

CAPITAL REGIONAL DISTRICT

REGIONAL SOURCE CONTROL PROGRAM

ANNUAL REPORT
2003

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Prepared by:

Trevor Smyth, BSc
Supervisor, Regional Source Control Program

**CAPITAL REGIONAL DISTRICT
REGIONAL SOURCE CONTROL PROGRAM ANNUAL REPORT 2003**

EXECUTIVE SUMMARY

The main objective of the Capital Regional District's (CRD) Regional Source Control program (RSCP) is to reduce the amounts of contaminants that industries, businesses, institutions and households discharge into the district's sanitary sewer systems in order to protect the receiving environment, public health and safety and sewage collection and treatment facilities.

The CRD Sewer Use Bylaw, adopted in 1994, serves as the main regulatory instrument for the RSCP. The program works to ensure that the bylaw and its associated policies and procedures are applied consistently within the separate collection areas for all CRD sewage facilities. Implementation of a region-wide program began in 1995 with regulation of larger industries under a permit system, followed by adoption of the first regulatory codes of practice for certain commercial sectors in 1999.

The findings of this year's annual report indicate that significant progress has been made toward achievement of the program's objectives. The program is currently meeting the commitments and schedules set out in the Core Area and Saanich Peninsula Liquid Waste Management plans (LWMPs). One of the main commitments in these plans, the development and adoption of codes of practice to control contaminant discharges from a range of business sectors, is now complete. Compliance levels and contaminant reductions in fully-implemented code sectors, and at permitted industrial facilities, have shown significant improvements over previous years.

The 2003 annual report presents background information, a summary of program activities and accomplishments over the period January to December 2003 and a brief account of initiatives planned for 2004. The main activities and accomplishments of the program in 2003 are outlined below.

Industrial, Commercial and Institutional Liquid Waste Regulation

- Development and adoption of codes of practice have been completed on schedule; new laboratory and recreation facility codes adopted in December 2003

- Eleven codes of practice now adopted (estimated 2,500 discharging operations regulated)

- Major amendment of the dry cleaning and vehicle wash codes and minor amendment of the automotive repair code

- Investigations into four additional business sectors were completed

- Required treatment works were confirmed to be in place at 100% of dental, carpet cleaning, fermentation, dry cleaning and printing operations, and 90% of food services and photographic imaging operations inspected in 2003 (the most significant increase in installations was in the food services sector)

- Levels of full compliance increased significantly in the dental (46% increase) and photographic imaging (35% increase) sectors over those reported in 2002

- Waste discharge permit compliance levels increased from 70% in 2002 to 85% in 2003

- Ongoing development of a database to track code of practice registration, inspection and compliance information

- Significant increase in reporting of new sewer dischargers to RSCP by municipal staff

- Cooperation with municipal and electoral area inspection staff regarding investigation of, and response to, several sewer discharge incidents in 2003

Enforcement

- The amended enforcement policy is working well for both permits and codes of practice

- Six dischargers placed on non-compliance list in 2003; no charges laid under the Sewer Use Bylaw

- One mediation session was conducted to resolve a waste discharge permit issue

- Forty-one tickets issued under the CRD Ticket Information Authorization Bylaw

- No orders issued under the *Waste Management Act*

Contaminant Reduction Targets

Five-year reduction targets established for two new code of practice sectors

Significant progress has been made toward meeting reduction targets in three fully-implemented code sectors – particularly the dental sector, which is now 3% short of reaching the target set for 2005

Most waste discharge permit holders have achieved, or are progressing toward achieving, their reduction targets

Significant reductions in contaminant discharges at four permitted sites in comparison to 2002

Education and Outreach

Eco-Star Community Environmental awards presented to five local businesses with excellent compliance records in 2003

Development of an RSCP home page for the new Environmental Services Web site – launched in November 2003

Two code guidebooks printed, distributed and posted on Web site; three guidebooks under development

Development and printing of brochures and posters for the fermentation sector

Increased effort regarding outreach for the automotive sector involving: newspaper advertisements, direct mail-out of information, workshops and presentations to stakeholder groups

Advertisements and newspaper articles to announce new codes of practice; promote existing codes and the RSCP in general

Distribution of a newspaper insert (*Sewer Smart #2*) focussed on residential source control and promotion of awareness of regulations and the RSCP

Completion and release of five multi-play source control video clips, in cooperation with City Green, the Georgia Strait Alliance and local community television

Development of a residential education display package and participation in two local Home Show events

Program Planning, Administration and Review

One major and two minor amendments to the Sewer Use Bylaw were prepared and adopted

Amended policies for enforcement, administration of fees and process of review were approved by the Board in January 2003

New management policy for the food services code approved by the Board in February 2003

Program is currently meeting the commitments and schedules outlined in the Core Area and Saanich Peninsula LWMPs

Inspection Concerns

Primary code of practice inspections are currently not meeting the target of 20% set for each sector in 2001. At the current rate of inspection and re-inspection, it is estimated that staff will be able to carry out primary inspections at only 12% of all fully-implemented code sectors in 2004. Once the 11 codes currently adopted are in full effect (2005), it is apparent that additional resources will be required in order to achieve the 20% primary inspection target for each code.

Next Steps - 2004

The main areas of development of the program in 2004 include implementation of codes that became fully effective in January 2004, and preparation and implementation of a priority contaminant management plan and a residential education plan.

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1.0 INTRODUCTION

Source control is a pollution prevention strategy that is aimed at reducing the amount of chemical contaminants that industries, businesses, institutions and households discharge to sewers.

The need for a Source Control program within the Capital Regional District (CRD) was assessed during the period 1990 to 1992 and commitments to develop a program followed in 1993.

Following discussions with municipal representatives in 1993, it was agreed that the CRD would assume full responsibility for regulating the quality of wastewater entering its trunk sewers and sewage treatment facilities by applying for designation as a sewage control area. In 1993, the CRD also committed to the development and implementation of a region-wide Source Control program and adoption of a Sewer Use Bylaw under the BC *Waste Management Act*. This bylaw was designed to serve as the main regulatory instrument for source control in sanitary sewer systems, creating a level playing field for businesses and institutions throughout the district. The Regional Source Control program (RSCP) has been active region-wide since adoption of the Sewer Use Bylaw in August 1994.

The first phase of program implementation began in 1995, following the adoption of a Regional Sewer Use Bylaw.

The objectives of the RSCP are documented in the 1996 Saanich Peninsula Liquid Waste Management Plan (LWMP) and the Core Area LWMP (July 2000). The program objectives are to:

- protect the marine receiving environment adjacent to the CRD's sewage outfalls
- protect sewerage facilities belonging to the CRD and its member municipalities against corrosion, blockage and other harmful effects related to the presence of wastewater contaminants
- ensure that the health and safety of sewage workers and the general public is not put at risk due to the presence of wastewater contaminants
- protect the quality of sewage sludge (biosolids) to allow the full range of options for its beneficial use
- protect treatment plants against upset due to inhibition of treatment processes by high contaminant loadings
- ensure fair and balanced use of the district's sewerage facilities through education, regulation, enforcement and the application of the user-pay principle
- promote responsible pollution prevention practices, including reduction, reuse, recycling, recovery and residuals management

The Core Area and Saanich Peninsula LWMPs contain commitments to prepare an annual report on the RSCP for submission to the Board and the Ministry of Water, Land and Air Protection (MWLAP). This annual report presents a summary of program activities and accomplishments over the period January to December 2003 and provides a brief account of initiatives planned for 2004.

2.0 BACKGROUND

2.1 Program Components

The main components that have formed the framework of the RSCP since the program's inception include:

- Planning, management and administration
- Inspections
- Monitoring
- Enforcement
- Education and outreach
- Data management
- Special projects

2.2 Policies and Procedures

The following policies and procedures are used to provide guidance and ensure fair and consistent application of the CRD Sewer Use Bylaw and associated enforcement, cost recovery and monitoring activities.

- Regional Source Control Program Enforcement Policy and Non-compliance List Criteria
- Regional Source Control Program Fees and Charges Policy
- Sewer Use Bylaw Process of Review
- Regional Source Control Program Code of Practice Management Policy – Food Services
- Sampling and Analysis Procedure Manual
- Analytical Result Reporting Procedure
- Non-domestic Waste Discharge Reporting Procedure

The first three policies were updated and approved by the Board in January 2003. The Board approved the Code of Practice Management Policy for Food Services in February 2003. The remaining procedures are periodically updated to reflect changes within the program.

2.3 Sewage Collection Areas and Sewage Facilities

The CRD Sewer Use Bylaw applies to any discharge of waste into a sewer that is connected to a sewage facility operated by the CRD. The RSCP is designed to ensure that the bylaw and its associated policies and procedures are applied consistently within the separate collection areas for these sewage facilities.

The CRD owns and operates eight wastewater treatment plants, as shown in Table 1. Four of these plants, Macaulay Point, Clover Point, Saanich Peninsula and Ganges, receive significant industrial, commercial or institutional wastewater flows, while the remaining four are small plants receiving mostly residential flows.

The sewage flows into each treatment plant are reported in the annual compliance monitoring reports for CRD sewage outfalls.

Estimated annual sewage flows contributed by each municipality, electoral area or other participating area, over the period 1 October 2002 to 30 September 2003, are listed in Table 2. The annual sewage flows are used to calculate the municipal requisition for the RSCP (see Section 3.6).

