

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF MARCH 24-25, 2005

ITEM: 5

SUBJECT: MANDATORY MINIMUM PENALTY ORDER NO. R3-2005-0009 FOR CITY OF PISMO BEACH WASTEWATER FACILITY, SAN LUIS OBISPO COUNTY

KEY INFORMATION

Location: 550 Frady Lane, Pismo Beach
Type of Waste: Municipal
Design Capacity: 1.5 million gallons per day (MGD) with upgrade to 1.9 MGD under construction
Present Volume: 1.3 MGD
Treatment: Secondary
Disposal: Pacific Ocean coastal waters near City of Pismo Beach
Existing Order: Waste Discharge Requirements Order No. R3-2004-0051

SUMMARY

California Water Code (CWC) sections 13385(h) and (i) require that the Regional Board assess mandatory minimum penalties of \$3,000 per violation of certain effluent requirements specified in NPDES Permits. At its May 14, 2004 meeting, the Regional Board issued Mandatory Penalty Order No. R3-2004-0008 to the City of Pismo Beach, assessing \$735,000 for effluent violations occurring between July 1, 2001, and July 31, 2003. At the request of the City, the State Water Resources Control Board reviewed Order No. R3-2004-0008 and remanded it to the Regional Board for reconsideration. This proposed Order (Attachment 1) replaces Order No. R3-2004-0008 with revisions to penalty amounts (described below) and addressing violations occurring between July 1, 2001, and November 30, 2004. The revised penalty amount is \$351,000. The Executive Officer issued Mandatory Penalty Complaint No. R3-2005-0009 (Complaint) to the City of Pismo Beach on January 21, 2005, assessing penalties of \$351,000. The City has proposed utilizing the maximum portion allowable of the penalty to fund a supplemental environmental project (SEP) similar to that described in Order No. R3-2004-0008. The

proposed SEP includes elements including a Wastewater Reclamation Feasibility Study, Agricultural Short Courses, Pier Area Bacteria Source Tracking, Pismo Creek Watershed Management Plan, and implementation of projects identified in the Management Plan.

DISCUSSION

Background: The City of Pismo Beach (City) operates a wastewater treatment facility located at 550 Frady Lane. The existing treatment system consists of primary clarification, activated sludge, secondary clarification and chlorine disinfection. Biosolids are anaerobically digested, dewatered and hauled to a composting facility. The existing treatment facilities have a design capacity of 1.75 MGD, however the City has not been successful in consistently meeting discharge requirements with flows considerably less than the design capacity.

The City is currently constructing a \$14 million upgrade of its treatment facility. The upgraded treatment facility is expected to be complete by the end of this year with an expanded capacity of 1.9 MGD. Existing activated sludge treatment

processes will be replaced with extended aeration processes using oxidation ditch units. The new treatment facility will include larger headworks, two oxidation ditches, two secondary clarifiers, waste and return activated sludge pumping stations, operations laboratory, administration building, and converting the existing aeration basin to effluent disinfection chamber with new pumping station. The upgraded facilities are expected to significantly improve the City's ability to consistently meet discharge requirements.

Final effluent is transported to Oceano, where it discharges to the ocean through a three-quarter

mile long outfall shared with South San Luis Obispo County Sanitation District. The outfall is offshore of Pismo State Beach, approximately two miles south of the Pismo Pier.

The City's discharge is regulated by NPDES Permit No. CA 0048151, Waste Discharge Requirements Order No. R3-2004-0051, adopted by the Regional Board on September 10, 2004 (and formerly by Order No. 99-31). Waste Discharge Requirements Order Nos. 99-31 and R3-2004-0051 include in part the following Effluent Limitations (Effluent Limitations B.2):

Constituent	Units	Monthly (30-day) Average	Weekly (7-day) Average	Daily Maximum
BOD, 5-day	mg/L	30	45	90
BOD, 5-day	lb/day	438	657	1314
Total Suspended Solids	mg/L	30	45	90
Settleable Solids	mL/L	1.0	1.5	3.0
Fecal Coliform	MPN/100 ml		200*	2000
BOD, 5-day	% removal		Order No. 99-31 requires 80% minimum Order No. R3-2004-0051 requires 85% minimum	

*Order No. R3-2004-0051 specifies limit as 7-sample median rather than 7-day average.

