

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO.

WASTE DISCHARGE REQUIREMENTS
FOR
CONTRA COSTA WATER AUTHORITY AND CONTRA COSTA WATER DISTRICT
RANDALL BOLD WATER TREATMENT PLANT AND
BRENTWOOD WATER TREATMENT PLANT
CONTRA COSTA COUNTY

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

1. Contra Costa Water Authority, a Joint Powers Authority comprised of the Contra Costa Water District and Diablo Water District submitted a Report of Waste Discharge (RWD), dated 2 February 2005, to apply for Waste Discharge Requirements (WDRs) for the existing Randall Bold Water Treatment Plant (WTP) and the planned Brentwood WTP. Additional information to complete the RWD was received on 31 May 2005, 23 January 2006, and 28 December 2006.
2. The Randall Bold WTP, which is owned by the Contra Costa Water Authority, is at 3760 Neroly Road in Oakley, as shown on Attachment A, which is attached hereto and made part of the Order by reference. The WTP is in Section 34, T2N, R1E, MDB&M, and comprises Assessor's Parcel No. 053-071-028. Contra Costa Water District operates the WTP.
3. The Randall Bold WTP has been in operation since 1992, and is designed to treat up to 40 million gallons of water per day. Current peak day demand is approximately 25 million gallons per day (mgd), and average annual demand is approximately 10 mgd. The discharge of waste at this facility was authorized under a waiver of WDRs, issued on 25 April 1991. The waiver was based on Regional Water Board Resolution No. 82-036, which expired on 1 January 2003.
4. The Contra Costa Water Authority and Contra Costa Water District (hereafter "Dischargers") plan to modify the Randall Bold facility and to construct a new WTP at the same site to serve the City of Brentwood, as shown on Attachment B, which is attached hereto and made part of the Order by reference.

Existing Facility and Discharge

5. Raw water from the Sacramento-San Joaquin Delta is pumped to the Randall Bold WTP from Old River and Rock Slough via the Contra Costa Canal for treatment prior to distribution as a public water supply. During periods of low salinity, raw water is stored in Los Vaqueros Reservoir. This stored water is supplied to the Contra Costa Canal and blended with raw water from the Delta intakes as needed. The following table summarizes raw water characterization data provided in the RWD for one sample obtained from the Contra Costa Canal on 5 January 2004.

Constituent/Parameter	Result (mg/L except as noted)
Aluminum	0.14
Arsenic	.0034
Bromide	0.2
Chloride	65.3
Chromium	.0024
Copper	0.011
Iron	0.222
Manganese	0.0097
Sodium	44.8
Nitrate	2.78
Hardness, total	108
Alkalinity, total	80
Specific Conductance	450 umhos/cm
Total Coliform	100 CFU/100 mL
Fecal Coliform	1 CFU/100 mL
Enterococci	7 CFU/100 mL

6. The Randall Bold WTP currently provides treatment by pre-ozonation, coagulation with aluminum sulfate and cationic polymer, flocculation, filtration through granular activated carbon and sand, post-ozonation, chloramination, fluoridation, and pH adjustment. Attachment C, which is attached hereto and made part of the Order by reference, depicts a simplified process schematic.
7. Periodic filter backwashing generates dilute alum sludge (filter wash water). The filters produce approximately 190 pounds of dry solids per million gallons of treated water. The filter wash water is discharged to three lagoons (Lagoons 1, 2, and 3) for settling/decanting and evapoconcentration to a solids content of 30 to 40 percent. Decant water is returned to the head of the WTP where it is blended with incoming raw water.
8. The RWD characterized the chemical composition of the filter wash water discharged to the filter wash water lagoons and is summarized below.

