# State Water Resources Control Board

May 23, 2024

Mr. Jeremy Nickel
Senior Land Planner
Pacific Gas and Electric Company
12840 Bill Clark Way
Auburn, CA 95602
**Sent via email**: JEN8@pge.com

**Lake Fordyce Dam Seepage Mitigation Project**
**Placer and Nevada Counties**
**Fordyce Lake and Fordyce Creek**

**AMENDMENT TO WATER QUALITY CERTIFICATION**

Dear Mr. Nickel:

This water quality certification (certification) amendment is issued in response to Pacific Gas and Electric Company's (PG&E) October 31, 2023 request to amend the Lake Fordyce Dam Seepage Mitigation Project (Project) certification[1] to incorporate changes to the Project. PG&E's Project changes include: (1) an updated cofferdam design; (2) onsite blasting and sourcing of rock for cofferdam construction at two nearby quarry locations; (3) modifications to the Project's pH management system; and (4) addition of a potential fifth year of construction.

**Project Background**
PG&E owns and operates Lake Fordyce Dam, which is located on Fordyce Creek, a tributary of the South Fork of the Yuba River, in Nevada County. Lake Fordyce Dam is about seven miles northwest of Soda Springs, California, and 17 miles west-northwest of Truckee, California.

Lake Fordyce Dam is a 156-foot-high, 1,220-foot-long soil and rockfill dam with a concrete liner on the upstream face that impounds Fordyce Creek to form Lake Fordyce. Lake Fordyce Dam does not generate hydroelectric energy but is operated as part of PG&E's Upper Drum-Spaulding Hydroelectric Project, which is licensed by the Federal Energy Regulatory Commission (FERC) and referred to as FERC Project No. 2310.

[1] The Executive Director issued the original Project certification on October 30, 2020, and amendments thereto on August 20, 2021.

Lake Fordyce Dam has a long history of seepage. At full reservoir capacity, the dam currently seeps between 23 to 60 cubic feet per second (cfs). In 2005, the California Department of Water Resources, Division of Safety of Dams (DSOD) instituted a seepage threshold of 30 cfs for Lake Fordyce Dam. In November 2011, seepage at Lake Fordyce Dam exceeded the threshold. Accordingly, in 2012 DSOD required PG&E to submit a plan and schedule to address the seepage.

To address DSOD's seepage reduction requirements at Lake Fordyce Dam, PG&E proposed implementation of the Project. The Project involves repair of Lake Fordyce Dam to ensure compliance with DSOD's seepage threshold requirement. On October 30, 2020, the Executive Director of the State Water Resources Control Board (State Water Board), issued a certification for the Project. Additionally, in compliance with the California Environmental Quality Act (CEQA), the State Water Board adopted an Initial Study/Mitigated Negative Declaration (IS/MND) that analyzed potential Project impacts. The IS/MND also includes mitigation measures to reduce identified impacts to less than significant.

On March 24, 2021, PG&E staff contacted State Water Board staff with concerns that the original Project design could lead to cofferdam instability or failure associated with construction of a cofferdam on existing sediment deposits. To address the cofferdam safety issues, PG&E requested to modify its original Project and submitted a request to the State Water Board for an amendment of the Project certification on June 24, 2021. On August 20, 2021, the Executive Director issued an amendment to the Project's 2020 certification along with a CEQA addendum that analyzed the potential impacts of Project changes.

In July 2021, PG&E began Project construction. Following the 2021 construction season (Construction Year One), PG&E determined that a new cofferdam design would be preferable and paused construction in May of 2022. On September 19, 2022, PG&E contacted State Water Board staff stating that the Project needed to be updated to reflect a new cofferdam design, onsite sourcing of rock for cofferdam construction, and a wider range of pH management methods. Since September 2022, State Water Board staff and PG&E staff have held regular meetings to identify and discuss Project changes, collect additional information regarding environmental conditions, and proactively begin the CEQA process prior to PG&E applying for an amendment to the Project certification.

On October 31, 2023, PG&E submitted a request to the Executive Director to amend the Project certification. On January 10, 2024, and January 11, 2024, PG&E supplemented its amendment request with additional information and an updated water quality monitoring plan (including modifications to the Project's pH management system). On April 19, 2024, PG&E amended its Project to include protection measures for special-status bat species.

**California Environmental Quality Act**

As the CEQA lead agency, the State Water Board reviewed and analyzed the effects of the Project description changes in relation to the IS/MND adopted in October 2020 and the CEQA Addendum issued on August 20, 2021. The State Water Board determined

that PG&E's proposed Project description changes would not result in any new potentially significant effects or substantially increase the severity of any previously identified potentially significant effects. Accordingly, the State Water Board has prepared a second CEQA Addendum that discusses the proposed Project changes and analyzes their potential environmental impacts. The CEQA Addendum is available on the State Water Board Drum-Spaulding Project website.[2]

**Noticing**

On November 29, 2023, the State Water Board provided public notice of PG&E's request for a second amendment to the Project certification, pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the amendment request on the Division of Water Rights Water Quality Certification Program Public Notices webpage and noticing interested parties via email. The State Water Board received no comments in response to this notice.

On April 19, 2024, State Water Board staff requested comments from the Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board) on the Project's certification amendment. (See Cal. Code Regs., tit. 23, § 3855, subd. (b)(2)(B).) On April 24, 2024, the Central Valley Regional Water Board responded with no comments.

**Certification Amendment**

PG&E's certification amendment request for the Project includes the following changes from the Project description previously certified on October 30, 2020, and amended on August 20, 2021:

- Update the cofferdam design from a bin-wall cofferdam to a rockfill cofferdam with a rock buttress and a membrane liner to limit leakage through the cofferdam. Installation of the cofferdam will require dredging an additional 1,100 cubic yards of sediment in the area immediately upstream of the cofferdam (3,000 cubic yards of sediment was removed in Construction Year One). The rockfill cofferdam and its associated buttress will require approximately 17,000 cubic yards of rock either trucked in or sourced onsite from two nearby quarry areas.
- Addition of two quarry areas/blast zones near Lake Fordyce Dam to provide for locally sourced rock for the cofferdam (shown in Attachment 3, Figure A: Lake Fordyce Dam Seepage Mitigation Project Area).
- Modification of the Project's proposed pH management system to: (1) add muriatic acid and bicarbonate as pH treatment options (previous proposal only included carbon dioxide); and (2) perform pH treatment of seepage from Lake Fordyce Dam under specific circumstances.
- Extended the construction schedule to up to five years of non-consecutive construction depending on weather conditions. Construction Year One began in July 2021 and halted in May 2022, prior to initiation of Construction Year Two.

[2] https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/drum_spaulding_ferc2310.html

**Conclusion**

The State Water Board finds that implementation of the revised Project, in accordance with the Project certification amendment, included as Attachment 1 (Strikethrough/ Underline Version), Attachment 2 (Clean Version), and the conditions provided below, will comply with state water quality standards of Lake Fordyce and Fordyce Creek and other appropriate requirements of state law. The State Water Board hereby amends the Project's certification as detailed in Attachments 1 and 2. Attachment 1 (Strikethrough/Underline Version) shows changes associated with this amendment in track changes. Attachment 2 shows a clean version of the Project certification with both amendments incorporated.

