

**LATE REVISIONS**  
**City of Davis WWTP**  
**Proposed Tentative Waste Discharge Requirements**  
**Regional Water Quality Control Board, Central Valley Region**  
**Board Meeting – 21/22 June 2007**  
**ITEM # 26**

1. In the NPDES permit, Finding II.S:  
Change the following paragraph to read:

California Water Code section 13263.3(d) allows the Regional Water Board to require a discharger to complete and implement a pollution prevention plan under specific situations. This Order requires pollution prevention plans for copper, cyanide, selenium, silver, aluminum, ~~dioxin and congeners~~, iron, and manganese, consistent with CWC 13263.3(d)(1)(D). The rationale for the requirement to provide pollution prevention plans for these constituents is included in the Fact Sheet. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

2. In the NPDES permit, section IV.A.1.a (Effluent Limitations):  
Make the following corrections to Table 6a:

**Table 6a. Effluent Limitations - Discharge Point 001**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous	
					Minimum	Maximum
Ammonia (1 March – 31 October)	mg/L	0. <del>58</del> <u>43</u>		1.04		
	lbs/day <sup>2</sup>	<del>36.6</del> <u>26.9</u>		65.1		
Ammonia (1 November– 29 February)	mg/L	0. <del>58</del> <u>52</u>		1.04		
	lbs/day <sup>2</sup>	<del>36.3</del> <u>32.5</u>		65.1		
<del>1,2,3,4,6,7,8 - HeptaCDD</del> <u>Dioxin</u> <del>and congeners, Total</del>	pg/L			<del>0.014</del> <u>1.4</u>		
	lbs/day <sup>2</sup>			8.8 E- <del>10</del> <u>8</u>		

3. In the NPDES permit, section IV.A.1.d (Effluent Limitations):  
Change the following sentence to read:

**Total Recoverable Manganese.** Each calendar year, the annual average total recoverable manganese concentration in the effluent shall not exceed ~~100~~200 µg/L.

4. In the NPDES permit, section IV.A.2.a (Effluent Limitations):  
Make the following corrections to Table 6b:

**Table 6b. Effluent Limitations - Discharge Point 002**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous	
					Minimum	Maximum
Ammonia (1 March – 31 October)	mg/L	0.8445		1.4711		
	lbs/day <sup>2</sup>	<del>52.5</del> 28.1		<del>91.9</del> 69.4		
Ammonia (1 November– 29 February)	mg/L	0.8467		1.47		
	lbs/day <sup>2</sup>	<del>52.5</del> 41.9		91.9		
<u>1,2,3,4,6,7,8 - HeptaCDD</u> Dioxin and congeners, Total	pg/L			<del>0.01</del> 1.4		
	lbs/day <sup>2</sup>			<del>8.98</del> 8 E-8		

5. In the NPDES permit, section IV.A.2.d (Effluent Limitations):  
Change the following sentence to read:

**Total Recoverable Manganese.** Each calendar year, the annual average total recoverable manganese concentration in the effluent shall not exceed ~~100~~200 µg/L.

6. In the NPDES permit, section IV.A.3.a (Effluent Limitations):  
Make the following corrections to Table 7a:

**Table 7a. Interim non-CTR Effluent Limitations – Discharge Point 001**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Annual Average	Instantaneous Maximum
<del>Dioxin and congeners, Total</del> <sup>4</sup> <u>1,2,3,4,6,7,8 - HeptaCDD</u>	pg/L	<del>42.9</del>		<del>0.43</del> 42.9		
	lbs/day <sup>2</sup>	<del>2.7</del> E-6		<del>2.6</del> 7 E-86		

- Compliance is to be measured at Monitoring Location EFF-A as described in the attached MRP.
- Based on an average dry weather discharge flow of 7.5 mgd.
- No limitation for turbidity during the period beginning on the effective date of this Order and ending 5 years from the effective date of this Order
- ~~The final limitation for dioxin and congeners for 2,3,7,8-TCDD must be met by 18 May 2010.~~

7. In the NPDES permit, section IV.A.3.b (Effluent Limitations):  
Make the following corrections to Table 7b:

**Table 7d. Interim non-CTR Effluent Limitations – Discharge Point 002**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Annual Average	Instantaneous Maximum
<del>Dioxin and congeners, Total</del> <sup>4</sup> <u>1,2,3,4,6,7,8-HeptaCDD</u>	pg/L			<del>0.12</del> 11.8		
	lbs/day <sup>2</sup>			<del>7.5</del> 4 E-97		

- Compliance is to be measured at Monitoring Location EFF-A as described in the attached MRP.
- Based on an average dry weather discharge flow of 7.5 mgd.
- No limitation for turbidity during the period beginning on the effective date of this Order and ending 5 years from the effective date of this Order
- ~~The final limitation for dioxin and congeners for 2,3,7,8-TCDD must be met by 18 May 2010.~~

8. In the NPDES permit, section IV.E.b (Biosolids Specifications):  
Change the following sentence to read:

Effective ~~one year from the effective date of this Order~~ [1 December 2008](#), the direct or indirect discharge of screenings, residual sludge, harvested lemna vegetation, biosolids, and other solids removed from liquid wastes to the overland flow fields is prohibited.

