

ATTACHMENT E

WATER QUALITY ORDER NO. 2005-XXX-DWQ NPDES NO. CA0103209

FACT SHEET

CALIFORNIA DEPARTMENT OF FISH AND GAME SILVER KING CREEK ROTENONE PROJECT ALPINE COUNTY

Pursuant to provisions of the federal Clean Water Act (CWA), the California Department of Fish and Game (DFG) has submitted an application to the Lahontan Regional Water Quality Control Board (Regional Water Board) for a National Pollutant Discharge Elimination System (NPDES) permit to regulate discharges of rotenone and its byproducts to Silver King Creek and its tributaries in the Carson River Hydrologic Unit. Silver King Creek is a water of the United States. The State Water Resources Control Board (State Water Board) has decided to issue this permit. This Fact Sheet provides facts and legal, methodological, and policy issues considered in preparing the draft NPDES Permit.

AVAILABILITY OF DRAFT PERMIT; PUBLIC NOTICE AND REVIEW PROCEDURES

On September 8, 2004, the Regional Water Board held a hearing on a draft NPDES permit for the proposed project. The Regional Water Board did not act on the draft permit. On June 3, 2005, State Water Board staff sent a draft permit with only minor revisions to interested parties. Written comments were due by 5:00 p.m. on July 5, 2005 to Debbie Irvin at the State Water Board letterhead address and fax number. A contact person and phone number were provided for additional information. Also on June 3, 2005 and June 6, 2005, the State Water Board published a notice in two local newspapers of record, the Tahoe Daily Tribune and the Record-Courier, respectively. The State Water Board held a hearing on July 6, 2005.

BACKGROUND

On March 12, 2001, the Ninth Circuit Court of Appeals held that discharges of pollutants from the use of aquatic pesticides to waters of the United States require coverage under an NPDES permit (Headwaters, Inc. v. Talent Irrigation District¹). The Headwaters, Inc. v. Talent Irrigation District decision was issued just prior to the major season for applying aquatic pesticides. Because of the serious public health, safety, and economic implications of delaying applications of aquatic pesticides, the State Water Resources Control Board (State Water Board) adopted an interim NPDES permit, Water Quality Order (Order) No. 2001-12-DWQ on an emergency basis.

The DFG previously obtained coverage under the above-cited Order for a proposed multi-year project to treat portions of Silver King Creek with rotenone, a type of aquatic pesticide toxic to gilled organisms such as fish. Due to delays in implementing the proposed project (which is the subject of this NPDES Permit), DFG was unable to exercise its permit rights under the above-cited Order, which expired in January 2004.

¹Headwaters, Inc. v. Talent Irrigation District, (9th Cir. 2001) 243 F.3d 526.

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In reissuing the statewide General Order, the State Water Board did not include NPDES permit coverage for fishery management projects by DFG using rotenone. Therefore, these projects must be regulated under separate individual or General NPDES permits.

AQUATIC PESTICIDE PROJECT DESCRIPTION

The use of aquatic pesticides by DFG is necessary to manage resources and maintain beneficial uses, such as to protect and/or restore threatened and endangered species. In this case, the DFG, in cooperation with the U.S. Department of Agriculture, Humboldt-Toiyabe National Forest (USFS), and the U.S. Fish and Wildlife Service (USFWS), proposes to use the aquatic pesticide rotenone as part of recovery efforts for Paiute Cutthroat Trout, *Oncorhynchus clarki seleniris*, at Silver King Creek. Paiute Cutthroat Trout is the rarest subspecies of trout in North America, indigenous only to the Silver King Creek watershed. Paiute Cutthroat Trout was listed by the USFWS as federally endangered on October 13, 1970 (Federal Register 35:16047) and reclassified as federally threatened on July 16, 1975 (Federal Register 40:29863). Rotenone will be used to eradicate introduced fish species that can out-compete and interbreed with Paiute Cutthroat Trout, from portions of Silver King Creek and associated tributaries, prior to introduction of the native trout.

