

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION

New Agreement GEO-16-002 (To be completed by CGL Office)

500 Renewable Energy Division	Elisabeth de Jong	45	916-654-4878
Golden Haven Hot Springs Spa and Resort			68-0064755
Golden Haven Injection Well			
6 / 14 / 2017	3 / 29 / 2019	\$ 134,642	

 ARFVTP agreements \$75K and under delegated to Executive Director.

Proposed Business Meeting Date	5 / 10 / 2017	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
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Business Meeting Presenter	Elisabeth de Jong	Time Needed:	5 minutes
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Please select one list serve. Geothermal

Agenda Item Subject and Description

Proposed resolution approving Agreement GEO-16-002 with Golden Haven Hot Springs Spa and Resort for a \$134,642 grant to drill and test an injection well for geothermal fluids used at the resort that are currently discharged to the City of Calistoga's sanitary sewer. Once completed, the injection well will be connected to an existing geothermal heat exchange system and the system will be tested. The injection well will allow non-contact geothermal fluids to be injected back into the geothermal reservoir to maintain reservoir pressure.

1. Is Agreement considered a "Project" under CEQA?
 Yes (skip to question 2) No (complete the following (PRC 21065 and 14 CCR 15378)):
 Explain why Agreement is not considered a "Project":
 Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because .
2. If Agreement is considered a "Project" under CEQA:
 a) Agreement **IS** exempt. (Attach draft NOE)
 Statutory Exemption. List PRC and/or CCR section number:
 Categorical Exemption. List CCR Class 3, 14 CCR 15303(d); Class 11, 14 CCR 15311; and section number: Class 30, 14 CCR 15330.
 Common Sense Exemption. 14 CCR 15061 (b) (3)
 Explain reason why Agreement is exempt under the above section:
 The proposed grant project will drill and test a shallow well for injection of non-contract geothermal fluids currently discharged to the City of Calistoga's sanitary sewer. The well will then be connected to an exiting geothermal heat exchange system at the resort. The project is exempt because it consists of small structures, installation of accessory structures, and the conversion of existing small structures from one use to another where only minor modifications are made. A CEQA Notice of Exemption for the project was prepared by the City of Calistoga Public Works Department on March 13, 2017.
- b) Agreement **IS NOT** exempt. (Consult with the legal office to determine next steps.)
 Check all that apply
 Initial Study Environmental Impact Report
 Negative Declaration Statement of Overriding Considerations
 Mitigated Negative Declaration

Legal Company Name:	Budget
Drilling Contractor - TBD	\$ 99,200
EGS Consulting, Inc.	\$ 21,680
Capuano Engineering Company	\$ 6,900

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Legal Company Name:

Funding Source	Funding Year of Appropriation	Budget List No.	Amount
GRDA	15/16	501.008G	\$134,642
Funding Source			\$
R&D Program Area: N/A			\$134,642
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Name:	Bruce Kendall	Name:	Barry Stern
Address:	1713 Lake Street	Address:	1713 Lake Street
City, State, Zip:	Calistoga, CA 94515	City, State, Zip:	Calistoga, CA 94515
Phone:	707-942-2944	Fax:	707-942-8000
E-Mail:	bbkendall108@gmail.com	E-Mail:	leabarry@comcast.net

<input checked="" type="checkbox"/> Competitive Solicitation	Solicitation #: GFO-16-505
<input type="checkbox"/> First Come First Served Solicitation	

1. Exhibit A, Scope of Work	<input checked="" type="checkbox"/> Attached
2. Exhibit B, Budget Detail	<input checked="" type="checkbox"/> Attached
3. CEC 105, Questionnaire for Identifying Conflicts	<input checked="" type="checkbox"/> Attached
4. Recipient Resolution	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Attached
5. CEQA Documentation	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Attached

_____ Agreement Manager	_____ Date	_____ Office Manager	_____ Date	_____ Deputy Director	_____ Date
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Exhibit A SCOPE OF WORK

TECHNICAL TASK LIST

Task #	Task Name
1	Administration
2	Select Drilling Contractor with Request for Proposal (RFP)
3	Drill and Test Well
4	Complete Long Term Flow Test
5	Connect Well to Existing Geothermal System and Test Injection System

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Barry Stern	EGS Inc.	
2	Barry Stern	EGS Inc./Capuano Engineering Company	
3	Barry Stern	Drilling Contractor/EGS Inc./Capuano Engineering Company	
4	Barry Stern Ray Simone	Drilling Contractor/EGS Inc./Capuano Engineering Company	
5	Barry Stern	Drilling Contractor/EGS Inc./Capuano Engineering Company	

