

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 5-01-180

NPDES NO. CA0079529

WASTE DISCHARGE REQUIREMENTS

FOR

CITY OF COLFAX
WASTEWATER TREATMENT PLANT
PLACER COUNTY

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

1. The City of Colfax (hereafter Discharger) submitted a Report of Waste Discharge, dated 16 February 2000, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from the City of Colfax Wastewater Treatment Plant (WWTP). Supplemental information to complete filing of the application was submitted 20 December 2000.
2. The Discharger owns and operates a wastewater collection, treatment, and disposal system, and provides sewerage service to the City of Colfax. The WWTP is in Assessors Parcel Number 101-160-02, Section 11, T14N, R9E, MDB&M, at Latitude 39°5' and Longitude 120°57', as shown on Attachment A, which is part of this Order.
3. The WWTP was constructed in 1978-1979 to meet Regional Board requirements for no discharge to surface water. The WWTP includes the headworks (a flow meter and a comminutor with bar screen bypass), two mechanically aerated facultative treatment ponds in series, a 69 million gallon storage reservoir, a 47-acre sprinkler irrigation system for land application/evapotranspiration, runoff and seepage collection systems, and a seepage disinfection system consisting of a chlorine contact chamber and dechlorination with sodium sulfate. The facility layout is shown in Attachment B and the flow diagram is shown in Attachment C. Attachments B and C are a part of this Order. The aerated ponds provide a secondary level treatment with approximately 35 days detention time at the average daily flow. Secondary treated wastewater is discharged to the storage reservoir where it is polished and stored during the winter months. In dry months, treated wastewater is removed from the storage reservoir and distributed through the sprinkler irrigation system to the hills surrounding the ponds. During dry months wastewater treated at the WWTP consists almost exclusively of domestic sewage.

4. The Report of Waste Discharge describes the WWTP flow rates, in million gallons per day (mgd), as follows:

	2000	1999	1998
Design Flow Rate	0.200 mgd		
Maximum Daily Flow Rate	3.310 mgd	2.11 mgd	0.99 mgd
Annual Average Daily Dry Weather Flow Rate	0.140 mgd	0.13 mgd	0.16 mgd
Annual Average Discharge to Surface Impoundments	0.280 mgd		
Annual Average Discharge to Land Application	0.140 mgd		
Seepage Average Daily Flow Rate	0.024 mgd		
Assumed Deep Percolation from Storage Reservoir	0.120 mgd		

5. The storage reservoir was created by construction of a dam/levee on the downstream side of the reservoir. The dam has a spillway to prevent overtopping and damage to the dam. Releases from the spillway are not permitted discharges under this Order. The storage reservoir is unlined and constructed over bedrock in an area of several natural springs. Seepage from the reservoir has occurred since initial use in 1979. The average dry weather seepage flow is a function of the amount of liquid stored in the reservoir. A study to evaluate the seepage problem recommended containment and pumping of the seepage back to the storage pond during the recreation season (dry weather). The cost of the system was estimated to be half a million dollars. The City was unable to obtain Clean Water Grant Funds and requested a year-round discharge to surface water. Monitoring of this seepage has shown relatively low suspended solids and biochemical oxygen demand. However, in the past the seepage was found to contain elevated concentrations of fecal coliform organisms and regular monitoring shows that the seepage continues to contain elevated concentrations of total coliform organisms. The seepage from the base of the dam is collected in a sump and diverted to a disinfection facility that was completed in late 1991. The disinfection facility consists of a fiberglass chlorine contact chamber with dechlorination, followed by discharge to an unnamed tributary of Smuthers Ravine. Dry chemicals are used for chlorination and dechlorination (sodium sulfate).
6. The Report of Waste Discharge describes the daily seepage from the base of the dam, prior to treatment, as follows:

	Maximum	Minimum
pH	7.0	5.9
	Maximum	Average
Flow	0.057 mgd	0.024 mgd
BOD ¹	5.0 mg/l	2.4 mg/l
Total Suspended Solids	12 mg/l	7.5 mg/l
Ammonia (as N)	3.7 mg/l	2.8 mg/l
Total Residual Chlorine	1.75 mg/l	0.68 mg/l
Total Coliform Organisms	300 mpn/100ml	50 mpn/100ml
Electrical Conductivity	425 µmho/cm	278 µmho/cm
Settleable Solids	0.10 ml/l	<0.10 ml/l
Winter Temperature	56 °F	52 °F
Summer Temperature	72 °F	58 °F

¹ 5-day, 20°C biochemical oxygen demand

7. The U.S. Environmental Protection Agency (EPA) and the Board have classified this discharge as a minor discharge.
8. Disinfected seepage from the base of the dam is discharged to an unnamed tributary of Smuthers Ravine and Smuthers Ravine, waters of the United States, and tributary to Bunch Canyon, the North Fork of the American River, and Folsom Lake. The discharge point is described as Latitude 39°4'30" and Longitude 120°56'30".
9. The Board adopted *The Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region, the Sacramento River Basin and the San Joaquin River Basin, Fourth Edition – 1998* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. These requirements implement the Basin Plan.
10. The Basin Plan states, on page II-1.00, "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...*" and "*...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.*" Existing and potential beneficial uses that currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1 of the Basin Plan. The beneficial uses of any specifically identified water body apply to its tributary streams. As designated in the Basin Plan, Smuthers Ravine and its unnamed tributary are in the Gold Run Hydrologic Subarea (514.53) of the North Fork American Hydrologic Area (514.50), in the Sacramento Hydrologic Basin. The beneficial uses of Smuthers Ravine and its unnamed tributary are not specifically identified in the Basin Plan. However, as stated in the Basin Plan above, the beneficial uses of any specifically identified water body apply to its tributary streams. Smuthers Ravine is tributary to Bunch Canyon and a section of the North Fork of the American River between the source and Folsom Lake (Hydrologic Area 514.50). The North Fork of the American River is the first body of water downstream of Smuthers Ravine for which the Basin Plan has identified present and potential beneficial uses. The beneficial uses of the North Fork of the American River, as identified in Table II-1 of the Basin Plan, are municipal and domestic supply, agricultural irrigation, water contact recreation including canoeing and rafting, non-contact water recreation including aesthetic enjoyment, warm and cold freshwater habitats including preservation or enhancement of fish and invertebrates, cold spawning habitat, and wildlife habitat. Other beneficial uses identified in the Basin Plan apply to Smuthers Ravine and its tributary and to Bunch Canyon and the North Fork of the American River, including groundwater recharge, freshwater replenishment, and preservation of biological habitats of special significance (including uses of water that support established refuges and parks). Upon review of the flow conditions, habitat values, and beneficial uses of Smuthers Ravine and its unnamed tributary, the Board finds that the beneficial uses identified in the Basin Plan for the North Fork of the American River, from the source to Folsom Lake, are applicable to Smuthers Ravine and its unnamed tributary.

The Board finds that the beneficial uses identified in the Basin Plan for the North Fork of the American River are applicable to Smuthers Ravine and its unnamed tributary based upon the following:

a. Municipal and Domestic Supply and Agricultural Irrigation

The State Water Resources Control Board (SWRCB) has recorded water rights, for domestic uses, along the North Fork of the American River downstream of the discharge. Riparian Rights, for landowners along streams and rivers, are not recorded with the SWRCB and have precedence over other water rights. There are no records of water rights claimed on Smuthers Ravine and the unnamed tributary of Smuthers Ravine. However, there are homes and farms along Smuthers Ravine and its tributary, which may use the water for domestic and irrigation purposes.

Smuthers Ravine is an intermittent stream and provides groundwater recharge during periods of low flow. Groundwater is a source of drinking water. In addition to the existing water uses, growth in the area downstream of the discharge is expected to continue, creating potential for increased domestic and agricultural uses of the water in Smuthers Ravine, Bunch Canyon, and the North Fork of the American River downstream of the discharge.

b. Water Contact and Non-contact Recreation (including canoeing, rafting, and aesthetic enjoyment)

The North Fork of the American River, from 0.3 miles above Health Springs to 1,000 feet upstream of the Colfax-Iowa Hill Bridge, was designated a Wild River in a 1978 amendment to the Wild and Scenic Rivers Act, adopted by Congress in 1968. The WWTP discharges to an unnamed tributary of Smuthers Ravine; Smuthers Ravine is tributary to Bunch Canyon; and Bunch Canyon discharges to the North Fork of the American River approximately 3 miles downstream of the end point of the Wild River designation. From the Colfax-Iowa Hill Bridge to the confluence with the Middle Fork of the American River, the North Fork of the American River is renowned for its whitewater rapids and much used for rafting and kayaking.

Hikers and campers in the relatively uninhabited area near the discharge point have a reasonable expectation that the waters of Smuthers Ravine and Bunch Canyon are as unpolluted as similar streams in the vicinity.

The Board finds that there is public access to Smuthers Ravine, Bunch Canyon, and the North Fork of the American River and public use is likely to increase as the population increases. Exclusion or restriction of public use is unrealistic.

- c. Warm and Cold Freshwater Habitats (including preservation or enhancement of fish and invertebrates), Cold Spawning Habitat, and Wildlife Habitat

Smuthers Ravine flows to Bunch Canyon and the North Fork of the American River. The California Department of Fish and Game (DFG) has verified the presence of Rainbow Trout and other cold and warm water fish species in waters downstream of the discharge point. There is also a potential for spawning of cold-water fish species in Smuthers Ravine and downstream waters. Pursuant to the Basin Plan Tributary Rule, the cold and warm water habitat designation applied to the North Fork of the American River applies to the unnamed tributary of Smuthers Ravine. The cold-water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/l. However, if the naturally occurring in-stream dissolved oxygen concentration is below 7.0 mg/l, the Discharger is not required to improve the dissolved oxygen concentration of the receiving stream.

National Marine Fisheries Service has designated the streams and rivers in the Sierra foothills, including Smuthers Ravine, to be potential habitat for Red-legged Frogs. DFG confirmed that the drainage of Smuthers Ravine/Bunch Canyon/North Fork American River contains Foothill Yellow-legged Frogs, Western Newt, and a variety of macro invertebrates.

The area surrounding and the watersheds containing Smuthers Ravine and downstream waters, is sparsely populated and therefore provides a wide variety of habitat for wildlife.

- d. Groundwater Recharge

In areas where the groundwater elevation is below the bottom of a stream, water from the stream will percolate to the groundwater. During dry weather in many places in California, flowing streams experience these conditions, thus providing groundwater recharge. The unnamed tributary of Smuthers Ravine and the downstream waters contribute to groundwater recharge.

- e. Freshwater Replenishment

When water is present in the unnamed tributary of Smuthers Ravine, there is hydraulic continuity with Smuthers Ravine, Bunch Canyon, and the North Fork of the American River. The unnamed tributary of Smuthers Ravine contributes to the quantity and may impact the quality of the water in the North Fork of the American River.

- f. Preservation of Biological Habitats of Special Significance (including uses of water that support established refuges and parks)

The discharge eventually flows into Folsom Lake, which is the focus of the surrounding Folsom Lake State Recreation Area and is heavily used for boating, water skiing, swimming, picnicking, etc. Folsom Lake discharges to the American River, which is a supply of drinking water for the City of Sacramento.