Specifically, the DFG will discharge into Silver King Creek and associated tributaries between Snodgrass Creek (Silver King Canyon) and Llewellyn Falls (see map, Attachment A in the NPDES Permit) rotenone formulation and potassium permanganate (an oxidizing agent used to detoxify rotenone). Discharges will also be made into Tamarack Lake. Treatment applications are anticipated once each year for up to three years to ensure all fish are eradicated prior to restocking the treated waters with pure strains of Paiute Cutthroat Trout. The Discharger proposes to apply rotenone in the summer of 2005. Additional treatments will be scheduled as necessary to ensure complete eradication of non-native fish.

Under this NPDES Permit, DFG is limited to use of two commercially available rotenone formulations for use with this project, specifically Nusyn-Noxfish and CFT Legumine. Use of other formulations is not authorized under this NPDES Permit.

Nusyn-Noxfish will be applied at a target concentration of 1 mg/L formulation (25 µg/L rotenone) to all flowing streams except Tamarack Creek. The specific quantity of Nusyn-Noxfish to be discharged is dependent on flow, and is estimated at approximately 10 gallons per treatment. CFT Legumine will be applied at a target concentration of 1 mg/L formulation (50 µg/L rotenone) to Tamarack Creek, and Tamarack Lake. The specific quantity of CFT Legumine to be discharged is dependent on Tamarack Lake volume estimates, and is estimated at approximately 50 gallons per treatment. Rotenone will be applied to streams using drip stations, with hand spraying in backwater areas as necessary. DFG will apply rotenone to Tamarack Lake from non-motorized rafts using gasoline-powered pumps.

DFG will operate a detoxification station downstream of the application areas in Silver King Creek, at the confluence of Silver King Creek and Snodgrass Creek. DFG will apply potassium permanganate at a rate of approximately 3 mg/L as the detoxifying agent. The application of potassium permanganate will temporarily discolor the water (resulting in a purple color) for up to two miles downstream of the

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detoxification station. Under these conditions, potassium permanganate is expected to be quickly reduced to manganese oxide, and does not persist for more than a day following the end of detoxification. Potassium permanganate will not be applied to Tamarack Lake.

The proposed project is within areas designated as federal wilderness within the East Fork Carson River Hydrologic Unit (Dept. of Water Resources Hydrologic Unit #632.00).

WATERS OF THE UNITED STATES

This NPDES Permit regulates the discharge of pollutants associated with the application of aquatic pesticides to waters of the United States. "Waters of the United States" include all waters currently used, used in the past, or susceptible to use in interstate commerce; all interstate waters; and all other waters the use, degradation, or destruction of which would or could affect interstate or foreign commerce. Waters of the United States include waters used by interstate or foreign travelers for recreation, waters from which fish or shellfish are taken and sold in interstate or foreign commerce, impoundments of and tributaries to waters of the United States, and wetlands adjacent to waters of the United States. Waters of the United States include, but are not limited to, irrigation and flood control channels that exchange water with waters of the United States.

WATER QUALITY STANDARDS

The CWA defines Water Quality Standards as "Provisions of state or federal law which consist of designated uses for the waters of the United States, water quality criteria for waters based upon such uses, and antidegradation policies. Water quality standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the Act." [40 Code of Federal Regulations (CFR) section 131.3(i)].

In California, *Water Quality Control Plans* designate the beneficial uses of waters of the State and water quality objectives (WQOs) to protect those uses. The State and Regional Water Boards adopt *Water Quality Control Plans* through a formal administrative rulemaking process, and, upon approval by the United State Environmental Protection Agency (U.S. EPA), the WQOs for waters of the United States (generally surface waters) become State water quality standards. The Regional Water Board adopted an updated *Water Quality Control Plan for the Lahontan Region* (Basin Plan) that became effective on March 31, 1995. The Basin Plan provides a strategy for protecting beneficial uses of surface and ground waters throughout the Lahontan Region, including 1990 and 1993 amendments of the preceding Basin Plan to allow conditional use of rotenone by DFG.

