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**ADDENDUM TO
GROUNDWATER MONITORING PLAN
HARDEE COUNTY REGIONAL SANITARY LANDFILL
HARDEE COUNTY FLORIDA**

Prepared For

**BOARD OF COUNTY COMMISSIONERS
Hardee County, Florida**

Prepared By

**SEABURN AND ROBERTSON
Water Resources and Environmental Consultants
Tampa, Florida**

March 1987

D. E. R.

MAR 25 1987

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**SOUTH WEST DISTRICT
TAMPA**

March 13, 1987

PN 84056-001



SEABURN AND ROBERTSON, INC.
A SUBSIDIARY OF
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environmental & water resource consultants

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(813) 877-9182

Mr. J.R. Prestridge, Supervisor
Hardee County Public Works
413 West Orange Street
Wauchula, Florida 33873

RE: Addendum to Hardee County Regional Sanitary Landfill
Groundwater Monitoring Plan.

Dear Mr. Prestridge:

We are pleased to submit three copies of our referenced report entitled Addendum to Groundwater Monitoring Hardee County Regional Sanitary Landfill, Hardee County, Florida.

Please review the enclosed report and feel free to contact us if you have any questions or comments. As always, it has been a pleasure to work with you.

Yours truly,

SEABURN AND ROBERTSON

T. Jay McAllister
Hydrogeologist

Susan J. Metcalfe, CPGS
Hydrogeologist

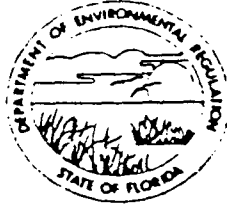
Reviewed by:

Gerald E. Seaburn, Ph.D., P.E.
Senior Hydrologist
Branch Manager

GES/SJM/TJM/tt11

enclosure

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT
BRANCH OFFICEWIN TOWERS OFFICE BUILDING
300 BLAIR STONE ROAD
ALLAHASSEE, FLORIDA 32301BOB GRAHAM
GOVERNORVICTORIA J TSCHINKEL
SECRETARYAPPLICATION FOR MONITORING PLAN APPROVAL
(Existing Sources)

INSTRUCTIONS: Submit four copies of this application and four copies of supporting information such as laboratory reports, maps and other documents to the appropriate District Office.

PART I - General Information

In compliance with Florida Administrative Code Rule 17-4.245(6)(c)2., the undersigned installation owner applies for approval from the Department for the monitoring criteria on the following property owned by:

<u>Hardee County Board of County Commissioners</u>				<u>S025-096551</u>
Corporation or Owner's Name				Permit No.
<u>Hardee County Regional Sanitary Landfill</u>				<u>4953</u>
Installation Name				SIC Code
<u>Airport Road</u>	<u>Wauchula</u>	<u>33873</u>	<u>Hardee</u>	<u>28°34'03"N 81°46'44"W</u>
Street Address	City	Zip	County	Latitude Longitude
<u>SW 1/4 NE 1/4 NE 1/4 of 35, T33S, R25E</u>				<u>Section, Township, Range</u>

OWNER OR AUTHORIZED REPRESENTATIVE (If representative, attach letter of authorization.)

<u>Seaburn and Robertson</u>			
Name and Official Title (Print or Type)			
<u>P.O. Box 23184</u>	<u>Tampa</u>	<u>33623</u>	<u>(813) 877-9182</u>
Street	City	State Zip	Telephone Number
Signature: <u>Susan J. Melcabe</u>			Date: <u>3/16/87</u>

PART II - Content of Monitoring Plan

Pursuant to Rule 17-4.245(6)(d), the plan shall contain findings, recommendations and plans for ground water monitoring derived from site specific information. For the type of information to be considered in the development and assessment of the plan, see page two of this form. In any case, the following items must be included:

1. Location(s) of proposed well(s) to sample natural unaffected background water quality and the intermediate and compliance well(s) in the down gradient direction.
2. Construction details of the monitor well(s), including type of casing material, diameter of casing, depth of casing and location of screens.
3. A water sampling and chemical analysis procedure which can determine the natural unaffected background quality of the ground water, and the quality of the receiving ground water in the downgradient intermediate and compliance wells.

The following information is the type generally required for detailed assessment of the most complex plans, with less complex cases not needing this degree of evaluation:

1. Hydrogeological, physical and chemical data for the site, including:
 - a. Direction and rate of ground water flow, and background ground water quality;
 - b. Porosity, horizontal and vertical permeability for the aquifer(s) and the depth to, and lithology of, the first confining bed(s);
 - c. Vertical permeability, thickness, and extent of any confining beds;
 - d. Topography, soil information and surface water drainage systems surrounding the site;
2. Waste disposal rate and frequency, chemical composition, method of discharge, pond volume, spray-field dimension, or other applicable site specific information;
3. Toxicity of waste;
4. Present and anticipated wastewater volume, seepage rate to the receiving ground water, physical, chemical, microbiological (whichever is applicable) characteristics of the leachate;
5. Disposal system water balance;
6. Present and reasonably expected future pollution sources located within one mile radius of the site;
7. Inventory depth, construction details, and cones of depression of water supply wells and monitor wells located within one mile radius of the site or potentially affected by the discharge;
8. Site specific economic and feasibility considerations;
9. Chronological information on water levels in the monitor wells and water quality data on water supplies collected from the water supply and monitor wells;
10. Type and number of waste disposal facilities within the installation;
11. Chronological information on surface water flows and water quality upstream and downstream from the site;
12. Construction and operation details of disposal facilities;
13. History of construction and land development in the vicinity of the site.

