California Regional Water Quality Control Board
Santa Ana Region

April 15, 2005

STAFF REPORT

ITEM: **10**

SUBJECT: Water Recycling Requirements, Order No. R8-2005-0033 for the Phase I Chino Basin Recycled Water Groundwater Recharge Project – Inland Empire Utilities Agency and Chino Basin Watermaster

DESCRIPTION:

This Order prescribes requirements for the use of recycled water from Inland Empire Utilities Agency's (IEUA) Regional Water Recycling Plants No. 1 and 4, including the use of recycled water for groundwater recharge via spreading in seven recharge basins within the Chino Groundwater Basin (Chino North Management Zone). This Order thereby authorizes implementation of the Phase I Chino Basin Recycled Water Groundwater Recharge Project (Phase I Recharge Project), which is a part of the Chino Basin Recycled Water Groundwater Recharge Program. In turn, this Groundwater Recharge Program is part of the Optimum Basin Management Program (OBMP) developed by the Chino Basin Watermaster.

A. SUMMARY

The Phase I Recharge Project, and the Groundwater Recharge Program as a whole, are parts of a comprehensive water supply enhancement program jointly sponsored by the Inland Empire Utilities Agency (IEUA), Chino Basin Watermaster (CBWM), Chino Basin Water Conservation District, and the San Bernardino County Flood Control District. The intent of the water supply enhancement program is to improve the quality of local drinking water wells, enhance water supply reliability, and lower the cost of water to residents throughout the Chino Groundwater Basin. IEUA is the lead agency for implementing the Phase I Recharge Project, since IEUA facilities will produce the recycled water to be used for recharge. However, implementation of this project in conformance with the recently amended Basin Plan requires that the Chino Basin Watermaster fulfill certain requirements and projects, which are described in Section F, "Regulatory Basis for Water Recycling Requirements", below. Furthermore, CBWM is a user of recycled water since recycled water recharge is an integral component of the Groundwater Recharge Program and OBMP. Accordingly, these water-recycling requirements are being issued jointly to IEUA and the Watermaster (hereinafter, users).

The Chino Basin Recycled Water Groundwater Recharge Program will be implemented in phases to reduce dependence on imported water that may not be available in the future and thereby provide a local, drought-proof supply of new water. Ultimately, when fully developed, the Program will replenish the Chino Basin with a blend of about 22,000 acre-feet per year (afy) of recycled water, 22,000 afy of stormwater, and 120,000 afy of imported water.

The Phase I Recharge Project consists of three major components: (1) wastewater treatment and water recycling facilities; (2) recharge basins; and (3) a conveyance system to deliver the various water supplies from their sources to the recharge basins. The initial project will provide approximately 8,000 afy of recycled water, about 8,000 afy of stormwater, and about 28,000 afy of imported water for a total blend of about 44,000 afy to replenish the Chino Basin. The goal during Phase I is to achieve a recycled water recharge of 20 percent of the total recharge capacity of the basins, based on a running 60-month average.

IEUA owns and operates a regional wastewater collection system and water reclamation plants, including Regional Water Recycling Plant No. 1 (RP-1), Regional Water Recycling Plant No. 4 (RP-4), Regional Water Recycling Plant No. 5 (RP-5), and Carbon Canyon Water Reclamation Facility (CCWRF). RP-1 and RP-4 tertiary treated wastewater will be used in the Phase I Recharge Project. RP-1 has a tertiary treatment capacity of 44 million gallons per day (mgd) and is located near the intersection of Highway 60 and Archibald Avenue in Ontario. RP-4 has a tertiary treatment capacity of 7 mgd and is located near the intersection of Sixth Street and Etiwanda Avenue in Rancho Cucamonga. Average discharge flows from RP-1 and RP-4 are about 38.2 and 4.6 mgd, respectively. The effluent flows from both plants are currently discharged to Cucamonga Creek, a tributary of Santa Ana River, and are regulated under Order No. 01-1 and NPDES No. CA0105279.

Recycled water from RP-1 and RP-4 will be delivered via IEUA's existing Regional Recycled Water Distribution System pump stations and pipelines to seven recharge basins, identified as the Banana Basin, Declez Basin, Etiwanda Conservation Ponds, Hickory Basin, RP-3 Basins, Turner Basin Nos. 1 and No. 2, and Turner Basin Nos. 3, and 4; and to the Jurupa Basin, which will be used as storage basin because it has essentially no percolation. All basins are existing basins. The total effective recharge area of these seven spreading facilities is nearly 138 acres (see Attachment "A" of this Staff Report for locations of recharge basins).

The Chino Basin Watermaster (CBWM) was established under a judgment from the San Bernardino County Superior Court. The Judgment required that the Chino Groundwater Basin be adjudicated and operated in accordance with the provisions of the Judgment and under the direction of a court-appointed watermaster. The Judgment mandated CBWM to develop an Optimum Basin Management Plan (OBMP). As part of the development of the OBMP, the Chino Basin Peace Agreement (Agreement) among all affected stakeholders in the Basin was finalized in 2000. Following the Agreement, the CBWM developed the Chino Basin Recharge Master Plan to identify and prioritize opportunities for groundwater recharge with the basin. IEUA completed a Recycled Water Feasibility Study in 2002 to integrate its recycled water program into the CBWM's goals and objectives for the OBMP and the Chino Basin Recharge Master Plan. The "Program Environmental Impact Report for the Wastewater Facilities Master Plan, Recycled Water Master Plan and Organics Management Master Plan" was certified and approved by the IEUA Board of Directors on June 28, 2002.

In conformance with State regulations pertaining to the use of recycled water, IEUA submitted to the California Department of Health Services (CDHS) a Title 22 Engineering Report for the Phase I Chino Basin Recycled Water Groundwater Recharge Project in November 2003. On July 28, 2004, IEUA submitted a Report of Waste Discharge (ROWD) to the Regional Board for the use of recycled water from RP-1 and RP-4 to implement the Phase I Recharge Project.

The CDHS conducted multiple meetings and discussions with IEUA concerning this proposed groundwater recharge/reuse project. On December 4, 2003, CDHS held a public hearing in Rancho Cucamonga, California, to consider the Phase I Recharge Project, as required by the California Code of Regulations Title 22 Water Recycling Criteria. During the Public Hearing held by DHS and since that time, no letters opposed to the project have been received by DHS, the RWQCB, IEUA, or Watermaster. A Summary of Public Hearing prepared by the CDHS is included in this Order as Attachment A. This summary includes CDHS' "Findings of Fact" and "Conditions" for the proposed project.

CDHS found that the proposed project complies with Section 60320 of Article 5.1, entitled "Groundwater Recharge" of the California Code of Regulations, Title 22, Division 4, Chapter 3, entitled "Water Recycling Criteria". CDHS found that the proposed operation of the Phase I Recharge Project will not degrade the quality of the receiving water aquifers as a source of domestic water supply, provided that IEUA meets all of the Conditions stipulated in Attachment A. These conditions include specific requirements pertaining to the quality of the recycled water to be used for recharge and the implementation of a comprehensive monitoring program by IEUA to ensure that these requirements are satisfied. The conditions also include requirements for groundwater monitoring prior to and after project start-up to assess any effects of recycled water recharge, and for the development and periodic update of an operations, maintenance and monitoring plan.

On July 28, 2004, CDHS sent a letter with the "Findings of Fact" and "Conditions" to the Regional Board. On November 24, 2004, CDHS provided the Regional Board a letter amending and clarifying its Findings of Fact Condition No. 8. The CDHS recommended that the Regional Board incorporate all of the "Findings of Fact" and "Conditions" into the water recycling requirements to be issued for the proposed Phase I Recharge Project. These "Findings of Fact" and "Conditions" are shown in Attachment A to the Order. On March 3, 2005, a meeting among IEUA, CDHS and Regional Board staff was held to consider changes to the "Findings of Fact" and "Conditions". Per the CDHS recommendation, this Order incorporates requirements that implement the Findings of Fact and Conditions, as revised on March 3, 2005. To the extent of any conflict between this Order and the CDHS' Conditions, the requirements of this Order shall govern.

B. DESCRIPTION OF IEUA RECYCLED WATER TREATMENT SYSTEM

CDHS' Conditions include specific requirements for the quality of the recycled water to be used for groundwater recharge, including requirements for turbidity and total coliform bacteria that reflect treatment system operations and performance, total nitrogen and total organic carbon (See Attachment A of the Order, Conditions #1, 2, 5, 6, 8, 9, 10). These conditions are reflected in the requirements of this Order. To assure that the recycled water to be used for recharge satisfies the CDHS Conditions and the requirements of this Order, IEUA is implementing the following measures and processes.

Source Control: IEUA maintains a comprehensive industrial pretreatment and source control program approved by the Regional Board for control of waste discharge from point sources into the wastewater collection system. IEUA owns and operates a non-reclaimable wastewater

(NRW) collection and conveyance system that provides disposal for industrial wastewater and brines. The northern NRW system discharges these wastes to the County Sanitation District of Los Angeles County for treatment and disposal. The southern NRW system discharges industrial wastewater and brines to the Orange County Sanitation District for treatment and disposal. The industrial pretreatment program and NRW system provide source control and salinity management for the IEUA water reclamation facilities. CDHS found that the scope and purpose of this IEUA source control program need to be expanded to include not only contaminants that may be detrimental to the facilities, but also to include contaminants specified by the CDHS that may be harmful to human health and drinking water supplies. IEUA proposes to review its current source control program to mitigate future impacts on the groundwater recharge program. The program review will determine whether additional constituents should be included in the industry permitting process and if additional pretreatment requirements are necessary, particularly for industries that discharge wastewater to the RP-1 and RP-4 collection systems. Through a comprehensive monitoring program implemented by IEUA, IEUA will ensure that the recycled water produced at RP-1 and RP-4 for recharge into the Chino Basin is not contaminated with toxic chemicals of industrial origin that are of concern to CDHS and the Regional Board in drinking water sources. IEUA also plans to maximize use of the NRW system to dispose of industrial wastewater and brines.

The IEUA's RP-1 and RP-4 wastewater treatment processes currently consist of the following:

Primary Treatment:

RP-1: Barscreens, Grit removal and sedimentation. At times, a portion of the primary effluent is diverted to flow equalization basins to dampen the diurnal flow peaks on the downstream processes.

RP-4: Barscreens and Grit removal

Secondary Treatment: IEUA's RP-1 and RP-4 utilize anoxic/oxic secondary treatment processes that remove nitrogen as well as organics and suspended solids, consequently producing an oxidized and clarified secondary effluent.

RP-1: Anoxic and oxic bioreactors and secondary clarifiers.

RP-4: Anoxic and oxic bioreactors and secondary clarifiers.

Tertiary Treatment: Secondary effluent from RP-1 and RP-4 receives tertiary treatment in compliance with the CDHS' "Water Recycling Criteria" for disinfected tertiary recycled water.

RP-1: Coagulation followed by filtration and disinfection. Coagulation with alum and polymer addition is used intermittently as needed to enhance biological flocculation based on influent turbidity to the filters. Following dual-media (sand and anthracite) filtration, tertiary effluent is disinfected using sodium hypochlorite. A portion of the disinfected tertiary effluent is pumped for irrigation uses. The remainder is dechlorinated using sodium bisulfite and discharged to Cucamonga Creek or delivered to reuse sites, such as Prado Lake and Prado Park Lake.

RP-4: Alum and polymer addition for in-line coagulation and direct sand filtration. Filtered effluent is disinfected using ultraviolet light and adding sodium hypochlorite. By 2005, the ultraviolet disinfection system will be removed and replaced with a conventional sodium hypochlorite disinfection system with a contact tank. A portion of the disinfected tertiary effluent is stored in on-site ponds and pumped to reuse customers. The balance of the flow is discharged to the RP-4 outfall, which transports the final effluent to the RP-1 site where it is combined with RP-1 effluent and discharged to Cucamonga Creek.

Redundant Treatment Systems: Both RP-1 and RP-4 have redundant treatment systems, standby equipment, power failure safeguards, and contingency plans to maintain process reliability and recycled water quality in accordance with the Water Recycling Criteria (WRC). To ensure that RP-1 and RP-4 produce recycled water that meets all requirements and performance criteria specified in this Order, IEUA has developed operating and contingency plans that define proper operation and cover critical parameters of the treatment processes. These plans will be updated periodically to take into account the experiences learned from the prior years of operation.

C. GROUNDWATER RECHARGE

The Chino Groundwater Basin is a structural depression that has been filled with more than 2,000 feet of sediment derived from the San Gabriel and San Bernardino mountains. The Chino Basin encompasses approximately 235 square miles in San Bernardino, Riverside, and Los Angeles Counties. The unconsolidated sediments consist of alluvial deposits designated as the Older and Younger Alluvium. The Older Alluvium consists of floodplain, fluvial, and alluvial fan deposits, with a thickness in excess of 1,000 feet in the center of the basin. The Older Alluvium is the primary aquifer. The Younger Alluvium consists of dune sands and stream-deposited material, with a thickness up to 200 feet. The Younger Alluvium unconformably overlies the Older Alluvium and occurs above the regional water table over most of the basin. In general, the Younger Alluvium is more permeable than the Older Alluvium, such that percolation of precipitation and applied water is higher in areas underlain by Younger Alluvium. The long-term safe yield of the Chino Basin has been determined to be 140,000 afy by the 1978 Chino Basin Judgment, using 1965 to 1974 as a base period. More recent analyses estimate the Basin's safe yield at 156,000 to 162,000 afy.

Recycled water from RP-1 is currently used to recharge the Chino Basin via Ely Basin No. 3 at a rate of approximately 500 afy. IEUA plans to increase the volume of recycled water recharged at this facility up to 2,300 afy, consistent with its approved Title 22 Engineering Report dated April 1997. The existing recycled water groundwater recharge operation at Ely Basin No. 3 is on- going and outside the scope of the Phase I Recharge Project. This Basin is expected to be added to the Chino Basin Recycled Water Groundwater Recharge Program in a future phase.

As described above, the Phase I Recharge Project will entail recharge via spreading in seven basins. The maximum average recycled water contribution (RWC) at each basin, based on a 60-month running average, will be limited to 20 percent, unless a revised percentage is approved in advance by CDHS and the Regional Board. Diluents will be stormwater and imported State

Project Water from Northern California that is purchased from Metropolitan Water District of Southern California. Stormwater will be local captured runoff originating from the watersheds along the southern extent of the San Gabriel Mountains and from the developed and undeveloped areas below the mountains.

At each recharge basin, a START-UP PERIOD not to exceed 180 days will be used at the outset of recycled water recharge operations. The purposes of each START-UP PERIOD are to establish site characteristics, including percolation rates, the physical characteristics of the vadose zone and soil aquifer treatment efficiency, and to establish a sampling regime, based on these characteristics, that is representative of recycled water following soil aquifer treatment. The length of the START-UP PERIOD at each basin will be contingent on site characteristics, including percolation rates and recycled water transit time in the subsurface. IEUA is required to submit for CDHS approval a proposed START-UP PERIOD protocol at least two weeks prior to beginning each START-UP PERIOD. A START–UP PERIOD report will be prepared at the close of each START-UP PERIOD and will include recommendations for the optimum depths and locations for placement of lysimeters that will be used to measure compliance, and for a compliance monitoring program. The report will also include recommendations for the maximum average RWC and Total Organic Carbon (TOC) limit for the initial year of recharge operations following the START-UP PERIOD. This Order requires that the TOC limit during the START-UP PERIOD not exceed 0.5 mg/L divided by the maximum average RWC. As stated above, the maximum average RWC is not to exceed 20 percent.

D. CDHS RECOMMENDED MINIMUM RETENTION TIMES AND HORIZONTAL DISTANCE SEPARATIONS FOR GROUNDWATER RECHARGE WITH RECYCLED WATER

To assure that any pathogenic microorganisms that may be present in the recycled water are effectively inactivated or removed in the subsurface, the CDHS found that new drinking water wells are to be constructed outside the area required to achieve 6 months of retention time and a minimum of 500 horizontal feet separation downgradient from the spreading operation at each of the recharge basins (See Attachment A to the Order, Findings of Fact # 14 and Conditions #15, 16 and 17. CDHS found that the closest existing domestic supply wells downgradient from the Phase I recharge basins (listed on page 9 of Attachment A of the Order) satisfy these minimum retention and horizontal distance separation requirements (See Attachment A to the Order, Findings of Fact #13).

With the exception of the Turner No. 1 Basin, the estimated recycled water underground retention time from the recharge basins to the closest downgradient wells exceeds 1,000 days. For the Turner No. 1 Basin, the retention time prior to extracting water of recycled water origin is estimated at 563 days. IEUA proposes to conduct a groundwater tracer study using only imported water and stormwater to confirm the underground travel time calculations prior to recharging recycled water at Tuner Basin No. 1. IEUA may conduct other groundwater tracer studies at other recharge basins after recharge operations commence.

E. GROUNDWATER MONITORING WELLS

IEUA proposes to monitor water quality at 13 existing municipal production wells located downgradient from the recharge basins and at three existing municipal wells located upgradient from the recharge basins. Six new monitoring wells will be constructed near the recharge basins within approximately one to three months travel time along the groundwater flow paths toward the nearest domestic wells. Additional intermediate new monitoring wells and other existing industrial wells may be added to the monitoring well network as needed for travel time within one to three months along the groundwater flow paths.

F. REGULATORY BASIS FOR WATER RECYCLING REQUIREMENTS:

Section 60320 of Title 22, California Code of Regulations states: "Reclaimed water used for groundwater recharge of domestic water supply aquifers by surface spreading shall be at all times of a quality that fully protects public health." CDHS conducted the requisite hearing on December 4, 2003 and concluded that the recharge complies with Section 60320 and will not degrade the receiving aquifer as a source of domestic supply, provided that the Conditions identified by CDHS are met (See Attachment A of this Order). As described above, CDHS has recommended that any water recycling requirements issued by the Regional Board for the Phase I Recharge Project require compliance with these Conditions. This Order implements that recommendation.

Section 13523 of the California Water Code provides that each Regional Board, after consulting with and receiving recommendations from the CDHS and any interested party who has requested in writing to be consulted, and after any necessary hearing, shall prescribe water recycling requirements for water that is used or proposed to be used as reclaimed water, if in the judgment of the Board, it is necessary to protect the public health, safety, or welfare. These requirements may be placed upon the party reclaiming water, users, or both. IEUA is the producer of recycled water to be used in the Phase I Recharge Project. IEUA is thus both a producer and user of recycled water. Recycled water recharge is an integral part of the Groundwater Recharge Program and OBMP developed by CBWM. Implementation of the Phase I Recharge Project, and the OBMP as a whole, in conformance with the recently amended Basin Plan (see below) is contingent on fulfillment of commitments by CBWM. Given these circumstances, CBWM is also considered a user of recycled water for the purposes of this Order. In order to assure the protection of public health and the use of the groundwater as a source of domestic water supply, it is appropriate for the Regional Board to prescribe water-recycling requirements for IEUA and CBWM.

This Order includes requirements that implement the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan). The Basin Plan specifies water quality objectives and beneficial uses for the groundwater and surface waters of the Santa Ana Region and an implementation plan, including management strategies for nitrogen and Total Dissolved Solids (TDS). A revised Basin Plan was adopted by the Regional Board on March 11, 1994 and became effective on January 24, 1995. More recently, the Basin Plan was amended significantly to incorporate revised boundaries for groundwater subbasins, now termed "management zones", new nitrate-nitrogen and TDS objectives for the new management zones, and new nitrogen and TDS

management strategies applicable to both surface and ground waters. This Basin Plan Amendment, shown in the Attachment to Resolution No. R8-2004-0001, was adopted by the Regional Board on January 22, 2004. The State Water Resources Control Board and Office of Administrative Law (OAL) approved the Amendment on September 30, 2004 and December 23, 2004, respectively. The surface water components of the Amendment are awaiting EPA approval, but do not bear significantly on these proposed water-recycling requirements. The groundwater-related components of the Amendment became effective upon approval by OAL. Accordingly, these water-recycling requirements implement relevant, groundwater-related components of the Amendment.

The Amendment delineates two sets of groundwater management zone boundaries and nitrate-nitrogen and TDS groundwater objectives for specific areas within the Chino Basin. The development and approval of this dual set of management zones/water quality objectives was prompted by the proposal by IEUA and CBWM to recharge recycled water to assure a reliable, drought-proof water supply for users within the Chino Basin. Specifically, the Amendment includes the following. The Chino North Management Zone applies for regulatory purposes provided that IEUA and CBWM fulfill a specific program of projects and requirements identified in the Amendment (see table below). Implementation of this program in accordance with the schedule specified in the Amendment assures that beneficial uses of affected waters are protected and that water quality consistent with maximum benefit to the people of the State will be maintained. The Amendment specifies "maximum benefit" TDS and nitrate-nitrogen objectives that apply to the Chino North Management Zone. The Amendment also identifies the Chino 1, 2 and 3 Management Zones, which encompass the same total area as the Chino North Management Zone. More stringent TDS and nitrate-nitrogen objectives for these three management zones that are based on historical water quality are included in the Amendment. These are termed the "antidegradation" objectives. Provided that IEUA and CBWM fulfill their maximum benefit commitments, the "maximum benefit" TDS and nitrate-nitrogen objectives for the Chino North Management Zone apply for regulatory purposes. If these commitments are not fulfilled, then the "antidegradation" nitrate-nitrogen and TDS objectives for the Chino 1, 2 and 3 management zones apply for regulatory purposes.

This Order implements these Basin Plan provisions by specifying effluent limitations and other requirements that pertain to both the "maximum benefit" and "antidegradation" management zones/water quality objectives. Provided that the maximum benefit commitments shown in the table below are satisfied, then the requirements of the Order that address the Chino North Management Zone and the "maximum benefit" objectives apply. If the Regional Board finds that the maximum benefit commitments are not being met, then the requirements of the Order that address the Chino 1, 2 and 3 Management Zones and their respective "antidegradation" TDS and nitrate-nitrogen objectives apply. This Order requires IEUA and CBWM to mitigate any recharge that took place in excess of the limits based on the "antidegradation" objectives if the Regional Board makes the finding that maximum benefit is not demonstrated.

Each of the maximum benefit commitments listed in the table below is described in the Amendment, which is available for review at the Regional Board office or upon request to Regional Board staff.

