

Central Valley Regional Water Quality Control Board
16/17 April 2015 Board Meeting

Response to Comments
for the
Nevada County Sanitation District No. 1
Lake of the Pines Wastewater Treatment Plant
Tentative Waste Discharge Requirements

The following are Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (NPDES Permit) for Nevada County Sanitation District No. 1's Lake of the Pines Wastewater Treatment Plant, Nevada County.

The tentative NPDES Permit was issued for a 30-day public comment period on 21 January 2015 and comments were due 20 February 2015.

The Central Valley Water Board received comments regarding the tentative NPDES Permit by the due date from the following interested parties:

- California Sportfishing Protection Alliance (CSPA)
- Central Valley Clean Water Association (CVCWA)

The submitted comments were accepted into the record, and are summarized below, followed by Central Valley Water Board staff responses. The commenter also submitted attachments that have been accepted into the record and are listed below after the comments and responses.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

Request for Designated Party Status. CSPA requested designated party status for the Central Valley Water Board hearing scheduled for 16 and 17 April 2015 with regard to the proposed renewal of the NPDES Permit for the Nevada County Sanitation District No. 1, Lake of the Pines Wastewater Treatment Plant. The commenter will be granted designated party status for the subject hearing.

CSPA, Comment No. 1.

CSPA contends that the Fact Sheet contains an inadequate description of the wastewater treatment plant and is therefore insufficient to defend inclusion of technology and water quality based discharge limitations or defend any decisions based on best professional judgment.

Response: The Lake of the Pines Microfiltration Membrane Bioreactor wastewater treatment system consistently produces very high quality effluent as shown in *Table F-2. Historical Effluent Limitations and Monitoring Data*, with daily discharges of BOD, total suspended solids, ammonia, nitrate and nitrite from May 2009 to March 2014 below the more stringent average monthly effluent limitations. To further demonstrate the consistency of this treatment system, between May 2009 and March 2014 pH only ranged from 7.10 to 7.57. Central Valley Water Board staff revised the treatment system description to provide clarity to the treatment process. The proposed Order was modified, as shown in underline/strikethrough format below:

A. Description of Wastewater and Biosolids Treatment and Controls

The Microfiltration Membrane Bioreactor (MBR) treatment system at the Facility consists of a headworks with coarse screening followed by fine screening. The structures following the screening consist of the biological processes where BOD reduction, nitrogen removal, phosphorus removal and solids separation occurs. The first structure is the denitrification basin with an anoxic zone to remove nitrates. Following the denitrification basin the waste stream enters the aeration basins to remove ammonia. Nitrate from the aeration basin is returned to the influent of the of the denitrification basin. The waste stream from the aeration basin then enters the membrane tanks for further mixing and thickening prior to treatment with the membrane filters. ~~treatment and filtration portion of the system consists of treatment tanks used for BOD reduction, nitrogen removal, phosphorus removal and solids separation.~~ Solids separation is accomplished using a 0.4 microns pore size a Microfiltration Membrane Bioreactor (MBR) system (0.4 microns pore size) that is immersed in the activated sludge mixed liquor. To maintain the solids balance the wasting pumps are used to pull of extra solids and older biological material to the digester for thickening and dewatering. Treated effluent is pumped through the membranes by vacuum created by a series of permeate pumps. The MBR system provides the required tertiary treatment with effluent turbidities less than 1 NTU. The biological treatment system is configured in two identical parallel treatment trains so that a single train can be taken off-line for maintenance during the dry months of the year. The disinfection portion of the system uses ultraviolet light (UV) disinfection.

Scum and waste activated sludge produced from waste material in the MBR tanks is digested in the aerobic sludge digesters followed by centrifuge dewatering. The dewatered sludge is taken off-site for disposal in a landfill.

CSPA, Comment No. 2.