A monitoring program instituted under some other state, federal, or local government regulation or permit may be substituted (or referenced if contained in an existing department permit) if such program is in substantial compliance with Part II.

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HARDEE LANDFILL
ADDENDUM TO GROUNDWATER MONITORING PLAN

INTRODUCTION

Purpose and Scope

On November 29, 1984, Seaburn and Robertson was authorized by the Hardee County Board of Commissioners prepare a Groundwater Monitoring Plan for the Hardee County Regional Sanitary Landfill. This plan was submitted for approval to the Florida Department of Environmental Regulation (FDER) in June 1985. Since that time, a major operational change has been planned at the Hardee County Landfill involving the spraying of collected leachate onto a sprayfield adjacent to the south boundary of the landfill. A revised monitoring plan is needed to monitor the environmental effects of the sprayfield.

Seaburn and Robertson was authorized by Hardee County on January 28, 1987, to make the necessary modifications to the original plan and submit an addendum to FDER in support of an application for approval of a groundwater monitoring plan for the Hardee County Regional Sanitary Landfill. This report summarizes

the necessary modifications to the original monitoring plan, and incorporates the monitoring of the sprayfield with the original plan.

Original Monitoring Plan Application

The original Hardee County Landfill Groundwater Monitoring Plan prepared by Seaburn and Robertson (Seaburn and Robertson 1985) contains information that is still valid for the revised plan. Please refer to the original monitoring plan for information on Site Location, Investigative Approach, Groundwater Flow, Regional Geology, Lineament Investigation, Hydrology, Climate, Surface Water Groundwater, Site Hydrogeology, Field Investigations, Site Geology, Hydraulic Testing and Results, Land Use, Well Inventory and Potential Pollution Sources. The reader is advised to ignore the section entitled Proposed Monitoring Plan in the original report. For information on Monitor Well Location, Well Construction, Sampling Procedures and Proposed Sampling Parameters please refer to the Revised Groundwater Monitoring Plan presented later in this report. Revised information regarding Site History and Operational Procedures will be found in the Hardee County Operation Permit Application. This report is currently in progress and will be submitted to the FDER by Hardee County.

REVISED GROUNDWATER MONITORING PLAN

In this section a revised groundwater monitoring plan is presented which has been prepared to comply with the requirements of Chapter 17-4.245 and 17-4.246 (Florida Administrative Code) for installations which discharge to groundwater. This revised plan takes into account the leachate sprayfield area as proposed by Briley, Wild and Associates and replaces the proposed Groundwater Monitoring Plan in the original Hardee County Landfill Groundwater Monitoring Plan Report (Seaburn and Robertson, 1985). The components of the plan include monitor well locations, well construction details, sampling methods and schedules, water quality parameters, and reporting procedures.

Well Location

There are presently four existing wells at the Hardee County landfill. These wells, three monitor wells and a water supply well, were installed in October 1983 during construction of the landfill. It is proposed that the existing monitor wells will be retained as part of the groundwater monitoring system. The location of these wells are indicated on Figure 1.

