



California Regional Water Quality Control Board

San Francisco Bay Region



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FROM: Myriam Zech 
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DATE: July 26, 2010

SUBJECT: **Confidential Attorney-Client Privileged Communication** - Proposed
Administrative Civil Liability for Novato Sanitary District regarding Sanitary
Sewer Overflows: preliminary staff report and consideration of factors
under 13385

Introduction:

From May 2007 to May 2010, the Novato Sanitary District reported 70 Sanitary Sewer Overflows (SSOs) to the Regional Water Board. According to these reports, the combined volume of the SSOs amounts to a total of 472,498 gallons. The bulk of the volume was created by 7 SSOs, which occurred because the flow exceeded the capacity of the collection system, i.e. they occurred because of inflow and infiltration (I&I). For these 7 SSOs, the Novato Sanitary District reported a total volume of approximately 375,900 gallons, none of which was recovered. The other causes of the SSOs were root, grease and debris blockages and infrastructure failure. Overall, of the 70 SSOs reported, 46 were category 2 SSOs, totalling approximately 8,898 gallons, while 24, including the 7 capacity-related SSOs, were category 1 SSOs, totalling approximately 463,300 gallons¹. Of the 70 SSOs reported, the Discharger recorded that only 22 reached surface water. These 22 spills include the capacity-related spills, and the combined volume of these 22 SSOs is reported as 453,025 gallons, with 441,575 gallons reported as having reached surface water.

¹ Category 1 SSOs equal or exceed 1000 gallons OR result in a discharge to a drainage channel, surface water or storm drainpipe that was not fully captured and returned to the sanitary sewer system. Category 2 SSOs are the other, minor discharges, i.e. under one thousand gallon AND do not reach a drainage channel, surface water or storm drainpipe.

The Novato Sanitary District Collection System is owned and operated by the Novato Sanitary District (Discharger). In addition to the wastewater collection system, the Novato Sanitary District owns and operates two municipal wastewater treatment facilities, the Novato plant and the Ignacio plant, and one combined effluent discharge outfall (E-003) to the intertidal mud flats of San Pablo Bay, adjacent to the former Hamilton Air Force Base. The Discharger presently discharges an average dry weather flow (ADWF) of 5.4 million gallons per day (MGD), from the WWTPs into San Pablo Bay.

The Discharger's wastewater collection system collects and transports wastewater flows to the wastewater treatment facilities through a series of gravity sewers and interceptors, pump stations, and force mains, designed to handle peak wet weather flows. The wastewater collection system serves a primarily residential service area with a population of about 56,000, which includes the City of Novato and adjacent areas (25 square miles). The collection system consists of 221 miles of sewer lines ranging in size from 6 to 48 inches in diameter: 209 miles of gravity lines, of which 28 miles are main trunk (interceptor) lines, and 12 miles of force mains served by 35 wastewater pump stations. The system includes approximately 6,000 manholes. The Discharger has an ongoing program for preventive maintenance and capital improvement programs for these sewer lines and pump stations, with the goal of maintaining adequate capacity and reliability of the collection system.

On October 15, 2003, the Board adopted Resolution No. RB2-2003-0095, establishing a collaborative effort with the Bay Area Clean Water Agencies (BACWA) to develop guidance for sewer system management plans (SSMPs) aimed at reducing or eliminating sanitary sewer overflows (SSOs), and for uniform, electronic reporting of SSOs to the Board. As per the Resolution, the Executive Officer issued a November 15, 2004, letter to collection system owners and operators pursuant to Section 13267 of the California Water Code. This letter established new SSO Reporting Requirements, and established the required elements and submission schedule for SSMPs.

Authority:

NPDES permit No. CA0037958, Order R2-2004-0093

This Order was amended by Order R2-2008-0026 to reflect planned modifications at the Novato plant, but the amendment does not modify the provisions that apply to SSOs. Order R2-2004-0093 expired on December 31, 2009 and was administratively extended to July 1, 2010, when the new permit (R2-2010-0074) came into effect. All the violations considered in this staff report happened while Order R2-2004-0093 was in effect.

From Order R2-2004-0093, Discharge Prohibition A.5 prohibits the discharge of untreated wastewater to surface waters from the collection system:

The discharge of untreated or partially treated wastewater from the collection system or pump stations to any surface water stream, natural or man-made, or to any drainage system intended to convey storm water runoff to surface waters, is prohibited. The discharge of chlorine, or any other toxic

substance used for disinfection and cleanup of wastewater spills, to any surface water body is prohibited.

