CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0066

NPDES NO. CA0081531

WASTE DISCHARGE REQUIREMENTS FOR COLLINS & AIKMAN PRODUCTS COMPANY, INC. FORMER WICKES FOREST INDUSTRIES SITE GROUNDWATER REMEDIATION SYSTEM SOLANO COUNTY

The California Regional Water Quality Control Board, Central Valley Region (hereafter Regional Board) finds that:

BACKGROUND

1. Collins & Aikman Products Company, Inc. (hereafter CAPCO or Discharger) submitted a Report of Waste Discharge, dated 29 November 2001, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from a groundwater extraction and treatment plant at the former Wickes Forest Industries Site in Elmira (site). Supplemental information to complete filing of the application was submitted on 29 January 2002, 18 October 2002, 30 October 2002, 4 November 2002, 28 February 2003, 25 March 2003, and 14 January 2004. The site is at 6109 A Street, Elmira, and is Solano County Assessor Parcel Numbers 142-010-130 and 142-010-140.

2. Pacific Wood Preserving operated a wood treatment facility at the site from 1972 until 1979, and Wickes Forest Industries, Inc. operated from 1979 until 1982. The wood treatment operations resulted in soil and groundwater polluted with arsenic, hexavalent chromium and copper. The Discharger acquired the Wickes site in 1980 and in 1997, sold the property to Jim Dobbas Inc. (Dobbas) of Newcastle.

3. The groundwater remediation is regulated by the California Department of Toxic Substances Control (DTSC). The Discharger, DTSC, and the Regional Board entered into a settlement agreement and schedule of compliance on 26 February 1984. The agreement established hazardous waste cleanup action at the site. Therefore, since 1984, the Discharger has operated an extraction, treatment and disposal system to clean up the polluted groundwater. Waste Discharge Requirements Order No 97-109, NPDES Number CA0081531, issued to the Discharger on 20 June 1997, currently governs discharge of the treated groundwater. In 1995, the Discharger completed soil cleanup by fixing the contaminants in place and covering the site with an engineered asphalt cap. Dobbas has responsibility for site maintenance including maintenance of the asphalt cap.

4. The groundwater pollutant plume, treatment system and discharge point are north of the corner of A Street and Holdener Road in Elmira, in Section 19, T6N, R1E, MDB&M as shown on **Attachment A**, which is by reference a part of this Order. The existing discharge point is into a

drainage channel along the north side of Holdener Road, immediately adjacent to the property gate, and at a latitude 38°, 21', 06" and longitude 121°, 54', 30".

5. When sufficient flow exists in the Holdener Road drainage channel, the discharge will flow to Ulatis Creek, a water of the United States. The discharge joins Ulatis Creek at about 3.5 miles downstream and it is at this confluence point that it enters the legal boundary of the Sacramento San Joaquin Delta. During rare occasions of local flooding the discharge may also flow to Old Alamo Creek, a tributary to New Alamo Creek, which is also a tributary to Ulatis Creek, at which point it also enters the legal boundary of the Delta. Therefore, to ensure the discharge does not enter Old Alamo Creek and add to the flooding conditions, **Provision G2** of this Order requires that during periods of local flooding the Discharger temporarily cease operation of the extraction, treatment and disposal system.

6. The groundwater treatment system (GWTS) includes an electrochemical cell that removes chromium, arsenic and copper from groundwater by co-precipitating the metal ions with ferric hydroxide particles. The schematic of the electrochemical co-precipitation treatment system is shown on **Attachment B**. The electrochemical process liberates ferrous ions in solution by means of anodic polarization of an iron metal electrode. The ferrous ions then induce reduction of hexavalent chromium to its lower trivalent state. The ferrous ions are produced in an electrochemical cell by passing polluted groundwater through iron plates carrying an electrical current. The iron plates are consumed in the process. The Discharger uses hydrochloric acid to clean the electrochemical cell reactor in order to facilitate changing the 29 iron plates about every eight weeks. Subsequent to the electrochemical cell the groundwater pH may require adjustment, in which case sodium hydroxide is added in a 30% solution. The settling properties (flocculation) of the metal complexes within the neutral pH (7.2 to 7.8) groundwater are improved by adding an anionic polymer to the process water at the inlet of the clarifier. The flocculated waste metal solids are then pumped to a slurry tank and dewatered with a filter press. The liquid filtrate is recycled back through the electrochemical cell. The waste solids are placed in drums for off-site disposal. The liquid supernatant from the clarifier is passed through a multi-media filter and finally discharged to the Holdener Road roadside drainage channel. The Discharger uses hydrochloric acid, consumable iron plates, sodium hydroxide, and an anionic polymer flocculating agent as amendments to facilitate treatment. The Report of Waste Discharge describes the treated groundwater discharge as follows:

Monthly Average Flow:	0.010 million gallons per day (mgd) (7 gpm)
Design Flow:	0.022 mgd (15 gpm)
Maximum Temperature:	28.2 °C summer and 21.4 °C winter
Average Temperature:	19.4 °C (67 °F) summer and 18.9 °C (66 °F) winter

Constituent	Concentration

Biochemical oxygen demand[1]	ND, <3 mg/l
Chemical oxygen demand	ND, <10 mg/l
Total organic carbon	3.1 mg/l
Total suspended solids	ND, <5.0 mg/l
Total dissolved solids	1,300 mg/l
Hardness as $CaCO_3$	510-600 mg/l
Chloride	210 mg/l
Sulfate	330 mg/l
Specific Conductivity	1,800 µmhos/cm
Arsenic	potentially present
Chromium III	20 µg/l
Chromium VI	38 µg/l
Copper	9 µg/l
Antimony	7.8 µg/l
Bis(2-ethylhexyl) phthalate	8.4 µg/l
Iron	20,000 µg/l
Mercury	0.0086 µg/l
Manganese	74 µg/l
Selenium	6.2 µg/l

1 5-day, 20°C biochemical oxygen demand.

7. The Regional Board has considered the information regarding the facility and the regulatory basis for these requirements in the attached Information Sheet. The Information Sheet, Monitoring and Reporting Program No. R5-2004-0066, and attachments A through E are part of this Order.

8. The U.S. Environmental Protection Agency (USEPA) and the Regional Board have classified this discharge as a minor discharge.

9. The Regional Board adopted a *Water Quality Control Plan*, *Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those water quality objectives for all waters of the Basin. Requirements in this Order implement the Basin Plan.

10. The USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000, and amendments to the CTR on 13 February 2001. These Rules contain water quality standards applicable to this discharge. The State Water Resources Control Board (State Board) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy [SIP]), which contains guidance on implementation of the NTR, CTR and other criteria for priority toxic pollutants.

RECEIVING WATER BENEFICIAL USES

11. The Basin Plan at page II-2.00 states: "Existing and potential beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The Basin Plan does not specifically identify beneficial uses for the Holdener Road drainage channel, but the Basin Plan does identify present and potential uses for the Sacramento San Joaquin Delta that includes the section of Ulatis Creek, to which the drainage channel is tributary.

As identified in Table II-1 of the Basin Plan, the beneficial uses of the Sacramento San Joaquin Delta (Delta) downstream of the discharge include; municipal and domestic water supply (MUN), agricultural irrigation and stock watering (AGR), industrial process water supply (PRO), industrial service supply (IND), body contact water recreation (REC-1), other non-body contact water recreation (REC-2), warm freshwater aquatic habitat (WARM), cold freshwater aquatic habitat (COLD), warm and cold fish migration habitat (MIGR), warm spawning habitat (SPWN), wildlife habitat (WILD), and navigation (NAV).

The Basin Plan on page II-1.00 states: "Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…" and with respect to disposal of wastewaters states that "...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses."

The Basin Plan recognizes that some uses may not currently exist and may not be able to be supported in the probable future for at least certain portions of a receiving water. Thus, the Regional Board recognizes that considering removing some of the beneficial uses may be appropriate. The Regional Board, however, is not authorized to remove such uses unless it follows the public process as required by state law and the federal regulations, i.e., by amending the Basin Plan.

The Holdener Road drainage channel courses east along the north side of Holdener Road and once it reaches Lewis Road, it is directed north within a channel along the west side of the road. This channel then at the corner of Lewis Road and Hawkins Road courses east along Hawkins Road towards Ulatis Creek, at which point, at about 3.5 miles downstream of the discharge point, enters the legal boundary of the Sacramento-San Joaquin Delta.

While flow in the Holdener Road drainage channel is tributary to the Delta (specifically Ulatis Creek), the Holdener Road drainage channel appears to have been constructed to collect stormwater runoff from the roadway and tail-water from agricultural irrigation. The Holdener Road drainage channel is not a "stream" as used in the Basin Plan "tributary" language, and as a constructed drainage channel, it is not subject to the tributary provisions of the Basin Plan. Therefore, although the Holdener Road drainage channel is a water of the U.S., the Regional Board has not designated beneficial uses to the channel. The beneficial uses of the Holdener Road

drainage channel are therefore identified by other statutory designations and/or actual existing beneficial uses of the receiving water. In examining appropriate designated beneficial uses of the Holdener Road drainage channel, the Regional Board has considered that USEPA's water quality standards regulations require protection of all existing uses (40 CFR 131.10). Existing uses are "those uses actually attained in the water body on or after 28 November 1975, whether or not they are included in the water quality standards" (40 CFR 131.3(e)). Existing uses also include those uses for which water quality was suitable on or before November 28, 1975. Furthermore, federal regulations require that all waters of the United States shall be so regulated as to achieve water quality that assures protection of public water supplies; assures the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife; and allows recreational activities (40 CFR, 125.62). Additionally, all downstream uses must also be protected (40 CFR 131.10(b)).

Therefore, in reviewing what existing beneficial uses apply to the Holdener Road drainage channel, the Regional Board has considered the following facts:

a. Municipal and Domestic Supply (MUN)

The Basin Plan defined Municipal and Domestic Supply (MUN) as "Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply." Flows in the Holdener Road drainage ditch, at times, consist solely of treated effluent (7 gallons per minute on average) and/or agricultural tailwater. These flow and quality concerns would likely preclude direct MUN use. In addition, flows in the Holdener Road drainage channel likely provide year-round recharge of local groundwater which has a MUN designated use according to the Basin Plan. Furthermore, there is no evidence that the Holdener Road drainage channel downstream of the discharge is currently or was previously used for MUN. It is also unknown whether MUN is attainable for the Holdener Road channel in the foreseeable future.

For Surface Waters at page II-2.00 the Basin Plan states: "Water Bodies within the basins that do not have beneficial uses designated in Table II-1 are assigned MUN designations in accordance with the provisions of State Water Board Resolution No. 88-63 Sources of Drinking Water Policy, which is, by reference, a part of this Basin Plan." The Basin Plan further states: "In making any exemptions to the beneficial use designation of MUN, the Regional Board will apply the exceptions listed in Resolution 88-63…." Resolution No. 88-63 states that "All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards with the exception of: 2. Surface Waters where: b. The water is in systems designed or modified for the primary purpose of conveying or holding agricultural drainage waters, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards." The Holdener Road drainage channel is a "waters of the State" and, therefore, is subject to Resolution No. 88-63. As required by State Board Resolution 88-63, all surface waters of the State are considered to

be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Board, unless an exception applies.

While the Holdener Road drainage channel appears to meet the exceptions of Resolution No. 88-63, the State Board found in Order WQO 2002-0015 (Vacaville) that "….Resolution No. 88-63 did not itself designate uses for any waterbody. Rather, the resolution established a state policy that the Regional Boards were required to implement in their basin plans." (page 27). The Regional Board implemented Resolution No. 88-63 through a blanket MUN designation for all unidentified waterbodies in the region. Having made the designation, the Regional Board is required to go through another rulemaking process to change the designation. Therefore, until or unless a basin plan amendment is completed to change the MUN designation, the MUN use applies to the Holdener Road drainage channel.

MUN is identified in the Basin Plan as an existing use of the Delta including Ulatis Creek downstream of the discharge. Any basin plan amendment process which considers dedesignating the MUN beneficial use of the Holdener Road drainage channel would also have to consider the impacts on this use in Ulatis Creek within the Delta.

b. Agricultural Supply (AGR)

The Basin Plan defines Agricultural Supply (AGR) as "Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation…stock watering, or support of vegetation for range grazing." The Holdener Road drainage channel, as previously mentioned, is a small channel that appears to have been constructed strictly to convey irrigation tailwater and stormwater runoff and at times consists solely of treated effluent and/or agricultural tailwater. Therefore, these flow and quality concerns would likely preclude direct AGR use. Furthermore, there are no existing water right permits for agricultural water supply uses of this channel, downstream of the discharge point to the confluence with Ulatis Creek, and there is no evidence of any use of this channel as agricultural water supply since November 28, 1975. It is also unknown whether AGR is attainable for the Holdener Road channel in the foreseeable future. Therefore, the Regional Board finds that the AGR use does not apply to the Holdener Road drainage channel, and no effluent limitations in this Order are associated with protection of this beneficial use. Future updates of this Order will continue to reconsider the existing use of the Holdener Road drainage channel as a source of agricultural water supply.

c. Industrial Service Supply (IND)

The Basin Plan defines Industrial Service Supply (IND) as "Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization." No known industrial supply water intakes or industrial uses are located

along the Holdener road drainage channel from the point of discharge to the confluence with Ulatis Creek. Whether waters of the drainage channel are suitable for IND use is unknown since a specific industrial use has not been identified. Therefore, the Regional Board finds that the IND use does not apply to the Holdener Road drainage channel, and no effluent limitations in this Order are associated with protection of this beneficial use. Future updates of this Order will continue to reconsider the existing use of the Holdener Road drainage channel as a source of industrial service supply water.

d. Industrial Process Supply (PRO)

The Basin Plan defines Industrial Process Supply (PRO) as "Uses of water for industrial activities that depend primarily on water quality." PRO is a beneficial use of the downstream water Ulatis Creek. However, as noted for IND, no known industrial supply water intakes or industrial uses are located along the Holdener road drainage channel from the point of discharge to the confluence with Ulatis Creek. Whether waters of the drainage channel are suitable for PRO use is unknown since a specific industrial use has not been identified. Therefore, the Regional Board finds that the PRO use does not apply to the Holdener Road drainage channel, and no effluent limitations in this Order are associated with protection of this beneficial use. Future updates of this Order will continue to reconsider the existing use of the Holdener Road drainage channel as a source of industrial process supply water.

e. Water Contact Recreation (REC-1), Non-contact Water Recreation (REC-2)

The Basin Plan defines Water Contact Recreation (REC-1) as "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to swimming, wading, water skiing, skin and scuba driving, surfing, white water activities, fishing, or use of natural hot springs." Non-contact Water Recreation is defined as "Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water." The discharge flows along agricultural land and rural roads, there is ready public access to the drainage channel, and exclusion of the public is unrealistic, however the channel averages about one foot deep, and contains an irregular supply of water and it appears very unlikely to support any recreational activities. Nevertheless, Section 101(a)(2) of the federal Clean Water Act (CWA) requires that water quality for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and out of the water be achieved, whenever attainable. Federal water quality standard regulations implementing the CWA create a rebuttable presumption that all waters should be designated as fishable/swimmable, thus, the beneficial uses of REC-1 and REC-2 are applicable for this drainage channel and to remove them would require completion of a Use Attainability Analysis and a Basin Plan amendment.

f. Groundwater Recharge (GWR)

The Basin Plan defines Groundwater Recharge (GWR) as "Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers." In areas and at times of the year where groundwater elevations are below the stream bottom, water from the channel will percolate to groundwater. Since the drainage channel is at times dry, it is reasonable to assume that the water is lost by evaporation, flow downstream, and percolation to groundwater, which provides a source of municipal and irrigation water supply. Therefore, this Order considers GWR as an existing use of the Holdener Road drainage channel.

g. Freshwater Replenishment (FRSH)

The Basin Plan defines Freshwater Replenishment (FRSH) as "Uses of water for natural or artificial maintenance of surface water quantity and quality." When water is present in the drainage channel and empties into Ulatis Creek there is hydraulic continuity between the drainage channel and Ulatis Creek (which is part of the Sacramento San Joaquin Delta). During periods of hydraulic continuity, the drainage channel adds to the water quantity and may impact the quality of water flowing in Ulatis Creek, part of the Sacramento San Joaquin Delta. Therefore, this Order considers FRSH as an existing use of the Holdener Road drainage channel.

h. Warm Freshwater Habitat (WARM)

The Basin Plan defines Warm Freshwater Habitat (WARM) as "Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates." There is aquatic habitat in the drainage channel, similar to those species found in area vernal pools. Aquatic life suited to the WARM use was also observed in the drainage channel at the corner of Holdener Road and Lewis Road including crayfish, minnows, and frogs. These observations indicate that waters of the Holdener Road drainage channel are suitable for the WARM use. As noted previously, Section 101(a)(2) of the federal CWA requires that water quality for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and out of the water be achieved, whenever attainable. Federal water quality standard regulations implementing the CWA create a rebuttable presumption that all waters should be designated as fishable/swimmable. Therefore, this Order considers WARM as an existing use of the Holdener Road drainage channel.

i. Cold Freshwater Habitat (COLD)

The Basin Plan defines Cold Freshwater Habitat (COLD) as "Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates." As noted above, Section 101(a)(2) of the federal CWA requires that water quality for the protection and propagation of fish, shellfish,

and wildlife, and for recreation in and out of the water be achieved, whenever attainable. Federal water quality standard regulations implementing the CWA create a rebuttable presumption that all waters should be designated as fishable/swimmable. In requiring a State to consider protection and propagation of fish, shellfish, and wildlife, the federal regulations do not distinguish between WARM and COLD uses. Furthermore, the California Department of Fish and Game (DFG) has verified that the fish species present in Ulatis Creek and downstream waters are consistent with both cold and warm water fisheries. There are no barriers at Ulatis Creek other than lack of elevation and flows at times of the year that would prevent fish and other aquatic species from entering into the drainage channel. Whether COLD exists or may be considered a seasonal use of the drainage channel is unknown.

40 CFR 131.10(c) provides that "States may adopt sub-categories of a use and use the appropriate criteria to reflect varying needs of such sub-categories of uses, for instance, to differentiate between cold water and warm water fisheries." However, removal or establishment of a sub-category of the fishable beneficial use like COLD would require completion of a UAA and Basin Plan amendment. Therefore, until or unless a basin plan amendment is completed to change the COLD designation, this Order considers the COLD use applicable to the Holdener Road drainage channel.

j. Migration of Aquatic Organisms (MIGR)

The Basin Plan defines Migration of Aquatic Organisms (MIGR) as "Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish." MIGR, for both warm and cold habitats, is identified as an existing beneficial use of the Delta including Ulatis Creek. The observations of crayfish, minnows, and frogs in the Holdener Road drainage channel suggest that the channel at a minimum supports a warm water habitat necessary for temporary activities by various aquatic organisms. As noted for COLD, at times of the year, the lack of elevation and flows at Ulatis Creek at the confluence point with the drainage channel would likely serve as barriers to movement of anadromous fish species which might transition between Ulatis Creek and the drainage channel. Whether the drainage channel is or has been suitable to support habitats necessary to the migration of cold water aquatic organisms is unknown. However, removal or establishment of a sub-category of the MIGR use would require completion of a UAA and Basin Plan amendment. Therefore, this Order considers warm MIGR as an existing use and cold MIGR as a potential use of the Holdener Road drainage channel.

k. Spawning, Reproduction, and/or Early Development (SPWN)

The Basin Plan defines Spawning, Reproduction, and/or Early Development (SPWN) as "Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish." Warm habitat spawning, reproduction, and/or early development (SPWN) is identified as an existing beneficial use of the Delta which includes the section of Ulatis Creek

into which the drainage channel discharges. The observation of minnows in the Holdener Road drainage channel suggests that the channel supports at a minimum a warm water habitat necessary for reproduction and early development of fish. As noted for COLD, at times of the year, the lack of elevation and flows at Ulatis Creek at the confluence point with the drainage channel likely serve as barriers to movement of anadromous fish species which might transition between Ulatis Creek and the drainage channel. Whether the drainage channel is or has been suitable to support habitats necessary for the spawning of cold water aquatic organisms is unknown. However, removal or establishment of a sub-category of the SPWN use would require completion of a UAA and a Basin Plan amendment. Therefore, this Order considers warm SPWN as an existing use and cold SPWN as potential use of the Holdener Road drainage channel.

l. Wildlife Habitat (WILD)

The Basin Plan defines Wildlife Habitat (WILD) as "Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources." WILD is identified as an existing beneficial use of the Delta which includes the section of Ulatis Creek to which the drainage channel discharges into. Based upon observations during field inspections, the Holdener Road drainage channel from the point of discharge until it confluences with Ulatis Creek does provide habitat for some aquatic vegetation and wildlife. Therefore, this Order considers WILD as an existing use of the Holdener Road drainage ditch.

m. Navigation (NAV)

The Basin Plan defines Navigation (NAV) as "Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels." NAV is identified as an existing beneficial use of the Delta which includes the section of Ulatis Creek to which the drainage channel discharges into. However, the size of the Holdener Road drainage channel from the discharge point until its confluence with Ulatis Creek, prevents any NAV use to occur. Therefore, the Regional Board finds that the NAV use does not apply to the Holdener Road drainage channel, and no effluent limitations in this Order are associated with protection of this beneficial use.

Upon review of the flow conditions, habitat values, and beneficial uses of the drainage channel and the facts described above, the Regional Board finds that MUN, REC-1, WARM, COLD, MIGR, and/or SPWN beneficial uses are applicable and/or existing and all have an impact on effluent and/or receiving water limitations in this Order.

12. The Regional Board also finds that based on the available information and on the Discharger's application, that the drainage channel absent the discharge, is an ephemeral water body. The

ephemeral nature of the drainage channel means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within the drainage channel help support the aquatic life. Both conditions may exist within a short time span, where the drainage channel would be dry without the discharge and periods when sufficient background flows provide hydraulic continuity with Ulatis Creek part of the Sacramento San Joaquin Delta. Dry conditions occur primarily in the summer months, but dry conditions may also occur throughout the year, particularly in low rainfall years. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards and aquatic life. Significant dilution may occur during and immediately following high rainfall events.

13. The beneficial uses of the underlying ground water, as identified in the Basin Plan are municipal and domestic, industrial service, industrial process, and agricultural supply.

EFFLUENT LIMITATIONS AND REASONABLE POTENTIAL

14. Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

15. The CWA Section 301 (b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include Regional Board's Basin Plan beneficial uses and narrative and numeric water quality objectives, State Board adopted standards, and federal standards, including the CTR and NTR. The Basin Plan contains numeric water quality objectives and narrative objectives including objectives for bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, taste and odor producing substances, temperature, turbidity, and toxicity. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (Basin Plan at III-8.00.) For determining whether there is reasonable potential for an excursion above a narrative objective, the regulations prescribe three discrete methods (40 CFR 122.44 (d)(vi)). The Regional Board often relies on the second method because the USEPA's water quality criteria have been developed using methodologies that are subject to public review, as are the individual recommended criteria guidance documents. USEPA's ambient water quality criteria are used as means of supplementing the integrated approach to toxics control, and in some cases deriving numeric limitations to protect receiving waters from toxicity as required in the Basin Plan's narrative toxicity objective. The narrative chemical constituents objective states "*Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At a minimum, water designated for use as*

domestic or municipal supply shall not contain concentrations of chemical constituents in excess of maximum contaminant levels (MCLs) in Title 22 of the California Code of Regulations." Thus for MUN designated waters, to determine whether there is reasonable potential for an excursion above a chemical constituents objective, MCLs are considered as the applicable water quality objectives. In addition, when determining effluent limitations for a discharge, the dilution of the effluent in the receiving water may be considered where areas of dilution are defined. However, when a receiving water is impaired by a particular pollutant or stressor, limited or no pollutant assimilative capacity may be available in spite of the available dilution. In these instances, and depending upon the nature of the pollutant, effluent limitations may be set equal to or less than the applicable water quality criteria that are applied at the point of discharge such that the discharge will not cause or contribute to the receiving stream excursion above water quality objectives established to protect the beneficial uses.

16. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs the Regional Board finds that the discharge does have a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for **antimony, arsenic, bis(2-ethylhexyl) phthalate, total chromium, chromium III, chromium VI, copper, iron, manganese, salinity (EC/TDS), selenium, and sulfate**. A table of the data used to determine reasonable potential is incorporated into this Order as **Attachment C**. Effluent limitations for these constituents are included in this Order. In addition, this Order contains provisions that:

    a. Require the Discharger to conduct a study to provide information as to whether the levels of priority pollutants, including CTR and NTR constituents, constituents for which drinking water maximum contaminant levels (MCLs) are prescribed in the California Code of Regulations, or other pollutants in the discharge cause or contribute to an in-stream excursion above a water quality standard, including Basin Plan numeric or narrative objectives;

    b. If the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard, requires the Discharger to submit information to calculate effluent limitations for those constituents; and

    c. Allows the Regional Board to reopen this Order and include effluent limitations for those constituents.

    State Board Resolution No. 68-16 (hereafter Resolution 68-16) requires the Regional Board in regulating discharge of waste to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board's policies (e.g., quality that exceeds water quality objectives). Resolution 68-16 requires that the discharge be regulated to meet best practicable treatment or control to

assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State be maintained.

On 10 September 2001 the Executive Officer issued a letter, in conformance with State Water Code, Section 13267, requiring the Discharger to prepare a technical report assessing effluent and receiving water quality. A copy of that letter, including its attachments is incorporated into this Order as **Attachments D through D4**. The study/provision contained in this Order is intended to be consistent with the requirements of the technical report (**Attachment D**) in requiring sampling for NTR, CTR, and additional constituents to determine if the discharge has a reasonable potential to cause or contribute to water quality impacts. The technical report requirements contained in Attachment D list specific constituents, detection levels, acceptable time frames and report requirements. **Provision G3** contained in this Order is intended to be consistent with the requirements of the technical report and requires the submittal of data requested but not provided.

17. Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB* [Regional Water Quality Control Board] *may establish a compliance schedule in an NPDES permit.*" Section 2.1 states further that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: "*(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order contains a Provision that requires this information and provides a compliance schedule for implementation of effluent limitations bis (2-ethylhexyl) phthalate and selenium. If justification for compliance schedules is **not** completed and submitted by the Discharger to the Regional Board by **1 September 2004**, or the submittal **does not meet** the requirements of Section 2.1 of the SIP, then implementation of the new water quality based Effluent Limitations for bis (2-ethylhexyl) phthalate and selenium become effective on **1 October 2004**. If compliance schedules are justified and implemented, then the final water quality based effluent limitations for bis (2-ethylhexyl) phthalate and selenium become effective **1 June 2009.**

18. Previous Order No. 97-109 included a daily maximum effluent limitation for **arsenic** of 50 µg/l, which was the USEPA Primary MCL at that time. Since arsenic is a groundwater pollutant from previous wood treatment operations, reasonable potential exists that arsenic could be discharged into the receiving water. For the Sacramento San Joaquin Delta, which includes the confluence point of the drainage ditch with Ulatis Creek, the Basin Plan contains a numeric receiving water objective for arsenic of 10 µg/l expressed as dissolved concentration, and using a conversion factor of 1 translates to a total recoverable concentration of 10 µg/l, which is also the newly adopted (22 January 2001) USEPA Primary MCL. Arsenic was detected in the groundwater treated

effluent in two samples in February and March 1998 with results of 15 µg/l and 14 µg/l respectively, both results exceeding the drinking water MCL. Therefore, this Order sets an effluent limit for arsenic of 10 µg/l as a monthly average. Based on the recently submitted information and on the Discharger's application, the GWTS is capable of dependably removing arsenic in groundwater to concentrations that are below the applicable water quality standard and are below the reported minimum level for the appropriate analytical method. USEPA Analytical Method 200.8 for arsenic has a typical reporting limit of 1.0 µg/l. The Discharger is capable of meeting the new water quality based effluent limit for arsenic of 10 µg/l, therefore a time schedule for compliance is not necessary in the Order.

19. Since **copper** is a groundwater pollutant from previous wood treatment operations, reasonable potential exists that copper could be discharged into the receiving water. The Basin Plan has established a maximum concentration objective for dissolved copper for waters in the Delta (applicable at the confluence point of the drainage ditch and Ulatis Creek) of 10 µg/l (independent of hardness), which translates to a total copper concentration of 10.4 µg/l (using the current USEPA default conversion factor of 0.96, instead of a factor of 1.0 as was done in the previous permit). The CTR Water Quality Criteria for total recoverable concentrations of copper for protection of freshwater aquatic life for acute and chronic scenarios are 27 µg/l and 17 µg/l, respectively based on the worst receiving water (Ulatis Creek) hardness of 204 mg/l as $CaCO_3$. Monitoring for copper in the previous order was required on a monthly basis and the results have been non-detect (<10 µg/l), except for one sample taken in October 1999, with a result of 12 µg/l, which exceeded the Basin Plan Delta objective. More recent results of effluent monitoring of the GWTS show that five of the five SIP samples contained **copper** above the analytical reporting limit of 0.5 µg/l with results ranging from 2.2 µg/l l to 9.0 µg/l. Based on the available information and on the Discharger's application, the GWTS is capable of dependably removing copper in groundwater to concentrations that are below the applicable water quality standard and are below the reported minimum level for the appropriate analytical method when adequately operating the groundwater treatment system. USEPA Analytical Method 200.8 for copper has a typical reporting limit of 0.5 µg/l. The effluent limits cannot be less stringent than those in the previous permit. The previous permit included an effluent limitation for total recoverable copper of 10 µg/l as a daily maximum based on the Basin Plan delta objective, and 11 µg/l as a 4-day average, and 17 µg/l as a 1-hr average based on the USEPA ambient water quality criteria for the protection of freshwater aquatic life. The 17 µg/l and 11 µg/l averages have been deleted from this Order since 10 µg/l as a daily maximum is much more restrictive than these averages. In addition, although the appropriate limitation should be 10.4 µg/l as a daily maximum, based on existing treatment technology and past history of compliance, the copper limitation will remain the same as in the previous permit, which is 10 µg/l as a daily maximum.

20. Due to the previous wood treatment operations, chromium was found to be polluting groundwater and since chromium is typically present in two forms, the previous Order established effluent limitations for both chromium III and chromium VI. Review of monthly monitoring reports between 1995 and 2002 showed that **Total chromium** was detected in 12 out of 129 samples with

a range between 2.9 µg/l and 54 µg/l. The California Primary MCL for total chromium is 50 µg/l, which is the criterion applicable to this discharge pursuant to the Chemical Constituents objective of the Basin Plan. Based on the available data, there was one instance, on 19 August 2002, when the total chromium concentration (54 µg/l) in the GWTS effluent exceeded the drinking water MCL. Therefore, this Order establishes an effluent limitation for total chromium of 50 µg/l as a monthly average. Since the groundwater treatment system is designed to remove chromium in the groundwater, the discharger should be able to comply with this effluent limitation when adequately operating the treatment system and therefore a time schedule for compliance is not necessary in this Order.

21. Since chromium III is an alternative valence state of the groundwater pollutant from previous wood treatment operations, reasonable potential exists that chromium III could be discharged into the receiving water. Previous Order No. 97-109 included a 4-day average and 1-hour average effluent limitation for **chromium III** of 210 µg/l and 1,700 µg/l, respectively based on USEPA ambient water quality criteria for the protection of freshwater aquatic life for chronic and acute scenarios based on an *assumed* worst receiving water hardness of 100 mg/l as $CaCO_3$. Based on new information, this Order considers the appropriate criteria as the CTR water quality criteria for chromium III for protection of freshwater aquatic life based on an *actual* worst receiving water hardness of 204 mg/l (monitored in Ulatis Creek), which results in a chronic criterion (4-day average) of 370 µg/l and an acute criterion (1-hr average) of 3100 µg/l. The maximum observed effluent concentration for chromium III was 20 µg/l. There is no reasonable potential based on effluent concentrations, however, due to high levels in the influent and the possibility of inadequate treatment, the Regional Board finds reasonable potential and establishes effluent limitations for chromium III based on CTR criteria. According to the SIP section 1.4, effluent limits should be calculated as a daily maximum and a monthly average. Thus, this order establishes effluent limits for chromium III of 606 µg/l as a daily maximum and 302 µg/l as a monthly average based on the CTR criteria for the protection of freshwater aquatic life. Based on the available information and on the Discharger's application, the groundwater treatment system (GWTS) is capable of dependably removing chromium III in groundwater. The Discharger is capable of meeting the new water quality based effluent limits for chromium III, therefore a time schedule for compliance is not necessary in the Order.

22. Previous Order No. 97-109 included a 4-day average and 1-hour average effluent limitation for **chromium VI** of 10 µg/l and 15 µg/l, respectively based on USEPA's recommended ambient water quality criteria for the protection of freshwater species. However, since adoption of the CTR on 18 May 2000, the CTR criteria for the protection of freshwater aquatic life for chromium VI of 16 µg/l (1-hr average, acute) and 11 µg/l (4-day average, chronic) become the applicable criteria. The criteria are expressed as dissolved concentrations and using the USEPA default conversion factor the CTR criteria are converted to total recoverable chromium VI concentrations of 16.3 µg/l (acute) and 11.4µg/l (chronic). Since chromium VI is a groundwater pollutant from previous wood treatment operations, reasonable potential exists that chromium VI could be discharged into the receiving water. The maximum observed effluent concentration for total chromium was 38

µg/l. Based on the data available the discharge appears to have reasonable potential to exceed the CTR water quality criteria for chromium VI. Therefore, this Order establishes effluent limitations for chromium V1 based on the applicable CTR criteria for protection of freshwater aquatic life as 16 µg/l as a daily maximum and 8.1 µg/l as a monthly average. Based on the available information and on the Discharger's application, the groundwater treatment system (GWTS) is capable of dependably removing chromium VI in groundwater. The Discharger should therefore be capable of meeting the new water quality based effluent limits for chromium VI, therefore a time schedule for compliance is not necessary in the Order.

23. The Discharger uses a treatment system that produces ferric hydroxide by electrochemical dissolution of iron plates that are made of carbon steel. Carbon steel may contain many elemental compounds, and the presence of antimony, chloride, iron, manganese, selenium and sulfate compounds in the effluent is likely from this source. Results of effluent monitoring of the GWTS show that one of the five SIP samples contained **antimony** above the analytical reporting limit of 5 µg/l with a maximum observed concentration of 7.8 µg/l. The California Primary MCL for antimony is 6.0 µg/l, which is the criterion applicable to this discharge pursuant to the Chemical Constituents objective of the Basin Plan. Based on the data available the discharge appears to have a reasonable potential to exceed the drinking water MCL for antimony. Therefore, this Order establishes an effluent limitation for antimony of 6.0 µg/l as a monthly average. It appears that the limit would put the discharger in immediate non-compliance. The previous Order No. 97-109 did not include an effluent limit for this constituent. Because establishing a designation of MUN at the drainage ditch is considered a new interpretation of the Basin Plan, a compliance schedule to meet the water quality objective, has been included in the permit. Therefore, **Provision G4** of this permit requires the discharger to submit a corrective action plan and implementation schedule to assure compliance with the antimony final effluent limitation. Full compliance with this limitation is not required by this Order until **1 June 2009**.

24. Results of effluent monitoring of the GWTS show that all five SIP samples taken between April 2002 and August 2003 contained **chloride** above the analytical reporting limit of 25 mg/l with results ranging from 180 mg/l to 210 mg/l. The secondary MCL recommended range for chloride is 250 mg/l, the upper range is 500 mg/l, and the short-term range is 600 mg/l. Based on the data available the discharge does not have a reasonable potential to exceed the Secondary MCL water quality goal for protection of domestic and municipal water supplies. Results of effluent monitoring of the GWTS between April 2002 and February 2003, showed that **Electrical Conductivity** (EC) levels ranged between 1600 and 1800 µmhos/cm and **Total Dissolved Solids** (TDS) levels ranged between 1100 and 1300 mg/l. For EC, the secondary MCL recommended range is 900 µmhos/cm, the upper range is 1600 µmhos/cm, and the short term range is 2200 µmhos/cm. For TDS, the secondary MCL recommended range is 500 mg/l, the upper range is 1000 mg/l, and the short term range is 1500 mg/l. Based on the data available, the discharge appears to have reasonable potential to exceed the EC and TDS secondary MCL for the protection of Municipal and domestic water supplies. Therefore, this Order establishes an effluent limitation for EC of 900 µmhos/cm as a monthly average and for TDS of 500 mg/l as monthly average. It appears that these limits would put the discharger in immediate

non-compliance. The previous Order No. 97-109 did not include effluent limits for these constituents. Because establishing a designation of MUN at the drainage ditch is considered a new interpretation of the Basin Plan, a compliance schedule to meet the water quality objective, has been included in the permit. Therefore, **Provision G4** of this permit requires the discharger to submit a corrective action plan and implementation schedule to assure compliance with the EC and TDS final effluent limitations. Full compliance with these limitations is not required by this Order until **1 June 2009.**

25. Results of effluent monitoring of the GWTS show that two of the five SIP samples contained **iron** above the analytical reporting limit of 100 µg/l with results ranging from 400 µg/l to 20,000 µg/l. The California Secondary MCL for iron is 300 µg/l. As previously indicated, ferric hydroxide is produced in the groundwater treatment process by electrochemical dissolution of iron plates that are made of carbon steel, thus the reason for the fluctuating levels of iron in the effluent. Based on the data available the discharge appears to have a reasonable potential to exceed the secondary MCL for iron. Therefore, this Order establishes an effluent limitation for iron of 300 µg/l as a monthly average. It appears that the limit would put the discharger in immediate non-compliance. The previous Order No. 97-109 did not include an effluent limit for this constituent. Because establishing a designation of MUN at the drainage ditch is considered a new interpretation of the Basin Plan, a compliance schedule to meet the drinking water MCL for the protection of MUN, has been included in the permit. Therefore, **Provision G4** of this permit requires the discharger to submit a corrective action plan and implementation schedule to assure compliance with the iron final effluent limitation. Full compliance with this limitation is not required by this Order until **1 June 2009**.

26. Results of effluent monitoring of the GWTS show that one of the five SIP samples contained **manganese** above the analytical reporting limit of 20 µg/l with a result of 74 µg/l. The California Secondary MCL for manganese is 50 µg/l. Based on the data available the discharge appears to have a reasonable potential to exceed the secondary MCL for manganese. Therefore, this Order establishes an effluent limitation for manganese of 50 µg/l as a monthly average. It appears that the limit would put the discharger in immediate non-compliance. The previous Order No. 97-109 did not include an effluent limit for this constituent. Because establishing a designation of MUN at the drainage ditch is considered a new interpretation of the Basin Plan, a compliance schedule to meet the drinking water MCL for the protection of MUN, has been included in the permit. Therefore, **Provision G4** of this permit requires the discharger to submit a corrective action plan and implementation schedule to assure compliance with the manganese final effluent limitation. Full compliance with this limitation is not required by this Order until **1 June 2009**.

27. Results of effluent monitoring of the GWTS show that three of the five SIP samples contained **selenium** above the analytical reporting limit of 5 µg/l with results ranging between 5.8 µg/l and 6.2 µg/l. The CTR water quality criteria for the protection of freshwater aquatic life are 5 µg/l (4-day average, chronic) and 20 µg/l (1-hour average, acute). Based on the data available the discharge appears to have a reasonable potential to exceed the chronic CTR criterion for the protection of freshwater species. Therefore, this Order establishes an effluent limitation for

selenium of 4.1 µg/l as a monthly average and 8.2 µg/l as a daily maximum. Since it appears these limits put the discharger in immediate non-compliance, according to the SIP Section 2.1, a compliance schedule is included in the permit. **Provision G4** of this permit requires the discharger to first submit justification for a time schedule and upon approval, then submit a corrective action plan and implementation schedule to assure compliance with final effluent limits. The new water quality based effluent limitations for selenium become effective on **1 October 2004** if a compliance schedule justification is not completed and submitted to the Regional Board by **1 September 2004**. Otherwise, full compliance with these limitations is not required by this Order until **1 June 2009**. In the meantime, interim effluent limits based on plant performance are established.

28. Results of effluent monitoring of the GWTS show that five of the five SIP samples contained **sulfate** above the analytical reporting limit of 25 mg/l with results ranging between 310 mg/l and 340 mg/l. For sulfate, the California Secondary MCL recommended range is 250 mg/l, the upper range is 500 mg/l, and the short term range is 600 mg/l. Based on the data available the discharge appears to have a reasonable potential to exceed the secondary MCL recommended range for sulfate. Therefore, this Order establishes an effluent limitation for sulfate of 250 mg/l as a monthly average. It appears that the limit would put the discharger in immediate non-compliance. The previous Order No. 97-109 did not include an effluent limit for this constituent. Because establishing a designation of MUN at the drainage ditch is considered a new interpretation of the Basin Plan, a compliance schedule to meet the drinking water MCL for the protection of MUN, has been included in the permit. Therefore, **Provision G4** of this permit requires the discharger to submit a corrective action plan and implementation schedule to assure compliance with the sulfate final effluent limitation. Full compliance with this limitation is not required by this Order until **1 June 2009**.

29. Bis (2-ethyl-hexyl) phthalate is used primarily as one of several plasticizers in polyvinyl chloride (PVC) resins for fabricating flexible vinyl products. According to the Consumer Product Safety Commission (CPSC), USEPA, and the Food and Drug Administration (FDA), these PVC resins are used to manufacture many products, including soft squeeze toys, balls, raincoats, adhesives, polymeric coatings, components of paper and paperboard, defoaming agents, animal glue, surface lubricants, and other products that must stay flexible and noninjurious for the lifetime of their use. The Discharger adds Andco 3640 polymer (Andco Environmental Processes, Inc. Buffalo, N.Y.) as a flocculating agent. The Discharger reported that two of the five SIP samples contained **bis(2-ethylhexyl) phthalate** above the analytical reporting limit of 5 µg/l, with a maximum result of 8.4 µg/l. The presence of bis(2-ethylhexyl) phthalate [di(2-ethylhexyl) phthalate; DEHP] in the effluent is likely from the flocculating agent. Bis(2-ethylhexyl) phthalate has a California Primary MCL of 4 µg/l and a CTR criterion for human health protection from consumption of water and aquatic organisms of 1.8 µg/l. Based on the data available the discharge appears to have a reasonable potential to exceed the CTR criterion and MCL for bis(2-ethylhexyl) phthalate. Therefore, this permit sets an effluent limitation for bis(2-ethylhexyl) phthalate of 1.8 µg/l as a monthly average and 3.6 as a daily maximum. Since these limits appear to put the discharger in immediate non-compliance, according to the SIP Section 2.1, a compliance schedule is included in the permit. **Provision G4** of this permit requires the discharger to first submit justification for

a time schedule and upon approval, then submit a corrective action plan and implementation schedule to assures compliance with the final effluent limits for bis(2-ethylhexyl) phthalate. The new water quality based effluent limitations for bis(2-ethylhexyl) phthalate become effective on **1 October 2004** if a compliance justification is not completed and submitted to the Regional Board by **1 September 2004**. Otherwise, full compliance with these limitations is not required by this Order until **1 June 2009**. In the meantime, interim effluent limits based on plant performance are established.

30. Results of effluent monitoring of the GWTS show that three of the five SIP samples contained **mercury** above the analytical reporting limit of 0.0002 µg/l with results ranging from 0.00454 µg/l to 0.00860 µg/l. The previous Order No. 97-109 did not include an effluent limit for this constituent. The current USEPA's ambient water quality criterion (expressed as dissolved concentrations) for continuous concentration of mercury is 0.77 µg/l (4-day average, chronic criteria), and the CTR (expressed as total recoverable) concentration for the human health protection for consumption of water and aquatic organisms is 0.050 µg/l. Based on the available data the discharge does not have a reasonable potential to exceed a water quality standard. Therefore, this Order does not include an effluent limitation for mercury. However, mercury is listed under the California 303(d) list as a pollutant causing impairment in the Sacramento-San Joaquin Delta. This listing is based partly on elevated levels of mercury in fish tissue. Because the Sacramento-San Joaquin Delta has been listed as an impaired water body for mercury based on fish tissue impairment, the discharge must not cause or contribute to increased mercury levels in fish tissue to enter the Delta. **Provision G5** of this Order requires the Discharger to conduct a downstream hydraulic continuity survey in accordance with a time schedule, and allows the Board to reopen this Order and set an effluent annual mass loading for mercury if necessary. The survey shall include a downstream evaluation of flow to determine if hydraulic continuity exists in the drainage ditch between the discharge point and Ulatis Creek during both wet and dry weather conditions. To aid in the investigation, several additional receiving water monitoring stations (R3, R4, R5, R6, R7, and R8) have been established at 1500 feet, 2500 feet, 1 mile, 2 miles, 3 miles, and 3.5 miles respectively downstream from the existing point of discharge.

31. The Discharger has been monitoring annually for three species (*Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum)* chronic toxicity of the effluent in accordance with procedure outlined in EPA 600/4-91-002 (*Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms*) and EPA 505/2-90-001 (*Technical Support Document for Water Quality Based on Toxic Control*). Results in September 1997 of 100% effluent showed below average levels of survival and reproduction for two species (*Pimephales promelas and Ceriodaphnia dubia).* Because of the September results, the discharger decided to conduct a full-scale Two-Species (*Pimephales promelas and Ceriodaphnia dubia)* Chronic toxicity test in October of 1997 using the dilution series specified in the Permit. The results of this second test indicated acceptable survival and reproduction levels for *Ceriodaphnia dubia,* but it still showed a reduction in survival and growth for *Pimephales promelas*, for mixed dilution samples. The Three-Species Chronic Toxicity test was repeated

again in September of 1998, using undiluted effluent, and results this time showed below average levels of survival and reproduction for *Pimephales promelas* and a significant reduction in reproduction for *Ceriodaphnia dubia*. In September 1999, a screening of 100% effluent indicated that reproduction of *Pimephales promelas* was below average. No adverse effects were observed in the population of *Ceriodaphnia dubia* or *Selenastrum capricornutum.* In November 2001, the three-species toxicity test performed with the full dilution series indicated a reduction in reproduction of *Ceriodaphnia dubia*, and survival and growth effects on *Pimephales promelas* when monitored with the 100% effluent only. No adverse effects were observed in the population of *Selenastrum capricornutum* for any of the tests. In January 2002, a confirmation test was performed on the 100% effluent and the results showed no effects on any of the three species. As a result of the observed toxicity results, the Discharger was required to conduct a Toxicity Reduction Evaluation (TRE) of the effluent. The discharger has indicated that certain modifications and upgrades have been made to the groundwater treatment system that have improved the overall quality of the effluent and may have changed the aquatic toxicity characteristics of the effluent. To test this theory, additional three-species toxicity tests were conducted in October 2002, and the results have shown no toxicity effects on any of the three species.

The USEPA has recently published newly promulgated Toxicity test methods with an effective date of 19 December 2002. Therefore, because of the above toxicity results and to confirm that the upgrades of the treatment system have consistently removed any in-stream toxicity present in the past, the three species chronic toxicity test shall continue to be conducted using the USEPA October 2002 Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition EPA/821-R-02-013 using the species *Ceriodaphnia dubia*, *Pimephales promelas*, and *Selenastrum capricornutum*. **Provision G6** contained in this Order requires the Discharger to perform a study on the effluent to determine if it is chronically toxic.

GENERAL

32. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Board Resolution 68-16. This Order does not provide for an increase in the permitted volume and mass of pollutants discharged for which effluent limits were set in prior WDRs (Order No. 97-109). Furthermore, this Order contains effluent limitations and other requirements to assure that the discharge will not unreasonably affect the beneficial uses of the receiving waters and will not exceed applicable water quality objectives. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

33. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.),

requiring preparation of an environmental impact report or negative declaration, in accordance with Section 13389 of the California Water Code (CWC).

34. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

35. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

36. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided the USEPA has no objections.

IT IS HEREBY ORDERED that Order No. 97-109 is rescinded and that Collins & Aikman Products Company, Inc., its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. The discharge of treated groundwater at a location or in a manner different from that described in the Findings is prohibited.

2. The by-pass or overflow of untreated or partially treated groundwater is prohibited, except as allowed by the attached Standard Provisions and Reporting Requirements A.13.

3. Neither the treatment nor the discharge shall create a nuisance or condition of pollution as defined by the CWC, Section 13050.

4. Surfacing or overflow of water outside the drainage channel is prohibited.

B. Effluent Limitations:

1. Effluent shall not exceed the following limits:

Constituent	Monthly Average	Daily Maximum

Constituent	Monthly Average	Daily Maximum
Antimony[3]	6 µg/l 0.0011 lbs/day[2]	
Arsenic	10 µg/l 0.0018 lbs/day[2]	
Bis(2-ethylhexyl) phthalate[1,4]	1.8 µg/l 0.0003 lbs/day[2]	3.6 µg/l 0.0006 lbs/day[2]
Total Chromium	50 µg/l 0.0092 lbs/day[2]	
Chromium III	302 µg/l 0.055 lbs/day[2]	606 µg/l 0.11 lbs/day[2]
Chromium VI	8.1 µg/l 0.0015 lbs/day[2]	16 µg/l 0.003 lbs/day[2]
TDS[3]	500 mg/l 92 lbs/day[2]	
Electrical conductivity[3]	900 µmhos/cm	
Copper		10 µg/l 0.0018 lbs/day[2]
Iron[3]	300 µg/l 0.055 lbs/day[2]	
Manganese[3]	50 µg/l 0.0092 lbs/day[2]	
Selenium[1]	4.1 µg/l 0.0007 lbs/day[2]	8.2 µg/l 0.0015 lbs/day[2]
Sulfate[3]	250 mg/l 46 lbs/day[2]	

[1] Effluent limitations effective 1 October 2004, unless compliance schedule justification is submitted. Otherwise, these final limits become effective 1 June 2009.
[2] Based upon maximum daily design treatment capacity of 0.022 mgd.
[3] Full compliance with this limit is not required by this Order until 1 June 2009.
[4] A result of non-detect (<5 µg/l) will be considered as full compliance with these limitations.

2. The following interim effluent limits shall be the applicable limitations until final effluent limitations for these constituents become effective:

Constituent	Daily Maximum
Antimony	24 µg/l 0.0044 lbs/day[1]
Bis(2-ethylhexyl) phthalate	26 µg/l 0.0048 lbs/day[1]
TDS	1500 mg/l 275 lbs/day[1]
Electrical conductivity	2200 µmhos/cm
Iron	1240 µg/l 0.23 lbs/day[1]
Manganese	230 µg/l 0.042 lbs/day[1]
Selenium	19 µg/l 0.0035lbs/day[1]
Sulfate	600 mg/l 110 lbs/day[1]

[1] Based upon maximum daily design treatment capacity of 0.022 mgd

3. The discharge shall not have a pH less than 6.5 or greater than 8.5 pH units.

4. The discharge shall not have a dissolved oxygen content less than 7.0 mg/l.

5. The maximum daily discharge flow shall not exceed 22,000 gallons per day (0.022 mgd).

6. The survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

   Minimum for any one bioassay - - - - - - - - - 70%
   Median for any three or more consecutive bioassays - - - - 90%

C. Discharge Specification:

1. There shall be no standing water or ponding of water at the discharge point.

2. The discharge drainage channel (up to Lewis Road) shall be managed to:

   a. prevent breeding of mosquitoes,
   b. control erosion,
   c. prevent weeds and remove debris to facilitate controlled flow.

