

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

ORDER NO. R4-2003-0109

**WASTE DISCHARGE REQUIREMENTS
FOR
RELIANT ENERGY MANDALAY, INC.
(MANDALAY GENERATING STATION)
(File No. 02-158)**

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

PURPOSE OF ORDER

1. Reliant Energy Mandalay, Inc. (hereinafter Discharger) owns and operates the Mandalay Generating Station, which is a power generation plant (Plant) with a capacity of 560 megawatts located at 393 North Harbor Boulevard, Oxnard, California (Figure 1).
2. Section 13260(a)(1) of the California Water Code (CWC) requires that any person discharging wastes, or proposing to discharge wastes, within any region that could affect the quality of the waters of the state, other than into a community sewer system, shall file with the appropriate regional board a report of the discharge. The Regional Board shall then prescribe requirements for the discharge or proposed discharge of wastes. Consequently, the waste discharge requirements (WDRs) for Reliant Energy Mandalay, Inc. are being prescribed.
3. On October 24, 2002, the Discharger filed a report of waste discharge (RoWD) for the discharge of domestic wastewater from the Plant through two septic tank systems. The primary septic system consists of a 3,800 gallon-per day (gpd) septic tank, two sump pumps and a leachfield. The secondary septic system servicing the Peaker Unit consists of a 2,880 gpd septic tank and a leachfield (Figure 2). The primary septic system has been in operation since the 1960's and the secondary septic system has been in operation since approximately 1966.

FACILITY AND TREATMENT PROCESS DESCRIPTION

4. The Plant is located in an unsewered area of the City of Oxnard. This area relies upon subsurface disposal systems. The nearest sewer collection system is approximately four to five thousand feet from the Plant.
5. Wastes generated on-site include hazardous wastes, domestic sewage waste, and other wastes currently discharged to surface water under a National Pollutant Discharge Elimination System (NPDES) permit. Hazardous wastes are stored on-site and shipped to

authorized disposal facilities. Only domestic sewage is discharged to the septic tank/leachfield systems.

6. The Plant employs approximately 40 employees and operates 24 hours per day. Approximately 800 gpd of partially treated wastewater is discharged through the septic systems without any disinfection. The primary septic system receives an average of 700 gpd of wastewater from the administration building, maintenance shop and main units. The Peaker Unit septic system receives an average of 100 gpd of wastewater from the employees in the Peaker building. The effluent leaving the primary septic tank is pumped from the two sumps to a distribution box and to a 100 feet long x 8 feet wide leachfield, which is located approximately 6 feet deep and at a higher elevation in the northeast area of the site. The effluent leaving the Peaker Unit septic tank drains by gravity to a 20 feet wide x 50 feet long leachfield located approximately 6 feet deep in the southwest area of the site. The domestic waste goes to the septic tanks, which allow for the settling of solids and primary treatment of the sewage.
7. The Department of Public Works of the County of Ventura issued construction permits for the primary septic system on June 24, 1957 and for the secondary system in 1966. The primary and secondary septic tank systems have been in operation since the 1960's and 1966's respectively. The Discharger reports that the systems have not been modified, expanded or replaced.
8. The Discharger indicated that the groundwater below the site ranges from 13.70 feet to 5.83 feet below ground surface (bgs). Groundwater levels beneath the site vary with seasonal fluctuations, ocean tides, rainfall and irrigation activities. The Discharger indicated that there is a groundwater separation of approximately four feet below the leachfields.
9. Wastewaters from the existing septic tank systems discharge to the groundwater through the leachfield disposal systems. The minimum standard for the vertical separation between the bottom of the septic system leachfields and the high groundwater table should be at least ten feet. Since there is no ten-foot vertical separation between leachfield inverts and groundwater, Regional Board staff are concerned that the existing treatment system may need additional treatment, such as disinfection to protect groundwater quality. The Regional Board, in Order No. 01-031 "*General Waste Discharge Requirements for Small Commercial and Multifamily Residential Subsurface Sewage Disposal Systems*," adopted on February 22, 2002, noted in footnote c) in section E.3. that "in areas of shallow groundwater and coastal regions where a minimum of ten feet of vertical separation cannot be maintained between the bottom of the disposal system and the historic high or anticipated high groundwater...effluent shall be disinfected to levels consistent with the beneficial uses of the groundwater and the nearest surface water body." Because Regional Board staff believe that the leachfield sites have less than 10 feet vertical separation and the primary and secondary leachfields are approximately 600 feet and 450 feet respectively from the ocean, this Order requires the Discharger to include supplemental disinfection

treatment for the system in order to meet the receiving water limitations for coliform that are included herein.