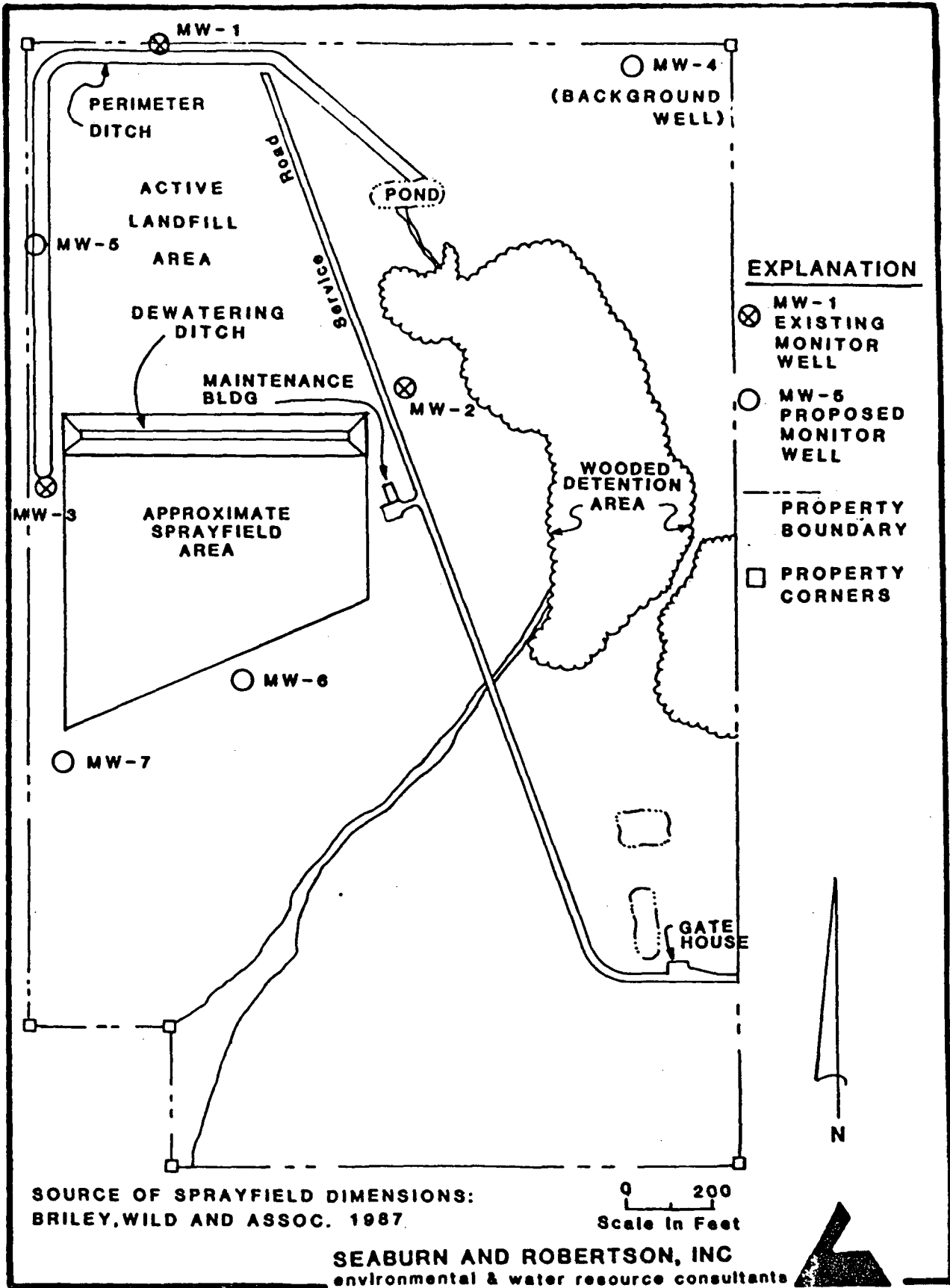


FIGURE 1.- LOCATION OF MONITOR WELLS.

Monitor Well MW-1 will be retained to monitor the effects of leachate and stormwater flowing in the perimeter ditch that lies along the northern landfill property boundary. Under the proposed operational changes, the ditch will no longer be used for leachate collection.

The existing Monitor Well MW-2, located on the east side of the landfill, is not proposed to be used as a regular part of the monitoring network, but will be retained for water level measurements. Existing Monitor Well MW-3, located at the southwest corner of the landfill, will serve as a downgradient compliance well.

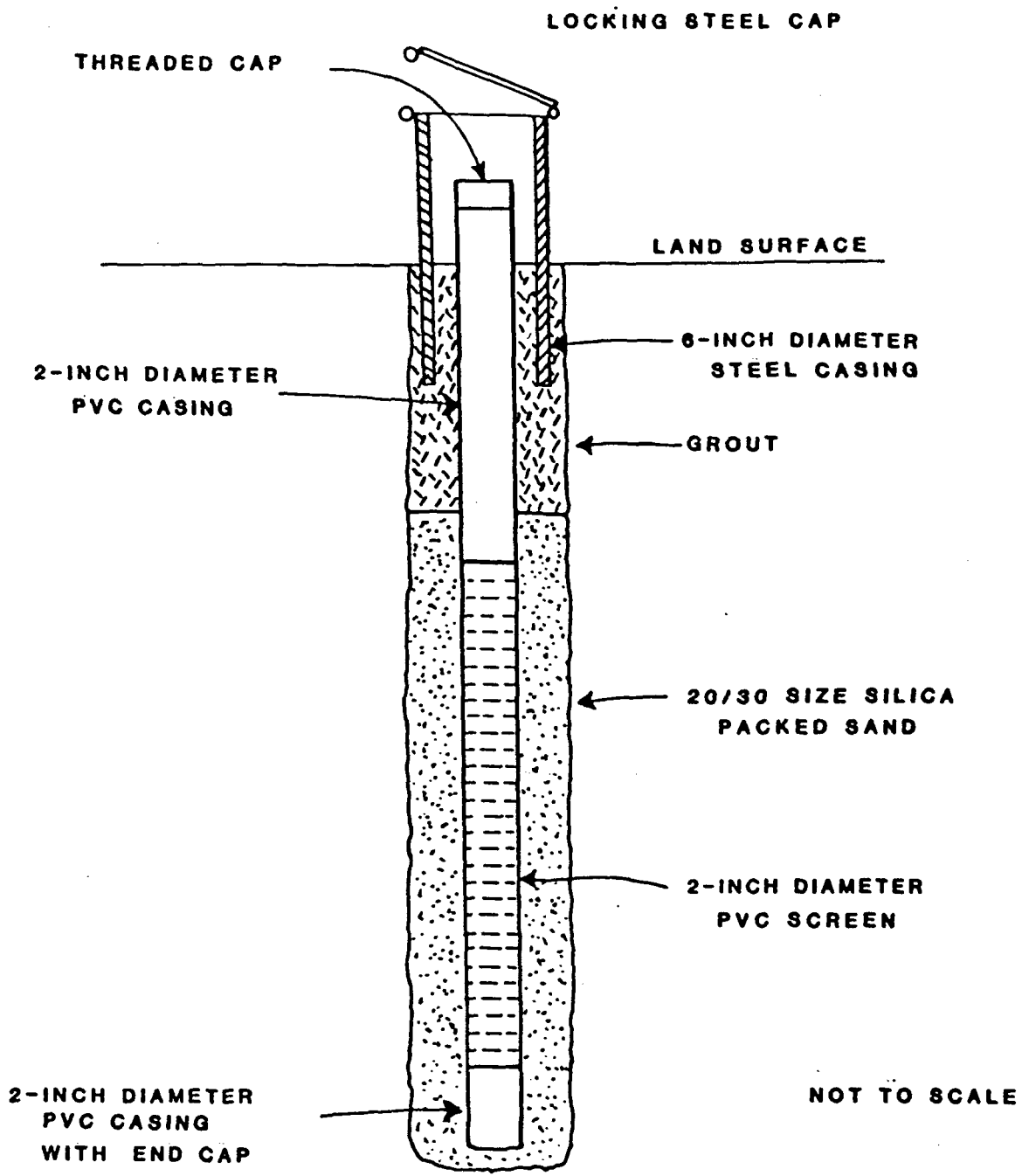
Four additional monitor wells will be installed and incorporated into the Hardee Landfill groundwater monitoring plan at locations shown in Figure 1. A new well (MW-4) is proposed to be installed the northeast corner of the landfill property to serve as a background monitor because this is an area unaffected by landfill activities.

