

**STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

ORDER NO. R4-2007-0041

**WASTE DISCHARGE REQUIREMENTS
FOR
THE THACHER SCHOOL
(The Thacher School Wastewater Treatment Plant)
(File No. 93-16)**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) finds:

PURPOSE OF ORDER

1. The Thacher School (hereinafter Discharger) owns an onsite wastewater treatment plant (Plant) at 5025 Thacher Road, Ojai, California (Site) (Figure 1). The Ventura Regional Sanitation District (VRSD) has been operating the Plant since February 2002 according to a contract with the Discharger. The Discharger discharges domestic wastewater through the Plant to a septic system under waste discharge requirements (WDR) contained in Order No. R4-2003-0075 adopted by this Regional Board on June 5, 2003.
2. The septic system at the Discharger's Equestrian Center, which is located at the eastern most section of the property, is not connected to the wastewater treatment plant and is not subject to WDR Order No. R4-2003-0075. The septic system is permitted by the Ventura County Environmental Health, and is for the use of staff and students while using the facilities at the Equestrian Center.
3. Section 13263(e) of the California Water Code (CWC) provides that all WDRs shall be reviewed periodically and, upon such review, may be revised by the Regional Board. Order No. R4-2003-0075 is a revision of Order No. 93-56, the original WDR adopted by this Regional Board for the Discharger. In order to give the Discharger sufficient time to comply with the limits prescribed in Order No. R4-2003-0075, Time Schedule Order (TSO) No. R4-2003-0076 was adopted together with the WDR.

FACILITY AND TREATMENT PROCESS DESCRIPTION

4. The Site is located in an unsewered area in the County of Ventura northeast of the City of Ojai. Neither the city nor the county have plans to offer sanitation service near the Discharger.
5. The Site is located in Section 3 and 4, Township 4N, Range 22W (San Bernardino Base Line & Meridian). Its approximate latitude is 34⁰27'49" and longitude is 119⁰10'50". The Plant is located in the East of San Antonio – Senior Canyon Creeks Area of the Lower Ojai Valley Groundwater Basin.

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6. Thacher Creek, which flows through the northwest section of the campus, is more than 500 feet from the disposal area. The creek is dry, except during the winter months when there is rain.
7. The Thacher School was established in 1889 as a boarding high school (School). The main campus occupies approximately 360 acres in the County of Ventura, California. The population, including current enrollment and staff, is approximately 340.
8. There are a total of 97 bathrooms on campus. These bathrooms are located in classroom buildings, offices, locker rooms, dormitories, and faculty homes. Domestic wastewater from these bathrooms is discharged to the Plant (Figure 2).
9. Prior to 1994, domestic wastewater was discharged to a septic disposal system consisting of one 9,600-gallon and three 5,500-gallon septic tanks and a 24,000-square foot leachfield. A package treatment Plant, consisting of one 8,000-gallon flow equalization tank, five 8,000-gallon aeration tanks, two 6,000-gallon sedimentation tanks, one 6,000-gallon dosing tank, one 8,000-gallon digester tank, and a distribution box, was constructed in 1994. The treated wastewater was discharged to the existing 24,000-square foot leachfield.
10. The design peak capacity of the Plant is 40,000 gallons per day (gpd) and the average daily dry weather inflow to the Plant is 16,926 gpd.
11. Domestic water is supplied to the Discharger by the Senior Canyon Mutual Water Company, a public water purveyor. The Senior Canyon Mutual Water Company supplements the water supplied to the Discharger with water from Casitas Municipal Water Company when it is needed. Historical records indicate that the Discharger buys up to 20,000 gpd from Senior Canyon Mutual Water Company, but this amount includes water used for irrigation purposes and fluctuates when the School is not in session (during holidays and summer vacation).
12. Groundwater elevation data obtained in June 2002 indicates that the depth to groundwater at a well located on campus near the intersection of McAndrew Road and Thacher Road was 230 feet below ground surface. The Site is located in the Ojai Groundwater Basin, an unconfined basin that is not nitrate impacted. Two wells on the Site are used for landscape and irrigation.
13. Historic effluent monitoring data indicate that the Discharger exceeded the sulfate effluent limit of 200 mg/L and total nitrogen effluent limit of 10 mg/L prescribed in Order No. 93-56 on a number of occasions. The Discharger exceeded effluent limits for nitrogen 21 times from 1997 to 2002, and exceeded effluent limits for sulfate 8 times from 1997 to 2002.
14. TSO Order No. R4-2003-0076 required the Discharger to complete studies and implement design changes so that the system will be capable of achieving compliance with the effluent limitations. The TSO allowed the Discharger to complete all necessary Plant upgrades and operational changes to meet the limits within a specified timeframe. TSO Order No. R4-2003-0076 required that the Discharger complete Plant upgrade by December 2004.