Table 1. CRD Treatment Plants and Sewage Collection Areas - 2003

CRD Sewage Treatment Plant	Sewage Collection Areas
Macaulay Point	Victoria (west), Esquimalt, Saanich (west), View Royal, Colwood, Langford, DND, Esquimalt First Nation, Songhees First Nation
Clover Point	Victoria (east), Oak Bay, Saanich (east)
Saanich Peninsula	Sidney, Central Saanich, North Saanich, Pauquachin First Nation, Tseycum First Nation, Institute of Ocean Sciences (IOS)
Ganges	Township of Ganges (Salt Spring Island Electoral Area)
Maliview	Maliview area (Salt Spring Island Electoral Area)
Schooner Way	Buck Lake area (Southern Gulf Islands Electoral Area)
Canon Crescent	Magic Lake Estates (Southern Gulf Islands Electoral Area)
Port Renfrew	Port Renfrew (Juan de Fuca Electoral Area)

Table 2. Annual Sewage Flows 2002/2003

Participant	Estimated Annual Flow (m³/year)*	Percentage of Total Flows
Saanich	13,042,634	29.48
Oak Bay	3,474,858	7.85
Victoria	18,965,719	42.87
Esquimalt	2,375,560	5.37
View Royal	973,353	2.20
Colwood	508,961	1.15
Langford	757,999	1.71
Sidney	1,495,215	3.38
Central Saanich	1,612,117	3.64
Esquimalt First Nation	6,540	0.01
Songhees First Nation	137,997	0.31
Pauquachin First Nation	35,995	0.08
Tseycum First Nation	15,324	0.03
IOS	7,954	0.02
DND	231,998	0.52
North Saanich	328,558	0.74
Ganges Sewer	164,837	0.37
Maliview Sewer	9,088	0.02
Magic Lakes Estates Sewer	84,095	0.19
Port Renfrew Sewer	14,964	0.03
Total Flow	44,243,766	100.00

* Yearly flows cover the period 1 October 2002 to 30 September 2003.

2.4 Municipal Role and Involvement

Ten member municipalities, three electoral areas and six other participating areas with sanitary sewers were regulated under the RSCP in 2003.

In 1997, a waste discharge assessment system was developed to provide up-to-date information on new connections during completion of the Western Communities trunk sewer. This system was modified and

introduced as a generic “non-domestic waste discharge reporting procedure” for voluntary use by all member municipalities and electoral areas in 1999 as part of an initiative to increase the level of communication among municipal licensing and inspection departments and the RSCP.

This new reporting system took some time to become established in the core and peninsula municipalities, however, by the end of 2001, waste discharge assessment forms were being submitted to the RSCP on a regular basis from most municipalities. A total of 146 forms were submitted in 2003 for evaluation by RSCP staff. This was a substantial increase over the 95 submitted in 2002.

The system has helped to increase the level of communication between municipal and RSCP staff and is assisting in ensuring fair and consistent application of the Sewer Use Bylaw throughout the district. In 2003, meetings were held with Victoria, Esquimalt, Oak Bay and North Saanich staff concerning the reporting procedure and code of practice requirements.

Municipal Engineering department staff also communicate regularly with RSCP staff regarding sanitary sewer wastewater quality problems, suspicious discharges or significant incidents leading to contamination of the collection and treatment system. Completed copies of the CRD’s significant incident report form, outlining the nature of the incident and a description of the response, are sent to engineering contacts within the municipality where the incident occurred. This form was developed in 2000 to record operational problems within all trunk sewers and treatment plants operated by the CRD. Municipal staff provide wastewater flow data and other information to RSCP staff during, and following, preparation of waste discharge permits and authorizations.

Examples of municipal and electoral area cooperation with RSCP regarding response to incidents in 2003 included investigation of:

- Strong hydrocarbon odour reported at Saanich Peninsula treatment plant
- Coloration of influent at Saanich Peninsula treatment plant due to discharges from fish processing operations
- A fish kill in a stream near a permitted electroplating facility – in cooperation with Department of Fisheries and Oceans Canada
- Excess grease build-up in View Royal and Saanich sewage collection systems
- Disposal of syringes, rubber gloves, swabs, cloths and other wastes found to be obstructing pumps at a View Royal pump station downstream from a hospital
- Disposal of water from a fire at a recycling facility in Victoria

Senior municipal engineering staff continued to be updated on developments within the RSCP during Engineering Liaison committee meetings throughout 2003.

3.0 REGIONAL SOURCE CONTROL ACTIVITIES AND ACCOMPLISHMENTS - 2003

Regional source control activities and accomplishments in 2003 are discussed under the following broad groups of activities:

- Industrial, Commercial and Institutional Liquid Waste Regulation
 - waste discharge permits
 - authorizations
 - codes of practice
 - monitoring
- Enforcement
- Contaminant Reduction Targets
- Education and Outreach
- Special Projects
- Program Revenue and Expenditures
- Program Planning, Management and Administration

3.1 Industrial, Commercial and Institutional Liquid Waste Regulation

3.1.1 Regulatory History

Following adoption of the Sewer Use Bylaw in August 1994, the RSCP focussed primarily on identifying, inspecting, assessing and permitting larger industrial facilities and preparing authorizations for smaller commercial and institutional dischargers operating within the district. This process was largely completed over the period 1995 to 1998. Waste discharge permits require ongoing management and periodic amendment to accommodate changes in site-specific processes, practices and discharge conditions. New businesses continue to be assessed for operation under permits or authorizations each year.

In 1998, the focus of the program shifted toward development, adoption and implementation of codes of practice to regulate discharges from larger numbers of smaller commercial and institutional facilities operating in the area. By the end of 2003, 11 codes of practice had been adopted under the Sewer Use Bylaw. For further information on codes of practice, see Section 3.1.5.

3.1.2 Statistics

The activities within each liquid waste regulation component in 2002 and 2003 are summarized in Table 3.

3.1.3 Waste Discharge Permits

Waste discharge permits are regulatory documents issued to industries and businesses under the CRD Sewer Use Bylaw that outline requirements for wastewater treatment, effluent quality, monitoring and reporting. Waste discharge permits are issued to industries, businesses or other operations that discharge significant non-domestic wastewater flows (greater than 10 m³/day) or wastewater containing high loads of specified chemical contaminants into the sanitary sewer.

As of December 2003, a total of 89 waste discharge permits had been issued to sanitary sewer users throughout the district. The majority of permits (46) were issued in the first three years following bylaw implementation, during the period when the program was focussed on regulating the larger industrial dischargers within the CRD. The small number of new permits issued since 1999 reflects the very slow growth in the number of new industrial sites discharging significant contaminant loads to sanitary sewer.

Seven new permits were issued, eight permit amendments were made and four permits were closed in 2003. Some permits issued for short-term discharges have set expiry dates. This accounts for a variable portion of permit activity each year. In 2003, four of the seven permits issued were for short-term discharges (gas station or construction site remediations). At the end of 2003, there were 33 active waste discharge permits being managed by RSCP staff. Most of these permits were ongoing, with no expiry date.

Permit management activity includes reviewing discharger self-monitoring reports on a monthly or quarterly basis, preparation of compliance letters, site inspections, meetings and regular phone contact with permittees. Permit managers are also responsible for comparing CRD audit sampling data to permittee self-monitoring data and submitting permit fee billing information to the CRD Finance department.

In 2003, permit management staff continued their search for new non-domestic waste dischargers within the Saanich Peninsula, Macaulay Point and Clover Point sewage collection areas. Several different search methods were used to identify dischargers who may not have applied for permits or authorizations in past years. This process included searches of municipal water consumption and business licence records, the BC Special Waste Generator Registry and several business directories. A total of 82 sites were selected for inspection in 2003 - 2004. Two waste discharge permits and five authorizations were issued in 2003 as a result of these inspections. Most of the businesses inspected as result of the search

in 2003 were determined not to be discharging restricted wastes to sewer. Investigations into new non-domestic waste dischargers will continue in 2004.

Table 3. Source Control Liquid Waste Regulation Activities in 2002 and 2003

SOURCE CONTROL ACTIVITY	2002	2003
Permits active (at year end)	30	33
New permits issued	15	7
Permits amended	4	8
Permits closed	14	4
Permit site inspections	62	56
Permit meetings	30	45
Self-monitoring reports reviewed	143	145
Compliance letters written	110	135
Authorizations in effect (at year end)	199	231
New authorizations issued	23	33
Authorizations amended	2	3
Authorizations cancelled (transferred to codes)	14	1
New codes adopted	3	2
Total codes adopted	9	11
Codes amended	0	3
Food Services Operations code (sector estimate)	1700	1289
Total site inspections	402	356
Photographic Imaging Operations code (sector estimate)	197	200
Total site inspections	50	10
Dental Operations code (sector estimate)	194	166
Total site inspections	33	29
Dry Cleaning Operations code (sector estimate)	20	25
Total site inspections	1	4
Automotive Repair Operations code (sector estimate)	-	301
Total site inspections	0	38
Vehicle Wash Operations code (sector estimate)	-	162
Total site inspections	0	9
Carpet Cleaning Operations code (sector estimate)	-	60
Total site inspections	0	6
Fermentation Operations code (sector estimate)	-	40
Total site inspections	0	4
Printing Operations code (sector estimate)	-	109
Total site inspections	0	2
Monitoring		
Permit compliance sampling events	54	51
Code of practice sampling events	62	53
Key manhole sampling events	10	6
Treatment plant influent monitoring events	19	21

3.1.4 Authorizations

Letters of authorization are issued under the Sewer Use Bylaw in cases where overall contaminant loads to sanitary sewer are low or where discharges are predicted to have a minimal impact on collection and treatment systems and/or the receiving environment. Authorizations contain site-specific discharge requirements and best management practices designed to decrease the impact of the discharge or limit the potential for illegal discharges. They are normally issued without expiry dates and have no sampling or reporting requirements. Inspections are carried out on a periodic basis by Source Control staff.

