



**GEYSERS POWER COMPANY, LLC**  
10350 Socrates Mine Road  
Middletown, CA 95461

GWQ-19-057

December 23, 2019

Eric Veerkamp, Compliance Project Manager  
Energy Facilities Siting and Environmental Protection Division  
California Energy Commission  
1516 Ninth Street, MS-15  
Sacramento, California 95814-5512

Mr. Veerkamp:

Subject: **79-AFC-5C** 2018 Annual Compliance Report, U16 (Quicksilver)

In fulfillment of the Compliance Plan's annual reporting requirement, Geysers Power Company, LLC hereby submits the following report for Unit 16 (Quicksilver).

If you have any comments or questions, please contact me at (707) 431-6097.

Sincerely,

Bill King  
Project Manager, EHS  
Calpine Corporation

**79-AFC-5C**

**CALIFORNIA ENERGY COMMISSION**

**FINAL DECISION**

**CONDITIONS FOR CERTIFICATION**

**GEYSERS POWER PLANT**

**UNIT 16**

**2018 ANNUAL COMPLIANCE REPORT**

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## EXECUTIVE SUMMARY

Section 25532 of the Public Resources Code provides that the California Energy Commission (CEC) shall establish a monitoring system to assure that any facility certified by the CEC is constructed and operated in compliance with air, water quality, public health, safety, and other applicable regulations, guidelines, and conditions adopted or established by the CEC.

On December 4, 1979, Pacific Gas and Electric Company (PG&E) filed an Application for Certification (AFC) for Geysers Power Plant Unit 16. In granting the AFC, the CEC issued the "Final Commission Decision Document for Geysers Power Plant Unit 16." In November 1999, the CEC license was transferred from PG&E to Geysers Power Company, LLC (GPC). The license requires GPC to be responsible for administering and monitoring various Conditions for Certification as contained in the Final Commission Decision, in accordance with the Compliance Plan for Unit 16, including submitting an Annual Report that summarizes compliance tasks conducted during the previous year.

According to the guidance provided to PG&E by CEC staff on July 12, 1995, only the on-going compliance tasks are to be addressed in this and future Annual Reports.

The status of the compliance tasks in each of the following areas are summarized below:

**Biological Resources:** Three on-going compliance tasks.

**Public Health:** Three on-going compliance tasks.

**Safety:** One on-going compliance task.

**Solid Waste Management:** Four on-going compliance tasks.

**Water Quality, Hydrology and Water Resources:** Six on-going compliance tasks.

**Air Quality:** Three on-going compliance tasks.

**Transmission Line Engineering - Safety and Nuisance:** Two on-going compliance tasks. Note, GPC does not own the transmission facilities and cannot comply with these two compliance tasks.

This Annual Report meets the aforementioned requirements found in the CEC's Final Decision for Geysers Power Plant Unit 16.

**2018 Annual Compliance Report to the California Energy Commission  
79-AFC-5C Geysers Power Plant Unit 16**

**SECTION 1: BIOLOGICAL RESOURCES**

<b>Compliance Plan Conditions</b>	<b>Agency</b>	<b>Compliance Task</b>	<b>Status</b>	<b>Remarks</b>
<b>Condition: 1-2</b>	CEC CDFW	Maintain sedimentation ponds for the operational life of the power plant.	On-going	The inspection on March 2 and 9 <sup>th</sup> (Attachment 1) found the plant sedimentation pond below U16 to be in good condition. The Big Injun Mine sedimentation pond was inaccessible due to fallen trees.
<b>Condition: 1-3</b>	CEC CDFW	Implement the measures in the Wildlife Mitigation Plan and Monitoring Program dated March 30, 2015.	On-going	PG&E received a letter dated December 20, 1995 documenting CEC determining that the installation of a wildlife guzzler was a satisfactory alternative to fulfill prescribed burns (condition 1-3). GPC continued maintenance as required over the years. The Valley Fire of September 2015 destroyed the guzzler and a replacement is in inventory awaiting installation.
<b>Condition: 1-5</b>	CEC CDFW	PG&E shall submit a report on the fisheries and stream sedimentation monitoring program five years after the start of commercial operation	<i>Completed</i>	Report submitted in 1995. Per CEC Compliance Manager letter dated 4/24/96, "no further action is required regarding this condition."
<b>Condition: 1-10</b>	CDFW CED	At the time the power plant is to be deactivated GPC will include in the decommissioning plan a biological resources element identifying mitigation and compensation measures.	On-going	Unit 16 is still operational.

