JUN 1986
St. Johns River
District

Operating Permit Renewal Application

for

Tomoka Farms Road Landfill

VOLUSIA COUNTY

FLORIDA

JUNE 1986

Briley, Wild & Associates, Inc.

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Introduction

Volusia County was issued a permit from the Florida Department of Environmental Regulation to operate the Tomoka Farms Road Landfill on August 5, 1981. This permit was issued based on a permit application, including a design report, a hydrogeological investigation, and a set of drawings. The landfill has been constructed and operated in accordance with that permit. It is the intention of the County to continue operating the landfill within the present active area until the final topography is achieved. The information submitted remains valid except as noted. Additional information is included in this report to reflect changes at the site and changes in the State regulations.

Service Area

The Tomoka Farms Road Landfill serves the eastern portion of Volusia County. The western portion of the County is presently served by the Plymouth Avenue Landfill in DeLand. The Plymouth Avenue Landfill permit expires in 1988. For the purposes of this report it was assumed that after that time all Class I landfill material will be taken to the Tomoka Farms Road Facility. It is expected that the Plymouth Avenue facility will be maintained as a Class III landfill

The Volusia Council of Governments has prepared population projections for Volusia County based on the U.S. Census and the University of Florida projections. These projections were prepared for the years 1990, 1995, 2000, 2010, and 2020. Using these projections and best fit interpolation between values the projected service area population is shown in Table 1.

TABLE 1

SERVICE AREA POPULATION PROJECTION

Year	Population
1986	205,335
1987	207,840
1988	210,168
1989	342,547
1990	351,300
1991	359,265
1992	367,379
1993	375,337
1994	383,143
1995	390,100
1996	398,314
1997	405,687
1998	412,923
1999	420,027
2000	427,200
2001	433,846
2002	440,569
2003	447,170
2004	453,652
2005	460,018
2006	466,271
2007	472,412
2008	478,444
2009	484,369
2010	491,100
2011	495,906
2012	501,522
2013	507,038
2014	512,456
2015	517,778
2016	523,006
2017	528,140
2018	533,183
2019	538,136
2020	542,800

Wasteload Projection

In February of 1980 the site was flown to provide topographic mapping. In February of 1986 similar aerial mapping was performed. The difference in volume between the two topographic maps represents the landfill capacity consumed in the intervening six years, including compacted refuse and cover material. This number was found to be 2,368,672 cu. yd.

To determine the annual per capita landfill capacity consumed it was necessary to determine the service area population during the six year period. At the start of the period, Port Orange and Ormond Beach had waste disposal facilities serving all or portions of those communities and Holly Hill. By the end of the period both of these facilities had closed. The changing service area population was estimated on a monthly basis as shown in Table 2. The total population loading on the landfill for the six year period was found to be 929,777 capita-years.

Dividing the total volume consumed by the population loading produces a total in-place landfill loading of 2.55 cu. yd/capita/year.

The 1980 Design Report estimated the in-place solid waste loading to be 2.22 cu. yd./capita/year, with an additional 20% allowance for cover material the total loading was estimated to be 2.66. This estimate was very close to the actual measured loading of 2.55.

Multiplying 2.55 cu/c/yr times the projected service population produces the waste generation projections shown in Table 3.

TABLE 2

SERVICE AREA POPULATION

Year	Month	Service Area Population	Capita- Months
1980	11	136,287	1,499,157
1981	12	138,901	1,666,812
1982	12	140,164	1,681,968
1983	10	141,250	1,412,500
1983	2	151,868	303,736
1984	9	153,597	1,382,373
1984	1	178,696	178,696
1984	2	197,488	394,976
1985	12	202,648	2,431,776
1986	1	205,335	205,335
Total	72		11,157,329