Authorizations are commonly issued to regulate unusual discharges or small groups of similar operations, such as ship and boat waste facilities and sani-dumps. They can also be issued to businesses where a code of practice is either planned or under development.

In December 2003, there were a total of 231 authorizations in effect. New authorizations were issued to 33 businesses, three authorizations were amended and one was cancelled in 2003.

3.1.5 Codes of Practice

Background

The CRD has made commitments to the development and implementation of codes of practice to regulate non-domestic waste discharges from the commercial and institutional sectors to sanitary sewer in the Core and Saanich Peninsula LWMP areas. The RSCP defines codes of practice as “regulatory documents containing mandatory sanitary sewer discharge standards for specific industrial, institutional or commercial sectors”.

RSCP staff began developing codes of practice in 1996 following consultants’ recommendations that this approach would be well suited to the CRD’s prevailing small industry/commercial business/institutional composition. Code of practice development and adoption has become one of the main focal points of program activities over the period 1998 to 2003. Stakeholder task forces were formed for each code sector to guide the development process and to help ensure the practicality and effectiveness of the final product. By December 2003, the development and adoption process for codes of practice had been completed on schedule. The adoption and effective dates of the 11 codes are summarized in Table 4.

Table 4. Summary of RSCP Code of Practice Adoption and Effective Dates (Bylaw 2922)

Code of Practice	Adoption Date	Initial Effective Date (New Operations ¹)	Final Effective Date (Existing Operations ²)
Food Services Operations	24 November 1999	1 January 2000	1 January 2003
Dry Cleaning Operations	24 November 1999	1 January 2000	30 June 2000
Photographic Imaging Operations	24 November 1999	1 June 2000	1 June 2000
Dental Operations	22 November 2000	1 January 2001	1 July 2001
Automotive Repair Operations	12 December 2001	1 January 2002	1 January 2004
Vehicle Wash Operations	12 December 2001	1 January 2002	1 January 2005
Carpet Cleaning Operations	11 December 2002	1 July 2003	1 July 2003
Fermentation Operations	11 December 2002	1 January 2003	1 July 2003 ³
Printing Operations	11 December 2002	1 January 2003	1 January 2005
Laboratory Operations	10 December 2003	1 January 2004	1 July 2004 ⁴
Recreation Facility Operations	10 December 2003	1 January 2004	1 January 2005 ⁵

Notes:

1. Businesses or institutions that commence operation within a specific code sector on or after the code’s initial effective date.
2. Businesses or institutions that were operating within a specific code sector before the code’s initial effective date.
3. For fermentation operations producing waste containing yeast.
4. Spill response plans required.
5. Monitoring point installation required.

In general, codes of practice include mandatory requirements for registration, waste treatment, inspection, maintenance and record keeping for businesses and institutions discharging non-domestic wastes to sanitary sewer. They are believed to be among the first of their type to be adopted in North

America. RSCP staff has prepared guidebooks for each code sector explaining the applicable regulations and including best management practices to help businesses achieve compliance.

Registration

All businesses and institutions within a specified code of practice sector (see Table 4) that discharge wastes to sewer are defined as “discharging operations”. All discharging operations are required to register with the RSCP within 90 days of the date of adoption of an applicable code of practice. For new operations commencing discharge after the adoption date, registration is required within 30 days. Notification of the adoption of a code of practice and the requirement for registration is provided by newspaper advertisement and by direct mail to all operations that are thought to be part of the sector. Registration information was mailed out to all known operators within the fermentation, printing and carpet cleaning sectors in February, and to laboratories and recreation facilities in December, 2003.

Self-Assessment

In 2002, all discharging operations were required to complete and submit a self-assessment form following a specified period of time after the adoption date of each code. Self-assessment forms were questionnaires prepared by RSCP staff to determine whether operators or business owners were registered and complying with specific requirements of a code. The forms, unique to each sector, were mailed out to all listed discharging operations at least 90 days in advance of the specified due date. Failure to submit a completed form by the due date resulted in the operation being charged a \$500 code of practice fee (see Section 3.6).

In June 2003, following a recommendation from RSCP staff, the Board amended the Sewer Use Bylaw to remove the self-assessment process. The reasons for this are outlined below:

- return rates for the self-assessment forms had declined significantly between 2001 and 2002 and were predicted to drop further in 2003, unless additional staff time was expended
- the information provided by businesses on the self-assessment forms was often found to be inaccurate - requiring verification through inspection
- the self-assessment process was proving to be very costly to administer, involving diversion of staff time from regular inspection duties
- businesses had voiced strong concerns regarding the administrative requirements of the process and many perceived the fee for non-submission of the form as unfair
- it was anticipated that many of the bills for failure to self-assess would not be paid
- continuing the self-assessment process and billings would harm the existing good working relations between RSCP inspectors and business owners

As a result of the removal of the self-assessment process in June, there are no new statistics related to this process for any of the codes of practice in effect in 2003.

Code of Practice Inspection Summary – 2003

The results of 247 code of practice “primary” site inspections carried out by RSCP staff in 2003 are summarized in Table 5. In addition, there were 211 “secondary” or repeat inspections carried out by RSCP or bylaw enforcement staff to confirm compliance following initial inspections in 2003 or in previous years.

Further to the above detailed inspections, a total of 531 brief inspections or “site visits” were undertaken by RSCP staff to confirm the numbers of actual dischargers in the larger sectors.

The primary inspection level for each sector having a fully effective code ranged from 5% to 16%. This result was below the annual target of 20% primary inspections originally set for each sector with a fully-implemented code. The shortfall was largely due to the very high number of repeat inspections that staff had to undertake in the food services sector to monitor compliance and follow-up on enforcement actions.

Since there are only two RSCP staff who currently undertake code of practice inspections, a shortfall is also predicted for 2004. At the current rate of inspection and re-inspection, it is estimated that staff will be able to carry out primary inspections at only 12% of all fully-implemented code sectors in 2004. This translates to approximately one primary inspection at each site every eight years.

Once the 11 codes currently adopted are in full effect (2005), it is apparent that additional resources will be required in order to achieve the 20% primary inspection target level for each code. This inspection level means that there would be one primary inspection at each site every five years.

Table 5. Code of Practice Inspection and Compliance Summary – 2003

Code of Practice	# Inspected (2003) ¹	% Sector Inspected ²	%Full Compliance ³
Food Services	161	13	43
Dry Cleaning	4	16	0
Photo Imaging	9	5	67
Dental	25	15	61
Carpet Cleaning ⁴	6	10	50
Fermentation ⁴	3	8	100
Auto Repair ⁵	30	10	24
Vehicle Wash ⁶	7	4	13
Printing ⁶	2	2	100

Notes:

1. Number of primary inspections by RSCP staff – includes inspections of discharging and non-discharging operations
2. Based on the estimated number of operations in each sector at the beginning of 2004 (see Table 3)
3. Percentage of operations in compliance with all requirements of the code in 2003 – includes sites using off-site waste management
4. Code not fully effective until July 2003
5. Code not fully effective until January 2004
6. Code not fully effective until January 2005

Code of Practice Development and Implementation Summary – 2003

Development and subsequent adoption of new codes of practice for laboratory and recreation facility operations and amendment of existing codes for dry cleaning, automotive repair and vehicle wash was one of the main achievements of the program in 2003. These codes and amendments were completed on schedule through the efforts of staff and sector stakeholders working closely together in a cooperative manner.

Development, implementation and inspection activities and compliance information for each code of practice in place in 2003 are summarized below under specific sector headings.

Food Services

The *Code of Practice for Food Services Operations*, adopted in November 1999 and amended in December 2001, became fully effective on 1 January 2003.

A bylaw amendment to remove the 100 mg/L oil and grease discharge limit from the code was approved in February 2003. The reasons for this change were outlined in the 2002 annual report.

The Board agreed that the 100 mg/L limit should remain as a target or guideline for use by inspection staff. This guideline was adopted in January as part of a general management policy for the code. Staff was directed to continue to collect data on the quality of wastewater discharged from food services operations and information on treatment technology and, within one year, bring back a recommendation on regulatory concentration limits for oil and grease that would apply to all new food services operations. This recommendation is now expected to be presented to the Board in May 2004.

The majority of RSCP site inspections in 2003 (161 primary and 195 secondary inspections) were carried out within the food services sector. RSCP staff carried out primary detailed inspections at approximately 13% of all food services operations in the district in 2003 with secondary follow-up inspections at many of these operations and several of those first inspected in 2002. There was a high level of repeat inspection for this sector indicating ongoing compliance issues.

Food Services inspections in 2002 indicated that about 60% of the sector had not installed treatment works. With the code becoming fully effective in 2003, new grease interceptor installations were reported by plumbing contractors to be increasing in late 2002, reaching a peak in early 2003. Inspections by RSCP staff in 2003 indicated that approximately 10% of food services businesses did not have the required treatment works (grease interceptor) in place, representing a significant change over the previous year. Other common inspection findings in this sector included undersized interceptors and excessive grease build-up.