GLOSSARY

Specific terms and acronyms used throughout this scope of work are defined as follows:

Term/ Acronym	Definition
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
DOGGR	California Department of Conservation, Division of Oil, Gas and Geothermal Resources
CPR	Critical Project Review
Energy	California Energy Commission

Term/ Acronym	Definition
Commission	
GRDA	Geothermal Resources Development Account; also used as a short title for the Geothermal Grant and Loan Program
Recipient	Golden Haven Hot Springs Spa and Resort
RED	Renewable Energy Division
RFP	Request for Proposals

Problem Statement:

Golden Haven Hot Springs Spa and Resort (Recipient) currently discharges spent geothermal fluids to the City of Calistoga’s sanitary sewer. However, the City of Calistoga’s waste water treatment plant is under a Regional Water Quality Control Board Cease and Desist Order to reduce the levels of antimony it discharges into the Napa River. Much of the antimony and boron in the treatment plant discharge comes from geothermal fluids produced from the shallow geothermal system that underlies most of Calistoga and disposed of by spas in the sanitary sewer. Injection of spent geothermal fluids would help reduce geothermal fluid discharge to the City of Calistoga’s sanitary sewer, thereby helping to reduce the levels of antimony and boron in the City’s treatment plant discharge. Injection of spent geothermal fluids would also help maintain the geothermal resource subsurface pressure and fluid availability.

Goals of the Agreement:

The goal of this Agreement is to help minimize the volume of spent geothermal fluids being disposed of in the City of Calistoga sanitary sewer system by injecting spent geothermal fluids that have not been in human contact back into the subsurface at a depth below the production zones.

Objectives of the Agreement:

The objectives of this Agreement are to 1) drill and test a well for injection of non-contact spent geothermal fluid into the geothermal reservoir, and 2) connect the injection well to the existing geothermal system at Golden Haven Hot Springs Spa and Resort (production wells and heat exchanger) to create a closed-loop system.

TASK 1 ADMINISTRATION

Task 1.1 Attend Kick-off Meeting

The goal of this task is to establish the lines of communication and procedures for implementing this Agreement. The Commission Agreement Manager (CAM) shall designate the date and location of this meeting and provide an agenda to the Recipient prior to the meeting.

The Recipient shall:

- Attend a “Kick-Off” meeting with the CAM, the Commission Agreement Officer (CAO), and a representative of the Energy Commission Accounting Office. The Recipient shall bring its Project Manager, Agreement Administrator, Accounting Officer, and others designated by the Commission Agreement Manager to this meeting.
- Discuss the following administrative and technical aspects of this Agreement:
 - Agreement Terms and Conditions
 - Critical Project Review (Task 1.2)
 - Match fund documentation (Task 1.6) No reimbursable work may be done until this documentation is in place.
 - Permit documentation (Task 1.7)
 - Subcontracts needed to carry out project (Task 1.8)
 - The CAM’s expectations for accomplishing tasks described in the Scope of Work
 - An updated Schedule of Products and Due Dates
 - Monthly Progress Reports (Task 1.4)
 - Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
 - Final Report (Task 1.5)

Recipient Products:

- Updated Schedule of Products
- Updated List of Match Funds
- Updated List of Permits

Commission Agreement Manager Product:

- Kick-Off Meeting Agenda

Task 1.2 Critical Project Review (CPR) Meetings

CPR meetings provide the opportunity for frank discussions between the Energy Commission and the Recipient. The goal of this task is to determine if the project should continue to receive Energy Commission funding to complete this Agreement and to identify any needed modifications to the tasks, products, schedule or budget.

The CAM may schedule CPR meetings as necessary, and meeting costs will be borne by the Recipient.

Meeting participants include the CAM and the Recipient and may include the CAO, Renewable Energy Division or other Energy Commission staff and management, as well as other individuals selected by the CAM to provide support to the Energy Commission.

The CAM shall:

- Determine the location, date, and time of each CPR meeting with the Recipient. These meetings generally take place at the Energy Commission, but they may take place at another location, by telephone, or by WebEx.
- Send the Recipient the agenda and a list of expected participants in advance of each CPR. If applicable, the agenda shall include a discussion on both match funding and permits.
- Conduct and make a record of each CPR meeting. Prepare a schedule for providing the written determination described below.
- Determine whether to continue the project, and if continuing, whether or not modifications are needed to the tasks, schedule, products, and/or budget for the remainder of the Agreement. Modifications to the Agreement may require a formal amendment (please see section 8 of the Terms and Conditions). If the CAM concludes that satisfactory progress is not being made, this conclusion will be referred to the Lead Commissioner for Renewables for his or her concurrence.
- Provide the Recipient with a written determination in accordance with the schedule. The written response may include a requirement for the Recipient to revise one or more product(s) that were included in the CPR.

