

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. 99-004

WASTE DISCHARGE REQUIREMENTS  
FOR  
MARIPOSA COUNTY  
YOSEMITE WEST MAINTENANCE DISTRICT  
WASTEWATER TREATMENT FACILITY  
MARIPOSA COUNTY

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

1. Mariposa County, Yosemite West Maintenance District, (Discharger) owns and operates the Yosemite West Subdivision wastewater collection, treatment, and disposal facility (WWTF). The WWTF provides sewerage service to the subdivision, which currently consists of 110 developed lots. Proposed build-out is 294 lots. The WWTF is on 27 acres owned or controlled by the Discharger through easement.
2. The subdivision was created in the 1960s. The 110 developed lots include single family homes, transient rentals, bed and breakfast establishments, and two condominiums with a total of 48 units. The Discharger has also issued building permits for six single family residences, a bed and breakfast, and a guest house, which will result in 118 developed lots.
3. Discharges from the WWTF are regulated by Waste Discharge Requirements Order No. 85-111, adopted by the Board on 31 May 1985. The Order prescribes requirements for the dry weather discharge of 100,000 gpd of wastewater from 294 lots to the WWTF and its leachfields. Order No. 85-111 is inadequate, as it does not describe the current WWTF configuration, operation, or capacity.
4. The WWTF is in steep terrain on a northern slope at an elevation of approximately 5,000 feet above mean sea level. According to WWTF personnel, five feet of snow typically sit on the ground at the WWTF during the winter months. The WWTF is 30 years old and includes an asbestos-cement pipe collection system; a lined 225,000 gallon aerated pond, an inoperable cobble/gravel/sand filter, and approximately 2000 linear feet of conventional leachlines contained in three terraces. Based on Order No. 85-111, the WWTF design capacity, including the filter, is 100,000 gpd. The filter only worked temporarily and was abandoned shortly after it went on-line. The synthetic aeration pond liner degraded over the years and no longer exists.
5. Winter inspection of the WWTF is difficult due to the terrain and snow. Snow melt during the spring results in high flows to the WWTF due to infiltration and inflow (I/I). Further, the melting snow saturates the leachlines, reducing their disposal capacity. Staff inspections conducted on 24 May 1993 and 9 April 1997 revealed leachline failures resulting in effluent surfacing and flowing down slope towards Indian Creek, a water of the U.S. On 18 May 1998, the Discharger reported significant leachline failures, resulting in

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similar off-site discharge conditions. The Discharger also reported that infiltration and inflow associated with snow melt was resulting in wastewater flows of up to 85,000 gpd. This information demonstrates that the collection system experiences excessive I/I and that the WWTF is currently incapable of treating and disposing of 100,000 gpd, the dry weather flow from the projected buildout population of the development.

6. In May 1998, to mitigate immediately the WWTF failures and eliminate the runoff of surfacing effluent, the Discharger installed a spray field and return system and diverted wastewater away from the leach field. The Discharger also implemented water conservation measures and implemented a connection ban on all current and proposed construction.
7. The Discharger also began implementing interim measures to prepare for disposal during the upcoming winter. At staff's request, the Discharger submitted an engineering report on 24 August 1998 describing the measures that it was implementing. The Discharger submitted a revised (15 December 1998) report on 8 January 1998. The report describes four phases. Phases one through three describe interim measures to correct WWTF deficiencies and provide treatment and disposal capacity for the existing development. Phase four describes measures necessary to address WWTF expansion to handle expansion buildout flows for the subdivision for an unspecified planning period.
8. Phase one has been partially completed and includes the placement of the temporary spray field described above, the construction of a clay lined pond to provide settling after the aeration pond, the rehabilitation of existing leachlines using Infiltrator<sup>®</sup> chambers, the installation of 2000 additional feet of leachlines using Infiltrator<sup>®</sup> chambers in previously unused terraces, and the purchase of an all-terrain vehicle to provide winter and spring access to the WWTF. The previously existing and recent WWTF, improvements including the ponds and leachlines, are on 7 acres of property controlled by the Discharger through a utility easement. The Discharger can apply wastewater by sprinkler irrigation to an additional 20 acres of forest land that it owns. The Discharger also implemented a program to identify and correct collection system (I/I) problems.
9. Phase two includes the installation of a permanent forest spray irrigation system for summer effluent disposal and the construction of a meter-grinder-grit chamber unit for the WWTF. Instead of installing permanent spray field fixtures, the Discharger decided to purchase mobile irrigation equipment to increase operational flexibility. The Discharger has purchased but not completed the meter-grinder-grit chamber unit.
10. Under phase three, the Discharger will rehabilitate the aeration pond and apply the pond sludge to the WWTF leachfield terraces, construct a permanent leachfield return system, install groundwater monitoring wells, and implement an extensive I/I control program.