California Water Code section 13385(h)(1) requires the Regional Board to assess a mandatory penalty of three thousand dollars (\$3,000) for each serious violation. A serious violation occurs if the discharge exceeds the effluent limitations for a Group II pollutant (as specified in Appendix A to section 123.45 of Title 40 Code of Federal Regulations) by 20 percent or more, or for a Group I pollutant (as specified in Appendix A to section 123.45 of Title 40 Code of Federal Regulations) by 40 percent or more.

California Water Code section 13385(i) requires the Regional Board to assess a mandatory penalty of three thousand dollars (\$3,000) for each violation, not counting the first three violations, if the discharger does any of the following four or more times in a consecutive six-month period:

- a) Exceeds a waste discharge requirement effluent limitation;

- b) Fails to file a report pursuant to Section 13260;
- c) Files an incomplete report pursuant to Section 13260; or
- d) Exceeds a toxicity discharge limitation contained in the applicable waste discharge requirements where the waste discharge requirements do not contain pollutant-specific effluent limitations for toxic pollutants.

Violations: The City submits monthly monitoring reports, as required by Order Nos. 99-31 and R3-2004-0051. According to monitoring reports submitted by the City, 118 effluent violations occurred between July 1, 2001, and November 30, 2004. Effluent violations subject to mandatory penalties are summarized below.

No.	Date	Effluent Constituent	Reported Value	Permitted Limit	Violation Type
1	7/14/01	Fecal Coliform 7-day average	280 MPN/100 ml	200 MPN/100 ml	Chronic