The Recipient shall:

- Prepare a CPR Report for each CPR that discusses the progress of the Agreement toward achieving its goals and objectives. This report shall include recommendations and conclusions regarding continued work of the projects. This report shall be submitted along with any other products identified in this scope of work. The Recipient shall submit these documents to the CAM and any other designated reviewers at least 15 working days in advance of each CPR meeting.
- Present the required information at each CPR meeting and participate in a discussion about the Agreement.

CAM Products:

- Agenda and a list of expected participants
- Schedule for written determination
- Written determination

Recipient Product:

- CPR Report(s)

Task 1.3 Final Meeting

The goal of this task is to closeout this Agreement.

The Recipient shall:

- Meet with Energy Commission staff to present the findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement.

This meeting will be attended by, at a minimum, the Recipient, the CAO, and the CAM. The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be two separate meetings at the discretion of the CAM.

The technical portion of the meeting shall present an assessment of the degree to which project and task goals and objectives were achieved, findings, conclusions, and any recommendations for grant process improvements. The CAM will determine the appropriate meeting participants.

The administrative portion of the meeting shall be a discussion with the CAM and the CAO about the following Agreement closeout items:

- What to do with any equipment purchased with Energy Commission funds (Options) (if applicable)
 - Energy Commission requests for specific “generated” data (not already provided in Agreement products)
 - “Surviving” Agreement provisions (if applicable)
 - Final invoicing and release of retention
- Prepare a schedule for completing the closeout activities for this Agreement.

Products:

- Written documentation of meeting agreements
- Schedule for completing closeout activities

Task 1.4 Monthly Progress Reports

The goal of this task is to periodically verify that satisfactory and continued progress is made towards achieving the objectives of this Agreement on time and within budget.

The objectives of this task are to summarize activities performed during the reporting period, to identify activities planned for the next reporting period, to identify issues that may affect performance and expenditures, and to form the basis for determining whether invoices are consistent with work performed.

The Recipient shall:

- Prepare a Monthly Progress Report that summarizes all Agreement activities conducted by the Recipient for the reporting period, including an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Each progress report is due to the CAM within 10 days of the end of the reporting period. The recommended specifications for each progress report are contained in Section 6 of the Terms and Conditions of this Agreement.

Product:

- Monthly Progress Reports

Task 1.5 Final Report

The goal of the Final Report is to assess the project's success in achieving the Agreement's goals and objectives.

The objectives of the Final Report are to clearly and completely describe the project's purpose, approach, activities performed, and results

The Final Report shall be a public document. If the Recipient has obtained confidential status from the Energy Commission for any project tasks and will be preparing a confidential version of the Final Report as well, the Recipient shall perform the following activities for both the public and confidential versions of the Final Report.

The Recipient shall:

- Prepare an Outline of the Final Report, if requested by the CAM.
- Prepare a Draft Final Report following the latest version of the Final Report guidelines which will be provided by the CAM. The CAM shall provide written comments on the Draft Final Report within fifteen (15) working days of receipt. The Draft Final Report must be submitted at least 60 days before the end of the Agreement Term.
- Prepare and submit a Final Report that addresses any comments from the CAM.
- Submit a hardcopy and electronic files (in both MS Word and .pdf formats) of the Final Report to the CAM for final review and formatting prior to Energy Commission publication of the report.
- Work with the CAM as necessary to address any questions about the Final Report or any formatting requirements necessary for Energy Commission publication of the Final Report.

Products:

- Outline of the Final Report, if requested
- Draft Final Report
- Final Report

Task 1.6 Identify and Obtain Matching Funds

The goal of this task is to ensure that the match funds planned for this Agreement are obtained for and applied to this Agreement during the term of this Agreement.

The costs to obtain and document match fund commitments are not reimbursable through this Agreement. Although the Energy Commission budget for this task will be zero dollars, the Recipient may utilize match funds for this task. Match funds shall be spent concurrently or in advance of Energy Commission funds for each task during the term of this Agreement. Match funds must be identified in writing and the associated commitments obtained before the Recipient can incur any costs for which the Recipient will request reimbursement.