Chino Basin Maximum Benefit Commitments

Description of Commitment	**Compliance Date – as soon as possible, but no later than**
1. Surface Water Monitoring Program	
a. Submit Draft Monitoring Program to Regional Board	a. January 23, 2005
b. Implement Monitoring Program	b. Within 30 days from date of Regional Board approval of monitoring plan
c. Quarterly data report submittal	c. April 15, July 15, October 15, January 15
d. Annual data report submittal	d. February 15th
2. Groundwater Monitoring Program	
a. Submit Draft Monitoring Program to Regional Board	a. January 23, 2005
b. Implement Monitoring Program	b. Within 30 days from date of Regional Board approval of monitoring plan
c. Annual data report submittal	c. February 15th
3. Chino Desalters	
a. Chino 1 desalter expansion to 10 MGD	a. Prior to recharge of recycled water
b. Chino 2 desalter at 10 MGD design	b. Recharge of recycled water allowed once award of contract and notice to proceed issued for construction of desalter treatment plant.
4. Future desalters plan and schedule submittal	October 1, 2005. Implement plan and schedule upon Regional Board approval
5. Recharge facilities (17) built and in operation	June 30, 2005
6. IEUA wastewater quality improvement plan and schedule submittal	60 days after agency-wide 12 month running average effluent TDS quality equals or exceeds 545 mg/L for 3 consecutive months or agency-wide 12 month running average TIN equals or exceeds 8 mg/L in any month. Implement plan and schedule upon approval by Regional Board

Chino Basin Maximum Benefit Commitments (cont.)

Description of Commitment	**Compliance Date – as soon as possible, but no later than**
7. Recycled water will be blended with other recharge sources so that the 5-year running average TDS and nitrate-nitrogen concentrations of water recharged are equal to or less than the "maximum benefit" water quality objectives for the Chino North Management Zone, i.e., 420 mg/L and 5 mg/L, respectively.	Compliance must be achieved by end of 5th year after initiation of recycled water recharge operations.
a. Submit a report that documents the location, amount of recharge, and TDS and nitrogen quality of stormwater recharge before the OBMP recharge improvements were constructed and what is projected to occur after the recharge improvements are completed	a. Prior to initiation of recycled water recharge
b. Submit documentation of amount, TDS and nitrogen quality of all sources of recharge and recharge locations. For stormwater recharge used for blending, submit documentation that the recharge is the result of CBWM/IEUA enhanced recharge facilities.	b. Annually, by February 15th, after initiation of construction of basins/other facilities to support enhanced stormwater recharge.
8. Hydraulic Control Failure	
a. Plan and schedule to correct loss of hydraulic control	a. 60 days from Regional Board finding that hydraulic control is not being maintained
b. Achievement and maintenance of hydraulic control	b. In accordance with plan and schedule approved by Regional Board. The schedule shall assure that hydraulic control is achieved as soon as possible but no later than 180 days after loss of hydraulic control is identified.
c. Mitigation plan for temporary failure to achieve/maintain hydraulic control	c. By January 23, 2005. Implement plan upon Regional Board determination that hydraulic control is not being maintained.
9. Ambient groundwater quality determination	July 1, 2005 and every 3 years thereafter

As reflected in the table (item 6) and described in the Amendment, IEUA has committed to the implementation of measures necessary to assure that the combined effluent quality from its treatment plants does not exceed 550 mg/L TDS and 8 mg/L total inorganic nitrogen on a 12-month, running average basis[1]. The recharge of this recycled water is contingent, in part, on blending with other recharge sources to assure that the 5-year running average TDS and nitrate-nitrogen concentrations of the water recharged are no greater than 420 mg/L TDS and 5 mg/L, respectively (item 7). These are the water quality objectives for the Chino North Management Zone. This Order implements that requirement. This is consistent with the condition identified by CDHS (see Attachment A of the Order, Condition #6) that the recycled water, or recycled water blended with other sources of recharge, must meet 5 mg/L total inorganic nitrogen prior to reaching the regional groundwater table. The Amendment also includes a 25% nitrogen loss coefficient that can be applied in calculating total inorganic nitrogen effluent limitations to account for nitrogen transformation and loss in the subsurface. The 25% nitrogen loss coefficient will be applied in this situation to calculate recycled water nitrogen quality when determining the amount of recharge of other water sources that must be achieved to meet the 5-year running averages. Compliance with the recycled water blending requirement (item 7) must be achieved no later than the end of the 5th year after the initiation of recycled water recharge operations.

IEUA/CBWM took steps prior to the approval of the Amendment by the State Board and OAL to address the maximum benefit commitments identified in the table above. Proposed monitoring plans for surface and groundwater (items 1 and 2, above) have been submitted to the Regional Board for approval and the monitoring programs are being implemented in advance of that approval Expansion of the Chino 1 desalter to 14 mgd is almost complete; the expanded facility is expected to fully operational in spring 2005 (item 3). The construction of the Chino 2 desalter at 10 mgd is 90 percent complete and the facility is expected to be fully operational in June 2005 (item 3). The construction of nineteen recharge facilities is almost complete and about half are fully operational. The remaining facilities are expected to be completed in the spring of 2005. Over 5, 000 acre-feet (AF) of "new" stormwater (stormwater that would not have been captured absent these recharge facilities) and 3,000 AF of State Project Water have been recharged. With grant funding from the California Department of Water Resources, the users are initiating the design of additional recharge improvements. With respect to hydraulic control, (item 8), the construction of nine hydraulic control monitoring wells is underway. Based on coordination with the Board staff and staff of the Orange County Water District, a monitoring plan designed, in part, to evaluate hydraulic control and a contingency plan for failure of hydraulic control have been developed. The monitoring plan is now being implemented. In summary, the users are currently fulfilling the maximum benefit commitments outlined in the preceding table in a satisfactory, timely manner.

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1 *Item 6 specifies a TDS trigger of 545 mg/l TDS, rather than 550 mg/l, for the submittal of the wastewater quality improvement plan. This 5 mg/l buffer is included based on recognition that steps to address TDS quality problems are likely to be complicated and time-consuming to implement. No such buffer is specified for the TIN trigger since operational changes can be more readily made to assure compliance with the 8 mg/l TIN limit.*

The recycled water spreading area overlies the Chino Groundwater Basin, including the Chino North Management Zone (or, if maximum benefit commitments are not being implemented, the Chino 1, 2 and 3 Management Zones). . The beneficial uses of the Chino North Management Zone (and thus Chino 1, 2 and 3) include municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

The limitations contained in the proposed Order are intended to protect these uses and maintain water quality in this Basin. Since domestic supply is a beneficial use, limitations are based on CDHS' primary and secondary drinking water standards, maximum contaminant levels (MCLs) in the Drinking Water Quality and Monitoring Requirements, California Code of Regulations (CCR), Title 22, Chapter 15, and Basin Plan objectives. The proposed limits on total organic carbon, total coliform, turbidity, notification levels for lead and copper, and other regulated and unregulated constituents are based on CDHS' recommendations stipulated in the "Conditions" included in the "Summary of Public Hearing" (Attachment A to this Order.). Finally, to implement CDHS Condition #24, this Order requires IEUA to have in place prior to initiation of recycled water recharge a resolution adopted by the IEUA Board that IEUA will be responsible for developing and implementing a plan for providing an alternative source of domestic supply, or a CDHS approved treatment mechanism, to any user whose domestic water well is found to violate California drinking water regulations as a direct result of the Phase I Recharge Project or when CDHS makes an analysis and finding that the domestic water well is unsuitable for human consumption as a direct result of the Phase I Recharge Project.

The requirements stipulated in the proposed Order should be adequate to protect the beneficial uses of the receiving waters of the area.

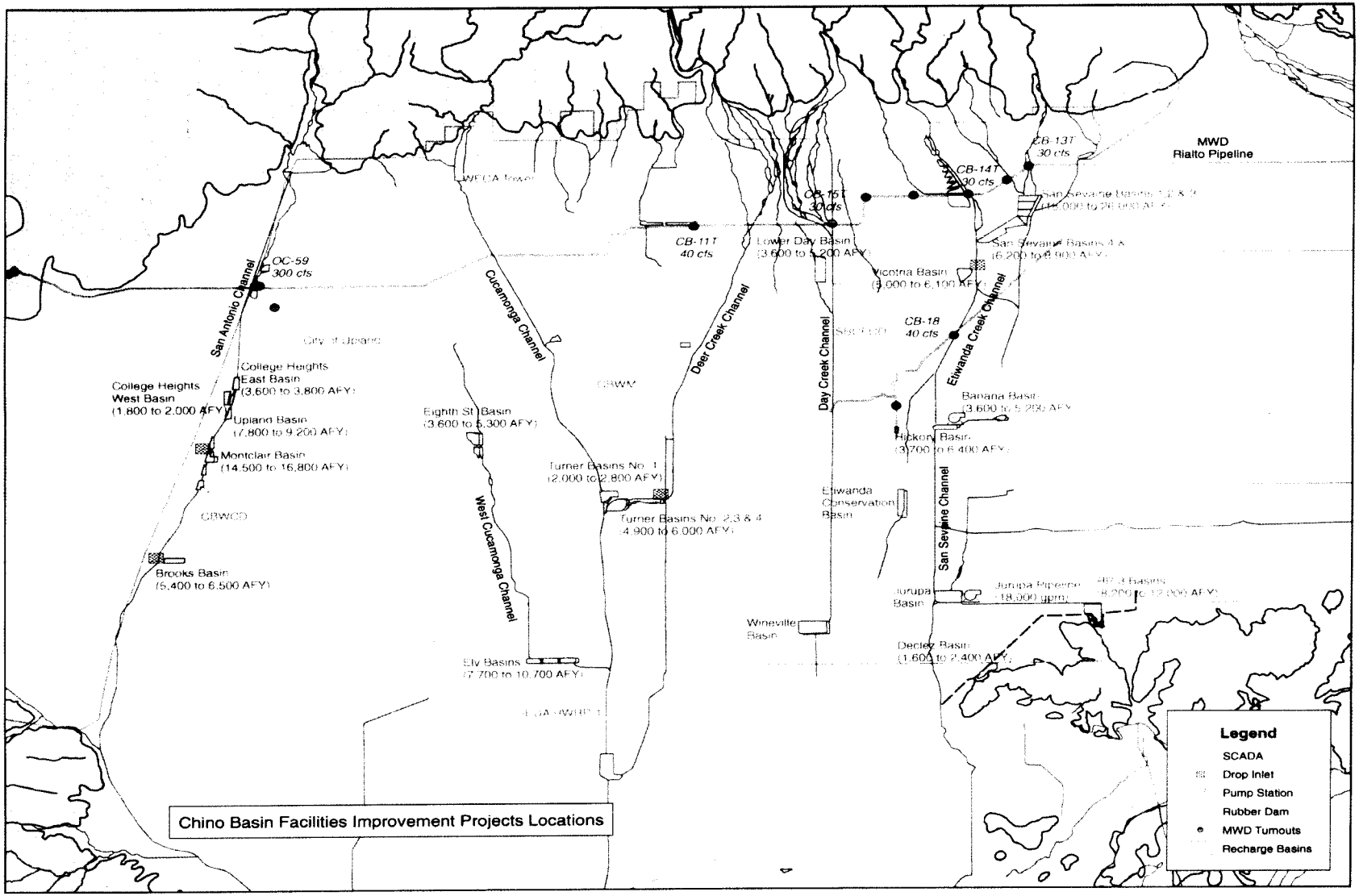
RECOMMENDATION:

Adopt Order No. R8-2005-0033, as presented

Comments were solicited from the following agencies:

State Water Resources Control Board, Office of the Chief Counsel – Jorge Leon
State Water Resources Control Board, Division of Water Quality- James Maughan
State Water Resources Control Board, Division of Financial Assistance - Diana Robles
State Department of Water Resources - Glendale
California Department of Health Services, Fresno - Cindy Forbes
California Department of Health Services, Carpenteria – John Curphey
California Department of Health Services, Carpenteria – Jeff Stone
California Department of Health Services, San Bernardino –Heather Collins
California Department of Health Services, Sacramento - Bob Hultquist
California Department of Health Services, Berkeley – Rick Sakaji
State Department of Fish and Game - Long Beach
Chino Basin Watermaster
Chino Basin Water Conservation District
San Bernardino County Flood Control District -
Orange County Water District - Nira Yamachika

Orange County Coastkeeper- Garry Brown
Lawyers for Clean Water C/c San Francisco Baykeeper
Natural Resources Defense Council- David Beckman
Water Reuse Consultant – Jim Crook
DDB Engineering, Inc. - Debra Burris



Staff Report Order No. R8-2005-0033
Phase I Chino Basin Recycled Water Groundwater Recharge Project
IEUA and CBWM

Attachment A

California Regional Water Quality Control Board
Santa Ana Region

ORDER NO. R8-2005-0033

Water Recycling Requirements

For

Inland Empire Utilities Agency and Chino Basin Watermaster
Phase I Chino Basin Recycled Water Groundwater Recharge Project
San Bernardino County

California Regional Water Quality Control Board
Santa Ana Region

ORDER No. R8-2005-0033

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H. Provisions 21-29

California Regional Water Quality Control Board
Santa Ana Region

Order No. R8-2005-0033

Water Recycling Requirements
For
Inland Empire Utilities Agency and Chino Basin Watermaster
Phase I Chino Basin Recycled Water Groundwater Recharge Project
San Bernardino County

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board), finds that:

1. Inland Empire Utilities Agency, Chino Basin Watermaster, Chino Basin Water Conservation District, and San Bernardino County Flood Control District jointly sponsor the Chino Basin Recycled Water Groundwater Recharge Program. This is a comprehensive water supply program to enhance water supply reliability and improve the quality of local drinking water wells throughout the Chino Groundwater Basin by using highly treated recycled water to recharge the Basin. Inland Empire Utilities Agency and Chino Basin Watermaster are hereinafter referred to as IEUA and CBWM, respectively, or users. IEUA is the lead agency for Phase I of this Program, since recycled water produced at IEUA's wastewater treatment plants will be used for recharge. However, implementation of the Program, including Phase I, in accordance with the Basin Plan requires that CBWM fulfill certain commitments. CBWM is a user of recycled water since the use of recycled water for recharge is an integral part of CBWM's Optimum Basin Management Program (OBMP), which includes the Recycled Water Groundwater Recharge Program.

2. The Chino Basin Recycled Water Groundwater Recharge Program will be implemented in phases to reduce dependence on imported water that may not be available in the future and thereby provide a local drought-proof supply of new water. Ultimately, when fully developed, the Program will replenish the Chino Groundwater Basin with a blend of about 22,000 acre-feet per year (afy) of recycled water, 22,000 afy of stormwater, and 120,000 afy of imported water. Phase I will include about 8,000 afy of recycled water blended with about 8,000 afy of storm water and about 28,000 afy of imported water. The goal during Phase I is to achieve a maximum recycled water recharge of 20 percent of the total recharge capacity of the basins for a total blend of about 44,000 afy, based on a running 60-month average. In Phase I, recycled water blended with stormwater and imported water will be recharged in the Chino North Management Zone[1].

3. The Phase I Recharge Project will consist of three major components:

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1 *As described in Finding Nos. 18 and 19, the Chino North Management Zone encompasses the same area as the Chino 1, 2 and 3 Management Zones. The Chino North Management Zone designation, and the nitrate-nitrogen and TDS objectives that apply to this Management Zone, apply for regulatory purposes provided that the users fulfill specific commitments designed to assure the maintenance of water quality consistent with maximum benefit to the people of the state. If maximum benefit is not demonstrated, then the Chino 1,2 and 3 Management Zones and their respective nitrate-nitrogen and TDS objectives apply for regulatory purposes. This Order addresses both scenarios.*

a. Wastewater treatment and water recycling facilities described in Findings 4, 5, and 6;
b. Recharge basins described in Finding 7; and
c. A conveyance system to deliver the various water supplies from their sources to the recharge basins described in Finding 7.

4. IEUA owns and operates a regional wastewater collection system and water recycling plants, including Regional Water Recycling Plant No. 1 (RP-1), Regional Water Recycling Plant No. 4 (RP-4), Regional Water Recycling Plant No. 5 (RP-5) and Carbon Canyon Wastewater Reclamation Facility. Tertiary treated wastewater from RP-1 and RP-4 will be used in the Phase I Recharge Project to recharge the Chino Groundwater Basin.

5. RP-1 is located near the intersection of Highway 60 and Archibald Avenue in Ontario. RP-4 is located near the intersection of Sixth Street and Etiwanda Avenue in Rancho Cucamonga.

6. Wastewater treatment at RP-1 and RP-4 consists of preliminary, primary, and secondary treatment systems, followed by tertiary coagulation, filtration, and disinfection. RP-1 and RP-4 have tertiary treatment capacities of 44 million gallons per day (mgd) and 7 mgd, respectively. The average discharge flows from RP-1 and RP-4 are about 38.2 and 4.6 mgd, respectively. The effluent flows from both RP-1 and RP-4 are currently discharged to Cucamonga Creek, a tributary of the Santa Ana River. These discharges are regulated under Order No. 01-1, NPDES No. CA0105279.

7. Recycled water from RP-1 and RP-4 will be delivered via IEUA's existing and proposed regional recycled water distribution system pump stations and pipelines to seven recharge basins, identified as the Banana Basin, Declez Basin, Etiwanda Conservation Ponds, Hickory Basin, RP-3 Basins, Turner Basin Nos. 1 and 2, Turner Basin Nos. 3 and 4; and to the Jurupa Basin, which will be used as a storage basin because it has essentially no percolation. All these basins are existing. The total effective recharge area of these seven spreading facilities is approximately 138 acres. All of the recharge basins overlie the Chino North Management Zone. If the Chino North Management Zone designation does not apply (see footnote 1 and Finding 19), the Management Zones underlying the recharge basins are as follows: Turner Basin Nos. 1 and 2, and Turner Basin Nos. 3 and 4 overlie the Chino 2 Management Zone; the Banana Basin, Declez Basin, Etiwanda Conservation Ponds, Hickory Basin, Jurupa Basin and RP-3 Basins overlie the Chino 3 Management Zone.

8. This Order limits the maximum average recycled water contribution (RWC) at each basin, based on a 60-month running average, to 20 percent, unless a higher percentage is approved in advance by CDHS and the Regional Board. Diluents will be stormwater and imported State Project Water from Northern California that is purchased from Metropolitan Water District of Southern California. Stormwater will be local captured runoff originating from the watersheds along the southern extent of the San Gabriel Mountains and from the developed and undeveloped areas below the mountains.

9. At each recharge basin, a START-UP PERIOD not to exceed 180 days will be used at the outset of recycled water recharge operations. The purposes of each START-UP PERIOD are to establish site characteristics, including percolation rates, the physical characteristics of the vadose zone and soil aquifer treatment efficiency, and to establish a sampling regime, based on these characteristics, that is representative of recycled water following soil aquifer treatment. The length of the START-UP PERIOD at each basin will be contingent on site characteristics, including percolation rates and recycled water transit time in the subsurface. This Order requires IEUA to submit for CDHS and Regional Board approval a proposed START-UP PERIOD protocol at least two weeks prior to beginning each START-UP PERIOD. A START–UP PERIOD report will be prepared at the close of each START-UP PERIOD and will include recommendations for the optimum depths and locations for placement of lysimeters that will be used to measure compliance, and for a compliance-monitoring program. The report will also include recommendations for the maximum average RWC and Total Organic Carbon (TOC) limit for the initial year of recharge operations following the START-UP PERIOD. This Order requires that the average TOC limit during the START-UP PERIOD not exceed 0.5 mg/L divided by the maximum average RWC. As stated in Finding 8, above, the maximum average RWC is not to exceed 20 percent.

10. In November 2003, IEUA submitted to the California Department of Health Services (CDHS) a Title 22 Engineering Report for the Phase I Recharge Project in conformance with state regulations pertaining to the use of recycled water.

11. CDHS conducted multiple meetings and discussions with IEUA about this proposed groundwater recharge/reuse project. On December 4, 2003, CDHS held a public hearing in Rancho Cucamonga, California, to consider the Phase I Chino Basin Recycled Water Groundwater Recharge Project. No comments opposing the project were received. A "Summary of Public Hearing" prepared by CDHS is included and incorporated in this Order as Attachment A. This summary includes "Findings of Fact" and "Conditions".

12. On July 28, 2004, CDHS provided the Regional Board a copy of the Summary of Public Hearing that included the "Findings of Fact" and "Conditions" for the proposed Phase I Chino Basin Recycled Water Groundwater Recharge Project. On November 24, 2004, CDHS provided the Regional Board a letter amending and clarifying its Findings of Fact Condition No. 8. CDHS found that the proposed project complies with Section 60320 of Article 5.1, entitled "Groundwater Recharge", of the California Code of Regulations, Title 22, Division 4, Chapter 3, entitled "Water Recycling Criteria", and that the proposed operation of the Phase I Recharge Project would not degrade the quality of the water in the receiving aquifers as a source of domestic water supply, provided that IEUA meets the "Conditions" stipulated in the "Summary of Public Hearing".

13. The July 28, 2004 CDHS letter recommended that the Regional Board incorporate all of the "Findings of Fact" and "Conditions" contained in the "Summary of Public Hearing" into any water recycling requirements issued for the Phase I Recharge Project. This Order implements that recommendation. Requirements that implement the Conditions, with certain modifications based on discussions with CDHS and IEUA, are specified in the Order. To the extent of any conflict between this Order and the CDHS "Conditions", the requirements of this Order shall govern.

14. IEUA maintains a comprehensive industrial pretreatment and source control program approved by the Regional Board to control waste discharges from point sources into the wastewater collection system. The focus of this source control program is to prevent adverse effects on the treatment facilities and the environment. The scope and purpose of this source control program need to be expanded to include not only contaminants that may be detrimental to the facilities, but also contaminants specified by the CDHS that may be harmful to human health and drinking water supplies. IEUA proposes to review its current source control program to mitigate future impacts on the groundwater recharge program. The program review will determine whether additional constituents should be included in the industry permitting process and if additional pretreatment requirements are necessary, particularly for industries that discharge wastewater to the RP-1 and RP-4 collection systems. Through a comprehensive monitoring program implemented by IEUA, IEUA will ensure that the recycled water produced at RP-1 and RP-4 for recharge into the Chino Basin is not contaminated with toxic chemicals of industrial origin that are of concern to CDHS and the Regional Board in drinking water sources. IEUA owns and operates a non-reclaimable wastewater (NRW) collection and conveyance system that provides disposal for industrial wastewater and brines. The NRW discharges either into the Orange County Sanitation District's wastewater treatment facilities or to the County Sanitation Districts of Los Angeles County wastewater treatment facilities for treatment and disposal. The industrial pretreatment program and the NRW system provide source control and salinity management for the IEUA water reclamation facilities. IEUA plans to further mitigate wastewater constituent impacts on the Phase I Recharge Project by maximizing the use of the NRW system. Requirements pertaining to IEUA's industrial pretreatment and source control program are specified in waste discharge requirements Order No. 01-1, NPDES No. CA0105279. Order No. 01-1 will expire on January 1, 2006. Order No. 01-1 will be renewed prior to the expiration date and will be revised to include and address additional pretreatment requirements needed to comply with the relevant CDHS Conditions (Attachment A, Condition 3). This Order specifies that if and when Order No. 01-1 is revised to implement the CDHS' conditions pertaining to the source control program implemented by IEUA, the requirements specified in Section C of this Order shall become ineffective.