No.	Date	Effluent Constituent	Reported Value	Permitted Limit	Violation Type
2	7/15/01	Settleable Solids maximum	8 mL/L	3 mL/L	Serious
3	7/15/01	Suspended Solids maximum	132 mg/L	90 mg/L	Serious
4	7/16/01	Suspended Solids maximum	96 mg/L	90 mg/L	Chronic
5	7/20/01	Suspended Solids maximum	124 mg/L	90 mg/L	Chronic
6	7/21/01	Fecal Coliform 7-day average	250 MPN/100 ml	200 MPN/100 ml	Chronic
7	7/21/01	Settleable Solids weekly average	2.46 mL/L	1.5 mL/L	Serious
8	7/21/01	Suspended Solids weekly average	87 mg/L	45 mg/L	Serious
9	7/21/01	BOD weekly average	70 mg/L	45 mg/L	Serious
10	7/26/01	Settleable Solids maximum	5 mL/L	3 mL/L	Serious
11	7/27/01	Settleable Solids maximum	44 mL/L	3 mL/L	Serious
12	7/27/01	Suspended Solids maximum	196 mg/L	90 mg/L	Serious
13	7/28/01	Fecal Coliform 7-day average	401 MPN/100 ml	200 MPN/100 ml	Chronic
14	7/28/01	Settleable Solids weekly average	8.00 mL/L	1.5 mL/L	Serious
15	7/28/01	Suspended Solids weekly average	60 mg/L	45 mg/L	Chronic
16	7/31/01	Settleable Solids monthly average	3.9 mL/L	1.0 mL/L	Serious
17	7/31/01	Settleable Solids maximum	44 mL/L	3 mL/L	Serious
18	7/31/01	Suspended Solids monthly average	53 mg/L	30 mg/L	Serious
19	7/31/01	Suspended Solids maximum	253 mg/L	90 mg/L	Serious
20	7/31/01	BOD monthly average	43 mg/L	30 mg/L	Serious
21	8/1/01	Suspended Solids maximum	172 mg/L	90 mg/L	Serious
22	8/7/01	Suspended Solids weekly average	50 mg/L	45 mg/L	Chronic
23	8/14/01	BOD weekly average	55 mg/L	45 mg/L	Chronic
24	8/14/01	Fecal Coliform 7-day average	762 MPN/100 ml	200 MPN/100 ml	Chronic
25	8/20/01	BOD maximum	130 mg/L	90 mg/L	Serious
26	8/20/01	BOD maximum mass	1423 lb/day	1314 lb/day	Chronic
27	8/21/01	Fecal Coliform 7-day average	390 MPN/100 ml	200 MPN/100 ml	Chronic
28	8/21/01	BOD weekly average	96 mg/L	45 mg/L	Serious
29	8/22/01	BOD maximum	100 mg/L	90 mg/L	Chronic
30	8/28/01	BOD weekly average	71 mg/L	45 mg/L	Serious
31	8/28/01	Fecal Coliform 7-day average	562 MPN/100 ml	200 MPN/100 ml	Chronic
32	8/31/01	Suspended Solids monthly average	34 mg/L	30 mg/L	Chronic
33	8/31/01	BOD monthly average	62 mg/L	30 mg/L	Serious
34	8/31/01	BOD percent removal	77 %	80%	Chronic
35	8/31/01	BOD monthly average mass	624 lb/day	438 lb/day	Serious
36	9/7/01	Fecal Coliform 7-day average	254 MPN/100 ml	200 MPN/100 ml	Chronic
37	9/21/01	Fecal Coliform 7-day average	258 MPN/100 ml	200 MPN/100 ml	Chronic
38	12/31/01	BOD monthly average	38 mg/L	30 mg/L	Chronic
39	1/7/02	BOD weekly average	57 mg/L	45 mg/L	Chronic
40	1/31/02	BOD monthly average	39 mg/L	30 mg/L	Chronic
41	2/28/02	BOD monthly average	32 mg/L	30 mg/L	Chronic
42	3/31/02	BOD monthly average	34 mg/L	30 mg/L	Chronic
43	4/7/02	BOD weekly average	51 mg/L	45 mg/L	Chronic
44	5/5/02	Suspended Solids maximum	97 mg/L	90 mg/L	Chronic

