

Central Valley Regional Water Quality Control Board
3/4 May 2007 Board Meeting
ITEM # 18

Response to Comments for the Mountain House Community Services District
Mountain House CSD Wastewater Treatment Plant
Tentative Waste Discharge Requirements

The following are Regional Water Quality Control Board, Central Valley Region (Regional Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (NPDES Permit No. CA) and Time Schedule Order (Orders) for the Mountain House Community Services District Wastewater Treatment Plant. Public comments regarding the proposed Orders were required to be submitted to the Regional Water Board by 20 April 2007 in order to receive full consideration.

The Regional Water Board received comments regarding the tentative Orders by the deadline from the Mountain House Community Services District, California Sportfishing Protection Alliance, Environmental Law Foundation and South Delta Water Agency. Many of the comments were regarding factual errors or typographical errors. The significant comments are summarized below, followed by staff responses.

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT (MHCS D) COMMENTS

MHCS D – COMMENT #1. Page 3, Facility Design Flow The tentative order states that the design flow is 3.0/5.4 million gallons per day (mgd). The facility design flow description needs to be clarified by adding that it is based on average dry weather flow (“ADWF”). Without the clarification and addition of ADWF, the permit implies that the design flow is limited to 3.0/5.4 mgd as a static number under all circumstances. The correction should be made throughout the permit wherever the facility design flow is discussed or identified.

RESPONSE: Clarification of the facility design flow has been proposed as a late revision.

MHCS D – COMMENT #2. Page 10, Final Effluent Limitations, Iron The tentative order proposes a final effluent limitation that is 300 µg/L as a daily maximum. The application of the iron effluent limitation as a daily maximum is not appropriate because the iron limitation is based on a taste and odor standard, not a human health or aquatic life objective. For this reason, the iron limitation should be applied as a long-term average instead of a daily maximum. Furthermore, a determination of assimilative capacity should be based on an evaluation of dissolved iron data, not total iron. The fact sheet should be revised to reflect this. The District requests that the time schedule order be revised to include the potential development of a translator for iron to replace the currently applied default translator of 1.0 that translates the dissolved iron objective into a total effluent limitation.

Response to Comments for the Mountain House Community Services District
Mountain House CSD Wastewater Treatment Plant
Tentative Waste Discharge Requirements

RESPONSE: The effluent limitations for iron are based on the Basin Plan site-specific water quality objectives for the Delta and are expressed as a maximum concentration. Therefore, the effluent limitations for iron are expressed as maximum daily effluent limitations in the tentative Order to implement the objective. It states in the Fact Sheet that the water quality objectives for iron are expressed as dissolved metals, so the suggested changes are unnecessary. A late revision is proposed to add a reopener provision to allow the permit to be reopened in the event the Discharger performs a metal translator study that would require modifications of the effluent limitations for iron.

MHSCD – COMMENT #3. Page 11, Final Effluent Limitations, EC The Discharger does not support the final effluent limitation for EC as contained in the tentative permit. As proposed in the permit, the District is subject to final limits of 700 $\mu\text{mhos/cm}$ (April 1 to August 31) and 1000 $\mu\text{mhos/cm}$ (September 1 to March 31) unless the District implements measures to meet an interim goal of 500 $\mu\text{mhos/cm}$ over source water; and participates financially in the development of the Central Valley Salinity Management Plan. The District is concerned that compliance with the effluent limitations is a subjective interpretation by the Executive Officer, and that the amount of financial participation in the development of the Central Valley Salinity Management Plan is open-ended and undisclosed.

The District has reviewed Enclosure 1 – Salinity Control Options and considers Option 1 to be the most appropriate. Option 1 includes effluent limitations as a finding but not as an enforceable limit. However, the District requests revisions to the finding that clarify how EC effluent limitations are dealt with in the future.

RESPONSE: Attachment A provides a detailed analysis of the compliance and permitting issues with respect to salinity. The Regional Water Board has several options to consider.

MHSCD – COMMENT #4. Page 14, Interim Effluent Limitations The District states that because the effluent limitations for iron and Group A pesticides are new limitations that are based on Basin Plan water quality objectives, their compliance schedules should be in the permit and not in the TSO.