15. To be in compliance with TSO Order R4-2003-0076, the Discharger modified the existing wastewater treatment system. In order to meet the permit limits for nitrogen, the existing process was modified to a particular form of biological nutrient removal process (Modified Ludzak-Ettinger Process), which reduces the total nitrogen below the permit limit of 10 milligrams per liter (mg/l). In the process there are two recycle streams, which are the Return Activated Sludge (RAS) and the internal recycle of Mixed Liquor Return (MLR) stream. This process incorporates the internal recycle of mixed liquor from the aerobic zone to the anoxic zone, increasing both the denitrification rate and overall nitrogen-removal efficiency. The MLR process provides for control over the fraction of nitrate removed through variation of the internal recycle ratio. In addition, higher denitrification rates are attained because the anoxic zone receives a source of readily biodegradable chemical oxygen demand (COD). The effluent is discharged to an existing 24,000 square foot leachfield. On August 5, 2005, the Discharger through its Board of Directors approved the budget to start the modification of the existing Plant. The upgrade on the Plant was completed during June 2006.
16. The potable water used at the Site could contain high concentrations of sulfate. The water supply is tested for general mineral analysis once every three years. The Discharger will analyze the potable water supply for sulfate content along with the routine effluent monitoring. In the event that monitoring shows sulfate concentration in source water greater than 195 mg/L, the Discharger's sulfate limit will increase to source water concentration plus a loading factor of 5 mg/L. However, the sliding scale limit for sulfate must not exceed 250 mg/L as specified in the Secondary Drinking Water Regulations.
17. Historic groundwater monitoring data indicate that no water has been detected in monitoring well TS-MW-1 located at 300 feet southwest (downgradient) of the leachfield. TS-MW-1, which was constructed in 1995, was in an unsaturated area and did not provide an effective monitoring location. To comply with the requirement of the Monitoring and Reporting Program No. CI-7327, the Discharger re-evaluated the existing groundwater monitoring network and determined that the groundwater well network is not capable of evaluating impacts from the discharge to the groundwater.
18. On February 27, 2006, the Discharger completed the upgrade of the groundwater monitoring network. The upgrade included the construction of groundwater monitoring well (MW-1R to replace the dry well TS-MW-1. MW-1R was constructed 40 feet west of TS-MW-1 and is approximately 625 feet southwest of the Plant. It serves as the downgradient monitoring location for sample collections. The dry well TS-MW-1 was destroyed as part of the upgrade.
19. The upgrade also included the modification of the wellheads of two existing irrigation supply wells to aid in the determination of the local groundwater gradient. Well 05N/R22W-33R01S (Well No. 2) is an existing irrigation water supply well, which was equipped with an operational air-line to enable accurate measurement of depth to water at the cross-to-up-gradient location. In conjunction with the other wells within the network, the measurements from this well verified the local groundwater gradient in the vicinity of the Plant. Well 05N/R22W-33J01S

(Well No. 1) is also an existing irrigation water supply well that was modified to enable accurate measurement of the depth to groundwater at this upgradient location. This well, together with the other wells in the network, will verify groundwater gradient and direction of flow in the vicinity of the Plant and the leachfield discharge system. Well 05N/R22W-33J01S provides upgradient background water quality samples. Figure 3 shows the location of the groundwater monitoring wells.