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Under phase four, the Discharger proposes to construct additional leachlines to accommodate wastewater flows generated by additional development for an unspecified planning period.

11. The engineering report estimates that the completed 4,000 feet of leachline will be suitable for winter/early spring flows of 60,000 gpd based on a loading rate of approximately 5 gallons/ft<sup>2</sup>/day. The U.S. Environmental Protection Agency (EPA 625/1-80-012) recommends a design application rate for coarse to medium grained sands of 1.2 gallons/ft<sup>2</sup>/day. As leachlines typically clog with solids as they age, more recent literature recommends much lower design application rates. While the new leachfields may arguably be able to handle flows of 60,000 gpd initially, it is unlikely that they will be capable of such high performance over the long term.
12. Order No. 85-111 indicates that the monthly average dry weather flow for the subdivision will be 100,000 gpd or about 340 gallons per day per lot. Changes in the land use (i.e., bed and breakfasts versus single family dwellings) and I/I will likely result in flows greater than 100,000 gpd prior to buildout. The report indicates that the capacity of the modified WWTF is less than the 100,000 gpd and does not provide predicted WWTF flows or specific leachfield requirements for buildout of the subdivision or, alternatively, a suitable planning period. This Order limits the discharge flow to 60,000 gpd. Additional investigation is necessary to determine the long term acceptance rate of the interim WWTF improvements, the wastewater flows that will be generated by the subdivision for a suitable planning period, and further modifications to the WWTF that will be necessary to provide wastewater treatment and disposal for such flows. When such information is available, this Order can be revised.
13. The WWTF is in Sections 23 and 24, T3S, R20E, MDB&M, as shown in Attachment A, attached hereto and part of this Order. Surface water drains to the northwest into Indian Creek, a water of the U.S. and tributary to the Merced River. The facility lies within the Merced River Hydrologic Unit (No. 537.00), as depicted on the interagency hydrologic maps prepared by the California Department of Water Resources.
14. Based on the 24 September 1998 report entitled *Effluent Holding Pond, Yosemite West*, soils in the WWTF area consist of residual soils derived from local granitic bedrock. Soils in the vicinity of the settling pond are silty sands with very minor clay content.
15. Based on data obtained from the National Weather Service, San Joaquin Valley, Hanford web site, the average annual precipitation for nearby Wawona is approximately 47.2 inches per year.

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16. The Board adopted a *Water Quality Control Plan, Fourth Edition, for the Sacramento River Basin and the San Joaquin River Basin*, (hereafter Basin Plan), which designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for waters of the Basin. These requirements implement the Basin Plan.
17. The beneficial uses of Indian Creek, as a tributary to the Merced River, are municipal and domestic supply; agricultural supply; hydropower generation, water contact recreation; non-contact water recreation; warm and cold freshwater habitat; and wildlife habitat.
18. The beneficial uses of underlying ground water are municipal and domestic supply; industrial supply; and agricultural supply.
19. The permitted discharge is consistent with the antidegradation provisions of State Water Resources Control Board Resolution No. 68-16. This Order requires a decrease in the volume of wastewater discharged. The discharge is not expected to unreasonably affect the quality of ground or surface waters.
20. On 20 August 1992, the State Water Resources Control Board adopted Waste Discharge Requirements Order No. 92-08-DWQ, NPDES General Permit No. CAS000002, for Discharges of Storm Water Runoff Associated with Construction Activity. The Order applies to discharges of storm water from construction sites where construction activities create a soil disturbance of five acres or more. This Order requires the Discharge to apply for coverage under the General Permit.
21. The action to adopt waste discharge requirements for this WWTF specifically, and the Yosemite West Subdivision in general, is exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Title 14, California Code of Regulations (CCR), Section 15301 (existing facility). This exemption applies for flows up to 100,000 gpd.
22. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
23. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED** that Order No. 85-111 is rescinded and Mariposa County, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following at the Yosemite West Special District Wastewater Treatment Facility:

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**A. Discharge Prohibitions:**

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. The discharge of wastes to areas other than the designated treatment and disposal areas is prohibited.
3. Bypass or overflow of untreated or partially treated waste is prohibited.
4. Discharge of waste classified as 'hazardous,' as defined in Section 2521(a) of Title 23, California Code of Regulations (CCR), Section 2510, et seq., or 'designated,' as defined in Section 13173 of the California Water Code (CWC), is prohibited

**B. Discharge Specifications:**

1. The monthly average daily influent flow shall not exceed 60,000 gallons.
2. Effluent from the WWTF shall not exceed the following limits:

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD	mg/l	40	80
TSS	mg/l	40	80
Settleable Solids	ml/l	--	0.1

3. Objectionable odors originating at the WWTF shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.
4. Wastewater discharged to leachlines shall remain underground at all times.
5. The distance between any unlined pond or leaching trench bottoms and anticipated highest groundwater shall be greater than 5.0 feet, or such distance as necessary to provide compliance with Groundwater Limitations.
6. Public contact with the wastewater shall be precluded through such means as fences and signs, or acceptable alternatives.
7. Precipitation and other run-on shall be precluded from entering spray field and leachfield areas, the treatment and settling ponds, or any WWTF property where the run-on could consume and adversely impact the treatment and disposal capacity of the WWTF.