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**SECTION 6: PUBLIC HEALTH**

<b>Compliance Plan Condition</b>	<b>Agency</b>	<b>Compliance Task</b>	<b>Status</b>	<b>Task implementation</b>
<b>Condition: 6-1</b>	CDHS/RHB	During first year of operations, provide CDHS/RHB with quarterly sampling results of Radon-222 concentrations entering the plant. After first year, annual reports will be submitted	On-going	First, second, third and fourth quarter samples of main steam supply Radon 222 concentrations were collected in 2018. Calculated resulting concentrations of radon exiting the cooling tower stacks are below 1.0 pCi/l. Annual reports to CDHS-RHB are submitted upon request
<b>Condition: 6-2</b>	CDHS/RHB	If Radon-222 concentration exceeds 3.0 pCi/l in the cooling tower exhaust, CDHS/RHB must be notified by written report with 30 days of detection.	On-going	Measurements of main steam Radon 222 used to calculate radon concentrations in the cooling tower exhaust are consistently below California's standard (3.0 pCi/l for indoor radon exposure).
<b>Condition: 6-3</b>	CDHS/RHB	GPC will notify CDHS/RHB and the CEC within 24 hours if levels of Radon-222 exceed 6.0 pCi/l in the cooling tower exhaust. A special report will follow outlining corrective actions taken.	On-going	Measurements of main steam Radon 222 used to calculate radon concentrations in the cooling tower exhaust are consistently below California's standard of 3.0 pCi/l for indoor radon exposure. Confirmation sampling and written special reports to CDHS/RHB have never been necessary.

**SECTION 9: SAFETY**

<b>Compliance Plan Conditions</b>	<b>Agency</b>	<b>Compliance Task</b>	<b>Status</b>	<b>Remarks</b>
<b>Condition: 9-2<sup>1</sup></b>	CEC Cal/OSHA	On-site worker safety inspections shall be conducted by Cal/OSHA during construction if employee complaint is received.	On-going	No CAL/OSHA inspections were conducted at Unit 16 in 2018.

**SECTION X: SOLID WASTE MANAGEMENT**

<b>Compliance Plan Conditions</b>	<b>Agency</b>	<b>Compliance Task</b>	<b>Status</b>	<b>Remarks</b>
<b>Condition: 10-1</b>	CEC	Keep a letter on file verifying that hazardous waste haulers have DTSC certificates of registration.	On-going	GPC only uses DTSC registered waste haulers which is a contract requirement. GPC has certificates of registration on file for 2018. The certificates of registration expire at different times during the year and GPC requests updated copies as needed.

<sup>1</sup> PG&E 9/14/1995 letter requesting this condition be deleted, subsequently this request was withdrawn by PG&E letter 3/2/1995 after consultation with CEC staff.

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**SECTION 10: SOLID WASTE MANAGEMENT (continued)**

<b>Compliance Plan Conditions</b>	<b>Agency</b>	<b>Compliance Task</b>	<b>Status</b>	<b>Remarks</b>
<b>Condition: 10-2</b>	LCBO	Any sludge which accumulates in the cooling tower will be vacuumed off and hauled by a registered hazardous waste hauler to an approved disposal site.	On-going	Any sludges cleared from the sedimentation basin and cooling tower are dewatered and hauled by a registered hazardous waste hauler to an approved disposal site. Completed hazardous waste manifests are sent to DTSC.
<b>Condition : 10-3</b>	DTSC CEC	Notify the CEC, DTSC, and Solid Waste Management Board of the selected disposal site. Any notice of change in disposal sites will be submitted as changes occur.	On-going	GPC uses only licensed and permitted disposal facilities. Subsequent to CEC licensing, submittal of the Hazardous Waste Report to DTSC became a requirement and is the manner in which GPC complies with this condition. Copies of hazardous waste shipping manifests and reports are maintained at The Geysers, and are available for inspection.
<b>Condition: 10-5</b>	DTSC CEC	Notify the CEC if GPC files an in-lieu application with DTSC for the operation of a Hazardous Waste Facility.	On-going	GPC operates under state and federal regulations as a hazardous waste generator and does not intend to operate hazardous waste facilities that require a permit.