The Basin Plan rotenone policy allows use of rotenone by DFG for certain specific types of fishery management activities, including restoration or enhancement of threatened or endangered species. Eligibility criteria and conditions are set forth in Chapter 4 of the Basin Plan. For DFG projects meeting the eligibility criteria and conditions, the Basin Plan rotenone policy grants a variance from meeting Basin Plan water quality objectives (such as the pesticides and toxicity objectives) that would otherwise apply. Projects qualifying for the variance are instead subject to specific water quality objectives for DFG rotenone use established in Chapter 3 of the Basin Plan. A Memorandum of Understanding

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(MOU) between the Regional Water Board and DFG was executed in 1990 to implement the Basin Plan policy. Certain aspects of that MOU are superseded or rendered invalid by the Headwaters, Inc. v. Talent Irrigation District decision and changes to State law. Namely, discharges of aquatic pesticides are now required to be in compliance with an NPDES permit. The MOU nonetheless provides a framework for compliance with the Basin Plan.

TOXICS RULES AND STATE IMPLEMENTATION POLICY

U.S. EPA has established water quality criteria in California for priority pollutants in the National Toxics Rule (NTR) and the California Toxics Rule (CTR). The NTR and CTR criteria are also water quality standards.

The State Water Board has adopted a *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP). The SIP establishes procedures for implementing water quality standards for NTR/CTR priority pollutants² in NPDES permits. Rotenone itself is not a designated priority pollutant and, therefore, is not subject to the SIP.

Section 5.3 of the SIP allows for short-term or seasonal exceptions from its requirements for resource or pest management activities conducted by public entities. In order to qualify for a categorical exception from meeting priority pollutant standards, a public entity must fulfill the requirements listed in Section 5.3. Among other requirements, entities seeking an exception to complying with water quality standards for priority pollutants must submit evidence of compliance with the California Environmental Quality Act (CEQA, Public Resources Code 21000, et seq.). The State Water Board has discretion to grant an exception for a qualifying project. In this case, the DFG certified a mitigated Negative Declaration for the project and otherwise qualifies for an exception. The proposed NPDES Permit includes an exception to the SIP.

To further bolster the basis for the State Water Board to grant an exception to the SIP, DFG has provided chemical testing data for volatile and semi-volatile organic compounds to demonstrate that the rotenone formulations do not contain priority pollutants of that type at levels that, consequent to discharge, would exceed applicable federal water quality standards established for California. In addition, State Water Board staff have reviewed confidential/proprietary information from the manufacturers of the rotenone formulations proposed for use by DFG. State Water Board staff review found that priority pollutants were not contained in the products or formulations.

RELATED AQUATIC PESTICIDE REGULATIONS

Pesticide formulations contain disclosed active ingredients that yield toxic effects on target organisms and may also have toxic effects on non-target organisms. They also contain inactive or inert ingredients, as well as adjuvants. Adjuvants are compounds chosen by the discharger and added to aquatic pesticides during an application event to increase the effectiveness of the aquatic pesticides on target organisms.

² The water quality standards for priority pollutants are listed in 40 Code of Federal Regulations (CFR), § 131.38 (b)(1).

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According to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), U.S. EPA has sole jurisdiction of pesticide label language. Label language and any changes thereto must be approved by U.S. EPA before the product can be sold in this country. As part of the labeling process, U.S. EPA evaluates data submitted by registrants to ensure that a product used according to label instructions will cause no harm (or “adverse impact”) on non-target organisms that cannot be reduced (or “mitigated”) with protective measures or use restrictions. Registrants are required to submit data on the effects of pesticides on target pests (efficacy) as well as effects on non-target organisms. Data on non-target effects include plant effects (phytotoxicity), fish and wildlife hazards (ecotoxicity), impacts on endangered species, effects on the environment, environmental fate, breakdown products, leachability, and persistence; however, FIFRA is not necessarily as protective of water quality as the Clean Water Act (CWA).

The Department of Pesticide Regulation (DPR) is responsible for reviewing the toxic effects of aquatic pesticide formulations and determining whether a pesticide is suitable for use in California’s waters through a registration process. To do this, DPR also reviews data submitted by the registrants. While DPR cannot require manufacturers to make changes in labels, DPR can refuse to register products in California unless manufacturers address unmitigated hazards by amending the pesticide label. Consequently, requirements that are specific for use in California are included in many pesticide labels that are approved by U.S. EPA.

DPR also licenses applicators of pesticides designated as a “restricted material.”³ To legally apply these pesticides, the applicator must be a holder of a Qualified Applicator Certificate or work under the supervision of someone who is certified. For aquatic pesticides, the qualified Applicator Certificate must have the category “aquatic.”