RESPONSE: The water quality objective for iron is an existing numeric objective in the Basin Plan that was adopted more than ten years ago, therefore, the compliance schedule cannot be included in the permit. However, for pesticides, the Basin Plan contains a prohibition against causing detectable concentrations

Central Valley Regional Water Quality Control Board
3/4 May 2007 Board Meeting
ITEM # 18

Response to Comments for the Mountain House Community Services District
Mountain House CSD Wastewater Treatment Plant
Tentative Waste Discharge Requirements

of persistent organochlorine pesticides in the receiving waters. This “non-detect” standard has been in the Basin Plan more than ten years, but the laboratory analytical tests for measuring these chemicals have changed, allowing detection of ever-lower concentrations. The lower detection levels is a “new interpretation” of the non-detect standard, therefore, staff agree that the time schedule for Group A pesticides should be placed in the permit. A late revision is proposed to remove the time schedule from the TSO and place it in the permit.

MHSCD – COMMENT #5. Page 23, iii Numeric Triggering Monitor. The District requests that the parenthetical “*where TUC = 100/NOEC*” be edited to read “*where TUC = 100/NOEC or 100/IC25*” consistent with how this section reads for the Town of Windsor Region 1 NPDES permit.

RESPONSE: Regional Water Board staff have used the No Observed Effect Concentration (NOEC) to calculate chronic toxic units, because the NOEC endpoint represents no toxicity. This is consistent with how staff interpret the Basin Plan’s narrative toxicity objective and how it has been implemented in the Regional Water Board’s regulatory programs. The point estimate, IC₂₅, assumes that some level of toxicity is acceptable. The selection of an acceptable level of toxicity to ensure compliance with the narrative toxicity objective is not consistent with how staff interprets the narrative toxicity objective.

MHSCD – COMMENT #6. Page 20, Reopener Provisions C1f Dilution Credits The District requests the following language modifications:

“...the Discharger has not provided adequate information for the allowance of dilution credits., most importantly, real-time flow monitoring data in the vicinity of the discharge. Should adequate data be developed and provided to RWQCB staff, a real-time flow monitoring station be installed in the vicinity of the discharge, and if this information real-time flow monitoring data from the station and supporting mathematical modeling analysis demonstrates that sufficient dilution flows are available in Old River, this Order may be reopened to allow dilution credits based on the real-time flow monitoring data.”

RESPONSE: A late revision has been proposed with the suggested changes to the reopener provision.

Response to Comments for the Mountain House Community Services District
Mountain House CSD Wastewater Treatment Plant
Tentative Waste Discharge Requirements

MHSCD – COMMENT #7. Page 26, Salinity Reduction Goal The District points out that the 1000 µmhos/cm EC goal is not consistent with the final limit approach of background + 500.

RESPONSE: Attachment A provides a detailed analysis of the compliance and permitting issues with respect to salinity. The Regional Water Board has several options to consider.

MHSCD – COMMENT #8. Page 27.a.ii. Discharge Flow Expansion (Phase III) and III request for increase. As currently drafted, the discharge flow cannot be increased from 3.0 to 5.4 mgd unless the District is compliant with the final effluent limitations for aluminum, regardless of the compliance schedule for aluminum and other constituents contained in the Order and the TSO. The District does not support the provision requiring compliance with these final effluent limitations for an increase in permitted discharge flow and states that the decision to allow the increase in discharge is unrelated to compliance with the final effluent limitations.

RESPONSE: The compliance date for meeting the final effluent limitations for aluminum is 30 April 2012. The interim effluent limitations for aluminum apply in lieu of the final effluent limitations during the compliance schedule. Compliance with the final effluent limitations for aluminum is not a requirement to increase the discharge rate to 5.4 mgd.

MHSCD – COMMENT #9. Page 34 D, Average Dry Weather Flow The tentative order should be revised to reflect that average dry weather flow should be determined over three consecutive dry weather months each year.

Response: The purpose of the effluent limitation for average dry weather flow is to ensure that the Facility is operating within its design capabilities. Compliance with the average dry weather flow is defined in Section VII.D. to be based on dry weather flows. A late revision is proposed to clarify the compliance determination language by stating that that compliance with the average dry weather flow will be based on the average daily flow for three consecutive dry weather months in a calendar year, which is consistent with the design of the Facility.

MHSCD – COMMENT #10. Page 35, Group A Pesticides Effluent Limitation. The District requests the following edit:

Central Valley Regional Water Quality Control Board
3/4 May 2007 Board Meeting
ITEM # 18

Response to Comments for the Mountain House Community Services District
Mountain House CSD Wastewater Treatment Plant
Tentative Waste Discharge Requirements

The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with ~~the lowest possible detectable level for Group A Pesticides with~~ a minimum acceptable reporting level as indicated in appendix 4 of the SIP.