The beneficial uses of any specifically identified water body apply to its tributary streams. The Board finds, based on hydraulic continuity, aquatic life migration, existing and potential water rights, and the reasonable potential for contact recreational activities that the beneficial uses of the North Fork of the American River apply to Smuthers Ravine and its unnamed tributary. Based on the available information, the Board also finds that Smuthers Ravine is a low-flow/intermittent stream in the absence of the discharge from the WWTP. The designated beneficial uses of Smuthers Ravine must be protected, however due to the low-flow/intermittent nature the unnamed tributary and Smuthers Ravine, no credit for receiving water dilution is available. Although the discharge flows may maintain aquatic habitat during dry weather conditions, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows of the unnamed tributary and Smuthers Ravine help support cold-water aquatic life. During dry weather conditions, Smuthers Ravine may have no or low flow and within a short time period sufficient precipitation may increase the flows to provide hydraulic continuity with Bunch Canyon and the North Fork of the American River. Dry weather conditions occur primarily in the summer months but also occur throughout the year, particularly in low rainfall years. Significant dilution may occur during and after high rainfall events. However, the lack of available dilution during dry periods results in more stringent effluent limitations to protect recreational uses, drinking water standards, agricultural water quality goals, and aquatic life.

11. The beneficial uses of the underlying groundwater are municipal and domestic supply, industrial service and process supply, and agricultural supply.
12. State Water Resources Control Board Resolution 68-16 requires that the discharge of waste shall not degrade groundwater quality. Domestic wastewater discharged to land, into treatment and storage basins, may percolate through the soil and increase the concentrations of nitrates, metals, and other constituents in groundwater. Groundwater monitoring is necessary to determine the effects of the discharge on groundwater quality.
13. Resolution No. 68-16 requires that the Discharger provide best practicable treatment to control the discharge to groundwater. This Order requires that the Discharger install a groundwater monitoring system and determine background groundwater quality. A minimum of three groundwater monitoring wells is necessary to determine the direction of groundwater flow. Initial samples from the groundwater monitoring wells will establish background groundwater quality.
14. The unnamed tributary and Smuthers Ravine are tributary to Bunch Canyon, the North Fork of the American River, and Folsom Lake. The unnamed tributary and Smuthers Ravine were intermittent streams prior to construction of the WWTP and year-round discharge of the disinfected seepage. Smuthers Ravine remains an intermittent stream upstream of the discharge. Due to the year-round discharge, the unnamed tributary is now perennial and Smuthers Ravine is more likely to also be perennial, downstream of the discharge. In dry months, the unnamed tributary and Smuthers Ravine are effluent dominated water bodies.
15. The unnamed tributary of Smuthers Ravine was, prior to construction of the WWTP, an intermittent stream, containing water only during wet weather. Since construction of the WWTP, during dry weather, the entire flow in the unnamed tributary is wastewater or a combination of

wastewater and storm water. Smuthers Ravine, upstream of the confluence with the unnamed tributary, is also an intermittent stream. Smuthers Ravine and its unnamed tributary provide little or no dilution to wastewater effluent discharged from the WWTP. The California Code of Regulations, Title 22, contains criteria for the reuse or reclamation of wastewater as an alternative to discharging to a receiving stream. The criteria are not directly applicable to streams that receive wastewater and the subsequent reuse of the combined stream/wastewater. Title 22 reclamation criteria were established to create minimum wastewater treatment standards to protect the public health when this water is reused for beneficial uses. The proposed permit does not apply Title 22 standards to the discharge, however, in assessing the discharge standards necessary to protect the site-specific beneficial uses of the unnamed tributary and Smuthers Ravine, Title 22 standards were compared to the level of treatment required to protect public health when in contact with treated wastewater or when directly using undiluted effluent for food crop irrigation. Title 22 states that it is necessary for wastewater to receive tertiary treatment with a coliform count of 2.2 MPN/100 ml, as a 7-day median, for reuse as irrigation water for food crops and for unrestricted contact recreation. The unnamed tributary and Smuthers Ravine, as intermittent streams, are essentially the same as any other conveyance system (pipe or canal) when upstream flows are not present for dilution. If the Department of Health Services (DHS) has determined that a specific level of treatment is required for reclaimed water delivered in a dedicated pipe or canal, then that same level of treatment would be necessary to protect the public if water is delivered in a dry streambed for these same uses. In a letter to Board staff, dated 8 April 1999, DHS concurred with the need to protect beneficial uses and recommended that the level of treatment required under Title 22 of the California Code of Regulations for reclaimed water in a dedicated pipe or canal, be applied to agricultural drains or streams where the water may be used or diverted for beneficial uses. Therefore, this permit includes effluent limitations, based on protecting the beneficial uses of contact recreation and irrigation. A continued NPDES discharge requires that the effluent conform to tertiary treatment standards and the intermittent nature of the receiving stream dictates that effluent limitations will be end of pipe limits with no dilution factor. The permit also includes compliance schedules for the Discharger to assess options and construct the necessary improvements to comply with the effluent limitations.

16. The WWTP was constructed at the headwaters of an unnamed tributary of Smuthers Ravine. Storm water along with any uncollected irrigation runoff and seepage from the irrigation areas and ponds would normally flow to the unnamed tributary. Seepage from the foot of the dam is collected and diverted to the disinfection facility. However, seepage from the storage reservoir occurs at other locations along the levees and is not disinfected. In addition, irrigation runoff, storm water runoff, and seepage from the two aeration ponds are not disinfected prior to discharge to the unnamed tributary. Therefore, treated but undisinfected wastewater is discharged continually to the unnamed tributary of Smuthers Ravine. The location of the entire treatment facility at the headwaters of the unnamed tributary precludes the establishment of an upstream monitoring point, because there is no location in the drainage area that is unaffected by the treatment facility. Board staff proposes to eliminate the current "upstream" monitoring point in the unnamed tributary, retain the existing monitoring point in the unnamed tributary downstream of the discharge, and establish receiving water monitoring points in Smuthers Ravine, up and down stream of the confluence of the unnamed tributary with Smuthers Ravine. The upstream monitoring point on Smuthers Ravine will be the new R-1; R-2 will remain as it is; and the downstream monitoring point on Smuthers Ravine will be R-3.

17. Folsom Lake is the first water body downstream of Smuthers Ravine for which the Basin Plan prohibits specific discharges. The Basin Plan, on page IV-24.00, prohibits the direct discharge of municipal and industrial wastes into Folsom Lake. When sufficient water is present, the discharged effluent flows through central and southern Placer County, commingling with the waters of Bunch Canyon and the North Fork of the American River, before discharging to Folsom Lake. The discharge to Folsom Lake is not a direct discharge.
18. The Basin Plan identifies numerical Water Quality Objectives for Total Dissolved Solids in the North Fork of the American River, downstream of Smuthers Ravine. Table III-3, on page III-7.00 of the Basin Plan states that Total Dissolved Solids in the North Fork of the American River shall not exceed 125 mg/l (90 percentile). Receiving Water Limitations based on the Water Quality Objective have been included in this Order. (The Basin Plan also identifies numerical Water Quality Objectives for Folsom Lake, downstream of Smuthers Ravine as discussed in Finding No. 19.d and e below.)
19. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting program, the Board finds that the discharge does have a reasonable potential to cause or contribute to in-stream excursions above water quality standards and objectives for the constituents discussed below. Effluent limitations and/or studies have been included in this Order.
 - a. The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. The Discharger uses chlorine to disinfect seepage from the base of the dam and sodium sulfate to dechlorinate prior to discharge to surface water. Inadequate dechlorination may result in discharge of chlorine to the receiving stream. Chlorine can cause toxicity to aquatic organisms when discharged to surface waters in sufficient concentrations. The current permit contains one effluent limitation of 0.02 mg/l as a Daily Maximum. However, U.S. EPA recommends, in its Ambient Water Quality Criteria for the Protection of Fresh Water Aquatic Life, that chlorine concentrations not exceed 0.02 mg/l as a 1-hour average and 0.01 mg/l as a 4-day average. Between June 2000 and March 2001, monitoring reports revealed that the Discharger did not report the results for 8 weeks out of a total of 43 weeks. Of the weekly samples that were reported, there were 13 violations of the Daily Maximum Effluent Limitation for Chlorine Residual (0.02 mg/l). For the 43-week period, in 21 of the weeks there were either violations of the limitation or no report. The dechlorination process within the disinfection system is inadequate. Chlorine residual in the discharge presents a reasonable potential that it could be discharged in toxic concentrations. Effluent Limitations for chlorine residual, based on Ambient Water Quality Criteria, have been included in the Order to protect the aquatic life beneficial uses of the receiving stream.

- b. Domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrate and denitrification is a process that converts nitrate to nitrogen gas. Complete nitrification and denitrification result in the conversion of all ammonia to nitrogen gas, which is released to the atmosphere. Incomplete nitrification and denitrification may result in the discharge of ammonia and/or nitrate to the receiving stream rather than emitting nitrogen gas to the atmosphere. Both nitrification and denitrification occur in the treatment and storage ponds but the completeness of the conversion of ammonia to nitrogen gas is not known. Ammonia, in certain concentrations and environmental conditions, is toxic to aquatic life. For nitrate, the U.S. EPA has developed standards and criteria for protection of human health.
 - i. Based on receiving water monitoring data submitted to the Board between April 1995 and March 2001, with comparison to the corresponding pH and temperature levels of the receiving stream, none of the reported concentrations of ammonia in the receiving stream were at chronic or acute toxicity concentrations. Therefore, effluent limitations for ammonia are not included in this Order.
 - ii. This Order and the Basin Plan prohibit the discharge of toxic constituents in toxic amounts. The conversion of ammonia to nitrate presents a reasonable potential for nitrate to exceed receiving water quality standards for the protection of domestic uses. U.S. EPA has developed Drinking Water Standards and Ambient Water Quality Criteria for protection of human health for nitrate. To date the City of Colfax has not been required to provide information about the presence of nitrate in the wastewater and the toxic effects of nitrate in the effluent are not known. See Finding No. 19.e below.
- c. This Order and the Basin Plan prohibit the discharge of toxic constituents in toxic amounts. Aluminum is an element that is found naturally in soils and the water that comes in contact with the soil. The U.S. EPA has developed Drinking Water Standards and Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life for aluminum. Domestic supply water used by the City of Colfax may come from a different source than Smuthers Ravine and may contain different concentrations of aluminum than Smuthers Ravine. To date, the City of Colfax has not been required to supply information regarding the concentrations of aluminum in the seepage effluent discharged from the WWTP and the toxic effects of aluminum in the effluent are not known. See Finding No. 19.e below.
- d. The Basin Plan identifies numerical Water Quality Objectives for Folsom Lake, downstream of Smuthers Ravine. The Board adopted numerical Trace Element Water Quality Objectives in the Basin Plan, shown in Table III-1 on page III-3.00, for Folsom Lake for arsenic, barium, copper, cyanide, iron, manganese, silver, and zinc. To date the City of Colfax has not been required to provide information about the presence of these constituents in the wastewater and the toxic effects of these constituents are not known. See Finding No. 19.e below.