CSPA contends that the proposed Order finds there is reasonable potential for the discharge to cause or contribute to an exceedance of the Primary Maximum Contaminant Level (MCL) for nitrate plus nitrite as follows, "The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, if untreated, will be harmful to fish and will violate the Basin Plan's narrative toxicity objective. This Order, therefore, requires removal of ammonia (i.e., nitrification). Nitrification is a biological process that converts ammonia to nitrate and

nitrite, and will result in effluent nitrate concentrations above the Primary MCL for nitrate plus nitrite... Reasonable potential for nitrate and nitrite therefore exists and WQBEL's are required." CSPA comments that the proposed Order inexplicably does not make the same finding of reasonable potential for nitrite. CSPA contends that reasonable potential should be found for nitrite based on the type of the facility in the same manner as nitrate plus nitrite, and the proposed Order should include an individual nitrite effluent limit based on the Primary MCL for nitrite.

Response: Central Valley Water Board staff does not concur that an individual nitrite effluent limit is required. The nitrification and denitrification process is a natural multistep biological oxidation/reduction process utilized at wastewater treatment facilities to convert inorganic nitrogen compounds in domestic wastewater (i.e., ammonia, nitrite, and nitrate) to nitrogen gas. Nitrification refers to a two-step oxidation of ammonia (NH_4^+) to nitrite (NO_2) and nitrite to nitrate (NO_3). Denitrification is the reduction of nitrate into nitrogen gas (N_2). The proposed Order includes an effluent limitation for nitrate plus nitrite, because the Facility is required to nitrify the wastewater to remove ammonia. The nitrification of ammonia results in nitrate concentrations that would exceed the Primary MCL for nitrate plus nitrite if the Facility does not adequately denitrify. This same rationale cannot be made for nitrite, because the conversion of ammonia to nitrite is an intermediate step and in the conversion to nitrate during the nitrification process. Inorganic nitrogen in the form of nitrite is unstable and will readily convert to nitrate. Therefore, for nitrite the reasonable potential analysis was conducted based on evaluating effluent nitrite data. The maximum effluent nitrite concentration was 0.14 mg/L based on 217 samples collected between November 2010 and March 2014, which does not exceed the Primary MCL (i.e., 1 mg/L nitrite as N). Reasonable potential for nitrite does not exist as documented in Attachment F – Fact Sheet section IV.C.3.a.i.(b) which concludes, *“Therefore, nitrite in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL, and the effluent limitation for nitrite has not been retained in this Order.”* Nitrite monitoring has been retained in the proposed Order and during the next permit renewal this data will be reviewed to determine if an individual nitrite limit is required or not.

CSPA, Comment No. 3.

CSPA contends that the tentative Permit allows for a monthly averaging period for the receiving water temperature limitation contrary to the Basin Plan.

Response: Page III-8.00 of the Basin Plan, Water Quality Objective for Temperature, states in part that: *“The natural receiving water temperature of intrastate water shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses”* and that *“[i]n determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided*

the beneficial uses will be fully protected.” Central Valley Water Board staff solicited input from the California Department of Fish and Wildlife (DFW) on whether a one-month averaging period for the temperature receiving water limitation was appropriate as requested by the Discharger. In a 26 June 2014 email to the Central Valley Water Board, DFW was in agreement with using a one-month averaging period for receiving water temperature limitation as long as receiving water temperature monitoring occurs during the hottest part of the day, where the high water temperatures are the most threatening to aquatic life. In a follow up email on 26 June 2014 DFW agreed to weekly monitoring of the receiving water. The proposed Order requires the Discharger to monitor the receiving water temperature between noon and 6:00 p.m. to comply with this. In addition, the proposed Order was modified, as shown in underline format below, to include discussion of the DFW approval of the receiving water temperature limitation.

