



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

The November 21, 2003 inspection report for the pretreatment performance evaluation of the Placer County, Sewer Maintenance District No.1 was issued as an attachment to the December 9, 2003 EPA administrative order.

Greg V. Arthur



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

PRETREATMENT PERFORMANCE EVALUATION INSPECTION REPORT

NPDES Permittee: Placer County Sewer Maintenance District No.1
11476 C Avenue, Dewitt Center, Auburn, California 95603-2702
Wastewater Treatment Plant (NPDES CA0079316)
WDRs Orders 97-113 and 96-087

Dates of Inspection: May 7-8, May 14, July 22, November 19, 2003

Data Review: effluent: Jan 2002 – Sep 2003 sludge: Jan 2002 – Jun 2003

Inspection Participants:

US EPA: Greg V. Arthur, CWA Compliance Office, (415) 972-3504
Amy Miller, CWA Compliance Office, (415) 947-4138

Placer County: Ed Wydra, Associate Civil Engineer, (530) 886-4915
Warren Tellefson, Special Districts Program Manager, (530) 886-4911
Pat Brown, Wastewater Plant Operator, (530) 886-1100
Rick Smith, Supervising Wastewater Plant Operator, (530) 886-1100

Industrial Users: Advanced Metal Finish, Mike Von Rembow, Owner, (530) 888-7772
Boardtronics, Kathy Thacker, Owner, (530) 887-9037
Carpenter Advanced Ceramics, Steve Gallucci, (530) 823-3401
Ceronix, Sal Viscuso, CFO, (530) 888-6403
Coherent Auburn Group, Al Barake, EH&S Mgr, (530) 887-5615
Custom Powder Coating, Mike Plant, Manager, (530) 887-1160
Quality Metals Fabrication, Tom Neithecutt, Owner, (530) 887-7388
Surface Manufacturing, Lee Baker, President, (530) 885-0700
Sierra Plating, Mark Shuger, Manager, (530) 823-7924
Vian Enterprise, Don Vian, CEO, (530) 885-1997

Report Prepared By: Greg V. Arthur, Environmental Engineer
November 21, 2003

Section 1

Introduction and Background

1.0 Scope and Purpose

In November 2003, EPA completed a performance evaluation of the regulatory control of non-domestic wastewaters discharged into the Placer County Sewer Maintenance District No.1 (“SMD-1”) wastewater treatment plant. This performance evaluation was one of a series of reviews of small publicly-owned treatment works (“POTWs”) that accept non-domestic contributions, but are not large enough to be mandated to operate EPA-approved pretreatment programs. EPA recognizes that the regulatory authority for pretreatment in small POTWs is shared with the Regional Water Quality Control Board (“RWQCB”) and that the responsibilities for all aspects of the pretreatment program are not clearly delineated.

The scope of this performance evaluation comprised:

- Sampling inspection of the Placer County SMD-1 wastewater treatment plant on May 8
- Additional sampling of the wastewater treatment plant on May 14 and July 22
- A review of the 2002-2003 Placer County SMD-1 self-monitoring records
- Sampling inspections of three significant industrial users, a compliance evaluation inspection of a fourth significant industrial user, and walk-throughs of six other industries
- Interviews with representatives of Placer County on May 7-8, May 14, and November 19.

The purpose of this evaluation was to determine if non-domestic discharges into the Placer County SMD-1 sewer system are properly controlled. The evaluation findings were measured against two fundamental performance objectives. The first is the prevention of sewage treatment works pass-through, interference and sludge contamination as shown by compliance with the Federal sludge limits, the discharge permit limits, and expected future Clean Water Act requirements. The second is the consistent compliance by the industrial users with their own Clean Water Act requirements, in particular with the Federal best-available-technology standards that apply to certain industrial categories, and any national prohibitions and local limits for pollutants associated with treatment works non-compliance.

This report covers the performance of the pretreatment program as it currently exists in Placer County SMD-1 and the RWQCB. Some pertinent findings from the industrial user inspections are also incorporated. The significant industrial users received individual reports covering their own performance. Arthur collected samples on May 8, May 14, and July 22 for delivery to Sequoia Labs in Sacramento on May 8, and May 15, and to the EPA Richmond Laboratory on July 23.