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8. Leachlines shall be designed, constructed, and maintained to meet, at minimum, the following setbacks:

<u>Setback Distance (feet)</u>	<u>To</u>
50	Ephemeral Stream <sup>1</sup>
100	Property Lines
100	Flowing Stream <sup>2</sup>
150	Domestic Wells, Public Wells

<sup>1</sup> As measured from the edge of the drainage course or stream.

<sup>2</sup> As measured from the line which defines the limit of a 10-year flood.

9. As a means of discerning compliance with Discharge Specification No. B.3, the dissolved oxygen content in the upper zone (1 foot) of wastewater stored in any storage pond shall not be less than 1.0 mg/l.
10. Leachlines shall be rested periodically to restore and maintain optimum effluent infiltration rates.
11. Ponds shall be managed to prevent breeding of mosquitoes. In particular:
- a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
  - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
  - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
12. The WWTF shall be capable of treating and disposing of allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. Freeboard shall never be less than two feet (measured vertically) or a lesser freeboard if certified in writing by a registered civil engineer as adequate to prevent overtopping, overflows, or levee failures.
13. Wastewater discharged to the spray field shall remain within the designated disposal areas or returned to the storage pond at all times.

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14. If effluent has been applied to the spray fields since the last precipitation event, the first 24 hours of precipitation runoff from the subsequent event shall be collected and returned to the ponds, and runoff may thereafter be released off-site.
15. Wastewater shall not be sprayed while precipitation is occurring, when it is forecast to occur within 24 hours, or when disposal areas are saturated.
16. No physical connection shall exist between spray field water piping and any domestic water supply or well.
17. WWTF treatment and disposal areas shall be maintained free of brush in densities that inhibits wastewater treatment and disposal, access to and monitoring of the site, or inspection of the WWTF components.

**C. Solids Disposal Specifications:**

1. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.
2. Any proposed change in sludge use or disposal practice shall be reported to the Executive Officer **at least 60 days in advance** of the change.
3. Use and disposal of sewage sludge shall comply with existing federal, state, and local laws, regulations, and ordinances, including permitting requirements and technical standards in 40 Code of Federal Regulations, Part 503 (40 CFR 503).

**D. Groundwater Limitations:**

The discharge, in combination with other sources, shall not cause underlying groundwater to contain waste constituents in concentrations statistically greater than background water quality. For purposes of comparison, background water quality shall be determined when groundwater monitoring provides sufficient data. Quality determined in this manner establishes "water quality protection standards."

**E. Provisions:**

1. The Discharger shall comply with Monitoring and Reporting Program No. 99-004, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

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2. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements," dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
3. The Discharger shall not allow pollutant-free wastewater to be discharged into the WWTF's collection, treatment, and disposal systems in amounts that significantly diminish the systems' capability to comply with this Order. Pollutant-free wastewater means storm water (i.e., inflow), ground water (i.e., infiltration), cooling waters, and condensates that are essentially free of pollutants.
4. By **1 June 1999** the Discharger shall submit a copy of the operation and maintenance manual (O&M manual) for the WWTF, including its proposed modifications. The O&M manual shall be prepared under the supervision of a California registered civil engineer and include descriptions of complete operational procedures for the WWTF that assure compliance with this Order. The O&M manual must address the items in Standard Provision B.2.
5. The Discharger shall submit by **1 June 1999** a technical report that certifies that a flow meter has been properly installed and calibrated to measure the wastewater flows to the WWTF. The flow meter shall be capable of providing recorded instantaneous and total daily flow information.
6. By **1 June 1999** the Discharger shall either submit a Notice of Intent (NOI) to comply with Water Quality Order No. 92-08-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 (General Permit), Waste Discharge Requirements for Dischargers of Storm Water Runoff Associated with Construction Activities, submit evidence that it has already submitted an NOI, or provide written certification that storm water associated with construction activities at its WWTF will not under any circumstances leave the facility site.
7. By **1 June 1999** the Discharger shall submit a technical report in the form of a work plan to install and develop a comprehensive ground water monitoring network to monitor at the earliest practicable date at the POCs the effects of its disposal operations on the uppermost groundwater aquifer. The proposed program shall include, but not be limited to: (1) a sufficient number of upgradient and downgradient ground water monitoring wells for the WWTF disposal areas, (2) a map showing the proposed location of the wells, and (3) the proposed well specifications.