15. The users propose to monitor groundwater quality at 13 existing municipal production wells located downgradient from the recharge basins and at three existing municipal wells located upgradient from the recharge basins. Seven new monitoring wells will be constructed near the recharge basins within approximately one to three months travel time along the groundwater flow paths toward the nearest domestic wells. Additional new monitoring wells and other existing industrial wells may be added to the monitoring well network as needed. Intermediate monitoring wells along the groundwater flow paths may be required by CDHS.

16. Pathogenic microorganisms may be present in the recycled water, though this potential is highly unlikely provided that IEUA's treatment plants are operated properly. In order to assure that any such microorganisms that remain after treatment are effectively inactivated or removed in the subsurface, CDHS has determined that it is necessary to provide a retention time of at least 6 months for the recycled water in the groundwater basin before the water is extracted for drinking purposes and a minimum of 500 feet horizontal separation distance between all drinking water wells and recharge basins. CDHS found that the closest existing domestic supply wells downgradient from the Phase I recharge basins satisfy these minimum retention and horizontal distance separation requirements. Also, new drinking water wells must be constructed outside the areas required to achieve the minimum retention times and horizontal separation distance identified by CDHS. To implement the relevant CDHS Condition (Attachment A, Condition 17), this Order requires the users to implement measures to assure that the County of San Bernardino Department of Environmental Health Services, the lead permitting agency for construction of all public and private domestic supply wells in the project area, adopt ordinances restricting the drilling of wells within 500 feet of the recharge basins and where extracted water would not have at least 6 months underground residence time. Further, IEUA is required to use best efforts to closely monitor the well permitting activities of the County of San Bernardino Department of Environmental Health Services to assure that domestic supply wells are situated outside the soil aquifer treatment zone near the recharge basins.

17. A Water Quality Control Plan (Basin Plan) became effective on January 24, 1995 and has been amended subsequently (see Finding 18). The Basin Plan contains beneficial uses and water quality objectives for surface and ground waters in the Santa Ana Region.

18. On January 22, 2004, the Regional Board adopted Resolution No. R8-2004-0001, amending the Basin Plan to incorporate revised boundaries for groundwater subbasins, now termed "management zones", new nitrate-nitrogen and TDS objectives for the new management zones, and new nitrogen and TDS management strategies applicable to both surface and ground waters. This Basin Plan Amendment, shown in the Attachment to Resolution No. R8-2004-0001 (hereinafter referred to as "N/TDS Amendment"), was adopted by the Regional Board on January 22, 2004. The State Water Resources Control Board and Office of Administrative Law (OAL) approved the N/TDS Amendment on September 30, 2004 and December 23, 2004, respectively. The surface water components of the N/TDS Amendment are awaiting EPA approval, but do not bear significantly on these proposed water-recycling requirements. The groundwater-related components of the N/TDS Amendment became effective upon approval by OAL.

Accordingly, these water-recycling requirements implement relevant, groundwater-related components of the N/TDS Amendment.

19. This Order implements relevant portions of the N/TDS Amendment by specifying effluent limitations and other requirements that pertain to both the "maximum benefit" and "antidegradation" management zones/water quality objectives. Provided that the maximum benefit commitments shown in the N/TDS Amendment are satisfied, then the requirements of the Order that address the Chino North Management Zone and the "maximum benefit" objectives apply. If the Regional Board finds that the maximum benefit commitments are not being met, then the requirements of the Order that address the Chino 1, 2 and 3 Management Zones and their respective "antidegradation" TDS and nitrate-nitrogen objectives apply. This Order requires IEUA and CBWM to mitigate any recharge that took place in excess of the limits based on the "antidegradation" objectives if the Regional Board makes the finding that maximum benefit is not demonstrated.

20. As part of the maximum benefit commitments, IEUA will implement measures necessary to assure that the combined effluent quality from all of its treatment plants does not exceed 550 mg/L TDS and 8 mg/L total inorganic nitrogen on a 12-month, running average basis. The maximum benefit commitments included in the N/TDS Amendment also specify that the recharge of IEUA recycled water is contingent, in part, on blending with other recharge sources to assure that the 5-year running average TDS and nitrate-nitrogen concentrations of the water recharged are no greater than 420 mg/L TDS and 5 mg/L, respectively. These are the water quality objectives for the Chino North Management Zone. This Order implements that requirement. The Order also specifies that if the Regional Board finds that the maximum benefit commitments are not being met, then recycled water recharge, with or without blending, would be limited to the TDS and nitrate-nitrogen objectives for the Chino 2 and 3 Management Zones (depending on the location of the recharge basin). The N/TDS Amendment also includes a 25% nitrogen loss coefficient that can be applied in calculating total inorganic nitrogen effluent limitations to account for nitrogen transformation and loss in the subsurface. The 25% nitrogen loss coefficient is applied in this Order in specifying the method of calculating recycled water nitrogen quality when determining the amount of recharge of other water sources that must be achieved to meet the 5-year running averages. Pursuant to the N/TDS Amendment, this Order requires compliance with the recycled water-blending requirement as soon as possible but no later than the end of the 5th year after the initiation of recycled water recharge operations.

21. IEUA/CBWM took steps prior to the approval of the N/TDS Amendment by the State Board and OAL to address the maximum benefit commitments specified therein. Proposed monitoring plans for surface and groundwater, have been submitted to the Regional Board for approval and the monitoring programs are being implemented in advance of that approval. (See Table 5-8a, Attachment to Resolution No. R8-2004-0001, # 1 and 2). Expansion of the Chino 1 desalter to 14 mgd is almost complete; the expanded facility is expected to be fully operational in spring 2005. The construction of the Chino 2 desalter at 10 mgd is 90 percent complete and the facility is expected to be fully operational in June 2005. (See Table 5-8a, # 3). The construction of nineteen recharge facilities is almost complete and about half are fully operational. The remaining facilities

are expected to be completed in the spring of 2005. (Table 5-8a, # 5). Over 5, 000 acre-feet (AF) of "new" stormwater (stormwater that would not have been captured absent these recharge facilities) and 3,000 AF of State Project Water have been recharged. With grant funding from the California Department of Water Resources, the users are initiating the design of additional recharge improvements. With respect to hydraulic control (Table 5-8a, #8), the construction of nine hydraulic control-monitoring wells is underway. Based on coordination with the Board staff and staff of the Orange County Water District, a monitoring plan designed, in part, to evaluate hydraulic control and a contingency plan for failure of hydraulic control have been developed. The monitoring plan is now being implemented. In summary, the users are currently fulfilling the maximum benefit commitments outlined in the N/TDS Amendment in a satisfactory and timely manner.

22. The beneficial uses of the Chino North Management Zone (and Chino 1, 2 and 3 Management Zones) include:

    a. Municipal and domestic supply;
    b. Agricultural supply;
    c. Industrial services supply; and
    d. Industrial process supply.

23. The limitations contained in this Order are intended to protect these uses and maintain water quality in these basins. Since domestic supply is a beneficial use, limitations are based on CDHS' drinking water standards (both primary and secondary maximum contaminant levels (MCLs)) in the Drinking Water Quality and Monitoring Requirements, California Code of Regulations (CCR), Title 22, Chapter 15, and Basin Plan objectives. The proposed limits for total organic carbon, total coliform, turbidity, lead and copper, and other regulated and unregulated constituents are based on CDHS' recommendations stipulated in the "Conditions" included in the "Summary of Public Hearing" (Attachment A to this Order). The proposed limits for total nitrogen are consistent with CDHS' Conditions. These limitations are necessary to assure the protection of public health and the use of the groundwater basin for domestic supply.

24. Section 13523 of the California Water Code provides that a Regional Board, after consulting with and receiving recommendations from the CDHS or its delegated local health agency, and after any necessary hearing, shall, if it determines such action to be necessary to protect the health, safety, or welfare of the public, prescribe water recycling requirements for water that is used or proposed to be used as recycled water. In order to assure the protection of public health and the use of the groundwater as a source of domestic water supply, it is appropriate for the Regional Board to prescribe water-recycling requirements for IEUA and CBWM. Section 13523 further provides that water-recycling requirements shall include, or be in conformance with, the statewide uniform recycling criteria established by the CDHS pursuant to the California Water Code Section 13521. The Regional Board has consulted with the CDHS regarding the recycling project and its use in groundwater recharge, and has incorporated their recommendations in this Order.

25. Based on Section 60323 of Title 22, California Code of Regulations, this Order requires IEUA to review and update the Engineering Report for the Recycled Water Groundwater Recharge Project every five years and to submit the updated report to CDHS and the Regional Board.

26. In compliance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.), IEUA prepared and certified an Environmental Impact Report (EIR) for the Phase I Recharge Project. The EIR identified no significant adverse impact to water quality as a result of the use of recycled water.

27. The Regional Board has notified the users and interested agencies and persons of its intent to issue Water Recycling Requirements for this recycled water reuse, and has provided them with an opportunity to submit their written views and recommendations.

28. The Regional Board, in a public meeting, heard and considered all comments pertaining to these water-recycling requirements.

IT IS HEREBY ORDERED that the users, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder shall comply with the following:

A. RECYCLED WATER QUALITY SPECIFICATIONS

1. The recycled water[2] from RP-1 and RP-4 used for recharge shall not contain constituent concentrations in excess of the limits specified in Tables I below:

TABLE I (See Compliance Determination B.1.)	
Constituent	***Concentration Limit (Units in mg/L unless noted otherwise)***
Inorganic Chemicals	
Aluminum	1.
Antimony	0.006
Arsenic	0.01
Asbestos	7 MFL[3]
Barium	1.
Beryllium	0.004
Cadmium	0.005
Chromium	0.05

2 *Recycled water is 100 % effluent from RP-1 and RP-4 without any blending with other waters not of wastewater origin.*

3 *MFL = million fibers per liter; MCL for fibers exceeding 10 um in length.*

TABLE I (See Compliance Determination B.1.)	
Constituent	***Concentration Limit (Units in mg/L unless noted otherwise)***
Cyanide	0.15
Fluoride	2.
Mercury	0.002
Nickel	0.1
Selenium	0.05
Thallium	0.002
Volatile Organic Chemicals (VOCs)	
Benzene	0.001
Carbon Tetrachloride	0.0005
1,2-Dichlorobenzene	0.6
1,4-Dichlorobenzene	0.005
1,1-Dichloroethane	0.005
1,2-Dichloroethane	0.0005
1,1-Dichloroethylene	0.006
cis-1,2-Dichloroethylene	0.006
trans-1,2-Dichloroethylene	0.01
Dichloromethane	0.005
1,2-Dichloropropane	0.005
1,3-Dichloropropene	0.0005
Ethylbenzene	0.3
Monochlorobenzene	0.07
Methyl-*tert*-butyl ether (MTBE)	0.013
Styrene	0.1
1,1,2,2-Tetrachloroethane	0.001
Tetrachloroethylene	0.005
Toluene	0.15
1,2,4-Trichlorobenzene	0.005
1,1,1 Trichloroethane	0.2
1,1,2-Trichloroethane	0.005
Trichloroethylene	0.005
Trichlorofluoromethane	0.15
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.2
Vinyl Chloride	0.0005
Xylenes	1.750[4]
Non-Volatile Synthetic Organic Chemicals (SOCs)	
Alachlor	0.002
Atrazine	0.001
Bentazon	0.018
Benzo(a)pyrene	0.0002

[4] *Limit is for either a single isomer or the sum of the isomers.*

TABLE I (See Compliance Determination B.1.)	
Constituent	***Concentration Limit (Units in mg/L unless noted otherwise)***
Carbofuran	0.018
Chlordane	0.0001
2,4-D	0.07
Dalapon	0.2
Dibromochloropropane (DBCP)	0.0002
Di(2-ethylhexyl)adipate	0.4
Di(2-ethylhexyl)phthalate	0.004
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin	0.002
Ethylene Dibromide (EDB)	0.00005
Glyphosate	0.7
Heptachlor	0.00001
Heptachlor Epoxide	0.00001
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Lindane	0.0002
Methoxychlor	0.03
Molinate	0.02
Oxamyl	0.05
Pentachlorophenol	0.001
Picloram	0.5
Polychlorinated Biphenyls	0.0005
Simazine	0.004
Thiobencarb	0.07
Toxaphene	0.003
2,3,7,8-TCDD (Dioxin)	3×10^{-8}
2,4,5-TP (Silvex)	0.05
Chemical	
Copper	1.3
Lead	0.015
Radionuclides	
Constituent	***Concentration Limit, pCi/l***
Combined Radium-226 and Radium-228	5
Gross Alpha particle activity (including Radium-226 but excluding Radon and Uranium)	15
Tritium	20,000

TABLE I (See Compliance Determination B.1.)	
Constituent	***Concentration Limit (Units in mg/L unless noted otherwise)***
Strontium-90	8
Gross Beta particle activity	50
Uranium	20

2. The recycled water[5] used for recharge, or if supplemented with diluent water, the blend of the two, prior to reaching the regional groundwater table shall not contain constituent concentrations in excess of the limits specified in Table II below[6]: For compliance determination, samples shall be collected from:

   a. the recycled water stream prior to spreading, or
   b. lysimeters in the vadose zone, or
   c. the mound prior to reaching the regional groundwater table.

TABLE II (See Compliance Determination B.1.)	
Disinfection Byproducts	
Constituent	***Concentration Limit, mg/l***
Total Trihalomethanes (TTHM)	0.080
Total Haloacetic acids (five) (HAA5)	0.060
Bromate	0.010
Chlorite	1.0

3. The recycled water[6] used for recharge, or if supplemented with diluent water, the blend of the two, prior to reaching the regional groundwater table shall not contain constituent concentrations in excess of the limits specified in Table III below[7]: For compliance determination, samples shall be collected from:

   a. the recycled water stream prior to spreading, or
   b. lysimeters in the vadose zone, or
   c. the mound prior to reaching the regional groundwater table.

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5 *Recycled water is 100 % effluent from RP-1 and RP-4 without any blending with other waters not of wastewater origin*

6 *See also Compliance Determination B. 1.*

7 *See also Compliance Determination B. 2.*

Table III (See Compliance Determination B.2.)	
Constituent	***Concentration Limits***
Aluminum	0.2 mg/L
Copper	1.0 mg/L
Corrosivity	Non-corrosive
Foaming Agents (MBAS)	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Methyl-*tert*-butyl ether (MTBE)	0.005 mg/L
Odor—Threshold	3 Units
Silver	0.1 mg/L
Thiobencarb	0.001 mg/L
Turbidity	5 Units
Zinc	5.0 mg/L

4. Recycled water produced by RP-1 and RP-4 for recharge shall at all times, be adequately oxidized, filtered, and disinfected tertiary treated wastewater and shall meet the following limitations:

   a. The turbidity of the filter effluent shall not exceed any of the following:

      (1) Average of 2 Nephelometric Turbidity Unit (NTU) within any 24-hour period;
      (2) 5 NTU more than 5 percent of the time in any 24-hour period; and
      (3) 10 NTU at any time.

   b. The 7-day median number of total coliform shall not exceed a Most Probable Number (MPN) of 2.2 total coliform bacteria per 100 milliliters (ml).

   c. The number of total coliform organism shall not exceed an MPN of 23 total coliform bacteria per 100 ml in more than one sample in any 30-day period.

   d. No total coliform sample shall exceed an MPN of 240 total coliform bacteria per 100 ml.

5. The Total Dissolved Solids (TDS) and Total Inorganic Nitrogen (TIN) concentration of the recycled water shall not exceed a 12-month running average concentration limit of 550 mg/l and 8 mg/l, respectively from the combined effluent of all IEUA treatment plants (see also Provisions H.4. and H.5.).

6. The recycled water used for recharge, or if supplemented with diluent water, the blend of the two, prior to reaching the regional groundwater table shall not contain constituent concentrations that exceed the following limitations:

a. A total nitrogen[8] concentration of 10 mg/L;

b. The sum of nitrite, organic, and ammonia nitrogen shall not exceed 5 mg/L as nitrogen; and

c. The nitrite level shall not exceed 1 mg/L as nitrogen.

7. The pH of recycled water used for recharge shall at all times be within the range of 6 to 9 pH units.

8. The total organic carbon (TOC) concentration of the filtered wastewater shall not exceed 16 mg/L[9] for more than two consecutive samples.

9. At each of the recharge basins, the average RWC shall not exceed 20 percent of the total water recharged at each location. If the users propose to increase the maximum average RWC to more than 20 percent at any time, prior approval shall be obtained from CDHS in accordance with CDHS Condition 4 (See Attachment A) and from the Executive Officer of the Regional Board. (See also Compliance Determination B.8.)

10. At each recharge basin, the monthly average TOC concentration of the recycled water prior to reaching the regional groundwater table shall not exceed the average TOC value calculated from the following formula.[10]:

$$TOC_{Average} = 0.5 \text{ mg/L} \div RWC_{Average}$$

11. For each recharge basin, during the initial year of recharge operation after the START-UP PERIOD (See Provisions H.9), the maximum average RWC and the TOC limit shall not exceed the maximum average RWC and TOC limit identified in the approved START-UP PERIOD report. After the first year following the START-UP PERIOD, the average RWC may be increased up to a maximum of 20 percent at each recharge basin. IEUA shall notify the CDHS and the Regional Board of such adjustment. If the users propose to increase the maximum average RWC to more than 20 percent at any time, prior approval shall be obtained from CDHS and from the Executive Officer of the Regional Board.

12. Diluent water shall be stormwater and imported untreated State Project Water.

13. Recycled water shall be recharged via spreading only at the Banana Basin, Declez Basin, Etiwanda Conservation Ponds, Hickory Basin, RP-3 Basins, Turner Basin Nos. 1 and 2, Turner Basin Nos. 3 and 4, and Jurupa Basin (if feasible), unless the use of additional recharge basins is approved by CDHS and the Regional Board's Executive Officer.

14. Recycled water spread into groundwater basins shall not contain any substances in concentrations toxic to human, animal, plant, or aquatic life.

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8 *Total nitrogen is the sum of ammonia, nitrite, nitrate, and organic nitrogen concentrations, expressed as nitrogen.*

9 *See Compliance Determination B.6., below.*

10 *See Compliance Determination B.7., below.*

15. Recycled water for recharge shall not contain oil and grease in concentrations greater than 1 mg/l.

16. Spreading of recycled water shall not cause a violation of any applicable water quality standards for receiving groundwater adopted by the Regional Board or CDHS.

17. The spreading of recycled water shall not impart tastes, odors, color, foaming, or other objectionable characteristics to receiving groundwater.

18. The recharge or use of inadequately treated wastewater at any time is prohibited.

B. COMPLIANCE DETERMINATION:

1. Compliance with Recycled Water Quality Specifications A.1. and A.2. shall be based on the running-quarterly average concentration, calculated each quarter using the previous consecutive four quarterly data for the specific constituent.

2. Compliance with Recycled Water Quality Specifications A.3. shall be based on the monitoring test results for the specific constituent or average thereof if more than one sample is taken.

3. Compliance with the turbidity limits specified in Recycled Water Quality Specifications A.4.a. shall be determined based on recorded turbidity readings taken at intervals of no more than 1.2 hours over a 24-hour period.

4. Compliance with the 12-month average limits specified in Recycled Water Quality Specifications A.5., shall be determined by the arithmetic mean of the last twelve monthly averages.

5. Compliance with Recycled Water Quality Specifications A.6. shall be determined on lysimeter-based monitoring at each individual recharge basin for total nitrogen, nitrate-nitrogen, nitrite-nitrogen, organic nitrogen, and ammonia-nitrogen, unless compliance can be demonstrated prior to recharge. (See also Provision H.8.)

6. Compliance with Recycled Water Quality Specifications A.8., above, shall be based on two consecutive TOC test samples.

7. Compliance with average TOC concentration limits specified in Recycled Water Quality Specifications A.10., above, shall be determined based on a lysimeter-based monitoring program performed at each individual recharge basin and allowing for recycled water percolation to the lysimeters to demonstrate soil aquifer treatment efficiency, unless recycled water TOC compliance can be demonstrated prior to recharge. Compliance shall be based on the running average of the most recent 20 lysimeter sample test results representative of recycled water samples. Determination of compliance shall begin after the START-UP PERIOD, as soon as 20 representative samples have been collected. Each week one grab or 24-hour composite sample of the recharge water (recycled water or if supplemented with diluent water, the blend of the two) shall be collected for TOC analysis from the compliance lysimeter sample point(s) and shall be averaged when there is more than one compliance lysimeter sampling point in a single basin. An alternative-monitoring plan may be approved upon submission of sampling results that demonstrate that an equal level of public health protection is achieved. (See also Provision H.8 and H.9.)

8. The average Recycled Water Contribution (RWC) shall be calculated by dividing the total volume of recycled water applied to the spreading area during the preceding 60 calendar months by the sum of the total recycled water applied to the spreading area and the diluent water applied during that period.

C. SOURCE CONTROL REQUIREMENTS:

1. The requirements in this Section shall become ineffective if and when Waste Discharge Requirements Order No. 01-1 for IEUA's RP-1 and RP-4 is revised to implement the CDHS' conditions specified in Attachment A of this Order pertaining to IEUA's source control program.

2. The wastewater collection system shall be operated under a comprehensive industrial pretreatment and pollutant control program for the control of discharge of toxic wastes from point sources. If CDHS identifies any contaminants that may pose a risk of contamination to a drinking water supply, it may designate those contaminants for inclusion in the pretreatment and source control program requirements for IEUA to minimize the possibility that the influent wastewater to RP-1 and RP-4 will be contaminated with such toxic chemicals. The source control program shall include:

    a. An assessment of the fate of the specified contaminant compounds through the wastewater and recycled water treatment systems.
    b. A source investigation and monitoring program focused on the specified contaminants.
    c. An outreach program to industrial, commercial and residential communities within the sewage collection agency's service area to manage and minimize the discharge of compounds of concern at the source.

d. A proactive program for maintaining an inventory of compounds discharged into the wastewater collection system so that new compounds of concern can be evaluated rapidly.