9. In the NPDES permit, section VI.C.1.d (Special Provisions):  
Change the following paragraph to read:

**Pollution Prevention.** This Order requires the Discharger to prepare and implement pollution prevention plans following CWC section 13263.3(d)(3) for copper, cyanide, selenium, silver, aluminum, ~~dioxin and congeners~~, iron, and manganese. Based on a review of the pollution prevention plans, this Order may be reopened for addition and/or modification of effluent limitations and requirements for these constituents. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

10. In the NPDES permit, section VI.C.3.b (Special Provisions):  
Change the following paragraph to read:

**Pollution Prevention Plan for copper, cyanide, selenium, silver, aluminum, ~~dioxin and congeners~~, iron, and manganese.** The Discharger shall prepare and implement a pollution prevention plan for copper, cyanide, selenium, silver, aluminum, ~~dioxin and congeners~~, iron, and manganese in accordance with CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet, Attachment F, VII.B.3. A work plan and time schedule for preparation of the pollution prevention plan shall be completed and submitted **within 6 months of the effective date of this Order** for approval by the Executive Officer. The Pollution Prevention Plan shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section IX.D.1.). The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

11. In the NPDES permit, section VI.C.7.b (Special Provisions):  
Change the following paragraphs to read:

**Compliance Schedules for Final Effluent Limitations for BOD, TSS, turbidity, total coliform organisms, aluminum, ammonia, [1,2,3,4,6,7,8 - HeptaCDD](#)~~dioxin and congeners~~, iron, and manganese**

- i. **By five years from the effective date of this Order**, the Discharger shall comply with final effluent limitations for BOD, TSS, turbidity, total coliform organisms, aluminum, ammonia, [1,2,3,4,6,7,8 - HeptaCDD](#)~~dioxin and congeners~~, iron, and manganese. On 22 January 2007, the Discharger submitted a compliance schedule justification for BOD, TSS, turbidity, total coliform organisms, aluminum, ammonia, [1,2,3,4,6,7,8 - HeptaCDD](#)~~dioxin and congeners~~, iron, and manganese. As this compliance schedule is greater than one year, the Discharger shall submit annual

progress reports in accordance with the Monitoring and Reporting Program (Attachment E, Section IX.D.1.)

- ii. **Corrective Action Plan/Implementation Schedule.** The Discharger shall submit to the Regional Water Board a corrective action plan and implementation schedule to assure compliance with the final effluent limitations for BOD, TSS, turbidity, total coliform organisms, aluminum, ammonia, 1,2,3,4,6,7,8 - HeptaCDD~~dioxin and congeners~~, iron, and manganese by six months of the effective date of this Order.
  
- iii. **Treatment Feasibility Study.** The Discharger is required to perform an engineering treatment feasibility study examining the feasibility, costs and benefits of different treatment options that may be required to remove BOD, TSS, turbidity, total coliform organisms, aluminum, ammonia, 1,2,3,4,6,7,8 - HeptaCDD~~dioxin and congeners~~, iron, and manganese from the discharge. A work plan and time schedule for preparation of the treatment feasibility study shall be completed and submitted to the Regional Water Board **within 6 months of the effective date of this Order** for approval by the Executive Officer. The treatment feasibility study shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section IX.D.1.).

12. In the Monitoring and Reporting Program, section IV.B.1 (Effluent Monitoring Requirements):

Make the following corrections to Table E-4:

**Table E-4. Effluent Monitoring Discharge 001**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
<u>1,2,3,4,6,7,8 - HeptaCDD</u> <del>Dioxin and congeners, Total</del>	pg/L	Grab <sup>3</sup>	1/month	

13. In the Monitoring and Reporting Program, section IV.C.1 (Effluent Monitoring Requirements):

Make the following corrections to Table E-5:

**Table E-5. Effluent Monitoring Discharge 002**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
<u>1,2,3,4,6,7,8 - HeptaCDD</u> <del>Dioxin and congeners, Total</del>	pg/L	Grab <sup>1</sup>	1/month	

14. In the Monitoring and Reporting Program, section VII.A.1 (Receiving Water Monitoring Requirements):  
 Make the following corrections to Table E-7:

**Table E-7. Receiving Water Monitoring Requirements – Surface Water**

Parameter	Units	Sample Type	Minimum Sampling Frequency <sup>2</sup>	Required Analytical Test Method
Fecal Coliform Organisms	MPN/100 mL	Grab	<del>5</del> 1/month <sup>3</sup>	

<sup>1.</sup> pH and temperature shall be determined at the time of sample collection for ammonia.