Section 1 – Introduction and Background

1.1 Placer County SMD-1 Wastewater Treatment Plant

The Placer County SMD-1 wastewater treatment plant is a nitrifying rotating biological contactor and trickling filter plant followed by media filtration for discharge to Rock Creek. The wastewater treatment plant has a dry-weather design capacity limited by the tertiary filters to 2.18 million gallons per day (“mgd”). Other portions of the wastewater treatment plant have greater design capacity. The average and calculated peak flows are 1.95 and 3.25 mgd. As a result, flows are not always within design capacity, which means some wet-weather flows discharge without tertiary filtration. See Figure 1.

- Primary and Secondary Treatment - The headworks, which provide grinding and aerated grit removal, is followed by primary sedimentation. All primary basins are in service during the winter wet-season, but some are out of service in the summer for daytime storage of return flows. Magnesium hydroxide is added to the primary effluent prior to introduction into three parallel sets of rotating biological contactors (“RBCs”) which are followed by secondary clarifiers. Intermediate clarifiers between the RBCs and the secondaries serve as reservoirs and solids contact basins for two recirculating trickling filters. The RBCs and trickling filters provide nitrification but not denitrification.
- Tertiary Treatment - The secondary effluent is decanted through anthracite-media gravity filtration. Filter backwash returns to the primary sedimentation basin. The tertiary-grade wastewater is chlorinated and dechlorinated prior to discharge to Rock Creek. Placer County also purchases water from the Nevada Irrigation District for release in order to comply consistently with receiving water limits for ammonia.
- Solids Handling - Primary sludge is the only solids stream hauled off-site. Sludge from the intermediate and secondary clarifiers, tertiary filtrate, grit, and grindings all return to the primary basins. The primary sludge is anaerobically digested and dewatered with the press filtrate returned to grit removal. Dewatered sludge is hauled to the county landfill.
- Sampling - The influent sampling point, located upstream of the headworks is designated as IWD-PC1 for the purposes of this report. All return flows rejoin treatment downstream of influent sampling. The effluent compliance sample point, sited immediately after final dechlorination, is designated as IWD-PC2. The accumulation of filter cake for hauling off-site is designated as the sludge compliance sampling point, IWD-PC3.

1.2 Sewer Service Area

The Placer County SMD-1 sewer service area comprises unincorporated county lands north of Auburn along State Highway 49 including the Auburn airport and the industrial development associated with the airport. The Placer County SMD-1 wastewater treatment plant serves a service area with an overall rated population of 6,300 equivalent dwelling units, with the primary contributions coming from commercial and industrial users. Out of an as-of-yet unquantified inventory of industrial users, at least five industrial users are

Section 1 – Introduction and Background

considered to be significant industrial users. Total non-domestic contributions cannot be determined without a comprehensive inventory of non-domestic wastewater flow rates.

1.3 Discharge Requirements

Placer County is authorized by the June 20, 1997 RWQCB Waste Discharge Requirements, Order 97-113, (“WDRs”), to discharge treated sewage from the Placer County SMD-1 wastewater treatment plant into Rock Creek at a point just above its confluence with Dry Creek. The WDRs also function as the National Pollutant Discharge Elimination System permit CA0079316. The WDRs contain narrative prohibitions, effluent limits, receiving water limitations, monitoring requirements, pretreatment provisions, and sludge disposal requirements. They set effluent limitations for conventional pollutants, total coliform, residual chlorine, oil and grease, surfactants, pH, and acute biotoxicity, as well as receiving water limitations for un-ionized ammonia, turbidity, pH, dissolved oxygen, fecal coliform, chlorine residual, and temperature. The receiving water limitations also include narrative provisions against causing a visible film, discoloration, objectionable growths, nuisance conditions, the bioaccumulation of toxics, bad tasting fish, or in any adverse effect on the beneficial uses of the receiving waters.

The RWQCB also issued a separate Cease and Desist Order, Order 96-087, (“CDO”), that required the completion of the corrective steps necessary to meet the WDRs for receiving water ammonia by April 1998. The third set of RBCs were installed to reduce ammonia concentrations.