D. Solids Disposal Requirements:

1. Collected screenings, sludge, and other solids removed from the treated groundwater, or generated as the result of groundwater treatment, shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste,* as set forth in Title 27, California Code of Regulations (CCR), Division 2, Subdivision 1, Section 20005, et seq.

2. Any proposed changes in solids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least **90 days** in advance of the changes.

E. Receiving Water Limitations:

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit. The discharge shall not cause the following in the receiving water (drainage channel):

1. Concentrations of dissolved oxygen to fall below 7.0 mg/l.

2. Oil, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.

3. Oil, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.

4. Esthetically undesirable discoloration.

5. Fungi, slimes, or other objectionable growths.

6. The monthly average turbidity to increase as follows:
   a. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
   b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
   c. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
   d. More than 10 percent where natural turbidity is greater than 100 NTUs.

7. The monthly average ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.

8. The monthly average ambient temperature to increase more than 5°F.
9. Deposition of material that causes nuisance or adversely affects beneficial uses.

10. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

11. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the CCR, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

12. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

13. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.

14. Violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Board pursuant to the CWA and regulations adopted thereunder. If more stringent applicable water quality standards are approved pursuant to Section 303 of the CWA, or amendments thereto, the Regional Board will revise and modify this Order in accordance with such more stringent standards.

F. Groundwater Limitations:

1. The discharge shall not cause degradation of groundwater quality.

G. Provisions:

1. The Discharger shall not allow pollutant-free wastewater and groundwater to be collected, treated, and disposed in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall and groundwater that are essentially free of pollutants.

2. During incidents of local flooding, the Discharger is required to cease operation of the extraction, treatment and disposal system, as stated in Finding No. 5. (Local flooding conditions can be defined as those times based on inspections at the corner of Holdener Rd and Lewis Rd that the drainage ditch has no freeboard).

3. There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of NTR, CTR water quality objectives, or supplemental constituents that could exceed Basin Plan numeric or narrative water quality

objectives. The constituents are specifically listed in a 10 September 2001 letter issued by the Executive Officer, in conformance with California Water Code Section 13267 for submission of a technical report by 23 March 2003 and a Dioxin study report by November 2004. The Discharger submitted Study results on 25 March 2003, however, the data submitted was not complete. The Discharger has not completed the constituent sampling and reporting as required for pentachlorophenol, alachlor, atrazine, bentazon, 2,4-D, dalapon, dinoseb, molinate, picloram, simazine, thiobencarb, 2,4,5-TP, diazinon, and chloropyrifos. The Discharger is required to conduct monthly monitoring of these 14 mentioned constituents for a period of 4 months and submit the results along with the Dioxin study report by **1 November 2004**.

This Provision is intended to be consistent with the requirements of the 10 September 2001 technical report request. However, additional time is being provided to complete the data missing from the initial testing. The Discharger shall submit to the Regional Board on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

If after review of the study results, it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective, this Order will be reopened and effluent limitations added for the subject constituents.

4. Antimony, bis(2-ethyl-hexyl) phthalate, EC, TDS, iron, manganese, selenium, and sulfate have been detected in the effluent at concentrations that exceed water quality objectives contained in the Basin Plan and the CTR. Sampling indicates the Discharger may not be capable of meeting the effluent limitations for these constituents. By **1 September 2004**, the Discharger shall complete and submit a compliance schedule justification for bis (2-ethyl-hexyl) phthalate and selenium. Antimony, EC, TDS, iron, manganese, and sulfate effluent limitations are not based on CTR criteria and thus a compliance justification for these constituents is not necessary. The compliance schedule justifications shall include all the applicable items specified by the SIP Section 2.1, Paragraph 3 [items (a) through (d)]. The new water quality based effluent limitations for bis (2-ethyl-hexyl) phthalate and selenium become effective on **1 October 2004** if a compliance schedule justification is not completed and submitted by the Discharger, or the submittal does not meet the requirements of Section 2.1 of the SIP. For bis (2-ethyl-hexyl) phthalate and selenium (upon approval of the compliance schedule justifications) and for all the other constituents, the Discharger shall develop a corrective action plan, which evaluates reasonable measures to achieve full compliance with final limitations in accordance with the following schedule:

Task	Date Due
Submit Corrective Action (compliance alternatives) Workplan	1 December 2004
Submit Compliance Alternatives Report	1 December 2005
Select Alternative(s)	1 April 2006
Submit Implementation Plan and Time Schedule	1 June 2006
Progress Reports[1]	1 June Annually
Full Compliance	1 June 2009

[1] The Progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, evaluate the effectiveness of the implemented measures and assess whether additional measures are necessary to meet the time schedule.

5. Due to the listing of mercury on the California 303 (d) list as a pollutant causing impairment of the Sacramento-San Joaquin Delta (which includes the section of Ulatis creek, which the drainage ditch is tributary to), the discharge must not cause or contribute to increased mercury levels in fish tissue to meet the requirements of the anti-degradation policy described in Sate Board's Resolution No. 68-16 and the anti degradation provision in 40 CFR 131.12 (a) (1). It is difficult to determine if the discharge is causing an increase in the mercury levels in the Delta, without knowing under what conditions hydraulic continuity exists between the discharge point at the drainage ditch and the confluence point at Ulatis Creek. The Discharger shall comply with the following time schedule in conducting a hydraulic continuity study during both, dry and wet weather conditions for at least two years, which will include a downstream evaluation of flow between the discharge point and the confluence with Ulatis Creek. To aid in the investigation, several additional receiving water monitoring stations (R3, R4, R5, R6, R7, and R8) have been established.

Task	Date Due
Submit Workplan and time schedule	1 September 2004
Begin Study	1 December 2004
Submit Progress Reports[1]	1 June Annually
Complete Study	1 December 2006
Submit Study Report	1 March 2007

The Discharger shall submit to the Regional Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus and estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

If after review of the study it is determined that the discharge has the potential to cause or contribute to the increase in the mercury levels in the Delta, this Order may be reopened to establish an interim mass effluent limitation for mercury.

6. The Discharger shall conduct the chronic toxicity testing specified in the MRP. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a work plan to conduct a Toxicity Reduction Evaluation (TRE) and, after Regional Board evaluation, conduct the TRE. This Order may be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if the State Board adopts a chronic toxicity water quality objective, this Order may be reopened and a limitation based on that objective included.

   USEPA has recently published newly promulgated Toxicity test methods with an effective date of 19 December 2002. Therefore, the Discharger will be required in the Monitoring and Reporting Program to routinely perform three species toxicity testing on the effluent to determine if their effluent causes toxicity. The three species chronic toxicity test will be conducted using the species *Ceriodaphnia dubia*, *Pimephales promelas*, and *Selenastrum capricornutum* (4th edition EPA/821-R-02-013).

7. The Discharger shall comply with all the items of the "*Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)"*, dated 1 February 2004, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provisions."

8. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. R5-2004-0066, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

9. The Discharger must use USEPA test methods and detection limits to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for these constituents as outlined in Section 2.3 and 2.4 of the State Implementation Policy. All peaks identified by the test method shall be reported.

10. When requested by the USEPA, the Discharger shall complete and submit Discharge Monitoring Reports to them. The submittal date shall be no later than the submittal date specified in the MRP for Discharger Self Monitoring Reports

11. This Order expires on **1 June 2009** and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than **180 days** in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.

12. The Discharger shall submit quarterly operations reports by the **1st day of the second month following the end of each calendar quarter**. This report may be included with the corresponding quarterly monitoring reports required in attached MRP No. R5-2004-0066. These operational reports shall contain a summary of the operating parameters, operation and maintenance activities, and a summary of any shutdown or spill events that occurred during the three months of each quarter.

13. The Discharger shall notify the Regional Board immediately during normal working hours via telephone or facsimile, and at least within **24 hours** of any unscheduled shutdown of the groundwater treatment system that lasts for 12 hours or more. This notification shall include the cause of the shutdown and the corrective action taken (or proposed to be taken) and the schedule to restart the system.

14. The Discharger shall notify the Regional Board immediately during normal working hours via telephone or facsimile, and at least within **5 days** if monthly average or daily maximum effluent limitations are exceeded. The Discharger must immediately resample the effluent, shut down the system, and determine the necessary actions to prevent further effluent violations. This notification shall include the cause of the shutdown, including the date the analytical results for the confirmation sample are expected, the corrective action taken (or proposed to be taken) and the schedule to restart the system. Upon restart, at a minimum, the Discharger shall sample the effluent on a weekly basis until four consecutive samples show that the constituent(s) concentration is below permitted levels. The Discharger shall submit a technical report within the next quarterly report stating how violations of this nature will be prevented in the future.

15. The Discharger shall notify the Regional Board immediately during normal working hours via telephone or facsimile, and at least within **24 hours** of any spill of untreated water. This notification shall include the size and cause of the spill, any immediate damage to the environment, any corrective/cleanup actions taken and/or additional monitoring proposed and the schedule to restart the system. The Discharger shall submit a technical report within **30 days** stating how violations of this nature will be prevented in the future.

16. The Discharger shall operate the treatment system for maximum removal efficiencies of groundwater pollutants.

17. The Discharger shall operate the groundwater extraction network to achieve maximum pollutant plume capture.

18. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

19. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

20. Prior to making any change in the discharge point, place of use, or purpose of use of the treated groundwater, the Discharger shall obtain approval of or clearance from the State Board (Division of Water Rights).

21. In the event of any change in the control of land or treatment facilities, or the expiration of any lease, contract, or agreement involving the treatment facilities that are presently controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office of the Regional Board.

22. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Board and a statement. The statement shall comply with the signatory paragraph of **Standard Provision D.6** and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the CWC. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 4 June 2004.

THOMAS R. PINKOS, Executive Officer

MES/RDJ

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2004-0066

NPDES NO. CA0081531

FOR
COLLINS & AIKMAN PRODUCTS COMPANY, INC.
FORMER WICKES FOREST INDUSTRIES SITE
GROUNDWATER REMEDIATION SYSTEM
SOLANO COUNTY

This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code Sections 13383 and is necessary to monitor surface water and assure compliance with the waste discharge requirements of this Order. The Discharger shall not implement any changes to this MRP unless and until the Regional Board or Executive Officer issues a revised MRP. For purposes of evaluating compliance with the limitations of Order No. R5-2004-0066, the Discharger shall conduct monitoring and submit reports as specified below. Specific sample station locations shall be established under direction of the Board's staff, and a description of the stations shall be attached to this Order.

Sample collection and analysis shall follow standard USEPA protocol. All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Field test instruments (such as those used to test pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

INFLUENT MONITORING

Representative influent groundwater samples shall be collected from the GWTS prior to treatment. When feasible, the influent shall be collected at approximately the same time as effluent samples. Influent monitoring shall include at least the following:

Constituent[3]	Units	Type of Sample	Sampling Frequency

Constituent[3]	Units	Type of Sample	Sampling Frequency
Flow	gpd	Meter	Continuously
Average Daily Flow	gpd	Calculated	Daily
pH	pH units	Grab	Weekly
Temperature	°F /°C	Grab	Weekly
Electrical Conductivity @25°C	µmhos/cm	Grab	Weekly
Antimony[1]	µg/l	Grab	Monthly
Arsenic[1]	µg/l	Grab	Monthly
Bis(2-ethyl-hexyl) phthalate[1,2]	µg/l	Grab	Monthly
Chloride	mg/l	Grab	Monthly
Chromium III[1]	µg/l	Grab	Monthly
Chromium VI[1]	µg/l	Grab	Monthly
Total Chromium[1]	µg/l	Grab	Monthly
Copper[1]	µg/l	Grab	Monthly
Iron[1]	µg/l	Grab	Monthly
Manganese[1]	µg/l	Grab	Monthly
Selenium[1]	µg/l	Grab	Monthly
Sulfate	mg/l	Grab	Monthly
Total Dissolved Solids	mg/l	Grab	Monthly

1 To be collected concurrently with effluent monitoring for these constituents.
2 Monthly for 1 year, quarterly monitoring after 3 consecutive non-detects and back to monthly if detected.
3 Analyses shall be conducted following methods and quantitation limits as prescribed in the table below.

EFFLUENT MONITORING

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall but before discharge to the drainage channel. Effluent monitoring shall include the following:

Constituent[3]	Units	Type of Sample	Sampling Frequency
Flow	gpd	Meter	Continuously
Average Daily Flow	gpd	Calculated	Daily
pH	Standard units	Grab	Weekly
Temperature	ºF/ºC	Grab	Weekly
Electrical Conductivity @25°C	µmhos/cm	Grab	Weekly
Dissolved Oxygen	mg/l	Grab	Weekly

Constituent[3]	Units	Type of Sample	Sampling Frequency
Turbidity	NTUs	Grab	Monthly
Antimony[1]	µg/l	Grab	Monthly
Arsenic[1]	µg/l	Grab	Monthly
Bis(2-ethylhexyl) phthalate[1]	µg/l	Grab	Monthly
Chloride	mg/l	Grab	Monthly
Chromium III[1]	µg/l	Grab	Monthly
Chromium VI[1]	µg/l	Grab	Monthly
Total Chromium[1]	µg/l	Grab	Monthly
Copper[1]	µg/l	Grab	Monthly
Iron[1]	µg/l	Grab	Monthly
Manganese[1]	µg/l	Grab	Monthly
Selenium[1]	µg/l	Grab	Monthly
Sulfate	mg/l	Grab	Monthly
Total Dissolved Solids	mg/l	Grab	Monthly
Mercury[2]	µg/l	Grab	Quarterly
Acute Toxicity[4]	% Survival	Grab	Annual

1 To be collected concurrently with influent monitoring for these constituents.

2 Requires use of clean technique (EPA Method 1631) for sampling, handling and analysis, or later amendment..

3 Analyses shall be conducted following methods and quantitation limits as prescribed in the table below.

4 The acute bioassays samples shall be analyzed using EPA/821-R-02-012, fifth Edition, or later amendment approved by Regional Board staff. Species shall be fathead minnows (Pimephales promelas, larval stage). Temperature and pH shall be recorded each day of the test. No pH adjustment unless approved by the Executive Officer.

ANALYSES

Constituent[3]	USEPA Analytical Method	Criterion Quantitation Limit
Antimony	200.8	5 µg/l
Arsenic	200.8	1 µg/l
Bis(2-ethylhexyl) phthalate	8270C	5 µg/l
Chromium III	200.8	2 µg/l
Chromium VI	7199	5 µg/l
Total Chromium	200.8	2 µg/l
Chloride	300.0	25 mg/l
Copper	200.8	0.5 µg/l
Iron	200.7	100 µg/l

Constituent[3]	**USEPA Analytical Method**	**Criterion Quantitation Limit**
Manganese	200.7	20 µg/l
Selenium	200.8	5 µg/l
Sulfate	300.0	0.5 mg/l

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Receiving water monitoring shall include at least the following:

Station[1]	Description (locations shall be marked somehow to be consistent)
DRAINAGE DITCH	
R-1	50 feet upstream from the point of discharge at A Street and Holdener Rd.
R-2	250 feet downstream from the point of discharge.
R-3	1500 feet downstream from the point of discharge.
R-4	2500 feet downstream at the intersection of Holdener Rd/Lewis Rd.
R-5	1 mile downstream at the intersection of Lewis Rd/Hawkins Rd.
R-6	2 miles downstream at the intersection of Hawkins Rd/Fox Rd.
R-7	3 miles downstream at the intersection of Hawkins Rd/Clark Rd.
R-8	3.5 miles downstream just before the junction with Ulatis Creek.

Constituents	Units	Sampling Station[2]	Sampling Frequency
Flow	Cfs	R1 through R8	Monthly
Dissolved Oxygen[1]	mg/l	R1 through R3	Monthly
pH[1]	Number	R1 through R3	Monthly
Turbidity[1]	NTU	R1 through R3	Monthly
Temperature[1]	°C/°F	R1 through R3	Monthly

[1] R1 need not be sampled when there is no flow observed.

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the drainage channel and subsequently to Ulatis Creek. The testing shall be conducted as specified in USEPA Methods EPA/821-R-02-013, fourth edition (which requires use of dilution series), or later amendment. Chronic toxicity samples shall be collected at the discharge of the groundwater treatment system prior to its entering the drainage channel. Twenty-four hour composite samples shall be representative of the volume and quality of the discharge. Time of collection samples shall be recorded. The effluent tests must be conducted with concurrent reference toxicant tests. Monthly laboratory reference toxicant tests may be substituted upon approval. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 14 days. Chronic toxicity monitoring shall include the following:

Species: Pimephales promelas (larval stage), Ceriodaphnia dubia, and Selenastrum capricornutum

Frequency: Semi-annually (January and July)

Dilution Series:

	Dilutions (%)					Controls	
	100	75	50	25	12.5	Receiving Water	Lab Water
% WWTP Effluent	100	75	50	25	12.5	0	0
% Dilution Water*	0	25	50	75	87.5	100	0
% Lab Water	0	0	0	0	0	0	100

* -*Dilution water shall be receiving water from Ulatis Creek taken upstream from the discharge point. If no upstream water is available, or if Ulatis Creek water demonstrates acute or chronic toxicity, laboratory dilution water may be used.*

REPORTING

Monitoring results shall be submitted to the Regional Board by the **1st day of the second month following each calendar quarter** (by May 1, August 1, November 1 and February1).

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to clearly illustrate whether the discharge complies with these waste discharge requirements. At a minimum, the reports shall include:

a. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations (in the annual report only)

b. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6) (in the annual report only);

c. The results of influent and effluent monitoring;

d. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements including the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements;

e. Copies of laboratory analytical report(s); and

f. The penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements B.3.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

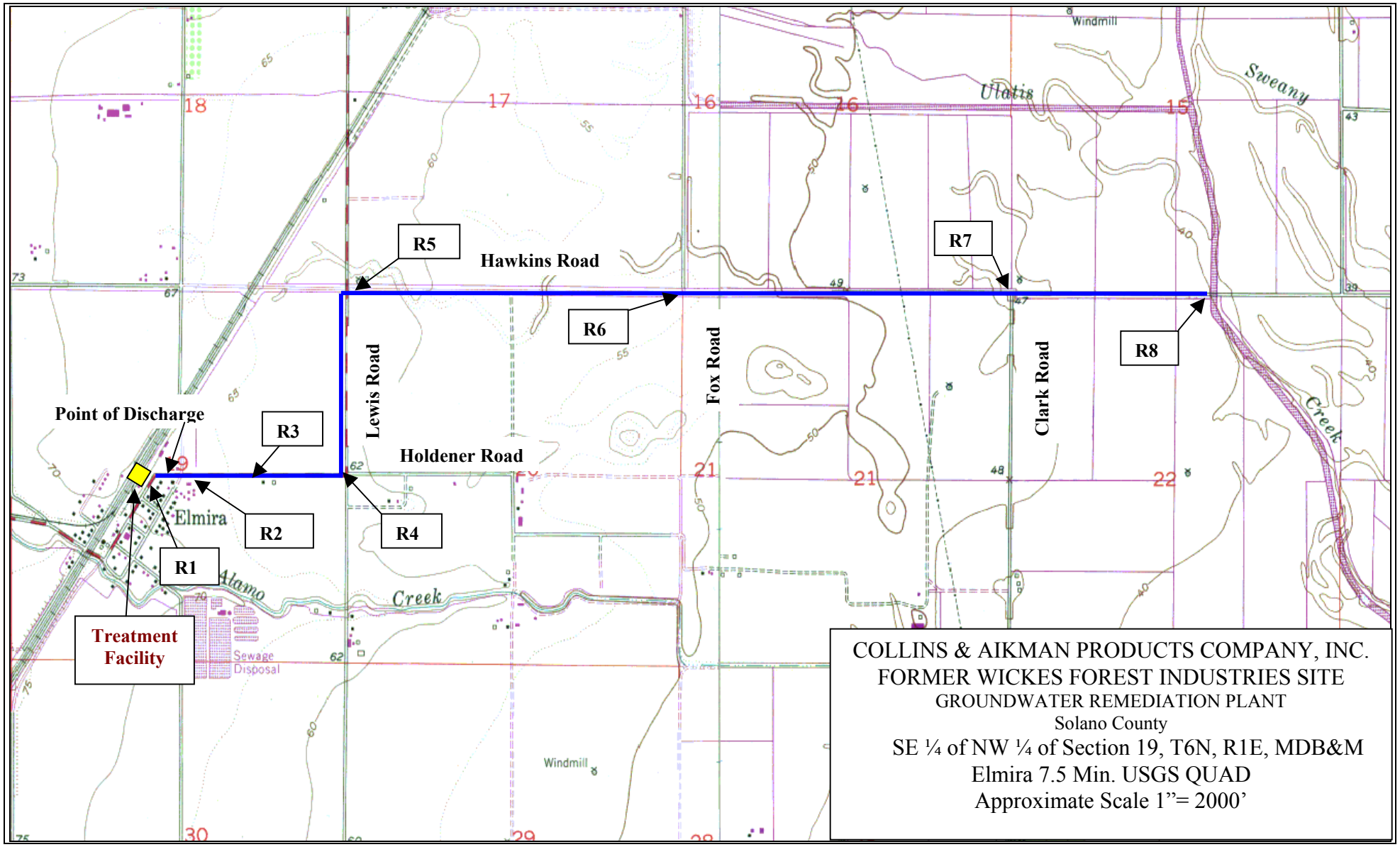
An Annual Report shall be prepared as the fourth quarter monitoring report. The Annual Report will include all monitoring data required in the monthly/quarterly schedule. The Annual Report shall be submitted to the Regional Board by **1 February** each year. In addition to the data normally presented, the Annual Report shall include any proposals to modify the GWTS.

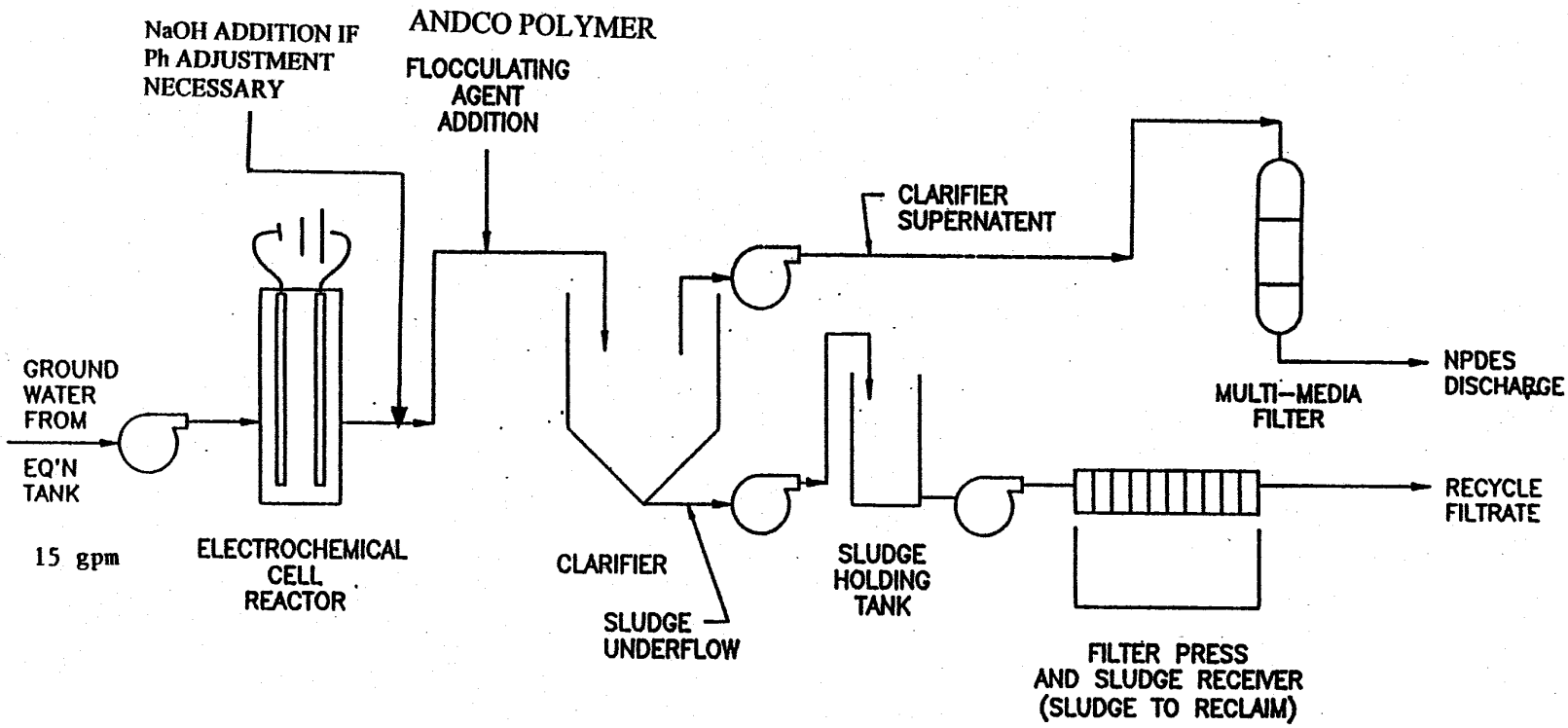
The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: _____
THOMAS PINKOS, Executive Officer

4 June 2004
(Date)

ATTACHMENT A





SCHEMATIC OF ELECTROCHEMICAL CO-PRECIPITATION TREATMENT SYSTEM - WICKES-ELMIRA

10 September 2001

REQUIREMENT TO SUBMIT MONITORING DATA

The Regional Water Quality Control Board (Board) is required to protect and enhance the beneficial uses of surface and ground waters in the Region. As part of that effort, National Pollutant Discharge Elimination System (NPDES) Permits are adopted which prescribe effluent limits for the types and concentrations of chemical and physical constituents which can be safely discharged. In order to prepare appropriate NPDES Permits, it is necessary to have adequate characterization of the discharged effluent and the receiving water.