10. The Discharger may have sufficient land area reserved for possible future 100 percent replacement of the subsurface disposal area. The Discharger will be required to have a contingency plan to deal with the event of failure of the disposal system or the loss of soil assimilative capacity.
11. The Plant site is located at the western margin of the Oxnard Plain groundwater basin in the Unconfined and Perched Aquifers Hydrologic Subarea within the Santa Clara Hydrological Area of the Ventura Central Hydrologic Unit. Effluent from the Plant's septic disposal systems discharge in close proximity (approximately 600 feet and 450 feet respectively) to the Pacific Ocean. Its approximate Latitude is 34 °7' 12" and its Longitude is 119 °9' 0".
12. There are no drinking water supply wells located within one mile of the property. The City of Oxnard Water Division provides potable water.
13. The Discharger discharges wastewater to surface waters from its Mandalay Generating Station Plant under waste discharge requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit contained in Order No. 01-057 adopted by the Regional Board on April 26, 2001 (NPDES Permit No. CA0001180). The NPDES permit is for discharging of up to 255.3 million gallons per day (mgd) of wastes consisting of once-through cooling water from two steam electric generating units (four condenser halves), metal cleaning waste, and other low volume waste into the Pacific Ocean at Mandalay Beach in Oxnard.

APPLICABLE LAWS, PLANS, POLICIES AND REGULATIONS

14. On June 13, 1994, the Regional Board adopted a revised *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) which was amended on January 27, 1997 by Regional Board Resolution No. 97-02. The Basin Plan (i) designates beneficial uses for surface waters and groundwaters, (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 Basin Plan.

15. On November 16, 2000, the State Board adopted a revised *Water Quality Control Plan for the Ocean Waters of California* (Ocean Plan). The State of California Office of Administrative Law and the United States Environmental Protection Agency (EPA) approved the Ocean Plan on July 9, 2001 and December 3, 2001, respectively. The Ocean Plan contains water quality objectives for coastal waters of California. This Order includes receiving water limitations, prohibitions, and provisions that implement the objectives of the Ocean Plan.

16. The Basin Plan designates beneficial uses and water quality objectives for the following water bodies:

Groundwater (Oxnard Plain - Unconfined and Perched Aquifers):

Existing: municipal and domestic water supply, and agricultural supply.
Potential: industrial service supply

Coastal Features (Mandalay Beach)

Existing: Navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, Marine habitat, wildlife habitat, rare, threatened or endangered species and shellfish harvesting.

The Basin Plan limitations for groundwater, all of which is assumed to have potential for municipal and domestic supply uses, may not be applicable to unconfined aquifers discharging to the ocean. The potential beneficial uses of groundwater in the unconfined aquifers at the Plant near the ocean is limited.

17. Although the ultimate receiving water is assumed to be the Pacific Ocean, ocean monitoring is not proposed. An effluent monitoring program is necessary to evaluate the effectiveness of the treatment system and a groundwater monitoring program is necessary to evaluate the impacts from the discharge of treated wastewater to groundwater, which in this location is connected to the Pacific Ocean. Ocean Plan standards have been used for the limitations established herein.

18. Impacts to beachfront waters from developments along the shoreline are of concern when leachfields are in relatively close proximity to the shoreline. The Discharger indicated that according to groundwater data obtained from the Plant from 1996 to the present, groundwater flow direction is parallel to the coast and towards the cooling water canal. A tidal influence study was performed on the station monitoring wells. The results of the study show that there is little or no response to tidal influences. The Discharger believes that pumping (a maximum of 255.3 million gallons per day) from the water canal for use in the cooling system is influencing the local groundwater flow direction at the Plant. The ultimate flow direction is generally toward the Ocean.

19. In accordance with the Governor's Executive Order requiring any proposed activity to be reviewed to determine whether such activity will cause additional energy usage, Regional Board staff believe that implementation of these wastes discharge requirements would cause a small increase in energy usage at the Plant.
20. The Discharger is not able to comply immediately with the constituent limits in this Order for total and fecal coliform and enterococcus. In order to provide the Discharger time to come into compliance with the limits without being in immediate violation thereof, the Regional Board is including a Time Schedule Order (TSO) No. R4-2003-0110 that will allow the Discharger to complete all needed disposal system upgrades within a time frame specified in the TSO.
21. The Regional Board is increasingly concerned about the aggregate effects of discharges from individual and community subsurface disposal systems on the Oxnard Watershed and groundwaters. At this time, these WDRs are being issued to regulate an individual disposal system. Future requirements, however, may require the discharge to be connected to a community collection system, or future requirements may require consistency with the WDRs established for a community collection system.

