FRASER RIVER ACTION PLAN

Fraser Point Source Inventory

User's Manual

Canada

Environment Canada

Environnement Canada

FRASER POINT SOURCE INVENTORY
Version 3.0

USER'S MANUAL

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Disclaimer

This publication contains the results of a project conducted under contract to Environment Canada. The ideas expressed herein do not necessarily state or reflect those of Environment Canada.

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1.0 Introduction

The pollution abatement component of the Fraser River Action Plan, an initiative under Canada's Green Plan, directs that action be taken to identify and control contaminants entering the Fraser River Basin from point and non-point effluent sources. The Fraser Point Source Inventory (FR_PSI) helps to address the need for a geo-referenced, personal computer-based inventory of wastewater sources in the Fraser River Basin.

Selective data from the B.C. Ministry of Environment, Lands and Parks WASTE permit management system and the Environment Canada Federal Facilities Environmental Activities Database (FFEAD) is contained in the FR_PSI database. This is supplemented by data from federal and provincial files, and from personal and telephone interviews. At the present time, only point-source site information and permit limits (not monitoring data) are included. Various reports can be performed on the data. These reports include summaries of loadings by sub-basin, region and SIC code. The data can also be exported to an ASCII file or DBF file for GIS mapping.

This database is written in FOXPRO 2.5. A mouse is optional but highly recommended. It will run on all 640K RAM IBM-compatible computers with a colour VGA monitor and a harddrive; however, the DOS-Extended version of the program will only run on 386 and 486 computers with more than 640K memory.

The information contained in this database represents a best effort to collect, compile and summarize the data available from many point sources of wastewater discharges in the Fraser River Basin. Any errors or omissions are not intentional.

The database is designed to be updated periodically by the Fraser Pollution Abatement Office as changes in permits occur.

Questions or comments regarding this database are welcomed and should be addressed to the Fraser Pollution Abatement Office at the following address:

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2.0 Background

The provincial WASTE management system is a single file (flat-file) VAX-based database that contains data on all the wastewater discharge permits that are administered by the Environmental Protection Division of the B.C. Ministry of Environment, Lands and Parks. There is a record in the WASTE database for each parameter that is regulated in each permit. The permit allowances are specified by parameter code, permit number, and "waste" (outfall) number. Permit allowances are specified as a maximum or typical discharge of a particular parameter. Flow rates are also specified for each outfall. These flow rates are specified as an additional parameter record for each unique combination of permit number and "waste" (outfall) number. The WASTE system database structure does not allow for easy calculation of loadings (because flow and discharge information are in separate records in the same file), also the calculation of loadings results in redundant information in the database (because it is a single file database). Another disadvantage to the system is that facilities that are regulated federally are generally not included in the provincial database unless they have a provincial permit.

Therefore, the need the FR_PSI database was recognized in order to provide a PC-based geo-referenced database to allow for flexibility in analysis and reporting of information on point sources of wastewater discharges in the Fraser River Basin. The FR_PSI database has a relational (i.e. multi-file) structure which ensures that redundant data is minimized. The site, flow (outfall), and permit allowance data is maintained in separate files (tables). This simplifies the calculation of parameter loadings. Data from Environment Canada's FFEAD database, supplemented by information provided by federal government departments, is also maintained in the database.

3.0 Installing the System

The system needs about 6 Megabytes of disk space, and also requires a setting of FILES=50 in the CONFIG.SYS file (see your resident computer expert about how to modify this setting)

Insert Fraser Installation Disk 1 into drive A. (If you are installing from another drive, adjust the instructions accordingly.) Type the following at the DOS prompt and press **Enter** after each line:

        A: (to switch to the disk drive)
        INSTALL   (to install the databases and program files)

Note: do NOT type *"A:INSTALL"* - the difference being that you need to press the **Enter** key after *"A:"* and once again after *"INSTALL"*.

Now just follow the screen prompts, placing the appropriate disk in drive A as directed.

4.0 Running the Program

Ensure that your mouse is functional by activating it explicitly before executing the program (the commands to access the mouse driver are sometimes put into the AUTOEXEC.BAT file). The program will run without the mouse but it will not be as simple to use.

       To run the program:

       Type **Fraser** and press the **Enter** button

At the password entry window, the user must enter his/her password. The user should note that the password checking program is case sensitive. The system will not recognize the password if the CAPS LOCK key is on!!!

HELP is available on most of the subsequent screens by pressing the **F1** key or by clicking on the <**Help**> push button.

4.1 Using the Mouse

Mouse operations are performed using the left mouse key. Window manipulation is performed very much like window manipulation in Microsoft Windows 3.x Windows can be moved by clicking on the top side of the frame and holding the left mouse button down while dragging the mouse. Windows are activated by clicking anywhere within a window (the colour of the window title changes when a window is activated). The window contents can be scrolled using the scroll bar indicators (on the right hand and bottom window frames) or resized by clicking and dragging on the lower right hand corner. Zooming to full-screen can be accomplished by clicking on the upper right hand corner of the window.

Push buttons are signified onscreen as words enclosed by angle brackets such as <**Save**> or << **Ok** >>. Radio buttons and check boxes are signified as ( ) and [ ], respectively. They can be activated using the mouse or the space bar key. Radio buttons allow for users to select only one option from several options (i.e. checking one option unchecks all other options - for an example select Reports from the main menu, then Simple Form Reports). Check boxes allow users to select multiple options (see the Federal Regulatory Instruments screen, which is located by first viewing a permit, and selecting Federal Instruments within the Site Information screen). A checkbox may also trigger the display of other windows (e.g. dialogue boxes) such as what occurs when the Federal Instruments checkbox is checked on the Site Information screen.

Popup lists can be activated by clicking anywhere within the popup box. A pop-up list allows the user to select one item from a list of entries (e.g. sub-basin field on the Site Information screen).

The menu bar (pulldown menu) at the top of the screen is activated by clicking the mouse on the desired option.

A light blue colour for a push button, window, or menu option means that it is temporarily disabled or inactive.

4.2 Using the Keyboard

Most mouse operations can also be accomplished with the keyboard. To cycle between windows press **Ctrl-F1** - this is especially helpful when browsing all three databases. The pulldown menus can be activated by typing **Alt** + the highlighted letter on the menu bar. The choices offered by the control window, located on the right side of the site and outfall screens, can be activated by typing **Ctrl** + the highlighted letter. Tab and Shift-Tab move the cursor to the next field and previous field on the screen, respectively. Keyboard shortcuts are sometimes indicated beside a menu option such as **"Delete - ^D"** (Ctrl-D).

4.3 System Security

The system security prevents unauthorized access to the database and is also used to monitor and record changes to the database. The changes are stored in a transaction log file. The date of last update and the user name of the person who updated the record are stored with each of the database files. A separate paper transaction log should also be maintained of all changes to the database. The paper transaction log is needed to reconstruct the database if a disk problem occurs and changes have been made to the database since the last time it was backed up.

Assigning different security levels to different users allows the system administrator to control the access to different database functions. Currently, there are 3 security levels for the database (9,7,5). The top security level allows a user unrestricted access to the database. The second level permits the user to do anything except add new users and modify passwords. The third level restricts the user to viewing the data only and will not permit him/her to edit the data.

Users ID's and passwords are maintained through the System Administration menu bar in the Maintenance sub-menu. Passwords can only be changed by typing in the old password first.

Note: The low level access that most users are provided with only gives them access to viewing and reporting functions (as well, code tables in the Maintenance submenu may be viewed but not edited). The system will not allow changes made to the fields to be saved.

4.4 Database Structure

There are three main databases: site, outfall and parameter. They are organized in a relational database format. This serves to minimize database redundancy. There are also various code tables that store information about different codes in the site, outfall and parameter tables. For example, the parameter codes table contains the parameter code, the full name for the parameter, the units that the parameter should be in and the upper limit for the parameter.

Each of these tables is indexed. The indices speed up the time that it takes to access a record. A unique field or combination of field controls is necessary for each record in the table. For example, the Record ID or Record ID and waste number are used to control access to the site, outfall, and parameter records. Users should exercise extreme caution when editing these fields.

Figure 1 illustrates the database structure of the Fraser PSI system.

~ 4.5 Menu Hierarchy

A menu bar is a feature of most FOXPRO applications. It acts as a pulldown menu which groups related system operations into submenus. The menu can be activated by clicking on the menu bar or by pressing **Alt** + the highlighted letter of menu option.

Figure 2 illustrates the menu hierarchy of the system.

4.6 Importing Data (File Submenu)

The system has the capability to import data from the provincial WASTE database. The import function prompts the user for the name and path to the file that is to be imported. The structure of this import file must conform to a rigid format (see Appendix E). **Caution:** the import function will overwrite changes made to WASTE data in FR_PSI since the last import.

4.7 Exporting Data (File Submenu)

Data can be exported to an ASCII or DBF file for use with a GIS system. The system prompts the user for the name and path of this export file.

Figure 1 System Structure

SITE DATABASE	Record ID	SIC Code	BC Env Office	....

OFFICE TABLE	BC Env Office Code	....

SIC CODE TABLE	SIC Code	....

OUTFALL DATABASE	Record ID	Waste Number	Waste Water Type	Discharge To	Site Type	....

SITE TYPE TABLE	Site Type Code	....

DISCHARGE TO TABLE	Discharge To Code	....

WASTE WATER TYPE TABLE	Waste Water Type Code	....

PARAMETER DATABASE	Record ID	Waste Number	Parameter Code	....

PARAMETER CODE TABLE	Parameter Code	.....

LOADTAB DATABASE	Record ID	Parameter Code	Parameter Name	Loading	....

Figure 2 Menu Hierarchy

| SYSTEM | FILE | EDIT | VIEW | RECORD | REPORTS | WINDOW | MAINTENANCE |

```
HELP        F1

Calculator
Calendar/Diary
Environment
```

```
Update
Export
Quit
```

```
Edit Permit
Browse All
```

```
View Permit
Browse All
```

```
Next              ^E
Prior             ^R
Top               ^O
Bottom            ^B
Locate            ^L

Pack
Toggle Delete     ^D

Delete Rec. from 3 Databas
Pack all 3 Databases
```

```
Set Printer Driver

Simple Form Reports

Custom Reports
Loading Reports

Code Tables
```

```
Administration
Security Log Browse
Reindex Databases
Backup Databases

SIC Browse
Parameter Browse
WasteWater Browse
Discharge To Browse
Site Type Browse
Office Browse
Edit Help Test
```

```
Move              ^F7
Cycle             ^F1

List of currently defined
window names
```

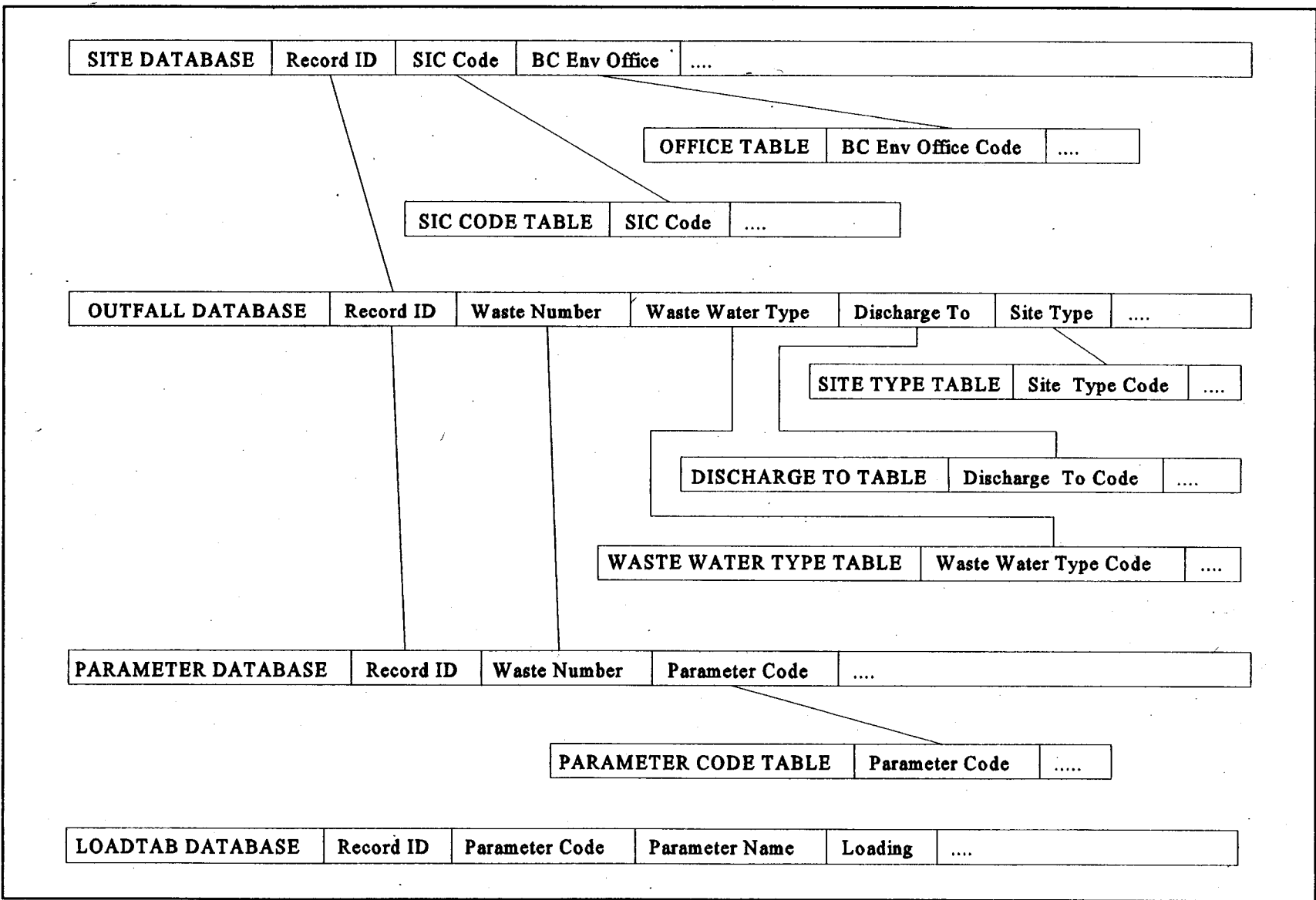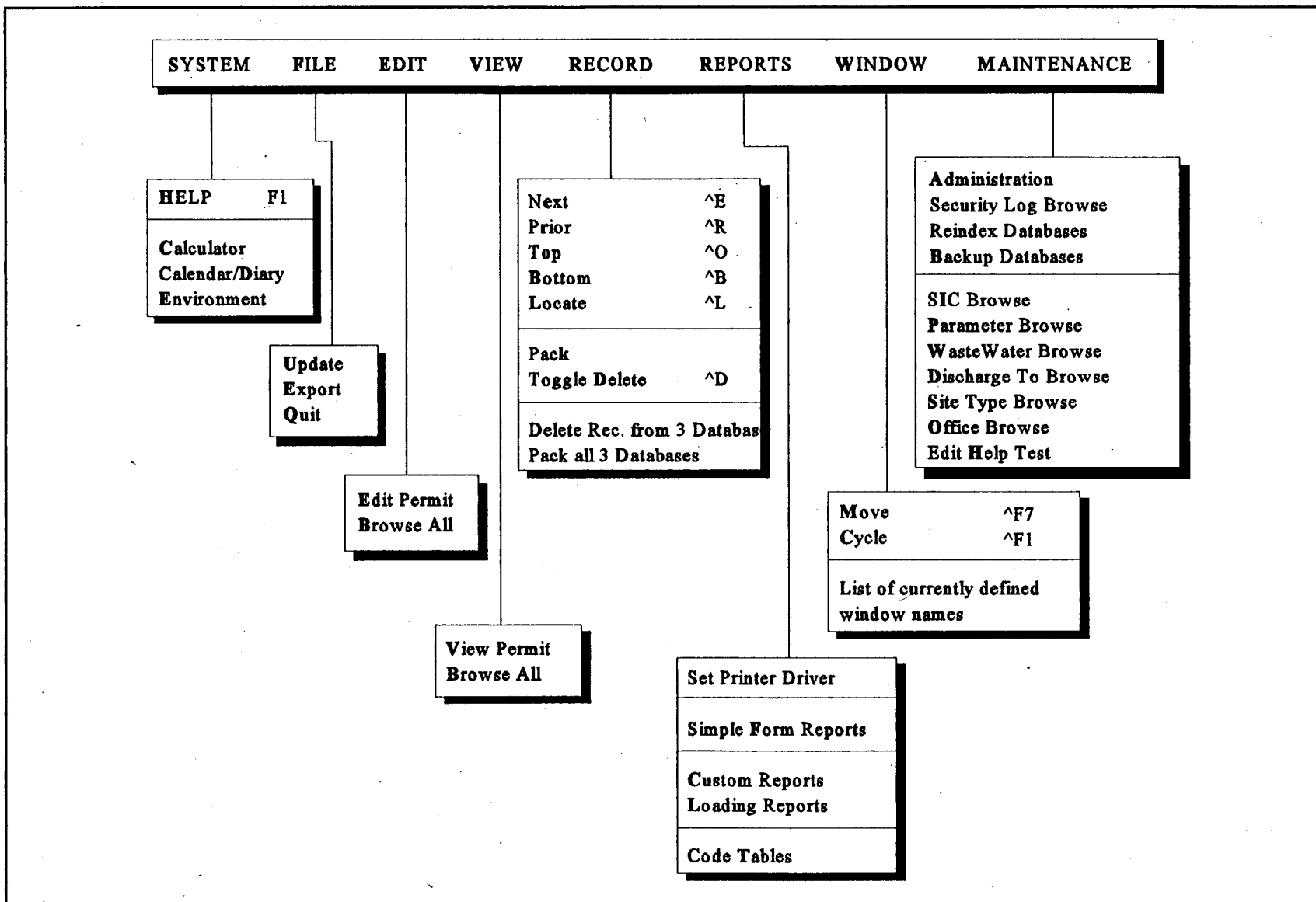## 4.8 Viewing Data (View Submenu)

The view submenu allows the user to view each of the individual database files. The system displays these files on a screen form. There are two main screen forms, a site information screen and an outfall information screen. Along with these two screen forms is a control window, which is on the right side of the screen. It contains push buttons that when selected control the position of the record pointer (i.e. the record pointer points to the active record in the table - only one record in a table can be active at any one time).