<sup>2.</sup> At specified frequency or when discharged.

~~<sup>3.</sup> This frequency is specified in the Basin Plan.~~

15. In the Monitoring and Reporting Program, section VII.A.2 (Receiving Water Monitoring Requirements):  
 Make the following corrections to the table:

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16. In the Monitoring and Reporting Program, section VII.B.1 (Receiving Water Monitoring Requirements):  
 Make the following corrections to Table E-8:

**Table E-8. Receiving Water Monitoring Requirements – Groundwater**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Volatile Organics <sup>2</sup>	ug/L	Grab	1/year	<del>USEPA 624</del>
Oxygenate Compounds	ug/L	Grab	1/year	<del>USEPA 624</del>

<sup>1.</sup> Prior to sampling, the groundwater monitoring wells shall be pumped until the temperature, specific conductivity, and pH have stabilized to ensure representative samples.

<sup>2.</sup> [Volatile Organic include all constituents listed in EPA Method 502.2](#)

17. In the Monitoring and Reporting Program, section IX.B.8 (Reporting Requirements):  
 Make the following corrections to Table E-14:

**Table E-14. Monitoring Periods and Reporting Schedule**

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
<del>5</del> /month	<del>First day of calendar month following permit effective date or on permit effective date if that date is first day of the month</del>	<del>4<sup>st</sup> day of calendar month through last day of calendar month</del>	<del>Submit with monthly SMR</del>

18. In the Monitoring and Reporting Program, section IX.D.1 (Reporting Requirements):

Make the following corrections to Table E-15:

**Table E-15. Reporting Requirements for Special Provisions Progress Reports**

Special Provision	Reporting Requirements
Pollution Prevention Plan for aluminum, <del>boron, dioxin and congeners,</del> iron, and manganese	<b>1 December</b> , annually, after approval of work plan until final compliance
Compliance Schedules for Final Effluent Limitations for BOD, TSS, turbidity, total coliform organisms, aluminum, ammonia, boron, <del>1,2,3,4,6,7,8 - HeptaCDD dioxin and congeners,</del> iron, and manganese, compliance with final effluent limitations	<b>1 June</b> , annually, after approval of work plan until final compliance
Compliance Schedules for Final Effluent Limitations for BOD, TSS, turbidity, total coliform organisms, aluminum, ammonia, boron, <del>1,2,3,4,6,7,8 - HeptaCDD dioxin and congeners,</del> iron, and manganese, Treatment Feasibility Study	<b>1 June</b> , annually, after approval of work plan until final compliance

19. In the Fact Sheet, section IV.C.3.b (Rationale for Effluent Limitations):

Change the following paragraph to read:

Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Regional Water Board finds that the Discharge 001 and Discharge 002 each have a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for copper, selenium, ~~1,2,3,4,6,7,8 - HeptaCDD dioxin and congeners,~~ aluminum, ammonia, boron, chloride, chlorine residual, electrical conductivity (EC), iron, manganese, sodium, and total dissolved solids (TDS). Additionally, Discharge 001 has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for cyanide; and Discharge 002 has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for silver. Water quality-based effluent limitations (WQBELs) for copper, selenium, ~~1,2,3,4,6,7,8 - HeptaCDD dioxin and congeners,~~ aluminum, ammonia, chlorine residual, iron, manganese, cyanide, and silver are included in this Order. At this time, boron, chloride, sodium, TDS, and EC do not have a final limitation, as described in Section IV.C.4.s. A detailed discussion of the RPA for each constituent is provided below. In response to the 16 May 2005 Alameda Court Order Granting Writ of Administrative Mandamus for the City of Woodland, the RPA for each constituent was typically based on about three years of data. Unless otherwise noted, the data used in the reasonable potential analysis and effluent limitations was from January 2002 through May 2005 for CTR constituents, and May 2002 through May 2005 for non-CTR constituents. The RPA for CTR constituents was extended beyond three years to include all of the 13267 priority pollutant data collected in 2002.

20. In the Fact Sheet, section IV.C.3.f (Rationale for Effluent Limitations):  
Change the following paragraphs to read:

The maximum observed 30-day average temperature in Discharge 001 and the Willow Slough Bypass was 70.7°F (21.5°C) and 82°F (27.8°C), respectively from 1 March through 31 October and 60.6°F (15.9°C) and 70°F (21.1°C), respectively, from 1 November through 29 February. Using the maximum permitted (worst-case) pH of 8.5, and a worst-case temperature of 82°F (27.8°C) and 70°F (21.1°C) on a 30-day basis, the 30-day criteria are 0.46 mg/L from 1 March through 31 October and 0.71 mg/L from 1 November through 29 February. The 4-day criteria are 1.15 mg/L from 1 March through 31 October and 1.78 mg/L from 1 November through 29 February. The resulting average monthly ammonia effluent limitation for Discharge 001 is ~~0.58~~ 0.43 mg/L from 1 March through 31 October and 0.52 mg/L from 1 November through 29 February.