CEQA and NOTIFICATION

22. This project involves an existing facility and, as such, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000 et seq.) in accordance with California Code of Regulations, title 14, section 15301.
23. The Regional Board has notified the Discharger and interested agencies and persons of its intent to issue Waste Discharge Requirements for this discharge, and has provided them an opportunity to submit their written views and recommendations for the requirements.
24. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge and to the tentative requirements.
25. 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, Reliant Energy Mandalay, Inc. shall comply with the following requirements in connection with the disposal operations at the Plant:

A. INFLUENT LIMITATIONS

1. Waste discharged to the septic/wastewater treatment systems shall be limited to domestic wastewater only. No water softener regeneration brines or industrial or commercial wastewater shall be discharged to the septic/wastewater treatment systems.
2. The maximum daily discharge to the septic/wastewater treatment system shall not exceed a flow of 6,700 gpd. This flow limitation also applies to effluent discharged to the leachfields.
3. No volatile organic compounds are to be discharged into the septic disposal system.

B. EFFLUENT LIMITATIONS

1. The pH of wastes discharged to the leachfield system shall at no time be less than 6.0 or more than 9.0 pH units.
2. Wastewater discharged to the leachfield system shall not contain additives or residual chlorine levels such that the biomat layer or the hydraulic capacity of the leachfield system is irreparably damaged.
3. The effluent discharge shall not contain heavy metals, arsenic, cyanide, or other EPA priority pollutants in concentrations exceeding the limits contained in the State Department of Health Services' Primary Drinking Water Standards.
4. 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.

C. RECEIVING WATER LIMITATIONS

1. The wastewater discharged shall not cause the receiving groundwater to contain constituents in excess of the following limits:

<u>Constituent</u> ¹	<u>Units</u> ²	<u>Monthly</u>		<u>Daily</u>
		<u>Mean</u>	<u>Median</u>	<u>Maximum</u>
Total coliform ³	MPN/100ml	---	70	---
Fecal coliform ³	MPN/100ml	200	---	---
Enterococcus ³	MPN/100ml	24	---	---
Ammonia (as N)	mg/L	2.4	---	---
Residual chlorine	µg/L	---	---	8

- ^[1] For the above parameters, the Discharger may choose the compliance point for each parameter to be the wastewater treatment system end of pipe or the downgradient groundwater monitoring well.
- ^[2] mg/L: milligrams per liter; MPN/100mL: Most Probable Number per 100 milliliters; µg/L micrograms per liter.
- ^[3] If only one sample is taken in any monthly period, that value shall be considered as the mean/median for the month.
2. Receiving water, for the purpose of these waste discharge requirements, is defined as groundwater at a point no greater than fifty (50) feet hydraulically downgradient of the furthest extent of the disposal area, or the property line of the Discharger, whichever is less.
 3. The wastewater discharged to the leachfield disposal systems shall not contain salts, heavy metals, or organic pollutants at levels that would impact groundwater that may be in hydraulic connection with surface waters designated for marine aquatic life or body contact recreation.
 4. Any wastes that do not meet the foregoing requirements shall be held in impervious containers, and discharged at a legal point of disposal.
 5. Compliance with these receiving water requirements shall also be based upon the upgradient quality of groundwater moving under the Plant to determine the net effect upon groundwater caused by the Discharger.

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. Wastes shall not be disposed of in geologically unstable areas or so as to cause earth movement.
4. Wastes discharged shall not impart tastes, odors, color, foaming or other objectionable characteristics to the receiving water.
5. Waste discharged shall not cause any impact on the indigenous marine life and diverse marine community.
6. Adequate facilities shall be provided to divert surface and storm water away from the wastewater treatment systems and leachfield disposal systems and from areas where any potential pollutants are stored.

7. The septic tanks, disinfection treatment systems, collection system and the disposal system shall be protected from damage by storm flows or runoff generated by a 100-year storm.
8. There shall be no onsite disposal of sludge. Any offsite disposal of sewage or sludge shall be made only to a legal point of disposal. For purposes of this Order, a legal disposal site is one for which requirements have been established by a regional water quality control board, and which is in full compliance therewith. Any sewage or sludge handling shall be in such a manner as to prevent its reaching surface waters or watercourses.
9. The treatment system, including the collection system that is a part of the treatment system and the disposal system, shall be maintained in such a manner that prevents sewage from surfacing or overflowing at any location.
10. Sewage odors shall not be detectable.
11. Wastes discharged shall at no time contain any substances in concentrations toxic to human, animal, plant, or aquatic life.
12. The discharge of waste shall not create a condition of pollution, contamination, or nuisance.
13. Nutrient materials in the waste discharged shall not cause objectionable aquatic growths or degrade indigenous biota.
14. The waste discharged shall not cause the concentration of organic materials in fish, shellfish or other marine resources used for human consumption to bioaccumulate to levels that are harmful to human health.
15. The direct or indirect discharge of any wastewater to surface waters or surface water drainage courses is prohibited.
16. Under no circumstances shall there be a groundwater separation of less than five feet below the leachfields.