**SECTION 11: WATER QUALITY, HYDROLOGY AND WATER RESOURCES**

<b>Compliance Plan Conditions</b>	<b>Agency</b>	<b>Compliance Task</b>	<b>Status</b>	<b>Remarks</b>
<b>Condition: 11-2</b>	CEC	GPC shall comply with the "Emergency Accidental Spill and Discharge Control Plan and Procedures, Geysers Power Plant (revised February 15, 1980).	On-going	The Emergency Accidental Spill and Discharge Control Program was renamed the Zero Discharge Program and revised February 28, 1996. GPC submitted a letter of intent to comply with The Geysers Zero Discharge Program to the California Regional Water Quality Control Board, Central Valley Region, and North Coast Region on April 26, 1999. GPC complies with this program.

**2018 Annual Compliance Report to the California Energy Commission  
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**SECTION 11: WATER QUALITY, HYDROLOGY AND WATER RESOURCES (continued)**

Compliance Plan Conditions	Agency	Compliance Task	Status	Remarks
<b>Condition: 11-6</b>	CEC LCBO CVRWQCB	<p>Should a spill of condensate or other material occur, the spill would flow to a 1,000 gallon, concrete-lined catch basin located at the lowest point on the plant site. The catch basin shall be equipped with a 100 gallon per minute pump to return spilled material to the cooling tower basin for reinjection. If a spill occurs which is larger than the capacity of the pump, GPC plant personnel shall use a portable pump to remove excess material.</p> <p>Alarm systems will notify plant operators when a spill has occurred and when the catch basin pump has started. GPC plant personnel shall respond to the alarms within 30 minutes and take measures necessary to correct the problem.</p>	On-going	<p>GPC complies with all of the tasks. Two, yard area containment pumps are rated at 350 gallons per minute. Additionally, Unit 16 yard was constructed to retain the rainfall runoff generated by the 100-yr, 24-hr design storm.</p> <p>Operations staff inspect the main control board alarms each shift.</p>
<b>Condition: 11-7</b>	CEC LCBO	<p>GPC shall ensure that rainwater entering the Stretford process area will not enter surface water or groundwater. The rainwater shall be used in the Stretford process or pumped to the cooling tower overflow structure.</p> <p>The steam condensate from the plant shall be used for cooling water, with any excess reinjected into the geothermal reservoir.</p>	<p>On-going</p> <p>On-going</p>	<p>The Stretford system area is surrounded by an impermeable concrete barrier and a drain system that routes rainwater to a sump, which is then valved to reinjection.</p> <p>The power plant is designed so that excess steam condensate is reinjected into the geothermal reservoir.</p>
<b>Condition: 11-8</b>	CEC LCBO CVRWQCB	<p>To minimize the potential adverse impacts of storm runoff on the quality of Bear Canyon and Anderson Creek below the confluence with Bear Canyon Creek, GPC shall return plant site runoff to the cooling tower basin for subsequent injection into the geothermal reservoir. When the capacity of the return system is exceeded and a spill has not occurred runoff may, if necessary, be released from the site through a manually controlled valve. If storm runoff is released from the power plant site, GPC shall satisfy the Basin (5A) Plan intent and any applicable requirements of the CVRWQCB.</p>	On-going	<p>The Geysers Power Plant Zero Discharge Program incorporates these requirements and GPC complies with them. Unit 16 had no storm water releases in 2018.</p>



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**SECTION 11: WATER QUALITY, HYDROLOGY AND WATER RESOURCES (continued)**

<b>Compliance Plan Conditions</b>	<b>Agency</b>	<b>Compliance Task</b>	<b>Status</b>	<b>Remarks</b>
<b>Condition: 11-9</b>	LCBO	GPC shall dispose of domestic wastewater by injection into the steam supplier's reinjection system. The waste will be treated in a septic tank to remove solids, and discharged to the reinjection line at a point between the condensate surge pond and the reinjection well.	On-going	Greywater effluent, from the sinks and showers at the hygiene building, is pumped to reinjection. Black water effluent from the septic tank is also pumped to reinjection or sometimes hauled out by truck.
<b>Condition: 11-10</b>	CEC	The CEC revised Condition 11-10 on March 12, 2004, which provides the following: The project owner shall provide the Compliance Project Manager with copies of all local and state water quality permits related to the use and disposal of reclaimed municipal wastewater within thirty (30) days of receipt. In the annual compliance reports, the project owner shall provide the CPM with data on the annual quantity of water reinjected at the facility, and a copy of the report submitted to the California Department of Health Services on the additional uses of recycled water per Provision #2 of the December 5, 2003, California Department of Health Services approval letter.	On-going	No Santa Rosa Wastewater was sent to the Unit 16 cooling towers in 2018. A copy of GPC's letter GWQ-19-020, dated July 23, 2019 is provided for CPM review (Attachment 2).  Total water injected within the Unit 16 steamfield in 2018 was 187,410,930 gallons. In addition to reclaimed wastewater, this value includes recycled condensate.