1.4 Legal Authorities

The WDRs impose an abbreviated set of pretreatment provisions that require implementation of the regulatory controls necessary to enact most but not all of the national prohibitions of 40 CFR 403.5(a)(b). The WDRs do not require Placer County to obtain an approved pretreatment program because 40 CFR 403.8(a) only mandates POTWs with design capacities above 5.0 mgd to do so. However, 40 CFR 403.8(a) does allow for States or EPA to require small POTWs that accept incompatible wastewaters to obtain an approved pretreatment program. Requirements to obtain and implement an approved pretreatment program would include the following:

- The implementation of the general and specific national prohibitions in 40 CFR 403.5 for industrial users against the introduction of incompatible wastewaters;
- The requirement in 40 CFR 403.5 to develop locally-determined limits necessary to protect the treatment works from potential adverse impacts, such as operational interference, worker health and safety risks, the pass-through of pollutants to the receiving waters, and sludge contamination;

Section 1 – Introduction and Background

- The performance of the program functions set forth in 40 CFR 403.8, such as identifying industrial users, issuing permits, inspecting and sampling industrial users, providing adequate funding, and enforcing against violators;
- The implementation of an industrial users self-monitoring program under 40 CFR 403.12;
- The implementation of Federal categorical standards under 40 CFR 403.6; and
- The enacting of the local legal authorities necessary to operate an approved pretreatment program under 40 CFR 403.8.

Placer County has a sewer use ordinance modeled after the City of Roseville code. This evaluation did not involve a review of the sewer use ordinance in order to determine if Placer County has the legal authority to implement all aspects of an approved pretreatment program. The RWQCB has the authority to assume the functions of the pretreatment program under 40 CFR 403.10(e,f).

Section 2

Wastewater Treatment Plant Performance

The Placer County SMD-1 wastewater treatment plant must meet permit effluent limits for conventional pollutants, metals, toxic organics, pH, residual chlorine, and biotoxicity. 40 CFR 403.5(a,b,c) and 403.6.

Non-domestic wastewaters may not result in unpermitted releases, hazardous or explosive conditions with the sewers, or operational interferences in the collection system. 40 CFR 403.5(b).

2.0 Summary

The wastewater treatment plant is expected to experience the pass-through of aluminum, manganese, and pesticides once the new NPDES permit takes effect. There are no other expected adverse impacts related to non-domestic discharges into the sewers, although non-domestic loadings contribute to the intermittent overloading of nitrification, which result in violations of the limits related to ammonia toxicity. Performance was determined through a review of the 2002-2003 discharge monitoring reports, 2002 California Toxics Rule reports, 2002-2003 sludge results, and the EPA sampling conducted in this evaluation. See Tables 1 - 4 for wastewater and sludge summaries, Tables 4 - 5 for the EPA sampling results, and Table 7 for the definitions of 'pass-through' and 'interference'.

Requirements

- Sludge sampling must be reported in mg/kg dry-weight, include moisture content results, and be analyzed down to appropriate detection limits, in order to allow for the determination of compliance.

Recommendations

- Placer County should regularly inform the rate payers of the district's compliance status, and the on-going need to fund the capital improvements, pretreatment, and operations necessary to protect and maintain its public wastewater investment.
- The wastewater treatment plant influent should be monitored for aluminum, manganese, copper, lead, zinc, selenium, and total phosphorus.
- The wastewater treatment plant effluent and the receiving waters should be monitored for total phosphorus.

Section 2 – Wastewater Treatment Plant Performance

2.1 Conventional Pollutants

The WWTP produces high-quality, low-nutrient, tertiary-treated wastewaters. As a result, it consistently complies with its permit limits for conventional pollutants. The average and calculated 99th% peaks are less than 4 and 9 mg/l BOD and 4 and 13 mg/l TSS. The oil & grease results are all below detection at 5 mg/l. There were two instances of the effluent pH below the lower 6.5 limit, each lasting approximately five minutes, and each attributed to meter malfunction. Finally, high flows during the wet season result in the occasional bypassing of the tertiary filters.