In addition, Order R2-2004-0093 contains the following provision regarding implementation and enforcement of Prohibition A.5 (Provision E-16):

Implementation and Enforcement of Prohibition A.5

- a. *Enforcement consideration.* In any enforcement action, the Board will consider the Discharger's efforts in containing, controlling, and cleaning up SSOs. The Board will also consider the Discharger's efforts in sewer rehabilitation. These considerations are part of the factors required by Section 13327 of the California Water Code.
The Discharger shall make every practicable effort to contain SSOs and to prevent the wastewater from entering storm drains and surface water bodies.
Prohibition A.5. is not violated under either of the following:
 - i. If the SSO does not enter a storm drain or surface water body, or
 - ii. If the Discharger contains the SSO within the storm drain system pipes, and fully recovers and cleans up the spilled wastewater.However these incidents of SSOs shall be reported to the Board as SSOs as stipulated in SMP Section V.7.
- b. *Discharges caused by severe natural conditions.* The Board may take enforcement action against the Discharger for any sanitary sewer system discharge caused by natural conditions, unless the Discharger demonstrates through properly signed, contemporaneous operating logs, or other relevant evidence that,
 - i. The discharge was caused by severe natural conditions (such as hurricanes, tornadoes, flooding, earthquakes, landslides, tsunamis, and other similar natural conditions);
 - ii. There were no feasible alternatives for the discharge, such as retention of untreated wastewater, reduction of inflow and infiltration, and use of adequate backup equipment;
 - iii. The Discharger submitted a claim to the Board's staff within 10 working days of the date of the discharge that the discharge meets the conditions of this provision. Additional information to substantiate such claim shall be submitted upon request of the Board staff; and
 - iv. The Discharger took all reasonable steps to stop, and mitigate the impact of the discharge within 24 hours after the Discharger became aware of the SSO.
- c. *Discharges caused by other factors.* For SSOs other than those covered under this section, the Discharger may establish an affirmative defense to an action brought for noncompliance if the Discharger demonstrates through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. The Discharger can identify the cause or likely cause of the discharge event;
 - ii. The discharge was exceptional, unintentional, temporary and caused by factors beyond the reasonable control of the Discharger;
 - iii. The discharge could not have been prevented by the exercise of reasonable control, such as proper management, operation and maintenance; adequate treatment facilities or collection system facilities or components (e.g., adequately enlarging treatment or collection facilities to accommodate growth or adequately controlling and preventing infiltration and inflow); preventive maintenance; installation of adequate backup equipment.
 - iv. The Discharger submitted a claim to the Board's Executive Officer within 10 working days of the date of the discharge that the discharge meets the conditions of this provision; and
 - v. The Discharger took all reasonable steps to stop, and mitigate the impact of, the discharge as soon as possible.

- d. *Burden of proof.* In any enforcement proceeding, the Discharger has the burden of proof to establish that the criteria in this section have been met. A claim to be submitted under Sections B.2.c. and B.3.d. above may also be provided in the space allocated for claims in the web-based SSO reporting system (when the system becomes available), which currently is being developed pursuant to the Board SSO Resolution No. R2-2003-0095. The Discharger shall provide additional available information pertaining to the SSO upon request by the Board's staff. The information may include:
- i. Relevant sewer maintenance/repair logs including the associated costs of sewer rehabilitation, cleaning/flushing, inspection, and replacement for the pipe section where the SSO occurred; and
 - ii. Information relating to storm event, such as size of the storm, length of such storm during the SSO.

Finally, General Provision A.1 of the "Standard Provisions and Reporting Requirements" which are part of Order No. R2-2004-0093, says that "neither the treatment nor the discharge of pollutants shall create a pollution, contamination, or nuisance as defined by Section 13050 of the California Water Code²."

Statewide General Waste Discharge Requirements, Order No. 2006-0003 DWQ

The Discharger's collection system is also regulated by Statewide General Waste Discharge Requirements, Order No. 2006-0003 DWQ, which was adopted by the State Water Board on May 2, 2006. As owner of a collection system, the Discharger is required to comply with the requirements of Order No. 2006-0003 DWQ (or General WDR). The Discharger filed a Notice of Intent for coverage under the General WDR on June 27, 2006. The effective date of the General WDR for the Discharger is August 10, 2006.

Prohibition C.1 of Statewide General Waste Discharge Requirements (General WDR), Order No. 2006-0003 DWQ, prohibits SSOs that result in a discharge of untreated wastewater to waters of the United States:

C. PROHIBITIONS

1. *Any SSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.*
2. *Any SSO that results in a discharge of untreated or partially treated wastewater that creates a nuisance as defined in CWC Section 13050(m) is prohibited.*

² According to Section 1050 of the Water Code, "Nuisance" means anything which meets all of the following requirements:

- (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
- (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
- (3) Occurs during, or as a result of, the treatment or disposal of wastes.

Facts:

From May 2007 to May 2010, the Discharger's Collection System had 70 Sanitary Sewer Overflows (SSOs), amounting to a total of 472,498 gallons, of which 441,575 gallons (93.5%) reached surface water. Out of these events, 7 were due to excessive flow capacity of the collection system, due to storm events. The total volume for these 7 SSOs amounted to approximately 375,900 gallons, or 79.6% in volume of the total SSO volume over the period. All the sewage from capacity-related SSOs reached surface water. The other SSOs were caused primarily by root (34), grease (10) and rags/debris (2) blockages, as well as infrastructure failure (5) and human error (4).