No.	Date	Effluent Constituent	Reported Value	Permitted Limit	Violation Type
45	5/5/02	Settleable Solids maximum	4.5 mL/L	3 mL/L	Serious
46	5/7/02	Settleable Solids maximum	3.5 mL/L	3 mL/L	Chronic
47	5/7/02	Settleable Solids weekly average	1.63 mL/L	1.5 mL/L	Chronic
48	5/7/02	BOD weekly average	62 mg/L	45 mg/L	Chronic
49	5/7/02	Fecal Coliform 7-day average	386 MPN/100 ml	200 MPN/100 ml	Chronic
50	5/21/02	Fecal Coliform 7-day average	697 MPN/100 ml	200 MPN/100 ml	Chronic
51	5/29/02	Settleable Solids maximum	14 mL/L	3 mL/L	Serious
52	5/30/02	Suspended Solids monthly average	35 mg/L	30 mg/L	Chronic
53	5/30/02	BOD monthly average	48 mg/L	30 mg/L	Serious
54	5/30/02	BOD maximum	94 mg/L	90 mg/L	Chronic
55	5/30/02	Suspended Solids maximum	140 mg/L	90 mg/L	Serious
56	6/21/02	BOD weekly average	46 mg/L	45 mg/L	Chronic
57	6/28/02	BOD weekly average	49 mg/L	45 mg/L	Chronic
58	6/30/02	BOD monthly average	43 mg/L	30 mg/L	Serious
59	7/31/02	BOD monthly average	31 mg/L	30 mg/L	Chronic
60	8/6/02	Settleable Solids maximum	13 mL/L	3.0 mL/L	Serious
61	8/7/02	Suspended Solids maximum	92 mg/L	90 mg/L	Chronic
62	8/7/02	Suspended Solids weekly average	50 mg/L	45 mg/L	Chronic
63	8/7/02	Settleable Solids weekly average	2.17 mL/L	1.5 mL/L	Serious
64	8/7/02	BOD weekly average	66 mg/L	45 mg/L	Serious
65	8/8/02	BOD maximum	92 mg/L	90 mg/L	Chronic
66	8/14/02	BOD weekly average	60 mg/L	45 mg/L	Chronic
67	8/31/02	BOD monthly average mass	481 lb/day	438 lb/day	Chronic
68	8/31/02	BOD monthly average	48 mg/L	30 mg/L	Serious
69	8/31/02	Suspended Solids monthly average	31 mg/L	30 mg/L	Chronic
70	9/30/02	BOD monthly average	34 mg/L	30 mg/L	Chronic
71	10/31/02	BOD monthly average	32 mg/L	30 mg/L	Chronic
72	11/21/02	Fecal Coliform 7-day average	262 MPN/100 ml	200 MPN/100 ml	Chronic
73	11/30/02	BOD monthly average	34 mg/L	30 mg/L	Chronic
74	2/28/03	BOD monthly average	34 mg/L	30 mg/L	Chronic
75	3/7/03	BOD weekly average	53 mg/L	45 mg/L	Chronic
76	3/21/03	BOD weekly average	47 mg/L	45 mg/L	Chronic
77	3/31/03	BOD monthly average	42 mg/L	30 mg/L	Chronic
78	4/14/03	BOD weekly average	75 mg/L	45 mg/L	Serious
79	4/18/03	BOD maximum	120 mg/L	90 mg/L	Chronic
80	4/21/03	BOD weekly average mass	1131 lb/day	657 lb/day	Serious
81	4/21/03	BOD weekly average	105 mg/L	45 mg/L	Serious
82	4/28/03	BOD weekly average	49 mg/L	45 mg/L	Chronic
83	4/30/03	BOD monthly average	72 mg/L	30 mg/L	Serious
84	4/30/03	BOD monthly average mass	672 lb/day	438 lb/day	Serious
85	5/7/03	BOD weekly average	52 mg/L	45 mg/L	Chronic
86	5/14/03	BOD weekly average	78 mg/L	45 mg/L	Serious
87	5/21/03	BOD weekly average	54 mg/L	45 mg/L	Chronic