Constituent/Parameter	Analytical Result (ug/L except as noted)		Applicable Water Quality Limit ¹ (ug/L except as noted)
	Total	Dissolved	
pH, std. units	7.5	--	6.5 to 8.4
Alkalinity, total	85	--	NA
Dissolved Solids, mg/L	--	220	450

Constituent/Parameter	Analytical Result (ug/L except as noted)		Applicable Water Quality Limit ¹ (ug/L except as noted)
	Total	Dissolved	
Arsenic	7.0	2.0	0.004
Boron, mg/L	0.20	--	0.70
Cadmium	1.0	1.0	0.07
Chromium	10	10	50
Copper	19	5	170
Iron	2,700	50	300
Lead	5	5	2.0
Manganese	200	120	0.50
Mercury	0.4	0.4	1.2
Nickel	10	10	12
Silver	10	10	85
Zinc	50	50	2,000
Bromide, mg/L	0.1	--	NA
Chloride, mg/L	45	--	106
Fluoride, mg/L	0.20	--	1.0
Orthophosphate, mg/L	6	--	NA
Sodium, mg/L	39	--	69
Sulfate, mg/L	69	--	250

-- Not applicable; constituents are considered completely soluble.

NA None applicable.

¹ Water quality limit to apply narrative water quality objectives specified in the Basin Plan for protection of the beneficial uses of groundwater.

The analytical results above indicate that the waste may exceed applicable water quality limits for arsenic, cadmium, lead, and manganese.

9. Dried solids removed from the filter wash water lagoons are currently disposed of off-site by land application to farmland owned by Ironhouse Sanitary District (ISD). This disposal is specifically allowed in ISD's waste discharge requirements. The same land is used for reclamation of ISD's treated effluent.
10. The RWD characterized the chemical composition of the dewatered solids sent to ISD, which is summarized below.

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Constituent/Parameter	Analytical Result	
	Total (mg/kg except as noted)	Soluble (mg/L)
Arsenic	20	<0.02 ¹
Cadmium	<1	<0.01 ¹
Chromium	14	<0.05 ¹
Copper	57	<0.05 ¹
Lead	<5	<0.05 ¹
Mercury	<0.01	<0.01 ¹
Molybdenum	<5	<0.05 ¹
Nickel	16	<0.05 ¹
Selenium	<1	<0.02 ¹
Zinc	28	<0.05 ¹
Solids	32%	130 ²

¹ Based on the Waste Extraction Test (WET) using deionized water as the extractant.

² Total dissolved solids.

11. After reviewing comments from interested parties provided during the October 2006 public comment period, Regional Water Board staff requested that the Discharger resample the dewatered solids using Title 22 test methods. Four samples of the dewatered solids were collected and analyzed in December 2006. The analytical results were provided in a 28 December 2006 report, and are summarized below.

Constituent, units	Soluble Threshold Limit	Sample No. 1	Sample No. 2	Sample No. 3	Sample No. 4
Antimony, mg/l	15	<3.0	<3.0	<3.0	<3.0
Arsenic, mg/l	5.0	0.320	0.500	0.760	0.57
Barium, mg/l	100	0.780	1.1	1.4	1.0
Beryllium, mg/l	0.75	< .10	< .10	< .10	< .10
Cadmium, mg/l	1.0	< .25	< .25	< .25	< .25
Chromium (III), mg/l	5	<.50	< .50	< .50	< .50
Cobalt, mg/l	80	<1.0	<1.0	<1.0	<1.0
Copper, mg/l	25	0.790	0.790	1.1	0.770
Lead, mg/l	2	< .15	< .15	< .15	< .15
Mercury, mg/l	0.2	< .02	< .02	< .02	< .02
Molybdenum, mg/l	350	<1.0	<1.0	<1.0	<1.0
Nickel, mg/l	20	<1.0	<1.0	<1.0	<1.0
Selenium, mg/l	1.0	< .25	< .25	< .25	< .25
Silver, mg/l	5	< .25	< .25	< .25	< .25
Thallium, mg/l	7.0	< .25	< .25	< .25	< .25
Vanadium, mg/l	24	0.410	0.690	0.730	0.660
Zinc, mg/l	250	<1.0	<1.0	<1.0	<1.0

Based on the sampling results, the dried solids do not exceed the Title 22 threshold limits for the 17 metals which were analyzed.

12. The three existing Randall Bold WTP filter backwash lagoons provide sufficient capacity for up to 25 mgd of treated water production. Each lagoon is excavated below grade to provide a six-foot total depth with a four-foot operating depth and a minimum of two feet of freeboard. Each is equipped with a 1,500 gallon-per-minute (gpm) decant pump, which can be used to prevent overflow as necessary. Lagoon design data are summarized below.