The Recipient shall:

- Prepare a letter documenting the match funding committed to this Agreement and submit it to the CAM at least 2 working days prior to the kick-off meeting. Provide in the letter a list of the match funds that identifies the:
 - Amount of each cash match fund, its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied.
 - Amount of each in-kind contribution, a description, documented market or book value, and its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient shall identify its owner and provide a contact name, address and telephone number, and the address where the property is located.
- Provide a copy of the letter of commitment from an authorized representative of each source of cash match funding or in-kind contributions that these funds or contributions have been secured. For match funds provided by a grant, a copy of the executed grant shall be submitted in place of a letter of commitment.
- Discuss match funds and the implications to the Agreement if they are reduced or not obtained as committed, at the kick-off meeting. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide the appropriate information to the CAM if during the course of the Agreement additional match funds are received.
- Notify the CAM within 10 days if during the course of the Agreement existing match funds are reduced. Reduction in match funds must be approved through a formal amendment to the Agreement and may trigger an additional CPR meeting.

Products:

- A letter regarding match funds
- Copy(ies) of each match fund commitment letter(s)
- Letter(s) for new match funds (if applicable)
- Letter that match funds were reduced (if applicable)

Task 1.7 Identify and Obtain Required Permits

The goal of this task is to obtain all permits required for work completed under this Agreement in advance of the date they are needed to keep the Agreement schedule on track.

Permit costs and the expenses associated with obtaining permits are not reimbursable under this Agreement. Although the Energy Commission budget for this task will be zero dollars, the Recipient shall budget match funds for any expected expenditures associated with obtaining permits. Permits must be identified in writing and obtained before the Recipient can make any expenditure for which a permit is required.

The Recipient shall:

- Prepare a letter documenting the permits required to conduct this Agreement and submit it to the CAM at least 2 working days prior to the kick-off meeting. If there are no permits required at the start of this Agreement, then state such in the letter. If it is known at the beginning of the Agreement that permits will be required during the course of the Agreement, provide in the letter:
 - A list of the permits that identifies the:
 - Type of permit
 - Name, address and telephone number of the permitting jurisdictions or lead agencies
 - The schedule the Recipient will follow in applying for and obtaining these permits.
- Discuss the list of permits and the schedule for obtaining them at the kick-off meeting and develop a timetable for submitting the updated list, schedule and the copies of the permits. The implications to the Agreement if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in the Progress Reports and will be a topic at CPR meetings.
- If during the course of the Agreement additional permits become necessary, provide the appropriate information on each permit and an updated schedule to the CAM.
- As permits are obtained, send a copy of each approved permit, and any permit required reports, to the CAM.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 working days. Either of these events may trigger an additional CPR.

Products:

- Letter documenting the permits or stating that no permits are required
- A copy of each approved permit (if applicable)
- Updated list of permits as they change during the term of the Agreement (if applicable)
- Updated schedule for acquiring permits as changes occur during the term of the Agreement (if applicable)
- A copy of each final approved permit (if applicable) and any permit required reports.

Task 1.8 Obtain and Execute Subcontracts

The goal of this task is to ensure quality products and to procure subcontractors required to carry out the tasks under this Agreement consistent with the Agreement Terms and Conditions and the Recipient's own procurement policies and procedures. It will also provide the Energy Commission an opportunity to review the subcontracts to ensure that the tasks are consistent with this Agreement, and that the budgeted expenditures are reasonable and consistent with applicable cost principles.

The Recipient shall:

- Manage and coordinate subcontractor activities.
- Submit a draft of each subcontract required to conduct the work under this Agreement to the CAM for review.
- Submit a final copy of the executed subcontract.
- If Recipient decides to add new subcontractors, then the Recipient shall notify the CAM.

Products:

- Draft subcontracts
- Final subcontracts

TECHNICAL TASKS

TASK 2 SELECT DRILLING CONTRACTOR WITH REQUEST FOR PROPOSALS (RFP)

The goal of this task is select a suitably qualified drilling contractor to drill the project well.

The Recipient shall:

- Prepare a *Drilling Contractor RFP* that accurately presents the drilling requirements for the injection well.
- Develop a list of known drilling contractors with the experience, qualifications and capability to drill the project geothermal injection well.
- Prepare the selected drilling location for potential drilling contractor inspection.
 - Check that the location is marked with outer limits of surface disturbance clearly defined for drilling operations and disturbance, limiting the impacts to the facility-owned residence adjacent to the drill site.
- Review proposals from drilling contractors and select contractor.
 - Establish selection criteria.
 - Create a rubric for comparing proposals.
 - Select contractor.
- Prepare a brief *Contractor Selection Process Report*.