Violations:

22 of the SSOs resulted in the discharge of untreated wastewater to surface waters, in violation of Discharge Prohibition A.5 of Order No. R2-2004-0093. Prohibition A.5 prohibits the discharge of untreated wastewater to any surface water stream, or to any drainage system intended to convey stormwater runoff to surface waters.

In consideration of which SSOs are violations, Prosecution staff considered Provision E.16 above. According to a.ii, the SSOs CAN be considered violations of Prohibition A.5 because these SSOs were not fully contained and recovered from the storm drains. According to Provision E-16 b.iii. and c.iv., the Board may take enforcement action against the Discharger for any sanitary sewer system discharge cause by natural conditions or otherwise because the Discharger failed to submit a claim to the Board within 10 working days of the day of the discharge. The Discharger has not submitted any claims to date for any SSO.

In addition, an unspecified number of the SSOs are creating a nuisance as defined by Section 13050 of the California Water Code, thus violating both General Provision A.1 of the "Standard Provisions and Reporting Requirements" which are part of Order No. R2-2004-0093, and Statewide General Waste Discharge Requirements, Order No. 2006-0003 DWQ.

The Discharger reported 70 SSOs during the three-year period. 7 SSOs were capacity-related and accounted for most of the total volume of the SSOs.

Among the other, not capacity-related SSOs, the most common cause of the Discharger's SSOs was root blockages, occasionally compounded with grease, debris or rags. The Discharger reported 38 SSOs due to root blockage alone. In addition, the Discharger recorded grease to be the primary cause of an SSO 10 times, and rags to be the primary cause twice. Some of the SSOs lasted more than a day, and the SSOs occurred for a combined total of 80 days.

Maximum liability:

The maximum liability will vary depending on which California Water Code section is used, and which spill volume is considered. In this case, I chose to use CWC Section 13385 (a) because a

large portion of the SSOs went to surface water, but alternative to determining maximum liability approaches could be used instead. In this section I'm referring to the Discharger's NPDES permit, not to the General WDR.

Pursuant to CWC Section 13385(a), any person who violates CWC Section 13376 or any requirements of Section 301 of the Clean Water Act is subject to administrative civil liability pursuant to CWC Section 13385(c), in an amount not to exceed the sum of both of the following: (1) Ten thousand dollars (\$10,000) for each day in which the violation occurs; and (2) where there is a discharge, any portion of which is not susceptible to cleanup or is not cleaned up exceeds 1,000 gallons, an additional liability not to exceed ten dollars (\$10) multiplied by the number of gallons by which the volume discharged but not cleaned up exceeds 1,000 gallons.

If we use the Discharge Prohibition violation as the basis for the ACL, and consider all the volumes reported, the maximum liability is $[\$10,000 \text{ per days of SSO} + \sum(\text{volume of each SSO} - 1,000\text{G}) \times \$10/\text{G}] = (\$10,000 * 35) + 424,025 \times \$10/\text{G} = \$350,000 + \$4,240,250 = \mathbf{\$4,590,250}$.

Consideration of Factors:

Nature

There were 70 SSOs from May 2007 to May 2010, 22 of which reached surface waters. These SSOs amounted to 472,498 gallons, with approximately 444,132 gallons not recovered (including the 441,575 gallons that are mentioned above and were discharged to surface waters– the difference is assumed to have been absorbed into the ground). Numbers are approximate because they are based on the Discharger's estimates.

Flow in excess of capacity accounted for the SSOs with the largest volumes (7 SSOs, amounting for 80% of the total volume). Capacity-related SSOs are caused by Inflow and Infiltration (I&I), or the entrance of groundwater or rain water into the sewer collection system. Inflow is stormwater that enters the sanitary sewer system at points of direct connection to the system, while infiltration is groundwater that enters the sewer system through cracks and/or leaks in the sanitary sewer pipes. Cracks or leaks in sanitary sewer pipes may be caused by age-related deterioration, loose joints, poor design, installation or maintenance errors, or root infiltration.

Root blockages, together with grease and debris or rags, account for 51 out of the 70 SSOs. These causes are mentioned alone or in combination, and the corrective actions that the Discharger will suggest are most often to increase cleaning frequency or to "plan rehabilitation or replacement of sewer".

Five SSOs out of 70 were the result of pipe or pump failure, four were the result of human error, and 4 causes were unidentified.

Circumstances

Flows in excess of capacity generally happen during rain events as a result of I&I. Specifically, in the last three years, 7 SSOs were due to I&I, and occurred on 3 occasions, all as a result of a storm event. In all three instances, both the Chase Street site and the Center Road site were overflowing.

Root intrusion is one of the most common maintenance problems for collection systems in our Region. Root, grease, debris and rag blockages, the other reasons given for SSOs in the Discharger's collection system, did not seem to necessarily recur at the same locations. Instead, they appeared to be random events.

Extent

The temporal extent of the SSOs represented at least 78 days over 3 years. This is because between May 1, 2007 and May 1, 2010, the Discharger reported that its collection system had SSOs during at least 78 days. The spatial extent of the SSOs included the entire Novato Sanitary District Sewer Service Area, and the Discharger documented that SSOs have reached Novato Creek, Pacheco Creek, Scottsdale Marsh, Rush Creek, Warner Creek, Arroyo de San Jose, and Vineyard Creek, all waters of the U.S.