= 927,777 capita - years

TABLE 3

TOMOKA FARMS RD LANDFILL WASTE LOADING

YEAR	POP	WASTE LOAD CU YD/YR(1)	CUM WASTE CU YD	ELEV. (2)
1986	205,335	523,111	523,111	53.0
1987	207,840	529,493	1,052,605	57.0
1988	210,168	535,424	1,588,029	61.0
1989	342,547	872,672	2,460,701	68.0
1990	351,300	894,972	3,355,673	77.0
1991	359,265	915,263	4,270,936	86.0
1992	367,379	935,936	5,206,872	97.0
1993	375,337	956,209	6,163,080	111.0
1994	383,143	976,094	7,139,174	128.0
1995	390,100	993,819	8,132,993	155.0
1996	398,314	1,014,743	9,147,737	0.0
1997	405,687	1,033,528	10,181,264	0.0
1998	412,923	1,051,963	11,233,227	0.0
1999	420,027	1,070,060	12,303,287	0.0
2000	427,200	1,088,335	13,391,622	0.0
2001	433,846	1,105,267	14,496,889	0.0
2002	440,569	1,122,392	15,619,281	0.0
2003	447,170	1,139,209	16,758,491	0.0
2004	453,652	1,155,724	17,914,214	0.0
2005	460,018	1,171,943	19,086,157	0.0
2006	466,271	1,187,872	20,274,029	0.0
2007	472,412	1,203,517	21,477,546	0.0
2008	478,444	1,218,885	22,696,431	0.0
2009	484,369	1,233,979	23,930,410	0.0
2010	491,100	1,251,126	25,181,536	0.0
2011	495,906	1,263,370	26,444,907	0.0
2012	501,522	1,277,677	27,722,584	0.0
2013	507,038	1,291,730	29,014,313	0.0
2014	512,456	1,305,533	30,319,846	0.0
2015	517,778	1,319,092	31,638,938	0.0
2016	523,006	1,332,410	32,971,348	0.0
2017	528,140	1,345,491	34,316,839	0.0
2018	533,183	1,358,338	35,675,177	0.0
2019	538,136	1,370,956	37,046,132	0.0
2020	542,800	1,382,837	38,428,970	0.0

(1) Includes cover material
(2) Existing developed site can not be filled above elev. 182 with existing boundaries and proposed side slopes.

Anticipated Life of Site

Portions of the site have been filled to elevation 75.0. Using the waste generation projections previously discussed the site could be filled to elevation 75.0 with four on one side slopes by the year 1990. By continuing to fill to elevation 100, the site may be kept in service to 1992.

Cover Material

Cover material has been taken from a borrow pit located on site immediately north of the landfill. The material in the borrow pit is a silty sand with low permeability. This pit will continue to provide cover material for the remainder of the planning period.

Leachate Control

The existing soils, as reported in the Design Report, have a low permeability with no apparent hydraulic connection to the Floridan aquifer. Plastic liners previously installed also serve to restrict the downward movement of leachate. Leachate formed by rainwater penetrating the fill is allowed to percolate into a system of internal drainage ditches. The water collected in these ditches, including leachate and on-site runoff, is pumped to a series of four ponds on the southern side of the fill. The effluent from the last pond flows to a vegitated holding area. Water from the holding area is taken to the external ditch where it is allowed to evaporate. During extreme rainfall events the external ditch may be pumped under an existing EPA discharge permit. The landfill also has a permit (I0 64-39230) from the FDER to discharge effluent from the landfill runoff and surface dewatering system.

Experience has indicated that discharge from the ditch is a rare event. A water balance was performed on the site to assist in estimating the quantity of leachate that could be expected. The balance, shown in Appendix A, confirms that potential evapotranspiration is very high and that external discharges would be required only during extended rainy seasons. It is anticipated that the new holding ponds will make it possible to further reduce the incidence of discharge.

Surface Water Management

The landfill is isolated from the surrounding land by a ditch system. The landfill is also at a higher elevation than surrounding areas, therefore surface waters from off the site do not flow onto the waste filled areas. The site has complied with all permit requirements of the St. Johns River Water Management District.

Surface water runoff from within the landfill site is collected in the internal drainage ditches and is treated along with the leachate in the ponds.

Ground Water Monitoring

The County has been monitoring ground water quality under the existing permit. The results have been submittd to FDER for review. There does not appear to be a problem of leachate contamination of surrounding ground waters.

