STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Water Quality Certification for the

Pacific Gas and Electric Company
Lake Fordyce Dam Seepage Mitigation Project

Sources: Fordyce Lake and Fordyce Creek

Counties: Placer and Nevada

WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

Common Acronyms and Abbreviations

ACOE	United States Army Corps of Engineers
AF	acre-feet
Basin Plan	*Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin*
CDFW	California Department of Fish and Wildlife
Central Valley Regional Water Board	Central Valley Regional Water Quality Control Board
CEQA	California Environmental Quality Act
certification	water quality certification
cfs	cubic feet per second
Construction General Permit	*General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities*
Deputy Director	Deputy Director of the Division of Water Rights
DSOD	California Department of Water Resources, Division of Safety of Dams
FERC	Federal Energy Regulatory Commission
IS	Initial Study
MND	Mitigated Negative Declaration
NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity unit
PG&E	Pacific Gas & Electric Company
Procedures	*State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*
Regional Water Board	Regional Water Quality Control Board
SEV	severity-of-ill-effect value
SNYF	Sierra Nevada yellow-legged frog
State Water Board	State Water Resources Control Board
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service

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 address seepage at the dam's low level outlet. 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 cofferdam would be constructed in Lake Fordyce to create a dry work area on the upstream face of the dam.

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 three consecutive years. The specific seasonal duration of each construction year would be informed by weather conditions and the water year (e.g., snowpack). The cofferdam bin walls may be removed in a fourth year of construction if weather conditions prohibit removal of the coffer dam bin walls in the third construction year.

The required minimum flow release of 5 cfs into Fordyce Creek[1] 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

[1] Per the Upper Drum-Spaulding Hydroelectric Project license, PG&E must maintain a minimum flow of 5 cfs into Fordyce Creek below Lake Fordyce Dam at all times.

maintain the required 5 cfs. Additional information on the Project description can be found in Attachment A of the Project's certification application (PG&E, 2020).

1.1. Water Rights

Table A lists the water rights held by PG&E for the Project.

Table A: Water Rights Held by PG&E for the Project[1]

Application or Statement No.	Source	Priority Date	Place of Storage or Diversion	Purpose of Use
A003550 Licensed 12/14/1978	Fordyce Creek	7/26/1923	Lake Fordyce	Industrial, Irrigation, and Municipal
S009033	Fordyce Creek	1873[2]	Lake Fordyce	Domestic, Irrigation, and Power
A002750 Licensed 3/2/1931	Fordyce Creek	2/9/1922	Lake Fordyce	Power

[1] Information is from the State Water Resource Control Board's electronic Water Rights Information Management System.

[2] PG&E claims a pre-1914 water right with 1873 as its first year of use.

2.0 Regulatory Authority

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, this authority is redelegated to the Assistant Deputy Directors of the Division of Water Rights (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.

2.2. Water Quality Control Plans and Related Authorities

The California Regional Water Quality Control Boards (Regional Water Boards) have primary responsibility for the formulation and adoption of water quality control plans for their respective regions, subject to State Water Board and United States Environmental Protection Agency (USEPA) approval, as appropriate. (Wat. Code, § 13240 et seq.) The State Water Board may also adopt water quality control plans, which will supersede regional water quality control plans for the same waters to the extent of any conflict. (Wat. Code, § 13170.) For a specified area, the water quality control plans designate the beneficial uses of water to be protected, water quality objectives established for the reasonable protection of those beneficial uses or the prevention of nuisance, and a program of implementation to achieve the water quality objectives. (Wat. Code, §§ 13241, 13050, subds. (h), (j).) The beneficial uses, together with the water quality objectives that are contained in the water quality control plans and state and federal anti-degradation requirements, constitute California's water quality standards for purposes of the Clean Water Act.

The Central Valley Regional Water Board adopted, and the State Water Board and USEPA approved, the *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* (Basin Plan). The Basin Plan designates the beneficial uses of water to be protected along with the water quality objectives necessary to protect those uses. The Basin Plan identifies beneficial uses for sources to Englebright Reservoir on the Yuba River as: municipal and domestic supply; irrigation; stock watering; hydropower generation; contact recreation; canoeing and rafting; other noncontact water recreation; cold freshwater habitat; cold water spawning, reproduction, and/or early development for fish; and wildlife habitat.

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] 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.