The observed maximum pH in Willow Slough Bypass at R-1 was 8.9 and the observed maximum pH in the effluent was 8.1. Using a worst-case maximum pH of 8.9, the resulting maximum daily effluent limitation for Discharge 001 is 1.04 mg/L (as N).

The maximum observed 30-day average temperature in Discharge 002 and the Conaway Ranch Toe Drain was 79°F (26.3°C) and 81°F (27.2°C), respectively from 1 March through 31 October and 66°F (19°C) and 69°F (20.6°C), respectively, from 1 November through 29 February. Using the maximum permitted (worst-case) pH of 8.5, and a worst-case temperature of 81°F (27.2°C) and 69°F (20.6°C) on a 30-day basis, the 30-day criteria are 0.48 mg/L from 1 March through 31 October and 0.74 mg/L from 1 November through 29 February. The 4-day criteria are 1.20 mg/L from 1 March through 31 October and 1.85 mg/L from 1 November through 29 February. The resulting average monthly ammonia effluent limitation for Discharge 002 is ~~0.84~~ 0.45 mg/L from 1 March through 31 October and 0.67 mg/L from 1 November through 29 February.

The maximum effluent pH was 8.7 and ~~is~~ the maximum pH in the Conaway Ranch Toe Drain was 8.3. Using a worst-case pH value of 8.7, the resulting maximum daily effluent ammonia limitation for Discharge 002 is 1.04 mg/L (as N) from 1 March through 31 October and 1.47 mg/L (as N) from 1 November through 29 February. Effluent Limitations for ammonia are included in this Order to assure the treatment process adequately nitrifies the waste stream to protect the aquatic habitat beneficial uses.

21. In the Fact Sheet, section IV.C.3.k (Rationale for Effluent Limitations):  
Change the following paragraphs to read:

~~1,2,3,4,6,7,8 - HeptaCDD~~ **Dioxin and Congeners.** The CTR criterion for Human health protection for consumption of aquatic organisms only is 0.014 pg/l for 2,3,7,8-tetrachlorodibenzo-p-dioxin. There are many congeners of chlorinated dibenzodioxins that exhibit toxic effects similar to those of 2,3,7,8-TCDD; The U.S. EPA has published toxic equivalency factors (TEFs) for the following 17 congeners: 2,3,7,8-TetraCDD; 1,2,3,7,8-PentaCDD; 1,2,3,4,7,8-HexaCDD; 1,2,3,6,7,8-HexaCDD; 1,2,3,7,8,9-HexaCDD; 1,2,3,4,6,7,8-HeptaCDD; OctaCDD; 2,3,7,8-TetraCDF; 1,2,3,7,8-PentaCDF; 2,3,4,7,8-PentaCDF; 1,2,3,4,7,8-HexaCDF; 1,2,3,6,7,8-HexaCDF; 1,2,3,7,8,9-HexaCDF; 2,3,4,6,7,8-HexaCDF; 1,2,3,4,6,7,8-HeptaCDF; 1,2,3,4,7,8,9-

HeptaCDF; and OctaCDF, including 2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD). USEPA toxic equivalency factors (TEFs) express the relative toxicities of the congeners compared to 2,3,7,8-TCDD to allow these congeners to be compared to the criterion for 2,3,7,8-TCDD. As shown in the SIP, the TEF for 1,2,3,4,6,7,8-HeptaCDD is 0.01. The observed maximum concentration in Discharge 001 for 1,2,3,4,6,7,8-HeptaCDD was 13.8 pg/l, based on six samples collected between May 2002 and May 2005. The observed maximum concentration in Discharge 002 for 1,2,3,4,6,7,8-HeptaCDD was 3.80 pg/l, based on seven samples collected between May 2002 and May 2005. Multiplying by the TEF of 0.01, the relative toxicity of 1,2,3,4,6,7,8-HeptaCDD is 0.138 pg/l in Discharge 001 and 0.0380 pg/l in Discharge 002, both of which are above the CTR criterion of 0.014 pg/l. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for 1,2,3,4,6,7,8-HeptaCDD dioxin and congeners.

This Order includes an MDEL for 1,2,3,4,6,7,8-HeptaCDD dioxin and congeners of ~~0.014~~ pg/L, ~~respectively,~~ based on the NTR criterion for the protection of human health for both discharges. (See Attachment F, Tables F-5a and F-5b for WQBEL calculations).