Browse windows are available in some of the database forms. These windows can be activated or deactivated by clicking on the relevant push button (e.g. The push button <**Next Page**>, located in the controls section of the form screens, activates the outfall information screen along with it's associated parameters. Note that the parameter information takes the form of a browse window).

4.8.1 Navigating Through the Database

The user interface of the form screens has been modeled after an actual permit form. What this means is that when viewing the site information, this is known as page one of the current permit and all subsequent pages would reveal the outfall and parameter information that is associated with the current site. The control window on the right hand side of the screen controls the record pointer in the database. For example, clicking on the < **Next** > push button moves the record pointer to the next permit (site) in the database, while clicking on the <**Next Page**> push button when in the site information screen brings up that particular site's outfall and parameter information. Note: A permit consists of a site that may have one or more outfalls, and each outfall may have zero or more parameters.

The <**Locate**> push button on the control window allows the user to jump quickly to a record in the database. To activate the <**Locate**> function, the user must define an expression in the window that opens such as Record ID >= "P00100" or Sub-basin = "Lower Fraser". Note that this search function is case sensitive. The user must then click on the <**Add**> push button and then the <**Search/Browse**> push button to see the records that match the selection criteria. The user can then click on a record in the Browse window and then click on the window close icon in the upper left hand corner of the Browse window followed by clicking on the <**Exit**> push button in order to view the record.

The <**Q-Find**> allows the user to skip to a record by specifying the Record ID or a string within the manager field (i.e. Typing *Bloedel* will find the next record of Macmillan Bloedel. Note that the system searches forward through the database to allow successive records to be found with the same string. Press the <**Top**> push button before <**Q-Find**> if finding the first record with a particular string is desired; otherwise, only records with a higher index number in the database will be located.

4.8.2 Exiting from the Screen Form

The screen form must be exited by selecting the < **EXIT** > push button on the control window (i.e. the menu on the right side of the editing and viewing screens).

4.8.3 Site Data Screen

Each record in the database must have an entry in the Record ID field, since this is the unique identifier for each site. For all sites other than federal facilities, the Record ID is a 6 character string, beginning with a P and ending with the numeric portion of the Waste Management Permit number. For example, Scott Paper Limited has a Permit No. PE-335. Therefore, the Record ID for Scott Paper is P00335.

For federal facilities, the Federal Facility number (obtained from FFEAD) is entered in the Record ID field and in the Federal Facility field. Some federal facilities may also have a B.C. WASTE Management permit. In this case, the provincial permit number is used in the Record ID field and the federal facility number is in the Federal Facility number field. This makes it possible to search for all federal facilities using the Federal Facility field and the <**Locate**> push button.

Pressing the F2 key while the cursor is in the *sic code* field activates a lookup table. Entries can be selected from this lookup table by pressing **Enter**. The user can also edit the lookup search string displayed at the top of the lookup window. The user should note that the system will search by SIC name only. Press **ESC** to abort selection of a lookup value. [']

The *SIC code*, and *BC environment office* fields are linked to code tables which lookup the appropriate code name for each relevant code number. See Appendix D Table 3 for the B.C. MELP office codes and descriptions, and see Table 4 for the Standard Industry Category codes and descriptions.

4.8.4 Outfall Data Screen

The combination of Record ID and waste number is unique for each outfall. A single site may have multiple outfalls.

The *discharge to, wastewater type*, and *site type* fields are linked to code tables which lookup the appropriate code name for each relevant code number. See Appendix D Table 5 for the B.C. MELP discharge to codes and descriptions, see Table 6 for the B.C. MELP waste type codes and descriptions, and see Table 7 for the B.C. MELP site type codes and descriptions.

4.8.5 Parameter Data Screen

The combination of Record ID, waste number, and parameter code is unique for each parameter. A single outfall may have multiple parameters. The *parameter code* field is linked to a code table which looks up the appropriate code name for each relevant code number. See Appendix D Table 8 for the parameter codes, descriptions, units, and upper limits.

The parameter data screen contains parameter limits information about each discharge. Pressing the **F2** key while the cursor is in the *parameter code* or *parameter name* field activates a lookup table. Entries can be selected from this lookup table by pressing **Enter**. The user can also edit the lookup search string displayed at the top of the lookup window. The user should note that the system will search by both parameter code and parameter name. Press **ESC** to abort selection of a lookup value.

Each parameter in the parameter lookup table is associated with a *units* field. The units field contains a string defining the units assigned to each parameter in the parameter table. The unit type is defaulted for any new parameter entered.

4.8.6 Changes to the Data

The user is not permitted to save changes to the database from within the View submenu. Although the View submenu functions similar to the Edit submenu, **changes to the database fields cannot be saved** . The <Save> push button is never active.

4.9 Editing Data (Edit Submenu)

This section provides instructions on how to add, edit, and delete records. For help on browsing and navigating through the database, see Section 4.8.

The edit submenu allows the user to edit each of the individual database files. The system displays these files on a screen form. When a record is initially displayed, the <Save> and <Cancel> push buttons are disabled. If the user makes a change to a field in the database, these push buttons are enabled and the control window is disabled. After the user has changed all the fields he/she wants to change, then he/she must explicitly save these changes or discard these changes.

Warning: while in the edit submenu, any changes made to the parameter data is saved automatically; hence, caution is advised when editing this data because you will be unable to cancel the changes made.

4.9.1 New Records

New records can be added to the database by clicking on the <New> push button at the bottom of the control window. Clicking on this push button will cause the <Save> and <Cancel> push buttons to be enabled. If the <New> push button is disabled (light blue letters) then you may be in viewing mode and not editing mode. The system may be waiting for you to cancel or save the existing record that is displayed onscreen before it will let you add a new record.

Clicking on the <New> push button will produce different results depending on which screen is currently being edited. When the site information screen is edited, the system creates a new site and a blank outfall, when the outfall information screen is edited the system creates a new outfall, and when the parameter browse window is edited a new parameter is created.

Each new record in the database must have an entry in the Record ID field, since this is the unique identifier for each site. For all sites other than federal facilities, the Record ID is a 6 character string, beginning with a P and ending with the numeric portion of the Waste Management Permit number. For example, Scott Paper Limited has a Permit No. PE-335. Therefore, the Record ID for Scott Paper is P00335.

For federal facilities, the Federal Facility number (obtained from FFEAD) is entered in the Record ID field and in the Federal Facility field. If the federal facility also has a B.C. WASTE Management permit, enter the provincial permit number in the Record ID field and the federal facility number is in the Federal Facility number field.

4.9.2 Editing Existing Records

The system monitors any changes you make to the system. If you make a change to any one of the fields, the system will ask you to confirm changes and will disable the record control window and some of the push buttons on the screen. At this point you can continue making changes to the field, however, you must eventually save or discard these changes before exiting the screen.

4.9.3 Deleting Records

The process of deleting records involves flagging a record for deletion and then recovering the space in the file by packing the table. The deletion process is done in this way because packing the table can be a very time-consuming process for large databases. It is more time efficient to mark for deletion all the records that you want to delete and then recover the file space by clicking on the Pack menu item in the Record submenu.

To mark a record for deletion, display the record in the window and then press **Ctrl-D**. Records can also be deleted by using the Record submenu. Pressing **Ctrl-D** a second time recovers the deleted record. Note that if a user wishes to delete all the data for a Record ID, he/she must delete records in all three databases. To simplify the process, there are functions at the bottom of the Record submenu that allow the user to delete a permit from all three tables or pack all three tables.

4.10 Reporting (Reports Submenu)

The reports are grouped according to their functionality and according to the complexity of the report.

4.10.1 Setting Printer Driver

The user can choose from several pre-defined printers such as Postscript, Laserjet II, and Laserjet III in the reporting dialogue screen that is activated after a user chooses a report type from the Reports submenu. The user can also modify the list of printer drivers (and set a default driver) by choosing the Modify Printer Driver option from the top of the Reports submenu. From this dialogue window, the user can specify a new printer driver by choosing the <New> push button.

4.10.2 Simple Form Reporting

Four types of reports may be produced depending on which database the user chooses as a base. They are *Site, Outfall, Parameter, and All*. Note: the selection *All* refers to a report that contains information from all three databases. After selecting the desired database the user now must decide which records they want included in their report.

4.10.2.1 Selecting Records

For simple reports, three options are available: a specific Record ID, all records in the currently selected database, or an advanced record selection. Note: for a specific Record ID the number must exactly match the number in the database - i.e. don't forget about leading 0's.

4.10.2.2 Advanced Record Selection (Filters)

Filters provide the user with the ability to retrieve information above and beyond the standard reporting features of the system. A filter specifies a condition that records in the current table/database must meet to be accessible. Through an easy, step by step process the user is able to build and execute complex queries. From a set of predetermined fields derived from

the current database, the user simply points and clicks the mouse on the desired fields to generate the required information.

For example, if the current database was *Site* you would have the option to query on Region, Sub-basin, Industry code, Industry name, BC environment office, and Manager. After selecting one of the aforementioned fields, the comparison operator defaults to an equals, which can be changed. Note: for string comparisons a double equals "==" represents an exact match, while a single equals "=" represents a partial string match.

4.10.3 Custom Reporting

Provides client with the flexibility of designing their own tabular reports. Users can specify the contents of the reports by selecting a database and then the desired fields. The user determines the order of the columns on the report by the sequence in which they select or de-select the fields.

See section 4.10.2.2 for detailed description of how to use the filter conditions. Note: when a filter is selected through custom reporting, it appears as a header to all pages of the report.

4.10.4 Loading Calculations

A note of caution concerning the loading calculation and reports require emphasis. The loading calculation module was developed to assist the planning process, and to facilitate gross comparisons between regions or industrial sectors. FR_PSI does not include actual monitoring data. In practice, flows and concentrations are probably lower than Permit levels used in the loading calculation. Loading values reported by the database should not be considered as a quantitative measure of actual pollutant loadings in the Basin, nor as a substitute for wastewater monitoring or characterization studies. The database loadings are to be used only to give a ball-park idea of the total authorized loadings of permitted parameters. Such extrapolations have no meaning outside the planning context.

The following formulas are used for the loading calculations:

Allowable Daily Loading = (Maximum Concentration Limit) * (Maximum Flow Rate)

Allowable Annual Loading = (Allowable Daily Loading) * (# Days of Discharge per Year)

4.11 Maintenance Submenu

The maintenance submenu allows the user to browse the system code tables for parameter names, site types, etc. Press ESC or click on the upper left hand corner of the browse window to close the window.

The system administrator can also maintain the code tables using the Browse submenu that is activated when an option is selected from the Maintenance submenu. Memo fields are edited by double-clicking on the word "Memo" in the browse view. Records can also be deleted and added from the Browse submenu.

The list of users can be maintained using the Administration submenu option. Click on the relevant push button to scroll through the list of users. Passwords can only be changed by entering in the old password first. New users are given a password of blank (i.e. just a carriage return) which must be changed by the system administrator.

4.12 Exiting the System

The system can be exited by choosing the Quit option from the File submenu.

5.0 Maintaining the Database

5.1 Updates to the System

Updates to the database should be controlled by one person. This is the only way to ensure that editing is done on a thorough and consistent basis.

5.2 Backing Up the System

This must be done on a regular basis in case the database is corrupted. The seven main files to backup are: SITE.DBF, SITE.CDX, SITE.FPT, OUTFALL.DBF, OUTFALL.CDX, PARAM.DBF, and PARAM.CDX. A paper transaction log must be used to record all changes to the database that are made between system backups.

From the main menu select Maintenance, then Backup Databases. This will *pk-zip* the aforementioned databases to a file located in the fraser directory named Backup.zip. It is recommended that you copy this file to diskette. Note: when you do another backup it will overwrite the old backup.zip file with the new backup.zip file.

5.3 User ID and Password Maintenance

User ID's are maintained by choosing the system administration security access level. The three security levels recognized by the system are 9 (high-level access), 7 (editing is permitted but not password maintenance), and 5 (no-editing allowed).

6.0 System Limitations

The accuracy of the reports in the system is only as good as the accuracy of the data that the reports are derived from. Please read section **4.10.3** carefully concerning the interpretation of loading calculations.

7.0 Summary and Recommendations

The Fraser River PSI database permits sophisticated reporting concerning parameter loadings in the Fraser Basin. Users have the ability to produce reports from the FR_PSI reports menu or to produce customized tabular reports. The following is a list of recommendations for improving the usefulness and validity of the FR_PSI database:

- *Consistency with Other Databases.* Procedures need to be developed to ensure that the FR_PSI database is regularly updated with data from the WASTE system.

- *Consistency with Wastewater Discharge Permits.* Each permit in the FR_PSI database needs to be fully validated against the actual paper permit. This should ideally be done by the person(s) who is responsible for the permits in each sub-basin of the Fraser River Basin because he/she will be most familiar with the permits and will be quickly able to identify database entries that are incorrect.

- *Version Control and User Registration.* A list of users of the system should be maintained and these users should be given regular updates to the system. These updates should be dated and given a number to facilitate version control.

- *Sophisticated Reporting for Integrity Checking.* Reports should be created that allow for sophisticated intra-record checking of data. These reports should be designed to highlight extraneous data values. They should be designed in conjunction with an expert in the field of permit allowance administration.

- *Standardization of Permits.* The permit wording and layout should be standardized to make it easier to validate the permit data in a database against the paper permit. Parameter discharge limits should be specified in standardized units. Exact locations of each outfall should be specified on the permits.

- *Regular Backups of Data.* Regular backups of data should be done as well as recording of all edits in a paper transaction log. Strict adherence to these procedures will ensure that no data is lost in the event of a major system crash.

- *Checking with Monitoring Data.* Data from FR_PSI system should be cross-referenced to monitoring data periodically to aid in highlighting data input errors and other discharge inconsistencies.

- *Conversion to FOXPRO Windows Version.* The system should be converted to run under Windows 3.1. Many users are familiar with Windows and they will be able to learn the system more easily than the current DOS version.

Appendix A
Screen Snapshots

Note: These screen snapshots reflect the current screens of the system at the time of printing.
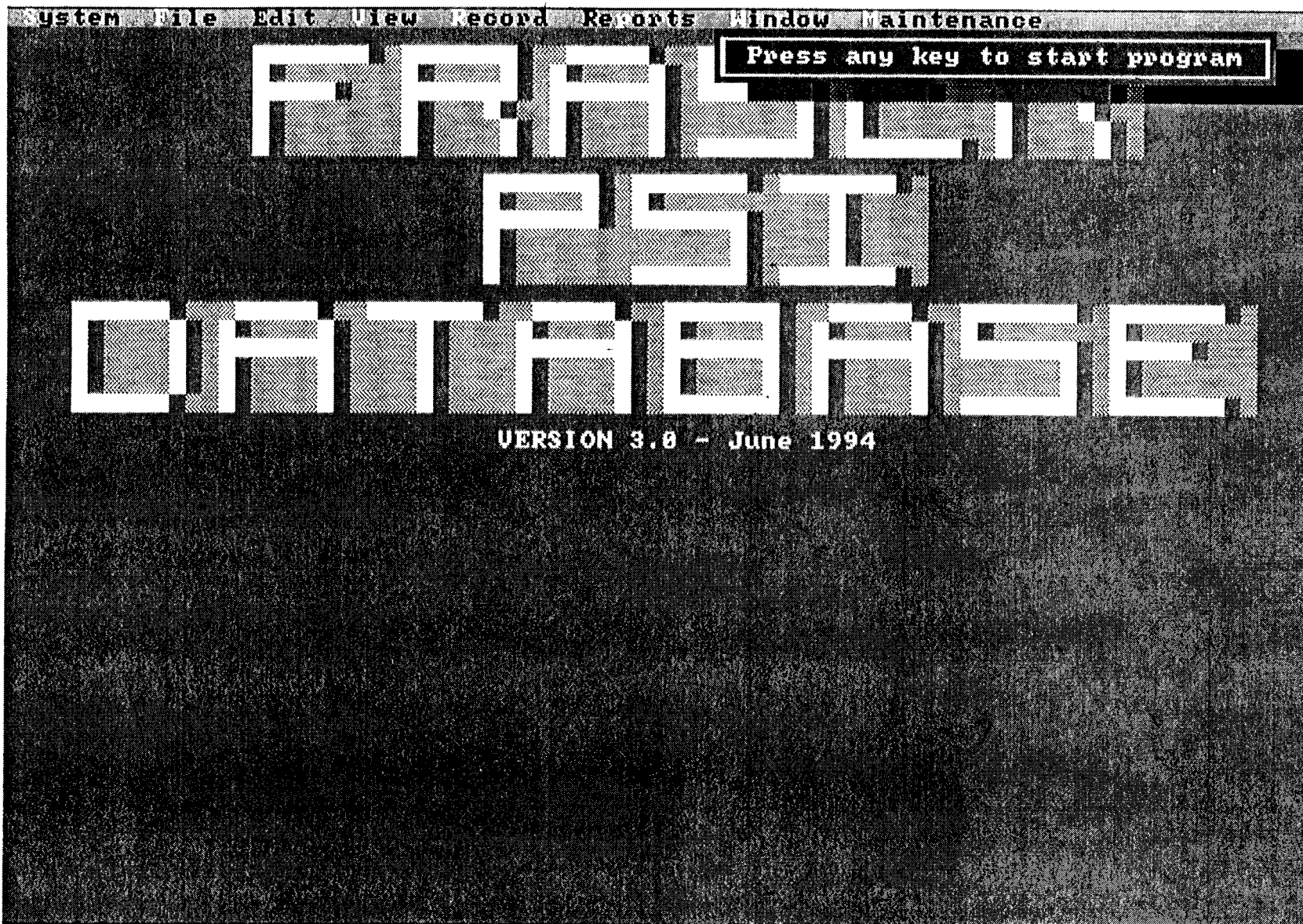
Figure 1 Opening screen of the Fraser PSI program.