- b. **Temperature.** Order R5-2009-0031 included an effluent limitation for temperature based on the Basin Plan objective, which requires that discharges shall not cause *“The natural temperature to be increased by more than 5°F.”* This Order allows for a 1-month averaging period, which should account for short-term intermittent temperature changes attributed to natural stream effects such as upstream dam releases. The Central Valley Water Board contacted the Department of Fish and Wildlife (DFW) to determine if a 1-month receiving water averaging period was protective of aquatic life. DFW, in a 26 June 2014 email to the Central Valley Water Board, was in agreement that a 1-month receiving water averaging period was protective of aquatic life as long as the receiving water monitoring occurred during the hottest part of the day, when water temperatures are the most threatening to aquatic life.

CSPA, Comment No. 4.

CSPA contends that the proposed Order does not contain effluent limitations for chronic toxicity; therefore, not complying with 40 C.F.R. section 122.44 (d)(1)(i) and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP).

Response: The Central Valley Water Board staff does not concur. The chronic toxicity issue was addressed in State Water Board Water Quality Order (WQO) 2008-0008 (City of Davis) adopted on 2 September 2008, and WQO 2003-0012 (Los Coyotes). With regard to the need for a numeric chronic toxicity effluent limit, WQO 2008-0008 states, *“We have already addressed this issue in a prior order and, once again, we conclude that a numeric effluent limitation for chronic toxicity is not appropriate at this time.”*

Consistent with State Water Board Orders and the SIP, the permit contains an appropriate narrative effluent limitation for chronic toxicity. The State Board Orders, however, do not explain how to determine compliance with the limitation. For this reason, the SIP and the State Water Board Orders rely on toxicity reduction/toxicity

identification (TRE/TIE) requirements to ensure that a discharge does not cause or contribute to toxicity.

The proposed Order states on page F-31 of the Fact Sheet section IV.C.5.b.

... Chronic toxicity to *C. Dubia* was observed in one of nine semi-annual samples. However, the Discharger conducted four subsequent accelerated monitoring tests, all of which indicated that there is no chronic toxicity present in the effluent. The treatment system is a MBR that produces high quality effluent that is low in ammonia, nitrates, and other nutrients as is evident by the Discharger not exceeding their ammonia, nitrite and nitrate plus nitrite effluent limits over the previous permit term.

The Monitoring and Reporting Program of this Order requires annual chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, the Special Provision in section VI.C.2.a of the Order includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for Toxicity Reduction Evaluation (TRE) initiation if toxicity is demonstrated.

During the TRE/TIE process, the Discharger is subject to the acute toxicity effluent limitation and a chronic toxicity receiving water limitation. (Permit, section V.A.16.) Taken together, these provisions require the Discharger to promptly address any newly-discovered chronic toxicity, or the Discharger will be in violation of the permit. This is consistent with the State Water Board's permitting approach for chronic toxicity.

CSPA, Comment No. 5.

The Central Valley Water Board should require a full assessment of the possible water quality impacts of peracetic acid addition before allowing it to be added to the effluent.

Response: The Central Valley Water Board staff does not concur. EPA previously approved peracetic acid (PAA) as a wastewater disinfectant as documented in the Office of Wastewater Management, U.S. Environmental Protection Agency's March 2013 publication titled *Emerging Technologies for Wastewater Treatment and In-Plant Wet Weather Management*, pages 2-26. This is one of 10 documents Central Valley Water Board staff reviewed in order to fully assess the water quality impacts related to the use of PAA in wastewater treatment. The 10 reviewed documents include:

- [1] Gehr R, Wagner M, Veerasubramanian P, Payment P. Disinfection efficiency of peracetic acid, UV, and ozone after enhanced primary treatment of municipal wastewater. *Water Research* 37 (2003) 4573-4586
- [2] Kitis M, Disinfection of wastewater with peracetic acid: a review. *Environmental International* 30 (2004) 47-55