Based on the sample results in the effluent, it appears that the Discharger may be in immediate non-compliance upon issuance of the permit. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Basin Plan for the Sacramento and San Joaquin River Basins includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives adopted after 25 September 1995 (See Basin Plan at page IV-16). The water quality-based effluent limitations for dioxin and congeners are based on a new interpretation of the narrative standard for protection of receiving water beneficial uses. Therefore, a compliance schedule for compliance with the dioxin and congeners effluent limitations is established in the Order.

Interim performance-based maximum daily effluent limitations of ~~0.432.9~~ pg/L for Discharge 001 and ~~0.1211.8~~ pg/L for Discharge 002 have been established in this Order for 1,2,3,4,6,7,8-HeptaCDD. The interim limitations were determined as described in Attachment F, Section IV.E.1., and are in effect through five years from the effective date of this Order. ~~The interim limitations are for the total concentration and mass of dioxin and congeners, and specifies that the effluent concentration of 2,3,7,8-TCDD may not exceed 0.014 pg/l by 18 May 2010.~~ As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final 1,2,3,4,6,7,8-HeptaCDD dioxin and congeners effluent limitations. In addition, the Discharger shall submit an engineering treatment feasibility study and prepare and implement a pollution prevention plan developed in accordance with CWC section 13263.3(d)(3). The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

~~The Discharger has indicated in their Infeasibility Report that additional time may be required beyond 17 May 2010 to comply with final effluent limits for 2,3,7,8-TCDD. Based on the Discharger's performance in implementing their corrective action plan and implementation schedule, the Regional Water Board may consider at a future date~~



~~issuance of a Time Schedule Order to provide additional time to comply with final effluent limits for 2,3,7,8-TCDD.~~

22. In the Fact Sheet, section IV.C.3.p.i (Rationale for Effluent Limitations):  
Change the following paragraphs to read:

*Past, present, and probable future beneficial uses of water:*

The designated beneficial uses of the Yolo Bypass include water contact recreation. The City of Woodland's December 2000 - Recreation, Land Use, and Dilution Study of the Tule Canal and Toe Drain (Study) indicates that the Yolo Bypass has been used for water contact recreation, including fishing (with human consumption of fish) and swimming. Additionally, the Willow Slough Bypass and Conaway Ranch Toe Drain are used for duck hunting, and the wetlands at the WWTP are open to the public and used as an educational facility for schoolchildren.

The designated beneficial uses of the Yolo Bypass also include agricultural irrigation supply. The Study indicates that crops grown in the area with the potential to be irrigated with Yolo Bypass waters include food crops that require irrigation water be treated to a tertiary level to protect public health. The State of California Department of Water Resources 1997 Yolo County Land Use Survey shows tomatoes and either melons, squash, or cucumbers grown in the Yolo Bypass within the vicinity of the two existing discharges. ~~The past, present and probable future beneficial uses of the receiving stream include agricultural irrigation, agricultural stock watering, body contact water recreation, other non-body contact water recreation, warm freshwater aquatic habitat, potential cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, and wildlife habitat.~~

23. In the Fact Sheet, section IV.C.3.p.ii (Rationale for Effluent Limitations):  
Change the following paragraph to read

*Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto:*

The Willow Slough Bypass and Conaway Ranch Toe Drain receiving water flows do not provide a 20:1 dilution of the effluent. The water in the Yolo Bypass includes tertiary-treated water from the upstream City of Woodland WWTP. The upgrade to tertiary by the City of Davis WWTP will further improve the environmental characteristics of the hydrographic unit (including the quality of water available). ~~The environmental characteristics of the hydrographic unit, including the quality of the available water, will be improved by the requirement to provide tertiary treatment for this wastewater discharge. The water quality in the Yolo Bypass includes tertiary-treated water from the City of Woodland WWTP. Tertiary treatment will allow for the reuse of the undiluted wastewater for food crop irrigation and contact recreation activities that would otherwise be unsafe according to recommendations from the California Department of Health Services (DHS).~~

24. In the Fact Sheet, section IV.C.3.p.iii (Rationale for Effluent Limitations):  
Change the following paragraph to read

*Water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect water quality in the area:*

*As stated above, the City of Woodland currently discharges tertiary treated effluent to the Yolo Bypass. To protect public health, the California Department of Health Services recommends that discharges to receiving streams with contact recreation and less than 20:1 dilution be oxidized, coagulated, filtered and adequately disinfected to provide a median total coliform organisms concentration of 2.2 MPN/100 mL at some point in the treatment process.* ~~*Fishable and swimmable water quality conditions can be reasonably achieved through the coordinated control of all factors that affect water quality in the area.*~~

25. In the Fact Sheet, section IV.C.3.p.iv (Rationale for Effluent Limitations):  
Change the following paragraph to read

*Economic considerations:*

The economic impact of requiring an increased level of treatment has been considered. The Discharger estimates the cost to upgrade the WWTP to tertiary or equivalent to be \$140 million dollars. Much of this cost is for upgrades necessary to comply with the mandatory California Toxics Rule (CTR) limitations. The Wastewater User Charge Survey Reports, prepared by the State Board, show the City's monthly user charges prior to fiscal year 2006-2007 have been lower than the State monthly average, but recently the charges have increased in anticipation of the requirement to upgrade the WWTP. Effective the summer of 2007, the City has a monthly user charge of \$39.00, which covers the existing operation and management of the WWTP and preliminary design and planning for WWTP upgrades.