RESPONSE: A late revision has been proposed to make the suggested revision.

MHSCD – COMMENT #11. Attachment A, p. 1, Best Practicable Treatment or Control The District objects to the definition of Best Practicable Treatment or Control (BPTC) and suggests that Resolution 68-16 and State Policies do not currently define BPTC. The District also objects to the statement that “an exceedance of a water quality objective in the Basin Plan constitutes pollution” and states that this is not consistent with the California Water Code.

RESPONSE: Water Code section 13050(h) defines “water quality objective” as the levels of water quality constituents that are established for the reasonable protection of beneficial uses. Water Code section 13050(l)(1) defines “pollution” as an alteration of water quality by waste to a degree that unreasonably affects beneficial uses. Therefore, an exceedance of water quality objectives generally constitutes a condition of pollution.

MHSCD – Comment #12. Attachment E, p. E-8, VIII Receiving Water Monitoring Requirements A. Surface Water Monitoring The District considers that it is unnecessary to conduct receiving water monitoring for constituents that are effectively regulated via end of pipe effluent limitations, and states that this has not been required of other dischargers. The Discharger requests that the following constituents be removed from the receiving water monitoring requirements, or if the requirements remain, that they be reduced from monthly to quarterly or annually:

Ammonia (as N), Mercury (total), Mercury (methyl), Nitrate (as N), Nitrite (as N), Total Kjeldahl Nitrogen, Total Organic Carbon, Total Phosphorus, Trihalomethanes (change to chloroform)

RESPONSE: The receiving water monitoring requirements for total kjeldahl nitrogen, total organic carbon, and total phosphorus are included in the proposed Order to better understand the biostimulatory impacts of the discharge. These were included based on concerns by municipal drinking water agencies. The receiving water monitoring requirements for total mercury and methyl mercury

Response to Comments for the Mountain House Community Services District
Mountain House CSD Wastewater Treatment Plant
Tentative Waste Discharge Requirements

are necessary, due to the impairment in the south Delta near the discharge. Staff agree that the receiving water monitoring for ammonia, nitrate, and nitrite are not necessary due to end-of-pipe effluent limitations and effluent monitoring. Staff also agree that the requirement to monitor Total THMs should be changed to chloroform. Therefore, late revisions are proposed to make these changes.

MHSCD – Comment #13 Attachment E, p. E-5 V.A.1 Acute Toxicity Monitoring Frequency The District requests that monthly acute toxicity tests only be required during the first year following permit adoption, followed by quarterly testing subject to approval by the Executive Officer.

RESPONSE: Monthly acute toxicity monitoring is appropriate for the nature of the discharge. POTW influents are not consistent due to variable inputs. Therefore, in order to ensure compliance with the Basin Plan's narrative toxicity objective, monthly acute toxicity is necessary.

MHSCD – Comment #14 Detected but not Quantified. The MHSCD requests the following edits.

“With the exception of Group A Pesticides, Sample results less than the RL, but greater than or equal to the laboratory’s MDL, shall be reported as “Detected, but Not Quantified,” or DNQ. The estimated chemical concentration of the sample shall also be reported.”

The reason being that any detect, quantified or not, would be an exceedance of the Group A pesticide limitation of “ND”.

RESPONSE: It is correct that any detect, quantified or not, may be an exceedance of the Group A pesticide limitation of “ND”. Therefore, no change is necessary.

MHSCD – Comment #15 Aluminum Effluent Limitations The District suggests that because both the effluent and receiving water hardnesses are both above 91 mg/L as CaCO₃, that the US EPA's recommended 87 µg/L chronic aquatic life criteria used as the basis for the aluminum effluent limitation in this Order is inappropriate. Instead, the chronic aquatic life criteria recommended by US EPA for waters with pH at or above 6.5 and hardness above 91 mg/L as CaCO₃ is 750 µg/L. Based on the maximum effluent

Central Valley Regional Water Quality Control Board
3/4 May 2007 Board Meeting
ITEM # 18

Response to Comments for the Mountain House Community Services District
Mountain House CSD Wastewater Treatment Plant
Tentative Waste Discharge Requirements

concentration for aluminum of 540 µg/L, there is not reasonable potential to exceed the applicable chronic aquatic life criteria for aluminum.