The following is a requirement that you collect effluent and receiving water samples and have them analyzed for a variety of potential waste constituents. In most cases this monitoring will be in addition to monitoring required in your NPDES Permit. To the extent that there is overlap between this request and monitoring already being done under your Permit, the monitoring need not be duplicated. This requirement is brought on by a number of factors:

1. On 2 March 2000, the State Water Resources Control Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, also known as the State Implementation Policy (SIP). The SIP established methods of evaluating receiving water criteria and developing effluent limitation in NPDES Permits for the priority pollutants contained in the US Environmental Protection Agency's (USEPA) *California Toxics Rule* and portions of USEPA's *National Toxics Rule*. Section 1.2 of the SIP directs the Board to issue Water Code Section 13267 letters to all NPDES dischargers requiring submittal of data sufficient to (1) determine if priority pollutants require effluent limitations (Reasonable Potential Analysis) and (2) calculate water quality-based effluent limitations. Further, Section 2.4 of the SIP requires that each discharger submit to the Regional Boards reports necessary to determine compliance with effluent limitations for priority pollutants in permits. Sections 2.4.1 through 2.4.4 of the SIP provide minimum standards for analyses and reporting. (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from http://www.swrcb.ca.gov/iswp/final.pdf.) To implement the SIP, effluent and receiving water data are needed for all priority pollutants. Effluent and receiving water pH and hardness are required to evaluate the toxicity of certain priority pollutants (such a heavy metals) where the toxicity of the constituents varies with pH and/or hardness. Section 3 of the SIP prescribes mandatory monitoring of dioxin congeners.

2. In addition to the specific requirements of the SIP, the Board is requiring the following monitoring needed for permit development:

a. Organophosphorous pesticides, principally diazinon and chlorpyrifos, are commonly-used insecticides found in many domestic wastewater discharges at concentrations which can cause toxicity both in effluent and in receiving water. These pesticides are not "priority pollutants" and so are not part of the analytical methods routinely performed for NPDES discharges. **This monitoring is required of domestic wastewater dischargers only.**

b. Drinking water constituents. Constituents for which drinking water Maximum Contaminant Levels (MCLs) have been prescribed in the California Code of Regulation are included in the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (Basin Plan). The Basin Plan defines virtually all surface waters within the Central Valley Region as having existing or potential beneficial uses for municipal and domestic supply. The Basin Plan further requires that, at a minimum, water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs contained in the California Code of Regulations.

c. Effluent and receiving water temperature. This is both a concern for application of certain temperature sensitive constituents, such as fluoride, and for compliance with the Basin Plan's thermal discharge requirements.

d. Effluent and receiving water hardness and pH. These are necessary because several of the CTR constituents are hardness or pH dependent.

e. Receiving water flow is needed to determine possible dilution available in the receiving water. The receiving water flows, in combination with the receiving water pollutant concentrations, will be used to determine if there is assimilative capacity in the receiving water for each pollutant, and whether dilution credits can be granted. Dilution credits can increase the concentrations of pollutants allowed in your effluent discharge if assimilative capacity is available in the receiving water.

Pursuant to Section 13267 of the California Water Code, you are required to submit monitoring data for your effluent and receiving water as described in Attachments I through IV.

Attachment I – Sampling frequency and number of samples.

Attachment II – Constituents to be monitored. This list identifies the constituents to be monitored. It is organized into groupings (Volatile Organics, Semi-Volatile Organics, Inorganics, Pesticides/Polychlorinated Biphenyls (PCBs), Other Constituents, and Discharge & Receiving Water Flows), which correspond to groupings in Attachment I. Also listed are the Controlling Water Quality Criteria and their concentrations. The criteria concentrations are compiled in the Central Valley Regional Water Board's staff report, *A Compilation of Water Quality Goals.*[1] Minimum quantitation levels for the analysis of the listed constituents will be equal to or less than the Minimum Levels (ML) listed in Appendix 4 of the SIP or the Detection Limits for Reporting Purposes (DLRs) published by the Department of Health Services which are below the controlling water quality criteria concentrations listed in Attachment II of this letter. In cases where the controlling water quality criteria concentrations are below the detection limits of all approved analytical methods, the best available procedure will be utilized that meets the lowest of the MLs and DLR. Also listed are suggested analytical procedures. You are not required to use

these specific procedures as long as the procedure you select achieves the desired minimum detection level. All analyses must be performed by a California certified environmental analytical laboratory.

Attachment III – Dioxin and furan sampling. Section 3 of the SIP has specific requirements for the collection of samples for analysis of dioxin and furan congeners, which are detailed in Attachment III. Briefly, dischargers classified as major must collect and analyze two samples per year (one collected in the wet season and one collected in the dry season) for congeners in each of the next three years. For dischargers classified as minor, one wet season and one dry season sample must be collected and analyzed at some time during the next three years.

Attachment IV – Reporting Requirements. This attachment provides laboratory and reporting requirements including a recommended data reporting format.

With the exception of dioxin and furan congener sampling which is due by **1 November 2004** (see Attachment III), all samples shall be collected, analyses completed, and monitoring data shall be submitted to the Regional Board by **1 March 2003**. Any NPDES permit application submitted after **1 March 2002** shall include with the application at least one set of data for the constituents listed in Attachment II.

In the interest of generating and submitting data by the required dates, a schedule for compliance with this data request shall be prepared and submitted to the Executive Officer by **16 November 2001**. This schedule shall include the requirements of Attachment I and Attachment III. The schedule will also include the data submission requirements for applications submitted after **1 March 2002**.

Failure or refusal to submit technical or monitoring data as required by Section 13267, California Water Code, or falsifying any information provided is guilty of a misdemeanor and is subject to an administrative civil liability of up to $1,000 per day of violation, in accordance with Section 13268, California Water Code.1

If you have any questions, please contact your Regional Board staff representative.

GARY M. CARLTON
Executive Officer

Attachments (4)

1 Available on the internet at http://www.swrcb.ca.gov/rwqcb5/wq_goals.

Attachment I – Sampling Frequency and Number of Samples (Minor Industrial)

Samples shall be collected from the effluent and upstream receiving water and analyzed for the constituents listed in Attachment II to provide the indicated number of valid sample results by the submittal due date. Sampling frequency shall be adjusted so that the appropriate number of samples is collected by the due date and so that the sampling is representative of the wastewater discharge.

Constituent/Sample Type2	Frequency	Timeframe (years)	Total Number ofSamples
Volatile Organics/grab	Quarterly	1	4
Semi-Volatile Organics/grab or composite	Quarterly	1	4
Inorganics/grab or composite	Quarterly	1	4
Pesticides3 & PCBs/grab or composite	Quarterly	1	4
Other Constituents4/grab or composite	Quarterly	1	4
Discharge & Receiving Water Flow5	Monthly	1	12
Dioxins/grab or composite	Semi-annual	1	2

2 The effluent sampling station and the upstream receiving water station specified in the NPDES Permit Monitoring and Reporting Program should be used.

3 OP pesticides (diazinon, chlorpyrifos) are not required of industrial facilities.

4 See list in Attachment II.

5 Discharge and Receiving Water Flow. Discharge flow should be recorded and reported for each day of sample collection. All NPDES dischargers should have a means of measuring the volume of discharge as part of their monitoring already required by the NPDES Permit Monitoring and Reporting Program. Receiving Water Flow, however, is not generally required by NPDES Permit Monitoring Programs. For facilities that already conduct receiving water flow monitoring, the receiving water flow should be recorded and reported for each day in which sampling occurs. For facilities that do not routinely conduct receiving water flow monitoring, provide the best estimate of flow reasonably obtainable. It may be possible to obtain flow data from an existing nearby gauging station.

Attachment III -Dioxin and Furan Sampling

Section 3 of the State Implementation Plan requires that each NPDES discharger conduct sampling and analysis of dioxin and dibenzofuran congeners. The required number and frequency of sampling are as follows:

- Major NPDES Dischargers – once during dry weather and once during wet weather for each of three years, for a total of six samples.
- **Minor NPDES Dischargers** – once during dry weather and once during wet weather for one year during the three-year period, for a total of two samples.

Each sample shall be analyzed for the seventeen congeners listed in the table below. High Resolution GCMS Method 8290, or another method capable of individually quantifying the congeners to an equivalent detection level, shall be used for the analyses.

Sampling shall start during winter 2001/2002 and all analyses shall be completed and submitted by 1 November 2004. Sample results shall be submitted along with routine monitoring reports as soon as the laboratory results are available.

For each sample the discharger shall report:

- The measured or estimated concentration of each of the seventeen congeners
- The quantifiable limit of the test (as determined by procedures in Section 2.4.3, No. 5 of the SIP)
- The Method Detection Level (MDL) for the test
- The TCDD equivalent concentration for each analysis calculated by multiplying the concentration of each congener by the Toxicity Equivalency Factor (TEF) in the following table, and summing the resultant products to determine the equivalent toxicity of the sample expressed as 2,3,7,8-TCDD.

Congener	TEF
2,3,7,8TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0001
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.05
2,3,4,7,8-PentaCDF	0.5
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01
1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0001

Attachment IV – Reporting Requirements

1. **Laboratory Requirements**. The laboratory analyzing the monitoring samples shall be certified by the Department of Health Services in accordance with the provisions of Water Code Section 13176 and must include quality assurance/quality control data with their reports.

2. **Criterion Quantitation Limit (CQL)**. The criterion quantitation limits will be equal to or lower than the minimum levels (MLs) in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from http://www.swrcb.ca.gov/iswp/final.pdf) or the detection limits for purposes of reporting (DLRs) published by the Department of Health Services (http://www.dhs.ca.gov/ps/ddwem/chemicals/DLR/dlrindex.htm) which is below the controlling water quality criterion concentrations summarized in attachment II of this letter.

3. **Method Detection Limit (MDL)**. The method detection limit for the laboratory shall be determined by the procedure found in 40 Code of Federal Regulations (CFR) Part 136, Appendix B (revised as of May 14, 1999).

4. **Reporting Limit (RL).** The reporting limit for the laboratory. This is the lowest quantifiable concentration that the laboratory can determine. Ideally, the RL should be equal to or lower than the CQL to meet the purposes of this monitoring.

5. **Reporting Protocols**. The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

   a. Sample results greater than or equal to the reported RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
   b. Sample results less than the report 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.
   c. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory, if such information is available, may include numerical estimates of the data quantity for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
   d. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

6. **Data Format**. The monitoring report shall contain the following information for each pollutant:

   a. The name of the constituent.
   b. Sampling location.
   c. The date the sample was collected.
   d. The time the sample was collected.

e. The date the sample was analyzed. For organic analyses, the extraction date will also be indicated to assure that hold times are not exceeded for prepared samples.
f. The analytical method utilized.
g. The measured or estimated concentration.
h. The required Criterion Quantitation Limit (CQL).
i. The laboratory's current Method Detection Limit (MDL), as determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).
j. The laboratory's lowest reporting limit (RL).
k. Any additional comments.

6. **Example of Data Format**.

Discharger: _____ Name of
Laboratory: _____
Contact Name: _____ Laboratory
Contact: _____
Phone Number: _____ Phone
Number: _____

Name of Constituent and CTR #	Sampling Location*	Date Sample Collected	Time Sample Collected	Date Sample Analyzed	USEPA Method Used	Analytical Results (ug/L)	CQL (ug/L)	MDL (ug/L)	RL (ug/L)
(See Attachment II)									

*The effluent sampling station and the upstream receiving water station specified in the NPDES Permit Monitoring and Reporting Program should be used. Other sampling locations must be approved by Regional Board staff. Include longitude and latitude coordinates for the receiving water sampling stations.

INFORMATION SHEET

COLLINS & AIKMAN PRODUCTS COMPANY, INC.
FORMER WICKES FOREST INDUSTRIES SITE
GROUNDWATER REMEDIATION SYSTEM
SOLANO COUNTY

Status of Permit

Pacific Wood Preserving operated a wood treatment facility at the former Wickes Forest Industries Site in Elmira (site) from 1972 until 1979, and Wickes Forest Industries, Inc. operated from 1979 until 1982. The wood preserving process at the site used solutions containing copper, arsenic and chromium. This resulted in contaminated soil and groundwater polluted with arsenic, hexavalent chromium and copper. This pollution deleteriously affected groundwater quality and impaired the beneficial use of this water resource. The site is at 6109 A Street, Elmira and has been assigned Solano County Assessor Parcel Numbers 142-010-130 and 142-010-140.

The Collins & Aikman Products Company, Inc. (Discharger), a wholly owned subsidiary of Collins & Aikman Corporation headquartered in Troy, Michigan (hereafter Discharger) acquired the Wickes site and since 1984 has operated a groundwater extraction and treatment system (GWTS) to reduce the pollution. The groundwater extraction and treatment system is necessary to remove the groundwater pollution.

After completing soil remediation, the Discharger sold the real property to Jim Dobbas Inc. of Newcastle, who maintains an engineered cap and periodically leases part of the property for various uses as permitted by Solano County. The Department of Toxic Substances Control (DTSC) has oversight responsibilities for the soil and groundwater cleanup. DTSC and the Discharger reached a agreement as a real property deed restriction for the site that is detailed in Solano County Instrument Number 1995-68154 titled *An Agreement for Operation and Maintenance of the Groundwater Extraction and Treatment System, Storm Water Control System, and the Asphalt Cap at the Former Wickes Forest Industries Site in Elmira, California*.

The Discharger submitted a Report of Waste Discharge (RWD), dated 29 November 2001, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from a groundwater extraction and treatment plant into a drainage ditch. Supplemental information to complete filing of the application was submitted on 29 January 2002, 18 and 30 October 2002, 4 November 2002, 28 February 2003, 25 March 2003, and 14 January 2004.

Groundwater Treatment Method

The Discharger owns and operates the GWTS that uses electrochemical ionic exchange to remove hexavalent chromium, which is the remaining groundwater pollutant. The electrochemical process liberates ferrous ions in solution by means of anodic polarization of an iron metal electrode. The ferrous ions then induce reduction of hexavalent chromium to its lower trivalent state. The ferrous ions are produced in an electrochemical cell by passing polluted groundwater through iron plates carrying an electrical current. The iron plates are consumed in the process. The Discharger uses hydrochloric acid to clean the electrochemical cell reactor in order to facilitate changing 29 iron plates about every eight weeks. Subsequent to the electrochemical cell the groundwater pH may require adjustment, in which case sodium hydroxide is added in a 30% solution. The settling

properties (flocculation) of the metal complexes within the neutral pH (7.2 to 7.8) groundwater are improved by adding an anionic polymer to the process water at the inlet of the clarifier. The flocculated waste metal solids are then pumped to a slurry tank and dewatered with a filter press. The liquid filtrate is recycled back through the electrochemical cell. The waste solids are placed in drums for off-site disposal. The liquid supernatant from the clarifier is passed through a multi-media filter and finally discharged to a roadside drainage channel. The Discharger uses hydrochloric acid, consumable iron plates, sodium hydroxide, and an anionic polymer flocculating agent as amendments to facilitate treatment.

The treatment system is operated for the optimal removal of the pollutants while keeping the flow rate as high as possible. The consumable iron plates vary in composition, and changes in the operating parameters influence the quality of the effluent. The Report of Waste Discharge (RWD) was completed on 30 April 2003 and indicates that the maximum flow rate that the treatment system can accommodate is 0.0216 mgd (0.022 mgd) or about 15 gpm, and on average discharges about 10,000 gpd or 7 gpm. Groundwater is extracted from about ten extraction wells and eight of these are off-site.

Description of Discharge

Treated groundwater is discharged to a drainage channel along Holdener Road, tributary to Ulatis Creek at a section within the boundaries of the Sacramento-San Joaquin River Delta, all waters of the State and United States, as shown on Attachment A, a the point latitude 38°, 21', 06" and longitude 121°, 54', 30". The RWD and other information submitted by the Discharger describes the groundwater and the treated groundwater discharge characteristics as follows:

Discharge

Average Monthly Flow:	0.010 mgd
Maximum Daily Flow (Design Flow):	0.022 mgd (15 gpm)
Maximum Temperature:	28.2 °C summer and 21.4 °C winter
Average Temperature:	19.4 °C (67 °F) summer and 18.9 °C (66 °F) winter
Average pH:	7.8

Constituent	Concentration
Biochemical oxygen demand[1]	ND, <3 mg/l
Chemical oxygen demand	ND, <10 mg/l
Total organic carbon	3.1 mg/l
Total suspended solids	ND, <5.0 mg/l
Total dissolved solids	1,300 mg/l
Hardness as $CaCO_3$	510-600 mg/l
Chloride	210 mg/l
Sulfate	330 mg/l
Specific Conductivity	1,800 µmhos/cm

Arsenic	potentially present
Chromium III	20 µg/l
Chromium VI	5.1 µg/l
Copper	9 µg/l
Antimony	7.8 µg/l
Bis(2-ethylhexyl) phthalate	8.4 µg/l
Iron	20,000 µg/l
Mercury	0.0086 µg/l
Manganese	74 µg/l
Selenium	6.2 µg/l

1 5-day, 20°C biochemical oxygen demand.

Solids Disposal

This treatment system does not generate biosolids and sludge as from a POTW. However, a filter press dewaters the solid waste stream from the clarifier. The solid waste is managed in accordance with 40 CFR Section 268 as hazardous waste and disposed of appropriately. The site was assigned USEPA ID No. CAD000627109 for this purpose.

Receiving Water

Treated Groundwater from the GWTS discharges into a drainage channel along the north side of Holdener Road, that is tributary to Ulatis Creek.

The drainage channel also collects stormwater runoff from the roadway and tail-water from agricultural irrigation. Regularly, but at times that cannot be clearly defined because of agricultural irrigation, the discharge dominates the contents of the drainage channel and infiltrates into the subsurface, thereby contributing to groundwater recharge before coursing to meet any other water body. The discharge typically flows east along the north side of Holdener Road and once it reaches Lewis Road, depending on the flows it is directed north within a channel along the west side of the road. This channel then at the corner of Lewis Road and Hawkins Road courses east along Hawkins Road towards Ulatis Creek, at which point, at about 3.5 miles downstream of the discharge point, enters the legal boundary of the Sacramento-San Joaquin Delta, all waters of the United States.

When sufficient flow exists in the Holdener Road drainage channel, the discharge will flow to Ulatis Creek. During local flooding, the discharge may also course at the intersection of Lewis Road and Holdener Road towards Old Alamo Creek. To eliminate the possibility of discharge flow to Old Alamo Creek and add to the flooding conditions, the permit requires that the Discharger shut down the GWTS during periods of heavy rainfall causing local flooding.

Beneficial Uses

The *Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Fourth Edition* (Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin. The Basin Plan at page II-2.00 states, "*Existing and potential beneficial uses that currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. For unidentified water bodies, the beneficial uses will be evaluated on a case-by-case basis.*" The Basin Plan does not specifically identify beneficial uses for the Holdener Road drainage channel, but the Basin Plan does identify present and potential uses for the Sacramento-San Joaquin River Delta (Delta) which includes the section of Ulatis Creek to which the drainage channel is tributary.

The beneficial uses of the Delta as identified in Table II-1 of the Basin Plan include: municipal and domestic water supply (MUN), agricultural irrigation and stock watering (AGR), industrial process water supply (PRO), industrial service supply (IND), body contact water recreation (REC-1), other non-body contact water recreation (REC-2), warm freshwater aquatic habitat (WARM), cold freshwater aquatic habitat (COLD), warm (striped bass, sturgeon, and shad) and cold fish (salmon and steelhead) migration habitat (MIGR), warm spawning habitat (SPWN), wildlife habitat (WILD), and navigation (NAV).

The Basin Plan on page II-1.00 states, "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning*…" and with respect to disposal of wastewaters states that "*disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses*…" The protection and enhancement of beneficial uses require that certain water quality and quantity objectives be met for surface and ground water."

The Basin Plan recognizes that some uses may not currently exist and may not be able to be supported in the probable future for at least certain portions of a receiving water. Thus, the Regional Board recognizes that considering removing some of the beneficial uses may be appropriate. The Regional Board, however, is not authorized to remove such uses unless it follows the public process as required by state law and the federal regulations, i.e., by amending the Basin Plan.

The Holdener Road drainage channel courses east along the north side of Holdener Road and once it reaches Lewis Road, it is directed north within a channel along the west side of the road. This channel then at the corner of Lewis Road and Hawkins Road courses east along Hawkins Road towards Ulatis Creek, at which point, at about 3.5 miles downstream of the discharge point, enters the legal boundary of the Sacramento-San Joaquin Delta

While flow in the Holdener Road drainage channel is tributary to the Delta (specifically Ulatis Creek), the Holdener Road drainage channel appears to have been constructed to collect stormwater runoff from the roadway and tail-water from agricultural irrigation. The Holdener Road drainage channel is not a "stream" as used in the Basin Plan "tributary" language, and as a constructed drainage channel, it is not subject to the tributary provisions of the Basin Plan. Therefore, although the Holdener Road drainage channel is a water of the U.S., the Regional Board has not designated beneficial uses to the channel. The beneficial uses of the Holdener Road drainage channel are

therefore identified by other statutory designations and/or actual existing beneficial uses of the receiving water. In examining appropriate designated beneficial uses of the Holdener Road drainage channel, the Regional Board has considered that USEPA's water quality standards regulations require protection of all existing uses (40 CFR 131.10). Existing uses are "those uses actually attained in the water body on or after 28 November 1975, whether or not they are included in the water quality standards" (40 CFR131.3(e)). Existing uses also include those uses for which water quality was suitable on or before November 28, 1975. Furthermore, federal regulations require that all waters of the United States shall be so regulated as to achieve water quality which assures protection of public water supplies; assures the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife; and allows recreational activities (40 CFR, 125.62). In addition, State Board Resolution No. 88-63, "Sources of Drinking Water Policy" requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1. Finally, all downstream uses must also be protected 40 CFR 131.10(b).

Therefore, in reviewing what existing beneficial uses apply to the Holdener Road drainage channel, the Regional Board has considered the following facts:

a. Municipal and Domestic Supply (MUN)

The Basin Plan defined Municipal and Domestic Supply (MUN) as "Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply." Flows in the Holdener Road drainage ditch, at times, consist solely of treated effluent (7 gallons per minute on average) and/or agricultural tailwater. These flow and quality concerns would likely preclude direct MUN use. In addition, flows in the Holdener Road drainage channel likely provide year-round recharge of local groundwater which has a MUN designated use according to the Basin Plan. Furthermore, there is no evidence that the Holdener Road drainage channel downstream of the discharge is currently or was previously used for MUN. It is also unknown whether MUN is attainable for the Holdener Road channel in the foreseeable future.

For Surface Waters at page II-2.00 the Basin Plan states: "Water Bodies within the basins that do not have beneficial uses designated in Table II-1 are assigned MUN designations in accordance with the provisions of State Water Board Resolution No. 88-63 Sources of Drinking Water Policy, which is, by reference, a part of this Basin Plan." The Basin Plan further states: "In making any exemptions to the beneficial use designation of MUN, the Regional Board will apply the exceptions listed in Resolution 88-63…". Resolution No. 88-63 states that "All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards with the exception of: 2. Surface Waters where: b. The water is in systems designed or modified for the primary purpose of conveying or holding agricultural drainage waters, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards." The Holdener Road drainage channel is a "waters of the State"

and, therefore, is subject to Resolution No. 88-63. As required by State Board Resolution 88-63, all surface waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Board, unless an exception applies.

While the Holdener Road drainage channel appears to meet the exceptions of Resolution No. 88-63, the State Board found in Order WQO 2002-0015 (Vacaville) that "….Resolution No. 88-63 did not itself designate uses for any waterbody. Rather, the resolution established a state policy that the Regional Boards were required to implement in their basin plans." (page 27). The Regional Board implemented Resolution No. 88-63 through a blanket MUN designation for all unidentified waterbodies in the region. Having made the designation, the Regional Board is required to go through another rulemaking process to change the designation. Therefore, until or unless a basin plan amendment is completed to change the MUN designation, the MUN use applies to the Holdener Road drainage channel.