The loss of beneficial uses within downstream waters, without the tertiary treatment requirement, which could include prohibiting the irrigation of food crops and prohibiting public access for contact recreational purposes, would have a detrimental economic impact. In addition to pathogen removal to protect irrigation and recreation, tertiary treatment may also aid in meeting discharge limitations for other pollutants, such as heavy metals, reducing the need for advanced treatment specific for those pollutants.

26. In the Fact Sheet, section IV.C.3.p.v (Rationale for Effluent Limitations):  
Change the following paragraph to read

*The need for developing housing within the region:*

~~*The need for developing housing in the area has been considered.*~~ The Discharger is not requesting the WWTP be permitted to discharge an increased flow, which indicates the City does not anticipate needing additional treatment plant capacity to accommodate housing development within the next five years. However, any housing development in the area may be facilitated by improved water quality, which protects the contact recreation and irrigation uses of the receiving water. Any growth in the area will place greater demand on the available resources and will increase the potential for activities, such as contact recreation, that needs an improved surface water quality.

27. In the Fact Sheet, section IV.C.3.p.vi (Rationale for Effluent Limitations):  
Change the following paragraph to read

*The need to develop and use recycled water:*

It is the Regional Water Board's policy, (Basin Plan, page IV-12.00, Policy 2) to encourage the reuse of wastewater. The Regional Water Board requires dischargers to evaluate how reuse or land disposal of wastewater can be optimized. The need to develop and use recycled water is facilitated by providing a tertiary level of wastewater treatment that will allow for a greater variety of uses in accordance with CCR, Title 22. DHS recommends that, in order to protect the public health, relatively undiluted wastewater effluent must be treated to a tertiary level for contact recreational and food crop irrigation uses. Without tertiary treatment, the downstream waters could not be safely utilized for contact recreation or the irrigation of food crops.

Title 22 contains reclamation criteria for the reuse of wastewater, and requires recycled water be disinfected and treated to a tertiary level when used to irrigate food crops where the recycled water may come into contact with the edible portion of the crop. Tertiary treatment will allow for the continued reuse of the undiluted wastewater for food crop irrigation and contact recreation activities, which is otherwise unsafe according to recommendations from the DHS. These crops require irrigation water be treated to a tertiary level to protect public health.

28. In the Fact Sheet, section IV.C.3.s (Rationale for Effluent Limitations):  
Change the following sentences to read:

As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final ~~dioxin and congeners~~ selenium effluent limitations.

29. In the Fact Sheet, section IV.C.4.b (Rationale for Effluent Limitations):  
Make the following corrections to Table F-7

**Table F-7: WQBEL Calculations for Ammonia**

	Discharge 001						Discharge 002					
	March 1 to October 31			November 1 to February 29			March 1 to October 31			November 1 to February 29		
	Acute	4-day	Chronic	Acute	4-day	Chronic	Acute	4-day	Chronic	Acute	4-day	Chronic
pH <sup>(1)</sup>	8.9	--	8.5	8.9	--	8.5	8.7	--	8.5	8.7	--	8.5
Temperature °C <sup>(2)</sup>	N/A	--	27.8	N/A	--	21.1	N/A	--	27.2	N/A	--	20.6
Criteria (mg/L) <sup>(3)</sup>	1.04	<del>1.46</del> <u>1.15</u>	0.46	1.04	1.78	0.71	1.47	1.20	0.48	1.47	1.84	0.74
Dilution Credit	--	--	--	--	--	--	--	--	--	--	--	--
ECA	1.04	<del>1.46</del> <u>1.15</u>	<del>--</del> <u>0.46</u>	1.04	1.78	<del>--</del> <u>0.71</u>	1.47	1.20	<del>--</del> <u>0.48</u>	1.47	<del>1.84</del> <u>1.85</u>	<del>--</del> <u>0.74</u>
ECA Multiplier	<del>0.24</del> <u>0.22</u>	<del>0.42</del> <u>0.40</u>	<del>--</del> <u>0.69</u>	<del>0.24</del> <u>0.32</u>	<del>0.42</del> <u>0.53</u>	<del>--</del> <u>0.78</u>	<del>0.25</del> <u>0.34</u>	<del>0.45</del> <u>0.55</u>	<del>--</del> <u>0.80</u>	<del>0.25</del> <u>0.27</u>	<del>0.45</del> <u>0.47</u>	<del>--</del> <u>0.74</u>
LTA	<del>0.25</del> <u>0.23</u>	<del>0.49</del> <u>0.46</u>	<del>--</del> <u>0.32</u>	<del>0.25</del> <u>0.34</u>	<del>0.75</del> <u>0.94</u>	<del>--</del> <u>0.56</u>	<del>0.37</del> <u>0.50</u>	<del>0.54</del> <u>0.66</u>	<del>--</del> <u>0.38</u>	<del>0.37</del> <u>0.40</u>	<del>0.82</del> <u>0.86</u>	<del>--</del> <u>0.55</u>
AMEL Multiplier (99 <sup>th</sup> %)	<del>2.37</del> <u>1.85</u>	--	--	<del>2.37</del> <u>1.55</u>	--	--	<del>2.24</del>	--	<del>--</del> <u>1.17</u>	<del>2.24</del> <u>1.68</u>	--	--
AMEL (mg/L) <sup>(4)</sup>	<del>0.58</del> <u>0.43</u>	--	--	<del>0.58</del> <u>0.52</u>	--	--	<del>0.84</del>	--	<del>--</del> <u>0.45</u>	<del>0.84</del> <u>0.67</u>	--	--
MDEL Multiplier (99 <sup>th</sup> %)	<del>4.23</del> <u>48</u>	--	--	<del>4.23</del> <u>3.09</u>	--	--	<del>3.94</del>	--	<del>--</del> <u>2.91</u>	<del>3.94</del> <u>70</u>	--	--
<b>MDEL (mg/L)</b>	<b>1.04</b>	--	--	<b>1.04</b>	--	--	<b>1.47</b>	--	<del>--</del> <u>1.11</u>	<b>1.47</b>	--	--