Gravity

The gravity of the capacity-related SSOs is moderately significant. This is because although these SSOs are diluted with stormwater, the combined volume of about 0.36 MG is large, none of the wastewater was recovered, and it is likely that there were impacts to the beneficial uses of the receiving water, as well as to human health. In addition, I&I contributes to an overloaded collection system. In addition to placing a strain on the treatment plant, thus leading to more effluent limit violations, I&I can lead to flooding of basements, threatening the health and well-being of residents.

Non-capacity-related SSOs are discharges of raw, untreated sewage, so they are a nuisance and adversely impact public health. The discharges represent a threat to public health because, by its nature, raw sewage contains high concentrations of bacteria and viruses. The Discharger did not observe specific effects on the actual beneficial uses.

Whether the discharge is susceptible to cleanup or abatement

Capacity-related SSOs are not susceptible to cleanup or containment because, by definition, the collection system is already overloaded at the time, so no sewage can be pumped out of the point of release and back into the system.

For other, blockage-related SSOs (roots, debris, rags), it is possible to recover all or at least a portion of the SSO by containing and pumping the sewage back into the sanitary

sewer for treatment. The Discharger reported to have recovered approximately half of the volume of SSOs that were not capacity-related.

Degree of toxicity of the discharge

The degree of toxicity of the specific SSOs in Novato over the last 3 years cannot be accurately quantified. SSOs are expected to have a harmful effect on the environment. Raw sewage typically has elevated concentrations of biochemical oxygen demand, total suspended solids, oil and grease, ammonia, high levels of viruses and bacteria, trash and toxic pollutants (such as heavy metals, pesticides, personal care products, and pharmaceuticals). These pollutants exert varying levels of impact on water quality, and as such, will adversely affect beneficial uses of receiving waters.

Capacity-related SSOs present a lower level of toxicity than an equal volume of raw sewage during non-storm conditions because they are diluted with stormwater.

SSOs that occur during dry weather are generally much smaller in volume than storm-related SSOs. However, any large dry weather SSO has a significant impact because the sewage is undiluted. The Discharger reported that its largest dry weather SSO over the 3-year period had a volume of 8,250 gallons and that it was due to a root blockage on January 7, 2008. No portion of this SSO was recovered.

Ability to pay

The Discharger has an annual operating budget of \$13.7 million for fiscal year 2009/2010, with net assets estimated at \$122.5 million. The Discharger's net assets at the end of fiscal year 2008/2009 were \$117.2 million. The Discharger's primary sources of revenues are sewer service charges, connection fees, permit fees and inspection fees. The Discharger also receives some revenues from property tax, solid waste revenue, interest income, franchise fees and rental income.

An ACL will not significantly impact the Discharger's budget. In addition, the Discharger has the authority to adjust its rate scale to provide for financial needs. In August 2005, the Discharger implemented rate increases to ensure that adequate financial resources are available to implement upgrades to its treatment facilities, collection system and pump station repairs and upgrades, and to maintain six months of cash reserves for operations. From fiscal year 2003-2004, the monthly service charge per EDU was raised incrementally from \$13.50 in fiscal year 2003-2004 to \$38.5 in fiscal year 2009-2010³.

Voluntary cleanup efforts undertaken

Of the total 472,498 gallons spilled, the Discharger reported to have recovered 28,366 gallons. In addition to sanitary sewage actually recovered, the Discharger has included volumes of water used to unclog blockages in the recovered water, thus making the

³ This rate remains lower than the average of \$43.66, according to the partial survey that Bay Area Clean Water Agencies (BACWA) uses as a benchmarking tool.

reported volume recovered seem higher. Regional Water Board staff has been working with the Discharger to change this practice, but instances of misreporting remain. This means that over 440,000 gallons, or more than 93%, were not recovered. Of this large volume of unrecovered sewage, 375,900 gallons were due to I&I, and these SSOs simply cannot be cleaned up or contained. For the remaining 22 SSOs, the Dischargers reported a combined volume of approximately 77,125 gallons. Of this combined volume, approximately 65,675 gallons went to surface waters. This means that approximately 11,500 gallons, or roughly 15% of the volume of the SSOs which were not capacity-related, was either not recovered or was discharged to land. Again, the numbers are obtained through extrapolation because the Discharger has reported volumes of water used to unclog blockages, as volumes of sewage recovered.

Prior history of violations

The Discharger has had a problem with SSOs for several years. Records anterior to May 1, 2007, are very incomplete. However, from December 2004 to April 2007, Regional Water Board records show that the Discharger has reported a total SSO volume of at least 215,820 gallons, of which only 500 gallons (0.2%) were recovered.