<u>Lagoon ID</u>	<u>Surface Area (sq. ft.)</u>	<u>Volumetric Capacity (million gallons)</u>
Lagoon 1	51,000	1.05
Lagoon 2	51,000	1.30
Lagoon 3	87,000	1.85

13. The lagoons are lined with 10 inches of soil cement on the 3:1 interior side slopes. The estimated percolation rate is 3.9 inches per day.

Proposed Changes in the Discharge

14. The Dischargers plan to modify the WTP and construct another WTP at the site in phases over the next three years as follows:
- a. Randall Bold WTP Sedimentation Basin Project;
 - b. Randall Bold WTP Solids Lagoon Project; and
 - c. New Brentwood WTP Project.

The proposed new waste lagoons associated with these projects are depicted on Attachment B.

15. The Randall Bold WTP Sedimentation Basin Project will involve construction of two new flocculation and sedimentation basins and conversion of the existing WTP from direct filtration to conventional settling before filtration. This will allow the WTP to produce up to 40 mgd of treated water.
16. The Randall Bold WTP Solids Lagoon Project involves construction of two new lined sedimentation basins. Lagoons 4 and 5 will also be capable of serving as backwash lagoons if necessary. Three additional solids lagoons are planned, but will be constructed later. Like the existing lagoons, each lagoon will be excavated below grade to provide a six-foot total depth with a four-foot operating depth and a minimum of two feet of freeboard. The lagoons will be lined with a minimum of six inches of soil

cement on the sides and a minimum of 10 inches of soil cement on the bottom. The lagoons will have 3:1 interior side slopes and will be equipped with a 1,500 gpm decant pump to control water levels. Design data for Lagoons 4 and 5 are summarized below.

<u>Lagoon ID</u>	<u>Surface Area (sq. ft.)</u>	<u>Volumetric Capacity (million gallons)</u>
Lagoon 4	60,000	1.7
Lagoon 5	40,000	1.06

Dried solids from these lagoons will also be disposed of at the ISD reclamation site.

17. Filter backwash from the Randall Bold WTP will continue to be discharged to Lagoons 1, 2, and 3. Lagoons 4 and 5 will receive both filter backwash and sedimentation basin solids as needed.
18. A new Brentwood WTP is under design, and will be operated by the Contra Costa Water District (CCWD) to serve the City of Brentwood. The new WTP will be constructed next to the Randal Bold WTP and will employ the same treatment technologies as the upgraded Randall Bold WTP. Initially, it will treat up to 12 mgd. CCWD will then add an additional foot of Granular Activated Carbon and re-rate the plant for 15 mgd and it may ultimately be expanded to treat 30 mgd, depending on demand.
19. The Brentwood WTP will eventually include up to six new filter backwash lagoons for settling/decanting and evapoconcentration. Decant water will be returned to the head of the Brentwood WTP. The solids stream from the Brentwood WTP will initially be discharged to Lagoons 4 and 5. As demand grows, the Brentwood WTP will utilize the additional solids lagoons described above.
20. Because the raw water supply for the Brentwood WTP is the same as that for the Randall Bold WTP, the chemical character of the solids and lagoon decant water are expected to be similar.
21. The RWD included a water balance that demonstrates adequate waste storage and disposal capacity during the 100-year, 365-day precipitation event. Excess water in the lagoons can be recycled through the WTPs as needed to maintain sufficient freeboard to prevent spills.
22. The Dischargers are considering lining all lagoons (existing, new, and future lagoons).

Site-Specific Conditions

23. The site is along the northeastern flank of the Mt. Diablo foothills at an elevation of approximately 90 feet above mean sea level (MSL). Site drainage is generally eastward towards Marsh Creek, which drains to Big Break.
24. Based on a soil boring log included in the RWD, surface soils at the site consist primarily of sands and silty sands to a depth of approximately 15 feet below ground surface (bgs). The sands are underlain by interbedded layers of clay and silt mixtures with varying amounts of sand to a depth of 50 feet or more. Cone penetrometer tests conducted at the site in November 2005 indicated similar stratigraphy to that described in the earlier soil boring to a depth of approximately 90 feet.
25. The site is not within the 100-year floodplain.
26. The average annual precipitation in the vicinity of the facility is approximately 13 inches and the 100-year total annual precipitation is 29 inches.
27. The reference evapotranspiration rate (ET₀) for the area is approximately 56 inches per year.