D. GROUNDWATER MONITORING WELL REQUIREMENTS:

1. Groundwater monitoring wells shall be sited at locations within approximately one to three months underground travel time of each recharge basin and at additional intermediate points between each recharge basin and the nearest downgradient domestic water supply well, such that samples can be obtained independently from each aquifer potentially conveying the recharge water. Monitoring well locations shall be determined based on a numerical model, tracer, or other method to determine the estimated underground travel time from the recharge operation to the monitoring well sites. If a tracer is used, the tracer shall be determined prior to start-up.

2. The users shall construct/install the following new monitoring wells within the distances specified below and within one to three months underground travel time from the recharge basins and the nearest downgradient domestic water supply wells. Monitoring wells shall be constructed prior to recycled water being recharged at each respective basin.

   a. Monitoring well BH1 shall be installed within about 300 to 360 feet downgradient of Banana and Hickory Basins to sample groundwater at two depths (approximately 370-410 and 420-460 feet below ground surface (bgs)).
   b. Monitoring well E1 shall be installed within about 450 feet downgradient of the Etiwanda Conservation Ponds to sample groundwater at two depths (approximately 320-340 and 370-390 feet bgs).
   c. Monitoring well RP31 shall be installed within about 200 feet downgradient of the RP-3 Basins to sample groundwater at two depths (approximately 215-235 and 265-285 feet bgs).
   d. Monitoring well D1 shall be installed within about 300 feet downgradient of Declez Basin to sample groundwater at two depths (approximately 135-155 and 185-205 feet bgs).
   e. Monitoring well T1 shall be installed within about 100 feet downgradient of Turner Basin No. 1 to sample groundwater at two depths (approximately 330-350 and 380-400 feet bgs).
   f. Monitoring well T2 shall be installed within about 100 feet downgradient of Turner Basin Nos. 2, 3, and 4 to sample groundwater at two depths (approximately 340-360 and 390-410 feet bgs).

3. Existing wells shall be incorporated in the groundwater-monitoring program as described in the Engineering Report. Additional monitoring wells may be required in the future depending on the results of the groundwater-monitoring program.

4. If evidence of percolation is found at Jurupa Basin, a new monitoring well shall be installed as described in the Engineering Report.

E. BUFFER ZONE SPECIFICATIONS IN RECHARGED GROUNDWATER BASINS

1. At each recharge basin, the recycled water shall be retained in the groundwater basin for a minimum of 6 months prior to being withdrawn at a domestic water supply well. A tracer study using a signature compound to confirm the underground retention time shall be conducted at Turner Basin No. 1 prior to recharge of recycled water at that basin. The CDHS may require tracer studies at the other recharge basins to be conducted after recharge of recycled water has begun to confirm the underground retention time at those basins. If a new well is installed at a closer distance to any of the recharge basins than the existing wells, tracer studies may need to be completed to evaluate the retention time between the recharge basin and the newly drilled well.

2. At each recharge basin, no domestic drinking water wells shall be allowed within a soil aquifer treatment zone defined by a distance of less than 500 feet and 6 months underground travel time from the basin.

3. IEUA and CBWM shall implement measures to assure that the County of San Bernardino Department of Environmental Health Services (DEHS), the lead permitting agency for construction of all public and private domestic supply wells in the project area, adopt and maintain ordinances that restrict the drilling of wells within 500 feet of the spreading basins and where extracted water would not have at least 6 months underground residence time. The users shall use best efforts to closely monitor the well permitting activities of DEHS to assure that domestic supply wells are located outside this soil aquifer treatment zone near the recharge basins.

F. CONDITIONS FOR SUSPENDING GROUNDWATER RECHARGE:

1. If the filtered wastewater TOC exceeds 16 mg/L for more than two consecutive samples, then recharge of recycled water shall be suspended until the filtered wastewater TOC is less than 16 mg/L.

2. After the START-UP PERIOD, if the most recent 20 sample average TOC concentration for samples collected after the end of the START-UP PERIOD exceeds the average TOC concentration limit specified in Recycled Water Quality Specifications A.10., the recharge of recycled water shall be suspended until the average TOC concentration limit can be met.

3. When turbidity performance requirements specified in Recycled Water Quality Specifications A.4.a. are exceeded, IEUA shall suspend the recharge of recycled water until such time that the cause of exceedance is identified and corrected. Any failure to meet the turbidity performance requirements shall be reported to the CDHS and the Regional Board in the next monthly report.

4. When the 7-day median coliform limit specified in Recycled Water Quality Specifications A.4.b. is exceeded for two consecutive days, IEUA shall suspend the spreading of recycled water until such time the cause of exceedance is identified and corrected.

5. If the average of two consecutive samples for nitrogen species exceeds the allowable limits specified in Recycled Water Quality Specifications A.6., IEUA shall investigate the causes and make appropriate corrections, and within 48 hours of receiving the second sample result, notify the CDHS and Regional Board. If the average of all samples collected for determining total nitrogen, nitrite, and organic and ammonia nitrogen concentration, and nitrite nitrogen over the ensuing two-week period exceeds any of the allowable limits specified in Recycled Water Quality Specifications A.6., IEUA shall suspend recharge of the recycled water at that recharge basin until appropriate corrections have been made.

G. REQUIRED NOTICES AND REPORTS

1. Reporting Provisions:

   a. All reports, or information submitted to the Regional Board shall be signed by a responsible officer or duly authorized representative of the users and shall be submitted under penalty of perjury.

   b. The users shall furnish, within a reasonable time, any information the Regional Board may request to determine compliance with this Order or whether cause exists for modifying, revoking and reissuing, or terminating this Order. The users shall also furnish to the Regional Board, upon request, copies of records required to be kept by this Order.

   c. All reports prepared in accordance with the terms of this Order shall be available for public inspection at the offices of the Regional Board. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 13387 of the California Water Code.

2. The users shall submit a monthly report that validates recycled water for recharge is an oxidized and filtered wastewater. The report shall include:

   a. Description of when, how often and whether coagulation of the wastewater is employed in the treatment process. If coagulation is not used at all times, the users shall:

      (1) Continuously monitor the turbidity of the influent to the filters. Turbidity exceedances of 10 NTU and above at any time, and of 5 NTU for more than 15 minutes shall be included in the monthly report;

(2) Certify that chemical addition for coagulation has been automatically employed when the filter influent turbidity exceed 5 NTU for more than 15 minutes.

b. Description of the type and rate of filtration employed in the treatment process.

3. At least two weeks prior to commencing the START-UP PERIOD at each recharge basin, a report describing the protocols to be used and implemented during the START-UP PERIOD shall be submitted for review and approval by the CDHS. At a minimum, the proposed protocols shall identify the methods to be used to establish site characteristics, including percolation rates, the physical characteristics of the vadose zone and soil aquifer treatment efficiency, and to establish a sampling regime, based on these characteristics, that is representative of recycled water following soil aquifer treatment.

4. A start-up period report shall be prepared at the conclusion of the START-UP PERIOD for each recharge basin. The start-up period report shall include: site specific determinations of percolation rates, soil aquifer treatment efficiency and optimum depths and locations of lysimeters to obtain representative compliance samples of recycled water after soil aquifer treatment. The report shall specify the date that the START-UP PERIOD ended. The report shall make recommendations for final compliance lysimeter placement and monitoring plan to be employed during the initial year of operation, the initial year maximum average RWC and corresponding TOC limit, and generalized method to track recharge water in the vadose zone. The analytical results from weekly lysimeter samples shall be evaluated and reported along with conclusions regarding soil aquifer treatment (SAT) performance. This report is subject to approval by the CDHS and the Regional Board Executive Officer. The report recommendations shall be implemented upon approval.

5. For each recharge basin, within 30-days from the end of the initial year of operation after the StART-UP PERIOD, the users shall submit a report that evaluates the efficacy of the compliance lysimeter monitoring plan and make recommendations regarding the maximum average RWC and corresponding TOC limit, and necessary adjustments to the lysimeter monitoring placement as appropriate. Adjustments to the maximum average RWC (and corresponding TOC limit) up to the 20 percent maximum average RWC limit specified in this Order may be made with prior notification of CDHS and the Regional Board. Adjustments to the lysimeter monitoring placement shall be made with prior approval from CDHS.

6. If the recycled water concentration for the specific constituent is out of compliance with Recycled Water Quality Specifications A.1., A.2., and A.3., a report shall be submitted to the CDHS and Regional Board that describes the reasons and the corrective actions taken.

7. If the average RWC does not comply with the maximum average RWC specified in Recycled Water Quality Specifications A.9., , and A.11., the users shall notify the CDHS and Regional Board within 7 days and shall submit a report to the CDHS and Regional Board within 60 days describing the reason and corrective actions taken to avoid future occurrences.

8. Within seven days of suspension of groundwater recharge, the users shall notify the CDHS and Regional Board. A report that describes the reasons and the corrective actions that have been taken to avoid future noncompliance with the TOC limit specified in Recycled Water Quality Specifications A.10. shall be submitted to the CDHS and Regional Board within 60 days, when the average of the last 20 consecutive recycled water samples exceeds the TOC concentration of 0.5 mg/L/RWC.

9. If evidence of percolation is found at Jurupa Basin, the users shall submit a geotechnical report to the CDHS and Regional Board documenting percolation at the Jurupa Basin.

10. Significant changes in the operation of any of the treatment processes shall be reported to the CDHS and Regional Board.

11. Within 60 days of suspension of recharge of recycled water, a report describing the causes of the exceedance and corrective measures taken to avoid future violations to these requirements shall be submitted to the CDHS and Regional Board.

12. When total coliform bacteria requirements specified in Recycled Water Quality Specifications A.4. are not met, IEUA shall submit to the CDHS and Regional Board, a report describing the cause of the failure and the corrective actions taken to avoid future violations of these requirements. This report shall be included in the required monthly monitoring report immediately following non-compliance with bacteria requirements.

13. IEUA shall provide adequate notice to the Regional Board of any change in the volume or character of pollutants being introduced by an existing or new source into the treatment facility that will cause or threaten to cause a violation of this Order.

14. IEUA shall file with the Regional Board a Report of Waste Discharge at least 120 days before making any material change in the character, location, or volume of the recycled water use. A material change includes, but is not limited to, the following:

    a. Significantly changing the method of treatment.
    b. Increasing the recycled water use beyond that specified in this Order.

15. IEUA shall report any condition related to the IEUA treatment facility or distribution system that may endanger human health or the environment. All available information concerning the condition shall be provided to the Executive Officer or the Executive Officer's designee (951-782-4130) and the Office of Emergency Services (800-852-7550), as soon as the users become aware of the circumstances. A written report shall be submitted within 5 days and shall contain a description of the condition and its cause; the duration of the condition, including exact dates and times, and, if the condition has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent recurrence of the condition, with a schedule for their implementation. The Executive Officer or the Executive Officer's designee may waive the above required written report on a case-by-case basis.

16. IEUA shall submit to the CDHS and Regional Board, and all downgradient public drinking water systems an annual report of findings prepared by a qualified engineer registered in California and experienced in the field of water reclamation for groundwater recharge regarding the operation of the Phase I Recharge Project and the results of the monitoring and investigations of the impacts of recycled water spreading at the Phase I recharge basins. The report shall include summaries of compliance with recycled water quality specifications, groundwater recharge requirements and operations specified in this Order; any corrective actions taken as a result of violations and any suspensions of recharge of recycled water; detections of monitored constituents and any observed trends in the monitoring wells; information related to travel of recharge waters, including leading edge of the recharged water plume; and description of any anticipated changes, along with an evaluation of the expected impact on subsequent unit processes. This report shall demonstrate a mass balance to ensure that blending is occurring in the aquifer at each spreading basin. Spreading recharge water flow paths shall be determined annually from groundwater elevation contours and compared to the flow and transport model's flow paths. The flow and transport model shall be updated to match as closely as possible the actual flow patterns observed within the aquifer if the flow paths have significantly changed. This report shall also include Title 22 drinking water quality data for the nearest domestic water supply well in the vicinity of each spreading basin. Prior to start-up of the Phase I Recharge Project, tracers will need to be identified.

17. The users shall submit an update to the engineering report for the Recycled Water Project every five years to the CDHS and Regional Board.

18. The users shall comply with the additional reporting requirements specified in Provision H.4 and H.5.

H. PROVISIONS

1. Neither the treatment nor the discharge of wastes or recharge of recycled water shall cause a nuisance or pollution as defined in Section 13050 of the California Water Code.

2. This Order becomes effective upon its adoption.

3. The users shall comply with Monitoring and Reporting Program No. R8-2005-0033 as issued by the Executive Officer. Revision of this monitoring and reporting program by the Executive Officer may be necessary to confirm that the users are in compliance with the requirements and provisions contained in this Order. Revisions may be made at any time during the term of this Order, and may include a reduction or an increase in the number of parameters to be monitored, the frequency of monitoring or the number and size of samples collected.

4. The users shall implement the following Chino Basin Maximum Benefit Commitments:

a. The users shall implement a surface water-monitoring program within 30 days of Regional Board approval of a proposed monitoring program[11]. At least six months of data must be obtained prior to the recharge of recycled water. At a minimum, the surface water-monitoring program shall include the collection of bi-weekly measurements of general minerals and nitrogen components at the locations listed in Table 5-8b of the N/TDS Amendment. Quarterly data reports shall be submitted each year on April 15th, July 15th, October 15th and January 15th. An annual data report summarizing all data collected for the year and evaluating compliance with relevant surface water objectives shall be submitted by February 15th of each year.

b. The users shall implement a groundwater-monitoring program within 30 days of Regional Board approval of a proposed monitoring program[12]. The program shall be sufficient to identify potential impacts from implementation of the Phase I Recharge Project on water levels and water quality within the Chino Basin and in downgradient basins, and to determine whether hydraulic control is being achieved and maintained. An annual report, including all raw data, shall be submitted to the Regional Board by February 15th of each year. This report shall summarize the results of the approved groundwater monitoring program and shall include evaluations of (1) hydraulic control achievement and maintenance and (2) the effects, if any, of implementation of the Phase I Recharge Project on water levels and water quality within the Chino Basin and downgradient basins.

c. No recharge of recycled water shall commence until the Chino 1 desalter at a capacity of at least 10 mgd is in operation and a construction contract for the Chino 2 desalter has been awarded.

d. By October 1, 2005, CBWM shall submit to the Regional Board the schedule for implementation of the next 20 mgd of desalter capacity. IEUA and/or CBWM and/or other responsible parties deemed acceptable by the Executive Officer shall initiate building of the next desalter when the 12-month running average effluent concentration (measured as an average for all IEUA wastewater treatment facilities) reaches 545 mg/L TDS for three consecutive months.

e. By June 30, 2005, or no later than one year from the start of discharge of recycled water, the 17 recharge facilities identified in the August 2001 Watermaster Recharge Master Plan, as updated by CBWM and IEUA, shall be completed and shall be operated to optimize the recharge of imported water in the Chino Basin. The CBWM shall optimize the recharge of imported water in the Chino Basin to meet the goal of maximizing recharge of State Project water when the TDS of that water is lowest.

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11 *The users have already submitted a proposed surface water monitoring program for approval.*

f. Within 60 days after the IEUA 12-month running average effluent concentration (measured as an average for all IEUA wastewater treatment facilities) for TDS exceeds 545 mg/L for 3 consecutive months, or the 12-month running average total inorganic nitrogen (TIN) concentration (measured as an average for all IEUA wastewater treatment facilities) exceeds 8 mg/L in any month, IEUA shall submit to the Regional Board a proposed plan and schedule for implementation of measures to insure that the 12-month running average agency-wide wastewater effluent quality does not exceed 550 mg/L and 8 mg/L for TDS and TIN, respectively. IEUA shall implement the plan and schedule upon approval.

g. The use of recycled water for groundwater recharge shall be limited to the amount that can be blended on a volume-weighted basis with other source of recharge to achieve a 5-year running average concentration equal to or less than 420 mg/l TDS and 5 mg/L TIN. Compliance with this requirement is to be achieved as soon as possible but no later than by the end of the 5th year after the initiation of recycled water recharge operations. A 25% nitrogen loss coefficient may be applied when determining the amount of recharge of other water sources that must be achieved to meet the 5 mg/L TIN 5-year running average.

   (1) Prior to the initiation of recycled water recharge, the users shall submit a report that documents the location, amount of recharge, and TDS and nitrogen quality of stormwater recharge before the recharge improvements (see "4e", above) were constructed and what is projected to occur after the recharge improvements are completed.

   (2) After initiation of construction of basins/other facilities necessary to support enhanced stormwater recharge, the users shall submit documentation of the amount, TDS and nitrogen quality of all sources of recharge and recharge locations. For stormwater recharge used for blending, the users shall submit documentation that the recharge is the result of IEUA/CBWM enhanced recharge facilities. All documentation required by this paragraph shall be submitted annually, by February 15th. The annual report shall evaluate compliance with the 5-year running average TDS and TIN concentration requirements specified above ("4g").

h. The users shall implement measures necessary to maintain hydraulic control, i.e., eliminating, or controlling to *de minimus* levels, the discharge of groundwater from the Chino Basin to the Santa Ana River.

   (1) By January 23, 2005, the users shall submit a proposed plan to mitigate water quality effects resulting from temporary failure to achieve or maintain hydraulic control. The users shall implement that plan upon a determination by the Regional Board that hydraulic control is not achieved/maintained.

   (2) The users shall submit a plan and schedule to correct loss of hydraulic control within 60 days of a determination by the Regional Board that hydraulic control is not being maintained. The schedule shall assure that hydraulic control is achieved as soon as possible but no later than 180 days after loss of hydraulic control is identified. The users shall implement the plan and schedule upon approval by the Regional Board.

i. By July 1, 2005 and every three years thereafter, CBWM shall submit a determination of ambient TDS and nitrate-nitrogen quality in the Chino North and Cucamonga Management Zones. This determination shall be accomplished using methodology consistent with the determinations used by the TDS/Nitrogen Task Force to develop the "antidegradation" TDS and nitrate-nitrogen objectives for groundwater within the Region.

5. If the users elect not to implement the maximum benefit commitments identified in Provisions 4., above, or if the Regional Board determines that the users are not meeting these commitments, then the following requirements pertaining to nitrogen and TDS management apply[12]:

a. Within 60 days after the IEUA 12-month running average effluent concentration (measured as an average for all IEUA wastewater treatment facilities) for TDS exceeds 545 mg/L for 3 consecutive months, or the 12-month running average total inorganic nitrogen (TIN) concentration (measured as an average for all IEUA wastewater treatment facilities) exceeds 8 mg/L in any month, IEUA shall submit to the Regional Board a proposed plan and schedule for implementation of measures to insure that the 12-month running average agency wastewater effluent quality does not exceed 550 mg/L and 8 mg/L for TDS and TIN, respectively. IEUA shall implement the plan and schedule upon approval.

b. The use of recycled water for groundwater recharge shall be limited to the amount that can be blended on a volume-weighted basis with other source of recharge to achieve a 5-year running average concentration equal to or less than 250 mg/l TDS and 2.9 mg/L TIN for recharge in the Chino 2 Management Zone or 260 mg/l TDS and 3.5 mg/l TIN for recharge in the Chino 3 Management Zone. Compliance with this requirement is to be achieved as soon as possible but no later than by the end of the 5th year after the initiation of recycled water recharge operations. A 25% nitrogen loss coefficient may be applied when determining the amount of recharge of other water sources that must be achieved to meet the TIN 5-year running average concentrations.

(1) Prior to the initiation of recycled water recharge, the users shall submit a report that documents the location, amount of recharge, and TDS and nitrogen quality of stormwater recharge before recharge improvements were constructed and what is projected to occur after and additional recharge improvements are completed.

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12 *The TDS and TIN quality requirements for recycled water used for recharge that are specified in Recycled Water Specifications, A.5., continue to apply.*

(2) After initiation of construction of basins/other facilities necessary to support enhanced stormwater recharge, the users shall submit documentation of the amount, TDS and nitrogen quality of all sources of recharge and recharge locations. For stormwater recharge used for blending, the users shall submit documentation that the recharge is the result of IEUA/CBWM enhanced recharge facilities. All documentation required by this paragraph shall be submitted annually, by February 15th. The annual report shall evaluate compliance with the 5-year running average TDS and TIN concentration requirements specified in "5.i.", above.

c. By July 1, 2005 and every three years thereafter, CBWM shall submit a determination of ambient TDS and nitrate-nitrogen quality in the Chino 2 and 3 Management Zones. This determination shall be accomplished using methodology consistent with the determinations used by the TDS/Nitrogen Task Force to develop the "antidegradation" TDS and nitrate-nitrogen objectives for groundwater within the Region.

6. If discharges pursuant to the "maximum benefit" objectives for the Chino North Management Zone, as specified in Provisions 4, above, occur, and if the Regional Board determines that the maximum benefit commitments are not satisfied, then the users shall implement a plan acceptable to the Executive Office of Regional Board to mitigate the effects of discharges of recycled and imported water that took place under the maximum benefit objectives. The mitigation plan shall address adverse effects on all affected receiving waters, including those in and downstream/downgradient of the Chino Basin. The plan shall assure that upon the implementation of the mitigation, the TDS and nitrogen loads to the Chino Basin from imported water, newly captured stormwater inputs as the result of the users' enhanced recharge facilities and recycled water are equivalent to the salt loads that would have been allowed to the Chino Basin under the "antidegradation" objectives for the Chino 2 and 3 Management Zones, as specified in Provisions 5, above. Discharges in excess of the antidegradation objectives for the Chino 2 and 3 Management Zones that must be considered for mitigation include both recycled water and imported water at TDS concentrations in excess of the antidegradation objectives. Any mitigation by groundwater extraction and desalting must be adjusted to address concentrations of TDS and nitrogen in the affected Management Zones, not just salt load. The approved mitigation plan shall be implemented as soon as possible, as determined by the Executive Office of Regional Board, but no later than 10 years following the finding by the Regional Board that maximum benefit commitments are not satisfied and that the antidegradation objectives apply.

7. Prior to the start of operation, the users shall have in place a resolution adopted by the appropriate governing board that the users will be responsible for developing a plan for providing an alternative source of domestic water supply, or CDHS approved treatment mechanism, to any user whose domestic water well is found to violate California drinking water quality regulations as a direct result of the Phase I Recharge Project or when the CDHS makes an analysis and finding that the domestic water well is unsuitable for human consumption as a direct result of the Phase I Recharge Project. Such alternative sources can include water delivered for blending of the producing well, imported water, water produced at a wellhead treatment plant, and water produced from new wells. The users shall notify the CDHS and Regional Board in a timely manner when the determination regarding an alternative supply is made.