EFFLUENT LIMITATIONS

NPDES permits for discharges to surface waters must meet all applicable provisions of sections 301 and 402 of the CWA. These provisions require controls that utilize best available technology economically achievable (BAT), best conventional pollutant control technology (BCT), and any more stringent controls necessary to reduce pollutant discharge and meet water quality standards. Controls to achieve limitations on effluent constituents are generally required.

Title 40, CFR section 122.44 states that if a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion, the permitting authority must develop effluent limits as necessary to meet water quality standards. Title 40, CFR section 122.44(k)(3) allows these effluent limits to be requirements to implement Best Management Practices (BMPs) if numeric effluent limits are infeasible. It is infeasible for the Regional Water Board to establish numeric effluent limitations in this NPDES Permit because:

³ DPR designates a pesticide as a restricted material in California if it poses hazards to public health, farm workers, domestic animals, honeybees, the environment, wildlife, or crops other than those being treated (“Regulating Pesticides: A Guide to Pesticide Regulation in California,” October 2001, DPR).

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1. Pesticides are products of specific formulation. Though pollutants in pesticides are discharged from a point source (or sources), they are not an "effluent" in the conventional sense of the word. A sufficient amount of the active ingredient must be discharged to achieve the target concentration that provides the intended effect. There is no point in requiring treatment to achieve effluent limits in this case. Treatment, in many cases, may render the pesticide useless for control purposes.
2. The regulated discharge is the discharge of pollutants associated with the application of aquatic pesticides. These include over-applied pesticide product and pesticide residues. At what point the pesticide becomes a residue is not precisely known and varies depending on such things as target species, water chemistry, and flow. Therefore, in the application of aquatic pesticides, the exact effluent is unknown.

Therefore, the effluent limitations contained in this NPDES Permit are narrative and include requirements to implement appropriate BMPs, including compliance with all pesticide label instructions, and to comply with receiving water limitations. The BMP requirements are included in DFG's NPDES Permit application and other information provided to the Regional Water Board by the DFG and are incorporated in the NPDES Permit by reference and by specific provisions. BMPs provide the flexibility necessary to establish controls to minimize the magnitude, area and duration of impacts caused by the discharge of aquatic pesticides.

The BMPs required herein constitute BAT and BCT and will be implemented to minimize the magnitude, area and duration of impacts caused by the discharge of aquatic pesticides in the treatment area and to allow for restoration of water quality and protection of beneficial uses of the receiving waters following completion of treatment events.

RECEIVING WATER LIMITATIONS

Once an aquatic pesticide has been applied to an application area, the pesticide product can actively treat the target species within the treatment area. During the treatment event, the aquatic pesticide is at a sufficient concentration to actively kill or control targets. The minimum effective concentration, and the time required to reach it, vary due to site specific conditions, such as flow, target species, and water chemistry. The NPDES Permit contains receiving water limitations applicable for rotenone projects as contained in the Basin Plan. The receiving water limitations require that an application event does not result in an excursion from applicable water quality standards in the receiving waters as defined in the NPDES Permit.

Water quality monitoring to verify compliance with receiving water limits is required in the project areas and in the downstream receiving waters both during and following the treatment events, as described below and in the Monitoring and Reporting Program.

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CEQA EXEMPTION

Pursuant to CWC section 13389, the State Water Board is exempt from the requirement to comply with the CEQA when adopting NPDES permits. While adoption of this NPDES Permit is exempt from preparation of a CEQA document, public entities receiving exceptions pursuant to section 5.3 of the SIP are required to prepare a CEQA document, as discussed below.

SIP EXCEPTION

The SIP contains implementation provisions for water quality standards for priority pollutants. The SIP provides that categorical exceptions may be granted to allow short-term or seasonal exceptions from meeting the priority pollutant criteria/objectives if “necessary to implement control measures . . . for resource or pest management . . . conducted by public entities to fulfill statutory requirements.” The SIP specifically refers to fishery management as a basis for a categorical exception. The exceptions are available only to public entities that have adequately provided the following, as listed in the SIP:

1. CEQA documentation including notifying potentially affected public and government agencies;
2. A detailed description of the proposed action which includes the proposed method of completing the action;
3. A time schedule;
4. A discharge and receiving water monitoring plan that specifies monitoring prior to application events, during application events, and after completion with the appropriate quality control procedures;
5. Contingency plans.
6. Residual waste disposal plans.

The DFG has prepared and certified a Mitigated Negative Declarations (MND) for the discharge of aquatic pesticides in accordance with CEQA. As the lead agency under CEQA, the DFG determined that the project would not have a significant effect on the environment and that the water quality or related water quality impacts identified in the environmental assessment of the project are less than significant. That determination was not challenged in accordance with statutory requirements of the CEQA.

As required in section 15096 of the CEQA Guidelines, the State Water Board, as Responsible Agency under CEQA, considered the MND approved by the DFG and finds that the project will have less than significant water quality impact if the waste discharge requirements in this NPDES Permit are followed.

DFG has complied with the exception requirements of SIP section 5.3. The State Water Board has considered this matter and has granted DFG an exception pursuant to section 5.3 of the SIP.

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MONITORING REQUIREMENTS

This NPDES Permit requires compliance with the Monitoring and Reporting Program (MRP) developed for the project. The goals of the MRP are to:

1. Determine compliance with the receiving water limitations and other requirements specified in this NPDES Permit;
2. Support the development, implementation, and effectiveness of BMPs;
3. Assess the chemical, physical, and biological impacts on receiving waters resulting from aquatic pesticide applications;
4. Assess the overall health and evaluate long-term trends in receiving water quality;
5. Demonstrate that water quality of the receiving waters following completion of resource management projects fully support beneficial uses;

In order to meet the MRP goals, DFG must provide information on the volume or volumetric flow rate of waters in the treatment areas and other information used to calculate the dosage and quantity of each pesticide used.

The NPDES Permit requires pre-project and post-project monitoring of benthic macroinvertebrate communities in the treatment areas and in "control" sites not subject to treatment. The monitoring as described in the MRP is reasonably necessary and adequate to assess the impacts on these communities and their post-project recovery status. Such monitoring on past projects has been a subject of controversy and disagreement among entomologists and others with expertise in the field.

Within two years following the last treatment for a specific project element, a fisheries biologist or related specialist from DFG must assess the condition of the treated waters, and certify in writing whether all applicable beneficial uses have been restored. Pursuant to the MOU, that assessment must consider the condition of fish and macroinvertebrate populations in the affected waters.

The MRP specifies the analytical methods that must be used. Analytical detection limits are specified in those methods, with the exception of di(ethylene glycol) ethyl ether, and 1-methyl-2-pyrrolidone, for which specific published analytical methods are not available (those two constituents will be analyzed by modified U.S. EPA Method 8015). Detection limits must conform with limits established in the analytical methods and, where detection limits are not specified within the method, detection limits shall be the lowest achievable using state-of-the-art analytical laboratory equipment and methodologies.

Detection limits for U.S. EPA Methods 8260 (Volatiles) and 8270 (Semi-volatiles) are available online at the website http://www.epa.gov/epaoswer/hazwaste/test/8_series.htm. DFG Reporting Limits for constituents analyzed by other methods are as follows:

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Constituent	Reporting Limit (µg/L)
rotenone	2
rotenolone	2
piperonyl butoxide	10
1-methyl-2-pyrrolidone	10
Di(ethylene glycol) ethyl	10

DFG has provided the results of chemical scans of Nusyn-Noxfish and CFT Legumine using the above-cited methods and reporting limits. The information is tabulated for comparative purposes in an Attachment 1 to this Fact Sheet titled "Expected Chemical Concentrations."

The MRP provided by this NPDES Permit is considered baseline monitoring. DFG mitigation monitoring plans required for CEQA mitigation measures must also be implemented.

NPDES PERMIT RE-OPENER AND REVOCATION/TERMINATION PROVISIONS

This NPDES Permit contains standard provisions that state the NPDES Permit may be modified, revoked and reissued, or terminated for cause. Cause includes, but is not limited to, any violation of the NPDES Permit. Any violation of the NPDES Permit constitutes a violation of the Clean Water Act and constitutes grounds for enforcement action, permit termination, permit revocation and reissuance, denial of an application for reissuance, or a combination of the above.

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Expected Chemical Concentrations