Response to Comments on the Draft NPDES Permit for the Kah-Nee-Ta Wastewater System at the Kah-Nee-Ta Resort

September 2007

On July 3, 2007, EPA issued a public notice of the availability of a draft permit for the Kah-Nee-Ta Wastewater System at the Kah-Nee-Ta Resort, located on the Warm Springs Indian Reservation near Warm Springs, Oregon. The public comment period closed on August 2, 2007. EPA received comments from the Kah-Nee-Ta resort, the Confederated Tribes of the Warm Springs Reservation of Oregon's Tribal Environmental Office, the US Fish and Wildlife Service, and NOAA fisheries.

Revisions to the Draft Permit Unrelated to Public Comments

Mass Limits for BOD_5, TSS, and chlorine

The draft permit proposed effluent limits for BOD_5, TSS and chlorine expressed in terms of mass (pounds per day). The proposed mass limits were equal to the mass of these pollutant parameters that would be discharged if the effluent flow rate were equal to the maximum observed daily flow rate of 370,000 gallons per day (gpd) and the concentrations were equal to the corresponding concentration limits.

After the close of the public comment period, EPA re-evaluated the flow data from the facility. The 370,000 gpd flow rate, which was observed on September 12, 2005, was 10.5 standard deviations greater than the average flow rate. The next highest flow rate was 190,000 GPD, or 51% of the maximum. A Grubbs' extreme value test shows that, with this sample size, the maximum flow rate would only have to be 4.2 standard deviations greater than the mean in order to be considered an outlier, at the 99% confidence level. Since the highest flow rate was 10.5 standard deviations greater than the mean, EPA has concluded that the 370,000 gpd flow rate was a statistical anomaly, and therefore it is unlikely that it will recur.

The final permit authorizes discharges based on a flow rate of 114,000 gpd, which is the average of the 30 highest daily flow rates observed between October 2004 and July 2007, with the outlying value of 370,000 gpd discarded. In general, the reduction in the flow rate used to calculate the mass limits will reduce the permitted mass loadings of pollutants by 69% relative to the draft permit, except for the interim limits for TSS. The interim TSS mass limits are reduced by 39% relative to those in the draft permit. The decrease in the TSS mass limits is not as great as that of the BOD_5 and chlorine limits because the final concentration limits for TSS have been increased, as described in the response to comment #1.

Compliance Evaluation Level for Chlorine

The draft permit had a compliance evaluation level for chlorine of 100 micrograms per liter. This is because the EPA methods for chlorine could not quantify chlorine at levels less than 100 micrograms per liter. The proposed final permit no longer contains this

provision, because the EPA methods upon which this compliance evaluation level was based are no longer approved for use with NPDES permits in 40 CFR Part 136.

Compliance Schedule End Date for BOD_5 and TSS

The draft permit proposed that the compliance schedule for BOD_5 and TSS end on the expiration date of the final permit. However, it is not certain that the permit will be administratively extended or renewed. If the permit is not extended or renewed, it will not be possible for EPA to determine if compliance with the final effluent limitations has been achieved before the permit expires, if the compliance schedule end date is the expiration date of the permit. Therefore, EPA will require that compliance be achieved by November 1, 2012, 1 month before the expiration date of the final permit.

Comment #1

The Kah-Nee-Ta Resort and the Tribal Environmental Office (TEO) stated that the average monthly limit for TSS that is consistently achievable by the facility is 77 mg/L and the average weekly limit for TSS that is consistently achievable by the facility is 107 mg/L. These values exceed the interim TSS limits shown on Table 1: Effluent Limitations and Monitoring Requirements. The Tribes recognize that the interim limit of 85 mg/L for TSS that we discussed Friday would be acceptable for the interim compliance schedule. We request that you make this modification in the permit.

In August of 2006, the TSS was 98 mg/L, and in July of 2007, it was 73 mg/L. Because of the nature of a lagoon system, it is common that algae blooms will cause effluent TSS values to increase during these few hot summer months and particularly at pond turn-over.