RESPONSE: The effluent limitations were based on USEPA's recommended water quality criteria to prevent toxicity to aquatic life from aluminum. The national criteria were developed based on scientific studies that concluded that aluminum is toxic to aquatic life at specified concentrations. Since the discharge contains aluminum it is necessary to assure that the discharge does not result in toxicity. The narrative toxicity objective from the Basin Plan is applicable to the discharge. Aluminum is a toxic constituent of the discharge. Applying the narrative toxicity objective using the USEPA National Recommended Water Quality Criteria for aluminum is consistent with state policy, the Policy for Application of Water Quality Objectives in Chapter IV (beginning on page IV-16.00) of the Basin Plan. With respect to narrative objectives, the Regional Water Board must establish effluent limitations using one or more of three specified sources, including EPA's published water quality criteria. [(40 CFR 122.44(d)(1)(vi)(A), (B), or (C)].

We recognize that the Criteria document contains a footnote that states,

“USEPA believes that use of Water-Effects Ratios might be appropriate because: (1) aluminum is less toxic at higher pH and hardness but relationship not well quantified; (2) aluminum associated with clay particles may be less toxic than that associated with aluminum hydroxide particles; (3) many high quality waters in U.S. exceed 87 ug/L as total or dissolved.”

In order to adjust the ambient criteria for aluminum based on the pH and hardness of the receiving water, the Discharger would need to submit adequate information to support a water effect ratio (WER). Without this information, the Regional Water Board must use the default assumption of a WER of 1.0, as was done in performing the reasonable potential analysis. As explained in the Fact Sheet, the acid soluble analysis method is allowed to be used to determine compliance with the effluent limits, which should eliminate from consideration aluminum associated with clay particles.

MHSCD – Comment #15 Total Trihalomethanes (THMs) The District contends the individual effluent limitations for Dichlorobromomethane and Dibromochloromethane in the tentative permit are inconsistent with statements made in the Fact Sheet (p.56-57) that the application of MCLs for Total THMs are appropriate.

Central Valley Regional Water Quality Control Board
3/4 May 2007 Board Meeting
ITEM # 18

Response to Comments for the Mountain House Community Services District
Mountain House CSD Wastewater Treatment Plant
Tentative Waste Discharge Requirements

RESPONSE: The discussion regarding the application of the MCL for Total THMs is in regard to the implementation of effluent limitations for chloroform. The CTR contains human health criteria for dichlorobromomethane and dibromochloromethane, so in accordance with the SIP, effluent limitations are necessary based on the CTR criteria. In the case of chloroform, we have chosen to implement the primary MCL for Total THMs as an effluent limitation, in lieu of the Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA) public health goal. Municipal and domestic water supply (MUN) is a designated beneficial use of the receiving water. However, there are no known drinking water intakes in Old River for several miles downstream of the discharge, and chloroform is a non-conservative pollutant. Therefore, to protect the MUN use of the receiving waters, the Regional Water Board finds that, in this specific circumstance, application of the USEPA MCL for total THMs for the effluent is appropriate, as long as the receiving water does not exceed the OEHHA cancer potency factor's equivalent receiving water concentration at a reasonable distance from the outfall.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

CSPA – COMMENT #1. The Regional Board must not issue a permit and/or the accompanying TSO until the Discharger submits a detailed engineering analysis that the new system is capable of meeting all water quality standards and objectives. CSPA contends that because the Discharger had not commenced discharging under its current permit, it should be considered a new or recommencing discharger, and as such, compliance schedules are not allowed.

RESPONSE: The Discharger began discharging under its current NPDES permit on 13 March 2007. However, even if they had not begun to discharge under the current permit, MHCSD does not meet the definition of New Discharger pursuant to 40 CFR 122.2, because it has a finally effective NPDES permit for discharges at that site. 40 CFR 122.2 states, "New discharger" means any building, structure, facility, or installation: (a) From which there is or may be a "discharge of pollutants;" (b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979; (c) Which is not a "new source;" and (d) Which has never received a finally effective NPDES permit for discharges at that "site..." Therefore, compliance schedules may be allowed in both the Permit and the TSO.

