



July 23, 2021

Ms. Cheryl L. McCormick,
Chief Department of
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Office of State Audits and
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Dear Ms. McCormick:

**CALIFORNIA GEOLOGIC ENERGY MANAGEMENT DIVISION, UNDERGROUND
INJECTION CONTROL AND WELL STIMULATION TREATMENT PROGRAMS, CORRECTIVE
ACTION PLAN - DEPARTMENT OF CONSERVATION RESPONSE TO PERFORMANCE AUDIT
REPORT
– UPDATE 1 (JULY 2021)**

On behalf of the Department of Conservation (DOC) and its Geologic Energy Management Division (CalGEM), please accept this Updated Corrective Action Plan (CAP), following the initial version submitted on January 22, 2021, in response to the Department of Finance's Office of State Audits and Evaluations' November 2020 performance audit of CalGEM's Underground Injection Control (UIC) and Well Stimulation Treatment (WST) programs.

The purpose of the audit was to confirm whether CalGEM's permit reviews in the UIC and WST programs meet legal and regulatory requirements and to identify improvement opportunities. The final audit report included findings and recommendations for UIC project approvals, UIC well permits, and WST permits. The audit's findings validated several CalGEM practices and suggested process improvements.

CalGEM has taken steps to implement further improvements to its UIC and WST processes, including strengthening internal controls identified in the audit. The initial CAP described the tasks designed to document the improvements to CalGEM processes and procedures as well as their completion schedule.

This update describes the current status of the tasks designed to make the identified improvements to CalGEM processes and procedures. In short, CalGEM is on track to implement all corrective actions according to the timelines communicated in the January 2021 CAP. Further, CalGEM has completed all corrective actions associated with the WST program. Highlights of the progress made on these identified actions include:

- **Standard operating procedure (SOP) codifying approval authority for UIC projects and well permits has been drafted.** This draft SOP will ensure that only authorized individuals maintain the authority to approve UIC projects and well permits in accordance with statutes and regulations. This SOP is currently under internal review by staff who serve as subject matter experts across CalGEM districts and headquarters to ensure the SOP can be consistently implemented, once approved. The draft SOP is on track to be approved and implemented by end of Summer 2021.
- **Headquarters (HQ) oversight to help ensure each UIC project has followed the MOA checklist has been implemented.** CalGEM has instituted a practice by which, following District review of a UIC project, HQ reviews each UIC project and confirms it has an associated MOA checklist uploaded into the Well Statewide Tracking and Reporting (WellSTAR) system and that the checklist is appropriately followed to help ensure consistent UIC project review and documentation. As a result of this additional control, from January 2021 to June 2021, four out of the 13 UIC applications submitted for HQ review were found to not have an MOA checklist uploaded into WellSTAR. HQ collaborated with the district office to correct this, indicating the new process provides the intended controls.
- **SOP for Steam Injection Area of Review (AOR) has been drafted.** Staff have completed a draft SOP documenting the process used to verify the location of a

proposed new injection well is within the approved existing steam injection AOR, and to help ensure project files contain appropriate documentation to support the completion of the AOR review. This draft SOP is under internal review and is on track to be completed by Winter 2022, as specified in the January CAP.

- **The review by the State Water Resources Control Board (SWRCB) of all infill well applications has been implemented.** Staff has implemented the identified task of providing all infill well applications to SWRCB for their review and comment. In addition, CalGEM has worked with the SWRCB to draft a non-expansion (infill) well checklist; this checklist is on track to be finalized by Spring 2022.
- **The Project by Project Review of placeholder projects has been initiated.** Out of the 33 legacy placeholder projects, 17 have been removed from the review process, as they were applications that were considered but never approved by CalGEM before the applicant withdrew the application. For 15 projects, operators have submitted requested data and the Inland and Coastal Districts have been performing completeness checks that will be followed by technical reviews. For one project, CalGEM has been unable to reach the operator linked to a placeholder project associated with two injection wells that are idle, and there is evidence that the wells have been deserted by the operator. CalGEM is still investigating, but it is likely that action will be taken to rescind the project approval.
- **SOP for the WST permit approval process has been updated.** CalGEM has implemented OSAE's recommendations to update the verification and clarification of the risk assessment file in the first CAP response. The SOP for the permit approval process has been updated to reflect these changes along with the new approval process in WellSTAR. In accordance with the new WellSTAR process, documents related to the WST permitting process are retained within the WellSTAR database including the risk assessment template generated by WST engineers during the review process.