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The Discharger shall install the network by **20 October 2000** of the Executive Officer's approval of the work plan and monitor all monitoring wells as described in the attached Monitoring and Reporting Program.

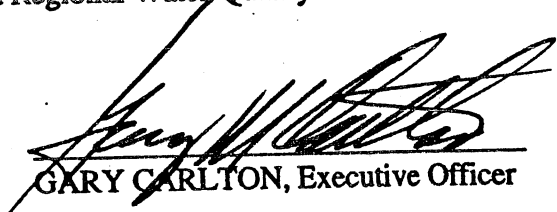
8. The Discharger shall use the best practicable control technique currently available to comply with this Order.
9. Reports required by this Order are requested pursuant to CWC Section 13267. All technical reports shall be prepared under the direction of and properly signed and stamped by a California registered civil engineer with experience in wastewater treatment and disposal. All reports are subject to the approval of the Executive Officer.
10. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
11. The Discharger shall submit to the Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Board by letter when it returns to compliance with the time schedule.
12. A copy of this Order shall be kept at the subdivision's Mariposa County maintenance building for reference by operating personnel and Board inspectors. Personnel responsible for the operation and maintenance of WWTF shall be familiar with its contents.
13. The Board will review this Order periodically and will revise requirements when necessary.

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8. The Discharger shall use the best practicable control technique currently available to comply with this Order.
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12. A copy of this Order shall be kept at the subdivision's Mariposa County maintenance building for reference by operating personnel and Board inspectors. Personnel responsible for the operation and maintenance of WWTF shall be familiar with its contents.
13. The Board will review this Order periodically and will revise requirements when necessary.

I, GARY M. CARLTON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 30 April 1999.

  
GARY CARLTON, Executive Officer

WDH:fmc:4/30/99

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 99-004  
FOR  
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Specific sample station locations shall be established with concurrence of the Board's staff. A description of the stations shall be submitted to the Board and attached to this Program.

**WWTF MONITORING**

Except for flow, which may be measured at the beginning of the WWTF, effluent samples shall be collected just prior to discharge to the spray field or leachlines. Effluent samples shall be representative of the volume and nature of the discharge. Time of collection of grab samples shall be recorded. Effluent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Metered	Continuous <sup>1</sup>
BOD <sub>5</sub> <sup>2</sup>	mg/l	Grab	Monthly
Settleable Solids	mg/l	Grab	Monthly
Total Suspended Solids	mg/l	Grab	Monthly
Conductivity @ 25°C	µmhos/cm	Grab	Monthly

<sup>1</sup> To be monitored and recorded continuously with the cumulative daily flow reported daily and submitted with the 24-hour chart recording in the monthly monitoring reports.

<sup>2</sup> Five day, 20°C biochemical oxygen demand.

The Discharger shall inspect all WWTF treatment, disposal, and return units weekly to ensure proper operation and maintenance. In conducting the WWTF inspections, a bound log shall be kept of the condition of the treatment systems, distribution boxes, and disposal areas, including notations regarding the condition of the treatment and distribution systems; solids in the distribution boxes; the presence or absence of surfacing effluent, standing water, or soil moisture in or adjacent to the disposal areas; and the presence or absence of animal burrows in or adjacent to the leachfields or spray field return berms that could cause effluent to surface or potentially convey surfaced effluent off-site. A summary of the entries made in the log during each month shall be submitted along with the monitoring report the following month.

Specific sample station locations shall be established with concurrence of the Board's staff. A description of the stations shall be submitted to the Board and attached to this Program.

### GROUNDWATER MONITORING

Pursuant to Provision No. E.7 and by 1 June 1999, the Discharger shall submit a work plan for a groundwater monitoring network with a schedule for implementation to monitor shallow groundwater upgradient and downgradient of the WWTF. The monitoring network shall consist of one or more background monitoring wells and sufficient downgradient wells to determine flow direction and gradient, and to monitor disposal areas. All well locations and construction features are subject to the prior approval of the Executive Officer and must be sufficient to monitor potential impacts of the disposal operation on the uppermost groundwater aquifer. By 20 October 2000, the Discharger shall implement the Executive Officer approved ground water monitoring well network.

Samples shall be taken monthly from approved background monitoring well(s) for one year and analyzed for the parameters specified below. Data from these analyses shall be reported to the Board by **within 30 days after said year ends**, for use in determining water quality protection standards.

If subsequent sampling of the background monitoring well(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste disposal activities, the Discharger may request modification of the water quality protection standards.