This certification amendment is issued with the following additional conditions:

1. This certification amendment is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to California Water Code, section 13330 and California Code of Regulations, title 23, division 3, chapter 28, article 6 (commencing with section 3867).

2. This certification amendment is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to California Code of Regulations, title 23, section 3855, subdivision (b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. This certification amendment is conditioned upon total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28 and owed by the applicant.

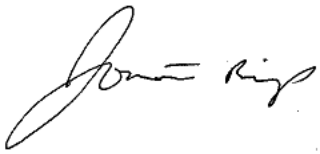
All documents and other information that constitute the public record for this amendment will be maintained by the Division of Water Rights and are available for public review at the following address:

State Water Resources Control Board
Division of Water Rights
1001 I Street, Sacramento, CA 95814

Documents are currently available at this location by appointment only. Please email **dwr@waterboards.ca.gov** to discuss options for document review.

If you have questions regarding this amendment, please contact Andrea Sellers, Project Manager, by email to: Andrea.Sellers@waterboards.ca.gov.

Sincerely,



Chief Deputy Director, on behalf of
Eric Oppenheimer
Executive Director

Attachments: Attachment 1: Lake Fordyce Dam Seepage Mitigation Project Certification Amendments (Strikethrough/Underline Version)
Attachment 2: Lake Fordyce Dam Seepage Mitigation Project Certification Amendments (Clean Version)
Attachment 3: Lake Fordyce Dam Seepage Mitigation Project Map.

ec (with Attachments): Ms. Debbie-Anne Reese, Acting Secretary
Federal Energy Regulatory Commission
**Via FERC eFiling**

U.S. Environmental Protection Agency
Region 9, Water Division
**Email: R9cwa401@epa.gov**

Mr. Patrick Pulupa, Executive Officer
Central Valley Regional Water Quality Control Board
**Email: Patrick.Pulupa@waterboards.ca.gov**

Ms. Taylor Powell, Project Manager
United States Army Corps of Engineers
**Email: Taylor.M.Powell@usace.army.mil**

cc (w/o Attachments): Interested Parties List

**ATTACHMENT 1:LAKE FORDYCE DAM SEEPAGE MITIGATION PROJECT CERTIFICATION AMENDMENTS (STRIKETHROUGH/UNDERLINE VERSION)**

The State Water Resources Control Board (State Water Board) hereby amends the water quality certification (certification), issued October 30, 2020, and as amended on August 20, 2021, for Pacific Gas and Electric Company's Lake Fordyce Dam Seepage Mitigation Project to modify Section 1.0, Section 2.1, Section 2.3, Section 4.0, Condition 1, Condition 2, and References, as provided below. Text from the August 20, 2021, certification amendment is shown as regular text as it was incorporated into the Project certification. Deletions are shown in ~~**bold strikethrough**~~ text. Additions are shown in **bold underlined** text.

## 1.0 Project Description

Pacific Gas and Electric Company (PG&E or Applicant) owns and operates Lake Fordyce Dam, which is located on Fordyce Creek, a tributary of the South Fork of the Yuba River, in Nevada County.

Lake Fordyce Dam is about seven miles northwest of Soda Springs, California, and 17 miles west-northwest of Truckee, California. Lake Fordyce Dam is a 156-foot-high, 1,220-foot-long soil-and rock-fill dam with a concrete liner on the upstream face that impounds Fordyce Creek to form Lake Fordyce. The reservoir has a normal water storage capacity of 49,903 acre-feet (AF). Inflow to Lake Fordyce is fed by Meadow Lake, Sterling Lake, and White Rock Lake, as well as unregulated inflow from rain and snowmelt. (Figure 1) Lake Fordyce Dam does not generate hydroelectric energy, but is operated as part of PG&E's Upper Drum-Spaulding Hydroelectric Project (Federal Energy Regulatory Commission (FERC) Project No. 2310).

Lake Fordyce Dam currently has a seepage rate of between 23 to 60 cubic feet per second (cfs). In 2005, the California Department of Water Resources, Division of Safety of Dams (DSOD) instituted a seepage threshold of 30 cfs for Lake Fordyce Dam. Seepage at Lake Fordyce Dam exceeded this threshold in November 2011. Accordingly, in 2012, DSOD required PG&E to submit a plan and schedule to mitigate the seepage. The Lake Fordyce Dam Seepage Mitigation Project (Project) is intended to repair Lake Fordyce Dam and bring it into compliance with DSOD's seepage threshold.

The Project consists of a number of dam improvements designed to reduce seepage, including placing an impermeable membrane liner on the dam's upstream face to cutoff seepage through the embankment and constructing a new concrete plinth and grout curtain at the upstream toe of the dam to **provide an anchor for the new impermeable liner and** address **under** seepage ~~**at the dam's low-level outlet through the bedrock**~~. These improvements require excavating a portion of the existing fill at the upstream toe of the dam and replacing it with engineered fill. Additionally, a ~~**bin-wall**~~ **rockfill** cofferdam would be constructed in Lake Fordyce to create a dry work area on the upstream face of the dam. **The cofferdam would be approximately 25-feet-wide at the crest, 23-feet-tall, and span approximately 450 feet across the reservoir. The upstream face of the cofferdam would be covered with a membrane liner to limit leakage from the reservoir into the work area.** Cofferdam

construction would require dredging ~~**5,000**~~ **4,100** cubic yards of reservoir sediments ~~**and backfill with crushed rock to create a stable base for**~~ **before beginning placement of the rockfill used to construct** the cofferdam. **3,000 cubic yards of sediment was removed during Construction Year One.** Sediments dredged for cofferdam construction would be permanently disposed of at the Project's downstream staging area, an upland area without hydraulic connectivity with receiving waters. **The cofferdam and the installation of a downstream rock buttress would require approximately 17,000 cubic yards of material. Two local quarry areas would be developed to source rock for the cofferdam and downstream rock buttress. Additionally, the Project includes development of a pH containment and management system that would include one to three ponds to isolate seepage water to ensure it does not enter Fordyce Creek prior to testing for pH. pH treatment includes the use of muriatic acid, bicarbonate, or carbon dioxide. After confirming the water is within the allowable pH range, water would be discharged downstream into Fordyce Creek.**

To implement the dam improvements, Lake Fordyce Road would be improved to provide access for construction equipment. Except for reservoir drawdown, which may occur as early as April of each construction season, the Project is scheduled to occur between mid-July and mid-October each year for ~~**four consecutive**~~ **up to five** years. The specific seasonal duration of each construction year would be informed by weather conditions and the water year (e.g., snowpack).