MUN is identified in the Basin Plan as an existing use of the Delta including Ulatis Creek downstream of the discharge. Any basin plan amendment process which considers dedesignating the MUN beneficial use of the Holdener Road drainage channel would also have to consider the impacts on this use in Ulatis Creek within the Delta.

b. Agricultural Supply (AGR)

The Basin Plan defines Agricultural Supply (AGR) as "Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation…stock watering, or support of vegetation for range grazing." The Holdener Road drainage channel, as previously mentioned, is a small channel that appears to have been constructed strictly to convey irrigation tailwater and stormwater runoff and at times consists solely of treated effluent and/or agricultural tailwater. Therefore, these flow and quality concerns would likely preclude direct AGR use. Furthermore, there are no existing water right permits for agricultural water supply uses of this channel, downstream of the discharge point to the confluence with Ulatis Creek, and there is no evidence of any use of this channel as agricultural water supply since November 28, 1975. It is also unknown whether AGR is attainable for the Holdener Road channel in the foreseeable future. Therefore, the Regional Board finds that the AGR use does not apply to the Holdener Road drainage channel, and no effluent limitations in this Order are associated with protection of this beneficial use. Future updates of this Order will continue to reconsider the existing use of the Holdener Road drainage channel as a source of agricultural water supply.

c. Industrial Service Supply (IND)

The Basin Plan defines Industrial Service Supply (IND) as "Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or

oil well repressurization." No known industrial supply water intakes or industrial uses are located along the Holdener road drainage channel from the point of discharge to the confluence with Ulatis Creek. Whether waters of the drainage channel are suitable for IND use is unknown since a specific industrial use has not been identified. Therefore, the Regional Board finds that the IND use does not apply to the Holdener Road drainage channel, and no effluent limitations in this Order are associated with protection of this beneficial use. Future updates of this Order will continue to reconsider the existing use of the Holdener Road drainage channel as a source of industrial service supply water.

d. Industrial Process Supply (PRO)

The Basin Plan defines Industrial Process Supply (PRO) as "Uses of water for industrial activities that depend primarily on water quality." PRO is a beneficial use of the downstream water Ulatis Creek. However, as noted for IND, no known industrial supply water intakes or industrial uses are located along the Holdener road drainage channel from the point of discharge to the confluence with Ulatis Creek. Whether waters of the drainage channel are suitable for PRO use is unknown since a specific industrial use has not been identified. Therefore, the Regional Board finds that the PRO use does not apply to the Holdener Road drainage channel, and no effluent limitations in this Order are associated with protection of this beneficial use. Future updates of this Order will continue to reconsider the existing use of the Holdener Road drainage channel as a source of industrial process supply water.

e. Water Contact Recreation (REC-1), Non-contact Water Recreation (REC-2)

The Basin Plan defines Water Contact Recreation (REC-1) as "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to swimming, wading, water skiing, skin and scuba driving, surfing, white water activities, fishing, or use of natural hot springs." Non-contact Water Recreation is defined as "Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water." The discharge flows along agricultural land and rural roads, there is ready public access to the drainage channel, and exclusion of the public is unrealistic, however the channel averages about one foot deep, and contains an irregular supply of water and it appears very unlikely to support any recreational activities. Nevertheless, Section 101(a)(2) of the federal Clean Water Act (CWA) requires that water quality for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and out of the water be achieved, whenever attainable. Federal water quality standard regulations implementing the CWA create a rebuttable presumption that all waters should be designated as fishable/swimmable, thus, the beneficial uses of REC-1 and REC-2 are applicable for this drainage channel and to remove them would require completion of a Use Attainability Analysis and a Basin Plan amendment.

f. Groundwater Recharge (GWR)

The Basin Plan defines Groundwater Recharge (GWR) as "Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers." In areas and at times of the year where groundwater elevations are below the stream bottom, water from the channel will percolate to groundwater. Since the drainage channel is at times dry, it is reasonable to assume that the water is lost by evaporation, flow downstream, and percolation to groundwater, which provides a source of municipal and irrigation water supply. Therefore, this Order considers GWR as an existing use of the Holdener Road drainage channel.

g. Freshwater Replenishment (FRSH)

The Basin Plan defines Freshwater Replenishment (FRSH) as "Uses of water for natural or artificial maintenance of surface water quantity and quality." When water is present in the drainage channel and empties into Ulatis Creek there is hydraulic continuity between the drainage channel and Ulatis Creek (which is part of the Sacramento San Joaquin Delta). During periods of hydraulic continuity, the drainage channel adds to the water quantity and may impact the quality of water flowing in Ulatis Creek, part of the Sacramento San Joaquin Delta. Therefore, this Order considers FRSH as an existing use of the Holdener Road drainage channel.

h. Warm Freshwater Habitat (WARM)

The Basin Plan defines Warm Freshwater Habitat (WARM) as "Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates." There is aquatic habitat in the drainage channel, similar to those species found in area vernal pools. Aquatic life suited to the WARM use was also observed in the drainage channel at the corner of Holdener Road and Lewis Road including crayfish, minnows, and frogs. These observations indicate that waters of the Holdener Road drainage channel are suitable for the WARM use. As noted previously, Section 101(a)(2) of the federal CWA requires that water quality for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and out of the water be achieved, whenever attainable. Federal water quality standard regulations implementing the CWA create a rebuttable presumption that all waters should be designated as fishable/swimmable. Therefore, this Order considers WARM as an existing use of the Holdener Road drainage channel.

i. Cold Freshwater Habitat (COLD)

The Basin Plan defines Cold Freshwater Habitat (COLD) as "Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates." As noted above, Section 101(a)(2) of the federal CWA requires that water quality for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and out of the water be achieved, whenever attainable. Federal water quality standard regulations implementing the CWA create a rebuttable presumption that all waters should be designated as fishable/swimmable. In requiring a State to consider protection and propagation of fish, shellfish, and wildlife, the federal regulations do not distinguish between WARM and COLD uses. Furthermore, the California Department of Fish and Game (DFG) has verified that the fish species present in Ulatis Creek and downstream waters are consistent with both cold and warm water fisheries. There are no barriers at Ulatis Creek other than lack of elevation and flows at times of the year that would prevent fish and other aquatic species from entering into the drainage channel. Whether COLD exists or may be considered a seasonal use of the drainage channel is unknown.

40 CFR 131.10(c) provides that "States may adopt sub-categories of a use and se the appropriate criteria to reflect varying needs of such sub-categories of uses, for instance, to differentiate between cold water and warm water fisheries." However, removal or establishment of a sub-category of the fishable beneficial use like COLD would require completion of a UAA and Basin Plan amendment. Therefore, until or unless a basin plan amendment is completed to change the COLD designation, this Order considers the COLD use applicable to the Holdener Road drainage channel.

j. Migration of Aquatic Organisms (MIGR)

The Basin Plan defines Migration of Aquatic Organisms (MIGR) as "Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish." MIGR, for both warm and cold habitats, is identified as an existing beneficial use of the Delta including Ulatis Creek. The observations of crayfish, minnows, and frogs in the Holdener Road drainage channel suggest that the channel at a minimum supports a warm water habitat necessary for temporary activities by various aquatic organisms. As noted for COLD, at times of the year, the lack of elevation and flows at Ulatis Creek at the confluence point with the drainage channel would likely serve as barriers to movement of anadromous fish species which might transition between Ulatis Creek and the drainage channel. Whether the drainage channel is or has been suitable to support habitats necessary to the migration of cold water aquatic organisms is unknown. However, removal or establishment of a sub-category of the MIGR use would require completion of a UAA and Basin Plan amendment. Therefore, this Order considers warm MIGR as an existing use and cold MIGR as potential use of the Holdener Road drainage channel.

k. Spawning, Reproduction, and/or Early Development (SPWN)

The Basin Plan defines Spawning, Reproduction, and/or Early Development (SPWN) as "Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish." Warm habitat spawning, reproduction, and/or early development (SPWN) is identified as an existing beneficial use of the Delta which includes the section of Ulatis Creek to which the drainage channel discharges into. The observation of minnows in the Holdener Road drainage channel suggests that the channel supports at a minimum a warm water habitat necessary for reproduction and early development of fish. As noted for COLD, at times of the year, the lack of elevation and flows at Ulatis Creek at the confluence point with the drainage channel likely serve as barriers to movement of anadromous fish species which might transition between Ulatis Creek and the drainage channel. Whether the drainage channel is or has been suitable to support habitats necessary for the spawning of cold water aquatic organisms is unknown. However, removal or establishment of a sub-category of the SPWN use would require completion of a UAA and a Basin Plan amendment. Therefore, this Order considers warm SPWN as an existing use and cold SPWN as a potential uses of the Holdener Road drainage channel.

l. Wildlife Habitat (WILD)

The Basin Plan defines Wildlife Habitat (WILD) as "Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources." WILD is identified as an existing beneficial use of the Delta which includes the section of Ulatis Creek to which the drainage channel discharges into. Based upon observations during field inspections, the Holdener Road drainage channel from the point of discharge until it confluences with Ulatis Creek does provide habitat for some aquatic vegetation and wildlife. Therefore, this Order considers WILD as an existing use of the Holdener Road drainage ditch.

m. Navigation (NAV)

The Basin Plan defines Navigation (NAV) as "Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels." NAV is identified as an existing beneficial use of the Delta which includes the section of Ulatis Creek to which the drainage channel discharges into. However, the size of the Holdener Road drainage channel from the discharge point until its confluence with Ulatis Creek, prevents any NAV use to occur. Therefore, the Regional Board finds that the NAV use does not apply to the Holdener Road drainage channel, and no effluent limitations in this Order are associated with protection of this beneficial use.

Upon review of the flow conditions, habitat values, and beneficial uses of the drainage channel and the facts described above, the Regional Board finds that the following beneficial uses MUN, REC-1,

WARM, COLD, MIGR, and/or SPWN all have an impact on effluent and/or receiving water limitations in this Order.

Dissolved Oxygen

The Basin Plan at page III-5.00 states that "*For surface water bodies outside the legal boundaries of the Delta,…. The dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time:*

Waters designated WARM 5.0 mg/l
Waters designated COLD 7.0 mg/l
Waters designated SPWN 7.0 mg/l"

Since the GWTS's effluent enters the drainage channel outside the Delta boundaries, then this Order applies a 7.0 mg/l as the receiving water limit for DO in the drainage channel.

Temperature

The Basin Plan includes a water quality objective that states "[a]*t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5ºF above natural receiving water temperature*." Natural receiving water temperature is defined in the thermal plan as "The temperature of the receiving water at locations, depth, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters. A numeric Receiving Water Limitation for temperature is included in this Order and is based on the Basin Plan objective for temperature. However, compliance with this limitation will be dependent of and if there are flows upstream of the discharge point.

Three Species Chronic Toxicity

The Discharger has been monitoring on an annual basis for three species (*Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum)* chronic toxicity of the effluent in accordance with procedure outlined in EPA 600/4-91-002 (*Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms*) and EPA 505/2-90-001 (*Technical Support Document for Water Quality Based on Toxic Control*). Results in September 1997 of 100% effluent showed below average levels of survival and reproduction for two species (*Pimephales promelas and Ceriodaphnia dubia).* Because of the September results, the discharger decided to conduct a full-scale Two-Species (*Pimephales promelas and Ceriodaphnia dubia)* Chronic toxicity test in October of 1997 using the dilution series specified in the Permit. The results of this second test indicated acceptable survival and reproduction levels for *Ceriodaphnia dubia,* but it still showed a reduction in survival and growth for *Pimephales promelas*, for mixed dilution samples. The Three-Species Chronic Toxicity test was repeated again in September of 1998, using undiluted effluent, and results this time showed below average levels of survival and reproduction for *Pimephales promelas* and a significant reduction in reproduction for *Ceriodaphnia dubia*. In September 1999, a screening of 100% effluent indicated that reproduction of *Pimephales promelas*

was below average. No adverse effects were observed in the population of *Ceriodaphnia dubia* or *Selenastrum capricornutum.* In November 2001, the three-species toxicity test performed with the full dilution series indicated a reduction in reproduction of *Ceriodaphnia dubia*, and survival and growth effects on *Pimephales promelas* when monitored with the 100% effluent only. No adverse effects were observed in the population of *Selenastrum capricornutum* for any of the tests. In January 2002, a confirmation test was performed on the 100% effluent and the results showed no effects on any of the three species. As a result of the observed toxicity results, the Discharger was required to conduct a Toxicity Reduction Evaluation (TRE) of the effluent. The discharger has indicated that certain modifications and upgrades have been made to the groundwater treatment system that have improved the overall quality of the effluent and may have changed the aquatic toxicity characteristics of the effluent. To test this theory, additional three-species toxicity tests were conducted in October 2002, and the results have shown no toxicity effects on any of the three species.

The USEPA has recently published newly promulgated Toxicity test methods with an effective date of 19 December 2002. Therefore, because of the above toxicity results and to confirm that the upgrades of the treatment system have consistently removed any in-stream toxicity present in the past, the three species chronic toxicity test shall continue to be conducted using the USEPA October 2002 Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition EPA/821-R-02-013 using the species *Ceriodaphnia dubia*, *Pimephales promelas*, and *Selenastrum capricornutum*. A provision contained in this Order requires the Discharger to perform a study on the effluent to determine if it is chronically toxic.

Effluent Limitations

USEPA adopted the National Toxics Rule (NTR) on 5 February 1993 and the California Toxics Rule (CTR) on 18 May 2000. In addition, the State Water Resources Control Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (known as the State Implementation Policy-SIP), which contains guidance on implementation of the NTR, CTR, and other priority toxic pollutants.

Federal regulations, 40 CFR Part 122.44 (d)(1)(i), 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 any water quality standard. Water quality standards include Regional Board's Basin Plan beneficial uses and narrative and numeric water quality objectives, State Board adopted standards, and federal standards, including the CTR and NTR. The Basin Plan contains numeric water quality objectives and narrative objectives including objectives for bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, taste and odor producing substances, temperature, turbidity, and toxicity. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (Basin Plan at III-8.00.) For determining whether there is reasonable potential for an excursion above a narrative objective, the regulations prescribe three discrete methods (40 CFR 122.44 (d)(vi)). The Regional Board often relies on the second method because the USEPA's water quality criteria

have been developed using methodologies that are subject to public review, as are the individual recommended criteria guidance documents. USEPA's ambient water quality criteria are used as means of supplementing the integrated approach to toxics control, and in some cases deriving numeric limitations to protect receiving waters from toxicity as required in the Basin Plan's narrative toxicity objective. The narrative chemical constituents objective states "*Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At a minimum, water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of maximum contaminant levels (MCLs) in Title 22 of the California Code of Regulations."* Thus for MUN designated waters, to determine whether there is reasonable potential for an excursion above a chemical constituents objective, MCLs are considered as the applicable water quality objectives. In addition, when determining effluent limitations for a discharge, the dilution of the effluent in the receiving water may be considered where areas of dilution are defined. However, when a receiving water is impaired by a particular pollutant or stressor, limited or no pollutant assimilative capacity may be available in spite of the available dilution. In these instances, and depending upon the nature of the pollutant, effluent limitations may be set equal to or less than the applicable water quality criteria that are applied at the point of discharge such that the discharge will not cause or contribute to the receiving stream excursion above water quality objectives established to protect the beneficial uses.

As stated above, the SIP contains guidance on implementation of the *NTR* and *CTR*. The SIP Section 2.1 provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB* [Regional Water Quality Control Board] *may establish a compliance schedule in an NPDES permit.*" Section 2.1 states further that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: "*(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order contains a Provision that requires this information and provides a compliance schedule for implementation of effluent limitations for bis (2-ethylhexyl) phthalate, and selenium.

In addition, the SIP, Section 2.2.1, requires that if a compliance schedule is granted for a *CTR* or *NTR* constituent, the Regional 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; include interim compliance dates separated by no more than one year, and; be included in the Provisions**.** The **interim limitations** 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. Where actual

sampling shows an exceedance of the proposed 3.3-standard deviation interim limit, the maximum detected concentration has been established as the interim limitation. 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 sampling point to obtain the daily maximum interim limitation (*TSD, Table 5-2*). The Regional 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 *NTR* and *CTR* based 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. For example, USEPA states in the Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life for copper, that it will take an unstressed system approximately three years to recover from a pollutant in which exposure to copper exceeds the recommended criterion. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the Effluent Limitation can be achieved

On 10 September 2001, the Executive Officer issued a letter, in conformance with CWC Section 13267, requiring the Discharger to prepare a technical report assessing effluent and receiving water quality. On 27 December 2001, the Executive Officer issued a letter revising Attachment II of the original 10 September 2001 letter, which relaxed certain constituents Criterion Quantitation Limits. The Discharger submitted monitoring results in accordance with the 10 September and 27 December 2001 letters to the Regional Board on 25 March 2003. These results, along with additional data submitted by the Discharger, were used to determine if the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective. The effluent limits contained in this permit do not account for the receiving water having assimilative capacity since the drainage ditch for the most part consists mainly of GWTS's effluent, and thus applicable water quality standards must be applied as end-of pipe effluent limitations.

Reasonable Potential Analyses

Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs the Regional Board finds that Table 1 below contains the list constituents that have reasonable potential to exceed a water quality standard. Effluent limitations for those constituents that were detected and that were included in the previous permit are included in this Order.

Table 1. Reasonable Potential Summary

Constituent	Basis	Criterion Concentration (µg/l or noted)	Criterion Quantitation Limit (µg/l or noted)	Comment	19-Feb-03	21-Nov-02	22-Jul-02 (19 Aug-02)	10-Apr-02
Antimony	Primary MCL	6	5	SIP Data	ND< 5.0	ND	ND	**7.8**
Arsenic	Primary MCL	10	1	Limit in previous permit	ND< 1.0	ND	ND	ND
Bis(2-ethylhexyl) phthalate	CTR	1.8	5	SIP Data	ND< 5.0	ND	**8.4**	ND
Chromium (total)	Primary MCL	50	2	Monitoring Data	**4.4**	0.6 J	**3.9 (54)**	**20**
Chromium (III)	CTR	370	2	Limit in previous permit				
Chromium (VI)	CTR	11	1	Limit in previous permit	**4.4**	**1.4**	**5.1**	ND
Copper	NTR	22 (5)	0.5	Limit in previous permit	**5.4**	**9**	**2.2**	**2.5**
Iron	Secondary MCL	300	100	SIP Data	**400**	18 J	40, J	**20,000**
Manganese	Secondary MCL	50	20	SIP Data	ND<20	ND	ND	**74**
Mercury	TMDL Develop		0.0005	SIP Data/303D listed		**0.00803**	**0.00454**	**0.0086**
Selenium	CTR	5	5	SIP Data	**6.2**	**5.8**	ND	**5.8**
Chloride	Secondary MCL	250 mg/l	25 mg/l	SIP Data	**180**	**200**	**210**	**200**
Specific conductance (EC)	Agricultural Goal	700 umhos/cm		SIP Data		**1800**	**1800**	**1600**
Sulfate	Secondary MCL	250 mg/l	25 mg/l	SIP Data	**340**	**340**	**330**	**310**
Total Dissolved Solids (TDS)	Agricultural Goal	450 mg/l	1 mg/l	SIP Data	**1,100**	**1,200**	**1,300**	**1,100**

Data Adjustments

In most situations, USEPA's NPDES regulations require that effluent limitations for metals be stated as total recoverable. Since most water quality criteria are expressed in the dissolved form, it is necessary to translate between dissolved metal in ambient waters and total recoverable metal in effluent. USEPA guidance on the use of translators provides three options including, (1) assuming the translator equivalent to the criteria guidance conversion factor, (2) developing a site specific translator directly as the ratio of dissolved to total recoverable metal, and/or, (3) developing a translator through the use of a partition coefficient. Reasonable potential analysis for this permit was conducted using the first option, applying criteria guidance conversion factors. To assure that metals criteria are appropriate for the chemical conditions under which they are applied, USEPA also provides for adjustment of the criteria through application of the water-effect ratio (WER). The WER approach compares bioavailability and toxicity of a specific pollutant in receiving waters and in laboratory waters. For this permit, reasonable potential analysis was conducted using a WER default value of 1. As described in the CTR, freshwater aquatic life criteria for certain metals are expressed as a function of hardness, since hardness, and/or water quality characteristics that are usually correlated with hardness can reduce or increase the toxicities of some metals.
Hardness is used as a surrogate for a number of water quality characteristics which affect the toxicity of metals in a variety of ways. To ensure the level of protection intended by the USEPA's 1985 guidelines for hardness, is maintained or exceeded, the minimum observed hardness of the receiving

water that does not contain effluent should be used t o adjust the applicable criterion, in this case receiving water from Ulatis Creek. Limited receiving water and effluent hardness data has been collected by the Discharger, as it was not required to be collected by previous Order monitoring programs. For purposes of the reasonable potential analysis, hardness dependent criteria have been adjusted where appropriate using the limited amount of hardness data that has been collected. The minimum observed hardness of Ulatis Creek, upstream of the point of effluent discharge, was reported as 204 mg/l as CaCO3 (on 11 October 2002). The reasonable potential analysis for hardness dependent criteria may be reconsidered and the Order reopened upon collection of additional constituent and hardness data.

Evaluation of Priority Pollutants Requiring Water Quality Based Effluent Limitations
Section 1.3 of the SIP requires that the Regional Board conduct an analysis for each priority pollutant with an applicable criterion or objective to determine if a water quality based effluent limitation is required. Attachment C summarizes final effluent priority pollutant data collected from the GWTS during recent periods of discharge. Attachment C also includes a summary of aquatic life and human health criteria for the pollutant. The Criteria Maximum Concentration (CMC) is defined by USEPA as the water quality criteria to protect against acute effects in aquatic life and is the highest in stream concentration of a priority toxic pollutant consisting of a short-term average not to be exceeded more than once every three years on the average. The Continuous Criteria Concentration (CCC) is the water quality criteria to protect against chronic effect in aquatic life and is the highest in stream concentration of a priority toxic pollutant consisting of a 4-day average not to be exceeded more than once every three years on the average. The CTR also included human health criteria for many priority pollutants.

Non-priority Pollutants

Iron

Results of effluent monitoring of the GWTS show that two of the five SIP samples contained iron above the analytical reporting limit of 100 µg/l with results ranging from 400 µg/l to 20,000 µg/l. The California Secondary MCL for iron is 300 µg/l. As previously indicated, ferric hydroxide is produced in the groundwater treatment process by electrochemical dissolution of iron plates that are made of carbon steel, thus the reason for the fluctuating levels of iron in the effluent. . Based on the data available the discharge appears to have a reasonable potential to exceed the secondary MCL for iron. Therefore, this Order establishes an effluent limitation for iron of 300 µg/l as a monthly average. It appears that the limit would put the discharger in immediate non-compliance. The previous Order No. 97-109 did not include an effluent limit for this constituent. Since this effluent limitation is a new regulatory requirement within this permit, and because the application of the drinking water MCL for the protection of MUN at the drainage ditch is considered a new interpretation of the Basin Plan, a compliance schedule has been included in the permit. Therefore, A provision of this permit requires the discharger to submit a corrective action plan and implementation schedule to assure compliance with the iron final effluent limitation. Full compliance with this limitation is not required by this Order until **1 June 2009**. In the meantime, interim effluent limitations based on plant performance are established.

Interim Effluent Limit (less than 10 data points):

Iron daily maximum = Maximum Effluent Concentration x 3.11
= 400 x 3.11
= 1244 = 1240 µg/l.

Therefore, based on Plant performance, the interim limitation for iron is 1240 µg/l as a daily maximum.

Manganese

Results of effluent monitoring of the GWTS show that one of the five SIP samples contained manganese above the analytical reporting limit of 20 µg/l with a result of 74 µg/l. The California Secondary MCL for manganese is 50 µg/l. Based on the data available the discharge appears to have a reasonable potential to exceed the secondary MCL for manganese. Therefore, this Order establishes an effluent limitation for manganese of 50 µg/l as a monthly average. It appears that the limit would put the discharger in immediate non-compliance. The previous Order No. 97-109 did not include an effluent limit for this constituent. Since this effluent limitation is a new regulatory requirement within this permit, and because the application of the drinking water MCL for the protection of MUN at the drainage ditch is considered a new interpretation of the Basin Plan, a compliance schedule has been included in the permit. Therefore, a provision of this permit requires the discharger to submit a corrective action plan and implementation schedule to assure compliance with the manganese final effluent limitation. Full compliance with this limitation is not required by this Order until **1 June 2009**. In the meantime, interim effluent limitations based on plant performance are established.

Interim Effluent Limit (less than 10 data points):

Manganese daily maximum = Maximum Effluent Concentration x 3.11.
= 74 x 3.11.
= 230 µg/l.

Therefore, based on Plant performance, the interim limitation for manganese is 230 µg/l as a daily maximum.

Salinity (Chloride, Electrical Conductivity and Total Dissolved Solids)

Results of effluent monitoring of the GWTS show that five of the five SIP samples taken between April 2002 and February 2003 contained chloride above the analytical reporting limit of 25 mg/l with results ranging from 180 mg/l to 210 mg/l. The Secondary MCL recommended range for chloride is 250 mg/l, the upper range is 500 mg/l, and the short-term range is 600 mg/l. Based on the data

available the discharge does not appear to have a reasonable potential to exceed the domestic and municipal water quality goal for chloride. Results of effluent monitoring of the GWTS between April 2002 and February 2003, showed that Electrical Conductivity (EC) levels ranged between 1600 and 1800 µmhos/cm and Total Dissolved Solids (TDS) levels ranged between 1100 and 1300 mg/l. For EC, the secondary MCL recommended range is 900 µmhos/cm, the upper range is 1600 µmhos/cm, and the short-term range is 2200 µmhos/cm. For TDS, the secondary MCL recommended range is 500 mg/l, the upper range is 1000 mg/l, and the short-term range is 1500 mg/l. Based on the data available, the discharge appears to have reasonable potential to exceed the domestic and municipal water quality goal for EC and TDS and the recommended and upper ranges of the secondary MCLs for EC and TDS. Therefore, this Order establishes an effluent limitation for EC of 900 µmhos/cm as a monthly average, and for TDS of 500 mg/l as monthly average. It appears that these limits would put the discharger in immediate non-compliance. The previous Order No. 97-109 did not include effluent limits for these constituents. Since these effluent limitations are new regulatory requirements within this permit, and because the application of the water quality objective for the protection of MUN at the drainage ditch is considered a new interpretation of the Basin Plan, a compliance schedule has been included in the permit. Therefore, a provision of this permit requires the discharger to submit a corrective action plan and implementation schedule to assure compliance with the EC and TDS final effluent limitations. Full compliance with these limitations is not required by this Order until **1 June 2009**. In the meantime, interim effluent limitations are established.

Interim Effluent Limit (less than 10 data points):

Electrical Conductivity	= Maximum Effluent Concentration x 3.11.
	= 1800 x 3.11.
	= 5598 µmhos/cm.
Total dissolved solids	= Maximum Effluent Concentration x 3.11.
	= 1300 x 3.11.
	= 4043 mg/l.

However, these limits appear to be too high and at a minimum, to ensure that these interim limits do not exceed the short-term ranges for secondary MCLs, the limits are set equal to the short-term ranges for the Secondary MCL and are as follows:

Electrical Conductivity = 2200 µmhos/cm.
Total Dissolved Solids = 1500 mg/l.