The downgradient wells shall constitute "points of compliance" (POCs). In conjunction with background monitoring, monitoring of POCs will enable one to determine compliance with water quality protection standards. This information shall be displayed on a water flow net diagram for the site. Water samples shall be collected from wells in the approved monitoring network and analyzed as follows:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency<sup>2</sup></u>
Depth	feet <sup>1</sup>	Measurement	Monthly
Minerals <sup>3</sup>	mg/l	Grab	Quarterly
Conductivity @ 25°C	µmhos/cm	Grab	Quarterly
pH	pH units	Grab	Quarterly
Kjeldahl-Nitrogen	mg/l	Grab	Quarterly
Total Coliform	MPN/100 ml	Grab	Quarterly

<sup>1</sup> The Discharger shall report groundwater levels as elevations with respect to a each other to allow determination of the for the local groundwater gradient.

- <sup>2</sup> Samples shall be collected one week before and weekly after leachfield treatments with hydrogen peroxide. Weekly sampling may be reduced to quarterly after two months if an appropriate analysis demonstrates that impacts, if any, should have been observed but were not.
- <sup>3</sup> Mineral analyses and total dissolved solids shall include calcium, carbonate, chloride, fluoride, iron, magnesium, nitrate, potassium, sodium, sulfate, total phosphorous and all other major cations and anions and include a verification that the analysis is complete (i.e., cation/anion balance).

Annually (after establishment of water quality protection standards), the Discharger shall determine whether there is a statistically significant increase over water quality protection standards for each parameter and constituent analyzed and submit its results to the Board.

### REPORTING

Monthly monitoring reports, including data for all constituents monitored at least monthly, shall be submitted to the Board by the **20th day** of the following month.

In reporting the monitoring data, the Discharger shall arrange the data and information in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data and information shall be summarized in a manner that clearly illustrates whether the Discharger complies with waste discharge requirements.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the discharge monitoring report.

By **20 January of each year**, the Discharger shall submit a written report to the Executive Officer containing the following:

- a. The names, titles, certificate grade, and general responsibilities of persons operating and maintaining the wastewater treatment system.
- b. The names and telephone numbers of persons to contact regarding the WWTF for emergency and routine situations.
- c. A certified statement of when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who did the calibration (Standard Provision C.4).
- d. A statement whether the current operation and maintenance manual, and contingency plan, reflect the WWTFs as currently constructed and operated, and the dates when these documents were last reviewed for adequacy.

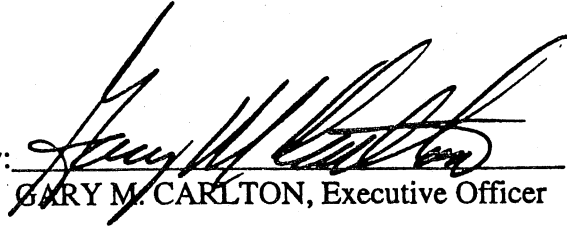
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e. Beginning in 2001, the above described statistical evaluation of groundwater data.

All reports submitted in response to this Order shall comply with the signatory requirements in Standard Provision B.3.