- [3] Koivunen J, Heinonen-Tanski H. Inactivation of enteric microorganisms with chemical disinfectants, UV irradiation and combined chemical/UV treatments. *Water Research* 39 (2005) 1519-1526.
- [4] Coyle E, Ormsbee L, Brion G. Peracetic Acid as an Alternative Disinfection Technology for Wet Weather Flows. August 2014.
- [5] Disinfection Task Force. Evaluation of Disinfection Technologies for the Calumet and North Side Water Reclamation Plant, Technical Memorandum 1. 12 December 2011.
- [6] U.S. EPA, Alternative Disinfection Methods Fact Sheet: Peracetic Acid, September 2012.
- [7] Gori R, Caretti C. Experimental study on municipal and industrial reclaimed wastewater refinement for agricultural reuse. 2008
- [8] Bell K, Sun J, Thompson, A. Evaluating Acidic Disinfection. July 2013, *Water & Wastes Digest*.
- [9] U.S. EPA, Chapter 2. Physical/Chemical Treatment Processes, *Emerging Technologies for Wastewater Treatment and In-Plant Wet Weather Management*, March 2013
- [10] U.S. EPA, Alternative Disinfection Peracetic Acid, Addendum *Emerging Technologies for Wastewater Treatment and In-Plant Wet Weather Management*, August 2013

Based on review of these documents, Central Valley Water Board staff recommends the use of PAA as an additive to UV disinfection. However, Central Valley Water Board staff has not included a final effluent limit for PAA because there are currently no criteria for PAA that can be used to establish a limit.

As for toxicity caused by PAA, the document *Emerging Technologies for Wastewater Treatment and In-Plant Wet Weather Management* also states that “PAA does not affect wastewater toxicity, so need not be removed as with chlorine.” If the Discharger adds PAA to the treatment stream, it will be added upstream of the UV disinfection system to supplement disinfection and not be the primary method of disinfection. With PAA being strongly reactive as cited by CSPA and added in small doses prior to UV disinfection, the probability of PAA discharge to Magnolia Creek is much less than if PAA was used as the only disinfectant. The proposed Order requires daily PAA monitoring and annual acute and chronic toxicity monitoring that Central Valley Water Board staff believe are adequate for protecting the beneficial uses of Magnolia Creek. CSPA is concerned about low pH caused by PAA since it is an acid; however, the proposed Order includes an instantaneous minimum pH effluent limit of 6.5 to protect Magnolia Creek that must be met during plant discharge, which prevents pH levels from dropping below 6.5 where metals can more readily convert from total concentrations to the more toxic dissolved form. Furthermore, the Discharger is using PAA only as a supplement to UV disinfection not a replacement so this should minimize the acid effects of PAA addition.

CSPA, Comment No. 6.

CSPA contends that the proposed Order is based on an incomplete Report of Waste Discharge and does not include a full reasonable potential analysis because only seven pollutants are included in the Reasonable Potential Analysis, Attachment H.

Response: The Central Valley Water Board staff does not concur. The Discharger submitted a complete Report of Waste Discharge on 10 September 2013. A complete reasonable potential analysis was performed by the Central Valley Water Board as is documented in the proposed Order. Page F-17 of the Fact Sheet section IV.C.3.a Constituents with No Reasonable Potential specifically states:

WQBEL's are not included in this Order for constituents that do not demonstrate reasonable potential (i.e., constituents were not detected in the effluent or receiving water); however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

Most constituents with no reasonable potential are not discussed in this Order. All constituents with effluent limits remain from Order R5-2009-0031, with the exception of nitrite.

The Fact Sheet further discusses reasonable potential for previous effluent limits that are no longer required, data that is inconclusive, and constituents where effluent limits need to be carried forward in the proposed Order or there is a requirement for new effluent limits. The reasonable potential analysis spreadsheet includes all the constituents reviewed as part of the analysis is included in the Administrative Record presented to the Board.

CSPA, Comment No. 7.

CSPA contends that the proposed Order establishes effluent limitations for metals based on the hardness of the effluent (48 mg/L) as opposed to the lower upstream receiving water hardness (44 mg/L) as required by the California Toxics Rule (CTR).

Response: Central Valley Water Board staff does not concur. The proposed Order has established the CTR criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP)¹ and the CTR². The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness,

¹ The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.