Based on the reported maximum effluent concentrations previously reported by the Discharger and past treatment performance, it appears the discharger is capable of meeting these interim limits.

Sulfate

Results of effluent monitoring of the GWTS show that five of the five SIP samples contained sulfate above the analytical reporting limit of 25 mg/l with results ranging between 310 mg/l and 340 mg/l. For sulfate, the California Secondary MCL recommended range is 250 mg/l, the upper range is 500

mg/l, and the short term range is 600 mg/l. Based on the data available the discharge appears to have a reasonable potential to exceed the secondary MCL recommended range for sulfate. Therefore, this Order establishes an effluent limitation for sulfate of 250 mg/l as a monthly average. It appears that the limit would put the discharger in immediate non-compliance. The previous Order No. 97-109 did not include an effluent limit for this constituent. Since this effluent limitation is a new regulatory requirement within this permit, and because the application of the drinking water MCL for the protection of MUN at the drainage ditch is considered a new interpretation of the Basin Plan, a compliance schedule has been included in the permit. Therefore, a provision of this permit requires the discharger to submit a corrective action plan and implementation schedule to assure compliance with the sulfate final effluent limitation. Full compliance with this limitation is not required by this Order until **1 June 2009**. In the meantime, interim effluent limitations are established.

Interim Effluent Limit (less than 10 data points):

Sulfate daily maximum = Maximum Effluent Concentration x 3.11.
= 370 x 3.11.
= 1150 mg/l.

However, this limit appear to be too high and at a minimum, to ensure that this interim limit does not exceed the short term range for the secondary MCL, the limit is set equal to the short term range for the Secondary MCL and is as follows:

Sulfate daily maximum limit = 600 mg/l.

Based on the reported maximum effluent concentrations previously reported by the Discharger and past treatment performance, it appears the discharger is capable of meeting these interim limits.

Priority Pollutants

Antimony

The Discharger uses a treatment system that produces ferric hydroxide by electrochemical dissolution of iron plates that are made of carbon steel. Carbon steel may contain many elemental compounds, and the presence of antimony, chloride, iron, manganese, selenium and sulfate compounds in the effluent is likely from this source. Results of effluent monitoring of the GWTS show that one of the five SIP samples contained antimony above the analytical reporting limit of 5 µg/l with a maximum observed concentration of 7.8 µg/l. The California Primary MCL for antimony is 6.0 µg/l, which is the criterion applicable to this discharge pursuant to the Chemical Constituents objective of the Basin Plan. Based on the data available the discharge appears to have a reasonable potential to exceed the drinking water MCL for antimony. Therefore, this Order establishes an effluent limitation for antimony of 6.0 µg/l as a monthly average. It appears that the limit would put the discharger in immediate non-compliance. The previous Order No. 97-109 did not include an effluent limit for this constituent. Since this effluent limitation is a new regulatory requirement within this permit, and

because the application of the water quality objective for the protection of MUN at the drainage ditch is considered a new interpretation of the Basin Plan, a compliance schedule has been included in the permit. Therefore, a provision of this permit requires the discharger to submit a corrective action plan and implementation schedule to assure compliance with the antimony final effluent limitation. Full compliance with this limitation is not required by this Order until **1 June 2009**. In the meantime, interim limitations are established based on plant performance.

Interim Effluent Limit (less than 10 data points):

Antimony daily maximum = Maximum Effluent Concentration x 3.11.
= 7.8 x 3.11.
= 24.3 = 24 µg/l.

Therefore, based on treatment plant performance, the interim limitation for antimony is 24 µg/l as a daily maximum.

Arsenic

Previous Order No. 97-109 included a daily maximum effluent limitation for arsenic of 50 µg/l, which was the USEPA Primary MCL at that time. Since arsenic is a groundwater pollutant from previous wood treatment operations, reasonable potential exists that arsenic could be discharged into the receiving water. For the Sacramento San Joaquin Delta, which includes the confluence point of the drainage ditch with Ulatis Creek, the Basin Plan contains a numeric receiving water objective for arsenic of 10 µg/l expressed as dissolved concentration, and using a conversion factor of 1 translates to a total recoverable concentration of 10 µg/l, which is also the newly adopted (22 January 2001) USEPA Primary MCL. Arsenic was detected in the groundwater treated effluent in two samples in February and March 1998 with results of 15 µg/l and 14 µg/l respectively, both results exceeding the drinking water MCL. Therefore, this Order sets an effluent limit for arsenic of 10 µg/l as a monthly average. Based on the recently submitted information and on the Discharger's application, the GWTS is capable of dependably removing arsenic in groundwater to concentrations that are below the applicable water quality standard and are below the reported minimum level for the appropriate analytical method. USEPA Analytical Method 200.8 for arsenic has a typical reporting limit of 1.0 µg/l. The Discharger is capable of meeting the new water quality based effluent limit for arsenic of 10 µg/l, therefore a time schedule for compliance is not necessary in the Order.

Bis (2-ethyl-hexyl) phthalate

Bis (2-ethyl-hexyl) phthalate is used primarily as one of several plasticizers in polyvinyl chloride (PVC) resins for fabricating flexible vinyl products. According to the Consumer Product Safety Commission (CPSC), USEPA, and the Food and Drug Administration (FDA), these PVC resins are used to manufacture many products, including soft squeeze toys, balls, raincoats, adhesives, polymeric coatings, components of paper and paperboard, defoaming agents, animal glue, surface lubricants, and other products that must stay flexible and noninjurious for the lifetime of their use. The Discharger adds Andco 3640 polymer (Andco Environmental Processes, Inc. Buffalo, N.Y.) as a

flocculating agent. The Discharger reported that two of the five SIP samples contained bis(2-ethylhexyl) phthalate above the analytical reporting limit of 5 µg/l, with a maximum result of 8.4 µg/l. The presence of bis(2-ethylhexyl) phthalate [di(2-ethylhexyl) phthalate; DEHP] in the effluent is likely from the flocculating agent. Bis(2-ethylhexyl) phthalate has a California Primary MCL of 4 µg/l and a CTR criterion for human health protection from consumption of water and aquatic organisms of 1.8 µg/l. Based on the data available the discharge appears to have a reasonable potential to exceed the CTR criterion and MCL for bis(2-ethylhexyl) phthalate. Therefore, this permit sets an effluent limitation for bis(2-ethylhexyl) phthalate of 1.8 µg/l as a monthly average and 3.6 as a daily maximum. Since these limits appear to put the discharger in immediate non-compliance, according to the SIP Section 2.1, a compliance schedule is included in the permit. A provision of this permit requires the discharger to first submit justification for a time schedule and upon approval, then submit a corrective action plan and implementation schedule to assures compliance with the final effluent limits for bis(2-ethylhexyl) phthalate. The new water quality based effluent limitations for bis(2-ethylhexyl) phthalate become effective on 1 August 2004 if a compliance justification is not completed and submitted to the Regional Board by 1 July 2004. Otherwise, full compliance with these limitations is not required by this Order until **1 June 2009**. In the meantime, interim effluent limits based on plant performance are established.

Final Effluent Limit for bis(2-ethyl-hexyl) phthalate

The ECA (effluent allocation allowance) = C (criterion) = 1.8 µg/l
The coefficient of variation used is the default value of 0.6 since less than 10 sample points.
From Table 2, the MDEL/AMEL Multiplier is 2.01
The AMEL (average monthly effluent limit) = ECA = 1.8 µg/l.
The MDEL (maximum daily effluent limit) = ECA x MDEL/AMEL multiplier = 1.8 x 2.01 = 3.6 µg/l

Interim Effluent limit

Daily maximum = Maximum effluent x 3.11 (Since less than 10 data points)
= 8.4 x 3.11
= 26.1 = 26 µg/l.

Total Chromium/Chromium III and Chromium VI

Due to the previous wood treatment operations, chromium was found to be polluting groundwater and since chromium is typically present in two forms, the previous Order established effluent limitations for both chromium III and chromium VI. Review of monthly monitoring reports between 1995 and 2002 showed that Total chromium was detected in 12 out of 129 samples with a range between 2.9 µg/l and 54 µg/l. The California Primary MCL for total chromium is 50 µg/l, which is the criterion applicable to this discharge pursuant to the Chemical Constituents objective of the Basin Plan. Based on the available data, there was one instance, on 19 August 2002, when the total chromium concentration (54 µg/l) in the groundwater treated effluent exceeded the drinking water MCL. Therefore, this Order establishes an effluent limitation for **total chromium** of 50 µg/l as a monthly average. Since the groundwater treatment system is designed to remove chromium in the

groundwater, the discharger should be able to comply with this effluent limitation when adequately operating the treatment system and therefore a time schedule for compliance is not necessary in this Order.

Furthermore, since chromium III is an alternative valence state of the groundwater pollutant from previous wood treatment operations, reasonable potential exists that chromium III could be discharged into the receiving water if treatment system not properly operated. Previous Order No. 97-109 included a 4-day average and 1-hour average effluent limitation for chromium III of 210 µg/l and 1,700 µg/l, respectively based on USEPA ambient water quality criteria for the protection of freshwater aquatic life for chronic and acute scenarios based on an *assumed* worst receiving water hardness of 100 mg/l as $CaCO_3$. More appropriate criteria is the CTR water quality criteria for total recoverable chromium III for protection of freshwater aquatic life based on an actual worst receiving water hardness of 204 mg/l (Ulatis creek), which results in a chronic criterion (4-day average) of 370 µg/l and an acute criterion (1-hr average) of 3100 µg/l. The maximum observed effluent concentration for chromium III was 20 µg/l. There is no reasonable potential based on effluent concentrations, however, due to high levels in the influent and the possibility of inadequate treatment, the Regional Board finds reasonable potential and establishes effluent limitations for chromium III based on CTR criteria. According to the SIP section 1.4, effluent limits should be calculated as a daily maximum and a monthly average. Thus, this order establishes effluent limits for **chromium III** of 606 µg/l as a daily maximum and 302 µg/l as a monthly average based on CTR criteria for the protection of freshwater aquatic life. Based on the available information and on the Discharger's application, the groundwater treatment system (GWTS) is capable of dependably removing chromium III in groundwater. The Discharger is capable of meeting the new water quality based effluent limits for chromium III, therefore a time schedule for compliance is not necessary.

Final Effluent limit for Chromium III

Calculating Effluent Limits: For the worst-case conditions of Ulatis Creek hardness of 204 mg/l.
ECA (chronic aquatic life) = 370 µg/l (worst case condition hardness)
ECA (acute aquatic life) = 3100 µg/l (worst case condition hardness)
LTA = ECA x ECA multiplier (From SIP Table 1, using CV=0.6 since <10 data points)
LTA (chronic) = 370 x 0.527 = 195
LTA (acute) = 3100 x 0.321 = 995

Choosing the lowest of the two, the effluent limitations are calculated as follows:
MDEL = Lowest LTA x MDEL multiplier (99 percentile, from SIP Table 2, CV=0.6, n=4)
AMEL = Lowest LTA x AMEL multiplier (95 percentile, from SIP Table 2, CV=0.6, n=4)
Therefore, under the worst-case condition of effluent hardness of 204 mg/l, the **chromium III** limits would be:
MDEL = 195 x 3.11 = **606 µg/l** as Total Chromium III.
AMEL = 195 x 1.55 = **302 µg/l** as Total Chromium III.

Previous Order No. 97-109 included a 4-day average and 1-hour average effluent limitation for **chromium VI** of 10 µg/l and 15 µg/l, respectively based on USEPA's recommended ambient water quality criteria for the protection of freshwater species. However, since adoption of the CTR on

18 May 2000, the CTR criteria for the protection of freshwater aquatic life for chromium VI of 16 µg/l (1-hr average, acute) and 11 µg/l (4-day average, chronic) become the applicable criteria. The criteria are expressed as dissolved concentrations and using the USEPA default conversion factor the CTR criteria are converted to total recoverable chromium VI concentrations of 16.3 µg/l (acute) and 11.4µg/l (chronic). Since chromium VI is a groundwater pollutant from previous wood treatment operations, reasonable potential exists that chromium VI could be discharged into the receiving water if treatment system not properly operated. The maximum observed effluent concentration for total chromium was 38 µg/l. Based on the data available the discharge appears to have reasonable potential to exceed the CTR water quality criteria for chromium VI. Therefore, this Order establishes effluent limitations for chromium V1 based on the applicable CTR criteria for protection of freshwater aquatic life as 16 µg/l as a daily maximum and 8.1 µg/l as a monthly average. Based on the available information and on the Discharger's application, the groundwater treatment system (GWTS) is capable of dependably removing chromium VI in groundwater. The Discharger should therefore be capable of meeting the new water quality based effluent limits for chromium VI, therefore a time schedule for compliance is not necessary. Review of monitoring reports between July 1994 and December 2003 show a total of 150 samples with 132 non-detects (detection levels <10, <2.5, <1 and others). Below is a table of some of those analyses since January 2001.

Sample Date	Chromium VI (µg/l)	Sample Date	Chromium VI (µg/l)	Sample Date	Chromium VI (µg/l)
1/24/01	<2.5	1/9/02	<1	1/22,31/03	**25,20**
2/21/01	<3	2/20/02	<1	2/6,19/03	**38**,4.4
3/28/01	1.8	3/27/02	<1	3/12/03	26.4
4/16/01	<1	4/10/02	<10	4/16/03	0.75
5/21/01	<1	5/15/02	NA	5/12/03	<0.5
6/27/01	<1	6/26/02	<10	6/4,6/03	**21**,3.9
7/25/01	<1	7/22/02	5.1	7/16/03	1.1
8/22/01	<1	8/19/02	<10	8/03	NA
9/26/01	<1	9/30/02	4	9/03	NA
10/29/01	<1	10/28/02	3	10/8/03	0.69
11/01	NA	11/6,21/02	1, 1.4	11/03	NA
12/5,19/01	<1,<1	12/18/02	1.1	12/03	NA

Because the data for Chromium V1 has more than 80% non-detects, according to section 1.4 of the SIP, the coefficient of variation (CV) shall be set equal to 0.6. Multipliers to calculate LTA, MDEL, and AMEL came from SIP Tables 1 and 2 based on a CV of 0.6 and n = 4.

Final Effluent limit for Chromium VI

(ECA (chronic aquatic life) = 11.4 µg/l, ECA (acute aquatic life) = 16.3 µg/l)
LTA = ECA x ECA multiplier
LTA (chronic) = 11.4 x 0.527 = 6.0
LTA (acute) = 16.3 x 0.321 = **5.2**

Choosing the lowest of the two, the effluent limitations are calculated as follows:
MDEL = Lowest LTA x MDEL multiplier (99 percentile)
AMEL = Lowest LTA x AMEL multiplier (95 percentile)
MDEL = 5.2 x 3.11 = 16.2 = **16 µg/l** as total chromium VI
AMEL = 5.2 x 1.55 = 8.11 = **8.1 µg/l** as total chromium VI

Copper

Since copper is a groundwater pollutant from previous wood treatment operations, reasonable potential exists that copper could be discharged into the receiving water if treatment system not properly operated. The Basin Plan has established a maximum concentration objective for dissolved copper for waters in the Delta (applicable at the confluence point of the drainage ditch and Ulatis Creek) of 10 µg/l (independent of hardness), which translates to a total copper concentration of 10.4 µg/l (using the USEPA default conversion factor of 0.96, which was not considered in the previous permit, instead a conversion of 1.0 was considered). The CTR Water Quality Criteria for total recoverable concentrations of copper for protection of freshwater aquatic life for acute and chronic scenarios are 27 µg/l and 17 µg/l, respectively based on the worst receiving water (Ulatis Creek) hardness of 204 mg/l as $CaCO_3$. Monitoring for copper in the previous order was required on a monthly basis and the results have been non-detect (<10 µg/l), except for one sample taken in October 1999, with a result of 12 µg/l, which exceeded the Basin Plan Delta objective. More recent results of effluent monitoring of the GWTS show that five of the five SIP samples contained copper above the analytical reporting limit of 0.5 µg/l with results ranging from 2.2 µg/l l to 9.0 µg/l. Based on the available information and on the Discharger's application, the GWTS is capable of dependably removing copper in groundwater to concentrations that are below the applicable water quality standard and are below the reported minimum level for the appropriate analytical method when adequately operating the groundwater treatment system. USEPA Analytical Method 200.8 for copper has a typical reporting limit of 0.5 µg/l. The effluent limits cannot be less stringent than those in the previous permit. The previous permit included an effluent limitation of 10 µg/l as a daily maximum, 11 µg/l as a 4-day average, and 17 µg/l as a 1-hr average. The 17 µg/l and 11 µg/l averages have been deleted from this Order since 10 µg/l as a daily max is much more restrictive than these averages. In addition, although the appropriate limitation should be 10.4 µg /l as a daily maximum, based on existing treatment technology and past history of compliance, the copper limitation shall remain the same as in the previous permit, which is 10 µg /l as a daily maximum.

Mercury

Results of effluent monitoring of the GWTS show that three of the five SIP samples contained mercury above the analytical reporting limit of 0.0002 µg/l with results ranging from 0.00454 µg/l to 0.00860 µg/l. The previous Order No. 97-109 did not include an effluent limit for this constituent. The current USEPA's ambient water quality criterion (expressed as dissolved concentrations) for continuous concentration of mercury is 0.77 µg/l (4-day average, chronic criteria), and the CTR (expressed as total recoverable) concentration for the human health protection for consumption of

water and aquatic organisms is 0.050 µg/l. Based on the available data the discharge does not have a reasonable potential to exceed a water quality standard. Therefore, this Order does not include an effluent limitation for mercury. However, mercury is listed under the California 303(d) list as a pollutant causing impairment in the Sacramento-San Joaquin Delta. This listing is based partly on elevated levels of mercury in fish tissue. Because the Sacramento-San Joaquin Delta has been listed as an impaired water body for mercury based on fish tissue impairment, the discharge must not cause or contribute to increased mercury levels in fish tissue to enter the Delta. Therefore, a provision of this Order requires the Discharger to conduct a downstream hydraulic continuity survey in accordance with a time schedule, and allow the Board to reopen this Order and set an effluent annual mass loading for mercury if necessary. The survey shall include a downstream evaluation of flow to determine if hydraulic continuity exists in the drainage ditch between the discharge point and Ulatis creek during both wet and dry weather conditions. To aid in the investigation, several additional receiving water monitoring stations (R3, R4, R5, R6, R7, and R8) have been established at 1500 feet, 2500 feet, 1 mile, 2 miles, 3 miles, and 3.5 miles respectively downstream from the existing point of discharge.

Selenium

Results of effluent monitoring of the GWTS show that three of the five SIP samples contained selenium above the analytical reporting limit of 5 µg/l with results ranging between 5.8 µg/l and 6.2 µg/l. The CTR water quality criteria for the protection of freshwater aquatic life are 5 µg/l (4-day average, chronic) and 20 µg/l (1-hour average, acute). Based on the data available the discharge appears to have a reasonable potential to exceed the chronic CTR criterion for the protection of freshwater species. Therefore, this Order establishes an effluent limitation for selenium of 4.1 µg/l as a monthly average and 8.2 µg/l as daily maximum. Since it appears these limits put the discharger in immediate non-compliance, according to the SIP Section 2.1, a compliance schedule is included in the permit. A provision of this permit requires the discharger to first submit justification for a time schedule and upon approval, then submit a corrective action plan and implementation schedule to assure compliance with final effluent limits. The new water quality based effluent limitations for selenium become effective on 1 August 2004 if a compliance schedule justification is not completed and submitted to the Regional Board by 1 July 2004. Otherwise, full compliance with these limitations is not required by this Order until **1 June 2009**. In the meantime, interim effluent limits based on plant performance are established.

Final Effluent limit for Selenium

ECA (chronic aquatic life) = 5 µg/l), ECA (acute aquatic life) = 20 µg/l.
LTA = ECA x ECA multiplier (From SIP Table 1, using CV=0.6 since <10 data points)
LTA (chronic) = 5.0 x 0.527 = 2.635 µg/l
LTA (acute) = 20 x 0.321 = 6.42 µg/l

Choosing the lowest of the two, the effluent limitations are calculated as follows:
MDEL = Lowest LTA x MDEL multiplier (99 percentile, from SIP Table 2, CV=0.6, n=4)
AMEL = Lowest LTA x AMEL multiplier (95 percentile, from SIP Table 2, CV=0.6, n=4)

MDEL = 2.635 x 3.11 = 8.19 = **8.2 µg/l** as Total Selenium.
AMEL = 2.635 x 1.55 = 4.08 = **4.1 µg/l** as Total Selenium.

Interim Effluent limit

Daily maximum = Maximum effluent x 3.11 (Since less than 10 data points)
= 6.2 x 3.11
= 19.2 = 19 µg/l.

No Reasonable Potential

There were several constituents which were detected in the effluent that do not pose a reasonable potential to cause an exceedance of a water quality standard and effluent limits were not included in the proposed permit:

Aluminum

Results of effluent monitoring of the GWTS showed that one of the five SIP samples contained aluminum with a concentration of 30 µg/l, below the USEPA ambient water quality criteria for the protection of freshwater aquatic life of 87 µg/l (4-day average, chronic) and 750 µg/l (1-hr average, acute), and the secondary MCL for aluminum of 200 µg/l. Therefore an effluent limitation is not necessary.

Ammonia

Ammonia has been detected in the effluent in 5 out of 5 SIP samples with detections ranging between 0.1 mg/l to 0.38 mg/l. The USEPA has published revised ambient water quality criteria for Ammonia (1999 Ammonia Update), superseding all previous USEPA's recommended freshwater criteria for ammonia. Applying 40 CFR section 122.44(d)(1)(vi)(B), it is appropriate to use USEPA's Ambient National Water Quality Criteria for the protection of Freshwater Aquatic Life for ammonia. The 1999 Ammonia Update pertains only to fresh waters. The new criteria incorporate revisions so that the acute criterion (1-hour average) for ammonia is dependent on pH and fish species and the chronic criterion (30-day average) is dependent on pH and temperature, and at temperatures lower than 15^{o}C is also dependent on fish species. From review of the monitoring reports for the past five years, it seems that worst-case scenarios would be when the pH is 8.1 and the temperature is 28 ^{o}C. Under these conditions, the USEPA's ambient water quality criteria for ammonia are 4.64 mg/l (Salmonids Present) and 6.95 mg/l (Salmonids Absent) as a 1-hour average (acute) and 0.879 mg/l as a 30-day average (chronic). The maximum detected concentration of ammonia in the effluent does not exceed the ambient water quality criteria, and therefore an effluent limitation is not necessary.

Barium

Barium was estimated (since detections were below the reporting limit of 100 µg/l but above the method detection limit) in 5 out of 5 SIP samples with concentrations ranging between 24 µg/l and 84 µg/l. The most stringent criterion is the site-specific Basin Plan water quality objective for the Delta

(which includes Ulatis Creek) of 100 µg/l. Since the effluent estimated concentrations are below the Basin Plan objective, then there is no reasonable potential and an effluent limitation is not necessary.

Cadmium

Cadmium was estimated (since detections were below the reporting limit of 0.25 µg/l but above the method detection limit) in the effluent in 2 of the 5 SIP samples with concentrations ranging between 0.1 µg/l and 0.12 µg/l, well below the primary MCL of 5 µg/l, and the CTR chronic and acute freshwater criteria (based on a worst receiving water hardness of 204 mg/l) of 4.3 µg/l and 10.1 µg/l respectively. Therefore, an effluent limitation is not necessary.

Dichloromethane (Methylene Chloride)

Dichloromethane was estimated (since detection was below the reporting limit of 2.0 µg/l but above the method detection limit) in the effluent in 1 of the 5 SIP samples with a concentration of 0.37 µg/l, well below the CTR water quality criterion for Human Health protection for consumption of water and aquatic organisms set at 4.7 µg/l, and the drinking water primary MCL of 5 µg/l. Therefore, an effluent limitation is not necessary.

Fluoride

Fluoride was detected in the effluent in 5 out of 5 SIP samples with concentrations ranging between 600 µg/l and 910 µg/l, well below the Agricultural water quality goal for fluoride of 1000 µg/l, and the primary MCL for fluoride of 2000 µg/l. Therefore, an effluent limitation is not necessary.

Lead

Lead was detected in the effluent in 1 of 5 SIP samples with a concentration of 0.8 µg/l, well below the CTR chronic and acute freshwater criteria (based on a worst receiving water hardness of 204 mg/l) of 7.9 µg/l and 200 µg/l respectively. Therefore, an effluent limitation is not necessary

Nickel

Nickel was detected in the effluent in 3 of 5 SIP samples with concentrations ranging from 6.7 µg/l to 38 µg/l, well below the CTR chronic and acute freshwater criteria (based on a worst receiving water hardness of 204 mg/l) of 95 µg/l and 860 µg/l respectively, and the primary MCL of 100 µg/l. Therefore, an effluent limitation is not necessary.

Nitrate

Nitrate was detected in the effluent in all 5 SIP samples with concentrations ranging between 5 µg/l and 8 µg/l, well below the primary MCL of 10 µg/l. Therefore, an effluent limitation is not necessary.

Pentachlorophenol

Pentachlorophenol was estimated (since detection was below the reporting limit of 1.0 µg/l but above the method detection limit) in the effluent in 1 of the 5 SIP samples with a concentration of 0.22 µg/l, well below the CTR water quality criterion for Human Health protection for consumption of water and aquatic organisms set at 0.28 µg/l, and the drinking water primary MCL of 1 µg/l. Therefore, an effluent limitation is not necessary.

Thallium

Thallium was estimated (since detection was below the reporting limit of 1.0 µg/l but above the method detection limit) in the effluent in 1 of the 5 SIP samples with a concentration of 0.37 µg/l, well below the CTR water quality criterion for Human Health protection for consumption of water and aquatic organisms set at 1.7 µg/l, and the drinking water primary MCL of 2 µg/l. Therefore, an effluent limitation is not necessary.

