

# The Geysers Steamline

GEYSERS GEOTHERMAL ASSOCIATION

VOLUME XXVI, NUMBER 1

WWW.theGGA.org

SPRING 2010

## GGA Spring Membership Dinner set for March 9

The GGA annual Spring Membership Dinner will take place on Tuesday, March 9 at Charlie's overlooking Windsor Golf Course. Social Hour begins at 6:00 and a gourmet buffet-style dinner will be served at 7:00.

Dinner guests will travel back in time, revisiting Unit One and the entrepreneurs who helped make the first large scale commercial steam plant a reality as we mark our fiftieth year since Unit 1 began production up on "the hill."

Guest speakers Ted Wilmsen and Ron Suess will talk about their links to the past, their memories of historic Unit One and the formative years of geothermal energy.

Invitations have been sent, so mark your calendar now be sure not to miss out, as this will be a happy celebration!

*Don't  
Be Late*



### Dues are due

March has arrived, and membership renewal notices have been mailed to all GGA members. If you did not receive your notice, please contact membership chair, Marilyn Sanborn, 530 472-6442 or email [msanborn@frontiernet.net](mailto:msanborn@frontiernet.net).



Unit One circa 1960. Photo courtesy of Calpine Corporation.

## Remembering the early years at The Geysers

Fifty years ago on September 25, 1960, PG&E pulled the startup switch on Unit 1, the first commercial geothermal plant in the United States. With a capacity of 11 megawatts and built at a cost of less than two million dollars, Unit 1 operated faithfully for 31 years before being retired in 1991 and subsequently demolished.

According to the late B.C. McCabe, early advocate of steam energy whose Magma Power Company was the driving force behind Unit 1, "It was difficult to convince PG&E management that the resource would last long enough to justify investing in a power plant."

In a 1985 speech by then PG&E President Barton W. Shackelford, he commented, "That first unit, while classified as commercial, was in reality more of a research project."

Shackelford then spoke of some of the problems encountered in pioneering geothermal technology. Things such as failed turbine blades, corroded pipes, and mineral deposits that sent engineers back to the drawing board time and again.

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## President's Message

By Ron Sues

People have a penchant for taking things for granted when things just keep moving on as if they were always there and will remain so. Time passes quickly when caught in this paradigm.

So, it's hard to believe PG&E's Geysers Unit 1 began commercial operation on 25 September 1960. That day marked the Nation's advent into geothermal electricity generation, and that modest beginning continues today at The Geysers—fifty years later! We have a special reason to celebrate the Golden Anniversary of commercial geothermal operations at The Geysers!

Commercial operations began modestly when Magma Power, Thermal Power, and PG&E agreed to work together to utilize the steam from The Geysers field to power the first unit that had a net output capacity of eleven megawatts. Even though this initial operation was classified as commercial, it was, in fact, a research and development project.

A PG&E publication states:  
"At the time of its development, no one was completely sure that the concept of geothermal energy would prove out. Nor was anyone certain of the economics."<sup>1</sup>

Well, the resource, the engineering, and the economics were ultimately developed, demonstrated, and established, and they have changed dramatically during the intervening fifty years. It has been a significant journey with many challenges that have severely tested the resolve of the industry pioneers and those that have carried on with the development and operation of the geothermal fields and power plants.

So here we are today, the original and reigning largest geothermal electricity generating facility in the world.

The history of The Geysers has a rich legacy that includes an eclectic mix of personalities that cover a wide range of endeavors, and The Geysers could not be ready to celebrate fifty golden years of commercial operations without their special contributions. Over time, this diverse group, including Grant, McCabe, McMillan, the Curry family, and many other personalities and companies, all have stamped an indelible imprint upon the geothermal industry. Our corner of the geothermal industry could not be what it is today without their contributions.

Now, fifty years after the successful initiation of commercial operations at The Geysers, we continue the legacy passed to us. We have willingly accepted the benefit of all of their hard work, dedication, and risk taking, and we are equal to the task of adding to that legacy in a very significant and meaningful way.

So, we can pause now, for a moment, to collectively celebrate this golden anniversary of geothermal-powered commercial electricity operations at The Geysers. Let's celebrate what has been accomplished and what is yet to be accomplished. We really can count our blessings, especially when we recognize the robust role that renewable energy will play nationwide and even worldwide in our long-term energy future with geothermal energy right at the top of the renewable alternatives as the only base load source.

Looking back at all of this history from the perspective of where we are right now, while, at the same time, looking toward the future, we have much to celebrate. Let's look to the next fifty years of geothermal energy at The Geysers! Not taking anything for granted, let's celebrate The Geysers and appreciate what we have and where we are!