Central Valley Regional Water Quality Control Board
3/4 May 2007 Board Meeting
ITEM # 18

Response to Comments for the Mountain House Community Services District
Mountain House CSD Wastewater Treatment Plant
Tentative Waste Discharge Requirements

CSPA – COMMENT #2. The proposed Permit fails to contain a protective Effluent Limitation for electrical conductivity. The Effluent Limitation for EC in the permit is non-binding and subject to removal at the whim of the Executive Officer.

RESPONSE: Attachment A provides a detailed analysis of the compliance and permitting issues with respect to salinity. The Regional Water Board has several options to consider.

CSPA – COMMENT #3. The proposed permit contains a compliance schedule for aluminum based on a “new interpretation of the Basin Plan. The Regional Board fails to provide any explanation or definition of the “new interpretation” of the Basin Plan.

RESPONSE: There are a number of Basin Plan narrative standards that are the basis for numeric effluent limits. The two most common narrative standards impacting NPDES Permits are the “No Toxics in Toxic Concentrations” standard, and the “Taste and Odor” standard. Time schedules can be included in permits for effluent limitations based upon “new interpretations” of narrative water quality objectives. An August 2005 Second District California Appeals Court Ruling [CBE v. SWRCB regarding the Avon Refinery (aka, Tosco Refinery)] greatly expanded the scope of “new interpretation”. Any effluent limit based upon a narrative water quality objective is a “new interpretation” that will allow a time schedule to be placed in an NPDES Permit when that effluent limit is first applied to that discharger.

ENVIRONMENTAL LAW FOUNDATION (ELF) COMMENTS

ELF – COMMENT #1. ELF asserts that the Tentative Order does not comply with State Water Board Resolution 68-16 (“Statement of Policy with Respect to Maintaining High Quality of Waters in California”) and the federal antidegradation policy (40 C.F.R. 131.12). The commenter asserts that the order would allow an increase in loading of certain constituents that are not allowed by the two policies and allow degradation without making appropriate findings.

RESPONSE: The Tentative Order complies with the antidegradation policies. The proposed Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The proposed Order requires compliance with applicable federal technology-based standards and with effluent limits where the discharge could have the reasonable potential to cause or contribute to an exceedance of water

Central Valley Regional Water Quality Control Board
3/4 May 2007 Board Meeting
ITEM # 18

Response to Comments for the Mountain House Community Services District
Mountain House CSD Wastewater Treatment Plant
Tentative Waste Discharge Requirements

quality standards. The Tentative Order is significantly more stringent than the previous order; it requires implementation of tertiary treatment, which is in excess of federal technology-based standards, and will result in maintenance of existing instream uses. The commenter has provided no evidence to the contrary. The federal antidegradation policy allows degradation of high quality waters if the state finds that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located, which is a balancing test. In this case, as documented in the Fact Sheet, Mountain House is growing and continued treatment of its wastewater is necessary to protect water quality and accommodate growth. The Regional Water Board does not have the jurisdiction to control growth, but is required to assure that the discharge is adequately treated. Tertiary and advanced wastewater treatment required by the proposed Order is a very high level of treatment. The accommodation of the development, as set forth in the federal antidegradation policy and in the Water Code (see Water Code section 13241(e)), justifies lowering of receiving water quality. In this case, however, the proposed Order is significantly more stringent than the previous Order, therefore, it does not authorize any lowering of receiving water quality.

SOUTH DELTA WATER AGENCY (SDWA) COMMENTS

SDWA – COMMENT #1. SDWA asserts that the Regional Board does not have the legal authority to allow the discharge of additional salt loads (and at concentrations above the standards) into a water body that is already impaired due to salts (or EC).

RESPONSE: Attachment A provides a detailed analysis of the compliance and permitting issues with respect to salinity. The Regional Water Board has several options to consider.

SDWA – Comment #2. SDWA asserts that the draft Order provides no basis on which to evaluate its unsupported conclusion that additional discharges of salt to Old River are in the public interest.

RESPONSE: Attachment A provides a detailed analysis of the compliance and permitting issues with respect to salinity. The Regional Water Board has several options to consider.