Three additional compliance wells are also proposed. Monitor well MW-5 would be installed along the west property boundary near the center of the active landfill west property boundary. Two monitor wells, MW-6 and MW-7, would be installed downgradient of the proposed leachate sprayfield. As requested by the FDER, these wells would be located within 100 feet of the actual sprayed area.

Well Construction

According to Florida Department of Environmental Regulation Well Completion Reports, the existing monitor wells are constructed with schedule 80, Type "C", threaded flush joint 4-inch polyvinyl chloride (PVC). Total depth of the wells ranges from 13-17 feet below land surface. The well screen in all cases is five feet of 0.010 inch slot, schedule 80, threaded flush joint 4-inch PVC. The screen was sand-packed to a point above the slotted section. The annulus of each well was then sealed with bentonite and cement, then backfilled to land surface. The top of each well is protected by a locking cap and cement pad with four concrete-filled six-inch diameter, four-foot tall steel posts. All existing monitor wells were installed using mud rotary drilling procedures. Well development techniques are unknown. Seaburn and Robertson advises Hardee County to redevelop all existing monitor wells before any additional wells are constructed. All existing monitor wells will then be evaluated to determine if they can be retained as viable parts of the groundwater monitoring system.

All proposed monitor wells will be constructed as indicated in Figure 2. The wells will be about 15 to 20 feet deep with approximately 10 feet of screen. All well screen and riser will



SEABURN AND ROBERTSON, INC
 environmental & water resource consultants

FIGURE 2.- TYPICAL MONITOR WELL CONSTRUCTION

be 2-inch diameter, threaded, flush-joint schedule 40 PVC. The screen will have of 0.010 inch slots. The screen section will extend from the approximate top of the dry season water table to within two feet of the total depth of the well. A two-foot end cap will be added to the bottom of the well screen to collect any sediment that may settle out of suspension in the well. The annulus of the wells will be sand-packed with coarse silica sand to a point approximately two feet above the slotted screen section. The borehole will then be grouted with neat cement to land surface. A protective locking steel casing will be seated in a cement pad at each well. All wells will be constructed using hollow stem augers so that little or no water is introduced into the formation to be monitored. Upon completion of well installation, all monitor wells will be developed by pumping until clear non-turbid water is produced.

Sampling Procedures

Prior to collecting a groundwater sample, the water level in the wells will be measured by the wetted tape method. The total depth of the well will be measured and the volume of water in the well casing will then be calculated. Approximately five casing volumes of water will be evacuated with a centrifugal pump. An additional casing volume of water will be removed with a teflon bailer. All sampling equipment will be washed with propanol and

rinsed with distilled water after each sample to prevent cross contamination between wells.

Water samples will be collected and transferred directly into prepared sample bottles. The samples will be iced immediately after collection and delivered to a water quality laboratory within 18 hours for analysis. A field log will be kept for each sample showing date, time, well number, water level, pumping/bailing volumes and rates, field pH, specific conductance, temperature and equipment calibration information.

Water Quality Parameters

The proposed initial sampling consists of the primary and secondary drinking water standards as defined in Chapter 17-22 F.A.C. including the eight volatile organic compounds which have defined maximum contaminant levels.

Thereafter, all wells are to be sampled for all secondary drinking water standards with the addition of selected indicator parameters such as total organic carbon, specific conductance and total Kjeldahl Nitrogen. Table 1 identifies the parameters to be included in the initial, annual, and quarterly analyses along with the analysis methods.

A report of the results of sampling along with all pertinent field data will be prepared for County review and submitted to the FDER Tampa office by the County within four weeks of receiving the laboratory data.

REFERENCES

Briley, Wild and Associates, 1987, Preliminary Design Drawing
Hardee County Sanitary Landfill, Hardee County, Florida,
Project No. 86073-6.

Seaburn and Robertson, 1985, Groundwater Monitoring Plan Hardee
County Regional Sanitary Landfill, Hardee County, Florida,
June 1985, 55 p.

Table 1 - Proposed Analysis Schedule, Groundwater Monitoring Plan, Lee County Landfill.

PARAMETERS	ANALYSIS		Mv-1	Mv-2	Mv-4 (BACKGROUND)	Mv-5	Mv-6	Mv-7
	METHOD							
PRIMARY INORGANICS								
Arsenic	EPA Method	205.2	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Barium	EPA Method	200.7	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Calcium	EPA Method	213.2	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Chromium	EPA Method	212.2	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Lead	EPA Method	239.2	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Mercury	EPA Method	245.1	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Silver	EPA Method	272.2	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Nitrate as N	EPA Method	353.2	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Flouride	EPA Method	340.2	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Primary Organics								
Endrin	EPA Method	608	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Lindene	EPA Method	608	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Methoxychlor	EPA Method	608	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Toxaphene	EPA Method	608	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
2,4-D	EPA Method	608	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
2,4,5-TP	EPA Method	608	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Other Primary								
Total	EPA Method	501.2	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Trihalomethanes								
Gross Alpha	EPA Method	909	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Fecal Coliform	STD Methods	909A	1 A Q	1 A Q	1 A Q	1 A Q	1 A Q	1 A Q
Turbidity	EPA Method	180.1	1 A Q	1 A Q	1 A Q	1 A Q	1 A Q	1 A Q
Volatile Organics								
Trichloroethylene	EPA Method	624	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Tetrachloroethylene	EPA Method	624	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Carbon	EPA Method	624	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Tetrachloride								
Vinyl Chloride	EPA Method	624	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
1,1,1-	EPA Method	624	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Trichloroethane								
1,2-Dichloroethane	EPA Method	624	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Benzene	EPA Method	624	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2
Ethylene Dibromide	NRS Method	501.2	1 A Q2	1 A Q2	1 A	1 A Q2	1 A Q2	1 A Q2