- e. USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain criteria for priority pollutants and water quality standards applicable to this discharge. 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 Plan or SIP), which contains guidance on implementation of the NTR and the CTR. Also, Findings No. 20.b.ii, 20.c, and 20.d, above, discuss the lack of data regarding nitrate, aluminum, arsenic, barium, copper, cyanide, iron, manganese, silver, and zinc in the discharge. This Order contains provisions that:
 - i. Require the Discharger to provide information as to whether the levels of NTR and CTR constituents, U.S. EPA Priority Pollutants, nitrate, aluminum, arsenic, barium, copper, cyanide, iron, manganese, silver, and zinc in the discharge cause or contribute to an in-stream excursion above a water quality objective;
 - ii. Require the Discharger to submit information so that effluent limitations may be calculated for those constituents in the discharge that have a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective; and
 - iii. Allow the Board to reopen this Order and include effluent limitations for those constituents.
20. The City of Colfax's WWTP is a Publicly Owned Treatment Work (POTW) as defined in the Clean Water Act. Section 13263.6(a) of the California Water Code, requires that "the regional board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the state board or the regional board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective". As detailed in the Finding directly above, there is insufficient effluent quality data to determine whether these constituents have a reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Board plan. Following completion of the required studies, this Order may be reopened and effluent limitations added.
21. 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 21100, et seq.), which requires preparation of an environmental impact report or negative declaration in accordance with Section 13389 of the California Water Code.

22. In a public meeting in 1978, the Board adopted Order No. 78-160, which renewed the NPDES permit and rescinded all previous Orders. Order No. 78-160 allowed seasonal discharge to Bunch Canyon until 1 February 1979, after which the new WWTP was to be completed and the discharge to surface water was to be prohibited. An Environmental Impact Report (EIR) required by the California Environmental Quality Act (CEQA) and approved by the City of Colfax, did not identify any significant water quality impacts.
23. In a public meeting in 1985, the Board adopted Order No. 85-141, which renewed NPDES No. CA0079529 and rescinded the previous Waste Discharge Requirements Order No. 78-160. The report of waste discharge, submitted in January 1984, applied for seasonal discharge to the unnamed tributary of Smuthers Ravine. The final EIR adopted by the City of Colfax addressed seasonal discharge only. However, in October 1984, the Discharger requested year-round discharge of seepage from the storage reservoir. The Board reviewed the EIR, the Discharger's proposal for year-round discharge, and monitoring data, and determined that a year-round discharge, in compliance with requirements, would not have significant impacts on the beneficial uses of the receiving water. The permit did not require that the seepage be disinfected prior to discharge.
24. In a public meeting in 1990, the Board adopted Order No. 90-166, which renewed the NPDES permit, rescinded Order No. 85-141, continued to allow year-round discharge, and included a time schedule for construction of seepage disinfection facilities by late 1990 for discharge of disinfected seepage to the unnamed tributary of Smuthers Ravine. Only seepage from the base of the dam for the storage reservoir was disinfected prior to discharge. The seepage disinfection system failed to account for seepage from other locations, irrigation system runoff, and runoff of stormwater from the irrigation area. Failure to disinfect all seepage and runoff has resulted in the discharge of undisinfectated wastewater to surface water. The Information Sheet of Order No. 90-166 indicates that in 1990 the storage pond lacked the capacity to store all wastewater during wet weather. Board staff attempted to resolve the problem by establishing an average daily dry weather influent flow limit of 0.16 mgd, using the following methodology described in the Information Sheet of Order No. 90-166:

"The storage pond capacity of the plant is a factor that further limits the volume of allowable wastewater influent. By summing the average dry weather wastewater flow, infiltration and inflow of non-wastewater, and the rainfall falling on the storage ponds and associated drainage areas, and subtracting the evapotranspiration from the ponds and the amount of seepage from the storage pond, each month from 1 October to 1 May, net storage values are generated and can be compared with the storage provided. The net storage must be less than the storage provided to prevent overtopping of the storage pond. To prevent the overtopping, using the value of infiltration and inflow generated during the 100-year rainfall year, the allowable average dry weather flow is 160,000 gpd [gallons per day]. This allowable flow rate assumes that the storage pond is empty at the beginning of the wet season, requiring the use of the spray irrigation field for summer disposal of wastewater from 1 May to 1 October."

25. In a public meeting in 1995, the Board adopted the current Order No. 95-058, which renewed the NPDES permit, rescinded Order No. 90-166, and continued to allow year-round discharge of disinfected seepage (from the base of the dam for the storage reservoir only) to the unnamed tributary of Smuthers Ravine.
26. Construction of the storage reservoir was completed in 1979. The design dry weather capacity of the storage reservoir is 0.20 mgd. However, by the time the NPDES permit (Order No. 90-166) was renewed in 1990, it appears that storage pond lacked the capacity to store all wastewater during wet weather. Board staff attempted to resolve the problem by establishing an influent flow limit of 0.16 mgd for the average daily dry weather influent flow using the methodology described above and in the Information Sheet for Order No. 90-166. As reported in the Information Sheet for the current Order No. 95-058, on two occasions in the past, the Discharger requested an increase in the ADWF from the permitted 0.16 mgd to 0.20 mgd. On both occasions, the Board denied the request due to noncompliance with the facility's total coliform effluent limit. Increased pond storage volume increases seepage volume. The seepage from the base of the dam is disinfected before discharge. Because the facility was not achieving consistent compliance with the total coliform effluent limit with the flows at the time, there appeared to be no justification for the increase in flow.
27. Between April 1995 and March 2001, monitoring reports revealed that there were 20 violations of the 30-Day Median (23 MPN/100 ml) and 12 violations of the Daily Maximum (500 MPN/100ml) Effluent Limitations for Total Coliform organisms. At the current flow rate of seepage from the base of the dam, the existing disinfection system is not adequate for removal of Total Coliform organisms from the effluent for compliance with the Effluent Limitation in the current permit. Any increase in flow through the disinfection system will increase the instances of inadequate Total Coliform organism removal and the number of violations of the Effluent Limitations.
28. Inadequacies of the disinfection system are discussed in Findings No. 19.a and 27, above. Upgrade of the disinfection system is warranted to provide adequate disinfection and dechlorination. The proposed Order contains more stringent coliform and chlorine residual effluent limitations. The accompanying Cease and Desist Order No. 5-01-181 contains a compliance schedule for the disinfection system upgrades and implementation of more stringent coliform and chlorine residual effluent limitations. Upgrade of the disinfection system is complicated by the overall lack of storage capacity and the inclusion of disinfection requirements for all seepage, runoff, and flow discharged over the spillway or water withdrawn from the storage reservoir to prevent spillway overflow (see Findings No. 30 and 31, below).
29. The Board finds that tertiary treatment (filtration) is required to protect the beneficial uses of contact recreation and agriculture downstream of the discharge in Smuthers Ravine, Bunch Canyon, and the North Fork of the American River. This Order contains provisions that require the WWTP to attain adequate capacity and full compliance with tertiary treatment requirements

and Effluent Limitations in the future or cease discharge to surface water. This Order contains provisions with a compliance schedule for turbidity and the accompanying Cease and Desist Order No. 5-01-181 contains compliance schedules for chlorine residual, total coliform organisms, and capacity issues. The new effluent limitation for coliform organisms is intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing pathogens. The new turbidity effluent limitation has been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment. A failure of the filtration system that resulted in impaired virus removal would normally result in increased turbidity. The major advantage to testing turbidity is that it provides immediate detection of filter failure and allows rapid correction action. In comparison, testing of coliform organisms requires several hours to days to identify high coliform concentrations.

30. This Order requires immediate compliance with interim Effluent Limitations for Total Coliform Organisms and Chlorine Residual. It is technically feasible for the Discharger to install temporary chlorination/dechlorination facilities to augment the existing system, or install new disinfection facilities prior to the discharge of treated wastewater into the storage reservoir, and maintain compliance until a final system can be constructed.
31. Board staff issued a Notice of Violation on 19 July 1996 for the following:
 - a. Discharge of treated but undisinfected waste due to lack of capacity in January, February, March, April, and May 1995, and March 1996;
 - b. Failure to maintain the sprinkler irrigation system; and
 - c. Violation of the average dry weather influent flow limit for May, June, and July 1995, and May 1996.

A technical report was required by 16 August 1996, describing the corrective action taken and planned to prevent future violations.

32. There were many violations of the influent flow limitation in the current permit (Order No. 95-058) and exceedances of plant capacity, prior to completion of the repairs to the sprinkler and collection systems. However, the violations of the influent limit and exceedances of plant capacity have continued and increased in 2000. It should be noted that dry weather is defined in the current permit as 1 May through 15 October. Many of the violations and exceedances occurred in May. The high flows in the month of May may be a continuation of the wet weather inflows from storms that occurred in earlier months. After the repairs were made to the sprinkler and collection systems in 1997, the only violations of the dry weather flow in 1998 and 1999 were in May of those years. In 2000, there were also violations of the dry weather flow limit in May, June, July, September, and October, that may indicate that capacity problems are increasing.

33. Because of lack of capacity in the storage reservoir, between January 1995 and December 2000, the City of Colfax has also had numerous exceedances of the minimum freeboard requirement during wet weather and has discharged wastewater over the storage reservoir spillway every winter between 1994/1995 and 1999/2000. No water was discharged over the spillway during the winter months of 2000/2001. Wastewater discharged over the spillway is treated but not disinfected, however, the Discharger has not provided information on the volume or quality of water discharged. The discharge of wastewater from the spillway is a violation of Discharge Prohibitions A.1 through A.4 and the failure to maintain a minimum two feet of freeboard is a violation of Pond Limitation C.16 of Order No. 95-058.
34. Due to the location of the WWTP at the head of the drainage system for the unnamed tributary of Smuthers Ravine, there is no location in the unnamed tributary that is unaffected by seepage from the ponds and storage reservoir, and runoff from the irrigation area. The Discharger has been disinfecting seepage from the base of the dam only. However, seepage from other locations, irrigation runoff that is not pumped back to the storage reservoir, storm water that runs off the irrigation area containing a wastewater component, and spillway overflow have been discharged without disinfection. All seepage, irrigation runoff, storm water runoff, spillway overflow, and water removed from the storage reservoir to prevent spillway overflow must be disinfected prior to discharge. All water discharged to surface water from the WWTP must be treated and disinfected and the Discharger must make the necessary improvements to the existing disinfection system. This Order includes provisions that contain compliance schedules and Cease and Desist Order No. 5-01-181 contains compliance schedules for improving the disinfection system, compliance with effluent limitations, and completion of studies, reports, and WWTP improvements to increase capacity and comply with tertiary treatment standards or eliminate the discharge to surface water entirely.
35. A "*Draft Focused Environmental Impact Report for the General Plan, City of Colfax, California*" (EIR) was prepared for the City of Colfax in June 1998. The purpose of the EIR is to analyze the potential impacts of the City of Colfax General Plan. The General Plan "contains goals, policies, and implementation measures to establish and provide for future development within the City Limits and the SOI" (Sphere of Influence). The Land Use Element of the General Plan, when implemented, will encourage community growth. The EIR states that the WWTP is operating at or above its permitted capacity and any increase to the current flow will exceed plant capacity. The EIR also states that infiltration to the collection system continues to contribute to the capacity problems at the WWTP. The mitigation alternative recommended in the EIR includes repair and correction of the infiltration problems in the collection system and construction of an additional WWTP or improvements to the existing WWTP. The conclusion in the EIR is that installation of a package treatment plant in conjunction with the existing WWTP is less expensive than a new WWTP.