2.2 Ammonia Toxicity

The permit sets acute toxicity and maximum pH limits as well as receiving water limitations for un-ionized ammonia, in order to limit effluent ammonia toxicity. The WWTP consistently complies with the acute toxicity and maximum pH limits, with the effluent pH never exceeding 7.5. However, the receiving water limits have not always been achieved because the organic loads often exceed the capacity of the RBCs and trickling filters to biodegrade and nitrify. The average and calculated 99th% peak concentrations for un-ionized ammonia in Rock Creek were 7.8 and 40.8 µg/l, which results in a ~11% chance of violation. Consistent compliance with the ammonia toxicity limits requires the capacity to provide full nitrification and consistent pH control of peak loads. As a result, it is a function of both the organics loadings from domestic and non-domestic sources, and the capacity of the WWTP to provide enough nitrification. It is not related solely to non-domestic contributions.

The next version of the permit would be expected to either replace or supplement the receiving water limitations with sliding-scale effluent limits for ammonia which are most stringent when pH and temperature are high. As a result, in the summer, the monthly-average and sample-maximum ammonia limits would be expected to bottom out at 2.37 and 13.3 mg/l. Against these minimum sliding-scale ammonia limits, the WWTP inconsistently complies year-round, with their average and calculated 99th% peak ammonia concentrations of 5.1 and 15.3 mg/l. This results in a ~3% chance of a violation of the lowest expected maximum limit and ~68% chance of violation of the lowest expected sliding-scale monthly-average limit.

2.3 Nitrates and Nitrites

The WWTP would not comply with the expected water quality standards for nitrates without completion of upgrades for full nitrification and denitrification. The majority of samples for nitrates exceeded the expected 10 mg/l standard. The average and calculated 99th% peak nitrate concentrations were 13.3 and 30.6 mg/l which results in a ~67% chance of violation of the expected limit. The nitrate levels are unrelated to non-domestic contributions since the WWTP does not have the capacity to provide denitrification.

Section 2 – Wastewater Treatment Plant Performance

2.4 Phosphorus

The permit does not limit total phosphorus, phosphates, or organo-phosphates. However, the wastewater treatment plant intermittently receives and discharges total phosphorus concentrations well over typical levels for California sewer districts. The total phosphate as phosphorus (“phosphate-P”) concentrations from the wastewater treatment plant rose from an average of 2.5 mg/l in 2002 to 15 mg/l in May 2003 during this inspection. Receiving water phosphate-P levels in California are usually below a 0.01 mg/l detection limit. Literature surveys document adverse impacts in western waterways at levels as low as 0.077 mg/l phosphorus. The principal adverse impact would be the dominant formation of filamentous green algae in the receiving water stream and its subsequent degradation of water quality through worsened aesthetics and reduced dissolved oxygen content. (*Nutrient Criteria Technical Guidance Manual: Rivers and Streams, 2002 – Ecoregion I; Fed Register: July 27, 2000, vol. 65, number 145*).

2.5 Salts

The permit does not limit salts but require monitoring for total dissolved solids, hardness, and electrical conductivity. The monitoring results for both WWTPs are all well below what could adversely impact reuse, or in the case of sulfate, impart an acute toxicity.

2.6 Toxic Pollutants

Aluminum - Aluminum appears to be one of two toxic metals potentially related to non-domestic contributions that could exceed the expected permit limits. The effluent average and calculated 99th% peaks are 101 and 391 µg/l. This results in a ~22% chance of a violation of the expected 200 µg/l maximum limit. As a result, the wastewater treatment plant is likely to periodically exceed the expected limit for aluminum unless there are reductions in influent loadings or increases in treatment plant removals. Placer County SMD-1 has significant non-domestic sources of aluminum associated with alumina-based ceramics manufacturing (*Carpenter Advanced Ceramics*) and alumina-slurry glass polishing (*Coherent*). The aluminum removal rate of ~88% is typical for secondary wastewater treatment.