1. Acute pH = maximum effluent or receiving stream pH, Chronic pH = permitted maximum allowed pH of 8.5
2. Temperature = Maximum 30-day average seasonal effluent temperature
3. USEPA Ambient Water Quality Criteria

30. In the Fact Sheet, section IV.C.4.b (Rationale for Effluent Limitations):  
Make the following corrections to Table F-12

**Table F-12. Summary of Water Quality-based Effluent Limitations (EFF-001)**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Ammonia (1 March – 31 October)	mg/L	<u>0.43</u>		<u>1.04</u>		
	lbs/day <sup>1</sup>	<u>26.9</u>		<u>65.1</u>		
Ammonia (1 November– 29 February)	mg/L	<u>0.52</u>		1.04		
	lbs/day <sup>1</sup>	<u>32.5</u>		65.1		
1,2,3,4,6,7,8- HeptaCDD Dioxin and congeners	pg/L			<del>0.014</del> <u>1.4</u>		
	lbs/day <sup>1</sup>			8.8 E- <del>108</del>		

31. In the Fact Sheet, section IV.C.4.b (Rationale for Effluent Limitations):  
 Make the following corrections to Table F-13

**Table F-13. Summary of Water Quality-based Effluent Limitations (EFF-002)**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
<a href="#">Ammonia</a> (1 March – 31 October)	mg/L	<a href="#">0.45</a>		<a href="#">1.11</a>		
	lbs/day <sup>1</sup>	<a href="#">28.1</a>		<a href="#">69.4</a>		
<a href="#">Ammonia</a> (1 November– 29 February)	mg/L	<a href="#">0.67</a>		1.47		
	lbs/day <sup>1</sup>	<a href="#">41.9</a>		91.9		
<a href="#">1,2,3,4,6,7,8-HeptaCDD dioxin and congeners</a>	pg/L			<del>0.01</del> <a href="#">1.4</a>		
	lbs/day <sup>1</sup>			<del>8.9</del> <a href="#">8E-108</a>		
Manganese	ug/L	<del>100</del> <sup>2</sup> <a href="#">200</a>				

32. In the Fact Sheet, section IV.D.1 (Rationale for Effluent Limitations):  
 Change the following paragraph to read:

Mass-based effluent limitations were calculated based upon the permitted average dry weather discharge flow allowed in Section IV.A.1.j. and Section IV.A.2.s of the Limitations and Discharge Requirements. Mass limitations are included for BOD, TSS, ammonia, copper, cyanide, [1,2,3,4,6,7,8 - HeptaCDD dioxin and congeners](#), mercury, and selenium.

33. In the Fact Sheet, section IV.D.2 (Rationale for Effluent Limitations):  
 Change the following sentence to read:

This Order utilizes only monthly limitations for manganese, and mercury. In lieu of weekly and monthly effluent limitations, this Order utilizes daily maximum limitations for [1,2,3,4,6,7,8 - HeptaCDD dioxin and congeners](#), and instantaneous minimum and/or maximum limitations for pH and silver.