System   File   Edit   View   Record   Reports   Window   Maintenance

Press any key to start program

FRASER
PSI
DATABASE

VERSION 3.0 - June 1994
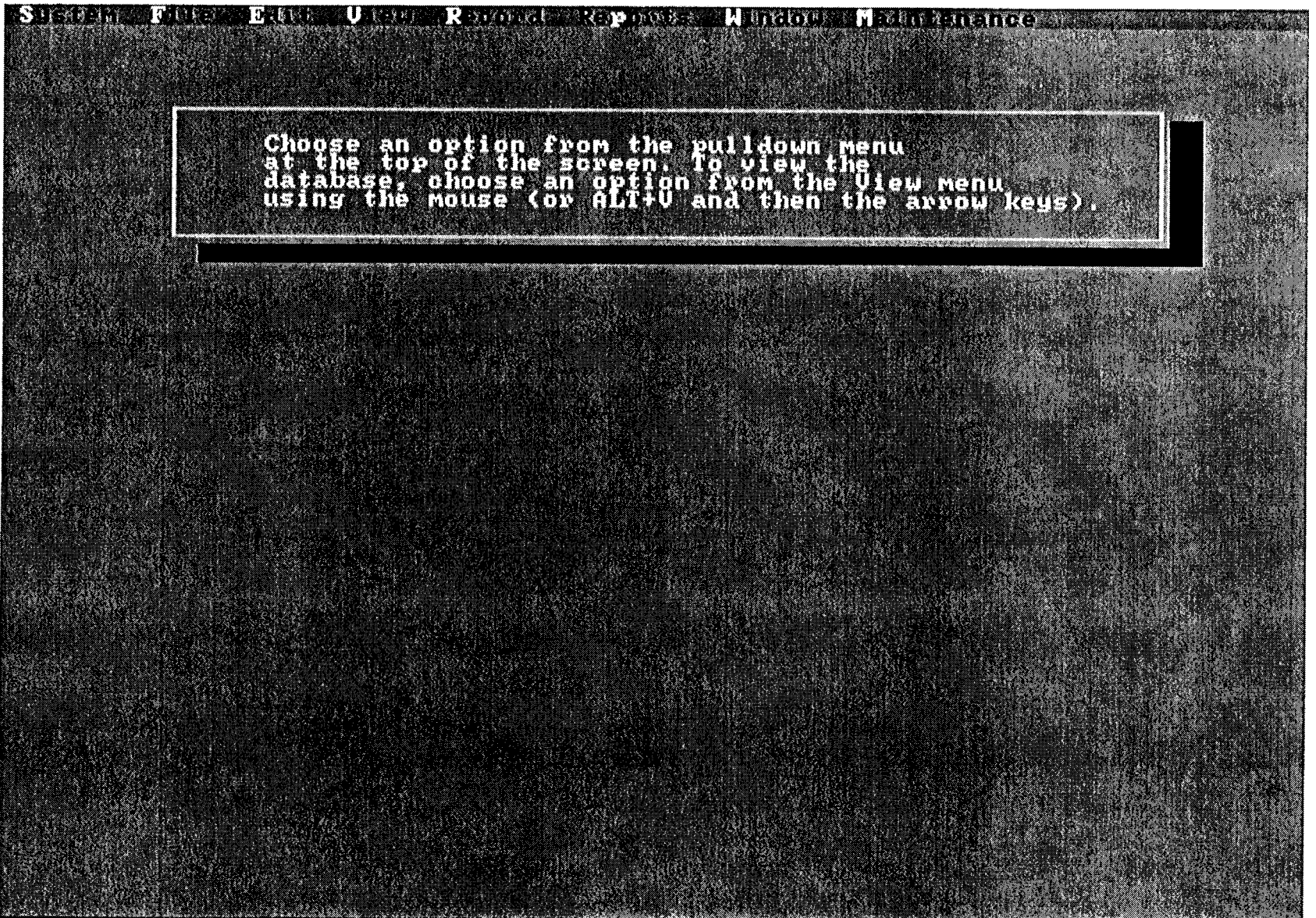
Figure 2 Main screen of the Fraser PSI program.

The screen shows a menu bar with the options: System File Edit View Record Reports Windows Maintenance

Choose an option from the pulldown menu
at the top of the screen. To view the
database, choose an option from the View menu
using the mouse (or ALT+V and then the arrow keys).

Figure 3 Selecting an option from the pulldown menu system.
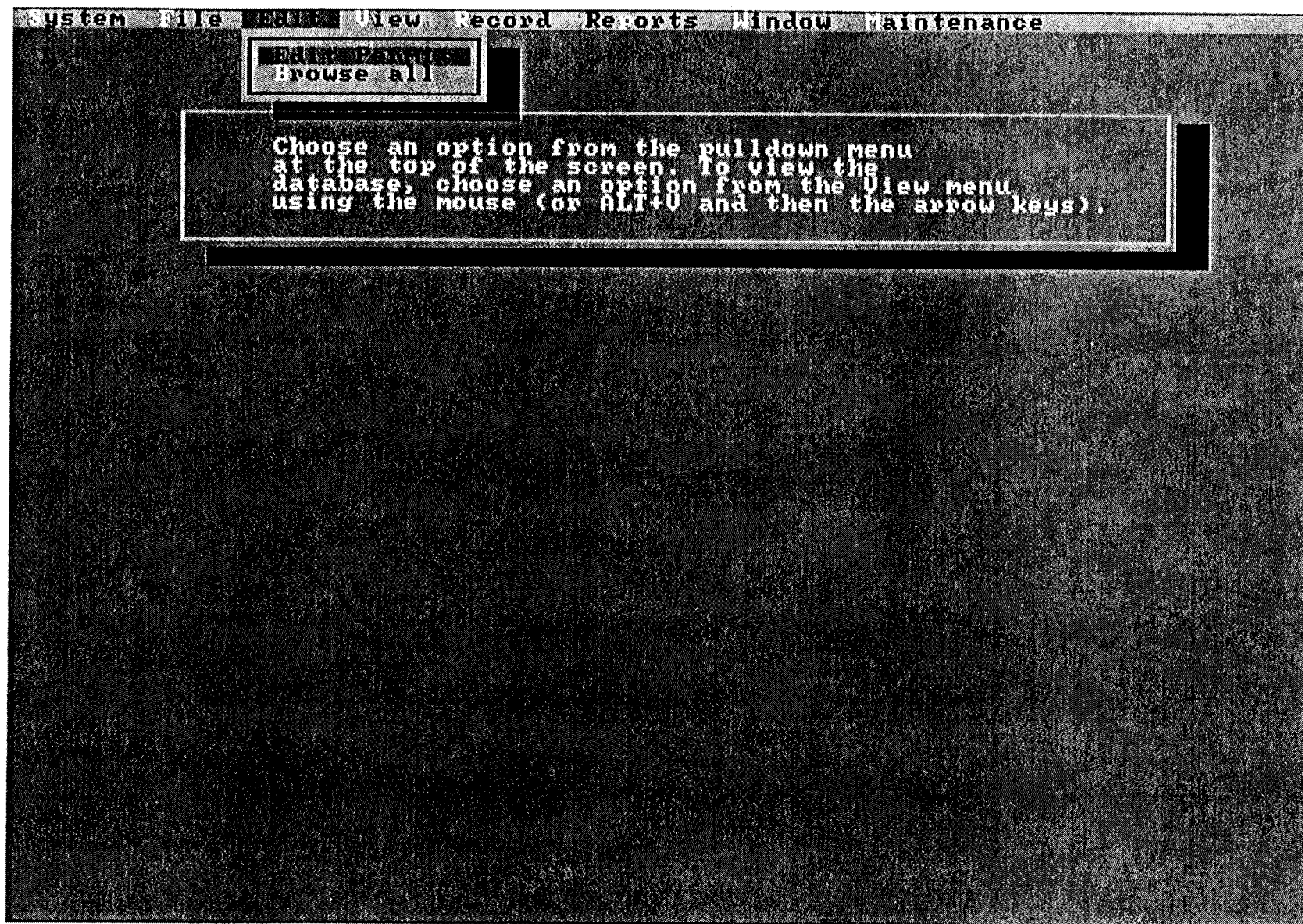
Figure 4 The site information screen.

OUTFALL #: 01 of 1

Record ID : P00017

Site Type : 19 Outfall
Was.Wt.Typ: 1 Process
Treatment : PACKAGE STP, CLARIFIER, ASB

Maximum Flow: 11,400.0000   Flow Units
Average Flow: M3/D
Duration   :   days/year

Discharge To: 1 Surface Water (Riv/Lk/E)
Rec.Wat.Body: FRASER RIVER; NORTH ARM

Last Updated by: Mcgee / Jack   Date: 09/16/93

Record ID: P00017   Waste #: 01   --->   9 Parameters
                         Parameter

Record ID	Waste	Record ID	Waste #	Param. Code	Parameter Nam
P00017	01	P00017	01	0004	pH
P00017	01	P00017	01	0115	Biochemical Ox
P00017	01	P00017	01	0013	Temperature
P00017	01	P00017	01	0014	Oxygen Dissolv
P00017	01	P00017	01	0008	Residue Nonfil
P00017	01	P00017	01	0461	Bio. LC50:Rain
P00017	01	P00017	01	T021	Trichloropheno
P00017	01	P00017	01	T020	Tetrachlorophe
P00017	01	P00017	01	P022	Pentachlorophe

F2   : Look-up Partable | Ctrl+Tab : Exit Parameter Window
Ctrl+N : Add a Parameter | Ctrl+T   : Delete/Und. a Parameter

Help
CURRENT PERMIT
Page 1
Next Page
Prev. Page

SELECT PERMIT
Next
Prior
Top
Bottom
Q-Find
Locate

Save
Cancel

New
Delete/Und

Exit

Figure 5 Outfall information screen with parameter browse table.

Figure 6 Producing a report.

System File Edit View Record Reports Window Maintenance

Simple Form Reports

Select Database
(*) SITE
( ) OUTFALL
( ) PARAMETER
( ) ALL

458 Records Selected

Record Selection
[X] All

[ ] Specific

[ ] Advanced

Output Device
(*) Preview
( ) To File
( ) To Printer

Printer Name
Generic type

< Help >   « Ok »   < Cancel >

Figure 7 Setting a filter condition on the database.

Appendix B
System Structure

```
Structure for database : DISCLIST.DBF
Number of data records :        5
        Last updated : 11/17/93 at 13:39
Field   Field name   Type         Width     Dec
    1   DISC_TO      Character        1
    2   DISCDESC     Character       25
** Total **                         27
```

```
Structure for database : LOADTAB.DBF
Number of data records :        1205
        Last updated : 04/28/94 at 15:20
Field   Field name   Type         Width     Dec
    1   PARAM_CODE   Character        4
    2   RECORD_ID    Character        6
    3   WASTE_NUM    Character        2
    4   DISCH_MAX    Numeric         13        4
    5   FLOW_MAX     Numeric         13        4
    6   FLOW_AVG     Numeric         13        4
    7   UNITS_TYPE   Character        9
    8   UNITS        Character        9
    9   SUB_BASIN    Character       20
   10   REGION       Character       20
   11   SIC_CODE     Character        5
   12   BC_ENV_OFF   Character        2
   13   LATITUDE     Numeric          5        2
   14   LONGITUDE    Numeric          6        2
   15   DISCH_TO     Character        2
   16   DISCH_DUR    Numeric          3
   17   FACILITY     Character       50
   18   MANAGER      Character       50
   19   DAI_LOAD     Numeric         13        2
   20   D_LD_UNITS   Character       10
   21   ANN_LOAD     Numeric         13
   22   A_LD_UNITS   Character       10
** Total **                        279
```

```
Structure for database : OFFICE.DBF
Number of data records :        8
        Last updated : 05/17/93 at  9:20
Field   Field name   Type         Width     Dec
    1   BC_ENV_OFF   Character        2
    2   OFFICE_NAM   Character       35
** Total **                         38
```

```
Structure for database : OUTFALL.DBF
Number of data records :          594
        Last updated : 04/28/94 at 15:14
Field  Field name  Type         Width    Dec
    1  RECORD_ID   Character        6
    2  WASTE_NUM   Character        2
    3  SITE_TYPE   Character        2
    4  TREATMENT   Character       60
    5  WASTE_TYPE  Character        1
    6  FLOW_MAX    Numeric         13       1
    7  FLOW_AVG    Numeric         13       1
    8  UNITS       Character        8
    9  DISCH_DUR   Numeric          3
   10  DISCH_TO    Character        1
   11  REC_WAT_BD  Character       25
   12  UPDATE_PER  Character       25
   13  UPDATE_DAT  Date             8
** Total **                      168
```

```
Structure for database : PARAM.DBF
Number of data records :         1209
        Last updated : 04/28/94 at 15:14
Field  Field name  Type         Width    Dec
    1  RECORD_ID   Character        6
    2  WASTE_NUM   Character        2
    3  PARAM_CODE  Character        4
    4  UNITS_TYPE  Character        9
    5  DISCH_MIN   Numeric         13       1
    6  DISCH_MAX   Numeric         13       1
    7  DISCH_AVG   Numeric         13       1
    8  UPDATE_PER  Character       25
    9  UPDATE_DAT  Date             8
** Total **                       94
```

```
Structure for database : PARTABLE.DBF
Number of data records :          562
        Last updated : 02/14/94 at 13:48
Field  Field name  Type         Width    Dec
    1  PAR_COD     Character        4
    2  PAR_NAME    Character       25
    3  UNITS       Character        9
    4  UPLIMIT     Numeric         15
** Total **                       54
```

```
Structure for database : SICLIST.DBF
Number of data records :      1247
        Last updated : 02/16/94 at 13:26
Field  Field name  Type        Width    Dec
    1  SIC_COD     Character        5
    2  INDUSCAT    Character      100
** Total **                       106
```

```
Structure for database : SITE.DBF
Number of data records :       459
        Last updated : 04/28/94 at 15:14
Field  Field name  Type        Width    Dec
    1  RECORD_ID   Character        6
    2  FED_FAC     Character        6
    3  PERMIT_TYP  Character        8
    4  MANAGER     Character       50
    5  BASIN       Character       20
    6  REGION      Character       25
    7  SUB_BASIN   Character       20
    8  SIC_CODE    Character        5
    9  PROD_CAPAC  Numeric          8
   10  UNITS       Character       15
   11  MAIL_ADDR   Character      150
   12  FACILITY    Character       50
   13  PHONE_NUM   Character       10
   14  FAX_NUMBER  Character       10
   15  CONTACT     Character       20
   16  LEG_DESCR   Character      150
   17  NTS_NUM     Character        6
   18  UTM_ZONE    Numeric          4
   19  EASTING     Numeric         10
   20  NORTHING    Numeric         10
   21  LATITUDE    Numeric         10        6
   22  LONGITUDE   Numeric         10        6
   23  BC_ENV_OFF  Character        2
   24  INSP_DATE   Date             8
   25  COMMENT     Memo            10
   26  UPDATE_PER  Character       25
   27  UPDATE_DAT  Date             8
   28  CB          Logical          1
   29  OCEAN       Logical          1
   30  PCB_W       Logical          1
   31  SECLEAD     Logical          1
   32  DF_D        Logical          1
   33  DF_E        Logical          1
   34  FISHACT     Logical          1
   35  EEM         Logical          1
   36  MEAT        Logical          1
```

```
37   MINING_G      Logical          1
38   MINING_R      Logical          1
39   PP            Logical          1
40   PETROL_G      Logical          1
41   PETROL_R      Logical          1
42   POTATO        Logical          1
43   ACA           Logical          1
44   CCA           Logical          1
45   CP            Logical          1
46   CREOSOTE      Logical          1
47   MARINA        Logical          1
48   PCP_T         Logical          1
49   PCP_W         Logical          1
50   FREGS         Logical          1
51   FILE_NUMB     Character       16
** Total **                       696
```

```
Structure for database : SITETYPE.DBF
Number of data records :        22
        Last updated : 12/14/93 at   9:41
Field  Field name  Type         Width     Dec
   1   SIT_TYP     Character        2
   2   SIT_DESC    Character       25
** Total **                        28
```

```
Structure for database : WASLIST.DBF
Number of data records :         5
        Last updated : 12/15/93 at 14:02
Field  Field name  Type         Width     Dec
   1   WAS_TYP     Character        1
   2   WASDESC     Character       25
** Total **                        27
```

Appendix C
Coding Source

Table 1. Origin of data and codes.

