

Lahontan Regional Water Quality Control Board

MEMORANDUM

TO: Water Board Members

FROM:

  
Patty Z. Kouyoumdjian

Executive Officer

LAHONTAN REGIONAL WATER QUALITY CONTROL BOARD

DATE: June 15, 2018

SUBJECT: **Exemption to Waste Discharge Prohibitions to Surface Waters and Below the Highwater Rim of Lake Tahoe for the Ski Run Marina Laminar Flow Aeration Test Project, South Lake Tahoe, El Dorado County**

In ten days, I intend to sign the enclosed Order granting exemptions to the above-cited discharge prohibitions specified in the *Water Quality Control Plan for the Lahontan Region* (Basin Plan). The exemption will allow the project proponent, Mansoor Alyeshmerni/Ski Run Marina (Applicant), to place air diffusers and weighted air lines in the waters of Lake Tahoe within Ski Run Marina using divers in order to test if laminar flow inversion and oxygenation will result in improved water and sediment quality and a reduction in aquatic invasive plant growth in Ski Run Marina.

The project meets the requirements for an exemption to the discharge prohibition. A public notice soliciting comments on the proposed project will be posted on the Water Board's website for 10 days.

Please contact me at (530) 542-5414 ([patty.kouyoumdjian@waterboards.ca.gov](mailto:patty.kouyoumdjian@waterboards.ca.gov)), or Russell Norman, Water Resource Control Engineer, at (530) 542-5435 ([russell.norman@waterboards.ca.gov](mailto:russell.norman@waterboards.ca.gov)), if you have any questions or comments regarding this matter.

Enclosure: Draft Notice of Applicability for General 401 WQC Order (SB14007IN)

cc: See Next Page

cc: Harold Singer, Agent,  
Dennis M. Zabaglo, Tahoe Regional Planning Agency  
Joe Morgan, Wetlands Regulatory Office, U.S. EPA, Region 9  
Sam Ziegler, U.S.EPA, Region 9 Wetlands Section  
Bill Orme, State Water Board, Division of Water Quality  
Aaron Park, USACE, Sacramento District, Reno Office  
Bob Hosea, California Department of Fish and Wildlife  
Russell Norman, P.E., Lahontan Water Board

RN/ma/T: SB70014IN\_Ski Run Marina Laminar Flow Aeration Test Project\_ 401\_Board Notice File  
Under: ECM / WDID 6A091804001

## Lahontan Regional Water Quality Control Board

WDID 6A091804001

Mansoor Alyeshmerni  
Ski Run Marina  
900 Ski Run Blvd., #1  
South Lake Tahoe, CA 96150  
[alyesh@aol.com](mailto:alyesh@aol.com)

### **Notice of Applicability: General 401 Water Quality Certification Order (SB14007IN) Requirements and Basin Plan Prohibition Exemption for the Ski Run Marina Laminar Flow Aeration Test Project, El Dorado County**

On April 20, 2018, Ski Run Marina/Mansoor Alyeshmerni (Applicant), filed a Notice of Intent (NOI) with \$400 filing fee requesting coverage under the March 17, 2017, State Water Resources Control Board (State Water Board) Clean Water Act Section 401 General Water Quality Certification under Order (SB14007GN) of the United States Army Corps of Engineers Regional General Permit 5 for Scientific Measurement Devices (General Certification Order) for the Ski Run Marina Laminar Flow Aeration Test Project (Project). The Application was complete on June 1, 2018, with the receipt of the Monitoring Plan.

The Project is intended to determine if laminar flow inversion and oxygenation will result in improved water and sediment quality and a reduction in aquatic invasive plant growth in Ski Run Marina. After review of the application materials submitted by the Applicant, the California Regional Water Quality Control Board, Lahontan Region (Lahontan Water Board) has determined that the Project qualifies for enrollment under this General Certification Order.