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 8561 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.

Monitoring and Reporting Program No. 8561 contains requirements, among others, specifying that a monitoring program for groundwater shall be established so that the groundwater immediately downgradient and upgradient from the discharge area can be measured, sampled, and analyzed to determine if discharges from the leachfield systems are impacting water quality. Submittal of a plan for monitoring groundwater, which is subject to the approval of the Executive Officer, is due by September 30, 2003.

4. The Discharger shall prepare a plan to upgrade the treatment system, including disinfection, to meet the receiving water limitations contained in section C above in accordance with Time Schedule Order No. R4-2003-0110 adopted concurrently herewith. Upon approval of the plan by the Executive Officer, the Discharger shall construct the system upgrade.
5. The Discharger shall ensure that the capacity of the disposal area is adequate for the discharge and that adequate steps are taken to accommodate system failures and/or to deal with loss of the soil assimilative capacity.
6. The Discharger shall prepare a spill response plan with phone numbers in accordance with Time Schedule Order No. R4-2003-0110.
7. The Discharger shall cause the treatment/disposal system to be inspected annually during the life of this Order by a professional inspector to be retained by the Discharger. National Sanitation Foundation standards should be applied where possible to the inspection. The inspector shall also specify the capacity and condition of the treatment system and of the leachfields and the corrections needed. The Discharger shall provide information regarding the separation distance between groundwater and the leachfield, information regarding the capacity and adequacy of the treatment system and disposal area to handle the discharge, and establish the contingency plan measures needed to accommodate disposal system failures or to deal with loss of assimilative capacity of the soils.
8. The Discharger shall comply with all applicable requirements of chapter 4.5 (commencing with section 13290) of division 7 of the California Water Code.

9. 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.
10. The Discharger shall, at all times, properly operate and maintain all facilities and systems of treatment which are installed or used by the Discharger to achieve compliance with the conditions of this Order.
11. 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.
12. The Regional Board will develop a Total Maximum Daily Load (TMDL) for coliform and historic pesticides in the Ventura Coastal Watershed Management Area, including the subject site. When the study is completed, coliform-loading rates will be assigned to dischargers. The Discharger shall comply with waste load and/or load allocations developed and approved pursuant to the process for the designation of the coliform TMDL for the area. The Regional Board may subsequently require that the Discharger meet coliform discharge limits stricter than those imposed in this Order. The Regional Board may also require monitoring for historic pesticides.
13. 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.
14. The Discharger shall notify the Regional Board within 24 hours, by telephone or electronically, of exceedance of any effluent limitation or any adverse conditions resulting from this discharge. Written confirmation by the Discharger shall follow within one week and shall include information relative to the location(s), estimated volume, date and time, duration, cause, and remedial measures taken to effect cleanup and measures taken to prevent any recurrence. 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.
15. The Discharger shall notify the Regional Board within 24 hours, by telephone or electronically, of any bypassing or surfacing of wastes. Written confirmation by the Discharger shall follow within one week and shall include information relative to the location(s), estimated volume, date and time, duration, cause, and remedial measures taken to effect cleanup and measures taken to prevent any recurrence.

16. This Order does not relieve the Discharger from the 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.
17. Any discharge of wastewater from the treatment systems (including the wastewater collection system) at any point other than specifically described in this Order is prohibited and constitutes a violation of this Order.
18. After notice and opportunity for a hearing, this Order may be terminated or modified for causes 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; or
 - c) A change in any condition, or the discovery of any information, that requires either a temporary or permanent reduction or elimination of the authorized discharge.
19. 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.
20. 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.
21. 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.
22. 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.

23. The Discharger shall submit to the Regional Board, within 180 days of the date of adoption of this Order, procedures that will be, or have been, taken to ensure that no discharge or recycling of any untreated or partially treated sewage will result from the treatment facility in the event of equipment failure.
24. The waste discharge requirements contained in this Order will remain in effect for a period of five years. Should the Discharger wish to continue discharging to groundwater for a period of time in excess of five years, the Discharger must file an updated Report of Waste Discharge with the Regional Board no later than 180 days in advance of the fifth-year anniversary date of the Order for consideration of issuance of new or revised waste discharge requirements. Any discharge of waste five years after the date of adoption of this Order without obtaining new waste discharge requirements from 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.
25. 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. REOPENER

This Order may be reopened to delete outdated requirements, or to include additional or modified requirements to address pollutant loading problems verified by monitoring data, Discharger work plans or mitigation plans, or TMDL or Basin Plan mandates.

I, Dennis A. Dickerson, 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 7, 2003.

Dennis A. Dickerson
Executive Officer