Groundwater Considerations

28. Three samples of groundwater were obtained from a cone penetrometer exploration conducted in November 2005 (see Attachment B for the locations). Analytical data from upgradient and downgradient samples indicate that the existing lagoons may have an influence on underlying groundwater.

Constituent/ Parameter	Units	CPT-3 upgradient	CPT-3R ² upgradient	CPT-4 downgradient	waste- water
pH	Std.	7.8	--	8.54	7.5
Hardness	mg/L	990	1,100	120	85
Alkalinity as CaCO ₃	mg/L	240	--	131	45
TDS	mg/L	2,070	--	282	220
Total chloramines	mg/L	<0.04	--	<0.04	--
Total trihalomethanes	ug/L	<0.5	--	<0.5	--
Chloride	mg/L	350	--	61	45
Copper	ug/L	--	0.55	0.55	5
Fluoride	mg/L	0.28	--	0.65	0.20

Constituent/ Parameter	Units	CPT-3 upgradient	CPT-3R ² upgradient	CPT-4 downgradient	waste- water
Sulfate	mg/L	930	--	72	69
Arsenic	ug/L	--	0.69	4.6	2.0
Boron	ug/L	--	590	170	0.20
Cadmium	ug/L	--	<0.25	<0.25	1.0
Calcium	mg/L	--	260	34	18
Chromium	ug/L	--	0.61	1.9	10
Iron	ug/L	--	<20	<20	50
Lead	ug/L	--	<0.5	<0.5	5
Magnesium	mg/L	--	96	9.4	9.2
Manganese	ug/L	--	320	<20	120
Mercury	ug/L	--	0.068	0.055	0.4
Nickel	ug/L	--	9.6	0.74	10
Potassium	mg/L	--	7.3	4.5	2.0
Silver	ug/L	--	<0.19	<0.19	10
Sodium	mg/L	--	170	59	39
Zinc	ug/L	--	<5	<5	50

¹ Based on topography.

² This sample location was co-located with CPT-3 after initial sampling to obtain a new sample for metals analysis.

Although these data are very limited, the cone penetrometer exploration analytical results indicate that shallow groundwater upgradient of the facility is significantly more saline than the settled solids and filter backwash water discharged to the lagoons. Concentrations of hardness, alkalinity, TDS, chloride, nitrate, sulfate, boron, calcium, magnesium, manganese, potassium and sodium in upgradient groundwater appear to be much higher than the corresponding concentrations in the waste discharged to the lagoons. However, concentrations of dissolved arsenic, cadmium, chromium, copper, iron, lead, mercury, silver, and zinc in the waste appear to exceed upgradient groundwater quality, indicating that the discharge poses some threat to groundwater quality from these constituents.

The data also indicate that downgradient groundwater quality is generally much less saline than upgradient groundwater quality. The existing lagoons have lined soil cement sidewalls and native soil bottoms that allow percolation, so it is not clear whether the decrease in downgradient salinity constituents is due to dilution from

lagoon leakage. Downgradient groundwater concentrations of arsenic and chromium exceed upgradient concentrations, indicating potential degradation from the existing lagoons. As stated above, the data are not sufficient to determine whether degradation has occurred, but they indicate that there is a potential for groundwater degradation. Therefore, it is appropriate for this Order to establish interim Groundwater Limitations and require groundwater monitoring and determination of background groundwater quality to determine final Groundwater Limitations.

Basin Plan, Beneficial Uses, and Regulatory Considerations

29. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Board. Pursuant to Section 13263(a) of the California Water Code, waste discharge requirements must implement the Basin Plan.
30. Surface water drainage is to Marsh Creek, which is tributary to Big Break in the Sacramento San Joaquin Delta. The beneficial uses of the Sacramento San Joaquin Delta are municipal and domestic supply; agricultural supply; industrial supply, water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; warm and cold water migration of aquatic organisms; warm water spawning reproduction and/or early development; wildlife habitat; and navigation.
31. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.
32. The Basin Plan establishes numerical and narrative water quality objectives for surface water and groundwater within the basin. Numerical water quality objectives are maximum limits directly applicable to the protection of designated beneficial uses of the water. The Basin Plan requires that the Regional Water Board, on a case-by-case basis, follow specified procedures to determine maximum numerical limitations that apply the narrative objectives when it adopts waste discharge requirements.
33. The Basin Plan includes a water quality objective for Chemical Constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the maximum contaminant levels (MCLs) specified in the following provisions of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) of Section 64449, and 64449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that that the Regional Water

Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.

