

CHAPTER 1

INTRODUCTION TO GRITS/STAT

1.1 INTRODUCTION

The Groundwater Information Tracking System with STATistical analysis capability (**GRITS/STAT**) is a tool designed to facilitate the storage, analysis, and reporting of data collected through groundwater monitoring programs at RCRA, CERCLA, and other regulated facilities and sites. The statistical portion of the program is for use at RCRA facilities.

Using the system functions described in this manual, you will be able to (1) tailor the **GRITS/STAT** environment to your needs, (2) enter facility and ground water data, (3) generate a number of standard reports containing this data, (4) export data to other software applications, and (5) perform frequently used statistical analyses.

1.2 TECHNICAL INFORMATION

1.2.1 Hardware Requirements

In order to run **GRITS/STAT**, you must have an 80386-based (a 80486 or Pentium system will improve performance) personal computer equipped with the following:

- 2 Megabytes (MB) installed memory, must have 570 kbytes (KB) available conventional memory.
- a high density floppy disk drive (1.2 MB 5.25" or 1.4 MB 3.5")
- a hard disk (a 40 MB disk or larger is recommended) with at least 12 MB available on the hard disk
- MS-DOS version 5.0 or later
- an EGA (or better) color graphics card and monitor

If you have installed **GRITS/STAT** but are unable to run the program, you may need to check your computer's memory configuration or files allocated in your CONFIG.SYS file (as prescribed by the **GRITS/STAT** boot program. Although your computer may have the minimum memory required, memory resident programs may be using some of this memory. Use the DOS MEM command to be sure that you have at least the required minimum amount of RAM available in conventional memory.

Although **GRITS/STAT** is compatible with local area network (LAN) systems, some LAN configurations will not allocate sufficient memory for **GRITS/STAT** program operations. Contact your LAN manager if you are installing this software on a network. Typically, the network drivers will require that DOS be loaded in extended memory to "free up" the necessary conventional memory.

Refer to your DOS 5.0 or later, User's Guide for information on loading DOS to the high memory area.

To check status of your computer's disk and available memory, run the MS-DOS MEM program by typing **MEM** and pressing **<Enter>**. For more information, see the MS-DOS manual that came with you computer or consult your PC support staff.

1.2.2 Software Specifications

GRITS/STAT has been developed using several commercially available software tools. The **GRITS/STAT** interface, database, utilities, exporter, and reporter were developed in CA-Clipper Version 5.2. All **GRITS/STAT** data is saved in dBase .DBF format. Index files conform to the Clipper .NTX format. The **GRITS/STAT** Statistics use C-code interfaced to the IMSL statistics library. The memory / config.sys checker program is written in C.

1.2.3 Background

In 1989, the Office of Solid Waste, Waste Management Division produced an Interim Final Guidance Document, *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*. The document was written to assist Regional/State Offices with the statistical analysis of RCRA detection, compliance or corrective action monitoring data.

In 1990, CERI developed a computer system to assist users in the implementation of the Interim Final Guidance Document's directives. From the outset of the project, electronically stored ground water information was mandatory for the efficient handling of the statistical analysis. In 1990 EPA Region 7 was one of the few Regions storing ground water information in a database on a personal computer. Moreover, Region 7's database system was "owned by EPA." The Region was storing information in this format since 1986.

The Region 7 system, **GRITS**, has been evolving since its 1986 inception. During Region 7's Version 3.0 to 4.0 upgrade, a cooperative, co-funded project between CERI and Region 7 was undertaken. The **GRITS/STAT** database system was enhanced to accommodate the necessary parameters for the statistical component of the system, hence, the origin of **GRITS/STAT**. The industry standard IMSL statistical routines were interfaced to the database to provide statistical analysis capabilities of ground water data according to the guidance provided by the Office of Solid Waste/Waste Management Division.

The Interim Final Guidance Document can be obtained from NTIS (703 487-4650), document # PB 89-151-047; or EPA's distribution center (1-800-424-9346), document # EPA/530-SW-89-026. The July, 1992 addendum may be obtained by contacting the RCRA information center in DC, 1-800-424-9346 or 703-920-9810.

1.3 CONTENTS OF THE SYSTEM

The **GRITS/STAT** 5.0 package includes 4 1.44 MB 3.5", high density diskettes and this User Documentation Manual.

1.4 CONVENTIONS USED IN THIS USER DOCUMENTATION

This User Documentation provides a concise and easy to understand description of **GRITS/STAT** and its operation. Be sure to read the instructions on each screen while running the system, as well as the information contained in this guide. Please note the following conventions used in this manual:

- 1) All user input appears in **boldface**.
- 2) Boldface items in < > brackets are inputs that require a single keystroke, e.g., <**Enter**> indicates the key marked Enter (or Return on some computers).
- 3) In most cases, it is necessary to press the <**Enter**> key after typing an answer. This document will either specifically instruct you to type your answer and press <**Enter**>, or will simply instruct you to 'enter' your answer. In the latter case, type the information and then press <**Enter**>.
- 4) This User Documentation will represent the DOS prompt as C> or C:**GRITS**> to specify the **GRITS/STAT** directory. Your DOS prompt may look slightly different, such as C:\> or C>>.
- 5) This User Documentation refers to the position of the cursor on the screen. On most screens, the cursor is either a highlight bar or a blinking line or box. The cursor indicates which question or item on the screen is currently active (selected).