2.4. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State

On April 2, 2019, the State Water Board adopted the ***State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State***[3] (Procedures) (State Water Board, 2019b), which became effective on May 28, 2020. The Procedures provide California's definition of wetland, wetland delineation procedures, and procedures for submitting applications for activities that could result in discharges of dredged or fill material to waters of the state. The Procedures ensure that State Water Board regulatory activities will result in no net loss of wetland quantity, quality, or permanence, compliant with the *California Wetlands Conservation Policy*, Executive Order W-59-93. PG&E must comply with the Procedures when conducting dredge or fill activities that may impact waters of the state, including wetlands.

3.0 California Environmental Quality Act

The State Water Board is the lead agency for the purposes of the California Environmental Quality Act (CEQA). (Pub. Resources Code, §§ 21000 – 21177et seq.; Cal. Code Regs., tit. 14, § 15000 et seq.). The State Water Board released a draft

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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. Available online at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html. Accessed October 23, 2020.

[3] State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. Available online at: https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_conformed.pdf. Accessed October 23, 2020.

Initial Study/Mitigated Negative Declaration (IS/MND) for public review and comment on September 24, 2020 (State Water Board, 2020). The draft IS/MND includes mitigation measures to avoid or substantially reduce significant environmental impacts of the Project. During the comment period, the State Water Board received one comment letter.

This certification has been informed by the environmental information and analysis contained in the IS/MND, public comments on the draft IS/MND, and other information in the record. Water quality protection measures and associated mitigation, monitoring, and reporting requirements were incorporated into conditions of this certification in accordance with California Code of Regulations title 23, section 3859, subdivision (a). Table B identifies resource areas in the State Water Board's purview for which the IS/MND identified mitigation measures for potential impacts, and associated certification conditions with water quality protection, monitoring, or reporting requirements.

Table B: IS/MND Resource Areas, Potential Impacts, and Corresponding Certification Conditions

IS/MND Resource Area and Mitigation Measure	IS/MND Potential Impacts	Applicable Certification Condition*
Biological Resources: Best Management Practices (BIO-2)*	Adverse effects on special status wildlife and their habitat	Condition 4
Biological Resources: Sierra Nevada yellow-legged frog (BIO-4)	Adverse effects on Sierra Nevada yellow-legged frogs	Condition 5
Hydrology and Water Quality: Adaptive Management Strategy (HYD-1)	Degradation to water quality	Condition 1

* Portions of BIO-2 within the State Water Board's authority are included in Condition 4.

The State Water Board has considered the draft IS/MND together with all comments and adopted a final IS/MND, including identification of mitigation, monitoring, and reporting requirements. The documents and other materials that constitute the public record are located at the State Water Board, Division of Water Rights, 1001 I Street, Sacramento, California. The State Water Board will file a Notice of Determination with the Office of Planning and Research within five working days of issuance of this certification. (Cal. Code Regs., tit. 14, § 15075.)

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].

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

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, 2018); (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) existing water quality conditions; (7) Project-related controllable factors; and (8) other information in the record.

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 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); use of geotubes and turbidity curtains to reduce the export of turbid water to Fordyce Creek; 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

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

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.

5.0 Conclusion

The State Water Board finds that, with the conditions and limitations imposed under this certification, the Project will be protective of state water quality standards and other appropriate requirements of state law.

6.0 Water Quality Certification Conditions

ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER RESOURCES CONTROL BOARD CERTIFIES that implementation of the Lake Fordyce Dam Seepage Mitigation Project (Project) will comply with sections 301, 302, 303, 306, and 307 of the Clean Water Act, and with applicable provisions of State law, if Pacific Gas and Electric Company (PG&E or Applicant) complies with the following terms and conditions.

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 in Fordyce Creek 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.

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).

CONDITION 3. Minimum Instream Flows
During Project activities, the Applicant shall ensure a minimum instream flow of 5 cubic feet per second (cfs) is maintained in Fordyce Creek through releases at Lake Fordyce Dam.

CONDITION 4. Best Management Practices
The Applicant shall implement the following best management practices for the protection of surface waters:

- Control measures for erosion, excessive sedimentation, and sources of turbidity shall be implemented and in place prior to the commencement of, during, and after any ground disturbing activities, or any other Project activities that could result in erosion or sediment discharges to surface water.
- Caution shall be used when handling and/or storing chemicals (e.g., fuel, hydraulic fluid) near waterways. Appropriate materials shall be on site to prevent and manage spills to prevent impacts to surface waters.