² The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO₃), or less, the actual ambient hardness of the surface water must be used.

respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR 131.38(c)(4).) The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones.¹ Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years (7Q10).²

Magnolia Creek is an ephemeral stream, therefore, under design conditions Magnolia Creek is effluent dominated with no receiving water flow. Under these design conditions, the reasonable worst-case ambient hardness is 48 mg/L (as CaCO₃), which is the downstream receiving water hardness based on the minimum observed effluent hardness. CSPA contends that in the SRCSD Decision the Sacramento Superior Court rejected this methodology for calculating hardness-dependent metals criteria for effluent dominated receiving waters. We disagree. The SRCSD decision concerned the Sacramento River, which is not an effluent dominated stream. The Court discussed the differences between the Sacramento River and an effluent-dominated stream.³ The Court stated (on page 10 of the SRCSD Decision):

[T]he facts of the Deer Creek case were significantly different from the facts of this case [effluent discharge to the Sacramento River]. Specifically, Deer Creek is a stream of highly variable flow that "... is, under dry conditions, an effluent dominated stream", in which "the 'worst-case' downstream hardness happens to be the same as the effluent hardness." In other words, under certain regularly-occurring dry conditions, the effluent is, in effect, the ambient surface water. Thus, it was reasonable to use the effluent hardness as a measure of a realistic "worst-case" scenario to ensure "that effluent limitations will be fully protective under all flow conditions."

Ambient surface water conditions in Magnolia Creek, an effluent dominated stream, are similar to conditions discussed by the Court in the Deer Creek case. Both streams are effluent dominated streams and not similar to Sacramento River, which is not an effluent dominated waterbody. The Central Valley Water Board correctly used the reasonable worst-case ambient downstream hardness value for Magnolia Creek under design conditions. The CTR criteria based on this actual ambient hardness value will be fully protective under all flow conditions (see Table F-5 of proposed Order).

¹ 40 CFR 131.38 (c)(4)(ii)

² 40 CFR 131.38 (c)(4)(iii) Table 4

³ *California Sportsfishing Protection Alliance v. California Regional Water Quality Control Board, Central Valley Region*, Sacramento Superior Court Case No. 34-2009-80000309) (EID Deer Creek Decision) *California Sportsfishing Protection Alliance v. California Regional Water Quality Control Board, Central Valley Region*, Sacramento Superior Court Case No. 34-2013-80001358) (SRCSD Decision)

CSPA, Comment No. 8.

CSPA contends that the proposed Order does not include an effluent limitation for cyanide despite data showing reasonable potential to exceed the cyanide water quality standard. CSPA contends that the cyanide is a product of legacy mining; therefore, it is possible for cyanide to be present in the wastewater.

Response: Central Valley Water Board staff does not concur. Using current EPA approved total cyanide analytical methods has shown to produce false positives in wastewater effluent samples caused by the creation of cyanide precursors during disinfection (from both chlorination and UV disinfection) and analytical interferences. In particular, the use of sodium hydroxide to preserve samples has itself shown to be an interferent for which there are no specific mitigation techniques. These findings have been documented in a white paper titled *Problems Associated with Using Current EPA Approved Total Cyanide Analytical Methods for Determining Municipal Wastewater Treatment Plant NPDES Permit Compliance* by Ben Giudice, M.S., Brant Jorgenson, and Michael Bryan. All samples collected by the Discharger were preserved with sodium hydroxide; therefore, they are subject to the possibility of sodium hydroxide interference with total cyanide analytical results.

The collection system for Lake of the Pines is directly connected to residences and business and does not receive storm water runoff. There are no known discharges to the collection system from gold mining operations that use cyanide in their gold processing activities. Also, on the days that analytical results in question exceeded the criterion (6 January 2011 and 10 April 2013) there was no measurable precipitation in the area on that day or the previous day that could have caused cyanide from the historical gold mines to have infiltrated into the collection system.