PARAMETERS	ANALYSIS METHOD	NY-4					
		NY-1	NY-3	(BACKGROUND)	NY-5	NY-6	NY-7
SECONDARY							
Chloride	STD Methods 407.A	I A Q	I A Q	I A Q	I A Q ²	I A Q ²	I A Q ²
Color	STD Methods 204.1	I A Q ²	I A Q ²	I A Q	I A Q ²	I A Q ²	I A Q ²
Copper	EPA Method 220.1	I A Q ²	I A Q ²	I A Q	I A Q ²	I A Q ²	I A Q ²
Corrosivity	STD Method 203.1	I A Q	I A Q	I A Q	I A Q	I A Q	I A Q
Foaming Agents	EPA Method 425.1	I A Q	I A Q ²	I A Q	I A Q	I A Q	I A Q
Iron	EPA Method 200.7	I A Q	I A Q	I A Q	I A Q	I A Q	I A Q
Manganese	EPA Method 243.1	I A Q	I A Q	I A Q	I A Q	I A Q	I A Q
Odor	EPA Method 140.1	I A Q	I A Q ²	I A Q	I A Q ²	I A Q ²	I A Q ²
pH	EPA Method 150.1	I A Q	I A Q	I A Q	I A Q ²	I A Q ²	I A Q ²
Sulfate	EPA Method 875.4	I A Q ²	I A Q	I A Q	I A Q ²	I A Q ²	I A Q ²
Total Dissolved Solids	EPA Method 150.2	I A Q	I A Q	I A Q	I A Q ²	I A Q ²	I A Q ²
Zinc	EPA Method 289.1	I A Q ²	I A Q ²	I A Q	I A Q ²	I A Q ²	I A Q ²
OTHER							
TOC	EPA Method 415.1	I A Q	I A Q	I A Q	I A Q	I A Q	I A Q
Temperature	-----	I A Q	I A Q	I A Q	I A Q	I A Q	I A Q
Specific Conductance	EPA Method 120.1	I A Q	I A Q	I A Q	I A Q	I A Q	I A Q
TkN	EPA Methods 251.2	I A Q	I A Q	I A Q	I A Q	I A Q	I A Q
Sodium	STD Methods 225.8	I A Q	I A Q	I A Q	I A Q	I A Q	I A Q

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- I = Initial sampling
- A = Annual sampling
- Q = Quarterly sampling.
- Q² = Quarterly sampling for parameter only if above MCL in annual sampling.
- 1 = If above 15, Re 226 and Re 228 will be added to next analysis.

OPERATION PLAN

for the

HARDEE COUNTY SANITARY LANDFILL

Airport Road

HARDEE COUNTY, FLORIDA

January, 1987

Prepared by:

J. R. Prestridge

Hardee County Solid Waste Superintendent

D. E. R.

APR 02 1987

SOUTHWEST DISTRICT
TAMPA

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Introduction

The purpose of this Operation Plan is to provide a written description of the daily operation of the landfill, in accordance to the requirements of Chapter 17-7.050 (5) (b) of the Florida Administrative Code.

It is recognized that landfills are dynamic systems under constant development. Changes in the type of material brought to the site, the quantity and rate of refuse delivery, surface topography of the landfill, and administrative and regulatory requirements may all result in changes in the way the landfill may be best operated to conserve landfill space, protect the environment, and provide safe and efficient operation for users of the landfill. It is the intent of this Operation Plan to be kept as an accurate description of the actual operation and procedures. This plan should be modified as required to reflect changes in the landfill operation as they occur.

A. Designation of Responsible Persons

A Solid Waste Superintendent has been assigned by the Board of County Commissioners over the operation of the Landfill. Commissioner Maurice Henderson was appointed by the Board of County Commissioners to be the liaison Commissioner to the Landfill. A senior operator is designated as being in charge of the site. The Solid Waste Superintendent directs the senior operator where the waste is to be placed.

B. Contingency Operations

The Landfill has one dozer, one end loader, one dragline and a diesel pump. Should any one piece of equipment be disabled, the Landfill could continue to operate. In addition, equipment from the Hardee County Public Works Road and Bridge Section could be loaned to the Solid Waste Division for use during an emergency.

The Landfill is large enough that if a portion of the site had to be closed due to some emergency, it is likely that some other area of the site could remain open.

C. Controlling the Type of Waste Received at the Site

The Landfill specifically excludes hazardous waste. The first line of defense against this waste is the Gate Guards. Each hauler must stop and sign their name certifying that the materials hauled are not hazardous material. The Gate Attendant also makes a visual check of the load and records the approximate cubic yards of refuse. The second line of defense is the senior operator at the dump site. If a suspicious material has already been dumped, it is kept separate from other wastes and the Solid Waste Superintendent is called to the site to determine its suitability for the Landfill. The ultimate decision on whether to accept or reject the material is made by the Solid Waste Superintendent.

