

**To:** Office of Planning and Research  
 PO Box 3044  
 1400 Tenth Street, Room 113  
 Sacramento, CA 95812-3044

**From:** California Energy Commission  
 1516 Ninth Street, MS-48  
 Sacramento, CA 95814

**Project Applicant:** Lawrence Berkeley National Laboratory

**Project Title:** Joint Time-Lapse Acquisition and Inversion of Passive Seismic and Magnetotelluric Data for Monitoring Reservoir Processes at the Geysers Geothermal Field

**Project Location – Specific:** 10350 Socrates Mine Rd

**Project Location – City:** Middletown 95461

**Project Location – County:** Lake

**Description of Nature, Purpose and Beneficiaries of Project:**

This project will demonstrate the advantages of concurrently acquiring time-lapse magnetotelluric and passive seismic data over a producing geothermal reservoir. The data will be jointly inverted for images of resistivity and seismic velocities using workflows and algorithms that enforce structural similarity constraints between the different physical properties, and subsequently correlating the spatio-temporal information in the joint-inversion geophysical images to working reservoir models. The technical advancements of this project are provided via concurrent monitoring of time-lapse changes in both resistivity and seismic velocity and the joint inversion of the multi-physics data. Ultimately, these images can be used for better estimates of rock properties and spatial distribution of steam and water at depth, for more accurate reservoir modeling and monitoring which will lead to more accurate placement of production wells. A field demonstration at The Geysers will be carried out to evaluate the value added by applying this technology.

**Name of Public Agency Approving Project:** California Energy Commission

**Name of Person or Agency Carrying Out Project:** Lawrence Berkeley National Laboratory

**Exempt Status:** *(check one)*

- Ministerial Exemption (Pub. Resources Code § 21080(b)(1); Cal. Code Regs., tit 14, § 15268);
- Declared Emergency (Pub. Resources Code § 21080(b)(3); Cal. Code Regs., tit 14, § 15269(a));
- Emergency Project (Pub. Resources Code § 21080(b)(4); Cal. Code Regs., tit 14, § 15269(b)(c));
- Categorical Exemption. State type and section number  
Cal. Code Regs., tit 14, § 15304 ; Cal. Code Regs., tit 14, § 15306
- Statutory Exemptions. State code number.
- Common Sense Exemption. (Cal. Code Regs., tit 14, §15061(b)(3))

**Reasons why project is exempt:**

This project is exempt under 15304 because it consists of passive data collection and does not involve any construction or changes to the existing landscape.

This project is exempt under 15306 because it consists of data collection for the purposes of resource evaluation research which does not result in a disturbance to the environmental resource.

Authority cited: Sections 21083 and 21110, Public Resources Code. Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

**Lead Agency**

**Contact Person:** Chuck Gentry **Area code/Telephone/Ext:** 916-327-1528

**If filed by applicant:**

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project?  Yes  No

**Signature:** *Chuck Gentry* **Date:** 6/24/2020 **Title:** Mechanical Engineer

Governor's Office of Planning & Research

**Jun 24 2020**

**STATE CLEARINGHOUSE**

**Date received for filing at OPR:** \_\_\_\_\_

Signed by Responsible Agency

Signed by Lead Agency

Signed by Applicant