8. IEUA shall install lysimeters[13] at each recharge basin. One or two clusters of four lysimeters shall be installed at each recharge basin at locations and depths determined in the field during installation of the lysimeters by a licensed geologist. Each cluster shall include lysimeters completed at varying depths based on the recommendations of the licensed geologist to provide detailed vertical resolution in the upper part of the vadose zone. The average value of the most representative lysimeter results shall be used to demonstrate soil aquifer treatment efficiency. An alternative-monitoring plan may be approved upon submission of sampling results that demonstrate that an equal level of public health protection is achieved.

9. The users shall commence recycled water recharge operations with a START-UP PERIOD at each recharge basin. No recycled water recharge shall commence at any recharge basin until the START-UP PERIOD protocol (See Required Notices and Report G. 3.) is reviewed and approved by CDHS. The START-UP PERIOD shall not exceed 180 days following commencement of recharge of recycled water to each basin. Upon approval by CDHS, IEUA shall implement the approved START-UP PERIOD protocols.

10. The users shall review and modify the groundwater monitoring program every two years or sooner, based on results of the monitoring program. Changes to the monitoring program, including well locations, shall be approved by CDHS and the Regional Board's Executive Officer prior to implementation.

11. The users shall develop an operations, maintenance and monitoring plan (OMMP) for the Phase I Project that shall be submitted to CDHS and the Regional Board for approval at least one month prior to startup of the project. IEUA shall operate its project facilities (described in Finding No. 3, above) in accordance with the approved OMMP. Following the initial year of operation, the OMMP shall be updated and submitted to the CDHS and Regional Board for review and approval. Significant changes in the approved OMMP, which may include provisions to comply with Source Control Program, must be approved by the CDHS and Regional Board prior to instituting changes. The OMMP shall include the following:

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13 *A lysimeter consists of a porous cup installed in unsaturated sediment that collects undiluted samples of recharge water prior to reaching the regional groundwater table.*

a. Critical operational parameters for the wastewater treatment facilities, recycled water and diluent water conveyance systems, and recharge basins;
b. Maintenance and calibration schedules for monitoring equipment, process alarm set points, and response procedures for alarms.
c. Criteria for diverting recycled water if water quality requirements are not met.
d. Start-up, seasonal, and emergency response and contingency plans.
e. During the first year of operation of the IEUA project, all treatment processes shall be optimized to reduce contaminant levels. The results of these initial optimization efforts shall be incorporated into the OMMP.
f. Staffing levels with applicable certifications levels for operations personnel.

12. The users shall assure that if any of the nitrogen limits specified in Section A.6. are exceeded, the testing laboratory shall report the result to IEUA within 48 hours of completion of the analysis. If the average of the two consecutive samples exceeds the allowable limit specified in Section A.6., IEUA shall investigate the causes and make appropriate corrections, and within 72 hours of receiving the second sample result, notify the CDHS and Regional Board.

13. When the TDS effluent discharges reaches or exceed 545 mg/l for three consecutive months, the users shall immediately implement a salt management program to reduce the salts, including nitrogen entering IEUA's wastewater treatment plants. This salt management program shall include:

a. Connection of new industries that have wastewater discharges with TDS greater than 550 mg/l to the brine line;
b. Regulation of the use of new and existing water softeners to the extent allowed by law, with incentives provided for the removal of on-site regenerative water softeners and the use of exchange canisters or other off-site regenerative systems;
c. Connection of existing domestic system industries with high TDS waste discharges to the brine lines;
d. Percolation of State Water Project water into the Chino Basin when that water is low in TDS; and
e. Development of a plan for sewering areas presently served by septic tanks to reduce the nitrogen loading into the Chino Management Zone.

14. The users shall monitor at reporting levels acceptable to CDHS, the recycled water quality for unregulated chemicals, priority toxic pollutants, and State notification levels, endocrine disrupting chemicals, and pharmaceuticals designated by the CDHS. Any detection shall be reported to the CDHS and the Regional Board in the next monthly report.

15. IEUA shall provide standby emergency power facilities and sufficient diversion capacity for diversion of recycled water in the event of upsets or outages at the treatment facilities.

16. IEUA shall provide adequate facilities to protect RP-1 and RP-4 from damage caused by storm flows and runoff.

17. IEUA shall maintain a copy of this Order at the site where recharge operation is controlled and managed so that it is available to site operating personnel at all times. Key operating personnel shall be familiar with its content.

18. IEUA shall promptly report to the Regional Board any proposed change in the character, location or method of use of recycled water, or any proposed change in ownership of the facility.

19. IEUA shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.

20. IEUA shall ensure that all facilities and systems of treatment, distribution, and control (and related appurtenances) which are installed or used to achieve compliance with conditions of this Order are at all times properly operated and maintained. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup and auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order.

21. Treatment of recycled water intended for groundwater recharge shall consist of secondary treatment, followed by tertiary filtration and disinfection in accordance with Section 60301.230 of Division 4, Chapter 3, Title 22, California Code of Regulations. Major modifications to the treatment trains at RP-1 and RP-4 shall be subject to review by the CDHS and Regional Board and, if related to the Phase I - Groundwater Recharge Project, must be completed prior to this project startup.

22. There shall be no bypass of any treatment process for production of recycled water for groundwater recharge

23. Major modifications to the treatment systems as described in the Engineering Report and associated Addenda, technical memoranda and correspondence shall be subject to review by the CDHS and the Regional Board.

24. The discharge of recycled water to surface waters is prohibited unless authorized by an NPDES permit.

25. The discharge of any radiological, chemical, or biological warfare agent or high level radiological waste is prohibited.

26. The recycled water storage facilities shall be protected from a 100-year frequency flood.

27. IEUA shall develop, update as necessary, maintain onsite and make available to site operating personnel, a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges and for minimizing the effect of such events. The technical report shall:

    a. Identify the possible sources of accidental loss, untreated waste bypass, and contaminated drainage. Loading and storage areas, power outage, waste treatment outage, and failure of process equipment, tanks, and pipes should be considered.

    b. Evaluate the effectiveness of present facilities and procedures and state when they become operational. Describe facilities and procedures needed for effective preventive and contingency plans.

    c. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

28. The users shall allow the Executive Officer, or any authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

    a. Enter upon premises where a regulated facility or activity is located or conducted, including recycled water treatment or discharge facilities, reject stream and screening disposal activities, or facilities where records must be kept under the requirements of this Order.

    b. Have access to and copy any records that must be kept under the conditions of this permit. Inspect, photograph, and sample or monitor, at reasonable times, any facilities equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including recycled water treatment, discharge, reject streams or screenings disposal sites.

    c. To sample or monitor influent and effluent for the purposes of determining compliance with this permit.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on April 15, 2005.

_____

Gerard J. Thibeault
Executive Officer

Attachment "A"
Order No. R8-2005-0033

V8

SUMMARY OF PUBLIC HEARING

In the Matter of:

Inland Empire Utilities Agency)
Phase I Chino Basin Recycled Water Groundwater Recharge Project)

On December 4, 2003, the California Department of Health Services (Department) held a public hearing in Rancho Cucamonga, California, to consider the proposed Phase I Chino Basin Recycled Water Groundwater Recharge Project (Phase I Recharge Project) in compliance with the California Code of Regulations Title 22 Water Recycling Criteria. The Phase I Recharge Project is part of a comprehensive Water Supply Enhancement Program jointly sponsored by the Inland Empire Utilities Agency (IEUA), Chino Basin Watermaster (CBWM), Chino Basin Water Conservation District, and the San Bernardino County Flood Control District to improve the quality of local drinking water wells, enhance water supply reliability, and lower the cost of water to residents throughout the Chino Groundwater Basin.

A list of public hearing attendees is included in Attachment A.

The hearing panel included:

Hearing Officer

Cindy Forbes, P.E., Chief of the Southern California Branch, Drinking Water Field Operations, State of California Department of Health Services

A brief presentation on the project was made by IEUA and CBWM staff and consultants. They described the relationship between the project stakeholders and the regional benefits of the proposed groundwater replenishment program. With IEUA serving as the lead agency, the program sponsors are all involved in protecting, replenishing, treating, distributing, and conveying waters in and throughout the Chino Groundwater Basin (Chino Basin). Noting that groundwater recharge has been widely practiced in California, the history of groundwater replenishment using recycled water and the experience of comparable projects were reviewed. Numerous studies were cited, demonstrating that no measurable adverse health effects have been attributed to similar groundwater recharge projects. A description of the background of the groundwater recharge master plan was presented. The overall program is supported by the Chino Basin Optimum Basin Management Program, Wastewater Facilities Plan, Recycled Water Feasibility Study, Recharge Master Plan, and other engineering studies and legal agreements. The Phase I Recharge Project will feature seven recharge basins that will be used to recharge a blend of up to about 44,000 acre-feet per year (afy) of recycled water, stormwater, and imported

water. Ultimately, it is planned for the project to be expanded to 19 recharge sites and up to 164,000 afy of recycled water, stormwater, and imported water. A short description of the water reclamation facilities emphasized the high level of treatment and superior quality of the recycled water. In conclusion, the agencies affirmed their commitment to the project, which will enhance water supply reliability and improve water quality in a cost effective manner.

The presentation was followed by statements from 11 members of the audience. In addition, 20 entities submitted their comments in writing to the Department. All commenters favored the proposed project and pledged their support for its implementation.

FINDINGS OF FACT

1. Section 60320 of Title 22, California Code of Regulations states: "Reclaimed water used for groundwater recharge of domestic water supply aquifers by surface spreading shall be at all times of a quality that fully protects public health. The State Department of Health Services' recommendations to the Regional Water Quality Control Boards for proposed groundwater recharge projects and for expansion of existing projects will be made on an individual case basis where the use of reclaimed water involves a potential risk to public health. The State Department of Health Services will hold a public hearing prior to making the final determination regarding the public health aspects of each groundwater recharge project. Final recommendations will be submitted to the Regional Water Quality Control Board in an expeditious manner."

2. Inland Empire Utilities Agency (IEUA), formerly the Chino Basin Municipal Water District, was formed in 1950 and became a member of the Metropolitan Water District of Southern California (Metropolitan) for the purpose of importing supplemental water from the Colorado River and Northern California to augment local water supplies. Located in western San Bernardino County, IEUA serves the cities of Chino, Chino Hills, Fontana, Montclair, Ontario, and Upland, and the service areas of the Monte Vista Water District and Cucamonga County Water District. The current population of the IEUA service area is approximately 700,000. Since its formation, IEUA has expanded its services beyond serving imported water to encompass regional wastewater treatment and production of recycled water, distribution of imported water and recycled water supplies, co-composting of manure and municipal biosolids, groundwater desalination, and disposal of non-reclaimable industrial wastes and brine. IEUA owns and operates a regional wastewater collection system and five water reclamation plants. Regional Water Recycling Plant No. 1 (RWRP-1) has a rated capacity of 44 million gallons per day (mgd) and is located near the intersection of Highway 60 and Archibald Avenue in Ontario. Regional Water Recycling Plant No. 2 (RWRP-2) treats about 5 mgd of wastewater, provides regional solids disposal, and is located in Chino at El Prado Road and Pine Avenue, just east of the 71 Expressway. Regional Water Recycling Plant No. 4 (RWRP-4) has a capacity of 7 mgd and is located near the intersection of Sixth Street and Etiwanda Avenue in Rancho Cucamonga. Regional Water Recycling Plant No. 5 (RWRP-5) is the newest facility, will ultimately treat up to 48 mgd of wastewater and provide regional solids treatment and disposal, and is located in Chino along Kimball Avenue near El Prado Road. The Carbon Canyon Wastewater Reclamation Facility (CCWRF) treats about 8 mgd of wastewater and is located on Telephone Avenue near Chino Hills Parkway and Central Avenue in Chino. Besides these wastewater facilities, IEUA also operates the Chino Basin Desalter, a brackish groundwater treatment facility owned by the Chino Desalter Authority. Chino Basin Desalter produces approximately 8 mgd of high quality drinking water and exports about 10,000 tons of salt annually from the Chino Groundwater Basin (Chino Basin).

3. The Chino Basin Watermaster (CBWM) was established under a Judgment entered in the Superior Court of the State of California for the County of San Bernardino, entitled "Chino Basin Municipal Water District v. City of Chino *et al*," (originally Case No. SCV 164327, file transferred August 1989, by order of the Court and assigned new Case No. RCV 51010). The Honorable Judge Howard B. Wiener signed the Judgment on January 27, 1978. The effective date of this Judgment for accounting and operations was July 1, 1977. The Judgment required that the Chino Basin be adjudicated and operated in accordance with the provisions of the Judgment under the direction of a court-appointed watermaster. The Judgment mandated that the CBWM, as an arm of the court, develop an Optimum Basin Management Plan (OBMP). As part of the development of the OBMP, a historic Chino Basin Peace Agreement (Agreement) between all affected stakeholders in the Basin was finalized in 2000. Following the Agreement, the CBWM developed the Chino Basin Recharge Master Plan to identify and prioritize opportunities for groundwater recharge with the basin. IEUA completed a Recycled Water Feasibility Study in 2002 to integrate its recycled water program into the CBWM's goals and objectives for the OBMP and the Chino Basin Recharge Master Plan. The Program EIR for the Recycled Water Feasibility Study was certified and approved by the IEUA Board of Directors on June 28, 2002.

4. The Chino Basin Water Conservation District (CBWCD) was established in 1949 to protect the Chino Basin in order to guarantee that current and future water needs will be met. Serving the cities of Chino, Chino Hills, Montclair, Ontario, Rancho Cucamonga, and Upland, the CBWCD replenishes the groundwater basin, directing rainfall and storm runoff via channels to its percolation basins in order to increase the local water supply. The CBWCD also promotes water conservation through an active public education program.

5. The San Bernardino County Flood Control District (SBCFCD) was formed when State legislation was enacted in 1939 to provide flood control functions and related water conservation services throughout the County. The SBCFCD has developed an extensive system of facilities, including dams, conservation basins, channels, and storm drains, to intercept and convey flood flows through and away from the major developed areas of the County.

6. The Phase I Chino Basin Recycled Water Groundwater Recharge Project (Phase I Recharge Project) is part of a comprehensive water supply enhancement program jointly sponsored by the IEUA, CBWM, CBWCD, and SBCFCD to enhance water supply reliability and improve the quality of local drinking water wells throughout the Chino Basin. IEUA is the lead agency for the proposed project.

   The Chino Basin Recycled Water Groundwater Recharge Program will be implemented in phases to reduce dependence on imported water that may not be available in the future and provide a local drought-proof supply of new water. Ultimately, when fully developed, the Program will replenish the Chino Basin

with a blend of about 22,000 acre-feet per year (afy) of recycled water, 22,000 afy of stormwater, and 120,000 afy of imported water.

The Phase I Recharge Project will consist of three major components: (1) wastewater treatment and water recycling facilities; (2) recharge basins; and (3) conveyance systems to deliver the various water supplies from their sources to the recharge basins. The initial project will provide approximately 8,000 afy of recycled water, 8,000 afy of stormwater, and 28,000 afy of imported water for a total blend of about 44,000 afy to replenish the Chino Basin. IEUA's goal during Phase I is to achieve a maximum recycled water recharge, based on a running 60-month average, which is 20 percent of the total recharge capacity of the basins.

Recycled water will be tertiary effluent produced by RWRP-1 and RWRP-4 wastewater treatment and water reclamation facilities. RWRP-1 is located at 2450 East Philadelphia Avenue in Ontario, California 91761, and RWRP-4 is located at 12811 Sixth Street in Rancho Cucamonga, California 91729. IEUA operates these two facilities under California Regional Water Quality Control Board, Santa Ana Region (SARWQCB) Order No. 01-1 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0105279. Recent average daily flows are 38.2 mgd at RWRP-1 and 4.6_mgd at RWRP-4.

The Phase I Recharge Project features seven recharge basins, including Banana Basin, Declez Basin, Etiwanda Conservation Ponds, Hickory Basin, RP-3 Basins, Turner Basin No. 1, and Turner Basin Nos. 2, 3, and 4, plus one storage basin, Jurupa Basin. All of these are existing basins owned by SBCFCD, with the exception of the IEUA RP-3 Basins. As part of the Phase I Recharge Project, IEUA plans to construct a new recharge facility, RP-3 Basins, at the site of their closed Regional Water Recycling Plant No. 3, near the southwest corner of the Jurupa Avenue and Beech Avenue intersection in Fontana. The total effective recharge area of these eight spreading facilities is nearly 138 acres, and their combined annual recharge capacity is approximately 44,000 afy.

Recycled water will be delivered to the recharge basins via IEUA's existing Regional Recycled Water Distribution System pump stations and pipelines, including the RWRP-4 Outfall, West Branch Regional Pipeline, Etiwanda North Regional Pipeline, Whittram Regional Pipeline, Etiwanda Conservation Ponds Pipeline, Etiwanda South Regional Pipeline, and Jurupa Regional Pipeline. Of these, the outfalls are existing pipelines and the others are new transmission lines, totaling nearly 20 miles in length and ranging up to 48 inches in diameter. The existing, concrete-lined Declez Channel will convey water from the RP-3 Basins to Declez Basin. Stormwater and imported water will be delivered to the recharge basins via pipelines, drainage channels, and flow control structures.

The recycled water treatment technology used for the proposed project consists of:

- Source Control: IEUA maintains a comprehensive industrial pretreatment and source control program approved by the SARWQCB for control of waste discharges from point sources into the wastewater collection system. IEUA owns and operates a non-reclaimable wastewater (NRW) collection and conveyance system that provides disposal for industrial wastewater and brines. The northern NRW system discharges these wastes to the County Sanitation Districts of Los Angeles County for treatment and disposal. The southern NRW system discharges industrial wastewater and brines to the Orange County Sanitation District for treatment and disposal. The industrial pretreatment program and NRW system provide source control and salinity management for the IEUA water reclamation facilities.
- Secondary Treatment: Wastewater is treated at IEUA's RWRP-1 and RWRP-4. Both of these facilities utilize anoxic/oxic secondary treatment processes that remove nitrogen as well as organics and suspended solids, producing an oxidized and clarified secondary effluent.
    - RWRP-1 features preliminary, primary, and secondary treatment processes. Preliminary treatment consists of barscreens and grit removal. Primary treatment consists of sedimentation. At times, a portion of the primary effluent is diverted to flow equalization basins to dampen the diurnal flow peaks on the downstream processes. Following primary clarification is the secondary treatment process, which is composed of anoxic and oxic bioreactors and secondary clarifiers.
    - RWRP-4 features preliminary and secondary treatment processes. Preliminary treatment consists of barscreens and grit removal. Secondary treatment consists of anoxic and oxic bioreactors and secondary clarifiers.
- Tertiary Treatment: Secondary effluent from RWRP-1 and RWRP-4 receives tertiary treatment in compliance with the California Department of Health Services' "Water Recycling Criteria" for disinfected tertiary recycled water.
    - RWRP-1 features coagulation, followed by filtration and disinfection. Coagulation with alum and polymer addition is used intermittently as needed to enhance biological flocculation, based on influent turbidity to the filters. Following dual-media (sand and anthracite) filtration, tertiary effluent is disinfected using sodium hypochlorite. A portion of the disinfected tertiary effluent is pumped to irrigation uses. The remainder is dechlorinated using sodium bisulfite and discharged to Cucamonga Creek or outfall reuse sites, such as Prado Lake and Prado Park Lake.
    - RWRP-4 features alum and polymer addition for in-line coagulation and direct sand filtration. Filtered effluent is

disinfected using ultraviolet light and adding sodium hypochlorite. By 2005, the ultraviolet disinfection system will be removed and replaced with a conventional sodium hypochlorite disinfection system with a contact tank. A portion of the disinfected tertiary effluent is stored in on-site ponds and pumped to reuse customers. The balance of the flow is discharged to the RWRP-4 outfall, which transports the final effluent to the RWRP-1 site where it is combined with RWRP-1 effluent and discharged to Cucamonga Creek.

The proposed project will comply with Section 60320 of Title 22, California Code of Regulations upon completion of the improvements at RWRP-1 that are described in the updated Title 22 Engineering Report for RWRP-1, in quarterly progress reports, and in correspondence between IEUA and the SARWQCB dated October 14 and 31, 2003.

7. An effective source control program is currently provided by IEUA to minimize the risk that wastewater treated at RWRP-1 and RWRP-4 will be contaminated with toxic chemicals to protect the treatment facilities. The scope and purpose of this IEUA source control program need to be expanded to include not only contaminants that may be detrimental to the facilities, but also to include contaminants specified by the Department that may be harmful to human health and drinking water supplies. IEUA proposes to review its current source control program to mitigate future impacts on the groundwater recharge program. The program review will determine if additional constituents should be included in the industry permitting process, and if additional pretreatment requirements are necessary, particularly for industries that discharge wastewater to the RWRP-1 and RWRP-4 collection systems. IEUA, through a comprehensive monitoring program, will be able to reasonably ensure that the recycled water produced at RWRP-1 and RWRP-4 for recharge into the Chino Basin is not contaminated with toxic chemicals of industrial origin that are of concern to the Department in drinking water sources. In addition, IEUA plans to further mitigate wastewater constituent impacts on the Phase I Recharge Project by maximizing use of the NRW system, which segregates these waste streams and discharges them to Los Angeles and Orange Counties.

8. IEUA has operated RWRP-1 since 1972 and RWRP-4 since 1997. Both facilities have redundant treatment systems, standby equipment, power failure safeguards, and contingency plans to maintain process reliability and recycled water quality in accordance with the Water Recycling Criteria (WRC). To ensure that RWRP-1 and RWRP-4 produce recycled water that meets all requirements and performance criteria specified in the SARWQCB permit, IEUA has developed operating and contingency plans that define proper operation and cover critical parameters of the treatment processes. These plans will be updated periodically to take into account the experiences learned from the prior years of operation.

9. Recycled water from RWRP-1 is currently used to recharge the Chino Basin via Ely Basin No. 3 at a rate of approximately 500 afy. IEUA plans to increase the volume of recycled water recharged at this facility up to 2,300 afy, consistent with its approved Title 22 Engineering Report dated April 1997. The existing recycled water groundwater recharge operation at Ely Basin No. 3 is on-going and outside the scope of the Phase I Recharge Project. Located just northwest of RWRP-1, Ely Basin No. 3 is owned by both SBCFCD and CBWCD and will eventually be added to the Chino Basin Recycled Water Groundwater Recharge Program in a future phase.