36. The volume of wastewater discharged to the City of Colfax's WWTP currently exceeds the capacity of the system to retain the flow as required by the current permit. The City of Colfax has violated the dry weather influent limitation and has discharged treated but undisinfected wastewater over the spillway of the dam (in violation of the permit) every wet season since the current permit was adopted (except the winter of 2000/2001). Board staff issued a Notice of Violation in 1996, requiring the City of Colfax to make irrigation system repairs and to correct collection system infiltration problems. The City of Colfax made improvements and repairs and the dry weather inflow violations were reduced but did not stop. However, the repairs and improvements had no effect on the wet weather capacity and the Discharger continued to discharge over the spillway in violation of the permit. To correct the Discharger's capacity problems, this Order contains Provisions containing compliance schedules and Cease and Desist Order No. 5-01-181 also contains compliance schedules for submittal of an engineered report, to calculate the water balance of the collection and treatment systems, assess alternatives to adequately treat and control all wastewater, considering both NPDES discharge to receiving water and complete containment options, and assessment of the costs to implement the different alternatives. This Order and the Cease and Desist Order also contain a compliance schedule for submittal of the report and implementation of the recommended WWTP improvements.
37. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. 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.
38. 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 Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
39. The discharge is presently governed by Waste Discharge Requirements Order No. 95-058 (NPDES No. CA0079529) adopted by the Board on 24 March 1995.
40. The Board has considered the information in the attached Fact Sheet in developing the Findings of this Order. The attached Fact Sheet is part of this Order.
41. The 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.
42. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.
43. 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 EPA has no objections.

IT IS HEREBY ORDERED that Order No. 95-058 is rescinded and the City of Colfax, 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. Discharge of wastewater-(other than seepage, runoff, and/or water removed from the storage reservoir to prevent spillway overflow, that have been treated and disinfected) at a location or in a manner different from that described in the Findings, is prohibited.
2. The by-pass or overflow of untreated, partially treated, or undisinfected waste is prohibited throughout the collection, treatment, storage, irrigation, and discharge system.
3. The by-pass or overflow of wastes over the spillway to surface waters is prohibited, except for discharge of treated and disinfected waste to prevent damage to or failure of the dam/levee and as allowed by Standard Provision A.13. [See attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)"].
4. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.
5. The discharge or storage of waste classified as 'hazardous' or 'designated', as defined in Sections 2521(a) and 2522(a) of Title 27, is prohibited.

B. Effluent Limitations:

1.a. Effluent shall not exceed the following limits:

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>7-Day Average</u>	<u>Daily Maximum</u>
BOD ¹	mg/l	10 ²	15 ²	25 ²
	lb/day ³	16.7	25	41.7
Total Suspended Solids	mg/l	10 ²	15 ²	25 ²
	lb/day ³	16.7	25	41.7
Settleable Solids	ml/l	0.1		0.2

¹ 5-day, 20°C biochemical oxygen demand (BOD)

² To be ascertained by a 24-hour composite

³ Based upon a design treatment capacity of 0.2 mgd ($x \text{ mg/l} \times 8.345 \times 0.2 \text{ mgd} = y \text{ lb/day}$)

1.b. Effluent shall not exceed the following limits until **14 June 2006**:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Median</u>	<u>Daily Maximum</u>
Total Coliform Organisms	MPN/100ml	23	500
Chlorine Residual	mg/l	--	0.02

1.c. Effluent shall not exceed the following limits after **14 June 2006**:

<u>Constituents</u>	<u>Units</u>	<u>7-Day Median</u>	<u>4-Day Average</u>	<u>Daily Average</u>	<u>1-Hour Average</u>	<u>Daily Maximum</u>
Total Coliform Organisms	MPN/100ml	2.2 ⁴				23 ⁵
Chlorine Residual	mg/l		0.01		0.02	
	lb/day ³		0.02		0.03	
Turbidity	NTU			2		5

³ Based upon a design treatment capacity of 0.2 mgd ($x \text{ mg/l} \times 8.345 \times 0.2 \text{ mgd} = y \text{ lb/day}$)

⁴ 7-Day Median based on previous seven daily sample results

⁵ In a 30-day period, only a single sample may exceed 23 MPN/100 ml

2. The arithmetic mean of 20°C BOD (5-day) and total suspended solids in disinfection system effluent samples collected over a monthly period shall not exceed 15 percent of the arithmetic mean of the values for WWTP influent samples collected at approximately the same times during the same period (85 percent removal).
3. The discharge to the receiving water shall not have a pH less than 6.5 nor greater than 8.5.
4. 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%
5. The disinfection and disposal facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
6. After 14 June 2006, the wastewater shall be settled, oxidized, coagulated, and filtered, or equivalent treatment provided, or discharge to surface water shall cease.

C. Spray Irrigation and Pond Limitations:

1. The monthly average dry weather flow to the WWTP shall not exceed 0.16 mgd.
2. The treatment and disposal facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
3. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.
4. The effluent discharged from the treatment facility to the irrigation area shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD ₅ ¹	mg/l	40	80
Settleable Solids	ml/l	0.2	0.5

¹ 5-day, 20° C biochemical oxygen demand (BOD)

5. There shall be no standing water in the disposal area 48 hours after wastewater is applied.
6. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
7. Areas irrigated with reclaimed water shall be managed to prevent breeding of mosquitoes. More specifically,
 - a. Tail water must be returned and all applied irrigation water must infiltrate completely within a 48-hour period.
 - b. Ditches not used as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store reclaimed water.
8. Reclaimed water for irrigation shall be managed to minimize erosion, runoff, and movement of aerosols from the disposal area.
9. All runoff from the irrigation system shall be returned to the storage reservoir.
10. Direct or windblown spray shall be confined to the designated reclamation area and prevented from contacting drinking water facilities.

11. The Discharger may not spray irrigate effluent during periods of precipitation and for at least 24 hours after cessation of precipitation, or when winds exceed 30 mph.
12. A 100-foot buffer shall be maintained around the spray field, and between any watercourse and the wetted area produced during spray disposal.
13. Signs with proper wording of sufficient size shall be placed at areas of access and around the perimeter of all areas used for effluent disposal to alert the public of the use of reclaimed water.
14. Ponds shall be managed to prevent breeding of mosquitoes. In particular:
 - a. An erosion control program should ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
15. As a means of discerning compliance with Spray Irrigation and Pond Limitation C.3, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/l.
16. Ponds shall not have a pH less than 6.5 or greater than 8.5.
17. Ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the nonirrigation season. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
18. Freeboard shall never be less than two feet (measured vertically to the lowest point of overflow).
19. On or about **15 October** of each year, available pond storage capacity shall at least equal the volume necessary to comply with Spray Irrigation and Pond Limitation C.18.

D. 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:

1. Concentrations of dissolved oxygen to fall below 7.0 mg/l. The monthly median of the mean daily dissolved oxygen concentration shall not fall below 85 percent of saturation in the main water mass. The 95th percentile concentration of dissolved oxygen shall not fall below 75 percent of saturation in the main water mass.
2. The Total Dissolved Solids (TDS) concentration to exceed 125 mg/l (90th percentile) in the North Fork of the American River.
3. The ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.
4. The ambient temperature to increase more than 5°F.
5. The fecal coliform concentration in any 30-day period to exceed a geometric mean of 200 MPN/100 ml or cause more than 10 percent of total samples to exceed 400 MPN/100 ml.
6. The turbidity to increase as follows:
 - a. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTU.
 - b. More than 20 percent where natural turbidity is between 5 and 50 NTU.
 - c. More than 10 NTU where natural turbidity is between 50 and 100 NTU.
 - d. More than 10 percent where natural turbidity is greater than 100 NTU.
7. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, 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.
8. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.
9. Oils, greases, waxes, floating material (liquids, solids, foams, and scums), or suspended material to create a nuisance or adversely affect beneficial uses.
10. Aesthetically undesirable discoloration.
11. Fungi, slimes, or other objectionable growths.
12. Deposition of material that causes nuisance or adversely affects beneficial uses.

13. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
14. 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.
15. 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.
16. Violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder.

E. Groundwater Limitations:

1. The Discharge shall not degrade groundwater quality.

F. Sludge Disposal:

1. Collected screenings, sludges, and other solids removed from liquid wastes 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, CCR, Division 2, Subdivision 1, Section 20005, et seq.
2. Any proposed change in sludge use or disposal practice from a previously approved practice shall be reported to the Executive Officer and EPA Regional Administrator at least **90 days** in advance of the change.
3. Use and disposal of sewage sludge shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR 503.

If the State Water Resources Control Board and the Regional Water Quality Control Boards are given the authority to implement regulations contained in 40 CFR 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR 503 whether or not they have been incorporated into this Order.

4. The Discharger is encouraged to comply with the "*Manual of Good Practice for Agricultural Land Application of Biosolids*" developed by the California Water Environment Association.

G. Provisions:

1. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
2. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
3. The Discharger shall conduct the chronic toxicity testing specified in the Monitoring and Reporting Program. 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 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 Board evaluation, conduct the TRE. This Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Water Resources Control Board, this Order may be reopened and a limitation based on that objective included.
4. There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives: NTR and CTR constituents, EPA Priority Pollutants, nitrate, aluminum, arsenic, barium, copper, cyanide, iron, manganese, silver, and zinc. The Discharger shall comply with the following time schedule in conducting a study of these constituents potential effect in surface waters:

<u>Task</u>	<u>Compliance Date</u>
Submit Work Plan and Time Schedule	45 days after permit adoption
Begin Study	4 months after permit adoption
Complete Study	1 year after beginning study
Submit Study Report	2 months after study completion

The Discharger shall submit to the 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 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.

5. Wastewater discharged to land, into treatment and storage basins, may percolate through soil and increase the concentrations of pollutants in groundwater. For purposes of this Provision, groundwater monitoring wells will be installed to determine background groundwater quality and establish a groundwater monitoring system. The Discharger shall submit a work plan, containing specifications for installation of a minimum of three groundwater monitoring wells near the treatment and storage basins. The work plan must include a site map (north at the top of the page) showing the proposed location of the monitoring wells. Prior to construction of the wells, Board staff must approve the work plan. Drilling, construction, and development of the groundwater monitoring wells shall comply with requirements of the Department of Water Resources. The monitoring wells must be installed by qualified and experienced drillers, accompanied by a qualified, experienced, and registered geologist or certified engineering geologist.

After construction and development of the wells, the Discharger shall submit a report describing the wells, including the elevation of the top of each well, the geologic logs, well construction logs, well development details, a site map showing the actual location of the wells, depth to groundwater, groundwater elevation, the direction of ground water flow. Prior to sampling, the wells should be pumped until the temperature, specific conductivity, and pH have stabilized to ensure representative samples. Grab groundwater samples shall be collected from the monitoring wells. All constituents listed in the groundwater monitoring section of Monitoring and Reporting Program No. 5-01-180, shall be analyzed and the results will also be included in the report.