The Discharger has had SSOs at the two locations which are only now targeted for major collection system upgrades for several years:

- 1) In December 2004, the Discharger reported a 1,650-gallon SSO at the intersection of Chase St and Peach St, and a 53,000-gallon SSO at the intersection of Center Rd and Western Drive.
- 2) In December 2005, the Discharger reported a 600-gallon SSO at the intersection of Chase St and Peach St, and a 525-gallon SSO at the intersection of Center Rd and Western Dr.

The Federal Emergency Management Agency (FEMA) declared Marin County a Federal disaster area⁴ in January 2006, but SSOs from that month are absent from the database. Therefore, it is possible that the Discharger failed to report SSOs in January 2006.

No enforcement has been taken to address previous SSOs.

Degree of culpability

The Discharger is culpable for the violations because it is responsible for the proper operation and maintenance of its collection system. As noted earlier, the two most common causes of the Discharger's SSOs are insufficient capacity and root blockages. Both of these causes can be prevented with system upgrades and more aggressive sewer system management and maintenance practices.

⁴ United States Geological Survey Assessment, Storms and Flooding in California in December 2005 and January 2006- A Preliminary Assessment. <http://pubs.usgs.gov/of/2006/1182/pdf/ofr2006-1182.pdf> p. 7.

Insufficient capacity:

The degree of culpability for the capacity-related SSOs is medium as the Discharger was aware of these problem locations and has a plan to address and eliminate them. Two problematic intersections located several miles apart in the City of Novato (intersection of Chase St and Peach St, and intersection of Center Rd and Western Dr), each saw 3 capacity-related SSOs in the last 3 years. The Discharger reported that those 6 SSOs totalled 375,300 gallons of sewage, none of which was recovered.

In August 2008, the Discharger put together a Sanitary Sewer Master Plan which addresses the development of capital programs to solve capacity-related issues. Construction is scheduled to be completed by the end of October 2010 for both “hot spots”.

The design to replace existing 6” and 8” flat sewers with 8” and 12” sewers at a better slope to upgrade the Chase St/Peach St location, providing sufficient capacity to convey all of the wet weather flows to the Olive Street Pump Station, is complete. The Novato Sanitary District Board awarded a \$1,805,844 construction bid on June 28th, and total estimated cost, including design and construction management, is approximately \$2 million⁵.

The Discharger has started to upgrade the Center Rd/Western Dr location by completing the first phase of the extension of the Center Road Wilson project at a construction cost of \$459,359 and total project cost of \$548,400. The second phase will extend the sewer up Center Road from Rica Vista to Western Ave. Design for this project is complete, and the Discharger will present it to the Novato Sanitary District Board at its July 26, 2010, meeting, with a final bid to be awarded at its August 10, 2010 meeting. The Discharger’s Engineer estimated that construction for the second phase will cost \$360,000. The total cost to the Discharger is estimated to be \$457,000. The total cost for this project is \$1 million⁶.

In addition, the Discharger is budgeting to spend \$4 million per year to upgrade the Collection system on an ongoing basis, to reduce I&I and correct any structural deficiencies that could lead to sewer blockages.

Root blockages:

The degree of culpability for root, grease and debris blockage-related SSOs is medium as the Discharger could implement a more aggressive root control program to eliminate these types of SSOs.

Where a root blockage occurs, the Discharger says that it increases the cleaning frequency of that section of sewer. The Discharger’s rate of SSOs caused by root

⁵ Novato Sanitary District Board Summary of Agenda item 9.b., Board meeting April 26, 2010, and email from Beverly James of July 1, 2010.

⁶ Novato Sanitary District Board Summary of Agenda item 8.b., Board meeting February 22, 2010, and email from Beverly James of July 1, 2010.

blockages per 100 miles in 2009 is 6.4, which is twice the median rate per 100 miles for Bay Area collection systems in 2009 of 3⁷.

Other blockages:

The degree of culpability for the remaining non-root blockage-related SSOs is medium, as the Discharger could implement a more aggressive fats, oils and grease (FOG) control, as well as sewer cleaning programs. The Discharger's rate of FOG-induced SSOs per 100 miles in 2009 is 1.7, which is nearly twice the median rate per 100 miles for Bay Area collection systems in 2009 of 0.9.

Remediation for root and other blockages:

The Discharger's rate of root and FOG-induced SSOs appears comparatively higher than most other agencies. However, comparisons with Bay Area medians have questionable qualitative value because out of 10 grease blockages reported, only 3 were reported to have reached surface waters. Likewise, out of the 34 root blockages reported, only 10 were reported to have reached surface waters. Water Board prosecution staff is considering a CDO for the remediation of these blockages, and will be performing an audit of the Discharger's practices to determine what improvements to the Discharger's root and FOG programs may be warranted.

The remaining causes of the Discharger's SSOs were blockages due to debris, infrastructure failure and human error. The Discharger reports that it is implementing an ongoing maintenance program that identifies problem pipes and puts them on an accelerated cleaning and inspection schedule pending repair or replacement.

Year ⁸	# of SSOs	SSO rate ⁹	Median SSO rate ¹⁰
2009	25	10.3	7.4
2008	27	11.6	7.2
2007	12	5.1	4.0

⁷ As per the Regional Water Board's review of the SSOs reported in 2009 to the State Water Board's California Integrated Water Quality System (CIWQS).