It is anticipated that there will again be a high level of inspection activity within the food services sector in 2004.

Dry Cleaning

The *Code of Practice for Dry Cleaning Operations* was adopted in 1999 and amended on 10 December 2003. This recent amendment was needed to harmonize the CRD code with an Environment Canada regulation regarding the use of tetrachloroethylene (PERC) in dry cleaning operations.

This federal regulation, which was registered under the *Canadian Environmental Protection Act* (CEPA) on 12 March 2003 and which came into effect on 1 January 2004, specified treatment works and maintenance and reporting requirements that differed from those outlined in the CRD's dry cleaning code of practice. After consultation with federal representatives, staff prepared a major revision of the existing CRD code to harmonize it with the new federal regulations. This amended code was circulated, in August 2003, to all dry cleaners in the CRD for review and comment prior to preparation of the final draft.

There were only four dry cleaning inspections carried out in 2003 as the sector had been fully inspected in 2001. The main compliance issue in this sector was lack of the correct type of wastewater holding tank.

Inspections for this sector in 2004 will focus on the new treatment requirements of the amended code, which came into effect 1 January 2004.

Photographic Imaging

The *Code of Practice for Photographic Imaging Operations*, adopted in 1999, is currently in full effect. No amendments to the code are considered necessary at this time.

RSCP staff inspected about 5% of known operations in this sector in 2003. Inspections showed that 67% were in full compliance with the code which was a significant improvement over inspection results in 2002 (32% full compliance). The main compliance issues found were: no spill containment, lack of silver testing, and no metering pump calibration. Correction of these issues will be the focus of photographic imaging inspections carried out in 2004.

Dental

The *Code of Practice for Dental Operations* was adopted in November 2000 and was fully in effect by 1 July 2001. No amendments to the code are considered necessary at this time.

RSCP staff inspected approximately 15% of operations in this sector in 2003. All sites inspected had an amalgam separator installed. Last year, the main "polluting" compliance issues were bypassing amalgam separators and failure to replace collecting containers as required. In May 2003, a letter was mailed out to all dental offices in the district reminding them to replace their expired collecting containers in accordance with manufacturer's instructions. By the end of 2003, 61% of operations inspected were found to be in full compliance with the code. This was a vast improvement over the 15% full compliance level reported in 2002, indicating that significant progress had been made to reduce the potential for contaminant discharge from this sector.

Failure to keep records and failure to post ISO certification documents remained as the key administrative compliance issues for the sector in 2003.

Automotive Repair and Vehicle Wash

The *Code of Practice for Automotive Repair Operations* and *Code of Practice for Vehicle Wash Operations* were adopted in December 2001 becoming effective on 1 January 2002 for new or renovated operations. Both codes were to be in full effect for existing operations on 1 January 2004.

During implementation of the automotive repair and vehicle wash codes in 2002 and 2003 a number of issues had emerged indicating that updates and modifications of the codes were necessary. These modifications mainly concerned the treatment works specified under the codes of practice. As a result, options for clarification and modification of existing code requirements were discussed at a combined stakeholder meeting held in July 2003. The amended codes were distributed to stakeholders for review and comment in August 2003 prior to preparation of the final draft. The final effective date for the vehicle wash code was extended to 1 January 2005 to allow businesses time to plan and install the prescribed treatment works. Both amended codes were adopted by the Board in December 2003.

Although these codes do not come into full effect until January 2004 and January 2005 respectively, site inspections commenced in March and April 2003 in order to establish baseline compliance levels.

Ten per cent of operations in the automotive repair sector were inspected in 2003. Only 24% of these operations were in full compliance with the code. The main compliance issue was failure to maintain the required oil-water separator. Many operations in this sector indicated they were intending to use off-site waste management (or operation as a "dry shop") to comply once the code was in effect.

Only 4% of known vehicle wash operations were inspected in 2003 and 13% of these were in full compliance with the code. Failure to maintain the required vehicle wash interceptor was the main compliance issue in this sector.

The low compliance levels for both sectors are expected to improve substantially once the amended codes become fully effective and further inspection and outreach initiatives are undertaken in 2004.

Carpet Cleaning

The *Code of Practice for Carpet Cleaning Operations* was adopted in December 2002 and became fully effective in July 2003. Letters were sent out to all known sector operations in February reminding them to register under the code. A workshop to introduce the code to this sector was hosted by the CRD in May 2003. A guidebook summarizing code requirements and best management practices was completed in October and distributed in March 2004.

This code of practice did not come into full effect until 1 July 2003. Consequently, site inspections did not commence until August. Ten per cent of the sector had been inspected by the end of 2003. Early inspection results indicated that about 50% of the sector was in full compliance. Failure to have the required solids removal equipment and failure to carry out equipment checks were the main compliance issues for the carpet cleaning sector.

Fermentation

The *Code of Practice for Fermentation Operations* was adopted in December 2002 and became fully effective in July 2003. Registration information was mailed out to all known fermentation operations in February 2003. A guidebook summarizing code requirements and best management practices was completed in March and distributed in April 2003.

Site inspections for this sector were initiated in July, following the date that the code became fully effective. Only 8% of the sector was inspected by the end of 2003 however results showed that all operations inspected were in full compliance with the code. Increased inspection of this sector in 2004 will provide more representative compliance data.

Printing

The *Code of Practice for Printing Operations* was adopted in December 2002 and became fully effective in January 2003 for new or renovated operations and will be effective for existing operations in January 2005. Registration information was mailed out to all known printing operations in February 2003. A guidebook summarizing code requirements and best management practices was completed in May and distributed in July 2003.

Since the printing code will not be in full effect until 2005, only two site inspections were carried out at printing operations in 2003. Both these operations were found to be in full compliance with the code. Increased inspection of this sector in 2004 will provide more representative baseline compliance data.

Laboratory

A laboratory sector task force, consisting of representatives from commercial and institutional laboratories, was initiated in October 2002. Following four meetings, a draft code of practice prepared by the task force was distributed to 60 laboratories, institutions and municipal engineering staff for information and comment in June 2003. Two further task force meetings were held to address stakeholder concerns, and the final draft code was endorsed in August 2003 for adoption under the Sewer Use Bylaw.

The *Code of Practice for Laboratory Operations* was adopted in December 2003 and became fully effective in January 2004. Registration reminders were sent out to all known operations in December following code adoption. Site inspections for this sector are expected to commence in July 2004. A guidebook summarizing code requirements and best management practices will be developed and distributed in 2004.

Recreation Facility

A task force made up of operators of local recreation facilities and municipal engineering staff was formed in October 2002. The task force addressed both sanitary sewage and stormwater issues for this sector simultaneously. Draft codes of practice for sanitary and storm sewers were prepared following four task force meetings. The sanitary sewer code was endorsed by the task force for adoption under the Sewer Use Bylaw. The draft codes were distributed to 30 stakeholders (recreation facilities and municipal engineering staff) for information and comment in May 2003.

The *Code of Practice for Recreation Facility Operations* (for sanitary sewer discharges) was adopted in December 2003 and became fully effective in January 2004. Registration reminders were sent out to all

known operations in December following code adoption. Site inspections for this sector are expected to commence by mid 2004. A guidebook summarizing code requirements and best management practices was completed and distributed in March 2004.

The draft model storm sewer code for recreation facilities is dependent on obtaining concurrent authority for municipalities under the Community Charter and will be brought forward for consideration once this issue is resolved.

Additional Sector Investigations

Several additional business sectors were investigated in 2003 regarding the need for a code of practice to regulate their sanitary sewer discharges. These sectors included: funeral homes, pest control operations, laundromats and hotels/motels.

There were only four funeral homes operating within the district. These facilities were issued letters of authorization in 2003 containing specific requirements for discharge to sewer.

Investigations into several local pest control operations revealed that this sector was subject to stringent federal and provincial regulations regarding the use and disposal of unused products and wastes. The provincial *Pesticide Control Act and Regulation* prohibits disposal of pesticides in the sanitary sewer, requires permits for all pesticide vendors and applicators, requires annual compliance inspections and sets standards for training and certification. The province's Integrated Pest Management program provides information and guidance to businesses, applicators and the public regarding the correct use and disposal of pesticides and minimization of environmental impacts. In view of the small number (18) of operations within the district, the degree of existing regulation for this sector and the extremely low levels of pesticides detected in CRD sewage effluent, further regulation of this sector was not considered necessary.

