



FACTSHEET
(pursuant to NAC 445A.236)

Permittee Name: USG NEVADA LLC
SR 447 MM-60
GERLACH, NV 89412

Permit Number: NS0094003

Permit Type: GROUNDWATER DISCHARGE

Designation: GROUNDWATER

New/Existing: EXISTING

Location: SAN EMIDIO GEOTHERMAL PLANT, WASHOE
P.O. BOX 135, GERLACH, NV 89412
LATITUDE: 40.381667, LONGITUDE: -119.40
TOWNSHIP: 29N, RANGE: 23E, SECTION: 16

Outfall / Well Num	Outfall / Well Name	Location Type	Well Log Num	Latitude	Longitude	Receiving Water
001	GEOTHERMAL BRINE DISCHARGE	External Outfall		40.381111	-119.401583	GROUNDWATER
002	COOLING TOWER BLOWDOWN	External Outfall		40.38	-119.401528	GROUNDWATER
003	10.6-ACRE EVAPORATION BASIN, AS FAR AS POSSIBLE FROM THE DISCHARGE POINT INTO THE CELL	External Outfall		40.380389	-119.406861	GROUNDWATER
SUM	SUM OF 001 AND 002	Sum		40.381111	-119.403889	GROUNDWATER

Permit History/Description of Proposed Action

The Permittee, USG Nevada LLC, a subsidiary of U.S. Geothermal Inc., the operator of the San Emidio Geothermal Plant has applied for a permit renewal of the existing reclaimed water reuse permit NS0094003. The San Emidio Geothermal Plant is a 10.8-megawatt (MW) geothermal power plant located 20 miles south of Empire, Nevada, in the San Emidio Desert of Washoe County. This permit allows for the discharge from the power plant cooling towers blowdown to a 10.6-acre unlined evaporation basin near the power geothermal plant.

This permit was first issued on August 9, 1994. There was a major modification to the permit on September 25, 2009. The most recent permit was issued on May 7, 2013, and expired on February 23, 2017; the permit has been administratively continued since.

Facility Overview

San Emidio Geothermal Plant is a 10.8 MW geothermal power plant that has a six-cell cooling tower that condenses Isopentane vapor for several cycles before being discharged at a rate of 0.19 million gallons per day (MGD) into a 10.6 acre wetlands cell, this concentrates the water three to four times that of the

naturally occurring shallow brackish groundwater. The blow-down chemistry averaged 3,270.48 milligrams per liter (mg/L) total dissolved solids (TDS) and 8.4 Standard Units (S.U.) pH. Profile 1 testing is conducted annually.

The permit was originally issued to Empire Foods LLC in August 1994, and due to economic conditions, the ownership reverted to the Intermountain Federal Bank Landbank Association, which was then purchased by U.S. Geothermal Inc., who renewed the permit in 2009. The original 3.6 MW plant was decommissioned and replaced with a 10.8 MW plant in 2011. In 2012, a modification to the permit was made to allow for the discharge from the power plant cooling towers blowdown to a 10.6-acre unlined evaporation basin near the power geothermal plant. In 2013, a modification to this permit authorized the discharge of 8.28 MGD cooling tower blowdown and geothermal brine to an evaporation basin/Wetlands cell. The reinjection of geothermal brine is authorized in permit UNEV87041 issued by NDEP.

The last Operation and Maintenance (O&M) Manual was received on January 23, 2014, the Permittee is required to provide an updated O&M every 10-years. The next O&M Manual will be due October 9, 2026, or 90 days after the issuance of this permit.

Outfall Summary

External Outfall 001: Geothermal Brine Discharge. This outfall is metered for flow rate measured in MGD and monitored for the daily maximum and the 30-day average, pH measured in S.U. and monitored for the daily maximum and the daily minimum, TDS measured in the mg/L and monitored for the daily maximum and the 30-day average.

External Outfall 002: Cooling Tower Blowdown. This outfall is metered for flow rate measured in MGD and monitored for the daily maximum and the 30-day average, pH measured in S.U. and monitored for the daily maximum and the daily minimum, TDS measured in mg/L and monitored for the daily maximum and the 30-day average.

External Outfall 003: 10.6-Acre Evaporation Basin. This outfall is to monitor and report Profile 1 metals, Alkalinity, Aluminum (Al), Antimony (Sb), Arsenic (As), Beryllium (Be), Cadmium (Cd), Calcium (Ca), Chloride (Cl), Chromium (Cr), Copper (Cu), Cyanide, Fluoride (F), Iron (Fe), Lead (Pb), Magnesium (Mg), Manganese (Mn), Mercury (Hg), Nickel (Ni), Nitrate + Nitrite, Total Nitrogen, Phosphorous (P), Potassium (K), Selenium (Se), Silver (Ag), Sulfate (S), and Thallium (Tl).

Outfall 004: Sum of 001 and 002. This outfall is metered for flow rate measured in MGD and monitored for the daily maximum and the 30-day average.