- When not in use, equipment shall be stored in upland areas outside the boundaries of waterways.
- All construction equipment shall be inspected for leaks before entering the Project area. All equipment shall be well maintained and inspected daily while on site to prevent leaks of fuels, lubricants, or other fluids into waters of the United States or waters of the state. Stationary equipment (e.g., generators) within 100 feet of aquatic habitat shall be parked over secondary containment. Additionally, service and refueling procedures shall be conducted in a designated area, where no potential exists for fuel spills to seep or wash into waterways.
- Stockpiles shall be located outside of riparian habitat and protected with appropriate best management practices. If more than 0.25 inch of rain is forecasted during the construction season, all stockpiles shall be covered with plastic and surrounded with sediment control technologies or berms to prevent sediment run-off.

CONDITION 5. Biological Resources Protection

The Applicant shall implement the following biological resources protection measures for Project areas in suitable habitat for the Sierra Nevada yellow-legged frog (SNYF):

- A qualified biologist shall conduct preconstruction surveys at work sites that contain suitable aquatic habitat for the SNYF (e.g., staging areas or road work in or adjacent to streams). Surveys shall be conducted within 24 hours prior to the start of work at that location. If work will occur at a location over multiple years, the work site shall be resurveyed each construction season prior to commencing Project activities.
- A United States Fish and Wildlife Service (USFWS)-approved monitor shall be present during roadwork activities (i.e., culvert modifications or construction of low water crossings) in areas with suitable frog habitat when water is present at the work site.
- Staging areas along Magonigal Road shall not be used for helicopter operations. The Stormwater Pollution Prevention Plan (SWPPP) shall include measures at these staging areas to limit sediment from cascading downslope to Rattlesnake Creek.
- If a SNYF is encountered in an active area of the Project, all activities in the area and surrounding area that may have the potential to result in take (e.g., harassment, injury, or death) shall cease and not resume until the SNYF has left the Project area. A photograph shall be taken (without handling the SNYF) and the qualified biologist shall be contacted. If the qualified biologist determines that it is a SNYF, it shall be permitted to leave the Project area on its own. If it does not leave, work shall be delayed until the frog leaves the area or until a relocation plan can be developed in consultation with USFWS and/or the California Department of Fish and Wildlife (CDFW).
- At the end of the each workday, all steep-sided excavations more than two feet deep shall be provided with one or more ramps, installed at an angle of no more

than 45 degrees to allow egress of SNYF. The ramps shall be constructed of earthen material, plywood, or similar material, and be a minimum width of six inches.

- All excavations shall be inspected for SNYF before being backfilled or graded.
- All open ends of pipes shall be covered at the end of each workday. If this is not possible, all ends of pipes shall be elevated to a minimum of three feet above the ground.

CONDITION 6. Turbidity Control Measures

The Applicant shall implement the turbidity control measures identified in Attachment A of its certification application, and as modified below.

- Turbidity Curtains:
  - A turbidity curtain (or curtains) shall be used during construction and deconstruction of the bin-wall cofferdam to contain any suspended sediment from the reservoir bottom.
  - A turbidity curtain shall be used to isolate approximately 6,000 square feet of a cove in Lake Fordyce (as shown in Figure 2). Turbid water (as discussed further below) shall be discharged to this settling area before being discharged to Fordyce Creek.
- Work Area Dewatering: The area between the bin-wall cofferdam and Lake Fordyce Dam shall be dewatered to create a dry work area. During dewatering, turbidity shall be monitored and the discharge rate adjusted to control Fordyce Creek turbidity levels at or below those listed in Condition 1.

  The shallow, residual water that remains in the work area after dewatering, as well as seepage water that leaks from Lake Fordyce, will likely contain elevated levels of turbidity. This turbid water shall either remain in the work area or be pumped to the settling area behind the turbidity curtain in Lake Fordyce before being discharged to Fordyce Creek. Additionally, ground-disturbing activities that produce turbid water and wash water generated during excavation for the concrete plinth shall be pumped to the settling area in Lake Fordyce before discharge to Fordyce Creek.