The required minimum flow release of 5 cfs into Fordyce Creek would continue to occur during Project construction through a 60-inch-diameter bypass pipe that would be installed between the ~~**bin wall**~~ cofferdam and Lake Fordyce Dam's low-level outlet. During periods when the low-level outlet is closed, barge-mounted pumps would maintain the required 5 cfs. **Following completion of the Project, the rockfill cofferdam would remain and is likely to be below the water surface except at the lowest lake levels. PG&E will remove the membrane liner and either create a notch in the crest of the cofferdam down to a water surface elevation of approximately 6239.5 feet (below the minimum pool level of 6245.4 feet) or leave the 60-inch bypass pipe in place and in the open position.** Additional information on the Project description can be found in Attachment A of the Project's certification application (PG&E, 2020), as well as in PG&E's application**s** for amended certification**s** (PG&E, 2021) **(PG&E, 2023). On January 10, 2024, January 11, 2024, and April 19, 2024, PG&E supplemented its amendment request by submitting additional information and an updated water quality monitoring plan.**

## 2.1. Water Quality Certification and Related Authorities

The federal Clean Water Act (33 U.S.C. §§ 1251-1388) was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. § 1251(a).) The Clean Water Act relies significantly on state participation and support in light of "the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution" and "plan the development and use" of water resources. (33 U.S.C. § 1251(b).) Section 101 of the Clean Water Act (33 U.S.C. § 1251(g)) requires

federal agencies to "co-operate with State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources."

Section 401 of the Clean Water Act (33 U.S.C. § 1341) requires any applicant for a federal license or permit that may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the project will comply with specified provisions of the Clean Water Act, including water quality standards promulgated pursuant to section 303 of the Clean Water Act (33 U.S.C. § 1313). Clean Water Act section 401 directs the agency responsible for certification to set effluent limitations and other conditions necessary to ensure compliance with the Clean Water Act and with "any other appropriate requirement of State law." (33 U.S.C. § 1341(d).) Section 401 further provides that certification conditions shall become conditions of any federal license or permit for the project.

The State Water Resources Control Board (State Water Board) is the state agency responsible for Clean Water Act section 401 certification in California. (Wat. Code, § 13160.) The State Water Board has delegated authority to act on applications for certification to the Executive Director of the State Water Board. (Cal. Code Regs., tit. 23, § 3838, subd. (a).)

Water Code section 13383 authorizes the State Water Board to "establish monitoring, inspection, entry, reporting, and recordkeeping requirements" and obtain "other information as may be reasonably required" for activities subject to certification under section 401 of the Clean Water Act. For activities that involve the diversion of water for beneficial use, the State Water Board delegated this authority to the Deputy Director of the Division of Water Rights (Deputy Director), as provided for in State Water Board Resolution No. 2012-0029 (State Water Board, 2012). In the Redelegation of Authorities ~~**Pursuant to Resolution No. 2012-0029**~~ memo issued by the Deputy Director on ~~**October 19, 2017**~~ **April 20, 2023,** this authority is redelegated to the Assistant Deputy Directors of the Division of Water Rights (**State Water Board, 2023; see also** State Water Board, 2017b).

PG&E filed an application for water quality certification (certification) with the State Water Board under section 401 of the Clean Water Act on May 26, 2020, pursuant to its application to the United States Army Corps of Engineers (ACOE) for a permit under section 404 of the Clean Water Act. State Water Board staff provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the Project on the State Water Board's website on June 29, 2020.

On October 26, 2020, State Water Board staff requested comments from the Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board) on the certification. (See Cal. Code Regs., tit. 23, § 3855, subd. (b)(2)(B).) No comments were received. On October 30, 2020, the State Water Board issued a certification for the Project.

On June 24, 2021, PG&E filed a request to amend the October 30, 2020 certification. State Water Board staff provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the Project on the State Water Board's website on July 2, 2021. No comments were received. **On August 20, 2021, the State Water Board issued an amendment to the October 30, 2020, certification for the Project.**

**On October 31, 2023, PG&E filed a second request to amend the Project certification. State Water Board staff provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the Project on the State Water Board's website on November 29, 2023. No comments were received. On April 19, 2024, State Water Board staff requested comments from the Central Valley Regional Water Board on the certification amendment for the Project. (See Cal. Code Regs., tit. 23, § 3855, subd. (b)(2)(B).) The Central Valley Regional Water Board responded with no comments on April 24, 2024.**

### 2.3. Construction General Permit

PG&E may need to obtain coverage under the ***General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities*** (Construction General Permit)[2] **and amendments thereto** for activities that disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but do not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

## 4.0 Rationale for Water Quality Certification Conditions

Certification conditions were developed to protect and enhance beneficial uses of California's waters and achieve compliance with associated water quality objectives[4]. Section 401 of the federal Clean Water Act (33 U.S.C. § 1341) provides that the conditions contained in this certification be incorporated as mandatory conditions of any federal permit issued for the Project.

When preparing this certification, State Water Board staff reviewed and considered the: (1) Basin Plan (Central Valley Regional Control Board, 201~~8~~**9**); (2) PG&E's

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[2] Water Quality Order No. 2009-0009-DWQ and NPDES No. CAS000002, as amended by Order No. 2010-0014-DWQ**,** ~~**and**~~ Order No. 2012-0006-DWQ**, and Order No. 2022-0057-DWQ**. Available online at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html. Accessed ~~**October 23, 2020**~~ **April 23, 2024**.

[4] Designated beneficial uses for surface waters in Project area are described in Section 2 of this certification and in Chapter 2 of the Basin Plan.

May 26, 2020 certification application (PG&E, 2020); (3) PG&E's March 2020 application to the ACOE for a Clean Water Act section 404 individual permit (PG&E, 2020); (4) IS/MND (State Water Board, 2020); (5) PG&E's September 13, 2019 Lake Fordyce Dam Seepage Mitigation Project – Technical Memorandum – Proposed Turbidity Limits and Water Quality Compliance (PG&E, 2020); (6) PG&E's June 24, 2021, application requesting amendment of the October 30, 2020 certification (PG&E, 2021); (7) existing water quality conditions; (8) Project related controllable factors; ~~and~~ (9) other information in the record**; (10) August 20, 2021 Addendum to the IS/MND (State Water Board, 2021); (11) PG&E's October 31, 2023, application requesting amendment of the certification (PG&E, 2023); (12) 2023 Water Quality Monitoring and Adaptive Management Plan submitted on January 10, 2024; (13) May 2024 Addendum to the IS/MND (State Water Board, 2024); and (14) additional information provided by PG&E on January 10, 2024, January 11, 2024, and April 19, 2024**.

The Project involves dredging, excavation, and dewatering the work area, and repairs to Fordyce Dam. Dredging, excavation, and dewatering have the potential to cause exceedances of the Basin Plan's turbidity water quality objective. Additionally, the installation of a grout curtain involves the injection of cement and bentonite clay to reduce dam seepage. Grout has the potential to react with seepage traveling through the dam and could cause a change in pH in Fordyce Creek.