Effluent Characterization

The average reported values for the 5-year period between 2020 and 2025 are listed below:

Outfall 001: Geothermal Brine Discharge
 30-day average Flow Rate: No Discharge
 Daily Max Flow Rate: No Discharge
 Average pH: No Discharge
 TDS 30-day average: No Discharge
 TDS daily maximum: No Discharge

Outfall 002: Cooling Tower Blowdown
 30-day average Flow Rate: 0.243 MGD
 Daily Max Flow Rate: 0.349 MGD
 Average pH: 8.3 U.S.
 TDS 30-day average: 3,247.606 mg/L
 TDS daily maximum: 3,353.521 mg/L

Outfall 003: 10.6-Acre Evaporation Basin, as far as possible from the discharge point into the cell

The only parameters that tested above the Profile 1 limit are listed below, the rest are below the limits.

Arsenic: 0.05 mg/L Profile 1 limit = 0.01 mg/L

Chloride 1310.00 mg/L Profile 1 limit = 400 mg/L

Manganese 23.01 mg/L Profile 1 limit = 0.1 mg/L

Sulfate: 680 mg/L Profile 1 limit = 500 mg/L

These parameters tested higher than the Profile 1 limits due to the nature of the brackish source water.

Sum-A: Sum of 001 and 002.

30-day average Flow Rate: 0.261 MGD

Daily Max Flow Rate: 0.353 MGD

Pollutants of Concern

Pollutants of concern are any pollutants or parameters that are believed to be present in the discharge and could affect the physical, chemical, or biological condition of the receiving water. Common pollutants of concern for geothermal brine and cooling tower blowdown are TDS, and pH along with potential inorganic chemicals and metals (Profile 1 contaminants).

Receiving Water

The receiving water is groundwater of the State. The groundwater in the vicinity of the plant and discharge areas ranges from 10 to 100 feet below ground surface. The groundwater exceeds the secondary standards drinking water standards for TDS, 11,035 mg/L; chloride, 5,000 mg/L; sulfate, 1,400 mg/L; iron, 0.97 mg/L; and manganese, 0.99 mg/L. Groundwater also has elevated concentrations of magnesium, 330 mg/L. The playa groundwater is similar to the geothermal fluid for most constituents but has higher total dissolved solids content.

Compliance History

The Permittee is in compliance with the permit.

Proposed Effluent Limitations

The discharge shall be limited and monitored by the Permittee as specified below.

**NS OTHER - Discharge Limitations Table for Sample Location 001 (Geothermal Brine Discharge)
To Be Reported Monthly**

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
pH, minimum	Daily Minimum		>= 6.5 Standard Units (SU)	Effluent Gross	001	Monthly	DISCRT
pH, maximum	Daily Maximum		<= 9.0 Standard Units (SU)	Effluent Gross	001	Monthly	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Monthly	DISCRT
Solids, total dissolved	30 Day Average		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Monthly	DISCRT
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	001	Continuous	METER
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	001	Continuous	METER

NS OTHER - Discharge Limitations Table for Sample Location 002 (Cooling Tower Blowdown) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
pH, maximum	Daily Maximum		<= 9.0 Standard Units (SU)	Effluent Gross	002	Monthly	DISCRT
pH, minimum	Daily Minimum		>= 6.5 Standard Units (SU)	Effluent Gross	002	Monthly	DISCRT
Solids, total dissolved	Daily Maximum		<= 5000 Milligrams per Liter (mg/L)	Effluent Gross	002	Monthly	DISCRT
Solids, total dissolved	30 Day Average		<= 4000 Milligrams per Liter (mg/L)	Effluent Gross	002	Monthly	DISCRT
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	002	Monthly	METER
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	002	Monthly	METER

NS OTHER - Discharge Limitations Table for Sample Location 003 (10.6-Acre Evaporation Basin, As Far As Possible From The Discharge Point Into The Cell) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Alkalinity, bicarbonate (as CaCO ₃)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Alkalinity, total (as CaCO ₃)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Aluminum, dissolved (as Al)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Antimony, dissolved (as Sb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Arsenic, dissolved (as As)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Barium, dissolved (as Ba)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Beryllium, dissolved (as Be)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Cadmium, dissolved (as Cd)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Calcium, dissolved (as Ca)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Chromium, dissolved (as Cr)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
			M&R				

NS OTHER - Discharge Limitations Table for Sample Location 003 (10.6-Acre Evaporation Basin, As Far As Possible From The Discharge Point Into The Cell) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Copper, dissolved (as Cu)	Daily Maximum		Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Fluoride, total (as F)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Iron, dissolved (as Fe)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Lead, dissolved (as Pb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Magnesium, dissolved (as Mg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Manganese, dissolved (as Mn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Mercury, dissolved (as Hg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Nitrite plus nitrate total 1 det. (as N)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
pH, maximum	Daily Maximum		M&R Standard Units (SU)	Effluent Gross	003	Annual	DISCRT
pH, minimum	Daily Minimum		M&R Standard Units (SU)	Effluent Gross	003	Annual	DISCRT
Potassium, dissolved (as K)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT

NS OTHER - Discharge Limitations Table for Sample Location 003 (10.6-Acre Evaporation Basin, As Far As Possible From The Discharge Point Into The Cell) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Selenium, dissolved [as Se]	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Silver, dissolved (as Ag)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Sodium, dissolved (as Na)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Sulfate, total (as SO ₄)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Thallium, dissolved (as Tl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Uranium, natural, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Cyanide, weak acid, dissociable	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Zinc, dissolved (as Zn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT

NS OTHER - Discharge Limitations Table for Sample Location Sum (Sum Of 001 And 002) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Flow rate	Daily Maximum	<= 8.28 Million Gallons per Day (Mgal/d)		Effluent Gross	SUM	Continuous	METER
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	SUM	Continuous	METER

Summary of Changes From Previous Permit

The Profile 1 parameters have been updated to reflect the dissolved measurements required by the Division.

Outfall GPS coordinates were updated.

Technology Based Effluent Limitations

Technology based effluent limitations are not applicable on this permit.

Water Quality Based Effluent Limitations

Water quality-based effluent limitations are not applicable to this permit.

Proposed Water Quality Based Effluent Limits (monthly/weekly/daily)

Water quality-based limitations are not applicable to this permit.

Basis for Effluent Limitations

Flow rate – limit of 8.28 MGD at the request of the permittee.

The groundwater in the area has high TDS values, and discharging TDS with a limit of 4,000 mg/L 30-day average, and 5,000 mg/L daily maximum isn't expected to degrade groundwater quality.

Some wastewater processes can increase or decrease wastewater pH; therefore, monthly monitoring for pH is included in assessing compliance with effluent limits of 6.5 S.U. as a daily minimum and 9.0 S.U. as a daily maximum.

The requirement to monitor the effluent for Profile 1 pollutants annually is included to evaluate the quality of the effluent and determine whether the effluent has a potential to impact the receiving water. Although some of the parameters are not expected to be present in the effluent, the permit requires the Permittee to sample these constituents annually as they are in the Profile 1 list.

Anti-backsliding

None of the proposed permit limits were changed to a less restrictive limit compared to those in the previous permit.

Antidegradation

The Division has developed an antidegradation regulation that is applied on a statewide basis, and which

meets the statutory requirements of Nevada’s water pollution control law found at Nevada Revised Statute (NRS) 445A.520 and NRS 445A.565 and is consistent with the federal antidegradation policy found at Title 40 in the Code of Federal Regulations (CFR) § 131.12. The objective of the Division’s antidegradation regulation is to prevent degradation of Nevada’s surface waters and maintain the unique attributes and special characteristics and water quality associated with high-quality waters.

As this permit is for discharges to groundwater, and not surface water, the new antidegradation rule is not applicable.

Special Conditions

There are no Special Approval / Condition items for this permit:

SA – Special Approvals / Conditions Table

There are no Special Approval / Condition items

Discharges From Future Outfalls/ Planned Facility Changes

This Permittee does not anticipate changes to the outfalls or to the plant.

Corrective Action Sites

There are no Bureau of Corrective Actions remediation sites within one-mile radius of this plant or discharge areas.

Wellhead Protection Program

The outfalls are not located within a Wellhead Protection Area, which represents an approximate 10-year capture zone of a well, or within a Drinking Water Protection Area, which is defined by a 3,000-foot radius around a PWS well.

Schedule of Compliance:

SOC – Schedule of Compliance Table

Item #	Description	Due Date
1	The Permittee shall submit two copies (one hard copy and one electronic copy) of an updated Operations and Maintenance (O&M) Manual for review and approval by the Division. The O&M Manual shall follow the Division's guidance document, WTS2 Minimum Information Required for an Operation and Maintenance Manual for a Wastewater Treatment Plant, and be prepared and wet-stamped by a licensed, qualified Nevada engineer (P.E.).	10/9/2026

Deliverable Schedule:

DLV– Deliverable Schedule for Reports, Plans, and Other Submittals

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly DMRs	Quarterly	10/28/2026
2	Annual DMRs	Annually	1/28/2027

Procedures for Public Comment:

The Notice of the Division's intent to issue a permit authorizing the facility to discharge to groundwater of the State of Nevada subject to the conditions contained within the permit, is being mailed to interested persons on our mailing list and will be posted on our website at <https://ndep.nv.gov/posts>. Anyone wishing to comment on the proposed permit can do so in writing until 5:00 P.M. **8/5/2026**, a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination:

The Division has made the tentative determination to issue/re-issue the proposed 5-year permit.

Prepared by: **Jason Reichelt**

Date: **7/1/2026**

Title: **Environmental Scientist 3**