- Divers: Divers with small diameter suction dredge hoses shall be deployed to minimize turbidity associated with dredging.
- Handling of dredged materials: Dredged material (sediment/water slurry) shall be pumped to two approximately 25-foot-wide by 50-foot-long geotubes (geotextile filter bags used to separate sediment from water). A biodegradable biopolymer flocculant shall be added to the dredged material to bond particles and promote coagulation/flocculation of the sediment in the geotubes. The geotubes will retain the sediment and release filtered water, which shall be collected and discharged to the settling area in Lake Fordyce. The material

collected in the geotubes shall be disposed of in accordance with all applicable laws and regulations.

- Turbid water for dust control: To reduce the amount of potentially turbid water flowing to the settling area in Lake Fordyce, as much turbid water as practical from the work area shall be used for dust control on the access road and staging areas.
- Equalization of water following end of construction season: At the end of each construction season, the work area (i.e., dry area created by the cofferdam) shall be re-watered. When the water levels on both sides of the bin-wall cofferdam are equalized with no visible differences in turbidity between the two sides of the bin-wall cofferdam, releases through the low-level outlet may resume.
- Overwintering preparation: At the end of each construction season, the work area shall be prepared for overwintering. All construction equipment shall be removed from the site with the exception of stockpiled, clean rock and granular fill, which may remain on site for use in subsequent construction seasons. These materials shall be stored onsite in a manner that prevents erosion and sloughing into surface waters.

CONDITION 7. pH Control Measures

The Applicant shall implement the pH control measures identified in Appendix A of its certification application, and as modified below.

The Applicant shall install a temporary pH treatment system below Lake Fordyce Dam to prevent water associated with grouting activities, which may contain elevated pH levels, from entering Fordyce Creek. The temporary pH treatment system shall consist of the construction of three temporary ponds (testing pond, treatment pond, and post-treatment pond) below Lake Fordyce Dam in the existing channel. The ponds shall be created using supersacks. To provide space for the temporary ponds, flow releases from Lake Fordyce Dam shall be temporarily extended, approximately 180 feet downstream (Figure 3). Seepage water shall flow through the treatment ponds as follows:

- Testing Pond: The testing pond shall be used to collect and sample seepage water (i.e., water that is seeping through the dam and is not being released for minimum instream flows). Seepage water in the testing pond shall be tested for pH (per Condition 1), and if the pH meets water quality standards, the seepage will continue downstream. If seepage water contains pH levels below 6.5 or above 8.5 it shall be pumped through a multi-bag filter to the treatment pond, to remove any grout particles.
- Treatment Pond: Seepage water in the treatment pond shall be injected with carbon dioxide to reduce pH levels.
- Post-Treatment Pond: The post-treatment pond shall receive treated seepage discharged from the treatment pond. Seepage water in the post-treatment pond

shall be tested to ensure compliance with Basin Plan pH water quality objectives prior to discharge into Fordyce Creek.

All three ponds shall be constructed and maintained to eliminate seepage water from bypassing the proposed treatment system. Unless otherwise approved by the Deputy Director, at a minimum, the Applicant shall line the treatment and post-treatment ponds with a 0.03-inch pond liner to protect Fordyce Creek substrate. The pH treatment system shall be maintained throughout the Project to ensure seepage water is adequately treated to meet Basin Plan requirements. The Applicant shall not discharge seepage water from the ponds if it does not meet Basin Plan requirements.

CONDITION 8. Project Activity Reports

Within 30 days of Project construction season completion for the given calendar year, the Applicant shall submit a Project Activity Progress Report (Progress Report) to the Deputy Director. The Progress Report shall include:

a. Summary of Project activities performed that construction season;
b. Results and analysis of all data collected for that construction season to comply with certification conditions;
c. Documentation of compliance with each condition of this certification and details of any failure to meet the certification requirements;
d. If applicable, details of Project-related adverse impacts to beneficial uses; and
e. Any proposed modifications to Project implementation to address impacts or other concerns.

The Deputy Director may require the Applicant to implement corrective actions in response to the information provided in a Progress Report. Within 60 days of Project completion, the Applicant shall provide the Deputy Director with a comprehensive report summarizing items (a) – (d). The Applicant shall provide any additional information or clarification requested by the Deputy Director related to a Progress Report or the comprehensive Project report. Upon request from State Water Board staff, the Applicant shall meet with staff to discuss a Progress Report or the comprehensive Project report.