For the above mentioned reasons, Central Valley Water Board staff has determined that there is insufficient data to determine if there is reasonable potential present for cyanide and are proposing to continue quarterly monitoring for cyanide. During the next permit renewal, cyanide data will be reviewed once again to determine if there is reasonable potential present to require a cyanide effluent limit. Also, during the upcoming permit term, if cyanide concentrations are consistently above the cyanide criterion the Central Valley Water Board may reopen the Order at any time to add a final effluent limit for cyanide. Attachment F, section IV.C.3.b.i.(b), paragraph two of the proposed Order was modified, as shown in underline/strikeout format below, to further document the causes of analytical false positives for cyanide.

- (b) The two detections above the chronic criterion did not occur back-to-back but were separated by nine quarterly sampling events; therefore, there is not a consistent source of cyanide. The two detections above the chronic criterion occurred during different months, therefore the source is most likely not seasonal. However, the Discharger is required to use sodium hydroxide to preserve cyanide samples because of the required hold time, where sodium hydroxide has shown to be a cyanide interferent and most likely the

~~preservative is causing false positives, as has been demonstrated in the white paper titled *Problems Associated with Using Current EPA Approved Total Cyanide Analytical Methods for Determining Municipal Wastewater Treatment Plant NPDES Permit Compliance* by Ben Giudice, M.S., Brant Jorgenson, and Michael Bryan by other dischargers with similar facilities. This white paper also documented that the creation of cyanide precursors during disinfection (from both chlorination and UV disinfection) can cause false positives for the presence of cyanide.~~ Furthermore, the collection system that feeds the Facility collects wastewater from approximately 6,900 residents and no industrial users, so if cyanide is present it is not from an industrial source.

CSPA, Comment No. 9.

CSPA contends that the proposed Order includes a reasonable potential analysis that does not include data collected on 7 November 2012 during filter membrane cleaning and that all data should be used in a reasonable potential analysis including this sample.

Response: Central Valley Water Board staff does not concur. The 7 November 2012 effluent sample was inadvertently collected while the Discharger was performing routine cleaning of the membrane bioreactor (MBR) filters. As part of the cleaning process the Discharger uses bleach to clean the MBR filters. To prevent chlorine or other untreated pollutants from being discharged to Magnolia Creek during and after the completion of the cleaning process the Discharger routes the treated waste stream through the effluent bypass line to the storage ponds, where it can be routed to the headworks to be retreated until the chlorine monitor detects zero mg/L of chlorine. The Discharger cannot directly discharge to Magnolia Creek via any of the four storage ponds at their facility and must route the water through the treatment system prior to discharge to Magnolia Creek.

Central Valley Water Board staff does not agree that the sample on 7 November 2012 represents the effluent of the treatment plant; rather it represents the constituents being removed by the MBR filters. Attachment F, section IV.C.2.b, paragraph two of the proposed Order was modified, as shown in underline/strikeout format below, to further clarify that chlorine was not the cause of the false presence of antimony, bis (2-ethylhexyl) phthalate, carbon tetrachloride, chloroform, dichlorobromomethane, and mercury, rather that the sample was of the filtered material removed by the MBR filters and chlorine containing compounds.

SIP section 1.2 states that the Central Valley Water Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP. The Discharger collected a fourth quarter priority pollutant effluent sample on 7 November 2012 during the time that they were cleaning the MBR with bleach and diverting the discharge to Pond 1. The Discharger regularly cleans the MBR overnight and the following day the plant effluent is diverted through the effluent bypass line to the storage ponds until the effluent chlorine monitor detects zero mg/L of chlorine. By