Implementation of the full plan is expected by the year 2022, as described in the January 2021 CAP. CalGEM looks forward to providing a future update on further progress as part of its next updated CAP in January 2022.

UNDERGROUND INJECTION CONTROL

DOF OSAE Finding	DOF OSAE Recommendations	Implementation Task	Implementation start date	Finish	Current Status
UIC Project Review and PAL Process					
Finding 1 – Improve UIC Program Controls	A - Forward all UIC project reviews to HQ for review and approval.	A – SOP for UIC WellSTAR Project Review Process	Winter 2021	Fall 2021	All UIC projects routed through HQ. SOP to document UIC WellSTAR project review process has been initiated.
	B - Update the MOA checklist, Manual of Instruction (MOI), and Memorandum of Expectation (MOE) policies and procedures for the review of UIC projects and well permits to be consistent with current statutes and regulations. Communicate updated policies and procedures to the Districts and monitor implementation.	B - MOA Checklist	Winter 2019	Fall 2020	MOA Checklist complete. MOI and MOE will be created using SOPs identified in implementation tasks 1C, 2A3, 2A4, 2B, 2C, 3C, 3D1, 3D2, 4D, 5B, and 5D. Implementation of MOA checklist monitored by HQ as part of UIC application review.

	C - Ensure authorized position levels approve UIC projects and well permits in accordance with statutes and regulations. Establish policies to document approval authority, communicate those policies to the Districts, and monitor implementation.	C – Developing SOP to document the approval authority and delegation of this authority	Winter 2021	Summer 2021	SOP to document the approval authority and delegation of this authority has been drafted. SOP is currently under internal review. Finalization expected by end of Summer 2021.
	D - Update WellSTAR user groups to ensure permission levels are appropriately assigned to individuals designated for the approver role.	D – Incorporate modification of approval authority in the UIC WellSTAR Project Review Process	Summer 2021	Fall 2021	After SOP in 1C is complete, assignment of approval responsibilities will be reflected into WellSTAR.

DOF OSAE Finding	DOF OSAE Recommendations	Implementation Task	Implementation start date	Finish	Current Status
<p>Finding 2 - Strengthen UIC Project Review Documentation and Transparency</p>	<p>A - Update review policies and procedures to address the completion and retention of MOA checklists and AOR review files. Develop standardized templates to facilitate consistent documentation among the Districts and monitor consistency of implementation. Retain project review files to support review determinations.</p>	<p>A1 - MOA Checklist</p>	<p>Winter 2019</p>	<p>Fall 2020</p>	<p>Complete.</p>
		<p>A2 – Establish HQ oversight to ensure that each UIC project has an associated MOA checklist uploaded into WellSTAR</p>	<p>Winter 2021</p>	<p>Fall 2021</p>	<p>Incorporated into current practices. As a result, from January 2021 to June 2021, four out of the 13 UIC applications submitted for HQ review were found to not have the MOA checklist uploaded into WellSTAR. HQ collaborated with district office to correct this, indicating the new process</p>

					provides the intended controls. Process to be documented in SOP developed in A3.
		A3 - SOP for consistent documentation of the review work done during the UIC approval process	Winter 2021	Winter 2022	No update.
		A4 - SOP for water and steam injection AOR	Winter 2021	Winter 2022	SOP for steam injection AOR has been drafted. SOP is currently under internal review.
	B - Determine a standard method to reference the list of approved injection wells in the PAL and ensure the reference is consistent among all PALs. Consider updating regulations as needed.	B – Create SOP to incorporate injectors list in UIC PAL.	Winter 2021	Winter 2022	SOP to incorporate injectors list in PAL has been initiated.
	C - Consistently include clearly labeled project maps in the PAL. Ensure maps clearly identify the entire project location, area, proposed injection wells, and other pertinent information.	C - SOP for Maps that will identify data to include, labels, etc.	Winter 2021	Winter 2022	SOP for Maps has been initiated.