CONDITIONS 9 – 29

CONDITION 9. The Applicant shall ensure no net loss of wetland or riparian habitat functions and compliance with the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Board, 2019b) and the *California Wetlands Conservation Policy* (Governor's Executive Order W-59-93 (Aug. 23, 1993)).

CONDITION 10. Notwithstanding any more specific provision of this certification, any plan developed as a condition of this certification requires review and approval by the Deputy Director. The State Water Board's approval authority, including authority delegated to the Deputy Director or others, includes the authority to withhold approval or to require modification of a proposal, plan, or report prior to approval. The State Water

Board may take enforcement action if the Applicant fails to provide or implement a required item in a timely manner. If a time extension is needed to submit an item for Deputy Director approval, the Applicant shall submit a written request for the extension, with justification, to the Deputy Director no later than 60 days prior to the deadline. The Applicant shall not implement any plans or reports until after receiving Deputy Director approval and any other necessary regulatory approvals.

CONDITION 11. The State Water Board reserves the authority to add to or modify the conditions of this certification: (1) to incorporate changes in technology, sampling, or methodologies; (2) if monitoring results indicate that Project activities could violate water quality objectives or impair beneficial uses; (3) to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act; and (4) to require additional monitoring and/or other measures, as needed, to ensure that Project activities meet water quality objectives and protect beneficial uses.

CONDITION 12. The State Water Board shall provide notice and an opportunity to be heard in exercising its authority to add to or modify the conditions of this certification.

CONDITION 13. Unless otherwise specified by conditions in this certification, Project activities shall be conducted in a manner consistent with all applicable water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act. The Applicant must take all reasonable measures to protect the beneficial uses of Lake Fordyce and Fordyce Creek.

CONDITION 14. Unless otherwise specified in this certification or at the request of the Deputy Director, data and/or reports shall be submitted electronically in a format accepted by the State Water Board to facilitate the incorporation of this information into public reports and the State Water Board's water quality database systems in compliance with California Water Code section 13167.

CONDITION 15. This certification does not authorize any act which results in the taking of a threatened, endangered, or candidate species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (ESA) (Fish & G. Code, §§ 2050–2097) or the federal ESA (16 U.S.C. §§ 1531–1544). If a “take” will result from any act authorized under this certification or water rights held by the Applicant, the Applicant must obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. The Applicant is responsible for meeting all requirements of the applicable ESAs for the Project authorized under this certification.

CONDITION 16. The Applicant shall submit any change to the Project, including operations, facilities, technology changes or upgrades, or methodology, which could have a significant or material effect on the findings, conclusions, or conditions of this certification, to the State Water Board for prior review and written approval. The State Water Board shall determine significance and may require consultation with state and/or

federal agencies. If the State Water Board is not notified of a change to the Project, it will be considered a violation of this certification.

CONDITION 17. In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation is subject to any remedies, penalties, process, or sanctions as provided for under applicable state or federal law. For the purposes of section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process, or sanctions for the violation or threatened violation constitutes a limitation necessary to ensure compliance with the water quality standards and other pertinent requirements incorporated into this certification. In response to any violation of the conditions of this certification, the State Water Board may add to or modify the conditions of this certification as appropriate to ensure compliance.

CONDITION 18. In response to a suspected violation of any condition of this certification, the State Water Board or Central Valley Regional Water Board may require the holder of any federal permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. (Wat. Code, §§ 1051, 13165, 13267, and 13383.)

CONDITION 19. This certification shall not be construed as replacement or substitution for any necessary federal, state, and local approvals. The Applicant is responsible for compliance with all applicable federal, state, or local laws or ordinances and shall obtain authorization from applicable regulatory agencies prior to the commencement of Project activities.

CONDITION 20. Any requirement in this certification that refers to an agency whose authorities and responsibilities are transferred to or subsumed by another state or federal agency, will apply equally to the successor agency.

CONDITION 21. Upon request, a construction schedule shall be provided to State Water Board staff. The Applicant shall provide State Water Board and Central Valley Regional Water Board staffs access to Project sites to document compliance with this certification.

CONDITION 22. A copy of this certification shall be provided to any contractor and all subcontractors conducting Project-related work, and copies shall remain in their possession at the Project sites. The Applicant shall be responsible for work conducted by its contractor, subcontractors, or other persons conducting Project-related work.