<sup>1</sup> the Geysers Unit 1, Pacific Gas and Electric Company (1985)

## GRC to celebrate 40 years

2010 marks the 40th Anniversary of the founding of the Geysers Resources Council, and members will celebrate at the GRC Annual Meeting, which this year, will be held in Sacramento October 24-27. As always, lots of presentations and activities are being planned, so check out <http://www.geothermal.org/> for details.

### Geysers Geothermal Association

PO Box 6501 • Santa Rosa CA 95406 • [www.theGGA.org](http://www.theGGA.org)

President - Ron Sues  
707 541-0976

Vice President/Finance Officer - Ralph Aviles  
Secretary - Ben Barker

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## Election of officers

The election of officers will be coming up soon, and nominations are being accepted. If you or someone you know would like to serve as president, vice president/finance officer, or secretary, please submit names to GGA President, Ron Suess, [resuess@cds1.net](mailto:resuess@cds1.net).

Both Ron and VP Ralph Aviles have served as officers in the GGA for many, many years, and are ready to hand the reins to someone new. Secretary Ben Barker frequently works out of country, and would like to turn his position over to someone who might be more available.

GGA Board members have recently experimented with conference call meetings, making it much easier for members to attend. The only downside is, you have to get your own donuts! Members can attend from home or office, rain or shine.

The Board plans to continue virtual meetings in the future, with the exception of the three meetings a year that are held prior to our dinner/barbecue events.

Board positions are excellent networking opportunities and many members who have served in the past have said they found it to be satisfying and rewarding.

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## Calpine gets set for annual Earth Day celebration

On Saturday, April 17, Calpine will roll out the big white tent in front of the Geothermal Visitors Center in Middletown and host a celebration of Earth Day—an event that has become very popular in the community over the years. Festivities will begin at 10 a.m. and end at 4 p.m.

This fun family event includes free power plant tours, informational booths from a wide variety of groups such as the Department Forestry, Master Gardeners, U.S. Forest Service, Sierra Club, Audubon as well as local vendors.

There will be live music, films and presentations by Taylor Observatory and EcoArts.

Reservations for the power plant tours are required. For more information, please contact Calpine's Geothermal Visitors Center, 15500 Central Park Road, 707 987-4270 or visit [www.geysers.com](http://www.geysers.com).

## SHEL Committee Report

Nick Voegtly, Chair

The Safety, Health, Environment, and Legislative Committee serves as a combined committee of the Health and Safety Committee, Environmental Committee, and Legislative Committee set forth in the GGA By-laws. The Committee meets quarterly to learn about new issues, perform investigation of known issues, and to provide this information to the GGA Board of Directors to assist in formulating GGA policy. The Committee also disseminates information to members.

SHEL met on November 18, 2009 at The Calpine Visitor Center in Middletown. We discussed the Committee mission (above), The Geysers Emergency Helipad Map revision, Greenhouse gases, Diesel engine emissions, and Induced seismicity. Discussions on these topics will be ongoing. Sean Connelly, NSCAPCD has offered to make a presentation to the Committee on greenhouse gases at a future meeting.

A new business topic at the next meeting will be Federal Stimulus Grants for Geothermal Energy. As you know stimulus grants are under attack in the media. The attacks I've seen have not focused on geothermal—yet. What should the GGA be saying/doing regarding this issue? Education of the public is a key GGA mission.

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*Continued from page 1*

## Remembering the early years

In 1987 The Geysers field reached peak production. At that time, to the best of our knowledge, there were 27 operating units serving 1.8 million homes. The years that followed, however, saw a gradual decline in the steamfield as the underground water decreased.

That situation began to change when NCPA completed the Southeast Geysers Effluent Pipeline Project in 1997. In 2003 the Santa Rosa Reclamation Project came online, and injected water from Lake and Sonoma Counties has kept the steam supply stable.

Today there are 20 units operating at The Geysers producing electricity for more than 1.1 million homes.

Even now, memories of Unit 1 evoke nostalgia among those lucky enough to have been around back then. There was an effort to have it preserved as a historical monument, but that was not to be. Certainly she will be in our thoughts as we celebrate the early years!

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## Fred Haley Memorial Scholarship Program Accepting Applications

Attention GGA Members:

The Geysers Geothermal Association (GGA), a non-profit trade association, which is comprised of the various companies that constitute the geothermal industry in Lake, Sonoma and Mendocino Counties, is pleased to announce the availability of the Fred Haley Memorial Scholarship.