A hydrogeologic investigation of the soils in the borrow pit and the area west of the landfill is presently in progress. Included in that investigation is a survey of the results and effectiveness of the present groundwater monitoring program. When that investigation is completed recommendations will be made to either retain the present monitoring system or modify it. At the present time no change in groundwater monitoring is proposed.

Site Operation

The landfill is operated as described in the Design Report. The operating staff is as follows:

1	Foremen
15	Equipment Operators
2	Mechanics
4	Clerical
3	Maintenance
26	Total

Equipment available at the site includes:

1 3 CY Hydraulic Excavator
1 2-1/2 CY Dragline
2 Compactors
1 Loader
1 23 CY Pan
3 Dozers
1 Service Truck
2 Mechanical Trucks
2 Pickup Trucks
2 17 CY Four Wheeled End Dump Trucks

Closure

In accordance with the requirements of Chapter 17-7, a closure schedule will be submitted to the DER one year prior to cessation of waste acceptance. The proposed final configuration of the landfill is shown on the plans accompanying this application. Minimum side slopes are 4:1 with 12-feet wide terraces located after every 12-feet of rise. Final cover shall include 18 inches of compacted material taken from the borrow pit and 6 inches of topsoil to provide a root zone for the final vegetative cover. Much of this cover will be placed prior to the time of closure as individual portions of the landfill are completed.

APPENDIX

A

APPENDIX A

1. Normal average monthly temperature at Daytona Beach, from National Oceanic and Atmospheric Administration (NOAA) 1984 Annual Summary of Climatological Data.

2. Heat Index from TABLE 1, Thornthwaite & Mather.

3. Unadjusted Daily Potential Evapotranspiration in inches from TABLE 3 and 5, Thornthwaite & Mather.

4. Mean Possible Monthly Duration of Sunlight in Units of 12 hours from TABLE 6, Thornthwaite & Mather.

5. Adjusted Potential Evapotranspiration in inches, calculated by multiplying Line 3 by Line 4.

6. Normal average monthly precipitation in inches at Daytona Beach, from NOAA 1984 Annual Summary of Climatological Data.

7. Runoff in inches, calculated by multiplying Line 6 by 0.075.

8. Infiltration in inches, calculated by subtracting Line 7 from Line 6.

9. Infiltration less the Potential Evapotranspiration in inches, calculated by subtracting Line 5 from Line 8.

10. Accumulated Potential Water Loss in inches, calculated by accumulating the negative values on Line 9.

11. Moisture retained in the soil after a given amount of accumulated potential water loss has occurred, in inches, from TABLE 16, Thornthwaite & Mather.

12. Change in soil moisture in inches, calculated by comparing the values in Line 11.

13. Actual Evapotranspiration in inches, calculated by adding Line 8 and the negative values on Line 12 and using that sum or the value on Line 5, whichever is less.

14. Percolation (leachate) in inches, calculated by subtracing Line 13 from Line 8 and subtracting any positive value on Line 12.

WATER BALANCE TOMOKA FARMS ROAD LANDFILL

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1. Temp F	57.9	58.8	64.1	69.6	75.1	79.2	81.1	80.8	79.5	73.2	65.2	59.5	70.3
2. Heat Index	4.95	5.22	6.85	8.71	10.71	12.29	13.05	12.97	12.41	10.01	7.22	5.43	109.82
3. Unadj PET	0.04	0.04	0.07	0.10	0.14	0.17	0.18	0.18	0.17	0.12	0.07	0.05	
4. Sunlight	27.3	26.4	30.9	32.1	35.1	34.8	35.4	33.9	30.9	29.4	27.0	27.0	
5. Adj PET	1.09	1.06	2.16	3.21	4.91	5.92	6.37	6.10	5.25	3.53	1.89	1.35	42.84
6. Precip	2.37	3.11	2.99	2.25	3.38	6.41	5.52	6.34	6.68	4.62	2.59	2.20	48.46
7. Runoff	0.18	0.23	0.22	0.17	0.25	0.48	0.41	0.48	0.50	0.35	0.19	0.17	3.63
8. Infiltration	2.19	2.88	2.77	2.08	3.13	5.93	5.11	5.86	6.18	4.27	2.40	2.03	44.83
9. Infil-Adj PET	1.10	1.82	0.16	-1.13	-1.78	0.01	-1.26	-0.24	0.93	0.74	0.51	0.68	
10. Acc Pot Wat Loss				-1.13	-2.91	-2.90	-4.16	-4.4					
11. Soil Moist	5.0	5.0	5.0	3.97	2.76	2.77	2.14	2.04	2.97	3.71	4.22	4.90	
12. Change in SM	0.10	0.0	0.0	-1.03	-1.21	0.01	-0.63	-0.10	0.93	0.74	0.51	0.68	
13. Actual ET	1.09	1.06	2.16	3.11	4.34	5.92	5.74	5.96	5.25	3.53	1.89	1.35	41.40
14. Percolation (in)	1.00	1.82	0.61	0	0	0	0	0	0	0	0	0	3.43