10. Pathogenic microorganisms may be present in the recycled water so a minimum retention time for the recycled water in the Groundwater Basin before the water is extracted for drinking purposes and a minimum horizontal separation distance between all drinking water wells should be provided.

11. The Chino Groundwater Basin is a structural depression that has been filled with more than 2,000 feet of sediment derived from the San Gabriel and San Bernardino mountains. The Chino Basin encompasses approximately 235 square miles in San Bernardino, Riverside, and Los Angeles Counties. The natural geological boundaries of Chino Basin include: (1) Red Hill and San Jose Faults to the north; (2) Rialto-Colton Fault to the east; (3) Jurupa Hills to the southeast; (4) La Sierra Hills and the Prado Flood Control Basin to the south; and (5) Chino Hills to the southwest. The unconsolidated sediments consist of alluvial deposits designated as the Older and Younger Alluvium. The Older Alluvium consists of floodplain, fluvial, and alluvial fan deposits, with a thickness in excess of 1,000 feet in the center of the basin. The Older Alluvium is the primary aquifer. The Younger Alluvium consists of dune sand and stream-deposited material, with a thickness up to 200 feet. The Younger Alluvium unconformably overlies the Older Alluvium and occurs above the regional water table over most of the basin. In general, the Younger Alluvium is more permeable than the Older Alluvium, such that percolation of precipitation and applied water is higher in areas underlain by Younger Alluvium. The aquifer system is considered to be largely unconfined, with semiconfined to confined conditions occurring at depth. Based on water quality, the deeper portions of the Basin appear to be somewhat isolated from the shallower saturated zone. The long-term safe yield of the Chino Basin has been determined to be 140,000 afy by the 1978 Chino Basin Judgment, using 1965 to 1974 as a base period. More recent analyses estimate the Basin's safe yield at 156,000 to 162,000 afy.

12. The Phase I Recharge Project will replenish the Chino Basin via spreading with a targeted blend of approximately 20 percent recycled water and 80 percent water of non-wastewater origin, based on a 60-month running average. A phased approach will be used to achieve the targeted blend of 20 percent over a two-year period. The recycled water contribution (RWC) will be 0.10 during the initial year of operation, 0.15 during the second year of operation, and 0.20 during the third and subsequent years (see Condition # 8). Diluents will be stormwater and imported State Project Water from Northern California that is

purchased from Metropolitan Water District of Southern California (Metropolitan). Stormwater will be local captured runoff originating from the watersheds along the southern extent of the San Gabriel Mountains and from the developed and undeveloped areas below the mountains. Storm runoff will be conveyed to the recharge basins via existing creeks and flood control channels. State Project Water will be untreated surface water diverted from Lake Silverwood, delivered to the recharge basins through Metropolitan's Foothill Feeder Pipeline (Rialto Reach). The recharge percentages will be calculated based on the running-monthly-average recycled water contribution for the preceding period up to 60 months.

13. The closest active domestic wells to the Phase I recharge basins are described below:

- Banana Basin: The closest active production well, Fontana Water Company F37A Well (CBWM No. 3600573), is located cross-gradient about 2,300 feet east of the basin and is not anticipated to receive recycled water. The closest downgradient domestic well is City of Ontario No. 31 Well (CBWM No. 600455) located about 16,788 feet southwest of the basin. The retention time prior to extracting water of recycled water origin at this well is estimated at 4,916 days.
- Declez Basin: The nearest downgradient domestic well is the Jurupa Community Services District No. 17 Well (CBWM No. 300207) located about 6,181 feet west-southwest of the basin. The retention time prior to extracting water of recycled water origin at this well is estimated at 1,206 days.
- Etiwanda Conservation Ponds: The closest downgradient domestic well is the City of Ontario No. 31 Well (CBWM No. 600455) located about 5,574 feet south of the basin. The retention time prior to extracting water of recycled water origin at this well is estimated at 1,123 days.
- Hickory Basin: The closest downgradient domestic well is City of Ontario No. 30 Well (CBWM No. 600454) located about 14,022 feet southwest of the basin. The retention time prior to extracting water of recycled water origin at this well is estimated at 3,547 days.
- RP-3 Basins: The closest downgradient domestic well is the Jurupa Community Services District No. 13 Well (CBWM No. 300200) located about 14,587 feet west-southwest of the basin. The retention time prior to extracting water of recycled water origin at this well is estimated at 5,770 days.
- Turner Basin No. 1: The nearest downgradient domestic well is City of Ontario No. 18 Well (CBWM No. 3602266) located about 679 feet west of the basin. The retention time prior to extracting water of recycled water origin at this well is estimated at 563 days.

- Turner Basin Nos. 2, 3, and 4: The nearest downgradient domestic well is City of Ontario No. 25 Well (CBWM No. 3600010) located about 2,146 feet southeast of the basins. The retention time prior to extracting water of recycled water origin at this well is estimated at 1,543 days.
- Jurupa Basin: The nearest downgradient domestic well is the Jurupa Community Services District No. 13 Well (CBWM No. 300200) located about 6,203 feet southwest of the basin. The retention time prior to extracting water of recycled water origin at this well is estimated at 2,813 days.

14. It is important that new drinking water wells are constructed outside the area required to achieve 6 months of retention time and a minimum of 500 horizontal feet separation downgradient from the spreading operation at each of the recharge basins for inactivation of microorganisms. The County of San Bernardino Department of Environmental Health Services (DEHS) is the lead permitting agency for construction of all public and private domestic supply wells within the project area. IEUA will closely monitor the well permitting activities of DEHS to make sure domestic supply wells are located outside this soil aquifer treatment zone near the recharge basins. Both IEUA and the CBWM will adopt ordinances to restrict the drilling of wells within 500 feet of the spreading basins and where extracted water would not have at least 6 months underground residence time.

15. Groundwater generally flows south to southwest across the Chino Basin. Extensive hydrogeologic studies have been prepared for the Chino Basin using data from the CBWM, and local groundwater flow models have been developed in the vicinity of the recharge basins. Transmissivity of the aquifer at various locations has been estimated from specific capacity tests at nearby production wells. Hydraulic gradients have been estimated and groundwater levels have been monitored. These analyses and modeling efforts were used to estimate the underground retention times from the recharge basins to nearby drinking water wells. With the exception of Turner No. 1 Basin, the estimated recycled water underground retention time from the Phase I recharge basins exceeds 1,000 days. IEUA proposes to conduct a groundwater tracer study using only imported water and stormwater to confirm the underground travel time calculations prior to recharging recycled water at Turner Basin No. 1. IEUA may conduct other groundwater tracer studies at other recharge basins after recharge operations commence.

16. A lysimeter-based monitoring program will be used to demonstrate soil-aquifer treatment for compliance with Total Organic Carbon (TOC) and total nitrogen. Samples of recharge water will be collected using lysimeters in the vadose zone at each recharge basin. A lysimeter consists of a porous cup installed in unsaturated sediment that collects undiluted samples of recharge water prior to reaching the regional groundwater table. One or two clusters of four lysimeters will be installed at each recharge basin. Each cluster will include lysimeters completed at depths of 5, 10, 15, and 25 feet bgs to provide detailed vertical

resolution in the upper part of the vadose zone. The average value of the lysimeter results from the deeper readings will be used to demonstrate soil-aquifer treatment efficiency.

17. Prior to spreading recycled water, new monitoring wells will be constructed near the recharge basins within approximately one to three months travel time along the groundwater flow paths toward the nearest domestic wells as follows:

    - Banana and Hickory Basins: One new monitoring well will be installed for Banana and Hickory Basins because these basins are located within close proximity to each other. Monitoring well BH1 will be installed within 300 to 360 feet downgradient of these basins to sample groundwater at two depths (approximately 370-410 and 420-460 feet below ground surface (bgs)).
    - Etiwanda Conservation Ponds: Monitoring well E1 will be installed within 450 feet downgradient of these basins to sample groundwater at two depths (approximately 320-340 and 370-390 feet bgs).
    - RP-3 Basins: Monitoring well RP31 will be installed within 200 feet downgradient of these basins to sample groundwater at two depths (approximately 215-235 and 265-285 feet bgs).
    - Declez Basin: Monitoring well D1 will be installed within 300 feet downgradient of this basin to sample groundwater at two depths (approximately 135-155 and 185-205 feet bgs).
    - Turner Basin No. 1: Monitoring well T1 will be installed within 100 feet downgradient of this basin to sample groundwater at two depths (approximately 330-350 and 380-400 feet bgs).
    - Turner Basin Nos. 2, 3 & 4: Monitoring well T2 will be installed within 100 feet downgradient of these basins to sample groundwater at two depths (approximately 340-360 and 390-410 feet bgs).
    - Jurupa Basin: Because Jurupa Basin has essentially no percolation capacity, it will be used for storage rather than recharge. An existing domestic well, Jurupa Community Services District No. 13 Well (CBWM 300200) located downgradient of Jurupa Basin will be used to monitor groundwater at 220 to 446 feet bgs.

18. IEUA proposes to monitor water quality at 13 existing municipal production wells located downgradient from the recharge basins and at three existing municipal wells located upgradient from the recharge basins. Additional new monitoring wells and other existing industrial wells may be added to the monitoring well network as needed. The Engineering Report summarizes groundwater sampling data that characterizes existing groundwater quality. Detailed information is provided in a 2002 report prepared for the Chino Basin Watermaster entitled "Final Initial State of the Basin Report, Chino Basin Optimum Basin Management Program".

19. An operations, maintenance, and monitoring plan (OMM Plan) for the Phase I Recharge Project will be submitted for review and approval by the Department and SARWQCB prior to startup. The OMM Plan will describe operating, maintenance, and monitoring procedures for normal, start-up, seasonal flow, upset, off-spec, and emergency conditions. The OMM Plan will address source control concerns, water quality issues, and include a contingency plan and an emergency response plan.

20. Documents submitted or prepared in support of the project include:

    "Title 22 Engineering Report, Phase I Chino Basin Recycled Water Groundwater Recharge Project", CH2M-Hill, November 2003

    "Memorandum of Understanding" for watershed protection and agree to maximize use of recycled water for mutual benefit, IEUA and Orange County Water District, October 2002

    "Final Initial State of the Basin Report, Chino Basin Optimum Basin Management Program". Prepared for the Chino Basin Watermaster, Wildermuth Environmental, Inc., October 2002

    "Program Environmental Impact Report for the Wastewater Facilities Master Plan, Recycled Water Master Plan and Organics Management Master Plan", Tom Dodson & Associates, Draft in April 2002, Final certified by IEUA Board in June 2002

    "Chino Basin Facilities Improvement Project, Executive Summary, Basin Descriptions and Appendix G (Geotechnical Report)", URS, March 2002

    "Memorandum of Understanding on Recharge Master Plan", approved by IEUA, CBWCD, SBCFCD, and CBWM, February 2002

    "IEUA Recycled Water System Feasibility Study", IEUA, January 2002

    "Chino Basin Recharge Master Plan", Chino Basin Watermaster, 2001

    "Optimum Basin Management Program, Recharge Master Plan, Phase II Report", Wildermuth Environmental, Inc., August 2001

    "Chino Basin Recycled Water Groundwater Recharge Project Facilities Plan", Camp Dresser & McKee", August 2000

    "Optimum Basin Management Program, Draft Phase I Report", Wildermuth Environmental, Inc., August 1999

CONDITIONS

Based on the above FINDINGS OF FACT, which are made pursuant to the information provided by Inland Empire Utilities Agency (IEUA) in the Title 22 Engineering Report on the Phase I Chino Basin Recycled Water Groundwater Recharge Project (Phase I Recharge Project) dated November 2003, subsequent correspondence, and the presentations by IEUA and Chino Basin Watermaster (CBWM) staff and consultants, and comments made by members of the public at the Public Hearing held by the California Department of Health Services, Drinking Water Field Operations Branch, on December 4, 2003, in Rancho Cucamonga, California, the California Department of Health Services (Department) FINDS that the proposed operation of the Phase I Recharge Project will provide groundwater recharge of the domestic water supply aquifers by surface spreading of a quality that fully protects public health PROVIDED THAT ALL OF THE FOLLOWING CONDITIONS ARE MET:

1. Treatment of recycled water intended for groundwater recharge shall consist of secondary treatment, followed by tertiary filtration and disinfection. Major modifications to the treatment trains at IEUA's Regional Water Recycling Plant No. 1 (RWRP-1) and Regional Water Recycling Plant No. 4 (RWRP-4) described in the Engineering Report and related correspondence shall be subject to review by the Department and the Santa Ana Regional Water Quality Control Board (SARWQCB) and must be completed prior to project startup.

2. Recycled water produced by RWRP-1 and RWRP-4 for recharge via spreading shall, at all times, be adequately oxidized, filtered, and disinfected in accordance with the Water Recycling Criteria (WRC). There shall be no bypassing of any treatment process for production of recycled water for groundwater recharge.

3. The wastewater collection system shall be operated under a comprehensive industrial pretreatment and pollutant source control program for the control of discharge of toxic wastes from point sources, which is approved by the SARWQCB. If the Department identifies any contaminants that may pose a risk of contamination to a drinking water supply, it may designate those contaminants for inclusion in the pretreatment and source control program requirements for IEUA to minimize the possibility that the influent wastewater to RWRP-1 and RWRP-4 will be contaminated with such toxic chemicals. Quarterly composite and/or grab samples shall be taken of the recycled water prior to recharge and analyzed for contaminants designated by the Department. Any positive results shall be included in the monitoring plan referenced in Condition #11.

   The source control program shall include:

   - An assessment of the fate of the specified contaminant compounds through the wastewater and recycled water treatment systems.

- A source investigation and monitoring program focused on the specified contaminants and their potential ability to persist through the treatment systems.
- An outreach program to industrial, commercial and residential communities within the sewage collection agency's service area to manage and minimize the discharge of compounds of concern at the source.
- A proactive program for maintaining an inventory of compounds discharged into the wastewater collection system so that new compounds of concern can be evaluated rapidly.

4. Recycled water shall be recharged via spreading at Banana Basin, Declez Basin, Etiwanda Conservation Ponds, Hickory Basin, RP-3 Basins, Turner Basin No. 1, Turner Basin Nos. 2, 3, and 4, and Jurupa Basin. The average recycled water contribution (RWC) that is recharged in each of the recharge basins shall not exceed 20 percent of the total water recharged at each location. If IEUA proposes to increase the RWC at any time, the Department will hold a public hearing prior to submitting its recommendations to the SARWQCB. Diluents shall be stormwater and imported untreated State Project Water. RWC compliance shall be determined on a 60-month running average basis. Once a month, the average RWC shall be calculated during this period by dividing the total volume of recycled water spread at each recharge basin during the preceding months by the total volume of spread water during that period. If the average RWC does not comply with the maximum average RWC specified herein, IEUA shall notify the Department and SARWQCB within 7 days and submit a report to the Department and the SARWQCB within 60 days describing the reason and corrective actions taken to avoid future occurrences.

5. The recycled water recharged shall meet all maximum contaminant levels specified in the Drinking Water Quality and Monitoring Requirements, California Code of Regulations (CCR), Title 22, Chapter 15 as follows:

   - Inorganic chemicals in Table 64431-A (except for nitrogen compounds);
   - Radionuclides in Table 4, Section 64443;
   - Organic chemicals in Table 64444-A;
   - Any new Federal or State maximum contaminant level upon adoption;
   - Action levels for lead and copper in Section 64678; and
   - Secondary maximum contaminant levels in Tables 64449-A and 64449-B ("Upper" levels).

   Recycled water shall be monitored on a quarterly basis at regular intervals by analyzing a 24-hour composite or grab sample to determine compliance with primary maximum contaminant levels referenced above for inorganic chemicals, radionuclides, organic chemicals, and disinfection byproducts and with action levels for lead and copper referenced above. Compliance shall be based on the

running-quarterly average, calculated each quarter using the previous four quarters of data. If the recycled water is out of compliance, a report shall be submitted to the Department and SARWQCB that describes the reasons and the corrective actions taken.

Prior to the commencement of recycled water spreading, at least one 24-hour composite or grab sample of recycled water shall be collected and analyzed to determine compliance with primary maximum contaminant levels referenced above for inorganic chemicals, radionuclides, organic chemicals, and disinfection byproducts, and with action levels for lead and copper referenced above and to demonstrate the effectiveness of the treatment process. The results for the initial recycled water quality analysis shall be submitted to the Department and SARWQCB.

Recycled water shall be monitored on an annual basis by analyzing a representative grab sample to determine compliance with secondary maximum contaminant levels listed above. If the single sample result (or average of samples collected during the year, if more than one) exceeds a secondary maximum contaminant level, a report shall be submitted to the Department and SARWQCB that describes the reasons and corrective actions taken.

6. The recycled water, or if supplemented with diluent water, the blend of the two, prior to reaching the regional groundwater table shall not exceed a total nitrogen concentration of 10 mg/L. The sum of nitrite, organic, and ammonia nitrogen shall not exceed 5 mg/L as nitrogen, and the nitrite level shall not exceed 1 mg/L as nitrogen. Total nitrogen shall be defined as the sum of ammonia, nitrite, nitrate, and organic nitrogen concentrations, expressed as nitrogen. Compliance determination of the recycled water or blend of the recycled water and diluent water shall be determined on lysimeter-based monitoring at each individual recharge basin. Each week two grab or 24-hour composite samples of recycled water or blend of the recycled water and diluent water shall be collected at least three days apart for total nitrogen analysis from the deepest lysimeter sample collection point(s) and shall be averaged when there is more than one lysimeter sampling collection point in a single basin. If any of the above-stated nitrogen limits are exceeded, the laboratory must report the result to IEUA within 48 hours of completion of the analysis. If the average of the two consecutive samples exceeds the allowable limit, IEUA shall investigate the causes and make appropriate corrections, and within 48 hours of receiving the second sample result, notify the Department and SARWQCB. If the average of all samples collected over the ensuing two week period exceeds any of the allowable limits, IEUA shall suspend recharge of the recycled water at that recharge basin until appropriate corrections have been made.

   Within 60 days of suspension of recharge of recycled water, a report describing the causes of the exceedance and corrective measures taken to avoid future violations to these requirements shall be submitted to the Department and SARWQCB.

7. Diluent water shall be monitored quarterly for nitrate and nitrite. Within 48 hours of being informed by the laboratory of a nitrate and/or nitrite result greater than a maximum contaminant level, a confirmation sample shall be collected and analyzed. If the average of the initial and confirmation samples exceeds the maximum contaminant level:

   - IEUA shall notify the Department and SARWQCB within 48 hours of receiving the confirmation sample result.
   - The causes of the exceedance shall be investigated and appropriate corrections shall be made.
   - IEUA shall collect and analyze two grab or 24-hour composite samples at least three days apart each week for two weeks.
   - If the average of all samples collected over the ensuing two week period exceeds the applicable criterion, recharge of the diluent water shall be suspended until appropriate corrections are made.

8. The Total Organic Carbon (TOC) concentration of the filtered wastewater shall not exceed 16 mg/L for more than two consecutive samples. If the filtered wastewater TOC exceeds 16 mg/L for more than two consecutive samples, then recharge of recycled water shall be suspended until the filtered wastewater TOC is less than 0.01 g/L. For one year after initial project startup, 24-hour composite samples of filtered wastewater shall be collected and analyzed twice per week for TOC compliance. Subsequently, based on its review of the first year of data, the Department may allow 24-hour composite samples of filtered wastewater to be collected and analyzed weekly for TOC compliance.

   A. For one year after initial project startup, the TOC concentration of the recycled water prior to reaching the regional groundwater table shall not exceed 5 mg/L (0.5 mg/L divided by 0.1). Compliance shall be determined based on a lysimeter-based monitoring program performed at each individual recharge basin to demonstrate soil aquifer treatment efficiency. Compliance shall be based on the running average of the most recent 20 samples. Each week one grab or 24-hour composite sample of the recharge water (recycled water or if supplemented with diluent water, the blend of the two) shall be collected for TOC analysis from the deepest lysimeter sample collection point(s) and shall be averaged when there is more than one lysimeter sampling collection point in a single basin. An alternative monitoring plan may be approved upon submission of sampling results that demonstrate that an equal level of public health protection is achieved. Determination of compliance shall begin as soon as four samples have been collected, averaging all available samples up to 20 samples. After that time, compliance shall be determined monthly based on the most recent 20 TOC samples. The average of the most recent 20 samples shall be determined monthly. If the average TOC concentration in the recycled water exceeds 5.0 mg/L, recharge of recycled water shall be suspended until the above TOC

requirement can be met. Within seven days of the suspension, IEUA shall notify the Department and SARWQCB. If the average of the last four recycled water samples exceeds the TOC concentration of 5.0 mg/L, a report shall be submitted to the Department and the SARWQCB within 60 days that describes the reasons and the corrective actions that have been taken to avoid future occurrences.

B. If the average TOC concentration of all samples collected during the first year at any spreading basin does not exceed 3.3 mg/L and all other Conditions are met, the RWC can be increased to 0.15 during the second year of operation of the project, and the TOC concentration of the recycled water prior to reaching the regional groundwater table shall not exceed 3.3 mg/L (0.5 mg/L divided by 0.15) for that year based on the 20-sample compliance monitoring stated above. If the average TOC concentration in the recycled water exceeds 3.3 mg/L, recharge of recycled water shall be suspended until the above TOC requirement can be met or, if the average TOC concentration does not exceed 5.0 mg/L and the running 60-month average RWC contribution does not exceed 0.1, compliance shall be based on the requirements specified in Condition #8(A). Within seven days of the suspension, IEUA shall notify the Department and SARWQCB. If the average of the last four recycled water samples exceeds the TOC concentration of 3.3 mg/L, a report shall be submitted to the Department and the SARWQCB within 60 days that describes the reasons and the corrective actions that have been taken to avoid future occurrences.

C. If the average TOC concentration of all samples collected during the second year at any spreading basin does not exceed 2.5 mg/L and all other Conditions are met, the RWC can be increased to 0.2 after one year of operation at a RWC of 0.15, and the TOC concentration of the recycled water prior to reaching the regional groundwater table shall not exceed 2.5 mg/L (0.5 mg/L divided by 0.2, the Department specified maximum average RWC) based on the 20-sample compliance monitoring stated above. If the average TOC concentration in the recycled water exceeds 2.5 mg/L, recharge of recycled water shall be suspended until the above TOC requirement can be met or, if the average TOC concentration does not exceed 3.3 mg/L and the running 60-month average RWC contribution does not exceed 0.15, compliance shall be based on the requirements specified in Condition #8(B). If recharge of recycled water is suspended, IEUA shall notify the Department and SARWQCB within seven days of suspension. If the average of the last four recycled water samples exceeds the TOC concentration of 2.5 mg/L, a report shall be submitted to the Department and the SARWQCB within 60 days that describes the reasons and the corrective actions that have been taken to avoid future occurrences.