	D - Consider providing public access to PALs and approved injection wells in WellSTAR to increase transparency of approved UIC projects.	D - Provide Public Access to WellSTAR that should include Well and UIC project and Well list- WellSTAR 5.1.3 released on Dec 2020	Fall 2020	Fall 2020	Complete. Public can now access UIC project data including PAL and well permitting data.
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DOF OSAE Finding	DOF OSAE Recommendations	Implementation Task	Implementation start date	Finish	Current Status
Approval of UIC Well Permits					
Finding 3 – Ensure Project Modifications or Expansions Are Not Approved Through Infill Well Reviews	A - Update review policies and procedures to address infill well review, tracking, and documentation. Communicate updated review policies and procedures to the Districts and monitor implementation.	A - Infill (non-expansion) well checklists (One for water injection & One for Steam injection) are under development.	Fall 2020	Spring 2022	An Infill (non-expansion) well checklist covering both Steam and Water injection has been drafted in collaboration with SWRCB. Checklist is on track to be finalized by Spring 2022.
	B - Notify and provide relevant key infill project documents to the Water Boards for review and comment; and ensure the Water Boards are consistently notified of approval letters issued aside from the UIC project review process.	B - Complete the Inter-agency checklist (including CalGEM's PE/PG signature and stamp requirement).	Winter 2021	Summer 2022	Infill applications have been sent for Water Boards review and comment. Infill well approval letter also shared with WSRCB. CalGEM will initiate discussion with SWRCB regarding drafting the checklist.

	C - Define significant and minor project changes to establish a basis for determining when an addendum or revision to the PAL is required in accordance with UIC requirements.	C - SOP defining significant and minor project changes that will result in addendum or revision to the PAL	Winter 2021	Winter 2022	No update.
	D - Conduct periodic reviews of infill well approval letters issued by Districts. Periodic reviews should be conducted by HQ using a risk-based approach to ensure adequate oversight of well permitting activities at the Districts.	D1 - SOP for infill wells	Fall 2020	Spring 2022	This task will be accomplished as part of task 3A.
		D2 – Develop SOP for risk-based selection of infill well approval letter to ensure oversight of well permitting activities	Winter 2021	Winter 2022	No update.

DOF OSAE Finding	DOF OSAE Recommendations	Implementation Task	Implementation start date	Finish	Current Status
<p>Finding 4 – Discontinue Use of Placeholder Projects and Issuance of Associated Well Permits</p>	<p>A - Consider ceasing injection for all well permits approved under placeholder projects that cannot be merged with an existing UIC project with a valid PAL, until the projects can be properly reviewed under a PxP review</p>	<p>A - Work with PxP team at Inland & Coastal district office to prioritize the merging of Placeholder projects with existing steam injection UIC projects</p>	<p>Winter 2021</p>	<p>Fall 2022</p>	<p>All 33 placeholder projects have either been 1) removed from CalGEM review process as they were applications that were considered but never approved by CalGEM before the applicant withdrew (17/33) or 2) have been merged with existing steam injection UIC projects and are actively under District review (15/33). One operator has not been reachable; CalGEM is exploring appropriate action. District completeness check and technical review expected to be complete by end of 2021.</p>

	B - Discontinue the use of placeholder project numbers to issue permits for injection wells. Consider rescinding permits for injection wells that are operating under placeholder project numbers that cannot be merged with an existing UIC project with a valid PAL.	B - Complete rescission of injection permits for wells that cannot be merged with existing steam injection projects.	Winter 2021	Fall 2022	Use of placeholder projects have been discontinued per the new UIC regulations.
	C - Identify the entire population of placeholder projects and prioritize the evaluation of these placeholder projects through the PxP review process. As needed, require operators to submit UIC project applications for review, approval, and issuance of a valid PAL.	C - Complete the UIC project by project review of placeholder projects.	Winter 2021	Fall 2022	All placeholder projects identified and prioritized. Project by project review on track to be completed by Fall 2022.
	D - Conduct periodic reviews of permits issued for injection wells by Districts for compliance with UIC requirements. Periodic reviews should be conducted by HQ using a risk-based approach to ensure adequate oversight of well permitting activities at the Districts.	D - Develop SOP to guide HQ review of 'districts' issued well permits on a risk-based basis for improved HQ oversight	Winter 2021	Winter 2022	No update.