No.	Date	Effluent Constituent	Reported Value	Permitted Limit	Violation Type
88	5/31/03	BOD monthly average	54 mg/L	30 mg/L	Serious
89	5/31/03	BOD monthly average mass	442 lb/day	438 lb/day	Chronic
90	10/14/03	Fecal Coliform 7-day average	283 MPN/100 ml	200 MPN/100 ml	Chronic
91	10/28/03	Fecal Coliform 7-day average	324 MPN/100 ml	200 MPN/100 ml	Chronic
92	12/31/03	BOD monthly average	34 mg/L	30 mg/L	*Chronic
93	1/7/04	BOD weekly average	46 mg/L	45 mg/L	Chronic
94	1/21/04	BOD weekly average	53 mg/L	45 mg/L	Chronic
95	1/28/04	BOD weekly average	51 mg/L	45 mg/L	Chronic
96	1/30/04	BOD monthly average	45 mg/L	30 mg/L	Serious
97	2/7/04	BOD weekly average	50 mg/L	45 mg/L	Chronic
98	2/28/04	BOD weekly average	52 mg/L	45 mg/L	Chronic
99	2/29/04	BOD monthly average	44 mg/L	30 mg/L	Serious
100	3/7/04	BOD weekly average	47 mg/L	45 mg/L	Chronic
101	3/7/04	Fecal Coliform 7-day average	322 MPN/100 ml	200 MPN/100 ml	Chronic
102	3/14/04	BOD weekly average	71 mg/L	45 mg/L	Serious
103	3/21/04	BOD weekly average	51 mg/L	45 mg/L	Chronic
104	3/31/04	BOD monthly average	49 mg/L	30 mg/L	Serious
105	3/31/04	BOD monthly average mass	453 lb/day	438 lb/day	Chronic
106	4/30/04	BOD monthly average	38 mg/L	30 mg/L	Chronic
107	5/13/04	Settleable Solids maximum	9 mL/L	3 mL/L	Serious
108	5/14/04	Fecal Coliform 7-day average	697 MPN/100 ml	200 MPN/100 ml	Chronic
109	5/16/04	BOD maximum	110 mg/L	90 mg/L	Chronic
110	5/21/04	BOD weekly average	62 mg/L	45 mg/L	Chronic
111	5/30/04	BOD monthly average	44 mg/L	30 mg/L	Serious
112	9/23/04	Fecal Coliform 7-sample median	900 MPN/100 ml	200 MPN/100 ml	Chronic
113	9/24/04	Fecal Coliform 7-sample median	1600 MPN/100ml	200 MPN/100 ml	Chronic
114	9/27/04	Fecal Coliform 7-sample median	1600 MPN/100ml	200 MPN/100 ml	Chronic
115	9/28/04	Fecal Coliform 7-sample median	1600 MPN/100ml	200 MPN/100 ml	Chronic
116	9/29/04	Fecal Coliform 7-sample median	1600 MPN/100ml	200 MPN/100 ml	Chronic
117	9/30/04	Fecal Coliform 7-sample median	1600 MPN/100ml	200 MPN/100 ml	Chronic
118	10/1/04	Fecal Coliform 7-sample median	300 MPN/100ml	200 MPN/100 ml	Chronic

*Denotes Chronic violation not subject to Mandatory Minimum Penalties

As a result of the referenced violations and as mandated by the California Water Code, the Executive Officer issued Complaint No. R3-2005-0009 to the City on January 21, 2005 (Attachment 2). The complaint proposes a penalty of \$126,000 for the 42 serious violations and \$225,000 for the 75 chronic violations, for a total of \$351,000. Violation No. 92 (above) is not subject to mandatory penalty as it is a chronic violation occurring when there were fewer than four violations within the preceding six-month period.

Prior Enforcement Actions: As described above, the City has experienced considerable difficulty meeting discharge requirements due (in part) to its aging wastewater facilities and large influx of visitors on weekends and holidays.

On December 8, 1998, the Executive Officer issued Cleanup or Abatement Order No. 98-83, directing the City to correct various deficiencies in its wastewater collection system. Responding to the Cleanup or Abatement Order, the City performed a comprehensive system evaluation,

identified and prioritized problem areas, and developed a Wastewater Master Plan. To date, the City has completed a considerable number of the prioritized collection system projects and is approximately half way through construction of its upgraded treatment facility.

On July 31, 2000, the Regional Board adopted Order No. 00-059 for mandatory penalties of \$12,000 addressing the City's effluent violations occurring between January 1, 2000, and April 30, 2000.

On December 7, 2001, the Regional Board adopted Order No. 01-117 for mandatory penalties of \$120,000 addressing the City's effluent violations occurring between May 1, 2000, and May 1, 2001.

On May 14, 2004, the Regional Board adopted Order No. R3-2004-0008 (subject of this revision) for mandatory penalties of \$735,000 addressing reported effluent violations between July 1, 2001, and July 31, 2003.

Revision of Order No. R3-2004-0008: Shortly after the Regional Board adopted Order No. R3-2004-0008, the City discovered that a significant number of violations addressed in the penalty order were reported in error. As a result, Mandatory Penalty Order No. R3-2004-008 significantly overstates actual effluent violations and corresponding penalties. The City submitted a petition for State Water Resources Control Board review of Order No. R3-2004-008. Regional Board staff concurred with the City, that reporting errors overstated violations, and notified the State Board accordingly by stipulation requesting the Order be remanded for Regional Board reconsideration (Attachment 3).