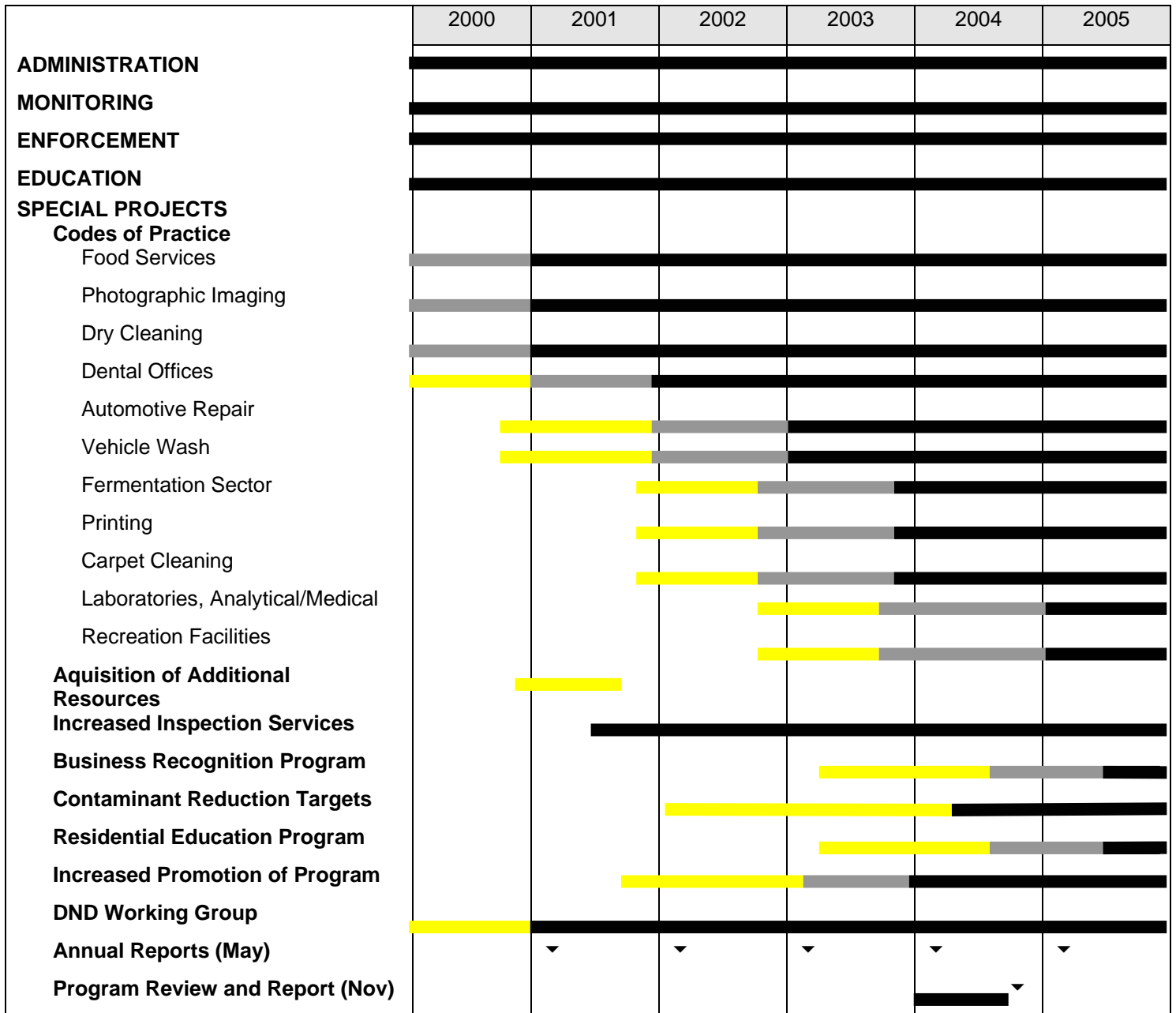
There were 20 laundromat operations identified within the CRD. On investigation, it was found that these operations discharged largely uncontaminated wastewater with characteristics similar to domestic waste. Due to the potential for contamination to be introduced through misuse of these facilities, letters of authorization containing specific discharge requirements were issued to all operations connected to CRD sewers in 2003.

In 2003, CRD staff completed a survey of liquid waste management practices within the hotel and motel sector. The survey indicated that significant numbers of hotels and motels operated laundry facilities to clean laundry generated on-site and many operated swimming pools or hot tubs. The wastewater from these facilities was generally discharged to sanitary sewer. A letter was sent out to 90 hotels and motels in the CRD advising operators of best management practices for laundry and pool/hot tub wastewater.

Investigations into restaurant hood cleaning practices and the painting and coatings sector were launched in late 2003. These investigations are expected to be completed in 2004.

Figure 1 shows that the implementation plan for RSCP codes of practice has been completed on schedule.

Figure 1 Regional Source Control Program - Implementation Plan (Enhanced Program)



Key: development
 Implementation
 ongoing program

RSCP Database

In 2000, RSCP staff developed the framework for a database to track business registration, self-assessment, inspection, compliance and other information associated with the management of codes of practice. This database was further modified in 2003 and currently stores information on all operations identified within the 11 existing code sectors. Verification of business information through registration and inspection is ongoing. Specialized software was developed to use personal digital assistants (PDAs) as inspection tools to allow for remote information searches and automated upload of code of practice inspection information. The database was expanded to include storage of waste discharge permit, authorization and enforcement data in 2003 and was enhanced to allow access for multiple users at one time.

3.1.6 Monitoring

All wastewater samples collected in 2003 were analyzed by a contract laboratory using standard analytical procedures specified in the RSCP Sampling and Analysis Procedure Manual. An analytical result reporting procedure was developed in 1999 to ensure that environmental officers and permit managers were provided with properly checked analytical data. RSCP staff carried out the following types of monitoring in 2003.

Permit Compliance Monitoring

Businesses operating under waste discharge permits are required to carry out self-monitoring of their wastewater for a range of parameters on a specified regular basis. These data are normally submitted to the RSCP on a monthly or quarterly basis for compliance assessment. An important component of the RSCP is the collection and analysis of audit samples from each permitted site two times per year. This is done to verify compliance and confirm that the self-monitoring data being submitted are representative of discharges from each permitted site. RSCP staff normally collects these samples throughout the year on a random basis, without prior notification of the event being given to the permittee. Additional sampling events are carried out, as necessary, on suspected problem discharges from permitted sites.

The environmental officer responsible for managing a specific permit checks the data and compares contaminant loads calculated using the two most recent audit sampling results with the corresponding loads calculated using the previous 12 self-monitoring results from that site. This comparison is carried out using a non-parametric statistical test to determine if a significant difference exists between the two data sets at the 95% confidence level. If a significant difference is detected, the permittee is contacted and an investigation into the discrepancy is initiated.

All audit results obtained in 2003 were not significantly different from self-monitoring results reported from the same site. This indicated that the self-monitoring results being submitted by permittees had been collected and analyzed in an appropriate manner, as required by each permit.

Since RSCP audit monitoring is carried out in accordance with strict quality assurance procedures, it provides reliable information when calculating characteristic contaminant levels or loads for a particular industry or business type. This information is useful in calculating contaminant mass balances for specified collection areas.

Code of Practice Monitoring

Another type of compliance monitoring undertaken by RSCP staff is code of practice monitoring. This monitoring began in 1999 during development of the first three codes of practice. Businesses operating under codes are not normally required to sample their wastewater and report results to the RSCP.

Compliance with a code is usually achieved by installing required treatment works, carrying out regular maintenance and keeping records. Exceedence of contaminant limits specified in a code can indicate failure of a treatment works or lack of proper maintenance.

RSCP staff carries out code of practice monitoring for a limited number of parameters at up to 5% of discharging operations in each code sector per year. Investigations or enforcement actions may follow receipt of results that are above specified contaminant limits.

Code of practice monitoring results are also useful in characterizing the typical waste stream of an operation within a code sector. This information can be used in mass balance calculations and also for identifying contaminants of concern in new code sectors.

In 2003, code of practice sampling again focussed on the food services sector (29 samples). In addition, samples were taken at vehicle wash operations (13), recreation facilities (three), photo imaging operations (three), dental operations, (two), dry cleaners (two) and a printing operation.

The food services sector samples were useful in determining the range of oil and grease levels achievable in effluent from grease interceptors that were sized according to the code. Samples were also taken from sites where interceptors were undersized or absent. Although the effluent from properly sized grease interceptors contained significantly lower levels of oil and grease in all cases, the oil and grease limit of 100 mg/L was not consistently met. This information was used to support the removal of the discharge limit from the code in February 2003 (see Section 3.1.4 - Food Services). Sampling of effluent from grease interceptors within the food services sector continued in 2003 to assist in determining the feasibility of an oil and grease limit for new food services operations. All results were reviewed in early 2004. This review confirmed that regular grease interceptor maintenance was an important factor in reducing oil and grease discharge concentrations.

The vehicle wash sampling was carried out as part of an investigation into the sector prior to considering amendments to the code of practice. The results showed two exceedences of the Sewer Use Bylaw limits for total suspended solids. The information obtained helped to rationalize the changes to treatment works specifications that became part of the amended code of practice for vehicle wash operations adopted in December 2003.

For the other sectors sampled in 2003, almost all results showed compliance with code limits and/or restricted waste limits. This indicated that the treatment works installed at the sampled sites were operating correctly and that proper operating practices were being used to minimize the discharge of contaminants. The single exception to the above was that one of two dry cleaning samples collected in 2003 showed a level of tetrachloroethene in excess of the discharge limit contained in the code. This result is currently under investigation.

Key Manhole Monitoring

Key manhole monitoring is carried out to monitor for potential contaminants originating from sources within a wide collection area. One example is residential (or domestic) key manhole sampling which has been carried out since 1996. This sampling has provided information on background levels of typical contaminants found in residential wastewater and data have been used to predict contaminant loads from domestic sources for use in mass balance calculations.