The Water Board is certifying this Project under United States Army Corps of Engineers Regional General Permit 5, Scientific Measurement Devices, subject to the conditions and the notification requirements described in the General Certification Order. This Notice of Applicability is being issued under the General Certification Order pursuant to Section 3838 of the California Code of Regulations.

### **PROJECT LOCATION**

Ski Run Marina, 900 Ski Run Blvd., South Lake Tahoe, CA, 96150  
Latitude: 38.951111 and Longitude: -119.959444

PETER C. PUMPHREY, CHAIR | PATTY Z. KOUYOUMDJIAN, EXECUTIVE OFFICER

## **APPROXIMATE TIMEFRAME OF PROJECT IMPLEMENTATION**

May 2018 to April 2023

## **PROJECT DESCRIPTION**

The Project is a laminar flow aeration demonstration intended to determine if laminar flow inversion and oxygenation will result in improved water and sediment quality and a reduction in aquatic invasive plant growth in Ski Run Marina. Initial Project activities include installation of five one-foot square ceramic air diffusers and weighted airlines on the Marina Lake bottom and upland areas and installation of five 1/2 horsepower air compressors on an upland area adjacent to the Marina. The airlines will not be buried on uplands or the Marina bed. Following installation of the above noted equipment, the ceramic air diffusers will be operated year-round to mix and aerate Marina waters and routine water quality. Sediment and vegetation monitoring will be conducted in Marina waters for five years. The proposed activity will take place within the approximately 0.5 acres of waters of the United States within the Ski Run Marina. The compressors located on upland areas around the Marina will be connected to the weighted airlines and ceramic diffusers. The ceramic diffusers and weighted airlines will be installed by divers from a boat in the Marina without the use of heavy equipment. The ceramic diffusers and weighted air lines will be set by hand on the Marina Lake bottom to minimize disturbance to Lake bottom sediments and associated increases in turbidity in the Marina.

A first quarter and annual monitoring/Project status reports are proposed with a final Project completion report summarizing the effects of laminar flow inversion and oxygenation on Marina water and sediment quality and aquatic invasive plant growth proposed at the conclusion of the Project. Additional reporting is proposed to document any adverse conditions or other unexpected outcomes during the Project term, as needed.

## **CEQA COMPLIANCE**

The Water Board has determined that this Project is exempt from the California Environmental Quality Act (CEQA; Public Resources Code sections 21000, et seq.). In accordance with section 15306, the basis for CEQA exemption is "Information Collection". A Notice of Exemption (enclosed) was filed with the State Clearinghouse concurrently with issuing this WQC.

## **WATER QUALITY CONTROL PLAN WASTE DISCHARGE PROHIBITION**

The Water Board has adopted a Water Quality Control Plan (Basin Plan) which, in Chapter 5.2, specifies the following discharge prohibitions:

1. *The discharge attributable to human activities of any waste or deleterious material to surface waters of the Lake Tahoe Hydrologic Unit is prohibited.*

2. *The discharge attributable to human activities of any waste or deleterious material to land below the highwater rim of Lake Tahoe or within the 100-year floodplain of any tributary to Lake Tahoe is prohibited.*

The Project is a laminar flow aeration demonstration intended to determine if laminar flow inversion and oxygenation will result in improved water and sediment quality and a reduction in aquatic invasive plant growth in Ski Run Marina. The project may result in discharges of organic material and sediment during diffuser placement and operation that may result in elevated turbidity and could potentially violate the prohibition(s) discussed or cited below. An exemption to the discharge prohibition(s) is allowed as described in the Basin Plan and discussed below.