The specific source of errors in the City's monitoring reports is that for a period of several years (2001 to 2004), the City reported weekly average values on a running basis. Each BOD or suspended solids data point was averaged with the preceding six data points for a running daily calculation. This error in calculation resulted in the City reporting multiple violations within a week period, where only one weekly average violation applies. Regional Board staff provided clarification of requirements to the City by letter dated June 7, 2004 (Attachment 4).

In addition to the errors described above, the proposed Order covers additional effluent violations occurring over an extended period of time (through November 30, 2004). No effluent violations occurred during December 2004.

Supplemental Environmental Project: California Water Code section 13385(l) allows a portion of mandatory penalties to be directed toward supplemental environmental projects (SEPs). The law provides that if the penalty amount exceeds \$15,000 then the Regional Board (with concurrence of the discharger) may direct \$15,000 plus half of the penalty amount in excess of \$15,000 toward supplemental environmental projects. Based upon the \$351,000 penalty amount, \$183,000 could be directed toward funding supplemental environmental projects. Criteria for supplemental environmental projects are specified in the State Board's Enforcement Policy (Resolution No. 2002-0040), and are generally environmental protection projects above and beyond required actions.

City staff worked in conjunction with a variety of local firms, non-profit groups and Regional Board staff to identify a broad variety of needs that could be addressed through SEPs. At its May 2004 meeting, the Regional Board considered the City's proposed SEPs and approved six projects to be funded as a combined SEP. The projects approved in Order No. R3-2004-0008 include:

1. Wastewater Reclamation Feasibility Study,
2. Wastewater Biology Courses,
3. Agricultural Short Courses,
4. Pier Area Bacteria Source Tracking,
5. Pismo Creek Watershed Mgmt. Plan, and
6. Pismo Creek Watershed Implementation Fund (projects identified in above plan).

Due to the reduced penalty available for SEPs, the City has proposed the following projects be approved as a revised SEP (Attachment 5) incorporated into Order No. R3-2005-0009. The project elements are consistent with those approved in Order No. R3-2004-0008, except that the Wastewater Biology Courses are not proposed for funding. The project includes five main elements in a single SEP. Each element addresses beneficial needs and/or uses concerning the Pismo Beach coastline, Pismo Creek and adjacent watersheds within the region. Each element includes the

expected deliverables to the extent that they can be determined at this time. The City's proposed SEP elements are as follows:

1. **Wastewater Reclamation Feasibility Study:** The study will include evaluation of recycled water quality with respect to key agronomic parameters; recycled water market assessment; necessary upgrades to treatment facilities; cost analyses; options for treating and conveying recycled water to various markets; and payment options.
2. **Agricultural Short Courses:** The Farm Water Quality Planning program is a coordinated effort by the University of California Division of Agriculture and Natural Resources cooperating with the USDA Natural Resource Conservation Service (NRCS) to improve water quality education to the irrigated agriculture industry in California. Course participants complete non-point source site-assessments that integrate production goals with water quality, habitat conservation, and soil conservation goals.

The City will set aside funds to conduct local agricultural water quality courses, educating local growers. These funds will initially focus on providing for growers in the Pismo Creek watershed, but will be open to growers throughout San Luis Obispo County. This element of the SEP would assist growers in San Luis Obispo County in meeting the Ag waiver requirements and develop farm water quality plans.
3. **Pier Area Bacteria Source Tracking:** Using water quality monitoring, standard bacteria testing and genetic fingerprinting techniques, the City will identify and characterize sources of bacteria impacting beach water quality, particularly near Pismo Pier.
4. **Pismo Creek Watershed Management Plan:** Central Coast Salmon Enhancement group will develop a comprehensive management plan for the Pismo Creek Watershed. The study area will include the upper reaches and tributaries and will include an assessment of current conditions, and identification of projects and methods to improve water quality. The Regional Board's Non-point Source Unit

will oversee and track the development of the plan (including scopes of work, work plans and deliverables).