The Landfill will not accept closed or sealed containers; all drums, tanks, and cans must have one end open and have been flushed. The Landfill will not accept septic tank sludge, used oil, paint thinners, contaminated gasoline or like liquids; human waste from hospitals, doctor's offices or clinics or personal homes as a result of surgery or contamination. The Landfill will not accept any materials which the hauler can not identify the composition of the material nor supply certification that the material is non-hazardous waste. The Landfill will not accept solid waste generated from outside the borders of Hardee County without prior written approval from the Board of County Commissioners or their designee.

All Landfill employees are trained to look for liquid waste, drums, waste in sealed containers, unusual odors or fumes. If the material is suspicious to the gate guards, it will not be permitted to enter the Landfill until the Solid Waste Superintendent comes to the site and identifies the material and determines its suitability for Landfilling

D. Measuring Waste

All vehicles taking waste to the Landfill are required to stop at the Gate House to sign in. The gate attendant makes a visual check of the amount and estimates the cubic yards of refuse.

E. Vehicle Traffic Control and Unloading

Signs clearly indicate the way to the working face. The operator at the site directs the driver where to unload. The face is approximately 100 feet wide and is organized to allow smooth flow of traffic for vehicles arriving, unloading, and departing. The on site roads are adequate for two-way traffic, and speed limits are clearly marked.

Scavenging of materials at the Landfill is strictly prohibited.

F. Method and Sequence of Filling Waste

The site is operated as a vertical high rise and excavated below grade cells. The soil from the below grade cells is used for cover for the high rise cells. By staggered operation of the fill sequences, materials are readily available for cover. County surveyors are used to provide spot elevations to measure the Landfill's progress. The below grade cells are excavated to approximately 12 to 15 feet. The above grade cells (high rise) are filled to a height of 10 feet. See attached maps for sequence of filling.