**2018 Annual Compliance Report to the California Energy Commission  
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**SECTION 12: AIR QUALITY**

Compliance Plan Condition	Agency	Verification Task	Status	Task implementation
<b>Condition: 12-1</b>	LCAQMD CEC	GPC shall summarize in an annual compliance report to the Compliance Program Manager (CPM) any significant interactions related to Geysers Unit 16 with the LCAQMD. GPC shall immediately inform the CPM and the California Air Resources Board in writing of any formal appeals filed with the LCAQMD.	On-going	The Annual Compliance Report is provided below

**2018 Annual Compliance Report:** Geysers Power Company LLC (GPC) interactions with the LCAQMD occur during the course of the year as routine reports and non-routine submittals.

**Quarterly Operating Report Submittals:** The following Quarterly reports were submitted to LCAQMD. The required elements are addressed in the report sections entitled: Operating Hours, Chemical Usage, and Source Test Results; Listing of Plant Outages; Incidents Requiring Corrective Action and Monitor Irregularities; and Treated gas monitor Calibration and Maintenance Activities.:

- Fourth Quarter 2017 Compliance Monitoring Report (Oct – Dec)      Submittal to LCAQMD,      dated 2/1/2018, ref, GPC18-001
- First Quarter 2018 Compliance Monitoring Report (Jan – Mar)      Submittal to LCAQMD,      dated 4/27/2018, ref. GPC18-036,
- Second Quarter 2018 Compliance Monitoring Report (Apr – June)      Submittal to LCAQMD,      dated 7/24/2018, ref. GPC18-074
- Third Quarter 2018 Compliance Monitoring Report (July – Sep)      Submittal to LCAQMD,      dated 10/22/2018, ref GPC18-085

**Other Routine Reports:**

- Annual Production 2018 Throughput Report to LCAQMD, 10/19/2018, ref. GPC18-040

**Nonroutine Submittals**

- NESHAP Notifications – **None**
- Breakdown reports – **None**
- Applications for Authority to Construct equipment modifications or replacement: **None**
- 2018 annual request for a statement of compliance verification, 7/1/2019, ref. GPC19-057.

**Significant interactions with the LCAQMD:**

- On 2/21/2018 LCAQMD issued ATC 2017-49 Emergency Standby Wet-Down Pump Diesel Drive Engine For Cooling Tower Fire Prevention At The Quicksilver Power Plant.
- LCAQMD issued a statement of compliance verification for 2017 on 2/13/2019.
- No Appeals filed;
- No Variances filed;
- No Notices of Violations were issued

**2018 Annual Compliance Report to the California Energy Commission  
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**SECTION 12: AIR QUALITY (Continued)**

<b>Compliance Plan Condition</b>	<b>Agency</b>	<b>Compliance Task</b>	<b>Status</b>	<b>Task implementation</b>
<b>Condition: 12-2</b>	LCAQMD CEC	GPC shall obtain LCAQMD Hearing Board and CEC approval before using any equipment other than the hydrogen peroxide/catalyst and Stretford/surface condenser system as proposed in the AFC to control H2S emissions.	On-going	No alternative H <sub>2</sub> S emissions abatement systems have been proposed. Operators use only the equipment specified in the AFC for the Stretford abatement system and secondary chemical feed system
<b>Condition: 12-6</b>	ARB LCAQMD	The ARB and the LCAPCO shall approve the frequency, method of collection, and the testing methods for the operation of a monitoring station to be located at the Anderson Springs Recreation Center.	On-going	GPC continues to fully participate in the Geyser Air Monitoring Program (GAMP.) The GAMP Monitoring Station located at the Anderson Springs Recreation Center continues to operate in accordance with ARB and LCAQMD approved methods for collection testing and frequency.
<p><b>Note:</b> The Geysers Air Monitoring Program (GAMP) established in 1983 includes a monitoring station located at the Anderson Springs Recreation Center and a description of frequency and method of collection and the testing methods for the operation of the monitoring station. GAMP continues to be fully funded annually by the Geothermal operators. The GAMP Memorandum of Understanding (MOU) is periodically reviewed and has undergone five revisions since it was established. GAMP VI, described in currently approved MOU was signed by all GAMP participants including GPC, LCAQMD, CARB, and the CEC.</p>				