The 2003 residential sampling program included two sampling events at the Vantreight and Harling Point stations, once in April and once in September. In order to identify sources of priority contaminants, both events included sampling for: conventional parameters, metals, cyanides, polycyclic aromatic hydrocarbons (PAHs), phenols, volatile organic compounds (VOCs) pesticides and phthalates. None of the samples contained concentrations of contaminants above restricted waste limits during both events. In April, there were no pesticides or phthalates and only low concentrations of a limited number of PAHs, metals, phenols, and VOCs detected in samples collected at Harling Point. Samples from Vantreight had similar levels of contaminants except that no PAHs and fewer VOCs were detected. The September samples from both sites contained no pesticides and only very low levels of a limited number of PAHs, metals, phthalates and VOCs. Low concentrations of phenols were detected in the Vantreight sample only.

Key manhole sampling was also carried out in 2003 at the Esquimalt pump station, serving the DND Dockyard area (sampled in April). This year's results showed chloride, sulphide and copper concentrations that exceeded Sewer Use Bylaw restricted waste criteria. DND staff is currently investigating the possible reasons for these findings.

In March 2003, RSCP staff collected composite and grab samples of wastewater, including wastes from domestic and non-domestic sources, discharged from the Victoria General Hospital. The samples were analysed for conventional parameters, metals, phenols, PAHs and VOCs. The levels of contaminants were all found to be below the restricted waste criteria, however, slightly elevated levels of phenols and volatile aromatic hydrocarbons were detected in the effluent.

Key manhole monitoring will continue at a similar level at the DND Dockyard and Colwood pump stations in 2004 whereas monitoring at residential key manhole sites will increase. Additional sampling at hospitals and academic institutions is also planned for 2004 to provide information on current contaminant loads being discharged and to help determine the need for further regulation of these facilities.

Treatment Plant Influent Monitoring

Monthly influent sampling continued at the SPTP in 2003. Eight grab samples (for metals analysis) and four composites (for metals and priority pollutant analysis) were collected over the year.

Eight sludge samples (for metals analysis), and a single sample of influent (for priority pollutant analysis), were also collected from the Ganges sewage treatment plant for analysis in 2003.

The influent and sludge data are routinely entered into the ESIS database and are used to identify metals of concern, provide ongoing information on contaminant variability and loads to the treatment plants and provide input to mass balance calculations.

There will be a similar level of analysis at the SPTP and the Ganges plant in 2004.

3.2 Enforcement

The district has adopted a stepwise, cooperative approach to enforcement of the Sewer Use Bylaw, as outlined in the *Regional Source Control Program Enforcement Policy and Non-compliance List Criteria*. This enforcement policy classifies offences, outlines enforcement steps and includes use of cooperative measures, such as increased communication, education and monitoring to resolve issues of non-compliance. The policy was originally approved by the Board in February 1997 and was amended in February 2001 and January 2003. The latest amendment included new procedures for response to exceedences of waste discharge permit limits, additions to procedures for preparation and publication of the non-compliance list, reclassification of several code of practice offences and clarification and harmonization of levels of compliance and enforcement actions.

The new procedure for response to exceedences of waste discharge permit limits involves a full review of effluent data, existing and "industry standard" treatment works and current practices followed by an assessment of the impact of key contaminants on the sewer system, sewage treatment facilities and the receiving environment. The impact assessment includes a comparison of current conditions with a range of treatment options including industry standard works. The review aims at determining whether installation of industry standard works will achieve acceptable reductions in impact or whether another pre-treatment option will be required. Site-specific permit limits and reduction targets are set during this review process (see Section 3.3).

The CRD's Ticket Information Authorization Bylaw contains fines (tickets) that have been set for specific offences under the Sewer Use Bylaw and its associated codes of practice. This bylaw was last amended in August 2002 to include offences under the automotive repair and vehicle wash codes of practice.

Waste Discharge Permit Holders

Enforcement activities are directed at ensuring or restoring discharger compliance with the terms and conditions of the Sewer Use Bylaw and waste discharge permits. Enforcement action is applied in an escalating manner that is reasonable, fair, consistent and impartial. Warnings, tickets, orders and fines are issued, as necessary, in cases of continuing non-compliance.

Of the 33 active waste discharge permits in place at the end of 2004, 15 sites were in "full compliance" with their permits and the Sewer Use Bylaw. Three sites were listed at Step 1, five at Step 2 and five at Step 3 of the enforcement policy. These 13 sites are considered to be "in progress", but still in compliance with their permits, under the enforcement policy. At Step 3, a significant escalation of enforcement action occurs, including notification of compliance status by letter, increased inspection frequency and scheduling of meetings to discuss remedial actions. Commitments and requirements agreed to at these meetings are confirmed in a follow-up letter to the permittee. Further non-compliance incidents can result in elevation of Step 3 sites to discharger under review (DUR) status. Dischargers at the DUR level or above are considered to be non-compliant with their permits.

Five of the 33 sites operating under waste discharge permits were classified as DUR at the end of 2003. This is the final enforcement step prior to placement of the operation on a published non-compliance list. Operations having DUR status must prepare and submit a detailed compliance plan for approval by the deputy sewage control manager. A 90-day period is allowed for the preparation of this plan. This period of time allows for a discharger to hire a consultant to help determine appropriate actions to achieve compliance. Progress meetings are held with the discharger after 30 and 60 days to measure progress, fully communicate the intent of any requirements and clarify any outstanding issues. A compliance plan, once approved by the deputy sewage control manager, becomes a compliance program that usually forms part of the discharger's waste discharge permit through an amendment.

If no acceptable compliance plan is received within the 90-day period, an order is issued under the *Waste Management Act* to set conditions for discharge. Failure to provide an acceptable plan will also result in placement of the discharger on a published non-compliance list.

Three businesses were identified in 2003 as being DUR due to past or continuing, exceedences of permit limits. These included an industrial laundry (# 1), a food commissary and a dairy product manufacturer.

The industrial laundry had achieved significant contaminant reductions since permit issuance through installation of treatment works (see Appendix 1) however, effluent contaminants periodically exceeded permit limits in 2002. This facility implemented modifications to its operating procedures in 2003 that have significantly improved effluent quality.

The food commissary became a DUR in December 2003 due to exceedences of permit discharge limits and is currently preparing a compliance plan.

The dairy product manufacturer had reported increasing loads of contaminants over the period 1998 - 2001 (see Appendix 1) despite introducing waste management procedures at the site. This facility has been a DUR since August 1998. Current contaminant loads can not be accurately determined as flow monitoring errors have been reported and a full water use audit has yet to be completed. A compliance plan is in preparation and must be submitted to the CRD by 30 June 2004. Treatment works and waste reduction procedures must be in place and operating by 30 June 2005.

One permit holder (industrial laundry # 2), originally designated a DUR through failure to submit reports in 2002, submitted a request for mediation of a decision made by the deputy sewage control manager following the procedure outlined in the *Sewer Use Bylaw Process of Review*. This issue was resolved at a mediation meeting in January 2003. However, failure to report a bypass of treatment works in June 2003, resulted in this business again being listed as a DUR.

Another business (industrial laundry # 3) was also listed as a DUR through failure to submit complete reports in 2003.

No dischargers were placed on the non-compliance list in 2003. In addition, no tickets, orders or charges were laid against waste discharge permit holders under the Sewer Use Bylaw during this period.

The above waste discharge permit compliance levels (85% in “full compliance” or “in progress”) indicated that there had been a significant improvement over the situation at the end of 2002 (70%).

Operations Regulated by Codes of Practice

The stepwise cooperative approach to achieve compliance is applied to all code of practice sectors in a similar way to dischargers operating under permits or authorizations, as outlined in the enforcement policy. Dischargers are classified as being in “full compliance” if they have been inspected and no unsatisfactory issues are identified. Dischargers having committed offences up to, and including, Step 3 are classified as being “in progress” and those at the DUR level and above are classified as being in “non-compliance” with the code. A summary of the code of practice enforcement results for 2003 is presented in Table 6.

Table 6. Code of Practice Enforcement Summary – 2003

Code of Practice	# Findings ¹ (2003)	% Full Compliance ²	% In Progress ³	% Non-Compliance ⁴ (DUR)
Food Services	177	43	45	12
Dry Cleaning	2	0	100	0
Photo Imaging	9	67	33	0
Dental	23	61	39	0
Carpet Cleaning ⁵	6	50	50	0
Fermentation ⁵	3	100	0	0
Auto Repair ⁶	21	24	76	0
Vehicle Wash ⁷	8	13	88	0
Printing ⁷	2	100	0	0

Notes:

1. Number of available records indicating compliance status at the end of 2003
2. Percentage of operations in compliance with all requirements of the code in 2003 – includes sites using off-site waste management
3. Percentage of operations classified at Step 1, 2 or 3 of the enforcement policy in 2003
4. Percentage of operations classified as discharger under review or on the non-compliance list in 2003
5. Code not fully effective until July 2003
6. Code not fully effective until January 2004
7. Code not fully effective until January 2005

Most code of practice enforcement actions to date have been associated with implementation of the food services code, which regulates one of the largest business sectors in the district. In general, there has been good cooperation from this sector during application of the escalating approach to enforcement. Some individuals have been upset by the requirements and some have attempted to ignore them, however, the vast majority has cooperated with inspection staff. Most businesses have complied after deficiencies were explained.

A high percentage of non-compliant food services businesses needed additional follow-up, resulting in 195 secondary inspections by RSCP staff. As a result, approximately 45% of food services operations inspected were considered to be “in progress” and 12% were classified as DUR at the end of 2003. Most

of the latter operations resolved, or were working towards resolving, outstanding problems however six businesses failed to install properly-sized grease interceptors in a timely manner and were subsequently put on the RSCP non-compliance list.