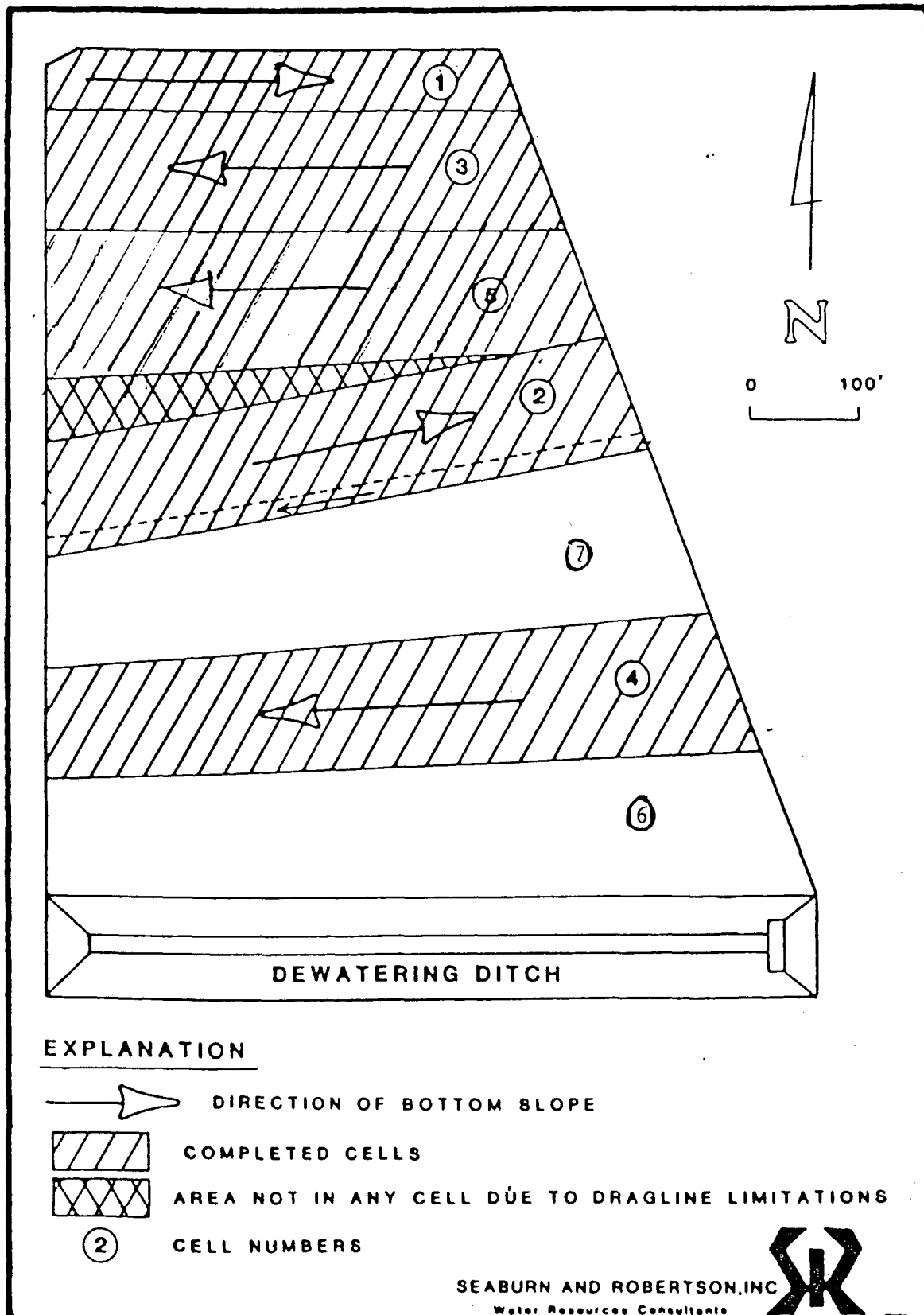


FIGURE 1.- SITE PLAN FOR HARDEE COUNTY LANDFILL - PHASE 1

MAP UPDATED - MARCH, 1987

J. R. PRESTRIDGE

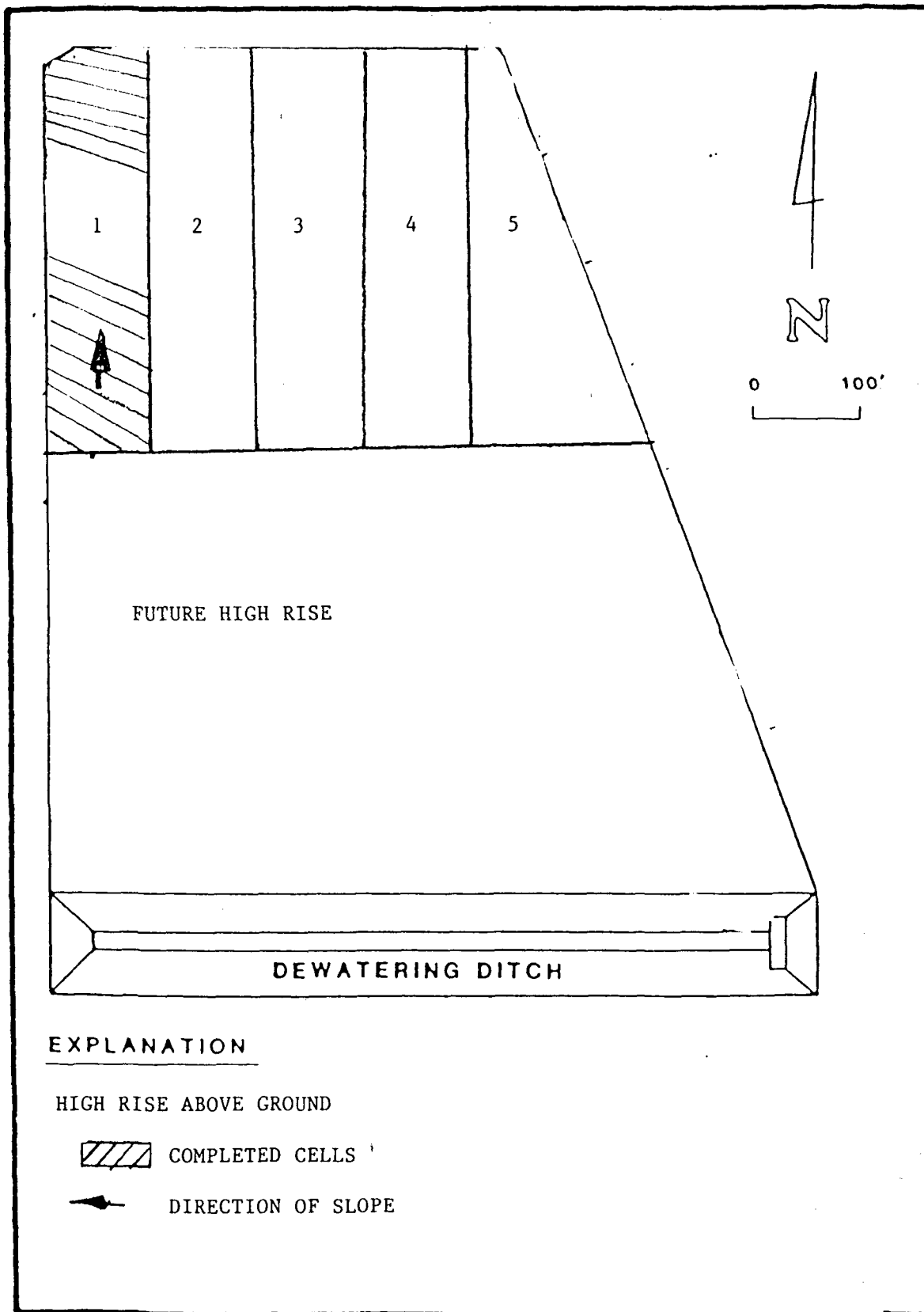


FIGURE 1.- SITE PLAN FOR HARDEE COUNTY LANDFILL - PHASE 1

MARCH, 1987

J. R. PRESTRIDGE

G. Waste Compaction and Application of Cover

The incoming waste is deposited at the working face. The working face is approximately 100 feet wide. The refuse is then spread in thin layers approximately one foot thick and then compacted with the dozer.

Cover material is taken from the excavated materials of the below grade cells and placed at the working face by the end loader. At the end of each day of operation, a cover of six inches is placed over the compacted trash and spread with the dozer.

H. Gas, Leachate and Stormwater Control

The stormwater control consists of ditches, ponds and control structures. Staff will periodically check the drainage ditches for erosion and will reshape and re-sod them on a needed basis. The plant types in the littoral zone will be checked and intruding vegetation removed if required. Drainage sumps will be cleaned out at least once per year and the storm sewer lines checked for plugging. The area in front of the bleeder structure will be checked at least quarterly to remove any excess plants or debris that would cause the structure to plug.

The sedimentation basin will be checked using a probe to determine the level of sediment in the sump. When the level of sediment becomes excessive, the accumulated debris will be cleaned out of the pond in order to restore operating efficiency.

There is no formal method of gas control at the site. The gas presently escapes through the cover material and vents into the atmosphere. The Landfill is surrounded by stormwater ditches and a synthetic liner on three sides. This should prevent any gas from migrating from the site. The under drains should also act as a method of gas control.

Leachate generated at the Landfill will be collected by under drains installed on the North, East, and West perimeter, adjacent to the side wall

liner. The Leachate collected will be deposited in the dewatering ditch on the South end of the Landfill site. The leachate collected will then be sprayed on a 5.4 acre site south of the dewatering ditch.