APPLICABLE LAWS, PLANS, POLICIES AND REGULATIONS

20. On June 13, 1994, this Regional Board adopted a revised *Water Quality Control Plan for Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) which has been subsequently amended. The Basin Plan (i) designates beneficial uses for surface waters and groundwater, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State antidegradation policy (*Statement of Policy with Respect to Maintaining High Quality Waters in California*, State Water Resources Control Board (State Board) Resolution No. 68-16, October 28, 1968), and (iii) describes implementation programs to protect all waters in the Region. In addition, the Basin Plan incorporates by reference applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. The Regional Board prepared the 1994 update of the Basin Plan to be consistent with previously adopted State and Regional Board plans and policies. This Order implements the plans, policies and provisions of the Regional Board's Basin Plan.
21. The beneficial uses for groundwater within the Lower Ojai Valley Groundwater Basin (East of San Antonio – Senior Canyon Creeks Area), which underlies the Thacher School as designated by the Basin Plan are:

Existing: municipal and domestic supply; industrial service supply; industrial process supply; and agricultural supply.
22. The requirements contained in this Order are based on the Basin Plan, and, as they are met, will be in conformance with the goals of the aforementioned water quality control plans and will protect and maintain existing beneficial uses of the groundwater.

CEQA and NOTIFICATION

23. The Plant is exempt from CEQA notification because it is an existing facility within the meaning of California Code of Regulations, title 14, section 15301.
24. The Regional Board has notified the Discharger and interested agencies and persons of its intent to revise waste discharge requirements for this discharge and has provided them an opportunity to submit their views and recommendations for the requirements.
25. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge and to the tentative requirements.

26. Pursuant to California Water Code section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Water Resources Control Board (State Board). A petition must be received by the State Board, P.O. Box 100, Sacramento, California, 95812, within 30 days of the date of adoption of the Order.

IT IS HEREBY ORDERED that the Discharger, The Thacher School, shall comply with the following requirements in connection with the disposal operations at the Plant:

A. EFFLUENT LIMITATIONS

1. Effluent discharged shall be limited to treated domestic wastewater only.
2. There shall be no discharge of wastes to surface water or watercourses at any time.
3. Effluent discharged shall not contain constituents in excess of the following limits:

<u>Constituent</u>	<u>Units</u> ¹	<u>Effluent Limitations</u>	
		<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD ₅	mg/L	30	45
Suspended solids	mg/L	30	45
Total Dissolved Solids	mg/L	700	----
Sulfate	mg/L	200 ²	----
Chloride	mg/L	50	----
Boron	mg/L	0.5	----
Nitrate + Nitrite + Ammonia (as Nitrogen) + Organic N	mg/L	10	----
Oil & Grease	mg/L	15	----

¹ mg/L: milligrams per liter

² Sliding Scale for Sulfate: In the event that monitoring data detects sulfate concentration in source water greater than 195 mg/L, the Discharger's sulfate limit will increase to source water concentration plus a loading factor of 5 mg/L. However, the sliding scale limit for sulfate shall not exceed 250 mg/L, as specified in the Secondary Drinking Water Regulations.

4. The effluent discharge shall not contain concentrations of heavy metals, arsenic, cyanide, or other United States Environmental Protection Agency (USEPA) priority pollutants in concentrations exceeding the limits contained in the State Department of Health Services' Primary Drinking Water Standards.
5. The pH of wastes discharged shall at no time be less than 6.5 or more than 8.5 pH units.
6. The arithmetic mean of BOD₅ (20°C) and suspended solids values for the effluent samples collected in a period of 30 consecutive calendar days

shall not exceed 15 percent of the arithmetic mean of values for influent samples collected at approximately the same time during the same period.