ATTACHMENT A
MOUNTAIN HOUSE CSD WATERTREATMENT PLANT
SALINITY ISSUES

The Regional Water Board held a lengthy hearing on a proposed NPDES permit for the Mountain House Community Services District (MHCSD) at the August 2006 Board meeting, with salinity issues being the major topic of testimony and Board discussion. The hearing was continued pending a better assessment of the impacts of the discharge on Delta salinity and development of alternative means of regulating salinity for Board consideration. The Regional Water Board directed staff to work with the MHCSD, the Department of Water Resources (DWR), and other stakeholders to model the effects of the discharge in the southern Delta. Since the hearing, Regional Water Board staff organized a stakeholder group that included representatives from the MHCSD, City of Tracy, South Delta Water Agency, California Sportfishing Protection Alliance, and DWR to develop appropriate scenarios for running DWR's Delta Simulation Model II (DSM2) to evaluate the salinity impacts of the City of Tracy and MHCSD discharges.

The Delta is heavily used as a municipal, industrial and agricultural water supply. Increases in salinity reduce the value of Delta water. Multiple agencies are involved in controlling salinity in the Delta to protect in-Delta and export uses of Delta waters. Water in the vicinity of the discharge is used locally for agricultural irrigation. The MHCSD discharge is only 5 miles upstream of the intake to the Delta Mendota Canal that serves water to the lower San Joaquin Valley, and the State Water Project intake is only a few miles further to the north.

The State Water Board has adopted salinity standards at a number of compliance locations in the Delta to protect a variety of beneficial uses. The compliance locations require a maximum 30-day running average of mean daily electrical conductivities of 700 umhos/cm during the irrigation season, and 1000 umhos/cm at other times, to protect agricultural use of Delta waters. Although compliance with these standards is required at specific locations, the water quality objectives apply throughout the south Delta. The State Water Board has conditioned water right permits held by DWR and Bureau of Reclamation (USBR), the agencies operating the major water supply export projects near Tracy, on meeting salinity standards at those locations. The 700 umhos/cm irrigation season standard is fully protective of all crops. Beyond MHCSD's contribution to the salinity load of the Delta, the salinity of MHCSD's discharge is particularly important because the discharge point is located near one of the Delta salinity compliance locations. The State Water Board recently adopted a Cease and Desist Order against DWR and USBR for threatened violation of Delta salinity standards, and any salt in MHCSD's discharge above Delta compliance standards makes compliance for DWR/USBR more difficult. Lawsuits over the State Water Board Cease and Desist Order have been filed. One focus of the recent modeling effort was to assess the relative impact at the D-1641 salinity compliance locations with increasing and decreasing salinity in MHCSD's discharge.

A. Npdes Permitting Options to Control Salinity

The Regional Water Board has a number of permitting options available for consideration. Two tentative NPDES Permits have been circulated for public review and comment. Furthermore, during this latest public review period, an additional document with several alternative salinity control options was distributed for public review. The Regional Water Board could adopt any of the alternatives that were circulated for public comment or any logical outgrowth of these options, although if the approach to salinity regulation is changed significantly from the noticed options, it may be appropriate to develop and circulate a new tentative Permit for future consideration and adoption.

1. June 2006 Tentative Permit

The tentative Permit dated 13 June 2006 concluded that there are no numeric salinity standards applicable at the point of discharge and no site-specific studies have been conducted by which the narrative chemical constituents objective could be interpreted; so final effluent limits could not be set at the time. MHCS D was given the opportunity to conduct studies to develop site-specific salinity standards for Old River. An interim effluent limit capped the current effluent salt concentrations so it could not get worse, and a five-year "goal" was established at a 500 $\mu\text{mhos/cm}$ increment in electrical conductivity over water supply. (Goals are not enforceable, but they are a statement by the Regional Water Board on where the MHCS D should be trying to get in five years.) Although no final effluent limit was set, findings made it clear that the salinity of the effluent must be reduced. MHCS D liked this option, but water supply agencies and environmental groups disliked it.

2. March 2007 Tentative Permit

The current tentative Permit dated 21 March 2007 includes an interim performance-based effluent limitation for EC and requires the Discharger to implement measures to reduce the salinity in its discharge to Old River. The proposed Order also includes final water quality-based effluent limitations (WQBELs) stating that the electrical conductivity in the discharge shall not exceed a monthly average of 700 $\mu\text{mhos/cm}$ (April 1 to August 31) and a monthly average of 1000 $\mu\text{mhos/cm}$ (September 1 to March 31), unless:

- a) The Discharger develops and implements a salinity source control program as approved by the Executive Officer that will identify and implement measures to reduce salinity in discharges from residential, commercial, industrial and infiltration sources in an effort to meet the interim salinity goal of a maximum 500 $\mu\text{mhos/cm}$ electrical conductivity increase over the weighted average electrical conductivity of the MHCS D's water supply; and
- b) When notified by the Executive Officer, the Discharger participates financially in the development of the Central Valley Salinity Management Plan.