PG&E's certification application includes proposed actions to manage pH and turbidity. pH actions include the installation of a temporary pH monitoring and ~~treatment~~ **management** system below Lake Fordyce Dam to treat seepage water before it's discharged to Fordyce Creek if it exceeds the Basin Plan's water quality objectives for pH. Turbidity actions include: construction management actions (such as using turbid water for dust control); turbidity curtains to reduce the export of turbid water to Fordyce Creek and Lake Fordyce; and monitoring of flows and turbidity. Conditions of this certification require PG&E to implement its pH and turbidity control measures with modifications to ensure Project discharges to Fordyce Creek are protective of water quality and beneficial uses.

As the existing conditions for turbidity in Fordyce Creek are typically below one nephelometric turbidity unit (NTU)[5], the Project, which is necessary for dam safety, is not able to comply with the numeric Basin Plan turbidity water quality objective on an instantaneous basis. Consistent with the Basin Plan, conditions in this certification apply averaging periods with corresponding turbidity limits, based on levels determined to be protective of the beneficial uses of Fordyce Creek. Beneficial uses in Fordyce Creek that would be most impacted by increased turbidity levels include cold freshwater habitat and cold water spawning, reproduction, and/or early development of fish. Rainbow trout, which are known to occur in Fordyce Creek and have been stocked in Lake Fordyce, are an indicator of these beneficial uses. Turbidity affects fish, such as rainbow trout, by impairing vision and altering feeding behavior, predator avoidance,

[5] Recent turbidity measurements in Fordyce Cree show variation over time ranging up to about 11 NTU (see Appendix C of the IS/MND).

and behavioral interaction with other fish. The higher the turbidity level, the shorter the duration a turbidity event must be to avoid adverse effects. To quantify the relationship between the magnitude of turbidity and exposure duration in fish, Newcombe and Jensen (1996) developed a "severity-of-ill-effect" (SEV) ranking model (SEV Model). The SEV Model incorporates magnitude and duration of turbidity events into SEV values and provides a basis for identifying turbidity thresholds that are protective of beneficial uses, including juvenile and adult life stages of cold water fish.

Newcombe (2003) modified the SEV Model so that it could be used to assess the impact of turbidity in clear, cold water systems such as Fordyce Creek. In Newcombe (2003), the SEV value index scores were grouped into four categories, based on behavioral, physiological, and survival effects: nil effects (scores of 0 to 0.5); minor effects (scores of 0.5 to 3.5); moderate, sublethal effects (scores of 3.5 to 8.5); and severe, lethal effects (scores of 8.5 to 14.5).

Conditions of this certification require the Project take all reasonable actions to manage turbidity levels and that SEV values do not exceed 3.5. SEV values at or below 3.5 are expected to cause behavior changes in fish (such as abandonment of cover) but are not expected to cause mortality. Required averaging periods for turbidity are provided in the certification conditions.

This certification imposes additional conditions regarding monitoring, enforcement, and potential future revisions. These are necessary for a variety of reasons, including to ensure that the Project operates to meet water quality standards and to ensure compliance with other relevant state and federal laws. Additionally, California Code of Regulations, title 23, section 3860 requires imposition of certain mandatory conditions for all certifications, which are included in this certification.

**CONDITION 1 Water Quality Monitoring and Adaptive Management**
A minimum of 30 days prior to Project implementation, the Applicant shall submit a Water Quality Monitoring and Adaptive Management Plan to the Deputy Director of the Division of Water Rights (Deputy Director) for review and approval. The Deputy Director may require modifications as part of any approval. The Water Quality Monitoring and Adaptive Management Plan shall be developed in consultation with Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board) and State Water Resources Control Board (State Water Board) staff. The goal of the Water Quality Monitoring and Adaptive Management Plan shall be to protect water quality and beneficial uses from Project-related impacts.

At a minimum, the Water Quality Monitoring and Adaptive Management Plan shall include: (1) monitoring locations, frequency, and duration; (2) adaptive management protocols, including actions to implement if turbidity begins to approach the limits for averaging periods specified below that would result in a "severity-of-ill-effect" (SEV) value of greater than 3.5 or water quality objectives are determined to be adversely impacted by the Project; (3) description of quality assurance and quality control procedures; (4) reporting frequency; and (5) documentation of consultation with Central

Valley Regional Water Board and State Water Board staff on development of the Water Quality Monitoring and Adaptive Management Plan.

The Water Quality Monitoring and Adaptive Management Plan shall, at a minimum, monitor turbidity, dissolved oxygen, pH, and temperature. Dissolved oxygen, pH, and temperature shall be maintained in accordance with the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin (Basin Plan) water quality objectives. The Water Quality Monitoring and Adaptive Management Plan shall document how the Applicant will manage turbidity levels at or below a SEV value of 3.5 on the Newcombe (2003) ranking model (SEV Model). Unless otherwise approved by the Deputy Director, the turbidity averaging periods and limits for each construction season shall be:

- No hourly average of turbidity shall exceed 165 nephelometric turbidity units (NTUs).
- No 12-hour average of turbidity shall exceed 55 NTUs.
- No two-day average of turbidity shall exceed 30 NTUs.
- No one-week average shall exceed 20 NTUs.
- No four-month average shall exceed 5 NTUs.

A minimum of four monitoring locations shall be required with stations located both above and below Lake Fordyce Dam. A global positioning system (GPS) point and a photograph shall be taken for each monitoring location. Downstream compliance monitoring shall occur via a sensor system to continuously monitor water quality at a minimum of 20-minute intervals. Each construction season, monitoring shall begin prior to dewatering the work area and use of the bin-wall cofferdam bypass system, and shall continue for the duration of the construction season, and for a minimum of three days following completion of the construction season. Monitoring reports shall be submitted to the Division of Water Rights Water Quality Certification Program Manager within 45 days of initiation of monitoring and every 30 days thereafter for the remainder of any Project activities.

The Applicant shall implement the Water Quality Monitoring and Adaptive Management Plan upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein. Any revisions to Water Quality Monitoring and Adaptive Management Plan shall be approved by the Deputy Director prior to implementation.

The Deputy Director and the Central Valley Regional Water Board Executive Officer (Executive Officer) shall be notified promptly, and in no case more than 24 hours following an exceedance of a water quality objective or the turbidity averaging period limits, as identified above. Project activities associated with the exceedance shall immediately cease and may not resume without approval from the Deputy Director.