⁸ Data based on certified CIWQS SSO reports. For 2007, data based on CIWQS reports submitted from May 2, 2007, through December 31, 2007.

⁹ The SSO rate is the number of sanitary sewer overflows per 100 miles of collection system.

¹⁰ The median SSO rate is for all Bay Area large collection systems which are defined as having 100 or more miles of collection system.

Year	# of SSOs	SSO rate	Median SSO rate
2009	15	6.4	3.0
2008	11	3.4	2.0
2007	8	3	1.7

Year	# of SSOs	SSO rate	Median SSO rate
2009	4	1.7	0.9
2008	5	3.9	1.4
2007	1	0	0.8

Year	# of SSOs	SSO rate	Median SSO rate
2009	2	0.9	1.1
2008	0	0	0.7
2007	0	0	0.6

Economic benefit and savings

Based on email communications between Regional Water Board staff and Beverly James on May 27, 2010, and based on the Sanitary Sewer Overflow (SSO) eReporting Program Database Records (from Dec. 1, 2004 to May 2, 2007), the Discharger has known that its sewer system has had I&I problems for several years, and these problems have been reported to the Regional Water Board since 2004. However, the upgrades are only being scheduled now. The two sewer system upgrades are estimated to cost about \$3 million. Assuming an interest rate of 2.5%¹¹, the interest on \$3,000,000 over the past three years results in the Discharger saving \$230,671¹² by delaying necessary upgrades.

¹¹ California State Revolving Fund (SRF) average interest rate from March 2007- March 2010 offered to SRF applicants

¹² <http://www.uic.edu/classes/actg/actg500/pfvatutor.htm>

This website calculates the Future Value based on the present value. The formula is

$FV = PV (1+r)^n = 3,000,000 (1 + 0.025)^3$.

Other factors as justice may require

Matters considered that increased the administrative civil liability amount.

As of July 1, 2010, staff time is 120 hours.

Matters considered that did not increase or decrease the administrative civil liability amount.

Reporting. Water Board Prosecution staff is unclear about the quality and consistency of the Discharger's reporting. While the Discharger seems to have reported small SSOs meticulously, in several instances the Discharger introduced a number of errors by reporting water used for cleanup under "spill volume recovered". Water Board Prosecution staff has requested the Discharger amend its CIWQS reports which presented the most egregious discrepancies.

For most SSOs, the Discharger reports response activities in CIWQS under the following terms: "Cleaned-up (mitigated effects of spill); Contained all or portion of spill; Inspected sewer using CCTV to determine cause; Restored flow; Returned all or portion of spill to sanitary sewer system". It is puzzling that the Discharger would implement the same activities for so many SSOs regardless of their magnitude. Staff will inspect logs that led to such reports, during the audit mentioned under "Degree of culpability".

Regional Water Board Resolution No. R2-2005-0059. This resolution declares support of local programs that inspect and rehabilitate private sewer laterals, and states that the Regional Water Board will consider the existence of such programs, especially those experiencing significant infiltration and inflow from private sewer laterals, as an important factor when considering enforcement actions for sanitary sewer overflows. The Discharger does not currently have a program that inspects and rehabilitates private sewer laterals.

Proposed Civil Liability:

The penalty factors using the Discharge Prohibition are summarized in Tables 1 and 2. The attached calculator suggests a liability of \$287,486.

Table 1: HARM FACTORS

Categories	Factor	Explanation
Harm/Potential Harm for Discharge violations	1	For capacity-related SSOs, as the impact is minor because SSOs occur during cold wet weather, when human use is minimal and sewage is diluted because of I&I and high flow volumes in the receiving water.
	2	For blockage-related SSOs, as they represent a below moderate threat to beneficial uses – public health warning signs not necessarily posted.
Degree of Toxicity	3	For capacity-related SSOs, as they pose a direct threat to potential receptors because, though diluted by I&I, SSOs are not at all treated and would contain bacteria at levels exceeding human health standards and potentially toxic to aquatic organisms;
	3	For blockage-related SSOs as the toxicity of these types of SSOs poses an above moderate risk due to their undiluted nature.
Susceptibility to Cleanup or Abatement	1	For capacity-related SSOs, as these type of SSOs may not be amenable to cleanup or containment because the storm drains and creeks are also flowing full at the time;
	0	For blockage-related SSOs, as the District response time is getting better and the SSO recovery percentage is more than 50 percent.
FINAL SCORE	5	For capacity-related SSOs;
	5	For blockage-related SSOs.

Table 2: VIOLATOR’S CONDUCT FACTORS

Additional Factors	Multiplier	Explanation
Culpability	1	The Discharger is culpable but not negligent/intentional.
Cleanup and cooperation	1	Some cleanup was performed for blockage-related SSOs.
History of Violations	1.1	There is a history of SSOs in the same location. We have found that SSOs were likely underreported before CIWQS came into existence, but the District is taking steps to address its capacity issues.