### **EXEMPTION CRITERIA AND FINDINGS**

1. The Water Board may grant exemptions to Prohibition 1, above, provided the following specific criteria are satisfied:

- a. *The discharge of waste will not, individually or collectively, directly or indirectly, adversely affect beneficial uses.*

The installation of the air diffusers could result in disturbing sediment and result in a discharge. Disturbance of sediment will be minimized by hand placing diffusers and air lines on the marina lake bottom using divers in lieu of using heavy equipment. Any elevated turbidity levels from placing the diffusers is expected to be short lived. Operation of the diffusers is not expected to result in discharges of waste (e.g., generation of turbidity, increases in suspended sediment concentrations). Turbidity levels will be measured during diffuser installation, removal, and operation. All Project activities will be stopped during installation, removal, or operation of the diffusers if turbidity exceeds the applicable turbidity water quality objective for Lake Tahoe (10% above natural turbidity levels or are greater than 3 NTU) and resumed only when turbidity levels are below the turbidity water quality objective. These measures will ensure beneficial uses are not adversely affected by Project activities.

- b. *There is no reasonable alternative to the waste discharge.*

The purpose of the Project is to evaluate if laminar flow inversion and oxygenation will result in improved water and sediment quality and a reduction in aquatic invasive plant growth in Ski Run Marina. The Project is expected to restore habitat by creating conditions unfavorable to aquatic invasive weeds that have impacted the ecological integrity of the Ski Run Marina. There is no reasonable alternative to the waste discharge to the surface waters of Lake Tahoe because the Project, by its very nature, must be located within Lake

Tahoe since these are the targeted clean-up areas that have become infested. The populations of AIS plants present within Ski Run Marina are susceptible to spread if left in place.

- c. *All applicable and practicable control and mitigation measures have been incorporated to minimize potential adverse impacts to water quality and beneficial uses.*

To minimize potential adverse impacts to water quality and beneficial uses in the Ski Run Marina, the Applicant will utilize divers from a boat and/or the Marina docks to place and remove diffusers and air lines on the Lake bed within Ski Run Marina in lieu of using heavy equipment. Turbidity levels will be measured during diffuser installation, removal, and operation. These activities will be stopped if turbidity exceeds the applicable turbidity water quality objective for Lake Tahoe (10% above natural turbidity levels or are greater than 3 NTU) and resumed only when turbidity levels are below the turbidity water quality objective. Additional BMPs will be employed to prevent spills during diffuser placement, removal and operation. Such measures and requirements are applicable and practicable control measures that will minimize any discharges of wastes to Lake Tahoe during and following project construction and operation activities.

2. The Water Board may grant exemptions to Prohibition 2, above for projects that conduct monitoring or scientific research pursuant the exemption number (6) starting on page 5.2 - 2 of the Basin Plan which states the following:

- (6) *Projects for monitoring or scientific research related to natural resources and environmental quality. This category includes equipment or structure installation for basic data collection, research, experimental management and resource evaluation activities that do not result in a significant adverse effect on water quality or beneficial uses. Prior to granting any such exemption, the Regional Boards shall require that all applicable and practicable control and mitigation measures have been incorporated into the project to minimize any discharges of waste to surface waters during or following construction.*

The Project involves conducting scientific research on the usefulness of laminar airflow in reducing nutrients in the water and sediments as a method to control aquatic invasive species. The project will require the installation of air diffusers and airlines.

The installation of the air diffusers could result in disturbing sediment and result in a discharge. Disturbance of sediment will be minimized by hand placing diffusers and airlines on the marina's lake bottom using divers in lieu of using heavy equipment. Turbidity levels will be measured during diffuser installation, removal, and operation. Project activities will be stopped if turbidity exceeds the applicable turbidity water quality objective for Lake Tahoe (10% above natural turbidity levels or are greater than 3 NTU). Project activities will resume when turbidity levels are below the

turbidity water quality objective. These measures will ensure beneficial uses are not adversely affected by Project activities.

### **EXEMPTION GRANTED**

Resolution No. R6T-2015-0038 delegates to the Executive Officer the authority to grant exemptions to Basin Plan waste discharge prohibitions when the Basin Plan exemption conditions are met. As demonstrated above, the Project meets the conditions in the Basin Plan for granting an exemption. A notice of exemption was posted on the Water Board website and distributed through an interested-persons mailing list, allowing at least 10 days for comments to be submitted. The Project is hereby granted an exemption to the above-cited waste discharge prohibitions.