collecting a sample during ~~this~~ the MBR cleaning process the analytical results do not represent the effluent of the Facility, rather the sample represents the constituents being removed by the MBR during the cleaning process as some of the residual sludge attached to the MBRs sloughs off as the MBRs are manually removed. Then the chlorine compounds are introduced as part of the cleaning process. Therefore the sample collected on 7 November 2012 contained elevated constituent concentrations of the following above their respective criterion: antimony, bis (2-ethylhexyl) phthalate, carbon tetrachloride, chloroform, dichlorobromomethane, and mercury is not representative of the Facility's typical functional capabilities and was not considered in the RPA. The remaining three quarterly priority pollutant samples for these constituents were below their respective criterions, demonstrating that there is no reasonable potential to exceed the respective criterion for these constituents during Facility discharge. ~~Therefore, effluent data collected on 7 November 2012 is not representative of the Facility's typical functional capabilities and was not considered in the RPA for evaluating antimony, bis (2-ethylhexyl) phthalate, carbon tetrachloride, chloroform, dichlorobromomethane, and mercury.~~

CSPA, Comment No. 10.

CSPA contends that the Central Valley Water Board failed to justify mussels are absent when calculating the ammonia effluent limitations using U.S. EPA's Recommended 2013 Ammonia Criteria.

Response: Central Valley Water Board staff does not concur. The proposed Order calculated the U.S. EPA's Recommended 2013 Ammonia Criteria with the assumption that mussels are not present for several reasons. Magnolia Creek is an ephemeral stream that would not support mussels because of the absence of year round flow and the diurnal temperature fluctuations in the stream when there is little or no flow present. The discharge conditions at the Lake of the Pines Facility is similar to discharge conditions at the Discharger's Lake Wildwood Facility, which discharges to Deer Creek an ephemeral stream at a similar elevation and location in the Sierra Foothills. The Sierra Streams Institute has been sampling macroinvertebrates twice per year at 15 sites on Deer Creek for the past 15 years and has not identified mussels as being present in Deer Creek (26 January 2015 e-mail from Joanne Hild of Sierra Streams Institute to Britt Bolerjack of Nevada County Sanitation District No. 1). In the report prepared by The Nature Conservancy, *Sensitive Freshwater Mussel Surveys in the Pacific Southwest Region: Assessment of Conservation Status* (published August 2010), the study does not contain any survey information indicating mussels present in Magnolia Creek.

Following the issuance of the Notice of Public Hearing on 21 January 2015, the Central Valley Water Board issued a supplemental notice to inform the public and interested persons that studies are currently underway to determine how the 2013 Criteria can be implemented in the Central Valley Region. The Board has initiated a Basin Planning effort to adopt nutrient and ammonia objectives. The Central Valley Water Board is performing the Basin Planning effort in part for ammonia because

U.S. EPA's 2013 Criteria update to the 1999 Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including new toxicity data on sensitive freshwater mussels in the Family Unionidae, the species tested for development of the 2013 Criteria may not be present in some Central Valley waterways. The 2013 Criteria document therefore states that, "*unionid mussel species are not prevalent in some waters, such as the arid west ...*" and provides that, "*In the case of ammonia, where a state demonstrates that mussel are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.*"

The Central Valley Water Board's Basin Plans set narrative water quality objectives for toxicity that prohibit the discharge of substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. To interpret these narrative objectives, the Central Valley Water Board often relies upon USEPA's nationally-recommended criteria, using these criteria to develop water quality-based effluent limits to regulate the discharge of ammonia. The permit, as initially proposed, included ammonia effluent limitations calculated using the 2013 Criteria. However, at the 16/17 April 2015 Board meeting, the Central Valley Water Board will consider adopting permits that contain ammonia effluent limits based on the 1999 Criteria instead of the 2013 Criteria for the reason stated above.

CENTRAL VALLEY CLEAN WATER ASSOCIATION (CVCWA) COMMENTS

CVCWA, Comment No. 1.

CVCWA requests the following change to section VI.C.3.a. on page 14 of the proposed Order shown in underline/strikeout format, "The Discharger shall provide annual reports demonstrating the reasonable progress in the implementation of the salinity evaluation and minimization plan~~reduction of salinity in its discharge to Magnolia Creek.~~" on page 14 of the proposed Order. CVCWA contests that the proposed Order language implies that the Discharger must show reductions in salinity in order to comply with the minimization plan requirement rather than using the salinity plan as a tool to identify and develop measures to address salinity sources.