9. Filter effluent shall be oxidized wastewater that has been coagulated and passed through dual media gravity filters at a rate that does not exceed 5 gallons per minute per square foot of surface area. Coagulation need not be used at all times provided that the filter effluent quality does not exceed 2 Nephelometric turbidity units (NTU), that the turbidity of the influent to the filters is continuously measured, that the influent turbidity does not exceed 5 NTU for more than 15 minutes and never exceeds 10 NTU, and that there is the capability to automatically activate chemical addition should the filter influent turbidity exceed 5 NTU for more than 15 minutes.

   The turbidity of the filter effluent shall not exceed an average of 2 NTU within any 24-hour period, and shal not exceed 5 NTU more than 5 percent of the time in any 24-hour period, and shall not exceed 10 NTU at any time. The turbidity of the filtrate shall be continuously measured with at least one reading every 1.2 hours and recorded. Compliance with the daily average turbidity shall be determined based on using the recorded turbidity taken at intervals of no more than 1.2 hours over a 24-hour period. Should the continuous turbidity meter and recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24 hours. The results of the daily average turbidity determinations shall be reported quarterly to the Department and the SARWQCB. A failure to meet the turbidity performance requirements shall result in the suspension of recharge of recycled water until such time that the cause of the failure has been identified and corrected. Any failure to meet the turbidity performance requirements shall be reported to the Department and the SARWQCB in the next monthly report.

10. The recycled water intended for recharge via spreading shall be disinfected such that the 7-day median number of total coliforms shall not exceed 2.2 total coliform bacteria per 100 milliliters (mL), and the number of total coliform organisms shall not exceed 23 total coliform bacteria per 100 mL in more than one sample in any 30-day period prior to injection or spreading. No sample shall exceed 240 total coliform bacteria per 100 mL. A grab sample shall be analyzed daily for total coliform bacteria. A failure to meet these requirements shall require the submission of a report describing the cause of the failure and the corrective actions taken to avoid future violations of these requirements. Failure to meet the 7-day median coliform requirement for two consecutive days shall result in the suspension of the spreading of recycled water until such time the cause of the failure has been identified and corrected. Any failure to meet the total coliform requirements shall be reported to the Department and SARWQCB in the next monthly report.

11. Each quarter during the first year of operation, samples of the recycled water shall be collected and analyzed as follows, and any positive results shall be reported to the Department and SARWQCB in the next monthly report:

    - Unregulated chemicals in Table 64450, Chapter 15, Title 22, CCR, Drinking Water Quality and Monitoring Requirements;

- Priority toxic pollutants (chemicals listed in the Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California, and 40 CFR Part 131, Federal Register 65 (97), May 18, 2000, p. 31682); and
- The following chemicals with State action levels: N-nitrosodimethylamine (NDMA), 1,4-dioxane, and perchlorate.

After the first year of operation, the Department may allow the monitoring frequency to be reduced to annually for the above chemicals based on the initial sample results.

Prior to the commencement of recycled water spreading, at least one 24-hour composite or grab sample of recycled water shall be collected and analyzed for the above chemicals. The results for the initial recycled water quality analysis shall be submitted to the Department and SARWQCB.

12. Each year, samples of the recycled water shall be collected and analyzed for endocrine disrupting chemicals and pharmaceuticals specified by the Department and using methods accepted by the Department. The results of this monitoring shall be submitted to the Department and SARWQCB annually.

13. IEUA shall strive to meet the recycled water quality goals for unregulated chemicals, priority toxic pollutants, and State action levels, endocrine disrupting chemicals, and pharmaceuticals designated by the Department. Any exceedance of any goal shall trigger an investigation by IEUA as to the cause of the exceedance. If the exceedance of any particular goal persists on two succeeding monitoring periods, IEUA shall submit the investigation results including but not limited to the description of the exceedance, cause(s) of the exceedance, and proposed corrective measure(s), if necessary to the Department and SARWQCB. If the exceedance of any goal becomes chronic, IEUA shall proceed to implement the proposed action plan to correct the exceedance. The Department and SARWQCB may modify the action plan.

14. An operations, maintenance and monitoring plan (OMM Plan) shall be developed for the Phase I Recharge Project and submitted to the Department and the SARWQCB for approval prior to startup of the project. IEUA shall operate its project facilities in accordance with the approved OMM Plan. After the initial year of operation, the OMM Plan shall be updated and submitted to the Department and SARWQCB for review and approval.

    The OMM Plan shall cover critical operational parameters for the wastewater treatment facilities, recycled water and diluent water conveyance systems, and recharge basins, maintenance and calibration schedules for monitoring equipment, process alarm set points, and response procedures for alarms, including criteria for diverting recycled water if water quality requirements are not met, start-up, seasonal flow, and emergency response and contingency plans. During the first year of operation of the IEUA project, all treatment processes shall be optimized to reduce contaminant levels. The results of these initial

optimization efforts shall be incorporated into the OMM Plan. The OMM Plan shall include staffing levels with applicable certifications levels for operations personnel. Significant changes in the operation of any of the treatment processes shall be reported to the Department and SARWQCB. Significant changes in the approved OMM Plan, which may include provisions to comply with Condition No. 3, must be approved by the Department and SARWQCB prior to instituting changes.

15. At each recharge basin, the recycled water shall be retained in the groundwater basin for a minimum of 6 months prior to being withdrawn at a domestic water supply well. A tracer study using a signature compound to confirm the underground retention time shall be conducted at Turner Basin No. 1 prior to recharge of recycled water at that basin. The Department may require tracer studies at the other recharge basins to be conducted after recharge of recycled water has begun to confirm the underground retention time at those basins. If a new well is installed at a closer distance to any of the recharge basins than the existing wells, tracer studies may need to be completed to evaluate the retention time between the recharge basin and the newly drilled well.

16. At each recharge basin, no domestic drinking water wells shall be allowed within a soil aquifer treatment zone defined by the distance of less than 500 feet and 6 months underground travel time from the basin.

17. IEUA shall adopt and maintain an ordinance to restrict the drilling of wells within 500 feet of the spreading basins and where extracted water would not have at least 6 months underground residence time. IEUA shall notify the CBWM and County of San Bernardino Department of Environmental Health Services (DEHS) to prevent construction of any domestic supply wells and prevent the use of groundwater for drinking water purposes within the area required to achieve 6 months retention time and 500 feet of horizontal separation from each of the recharge basins prior to the start of spreading of recycled water. IEUA shall closely monitor the well permitting activities of DEHS to make sure domestic supply wells are located outside this soil aquifer treatment zone near the recharge basins.

18. Groundwater monitoring to detect the influence of the Phase I Recharge Project shall be performed. Monitoring wells shall be sited at locations within approximately one to three months underground travel time of each recharge basin and at additional intermediate points between each recharge basin and the nearest downgradient domestic water supply well, and such that samples can be obtained independently from each aquifer potentially conveying the recharge water. Monitoring well locations shall be determined based on a numerical model, tracer, or other method to determine the estimated underground travel time from the recharge operation to the monitoring well sites. If a tracer is used, the tracer shall be determined prior to start-up.

19. With the intent of monitoring groundwater quality prior to spreading recycled water in each particular basin, at a minimum, the following new monitoring wells shall be constructed prior to project startup within 500 feet of each recharge basin and within one to three months underground travel time from the recharge basins and the nearest downgradient domestic water supply wells:

    - Monitoring well BH1 will be installed within about 300 to 360 feet downgradient of Banana and Hickory Basins to sample groundwater at two depths (approximately 370-410 and 420-460 feet below ground surface (bgs)).
    - Monitoring well E1 will be installed within about 450 feet downgradient of the Etiwanda Conservation Ponds to sample groundwater at two depths (approximately 320-340 and 370-390 feet bgs).
    - Monitoring well RP31 will be installed within about 200 feet downgradient of the RP-3 Basins to sample groundwater at two depths (approximately 215-235 and 265-285 feet bgs).
    - Monitoring well D1 will be installed within about 300 feet downgradient of Declez Basin to sample groundwater at two depths (approximately 135-155 and 185-205 feet bgs).
    - Monitoring well T1 will be installed within about 100 feet downgradient of Turner Basin No. 1 to sample groundwater at two depths (approximately 330-350 and 380-400 feet bgs).
    - Monitoring well T2 will be installed within about 100 feet downgradient of Turner Basin Nos. 2, 3, and 4 to sample groundwater at two depths (approximately 340-360 and 390-410 feet bgs).

    Existing wells shall be incorporated in the groundwater monitoring program as described in the Engineering Report. Additional monitoring wells may be required in the future depending on the results of the groundwater monitoring program.

20. IEUA shall submit a geotechnical report to the Department and the SARWQCB documenting percolation at the Jurupa Basin. If evidence of percolation is found at Jurupa Basin, a new monitoring well shall be installed as described in the Engineering Report.

21. The groundwater monitoring program shall be reviewed and modified every two years or sooner, based on results of the monitoring program. Changes to the monitoring program, including well locations, shall be approved by the Department and SARWQCB.

22. Samples shall be collected at the aquifer depths listed in Condition No. 19 at each monitoring well and analyzed:

Quarterly for:

- TOC;
- Constituents and characteristics in CCR, Title 22, Chapter 15, Tables 64449-A and 64449-B;
- Total coliform levels; and
- Any water quality constituents specified by the Department based on the results of the recycled water monitoring conducted pursuant to these analyses.

Every two weeks for:

> Tot al nitrogen;

> Nitrate;

> Nitrite;

> Dissolved Oxygen.

The frequency of sampling for the last four constituents may be decreased to quarterly after recharge water recharged at the highest RWC allowed in the permit has reached the well for a period of 24 months and only if the nitrite and nitrate maximum contaminant levels have not been exceeded and the dissolved oxygen level has not fallen below 2 mg/L in two consecutive samples.

If any of the monitoring results indicates that a maximum contaminant level has been exceeded, that the dissolved oxygen falls below 2 mg/L, or that coliforms are present, IEUA shall notify the Department within 48 hours of receiving the results and make note of any of these findings in the monthly report submitted to the SARWQCB.

23. IEUA shall submit all water quality data for groundwater monitoring in a format acceptable to the Department and SARWQCB. Analytical results shall be reported to the Department electronically using the Electronic Deliverable Format as defined in the Electronic Deliverable Format (EDF) Version 1.2i Guidelines and Restrictions dated April 2001 and Data Dictionary dated April 2001.

24. Prior to the onset of operation, IEUA shall have in place a resolution adopted by its governing board that it will be responsible for developing a plan for providing an alternative source of domestic water supply, or a Department approved treatment mechanism, to any user whose domestic water well is found to violate California drinking water quality regulations as a direct result of the Phase I Recharge Project or when the Department makes an analysis and finding that the domestic water well is unsuitable for human consumption as a direct result of the Phase I Recharge Project. Such alternative sources can include water delivered for blending of the producing well, imported water, water produced at a

well head treatment plant, and water produced from new wells. IEUA shall notify the Department in a timely manner when such a determination is made.

25. IEUA shall submit to the Department, SARWQCB, and all downgradient public drinking water systems an annual report of findings prepared by a qualified engineer registered in California and experienced in the field of water reclamation for groundwater recharge regarding the operation of the Phase I Recharge Project and the results of the monitoring and investigations of the impacts of recycled water spreading at the Phase I recharge basins. The report shall include summaries of compliance with Condition Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 15, and 16; any corrective actions taken as a result of violations and any suspensions of recharge of recycled water; detections of monitored constituents and any observed trends in the monitoring wells; information related to travel of recharge waters, including leading edge of the recharged water plume; and description of any anticipated changes, along with an evaluation of the expected impact on subsequent unit processes. This report shall demonstrate a mass balance to ensure that blending is occurring in the aquifer at each spreading basin. Spreading recharge water flow paths shall be determined annually from groundwater elevation contours and compared to the flow and transport model's flow paths. The flow and transport model shall be updated to match as closely as possible the actual flow patterns observed within the aquifer if the flow paths have significantly changed. This report shall also include Title 22 drinking water quality data for the nearest domestic water supply well in the vicinity of each spreading basin. Prior to start-up of the IEUA Phase I Recharge Project, tracers will need to be identified.

26. IEUA shall submit an update to the engineering report every five years to the Department and SARWQCB.

27. Provided that IEUA meets all of the above conditions and findings of fact, the Department finds that the Phase I Recharge Project will provide groundwater recharge of the domestic water supply aquifers by surface spreading of a quality that fully protects public health. The Department recommends that the above conditions of approval be incorporated into the provisions of the Water Recycling Permit issued by the SARWQCB.

California Regional Water Quality Control Board
Santa Ana Region

MONITORING AND REPORTING PROGRAM
NO. R8-2005-0033

for the

Inland Empire Utilities Agency and Chino Basin Watermaster
Phase I Chino Basin Recycled Water Groundwater Recharge Project
San Bernardino County

State of California
California Regional Water Quality Control Board
Santa Ana Region

MONITORING AND REPORTING PROGRAM NO. R8-2005-0033

For

Inland Empire Utilities Agency and Chino Basin Watermaster
Phase I Chino Basin Recycled Water Groundwater Recharge Project
San Bernardino County

The users shall implement this monitoring and reporting program on the effective date of this Order.

I. *MONITORING REQUIREMENTS*

A. Sampling Requirements

1. Daily samples shall be collected on each day of the week.

2. Weekly samples shall be collected on a representative day of the week.

3. Monthly samples shall be collected on the 10th working day of the month.

4. Quarterly samples shall be collected on the 10th working day of January, April, July, and October.

5. Annual samples shall be collected by the 10th working day of the following months:

Year	Annual Sampling Month
2005-2007	March, June, September, December, respectively
2008-2011	February, May, August, November, respectively
2012-2015	April, July, October, January, respectively

TENTATIVE

B. General Monitoring and Reporting Requirements

1. All chemical and bacteriological analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP) or approved by the Executive Officer. A copy of the laboratory certification shall be submitted with the annual summary report.

2. Recycled water samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136.3. All QA/QC analyses must be run on the same dates when samples were actually analyzed. The Discharger shall make available for inspection and/or submit the QA/QC documentation upon request by Regional Board staff. Proper chain of custody procedures must be followed and a copy of that documentation shall be furnished upon request by Regional Board staff.

3. Users shall submit all water quality data for groundwater monitoring in a format acceptable to the CDHS and Regional Board. Analytical results shall be reported to the CDHS electronically using the Electronic Deliverable Format as defined in the Electronic Deliverable Format (EDF) Version 1.2i Guidelines and Restrictions dated April 2001 and Data Dictionary dated April 2001.

4. The users shall summarize and arrange the monitoring data in tabular form to demonstrate compliance with requirements.

5. For every item where the requirements are not met, the discharger shall submit a statement of the actions undertaken or proposed which will bring the recycled water into full compliance with requirements at the earliest possible time, and submit a timetable for implementation of the corrective measures.

6. Monitoring reports shall be signed by either the principal Executive Officer or ranking elected official. A duly authorized representative of the aforementioned signatories may sign documents if:

   a. The authorization is made in writing by the signatory;
   b. The authorization specifies the representative as either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
   c. The written authorization is submitted to the Executive Officer of this Regional Board.

7. The monitoring report shall contain the following completed declaration:

   "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments thereto; and that, based on my inquiry of the individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Executed on the _____day of_____at _____

_____Signature

_____Title

8. The users shall retain records of all monitoring information, including all calibration and maintenance, monitoring instrumentation, and copies of all reports required by this Order, for a period of at least three (3) years from the date of sampling measurement, or report. This period may be extended by request of the Regional Board or the CDHS at any time and shall be extended during the course of any unresolved litigation regarding the regulated activity. Records of monitoring information shall include:

   a. The date, exact place, and time of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analysis;
   e. The analytical techniques or methods used; and
   f. The results of such analyses.

9. The users shall submit to the Regional Board, together with the first monitoring report required by this Order, a list of all chemicals and proprietary additives which could affect the quality of the recycled water, including quantities of each. Any subsequent changes in types and/or quantities shall be reported promptly. An annual summary of the quantities of all chemicals, listed by both trade and chemical names, which are used in the treatment processes, shall be included in the annual report.

II. ***RECYCLED WATER MONITORING:***

1. Prior to the commencement of recycled water recharge, at least one 24-hour composite or grab sample of recycled water shall be collected and analyzed for all chemicals, radio nuclides, and constituents listed in Tables I, II, and III of Recycled Water Monitoring requirement II.2., below. The results for the initial recycled water quality analysis shall be submitted to the CDHS and Regional Board.

2. Sampling station(s) shall be established where representative samples of recycled water can be obtained. Representative samples shall be collected and analyzed for the parameters at frequencies specified in the following Tables I, II, and III, below:

Table I

Chemical	***Units***	***Type of Sample***	***Minimum Frequency of Sampling and Analysis***
Total Recycled Water Flow	*mgd*	Flow meter/totalizer	Continuous
Turbidity	*NTU*	continuous monitoring and recording	Continuous (see paragraph II.3., below)
Total Nitrogen[1]	*mg/l*	Grab[2]/composite	2/week[3]

[1] *Total Nitrogen is defined as the sum of nitrate, nitrite, ammonia, and organic nitrogen concentrations, expressed as nitrogen.*

Table I			
Chemical	***Units***	***Type of Sample***	***Minimum Frequency of Sampling and Analysis***
Nitrate Nitrogen	*mg/l*	Grab/composite	2/week
Total Inorganic Nitrogen	*mg/l*	Grab/composite	2/week
Total Organic Carbon	*mg/l*	Grab/composite	2/Weekly[4]
Total Coliform	*MPN/100ml*	Grab	Daily
pH	*pH units*	pH meter	Continuous
Electrical Conductivity	*Micromhos/cm*	Grab	Daily
Total Dissolved Solids	*mg/l*	Composite	Monthly
Total Hardness	*mg/l*	Composite	Monthly
Oil and Grease	*mg/l*	Grab	Quarterly
Inorganic Chemical			
Aluminum	*mg/l*	Grab	Quarterly
Antimony	"	"	"
Arsenic	"	"	"
Asbestos	*MFL*	"	"
Barium	*mg/l*	Grab	Quarterly
Beryllium	"	"	"
Cadmium	"	"	"
Chromium	"	"	"
Cyanide	"	"	"
Fluoride	"	"	"
Mercury	"	"	"
Nickel	"	"	"
Selenium	"	"	"
Thallium	*mg/l*	Grab	Quarterly
Volatile Organic Chemicals (VOC)			
Benzene	*mg/l*	Grab	Quarterly
Carbon Tetrachloride	"	"	"
1,2-Dichlorobenzene	"	"	"
1,4-Dichlorobenzene	"	"	"
1,1-Dichloroethane	"	"	"
1,2-Dichloroethane	"	"	"
1,1-Dichloroethylene	"	"	"
cis-1,2-Dichloroethylene	"	"	"
trans-1,2-Dichloroethylene	"	"	"
Dichloromethane	"	"	"
1,2-Dichloropropane	*mg/l*	Grab	Quarterly

2 *Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may or may not be during hydraulic peaks.*

3 *Two samples shall be collected at least three days apart.*

4 *Sampling and testing frequency may be reduced to once weekly subject to CDHS' and Regional Board Executive Officer's approval.*

Table I			
Chemical	***Units***	***Type of Sample***	***Minimum Frequency of Sampling and Analysis***
1,3-Dichloropropene	*mg/l*	Grab	Quarterly
Ethylbenzene	"	"	"
Monochlorobenzene	"	"	"
Methyl-*tert*-butyl ether (MTBE)	"	"	"
Styrene	"	"	"
1,1,2,2-Tetrachloroethane	"	"	"
Tetrachloroethylene	"	"	"
Toluene	"	"	"
1,2,4-Trichlorobenzene	"	"	"
1,1,1Trichloroethane	"	"	"
1,1,2-Trichloroethane	"	"	"
Trichloroethylene	"	"	"
Trichlorofluoromethane	"	"	"
1,1,2-Trichloro-1,2,2-Trifluoroethane	"	"	"
Vinyl Chloride	"	"	"
Xylenes[5]	*mg/l*	Grab	Quarterly
Non-Volatile Synthetic Organic Chemicals (SOCs)			
Alachlor	*mg/l*	Grab	Quarterly
Atrazine	"	"	"
Bentazon	"	"	"
Benzo(a)pyrene	"	"	"
Carbofuran	"	"	"
Chlordane	"	"	"
2,4-D	"	"	"
Dalapon	"	"	"
Dibromochloropropane (DBCP)	"	"	"
Di(2-ethylhexyl)adipate	"	"	"
Di(2-ethylhexyl)phthalate	"	"	"
Dinoseb	"	"	"
Diquat	"	"	"
Endothall	"	"	"
Endrin	"	"	"
Ethylene Dibromide (EDB)	"	"	"
Glyphosate	"	"	"
Heptachlor	"	"	"
Heptachlor Epoxide	"	"	"
Hexachlorobenzene	"	"	"
Hexachlorocyclopentadiene	"	"	"
Lindane	*mg/l*	Grab	Quarterly

5 *Limit is for either a single isomer or the sum of the isomers.*

Table I			
Chemical	***Units***	***Type of Sample***	***Minimum Frequency of Sampling and Analysis***
Methoxychlor	*mg/l*	Grab	Quarterly
Molinate	"	"	"
Oxamyl	"	"	"
Pentachlorophenol	"	"	"
Picloram	"	"	"
Polychlorinated Biphenyls	"	"	"
Simazine	"	"	"
Thiobencarb	"	"	"
Toxaphene	"	"	"
2,3,7,8-TCDD (Dioxin)	"	"	"
2,4,5-TP (Silvex)	*mg/l*	Grab	Quarterly
Disinfection By-products			
Total Trihalomethanes (TTHM)[6]	*mg/l*	Grab	Quarterly
Total Haloacetic acids (five) (HAA5)[7]	"	"	"
Bromate	"	"	"
Chlorite	*mg/l*	Grab	Quarterly
Notification Levels			
Copper	*mg/l*	Grab	Quarterly
Lead	*mg/l*	Grab	Quarterly
Radionuclides			
Combined Radium-226 and Radium-228	*pCi/l*	Grab	Quarterly
Gross Alpha particle activity (including Radium-226 but excluding Radon and Uranium)	*pCi/l*	Grab	Quarterly
Tritium	"	"	"
Strontium-90	"	"	"
Gross Beta particle activity	"	"	"
Uranium	*pCi/l*	Grab	Quarterly

6 *Sum of bromodichloromethane, dibromochloromethane, bromoform, and chloroform.*

7 *Sum of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid).*

Table II			
Constituents	***Units***	***Type of Sample***	***Minimum Frequency of Sampling and Analysis***
Remaining priority pollutants (See Attachment "A")	*µg/l*	Grab	Quarterly
Endocrine disrupting chemicals & pharmaceuticals (see Attachment "B")	*µg/l*	Grab	Annually
Unregulated Chemicals			
Boron	*mg/l*	Grab	Quarterly (see II.4., below)
Chromium-6	*µg/l*	"	"
Dichlorodifluoromethane	"	"	"
Ethyl tertiary butyl ether	"	"	"
N-Nitrosodimethylamine (NDMA)	*µg/l*	Grab	"
Perchlorate	*mg/l*	Grab	Quarterly (see II.4., below)
Tertiary amyl methyl ether	"	"	"
Tertiary butyl alcohol	"	"	"
Vanadium	"	"	"
1,4-Dioxane	"	"	"
1,2,3-Trichloropropane	*µg/l*	Grab	"

Table III			
Constituents	***Units***	***Type of Sample***	***Minimum Frequency of Sampling and Analysis***
Aluminum	*mg/L*	Grab	Annually
Corrosivity	--	"	"
Foaming Agents (MBAS)	"	"	"
Iron	"	"	"
Manganese	*mg/l*	Grab	annually
Odor—Threshold	*units*	"	"
Silver	*mg/l*	Grab	annually
Thiobencarb	"	"	"
Zinc	*mg/l*	Grab	annually

3. Turbidity shall be measured and recorded continuously and immediately before disinfection with at least one reading every 1.2 hours. Should the continuous turbidity meter and recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24 hours.