### **ADDITIONAL CONDITIONS AND MONITORING AND REPORTING REQUIREMENTS**

In addition to requirements in the General Permit, pursuant to California Water Code section 13267, the following is required:

1. By **March 1, 2019**, a report must be provided to the Water Board that demonstrates the Project was constructed according to the plans provided and reviewed by this office. The report must include an exhibit showing locations where diffusers, airlines and air compressors were installed and pre-installation and post-installation water quality monitoring data.
2. The Applicant must provide monitoring reports and notifications to the Lahontan Water Board per the requirements of Attachment B of the General Certification Order and requirements specified in this NOA. Quarterly and Annual Monitoring reports must be submitted for the duration of the Project. Reports must include all monitoring data collected which shall include all monitoring specified in the "Monitoring Plan for Inversion Oxygenation Laminar Flow Project Ski Run Marina, South Lake Tahoe, CA", Version 4, dated June 1, 2018, (see enclosure) and any additional monitoring conducted. Quarterly reports are due on October 1, January 1, April 1 and July 1. Annual reports are due on March 1 in the year following the monitoring period for the annual monitoring report.
3. Monitoring, including turbidity, shall be implemented throughout the duration of the Project.
4. Turbidity shall be monitored during diffuser and airline installation and removal, and during any other project activities that generate turbidity within the Ski Run Marina or Lake Tahoe. The Applicant is required to cease all turbidity generating Project activities if turbidity levels exceed 10% above natural turbidity levels or are greater than 3 NTU and may resume turbidity generating activities when turbidity levels drop below 10% above natural turbidity levels or 3 NTU. Background levels shall be based upon field sampling results from a location agreed to by the Applicant and Water Board staff and documented in writing. Turbidity must

be measured by a certified lab or with a handheld meter with sensitivity of at least 0.1 NTU and calibrated in accordance with manufacturer specifications.

The Applicant is required to modify how Project implementation activities are conducted, including modifications to AIS removal and bottom barrier installation/removal methods and modification of proposed BMPs or adoption of new BMPs, in response to turbidity exceedances. The Applicant is required to document and report all turbidity exceedances and Project implementation modifications.

5. Construction equipment must be clean and free from oil, grease, and loose metal material and must be removed from service if necessary to protect water quality. The boat and equipment used for transporting, deploying, and retrieving the diffusers and air lines and any motorized support vessels must be monitored for leaks, and removed from service if necessary to protect water quality.
6. A copy of this Order must be maintained at the Project site so as to be available at all reasonable times to site operating personnel and Water Board staff.
7. The Project must not introduce, or increase the presence of, aquatic invasive species. The Applicant must ensure that Contractor employs necessary measures to prevent the introduction or spread of noxious/invasive weeds within the project and staging area. Prior to deployment, all equipment (e.g., boats, etc.) must be visually inspected for aquatic invasive species by either Tahoe Resource Conservation District (TRCD) staff or a qualified professional on TRCD's list of surveyors. If decontamination is necessary, TRCD's recommended decontamination procedure must be implemented.
8. Debris, cement, concrete (or wash water therefrom), oil or other petroleum products must not be allowed to enter into or be placed where they may be washed from the Project site by rainfall or runoff into waters of the state. When operations are completed, any excess material must be removed from the Project work area and any areas adjacent to the work area where such material may be transported into waters of the state.
9. The Applicant must immediately notify Water Board staff by telephone whenever an adverse condition occurs as a result of this discharge. Refer to Attachment B of the General Certification Order for notification requirements. Such a condition includes, but is not limited to, a violation of the conditions of this NOA or the General Certification Order, a significant spill of petroleum products or toxic chemicals, or damage to control facilities that would cause noncompliance. A written notification of the adverse condition must be provided to the Water Board within two weeks of occurrence. The written notification must identify the adverse condition, describe the actions completed or necessary to remedy the condition, and specify a timetable, subject to any modifications by Water Board staff, for the remedial actions, if not already accomplished.
10. An emergency spill kit must be at the Project site at all times.

