in the sub- and intertidal zones. Staff anticipates that the abandonment approach described in the Becker EIR, as modified by the EIR Addendum, will allow for the safe and effective elimination of oil leaks from legacy wells within the Summerland area.

Project Modifications

The Project modifications evaluated in the EIR Addendum include onshore beach access, use of a diesel impact hammer to drive pipe piles, and removal of a cement well cap (as found at the Treadwell Number 10 well). The modifications are evaluated to determine if they would produce any new significant environmental impacts or a substantial increase in the severity of significant effects previously identified in the Becker EIR.

Onshore Beach Access

Due to their onshore and intertidal locations, including C.H. Olsson Number 805 and Duquesne Number 910, some wells are accessible from the beach during low tides. This allows for well abandonment activities to occur utilizing a low-tide onshore beach access approach. Lookout Park parking lot at Summerland Beach would be temporarily utilized as needed and during high tide cycles as a staging area for abandonment-related equipment and vehicles. As the high tide recedes, equipment would be brought in through two access routes along Summerland Beach. C.H. Olsson Number 805 would be accessed via the county beach access road from Lookout Park. Duquesne Number 910 would be accessed via the county beach access road located off Finney Street. From the staging area in the Lookout Park parking lot, equipment operators would head east for 0.25 miles down Wallace Avenue to Finney Street. The equipment operators would then head 0.1 miles down Finney Street to a county

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beach access road. Other leaking wells discovered along Summerland Beach could also be accessed from these routes.

Use of Diesel Impact Hammer

The Becker EIR identified the use of a vibratory hammer as the Applicant Proposed Measure (APM-4). As stated in the EIR, vibratory hammers “generally produce less sound than impact hammers and are often employed as a mitigation measure to reduce the potential for adverse effects on fish that can result from impact pile driving.” The effects of the higher decibel (dB) levels associated with the impact hammer (approximately 15 to 25 dB higher than vibratory hammers) were not evaluated in the Becker EIR; however, the more powerful diesel impact hammer may be required to drive the pipe pile to deeper depths during offshore well abandonment operations for other legacy wells. The diesel impact hammer would be used at peak noise levels for a maximum duration of approximately 90 minutes or less.

Cement Well Cap Removal

The Treadwell Number 10 well is the only known leaking legacy well requiring cement well cap removal. Following positioning and anchoring of the barge over the Treadwell Number 10 well, divers would temporarily displace sand with water jetting tools to fully expose the existing 6-foot wide by 4-foot-tall cement well cap. For Treadwell Number 10, as of June 2019, approximately 20 inches of the well cap was exposed above the natural seafloor. Once the well cap has been further exposed using water jetting tools, divers would employ cold cutting methods and a pneumatic rivet buster to break up the cement well cap allowing access to the top of the original wellhead in preparation for well abandonment. The broken-up cement well cap would be moved out of the way and left on the seafloor. Complete cement well cap exposure is estimated to take 5 days to complete.

Modified Mitigation Measure

The Becker EIR as modified by the EIR Addendum supports the conclusion that the use of onshore beach access, the utilization of a diesel impact hammer, and cement well cap removal do not result in any new significant environmental effects or a substantial increase in the severity of previously identified significant effects. No new information regarding adverse impacts has become available and no substantial changes to the circumstances under which the Project is being undertaken have occurred since certification of the Becker EIR. No substantial changes are required for the modifications compared to that analyzed in the Becker EIR. There are no new mitigation measures required and no new alternatives are

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available that would substantially reduce the environmental effects beyond those previously described in the Becker EIR. However, one mitigation measure has been modified. MM BIO-4b, "Soft Start," was modified to add the requirement to perform a soft start to all pile driving activities in order to account for diesel impact hammer use.

Climate Change Analysis:

A discussion of climate change and sea-level rise considerations is included in the Becker EIR under Section 8, *Other Commission Considerations*. The analysis concluded that given the very short duration of the Project and because no permanent infrastructure is proposed for the Project, sea-level rise will not have any effect on the Project.