Variable Name	Source		
	FR_PSI	WASTE	FFEAD
Record Id	X	X	X
Manager		X	X
Facility		X	X
Sub-basin	X		
Region	X		
SIC Code		X	X
Production Capacity		X	
Production Units	X	X	
Mailing Address		X	X
Location	X	X	X
Phone Number		X	X
Fax Number		X	X
Contact Name		X	X
Legal Address		X	X
NTS Mapsheet	X		
UTM Zone	X		
UTM Easting	X	X	
UTM Northing	X	X	
Latitude	X	X	X
Longitude	X	X	X
MELP Office		X	
Federal Facility Number	X		X
Federal Regulations	X		

Variable Name	Source		
	FR_PSI	WASTE	FFEAD
Permit Date		X	
Date of Last Update	X		
WASTE Number		X	
Site Type		X	
Waste Type		X	
Flow Maximum		X	
Flow Minimum		X	
Flow Average		X	
Flow Units	X	X	
Discharge Duration	X		
Discharge To	X	X	
Receiving Waterbody	X	X	
Parameter Code	X	X	
Parameter Units	X	X	
Discharge Minimum		X	
Discharge Maximum		X	
Discharge Average		X	

Appendix D
Lookup Tables

Table 1. Sub-basin watershed codes and descriptions.

Sub-basin Table	
CODE	DESCRIPTION
1	Lower Fraser
2	Lillooet
3	Bridge-Seton
4	Thompson
5	South Thompson
6	North Thompson
7	Middle Fraser
8	Chilcotin
9	Quesnel
10	West Road
11	Upper Fraser
12	Nechako
13	Stuart

Table 2. Region codes, descriptions, and the associated sub-basin.

Region Table		
CODE	DESCRIPTION	SUB-BASINS
1	Lower	1,2
2	Thompson	4,5,6
3	Middle	3,7,8,9,10
4	Upper	11,12,13

Table 3. B.C. MELP office codes and descriptions.

BC Environment Office Table	
CODE	LOCATION
10	Vancouver Island, Nanaimo
20	Lower Mainland, Surrey
30	Southern Interior, Kamloops
40	Kootenay, Nelson
50	Northern Interior, Williams Lake
60	Skeena, Smithers
70	Northern Interior, Prince George
80	Southern Interior, Penticton

Table 4. Site industry codes and descriptions.

SIC Table

CODE DESCRIPTION

01   Agricultural Industries
011   Livestock farms
0111   Dairy Farms
0112   Cattle Farms
0113   Hog Farms
0114   Poultry and Egg Farms
0115   Sheep and Goat Farms
0119   Livestock Combination Farms
012   Other Animal Specialty Farms
0121   Honey and Other Apiary Product Farms
0122   Horse and Other Equine Farms
0123   Furs and Skins, Ranch
0129   Other Animal Specialty Farms n.e.c
013   Field Crop Farms
0131   Wheat Farms
0132   Small-Grain Farms (Except Wheat)
0133   Oilseed Farms (Except Corn)
0134   Grain Corn Farms
0135   Forage, Seed and Hay Farms
0136   Dry Field Pea and Bean Farms
0137   Tobacco Farms
0138   Potato Farms
0139   Other Field Crop Farms
014   Field Crop Combination Farms
0141   Field Crop Combination Farms
015   Fruit and other Vegetable Farms
0151   Fruit Farms
0152   Other Vegetable Farms
0159   Fruit and Vegetable Combination Farms
016   Horticultural Specialties
0161   Mushrooms
0162   Green House Products
0163   Nursery Products
0169   Other Horticultural Specialties
017   Livestock, Field Crop and Horticultural Combination Farms
0171   Livestock, Field Crop and Horticultural Combination Farms

02	**Service industries Incidental to Agriculture**
021	Services Incidental to Livestock and Animal Specialties
0211	Veterinary Services
0212	Farm Animal Breeding Services (Except Poultry)
0213	Poultry Services
0219	Other Services Incidental to Livestock and Animal Specialties
022	Services Incidental to Agricultural Crops
0221	Soil Preparation, Planting and Cultivating Services
0222	Crop Dusting and Spraying Services
0223	Harvesting, Baling and Threshing Services
0229	Other Services Incidental to Agricultural Crops
023	Other Services Incidental to Agriculture
0231	Agricultural Management and Consulting Services
0239	Other Services Incidental to Agriculture n.e.c.
03	**Fishing and Trapping Industries**
031	Fishing Industries
0311	Salt Water Fishing Industry
0312	Inland Fishing industry
032	Services Incidental to Fishing
0321	Services Incidental to Fishing
033	Trapping
0331	Furs and Skins, Wild
0339	Other Trapping
04	**Logging Industry**
041	Logging Industry
0411	Logging Industry
05	**Forestry Services Industry**
051	Forestry Services Industry
0511	Forestry Services Industry
06	**Mining Industries**
061	Metal Mines
0611	Gold Mines
0612	Copper and Copper-Zinc Mines
0613	Nickel-Copper Mines
0614	Silver-Lead-Zinc Mines
0615	Molybdenum Mines
0616	Uranium Mines
0617	Iron Mines
0619	Other Metal Mines
062	Non-Metal Mines (Except Coal)
0621	Asbestos Mines
0622	Peat Industry

0623	Gypsum Mines
0624	Potash Mines
0625	Salt Mines
0629	Other Non-Metal Mines (Except Coal)
063	Coal Mines
0631	Bituminous Coal Mines
0632	Subbituminous Coal Mines
0633	Lignite Mines
07	**Crude Petroleum and Natural Gas Industries**
071	Crude Petroleum and Natural Gas Industries
0711	Conventional Crude Oil and Natural Gas Industry
0712	Non-Conventional Crude Oil Industry
08	**Quarry and Sand Pit Industries**
081	Stone Quarries
0811	Granite Quarries
0812	Limestone Quarries
0813	Marble Quarries
0814	Sandstone Quarries
0815	Shale Quarries
082	Sand and Gravel Pits
0821	Sand and Gravel Pits
09	**Service Industries Incidental to Mineral Extraction**
091	Service Industries Incidental to Crude Petroleum and Natural Gas
0911	Contract Drilling, Oil and gas Industry
0919	Other Service Industries Incidental to Crude Petroleum and Natural Gas
092	Service Industries Incidental to Mining
0921	Contract Drilling Industry (Except Oil and Gas)
0929	Other Service Industries Incidental to Mining
10	**Food Industries**
101	Meat and Poultry Products Industries
1011	Meat and Meat Products Industry (Except Poultry)
1012	Poultry Products Industry
102	Fish Products Industry
1021	Fish Products Industry
103	Fruit and Vegetable Industries
1031	Canned and Preserved Fruit and Vegetable Industry
1032	Frozen Fruit and Vegetable Industry
104	Dairy Products Industries
1041	Fluid Milk Industry
1049	Other Dairy Products Industries
105	Flour,Prepared Cereal Food and Feed Industries
1051	Cereal Grain Flour Industry

1052	Prepared Flour Mixes and Prepared Cereal Foods Industry
1053	Feed Industry
106	Vegetable Oil Mills (Except Corn Oil)
1061	Vegetable Oil Mills (Except Corn Oil)
107	Bakery Products Industries
1071	Biscuit Industry
1072	Bread and Other Bakery Products Industry
108	Sugar and Sugar Confectionery Industries
1081	Cane and Beet Sugar Industry
1082	Chewing Gum Industry
1083	Sugar and Chocolate Confectionery Industry
109	Other Food Products Industries
1091	Tea and Coffee Industry
1092	Dry Pasta Products Industry
1093	Potato Chip, Pretzel and Popcorn Industry
1094	Malt and Malt Flour Industry
1099	Other Food Products Industries n.e.c.
11	**Beverage Industries**
111	Soft Drink Industry
1111	Soft Drink Industry
112	Distillery Products Industry
1121	Distillery Products Industry
113	Brewery Products Industry
1131	Brewery Products Industry
114	Wine Industry
1141	Wine Industry
12	**Tobacco Products**
121	Leaf Tobacco Industry
1211	Leaf Tobacco Industry
122	Tobacco Products Industry
1221	Tobacco Products Industry
15	**Rubber Products Industries**
151	Tire and Tube Industry
1511	Tire and Tube Industry
152	Rubber Hose and Belting Industry
1521	Rubber Hose and Belting Industry
159	Other Rubber Products Industries
1599	Other Rubber Products Industries
16	**Plastic Products Industries**
151	Foamed and Expanded Plastic Products Industry
1611	Foamed and Expanded Plastic Products Industry
162	Plastic Pipe and Pipe Fittings Industry

1621   Plastic Pipe and Pipe Fittings Industry
163   Plastic Film and Sheeting Industry
1631   Plastic Film and Sheeting Industry
169   Other Plastic Products Industries
1691   Plastic Bag Industry
1699   Other Plastic Products Industries n.e.c.
17   Leather and Allied Products Industries
171   Leather and Allied Products Industries
1711   Leather Tanneries
1712   Footwear Industry
1713   Luggage, Purse and Handbag Industry
1719   Other Leather and Allied Products Industries
18   Primary Textile Industries
181   Man-Made Fibre and Filament Yarn Industry
1811   Man-Made Fibre and Filament Yarn Industry
182   Spun Yarn and Woven Cloth Industries
1821   Wool Yarn and Woven Cloth Industries
1829   Other Spun Yarn and Woven Cloth Industries
183   Broad Knitted Fabric Industry
1831   Broad Knitted Fabric Industry
19   Textile Products Industry
191   Natural Fibres Processing and Felt Products Industry
1911   Natural Fibres Processing and Felt Products Industry
192   Carpet, Mat and Rug Industry
1921   Carpet, Mat and Rug Industry
193   Canvas and Related Products Industry
1931   Canvas and Related Products Industry
199   Other Textile Products Industries
1991   Narrow Fabric Industry
1992   Contract Textile Dyeing and Finishing Industry
1993   Household Products of Textile Materials Industry
1994   Hygiene Products of Textile Materials Industry
1995   Tire Cord Fabric Industry
1999   Other Textile Products Industries n.e.c.
24   Clothing Industry
243   Men's and Boy's clothing Industries
2431   Men's and Boy's Coat Industry
2432   Men's and Boy's Suit and Jacket Industry
2433   Men's and Boy's Pants Industry
2434   Men's and Boy's Shirt and Underwear Industry
2435   Men's and Boy's Clothing Contractors
244   Women's Clothing Industries

2441	Women's Coat and Jacket Industry
2442	Women's Sportswear Industry
2443	Women's Dress Industry
2444	Women's Blouse and Shirt Industry
2445	Women's Clothing Contractors
245	Children's Clothing Industry
2451	Children's Clothing Industry
249	Other Clothing and Apparel Industries
2491	Sweater Industry
2492	Occupational Clothing Industry
2493	Glove Industry
2494	Hosiery Industry
2495	Fur Goods Industry
2496	Foundation Garment Industry
2499	Other Clothing and Apparel Industries n.e.c.
25	**Wood Industries**
251	Sawmill, Planing Mill and Shingle Mill Products
2511	Shingle and Shake Industry
2512	Sawmill and Planing Mill Products Industry (Except Shingle and Shakes)
252	Veneer and Plywood Industries
2521	Hardwood Veneer and Plywood Industries
2522	Softwood Veneer and Plywood Industries
254	Sash, Door and Other Millwork Industries
2541	Prefabricated Wooden Buildings Industry
2542	Wooden Kitchen Cabinet and Bathroom Vanity Industry
2543	Wooden Door and Window Industry
2549	Other Millwork Industries
256	Wooden Box and Pallet Industry
2561	Wooden Box and Pallet Industry
258	Coffin and Casket Industry
2581	Coffin and Casket Industry
259	Other Wood Industries
2591	Wood Preservation Industry
2592	Particle Board Industry
2593	Wafer Board Industry
2599	Other Wood Industries n.e.c.
26	**Furniture and Fixture Industries**
261	Household Furniture Industries
2611	Wooden Household Furniture Industry
2612	Upholstered Household Furniture Industry
2619	Other Household Furniture Industries
264	Office Furniture Industries

2641   Metal Office Furniture Industry
2649   Other Office Furniture Industries
269   Other Furniture and Fixture Industries
2691   Bead Spring and Mattress Industry
2692   Hotel, Restaurant and Institutional Furniture and Fixture Industry
2699   Other Office Furniture Industries n.e.c.
27   Paper and allied Products Industries
271   Pulp and Paper Industries
2711   Pulp Industry
2712   Newsprint Industry
2713   PaperBoard Industry
2714   Building Board Industry
2719   Other Paper Industries
272   Asphalt Roofing Industry
2721   Asphalt Roofing Industry
273   Paper Box and Bag Industries
2731   Folding Carton and Set-Up Box Industry
2732   Corrugated Box Industry
2733   Paper Bag Industry
279   Other Converted Paper Products Industries
2791   Coated and Treated Paper Industry
2792   Stationery Paper Products Industry
2793   Paper Consumer Products Industry
2799   Other converted Paper Products Industries n.e.c.
28   Printing, Publishing and Allied Industries
281   Commercial Printing Industries
2811   Business Forms Printing Industry
2819   Other Commercial Printing Industries
282   Platemaking, Typesetting and Bindery Industry
2821   Platemaking, Typesetting and Bindery Industry
283   Publishing Industries
2831   Book Publishing Industry
2839   Other Publishing Industries
284   Combined Publishing and Printing Industries
2841   Newspaper, Magazine and Periodical (Combined Publishing and Printing) Industry
2849   Other Combined Publishing and Printing Industries
29   Primary Metal Industries
291   Primary Steel Industries
2911   Ferro-Alloys Industries
2912   Steel Foundries
2919   Other Primary Steel Industries
292   Steel Pipe and Tube Industry

2921   Steel Pipe and Tube Industry
294   Iron Foundries
2941   Iron Foundries
295   Non-Ferrous Metal Smelting and Refining Industries
2951   Primary Production of Aluminum
2959   Other Primary Smelting and Refining of Non-Ferrous Metal Industries
296   Aluminum Rolling, Casting and Extruding Industry
2961   Aluminum Rolling, Casting and Extruding Industry
297   Copper and Copper Alloy Rolling, Casting and Extruding Industry
2971   Copper and Copper Alloy Rolling, Casting and Extruding Industry
299   Other Rolled, Cast and Extruded Mon-Ferrous Metal Products Industries
2999   Other Rolled, Cast and Extruded Mon-Ferrous Metal Products Industries

30   Fabricated Metal Products Industries (Except Machinery and Transportation Equipment Industries)

301   Power Boiler and Heat Exchanger Industry
3011   Power Boiler and Heat Exchanger Industry
302   Fabricated Structural Metal Products Industries
3021   Metal Tanks (Heavy Gauge) Industry
3022   Plate Work Industry
3023   Pre-Engineered Metal Buildings Industry (Except Portable)
3029   Other Fabricated Structural Metal Products Industries
303   Ornamental and Architectural Metal Products Industries
3031   Metal Door and Window Industry
3032   Prefabricated Portable Metal Buildings Industry
3039   Other Ornamental and Architectural Metal Products Industries
305   Wire and Wire Products Industries
3051   Upholstery and Coil Spring Industry
3052   Wire and Wire Rope Industry
3053   Industrial Fastener Industry
3059   Other Wire Products Industries
306   Hardware, Tool and Cutlery Industries
3061   Basic Hardware Industry
3062   Metal Dies, Moulds and Patterns Industry
3063   Hand Tool and Implement Industry
3069   Other Hardware and Cutlery Industries
307   Heating Equipment Industry
3071   Heating Equipment Industry
308   Machine Shop Industry
3081   Machine Shop Industry
309   Other Metal Fabricating Industries
3091   Metal Plumbing Fixtures and Fittings Industry
3092   Metal Valve Industry

3099	Other Metal Fabricating Industries n.e.c.

31   Machinery Industries (Except Electrical Machinery)

311	Agricultural Implement Industry
3111	Agricultural Implement Industry
312	Commercial Refrigeration and Air Conditioning Equipment Industry
3121	Commercial Refrigeration and Air Conditioning Equipment Industry
319	Other Machinery and Equipment Industries
3191	Compressor, Pump and Industrial Fan Industry
3192	Construction and Mining Machinery and Materials Handling Equipment Industry
3193	Sawmill and Woodworking Machinery Industry
3194	Turbine and Mechanical Power Transmission Equipment Industry
3199	Other Machinery and Equipment Industries n.e.c.