CONDITION 23. Onsite containment for storage of chemicals classified as hazardous shall be away from watercourses and include secondary containment and appropriate management as specified in California Code of Regulations, title 27, section 20320.

CONDITION 24. The Applicant shall comply with the terms and conditions in the State Water Board's National Pollutant Discharge Elimination System (NPDES) *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; State Water Board Order 2009-0009-DWQ, as amended by State Water Board Orders 2010-0014-DWQ and 2012-0006-DWQ), and ongoing amendments during the life of the Project.

CONDITION 25. The Applicant shall use analytical methods approved by California's Environmental Laboratory Accreditation Program (ELAP), where such methods are available. Samples that require laboratory analysis shall be analyzed by ELAP-certified laboratories.

CONDITION 26. Nothing in this certification shall be construed as State Water Board approval of the validity of any water rights, including pre-1914 claims. The State Water Board has separate authority under the Water Code to investigate and take enforcement action, if necessary, to prevent any unauthorized or threatened unauthorized diversions of water.

CONDITION 27. This certification is subject to modification or revocation upon administrative or judicial review, including but not limited to 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).

CONDITION 28. This certification 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 application for certification was filed pursuant to California Code of Regulations, title 23, section 3855, subdivision (b) and that application for certification specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

CONDITION 29. This certification is conditioned upon total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28.

Eileen Sobeck
Executive Director

October 30, 2020
Date

Enclosures: Figure 1. Lake Fordyce Dam Seepage Mitigation Project
Figure 2. Work Area Components
Figure 3. Downstream pH Control Configuration

References

Central Valley Regional Control Board. (2018, May). The Water Quality Control Plan . *Basin Plan*.

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.

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 Subsistance Fishing Beneficial Uses and Mercury Provisions.* Resolution No. 2107-0027.

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*.