5. **Pismo Creek Watershed Implementation Fund:** The remaining penalties, (plus any funds not used in completing the first four elements) will be used in completing projects identified in the Pismo Creek Watershed Management Plan and approved by the Executive Officer.

Deliverables will include the draft and final reports for elements 1, 3 and 4 and quarterly status and summary reports for elements 2 and 5. City and Regional Board staff will review the draft reports and be allowed a 30-day comment period prior to submission of a final report.

The City will expend one hundred eighty-three thousand dollars (\$183,000) to implement and complete the SEP described above and in Finding No. 19 of Order No. R3-2005-0009. The responsible parties for each element will complete each associated element to the satisfaction of the Executive Officer. In order to avoid unnecessary fees from a fiscal institution, staff recommends that the elements of the SEP be paid directly by the City to the party that will actually perform the work. If the minimum expectations of each element, as defined by the Order, are not met to the satisfaction of the Executive Officer, then the City must pay the amounts associated with those elements to the Cleanup and Abatement Account. The City can avoid having to make double payments by including provisions in grantee contracts that the City will only pay the contractors upon satisfactory completion of work, as determined by the Executive Officer; by requiring performance bonds from the contractors; or by including penalty provisions for failure to perform the work in a satisfactory manner.

The Pismo Creek Watershed Implementation Fund will be liquidated by March 25, 2010 (5 years). Funds remaining in the account at that date will be forfeited to the State Water Resources Control Board, Cleanup and Abatement Account. Provisions have been included to allow the Executive Officer to extend this deadline if delays arise beyond the responsible party's control.

COMMENTS AND RESPONSE

City of Pismo Beach: The City has indicated it has identified errors in its past sampling techniques (relating to sample location) resulting in reported effluent BOD data exceeding actual discharge concentrations. For many years, the City collected effluent BOD samples upstream of its chlorination structure, rather than after the final point in the treatment train (after disinfection). Recent correction of this sampling error and comparative samples (comparing results from samples prior to and post chlorination) indicates actual effluent BOD of the discharge may have been significantly lower in concentration than reported. The City contends that the chlorination process significantly reduces BOD, when above 30 mg/L, by oxidizing bacteria and organic compounds. The City also contends that the BOD reduction is not effective when BOD is less than 30 mg/L, and may actually increase such BOD concentrations. From this information, the City concludes that significantly fewer effluent violations actually occurred than those reported (and summarized in the table on pages 2-5 of this staff report). The City has corrected its sampling techniques and effluent monitoring demonstrates greatly reduced BOD concentrations (with no other process changes contributing to improvement). Since correction of the sample location, the City has maintained compliance with its effluent BOD limitations. Based on the City's estimates of effluent BOD concentrations being 40-88% lower than test results, the City requests that the Regional Board waive penalties for 47 of the BOD violations listed above. The City's request, explanation and study summary are attached (Attachment 6).

Staff Response: The City's NPDES Permit clearly states that monitoring shall be performed on samples representative of effluent discharged to the ocean after the last point of treatment. Monitoring reports that a discharger submits to comply with an NPDES permit are admissions that the reported violations occurred. The City contends that it has (for many years) not monitored and reported effluent in the manner required. Therefore, the monitoring data submitted by the City does not reflect final effluent quality and only estimates of effluent quality are available. There is no indication that the City intentionally misrepresented effluent data or intentionally failed to monitor effluent in the manner required.

Essentially, the request is that the Regional Board accept the City's current estimates of past effluent BOD concentrations in lieu of monitoring data previously submitted. If the effluent BOD estimates are acceptable, then the number of discharge violations subject to mandatory penalties would be reduced by 47 violations.