11. The Applicant must permit Water Board staff or its authorized representative upon presentation of credentials:
  - a. Entry onto Project premises, including all areas on which wetland fill or wetland mitigation is located or in which records are kept.
  - b. Access to copy any record required to be kept under the terms and conditions of this NOA.
  - c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this NOA.

### **GENERAL INFORMATION**

1. The General Certification Order can be found on the State Water Resources Control Board's website at: [https://www.waterboards.ca.gov/water\\_issues/programs/cwa401/docs/generalorders/nwp\\_go.pdf](https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/generalorders/nwp_go.pdf).
2. The Project must proceed in accordance with the information provided in the Notice of Intent submitted by the Applicant, and the requirements contained in this Notice of Applicability and General Certification Order. Coverage under the General Certification Order is no longer valid if the Project is modified.
3. The Project must be constructed and operated in accordance with the Project description in the information provided to the Water Board. Deviation from the Project description constitutes a violation of the conditions upon which this NOA was granted.
4. Neither Project construction activities nor operation of the Project may cause a violation of the Water Quality Control Plan for the Lahontan Region, may cause a condition or threatened condition of pollution or nuisance, or cause any other violation of the Water Code.
5. Any discharge within the Project area must be in accordance with the requirements contained in the General Permit. Failure to abide by the conditions of this General Permit and this NOA may result in enforcement action as authorized by the provisions of the Water Code.

The Water Board has an electronic filing system. **Please send all future communications regarding your project to: [Lahontan@waterboards.ca.gov](mailto:Lahontan@waterboards.ca.gov), and include the Project/Facility Name, Order and Waste Discharge Identification (WDID) numbers in the transmittal email subject line.** Your Order and WDID numbers are noted above.

We look forward to working with you in your efforts to protect water quality. If you have questions, please contact me at (530) 542-5414 ([patty.kouyoumdjian@waterboards.ca.gov](mailto:patty.kouyoumdjian@waterboards.ca.gov)),

Russell Norman, Water Resource Control Engineer, at (530) 542-5435 ([russell.norman@waterboards.ca.gov](mailto:russell.norman@waterboards.ca.gov)), or Rob Tucker, P.E., Senior Water Resource Control Engineer, at (530) 542-5467 ([robert.tucker@waterboards.ca.gov](mailto:robert.tucker@waterboards.ca.gov)),

PATTY Z. KOUYOUMDJIAN  
EXECUTIVE OFFICER

Enclosure: Monitoring Plan for Inversion Oxygenation Laminar Flow Project Ski Run Marina, v4 dated June 1, 2018

cc: Harold Singer, Agent,  
Dennis M. Zabaglo, Tahoe Regional Planning Agency  
Joe Morgan, Wetlands Regulatory Office, U.S. EPA, Region 9  
Sam Ziegler, U.S.EPA, Region 9 Wetlands Section  
Bill Orme, State Water Board, Division of Water Quality  
Aaron Park, USACE, Sacramento District, Reno Office  
Bob Hosea, California Department of Fish and Wildlife  
Rob Tucker, Lahontan Water Board  
Russell Norman, P.E., Lahontan Water Board

RN/ma/T: SB14007IN\_Ski Run Marina Laminar Flow Aeration Test Project NOA\_6A091804001  
File Under: ECM / WDID 6A091804001

DRAFT v4 6/1/18  
 MONITORING PLAN  
 FOR  
 INVERSION OXYGENATION LAMINAR FLOW PROJECT  
 SKI RUN MARINA, SOUTH LAKE TAHOE, CA  
 SPRING 2018

**PROJECT**

Ski Run Marina intends to implement an laminar flow inversion oxygenation project in Spring/Summer 2018 in an effort to control invasive aquatic plants and to improve water quality in the marina. While this technology has been successful in reducing the concentration of aquatic plants (specifically Eurasian Watermilfoil) and some compaction of sediments at other lakes in the U.S., this is considered a pilot project since there have not been any similar projects implemented in Lake Tahoe. Similar projects throughout the U.S. exhibit variations in the amount of aquatic plant reduction and sediment compaction; therefore, there are no specific numeric goals set for this pilot project.