OPERATION PLAN

for the

TOMOKA FARMS ROAD LANDFILL

July, 1991

VC 91114-6 E

BRILEY, WILD
AND ASSOCIATES

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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 17-701.050 (5) (b) of the Florida Administrative Code.

The Tomoka Farms Road Landfill is a solid waste management facility including the following operations:

A Class I landfill
A construction and demolition debris disposal site
A tire and white goods storage facility
A municipal wastewater sludge storage facility
A recycling drop off facility
A household hazardous waste collection facility

This Operation Plan describes the operation of the Class I landfill.

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 Foreman IV has been assigned supervisory responsibility over both the Tomoka Farms Road Landfill and the Plymouth Avenue Landfill in DeLand. Routine operation of the Tomoka Landfill is under the direction of a Foreman III. When he is absent from the site, a senior operator is designated as being in charge of the site.

At the beginning of each working day the site foreman tells the spotter at the working face where the various types of waste (refuse, sludge, tires) should be placed that day. The spotter is responsible for telling each customer where to dump his waste.

B. Contingency Operations

The landfill has two compactors, three dozers, and two four wheel drive dump trucks. Should any one piece of equipment be disable the landfill could continue to operate. In addition, the Volusia County Department of Public Works Division of Roads and Bridges also has equipment which could be loaned to the Division of Solid Waste for use during an emergency.

The landfill is large enough that if a portion of the site had to be closed due to emergency (fire, chemical spill, storm damage, etc.) it is likely that some other area of the site could remain open. If on-site roads became impassable the County has an agreement with private contractors to provide roll-off containers near the scale.

C. Controlling the Type of Waste Received at the Site

The landfill specifically excludes hazardous wastes, toxic waste, pathological/infectious wastes, and liquid or chemical wastes. The first defense against these wastes is the clerk at the scale house. Normally, these wastes are not allowed to enter the site. The second line of defense is the spotters at the working face. The third line of defense is the equipment operators who spread, compact, and cover the waste.

All employees have been trained to look for liquid waste, drums, waste in sealed containers, waste with unusual odors or fumes, and waste with an unusual appearance such as hospital waste or waste with strange markings. Waste with suspicious appearance is kept on the trucks until the site foreman has approved its dumping. If the material has already been dumped it is kept separate from other wastes. If the material is suspicious to the site foreman he is instructed to call the County Environmental Control, who will come to the site and identify the material and determine its suitability for landfilling.

The ultimate decision on whether to accept or reject the material is made by the site foreman.

D. Weighing or Measuring Waste

All vehicles taking waste to the landfill are weighed at the scale house. After dumping their wastes the vehicles are again weighed on their way out. Those vehicles whose tare weights are on record are weighed entering the landfill but are not required to weigh when leaving.

Not all vehicles are charged based on weight. Cars and pickup trucks are charged a standard per load charge and many larger vehicles are charged based on their cubic yard capacity. Regardless of how the charges are made all refuse is weighed on entering.

E. Vehicle Traffic Control and Unloading

Signs clearly indicate the way to the working face. A spotter assists in directing vehicles to the active area and in screening wastes. A second spotter at the working face tells each driver where to unload. The working 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.

Traffic control on the on-site roads and at the working face is the responsibility of the spotters.

Scavenging, the uncontrolled retrieval of materials at the working face by individuals, is strictly forbidden and is prevented by the spotters.