**SECTION 16: TRANSMISSION LINE ENGINEERING – SAFETY AND NUISANCE**

<b>Compliance Plan Conditions</b>	<b>Agency</b>	<b>Compliance Task</b>	<b>Status</b>	<b>Remarks</b>
<b>Condition: 16-2</b>	CEC	PG&E shall maintain the vegetation clearance for conductors and structures on the transmission lines in accordance with Title 14, California Administration Code, Sections 1250 and Public Resources Code, Sections 4292-4296. PG&E shall also inspect the transmission lines annually.	On-going	GPC does not own the transmission facilities and cannot comply with this compliance task.
<b>Condition: 16-6</b>	CEC CAL/OSHA	PG&E shall note any CAL/OSHA inspections in its periodic compliance reports.	On-going	GPC does not own the transmission facilities and cannot comply with this compliance task.

## LIST OF ACRONYMS

AFC	Application for Certification
ARB	Air Resources Board
CAL/OSHA	California Occupational Safety and Health Administration
CEC	California Energy Commission
CDFW	California Department of Fish and Wildlife
CDF	California Department of Forestry
CDHS/RHB	California Department of Health Services Radiological Health Branch
CPM	Compliance Program Manager
CVRWQCB	Central Valley Regional Water Quality Control Board
DTSC	California Department of Toxic Substances Control
EPA	Environmental Protection Agency
GAMP	Geysers Air Monitoring Program
GPC	Geysers Power Company LLC
LCAQMD	Lake County Air Quality Management District
LCBO	Lake County Building Official
PG&E	Pacific Gas and Electric Company
NCRWQCB	North Coast Regional Water Quality Control Board
NSCAPCD	Northern Sonoma County Air Pollution Control District
SCBO	Sonoma County Building Official
UBC	Uniform Building Code

# ATTACHMENT 1

**Attachment 1 - CEC Guzzler Inspection Notes  
Inspected March 2 and 9, 2019 by Allen Sonnevile**

Unit 16

- Injun Mine Sedimentation pond (below white water tank) was inaccessible due to growth and fallen trees



- Guzzler located on top of hill not repaired since fire destroyed in 2015.



- Plant sedimentation pond below Unit 16 OK.

## **ATTACHMENT 2**



**GEYSERS POWER COMPANY, LLC**

10350 Socrates Mine Road  
Middletown, CA 95461  
707.431.6000

GWQ-19-020

July 23, 2019

Janice M. Thomas, P.E.  
Drinking Water Field Operations Branch  
California Department of Health Services  
50 D Street, Suite 200  
Santa Rosa, CA 95404

**Subject: 2018 Geysers Power Plant Units Recycled Water Use Report**

Dear Ms. Thomas:

Use of Santa Rosa Waste Water (SRWW) first began at Unit 17 on July 22, 2004 where it supports cooling tower basin levels by replacing blowdown water at a rate of 400-500 gpm. When tower basin water levels are sufficiently high, SRWW bypasses the tower and enters the onsite sediment pond, where it mixes with condensate then gravity fed to the Unit 11 sediment pond prior to reinjection at the OS-16 well. Tabulated below are various uses of SRWW during 2018.

2018 Total	U17 Tower	U20 Tower	Unit 7/8 Sediment Pond	Aidlin Injection and/or Burner
Million Gallons	83,550,307	122,389,385	377,179,975	112,539,666

Minor amounts of SRWW were used for incidental purposes as identified in Section 3.2 of the Engineering Report. These uses may consist of dust control, construction, fire-fighting and industrial process water. Additionally, SRWW was used for various drilling activities in Sonoma County during 2018. Appropriate signage and labeling was directed by the User Supervisor (Jaime Griep) for these activities.

If you have any questions, please contact me at (707) 431-6097.

Sincerely,

  
Bill King  
Calpine-Geysers EHS