Failure to meet conditions a) and b), above, shall result in the final effluent limitation becoming effective.

Furthermore, the proposed Order requires that the Discharger implement best practicable treatment or control (BPTC) of its discharge and requires the development and implementation of pollution prevention plan for salinity in accordance with CWC section 13263.3(d)(1)(D).

3. Salinity Control Options Document

Additional salinity control options were included with the March 2007 tentative permit and received public review and comment. The options included seasonal effluent limits equivalent to the State Water Board's salinity objectives (i.e. 700/1000 umhos/cm) and an option to include a finding and no effluent limitations. The finding states that an effluent limitation is necessary, but it is impracticable to implement an effluent limitation in the proposed Order.

B. DSM2 Modeling

A stakeholder group that included representatives from the MHCSD, City of Tracy, South Delta Water Agency, California Sportfishing Protection Alliance, DWR, and the Regional Water Board was formed to develop appropriate scenarios for running DWR's Delta Simulation Model II (DSM2) to evaluate the salinity impacts of the MHCSD Wastewater Facility and the Tracy Wastewater Treatment Plant discharges in the south Delta. The model was run under reasonable worst-case conditions. A detailed summary of the DSM2 modeling effort is provided in the document titled, *DSM2 Modeling Evaluation, City of Tracy and Mountain House CSD (29 March 2007)*.

The DSM2 modeling demonstrates that even under reasonable worst-case conditions the MHCSD discharge has limited impacts on salinity in the southern Delta. Based on the modeling, the areas of greatest impacts from the MHCSD discharge are limited to the section of Old River between Tracy Blvd and the Delta Mendota Canal. The modeling focused on the months of August and October as critical periods. In August with temporary barriers, the maximum reasonable worst-case monthly average EC increase near the discharge was less than 2 percent¹, with receiving water increases diminishing as you move away from the discharge point. In October, the maximum reasonable worst-case monthly average EC increase is 5 percent², due to reduced circulation in Old River. This maximum increase is based on the assumption of low exports from the Central Valley Project (CVP) and State Water Project (SWP) drinking water plants and the south Delta salinity standard in October is 1000 µmhos/cm, for the protection of the domestic and municipal water supply (MUN) beneficial use. Furthermore, the modeling predicted no increases in EC caused by the MHCSD discharge near the CVP or SWP pumping plants under these reasonable worst-case conditions.

¹ Ambient and effluent EC of 700 and 1400 µmhos/cm, respectively, and an effluent flow of 3 mgd were assumed for the DSM2 modeling.

² Ambient and effluent EC of 1000 and 1400 µmhos/cm, respectively, and an effluent flow of 3 mgd were assumed for the DSM2 modeling.

An evaluation was performed to compare different regulatory levels for EC and the relative impacts in the receiving water at the Tracy Blvd Bridge, which is the nearest south Delta compliance location to the MHCSD discharge. Two regulatory levels were evaluated for August and October. These months were used, because they represent different critical temporary barrier configurations. The different regulatory levels used in the evaluation were water quality-based effluent limitations (WQBELs) (i.e. 700 umhos/cm and 1000 umhos/cm for August and October, respectively), and performance-based effluent limitations as proposed in the tentative Order (1400 umhos/cm). Figure 1 shows the relative impacts of the MHCSD discharge under these different regulatory levels. The implementation of WQBELs based on the south Delta salinity standards would require advanced treatment, such as reverse osmosis, for a large portion of the discharge to maintain compliance with the effluent limitations. As shown below in Figure 1, the difference between requiring WQBELs and performance-based limitations is small, even under reasonable worst-case conditions.

Based on the relatively small impact of the MHCSD discharge, the imposition of salinity effluent limits that require the construction and operation of reverse osmosis facilities to treat discharges prior to implementation of other measures to reduce the salt loading to the south Delta is not a reasonable approach. The MHCSD discharge is one of many contributors to the salinity problems in the south Delta. Even if the MHCSD discharge were removed it would not solve the salinity problems in the area. The proposed Order provides reasonable salinity controls that put the Discharger on the path to reducing its salt loading to the Delta.

**Figure 1 – MHCSD Salinity Impacts at Tracy Blvd Bridge
Performance-based Effluent Limitations vs WQBELs**