**The Water Quality Monitoring and Adaptive Management Plan submitted by PG&E to the State Water Board on January 10, 2024, satisfies the plan requirements of this condition and is hereby approved with the following modifications:**

- **The Applicant shall conduct daily observations for seepage prior to and during all grouting activities. A pH containment and management system shall be used to ensure seepage does not enter Fordyce Creek if:**
    - **25 gallons per minute or more of seepage is flowing into Fordyce Creek below Fordyce Dam, as measured by timing volumetric flow or use of a flow measuring weir; or**
    - **Less than 25 gallons per minute of seepage is measured below Fordyce Dam as measured by timing volumetric flow or use of a flow measuring weir and pH, as measured at the compliance monitoring location in Fordyce Creek downstream of all Project activities, is trending to exceed the pH water quality objective. For reference, the *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* requires that "pH shall not be depressed below 6.5 nor raised above 8.5."**

  **The pH containment and management system shall include one to three ponds to isolate seepage water. Water in the pond(s) shall be monitored for pH to determine if treatment is necessary. If needed, the method of pH neutralization shall include the use of muriatic acid, bicarbonate, or carbon dioxide. After treatment, water shall be discharged downstream or recirculated for further treatment if necessary. If muriatic acid is used for pH treatment of seepage water, the Applicant shall monitor for chlorine. If chlorine residuals are measured in the management system, sodium thiosulfate or Vita-D-Chlor tablets shall be used to dechlorinate water before it is discharged downstream into Fordyce Creek.**

**Any changes to the Water Quality Monitoring and Adaptive Management Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modification as part of any such approval. The Applicant shall file any Deputy Director-approved updates, along with any required modifications, with FERC.**

**CONDITION 2. Project Activities**

Unless otherwise modified by conditions of this certification, the Applicant shall implement the Project as described in Attachment A of its May 26, 2020 certification application (PG&E, 2020), ~~**as well as**~~ its June 24, 2021 **and October 31, 2023**, application**s** for ~~**an**~~ amendment of the **Project** ~~**October 30, 2020**~~ certification~~.~~**, and supplemental information provided by PG&E on January 10, January 11, and April 19, 2024, which includes an updated water quality monitoring plan.**

**ATTACHMENT 1:LAKE FORDYCE DAM SEEPAGE MITIGATION PROJECT CERTIFICATION AMENDMENTS (STRIKETHROUGH/UNDERLINE VERSION)**

**References**


Central Valley Regional Water Quality Control Board. (201~~8~~**9**, ~~**May**~~ **February**). The Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin.

PG&E. (2020, March 31). 401 Water Quality Certification and Waste Discharge Requirements Application for Dredged or Fill Impacts to Waters of the State. Lake Fordyce Dam Seepage Mitigation Project.

PG&E. (2020, September 13). Lake Fordyce Dam Seepage Mitigation Project – Technical Memorandum - Proposed Turbidity Limits and Water Quality Compliance.

PG&E. (2020, March). U.S. Army Corps of Engineers CWA Section 404 Individual Permit Application.

PG&E (2021, June 24). Application for Amended Water Quality Certification. Lake Fordyce Dam Seepage Mitigation Project.

**PG&E (2023, October 31). Application for Amended Water Quality Certification. Lake Fordyce Dam Seepage Mitigation Project.**

**PG&E (2024, January 10). 2023 Water Quality Monitoring and Adaptive Management Plan. Lake Fordyce Dam Seepage Mitigation Project.**

**PG&E (2024, April 19). Updated Bat Language. Lake Fordyce Dam Seepage Mitigation Project.**

~~**State Water Board. (2012). Delegation of Authority to State Water Resources Control Board Members Individually and to the Deputy Director for Water Rights. Resolution No. 2012-0029.**~~

State Water Board. (2013). Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Residual Aquatic Pesticide Discharges to Waters of the United States From Algae and Aquatic Weed Control Applications. Water Quality Order No. 2013-0002-DWQ and NPDES No. CAG990005, as amended by Order No. 2014-0078-DWQ, Order No. 2015-0029-DWQ, Order No. 2016-0073-EXEC.

State Water Board. (2017a). Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California - Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions. Resolution No. 2~~1~~0**1**7-0027.

State Water Board. (2017b). Redelegation of Authorities pursuant to Resolution No. 2012-0029.

State Water Board. (2019b). State Wetland Definition and Procedures for Discharge of Dredged or Fill Material to Waters of the State (Procedures). Resolution No. 2019-0015.

State Water Board. (2020, September). Draft Initial Study/Mitigated Negative Declaration. Lake Fordyce Dam Seepage Mitigation Project.

**State Water Board. (2021, August). Addendum to the Initial Study/Mitigated Negative Declaration for the Lake Fordyce Dam Seepage Mitigation Project.**

**State Water Board. (2023). Redelegation of Authorities.**

**State Water Board. (2024, May). Addendum to the Initial Study/Mitigated Negative Declaration and Previous Addendum for the Lake Fordyce Dam Seepage Mitigation Project.**

**ATTACHMENT 2: LAKE FORDYCE DAM SEEPAGE MITIGATION PROJECT CERTIFICATION AMENDMENTS (CLEAN VERSION)**

The State Water Resources Control Board (State Water Board) hereby amends the water quality certification (certification), issued October 30, 2020, and as previously amended on August 20, 2021, for Pacific Gas and Electric Company's Lake Fordyce Dam Seepage Mitigation Project to modify Section 1.0, Section 2.1, Section 2.3, Section 4.0, Condition 1, Condition 2, and References, as provided below.

## 1.0 Project Description

Pacific Gas and Electric Company (PG&E or Applicant) owns and operates Lake Fordyce Dam, which is located on Fordyce Creek, a tributary of the South Fork of the Yuba River, in Nevada County.

Lake Fordyce Dam is about seven miles northwest of Soda Springs, California, and 17 miles west-northwest of Truckee, California. Lake Fordyce Dam is a 156-foot-high, 1,220-foot-long soil-and rock-fill dam with a concrete liner on the upstream face that impounds Fordyce Creek to form Lake Fordyce. The reservoir has a normal water storage capacity of 49,903 acre-feet (AF). Inflow to Lake Fordyce is fed by Meadow Lake, Sterling Lake, and White Rock Lake, as well as unregulated inflow from rain and snowmelt. (Figure 1) Lake Fordyce Dam does not generate hydroelectric energy, but is operated as part of PG&E's Upper Drum-Spaulding Hydroelectric Project (Federal Energy Regulatory Commission (FERC) Project No. 2310).

Lake Fordyce Dam currently has a seepage rate of between 23 to 60 cubic feet per second (cfs). In 2005, the California Department of Water Resources, Division of Safety of Dams (DSOD) instituted a seepage threshold of 30 cfs for Lake Fordyce Dam. Seepage at Lake Fordyce Dam exceeded this threshold in November 2011. Accordingly, in 2012, DSOD required PG&E to submit a plan and schedule to mitigate the seepage. The Lake Fordyce Dam Seepage Mitigation Project (Project) is intended to repair Lake Fordyce Dam and bring it into compliance with DSOD's seepage threshold.