Spray Field Operation:

The pumps should be operated one day a week, preferable near the beginning of the week.

The number of hours to pump should be based on the irrigation needs of the cover crop. Until actual operating date is collected, the enclosed table may be used as a guide. It should be pointed out that the actual rainfall crop growth, and leachate production in any given month could be substantially different. The numbers in the table are not a very precise basis of operation. If the spray field appears to be saturated, the number of hours of irrigation for that month should be cut back. It is expected that water levels in the dewatering ditch will fluctuate. They should not be allowed to go above 77.4 elevation and by July or August should be lowered to 74.2. The low level cut off for the pump is anticipated to be set at 72.0.

I. Ground Water Monitoring

Ground water sampling and analysis of the first year of the approved Ground Water Monitoring Plan will be done by Seaburn and Robertson, Inc., Water Resources Consultants. Hardee County will retain this firm for the taking of samples and analysis. The Solid Waste Superintendent will be responsible for reviewing the reports and submitting to F.D.E.R.

J. All Weather Access Roads

The onsite roads are shelled base roads with drainage swales on both sides.

The roads are slightly elevated above surrounding grades and are crowned to promote drainage. The roads are routinely graded by the Hardee County Public Works Department.

K. Effective Barrier

The entire property is surrounded by a fence. Vehicular traffic must pass the gate house to get to the Landfill. When the Landfill is not in operation, the gates are kept locked.

L. Signs

A large sign on State Road 636 indicates the landfill is run by Hardee County and the days and hours of operation. There are many other signs throughout the Landfill to indicate traffic flow, types of waste that are not acceptable speed limits, and under ground liner signs, etc.

The manholes will be marked with a warning sign stating " This Manhole Contains Toxic & Explosive Gases. Do Not Enter With Out Proper Ventilation".

M. Dust Control

During dry periods, it is occasionally necessary to control dust on the haul road. When dust control becomes necessary, water from the existing storm-water pond will be pumped into a 1,000 gallon tank truck equipped with a spray bar and nozzles. The tank truck sprays the roads requiring dust control.

N. Litter Control

Litter at the Landfill is caused by refuse previously unloaded at the working face, by refuse being unloaded, and refuse falling from improperly covered loads; the wind sometimes catches the paper and blows it away from the working face. A snow fence in close proximity to the working face catches some of the papers. During periods of high winds, some of the litter does escape. This litter is retrieved on a weekly basis by county trustees. This litter is collected on the roadway, stormwater ditches, and returned to the working face.

O. Fire Protection and Fire Fighting Facilities

Landfill fires are particularly hazardous. If a fire is observed during working hours, the burning material is separated and covered with soil to smother fire out. Fire extinguishers are installed on the equipment and at the maintenance barn. This equipment could be used to extinguish small fires. Fires that occur outside of the normal working hours are more difficult to control since they are usually well developed before it is reported. Whenever a landfill fire does develop, the staff is instructed to call the City of Wauchula Fire Department. This department is equipped with self contained breathing devices, and is trained in fighting landfill fires.

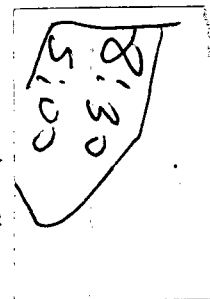
The response time is approximately four minutes from the station. If they should need additional help, the Division Of Forestry could be called. The City of Wauchula Fire Department is responsible for fire control in the area of the County where the Landfill is located. In the event that a fire is observed or reported during the hours the Landfill is closed, the Sheriff's Office is instructed to call the City of Wauchula Fire Department and call the Landfill staff.

P. Attendant

A Landfill Attendant is present during all hours the landfill is open. During other hours, the fence and locked gates help prevent unauthorized access to the site.

Q. Communication Facilities

The gate house is equipped with telephones. The supervisory personnel are assigned vehicles with radios that communicate with the County's Public Works Division. They can relay messages to the Sheriff's Office and other emergency services.



R. In Service and Reserve Equipment

The Landfill has one dozer, one end loader, one dragline (one cubic yard). Should any one piece of equipment be disabled, the Landfill could continue to operate. In an emergency, the Hardee County Road and Bridge Department also has equipment which could be loaned to the Division of Solid Waste for use during an emergency.

S. Safety Devices

All Landfill equipment has fully enclosed cabs for roll over protection. The end loader and dozer are equipment has fully enclosed cabs for roll over protection. The end loader and dozer are equipped with air conditioning and heaters. Each piece of equipment has a fire extinguisher to assist in handling small fires. Site employees are equipped with safety boots, rain gear, gloves, and goggles for personal protection while working at the Landfill.

PROJECTED PUMP RUNNING TIMES FOR IRRIGATION

	Monthly Irrigation Requirement In Inches	Monthly Irrigation In Gallons	Pump Operating Hours per Month	Water Level in Ditch
JANUARY	1.04	152,500	6.9	
FEBRUARY	0.73	107,000	4.8	
MARCH	1.71	250,800	11.3	77.4
APRIL	3.61	529,400	23.8	
MAY	5.85	857,900	38.6	
JUNE	3.55	520,600	23.5	
JULY	3.37	494,200	22.3	74.2
AUGUST	3.01	441,400	19.9	
SEPTEMBER	2.11	309,400	13.9	
OCTOBER	3.01	441,400	19.9	
NOVEMBER	2.63	385,700	17.4	
DECEMBER	1.23	180,400	8.1	
TOTAL	31.85	4,670,700	210.4	