34. The Basin Plan contains narrative water quality objectives for Chemical Constituents, Tastes and Odors, and Toxicity. The Toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. The Chemical Constituents objective requires that groundwater “shall not contain chemical constituents in concentrations that adversely affect beneficial uses”. The Tastes and Odors objective requires that groundwater “shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses”. Chapter IV, Implementation, of the Basin Plan contains the “Policy for Application of Water Quality Objectives”. This Policy specifies, in part, that compliance with narrative water quality objectives may be evaluated considering numerical criteria and guidelines developed and/or published by other agencies and organizations.
35. CWC Section 13241 requires the Regional Water Board to consider various factors, including economic considerations, when adopting water quality objectives into its Basin Plan. CWC Section 13263 requires the Regional Water Board to address the factors in Section 13241 in adopting waste discharge requirements. The State Water Resources Control Board (State Water Board), however, has held that a Regional Water Board need not specifically address the Section 13241 factors when implementing existing water quality objectives in waste discharge requirements because the factors were already considered in adopting water quality objectives. The interim groundwater limitations implement adopted water quality objectives in the manner prescribed by the Basin Plan. No additional analysis of Section 13241 factors is required.

Groundwater Degradation

36. State Water Board Resolution No. 68-16 (“Policy with Respect to Maintaining High Quality Waters of the State”) (hereafter Resolution 68-16) requires a Regional Water Board in regulating the discharge of waste to maintain high quality waters of the state (i.e., background water quality) until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than as described in plans and policies. The discharge is required to meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and highest water quality consistent with maximum benefit to the people will be maintained.
37. Some degradation of groundwater beneath the solids and backwash water lagoons is consistent with Resolution 68-16 provided that degradation:

- a. Is confined to a reasonable area;
- b. Is minimized by means of full implementation, regular maintenance, and optimal operation of best practicable treatment and control (BPTC) measures;
- c. Is limited to waste constituents typically encountered in water treatment solids and filter backwash water; and
- d. Does not result in water quality less than that prescribed in the applicable basin plan.

Antidegradation Analysis

38. Some degradation of groundwater by some of the typical waste constituents released with discharge from a water treatment plant after effective source control, treatment, and control is consistent with maximum benefit to the people of California. The technology, energy, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous domestic water wells, and the impact on the water resource will be substantially less. Degradation of groundwater by constituents (e.g., toxic chemicals) other than those specified in the groundwater limitations in this Order, and by constituents that can be effectively removed by conventional treatment (e.g., total coliform bacteria) is prohibited. When allowed, the degree of degradation permitted depends upon many factors (i.e., background water quality, the waste constituent, the beneficial uses and most stringent water quality objective, source control measures, and waste constituent treatability).
39. Economic prosperity of local communities is of maximum benefit to the people of California, and therefore sufficient reason exists to accommodate growth and groundwater degradation around the WTPs, provided that the terms of the Basin Plan are met.

Treatment and Control Practices

40. The WTPs provides treatment and control of the discharge that incorporates:
 - a. Technology for treatment to drinking water standards; and
 - b. Waste containment ponds with soil cement sidewalls and native soil bottoms.
41. This Order establishes interim groundwater limitations for the WTP site that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. This Order contains tasks for assuring that BPTC and the highest water quality consistent with the maximum benefit to the people of the State will be achieved. Accordingly, the discharge is consistent with the antidegradation provisions of Resolution No. 68-16. Based on the results of the scheduled tasks, the Regional

Water Board may reopen this Order to reconsider groundwater limitations and other requirements to comply with Resolution No. 68-16.