4. For the first year of operation, all unregulated chemical constituents shall be sampled and tested quarterly. After the first year of operation and with CDHS recommendation and approval, the Executive Officer may allow the monitoring frequency to be reduced to annually for these chemicals based on the initial sample results.

III. *DILUENT WATER MONITORING:*

1. Sampling station(s) shall be established where representative samples of diluent water can be obtained. Representative samples shall be collected and analyzed for the following parameters at frequencies specified herein:

Monitoring Program for Diluent Water				
Parameter	***Sample Station***	***Units***	***Type of Sample***	***Minimum Frequency of Analysis***
Diluent water flow	Before blending	*mgd*	Flow Meter/Totalizer	Continuous
Nitrate and nitrite	"	*mg/l*	Grab	Quarterly
Total Dissolved Solids	"	*mg/l*	Grab	Quarterly

IV. *RECHARGED WATER MONITORING*

1. A lysimeter-based monitoring system shall be used to demonstrate soil-aquifer treatment for TOC and total nitrogen. Samples of recharged water shall be collected using lysimeters in the vadose zone at each recharge basin. (See Provision H.8. of the Order)

Monitoring Program for Recharged Water				
Parameter	***Sample Station***	***Units***	***Type of Sample***	***Minimum Frequency of Analysis***
TOC	lysimeter	*mg/l*	Grab	Weekly
Total Nitrogen	lysimeter	*mg/l*	Grab	2/Week
Total Inorganic Nitrogen	lysimeter	*mg/l*	Grab	2/week
Nitrate-Nitrogen	lysimeter	*mg/l*	Grab	2/week

Monitoring Program for Recharged Water				
Parameter	***Sample Station***	***Units***	***Type of Sample***	***Minimum Frequency of Analysis***
Nitrite, Ammonia, and Organic Nitrogen	lysimeter	*mg/l*	Grab	2/week
Nitrite-Nitrogen	lysimeter	*mg/l*	Grab	2/week

V. *GROUNDWATER MONITORING PROGRAM*

1. The groundwater-monitoring program shall begin one month prior to recharge of recycled water and as soon as the monitoring wells for each recharge basin specified in Sections D.2. and D.3. – Groundwater Monitoring Well Requirements of the Order and the list of wells shown in Attachment C of the M&RP are constructed/installed. Representative samples shall be taken at the groundwater monitoring wells at depths heretofore specified in Sections D.2. and D.3.-Groundwater Monitoring Well Requirements of the Order and the list of wells shown in Attachment C of this M&RP for the following constituents:

Parameter	***Units***	***Type of Sample***	***Minimum Frequency of Analysis***
Total Organic Carbon	*mg/l*	Grab	Quarterly
Total Coliform	*MPN/100ml*	"	"
pH	*pH units*	"	"
Electrical Conductivity	*micromhos/cm*	"	"
Aluminum	*mg/l*	"	"
Color	*Units*	"	"
Copper	*mg/l*	Grab	Quarterly
Corrosivity	*units*	"	"
Foaming Agents (MBAS)	*mg/l*	"	"
Iron	"	"	"
Manganese	"	"	"
Methyl-*tert*-butyl ether (MTBE)	*mg/l*	Grab	Quarterly
Odor—Threshold	*Units*	Grab	Quarterly
Silver	*mg/l*	"	"
Thiobencarb	*mg/l*	"	"
Turbidity	*NTU*	"	"
Zinc	*mg/l*	"	"
Total Dissolved Solids	"	"	"
Chloride	"	'	"
Hardness	"	"	"

Parameter	***Units***	***Type of Sample***	***Minimum Frequency of Analysis***
Sodium	*mg/l*	Grab	Quarterly
Sulfate	*mg/l*	Grab	Quarterly
Water Quality Constituents[8]	"	"	"
Total Nitrogen	"	"	Every two weeks at monitoring wells specified in Section D.2. of the Order (See V.2., below) Quarterly for all other wells
Nitrate-nitrogen	"	"	"
Nitrite-nitrogen	"	"	"
Dissolved Oxygen	"	"	"

2. The frequency of sampling for these constituents may be decreased to quarterly after recharge water recharged at the allowed highest RWC has reached the closest monitoring well at each basin for a period of 24 months and only if the nitrite and nitrate MCL[9] levels have not been exceeded and the dissolved oxygen level has not fallen below 2 mg/l in two consecutive samples.

3. If any of the groundwater monitoring test results indicates that a maximum contaminant level has been exceeded, that the dissolved oxygen falls below 2 mg/l, or that coliform are present, the users shall notify the CDHS within 48 hours of receiving the results and make note of any positive findings in the monthly report submitted to the Regional Board.

VI. ***REPORTING REQUIREMENTS:***

A. Quarterly Monitoring Reports

1. Quarterly monitoring reports shall be submitted in accordance with following schedule:

Reporting Period	Report Due Date
January – March	May 15th
April – June	August 15th
July – September	November 15th
October – December	February 15th

8 *Any water quality constituents specified by the CDHS based on the results of the recycled water monitoring in Section B., above.*

9 *Maximum Contaminant Level*

2. If no reclaimed water was delivered for recharge during the quarter, the report shall so state.

3. Each quarterly monitoring report shall include, at a minimum, the following:

   a. All monitoring results for recycled water produced from the RWRP-1 and RWRP-4 facilities, diluents, recharged water with or without blending with diluents prior to recharge, and groundwater.

   b. A tabular form report showing the amount of recharged recycled water and diluent water recharge into each recharge basin including any non-compliance events, which occurred at the individual recharge sites during the reporting period. A summary of these data shall be included in the annual report.

   c. Records of any operational problems, plant upset and equipment breakdowns or malfunctions, and any diversion(s) of off-specification recycled water and the location(s) of final disposal.

   d. All corrective or preventive action(s) taken.

   e. A certification by the users that no groundwater has been pumped from the zone that extends 500 feet and 6 months underground travel time from the recharge basin(s) where recycled water is applied for domestic water supply use.

   f. The Regional Board may request supporting documentation, such as daily logs of operations.

B. Annual Monitoring Reports

1. By May 1 of each year, the users shall submit an annual report to the Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year. The users shall discuss the compliance record and a summary of corrective actions taken as a result of violations, suspensions of recharge, detections of monitored constituents and any observed trends, information on the travel of the recycled water, description of any changes in operation of any unit processes or facilities, and description of any anticipated changes, including any impacts on other unit processes.

2. The annual report shall be prepared by a qualified engineer registered in California and experienced in the field of water reclamation for groundwater recharge regarding the operation of the Phase I Recharge Project and the results of the monitoring and investigations of the impacts of recycled water recharge at the Phase I recharge basins.

3. The annual report shall include the following:

   a. A list of the analytical methods employed for each test and associated laboratory quality assurance/quality control procedures. The report shall restate, for the record, the laboratories used by the users to monitor compliance with this Order and their status of certification. Upon request by Regional Board staff, the users shall also provide a summary of performance.

   b. A mass balance to ensure that blending is occurring in the aquifer at each recharge basin. Recharge water groundwater flow paths shall be determined annually from groundwater elevation contours and compared to the flow and transport model's flow paths, travel of recharge waters, including leading edge of the recharged water plume, any anticipated changes. The flow and transport model shall be updated to match as closely as possible the actual flow patterns observed within the aquifer if the flow paths have significantly changed.

   c. A summary of corrective actions taken as a result of violations, suspensions of recharge, detections of monitored constituents and any observed trends, information on the travel of the recycled water (estimated location of the leading edge), description of any changes in operation of any unit processes or facilities, and description of any anticipated changes, including any impacts on other unit processes.

   d. A summary of calibration records for equipments, such as pH meters, flow meters, turbidity meters, and lysimeters.

   e. All downgradient public drinking water systems. A summary discussion on whether domestic drinking water wells extracted water within the buffer zone defined by the area less than 500 feet and 6 months underground travel time from the recharge basins, including the actions/measures that were undertaken to prevent reoccurrence. If there were none, a statement to that effect shall be written.

   f. Any tracers will need to be identified.

4. At least one year after the blended recharged water has reached at least one groundwater monitoring well, the users shall submit a report to the CDHS and Regional Board evaluating the compliance with the minimum underground retention time, distance to the nearest point of extraction, blending, and the maximum RWC requirements. The annual report shall include water quality data on turbidity, coliform, total nitrogen, dissolved oxygen, regulated contaminants, TOC, and non-regulated contaminants compliance.

C. Five Years Engineering Report:

1. The users shall submit an updated engineering report every five years to the CDHS and Regional Board to address any project changes. The update shall include, but not be limited to, a demonstration that:
   a. The maximum RWC, as authorized pursuant to the terms of Order No. R8-2005-0033 (Recycled Water Quality Specifications A. 9), or amendments thereto will not be exceeded,
   b. The minimum underground retention time required pursuant to Order No. R8-2005-0033 (Buffer Zone Specifications In Recharged Groundwater Basins, E.1), or amendments thereto will be met. The update shall also identify any changes in CDHS regulations pertaining to underground retention time and evaluate compliance with any such changes.
   c. Any inconsistencies between groundwater model prediction and observation and/or measurement and how they are being addressed.

Ordered by_____
Gerard J. Thibeault
Executive Officer

April 15, 2005

EPA PRIORITY POLLUTANT LIST

Metals		Acid Extractibles		Base/Neutral Extractibles (continuation)	
1.	Antimony	45.	2-Chlorophenol	91.	Hexachloroethane
2.	Arsenic	46.	2,4-Dichlorophenol	92.	Indeno (1,2,3-cd) Pyrene
3.	Beryllium	47.	2,4-Dimethylphenol	93.	Isophorone
4.	Cadmium	48.	2-Methyl-4,6-Dinitrophenol	94.	Naphthalene
5a.	Chromium (III)	49.	2,4-Dinitrophenol	95.	Nitrobenzene
5b.	Chromium (VI)	50.	2-Nitrophenol	96.	N-Nitrosodimethylamine
6.	Copper	51.	4-Nitrophenol	97.	N-Nitrosodi-N-Propylamine
7.	Lead	52.	3-Methyl-4-Chlorophenol	98.	N-Nitrosodiphenylamine
8.	Mercury	53.	Pentachlorophenol	99.	Phenanthrene
9.	Nickel	54.	Phenol	100.	Pyrene
10.	Selenium	55.	2, 4, 6 – Trichlorophenol	101.	1,2,4-Trichlorobenzene
11.	Silver	**Base/Neutral Extractibles**		**Pesticides**	
12.	Thallium	56.	Acenaphthene	102.	Aldrin
13.	Zinc	57.	Acenaphthylene	103.	Alpha BHC
Miscellaneous		58.	Anthracene	104.	Beta BHC
14.	Cyanide	59.	Benzidine	105.	Delta BHC
15.	Asbestos (not required unless requested)	60.	Benzo (a) Anthracene	106.	Gamma BHC
16.	2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD)	61.	Benzo (a) Pyrene	107.	Chlordane
Volatile Organics		62.	Benzo (b) Fluoranthene	108.	4, 4' - DDT
17.	Acrolein	63.	Benzo (g,h,i) Perylene	109.	4, 4' - DDE
18.	Acrylonitrile	64.	Benzo (k) Fluoranthene	110.	4, 4' - DDD
19.	Benzene	65.	Bis (2-Chloroethoxy) Methane	111.	Dieldrin
20.	Bromoform	66.	Bis (2-Chloroethyl) Ether	112.	Alpha Endosulfan
21.	Carbon Tetrachloride	67.	Bis (2-Chloroisopropyl) Ether	113.	Beta Endosulfan
22.	Chlorobenzene	68.	Bis (2-Ethylhexyl) Phthalate	114.	Endosulfan Sulfate
23.	Chlorodibromomethane	69.	4-Bromophenyl Phenyl Ether	115.	Endrin
24.	Chloroethane	70.	Butylbenzyl Phthalate	116.	Endrin Aldehyde
25.	2-Chloroethyl Vinyl Ether	71.	2-Chloronaphthalene	117.	Heptachlor
26.	Chloroform	72.	4-Chlorophenyl Phenyl Ether	118.	Heptachlor Epoxide
27.	Dichlorobromomethane	73.	Chrysene	119.	PCB 1016
28.	1,1-Dichloroethane	74.	Dibenzo (a,h) Anthracene	120.	PCB 1221
29.	1,2-Dichloroethane	75.	1,2-Dichlorobenzene	121.	PCB 1232
30.	1,1-Dichloroethylene	76.	1,3-Dichlorobenzene	122.	PCB 1242
31.	1,2-Dichloropropane	77.	1,4-Dichlorobenzene	123.	PCB 1248
32.	1,3-Dichloropropylene	78.	3,3'-Dichlorobenzidine	124.	PCB 1254
33.	Ethylbenzene	79.	Diethyl Phthalate	125.	PCB 1260
34.	Methyl Bromide	80.	Dimethyl Phthalate	126.	Toxaphene
35.	Methyl Chloride	81.	Di-n-Butyl Phthalate		
36.	Methylene Chloride	82.	2,4-Dinitrotoluene		
37.	1,1,2,2-Tetrachloroethane	83.	2-6-Dinitrotoluene		
38.	Tetrachloroethylene	84.	Di-n-Octyl Phthalate		
39.	Toluene	85.	1,2-Dipenylhydrazine		
40.	1,2-Trans-Dichloroethylene	86.	Fluoranthene		
41.	1,1,1-Trichloroethane	87.	Fluorene		
42.	1,1,2-Trichloroethane	88.	Hexachlorobenzene		
43.	Trichloroethylene	89.	Hexachlorobutadiene		
44.	Vinyl Chloride	90.	Hexachlorocyclopentadiene		

Note: All laboratory analyses shall be performed in accordance with test procedures under 40 CFR 136 (latest edition) and shall meet the minimum levels specified in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California

Revised: 1/12/2005

List of Chemicals
of
Endocrine Disrupting Chemicals & Pharmaceuticals and Other Chemicals

A. Chemicals with State Notification Levels:

1. n-butylbenzene
2. sec-butylbenzene
3. tert-butylbenzene
4. carbon disulfide
5. chlorate
6. 2-chlorotoluene
7. diazinon
8. 1,4-dioxane
9. formaldehyde
10. isopropylbenzene
11. n-propylbenzene
12. 1,2,4 –trimethylbenzene
13. 1,3,5-trimethylbenzene

B. Nitrosoamines

14. N-Nitrosodiethylamine (NDEA)
15. N-Nitrosopyrrolidine

C. Endocrine Disrupting Chemicals, Pharmaceuticals and Other Chemicals:

- Hormones:
  16. Ethinyl estradiol
  17. 17-B estradiol
  18. estrone

- "Industrial" Endocrine Disruptors:
  19. bisphenol A
  20. nonylphenol and nonylphenol polyethoxylate
  21. octylphenol and octylphenol polyethoxylate
  22. polybrominated diphenyl ethers

List of Chemicals
of
Endocrine Disrupting Chemicals & Pharmaceuticals and Other Chemicals

- Pharmaceuticals and others substances:
  23. acetaminopen
  24. amoxicillin
  25. azithromycin
  26. caffience
  27. carbamazepine
  28. ciprofloxacin
  29. ethylenediamine tetra-acetic acid (EDTA)
  30. gemfibrozil
  31. ibuprofen
  32. iodinated contrast media
  33. lipitor
  34. methadone
  35. morphine
  36. salicylic acid
  37. triclosan

SUMMARY OF WELLS IN GROUNDWATER MONITORING NETWORK

BASIN	CBWM_ID	UPGRADIENT	DOWNGRADIENT	NEW	OWNER/LOCAL NAME	SCREENED INTERVAL(S) (feet bgs)	CASING DIAMETER (inches)	SWL (ft bgs)	STATUS	TYPE	SAMPLING METHOD
HICKORY AND BANANA BASINS	3600573	1			FONTANA WATER COMPANY - F37A	378-810	20	422	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	600660		1		CALIFORNIA SPEEDWAY - Infield Well	NA	NA	390	ACTIVE	INDUSTRIAL	FAUCET DISCHARGE
	3601364		1		KAISER STEEL CORPORATION - 1	452-484, 502-507, 543-546, 582-628, 678-746, 766-805	20	415	ACTIVE	INDUSTRIAL	FAUCET DISCHARGE
	3600371		1		SOUTHERN CALIFORNIA EDISON - East Well	434-467, 500-513, 553-580, 593-652, 825-847	20	420	ACTIVE	INDUSTRIAL	FAUCET DISCHARGE
	3602267		1		CITY OF ONTARIO - 20	NA	20	378	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	BH1/1			1	INLAND EMPIRE UTILITIES AGENCY	360-400	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
	BH1/2			1	INLAND EMPIRE UTILITIES AGENCY	430-470	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
TURNER BASINS	3601065	1			CITY OF ONTARIO - 19	NA	16	400	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	3602266		1		CITY OF ONTARIO - 18	297-315, 319-407, 783-795, 825-859, 947-1017	20	380	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	NA		1		CITY OF ONTARIO - 41 *	NA	NA	TBD	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	3600010		1		CITY OF ONTARIO - 25	370-903	20	380	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	600453		1		CITY OF ONTARIO - 29	400-1095	18	400	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	T1/1			1	INLAND EMPIRE UTILITIES AGENCY	330-350	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
	T1/2			1	INLAND EMPIRE UTILITIES AGENCY	380-400	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
	T2/1			1	INLAND EMPIRE UTILITIES AGENCY	340-360	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
	T2/2			1	INLAND EMPIRE UTILITIES AGENCY	390-410	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
DECLEZ BASIN	300208		1		JURUPA COMMUNITY SERVICES DISTRICT - 19	230-390	18	240	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	300207		1		JURUPA COMMUNITY SERVICES DISTRICT - 17	259-290, 300-400	NA	130	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	300200		1		JURUPA COMMUNITY SERVICES DISTRICT - 13	220-446	16-34	NA	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	D1/1			1	INLAND EMPIRE UTILITIES AGENCY	135-155	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
	D1/2			1	INLAND EMPIRE UTILITIES AGENCY	185-205	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
RP-3 BASINS	600492	1			FONTANA WATER COMPANY - F23A	450-740	18	350	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	600477		1		INLAND EMPIRE UTILITIES AGENCY - Southridge Middle School	NA	NA	NA	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	600848		1		ALCOA - Offsite MW1	NA	NA	NA	ACTIVE	MONITORING	BLADDER PUMP
	600850		1		ALCOA - Offsite MW3	NA	NA	NA	ACTIVE	MONITORING	BLADDER PUMP
	RP31/1			1	INLAND EMPIRE UTILITIES AGENCY	215-235	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
	RP31/2			1	INLAND EMPIRE UTILITIES AGENCY	265-285	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
ETIWANDA CONSERVATION PONDS	600455		1		CITY OF ONTARIO - 31	400-980	18	300	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	600454		1		CITY OF ONTARIO - 30	420-1014	18	300	INACTIVE	MUNICIPAL	FAUCET DISCHARGE
	600551		1		CITY OF ONTARIO - 37	400-860	4-35.25	300	ACTIVE	MUNICIPAL	FAUCET DISCHARGE
	600837		1		KAISER STEEL CORPORATION - MP1-A	270-350	4	NA	ACTIVE	MONITORING	BLADDER PUMP
	600838		1		KAISER STEEL CORPORATION - MP1-B	370-410	4	NA	ACTIVE	MONITORING	BLADDER PUMP
	600839		1		KAISER STEEL CORPORATION - MP1-C	440-575	4	NA	ACTIVE	MONITORING	BLADDER PUMP
	600841		1		KAISER STEEL CORPORATION - MP2-A	240-300	4	NA	ACTIVE	MONITORING	BLADDER PUMP
	600842		1		KAISER STEEL CORPORATION - MP2-B	370-410	4	NA	ACTIVE	MONITORING	BLADDER PUMP
	600843		1		KAISER STEEL CORPORATION - MP2-C	430-520	4	NA	ACTIVE	MONITORING	BLADDER PUMP
	E1/1			1	INLAND EMPIRE UTILITIES AGENCY	320-340	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
	E1/2			1	INLAND EMPIRE UTILITIES AGENCY	370-390	4	TBD	NI	MONITORING	DEDICATED BLADDER PUMP
JURUPA BASIN	NOT CURRENTLY PLANNED FOR RECHARGE										

Notes:

SWL = Static water level
NA = Data not available
CBWM I.D. = Chino Basin Water Master well identification number
bgs = below ground surface
TBD = To be determined
NI = Not installed
* City of Ontario Well 18 (CBWM ID=3602266) is currently unequipped. A new well - City of Ontario Well 41 - is located approximately 100 feet north of Ontario Well 18. This well should be used to monitor the Turner Basins until and if Ontario Well 18 is reequipped.