34. In the Fact Sheet, section IV.E.1 (Rationale for Effluent Limitations):  
 Change the following paragraphs to read:

**Aluminum, ammonia, copper, cyanide, [1,2,3,4,6,7,8 - HeptaCDD dioxin and congeners](#), electrical conductivity, iron, manganese, selenium, and silver.** The SIP, section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Water Board shall establish interim requirements and dates for their achievement in the NPDES permit. The interim limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent. The State Water Board has held that the SIP may be used as guidance for non-CTR constituents. Therefore, the SIP requirement for interim effluent limitations has been applied to both CTR and non-CTR constituents in this Order.

The interim limitations for aluminum, ammonia, copper, cyanide, [1,2,3,4,6,7,8 - HeptaCDD dioxin and congeners](#), electrical conductivity, iron, manganese, selenium,

and silver in this Order are based on the current treatment plant performance. In developing the interim limitation, where there are ten sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data.

When there are less than ten sampling data points available, the *Technical Support Document for Water Quality- Based Toxics Control* ((EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than ten sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed effluent concentration to obtain the daily maximum interim limitation (TSD, Table 5-2).

Even though there fewer than 10 data points for the EC yearly average, the statistical approach was used to develop interim EC limitations based on best professional judgment. The resulting interim effluent limitations are more reasonable using the statistical approach.

The Regional Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the effluent limitation can be achieved.

Table [F-146](#) summarizes the calculations of the interim effluent limitations for aluminum, ammonia, copper, cyanide, [1,2,3,4,6,7,8 - HeptaCDD](#)~~dioxin and congeners~~, electrical conductivity, iron, manganese, selenium, and silver:

35. In the Fact Sheet, section IV.E.1 (Rationale for Effluent Limitations):  
Make the following corrections to Table F-14

**Table F-14. Interim Effluent Limitation Calculation Summary –Discharge 001**

Parameter	Units	Maximum Concentration	Mean	Std. Dev.	# of Samples	Interim Limitation
<u>1,2,3,4,6,7,8 - HeptaCDD dioxin and congeners</u>	pg/L	<del>0.14</del> <u>13.8</u>	<del>0.041</del> <u>4.2</u>	<del>0.040</del> <u>4.1</u>	6	<del>0.43</del>

36. In the Fact Sheet, section IV.E.1 (Rationale for Effluent Limitations):  
Make the following corrections to Table F-15

**Table F-15. Interim Effluent Limitation Calculation Summary –Discharge 002**

Parameter	Units	Maximum Concentration	Mean	Std. Dev.	# of Samples	Interim Limitation
<u>1,2,3,4,6,7,8 - HeptaCDD dioxin and congeners</u>	pg/L	<del>0.03</del> <u>8</u>	<del>0.025</del> <u>2.5</u>	<del>0.011</del> <u>1.1</u>	7	<del>0.12</del> <u>12</u>

37. In the Fact Sheet, section VI.B.1 (Rationale for Monitoring and Reporting Requirements):  
Change the following paragraph to read:

Pursuant to the requirements of 40 CFR §122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater. To assess compliance with effluent limitations, this Order requires effluent monitoring for BOD, TSS, pH, settleable solids, turbidity, total coliform organisms, aluminum, ammonia, boron, chloride, copper, cyanide, 1,2,3,4,6,7,8 - HeptaCDD dioxin and congeners, electrical conductivity (EC), iron, manganese, sodium, selenium, acute whole effluent toxicity, mercury, temperature, total residual chlorine, flow for both Discharge 001 and Discharge 002; effluent monitoring for cyanide for Discharge 001, and effluent monitoring for silver for Discharge 002. Since the effluent hardness effects the toxicity of some of these constituents, this Order includes effluent monitoring for hardness.

38. In the Fact Sheet, section VII.B.1.b (Rationale for Provisions):  
Change the following paragraph to read:

**Pollution Prevention.** This Order requires the Discharger to prepare and implement pollution prevention plans following CWC section 13263.3(d)(3) for copper, cyanide, selenium, silver, aluminum, ~~dioxin and congeners~~, iron, and manganese. This reopener provision allows the Regional Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements for these constituents based on a review of the pollution prevention plans. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

39. In the Fact Sheet, section VII.B.6.b (Rationale for Provisions):  
Change the following paragraph to read:

The Discharger submitted a request, and justification (dated 22 January 2006), for a compliance schedule for BOD, TSS, turbidity, coliform, aluminum, ammonia, [1,2,3,4,6,7,8 - HeptaCDD](#)~~dioxin and congeners~~, iron, and manganese. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of section 2.1 of the SIP. This Order establishes a compliance schedule for the new, final, water quality-based effluent limitations for BOD, TSS, turbidity, coliform, aluminum, ammonia, [1,2,3,4,6,7,8 - HeptaCDD](#)~~dioxin and congeners~~, iron, and manganese and requires full compliance by five years from the effective date of this Order.