Response #1

EPA agrees with this comment. The final permit contains interim TSS effluent limits of 85 mg/L and 81 lb/day as a monthly average and 128 mg/L and 122 lb/day as a weekly average. These effluent limits are consistent with the EPA-approved alternative state requirement for TSS from publicly-owned treatment works using lagoons for treatment in eastern Oregon (49 FR 37005, September 20, 1984). Although the facility is located on Tribal land, it is nonetheless within the geographic area of eastern Oregon ("eastern" meaning east of the Cascade Mountains). Therefore, the technical analysis supporting Oregon's approved alternative state requirements for TSS is no less valid on the Reservation than it is elsewhere in eastern Oregon.

Comment #2

The TEO has requested the Kah-Nee-Ta Board of Directors to prepare an operating plan and schedule of improvements and equipment installations necessary to comply with interim standards and monitoring requirements including surface water monitoring. This report shall outline milestones targeted for each of the five years of the interim schedule.

Response #2

EPA agrees and has added a requirement under Part I.E of the permit (Interim Requirements for Schedules of Compliance), requiring that the permittee prepare an operating plan and schedule of improvements and equipment installations necessary to comply with interim effluent limitations and monitoring requirements including surface water monitoring.

Comment #3

The TEO has recommended a 5 year compliance schedule for the Kah-Nee-Ta Board to meet final CTWSRO treatment criteria for the Warm Springs River. The interim standards that can be met by the facility are equal to the "Treatment Equivalent to Secondary" standards found in 40 CFR 133.105.

Response #3

EPA believes that the draft permit's compliance schedule and interim limits for BOD and TSS are consistent with the recommendations of the TEO. The length of the compliance schedule is four years and 11 months (shortened by 1 month so that compliance status can be determined before the permit expires), and the interim limits are consistent with the requirements of 40 CFR 133.105 ("Treatment Equivalent to Secondary" for BOD_5 and "Alternative State Requirements" for TSS). See also the response to comment #1.

Comment #4

The Kah-Nee-Ta Resort and TEO stated that, since the draft permit increases the sample frequency to weekly, it will require the Kah-Nee-Ta High Desert Resort & Casino to acquire composite samplers and other lab equipment. This could take 120 to 180 days to acquire this equipment and have it installed and calibrated. The effective date for the permit should be after January 1, 2008.

Response #4

Rather than delay the effective date of the final permit, EPA will address this issue of weekly composite monitoring requirements by delaying the required start date for weekly composite sampling. For the first 120 days of the permit, the permit requires monthly monitoring for BOD_5 and TSS. All other monitoring requirements (which do not require composite sampling) are effective immediately upon the effective date of the permit.

Comment #5

The US Fish and Wildlife Service (USFWS) stated that the biological evaluation (BE) did not discuss the effect of the permitted discharge of biochemical oxygen demand on dissolved oxygen levels in the receiving water, and, in turn, on bull trout.

Response #5

EPA has prepared a revised biological evaluation, which was sent to USFWS and NOAA Fisheries on September 17, 2007. In the revised biological evaluation, EPA determined

that the discharge would have insignificant effects on dissolved oxygen in the receiving water, both in the near and far fields, even if the dissolved oxygen in the effluent is low. The isolated effect of the permitted discharge of BOD_5, as opposed to low dissolved oxygen in the effluent, at the permittee's interim weekly average effluent limit of 62 lb/day, is 0.0013 mg/L.

EPA has determined that the near and far-field effects of the discharge upon dissolved oxygen are negligible. The discharge does not appear to exhibit low dissolved oxygen, and even if it did, the effect on the dissolved oxygen of the receiving water would be negligible due to the large amount of dilution available. The EPA therefore concludes that the levels of dissolved oxygen and oxygen demanding materials in the discharge from the facility will result in insignificant or discountable effects to aquatic species and therefore are not likely to adversely affect listed fish species. However, BOD will continue to be limited and monitored in the effluent and dissolved oxygen will be monitored in the receiving water throughout the permit cycle and further effects of the discharge may be reevaluated for the next permit. For more information, see the revised biological evaluation (EPA 2007).

Comment #6

USFWS stated that the biological evaluation gave limited technical explanation as to the differences in the level of effect to bull trout during the term of the compliance schedules for BOD_5, TSS, and total residual chlorine, when interim limits apply, as opposed to the effect resulting from compliance with the final effluent limits.