Attachment 1: Summary of Novato Sanitary District SSOs From May 2007 to May 2010

SSO event ID	Start Date	Spill Address	reached surface water?	Total Spill Volume	Spill Volume Recovered	Spill volume that reached surface water	Spill rate	Spill Cause
652314	6/18/07	500 Country Club Drive	No	350	350	Unreported	5	Unknown
653465	6/29/07	1098 Cambridge Street	No	675	675	Unreported	15	Root intrusion
653964	7/6/07	100 Rowland Way	No	450	400	Unreported	10	Pipe structural problem/failure
655812	8/11/07	0 West Campus Drive	No	750	635	0	25	Grease and Rags
656678	8/23/07	1636 Hill Road	No	75	75	0	0	Spill was caused by root intrusion at the outflow pipe in a manhole. It was a momentary occurrence as the manhole was not overflowing when we arrived.
656894	9/1/07	210 Montura Way	No	100	100	0	0	Root intrusion
657012	9/7/07	104 Eagle Drive	No	75	0	0	0	Roots and debris at outflow pipe in unlisted manhole
657882	9/13/07	0 E. Hamilton Parkway	No	50	50	Unreported	Unreported	Pump station failure: This spill occurred due to an air relief valve failure that allowed the main line to air lock. It was a one time

Legend

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In purple: numbers which the Discharger has not yet amended in CIWQS.

Highlighted: The Discharger reported that these SSOs lasted more than a day.

SSO event ID	Start Date	Spill Address	reached surface water?	Total Spill Volume	Spill Volume Recovered	Spill volume that reached surface water	Spill rate	Spill Cause
								occurrence by all indications.
657701	9/14/07	689 Canyon Road	No	900	800	Unreported	Unreported	Root intrusion
657969	9/24/07	0 State Access Road	Yes	8,100	4,100	4,000	20	Roots, Rags and Grease
707493	10/15/07	4 Gustafson Court	No	40	40	0	1	Root intrusion
707494	10/24/07	591 Trumbull Road	No	80	70	Unreported	2	Root intrusion
710703	1/4/08	1211 Chase Street	Yes	21,750	0	21,750	200	Flow exceeded capacity
710705	1/4/08	0 Center Road	Yes	105,000	0	105,000	200	Flow exceeded capacity
710704	1/4/08	0 Ignacio Boulevard	Yes	16,500	0	16,500	275	Grease deposition (FOG)
713769	1/6/08	1711 Center Road	No	800	720	Unreported	Unreported	Unknown
710871	1/7/08	0 Ignacio Boulevard	Yes	8,250	0	8,250	150	Root intrusion
711862	1/25/08	Center Drive	Yes	186,000	0	186,000	175	Flow exceeded capacity

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SSO event ID	Start Date	Spill Address	reached surface water?	Total Spill Volume	Spill Volume Recovered	Spill volume that reached surface water	Spill rate	Spill Cause
711861	1/25/08	0 Chase Street	Yes	57,375	0	57,375	75	Flow exceeded capacity
712096	1/25/08	706 Del Mar Avenue	Yes	600	0	600	Unreported	Flow exceeded capacity
712099	1/26/08	1471 Donna Street	Yes	8,250	0	8,250	Unreported	Pump station failure
715244	1/28/08	829 Hayden Avenue	No	50	50	0	0	Root intrusion
714986	2/19/08	495 Alameda del Prado	No	150	150	0	0	A root mass broke off and partially blocked the outlet pipe in the overflow manhole.
716688	3/7/08	16 Del Oro Lagoon	No	150	143	0	0	Unknown
716754	3/8/08	400 Midway Boulevard	No	129	129	0	3	Grease deposition (FOG)
716762	3/26/08	99 Caribe Isle	No	650	618	0	0	Contractor failed to connect lateral during mainline replacement project. This overflow was the result of contractor error, a failure to reconnect the common lateral for these units during a sewer main replacement project.
716775	3/29/08	110 Emberson Avenue	No	5	5	0	0	Grease deposition (FOG)

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SSO event ID	Start Date	Spill Address	reached surface water?	Total Spill Volume	Spill Volume Recovered	Spill volume that reached surface water	Spill rate	Spill Cause
717872	4/26/08	1912 Center Road	No	10	10	0	0	Unknown
719737	5/4/08	1176 Cambridge Street	No	25	25	0	0	Grease deposition (FOG)
720040	6/21/08	21 Shields Lane	Yes	1,100	350	750	10	After video inspecting the main, District personnel determined that root intrusion was the primary cause of this overflow.
722914	7/11/08	139 Wild Horse Drive	No	236	0	0	2	Root intrusion immediately downstream for the lateral caused the stoppage.
723201	7/20/08	Clemente Court	Yes	20,000	5,000	15,000	0	Grease/root blockage in District sewer main- Discharger estimated the spill lasted for approximately 3 days.
724663	8/13/08	8 Balra Drive	No	75	75	0	0	Root intrusion
725116	8/22/08	63 Capilano Drive	No	20	16	0	0	Root intrusion
725627	9/1/08	1170 Midway Drive	No	10	10	0	0	This spill was caused by a partial root blockage and debris.
725873	9/5/08	333 Enfrente Road	No	220	220	0	0	Pump station failure
727377	10/5/08	431 Ignacio Boulevard	No	1,575	1,575	0	35	Grease deposition (FOG)