The Discharger shall comply with the following compliance schedule to determine background groundwater quality, and install groundwater monitoring wells:

<u>Task</u>	<u>Compliance Date</u>
Submit Work Plan	2 years after permit adoption
Install and Sample Monitoring Wells	2 years, 6 months after permit adoption
Submit Technical Report	3 months after well installation and sampling

The Discharger shall submit to the Board on or before each compliance 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 Board by letter when it returns to compliance with the time schedule.

After installation of the groundwater monitoring wells, the Discharger shall institute the groundwater monitoring program in Monitoring and Reporting Program No. 5-01-180. If monitoring of the groundwater indicates that the discharge has caused an increase in constituent concentrations, when compared to background, the Discharger will be required to conduct a study of the extent of groundwater degradation. If the study indicates that the discharge has incrementally increased constituent concentrations in groundwater, enforcement actions may be pursued and/or this permit may be reopened and modified.

6. The Discharger shall comply with the following compliance schedule to upgrade the facility to full tertiary treatment or complete land disposal, and assure compliance with the new Effluent Limitations in this Order for Turbidity, Total Coliform Organisms, and Chlorine Residual to comply with Effluent Limitations 1.c:

<u>Task</u>	<u>Compliance Date</u>
Submit Work Plan and Time Schedule	6 months after permit adoption
Submit Progress Reports	Quarterly
Submit Engineered Report and Facilities Plan	2 years after permit adoption
Full Compliance	14 June 2006

The engineered report must include the following:

- a. Assessment of local lithology and geology in relation to the presence and behavior of groundwater, in preparation for installation of monitoring wells;
- b. Capacity analysis and calculation of the water balance of the collection, irrigation, and treatment systems, including inflow/infiltration and storm water and percolation to groundwater from ponds and the storage reservoir;
- c. Assessment of alternatives to:
 - i. Adequately treat all wastewater to tertiary or equivalent standards for NPDES discharge or provide complete land containment with no discharge to surface water; and
 - ii. Provide adequate capacity for existing flows and additional capacity to allow for community growth;
- d. Assessment of the costs to implement the different alternatives with a recommended alternative; and
- e. If tertiary treatment with discharge to surface water is the chosen alternative, the Discharger must provide, operate, and maintain, continuous flow measurement within **2 years and 6 months** after permit adoption, and continuous chlorine residual measurement by **14 June 2006**.

The Discharger shall submit to the Board on or before each compliance 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 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.

7. Violation Monitoring and Reporting Program

Monitoring

The discharge of wastewater to surface water from the spillway is prohibited. Because of the number of overflow incidents in the recent past, and until the problem is corrected, the spillway overflow that is discharged to surface water, shall be monitored. Monitoring is not required for spillway overflow that is returned to the storage reservoir. Prior to completion of the improvements to the disinfection system with the inclusion of spillway overflow; the spillway overflow samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall. Spillway overflow samples should be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. Spillway overflow monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
20°C BOD ₅	mg/l, lbs/day	Grab	Daily
Suspended Solids	mg/l, lbs/day	Grab	Daily
Settleable Solids	ml/l	Grab	Daily
Total Dissolved Solids	mg/l	Grab	Daily
Electrical Conductivity @25°C	µmhos/cm	Grab	Daily
pH	--	Grab	Daily
Total Coliform Organisms	MPN/100 ml	Grab	Daily
Temperature	°F	Grab	Daily
Flow ¹	mgd	Meter/Measure	Continuously/Daily
Ammonia ^{2,3}	mg/l	Grab	Daily
Acute Toxicity ^{4,5}	% Survival	Grab	Upon initiation of the first overflow event.

¹ Flow will be metered continuously, or with a high water alarm present and operating, flow may be measured daily. A Flow Metering/Measuring Compliance Schedule is included below, with final compliance by **15 November 2001**.

² Concurrent with acute toxicity monitoring.

³ Report as Total Ammonia.

⁴ The acute toxicity bioassay samples shall be analyzed using EPA/600/4-90/027F, Fourth Edition, or later amendment with Board staff approval. Temperature and pH shall be recorded at the time of bioassay sample collection. Test species shall be juvenile fathead minnows (*Pimephales promelas*), with no pH adjustment unless approved by the Executive Officer.

⁵ Concurrent with ammonia sampling.

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.

Reporting

Monitoring results shall be submitted to the Regional Board by the **first day of the second month following sample collection**. A final report including all spillway overflow data from the wet season shall be submitted by **31 July**. The report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the time and date of sample collection, the constituents, and the concentrations are readily discernible. The data shall be summarized to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages and medians, and removal efficiencies (%) for BOD and Suspended Solids, should be determined and recorded.

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.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Flow Metering/Measuring Compliance Schedule

The Discharger shall comply with the following compliance schedule to install a meter, high water alarm system, or other alternative acceptable to Board staff and assure compliance with the Discharge Prohibitions of this Order:

<u>Task</u>	<u>Compliance Date</u>
Submit Work Plan and Time Schedule	1 October 2001
Installation of Approved Equipment	30 October 2001
Full Compliance	15 November 2001

The Discharger shall submit to the Board on or before each compliance 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 Board by letter when it returns to compliance with the time schedule.

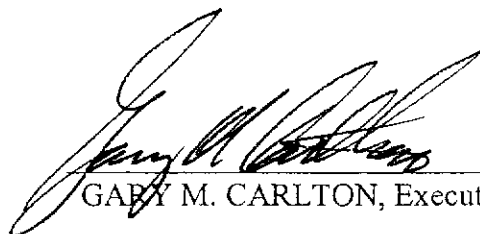
8. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)", dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provisions."
9. The Discharger shall comply with Monitoring and Reporting Program No. 5-01-180, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

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

10. This Order expires on **14 June 2006** 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.
11. The Discharger shall implement the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges from other sources:
 - a. Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or
 - b. Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.
12. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from the State Water Resources Control Board (Division of Water Rights).
13. In the event of any change in control or ownership of land or waste discharge facilities presently owned or 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.

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 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 California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, GARY M. CARLTON, 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 14 June 2001.


GARY M. CARLTON, Executive Officer

EAT/eat

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 5-01-180

NPDES NO. CA0079529

FOR
CITY OF COLFAX
WASTEWATER TREATMENT PLANT
PLACER COUNTY

This Monitoring and Reporting Program is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this Program unless and until the Regional Board or Executive Officer issues a revised Monitoring and Reporting Program. 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.

WWTP INFLUENT MONITORING

Samples shall be collected at approximately the same time as the seepage effluent samples and should be representative of the influent for the period sampled. WWTP influent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
20°C BOD ₅	mg/l, lbs/day	24-hr. Composite ¹	Twice Monthly
Suspended Solids	mg/l, lbs/day	24- hr. Composite ¹	Twice Monthly
Flow	mgd	Meter	Continuous

¹ 24-hour composite samples shall be flow proportional.

DISINFECTION SYSTEM INFLUENT MONITORING

Samples shall be collected, from the seepage influent to the chlorination system, at approximately the same time as the seepage effluent samples and should be representative of the influent for the period sampled. Seepage influent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Total Coliform Organisms	MPN/100 ml	Grab	Monthly

DISINFECTION SYSTEM EFFLUENT MONITORING

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall. Effluent samples should be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. Effluent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
20°C BOD ₅	mg/l, lbs/day	Grab	Twice Monthly
Suspended Solids	mg/l, lbs/day	Grab	Twice Monthly
Settleable Solids	ml/l	Grab	Twice Monthly
Total Dissolved Solids ¹	mg/l	Grab	Quarterly
Electrical Conductivity @25°C	µmhos/cm	Grab	Three Times Weekly
pH	--	Grab	Three Times Weekly
Total Coliform Organisms	MPN/100 ml	Grab	Three Times Weekly
Chlorine Residual	mg/l	Grab ²	Daily
Temperature	°F	Grab	Three Times Weekly
Flow ³	mgd	Measure	Daily
Ammonia ^{4,5}	mg/l	Grab	Monthly
Acute Toxicity ^{6,7}	% Survival	Grab	Quarterly
Priority Pollutants	mg/l	Grab	Twice Annually

¹ If Total Dissolved Solids (TDS) is detected in the effluent at concentrations that are above the Receiving Water Limitation (125 mg/l (90th percentile) in the North Fork of the American River), the Discharger may collect additional samples from the receiving waters to show that the discharge did not increase the TDS concentration in the North Fork of the American River above the limitation.

² The Monitoring Report shall contain details of any exceedances and report the daily maximum. The recording strips shall be maintained on site for a minimum of 5 years. Continuous chlorine residual monitoring will take effect 14 June 2006, unless complete land disposal is the chosen disposal alternative. See Provision No. 6 of Waste Discharge Requirements Order No. 5-01-180.

³ The Discharger is required to submit an Engineering Report two years after this Order is adopted. In that report the Discharger must make a decision regarding complete land containment versus tertiary treatment. If the Discharger decides to continue surface water discharge with tertiary treatment, the Discharger must install a continuous flow meter 6 months after submittal of the Engineering Report. See Provision No. 6 of Waste Discharge Requirements Order No. 5-01-180.

⁴ Concurrent with acute toxicity monitoring.

⁵ Report as Total Ammonia.

⁶ The acute toxicity bioassay samples shall be analyzed using EPA/600/4-90/027F, Fourth Edition, or later amendment with Board staff approval. Temperature and pH shall be recorded at the time of bioassay sample collection. Test species shall be fathead minnows (*Pimephales promelas*), with no pH adjustment unless approved by the Executive Officer.

⁷ Concurrent with ammonia sampling.

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.

STORAGE RESERVOIR AND IRRIGATION MONITORING

IRRIGATION MONITORING

Samples shall be collected just prior to distribution for irrigation and should be representative of the irrigation water. Irrigation water monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
20°C BOD ₅	mg/l, lbs/day	Grab	Monthly
Settleable Solids	ml/l	Grab	Monthly

STORAGE RESERVOIR MONITORING

Storage reservoir monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Dissolved Oxygen	mg/l	Grab	Weekly
pH	--	Grab	Weekly
Odors	--	Observation	Weekly
Freeboard	tenths of feet	Measured	Daily
Pond Elevation	tenths of feet	Measured	Daily
Flow to Irrigation	mgd	Meter	Continuous
Flow over Spillway ¹	--	--	--

¹ See Waste Discharge Requirements Order No. 5-01-180, Provision No. 7.