32   Transportation Equipment Industries

321	Aircraft and Aircraft Parts Industry
3211	Aircraft and Aircraft Parts Industry
323	Motor Vehicle Industry
3231	Motor Vehicle Industry
324	Truck and Bus Body and Trailer Industries
3241	Truck and Bus Body Industry
3242	Commercial Trailer Industry
3243	Non-Commercial Trailer Industry
3244	Mobile Home Industry
325	Motor Vehicle Parts and Accessories Industries
3251	Motor Vehicle Engine and Engine Parts Industry
3252	Motor Vehicle Wiring Assemblies Industry
3253	Motor Vehicle Stampings Industry
3254	Motor Vehicle Steering and Suspension Parts Industry
3255	Motor Vehicle Wheel and Brake Industry
3256	Plastic Parts and Accessories for Motor Vehicles Industry
3257	Motor Vehicle Fabric Accessories Industry
3259	Other Motor Vehicle Accessories, Parts and Assemblies Industries
326	Railroad Rolling Stock Industry
3261	Railroad Rolling Stock Industry
327	Shipbuilding and Repair Industry
3271	Shipbuilding and Repair Industry
328	Boatbuilding and Repair Industry
3281	Boatbuilding and Repair Industry
329	Other Transportation Equipment Industries
3299	Other Transportation Equipment Industries

33   Electrical and Electronic Products Industries

331	Small Electrical Appliance Industry
3311	Small Electrical Appliance Industry

332   Major Appliance Industry (Electric and Non-Electric)
3321 Major Appliance Industry (Electric and Non-Electric)
333   Electric Lighting Industries
3331 Lighting Fixture Industry
3332 Electric Lamp and Shade Industry (Except Bulb and Tube)
3333 Electric Lamp (Bulb and Tube Industry)
334   Record Player, Radio and Television Receiver Industry
3341 Record Player, Radio and Television Receiver Industry
3335 Communication and Other Electronic Equipment Industries
3351 Telecommunication Equipment Industry
3352 Electronic Parts and Components Industry
3359 Other Communication and Electronic Equipment Industries
336   Office, Store and Business Machine Industries
3361 Electronic Computing and Peripheral Equipment Industry
3362 Electronic Office, Store and Business Machine Industry
3369 Other Offices, Store and Business Machine Industries
337   Electrical Industrial Equipment Industries
3371 Electrical Transformer Industry
3372 Electrical Switchgear and Protective Equipment Industry
3379 Other Electrical Industrial Equipment Industries
338   Communications and Energy Wire and Cable Industry
3381 Communications and Energy Wire and Cable Industry
339   Other Electrical Products Industries
3391 Battery Industry
3392 Non-Current Carrying Wiring Devices Industry
3399 Other Electrical Products Industries n.e.c.
35   Non-Metallic Mineral Products Industries
351   Clay Products Industries
3511 Clay Products Industry (From Domestic Clay)
3512 Clay Products Industry (From Imported Clay)
352   Hydraulic Cement Industry
3521 Hydraulic Cement Industry
354   Concrete Products Industries
3541 Concrete Pipe Industry
3542 Structural Concrete Products Industry
3549 Other Concrete Products Industries
355   Ready-Mix Concrete Industry
3551 Ready-Mix Concrete Industry
356   Glass and Glass Products Industries
3561 Primary Glass and Glass Containers Industry
3562 Glass Products Industry (Except Glass Containers)
357   Abrasives Industry

3571 Abrasives Industry
358 Lime Industry
3581 Lime Industry
359 Other Non-Metallic Mineral Products Industries
3591 Refractories Industry
3592 Asbestos Products Industry
3593 Gypsum Products Industry
3594 Non-Metallic Mineral Insulation Materials Industry
3599 Other Non-Metallic Mineral Insulating Materials Industry n.e.c.
36 Refined Petroleum and Coal Products Industries
361 Refined Petroleum Products Industries
3611 Refined Petroleum Products Industry (Except Lubricating Oil and Grease)
3612 Lubricating Oil and Grease Industry
369 Other Petroleum and Coal Products Industries
3699 Other Petroleum and Coal Products Industries
37 Chemical and Chemical Products Industries
371 Industrial chemicals Industries n.e.c.
3711 Industrial chemicals Industries n.e.c.
3712 Industrial Organic Chemical Industries n.e.c.
372 Agricultural Chemical Industries
3721 Industrial Organic Chemical Industries n.e.c.
3722 Mixed Fertilizer Industry
3729 Other Agricultural Chemical Industries
373 Plastic and Synthetic Resin Industry
3731 Plastic and Synthetic Resin Industry
374 Pharmaceutical and Medicine Industry
3741 Pharmaceutical and Medicine Industry
375 Paint and Varnish Industry
3751 Paint and Varnish Industry
376 Soap and Cleaning Compounds Industry
3761 Soap and Cleaning Compounds Industry
377 Toilet Preparations Industry
3771 Toilet Preparations Industry
379 Other Chemical Products Industries
3791 Printing Ink Industry
3792 Adhesives Industry
3799 Other Chemical Products Industries n.e.c.
39 Other Manufacturing Industries
391 Scientific and Professional Equipment Industries
3911 Indicating, Recording and Controlling Instruments Industry
3912 Other Instruments and Related Products Industry
3913 Clock and Watch Industry

3914   Ophthalmic Goods Industry
392   Jewellery and Precious Metal Industries
3921   Jewellery and Silverware Industry
3922   Precious Metal Secondary Refining Industry
393   Sporting Goods and Toy Industries
3931   Sporting Goods Industry
3932   Toys and Games Industry
397   Sign and Display Industry
3971   Sign and Display Industry
399   Other Manufactured Products Industries
3991   Broom, Brush and Mop Industry
3992   Button, Buckle and Clothes Fastener Industry
3993   Floor Tile, Linoleum and Coated Fabric Industry
3994   Musical Instrument and Sound Recording Industry
3999   Other Manufactured Products Industries n.e.c.
40   Building, Developing and General Contracting Industries
401   Residential Building and Development
4011   Single Family Housing
4012   Apartment and Other Multiple Housing
4013   Residential Renovation
402   Non-Residential Building and Development
4021   Manufacturing and Light Industrial Building
4022   Commercial Building
4023   Institutional Building
41   Industrial and Heavy (Engineering) Construction Industries
411   Industrial Construction (Other Than Buildings)
4111   Power Plants (Except Hydroelectric)
4112   Gas, Oil and Other Energy Related Structures (Except Pipelines)
4113   Gas and Oil Pipelines
4119   Other Industrial Construction
412   Highway and Heavy Construction
4121   Highways, Streets and Bridge
4122   Waterworks and Sewage Systems
4123   Hydroelectric Power Plants and Related Structures (Except Transmission Lines)
4124   Power and Telecommunication Transmission Lines
4129   Other Heavy Construction
42   Trade Contracting Industries
421   Site Work
4211   Wrecking and Demolition
4212   Water Well Drilling
4213   Septic System Installation
4214   Excavating and Grading

4215   Equipment Rental (With Operator)
4216   Asphalt Paving
4217   Fencing Installation
4219   Other Site Work
422   Structural and Related Work
4221   Pile Driving Work
4222   Form Work
4223   Steel Reinforcing
4224   Concrete Pouring and Finishing
4225   Precast Concrete Installation
4226   Rough and Framing Carpentry
4227   Structural Steel Erection
4229   Other Structural and Related Work
423   Exterior Close-in Work
4231   Masonry Work
4232   Siding Work
4233   Glass and Glazing Work
4234   Insulation Work
4235   Roof Shingling
4236   Sheet Metal and Built-up Roofing
4239   Other Exterior Close-In Work
424   Plumbing, Heating and Air Conditioning, Mechanical Work
4241   Plumbing
4242   Dry Heating and Gas Piping Work
4243   Wet Heating and Air-Conditioning Work
4244   Sheet Metal and Other Duct Work
425   Mechanical Specialty Work
4251   Process Piping Work
4252   Automatic Sprinkler System Installation
4253   Commercial Refrigeration Work
4254   Environmental Control Work
4255   Millwright and Rigging
4256   Thermal Insulation Work
4259   Other Mechanical Specialty Work
426   Electrical Work
4261   Electrical Work
427   Interior and Finishing Work
4271   Plastering and Stucco Work
4272   Drywall Work
4273   Acoustical Work
4274   Finish Carpentry
4275   Painting and Decorating Work

4276	Terrazzo and Tile Work
4277	Hardwood flooring Installation
4278	Resilient Flooring and Carpet Work
4279	Other Interior and Finishing Work
429	Other Trade Work
4291	Elevator and Escalator Installation
4292	Ornamental and Miscellaneous Fabricated Metal
4293	Residential Swimming Pool Installation
4299	Other Trade Work n.e.c.
44	**Service Industries Incidental to Construction**
441	Project Management, Construction
4411	Project Management, Construction
449	Other Services Incidental to Construction
4491	Land Developers
4499	Other Services Incidental to Construction n.e.c.
45	**Transportation Industries**
451	Air Transport Industries
4511	Scheduled Air Transport Industry
4512	Non-Scheduled Air Transport,Chartered, Industry
4513	Non-Scheduled Air Transport, Specialty, Industry
452	Service Industries Incidental to Air Transport
4521	Airport Operations Industry
4522	Aircraft Rental Industry
4523	Aircraft Servicing Industry
4529	Other Service Industries Incidental to Air Transport
453	Railway Transport and Related Service Industries
4531	Railway Transport Industry
4532	Service Industry Incidental to Railway Transport
454	Water Transport Industries
4541	Freight and Passenger Water Transport Industry
4542	Ferry Industry
4543	Marine Towing Industry
4544	Ship Chartering Industry
4549	Other Water Transport Industries
455	Service Industries Incidental to Water Transport
4551	Marine Cargo Handling Industry
4552	Harbour and Prot Operation Industry
4553	Marine Salvage Industry
4554	Piloting Service, Water Transport Industry
4555	Marine Shipping Agencies Industry
4559	Other Service Industries Incidental to Water Transport
456	Truck Transport Industries

4561   General Freight Trucking Industry
4562   Used Goods Moving and Storage Industry
4563   Bulk Liquids Trucking Industry
4564   Dry Bulk Materials Trucking Industry
4565   Forest Products Trucking Industry
4569   Other Truck Transport Industries
457   Public Passenger Transit Systems Industries
4571   Urban Transit Systems Industry
4572   Interurban and Rural Transit Systems Industry
4573   School Bus Operations Industry
4574   Charter and Sightseeing Bus Services Industry
4575   Limousine Service to Airports and Stations Industry
458   Other Transportation Industries
4581   Taxicab Industry
4589   Other Transportation Industries n.e.c.
459   Other Service Industries Incidental to Transportation
4591   Highway, Street and Bridge Maintenance Industry
4592   Freight Forwarding Industry
4599   Other Service Industries Incidental to Transportation n.e.c.
46   **Pipeline Transport Industries**
461   Pipeline Transport Industries
4611   Natural Gas Pipeline Transport Industry
4612   Crude Oil Pipeline Transport Industry
4619   Other Pipeline Transport Industries
47   **Storage and Warehousing Industries**
471   Grain Elevator Industry
4711   Grain Elevator Industry
479   Other Storage and Warehousing Industries
4791   Refrigerated Warehousing Industry
4799   Other Storage and Warehousing Industries n.e.c.
48   **Communication Industries**
481   Telecommunication Broadcasting Industries
4811   Radio Broadcasting Industry
4812   Television Broadcasting Industry
4813   Combined Radio and Television Broadcasting Industry
4814   Cable Television Industry
482   Telecommunication Carriers Industry
4821   Telecommunication Carriers Industry
483   Other Telecommunication Industries
4839   Other Telecommunication Industries
484   Postal and Courier Service Industries
4841   Postal Service Industry

4842   Courier Service Industry
49   Other Utility Industries
491   Electric Power Systems Industry
4911   Electric Power Systems Industry
492   Gas Distribution Systems Industry
4921   Gas Distribution Systems Industry
493   Water Systems Industry
4931   Water Systems Industry
499   Other Utility Industries n.e.c.
4999   Other Utility Industries n.e.c.
50   Farm Products Industries
501   Farm Products, Wholesale
5011   Livestock Wholesale
5012   Grain Wholesale
5019   Other Farm Products
51   Petroleum Products Industries, Wholesale
511   Petroleum Products Industries, Wholesale
5111   Petroleum Products Industries, Wholesale
52   Food, Beverage, Drug and Tobacco Industries, Wholesale
521   Food Wholesale
5211   Confectionery Wholesale
5212   Frozen Foods (Packaged) Wholesale
5213   Dairy Products Wholesale
5214   Poultry and Eggs Wholesale
5215   Fish and Seafood Wholesale
5216   Fresh Fruit and Vegetables Wholesale
5217   Meat and Meat Products Wholesale
5219   Other Foods Wholesale
522   Beverages Wholesale
5221   Beverages Wholesale
523   Drugs and Toilet Preparations Wholesale
5231   Drugs Wholesale
5232   Toilet Soaps and Preparations Wholesale
5239   Drug Sundries and Other Drugs and Toilet Preparations Wholesale
524   Tobacco Products Wholesale
5241   Tobacco Products Wholesale
53   Apparel and Dry Goods Industries Wholesale
531   Apparel Wholesale
5311   Men's and Boys' Clothing and Furnishings Wholesale
5312   Women's and Misses' and Children's Hosiery Underwear and Apparel Accessories
       Wholesale
5314   Footwear Wholesale

5319   Other Apparel Wholesale
532   Dry Goods Wholesale
5321   Piece Goods Wholesale
5329   Notions and Other Dry Goods Wholesale
54   Household Goods Industries Wholesale
541   Electrical and Electronic Household Appliances and Parts Wholesale
5411   Electrical Household Appliances Wholesale
5412   Electronic Household Appliances Wholesale
542   Household Furniture Wholesale
5421   Household Furniture Wholesale
543   Household Furnishings Wholesale
5431   China Glassware Crockery and Pottery Wholesale
5431   Floor Coverings Wholesale
5433   Linens Draperies and Other Textile Furnishings Wholesale
5439   Other Household Furnishings Wholesale
55   Motor Vehicle Parts and Accessories Industries Wholesale
551   Motor Vehicles Wholesale
5511   Automobiles Wholesale
5512   Trucks and Buses Wholesale
5519   Other Motor Vehicles and Trailers Wholesale
552   Motor Vehicle Parts and Accessories Wholesale
5521   Tires and Tubes Wholesale
5529   Other Motor Vehicle Parts and Accessories Wholesale
56   Metals Hardware Plumbing Heating and Building Materials Industries Wholesale
561   Metal and Metal Products Wholesale
5611   Iron and Steel Primary Forms and Structural Shapes Wholesale
5612   Other Iron and Steel Products Wholesale
5613   Non-ferrous Metal and Metal Products Wholesale
5619   Combination Metal and Metal Products
562   Hardware and Plumbing Heating and Air Conditioning Equipment and Supplies Wholesale
5621   Hardware Wholesale
5622   Plumbing Heating and Air Conditioning Equipment and Supplies Wholesale
563   Lumber and Building Materials Wholesale
5631   Lumber Plywood and Millwork Wholesale
5632   Paint Glass and Wallpaper Wholesale
5639   Other Building Materials Wholesale
57   Machinery Equipment and Supplies Industries Wholesale
571   Farm Machinery Equipment and Supplies Wholesale
5711   Farm Machinery Equipment and Supplies Wholesale
572   Construction Forestry and Mining Machinery Equipment and Supplies Wholesale