The Project consists of a number of dam improvements designed to reduce seepage, including placing an impermeable membrane liner on the dam's upstream face to cutoff seepage through the embankment and constructing a new concrete plinth and grout curtain at the upstream toe of the dam to provide an anchor for the new impermeable liner and address under seepage through the bedrock. These improvements require excavating a portion of the existing fill at the upstream toe of the dam and replacing it with engineered fill. Additionally, a rockfill cofferdam would be constructed in Lake Fordyce to create a dry work area on the upstream face of the dam. The cofferdam would be approximately 25-feet-wide at the crest, 23-feet-tall, and span approximately 450 feet across the reservoir. The upstream face of the cofferdam would be covered with a membrane liner to limit leakage from the reservoir into the work area. Cofferdam construction would require dredging 4,100 cubic yards of reservoir sediments before beginning placement of the rockfill used to construct the cofferdam. 3,000 cubic yards of sediment was removed during Construction Year One. Sediments dredged for cofferdam construction would be permanently disposed of at the Project's downstream

staging area, an upland area without hydraulic connectivity with receiving waters. The cofferdam and the installation of a downstream rock buttress would require approximately 17,000 cubic yards of material. Two local quarry areas would be developed to source rock for the cofferdam and downstream rock buttress. Additionally, the Project includes development of a pH containment and management system that would include one to three ponds to isolate seepage water to ensure it does not enter Fordyce Creek prior to testing for pH. pH treatment includes the use of muriatic acid, bicarbonate, or carbon dioxide. After confirming the water is within the allowable pH range, water would be discharged downstream into Fordyce Creek.

To implement the dam improvements, Lake Fordyce Road would be improved to provide access for construction equipment. Except for reservoir drawdown, which may occur as early as April of each construction season, the Project is scheduled to occur between mid-July and mid-October each year for up to five years. The specific seasonal duration of each construction year would be informed by weather conditions and the water year (e.g., snowpack).

The required minimum flow release of 5 cfs into Fordyce Creek would continue to occur during Project construction through a 60-inch-diameter bypass pipe that would be installed between the cofferdam and Lake Fordyce Dam's low-level outlet. During periods when the low-level outlet is closed, barge-mounted pumps would maintain the required 5 cfs. Following completion of the Project, the rockfill cofferdam would remain and is likely to be below the water surface except at the lowest lake levels. PG&E will remove the membrane liner and either create a notch in the crest of the cofferdam down to a water surface elevation of approximately 6239.5 feet (below the minimum pool level of 6245.4 feet) or leave the 60-inch bypass pipe in place and in the open position. Additional information on the Project description can be found in Attachment A of the Project's certification application (PG&E, 2020), as well as in PG&E's application**s** for amended certifications (PG&E, 2021) (PG&E, 2023). On January 10, 2024, January 11, 2024, and April 19, 2024, PG&E supplemented its amendment request by submitting additional information and an updated water quality monitoring plan.

## 2.1. Water Quality Certification and Related Authorities

The federal Clean Water Act (33 U.S.C. §§ 1251-1388) was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. § 1251(a).) The Clean Water Act relies significantly on state participation and support in light of "the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution" and "plan the development and use" of water resources. (33 U.S.C. § 1251(b).) Section 101 of the Clean Water Act (33 U.S.C. § 1251(g)) requires federal agencies to "co-operate with State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources."

Section 401 of the Clean Water Act (33 U.S.C. § 1341) requires any applicant for a federal license or permit that may result in a discharge into navigable waters to provide

the licensing or permitting federal agency with certification that the project will comply with specified provisions of the Clean Water Act, including water quality standards promulgated pursuant to section 303 of the Clean Water Act (33 U.S.C. § 1313). Clean Water Act section 401 directs the agency responsible for certification to set effluent limitations and other conditions necessary to ensure compliance with the Clean Water Act and with "any other appropriate requirement of State law." (33 U.S.C. § 1341(d).) Section 401 further provides that certification conditions shall become conditions of any federal license or permit for the project.

The State Water Resources Control Board (State Water Board) is the state agency responsible for Clean Water Act section 401 certification in California. (Wat. Code, § 13160.) The State Water Board has delegated authority to act on applications for certification to the Executive Director of the State Water Board. (Cal. Code Regs., tit. 23, § 3838, subd. (a).)

Water Code section 13383 authorizes the State Water Board to "establish monitoring, inspection, entry, reporting, and recordkeeping requirements" and obtain "other information as may be reasonably required" for activities subject to certification under section 401 of the Clean Water Act. For activities that involve the diversion of water for beneficial use, the State Water Board delegated this authority to the Deputy Director of the Division of Water Rights (Deputy Director), as provided for in State Water Board Resolution No. 2012-0029 (State Water Board, 2012). In the Redelegation of Authorities memo issued by the Deputy Director on April 20, 2023, this authority is redelegated to the Assistant Deputy Directors of the Division of Water Rights (State Water Board, 2023; see also State Water Board, 2017b).

PG&E filed an application for water quality certification (certification) with the State Water Board under section 401 of the Clean Water Act on May 26, 2020, pursuant to its application to the United States Army Corps of Engineers (ACOE) for a permit under section 404 of the Clean Water Act. State Water Board staff provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the Project on the State Water Board's website on June 29, 2020.

On October 26, 2020, State Water Board staff requested comments from the Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board) on the certification. (See Cal. Code Regs., tit. 23, § 3855, subd. (b)(2)(B).) No comments were received. On October 30, 2020, the State Water Board issued a certification for the Project.

On June 24, 2021, PG&E filed a request to amend the October 30, 2020 certification. State Water Board staff provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the Project on the State Water Board's website on July 2, 2021. No comments were received. On August 20, 2021, the State Water Board issued an amendment to the October 30, 2020, certification for the Project.

On October 31, 2023, PG&E filed a second request to amend the Project certification. State Water Board staff provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the Project on the State Water Board's website on November 29, 2023. No comments were received. On April 19, 2024, State Water Board staff requested comments from the Central Valley Regional Water Board on the certification amendment for the Project. (See Cal. Code Regs., tit. 23, § 3855, subd. (b)(2)(B).) The Central Valley Regional Water Board responded with no comments on April 24, 2024.

### 2.3. Construction General Permit

PG&E may need to obtain coverage under the ***General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities*** (Construction General Permit)[2] and amendments thereto for activities that disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but do not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

## 4.0 Rationale for Water Quality Certification Conditions

Certification conditions were developed to protect and enhance beneficial uses of California's waters and achieve compliance with associated water quality objectives[4]. Section 401 of the federal Clean Water Act (33 U.S.C. § 1341) provides that the conditions contained in this certification be incorporated as mandatory conditions of any federal permit issued for the Project.

When preparing this certification, State Water Board staff reviewed and considered the: (1) Basin Plan (Central Valley Regional Control Board, 2019); (2) PG&E's May 26, 2020 certification application (PG&E, 2020); (3) PG&E's March 2020 application to the ACOE for a Clean Water Act section 404 individual permit (PG&E, 2020); (4) IS/MND (State Water Board, 2020); (5) PG&E's September 13, 2019 Lake Fordyce Dam Seepage Mitigation Project – Technical Memorandum – Proposed Turbidity Limits and Water Quality Compliance (PG&E, 2020); (6) PG&E's June 24, 2021, application requesting amendment of the October 30, 2020 certification (PG&E, 2021); (7) existing water quality conditions; (8) Project related controllable factors; (9) other information in the

[2] Water Quality Order No. 2009-0009-DWQ and NPDES No. CAS000002, as amended by Order No. 2010-0014-DWQ, Order No. 2012-0006-DWQ, and Order No. 2022-0057-DWQ. Available online at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html. Accessed April 23, 2024.