There will be two scholarships awarded, one each to two high school seniors whose parent(s) are directly involved and spend a majority of their working time in Geysers Geothermal work. Each scholarship will be for \$1,500.

The scholarship program is one of the ways the GGA endeavors to be of service to the geothermal community.

Selection of recipients will be based upon the student's academic record, student activities, citizenship and an evaluation of the renewable energy related essay question. Please note that there is no formal application form for applying for this scholarship. Your application must include:

- Current transcript through seven semesters of high school.
- List of student activities including offices held.
- List and brief description of all extracurricular and/or community activities.  
(Make sure home address is also included).
- Statement of verification by the applicant's school counselor.
- One-page statement (essay) by the applicant about their future goals.
- Brief statement by the parent(s) describing their work relationship to The Geysers Geothermal Field.
- One-page essay answering the following question: "What renewable energy sources could economically supplant fossil fuels for future power generation?"

Applications must be postmarked by April 30, 2010. Successful recipients will be notified by May 19, 2010.

Applications or questions should be addressed to:

Scholarship Committee  
Geysers Geothermal Association  
P.O. Box 6501  
Santa Rosa, California 95406

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## Calpine team lends a hand with Clearlake H<sub>2</sub>S Leak

Reports of a noxious odor in a Clearlake neighborhood February 10 led to the discovery of a naturally occurring release of gases including hydrogen sulfide. The Lake County Air Quality Management District responded to the call and found gas venting from a hole in the soil and tested air samples.

Lake County CUPA and the Lake County Air Quality Control Board called on members of Calpine Geysers' environmental and geological team for help with additional laboratory testing of the vent gases.

Brian Benn, Joe Beall and Terry Sellers responded, and met with the Lake County agencies on site. They took gas samples, analyzed them at Calpine's Geysers laboratory and then provided analysis to Lake County on-site Haz Mat personnel.

The results revealed the presence of hydrogen sulfide at levels capable of causing adverse health effects. Carbon dioxide and methane were also present. The Calpine team followed up by providing the County's personnel with materials to assist with their mitigation of the incident.

Other responders included Lake County Fire Protection District, City of Clearlake Police Department and Public Works Department and Lake County Health Services.

Residents of the neighborhood in Clearlake are familiar with the periodic venting of geothermal gases and associated rotten-egg smells. The noticeable increase was the consequence of saturation of the soil by heavy February rains, which caused gases normally present in low concentrations to collect in pockets and seep to the surface through available channels.

Temporary measures were taken to reduce the release by covering the site with plastic sheeting, which reduced the hydrogen sulfide levels in the immediate area to less than half of the initial measurements. Levels taken at the closest home, approximately 60 feet from the site were only 1 percent to 2 percent of the original level at the source.

Residents in the immediate vicinity of the gas release were notified and advised to consider precautionary evacuation on a voluntary basis. With assistance from the American Red Cross, one family was housed in a local hotel, officials reported. A Public Health advisory also was distributed to residents in the areas impacted by the geothermal gas release.

By mid-day Thursday, air samples from approximately 50 feet away from the geothermal vent showed essentially little to no detectable levels of hydrogen sulfide. Later in the day, with the assistance of Calpine engineers, a filtering device was installed and subsequent testing showed no detectable hydrogen sulfide. The site continues to be monitored and is expected to clear up as the soil dries out.

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## Plugged and abandoned wells reopened by Calpine in demonstration project

Boosted by funding and support from the Department of Energy, Calpine is proceeding with plans to monitor and study the effects of water infusion into hot rock formations beneath the earth's surface in a demonstration project utilizing two plugged and abandoned wells located in the northwestern portion of The Geysers field.

The study, with participation from Lawrence Berkeley National Laboratory, is aimed at expanding and enhancing geothermal energy sources. Both wells will be opened, with water being injected into only one in order to enhance naturally occurring steam production.

The second well will be used to closely monitor the progress, including the steam's source, movement and effects, providing a higher level of information than normal monitoring performed in daily operations. After a period of time, the functions of the two wells will be switched.

It is hoped that information gathered in the demonstration project will aid in expansion of the northwest corner of The Geysers.

The Department of Energy funneled more than \$400 million into its geothermal program last year, and will contribute \$5 million toward the cost of Calpine's demonstration project, which is estimated at almost \$8 million.