5721   Construction Forestry Machinery Equipment and Supplies Wholesale

5722   Mining Machinery Equipment and Supplies Wholesale

573   Industrial Machinery Equipment and Supplies Wholesale

5731   Industrial Machinery Equipment and Supplies Wholesale

574   Electrical and Electronic Machinery Equipment and Supplies Wholesale

5741   Electrical Wiring Supplies and Electrical Construction Material Wholesale

5742   Electrical Generating and Transmission Equipment and Supplies Wholesale

5743   Electronic Machinery Equipment and Supplies Wholesale

5749   Other Electrical and Electronic Machinery Equipment and Supplies Wholesale

579   Other Machinery, Equipment and Supplies Wholesale

5791   Office and Store Machinery Equipment and Supplies Wholesale

5792   Service Machinery Equipment and Supplies Wholesale

5793   Professional Machinery Equipment and Supplies Wholesale

5799   Other Machinery, Equipment and Supplies n.e.c. Wholesale

59   **Other Products Industries Wholesale**

591   Waste Materials Wholesale

5911   Automobile Wrecking

5919   Other Waste Materials Wholesale

592   Paper and Paper Products Wholesale

5921   Newsprint Wholesale

5922   Stationery and Office Supplies Wholesale

5929   Other Paper and Paper Products, Wholesale

593   Agricultural Supplies Wholesale

5931   Agricultural Feeds Wholesale

5932   Seeds and Seed Processing Wholesale

5939   Agricultural Chemical and Other Farm Supplies Wholesale

594   Toys, Amusement and Sporting Goods Wholesale

5941   Toys Novelties and Fireworks Wholesale

5942   Amusement and Sporting Goods Wholesale

595   Photographic Equipment and Musical Instruments and Supplies Wholesale

5951   Photographic Equipment and Supplies Wholesale

5952   Musical Instruments and Accessories, Wholesale

596   Jewellery and Watches Wholesale

5961   Jewellery and Watches Wholesale

597   Industrial and Household Chemicals Wholesale

5971   Industrial and Household Chemicals Wholesale

598   General Merchandise Wholesale

5981   General Merchandise Wholesale

599   Other Products n.e.c. Wholesale

5991   Books Periodicals and Newspapers, Wholesale

5992   Second-Hand Goods Wholesale (Except Machinery and Automotive)

5993   Forest Products Wholesale

5999   Other Products n.e.c. Wholesale

60   Food, Beverage and Drug Industries, Retail

601   Food Stores

6011   Food (Groceries) Stores

6012   Food (Specialty) Stores

602   Liquor, Wine and Beer Stores

6021   Liquor Stores

6022   Wine Stores

6023   Beer Stores

603   Prescription Drugs and Patent Medicine Stores

6031   Pharmacies

6032   Patent Medicine and Toiletries Stores

61   Shoe, Apparel, Fabric and Yarn Industries, Retail

611   Shoe Stores

6111   Shoe Stores

612   Men's Clothing Stores

6121   Men's Clothing Stores

613   Women's Clothing Stores

6131   Women's Clothing Stores

614   Clothing Stores n.e.c.

6141   Clothing Stores n.e.c.

615   Fabric and Yarn Stores

6151   Fabric and Yarn Stores

62   Household Furniture, Appliances and Furnishings Industries Retail

621   Household Furniture Stores

6211   Household Furniture Stores (With Appliances and Furnishings)

6212   Household Furniture Stores (Without Appliances and Furnishings)

6213   Furniture Refinishing and Repair Shops

622   Appliance, Television, Radio and Stereo Stores

6221   Appliance, Television, Radio and Stereo Stores

6222   Television, Radio and Stereo Stores

6223   Appliance, Television, Radio and Stereo Repair Shops

623   Household Furnishings Stores

6231   Floor Covering Stores

6232   Drapery Stores

6239   Other Household Furnishings Stores

63   Automotive Vehicles Parts and Accessories Industries Sales and Service

631   Automobile Dealers

6311   Automobile (new) Dealers

6312   Automobile (Used) Dealers

632   Recreational Vehicle Dealers

6321   Motor Home and Travel Trailer Dealers

6322	Boats, Outboard Motors and Boating Accessories Dealers
6323	Motorcycle and Snowmobile Dealers
6329	Other Recreational Vehicle Dealers
633	Gasoline Service Stations
6331	Gasoline Service Stations
634	Automotive Parts and Accessories Stores
6341	Home and Auto Supply Stores
6342	Tire, Battery, Parts and Accessories Stores
635	Motor Vehicle Repair Shops
6351	Garages (General Repairs)
6352	Paint and Body Repair Shops
6353	Muffler Replacement Shops
6354	Motor Vehicle Glass Replacement Shops
6355	Motor Vehicle Transmission Repair and Replacement Shops
6359	Other Motor Vehicle Repair Shops
639	Other Motor Vehicle Services
6391	Car Washes
6399	Other Motor Vehicle Services n.e.c.
64	**General Retail Merchandising Industries**
641	General Merchandise Stores
6411	Department Stores
6412	General Stores
6413	Other General Merchandise Stores
65	**Other Retail Stores Industries**
651	Book and Stationery Stores
6511	Book and Stationery Stores
652	Florists, Lawn and Garden Centres
6521	Florist Shops
6522	Lawn and Garden Centres
653	Hardware, Paint, Glass dan Wallpaper Stores
6531	Hardware Stores
6532	Paint, Glass and Wallpaper Stores
654	Sporting Goods and Bicycle Shops
6541	Sporting Goods Stores
6542	Bicycle Shops
655	Musical Instrument and Record Stores
6551	Musical Instrument Stores
6552	Record and Tape Stores
656	Jewellery Stores and Watch and Jewellery Repair Shops
6561	Jewellery Stores
6562	Watch and Jewellery Repair Shops
657	Camera and Photographic Supply Stores

6571   Camera and Photographic Supply Stores
658   Toy, Hobby, Novelty, and Souvenir Stores
6581   Toy and Hobby Stores
6582   Gift Novelty and Souvenir Stores
659   Other Retail Stores
6591   Second-Hand Merchandise Stores n.e.c.
6592   Opticians' Shops
6593   Art Galleries and Artists' Supply Stores
6594   Luggage and Leather Goods Stores
6595   Monument and Tombstone Dealers
6596   Pet Stores
6597   Coin and Stamp Dealers
6598   Mobile Home Dealers
6599   Other Retail Stores n.e.c.
69   Non-Store Retail Industries
691   Vending Machine Operators
6911   Vending Machine Operators
692   Direct Sellers
6921   Direct Sellers
70   Deposit Accepting Intermediary Industries
701   Central Bank
7011   Central Bank
702   Chartered Banks and Other Banking-Type Intermediaries
7021   Chartered Banks
7029   Other Banking-Type Intermediaries
703   Trust Companies
7031   Trust Companies
704   Deposit Accepting Mortgages Companies
7041   Deposit Accepting Mortgage Companies (Except Co-operatives)
7042   Co-operative Mortgage Companies
705   Credit Unions
7051   Local Credit Unions
7052   Central Credit Unions
709   Other Deposit Accepting Intermediaries
7099   Other Deposit Accepting Intermediaries
71   Consumer and Business Financing Intermediary Industries
711   Consumer Loan Companies
7111   Consumer Loan Companies
712   Business Financing Companies
7121   Sales Finance Companies
7212   Credit Card Companies
7213   Factoring Companies

7124	Financial Leasing Companies
7125	Venture Capital Companies
7129	Other Business Financing Companies
72	**Investment Intermediary Industries**
721	Portfolio Investment Intermediaries
7211	Investment (Mutual) Funds
7212	Retirement Savings Funds
7213	Segregated Funds
7214	Investment companies
7214	Holding Companies
722	Mortgage Companies
7221	Mortgage Investment Companies
7222	Teal Estate Investment Trusts
7229	Other Mortgage Companies
729	Other Investment Intermediaries
7291	Trusteed Pension Funds
7292	Estate, Trust and Agency Funds
7299	Other Investment Intermediaries n.e.c.
73	**Insurance Industries**
731	Life Insurers
7311	Life Insurers
732	Deposit Insurers
7321	Deposit Insurers
733	Property and Casualty Insurers
7331	Health Insurers
7339	Other Property and Casualty Insurers
74	**Other Financial Intermediary Industries**
741	Security Brokers and Dealers
7411	Investment Dealers
7412	Stock Brokers
7413	Commodity Brokers
742	Mortgage Brokers
7421	Mortgage Brokers
743	Security and Commodity Exchanges
7431	Stock Exchanges
7432	Commodity Exchanges
749	Other Financial Intermediaries n.e.c.
7499	Other Financial Intermediaries n.e.c.
75	**Real Estate Operator Industries (Except Developers)**
751	Operators of Buildings and Dwellings
7511	Operators of Residential Buildings and Dwellings
7512	Operators of Non-Residential Buildings

759	Other Real Estate Operators
7599	Other Real Estate Operators
76	**Insurance and Real Estate Agent Industries**
761	Insurance and Real Estate Agencies
7611	Insurance and Real Estate Agencies
77	**Business Service Industries**
771	Employment Agencies and Personnel Suppliers
7711	Employment Agencies
7712	Personnel Suppliers
772	Computer and Related Services
7721	Computer Services
7722	Computer Equipment Maintenance and Repair
773	Accounting and Bookkeeping Services
7731	Offices of Chartered and Certified Accountants
7739	Other Accounting and Bookkeeping Services
774	Advertising Services
7741	Advertising Agencies
7742	Media Representatives
7743	Outdoor Display and Billboard Advertising
7749	Other Advertising Services
775	Architectural, Engineering and Other Scientific and Technical Services
7751	Offices on Architects
7752	Offices of Engineers
7759	Other Scientific and Technical Services
776	Offices of Lawyers and Notaries
7761	Offices of Lawyers and Notaries
777	Management Consulting Services
7771	Management Consulting Services
779	Other Business Services
7791	Security and Investigation Services
7792	Credit Bureau Services
7793	Collection Agencies
7794	Customs Brokers
7795	Telephone Answering Services
7796	Duplicating Services
7799	Other Business Services n.e.c.
81	**Federal Government Service Industries**
811	Defense Services
8111	Defense Services
812	Protective Services
8121	Courts of Law
8122	Correctional Services

8123   Police Services
8125   Regulatory Services
8129   Other Protective Services
813   Labour, Employment and Immigration Services
8131   Labour and Employment Services
8132   Immigration Services
8139   Other Labour, Employment and Immigration Services
814   Foreign Affairs and International Assistance
8141   Foreign Affairs
8142   International Assistance
815   General Administrative Services
8151   Executive and Legislative Administration
8152   Finance and Economic Administration
8153   Taxation Administration
8154   Intergovernmental Affairs Administration
8159   Other General Administrative Services
816   Human Resource Administration
8161   Health Administration
8162   Social Service Administration
8163   Education Administration
8164   Recreation and Culture Administration
817   Economic Services Administration
8171   Transportation and Communication Administration
8172   Resource Conservation and Industrial Development Administration
8173   Environment Administration
8174   Housing Administration
8175   Regional Planning and Development Administration
8176   Research Administration
82   Provincial and Territorial Government Service Industries
822   Protective Services
8221   Courts of Law
8222   Correctional Services
8223   Police Services
8224   Firefighting Services
8225   Regulatory Services
8229   Other Protective Services
823   Labour, Employment and Immigration Services
8231   Labour and Employment Services
825   General Administrative Services
8251   Executive and Legislative Administration
8252   Finance and Economic Administration
8253   Taxation Administration

8254   Intergovernmental Affairs Administration
8259   Other General Administrative Services
826   Human Resource Administration
8261   Health Administration
8262   Social Service Administration
8263   Education Administration
8264   Recreation and Culture Administration
827   Economic Services Administration
8271   Transportation and Communication Administration
8272   Resource Conservation and Industrial Development Administration
8273   Environment Administration
8274   Housing Administration
8275   Regional Planning and Development Administration
8276   Research Administration
83   **Local Government Service Industries**
832   Protective Services
8321   Courts of Law
8322   Correctional Services
8323   Police Services
8324   Firefighting Services
8325   Regulatory Services
8326   Other Protective Services
835   General Administrative Services
8351   Executive and Legislative Administration
8352   Finance and Economic Administration
8353   Taxation Administration
8354   Intergovernmental Affairs Administration
8359   Other General Administrative Services
836   Human Resource Administration
8361   Health Administration
8362   Social Service Administration
8363   Education Administration
8364   Recreation and Culture Administration
837   Economic Services Administration
8371   Transportation Administration
8372   Resource Conservation and Industrial Development Administration
8373   Environment Administration
8374   Housing Administration
8375   Regional Planning and Development Administration
84   **International and Other Extra-Territorial Government Service Industries**
841   International and Other Extra-Territorial Agencies
8411   International and Other Extra-Territorial Agencies

85	**Educational Service Industries**
851	Elementary and Secondary Education
8511	Elementary and Secondary Education
852	Post-Secondary Non-University Education
8521	Post-Secondary Non-University Education
853	University Education
8531	University Education
854	Library Services
8541	Library Services
855	Museums and Archives
8551	Museums and Archives
859	Other Educational Services
8599	Other Educational Services
86	**Health and Social Service Industries**
861	Hospitals
8611	General Hospitals
8612	Rehabilitation Hospitals
8613	Extended Car Hospitals
8614	Mental (Psychiatric) Hospitals
8615	Addiction Hospitals
8616	Nursing Stations and Outpost Hospitals
8617	Children's (Paediatric) Hospitals
8619	Other Specialty Hospitals
862	Other Institutional Health and Social Services
8621	Homes for Personal and Nursing Care
8622	Homes for Physically Handicapped and/or Disabled
8623	Homes for Mentally Retarded
8624	Homes for Mentally Handicapped and /or Disabled
8625	Homes for Emotionally Disturbed Children
8626	Homes for Alcohol/Drug Addicts
8627	Homes for Children in Need of Protection
8628	Homes for Single Mothers
8629	Other Institutional Health and Social Services n.e.c.
863	Non-Institutional Health Services
8631	Ambulance Services
8632	Drug Addiction and Alcoholism Treatment Clinics
8633	Health Rehabilitation Clinics
8634	Home Care Services (Including Home Nursing)
8635	Public Health Clinics/Community Health Centres
8639	Other Non-Institutional Health Services
864	Non-Institutional Social Services
8641	Child Day-Care and Nursery School Services

8642   Child Welfare Services
8643   Family Planning Services
8644   Sheltered Workshops
8645   Home-Maker Services
8646   Meal Services (Non-Commercial)
8647   Social Rehabilitation Services
8648   Crisis Intervention
8649   Other Non-Institutional Social Services
865   Offices of Physicians, Surgeons and Dentists, Private Practice
8651   Offices of Physicians, General Practice
8652   Offices of Physicians and Surgeons, Specialists
8653   Offices of Dentists, General Practice
8654   Offices of Dentists, Specialists
866   Offices of Other Health Practitioners
8661   Offices of Chiropractors and Osteopaths
8662   Offices of Nurses, Registered
8663   Offices of Nurses, Practical
8664   Offices of Nutritionists/Dietitians
8665   Offices of Physiotherapists/Occupational Therapists
8666   Offices of Optometrists
8667   Offices of Podiatrists and Chiropodists
8668   Offices of Denturists
8669   Offices of Other Health Practitioners
867   Offices of Social Services Practitioners
8671   Offices of Psychologists
8672   Offices of Social Workers
8679   Offices of Other Social Service Practitioners
868   Medical and Other Health Laboratories
8681   Medical Laboratories
8682   Radiological Laboratories
8683   Combined Medical and Radiological laboratories
8684   Public Health Laboratories
8685   Blood Bank Laboratories
8689   Other Health Laboratories
869   Health and Social Service Association and Agencies
8691   Health Care and Public Safety Promotion Associations and Agencies
8692   Health Care Standards Agencies
8693   Health Care Research Agencies
8694   Social Service Planning and Advocacy Agencies
8699   Other Health and Social Service Associations and Agencies
91   **Accommodation Service Industries**
911   Hotels, Motels and Tourist Courts

9111 Hotels and Motor Hotels
9112 Motels
9113 Tourist Courts and Cabins
9114 Guest Houses and Tourist Homes
912   Lodging Houses and Residential Clubs
9121 Lodging Houses and Residential Clubs
913   Camping Grounds and Travel Trailer Parks
9131 Camping Grounds and Travel Trailer Parks
914   Recreation and Vacation Camps
9141 Outfitters (Hunting and Fishing Camps)
9149 Other Recreation and Vacation Camps
92   Food and Beverage Service Industries
921   Food Services
9211 Restaurants, Licensed
9212 Restaurants, Unlicensed (Including Drive-Ins)
9213 Take-out Food Services
9214 Caterers
922   Taverns, Bars and Night Clubs
9221 Taverns, Bars and Night Clubs
96   Amusement and Recreational Service Industries
961   Motion Picture, Audio and Video Production and Distribution
9611 Motion Picture and Video Production
9612 Motion Picture and Video Distribution
9613 Motion Picture Laboratories and Video Production Facilities
9614 Sound Recording Services
9619 Other Motion Picture, Audio and Video Services
962   Motion Picture Exhibition
9621 Regular Motion Picture Theatres
9622 Outdoor Motion Picture Theatres
9629 Other Motion Picture Exhibition
963   Theatrical and Other Staged Entertainment Services
9631 Entertainment Production Companies and Artists
9639 Other Theatrical and Stage Entertainment Services
964   Commercial Spectator Sports
9641 Professional Sports Clubs
9642 Professional Athletes and Promoters on Own Accounts
9643 Horse Race Tracks
9644 Other Race Tracks
965   Sports and Recreation Clubs and Services
9651 Golf Courses
9652 Curling Clubs
9653 Skiing Facilities

9654   Boat Rentals and Marinas
9659   Other Sports and Recreation Clubs
966   Gambling Operations
9661   Gambling Operations
969   Other Amusement and Recreational Services
9691   Bowling Alleys and Billiard Parlours
9692   Amusement Park, Carnival and Circus Operations
9693   Dance Halls, Studios and Schools
9694   Coin-Operated Amusement Services
9695   Roller Skating Facilities
9696   Botanical and Zoological Gardens
9699   Other Amusement and Recreational Services
97 **Personal and Household Service Industries**
971   Barber and Beauty Shops
9711   Barber Shops
9712   Beauty Shops
9713   Combination Barber and Beauty Shops
972   Laundries and Cleaners
9721   Power Laundries and/or Dry Cleaners
9722   Distributors and/or Agents for Dry Cleaners
9723   Self-Serve Laundries and/or Dry Cleaners
9724   Valet Services, Pressing and/or Repair
9725   Linen Supply
9726   Carpet Cleaning
9729   Other Laundry and Dry Cleaning Services
973   Funeral Services
9731   Funeral Homes
9732   Cemeteries and Crematoria
974   Private Households
9741   Private Households
979   Other Personal and Household Services
9791   Shoe Repair
9792   Fur Cleaning, Repair and Storage
9799   Other Personal and Household Services n.e.c.
98 **Membership Organization Industries**
981   Religious Organizations
9811   Religious Organizations
982   Business Associations
9821   Business Associations
983   Professional Membership Associations
9831   Professional Health and Social Service Membership Associations
9839   Other Professional Membership Associations

984   Labour Organizations
9841   Labour Organizations
986   Civic and Fraternal Organizations
9861   Civic and Fraternal Organizations
99   Other Service Industries
991   Machinery and Equipment Renting and Leasing Services
9911   Industrial Machinery and Equipment Rental and Leasing
9912   Audio-Visual Equipment Rental and Leasing
9913   Office Furniture and Machinery Rental and Leasing
9919   Other Machinery and Equipment Rental and Leasing
992   Automobile and Truck Rental and Leasing Services
9921   Automobile and Truck Rental and Leasing Services
993   Photographers
9931   Photographers
994   Other Repair Services
9941   Electric Motor Repair
9942   Welding
9949   Other Repair Services n.e.c.
995   Services to Buildings and Dwellings
9951   Disinfecting and Exterminating Services
9952   Window Cleaning Services
9953   Janitorial Services
9959   Other Services to Buildings and Dwellings
996   Travel Services
9961   Ticket and Travel Agencies
9962   Tour Wholesalers and Operators
999   Other Services n.e.c.
9991   Parking Lots and Parking Garages
9999   Other Services n.e.c.
NC02 Waste Disposal Operations
NC03 Storage Facilities for Bulk Solids
NC04 Storage Facilities for Bulk Liquids
NC05 Anthracite Coal Mines
NC06 Placer Mines
NC07 Medical, Health and Other Laboratories
NC08 Other Wood Products Industries
NC09 Other Repair Shops
NC10 Other Recycling Operations
NC11 An Industry Not Referred to Elsewhere in this Schedule

Table 5. B.C. MELP discharge to codes and descriptions.