[4] Designated beneficial uses for surface waters in Project area are described in Section 2 of this certification and in Chapter 2 of the Basin Plan.

record; (10) August 20, 2021 Addendum to the IS/MND (State Water Board, 2021); (11) PG&E's October 31, 2023, application requesting amendment of the certification (PG&E, 2023); (12) 2023 Water Quality Monitoring and Adaptive Management Plan submitted on January 10, 2024; (13) May 2024 Addendum to the IS/MND (State Water Board, 2024); and (14) additional information provided by PG&E on January 10, 2024, January 11, 2024, and April 19, 2024.

The Project involves dredging, excavation, and dewatering the work area, and repairs to Fordyce Dam. Dredging, excavation, and dewatering have the potential to cause exceedances of the Basin Plan's turbidity water quality objective. Additionally, the installation of a grout curtain involves the injection of cement and bentonite clay to reduce dam seepage. Grout has the potential to react with seepage traveling through the dam and could cause a change in pH in Fordyce Creek.

PG&E's certification application includes proposed actions to manage pH and turbidity. pH actions include the installation of a temporary pH monitoring and management system below Lake Fordyce Dam to treat seepage water before it's discharged to Fordyce Creek if it exceeds the Basin Plan's water quality objectives for pH. Turbidity actions include: construction management actions (such as using turbid water for dust control); turbidity curtains to reduce the export of turbid water to Fordyce Creek and Lake Fordyce; and monitoring of flows and turbidity. Conditions of this certification require PG&E to implement its pH and turbidity control measures with modifications to ensure Project discharges to Fordyce Creek are protective of water quality and beneficial uses.

As the existing conditions for turbidity in Fordyce Creek are typically below one nephelometric turbidity unit (NTU)[5], the Project, which is necessary for dam safety, is not able to comply with the numeric Basin Plan turbidity water quality objective on an instantaneous basis. Consistent with the Basin Plan, conditions in this certification apply averaging periods with corresponding turbidity limits, based on levels determined to be protective of the beneficial uses of Fordyce Creek. Beneficial uses in Fordyce Creek that would be most impacted by increased turbidity levels include cold freshwater habitat and cold water spawning, reproduction, and/or early development of fish. Rainbow trout, which are known to occur in Fordyce Creek and have been stocked in Lake Fordyce, are an indicator of these beneficial uses. Turbidity affects fish, such as rainbow trout, by impairing vision and altering feeding behavior, predator avoidance, and behavioral interaction with other fish. The higher the turbidity level, the shorter the duration a turbidity event must be to avoid adverse effects. To quantify the relationship between the magnitude of turbidity and exposure duration in fish, Newcombe and Jensen (1996) developed a "severity-of-ill-effect" (SEV) ranking model (SEV Model). The SEV Model incorporates magnitude and duration of turbidity events into SEV

[5] Recent turbidity measurements in Fordyce Cree show variation over time ranging up to about 11 NTU (see Appendix C of the IS/MND).

values and provides a basis for identifying turbidity thresholds that are protective of beneficial uses, including juvenile and adult life stages of cold water fish.

Newcombe (2003) modified the SEV Model so that it could be used to assess the impact of turbidity in clear, cold water systems such as Fordyce Creek. In Newcombe (2003), the SEV value index scores were grouped into four categories, based on behavioral, physiological, and survival effects: nil effects (scores of 0 to 0.5); minor effects (scores of 0.5 to 3.5); moderate, sublethal effects (scores of 3.5 to 8.5); and severe, lethal effects (scores of 8.5 to 14.5).

Conditions of this certification require the Project take all reasonable actions to manage turbidity levels and that SEV values do not exceed 3.5. SEV values at or below 3.5 are expected to cause behavior changes in fish (such as abandonment of cover) but are not expected to cause mortality. Required averaging periods for turbidity are provided in the certification conditions.

This certification imposes additional conditions regarding monitoring, enforcement, and potential future revisions. These are necessary for a variety of reasons, including to ensure that the Project operates to meet water quality standards and to ensure compliance with other relevant state and federal laws. Additionally, California Code of Regulations, title 23, section 3860 requires imposition of certain mandatory conditions for all certifications, which are included in this certification.

**CONDITION 1 Water Quality Monitoring and Adaptive Management**

A minimum of 30 days prior to Project implementation, the Applicant shall submit a Water Quality Monitoring and Adaptive Management Plan to the Deputy Director of the Division of Water Rights (Deputy Director) for review and approval. The Deputy Director may require modifications as part of any approval. The Water Quality Monitoring and Adaptive Management Plan shall be developed in consultation with Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board) and State Water Resources Control Board (State Water Board) staff. The goal of the Water Quality Monitoring and Adaptive Management Plan shall be to protect water quality and beneficial uses from Project-related impacts.

At a minimum, the Water Quality Monitoring and Adaptive Management Plan shall include: (1) monitoring locations, frequency, and duration; (2) adaptive management protocols, including actions to implement if turbidity begins to approach the limits for averaging periods specified below that would result in a “severity-of-ill-effect” (SEV) value of greater than 3.5 or water quality objectives are determined to be adversely impacted by the Project; (3) description of quality assurance and quality control procedures; (4) reporting frequency; and (5) documentation of consultation with Central Valley Regional Water Board and State Water Board staff on development of the Water Quality Monitoring and Adaptive Management Plan.

The Water Quality Monitoring and Adaptive Management Plan shall, at a minimum, monitor turbidity, dissolved oxygen, pH, and temperature. Dissolved oxygen, pH, and temperature shall be maintained in accordance with the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin (Basin Plan) water quality objectives. The Water Quality Monitoring and Adaptive Management Plan shall document how the Applicant will manage turbidity levels at or below a SEV value of 3.5 on the Newcombe (2003) ranking model (SEV Model). Unless otherwise approved by the Deputy Director, the turbidity averaging periods and limits for each construction season shall be:

- No hourly average of turbidity shall exceed 165 nephelometric turbidity units (NTUs).
- No 12-hour average of turbidity shall exceed 55 NTUs.
- No two-day average of turbidity shall exceed 30 NTUs.
- No one-week average shall exceed 20 NTUs.
- No four-month average shall exceed 5 NTUs.

A minimum of four monitoring locations shall be required with stations located both above and below Lake Fordyce Dam. A global positioning system (GPS) point and a photograph shall be taken for each monitoring location. Downstream compliance monitoring shall occur via a sensor system to continuously monitor water quality at a minimum of 20-minute intervals. Each construction season, monitoring shall begin prior to dewatering the work area and use of the bin-wall cofferdam bypass system, and shall continue for the duration of the construction season, and for a minimum of three days following completion of the construction season. Monitoring reports shall be submitted to the Division of Water Rights Water Quality Certification Program Manager within 45 days of initiation of monitoring and every 30 days thereafter for the remainder of any Project activities.

The Applicant shall implement the Water Quality Monitoring and Adaptive Management Plan upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein. Any revisions to Water Quality Monitoring and Adaptive Management Plan shall be approved by the Deputy Director prior to implementation.