Conclusion:

For all the reasons above, staff recommends that the Commission delegate authority to the Executive Officer, or her designee, to solicit proposals for consultant services, negotiate fair and reasonable prices, award and execute agreements, and take any other steps reasonably necessary to abandon up to eight legacy wells in and near Summerland Beach and the Santa Barbara Channel. Staff will continue its long-standing coordination with the Department of Conservation and the many stakeholders who have an interest in these issues. This undertaking will not substantially interfere with Public Trust needs and values, is consistent with the common law Public Trust Doctrine, and is in the best interests of the State.

OTHER PERTINENT INFORMATION:

1. The proposed action is consistent with Strategy 1.1 of the Commission's Strategic Plan to deliver the highest levels of public health and safety in the protection, preservation, and responsible economic use of the lands and resources under the Commission's jurisdiction.
2. Pursuant to the Commission's delegation of authority and the State California Environmental Quality Act (CEQA) Guidelines (Cal. Code Regs., tit. 14, § 15025), Commission staff prepared an EIR for the original project identified as the Becker and Legacy Wells Abandonment and Remediation Project, CSLC EIR No. 792, State Clearinghouse No. 2016101008. The EIR was prepared and circulated for public review pursuant to the provisions of CEQA and certified by the Commission together with adoption of a Mitigation Monitoring Program, CEQA Findings, and Statement of Overriding Considerations on August 17, 2017 ([Item 82, August 17, 2017](#)). In January 2020, staff prepared an Addendum to the EIR as described above and posted the Addendum on the

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[Commission website](#). The evaluation contained in the Addendum, based on substantial evidence, found that no new or more severe significant effects will occur as a result of abandoning additional legacy wells at Summerland Beach.

3. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code section 6370 et seq. At the time the Commission certified the Becker EIR in 2017, staff concluded that such activity would not affect those significant lands and the Commission found the activity to be consistent with its use classification pursuant to Public Resources Code section 6370 et seq.

APPROVALS REQUIRED:

U.S. Army Corps of Engineers
Central Coast Regional Water Quality Control Board
California Coastal Commission
Santa Barbara County

RECOMMENDED ACTION:

It is recommended that the Commission:

CEQA FINDING:

1. Find that the Commission certified the Becker and Legacy Wells Abandonment and Remediation Project, CSLC EIR No. 792, State Clearinghouse No. 2016101008, and adopted a Mitigation Monitoring Program, CEQA Findings, and Statement of Overriding Considerations on August 17, 2017 ([Item 82, August 17, 2017](#)); that the Commission has reviewed and considered the information contained therein together with the Addendum prepared by staff in January 2020 available on the Commission website; that the Addendum modifies MM BIO-4b, that in the Commission's independent judgment, the scope of activities to be carried out has been adequately analyzed; that none of the events specified in Public Resources Code section 21166 or the State CEQA Guidelines section 15162 resulting in any new or substantially more severe significant impacts will occur, and therefore, no additional CEQA analysis is required.
2. Adopt the modified MM BIO-4b, "Soft Start," to perform a soft start to all pile driving activities in order to account for diesel impact hammer use; all other mitigation measures in the Mitigation Monitoring Program remain valid.

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PUBLIC TRUST AND STATE'S BEST INTERESTS:

Find that the activity will not substantially impair the public rights to navigation and fishing or substantially interfere with the Public Trust needs and values at this location, at this time, and for the duration of the plug and abandonment activities; is consistent with the common law Public Trust Doctrine; and is in the best interests of the State.

AUTHORIZATION:

Authorize the Executive Officer or her designee to solicit proposals for consultant services, negotiate fair and reasonable prices, award and execute agreements, and take any other steps reasonably necessary to abandon up to eight legacy wells in and near the Santa Barbara Channel, pursuant to the requirements of the Public Contract Code and current State policies and procedures.