Response #6

In the revised biological evaluation, EPA has evaluated the effect of compliance with both the interim and final effluent limits upon bull trout and steelhead. EPA has determined that compliance with the interim effluent limits for BOD_5 and TSS will result in insignificant or discountable effects to aquatic species and are therefore not likely to adversely affect listed fish species. Since the final effluent limits for BOD_5 and TSS will require significant reductions in the discharges of these pollutants, EPA believes that the compliance with the final effluent limitations will also result in insignificant or discountable effects to aquatic species.

For chlorine, due to the very small ratio of the effluent flow to the river flow (0.15%), the short duration of the compliance schedule, the fact that the facility will likely discharge only combined chlorine (which is less toxic than free chlorine), the fact that chlorine is not a conservative pollutant (even though the calculation of effluent limits presumes that it is conservative), and the fact that the permit will require reductions in chlorine discharges to nontoxic levels at the end-of-pipe after the 1-year compliance schedule, EPA has determined that, even during the term of the compliance schedule, the extremely small areas of somewhat higher chlorine concentration in the stream, if any, would result in insignificant effects to listed fish species (or any other aquatic species) maintenance, reproduction, or growth, and, therefore, would not be likely to adversely the listed fish species considered in this BE. Therefore, EPA determines that the chlorine discharged

from the WSKR WWTP may affect, but is not likely to adversely affect listed fish species. For more information, see the revised biological evaluation (EPA 2007).

Comment #7

USFWS stated the biological evaluation lacked information on the relative amounts of free and combined chlorine in the discharge.

Response #7

According to the 18th Edition of *Standard Methods for the Examination of Water and Wastewater*, disinfected wastewater effluents normally contain only combined chlorine. This information is provided in the revised biological evaluation (EPA 2007).

Comment #8

USFWS noted that temperature is a critical element of bull trout habitat and requested that EPA should therefore evaluate the effects of the discharge upon the temperature of the receiving water.

Response #8

The revised biological evaluation includes an expanded discussion of the temperature effects of the discharge. In the revised BE, EPA concluded that, due to the very small ratio of the effluent flow to the river flow (0.15%), the fact that the discharge is not hot enough to result in thermal shock or lethality at the end-of-pipe, and the fact that the discharge must mix with a very small fraction of the receiving water flow rate (3.3%) in order for the river to reach a temperature immeasurably increased from background under critical conditions, EPA determined that the temperature of the discharge will have insignificant or discountable effects on threatened or endangered fish and is therefore not likely to adversely affect listed fish species within the Action Area. For more information, see the revised biological evaluation (EPA 2007).

Comment #9

USFWS stated that the original BE's statement that ammonia is not a parameter of concern for the Kah-Nee-Ta discharge needs further technical information to support an effects determination.

Response #9

EPA evaluated the potential effects of ammonia in the discharge in the revised biological evaluation and concluded that, due to the fact that the assumed discharge concentration of ammonia will be quickly diluted to a concentration that will result in no observable effect to listed fish species, the fact that the discharge flow rate is very small relative to the river flow, and the due to the several conservative assumptions employed in the evaluation of the effects of ammonia in the discharge, the discharge of ammonia authorized by the subject permit will result in insignificant or discountable effects to listed fish species. Therefore, EPA determines that the discharge of ammonia from the WSKR WWTP may affect, but is not likely to adversely affect listed fish species. Ammonia will be

monitored in the discharge and the receiving waters throughout the permit cycle and potential effects of ammonia in the discharge will be reevaluated during the permit renewal period. For more information, see the revised biological evaluation (EPA 2007).

Comment #10

NOAA Fisheries was not able to submit detailed comments during the public comment period, but stated that its initial findings indicates that NOAA would need some additional information to fully understand the proposed action and subsequent effects to Middle Columbia River steelhead.

Response #10

On September 17, 2007, EPA provided NOAA Fisheries and USFWS with a revised biological evaluation which provides additional information requested by NOAA Fisheries. See also the response to comments 5, 6, 7, 8, and 9. For more information, see the revised biological evaluation (EPA 2007).

References

EPA. 2007. *Biological Evaluation for a National Pollutant Discharge Elimination System Permit for the Warm Springs Kah-Nee-Ta Wastewater System*. US EPA Region 10. Office of Water and Watersheds. June 2007. Revised September 2007.