RECEIVING WATER MONITORING

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

<u>Station</u>	<u>Description</u>
R-1	100 feet upstream from the confluence with Smuthers Ravine
R-2	100 feet downstream from the point of discharge
R-3	100 feet downstream from the confluence with Smuthers Ravine

<u>Constituents</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
Dissolved Oxygen	mg/l	R-1, R-2, R-3	Weekly
pH	Number	R-1, R-2, R-3	Weekly
Turbidity	NTU	R-1, R-2, R-3	Weekly
Temperature	°F (°C)	R-1, R-2, R-3	Weekly
Electrical Conductivity @25°C	µmhos/cm	R-1, R-2, R-3	Weekly
Fecal Coliform Organisms	MPN/100 ml	R-1, R-2, R-3	Weekly
Chlorine Residual	mg/l	R-1, R-2, R-3	Weekly
Radionuclides	pCi/l	R-1, R-2, R-3	Annually

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-3. Attention shall be given to the presence or absence of:

- | | |
|---------------------------------|--|
| a. Floating or suspended matter | e. Visible films, sheens or coatings |
| b. Discoloration | f. Fungi, slimes, or objectionable growths |
| c. Bottom deposits | g. Potential nuisance conditions |
| d. Aquatic life | |

Notes on receiving water conditions shall be summarized in the monitoring report.

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the receiving water. The testing shall be conducted as specified in EPA 600/4-91/002. Chronic toxicity samples shall be collected at the discharge of the seepage disinfection system prior to its entering the unnamed tributary of Smuthers Ravine. Grab samples shall be representative of the volume and quality of the discharge. Time of collection samples shall be recorded. Dilution and control waters shall be obtained immediately upstream of the discharge into Smuthers Ravine from an area unaffected by the discharge in the receiving waters. Standard dilution water can be used if the receiving water source exhibits toxicity and is approved by the Executive Officer. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results. 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*, *Ceriodaphnia dubia*, and *Selenastrum capricornutum*
 Frequency: Twice per year
 Dilution Series: None – the test shall be conducted using 100% effluent

	<u>Dilutions (%)</u>	<u>Controls</u>	
	<u>100</u>	<u>Creek Water</u>	<u>Lab Water</u>
% WWTP Effluent	100	0	0
% Dilution Water	0	100	0
% Lab Water	0	0	100

SLUDGE MONITORING

A composite sample of sludge shall be collected when sludge is removed from the ponds, in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for the following metals:

Cadmium	Copper	Nickel
Chromium	Lead	Zinc

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

When sludge has been removed from the ponds, the Discharger shall submit:

- a. Annual sludge production in dry tons and percent solids.
- b. A schematic diagram showing sludge handling facilities and a solids flow diagram.

- c. Depth of application and drying time for sludge drying beds.
- d. A description of disposal methods. If more than one method is used, include the percentage of annual sludge production disposed by each method.

GROUNDWATER MONITORING

Prior to construction, plans and specifications for ground water monitoring wells shall be submitted to Board staff for review and approval. Wells shall comply with requirements of the Department of Water Resources.

The following shall constitute the groundwater monitoring program and the list of constituents to be sampled and analyzed to establish background groundwater quality and:

<u>Constituents</u>	<u>Units</u>	<u>Sampling Frequency *</u>
Depth to Groundwater	feet	Monthly
Groundwater Elevation	feet	Monthly
Gradient (direction of groundwater flow)	--	Monthly
pH	--	Monthly
Electrical Conductivity (EC) at 25 °C	µmhos/cm	Monthly
Nitrates	mg/l	Quarterly
Total Coliform Organisms	MPN/100ml	Quarterly

* After one year of sampling, at the discretion of Board staff, and if adequate data has been collected, monthly sampling may be reduced to quarterly sampling.

Prior to construction of groundwater monitoring wells, the Discharger shall submit a work plan, for Board staff review and approval. The work plan shall contain monitoring well specifications and a site map (north at the top of the page) showing the proposed location of monitoring wells. Board staff must approve the work plan before construction may begin. Drilling, construction, and development of the groundwater monitoring wells shall comply with requirements of the Department of Water Resources. Monitoring wells must be installed by qualified and experienced drillers, accompanied by a qualified, experienced, and registered geologist or certified engineering geologist. After construction and development of the wells, the Discharger shall submit a report describing the wells, including the elevation of the top of each well, the geologic logs, well construction logs, well development details, a site map showing the actual location of the wells, depth to groundwater, groundwater elevation, the direction of ground water flow, and the laboratory results from the first round of groundwater sampling. Prior to sampling, the wells should be pumped until the temperature, specific conductivity, and pH have stabilized to ensure representative samples. Grab groundwater samples shall be collected from the monitoring wells. To establish background and initial water quality, all constituents shall be sampled from all new groundwater monitoring wells in the first round of sampling, after installation of the wells.

Subsequent groundwater sampling and reporting shall comply with the schedule above.

REPORTING

Monitoring results shall be submitted to the Regional Board by the **first day of the second month following sample collection**. Quarterly and annual monitoring results shall be submitted by the **first day of the second month following each calendar quarter, semi-annual period, and year**, respectively.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the time and date of sample collection, the constituents, and the concentrations are readily discernible. The data shall be summarized to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages and medians, and removal efficiencies (%) for BOD and Suspended Solids, should be determined and recorded.

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.

By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:


- a. The names, certificate grades, and general responsibilities of all persons employed at the WWTP (Standard Provision A.5).
- b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
- c. 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).
- d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

The Discharger may also be requested to submit an annual report to the Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by:



GARY M. CARLTON, Executive Officer

14 June 2001

(Date)

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ATTACHMENT A
CITY OF COLFAX
WASTEWATER TREATMENT PLANT

PLACER COUNTY

USGS 7.5 MINUTE
COLFAX QUADRANGLE

1949

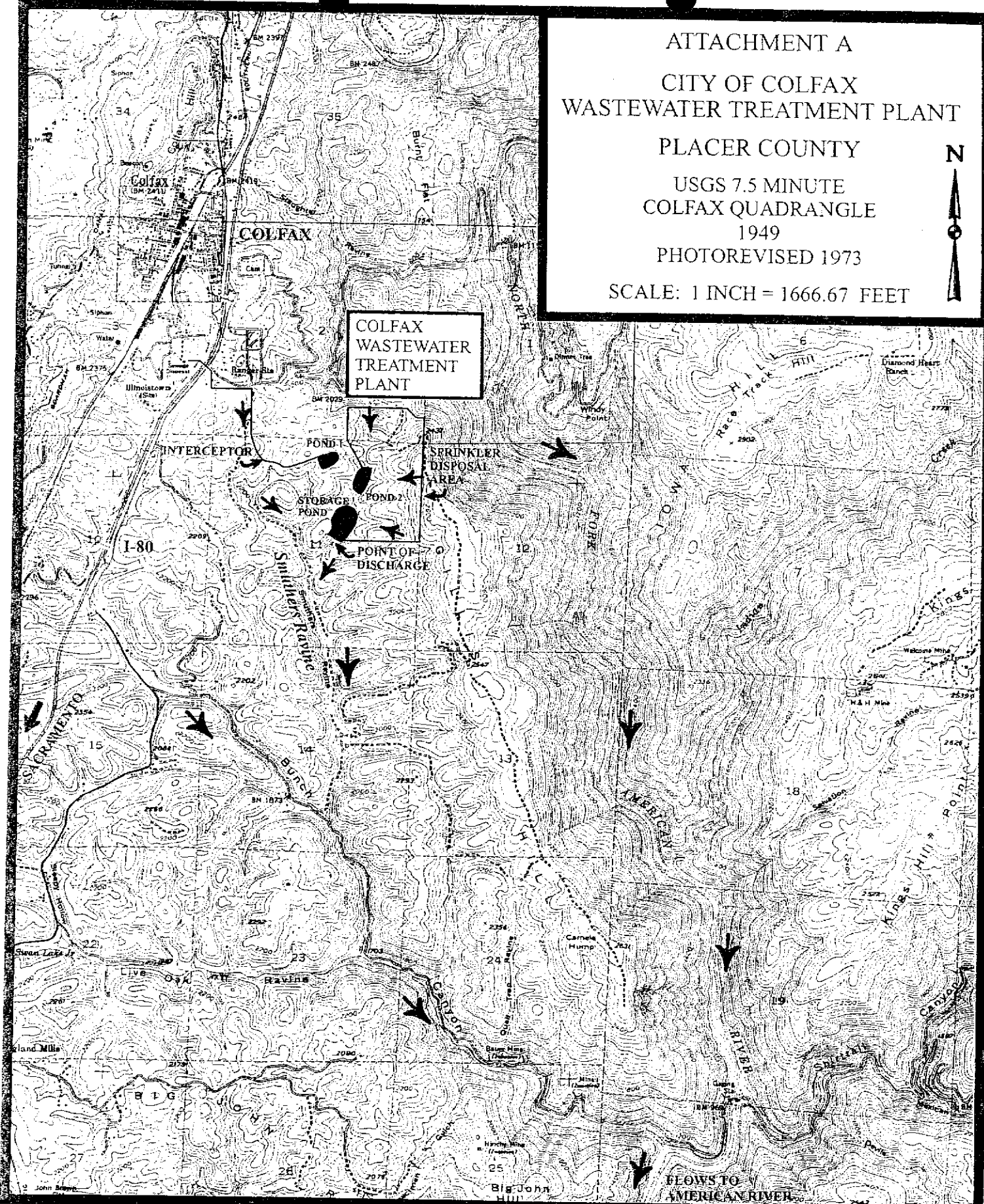
PHOTOREVISED 1973

SCALE: 1 INCH = 1666.67 FEET

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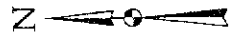
COLFAX
WASTEWATER
TREATMENT
PLANT



BLOWS TO
AMERICAN RIVER

ATTACHMENT B
COLFAX WASTEWATER
TREATMENT PLANT
FACILITY LAYOUT

- SPRAY IRRIGATION AREA
- - - - - DRAINAGE
- SEEPAGE



SPRAY
IRRIGATION
AREA

DRAINAGE

DRAINAGE

SPRAY IRRIGATION AREA

PUMP BUILDING

POND 2

LAB

HEADWORKS

POND 1

STORAGE POND

DAM

(With Emergency
Spillway)