F. Method and Sequence of Filling Waste

The site is operated as a vertical, "high rise" landfill with wastes being placed, spread, compacted, and covered with material from the adjacent borrow pit. County surveyors are used to provide spot elevations to measure the landfill's progress.

The site foreman is responsible for selecting the location of each day's working face based on the approved design and on the most efficient utilization of available space. Lifts of 10-feet are placed so as to best utilize on-site roads, provide adequate working room for refuse and landfill vehicles, and to provide drainage of surface water away from the working face.

G. Waste Compaction and Application of Cover

The incoming waste is deposited at the working face as directed by the spotters. Tires and municipal sludge are placed at the bottom of the working face. The remaining wastes are placed at the top of the face. The working face is approximately 100-feet wide and 10-feet high. The refuse is spread into thin layers approximately 1-foot thick by the dozers, and then compacted by the compactors. At the end of the day cover material is spread by the dozers until 6-inch (minimum) layer of compacted soil completely covers the completed cell. On Saturdays, and Sundays very little material is placed and the cover is often completed on Monday.

Cover material is taken from the borrow pit, north of the landfill land hauled to the working face with four wheel drive dump trucks.

H. Gas, Leachate, and Stormwater Control

The site foreman is responsible for proper operation of gas, leachate and stormwater control systems.

The landfill is a high rise landfill with a liner, and is surrounded by stormwater ditches which extend to the base of the fill. It is not possible for gas formed in the landfill to migrate off the site. The gas presently escapes out near the base of the landfill to the stormwater ditches or through the cover material and is dissipated in the atmosphere. The County is presently considering contracting with a private Contractor to recover and utilize this gas. Recovery operations will involve the installation of gas wells and will be conducted by the private contractor.

The leachate and stormwater collection systems are composed of ditches, pumps, and ponds. Control of the levels in the ditches and ponds is achieved by pumping and by adjusting weir overflow levels. The water level in the ditches must be kept below 29.0 during rainfall events and below 25.5 after rainfall events to ensure proper operation. This is achieved by pumping from the interior ditch into the pond system and from the exterior ditch to discharge.

Proper operation of the pond system includes adjusting weirs and pumping to keep the water level below elevation 33.0 and to draw the ponds down prior to major rainfall periods. If water quality monitoring indicates that the water is not suitable for discharge, the water must be retained on site. Additional natural treatment may be provided in the ponds through the addition of water hyacinths, or by spraying for on-site irrigation of completed portions of the landfill.

I. Ground Water Monitoring

Ground water is monitored at the site to ensure that the landfill operations are not adversely affecting ground water resources. Monitoring requirements were presented in the operating permit issued by the State in August 5, 1981. This monitoring program has been modified by subsequent changes in the rules and regulations governing ground water monitoring and by the Department of Environmental Regulation modifications to the County permit.

At the present time 12 shallow wells and two Floridan wells are sampled for water quality analysis. The wells, screened intervals, and DER numbers are listed below.

Existing Monitoring Wells

Well	Year Installed	Screened or Open Interval (ft.)	DER Number
B-1B	1987	28-33	3064A14965
B-2	1980	19-24	3064A12081
B-3B	1987	17-22	3064A14966
B-4	1980	20-25	3064A12087
B-5	1980	18-23	3064A12082
B-6	1980	25-30	3064A12090
B-7	1980	27-32	3064A14970
B-8	1987	43-48	3064A14971

Well	Year Installed	Screened or Open Interval (ft.)	DER Number
B-9	1987	28-33	3064A14972
B-10	1988	15-25	3064A15206
B-11	1990	4-10	3064A15502
MO5B	1987	27-32	3064A14964
FA-1B	1987	91-92	3064A14968
FA-2B	1987	91-94	3064A14969

J. All Weather Access Roads

The on-site roads from the entrance gate to the landfill are paved roads. The roads on the landfill used as haul roads for transporting cover material from the borrow pit, and for service roads for the refuse vehicles are well build, well drained, heavy duty roads built of construction debris and shell. The roads are slightly elevated above surrounding grade and are crowned to assist in providing good drainage.