*Source: from an article in the Press Democrat*

# GGA BUSINESS DIRECTORY

## CONSULTANTS

**Blaydes and Associates**  
• Paula E. Blaydes  
1275 Fourth Street #214  
Santa Rosa CA 95404  
530 223-6355

**Data Instincts**  
• Mark Millan  
239 Windsor River Road  
Windsor CA 95492  
707 836-0300

**EGS, Inc**  
• Paul Brophy  
3883 Airway Drive  
Suite 340  
Santa Rosa CA 95403  
707 544-0955

**Graphic Vision**  
• Kathy Enedy  
3883 Airway Drive  
Suite 340  
Santa Rosa CA 95403  
707 636-5815

**RMT, Inc.**  
• Laurie McClenahan Hietter  
4 W. Fourth Ave, Ste. 303  
San Mateo CA 94402  
650 373-1200

**Nick Voegtly Safety  
and Loss Control**  
• Nick Voegtly  
11725 Loch Lomond Rd.  
Middleton CA 95461  
707 349-7233

**Ronald E. Suess Company**  
• Ronald E. Suess  
1275 Fourth Street #105  
Santa Rosa CA 95404  
707 541-0976

**Tecton Geologic, Inc.**  
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Santa Rosa CA 95403  
707 571-1700

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Santa Rosa CA 95401  
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## ENGINEERS AND CONTRACTORS

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www.brunsing.com  
707 838-3027

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15 Third Street  
Santa Rosa CA 95401  
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707 538-2821

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801 Muscat Court  
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PO Box 1723  
Marysville CA 95901  
530 743-5424

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• Louis Capuano  
3883 Airway Drive Ste. 340  
Santa Rosa CA 95403  
707 523-2960

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• Rick Benton  
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Rio Vista CA 94571  
707 374-6493

## EQUIPMENT AND MATERIALS

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460 Cabot Road  
S San Francisco CA 94080  
650 871-4343

## EQUIPMENT AND MATERIALS

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PO Box 550  
Lakeport CA 95453  
707 263-7700

**Hudson Mechanical**  
• Blaine Hudson  
PO Box 493190  
Redding CA 96049  
530 223-6355

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• Wayne Jackson  
PO Box 669  
Middleton CA 95461  
707 987-3660

**Mahl Tek Inc.**  
• Dan Mahl  
PO Box 2520  
Mill Valley CA 94941  
415 388-7494

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530 662-1024

**Thomason Mechanical Corp.**  
• Ernie Vorhauer  
2150 E. 37th Street  
Vernon CA 90058  
310 639-3523

## LEGAL SERVICES

**Babin & Seeger, LLP**  
• Martin Seeger IV  
3550 Round Barn Blvd.  
Suite 201  
Santa Rosa CA 95403  
707 526-7370

## NETWORKING

**Geothermal Resources  
Council**  
• Curt Robinson  
2001 Second Street #5  
Davis CA 95616  
530 758-2360

## SPECIAL SERVICES

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PO Box 492  
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10965A Bachelor Valley Rd  
Witter Springs CA 95493  
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1360 Dutton Ave Ste 150  
Santa Rosa CA 95401  
707 542-6268

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1435 Santa Rosa Ave #C-5  
Santa Rosa CA 95404  
707 569-0200

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• Obie Sanders  
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Middleton CA 95461  
707 987-2001

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• Barry Penzel  
2555 Business Parkway  
Minden NV 89423  
775 267-2000

**Renewable Power Mgmt**  
• Ilene Mason  
32 Garrison St, 50-407  
Boston MA  
508 259-5030

**Sierra Crane Company**  
• Doug Burgard  
2530 Burgard Lane  
Auburn CA 95603  
916 663-3794

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PO Box 1369  
Cobb CA 95426  
707 928-4676

**SPECIAL SERVICES**

TNG Energy Services  
• Bryan Greuter  
3505 Standard Street  
Bakersfield CA 93308  
661 323-7031

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184 Malbert Street  
Perris CA 92570  
800 659-5908

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PO Box 326  
Cobb CA 95426  
707 928-4578

Calpine Corporation  
• Ralph Aviles  
10350 Socrates Mine Road  
Middletown CA 95461  
707 431-6000

Northern California  
Power Agency  
• Murray Grande  
PO Box 663  
Middletown CA 95461  
707 987-4033

Ormat Nevada Inc.  
• Charlene Wardlow  
PO Box 71533  
Reno NV 89570  
775 336-0155

Ram Power Corporation  
• Mike Long  
235 Foss Creek Circle  
Healdsburg CA 95448  
707 723-4455 Office  
707 473-9618 Fax

Would you like to add your website to the above business information? Call or email Marilyn Sanborn, 530 472-6442 msanborn@frontiernet.net

Do we have your contact information up to date? Let us know if there are changes.