PUMP BUILDING

SEEPAGE

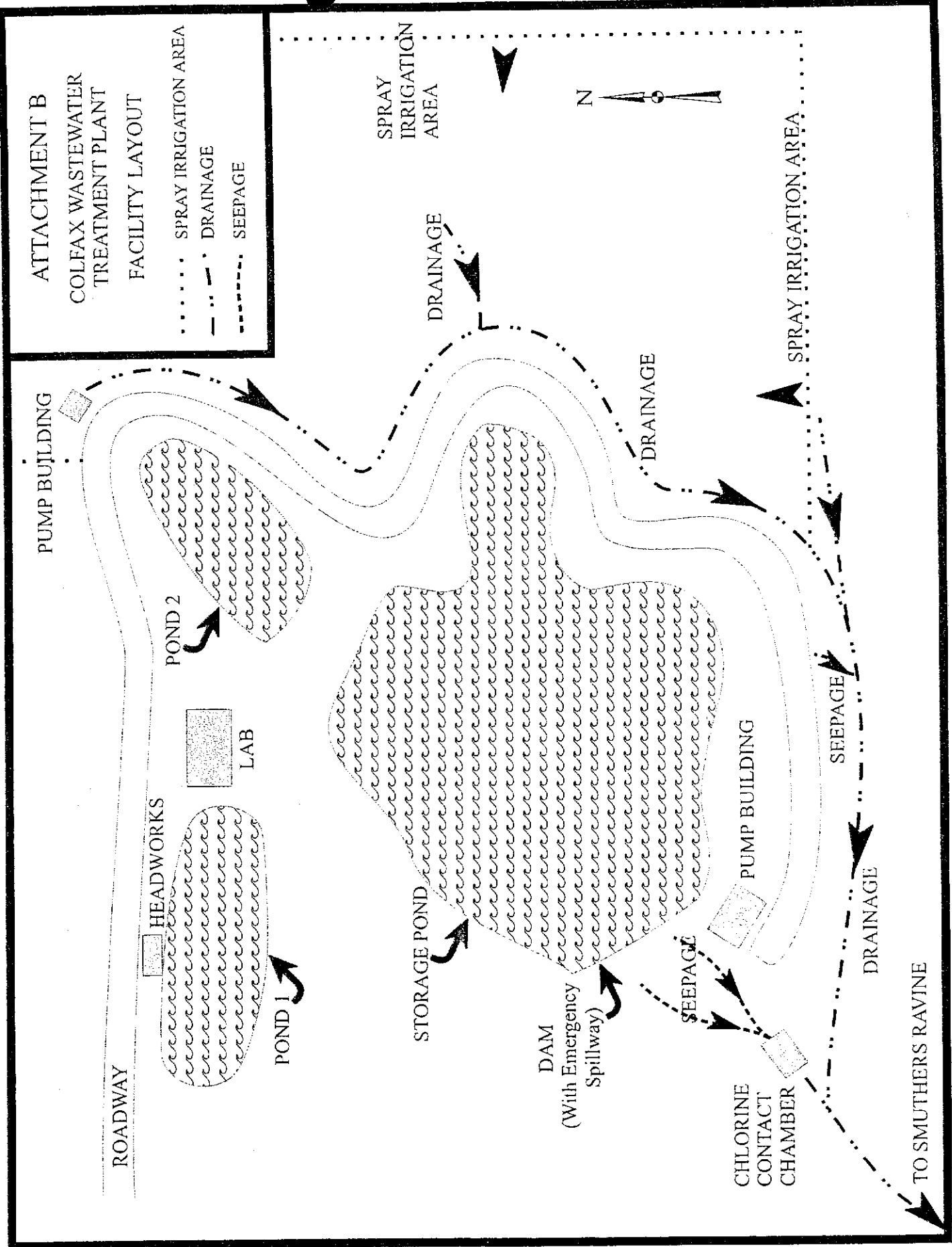
CHLORINE
CONTACT
CHAMBER

SEEPAGE

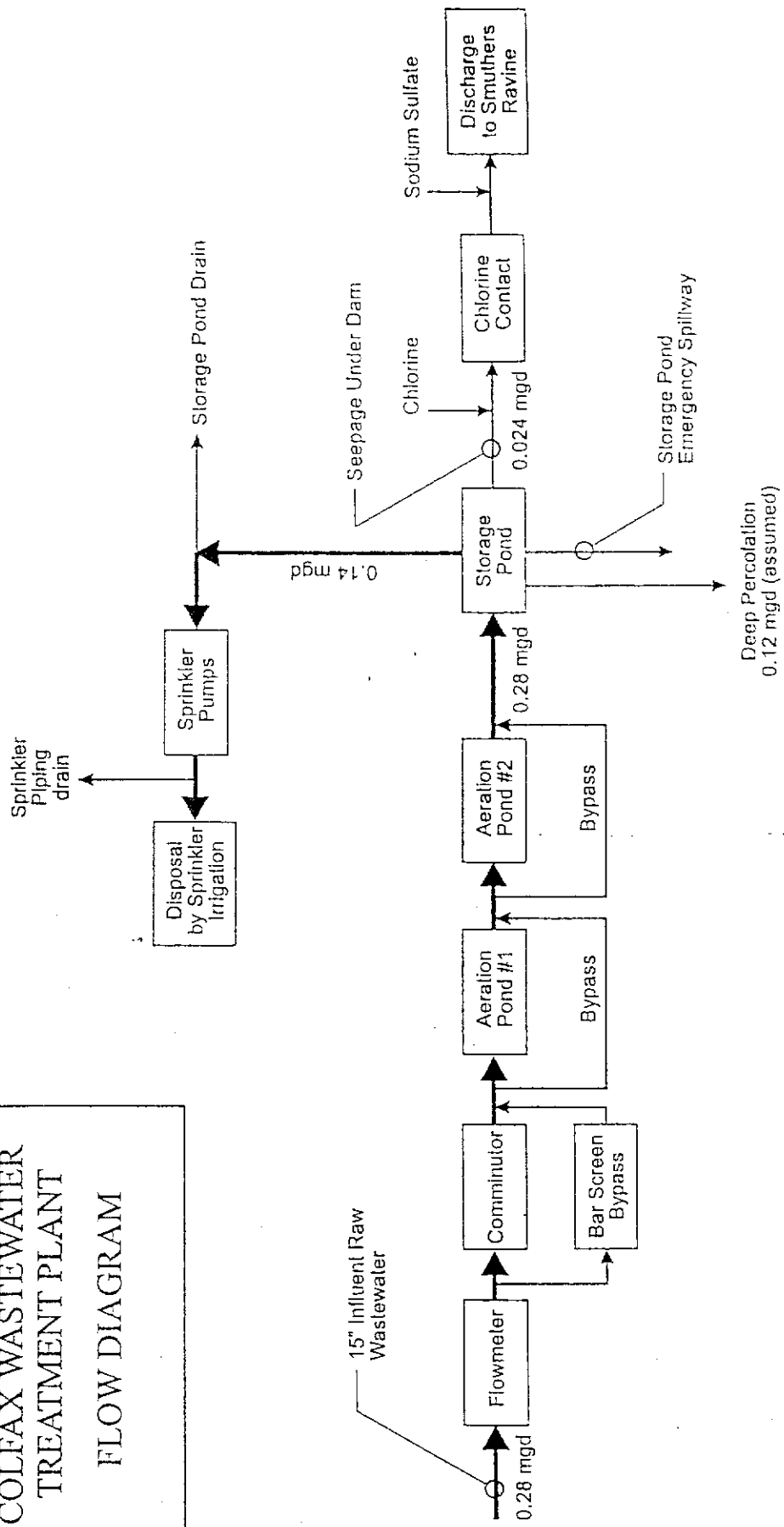
DRAINAGE

ROADWAY

TO SMUTHERS RAVINE



ATTACHMENT C
 COLFAX WASTEWATER
 TREATMENT PLANT
 FLOW DIAGRAM



B R O W N A N D C A L D W E L L	DATE	12-20-00	Sewage Treatment Facilities, City of Colfax, California	FIGURE
	PROJECT	20681		



FACT SHEET

ORDER NO. 5-01-180
NPDES NO. CA0079529
CITY OF COLFAX
WASTEWATER TREATMENT PLANT
PLACER COUNTY

SCOPE OF PERMIT

This renewed Order regulates the treatment of 0.14 mgd (average dry weather flow) of wastewater from the City of Colfax and the treatment and the disinfection and discharge of seepage from the treatment and storage ponds, runoff, and discharges to prevent spillway overflow. This Order requires that the Discharger adequately disinfect all existing discharges and prohibits discharge over the spillway but includes Provisions for monitoring if spillway discharge is necessary to protect the integrity of the dam. This Order includes effluent and ground and surface water limits, monitoring and reporting requirements, additional study requirements, compliance schedules, and reopener provisions for several effluent constituents. This Order and requires assessment of alternatives for complete land disposal or tertiary treatment with discharge to surface water so that the Discharger is in full compliance with new effluent limitations by 14 June 2006. Cease and Desist Order No. 5-01-181 contains compliance schedules for limitations and prohibitions that were violated in the current Order. The wastewater treatment and discharge are currently governed by Waste Discharge Requirements Order No. 95-058 (NPDES No. CA0079529), adopted by the Board 24 March 1995.

PERMIT AND ENFORCEMENT HISTORY

1. The first permit from the Regional Board, Resolution 58-556 issued in 1958, allowed the discharge of treated wastewater to Bunch Canyon.
2. WDR Order No. 72-107, adopted by the Board in a public meeting in 1972, allowed a seasonal (wet weather) discharge from evaporation ponds to Bunch Canyon and included a time schedule for construction of a new wastewater treatment facility by 1974. Resolution 58-556 was to be rescinded after completion of the new wastewater treatment facility.
3. In a public meeting in 1974, the Board adopted the first NPDES permit (WDR Order No. 74-403, NPDES No. CA0079529) that continued to allow the seasonal discharge to Bunch Canyon until 1976, when discharge to surface water was prohibited. The permit also contained an updated compliance schedule for completion of the new treatment facility and amended Order 72-107 and Resolution 58-556, which were to remain in effect until rescinded.
4. In a public meeting in 1977, the Board adopted Order No. 77-141, Enforcement Order for Issuance of a Time Schedule, containing an updated compliance schedule for completion of the new facility and an expiration date in 1979.
5. In a public meeting in 1978, the Board adopted Order No. 78-160, which renewed the NPDES permit and rescinded all previous Orders. Order No. 78-160 allowed seasonal discharge to Bunch Canyon until 1 February 1979, after which the new treatment facility was to be completed and the discharge to surface water was to be prohibited. An Environmental Impact Report (EIR) required by the California Environmental Quality Act (CEQA) and approved by the City of Colfax, did not identify any significant water quality impacts.

6. In a public meeting in 1985, the Board adopted Order No. 85-141, which renewed the NPDES permit and rescinded Order No. 78-160. The report of waste discharge, submitted in January 1984, applied for seasonal discharge to an unnamed tributary of Smuthers Ravine. The final EIR adopted by the City of Colfax addressed seasonal discharge only. However, in October 1984, the Discharger requested year-round discharge of seepage from the storage reservoir. The Board reviewed the EIR, the Discharger's proposal for year-round discharge, and monitoring data, and determined that a year-round discharge, in compliance with requirements, would not have significant impacts on the beneficial uses of the receiving water. The permit did not require that the seepage be disinfected prior to discharge.
7. In a public meeting in 1990, the Board adopted Order No. 90-166, which renewed the NPDES permit, rescinded Order No. 85-141, continued to allow year-round discharge, and included a time schedule for construction of seepage disinfection facilities by late 1990 for discharge of disinfected seepage to the unnamed tributary of Smuthers Ravine. The Information Sheet of Order No. 90-166 indicates that the storage pond lacked the capacity to store all wastewater during wet weather. Board staff attempted to resolve the problem by establishing an average daily dry weather influent flow limit of 0.16 mgd, using the following methodology:

"The storage pond capacity of the plant is a factor that further limits the volume of allowable wastewater influent. By summing the average dry weather wastewater flow, infiltration and inflow of non-wastewater, and the rainfall falling on the storage ponds and associated drainage areas, and subtracting the evapotranspiration from the ponds and the amount of seepage from the storage pond, each month from 1 October to 1 May, net storage values are generated and can be compared with the storage provided. The net storage must be less than the storage provided to prevent overtopping of the storage pond. To prevent the overtopping, using the value of infiltration and inflow generated during the 100-year rainfall year, the allowable average dry weather flow is 160,000 gpd [gallons per day]. This allowable flow rate assumes that the storage pond is empty at the beginning of the wet season, requiring the use of the spray irrigation field for summer disposal of wastewater from 1 May to 1 October."