Discharge To Table	
CODE	DESCRIPTION
0	Not Applicable
1	Surface Water (Rivers/Lakes/Estuaries)
2	Marine Water
3	Ground
4	Air

Table 6. B.C. MELP waste type codes and descriptions.

Waste Type Table	
CODE	DESCRIPTION
1	Process
2	Cooling
3	Storm
4	STP
5	Leachate

Table 7. B.C. MELP site type codes and descriptions.

Site Type Table	
CODE	DESCRIPTION
01	Ambient or background air
03	Combined Sewer
05	Ditch or Culvert
07	Estuarine
09	In Plant
11	Irrigation Spray
13	Lake or Pond
15	Landfill
17	Marine
19	Outfall
21	River, Stream or Creek
23	Seepage or Seepage Pools
25	Snow Pack
27	Spring or Hot Spring
29	Stack
31	Storm Sewer
33	Well
35	Infiltration Pond
36	Tile Field
37	Septic Tank
38	Monitoring Well
39	Storage

Table 8. Parameter codes, descriptions, units, and upper limits.

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
D030	1,2 Dichloro ethane	ug/L	500
B022	1,2 Dichlorobenzene	ug/L	20000
P030	1,2 Dichloropropane	ug/L	500
T032	2,4,5-TP	ug/L	500
D041	2,4-D	ug/L	100
D044	2,4-D BEE	ug/L	20000
D050	2,4-Dichlorophenol	ug/L	20000
T039	3Chloroguaiacdl3,4,5	ug/L	20000
G002	41-G	ug/L	20000
T063	4Chl2BFuran-2,3,7,8	pg/L	20000
T061	4Chl2BenDiox-2,3,7,8	pg/L	20000
T060	4ChlDibenzodioxin	pg/L	20000
T062	4Chldibenzofuran	pg/L	20000
T036	4Chlorophenol2,3,4,5	ug/L	20000
T037	4Chlorophenol2,3,4,5	ug/L	20000
T038	4Chlorophenol2,3,4,6	ug/L	20000
P043	5Chl2Bfuran1,2,3,7,8	pg/L	20000
P044	5Chl2BFuran2,3,4,7,8	pg/L	20000
P040	5Chl2BenDiox1,2,3,78	pg/L	20000
P041	5Chldibenzodioxin	pg/L	20000
P042	5Chldibenzofuran	pg/L	20000
H011	6Chl2BDiox1,2,3,4,78	pg/L	20000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
H012	6Chl2BDiox1,2,3,4,78	pg/L	20000
H013	6Chl2BDiox1,2,3,7,89	pg/L	20000
H017	6Chl2BFuran1,2,3,478	pg/L	20000
H018	6Chl2BFuran1,2,3,678	pg/L	20000
H019	6Chl2BFuran2,3,4,678	pg/L	20000
H010	6Chldibenzodioxin	pg/L	20000
H016	6Chldibenzofuran	pg/L	20000
H020	6Chl2BFuran1,2,3,789	pg/L	20000
H015	6Chl2BDiox1,2,3,4678	pg/L	20000
H023	7Chl2BFuran1,2,34789	pg/L	20000
H022	7Chl2dFuran1,2,34678	pg/L	20000
H014	7ChlDibenzodioxin	pg/L	20000
H021	7Chldibenzofuran	pg/L	20000
O101	8Chldibenzodioxin	pg/L	20000
O102	8Chldibenzofuran	pg/L	20000
A001	AMPA (pesticide)	ug/L	20000
A030	Abietic Acid	mg/L	10000
PA01	Acenaphthene	ug/L	20000
PA02	Acenaphthylene	ug/L	20000
A007	Acephate (pesticide)	ug/L	20000
AEHS	Acid Extrctble Herbs (pes	ug/L	20000
0132	Acidity pH 4.5	mg/L	500
0131	Acidity pH 8.3	mg/L	500

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
AC83	Acidity to pH 8.3	mg/L	500
AC-F	Acidity:Free	mg/L	500
AC-T	Acidity:Total	mg/L	500
AOX-	Adsorb Org: Halides	mg/L	2000
A040	Aldehydes (formaldehyde)	mg/L	500
A003	Aldicarb	ug/L	100
A002	Aldrin	ug/L	10000
D102	Alkalinity 4.5/4.2	mg/L	500
1102	Alkalinity Diss. 4.5	mg/L	500
0101	Alkalinity Phen. 8.3	mg/L	500
0102	Alkalinity Total 4.5	mg/L	500
AK-T	Alkalinity Total	mg/L	500
Al-T	Aluminum	mg/L	20000
Al-D	Aluminum Dissolved	mg/L	10000
Al-I	Aluminum-Insoluble	mg/L	10000
Al-S	Aluminum-Soluble	mg/L	10000
NH3-	Ammonia	mg/L	100
NH4-	Ammonium	mg/L	50
2108	Ammonium Chloride	mg/L	20000
NH4A	Ammonium-1st Step	mg/L	20000
A029	Amyl OH	mg/L	20000
PA03	Anthracene	ug/L	20000
Sb-T	Antimony	mg/L	10000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
Sb-D	Antimony Dissolved	mg/L	10000
Sb25	Antimony-125	mg/L	10000
SbIA	Antimony-1st Step	mg/L	10000
Sb-I	Antimony Insoluble	mg/L	10000
SbSA	Antimony-S 1st Step	mg/L	10000
Sb-S	Antimony-Soluble	mg/L	10000
SbTA	Antimony-T/HV Step A	mg/L	10000
FA07	Arachidic (resin acid)	mg/L	10000
A017	Aroclor 1242	ug/L	10000
A021	Aroclor 1254	ug/L	10000
A022	Aroclor 1260	ug/L	10000
As-T	Arsenic	mg/L	20000
As-D	Arsenic Dissolved	mg/L	10000
As-E	Arsenic Extractable	mg/L	10000
AsIA	Arsenic-I 1st Step	mg/L	10000
As-I	Arsenic Insoluble	mg/L	10000
AsSA	Arsenic-S 1st Step	mg/L	10000
AsTA	Arsenic-T/HV Step A	mg/L	10000
FIBR	Asbestos		
A016	Atrazine	ug/L	20000
A008	Azinphos Methyl	ug/L	10000
Ba-T	Barium	mg/L	10000
Ba-D	Barium Dissolved	mg/L	10000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
FA08	Behenic	ug/L	20000
B003	Benomyl	ug/L	20000
B020	Benzene	ug/L	500
PA04	Benzo(a) anthracene	ug/L	20000
PA05	Benzo(a) pyrene	ug/L	20000
PA06	Benzo(b) fluoranthene	ug/L	20000
PA17	Benzo(b+k) fluoranthe	ug/L	20000
PA07	Benzo(ghi) peryliene	ug/L	20000
PA08	Benzo(k) fluoranthene	ug/L	20000
Be-T	Beryllium	mg/L	10000
Be-D	Beryllium Dissolved	mg/L	10000
0150	Bicarbonate	mg/L	5000
DMGC	Bio. LC50:Daph.Magna	%	101
0461	Bio. LC50:Rainbow Tr	%	101
DMGT	Bio. LT50:Daph.Magna	h	100
0459	Bio. LT50:Rainbow Tr	h	100
DMGX	Bio.21 d.Chr:D.Magna	%	101
1416	Bioassay LC50(Salmon)	%	101
0463	Bioassay LT50	h	100
0464	Bioassay LT50 pH Adj	h	100
2461	Bioassay (Pass/Fail)	%	101
0115	Biochemical Oxygen Demand	mg/L	5000
P009	Bis(2ethy1hex)Phthal	ug/L	20000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
Bi-T	Bismuth	mg/L	2000
Bi-D	Bismuth Dissolved	mg/L	1000
B--T	Boron	mg/L	2000
B--D	Boron Dissolved	mg/L	1000
EF15	Brewery Effluent	n/a	
B012	Bromodichloromethane	ug/L	20000
B013	Bromoform	ug/L	20000
P013	ButylBenzyl Phthalat	ug/L	20000
Cd-T	Cadmium	mg/L	2000
Cd-D	Cadmium Dissolved	mg/L	1000
Cd-E	Cadmium Extractable	mg/L	1000
CdIA	Cadmium-I 1st Step	mg/L	1000
Cd-I	Cadmium-Insoluble	mg/L	1000
CdSA	Cadmium-S 1st Step	mg/L	1000
Cd-S	Cadmium-Soluble	mg/L	1000
CdTA	Cadmium-T/HV Step A	mg/L	1000
Ca-T	Calcium	mg/L	10000
Ca-D	Calcium Dissolved	mg/L	10000
Ca-S	Calcium-Soluble	mg/L	10000
C005	Captain	ug/L	10000
EF19	Car & Truck Wah Op.	n/a	
C006	Carbamate	ug/L	10000
C001	Carbaryl	ug/L	20000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
1124	Carbon Diss Inorg.	mg/L	20000
1103	Carbon Diss Organic	mg/L	10000
CO--	Carbon Monoxide	mg/m3	1000000
0124	Carbon Tot Inorganic	mg/L	10000
C--T	Carbon Total	mg/L	20000
0103	Carbon Total Organic	mg/L	10000
C034	Carbon tetrachloride	ug/L	20000
0149	Carbonate	mg/L	50000
C007	Carbophenthion	ug/L	200000
Cs34	Cesium-134	bq/L	10000
Cs37	Cesium-137	bq/L	10000
0116	Chemical Oxygen Dem.	mg/L	10000
1104	Chloride Dissolved	mg/L	10000
0104	Chloride Total	mg/L	10000
ClSA	Chloride-S 1st Step	mg/L	10000
Cl-S	Chloride-Soluble	mg/L	10000
Cl2-	Chlorine	mg/L	10000
2016	Chlorine Dem. Free	mg/L	10000
3016	Chlorine Dem. Total	mg/L	10000
C102	Chlorine Dioxide	mg/L	5000
0016	Chlorine Res:Free	mg/L	100
1016	Chlorine Res:Total	mg/L	100
C010	Chlorobenzene	ug/L	20000

Parameter Table

CODE	DESCRIPTION	UNITS	UPPER LIMIT
C050	Chlorodehydroabietic	mg/L	10000
C033	Chlorodibromomethane	ug/L	20000
C032	Chloroform	ug/L	20000
C020	Chlorophenols	ug/L	20000
0143	Chlorophyll A	mg/L	500
C016	Chlorothalonil (pesticide	mg/L	500
Cr-T	Chromium	mg/L	10000
Cr-D	Chromium Dissolved	mg/L	10000
COAL	Coal	n/a	
Co-T	Cobalt	mg/L	1000
Co-D	Cobalt Dissolved	mg/L	1000
Co60	Cobalt-60	bq/L	10000
0450	Coliform - Fecal	#/100 mL	100000
0451	Coliform - Total	#/100 mL	10000000
COLI	Coliform Result	#/100 mL	100000
0001	Colour Apparent	Rel. Unit	1000
1052	Colour S./W. Diss.	Rel. Unit	500
0024	Colour TAC	Rel. Unit	500
0002	Colour True	Rel. Unit	500
Cu-T	Copper	mg/L	50000
Cu-D	Copper Dissolved	mg/L	30000
Cu-E	Copper Extractable	mg/L	30000
CuIA	Copper-I 1st Step	mg/L	30000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
Cu-I	Copper-Insoluble	mg/L	30000
CuSA	Copper-S 1st Step	mg/L	50000
Cu-S	Copper-Soluble	mg/L	30000
CuTA	Copper-T/HV Step A	mg/L	10000
PA09	Crysene	ug/L	20000
CYAN	Cyanate	mg/L	1000
1105	Cyanide Dissolved	mg/L	1000
0105	Cyanide S.A.D.	mg/L	1000
CN-T	Cyanide Total	mg/L	1000
0157	Cyanide WAD	mg/L	1000
C030	Cyclohexane	ug/L	20000
D025	DDD	ug/L	50
D023	DDE	ug/L	50
D026	DDT	ug/L	50
D052	Dehydroabietic Acid	mg/L	10000
P012	Di-n-Butyl Phthalate	ug/L	20000
P014	Di-n-Octyl Phthalate	ug/L	20000
D010	Dizainon	ug/L	100
PA10	Dibenzo(a,h) anthrace	ug/L	20000
B026	Dichlorobenzene-1,3	ug/L	20000
D062	Dichlorocatechols	ug/L	20000
D053	DichlorodehydroAbiet	mg/L	10000
D061	Dichloroguaiacol	ug/L	20000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
M041	Dichloromethane	ug/L	20000
D060	Dichlorophenols	ug/L	20000
D064	Dichlorovanillins	ug/L	20000
D063	Dichloroveretrols	ug/L	20000
D022	Dieldrin	ug/L	1000
P011	Diethyl Phthalate	ug/L	20000
D001	Dimethoate	ug/L	20000
D011	Dimethyl Ether	ug/L	20000
P010	Dimethyl Phthalate	ug/L	20000
D020	Dioxins	pg/L	100
0660	Discharge Rate (flow)		
EF16	Distillery Effluent	n/a	
0147	E Coli	#/100 mL	10000
EF12	Egg Packing Plant	n/a	
EF13	Egg Processing Plant	n/a	
E040	Endosulfan I	ug/L	10000
E041	Endosulfan II	ug/L	10000
E042	Endosulfan Sulphate	ug/L	10000
E007	Endrin	ug/L	10000
0148	Enterococcus	#/100 mL	10000
E030	Esters	ug/L	20000
E001	Ethyl Alcohol	mg/L	1000
B021	Ethyl Benzene	ug/L	10000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
E010	Ethyl Dichloride	mg/L	1000
E020	Ethylene Glycol	mg/L	1000
F030	Fensulothion	ug/L	10000
FBRC	Fiber Count (Pulp)		
EF07	Fish Farm Effluent	n/a	
EF08	Fish Hatchery Effl.	n/a	
EF09	Fish Processing Effl.	n/a	
0029	Floatable Soids		
F019	Floauzifop-butyl		
0018	Flow (Avg)		
1018	Flow (Rate)		
PA11	Fluoranthene	ug/L	20000
PA12	Fluorene	ug/L	20000
FREP	Fluoridat'n Indx Rpt		
FLRI	Fluoridat'n Index		
FLRA	Fluoridat'n Index		
1106	Fluoride Dissolved	mg/L	20
0106	Fluoride Total	mg/L	50
F-SA	Fluoride-S 1st Step	mg/L	20
F--S	Fluoride-Soluble	mg/L	20
F032	Fonofos	ug/L	20000
F010	Formaldehyde	mg/L	10000
EF11	Fruit & Veg. Proc.	n/a	