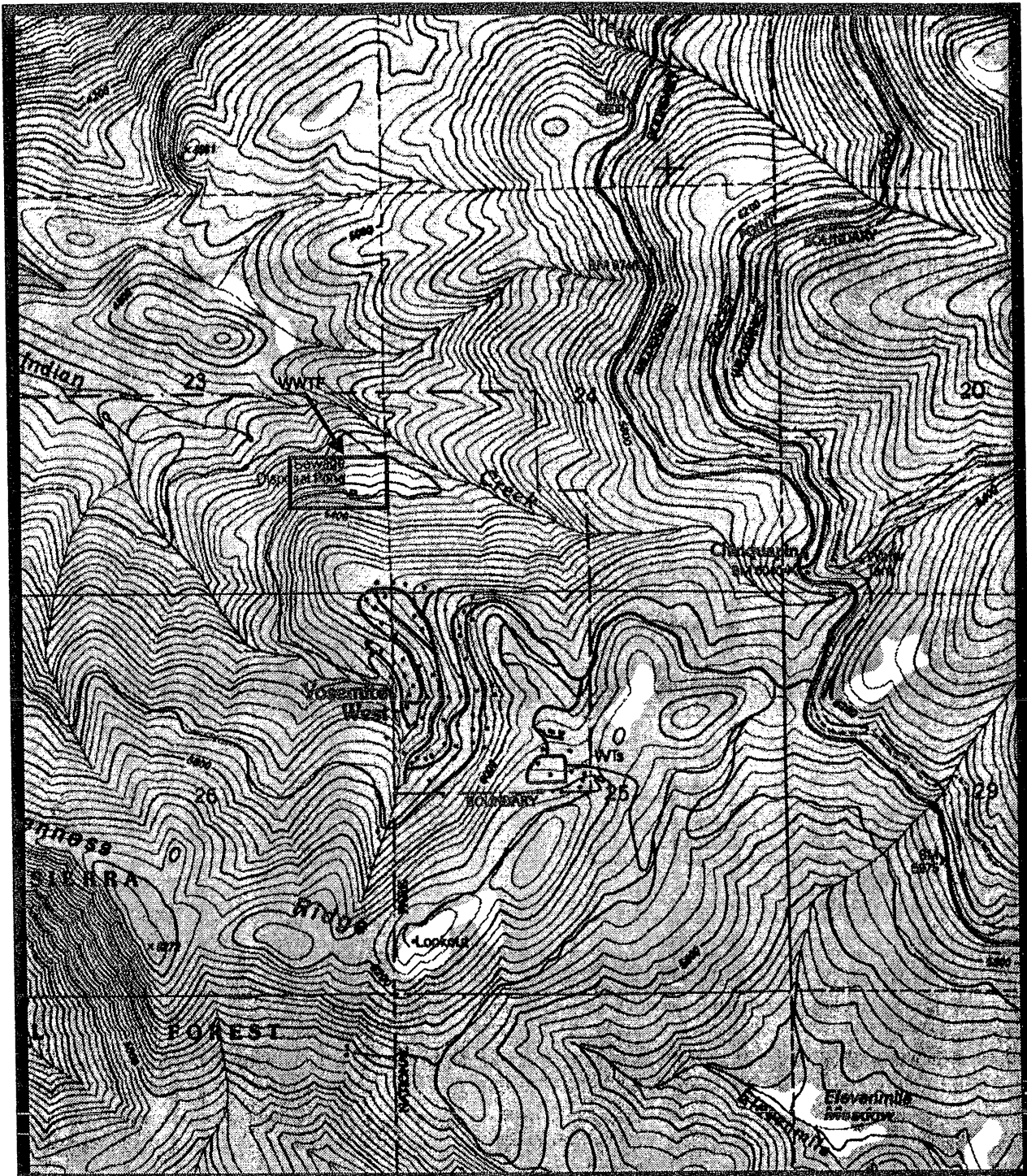
The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by:

  
GARY M. CARLTON, Executive Officer

30 April 1999  
(Date)

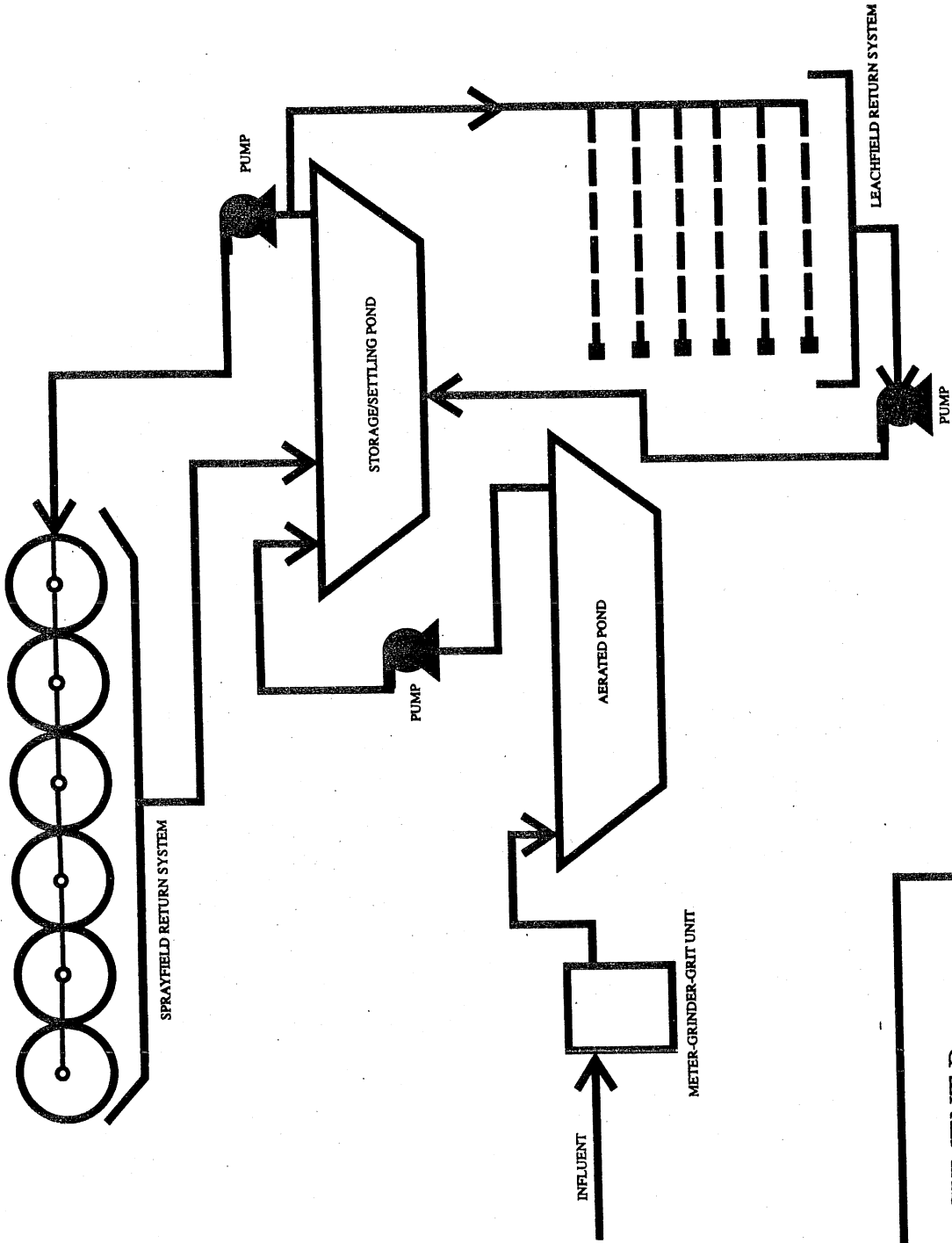
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Scale 1" = 2000'