Response: Central Valley Water Board staff concurs and has modified the language as proposed.

CENTRAL VALLEY WATER BOARD STAFF (STAFF) CHANGES

Staff Change No. 1.

The turbidity filtration system operation specifications included in the tentative Order were for a granular media filtration system; however, the Lake of the Pines WWTP has a membrane filtration system. Therefore, section VI.C.4.a. of the proposed Order was modified, as shown in underline format below and throughout the proposed Order as appropriate:

- a. **Filtration System Operating Specifications.** To ensure the filtration system is operating properly to provide adequate disinfection of the wastewater, the turbidity of the filter effluent measured at Monitoring Location FIL-001 shall not exceed:
 - i. ~~2 NTU as a daily average;~~0.2 NTU more than 5 percent of the time within a 24-hour period; and
 - ii. ~~5 NTU more than 5 percent of the time within a 24-hour period; and~~0.5 NTU, at any time.
 - iii. ~~10 NTU, at any time.~~

However, after routine cleaning of the filter membranes, the membranes must build up a layer of sludge/biofilm to increase filtration efficiency. Thus upon start-up of the filtration system, the turbidity measures above the 0.5 NTU requirement for a short period of time, generally less than one hour. Therefore, the following language has been added to section VII. Compliance Determination in underline format below:

- G. **Turbidity Filtration System Operating Specifications (Section VI.C.4.a).**
Compliance with the filtration system operating specifications for turbidity required in Construction, Operating Specifications provision VI.C.4.a shall be maintained while the filter is in operation. When reporting the measured turbidity of the filter effluent the Discharger shall indicate the time and date the filter was taken off-line for maintenance activities and the time and date the filter was brought back on-line. The Discharger shall achieve compliance with Provision VI.C.4.a within one hour of the filter being brought back on-line. During the hour the filter is being brought back on-line the measured turbidity of the filter effluent shall not exceed 2 NTU at any time.

Staff Change No. 2.

Central Valley Water Board staff removed “Number of UV banks in operation” and “UV Dose” parameters from Table E-8 Filtration System and UV Disinfection System Monitoring Requirements. These monitoring requirements were inadvertently left in the proposed Order and are no longer required. Attachment E, Table E-8 Filtration System and UV Disinfection System Monitoring Requirements of the proposed Order was modified, as shown in strikeout format below, to remove the unnecessary monitoring requirements and associated footnote.

Table E-8 Filtration System and UV Disinfection System Monitoring Requirements

Parameter	Units	Sample Type	Monitoring Location	Minimum Sampling Frequency
Flow	MGD	Meter	UVS-001	Continuous ¹
Turbidity	NTU	Meter	FIL-001	Continuous ^{1,2}
Number of UV banks in operation	Number	Observation	N/A	Continuous ⁴
UV Transmittance	Percent (%)	Meter	FIL-001	Continuous ¹
UV Dose ³	mJ/cm ²	Calculated	N/A	Continuous ⁴
Total Coliform Organisms	MPN/100 mL	Grab	UVS-001	2/Week

¹ For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation. If analyzer(s) fail to provide continuous monitoring for more than two hours and influent and/or effluent from the disinfection process is not diverted for retreatment, the Discharger shall obtain and report hourly manual and/or grab sample results. The Discharger shall not decrease power settings or reduce the number of UV lamp banks in operation while the continuous analyzers are out of service and water is being disinfected.

² Report daily average and maximum turbidity.

³ Report daily minimum hourly average UV dose and daily average UV dose. The minimum hourly average dose shall consist of lowest hourly average dose provided in any channel that had at least one bank of lamps operating during the hour interval. For channels that did not operate for the entire hour interval, the dose will be averaged based on the actual operation time.