Figures

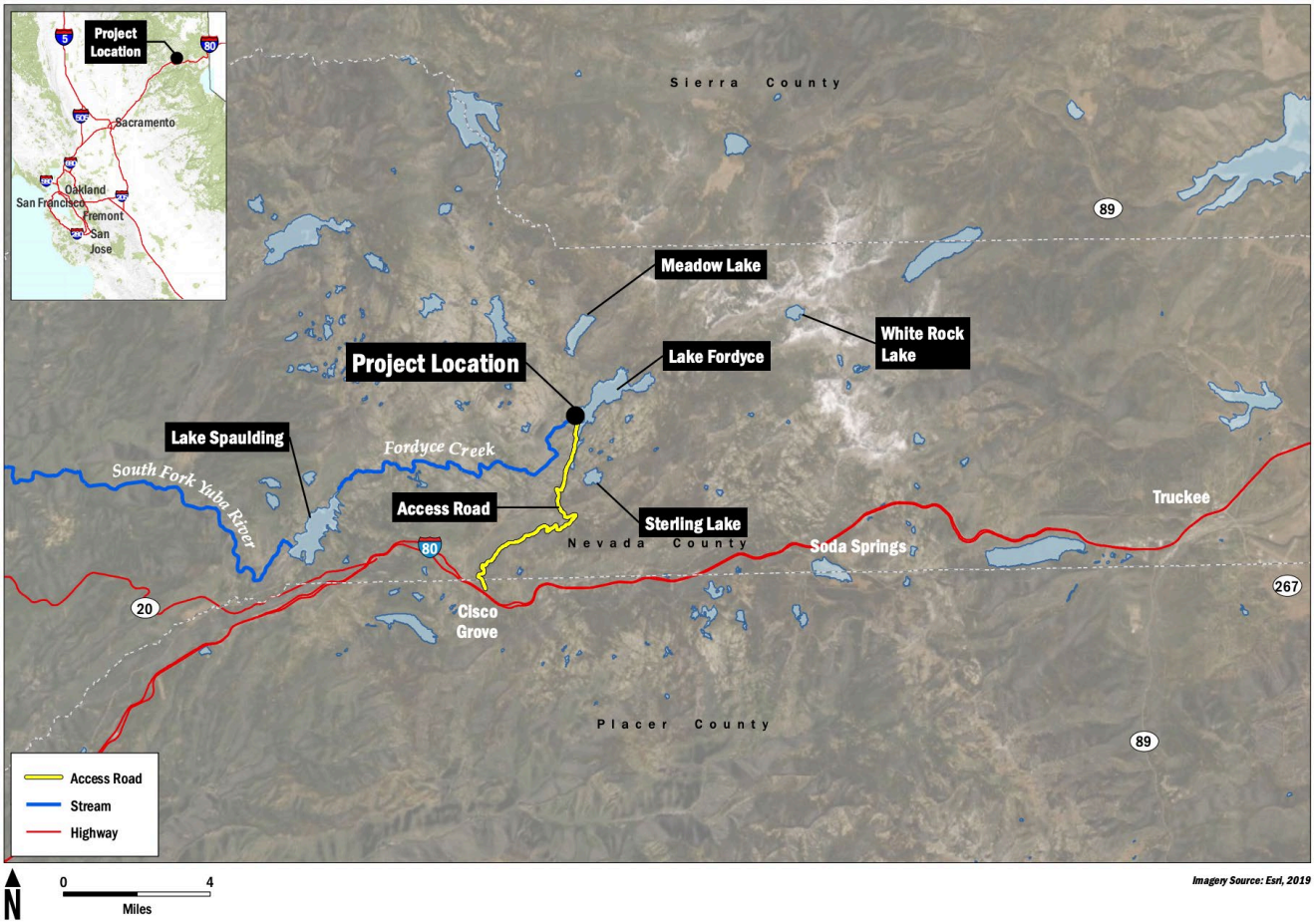

Figure 1. Lake Fordyce Dam Seepage Mitigation Project

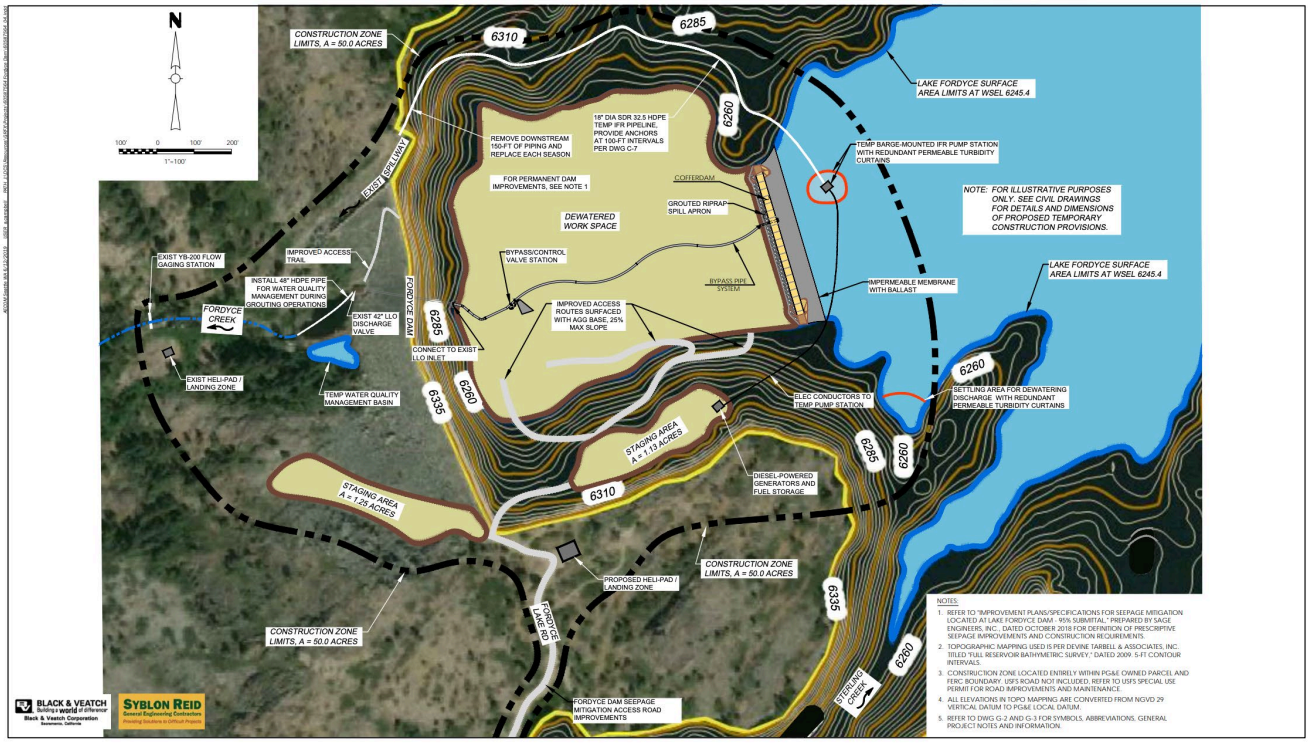