Xylenes

Xylenes was detected in the effluent in 1 of the 5 SIP samples with a concentration of 2.8 µg/l, well below the Taste and Odor threshold value of 17 µg/l, and the secondary MCL of 20 µg/l. Therefore, an effluent limitation is not necessary.

Zinc

Zinc detected in the effluent in 1 of the 5 SIP samples with a concentration of 33 µg/l, well below the CTR chronic and acute freshwater criteria (based on a worst receiving water hardness of 204 mg/l) of 220 µg/l and 220 µg/l respectively. Therefore, an effluent limitation is not necessary.

Discharge Prohibitions and Specifications

The Order defines a new discharge point within the drainage channel and therefore contains a time schedule for the installation of a discharge pipe. The Order contains effluent limits for antimony, arsenic, bis (2-ethyhexyl) phthalate, total chromium, chromium III, chromium VI, copper, iron, manganese, selenium, salinity (electrical conductivity, total dissolved solids), sulfate, dissolved oxygen, and pH. This Order prohibits discharge during flooding conditions at the Holdener Road drainage channel and contains more effluent limits than the previous Order, and time schedules to comply with the new effluent limitations. The Discharger must also complete the dioxin and furan, and other sampling specified by the Executive Officer on 10 September 2001, as required by the CTR and NTR, and the time schedule from that letter is reiterated in the Order. The Order establishes a discharge flow limit of 0.022 mgd (21,600 gpd as indicated in the RWD).

Monitoring Requirements

The proposed Order increases the previous Order's influent and effluent monitoring requirements, and requires quarterly reporting. In order to adequately characterize the effluent, the Discharger is required to monitor for antimony, arsenic, bis(2-ethylhexyl) phthalate, total chromium, chromium III, chromium VI, copper, iron, manganese, salinity (chloride, TDS, EC), selenium, sulfate, dissolved oxygen, and pH. The established effluent limits are protective of beneficial uses, so monitoring is not required for Ulatis Creek. In addition new receiving water monitoring stations (R3 thru R8) have been established at the drainage ditch, in order to better determine hydraulic continuity between the discharge point and the confluence with Ulatis Creek.

Reopener

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. However, the proposed Order contains a clause to reopen the permit to add effluent limits for constituents if sampling shows that it is warranted. This Order may also be reopened and an effluent limit established for a specific toxicant identified by a toxicity reduction evaluation.

MES/RDJ

Attachment C - Constituents in the Effluent (SIP Data)																				
		Controlling Water Quality Criterion for Surface Waters				Wickes Results			Wickes Results			Wickes Results			Wickes Results			Wickes Results		
CTR #	Constituent	Basis	Criterion Concentration (ug/L or noted) (1)	Criterion Quantitation Limit (ug/L or noted)	Suggested Test Methods	8/27/2003 Effluent			2/19/2003 Effluent			11/21/2002 Effluent			7/22/2002 Effluent			4/10/2002 Effluent		
VOLATILE ORGANICS						result	*dlr*	*method*	result	*dlr*	*method*	result	dlr	method	result	dlr	method	result	dlr	method
28	1,1-Dichloroethane	Primary MCL	5	1	EPA 8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B
30	1,1-Dichloroethene	National Toxics Rule	0.057	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
41	1,1,1-Trichloroethane	Primary MCL	200	2	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
42	1,1,2-Trichloroethane	National Toxics Rule	0.6	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
37	1,1,2,2-Tetrachloroethane	National Toxics Rule	0.17	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
75	1,2-Dichlorobenzene	Taste & Odor	10	2	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
29	1,2-Dichloroethane	National Toxics Rule	0.38	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
	cis-1,2-Dichloroethene	Primary MCL	6	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
31	1,2-Dichloropropane	Calif. Toxics Rule	0.52	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
101	1,2,4-Trichlorobenzene	Public Health Goal	5	5	EPA 8260B	ND	5.0 ug/l	8260B	ND	5.0 ug/l	8260B	ND	5.0 ug/l	8260B	ND	5.0 ug/l	8260B	ND	5.0 ug/l	8260B
76	1,3-Dichlorobenzene	Taste & Odor	10	2	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
32	1,3-Dichloropropene	Primary MCL	0.5	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
77	1,4-Dichlorobenzene	Primary MCL	5	2	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
17	Acrolein	Aquatic Toxicity	21	5	EPA 8260B	ND	5.0 ug/l	8316	ND	5.0 ug/l	8316	ND	5.0 ug/l	8316	ND	5.0 ug/l	8316	ND	5.0 ug/l	8316
18	Acrylonitrile	National Toxics Rule	0.059	2	EPA 8260B	ND	2.0 ug/l	8316	ND	2.0 ug/l	8316	ND	2.0 ug/l	8316	ND	2.0 ug/l	8316	ND	2.0 ug/l	8316
19	Benzene	Primary MCL	1	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
20	Bromoform	Calif. Toxics Rule	4.3	2	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
34	Bromomethane	Calif. Toxics Rule	48	2	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
21	Carbon tetrachloride	National Toxics Rule	0.25	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
22	Chlorobenzene (mono chlorobenzene)	Taste & Odor	50	2	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
24	Chloroethane	Taste & Odor	16	2	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
25	2- Chloroethyl vinyl ether	Aquatic Toxicity	122 (3)	1	EPA 8260B	ND	1.0 ug/l	502.2	ND	1.0 ug/l	502.2	ND	1.0 ug/l	502.2	ND	1.0 ug/l	502.2	ND	1.0 ug/l	502.2
26	Chloroform	OEHHA Cancer Risk	1.1	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
35	Chloromethane	USEPA Health Advisory	3	2.0	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	0.50 ug/l	8260B
23	Dibromochloromethane	Calif. Toxics Rule	0.41	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
27	Dichlorobromomethane	Calif. Toxics Rule	0.56	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
36	Dichloromethane (Methylene Chloride)	Calif. Toxics Rule	4.7	2	EPA 8260B	0.37 J	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
33	Ethylbenzene	Taste & Odor	29	2	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
88	Hexachlorobenzene	Calif. Toxics Rule	0.00075	1	EPA 8260B	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C
89	Hexachlorobutadiene	National Toxics Rule	0.44	1	EPA 8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B
91	Hexachloroethane	National Toxics Rule	1.9	1	EPA 8260B	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C
94	Naphthalene	USEPA IRIS	14	10	EPA 8260B	ND	10 ug/l	8260B	ND	10 ug/l	8260B	ND	10 ug/l	8260B	ND	10 ug/l	8260B	ND	10 ug/l	8260B
38	Tetrachloroethene	National Toxics Rule	0.8	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
39	Toluene	Taste & Odor	42	2	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
40	trans-1,2-Dichloroethylene (…ethene)	Primary MCL	10	1	EPA 8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B	ND	1.0 ug/l	8260B
43	Trichloroethene	National Toxics Rule	2.7	2	EPA 8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B	ND	2.0 ug/l	8260B
44	Vinyl chloride	Primary MCL	0.5	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
	Methyl-tert-butyl ether (MTBE)	Secondary MCL	5	3	EPA 8260B	ND	3 ug/l	8260B	ND	3 ug/l	8260B	ND	3 ug/l	8260B	ND	3 ug/l	8260B	ND	3 ug/l	8260B
	Trichlorofluoromethane	Primary MCL	150	5	EPA 8260B	ND	5.0 ug/l	8260B	ND	5.0 ug/l	8260B	ND	5.0 ug/l	8260B	ND	5.0 ug/l	8260B	ND	5.0 ug/l	8260B
	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon113)	Primary MCL	1200	10	EPA 8260B	ND	10 ug/l	8260B	ND	10 ug/l	8260B	ND	10 ug/l	8260B	ND	10 ug/l	8260B	ND	10 ug/l	8260B
	Styrene	Taste & Odor	11	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B
	Xylenes	Taste & Odor	17	0.5	EPA 8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	2.8	0.50 ug/l	8260B	ND	0.50 ug/l	8260B	ND	0.50 ug/l	8260B

COLLINS AND AIKMAN CONSTITUENTS IN THE EFFLUENT ATTACHMENT C

SEMI-VOLATILE ORGANICS																				
60	1,2-Benzanthracene (Benzo(a)anthracene)	Calif. Toxics Rule	0.0044	5	EPA 8270C							ND	0.20 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610
85	1,2-Diphenylhydrazine	National Toxics Rule	0.04	1	EPA 8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C
45	2-Chlorophenol	Taste and Odor	0.1	2	EPA 8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C
46	2,4-Dichlorophenol	Taste and Odor	0.3	1	EPA 8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C
47	2,4-Dimethylphenol	Calif. Toxics Rule	540	2	EPA 8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	3.0 ug/l	8270C	ND	3.0 ug/l	8270C	ND	3.0 ug/l	8270C
49	2,4-Dinitrophenol	National Toxics Rule	70	5	EPA 8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
82	2,4-Dinitrotoluene	National Toxics Rule	0.11	5	EPA 8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
55	2,4,6-Trichlorophenol	Taste and Odor	2	10	EPA 8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C
83	2,6-Dinitrotoluene	USEPA IRIS	0.05	5	EPA 8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
50	2-Nitrophenol	Aquatic Toxicity	150 (5)	10	EPA 8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C
71	2-Chloronaphthalene	Aquatic Toxicity	1600 (6)	10	EPA 8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C
78	3,3'-Dichlorobenzidine	National Toxics Rule	0.04	5	EPA 8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
62	3,4-Benzofluoranthene (benzo(b)fluoranth	Calif. Toxics Rule	0.0044	10	EPA 8270C							ND	0.20 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610
52	4-Chloro-3-methylphenol	Aquatic Toxicity	30	5	EPA 8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
48	4,6-Dinitro-2-methylphenol	National Toxics Rule	13.4	10	EPA 8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND		8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C
51	4-Nitrophenol	USEPA Health Advisory	60	10	EPA 8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C
69	4-Bromophenyl phenyl ether	Aquatic Toxicity	122	10	EPA 8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C
72	4-Chlorophenyl phenyl ether	Aquatic Toxicity	122 (3)	5	EPA 8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
56	Acenaphthene	Taste and Odor	20	1	EPA 8270C							ND	0.20 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610
57	Acenaphthylene	No Criteria Available		10	EPA 8270C							ND	0.20 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610
58	Anthracene	Calif. Toxics Rule	9,600	10	EPA 8270C							ND	0.20 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610
59	Benzidine	National Toxics Rule	0.00012	5	EPA 8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	Calif. Toxics Rule	0.0044	2	EPA 8270C							ND	0.10 ug/l	610	ND	0.10 ug/l	610	ND	0.10 ug/l	610
63	Benzo(g,h,i)perylene	No Criteria Available		5	EPA 8270C							ND	0.20 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610
64	Benzo(k)fluoranthene	Calif. Toxics Rule	0.0044	2	EPA 8270C							ND	0.20 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610
65	Bis(2-chloroethoxy) methane	No Criteria Available		5	EPA 8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
66	Bis(2-chloroethyl) ether	National Toxics Rule	0.031	1	EPA 8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C
67	Bis(2-chloroisopropyl) ether	Aquatic Toxicity	122 (3)	10	EPA 8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C
68	Bis(2-ethylhexyl) phthalate	Calif. Toxics Rule	1.8	5	EPA 8270C	**6.3**	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	**8.4**	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
70	Butyl benzyl phthalate	Aquatic Toxicity	3 (7)	10	EPA 8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C
73	Chrysene	Calif. Toxics Rule	0.0044	5	EPA 8270C							ND	0.2 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610
81	Di-n-butylphthalate	Aquatic Toxicity	3 (7)	10	EPA 8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C
84	Di-n-octylphthalate	Aquatic Toxicity	3 (7)	10	EPA 8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C
74	Dibenzo(a,h)-anthracene	Calif. Toxics Rule	0.0044	0.1	EPA 8270C							ND	0.1 ug/l	610	ND	0.10 ug/l	610	ND	0.10 ug/l	610
79	Diethyl phthalate	Aquatic Toxicity	3 (7)	2	EPA 8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C
80	Dimethyl phthalate	Aquatic Toxicity	3 (7)	2	EPA 8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C	ND	2.0 ug/l	8270C
86	Fluoranthene	Calif. Toxics Rule	300	10	EPA 8270C							ND	0.2 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610
87	Fluorene	Calif. Toxics Rule	1300	10	EPA 8270C							ND	0.2 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610
90	Hexachlorocyclopentadiene	Taste and Odor	1	5	EPA 8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
92	Indeno(1,2,3-c,d)pyrene	Calif. Toxics Rule	0.0044	0.05	EPA 8270C							ND	0.05 ug/l	610	ND	.050 ug/l	610	ND	0.050 ug/l	610
93	Isophorone	National Toxics Rule	8.4	1	EPA 8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C
98	N-Nitrosodiphenylamine	National Toxics Rule	5	1	EPA 8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C
96	N-Nitrosodimethylamine	National Toxics Rule	0.00069	5	EPA 8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
97	N-Nitrosodi-n-propylamine	Calif. Toxics Rule	0.005	5	EPA 8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C	ND	5.0 ug/l	8270C
95	Nitrobenzene	National Toxics Rule	17	10	EPA 8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C	ND	10 ug/l	8270C
53	Pentachlorophenol	Calif. Toxics Rule	0.28	1	EPA 8270C	ND	1.0 ug/l	8151A	0.22, J	1.0 ug/l	8151A	ND	failed QC					ND	1 ug/l	8151A
99	Phenanthrene	No Criteria Available		5	EPA 8270C							ND	0.2 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610
54	Phenol	Taste and Odor	5	1	EPA 8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C	ND	1.0 ug/l	8270C
100	Pyrene	Calif. Toxics Rule	960	10	EPA 8270C							ND	0.2 ug/l	610	ND	0.20 ug/l	610	ND	0.20 ug/l	610

COLLINS AND AIKMAN CONSTITUENTS IN THE EFFLUENT ATTACHMENT C

INORGANICS																			
	Aluminum	Ambient Water Quality	87	50	EPA 6020/200.8	ND	50 ug/l	200.7	ND	50 ug/l	200.7	30, J	50 ug/l	200.7	ND	50 ug/l	200.7	ND	50 ug/l	200.7
1	Antimony	Primary MCL	6	5	EPA 6020/200.8	ND	5 ug/l	200.8	ND	5 ug/l	200.8	ND	5 ug/l	200.8	ND	5 ug/l	200.8	**7.8**	5 ug/l	200.8
2	Arsenic	Primary MCL	10	1	EPA 6020/Hydride	ND	1 ug/l	200.8	ND	1 ug/l	200.8	ND	1 ug/l	200.8	ND	1 ug/l	200.8	ND	1 ug/l	200.8
15	Asbestos	National Toxics Rule/ Primary MCL	7 MFL	0.2 MFL >10um	EPA/600/R-93/116(PCM)							ND	0.2 MFL	EPA/600/R-94/134	ND	0.2 MFL	EPA/600/R-94/134	<2.79 MFL	elevated	EPA/600/R-94/134
	Barium	Basin Plan Objective	100	100	EPA 6020/200.8	24, J	100 ug/l	200.7	47 J	100 ug/l	200.7	41, J	100 ug/l	200.7	42, J	100 ug/l	200.7	83.6, J	100 ug/l	200.7
3	Beryllium	Primary MCL	4	1	EPA 6020/200.8	ND	1 ug/l	200.7	ND	1 ug/l	200.7	ND	1 ug/l	200.7	0.22, J	1 ug/l	200.7	ND	1 ug/l	200.7
4	Cadmium	Primary MCL	5	0.25	EPA 1638/200.8	ND	0.25 ug/l	200.8	0.12 J	0.25 ug/l	200.8	ND	0.25 ug/l	200.8	ND	0.25 ug/l	200.8	0.1, J	0.25 ug/l	200.8
5a	Chromium (total)	Primary MCL	50	2	EPA 6020/200.8	1.1, J	2 ug/l	200.8	4.4	2 ug/l	200.8	0.6 J	2 ug/l	200.8	3.9	2 ug/l	200.8	20	2 ug/l	200.8
5b	Chromium (VI)	Calif. Toxics Rule	11	5	EPA 7199/ 1636	ND	1 ug/l	7199	4.4	1 ug/l	7199	1.4	1 ug/l	7199	5.1	1 ug/l	7199	ND	0.50 ug/l	
6	Copper	Basin Plan Objective	10	0.5	EPA 6020/200.8	2.9	0.50 ug/l	200.8	5.4	0.50 ug/l	200.8	9	0.50 ug/l	200.8	2.2	0.50 ug/l	200.8	2.5	0.50 ug/l	200.8
14	Cyanide	Calif. Toxics Rule	5.2	5	EPA 9012A	ND	5 ug/l	335.2	ND	5 ug/l	335.2	ND	5 ug/l	335.2	ND	5 ug/l	335.2	ND	5 ug/l	335.2
	Fluoride	Agricultural Goal	1000	100	EPA 300	620	100 ug/l	300	890	100 ug/l	300	910	100 ug/l	300	600	100 ug/l	300	660	100 ug/l	300
	Iron	Secondary MCL	300	100	EPA 6020/200.8	71, J	100 ug/l	200.7	**400**	100 ug/l	200.7	18 J	100 ug/l	200.7	40, J	100 ug/l	200.7	**20,000**	100 ug/l	200.7
7	Lead	Calif. Toxics Rule	7.9 (2)	0.5	EPA 1638	ND	0.5 ug/l	200.8	0.27 J	0.5 ug/l	200.8	ND	0.5 ug/l	200.8	ND	0.5 ug/l	200.8	0.8	0.5 ug/l	200.8
8	Mercury	TMDL Development		0.0005 (11)	EPA 1669/1631							**0.00803**	0.0005 ug/l	1631	**0.00454**	.0005 ug/l	1631	**0.0086**	0.0005 ug/l	1631
	Manganese	Secondary MCL/ Basin Plan Objective	50	20	EPA 6020/200.8	13, J	20 ug/l	200.7	ND	20 ug/l	200.7	ND	20 ug/l	200.7	ND	20 ug/l	200.7	**74**	20 ug/l	200.7
9	Nickel	Calif. Toxics Rule	95 (2)	5	EPA 6020/200.8	21	5 ug/l	200.8	ND	5 ug/l	200.8	6.7	5 ug/l	200.8	2.1, J	5 ug/l	200.8	38	5 ug/l	200.8
10	Selenium	Calif. Toxics Rule	5 (8)	5	EPA 6020/200.8	4.2, J	5 ug/l	200.8	**6.2**	5 ug/l	200.8	**5.8**	5 ug/l	200.8	ND	5 ug/l	200.8	**5.8**	5 ug/l	200.8
11	Silver	Basin Plan Objective	10	1	EPA 6020/200.8	ND	1 ug/l	200.8	ND	1 ug/l	200.8	ND	1 ug/l	200.8	ND	1 ug/l	200.8	0.27, J	1 ug/l	200.8
12	Thallium	Calif. Toxics Rule	1.7	1	EPA 6020/200.8	0.37, J	1 ug/l	200.8	ND	1 ug/l	200.8	ND	1 ug/l	200.8	ND	1 ug/l	200.8	ND	1 ug/l	200.8
	Tributyltin	Ambient Water Quality	0.063	0.06	EV-024/025	ND	.005 ug/l	GCFPD				ND	0.005 ug/l	EV-024/025	ND	.020 ug/l	EV-024/025	ND	10 ug/l	EV-024/025
13	Zinc	Calif. Toxics Rule/ Basin Plan Objective	220 (2)/100	10	EPA 6020/200.8	ND	10ug/l	200.7	33	10ug/l	200.7	4.8, J	10ug/l	200.7	ND	10ug/l	200.7	5 J	10ug/l	200.7
PESTICIDES - PCBs																				
110	4,4'-DDD	Calif. Toxics Rule	0.00083	0.05	EPA 8081A	ND	0.050 ug/l	8081A	ND	0.050 ug/l	8081A	ND	0.050 ug/l	8081A	ND	.050 ug/l	8081A	ND	0.050 ug/l	8081A
109	4,4'-DDE	Calif. Toxics Rule	0.00059	0.05	EPA 8081A	ND	0.050 ug/l	8081A	ND	0.050 ug/l	8081A	ND	0.050 ug/l	8081A	ND	.050 ug/l	8081A	ND	0.050 ug/l	8081A
108	4,4'-DDT	Calif. Toxics Rule	0.00059	0.01	EPA 8081A	ND	0.010 ug/l	8081A	ND	0.010 ug/l	8081A	ND	0.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A
112	alpha-Endosulfan	National Toxics Rule	0.056 (9)	0.02	EPA 8081A	ND	0.020 ug/l	8081A	ND	0.020 ug/l	8081A	ND	0.020 ug/l	8081A	ND	0.02 ug/l	8081A	ND	0.02 ug/l	8081A
103	alpha-Hexachlorocyclohexane (BHC)	Calif. Toxics Rule	0.0039	0.01	EPA 8081A	ND	0.01 ug/l	8081A	ND	0.01 ug/l	8081A	ND	0.01 ug/l	8081A	0.00068 J	0.01 ug/l	8081A	ND	0.01 ug/l	8081A

COLLINS AND AIKMAN CONSTITUENTS IN THE EFFLUENT ATTACHMENT C

	Alachlor	Primary MCL	2	1	EPA 8081A															
102	Aldrin	Calif. Toxics Rule	0.00013	0.005	EPA 8081A	ND	0050 ug/l	8081A	ND	0050 ug/l	8081A	ND	0.0050 ug/l	8081A	ND	050 ug/l	8081A	ND	.0050 ug/l	8081A
113	beta-Endosulfan	Calif. Toxics Rule	0.056 (9)	0.01	EPA 8081A	ND	.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A
104	beta-Hexachlorocyclohexane	Calif. Toxics Rule	0.014	0.005	EPA 8081A	ND	.005 ug/l	8081A	ND	.005 ug/l	8081A	ND	0.005 ug/l	8081A	ND	.005 ug/l	8081A	ND	0.005 ug/l	8081A
107	Chlordane	Calif. Toxics Rule	0.00057	0.1	EPA 8081A	ND	0.10 ug/l	8081A	ND	0.10 ug/l	8081A	ND	0.10 ug/l	8081A	ND	0.10 ug/l	8081A	ND	0.10 ug/l	8081A
106	delta-Hexachlorocyclohexane	No Criteria Available		0.005	EPA 8081A	ND	.005 ug/l	8081A	ND	.005 ug/l	8081A	ND	0.005 ug/l	8081A	ND	.005 ug/l	8081A	ND	0.005 ug/l	8081A
111	Dieldrin	Calif. Toxics Rule	0.00014	0.01	EPA 8081A	ND	.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A
114	Endosulfan sulfate	Ambient Water Quality	0.056	0.05	EPA 8081A	ND	.050 ug/l	8081A	ND	.050 ug/l	8081A	ND	0.050 ug/l	8081A	ND	.050 ug/l	8081A	ND	0.050 ug/l	8081A
115	Endrin	Calif. Toxics Rule	0.036	0.01	EPA 8081A	ND	.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A
116	Endrin Aldehyde	Calif. Toxics Rule	0.76	0.01	EPA 8081A	ND	.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A
117	Heptachlor	Calif. Toxics Rule	0.00021	0.01	EPA 8081A	ND	.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A
118	Heptachlor Epoxide	Calif. Toxics Rule	0.0001	0.01	EPA 8081A	ND	.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A	ND	.010 ug/l	8081A	ND	0.010 ug/l	8081A
105	Lindane (gamma-Hexachlorocyclohexane	Calif. Toxics Rule	0.019	0.02	EPA 8081A	ND	0.02 ug/l	8081A	ND	0.02 ug/l	8081A	ND	0.02 ug/l	8081A	ND	0.02 ug/l	8081A	ND	0.02 ug/l	8081A
119	PCB-1016 (aroclor)	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082	ND		8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082
120	PCB-1221 (aroclor)	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082	ND		8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082
121	PCB-1232 (aroclor)	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082	ND		8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082
122	PCB-1242 (aroclor)	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082	ND		8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082
123	PCB-1248 (aroclor)	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082	ND		8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082
124	PCB-1254 (aroclor)	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082	ND		8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082
125	PCB-1260 (aroclor)	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082	ND		8082	ND	0.50 ug/l	8082	ND	0.50 ug/l	8082
126	Toxaphene	Calif. Toxics Rule	0.0002	0.5	EPA 8081A	ND	0.50 ug/l	8081A	ND	0.50 ug/l	8081A	ND	0.50 ug/l	8081A	ND	0.50 ug/l	8081A	ND	0.50 ug/l	8081A
	Atrazine	Public Health Goal	0.15	1	EPA 8141A															
	Bentazon	Primary MCL	18	2	EPA 643/ 515.2	ND	2.0 ug/l	8151A	ND	2.0 ug/l	8151A	ND	2.0 ug/l	8151A				ND	2 ug/l	8151A
	Carbofuran	CDFG Hazard Assess.	0.5	5	EPA 8318							ND	5 ug/l	632	ND	5 ug/l	632	ND	5 ug/l	632
	2,4-D	Primary MCL	70	10	EPA 8151A	ND	10 ug/l	8151A	ND	10 ug/l	8151A	ND	10 ug/l	8151A				ND	1 ug/l	8151A
	Dalapon	Ambient Water Quality	110	10	EPA 8151A	ND	10 ug/l	8151A	ND	10 ug/l	8151A	ND	10 ug/l	8151A				ND	2 ug/l	8151A
	1,2-Dibromo-3-chloropropane (DBCP)	Public Health Goal	0.0017	0.01	EPA 8260B	ND	.010 ug/l	504.1	ND	.010 ug/l	504.1	ND	0.010 ug/l	504	ND	.010 ug/l	504	ND	0.010 ug/l	504
	Di(2-ethylhexyl)adipate	USEPA IRIS	30	5	EPA 8270C							ND	5 ug/l	506	ND	5 ug/l	506	ND	5 ug/l	506
	Dinoseb	Primary MCL	7	2	EPA 8151A	ND	2.0 ug/l	8151A	ND	2.0 ug/l	8151A	ND	2.0 ug/l	8151A				ND	1 ug/l	8151A
	Diquat	Ambient Water Quality	0.5	4	EPA 8340/ 549.1/HPLC							ND	4 ug/l	549.1	ND	4 ug/l	549.1	ND	4 ug/l	549.1
	Endothal	Primary MCL	100	45	EPA 548.1							ND	45 ug/l	548.1	ND	45 ug/l	548.1	ND	45 ug/l	548.1
	Ethylene Dibromide	OEHHA Cancer Risk	0.0097	0.02	EPA 8260B/ 504	ND	0.02 ug/l	504.1	ND	0.02 ug/l	504.1	ND	0.02 ug/l	504	ND	0.02 ug/l	504	ND	0.02 ug/l	504
	Glyphosate	Primary MCL	700	25	HPLC/ EPA 547							ND	25 ug/l	547	ND	25 ug/l	547	ND	25 ug/l	547
	Methoxychlor	Public Health Goal	30	10	EPA 8081A	ND	10 ug/l	8081A	ND	10 ug/l	8081A	ND	10 ug/l	8081A	ND	10 ug/l	8081A	ND	10 ug/l	8081A
	Molinate (Ordram)	CDFG Hazard Assess.	13	2	EPA 634															
	Oxamyl	Public Health Goal	50	20	EPA 8318/ 632							ND	20 ug/l	632	ND	20 ug/l	632	ND	20 ug/l	632
	Picloram	Primary MCL	500	1	EPA 8151A	ND	1.0 ug/l	8151A	ND	1.0 ug/l	8151A	ND	1.0 ug/l	8151A				ND	1 ug/l	8151A
	Simazine (Princep)	USEPA IRIS	3.4	4	EPA 8141A															
	Thiobencarb	Basin Plan Objective/ Secondary MCL	1	1	HPLC/ EPA 639															
16	**2,3,7,8-TCDD (Dioxin)**	Calif. Toxics Rule	1.30E-08	5.00E-06	EPA 8290 (HRGC) MS															
	2,4,5-TP (Silvex)	Ambient Water Quality	10	1	EPA 8151A	ND	1.0 ug/l	8151A	ND	1.0 ug/l	8151A	ND		8151A				ND	1 ug/l	8151A
	Diazinon	CDFG Hazard Assess.	0.05	0.25	EPA 8141A/ GCMS															
	Chlorpyrifos	CDFG Hazard Assess.	0.014	1	EPA 8141A/ GCMS															