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
F001	Furans	pg/L	1000
GCMS	GCMS Scan	n/a	
Ga-T	Gallium	mg/L	1000
G001	Glyphosate	mg/L	1000
EF04	Gravel Washing Effl.	n/a	
1292	Gross Alpha Diss.	bq/L	10
0292	Gross Alpha Total	bq/L	20
1107	Hardness Dissolved	mg/L	5000
0107	Hardness Total	mg/L	10000
H001	Heptachlor	ug/L	1000
H002	Heptachlor Epoxide	ug/L	1000
HCSN	Hydrocarbon Scan	n/a	
HC-T	Hydrocarbon Total	mg/L	20000
HCl-	Hydrogen Chloride	mg/L	10000
HCN-	Hydrogen Cyanide	mg/L	10000
HF--	Hydrogen Fluoride	mg/L	10000
H2O2	Hydrogen Peroxide	mg/L	10000
H2S-	Hydrogen Sulfide	mg/L	10000
PA13	Indeno(1,2,3-cd)pyre	ug/L	10000
In-T	Indium	mg/L	20000
I131	Iodine-131	bq/L	50
I003	Iprodione	mg/L	1000
Fe-T	Iron	mg/L	20000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
Fe-D	Iron Dissolved	mg/L	20000
Fe-E	Iron Extractable	mg/L	10000
Fe-I	Iron-Insoluble	mg/L	10000
Fe-S	Iron-Soluble	mg/L	10000
I004	Isopimaric Acid	mg/L	10000
I001	Isopropanol	ug/L	500
P024	K Amul Xanthate	mg/L	1000
EF18	Laundromat Effluent	n/a	
FA01	Lauric Acid	mg/L	10000
Pb-T	Lead	mg/L	10000
Pb-D	Lead Dissolved	mg/L	5000
Pb-E	Lead Extractable	mg/L	5000
PbIA	Lead-I 1st Step	mg/L	5000
Pb-I	Lead_Insoluble	mg/L	5000
PbSA	Lead-S 1st Step	mg/L	5000
Pb-S	Lead-Soluble	mg/L	5000
PbTA	Lead-T/HV Step A	mg/L	5000
L003	Levo Pimaric Acid	mg/L	10000
FA09	Lignoceric	mg/L	10000
L002	Lindane	mg/L	1000
FA05	Linoleic	mg/L	10000
LIPI	Lipids	mg/L	2000
Li-T	Lithium	mg/L	2000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
Li-D	Lithium Dissolved	mg/L	2000
X003	M,P-Xylene	ug/L	20000
M029	MIBC	mg/L	500
M030	MIBK	mg/L	500
Mg-T	Magnesium	mg/L	3000
Mg-D	Magnesium Dissolved	mg/L	2000
Mg-S	Magnesium-Soluble	mg/L	2000
M001	Malathion	ug/L	20000
Mn-T	Manganese	mg/L	5000
Mn-D	Manganese Dissolved	mg/L	1000
Mn-E	Manganese Extractable	mg/L	1000
EF06	Meat & Poultry Proc.	n/a	
Hg-T	Mercury	ug/L	100
Hg-D	Mercury Dissolved	ug/L	50
Hg-E	Mercury Extractable	ug/L	50
Hg-I	Mercury-Insoluble	ug/L	50
Hg-S	Mercury-Soluble	ug/L	50
HgTA	Mercury-T 1st Step	ug/L	100
EF22	Metal Ores Proces	n/a	
M002	Methamidophos	mg/L	1000
CH4-	Methane	ug/L	20000
M020	Methanol	ug/L	20000
M015	Methiocarb	ug/L	10000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
M016	Methoxychlor	ug/L	10000
M022	Methyl Chloroform	ug/L	500
M017	Methyl Mercaptan	mg/L	100
M018	Methyl Parathion		
M042	Methylene Chloride	ug/L	10000
M003	Mevinphos	ug/L	20000
0458	Microtox EC50 15 Min.	%	101
0457	Microtox EC50 5 Min.	%	101
EF10	Milk Proc. Effluent	n/a	
0025	Moisture	%	101
Mo-T	Molybdenum	mg/L	10000
Mo-D	Molybdenum Dissolved	mg/L	5000
Mo-E	Molybdenum Extractbl	mg/L	5000
M052	Monochlorocatechols	ug/L	10000
M051	Monochloroguaicols	ug/L	10000
M050	Monochlorophenols	ug/L	5000
M053	Monochlorovanillins	ug/L	10000
FA02	Myristic	mg/L	10000
PA14	Naphthalene	ug/L	5000
N005	Neoabietic Acid	mg/L	10000
Ni-T	Nickel	mg/L	10000
Ni-D	Nickel Dissolved	mg/L	10000
Nb-T	Niobium	mg/L	1000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
NO3A	Nitrate-S 1st Step	mg/L	10000
NO3-	Nitrate-Soluble	mg/L	10000
HNO3	Nitric Acid		
L111	Nitro. Diss (NO2) LL	mg/L	1000
L109	Nitro. Diss (NO2+3) LL	mg/L	200
1108	Nitrogen Amm. Diss (N)	mg/L	50
0108	Nitrogen Amm. Total	mg/L	100
1113	Nitrogen Kjel. Diss (N)	mg/L	500
0113	Nitrogen Kjel. Tot (N)	mg/L	1000
0109	Nitrogen NO2 + NO3	mg/L	10000
1111	Nitrogen NO2 Diss (N)	mg/L	1500
0111	Nitrogen NO2 Total	mg/L	1000
1110	Nitrogen NO3 Diss (N)	mg/L	500
0110	Nitrogen NO3 Total	mg/L	1000
1109	Nitrogen NO3+NO2 Diss	mg/L	500
0112	Nitrogen Organic-Tot	mg/L	100
NOx-	Nitrogen Oxides	mg/m3	1000000
0114	Nitrogen Total	mg/L	500
1114	Nitrogen Total (Diss)	mg/L	200
C002	O-Xylene	ug/L	50000
X002	O-Xylene	ug/L	50000
0030	Odour		
0003	Oil & Grease	mg/L	2000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
FA04	Oleic/Linoleic	mg/L	10000
OCPS	Organo-Chlorines	ug/L	20000
OPPS	Organo-phosphorus	mg/L	5000
0039	Oxid. Red. Potential	mV	
0014	Oxygen Dissolved	mg/L	20
O3--	Ozone	mg/m3	1000000
PC42	PCB 1242	ug/L	50
PC48	PCB 1248	ug/L	50
PC54	PCB 1254	ug/L	50
PC60	PCB 1260	ug/L	50
P019	PCB's - Total	ug/L	50
PA03	Palmitic	mg/L	10000
P001	Parathion	ug/L	20000
P002	Parathion Methyl	ug/L	20000
003K	Part. Size 10 Mesh		
003C	Part. Size 100 Mesh		
003D	Part. Size 140 Mesh		
0033	Part. Size 16 Mesh		
003E	Part. Size 200 Mesh		
003L	Part. Size 230 Mesh		
003F	Part. Size 270 Mesh		
003A	Part. Size 30 Mesh		
003I	Part. Size 32 Mesh		

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
003G	Part. Size 400 Mesh		
003M	Part. Size 4000 Mesh		
003B	Part. Size 50 Mesh		
003J	Part. Size 9 Mesh		
003H	Part. Size >400 Mesh		
003N	Part. Size >4000 Mesh		
P022	Pentachlorophenol	ug/L	20000
P050	Perchloroethylene	ug/L	20000
PEST	Pesticides	ug/L	
EF24	Petroleum Bulk Stor.	n/a	
H009	Petroleum Distillate	n/a	
0146	Phaeophytin A		
PA15	Phenanthrene	ug/L	5000
0117	Phenols	ug/L	20000
P003	Phosmet	ug/L	10000
P04A	Phosphate-S 1st Step	mg/L	10000
PO4-	Phosphate-Soluble	mg/L	10000
L118	Phosphor. Orth. Dis. LL	mg/L	10000
1118	Phosphorous Ort. Dis-P	mg/L	10000
0118	Phosphorous Ortho	mg/L	10000
PPer	Phosphorous Peroxide	mg/L	10000
PPIA	Phosphorous Tot. Ins. A	mg/L	10000
PP-A	Phosphorous Tot. Insol.	mg/L	10000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
PP-S	Phosphorous Tot. Sol.	mg/L	10000
PPSA	Phosphorous Tot. Sol. A	mg/L	10000
P--D	Phosphorous Tot. Diss.	mg/L	10000
P--T	Phosphorous Total	mg/L	10000
PP-T	Phosphorous Total A	mg/L	10000
P025	Pimaric Acid	mg/L	10000
P007	Peperonyl Butoxide		
EF05	Placer Gold Gravel Wsh.	n/a	
EF23	Plywood & Veneer	n/a	
PAH-	Polychlo. Hydrocarbon	ug/L	500
P023	Polychlor. Biphenyls	ug/L	50
K--T	Potassium	mg/L	1000
K--D	Potassium Dissolved	mg/L	500
K--S	Potassium-Soluble	mg/L	500
0470	Production Quant.		
P015	Propazine	ug/L	20000
PA16	Pyrene	ug/L	500
Ra-D	Radium Dissolved	bq/L	100
Ra-T	Radium Total	bq/L	100
Ra26	Radium-226	bq/L	0
FAC2	Ratio-Alk. vs. Cond.		
EF20	Ready Mix Truck Wash	n/a	
0007	Res. Filterable-0.45u	mg/L	2000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
RF-F	Res. Fixed Filterable	mg/L	2000
007H	Res. Fixed Filterable	mg/L	2000
0009	Residue Fixed Nfilt.	mg/L	2000
0008	Residue Nonfilt.	mg/L	2000
0032	Residue Tot. Volatile	mg/L	2000
0005	Residue Total	mg/L	5000
0006	Residue Total Fixed	mg/L	2000
0010	Residue Vol-Nonfilt.	mg/L	2000
0128	Resin Acids	mg/L	10000
R001	Rotenone	mg/L	1000
SWEP	SW Waste Extr. Proc.		
0130	Salinity	mg/L	500
SALM	Salmonella		
S006	Sandaraco Pimaric Ac.	mg/L	10000
Se-T	Selenium	mg/L	20000
Se-D	Selenium Dissolved	mg/L	10000
Se-E	Selenium Extractable	mg/L	10000
EF03	Septic Tank Pumb/STP Sldg	n/a	
EF02	Septic Tank Effluent	n/a	
0023	Settleable Solids		
EF01	Sewage Sludge	n/a	
0120	Silica Reactive	mg/L	3000
1120	Silica Reactive Diss.	mg/L	2000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
Si-T	Silicon	mg/L	2000
Si-D	Silicon Dissolved	mg/L	1000
SiF4	Silicon Tetra-F	mg/L	1000
Ag-T	Silver	mg/L	1000
Ag-D	Silver Dissolved	mg/L	500
S001	Simzine	mg/L	20000
Na-t	Sodium	mg/L	10000
NaBA	Sodium Borate	mg/L	10000
NaCA	Sodium Chlorate	mg/L	10000
Na-D	Sodium Dissolved	mg/L	5000
NaOH	Sodium Hydroxide	mg/L	10000
NaSi	Sodium Silicate	mg/L	5000
NaSA	Sodium-S 1st Step	mg/L	10000
Na-S	Sodium-Soluble	mg/L	5000
EF14	Soft-Drink Bottling	n/a	
SSHS	Solvent Soluble Herb	mg/L	1000
0011	Specific Conductance	usie/cm	
011P	Specific Conductance	usie/cm	
FA06	Stearic	mg/L	20000
0454	Streptococcus -Fecal	#/100mL	50000
Sr-T	Strontium	mg/L	20000
Sr-D	Strontium Dissolved	mg/L	10000
S010	Styrene	ug/L	500

Parameter Table

CODE	DESCRIPTION	UNITS	UPPER LIMIT
0121	Sulphate	mg/L	5000
1121	Sulphate Dissolved	mg/L	5000
SO4A	Sulphate-S 1st Step	mg/L	5000
SO4-	Sulphate-Soluble	mg/L	5000
1125	Sulphide Dissolved	mg/L	25
0125	Sulphide Total	mg/L	300
SO2-	Sulphur Dioxide	mg/m3	1000000
S--D	Sulphur Dissolved	mg/L	300
S--T	Sulphur Total	mg/L	300
Su2-	Sulphur:Bivalent	mg/L	100
0138	Sulphite	mg/L	25
SA--	Sulphuric Acid	mg/L	
0122	Surfactants	mg/L	5000
1122	Surfactants Dissolved	mg/L	5000
B024	TCMT Benzothiazole		
1123	Tannin & Lignin Diss.	mg/L	50000
0123	Tannin & Lignin Total	mg/L	100000
Te-D	Tellerium Dissolved	mg/L	5000
Te-T	Tellerium	mg/L	2000
0013	Temperature	deg C	60
T026	Tetachlorcatechols	ug/L	20000
T030	Tetachloroethylene	ug/L	20000
T024	Tetachloroguaiacol	ug/L	20000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
T020	Tetrachlorophenols	ug/L	20000
T028	Tetrachloroveretrols	ug/L	20000
Tl-T	Thallium	mg/L	10000
Tl-D	Thallium Dissolved	mg/L	5000
THIO	Thiocyanate	mg/L	1000
TH-T	Thorium	ug/L	5000
Sn-T	Tin	mg/L	10000
Sn-D	Tin Dissolved	mg/L	5000
Ti-T	Titanium	mg/L	50
Ti-D	Titanium Dissolved	mg/L	10
T001	Toluene	ug/L	500
T010	Toluenedisocyanate	ug/L	500
TRS-	Total Reduced Sulfur		
T014	Toxaphene	ug/L	10000
T050	Triazines	ug/L	500
T051	Tributyltins	ug/L	20000
T034	Tricglorophenol2,3,5	ug/L	20000
B027	Trichlorobenzene-1,4	ug/L	500
T041	Trichlorocatechol345	ug/L	20000
T025	Trichlorocatechols	ug/L	20000
T040	Trichloroethane	ug/L	500
T029	Trichloroethylene	ug/L	500
M040	Trichlorofluorometha	ug/L	500

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
T022	Trichloroguaiacol	ug/L	20000
M043	Trichloromethane	ug/L	500
T033	Trichlorophenol2,3,4	ug/L	500
T035	Trichlorophenol2,3,6	ug/L	500
T021	Trichlorophenols	ug/L	500
T027	Trichloroveretrols	ug/L	500
T031	Trichlorpyr	ug/L	500
T019	Trichlorsyringols	ug/L	500
T015	Trifluralin	ug/L	500
B023	Trimethyl Benzene	ug/L	500
H-3-	Tritium	bq/L	50
0015	Turbidity	ntu	1000
EF25	Uncontam. Cooling H2O	n/a	
U--T	Uranium	ug/L	5000
U--D	Uranium Dissolved	ug/L	1000
V--T	Vanadium	mg/L	2000
V--D	Vanadium Dissolved	mg/L	1000
VOC-	Volatile Org. Cmp.	ug/L	20000
0021	Water Level	m	20000
0041	Water Velocity		
EF17	Winery Effluent	n/a	
X001	Xylene	ug/L	50000
Zn-T	Zinc	mg/L	1000

Parameter Table			
CODE	DESCRIPTION	UNITS	UPPER LIMIT
Zn-D	Zinc Dissolved	mg/L	500
Zn-E	Zinc-Extractable	mg/L	500
ZnIA	Zinc-I 1st Step	mg/L	1000
Zn-I	Zinc-Insoluble	mg/L	500
ZnSA	Zinc-S 1st Step	mg/L	1000
Zn-S	Zinc-Soluble	mg/L	500
ZnTA	Zinc-T/HV Step A	mg/L	1000
Zr-T	Zirconium	mg/L	500
Zr-D	Zirconium Dissolved	mg/L	500
C011	alpha-Chlordane	ug/L	5000
C012	gamma-Chlordane	ug/L	5000
D024	o,p'DDT	ug/L	10
0004	pH	pH units	15
pH--	pH (rain)	pH units	15
DSEW	Domestic Sewage	n/a	

Appendix E
Import File Format

```
Structure for database : SIMS.DBF
Number of data records :      2598
        Last updated : 12/30/92 at   8:33
Field   Field name   Type        Width    Dec
    1   PER_NO       Numeric        5
    2   PER_VER      Numeric        2
    3   REG_COD      Character      2
    4   OFF_COD      Character      2
    5   DIS_COD      Character      2
    6   FIL_TYP      Character      1
    7   WAS_TYP      Character      1
    8   FIL_STA      Character      1
    9   EXP_DAT      Numeric    ·   8
   10   CLI_NAM      Character     50
   11   LOCAT        Character     50
   12   LEG_ADD      Character    150
   13   MAI_ADD      Character ʼ  150
   14   PHO_NUM      Character     10
   15   FAX_NUM      Character     10
   16   NTS_NUM      Character      6
   17   LAT          Character      7
   18   LONG         Character      7
   19   SIC_COD      Character      5
   20   PROD_CAP     Numeric        8
   21   UNITS        Character     15
   22   WASTE_NO     Numeric        2
   23   SIT_TYP      Character      2
   24   DISC_TO      Character      1
   25   REL_COD      Character      1
   26   PAR_COD      Character      4
   27   DIS_MIN      Numeric       13       4
   28   DIS_MAX      Numeric       13       4
   29   DIS_AVG      Numeric       13       4
   30   UNIT_COD     Character      8
   31   DIS_TIM      Numeric        3
   32   DIS_DUR      Numeric        3
   33   DISD_UNI     Character      3
   34   DIS_FRQ      Numeric        3
   35   DISF_UNI     Character      3
   36   WAT_BOD      Character     40
   37   PER_DAT      Numeric       10
** Total **                      615
```