Biochemical Oxygen Demand (BOD) is a measure of the amount of oxygen used to break down and stabilize decomposable organic matter. Bacteria are used in BOD analyses to decompose the organic matter. However, if adequate numbers of bacteria are not present (or have been killed by disinfection), then proper BOD analysis requires the samples be "seeded" with live bacteria to perform the decomposition. In any event, the number of live bacteria in the effluent should not significantly affect BOD concentration. The City also contends that BOD reduction occurs through the disinfection process only when BOD exceeds 30 mg/L, and that lower concentrations actually increase after disinfection processes. Aside from a nominal amount of oxidation and settling within the chlorination chamber, staff is unaware of a scientific process that would result in significant BOD reduction after chlorination. However, it is likely that slight increases in BOD result from addition of dechlorination chemicals, however such increases would occur at any BOD concentration.

Based upon the information submitted by the City, staff is of the opinion that it is unlikely that sample location alone assures that the discharge was at least 40% lower in BOD concentration (as claimed by the City). Furthermore, the City's basis for concluding that high BOD concentrations were reduced while low BOD concentration were increased, does not provide assurance that effluent discharges met permit requirements. However, ongoing sampling (in the correct location) continues to demonstrate BOD concentrations significantly lower than those reported prior to May 2004, which supports (at least partially) the City's claim that effluent discharged contained lower BOD concentrations than reported in monthly monitoring reports.

Literature indicates that chlorination has been demonstrated to reduce BOD in secondary effluent at a rate of approximately one pound of BOD per two pounds chlorine. Based upon this potential

effect, staff calculated the hypothetical maximum BOD reduction that could have occurred based upon the City's reported chlorine application. Calculated potential BOD reduction by chlorine oxidation ranged from 5-54% (City claims 40-88%). Accordingly, if all of the applied chlorine were available to oxidize BOD, it is hypothetically possible that 35 of the violations listed above were not actual discharge violations. This does not address chlorine availability diminished by chemical storage, errors in the City's calculations of application rates, variability of actual BOD oxidation rates, and other factors. However, under the best case scenario (best case meaning least violations), 35 of the 118 listed violations may not have occurred.

Because of the number and nature of issues regarding the BOD violations, staff has prepared three options for Regional Board consideration.

Option No. 1 includes adopting the proposed Order, assessing \$351,000 for 118 violations subject to mandatory penalties (Attachment 1).

Option No. 2 includes reducing the number of violations subject to penalty by 47 based upon the City's contention that wastewater discharged contained 40% lower BOD concentrations than measured. If the Regional Board concurs with the City, then the shaded violations (depicted on Attachment 1) may be deleted from the proposed Order and shaded violation and penalty amounts listed in the following paragraphs could replace the preceding amounts (Finding Nos. 14, 15, 16, "It is hereby ordered" clause, and Requirement Nos. 1 and 7). This would reduce the penalty amount to \$210,000 and the available SEP funds would be reduced to \$112,500. This reduced amount would not be adequate to fund all five components of the City's proposed SEP. Therefore, based upon water quality priorities, staff recommends proceeding with only projects 2, 4 and 5 of Finding No. 19.

Option No. 3 includes reducing the number of violations subject to penalty by 35 based upon staff's calculations of the maximum BOD reduction that could have occurred (based upon literature oxidation rate and City's reported chlorination application). The remaining 83 violations would result in a penalty amount of \$243,000 and the available SEP funds would be reduced to \$129,000. The order proposed under this option is included at Attachment 1a. This Order also would approve only projects 2, 4 and 5 for SEPs.

RECOMMENDATION

Subject to consideration of testimony presented during the public hearing, staff recommends that the Regional Board proceed with Option No. 3 and adopt Order No. R3-2005-0009 (Attachment 1a) for 83 violations (incorporating changes which may result from the hearing) to replace Order No. R3-2004-0008.

ATTACHMENTS

1. Proposed Order No. R3-2005-0009 (citing 118 or 71 violations)
- 1a. Proposed Order No. R3-2005-0009 (citing 83 violations)
2. Complaint No. R3-2005-0009
3. Transmittal of Stipulation and Proposed Order
4. June 7, 2004 letter to Greg Ray
5. Proposed Supplemental Environmental Project
6. February 16, 2005 letter to Sorrel Marks