Other

42. The State Water Resources Control Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The RWD did not specify whether storm water is discharged from the industrial portion of the facility. Therefore, it appropriate for this Order to require that the Dischargers either obtain coverage under General Permit No. CAS000001 or submit a Notice of Non-Applicability to demonstrate that the General Permit is not applicable to the facilities.
43. Section 13267(b) of the California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."
44. The technical reports required by this Order and the attached Monitoring and Reporting Program No. ___ are necessary to assure compliance with these waste discharge requirements. The Dischargers operate the facilities that discharge the waste subject to this Order.
45. The California Department of Water Resources set standards for the construction and destruction of groundwater wells, as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to CWC section 13801, apply to all monitoring wells.
46. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27. While the WTPs exempt from Title 27, the data analysis methods of Title 27 may be appropriate for determining whether the discharge complies with the terms for

protection of groundwater specified in this Order.

47. The action to adopt waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality (CEQA), in accordance with Title 14 CCR, Section 15301.
48. On 21 April 2004, Contra Costa Water District, as lead agency, determined that the action to modify the Randall Bold WTP is exempt from CEQA. Based on the information presented above, the expansion project, when conducted in compliance with this Order, should not cause adverse environmental impacts.
49. On 14 June 2005, the City of Brentwood adopted the Final Environmental Impact Report for the City of Brentwood Surface Water Treatment Facility, Phase II Project. Potential for localized sediment or pollutant release during construction was mitigated to less than significant by implementation of Best Management Practices to control discharge of construction-related pollutants to surface waters and spill prevention and control programs. The Regional Water Board concurs with the City's findings.
50. The discharge authorized herein and the treatment and storage facilities associated with the discharge are exempt from the requirements of Title 27, California Code of Regulations (CCR), Section 20005 et seq. (hereafter Title 27). The exemption, pursuant to Section 20090(b) of Title 27, is based on the following:
 - a. The Board is issuing waste discharge requirements;
 - b. The discharge complies with the Basin Plan; and
 - c. The waste does not need to be managed according to Title 22, CCR, Division 4.5, and Chapter 11, as a hazardous waste.
51. Pursuant to California Water Code Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Public Notice

52. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
53. The Dischargers and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
54. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that, pursuant to Sections 13263 and 13267 of the California Water Code, the Contra Costa Water Authority and Contra Costa Water District, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]

A. Discharge Prohibitions:

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as hazardous, as defined in Sections 2521(a) of Title 23, CCR, Division 3, Chapter 15, Section 2510, et seq., (hereafter Chapter 15), or 'designated', as defined in Section 13173 of the California Water Code, is prohibited.
3. Discharges of waste to locations other than the lagoon system described in Finding Nos. 7, 9, and 14 through 19, inclusive, are prohibited.

B. Discharge Specifications:

1. The Dischargers shall construct new filter backwash and sedimentation lagoons commensurate with treatment capacity expansion and as needed to ensure adequate capacity to comply with all requirements of this Order.
2. Discharges to the lagoons shall be limited to waste generation associated with the following water treatment capacities:

Randall Bold Water Treatment Plant	40 mgd
Brentwood Water Treatment	30 mgd
3. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.
4. Neither the treatment nor the discharge shall cause a nuisance or condition of pollution as defined by the California Water Code, Section 13050.
5. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the water treatment plant site boundaries.

6. The Dischargers shall operate all systems and equipment to maximize treatment of raw water and optimize the quality of the discharge.
7. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
8. The facility shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow and design seasonal precipitation during the winter months. 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.
9. Freeboard in any waste lagoon shall never be less than two feet as measured from the water surface to the lowest point of overflow.
10. On or about **15 October** of each year, available lagoon storage capacity shall at least equal the volume necessary to comply with Discharge Specifications B.8 and B.9.

C. Solids Disposal Requirements:

1. Collected screenings, sludge, and other solids generated at the facility shall be disposed of at the Ironhouse Sanitary District and/or disposed of off-site, in compliance with the *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. when approved by the Executive Officer.
2. Any proposed change in solids use or disposal practice shall be reported to the Executive Officer at least 90 days in advance of the change.