Products:

- *Drilling Contractor RFP*
- *Contractor Selection Process Report*

TASK 3 DRILL AND TEST WELL

The goal of this task is to complete the well to the proposed depth of 600 feet according to the drilling plan, and evaluate the well capability for receiving fluids.

The Recipient shall:

- Prepare a *Well Drilling and Testing Plan* that identifies the well drilling and testing tasks, who is responsible for completing the identified tasks, and includes a schedule for conducting the activities. The plan shall also address the following:
 - Monitoring all drilling operations to ensure they are in compliance with the drilling permit.
 - Taking temperature measurements, performing well logging (cuttings) and electric logs such that a complete report can be provided to the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) at well completion.
 - A short-term rig test discussion that addresses all of the following:
 - Identification of parameters and measurement processes to determine subsurface characteristics of the well, including, but not limited to, flowrate and pressure.
 - Process/procedure to evaluate well suitability to receive required flow rates from Golden Haven operations.
 - Preparation of a short (1-3 pages) *Preliminary Injection Data Notification* that includes temperature and other parameters used for interim evaluation of the well for injection and determination if additional drilling is necessary.
 - Protocols, provisions and steps to be taken if additional drilling is needed (such as cleaning out the well, retesting at different zones within the well, or drilling deeper). The protocol and provisions shall also include notification to the Energy Commission and preparation of an *Additional Drilling Notification and Interim Drilling Report* should the need for additional drilling arise.
- Drill and test well in accordance with the *Well Drilling and Testing Plan* and applicable provisions of the Drilling Contractor subcontract.
- Prepare a *Well Completion Report* per the *Well Drilling and Testing Plan* and applicable permit requirements.

Products:

- *Well Drilling and Testing Plan*
- *Preliminary Injection Data Notification*
- *Additional Drilling Notification and Interim Drilling Report (if necessary)*

- *Well Completion Report*

TASK 4 COMPLETE LONG TERM FLOW TEST

The goal of this task is to complete a longer term flow test of the well to obtain well characteristics that will govern the operation of the well over an extended time.

The Recipient shall:

- Prepare a *Long Term Flow Test Plan* that defines how the following will be completed:
 - Setting up a flow test over a period of approximately 2 days.
 - Monitoring temperature, pressure and other parameters sufficient to prepare a detailed injection report
- Conduct the long term flow test according to the *Long Term Flow Test Plan*.
- Prepare a detailed *Injection Report* based on data generated from the long term flow test.

Products:

- *Long Term Flow Test Plan*
- *Injection Report*

TASK 5 CONNECT WELL TO EXISTING GEOTHERMAL SYSTEM AND TEST INJECTION SYSTEM

The goal of this task is to facilitate the injection of used fluids from Golden Haven operations by connecting the well to the existing geothermal facilities.

The Recipient shall:

- Prepare an *Injection Well Connection Plan* that includes the plan for accomplishing the connection as well as the engineering drawings needed to connect the injection well to the existing geothermal heating system
- Connect the injection well to the existing geothermal heating system according to the *Injection Well Connection Plan*.
- Prepare an *Injection Well Connection Summary Report* to include revised engineering drawings of the existing geothermal heating system with the injection well connected.

Products:

- *Injection Well Connection Plan*
- *Injection Well Connection Summary Report*

STATE OF CALIFORNIA

**STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

RESOLUTION - RE: GOLDEN HAVEN HOT SPRINGS SPA AND RESORT

RESOLVED, that the State Energy Resources Conservation and Development Commission (Energy Commission) adopts the staff CEQA findings contained in the Agreement or Amendment Request Form (as applicable); and

RESOLVED, that the Energy Commission approves Agreement GEO-16-002 from GFO-16-505 with Golden Haven Hot Springs Spa and Resort for a \$134,642 grant to drill and test an injection well for geothermal fluids used at the resort that are currently discharged to the City of Calistoga's sanitary sewer. Once completed, the injection well will be connected to an existing geothermal heat exchange system and the system will be tested. The injection well will allow non-contact geothermal fluids to be injected back into the geothermal reservoir to maintain reservoir pressure; and

FURTHER BE IT RESOLVED, that the Executive Director or his/her designee shall execute the same on behalf of the Energy Commission.

CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of a Resolution duly and regularly adopted at a meeting of the California Energy Commission held on May 10, 2017.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat