

ITEM: 6

SUBJECT: California Department of Fish and Game, Lake Davis Pike Eradication Project, Plumas County

BOARD ACTION: Consideration of Adoption of a NPDES Permit

BACKGROUND: The Discharger proposes to apply the pesticide rotenone to Lake Davis as part of the efforts to eradicate non-native Northern Pike from the lake. Northern Pike are a highly predations non-native fish that can out compete native fish. It is feared that if the pike escape from Lake Davis, they would spread downstream to the Middle Fork Feather River and beyond, eventually to the Sacramento River and the Sacramento-San Joaquin River Delta. Such a spread of Northern Pike could severely impact the trout fishery in Big Grizzly Creek and the Middle Fork of the Feather River, and also impact salmon and other anadromous fish, including threatened or endangered species, below Lake Oroville and in the Sacramento River and Delta. The impacts could be catastrophic to native fisheries and seriously impact local economies.

Grizzly Valley Dam impounds Big Grizzly Creek, forming Lake Davis approximately 6 miles upstream from its confluence with the Middle Fork Feather River and five miles north of the City of Portola.

The treatment of Lake Davis is planned for September 2007, however if significant delays occur, the project may take place in the fall of a later year.

A liquid rotenone formulation is proposed for use. The formulation contains significant quantities of organic constituents to help disperse the rotenone throughout the Lake.

Immediately prior to the application of the rotenone formulation to Lake Davis, the outlet from Grizzly Valley Dam will be closed to prevent the discharge of treated lake water to Big Grizzly Creek below the dam. The outlet will remain closed for a minimum of five days to allow for mixing of the pesticide formulation within the lake.

To prevent residual rotenone from impacting non-target fisheries downstream, the rotenone must be neutralized prior to discharging the treated lake water downstream below Grizzly Valley Dam. The Discharger has identified four options to neutralize the rotenone to prevent downstream mortality. Option 1, identified as the preferred alternative, is to keep the dam outlet closed for up to 45 days to allow all the formulation constituents to fully degrade by natural processes. The Discharger has determined adequate tributary and acretionary flows occur a short distance downstream of the dam to support the existing

fishery.

If keeping the dam outlet closed until the rotenone formulation fully degrades is not possible, then the Discharger proposes to withdraw and treat the lake water with potassium permanganate (as per label instructions) in an off-stream facility within the lake area near the dam to neutralize the rotenone prior to discharging it below the dam. This alternative is identified as Option 2.

Neutralization Options 3 and 4 propose to release water from the dam at two different flow rates five days after applying the pesticide to Lake Davis. The potassium permanganate neutralizing agent would be applied directly to Big Grizzly Creek below the dam. This will result in the neutralization of the rotenone within approximately 30 minutes contact time, equating to a stream distance of approximately 0.5 mile depending on flow. Since both rotenone and unreacted potassium permanganate are toxic to aquatic life, the use of Big Grizzly Creek as the key component of the reaction/neutralization system will result in the elimination of virtually all aquatic life within the 0.5 mile reach. An imbalance in the potassium permanganate application due to variability in the rotenone concentrations discharging from the dam could result in either residual concentrations of potassium permanganate or rotenone outside the target ranges. Such a condition could result in the death of fish and other aquatic life for a significant distance downstream

On March 12, 2001, the Ninth Circuit Court of Appeals held that point-source discharges of pollutants associated with use of aquatic pesticides in waters of the United States require a NPDES permit because the residual pesticide left in the water after it has served its purpose was considered a "pollutant" (*Headwaters, Inc. v. Talent Irrigation District*). In 2005, the Ninth Circuit Court stated that the determinative issues in whether an NPDES permit was required was whether there is any "residue or unintended effect" from application of the pesticide. It is the "residue or unintended effect" that is the pollutant (*Fairhurst v Hagener*). Accordingly, the discharge of rotenone beyond the area of its intended use (Lake Davis) requires a NPDES permit. In a similar argument, the addition of potassium permanganate to neutralize the rotenone would be application of a chemical to waters for its intended use and not considered a pollutant. However, after the potassium permanganate has completely oxidized the rotenone, it may still be present in concentrations toxic to aquatic life. A NPDES permit is required in order to regulate the residue or unintended effect of the rotenone formulation and the potassium permanganate beyond its target use. The application of the chemicals to Lake Davis for its intended use (kill pike) does not require an NPDES permit.

Because Lake Davis is a municipal water supply, the Department of Health Services, Division of Drinking Water and Environmental Management (DHS) also has regulatory authority over the application of the pesticide. Health and Safety Code Section 116751 requires that the Discharger may not introduce a poison to a drinking water supply for purposes of fisheries management unless DHS determines that the activity will not have a permanent adverse impact on the quality of the drinking water supply or wells connected to the drinking water supply. DHS has made a Draft Determination that the application of rotenone to Lake Davis will not have a short or long term effect on drinking water from the project. A Final Determination is expected shortly. The Regional Water Board staff has reviewed the available data and concurs with this determination.

ISSUES

Using Big Grizzly Creek downstream of Lake Davis as part of the neutralization system. Neutralization Options 3 and 4 would require the Regional Water Board to allow for acute in-stream toxicity and 100 percent mortality of aquatic life within and beyond the mixing zone of a permitted discharge. Such a condition would be against the policy of the Regional Water Board and not consistent with other NPDES permits. This is of particular concern as two other neutralization options (shutting off the dam for 45 days to allow for natural degradation of the chemicals and off-stream neutralization) are available. The proposed permit does not include Options 3 and 4.

Lake Davis is a drinking water supply for the City of Portola. The addition of a pesticide and organic chemical compounds known to have adverse impacts on human health and the environment to a municipal drinking water supply is a concern to local citizens. Lake Davis will not be returned to use as a municipal water supply until all residual chemicals are fully degraded and the use approved by DHS. Although Lake Davis has not been used by the City of Portola as a drinking water supply since 1997, it is planned to return to use in the near future. Mitigations and alternative water supplies are proposed by the Discharger to assure adequate water is available until DHS approves the use of Lake Davis again as a municipal water supply.

RECOMMENDATION: Adopt the proposed order.

Mgmt. Review _____

Legal Review _____

21 and 22 June 2007
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