D. Groundwater Limitations:

1. Release of waste constituents from any wastewater treatment or storage system component associated with the WTPs shall not cause groundwater under and beyond that system component, as determined by an approved well monitoring network, to:
 - a. Contain any of the following constituents in concentrations greater than those listed below or greater than ambient background groundwater quality, whichever is greater:

<u>Constituent</u>	<u>Units</u>	<u>Limitation</u>
Arsenic	ug/L	0.004

Constituent	Units	Limitation
Cadmium	ug/L	0.07
Chloride	mg/L	106
Chromium	ug/L	50
Copper	ug/L	170
Iron	ug/L	300
Lead	ug/L	2
Manganese	ug/L	0.5
Mercury	ug/L	1.2
Nickel	ug/L	12
Silver	ug/L	85
Sodium	mg/L	69
Zinc	mg/L	2
Total trihalomethanes	ug/L	80
Bromoform	ug/L	4
Bromodichloromethane	ug/L	0.27
Chloroform	ug/L	1.1
Dibromochloromethane	ug/L	0.37
Total Coliform Organisms	MPN/100 mL	≤2.2
Total Dissolved Solids ¹	mg/L	450

¹ A cumulative impact limit that accounts for several dissolved constituents in addition to those listed here separately [e.g., alkalinity (carbonate and bicarbonate), calcium, hardness, phosphate, and potassium].

- b. Exhibit a pH of less than 6.5 or greater than 8.4 pH units.
- c. Impart taste, odor, toxicity, or color that creates a nuisance or impairs any beneficial use.

E. Provisions:

1. The Dischargers shall submit reports for groundwater monitoring as described below. The reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared as described in Provision E.3:
 - a. By **1 May 2008**, the Dischargers shall submit a *Monitoring Well Installation Workplan*. The workplan shall describe the proposed installation of groundwater monitoring wells sufficient to characterize groundwater gradient and

groundwater quality upgradient and down gradient of all lagoons. The workplan may propose a phased installation plan such that the first phase includes at least three monitoring wells to characterize groundwater upgradient and downgradient of the existing lagoons, and subsequent phases include additional downgradient wells to be constructed shortly after completion of new lagoons. Monitoring wells shall be constructed to yield representative samples from the uppermost layer of the uppermost aquifer and to comply with applicable well standards. The workplan shall be consistent with, and include the items listed in, the first section of Attachment D, which is attached hereto and made part of this Order by reference.

- b. By **1 May 2009**, the Dischargers shall submit a *Monitoring Well Installation Report* that describes the installation of groundwater monitoring wells and contains the items found in the second section of Attachment D.
 - c. By **1 July 2011**, the Dischargers shall submit a *Background Groundwater Quality Study Report*. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of all monitoring data and calculation of the concentration in background monitoring well(s). Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least 8 consecutive quarterly (or more frequent) groundwater monitoring events.
2. If the groundwater monitoring results show that the discharge of waste is threatening to cause or has caused groundwater to contain waste constituents in concentrations statistically greater than background water quality, then within 120 days of the request of the Executive Officer, the Dischargers shall submit a *BPTC Evaluation Workplan* that sets forth a scope and schedule for a systematic and comprehensive technical evaluation of each component of the facilities' waste management system to determine best practicable treatment and control for each waste constituent listed in the Groundwater Limitations of this Order. The workplan shall include a preliminary evaluation of each component of the waste management system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable, and shall not exceed one year.
 3. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geological sciences, shall be prepared by, or under the direction of, persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

4. The Dischargers shall comply with Monitoring and Reporting Program No. ____, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.
5. The Dischargers shall use the best practicable treatment and control, including proper operation and maintenance, to comply with this order.
6. The Dischargers shall report to the Regional Water Board any toxic chemical release data reported to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to Section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
7. The Dischargers shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
8. At least 90 days prior to termination or expiration of any lease, contract, or agreement involving the land application areas used to justify the capacity authorized herein and assure compliance with this Order, the Dischargers shall notify the Regional Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
9. The Dischargers shall submit to the Regional Water Board on or before each compliance report due date the specified document, or if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is reported, then the Dischargers shall state the reasons for noncompliance and shall provide a schedule to come into compliance.
10. The Dischargers shall report promptly to the Regional Water Board any material change or proposed change in the character, location, or volume of the discharge.
11. In the event of any change in control or ownership of the facility or land application areas, the Dischargers must 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 as Discharger 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, the name and address and telephone number of the persons responsible for contact with the Regional Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 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 by the Executive Officer.

12. The Dischargers shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
13. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel at each land application property shall be familiar with its contents.
14. The Regional Water Board will review this Order periodically and may revise requirements when necessary.

I, PAMELA C. CREEDON, 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 _____.

PAMELA C. CREEDON, Executive Officer