COLLINS AND AIKMAN CONSTITUENTS IN THE EFFLUENT ATTACHMENT C

OTHER CONSTITUENTS																				
	Ammonia (as N)	Ambient Water Quality	1500 (4)		EPA 350.1	100	100 ug/l	350.2	98 J	100 ug/l	350.2	100	100 ug/l	350.2	280	100 ug/l	350.2	380	100 ug/l	350.2
	Chloride	Agricultural Goal	106 mg/l		EPA 300.0	**240**	25 mg/l	300	**180**	25 mg/l	300	**200**	25 mg/l	300	**210**	25 mg/l	300	**200**	25 mg/l	300
	Flow		1 CFS				GPM			GPM		12.2	GPM		16.33	GPM		12.99	GPM	
	Hardness (as $CaCO_3$)		5 mg/l		EPA 130.2	600	1 mg/l	2340B	510	1 mg/l	2340B	600	1 mg/l	2340B	590	1 mg/l	2340B	530	1 mg/l	2340B
	Foaming Agents (MBAS)	Secondary MCL	500		SM5540C	42, J	500 ug/l	425.1	59, J	500 ug/l	425.1	63, J	500 ug/l	425.1	ND	500 ug/l	425.1	53, J	500 ug/l	425.1
	Nitrate (as N)	Primary MCL	10 mg/l	2	EPA 300.0	8	1 mg/l	0.3	5	1 mg/l	0.3	6	1 mg/l	0.3	7	1 mg/l	0.3	6	1 mg/l	0.3
	Nitrite (as N)	Primary MCL	1000	400	EPA 300.0	ND	400 ug/l	300	ND	400 ug/l	300	ND	400 ug/l	300	ND	400 ug/l	300	48 J	400 ug/l	300
	pH	Basin Plan Objective	6.5-8.5	0.1	EPA 150.1	7.9		150.1	8		150.1	7.9		150.1	8.1		150.1	7.6		150.1
	Phosphorus, Total (as P)	No Criteria Available			EPA 365.3	ND	50 ug/l	365.2	ND	50 ug/l	365.2	97	50 ug/l	365.2	56	50 ug/l	365.2	ND	50 ug/l	365.2
	Specific conductance (EC)	Agricultural Use	700 umhos/cm		EPA 120.1	**1600**						**1800**			**1800**			**1600**		
	Sulfate	Secondary MCL	250 mg/l	500	EPA 300.0	**370**	25 mg/l	300	**340**	25 mg/l	300	**340**	25 mg/l	300	**330**	25 mg/l	300	**310**	25 mg/l	300
	Sulfide (as S)	Taste and Odor	0.029		EPA 376.2	ND	1 mg/l	376.2	ND	1 mg/l	376.2	ND	1 mg/l	376.2	ND	1 mg/l	376.2	ND	1 mg/l	376.2
	Sulfite (as SO_3)	No Criteria Available			SM4500-SO3	ND	5 mg/l	377.1	ND	5 mg/l	377.1	ND	5 mg/l	377.1	ND	5 mg/l	377.1	ND	5 mg/l	377.1
	Temperature	Basin Plan Objective	(change <5oF)				oC			oC		17.6	oC		15.1	oC		14.7	oC	
	Total Disolved Solids (TDS)	Agricultural Use	450 mg/l		EPA 160.1	**1300**	1 mg/l	160.1	**1100**	1 mg/l	160.1	**1200**	1 mg/l	160.1	**1300**	1 mg/l	160.1	**1100**	1 mg/l	160.1

FOOTNOTES: (DETECTIONS ARE HIGHLIGHTED AND DETECTIONS ABOVE OBJECTIVES ARE IN BOLD

(1) - The Criterion Concentrations serve only as a point of reference for the selection of the appropriate analytical method. They do not indicate a regulatory decision that the cited concentration is either necessary or sufficient for full protection of beneficial uses. Available technology may require that
(2) - Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body (Ulatis Creek). Values displayed correspond to a total hardness of 204 mg/L.
(3) - For haloethers
(4) - Freshwater aquatic life criteria for ammonia are expressed as a function of pH and temperature of the water body. Values displayed correspond to pH 8.0 and temperature of 22 C.
(5) - For nitrophenols.
(6) - For chlorinated naphthalenes.
(7) - For phthalate esters.
(8) - Basin Plan objective = 2 ug/L for Salt Slough and specific constructed channels in the Grassland watershed.
(9) - Criteria for sum of alpha- and beta- forms.
(10) - Criteria for sum of all PCBs.
(11) - Mercury monitoring utilized "ultra-clean" sampling and analytical methods. These methods include: Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, US EPA; and Method 1631: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluoresence, US EPA

Attachment II - Constituents to be monitored

			Controlling Water Quality Criterion for Surface Waters			
CTR #	Constituent	CAS Number	Basis	Criterion Concentration (ug/L or noted) (1)	Criterion Quantitation Limit (ug/L or noted)	Suggested Test Methods
VOLATILE ORGANICS						
28	1,1-Dichloroethane	75343	Primary MCL	5	1	EPA 8260B
30	1,1-Dichloroethene	75354	National Toxics Rule	0.057	0.5	EPA 8260B
41	1,1,1-Trichloroethane	71556	Primary MCL	200	2	EPA 8260B
42	1,1,2-Trichloroethane	79005	National Toxics Rule	0.6	0.5	EPA 8260B
37	1,1,2,2-Tetrachloroethane	79345	National Toxics Rule	0.17	0.5	EPA 8260B
75	1,2-Dichlorobenzene	95501	Taste & Odor	10	2	EPA 8260B
29	1,2-Dichloroethane	107062	National Toxics Rule	0.38	0.5	EPA 8260B
	cis-1,2-Dichloroethene	156592	Primary MCL	6	0.5	EPA 8260B
31	1,2-Dichloropropane	78875	Calif. Toxics Rule	0.52	0.5	EPA 8260B
101	1,2,4-Trichlorobenzene	120821	Public Health Goal	5	5	EPA 8260B
76	1,3-Dichlorobenzene	541731	Taste & Odor	10	2	EPA 8260B
32	1,3-Dichloropropene	542756	Primary MCL	0.5	0.5	EPA 8260B
77	1,4-Dichlorobenzene	106467	Primary MCL	5	2	EPA 8260B
17	Acrolein	107028	Aquatic Toxicity	21	5	EPA 8260B
18	Acrylonitrile	107131	National Toxics Rule	0.059	2	EPA 8260B
19	Benzene	71432	Primary MCL	1	0.5	EPA 8260B
20	Bromoform	75252	Calif. Toxics Rule	4.3	2	EPA 8260B
34	Bromomethane	74839	Calif. Toxics Rule	48	2	EPA 8260B
21	Carbon tetrachloride	56235	National Toxics Rule	0.25	0.5	EPA 8260B
22	Chlorobenzene (mono chlorobenzene)	108907	Taste & Odor	50	2	EPA 8260B
24	Chloroethane	75003	Taste & Odor	16	2	EPA 8260B
25	2- Chloroethyl vinyl ether	110758	Aquatic Toxicity	122 (3)	1	EPA 8260B
26	Chloroform	67663	OEHHA Cancer Risk	1.1	0.5	EPA 8260B
35	Chloromethane	74873	USEPA Health Advisory	3	2.0	EPA 8260B
23	Dibromochloromethane	124481	Calif. Toxics Rule	0.41	0.5	EPA 8260B
27	Dichlorobromomethane	75274	Calif. Toxics Rule	0.56	0.5	EPA 8260B
36	Dichloromethane	75092	Calif. Toxics Rule	4.7	2	EPA 8260B
33	Ethylbenzene	100414	Taste & Odor	29	2	EPA 8260B
88	Hexachlorobenzene	118741	Calif. Toxics Rule	0.00075	1	EPA 8260B
89	Hexachlorobutadiene	87683	National Toxics Rule	0.44	1	EPA 8260B
91	Hexachloroethane	67721	National Toxics Rule	1.9	1	EPA 8260B
94	Naphthalene	91203	USEPA IRIS	14	10	EPA 8260B
38	Tetrachloroethene	127184	National Toxics Rule	0.8	0.5	EPA 8260B
39	Toluene	108883	Taste & Odor	42	2	EPA 8260B
40	trans-1,2-Dichloroethylene	156605	Primary MCL	10	1	EPA 8260B
43	Trichloroethene	79016	National Toxics Rule	2.7	2	EPA 8260B
44	Vinyl chloride	75014	Primary MCL	0.5	0.5	EPA 8260B
	Methyl-tert-butyl ether (MTBE)	1634044	Secondary MCL	5	3	EPA 8260B
	Trichlorofluoromethane	75694	Primary MCL	150	5	EPA 8260B
	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	Primary MCL	1200	10	EPA 8260B
	Styrene	100425	Taste & Odor	11	0.5	EPA 8260B
	Xylenes	1330207	Taste & Odor	17	0.5	EPA 8260B

			Controlling Water Quality Criterion for Surface Waters			
CTR #	Constituent	CAS Number	Basis	Criterion Concentration (ug/L or noted) (1)	Criterion Quantitation Limit (ug/L or noted)	Suggested Test Methods
SEMI-VOLATILE ORGANICS						
60	1,2-Benzanthracene	56553	Calif. Toxics Rule	0.0044	5	EPA 8270C
85	1,2-Diphenylhydrazine	122667	National Toxics Rule	0.04	1	EPA 8270C
45	2-Chlorophenol	95578	Taste and Odor	0.1	2	EPA 8270C
46	2,4-Dichlorophenol	120832	Taste and Odor	0.3	1	EPA 8270C
47	2,4-Dimethylphenol	105679	Calif. Toxics Rule	540	2	EPA 8270C
49	2,4-Dinitrophenol	51285	National Toxics Rule	70	5	EPA 8270C
82	2,4-Dinitrotoluene	121142	National Toxics Rule	0.11	5	EPA 8270C
55	2,4,6-Trichlorophenol	88062	Taste and Odor	2	10	EPA 8270C
83	2,6-Dinitrotoluene	606202	USEPA IRIS	0.05	5	EPA 8270C
50	2-Nitrophenol	25154557	Aquatic Toxicity	150 (5)	10	EPA 8270C
71	2-Chloronaphthalene	91587	Aquatic Toxicity	1600 (6)	10	EPA 8270C
78	3,3'-Dichlorobenzidine	91941	National Toxics Rule	0.04	5	EPA 8270C
62	3,4-Benzofluoranthene	205992	Calif. Toxics Rule	0.0044	10	EPA 8270C
52	4-Chloro-3-methylphenol	59507	Aquatic Toxicity	30	5	EPA 8270C
48	4,6-Dinitro-2-methylphenol	534521	National Toxics Rule	13.4	10	EPA 8270C
51	4-Nitrophenol	100027	USEPA Health Advisory	60	10	EPA 8270C
69	4-Bromophenyl phenyl ether	101553	Aquatic Toxicity	122	10	EPA 8270C
72	4-Chlorophenyl phenyl ether	7005723	Aquatic Toxicity	122 (3)	5	EPA 8270C
56	Acenaphthene	83329	Taste and Odor	20	1	EPA 8270C
57	Acenaphthylene	208968	No Criteria Available		10	EPA 8270C
58	Anthracene	120127	Calif. Toxics Rule	9,600	10	EPA 8270C
59	Benzidine	92875	National Toxics Rule	0.00012	5	EPA 8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	Calif. Toxics Rule	0.0044	2	EPA 8270C
63	Benzo(g,h,i)perylene	191242	No Criteria Available		5	EPA 8270C
64	Benzo(k)fluoranthene	207089	Calif. Toxics Rule	0.0044	2	EPA 8270C
65	Bis(2-chloroethoxy) methane	111911	No Criteria Available		5	EPA 8270C
66	Bis(2-chloroethyl) ether	111444	National Toxics Rule	0.031	1	EPA 8270C
67	Bis(2-chloroisopropyl) ether	39638329	Aquatic Toxicity	122 (3)	10	EPA 8270C
68	Bis(2-ethylhexyl) phthalate	117817	National Toxics Rule	1.8	5	EPA 8270C
70	Butyl benzyl phthalate	85687	Aquatic Toxicity	3 (7)	10	EPA 8270C
73	Chrysene	218019	Calif. Toxics Rule	0.0044	5	EPA 8270C
81	Di-n-butylphthalate	84742	Aquatic Toxicity	3 (7)	10	EPA 8270C
84	Di-n-octylphthalate	117840	Aquatic Toxicity	3 (7)	10	EPA 8270C
74	Dibenzo(a,h)-anthracene	53703	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
79	Diethyl phthalate	84662	Aquatic Toxicity	3 (7)	2	EPA 8270C
80	Dimethyl phthalate	131113	Aquatic Toxicity	3 (7)	2	EPA 8270C
86	Fluoranthene	206440	Calif. Toxics Rule	300	10	EPA 8270C
87	Fluorene	86737	Calif. Toxics Rule	1300	10	EPA 8270C
90	Hexachlorocyclopentadiene	77474	Taste and Odor	1	5	EPA 8270C
92	Indeno(1,2,3-c,d)pyrene	193395	Calif. Toxics Rule	0.0044	0.05	EPA 8270C
93	Isophorone	78591	National Toxics Rule	8.4	1	EPA 8270C
98	N-Nitrosodiphenylamine	86306	National Toxics Rule	5	1	EPA 8270C
96	N-Nitrosodimethylamine	62759	National Toxics Rule	0.00069	5	EPA 8270C
97	N-Nitrosodi-n-propylamine	621647	Calif. Toxics Rule	0.005	5	EPA 8270C
95	Nitrobenzene	98953	National Toxics Rule	17	10	EPA 8270C
53	Pentachlorophenol	87865	Calif. Toxics Rule	0.28	1	EPA 8270C
99	Phenanthrene	85018	No Criteria Available		5	EPA 8270C
54	Phenol	108952	Taste and Odor	5	1	EPA 8270C
100	Pyrene	129000	Calif. Toxics Rule	960	10	EPA 8270C

			Controlling Water Quality Criterion for Surface Waters			
CTR #	Constituent	CAS Number	Basis	Criterion Concentration (ug/L or noted) (1)	Criterion Quantitation Limit (ug/L or noted)	Suggested Test Methods
INORGANICS						
	Aluminum	7429905	Ambient Water Quality	87	50	EPA 6020/200.8
1	Antimony	7440360	Primary MCL	6	5	EPA 6020/200.8
2	Arsenic	7440382	Ambient Water Quality	0.018	1	EPA 6020/Hydride
15	Asbestos	1332214	National Toxics Rule/ Primary MCL	7 MFL	0.2 MFL >10um	EPA/600/R-93/116(PCM)
	Barium	7440393	Basin Plan Objective	100	100	EPA 6020/200.8
3	Beryllium	7440417	Primary MCL	4	1	EPA 6020/200.8
4	Cadmium	7440439	Public Health Goal	0.07	0.25	EPA 1638/200.8
5a	Chromium (total)	7440473	Primary MCL	50	2	EPA 6020/200.8
5b	Chromium (VI)	18540299	Public Health Goal	0.2	5	EPA 7199/ 1636
6	Copper	7440508	National Toxics Rule	4.1 (2)	0.5	EPA 6020/200.8
14	Cyanide	57125	National Toxics Rule	5.2	5	EPA 9012A
	Fluoride	7782414	Public Health Goal	1000	100	EPA 300
	Iron	7439896	Secondary MCL	300	100	EPA 6020/200.8
7	Lead	7439921	Calif. Toxics Rule	0.92 (2)	0.5	EPA 1638
8	Mercury	7439976	TMDL Development		0.0005 (11)	EPA 1669/1631
	Manganese	7439965	Secondary MCL/ Basin Plan Objective	50	20	EPA 6020/200.8
9	Nickel	7440020	Calif. Toxics Rule	24 (2)	5	EPA 6020/200.8
10	Selenium	7782492	Calif. Toxics Rule	5 (8)	5	EPA 6020/200.8
11	Silver	7440224	Calif. Toxics Rule	0.71 (2)	1	EPA 6020/200.8
12	Thallium	7440280	National Toxics Rule	1.7	1	EPA 6020/200.8
	Tributyltin	688733	Ambient Water Quality	0.063	0.06	EV-024/025
13	Zinc	7440666	Calif. Toxics Rule/ Basin Plan Objective	54/ 16 (2)	10	EPA 6020/200.8
PESTICIDES - PCBs						
110	4,4'-DDD	72548	Calif. Toxics Rule	0.00083	0.05	EPA 8081A
109	4,4'-DDE	72559	Calif. Toxics Rule	0.00059	0.05	EPA 8081A
108	4,4'-DDT	50293	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
112	alpha-Endosulfan	959988	National Toxics Rule	0.056 (9)	0.02	EPA 8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	Calif. Toxics Rule	0.0039	0.01	EPA 8081A
	Alachlor	15972608	Primary MCL	2	1	EPA 8081A
102	Aldrin	309002	Calif. Toxics Rule	0.00013	0.005	EPA 8081A
113	beta-Endosulfan	33213659	Calif. Toxics Rule	0.056 (9)	0.01	EPA 8081A
104	beta-Hexachlorocyclohexane	319857	Calif. Toxics Rule	0.014	0.005	EPA 8081A
107	Chlordane	57749	Calif. Toxics Rule	0.00057	0.1	EPA 8081A
106	delta-Hexachlorocyclohexane	319868	No Criteria Available		0.005	EPA 8081A
111	Dieldrin	60571	Calif. Toxics Rule	0.00014	0.01	EPA 8081A
114	Endosulfan sulfate	1031078	Ambient Water Quality	0.056	0.05	EPA 8081A
115	Endrin	72208	Calif. Toxics Rule	0.036	0.01	EPA 8081A
116	Endrin Aldehyde	7421934	Calif. Toxics Rule	0.76	0.01	EPA 8081A
117	Heptachlor	76448	Calif. Toxics Rule	0.00021	0.01	EPA 8081A
118	Heptachlor Epoxide	1024573	Calif. Toxics Rule	0.0001	0.01	EPA 8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	Calif. Toxics Rule	0.019	0.02	EPA 8081A
119	PCB-1016	12674112	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
120	PCB-1221	11104282	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
121	PCB-1232	11141165	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
122	PCB-1242	53469219	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082

			Controlling Water Quality Criterion for Surface Waters			
CTR #	Constituent	CAS Number	Basis	Criterion Concentration (ug/L or noted) (1)	Criterion Quantitation Limit (ug/L or noted)	Suggested Test Methods
123	PCB-1248	12672296	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
124	PCB-1254	11097691	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
125	PCB-1260	11096825	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
126	Toxaphene	8001352	Calif. Toxics Rule	0.0002	0.5	EPA 8081A
	Atrazine	1912249	Public Health Goal	0.15	1	EPA 8141A
	Bentazon	25057890	Primary MCL	18	2	EPA 643/ 515.2
	Carbofuran	1563662	CDFG Hazard Assess.	0.5	5	EPA 8318
	2,4-D	94757	Primary MCL	70	10	EPA 8151A
	Dalapon	75990	Ambient Water Quality	110	10	EPA 8151A
	1,2-Dibromo-3-chloropropane (DBCP)	96128	Public Health Goal	0.0017	0.01	EPA 8260B
	Di(2-ethylhexyl)adipate	103231	USEPA IRIS	30	5	EPA 8270C
	Dinoseb	88857	Primary MCL	7	2	EPA 8151A
	Diquat	85007	Ambient Water Quality	0.5	4	EPA 8340/ 549.1/HPLC
	Endothal	145733	Primary MCL	100	45	EPA 548.1
	Ethylene Dibromide	106934	OEHHA Cancer Risk	0.0097	0.02	EPA 8260B/ 504
	Glyphosate	1071836	Primary MCL	700	25	HPLC/ EPA 547
	Methoxychlor	72435	Public Health Goal	30	10	EPA 8081A
	Molinate (Ordram)	2212671	CDFG Hazard Assess.	13	2	EPA 634
	Oxamyl	23135220	Public Health Goal	50	20	EPA 8318/ 632
	Picloram	1918021	Primary MCL	500	1	EPA 8151A
	Simazine (Princep)	122349	USEPA IRIS	3.4	4	EPA 8141A
	Thiobencarb	28249776	Basin Plan Objective/ Secondary MCL	1	1	HPLC/ EPA 639
16	2,3,7,8-TCDD (Dioxin)	1746016	Calif. Toxics Rule	1.30E-08	5.00E-06	EPA 8290 (HRGC) MS
	2,4,5-TP (Silvex)	93765	Ambient Water Quality	10	1	EPA 8151A
	Diazinon	333415	CDFG Hazard Assess.	0.05	0.25	EPA 8141A/ GCMS
	Chlorpyrifos	2921882	CDFG Hazard Assess.	0.014	1	EPA 8141A/ GCMS

			Controlling Water Quality Criterion for Surface Waters			
CTR #	Constituent	CAS Number	Basis	Criterion Concentration (ug/L or noted) (1)	Criterion Quantitation Limit (ug/L or noted)	Suggested Test Methods
OTHER CONSTITUENTS						
	Ammonia (as N)	7664417	Ambient Water Quality	1500 (4)		EPA 350.1
	Chloride	16887006	Agricultural Use	106,000		EPA 300.0
	Flow			1 CFS		
	Hardness (as $CaCO_3$)			5000		EPA 130.2
	Foaming Agents (MBAS)		Secondary MCL	500		SM5540C
	Nitrate (as N)	14797558	Primary MCL	10,000	2,000	EPA 300.0
	Nitrite (as N)	14797650	Primary MCL	1000	400	EPA 300.0
	pH		Basin Plan Objective	6.5-8.5	0.1	EPA 150.1
	Phosphorus, Total (as P)	7723140	USEPA IRIS	0.14		EPA 365.3
	Specific conductance (EC)		Agricultural Use	700 umhos/cm		EPA 120.1
	Sulfate		Secondary MCL	250,000	500	EPA 300.0
	Sulfide (as S)		Taste and Odor	0.029		EPA 376.2
	Sulfite (as SO_3)		No Criteria Available			SM4500-SO3
	Temperature		Basin Plan Objective	^{o}F		
	Total Disolved Solids (TDS)		Agricultural Use	450,000		EPA 160.1

FOOTNOTES:

(1) - The Criterion Concentrations serve only as a point of reference for the selection of the appropriate analytical method. They do not indicate a regulatory decision that the cited concentration is either necessary or sufficient for full protection of beneficial uses. Available technology may require that effluent limits be set lower than these values.
(2) - Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body. Values displayed correspond to a total hardness of 40 mg/L.
(3) - For haloethers
(4) - Freshwater aquatic life criteria for ammonia are expressed as a function of pH and temperature of the water body. Values displayed correspond to pH 8.0 and temperature of 22 C.
(5) - For nitrophenols.
(6) - For chlorinated naphthalenes.
(7) - For phthalate esters.
(8) - Basin Plan objective = 2 ug/L for Salt Slough and specific constructed channels in the Grassland watershed.
(9) - Criteria for sum of alpha- and beta- forms.
(10) - Criteria for sum of all PCBs.
(11) - Mercury monitoring shall utilize "ultra-clean" sampling and analytical methods. These methods include: Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, US EPA; and Method 1631: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluoresence, US EPA