Measurements of aquatic plant composition, cover and density along with any change in the thickness of un-compacted sediment will be used to determine the applicability of this technology in Lake Tahoe. Secondary measurements will taken to determine changes in the concentration and forms of nitrogen and levels of ortho-phosphorus in the sediment and pore-water. Additional water quality parameters will be measured to demonstrate that the project does not result in any adverse conditions.

**MONITORING PARAMETERS / FREQUENCY**

Parameter	Pre-project	Day 1	Day 2, 4, 6	Week 2 - 4	Month 2 - 12	Year 2 - 5
<b>Water</b>						
Turbidity	day before: 4x / day 8 am then every 3 hrs	4x / day 8 am then every 3 hrs	1x / day 8 am	none - unless initial results warrant	none - unless initial results warrant	none - unless initial results warrant
pH	day before: 4x / day 8 am then every 3 hrs	4x / day 8 am then every 3 hrs	1x / day 8 am	none - unless initial results warrant	none - unless initial results warrant	none - unless initial results warrant
Total Kjeldahl Nitrogen, nitrate + nitrite nitrogen, ammonia	within week of start up, 1x /day	1x /day	none	none	1x every 4th month	twice / yr

Parameter	Pre-project	Day 1	Day 2, 4, 6	Week 2 - 4	Month 2 - 12	Year 2 - 5
Dissolved Oxygen	day before: every 2 hrs starting 1 hr after sunrise till 1 hr before sunset	every 2 hrs starting 1 hr after sunrise till 1 hr before sunset	1x / day 8 am	once per week 1 hr after sunrise and noon	month 4 and 8 1 hr after sunrise and noon	twice / yr 1 hr after sunrise and noon
<b>Sediment</b>						
top of sediment elevation	two weeks or less before start	none	none	none	month six	twice / yr
thickness of muck	two week or less before start	none	none	none	month six	twice / yr
Total Kjeldahl Nitrogen, nitrate + nitrite nitrogen ammonia, ortho-phosphorus, total organic carbon	two weeks or less before start	none	none	none	none	once / yr
<b>Aquatic Plants</b>						
plant density and aerial coverage, percent cover, plant composition	three weeks or less before start	none	none	none	at 6 mo	once / yr

## MONITORING LOCATIONS

Parameter	Locations
<b>Water</b>	
Turbidity	locations 1 - 6 / within 1' of surface - see map
pH	locations 1 - 6 / within 1' of surface and within 1' of water/sediment interface - see map
Total Kjeldahl Nitrogen, nitrate + nitrite nitrogen ammonia, ortho-phosphorus	locations 1 - 6 / middle of water column - see map
Dissolved Oxygen	locations 1 - 6 / within 1' of surface and within 1' of water/sediment interface - see map
<b>Sediment</b>	
top of sediment elevation	locations 1 - 6 / see map
thickness of muck	locations 1 - 6 / see map
Total Kjeldahl Nitrogen, nitrate + nitrite nitrogen ammonia, ortho-phosphorus, Total Organic Carbon	locations 1 - 6, sediment and pore-water at each location at two different layers, one sample in middle of muck layer (un-compacted sediment) and one sample 4" into consolidated sediment. (note - If feasible at minimal cost, otherwise will modify depth of sample collection or may, for each location, take composite sample of muck) see map
<b>Aquatic Plants</b>	
plant density and aerial coverage, percent cover, plant composition	two transects: north / south - from the end of the western fixed pier to bulkhead; east / west - across the widest section of the marina. Plant density and aerial coverage - 0.25m quadrats every 4 meters. Percent cover and plant composition - point every 4 meters. see map

Note - location 1 is the background / reference station since it is outside the influence of the system