DOF OSAE Finding	DOF OSAE Recommendations	Implementation Task	Implementation start date	Finish	Current Status
Finding 5 – Improve Well Permit Detail and Review Documentation	A - Update review policies and procedures to address permits issued for injection wells, and documentation requirements including retention of key project review files to support review determinations.	A1 - SOP for injection well permitting	Fall 2020	Spring 2022	Task to be completed as part of tasks 1B (complete) and 3A. Non-expansion checklist on track to be completed by Spring 2022.
		A2 – Documentation requirement for injection wells are well defined	Fall 2020	Spring 2022	Task to be completed as part of tasks 1B (complete) and 3A. Non-expansion checklist on track to be completed by Spring 2022.
	B - Identify pertinent well and UIC project data to be included on all permits issued for injection wells, such as but not limited to, well type and project number.	B - SOP for pertinent well data to be included for injection well permit in WellSTAR	Winter 2021	Winter 2022	No update.
	C - Ensure project files contain documentation and evidence to support completion of AOR review for the project and/or proposed injection well.	C1 - Ensure project files contain documentation to support completion of AOR review	Winter 2021	Winter 2022	CAP Same as 2A4.
		C2- Documentation			

		retention to support AOR review will be covered in AOR SOP	Winter 2021	Winter 2022	CAP Same as 2A4.
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DOF OSAE Finding	DOF OSAE Recommendations	Implementation Task	Implementation start date	Finish	Current Status
	D - Verify proposed injection wells are within the approved existing UIC project area. Reject the NOI if the well is located outside the project area (i.e. section, township, and range).	D1 - Verify proposed injection wells are within the approved existing UIC project area	Fall 2020	Spring 2022	CAP Same as 2A4 & 3A.
		D2 - Ensuring location of new injection well is within approved AOR will be covered under AOR SOP	Winter 2021	Winter 2022	CAP Same as 2A4.
	E - Conduct periodic reviews of permits issued for injection by the Districts. Periodic reviews should be conducted by HQ using a risk-based approach to ensure adequate oversight of well permitting activities at the Districts.	E - SOP for risk-based ranking criteria to conduct periodic reviews of permits issued for injection by district	Winter 2021	Winter 2022	No update.

WELL STIMULATION TREATMENT

DOF OSAE Finding	DOF OSAE Recommendations	Implementation Task	Implementation start date	Finish	Current Status
Finding 6 – Strengthen ADSA Review Documentation	A - Update WST SOP to include documentation requirements for verification of operator's 2xADSA data, determination of ADSA locations, addressing high risk abandoned wells, and selection of monitoring wells.	A - Update the WST permitting process flowchart and SOP to include all the DOF report recommendations. (SOP – Risk assessment section)	Summer 2020	Winter 2021	SOP has been updated and is attached.
	B - Update the risk assessment template to incorporate WST SOP updates noted in Recommendation A above.	B - Update the WST risk assessment template to include the verification of 2xADSA, mitigation measure of the high-risk P/A wells, and reason for the selection of monitoring wells. (SOP – Risk assessment section)	Summer 2020	Summer 2020	Risk assessment template has been updated to reflect the recommendations. Changes are captured in Appendix Section 4.2 of the SOP.

	C - Include all wells within the 2xADSA (penetrating or non-penetrating) in the risk assessment and identify the wells that do not require evaluation including documentation of the reasons why.	C - Update the WST risk assessment template to include all wells within the 2xADSA circle, including the non-penetrating wells. (SOP – Risk assessment section)	Summer 2020	Summer 2020	Risk assessment template has been updated. Changes found under Appendix Section 4.2.4, of the SOP.
	D - Ensure sufficient review documentation and files are retained to support the evaluation of risk for the WST. The audit trail should facilitate the tracing of ADSA Narrative review determinations to source files and documents completed by permit engineers.	D - Update the SOP and the risk assessment template to ensure the ADSA Narrative and risk assessment determination review process is consistent for all applications, including those without any 2xADSA wells. Create the risk assessment template for each application and retain it for documentation.	Summer 2020	Summer 2020	Risk assessment template has been updated. Risk assessment steps are updated to capture changes under Appendix Section 4 of the SOP. Documents are also uploaded and retained in WellSTAR database.

Please contact Courtney Smith (courtney.smith@conservation.ca.gov) if you would like to discuss this CAP.

Sincerely,
DocuSigned by:

9A99E0FA285645A
David Shabazian

Director Department
of Conservation

DocuSigned by:

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Uduak-Joe Ntuk
State Oil and Gas Supervisor

cc: Wade Crowfoot, Secretary, California Natural Resources Agency
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Attachments:

Standard Operating Procedure (SOP) for WST Permit Approval Process