Manganese - Manganese is also potentially related to non-domestic contributions and could exceed the expected permit limits. The effluent average and calculated 99th% peaks are 35 and 62 µg/l. This results in an ~9% chance of a violation of the expected 50 µg/l maximum limit. As with aluminum, the wastewater treatment plant is likely to occasionally exceed the expected limits for manganese without reductions in loadings or increases in removals. Placer County SMD-1 may have at least one non-domestic source of manganese since manganese is a decolorizing agent in clear glass (*Coherent*).

Section 2 – Wastewater Treatment Plant Performance

Other Metals - The wastewater treatment plant is likely to consistently comply with the expected standards for copper, lead, zinc, and selenium even though there are non-domestic sources of these metals. The expected four-day average and sample-maximum limits for copper, which are a function of hardness, are 5.0 and 7.0 µg/l. For lead, zinc, and selenium, the maximum limits are expected to be 2.5, 120, and 50 µg/l. The effluent average and calculated 99th% peaks for these metals were all well below their limits, with copper at 2.0 and 4.6 µg/l, lead at 0.7 and 1.6 µg/l, zinc at 27.3 and 43.4 µg/l, and selenium at 0.15 and 0.22 µg/l. The influent copper concentrations also are similar to those for other small California sewer districts (ex: *Red Bluff-26.0 µg/l, Nevada City-20.0 µg/l*), and the removal efficiencies are typical for secondary treatment.

Other Toxics - A number of other toxic pollutants were detected but most of them did not or will not exceed the limits derived from the California Toxics Rule (“CTR”). The principle exceptions were the long-term averages related to human health effects for a chlorination byproduct (*dichlorobromomethane*) and a plasticizing agent (*bis(2-ethylhexyl)phthalate*). There were also a number of pesticides and their byproducts, herbicides, and polychlorinated biphenyls (“PCBs”) detected just once at levels over the expected CTR limit (*alachlor, aroclor-1016, aroclor-1221, aroclor-1260, atrazine, 4,4’-DDE, endosulfan I, endosulfan II, dioxin, and heptachlor epoxide*). There is also a slight possibility of exceeding the limits for a gasoline additive (*methyl-tert-butyl ether*). However, only bis(2-ethylhexyl)phthalate and methyl-tert-butyl ether could be considered to have non-domestic sources such as ground water clean-up sites and plastic manufacturing. The other toxic organics are likely entrained in the run-off, ground water infiltration, or sewage, from domestic activities.

2.7 Federal Sludge Limits

The wastewater treatment plant sludges are likely to consistently comply with the Federal clean sludge limits suitable for any reuse in Table 3 of 40 CFR 503.13. However, Placer County did not self-report the annual sludge samples in mg/kg dry-weight. The reports also did not include moisture content and low enough detection limits to allow the conversion of the results into mg/kg dry-weight comparable to the Federal sludge standards. As a result, Placer County’s self-monitoring results for 2002 and 2003 were not usable for determining compliance. The levels of lead, selenium, and zinc found in the EPA sample collected during this inspection were higher than typical levels for small California sewer districts (*typical dry-weight mg/kg’s are 15-25 Pb, 3-10 Se, 300-500 Zn*). Otherwise, the EPA sample contained typical levels of copper and the other Federally-regulated metals.

Section 3

Local Limits

Pretreatment programs are required to develop local limits to prevent pass-through, interference, sludge contamination or other adverse effects upon the treatment works. 40 CFR 403.5(c).

3.0 Summary

Placer County has an ordinance to prohibit discharges that exceed local limits or could harm the treatment works. However, the technical basis is questionable since it incorporates local limits derived for the City of Roseville and not SMD-1. The next WDRs should for the first time set effluent limits for toxic pollutants (aluminum and manganese are expected to pass-through). There is little evidence of any other non-compliance related to non-domestic sources although there are sources of other toxic pollutants in the service area that could pose a significant risk to the treatment works. See Table 7 for a definition of ‘local limits’.

Requirements

- Aluminum and manganese sources, both domestic and non-domestic, into the sewer systems must be quantified.
- Placer County must determine the maximum allowable headworks loadings for aluminum and manganese and enact new local limits, prohibitions or control strategies.