7. Radioactivity of the waste discharged shall not exceed the limits specified in California Code of Regulations, title 22, section 64441 et seq., or subsequent revisions.

B. GROUNDWATER LIMITATIONS

1. Receiving water, for the purpose of these waste discharge requirements, shall be defined as groundwater at the downgradient monitoring well, MW-1R.
2. The discharge of treated wastewater from the wastewater treatment plant shall not cause the receiving water to contain any waste constituents in concentrations that are greater (measurably significant - sections 20164, and 20415 (e), (5), (6), (7), title 27, California Code of Regulations) than background water quality except as provided for in the limits in B.4 below.
3. The concentration of total coliform in receiving groundwater shall not exceed 1.1 most probable number (MPN) per 100 milliliters.
4. The discharge of treated wastewater from the wastewater treatment plant shall not cause the receiving water to exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Maximum</u>
Total Dissolved Solids (TDS)	mg/L	700
Sulfate	mg/L	200
Chloride	mg/L	50
Boron	mg/L	--
Nitrate as nitrogen plus		
Nitrite as nitrogen	mg/L	10
<u>Nitrite as N</u>	<u>mg/L</u>	<u>1</u>

mg/L: milligram per liter

C. GENERAL REQUIREMENTS

1. Adequate facilities shall be provided to divert storm waters away from the Plant and from areas where any potential pollutants are stored.
2. Waste discharged shall be retained in an area of the Plant from which the public is effectively excluded, and shall not be permitted to escape therefrom as overland flow.
3. All wastes which do not meet each of the foregoing requirements shall be held in impervious containers and, if transferred elsewhere, the final disposal shall be only at a legal point of disposal. For the purpose of these requirements a legal point of disposal is one for which requirements

have been established by a California regional water quality control board, and which is in full compliance therewith.

4. All permanent structures shall be adequately protected from inundation by floods having a predicted frequency of occurrence of once in 100 years. All percolation/evaporation ponds shall be adequately protected from inundation by floods having a predicted frequency of occurrence of once in 25 years.
5. Standby or emergency power facilities, sufficient storage capacity, or some other means shall be provided so that in the event of plant upsets or outages due to power failure or other cause, discharge of raw or inadequately treated sewage does not occur.

D. PROHIBITIONS

1. The discharge or use of raw or inadequately treated sewage at any time is prohibited.
2. The discharge of wastes to any point(s) other than specifically described in this Order is prohibited and constitutes a violation thereof.
3. Neither the treatment nor the discharge of waste shall create a condition of pollution, contamination, or nuisance.
4. Wastes shall not be disposed in geologically unstable areas or so as to cause earth movement.
5. Waste discharged shall not impart taste, odors, color foaming, or other objectionable characteristics to the receiving groundwater.
6. Sewage odors shall not be detectable at the property line.
7. Waste discharged shall at no time contain any substances in concentrations toxic to human, animal, plant, or aquatic life.
8. The surfacing or overflow of sewage from the Plant or the disposal area at any time and at any location and the direct or indirect discharge of wastes to waters of the State (including storm drains, groundwater or surface water drainage courses) is prohibited.
9. No part of the treatment or disposal system shall be closer than 150 feet to any water well or closer than 100 feet to any stream, channel, or other watercourse.
10. No part of the Plant shall extend to a depth where waste may deleteriously affect any underground water stratum that is usable for domestic purposes. In no case may the sewage treatment or disposal system extend to within 10 feet of a zone of historic or anticipated high groundwater level.