All other code of practice sectors, except fermentation and printing, had some enforcement issues that were considered to be in progress, however no businesses in these sectors had been classified as DUR by the end of 2003. The fermentation and printing sectors were fully compliant, based on a small number of enforcement findings.

In addition to the above enforcement action by RSCP staff, there were 49 enforcement investigations involving CRD Bylaw Enforcement staff in 2003. As a result of these investigations, 29 food services businesses were served a total of 41 tickets under the CRD's Ticket Information Authorization Bylaw in 2003. The main offences were: failure to install a grease interceptor, failure to install a properly sized interceptor, failure to connect fixtures to a grease interceptor and accumulation of excessive oil and grease. RSCP staff worked closely with CRD Bylaw Enforcement staff in carrying out these enforcement actions.

Operations Regulated by Authorization

Although several inspections were carried out at sites operating under authorizations in 2003, no enforcement actions were required. The enforcement policy amendments in early 2003 included harmonization of actions for operations under authorizations with those for permit holders and code of practice operations. This will aid in the delivery of a consistent enforcement approach to all regulated dischargers in 2004.

3.3 Contaminant Reduction Targets

The Core Area LWMP contains a commitment to develop "contaminant reduction targets" for existing and future waste discharge permit holders and code of practice sectors. Since the RSCP's jurisdiction extends beyond the core area, staff was requested to develop contaminant reduction targets that would be applicable in all participating sewage collection areas within the CRD.

Waste Discharge Permit Targets

The contaminant reduction targets established for waste discharge permit holders are generally considered to be the individual permit discharge concentration limits that are established either during the initial permitting process or during permit review.

Many permit holders have consistently met their permit discharge concentration limits since their permit was issued through application of good operating procedures. Other sites have met their target concentration limits following installation of treatment works and/or adoption of good operating procedures or pollution prevention measures. At the end of 2003, 55% of permitted sites were meeting their target concentration limits and a further 36% were in progress toward meeting their targets.

There have been significant contaminant load reductions over the years as a result of permitted sites implementing changes to meet their concentration limit targets (see Appendix 1).

The individual reduction targets established for each permittee will be tracked through ongoing analysis and evaluation of monthly self-monitoring data (reported quarterly) and CRD audit data (collected twice per year). Contaminant load reductions achieved, target tracking results, new targets set and any target refinements necessary will be reported in the annual report for 2004.

Code of Practice Targets

Contaminant reduction targets have been prepared for each of the 11 existing codes of practice. The general procedure for determining and tracking targets has been documented in previous annual reports.

Contaminant reduction estimates for applicable sectors in 2003 and sector five-year reduction targets are summarized in Table 7.

Information obtained through site inspections between 2001 and 2003 indicates that three fully-implemented code sectors are currently on track towards meeting their contaminant reduction targets – the dental, food services and photo-imaging sectors.

Target development for the laboratory code of practice presented some new challenges in 2003. A wide range of prohibited and restricted wastes have been targeted for reduction under this code. Consequently, there is a wide range of treatment works with varying reduction efficiencies that can be used by laboratory operations to reduce waste loads and meet code requirements. Although off-site waste management will likely be the main method of choice in meeting the requirements, many laboratories will choose to treat some of their wastes on-site (using site-specific techniques) and dispose of residuals off-site. Due to the complexity of the many treatment scenarios and waste streams within this sector, and the lack of baseline contaminant loading data, the general procedure for determining reduction targets could not be used. Reduction targets for the laboratory sector were based solely on predicted compliance levels over a five-year period following code adoption.

Table 7. Contaminant Reduction Estimates and Targets for Sectors Operating Under CRD Codes of Practice

Code Sector	Baseline Year	Target Year	Contaminant(s)	Current % Reduction (2003)	Target % Reduction
Dental	2000	2005	Mercury, Copper, Zinc, Silver	83	86
Food Services	2002	2007	Oil and Grease	47	77
Dry Cleaning*	2003	2008	Tetrachloroethylene (PERC)	*	>99
Photo Imaging	2000	2005	Silver	60	86
Automotive Repair	2003	2008	Mineral Oil and Grease Copper, Lead, Nickel, Zinc	**	90 60
Vehicle Wash	2004	2009	Mineral Oil and Grease Copper, Lead, Nickel, Zinc	**	90 30
Carpet Cleaning	2002	2007	Suspended Solids	**	57
Fermentation	2002	2007	Suspended Solids	**	84
Printing	2004	2009	Mineral Oil and Grease BETX	***	88
Recreation Facilities	2003	2008	Suspended Solids	**	81
Laboratories	2003	2008	Wide range of restricted and prohibited wastes	**	95****

Notes: * First reduction estimate for the amended dry cleaning code will be available in 2004
 ** First reduction estimates for these sectors will be available in 2004
 *** First reduction estimates for this sector will be available in 2005
 **** Based on predicted compliance levels only

3.4 Education and Outreach

RSCP education and outreach activities undertaken in 2003 were carried out with the support of the Environmental Education division. A new Web site for the CRD Environmental Services department was completed and launched in November 2003. This Web site contains sub-pages on the RSCP which provide an overview of program goals, regulatory requirements, monitoring and outreach initiatives, and links to other CRD programs.

Business Education

RSCP business education activities throughout 2003 largely focussed on the nine existing code of practice sectors. Guidebooks providing regulatory information and best management practices for the fermentation and printing sectors were developed and distributed to sector members in April and July 2003 respectively. These new guidebooks, along with guidebooks for existing codes, became accessible through the CRD's Web site in 2003. A guidebook for carpet cleaning operations was completed in October 2003 for distribution in 2004.

Code of practice summary brochures, including regulatory information, best management practices and educational posters, were produced for the fermentation sector in 2003 for direct mail-out or handout at workshops and special events. The fermentation code of practice information was separated into two categories wine and beer production. Two distinct posters were developed for this sector in 2003 for distribution in 2004.

Increased effort was put into education initiatives within the automotive sector in 2003, due to the impending deadline of January 2004 for installation of oil-water separators. Key education initiatives for the automotive sector in 2003 included:

- May 6 and 22: Automotive repair and vehicle wash codes of practice workshop (third and fourth workshops since adoption of codes)

- July: Automotive repair and vehicle wash sector task force meeting to discuss amendments to the vehicle wash treatment works requirements

- July: Meeting with Victoria and British Columbia Automotive Dealership Association executives regarding the impact of codes of practice on dealerships

- July: Presentation to general members of the Victoria Automotive Dealership Association

- October: Advertisement in the Times Colonist newspaper regarding the planned adoption of amendments to the automotive repair and vehicle wash codes of practice. The advertisement included a summary of the requirements and deadlines

- December: Direct mail-out to all known discharging operations regarding the new amendments to the automotive repair and vehicle wash codes of practice

Code of practice education and outreach initiatives will continue in 2004 as the new codes are implemented and existing codes are amended.

New initiatives include the development of code of practice and best management practice bulletins. Direct mail-out was determined to be an effective method of communicating common compliance issues within a business sector. Bulletin formats and general styles were developed and evaluated in 2003 for distribution in 2004. The first four target sectors for the distribution of bulletins are dry cleaning, vehicle wash, automotive repair and laboratory operations.

In November 2003, achievement awards were presented to five local businesses operating under the RSCP as part of the fourth annual Eco-star Community Environmental awards evening. Awards were presented to one waste discharge permit holder and four code of practice sector businesses that had excellent compliance records in 2003. The awards and recipients are listed in Table 8 below. RSCP staff assisted in the hosting of this successful awards evening. The CRD Board chair presented the source control awards.

Residential Education

Production of five "multi-play" one-minute videos, containing general information on the RSCP and best management practices for both businesses and households, was completed in 2003. This was a cooperative initiative involving RSCP staff, City Green and the Georgia Strait Alliance. The video clips were aired on local community television early in 2003.

Table 8. RSCP Eco-Star Awards – 2003

Award	Recipient
Permittee Award	BC Hydro and Power Authority
Food Services Code of Practice Award	Jana's Bake Shop
	Dunsmuir Lodge
Photographic Imaging Code of Practice Award	London Drugs – Saanich Centre
Fermentation Code of Practice Award	The Other Beer Store

In February 2003, a four-page coloured advertisement ("*Sewer Smart #2*") covering the goals and objectives of the RSCP with a focus on household best waste management practices was distributed to residents and businesses within the district. Over 100,000 copies were produced and delivered through the News Group. The advertisement was designed and written primarily for the residents of the CRD. The format and writing style reflected the findings of the survey titled *Environmental Services – 2002 Residential Survey* (R.A. Malatest and Associates Ltd., 2002). *Sewer Smart #2* was written with as little technical jargon as possible and focussed on raising awareness of environmental impacts, perception of "social norms" and saving money. Based on comments received at two public events (see "Home Shows" below), the advertisement was successful in conveying the source control message.

Home Show events were selected as venues for residential outreach because of the expected diversity of age, background and experience within the audience. The first RSCP participation in a Home Show was in February 2003, in coordination with the launch of *Sewer Smart #2*. The general RSCP display was used for this event. Although the display booth was well attended and RSCP staff received positive feedback on *Sewer Smart #2*, the display lacked recognition for both the program and its goals. Based on comments received, a separate RSCP residential display was developed in 2003. The display used the basic format from the *Sewer Smart #2* advertisement and included an interactive "hands-on" component as well as hand-out cards with "environmental tips". The cards contained resource information and recipes for economical, easily prepared household cleaners and disinfectants that have a low environmental impact. The RSCP residential display package was used for the November Fall Home Show. This event attracted nearly three times the audience (424) than the previous Home Show (159).