Recommendations

- The maximum allowable headworks loadings should be determined for copper, lead, selenium, zinc, phosphorus, MTBE, oil & grease, and any other pollutants the district intends to regulate under a local limit.
- The effluent discharges should be resampled in order to determine whether bis(2ethylhexyl)phthalate, a number of pesticides and their byproducts, herbicides, and polychlorinated biphenyls are present at levels over their detection limits.

3.1 National Prohibitions

The national prohibitions apply to every non-domestic discharge into the sewers nationwide to prevent harm to the treatment works. They consist of the general prohibitions in 40 CFR 403.5(a) against harm and the specific prohibitions in 40 CFR 403.5(b). In practice, local limits, covering a range of pollutants, and developed in accordance with 40 CFR 403.5(c), replace most of the effective span of the national prohibitions. Placer County adopted the

Section 3 – Local Limits

Roseville local limits as its own but will need to re-develop them for the pollutants of concern in order to be protective of its own treatment works.

3.2 Pollutants of Concern

The pollutants of concern are those related to non-domestic sources with a statistical chance of over 1% to cause a violation of the WDRs or the Federal sludge limits. The pollutants with a statistical chance over 1% are aluminum, manganese, ammonia, nitrates, alachlor, bis(2-ethylhexyl)phthalate, bromodichloromethane, 4,4'-DDE, endosulfan I, endosulfan II, dioxin, heptachlor epoxide, aroclor-1016, aroclor-1221, and aroclor-1260. Of these, the only pollutants with discernible non-domestic sources are aluminum, manganese, and possibly bis(2-ethylhexyl)phthalate.

A number of other pollutants with a statistical chance below 1% to cause a violation, nevertheless, should be pollutants of concern for the purpose of determining local limits. Copper, chromium, lead, nickel, phosphorus and zinc are entrained in solution and rinse tanks at metal finishers and powder coaters (*Sierra Plating, Advanced Metal Finishing, Custom Powder Coating*). Copper, lead, selenium, zinc and possibly phosphorus are generated by laser glass grinding (*Coherent*). Nickel and molybdenum are in solution tanks used in ceramic finishing (*Carpenter*). MTBE at aquifer clean-up sites are pollutants of site-specific concern and oil & grease is a concern in every sewer district.

Bromodichloromethane would not be a pollutant of concern because it is a chlorination by-product unrelated to influent quality. Ammonia, nitrates, and the trihalomethane precursors, also would not be pollutants of concern because their effluent concentrations are a function of the treatment plant operations. It cannot be determined without further monitoring whether the detected pesticides, herbicides, and polychlorinated biphenyls are pollutants of concern. The PCBs and 4,4'-DDE, long-banned from use, were detected in single samples at levels over the expected permit limits even though they should have no identifiable non-domestic or domestic sources. Alachlor, atrazine, endosulfans, dioxin, and heptachlor epoxide also were only detected in single samples and, along with bis(2-ethylhexyl)phthalate, would be most likely to have domestic or infiltration/inflow sources. Compliance with the acute toxicity and the chronic three-species toxicity limits using minnows, algae, and ceriodaphnia could be used to confirm that there is no non-ammonia acute toxicity from these other toxic organics.

Finally, dioxin (2,3,7,8-TCDD), heptachlor epoxide, and three PCBs (*aroclor-1016, aroclor-1221, aroclor-1260*), each detected once, have analytical detection limits over the expected permit limits.

3.3 Maximum Allowable Headworks Loadings

Every sewer district must determine the maximum loading of pollutants it can accept and still comply with the permit requirements and Federal sludge limits. The maximum allowable

Section 3 – Local Limits

headworks loadings (“MAHLs”) form the technical basis for determining local limits. MAHLs are needed for aluminum, and manganese, as well as for copper, chromium, lead, molybdenum, nickel, phosphorus, selenium, zinc, oil & grease, and MTBE. All this requires influent, effluent, and sludge monitoring under the range of conditions expected during the year, in order to determine the WWTP removal efficiencies. EPA has a free spreadsheet program called Prelim to assist in the calculations. WEF also has a fate and transport model available for purchase on its web-site.