**ATTACHMENT A**  
**VICINITY MAP**  
**MARIPOSA COUNTY**  
**YOSEMITE WEST SPECIAL DISTRICT**  
**WASTEWATER TREATMENT FACILITY**  
**MARIPOSA COUNTY**  
Sections 23 and 24, T3S, R21E, MDB&M  
Wawona, Calif., 7.5 Min. U.S.G.S Quad Maps

SPRAYFIELD (NUMBER OF SPRINKLERS NOT EXACT)



ATTACHMENT B  
FLOW SCHEMATIC  
YOSEMITE WEST SPECIAL DISTRICT  
WASTEWATER TREATMENT FACILITY  
MARIPOSA COUNTY



## INFORMATION SHEET

### YOSEMITE WEST MAINTENANCE DISTRICT WASTEWATER TREATMENT FACILITY MARIPOSA COUNTY

The Yosemite West Subdivision wastewater collection, treatment, and disposal facilities (WWTF) provides sewerage service to the subdivision, which currently consists of 110 developed out of 294 potential lots. The WWTF is on 27 acres owned or controlled by the Mariposa County (Discharger).

The subdivision was created in the 1960s and the 110 lots include single family homes, transient rentals, bed and breakfast establishments, and two condominiums with a total of 48 units. The Discharger has also issued building permits for six single family residences, a bed and breakfast, and a guest house for a total of 118 developed lots.

Discharges from the WWTF are regulated by Waste Discharge Requirements Order No. 85-111, which prescribes requirements for the dry weather discharge of 0.10 mgd of wastewater from 294 lots to the WWTF and its leachfields.

The WWTF is located in steep terrain on a northern slope at an elevation of approximately 5,000 feet above mean sea level. It is located below the subdivision about one mile down a relatively steep dirt road. According to WWTF personnel, there is typically five feet of snow on the ground at the WWTF during the winter months. In the spring the WWTF road becomes muddy and impassable with conventional vehicles. As a result the WWTF has seldom been inspected by the Discharger during the winter and spring months.

The WWTF is 30 years old and includes a brittle asbestos-cement pipe collection system; a previously lined 225,000 gallon aerated pond, an abandoned cobble/gravel/sand filter, and approximately 2000 linear feet of conventional leachlines contained in three terraces. Based on Order No. 85-111, its design capacity, including the filter, is 100,000 gallons per day. The filter never worked properly and was abandoned shortly after it went on-line. The synthetic aeration pond liner degraded over the years and no longer exists.

The Discharger reports that snow melt during the spring results in high flows to the WWTF due to infiltration and inflow (I/I). Further, the melting snow saturates the leachlines reducing their disposal capacity during this period of greater need. Staff inspections in the late spring have consistently revealed leachline failures resulting in effluent surfacing and flowing down slope towards Indian Creek. On 18 May 1998, the Discharger reported large leachfield failures and similar unacceptable conditions. The Discharger also reported that infiltration and inflow associated with snow melt was resulting in peak daily wastewater flows of up to 85,000 gpd, about twice that expected for the current level of construction. The information demonstrates that the collection system experiences high infiltration and inflow and that the WWTF is incapable of treating and disposing of 100,000 gpd from the projected buildout population of the development.