## PG&E prepares to defend its turf as public CCA power gains in popularity with California cities and counties

Worried about the prospect of losing large blocks of customers, PG&E is funding Proposition 16, a June ballot initiative which would amend California's Constitution to require a two-thirds, or super-majority vote before local governments can offer their electricity customers a greener palette of energy options called "community choice aggregation," or CCA.

With the goal of delivering cleaner, more cost effective choices to cities and counties throughout California, CCA is an attractive alternative to PG&E and many local governments throughout the state are excited about it. Under CCA, energy will still be delivered over PG&E transmission lines and the company will continue to handle the billing.

Marin County will be the first entity to implement the new CCA power arrangement, and plans to be up and running with it in May. San Francisco County is in the process of implementing CCA, and is heavily committed to making the county green.

If Proposition 16 passes, cities would be required to hold costly special elections each time they annexed a subdivision or industrial property that would use city-provided power. It would also force existing power companies, such as Calpine, NCPA and SMUD, to obtain a two-thirds vote from customers before expanding into new territory.

With roughly 15 million customers in Northern and Central California, PG&E has so far spent \$6.5 million on the initiative, according to a February 16 news article from the Associated Press. As of mid-February, PG&E is the sole source of the initiative's funding. The utility has already launched a direct mail campaign in San Francisco painting CCA as "a risky scheme." City Attorney Dennis Herrera has petitioned the CPUC for tougher regulations

that would block PG&E's efforts to undermine consumer choice.

PG&E justifies their request to amend the Constitution by saying that taxpayers and ratepayers need to be protected from possible losses due to inexperienced local governments entering the electric power wholesaling arena.

But cities and counties who have had experience in the wholesale power market feel differently. Marin County Supervisor Charles McGlashan told Associated Press, "It's an absolute canard that city officials aren't qualified to do this sort of thing. One out of four Californians already get their power from their City Council today, and they pay less than we as PG&E customers do."

Will the Proposition 16 outcome affect The Geysers community? We don't know yet, but one scenario (if it passes) could be the return direct access, in which case Calpine and other power sellers could end up selling electricity directly to end user customers. We are hopeful that whatever the outcome, it will affect the geothermal industry, and The Geysers in particular, in a positive way.

The GGA will continue to monitor Proposition 16 to see which way it goes and how its outcome can affect us.

*Source: February 16 Associated Press Article and various websites*

## New PR chairman hospitalized

When former Unocal employee, Sylvia Timmons recently volunteered to help with GGA activities, President Ron Suess was quick to offer her a position as PR chair.

Sadly, shortly after accepting, Sylvia was taken ill and was hospitalized in San Francisco. We wish her well, and hope her hospital stay is short.

# GGA Executive Committee and Board of Directors

## Executive Committee

The Executive Committee is comprised of the following members:

### Officers (elected)

President	Ronald E. Suess
Secretary	Ben Barker
Financial Officer	Ralph Aviles

### Committee Chairs (appointed)

Editorial	Marilyn Sanborn
Membership	Marilyn Sanborn
Public Relations	Sylvia Timmons
SHEL	Nick Voegtly
Website	Dorothy Beebee
Scholarship	Louis Capuano III

## Board of Directors Term of Office Expiration Dates

2010*	2011	2012	2013
<i>Expires March 2010</i>			
1. Steve Burden	Paula Blaydes	Ralph Aviles	Reserved
2. Louis Capuano II	Sylvia Timmons	Paul Brophy	Reserved
3. Boyd Green	Dorothy Beebee	Steve Eney	Reserved
4. Marilyn Sanborn	Ron Suess	Lou Capuano III	Reserved
5. Doug Jung	Wayne Stith	Ben Barker	Reserved
6. Ted Wilmsen	Charlene Wardlow	Nick Voegtly	Reserved

### Note:

GGA bylaws require the Board of Directors (BOD) to consist of a minimum 15 members to a maximum 25 members. Currently, there are 18 members. This list of appointees represents the current BOD. This slate of Directors for one (1), two (2), and three (3) year terms expiring in successive years.

\*These Members to be appointed to a new three (3) year term on Board of Directors, ending in 2013, with individual Board Member's consent.



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Association*

**Editor:**  
Marilyn Sanborn  
msanborn@frontier.net  
530 472-6442  
Ben Barker  
Dorothy Beebee  
Danielle Saperas

**The Geysers Steamline**  
PO Box 6501  
Santa Rosa CA 95406