3.4 Allocation Method

The MAHLs for each of the pollutants of concern must be allocated between uncontrollable and controllable sources. The uncontrollable sources comprise domestic sewage, and infiltration and inflow. The controllable sources are those that could be regulated under permits or best-management practices. This will require background monitoring of domestic sewage, and infiltration and inflow, in order to determine the pollutant loadings that cannot be allocated to the controllable sources. The remaining loadings can then be allocated in any fashion to the individual industrial and commercial sources. For example, Placer County could set different local limits by individual industrial discharge, or by flow-weighted average, or uniformly across the entire service area for some pollutants but differentially set for others. The allocation method does not matter as long as the total allocation out to the domestic and non-domestic users does not exceed the calculated MAHLs.

It is possible that the main sources of certain pollutants are domestic in nature and largely uncontrollable by ordinance through permitting or best-management practices. For example, significant pesticide loadings may come primarily from infiltration and inflow off of nearby fields, or household use. In these cases, Placer County would have to redetermine the MAHLs after the sources are mitigated through some other means.

3.5 Industrial User Compliance with Local Limits

The Federal regulations do not define how to determine regulatory success. Moreover, any conclusion regarding industrial user compliance with the local limits would be premature since they are not technically-based to protect the Placer County SMD-1 treatment works from adverse impacts, and the sources of the pollutants of concern are not yet identified. Once the local limits are sound and implemented through industrial user permits, however, the following performance measures determine regulatory success in achieving industrial user compliance.

- Treatment Plant Performance - EPA Region 9 bases its primary determinations on the purpose of local limits and the national prohibitions to prevent pass-through, interference, sludge contamination, or potential worker safety risks. As a result, the best measure of a program’s effectiveness is consistent compliance with the NPDES permit and sludge

Section 3 – Local Limits

limits. By this measure, Placer County would not be successful if the pass-through of aluminum and manganese persists.

- Cost Effective On-Site Treatment - Conventional pollutants can be treated at the sources and the sewage treatment plant. In general, primary treatment for solids and organics, pH adjustment, and gravity oil-water separation, are cost effective at the sources, while secondary treatment for dissolved organics, nitrification and denitrification are much more cost effective at the sewage treatment plant. On the other hand, toxics must be entirely controlled by the sources since sewage treatment plants are not designed to for toxics.
- Significant Non-Compliance - Significant non-compliance will be based on industrial user compliance rates once the local limits are re-developed and implemented into the permits.

Section 4

Industrial User Compliance with Federal Standards

Pretreatment programs are required to be administered to ensure industrial user compliance with Federal categorical pretreatment standards. 40 CFR 403.8(b).

4.0 Summary

Best-available-technology ("BAT") treatment or its equivalent was not applied and in place at all identified Federally-regulated industrial process within the Placer County SMD-1 service area.

Requirements

- Any discharge to the sewers of Federally-regulated wastewaters from Sierra Plating and any successor first must be treated through BAT treatment or its equivalent.
- Compliance sampling points and monitoring requirements must be established and implemented in order to determine whether treatment is necessary at Carpenter.
- The operational and disposal procedures to ensure compliance with the metal finishing standards through the achievement of zero-discharge must be determined and set forth for Sierra Plating and Custom Powder Coating.

4.1 Treatment In-Place

EPA Region 9 uses two performance measures that together reflect the purpose of the various Federal categorical standards to bring about the nationwide use of model BAT treatment.

The first measure is BAT treatment across the industrial inventory. The Federal standards for each Federally-regulated industrial category were based on the statistical performance of model BAT treatment as it is separately defined for each category. For metal finishing, BAT treatment is metals precipitation, settling and solids removal, and if necessary, cyanide destruction and chromium reduction. The following industries in the Placer County SMD-1 service area, identified during this evaluation by EPA as Federally-regulated users, were not all found to comply with their Federal standards either through BAT treatment or through facility configurations and practices to keep from discharging to the sewers.

- Advanced Metal Finishing - This metal finishing job-shop complies with the Federal new source metal finishing standards in 40 CFR 433 by not discharging any process-related wastewaters to the sewers. De-ionized water rinses minimize the build-up of salts. Drag-

Section 4 – Industrial User Compliance with Federal Standards

out is captured in static rinses which are periodically wasted to an evaporator, with the evaporator sludges, spent anodizing solutions, spent dyes, and excess first-stage rinse waters hauled off-site for disposal as hazardous waste. Placer County should verify that operations do not involve any untreated discharge of metal finishing wastes to the sewer.