3.5 Special Projects

Special projects undertaken by the RSCP are specifically designed to provide information on sources, types and loads of chemical contaminants and other information to support bylaw amendments, code of practice development, staff reports, municipal communications or LWMP development.

Special projects on-going, initiated or completed in 2003 included:

- CRD Core LWMP Trigger Process Alternatives analysis and identification of contaminants of concern participation in an Association of Metropolitan Sewerage Agencies (AMSA) work group on mercury control
- monthly sampling for low level mercury in SPTP influent and effluent as part of an AMSA study initiated in July 2003
- completion of source control component of a SPTP benchmarking exercise in January and November 2003
- completion of a review of a discussion paper on the BC Special Waste Regulation in May 2003
- participation in quarterly DND/CRD working group on liquid waste pollution prevention meetings - included visits to industrial facilities on base, open exchange of liquid waste information and monitoring data, discussion of odour and corrosion control and oily wastewater treatment concerns

Special projects planned or ongoing for 2004 include:

- trend analysis for priority contaminants in Clover and Macaulay point effluent (1996 – 2003)
- source control priorities and options for the Core LWMP early indication process
- participation in the Association of Metropolitan Sewerage Agencies (AMSA) work group on mercury
- monthly sampling for low level mercury in SPTP influent and effluent
- participation in DND/CRD working group on liquid waste pollution prevention meetings (quarterly)

3.6 Program Revenue and Expenditures

A summary of revenue and expenditures for the RSCP in 2004 is provided in Table 9.

A portion of program revenue is provided through the imposition of fees and charges on businesses and institutions under the Source Control Local Service Establishment Bylaw. The total waste discharge permit fees, code of practice fees and tickets collected in 2003 amounted to approximately \$110,000.

Table 9. Regional Source Control Program Revenue and Expenditures - 2004

Description	Revenue (\$)	Expenditures (\$)	
Fees, fines, grants, surplus, other	164,274		
Requisition	876,660		
Total Program Revenue	1,040,934		
Program Expenditures		985,847	
Administration Expenditures		23,528	
Total Program Expenditures		1,009,375	
Carry Forward to 2003			31,559

Waste Discharge Permit Fees

The RSCP waste discharge permit fee structure was developed in consultation with stakeholders to reflect the size and impact of the discharge from each business type. The fee structure is outlined in the Sewer Use Bylaw and the RSCP fees and charges policy governs the administration of the fees. In addition to a fixed annual administration fee, permittees pay discharge fees in proportion to the loads of specific contaminants discharged, based on their own self-monitoring results. Permit application and amendment fees are also charged in order to offset administrative costs.

Code of Practice Fees

The Board, at the meeting of 10 May 2000, approved a proposal for funding the implementation of codes of practice. This proposal established a schedule by which businesses within sectors operating under existing and future codes of practice must complete and submit self-assessment forms and/or successfully pass inspections to confirm that they are not discharging contaminants. Failure to submit a self-assessment form or to pass an inspection would result in an annual user fee of \$500 being charged by the district. A fee structure and schedule based on this proposal was adopted, with other amendments to the Sewer Use Bylaw, in November 2000. The RSCP fees and charges policy was subsequently amended to include administration of the fee.

As indicated in Section 3.1.5, the self-assessment process was removed from the Sewer Use Bylaw in June 2003. The \$500 fee for failure to have the required treatment works in place, remained in effect.

3.7 Program Planning, Management and Administration

The following is a summary of the main achievements related to the management, planning and administration of the RSCP in 2003.

RSCP policies for enforcement, administration of fees and process of review were approved by the Board in January 2003.

The Board approved an amendment to the Code of Practice for Food Services operations to remove the discharge limit for oil and grease (amendment Bylaw 3046) and adoption of a new management policy for food services operations in February 2003.

An update on Source Control activities on the Saanich Peninsula was presented to the Saanich Peninsula Wastewater committee in March 2003.

The program is currently meeting the commitments and schedules outlined in the Core Area and Saanich Peninsula Liquid Waste Management plans. The RSCP annual report for 2002 was presented to the Environment committee and Board in May 2003 as scheduled and a copy was sent to the Ministry of Water, Land and Air Protection later that month. A full assessment and review of the program is scheduled for 2004.

In June 2003 the Board approved the removal of the code of practice self-assessment process through amendment Bylaw 3075.

The Sewer Use Bylaw was consolidated in December 2003 (through amendment Bylaw 3105) to include the adoption of new codes of practice for Recreation Facility and Laboratory Operations and amendments to the Dry Cleaning, Automotive Repair and Vehicle Wash codes of practice.

Appendix 1

Summary of Contaminant Load Reductions Achieved by Waste Discharge Permit Holders

Permit Holder	Baseline Year	Comparison Year	Priority Contaminants	Load Reduction (%)	Comments
Seafood Processor #1	1997	2001 - 2002	COD	93	Screens installed in 2000, improved operating practices. Eco-Star award winner in 2002.
			O&G	92	
			TSS	87	
Groundwater Remediation Site	1991	2002	COD	74	Filtration, neutralization, flocculation, carbon adsorption installed in 1992, additional carbon adsorption in 1996. Eco-Star award winner in 2003.
			TSS	91	
			BETX	>99	
			PAH	>99	
			Metals	30 - >99	
Metal Plater #1	1998	2000	Copper	69	Improved operating practices in 1999.
			Nickel	47	
Metal Plater #2	1997	2000	Cadmium	43	Improved operating practices in 1998.
			Chromium	76	
			Copper	32	
Metal Plater #3	2000	2001	Cadmium	83	Oil-water separation, flocculation/filtration installed in 2001.
			Chromium	82	
Electronic Component Manufacturer	2000	2001	COD	47	Flocculation/filtration system installed in mid 2000. Eco-Star award winner in 2001.
			TSS	89	
			Metals	43 - >99	
Septage Disposal Facility	1991	2002	BOD	96	De-watering equipment and dissolved air flotation installed 1999. Bio-reactor added in 2001.
			TSS	99	
			O&G	>99	
			MOG	>99	
			Metals	85 - >99	
Transportation Facility #2	1998	1999	COD	33	Dissolved air flotation unit installed in 1999.
			MOG	39	
			Lead	61	
			PAH	58	
Chemical Manufacturer	1997	2002	pH	in control	Installed pH control works in 1998.
Gasoline Station Remediations	2002	2002	TSS	98 - 99	Data represents results from two typical sites in 2002 with bag and carbon filters installed.
			BETX	32 - 97	
			MOG	75	
			Lead	81 - 85	
Street Waste Facility #1	2001	2002	TSS	92	Filtration and oil-water separator.
			MOG	91	
			Metals	75 - 94	
Street Waste Facility #2	2001	2002	TSS	98	Filtration and oil-water separator.
			MOG	97	
			Metals	61 - 96	
			MOG	89	

Permit Holder	Baseline Year	Comparison Year	Priority Contaminants	Load Reduction (%)	Comments
Chocolate Manufacturer	2000	2003	BOD/COD	50/63	Grease interceptor installed 2001, permit under review. pH control works installed 2003. Permit amended November 2003.
			TSS	75	
			O&G	81	
Industrial Laundry #1	1997	2003	BOD/COD	56/55	Shaker screen and oil skimmer installed 1999. Currently DUR for exceedences. Operating procedure modifications in 2003 improved effluent quality.
			TSS	62	
			O&G	76	
			MOG	92	
Industrial Laundry #2	1997	2003	BOD/COD	64/46	Shaker screen installed 1999. Meeting permit limits. Currently DUR for bypassing treatment works in 2003.
			TSS	49	
			O&G	69	
			MOG	98	
Industrial Laundry #3					Permit issued in August 2002. No treatment required. Currently DUR for incomplete reporting.
Dairy Product Manufacturer	1998	2001	BOD/COD	-18 / -35	No treatment installed, loads increasing. Currently DUR for exceedences. Compliance plan in preparation.
			TSS	- 52	
			O&G	- 58	
			pH		
Brewery #2	1998 - 1999	2003	BOD/COD	60/59	No treatment installed. Solids removal plan and improved waste reduction practices implemented. Permit amended in April 2003.
			TSS	68	
Oily Wastewater Treatment Facility	2002	2002	MOG	>99	Filtration, primary separation, centrifugation, neutralization, oxidation and activated carbon adsorption. Permit amended April 2003.
Meat Processor	1996 - 1997	2003	BOD/COD	91/89	Grease interceptor installed, operating practices changed, permit amended 2003.
			TSS	94	
			O&G	97	
Food Commissary					Grease interceptor installed. Permit issued August 2002. Currently DUR for exceedences. Compliance plan in preparation.
Seafood Processor#2	1997	2002	BOD/COD	28/21	Screens and sump installed 1999, new screens in 2003. Permit amended October 2003.
			TSS	75	
			O&G	90	

Note: BOD = biochemical oxygen demand; COD = chemical oxygen demand; O&G = oil and grease; TSS = total suspended solids; BETX = benzene, ethylbenzene, toluene, xylene; PAH = polycyclic aromatic hydrocarbons; MOG = mineral oil and grease; pH = acidity or basicity