E. PROVISIONS

1. A copy of this Order shall be maintained at the Plant so as to be available at all times to operating personnel.
2. In the event of any change in name, ownership, or control of this waste treatment and disposal facility, the Discharger shall notify the Regional Board of such change and shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to the Regional Board.
3. The Discharger shall file with the Regional Board technical reports on self-monitoring work performed according to the detailed specifications contained in Monitoring and Reporting Program No. CI-7327 attached hereto and incorporated herein by reference, as directed by the Regional Board Executive Officer (Executive Officer). The results of any monitoring done more frequently than required at the location and/or times specified in the Monitoring and Reporting Program shall also be reported to the Regional Board.
4. In accordance with section 13260(c) of the California Water Code, the Discharger shall file a report of any material change or proposed change in the character, location, or volume of the discharge.
5. The Discharger shall file a written report with the Regional Board within 90 days after the average dry-weather flow for any month equals or exceeds 90 percent of the design capacity of the waste treatment and/or disposal facilities. The report shall detail provisions to cope with flows in excess of 90 percent of the design capacity.
6. The Discharger shall take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.
7. The Discharger shall notify the Regional Board within 24 hours, by telephone or electronically, of any violations of effluent limitations or any adverse conditions resulting from this discharge; written confirmation shall follow within one week. This information shall be confirmed in the next monitoring report; in addition, the report shall also include the reason for the violations or adverse conditions, the steps to be taken to correct the problem (including dates thereof), and the steps being taken to prevent a recurrence.
8. Should monitoring data indicate impacts to groundwater, the Discharger shall submit, within 90 days after determination of the problem, plans for measures that will be taken, or have been taken, to mitigate any long-term effects that may result from the subsurface disposal of wastes. Any water quality impact to groundwater such as, but not limited to, risks to human health from pathogens shall be reported.

9. The Discharger shall submit to the Regional Board, within 60 days of the date of adoption of this Order, procedures that will be, or have been, taken to ensure that no discharge of any untreated sewage or partially-treated sewage from the treatment facility will result in the event of equipment failure.
10. This Order does not relieve the Discharger from responsibility to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency.
11. This Order includes the attached Monitoring and Reporting Program. If there is any conflict between provisions stated in the Monitoring and Reporting Program and the Standard Provisions, those provisions stated in the Monitoring and Reporting Program prevail.
12. This Order includes the attached *Standard Provisions Applicable to Waste Discharge Requirements* which are incorporated herein by reference. If there is any conflict between provisions stated herein and the *Standard Provisions Applicable to Waste Discharge Requirements*, the provisions stated herein will prevail.
13. The Discharger shall furnish, within a reasonable time, any information the Regional Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Discharger shall also furnish to the Regional Board, upon request, copies of records required to be kept by this Order.
14. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - a) Violation of any term or condition contained in this Order;
 - b) Obtaining this Order by misrepresentation, or failure to disclose all relevant facts;
 - c) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
16. The waste discharge requirements contained in this Order will remain in effect until June 7, 2012. Should the Discharger wish to continue discharging to groundwater after the expiration date of this Order, the Discharger must file an updated Report of Waste Discharge with the Regional Board, no later than 180 days in advance of the expiration date, for consideration of issuance of new or revised waste discharge requirements. Any discharge of waste after this Order has expired, without filing an updated Report of Waste Discharge with the Regional Board, is a violation of California Water Code section 13264. The Regional Board is

authorized to take appropriate enforcement action for any noncompliance with this provision including assessment of penalties.

17. In accordance with California Water Code section 13263(g), these requirements shall not create a vested right to continue to discharge and are subject to rescission or modification. All discharges of waste into the waters of the State are privileges, not rights.

F. RESCISSION

Waste Discharge Requirements Order No. R4-2003-0075 adopted by the Regional Board on June 5, 2003, is hereby rescinded, except for enforcement purposes. Time Schedule Order No. R4-2003-0076 adopted by the Regional Board on June 5, 2003 is hereby rescinded.

I, Deborah J. Smith, Interim 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, Los Angeles Region, on August 9, 2007.

Deborah J. Smith
Interim Executive Officer