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SSO event ID	Start Date	Spill Address	reached surface water?	Total Spill Volume	Spill Volume Recovered	Spill volume that reached surface water	Spill rate	Spill Cause
730410	12/10/08	568 Fernando Drive	No	50	50	0	0	: The cause of this overflow was determined to be root intrusion and grease buildup. We cleared the blockage and recovered about 100% of the overflow and wash-down water. The overflow water that went into the storm drain system was fully captured and recovered.
730575	12/13/08	Marion Avenue	No	104	104	0	4	Root intrusion
731377	1/2/09	2235 Laguna Vista Drive	No	5	5	0	0	Root intrusion
731378	1/4/09	950 Ignacio Boulevard	No	100	100	0	2	Root intrusion
732107	1/13/09	Margarita Terrace	No	70	56	0	2	Root intrusion
732824	1/27/09	2141 Leese Lane	No	75	75	0	0	Root intrusion
733565	2/16/09	821 Hayden Avenue	Yes	200	100	100	0	Root intrusion
734863	3/5/09	20 Pinto Lane	Yes	2,500	100	2,400	0	Unknown – Discharger reported that SSO lasted for at least 5 days.

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SSO event ID	Start Date	Spill Address	reached surface water?	Total Spill Volume	Spill Volume Recovered	Spill volume that reached surface water	Spill rate	Spill Cause
735312	3/19/09	32 Truman Drive	No	75	5	0	0	Root intrusion
736245	4/11/09	1350 Monte Maria Avenue	No	61	61	0	1	Debris-Rags
736640	4/13/09	1332 Cambridge Street	No	68	68	0	4	Root intrusion
737425	5/12/09	105 Michele Circle	Yes	675	225	450	0	Grease deposition (FOG)
738194	5/26/09	401 Ignacio Boulevard	Yes	550	275	275	10	Grease deposition (FOG)
740602	6/4/09	1616, 1620 Novato Blvd Boulevard	No	15	13	0	0	The discharge occurred while cleaning a shallow sewer main with a hydro flusher in an easement area next to Novato Blvd. The cause was District cleaning operations.
740605	6/15/09	5 English Court	No	15	0	0	0	Partial blockage of District main due to grease deposits
743795	7/4/09	1141 Elm Drive	No	10	5	0	0	Debris-Rags
743903	7/20/09	0 Hamilton Parkway	No	25	0	0	0	Operator error
743905	7/21/09	0 Alameda del Prado	No	50	50	0	0	Root intrusion

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SSO event ID	Start Date	Spill Address	reached surface water?	Total Spill Volume	Spill Volume Recovered	Spill volume that reached surface water	Spill rate	Spill Cause
744110	8/31/09	3 Salvatore Drive	No	580	580	0	10	Grease deposition (FOG)
744308	9/4/09	260 Country Club Drive	No	200	200	0	5	Root intrusion
744535	9/10/09	859 Atherton Avenue	No	750	25	0	0	Root intrusion
746397	9/23/09	14 Nina Drive	No	25	25	0	0	Partial root blockage, manhole was 6 inches below the rim and not overflowing when staff arrived.
745337	10/1/09	812 Reichert Court	No	220	200	0	0	Root intrusion
746758	11/12/09	0 Railroad Avenue	No	9,000	8,850	0	0	A drilling contractor bored through the top of the 27 inch force main while performing soil sampling for the District.
747144	11/26/09	38 San Benito Way	Yes	1,120	0	1,000	0	Root intrusion
747921	12/22/09	0 Midway Boulevard	No	75	75	0	0	Root intrusion
747923	12/26/09	0 San Marin Drive	No	250	200	0	0	Grease deposition (FOG)
748503	1/20/10	0 Center Road	Yes	4,500	0	4,500	100	Flow exceeded capacity
748502	1/20/10	1211 Chase Street	Yes	675	0	675	15	Flow exceeded capacity. This was a capacity related overflow

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SSO event ID	Start Date	Spill Address	reached surface water?	Total Spill Volume	Spill Volume Recovered	Spill volume that reached surface water	Spill rate	Spill Cause
								caused by a severe wet weather event.
748803	1/25/10	1112 Seventh Street	Yes	500	250	250	10	root/grease blockage during a rain storm
749355	2/4/10	674 Olive Avenue	Yes	2,280	228	2,000	2	Root intrusion - Discharger estimated the spill lasted a minimum of 8 days.
749834	2/25/10	257 Marin Valley Drive	Yes	6,600	0	6,000	50	Root intrusion
750103	2/28/10	423 San Carlos Way	Yes	500	50	450	0	Root intrusion - Multiple partial root blockages in the District main

Total volumes

472,498

28,366

441,575

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