The Deputy Director and the Central Valley Regional Water Board Executive Officer (Executive Officer) shall be notified promptly, and in no case more than 24 hours following an exceedance of a water quality objective or the turbidity averaging period limits, as identified above. Project activities associated with the exceedance shall immediately cease and may not resume without approval from the Deputy Director.

The Water Quality Monitoring and Adaptive Management Plan submitted by PG&E to the State Water Board on January 10, 2024, satisfies the plan requirements of this condition and is hereby approved with the following modifications:

- The Applicant shall conduct daily observations for seepage prior to and during all grouting activities. A pH containment and management system shall be used to ensure seepage does not enter Fordyce Creek if:
    - 25 gallons per minute or more of seepage is flowing into Fordyce Creek below Fordyce Dam, as measured by timing volumetric flow or use of a flow measuring weir; or
    - Less than 25 gallons per minute of seepage is measured below Fordyce Dam as measured by timing volumetric flow or use of a flow measuring weir and pH, as measured at the compliance monitoring location in Fordyce Creek downstream of all Project activities, is trending to exceed the pH water quality objective. For reference, the *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* requires that "pH shall not be depressed below 6.5 nor raised above 8.5."

  The pH containment and management system shall include one to three ponds to isolate seepage water. Water in the pond(s) shall be monitored for pH to determine if treatment is necessary. If needed, the method of pH neutralization shall include the use of muriatic acid, bicarbonate, or carbon dioxide. After treatment, water shall be discharged downstream or recirculated for further treatment if necessary. If muriatic acid is used for pH treatment of seepage water, the Applicant shall monitor for chlorine. If chlorine residuals are measured in the management system, sodium thiosulfate or Vita-D-Chlor tablets shall be used to dechlorinate water before it is discharged downstream into Fordyce Creek.

Any changes to the Water Quality Monitoring and Adaptive Management Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modification as part of any such approval. The Applicant shall file any Deputy Director-approved updates, along with any required modifications, with FERC.

**CONDITION 2. Project Activities**

Unless otherwise modified by conditions of this certification, the Applicant shall implement the Project as described in Attachment A of its May 26, 2020 certification application (PG&E, 2020), its June 24, 2021 and October 31, 2023, applications for amendment of the Project certification, and supplemental information provided by PG&E on January 10, January 11, and April 19, 2024, which includes an updated water quality monitoring plan.

## References

Central Valley Regional Water Quality Control Board. (2019, February). The Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin.

PG&E. (2020, March 31). 401 Water Quality Certification and Waste Discharge Requirements Application for Dredged or Fill Impacts to Waters of the State. Lake Fordyce Dam Seepage Mitigation Project.

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State Water Board. (2023). Redelegation of Authorities.

State Water Board. (2024, May). Addendum to the Initial Study/Mitigated Negative Declaration and Previous Addendum for the Lake Fordyce Dam Seepage Mitigation Project.

## ATTACHMENT 3: LAKE FORDYCE DAM SEEPAGE MITIGATION PROJECT MAP

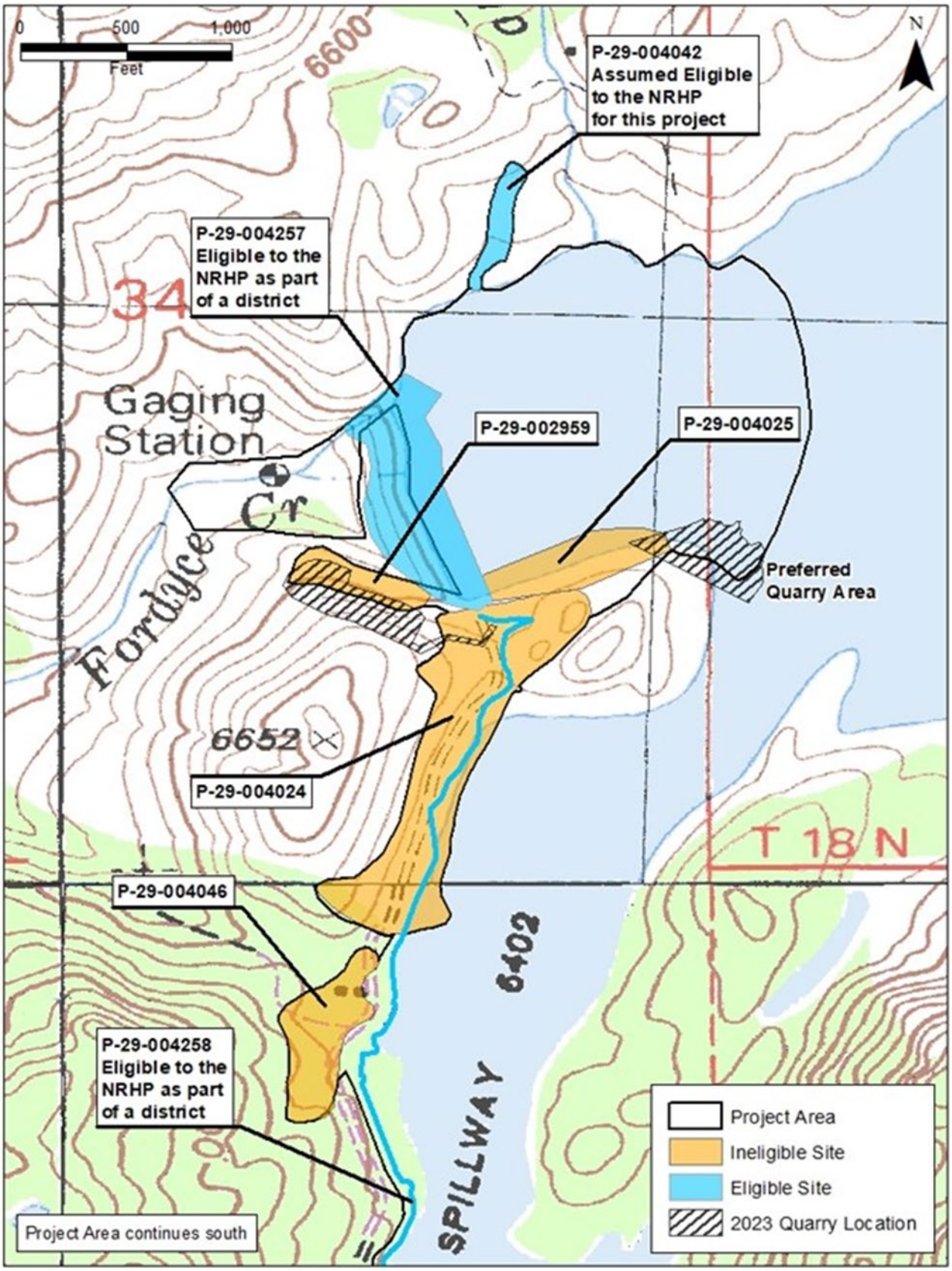


**Figure A: Lake Fordyce Dam Seepage Mitigation Project Area**