Figure 2. Work Area Components

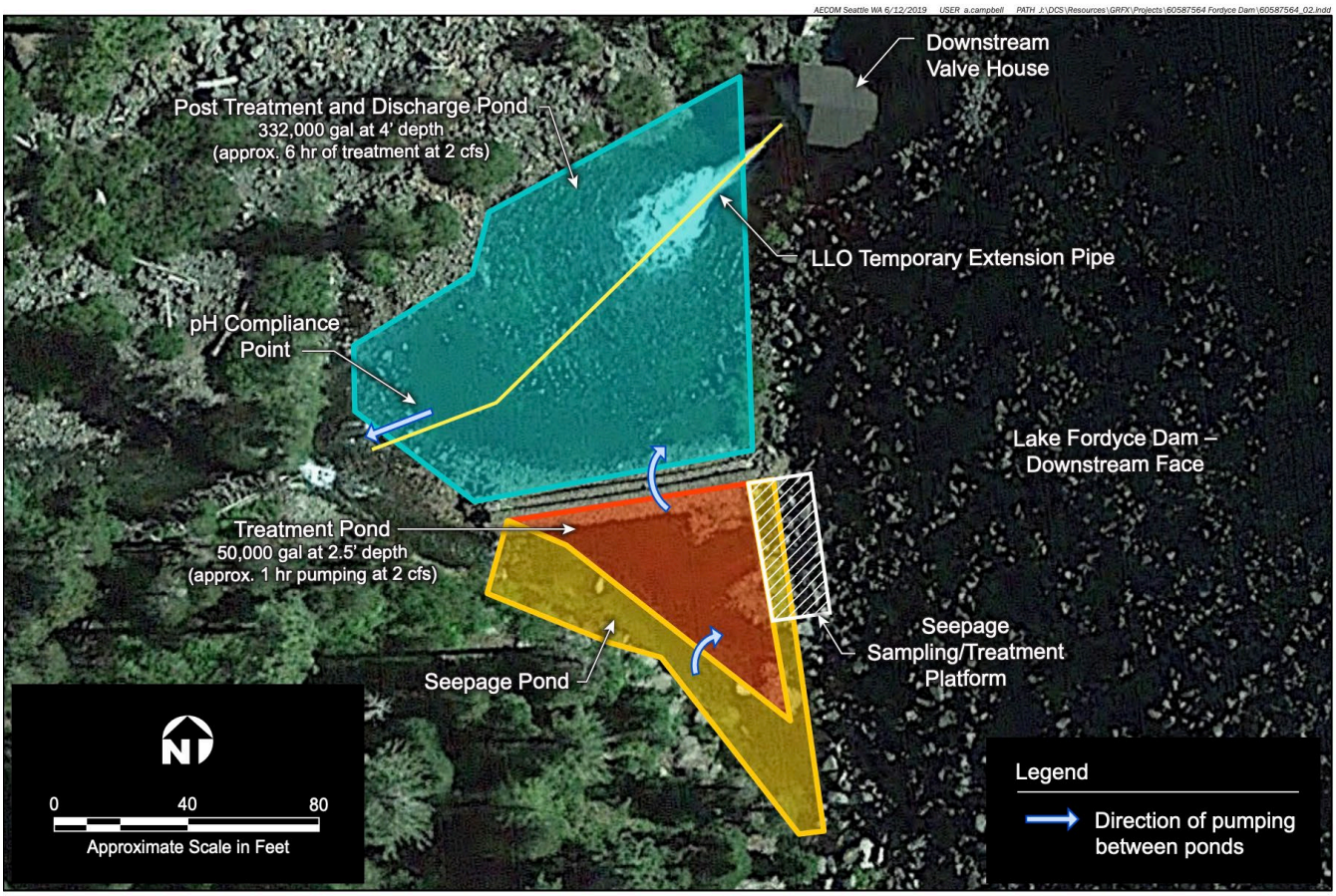

Figure 3. Downstream pH Control Configuration