8. In a public meeting in 1995, the Board adopted Order No. 95-058, which renewed the NPDES permit, rescinded Order No. 90-166, and continued to allow year-round discharge of disinfected seepage to the unnamed tributary of Smuthers Ravine.
9. Board staff issued a Notice of Violation on 19 July 1996 for the following:
 - a. Discharge of treated but undisinfected waste due to lack of capacity in January, February, March, April, and May 1995, and March 1996;
 - b. Failure to maintain the sprinkler irrigation system; and
 - c. Violation of the average dry weather influent flow limit for May, June, and July 1995, and May 1996.

A technical report was required by 16 August 1996, describing the corrective action taken and planned to prevent future violations.

10. Board staff issued a Notice of Violation on 20 February 2001 for the following violations between April 1995 and December 2000:
 - a. A minimum of 455 days in which the freeboard in the storage reservoir exceeded the minimum limitation (2 feet);
 - b. 20 violations of the 30-Day Median Coliform Effluent Limitation (23 MPN/100ml);
 - c. 12 violations of the Daily Maximum Coliform Effluent Limitation (500 MPN/100ml);
 - d. 290 days in which the influent flow exceeded the Influent Flow Limitation (0.16 mgd); and
 - e. A minimum of 199 days of discharge over the spillway in violation of discharge prohibitions.

Schedules to correct these deficiencies and violations are included in the proposed NPDES Permit and Cease and Desist Order.

FACILITY DESCRIPTION

The wastewater treatment plant (WWTP) location is shown in Attachment A, the facility layout is shown in Attachment B, and the flow diagram is shown in Attachment C. Attachments A, B, and C are part of this Order. The City of Colfax operates a WWTP approximately one mile southeast of downtown Colfax. The WWTP was constructed during 1978-1979 to meet Regional Board requirements for no discharge to surface water. The sewage treatment facility consists of the headworks, which includes a flow meter and comminutor with bar screen bypass, two mechanically aerated facultative treatment ponds in series, a 69 million gallon storage reservoir, and a 47-acre sprinkler irrigation system for land application (evapotranspiration disposal). The seepage disinfection system consists of a seepage collection system, a chlorine contact chamber, and dechlorination with sodium sulfate prior to discharge to an unnamed tributary of Smuthers Ravine.

The aerated ponds provide secondary level treatment with approximately 35 days detention time at the average daily flow. Secondary treated wastewater is discharged to the storage reservoir where it is polished and stored during winter months. In dry months, treated wastewater is pumped from the storage reservoir through the sprinkler irrigation system to hills surrounding the ponds.

SEEPAGE FROM THE STORAGE RESERVOIR

The storage reservoir was created by construction of a dam/levee on the downstream side of the reservoir. The dam has a spillway to prevent overtopping and damage to the dam. Releases from the spillway are not permitted discharges under this Order. The storage reservoir is unlined and constructed over bedrock in an area of several natural springs. Seepage from the reservoir has occurred since initial use in 1979. The average dry weather seepage flow is a function of the amount of liquid stored in the reservoir. A study to evaluate the seepage problem, recommended containment and pumping of the

seepage back to the storage pond during the recreation season (dry weather). The cost of the system was estimated to be half a million dollars. The City was unable to obtain Clean Water Grant Funds and requested a year-round discharge to surface water. Monitoring of the seepage has shown relatively low levels of suspended solids and biochemical oxygen demand. However, in the past the seepage was found to contain elevated levels of fecal coliform organisms and regular monitoring shows that the seepage continues to contain elevated levels of total coliform organisms. Seepage from the base of the dam is collected in a sump at the base of the dam and diverted to a disinfection facility that was completed in 1991. The seepage disinfection facility consists of a fiberglass chlorine contact chamber with dechlorination, followed by discharge to an unnamed tributary of Smuthers Ravine. Dry chemicals are used for chlorination and dechlorination (sodium sulfate).

Seepage that occurs at other locations upstream of the dam, irrigation runoff, storm water that flows over the irrigation area and contains a wastewater component, and treated wastewater that is discharged over the spillway, are not collected and disinfected prior to discharge to surface water.

FACILITY DRAINAGE

The WWTP was constructed at the headwaters of an unnamed tributary of Smuthers Ravine. Therefore, storm water along with any uncollected runoff and seepage from the irrigation areas and ponds would normally flow to the unnamed tributary. Due to their location in the drainage system, it appears that the sump and seepage disinfection facilities may be subject to flooding and washout during heavy storm events. The location of the entire treatment facility at the headwaters of the unnamed tributary precludes the establishment of an upstream monitoring point, because there is no location in the drainage area that is unaffected by the treatment facility.

RECEIVING WATER MONITORING POINTS

Because the entire length of the unnamed tributary of Smuthers Ravine is impacted by the treated wastewater from the City of Colfax, Board staff proposes to eliminate the current "upstream" monitoring point in the unnamed tributary, retain the existing monitoring point in the unnamed tributary downstream of the discharge, and establish receiving water monitoring points in Smuthers Ravine, up and down stream of the confluence of the unnamed tributary with Smuthers Ravine.

The upstream monitoring point on Smuthers Ravine will be the new R-1, R-2 will remain as it is, and the downstream monitoring point on Smuthers Ravine will be R-3.

GROUNDWATER

State Water Resources Control Board Resolution 68-16 requires that the discharge of waste shall not degrade groundwater quality. Domestic wastewater discharged to land, into treatment and storage basins, may percolate through soil and increase the concentrations of nitrates, metals, and other constituents in groundwater. Groundwater monitoring is necessary to determine the effects of the discharge on groundwater quality.

Resolution No. 68-16 requires that the Discharger provide best practicable treatment or control discharge to groundwater. This Order requires that the Discharger install a groundwater monitoring system and determine background groundwater quality. A minimum of three groundwater monitoring

wells is necessary to determine the direction of groundwater flow. Initial samples from the groundwater monitoring wells will establish background groundwater quality.

If regular monitoring of the groundwater indicates that the discharge has caused an increase in constituent concentrations, when compared to background, the Discharger will be required to conduct a study of the extent of groundwater degradation. The study will, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide best practicable treatment or control to comply with Resolution No. 68-16. If the study indicates that the discharge has increased constituent concentrations in groundwater, enforcement actions may be pursued and/or this permit may be reopened and modified.

BASIN PLAN RECEIVING WATER BENEFICIAL USES

The Basin Plan states, on page II-1.00, "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...*" and "*...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.*" Existing and potential beneficial uses that currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1 of the Basin Plan. The beneficial uses of any specifically identified water body apply to its tributary streams. As designated in the Basin Plan, Smuthers Ravine and its unnamed tributary are in the Gold Run Hydrologic Subarea (514.53) of the North Fork American Hydrologic Area (514.50), in the Sacramento Hydrologic Basin. The beneficial uses of Smuthers Ravine and its unnamed tributary are not specifically identified in the Basin Plan. However, as stated in the Basin Plan above, "*The beneficial uses of any specifically identified water body generally apply to its tributary streams.*" Smuthers Ravine is tributary to Bunch Canyon and a section of the North Fork of the American River between the source and Folsom Lake (Hydrologic Area 514.50). The North Fork of the American River is the first body of water downstream of Smuthers Ravine for which the Basin Plan has identified present and potential beneficial uses. The beneficial uses of the North Fork of the American River, as identified in Table II-1 of the Basin Plan, are municipal and domestic supply, agricultural irrigation, water contact recreation including canoeing and rafting, non-contact water recreation including aesthetic enjoyment, warm and cold freshwater habitats including preservation or enhancement of fish and invertebrates, cold spawning habitat, and wildlife habitat. Other beneficial uses identified in the Basin Plan apply to Smuthers Ravine and its tributary and to Bunch Canyon and the North Fork of the American River, including groundwater recharge, freshwater replenishment, and preservation of biological habitats of special significance (including uses of water that support established refuges and parks). Upon review of the flow conditions, habitat values, and beneficial uses of Smuthers Ravine and its unnamed tributary, the beneficial uses identified in the Basin Plan for the North Fork of the American River, from the source to Folsom Lake, are applicable to Smuthers Ravine and its unnamed tributary.

The beneficial uses identified in the Basin Plan for the North Fork of the American River are applicable to Smuthers Ravine and its unnamed tributary based upon the following:

1. Municipal and Domestic Supply and Agricultural Irrigation

The State Water Resources Control Board (SWRCB) has recorded water rights, for domestic uses, along the North Fork of the American River downstream of the discharge. Riparian Rights, for landowners along streams and rivers, are not recorded with the SWRCB and have precedence over other water rights. There are no records of water rights claimed on Smuthers Ravine and the unnamed tributary of Smuthers Ravine. However, there are homes and farms along Smuthers Ravine and its tributary, which may use the water for domestic and irrigation purposes.

Smuthers Ravine is an intermittent stream and provides groundwater recharge during periods of low flow. Groundwater is a source of drinking water. In addition to the existing water uses, growth in the area downstream of the discharge is expected to continue, creating potential for increased domestic and agricultural uses of the water in Smuthers Ravine, Bunch Canyon, and the North Fork of the American River downstream of the discharge.

2. Water Contact and Non-contact Recreation (including canoeing, rafting, and aesthetic enjoyment)

The North Fork of the American River, from 0.3 miles above Health Springs to 1,000 feet upstream of the Colfax-Iowa Hill Bridge, was designated a Wild River in a 1978 amendment to the Wild and Scenic Rivers Act, adopted by Congress in 1968. The WWTP discharges to an unnamed tributary of Smuthers Ravine; Smuthers Ravine is tributary to Bunch Canyon; and Bunch Canyon discharges to the North Fork of the American River approximately 3 miles downstream of the end point of the Wild River designation. From the Colfax-Iowa Hill Bridge to the confluence with the Middle Fork of the American River, the North Fork of the American River is renowned for its whitewater rapids and much used for rafting and kayaking.

Hikers and campers in the relatively uninhabited area near the discharge point have a reasonable expectation that the waters of Smuthers Ravine and Bunch Canyon are as unpolluted as similar streams in the vicinity.

There is public access to Smuthers Ravine, Bunch Canyon, and the North Fork of the American River and public use is likely to increase as the population increases. Exclusion or restriction of public use is unrealistic.

3. Warm and Cold Freshwater Habitats (including preservation or enhancement of fish and invertebrates), Cold Spawning Habitat, and Wildlife Habitat

Smuthers Ravine flows to Bunch Canyon and the North Fork of the American River. The California Department of Fish and Game (DFG) has verified the presence of Rainbow Trout and other cold and warm water fish species in waters downstream of the discharge point. There is also a potential for spawning of cold-water fish species in Smuthers Ravine and downstream waters. Pursuant to the Basin Plan Tributary Rule, the cold and warm water habitat designation applied to the North Fork of the American River applies to the unnamed tributary of Smuthers Ravine. The cold-water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/l. However, if the naturally occurring in-stream dissolved oxygen