- Carpenter Advanced Ceramics - Bldg 1 - This specialty ceramics manufacturer qualifies as a new source metal finisher subject to the metal finishing standards in 40 CFR 433. Bldg 1 wastewaters from nickel plating, electroless nickel plating, acid etching, and hard grinding discharge without treatment to the sewers. No sample record exists as of yet so it cannot be determined if the Bldg 1 discharges comply with the Federal standards.
- Carpenter Advanced Ceramics - Bldg 2 - The Bldg 2 wastewaters from hard grinding, ultrasonic cleaning, final polishing, deburring, and dye penetrant testing discharge without treatment to the sewers. No sample record exists as of yet so it cannot be determined if the Bldg 2 discharges comply with the Federal standards.
- Coherent - Laser glass manufacturing is not regulated under any Federal rule. Coherent discharges glass polishing wash down and slurries through a solids removal treatment unit to one sewer connection and untreated cooling tower flush to another.
- Custom Powder Coating - This powder coating job-shop complies with the Federal new source metal finishing standards in 40 CFR 433 by not discharging any process wastewaters to the sewers. The phosphating and alkaline degreasing solutions and rinses evaporate in tank. The generation and disposal of spents has not been determined as of yet. Placer County must ensure that the operations do not involve any untreated discharge of metal finishing wastes to the sewer.
- Sierra Plating - This job-shop metal finishing shop discharges spent solutions and spent static rinses by pump and hose without treatment to a sink drain connection to the sewers. No sample record exists as of yet, so it cannot be determined if Sierra Plating complies with the Federal metal finishing standards for new sources in 40 CFR 433. However, it is unlikely that untreated electroplating wastewaters can comply with the Federal standards without treatment equivalent to or better than the model BAT treatment. Sierra Plating is expected to shut down and be sold. Placer County must ensure that the transference of ownership does not involve an untreated discharge of metal finishing wastes to the sewer.
- Vian Enterprises - Vibratory deburring wash down and non-destructive testing wastewaters are discharged to the sewers but these discharges are unregulated under the Federal metal finishing rule at facilities that also do not perform metal finishing on-site.

4.2 Comparison with Model IU Performance

The second measure, derived from statistical comparisons with the performance of model categorical industrial users, only applies to larger industrial user inventories.

Section 5

Industrial User Inventory

Pretreatment programs are required to develop a complete inventory of industrial users, as part of ensuring industrial user compliance. 40 CFR 403.8(b,f1iii,f2i).

5.0 Summary

Placer County has not identified for regulation its significant industrial users (“SIUs”), categorical industrial users (“CIUs”), and zero-discharging CIUs who would be subject to Federal standards if they discharged. Placer County has not established procedures to identify and maintain its inventory of industrial users. The permit application for the current NPDES permit did not list any of the major industrial users by name, SIC code, and industrial activity. See Table 6 for a list of identified SIUs. See Table 7 for a definition of SIU.

Requirement

- Placer County must field verify its industrial user inventory and institute formal documented procedures to continually identify additions, deletions and changes.
- Placer County must identify the SIUs, CIUs, and zero-discharging CIUs in its inventory and begin annual reporting on their compliance status.
- Placer County must amend its permit application to include the list of SIUs.

Recommendation

- Placer County should maintain its industrial user inventory by non-domestic wastewater discharge point, with each discharge point characterized by Federal point source category, annual average flow rate, type of wastewater, and owner or operator.

5.1 Permit Application

The WDRs that are currently in effect were based on Placer County’s December 24, 1996 permit application. The permit application did not list any of the major contributing facilities, defined in the instructions as the industries that have or could have “significant impact on a municipal wastewater treatment facility or the effluent”, specifically industries with large flows or toxic material in their discharges. By this definition, because of the toxics, Sierra Plating, Carpenter Advanced Ceramics, and Coherent all should have been identified.