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In May of 1998, the Discharger acted immediately to address the WWTF failures and eliminate the runoff of surfacing effluent. With staff's consent, the Discharger installed a portable spray field in the forest above the WWTF and a temporary return system to divert wastewater away from the leach field, implemented water conservation measures, and implemented a connection ban on all current and proposed construction.

The Discharger also began implementing measures to prepare for disposal during the upcoming winter. At staff's request, on 24 August 1998, the Discharger submitted an engineering report describing measures that it was implementing. The report describes four phases of corrective actions. Phases one and two describe immediate interim measures to correct WWTF deficiencies and provide treatment and disposal capacity for the existing development. Phase three describes additional interim measures necessary to ensure compliance with this Order. Phase four describes measures necessary to address WWTF expansion to handle flows for a suitable planning period for the subdivision.

Phase one was partially completed during the spring, summer and fall of 1998 and includes the placement of the temporary spray field described above, the construction of a clay lined pond to provide settling after the aeration pond, the rehabilitation of existing leachlines using Infiltrator<sup>®</sup> chambers, the installation of 2000 additional feet of leachlines using Infiltrator<sup>®</sup> chambers in unused terraces, and the purchase of an all-terrain vehicle to provide winter and spring access to the WWTF. The Discharger also implemented a program to identify and correct collection system (I/I) problems, and corrected some of the more significant sources. The Discharger has not submitted a report quantifying the success of its program. Therefore, this Order requires an I/I report. The Discharger did not complete the leachfield return system prior to the winter of 1998/1999 and moved it to phase three in the revised engineering report.

Phase two included the installation of a permanent forest spray irrigation system and the construction of a meter-grinder-grit chamber unit for the WWTF. Instead of installing permanent spray field fixtures, the Discharger will purchase mobile irrigation equipment. The Discharger purchased but did not install the meter-grinder-grit chamber unit.

In phase three, the Discharger will rehabilitate the aeration pond, and land apply the sludge, install a groundwater monitoring network, and install a permanent leachfield return system below the new leachlines.

The engineering report estimates that the completed 4,000 feet of leachline will be suitable for a winter/early spring flows of 60,000 gpd based on a loading rate of approximately 5 gallons/ft<sup>2</sup>/day. The loading rate is not supported with soil profile information or percolation test data, but instead on the conclusion that the existing leachlines "successfully" accepted a loading rate of 7 gallons/ft<sup>2</sup>/day. The U.S. Environmental Protection Agency (EPA 625/1-80-012)

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recommends a design application rate for coarse to medium grained sands of 1.2 gallons/ft<sup>2</sup>/day. More recent guidance on leachfield design promotes much lower loading rates to ensure long term disposal capacity, as overloaded leachlines typically clog with solids over time. The existing leachlines are receiving wastewater without the benefit of the solids removal that would have been provided by filtration and failed after only six years. While the combination of new and existing leachfields may be able to handle flows of 60,000 gpd during the immediate future, it is unlikely that they will perform successfully over the long term.

The Discharger diligently implemented interim modifications to the existing WWTF to contain wastewater discharges during the winter of 1998/1999. However, Order No. 85-111 indicates that the monthly average dry weather flow for the subdivision will be 100,000 gpd or about 340 gallons per day per lot. Changes in the land use (i.e., bed and breakfasts versus single family dwellings) and I/I during the spring will likely generate flows greater than 100,000 gpd prior to buildout. The report indicates that the capacity of the modified WWTF is less than the intended 100,000 gpd and does not provide predicted WWTF flows or specific leachfield requirements for buildout of the subdivision or a suitable planning period. This Order limits the flow to the WWTF to 60,000 gpd, which the Discharger certified as reasonable. However, additional investigation is necessary to determine the long term acceptance rate of the interim WWTF improvements, the wastewater flows for a suitable planning period, and further modifications to the WWTF that will be required to provide wastewater treatment and disposal for the subject planning period. Board enforcement, proposed separately, would require the Discharger to complete this additional investigation. This Order will need to be updated upon receipt of the information required by the proposed enforcement.

Soils in the WWTF area consist of residual soils derived from local granitic bedrock. Soils in the vicinity of the settling pond are silty sands with very minor clay content. The soil information provided by the Discharger is minimal. Additional soil information is necessary to assess the adequacy of the soil profile to inhibit pathogen migration. Groundwater monitoring is necessary to monitor whether past discharges have degraded local groundwater with pathogens and salts and to monitor the Discharger's treatment of the existing leachlines with hydrogen peroxide.

The action to adopt waste discharge requirements for this WWTF is exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Title 14, California Code of Regulations (CCR), Section 15301 (existing facility).

WDH:fmc:4/30/99