Shell construction debris suitable for road construction are stockpiled separately. This material is available at the site for the landfill staff to use to repair, maintain or relocate on-site access roads.

K. Effective Barrier

The entire property is surrounded by a fence and patrol road to prevent unauthorized entry to the site. Vehicular traffic must pass the scale house to get to the landfill. When the landfill is not in operation, the gates are kept locked and a night watchman assists in preventing unauthorized entry.

L. Signs

A large sign at the entrance gate proclaims the landfill to be run by Volusia County and gives the hours of operation. The charge system for commercial haulers is not described on the sign but it does indicate that individuals may dump a single load at no charge on Saturdays and Sundays during normal working hours.

There are many signs throughout the landfill to indicate traffic flow, where specific wastes may be placed, safety instructions, etc.

M. Dust Control

During dry periods it is occasionally necessary to control dust on the unpaved haul roads utilized by the refuse vehicles and by the vehicles hauling cover material. When the site foreman determines that dust control is required, water from the external stormwater ditch is pumping into a 7,000 gallon tank trailer, equipped with spray nozzles. This trailer is used to spray down the roads requiring dust control. As these roads are all on-site, any runoff from this operation is captured in the stormwater and leachate collection systems.

N. Litter Control

Litter at landfills is caused by: a) refuse being unloaded at the working face or refuse previously unloaded at the working face, but not yet covered, being caught by the wind and transported away from the working face; b) refuse falling from improperly covered refuse vehicles; and c) dumping of refuse in unauthorized locations.

To control wind borne litter refuse unloaded at the working face is spread and compacted continuously throughout the working day. Proper orientation of the working face by the site foreman also reduces the incidence of wind blown litter. On windy days refuse could be placed at the bottom of the working face to shield it from the wind. During times of high wind some litter does escape from the working face. This fugitive litter is collected along the sides of the stormwater ditches that surround the landfill and does not leave the property. Work-release parties from the correctional institute are utilized in retrieving and collecting this material.

Transporting refuse in an open truck with the tailgate down or without proper cover is against County ordinances. Spotters and the gate house clerk report vehicles in violation to the litter control officer, who issues the appropriate citations.

With signs clearly indicating the way to the appropriate working face and with spotters enforcing traffic control and directing the unloading of refuse from vehicles, improper dumping is kept under control.

O. Fire Protection and Fire Fighting Facilities

Landfill fires are particularly hazardous, due to the presence of methane gas, Chemicals in the waste, such as discarded cleansers, gasoline cans, etc., can also make landfill fires particularly dangerous. Fires may be caused by spontaneous combustion in refuse containers or refuse vehicles, by reaction of waste fuel, or chemicals, or by hot coals or ashes. Daily cover assists in preventing the fire from spreading from cell to cell.

If a fire is observed during operating hours, the burning material is separated from other refuse and is covered with soil. In addition, each vehicle and building is equipped with fire extinguishers to allow small fires to be dealt with as they occur. Whenever a fire does take place, the landfill staff calls the Florida State Division of Forestry, which classifies landfill fires as brush fires. The Division of Forestry notifies the County Sheriff and the Halifax Fire Department.The Halifax Fire Department is trained to deal with landfill fires and is equipped with self contained breathing devices and chemical masks which could be needed.

Fires that occur outside of the normal hours of operation are considerably more difficult to control due to the fact that the fire could be well developed before it is reported. Nighttime visibility restrictions also make these fires considerably more dangerous than daytime fires. In the vent that a fire is observed or reported during the hours the landfill is closed, the Sheriff's office and 911 are instructed to call the Division of Forestry. The Division of Forestry notifies the Halifax Fire Department and will call the landfill staff members who are on call at that time.

P. Attendant

A clerk is present at the scale house during all hours the landfill is open. Spotters and equipment operators are also present. During evening hours when the landfill is not in operation, a night watchman helps restrict unauthorized access to the site.

Q. Communication Facilities

The scale house and the office/maintenance building are equipped with telephones. The two spotters and supervisory personnel are assigned vehicles with radios that communicate with the County's Central Control network. Through this network, the spotters can communicate directly with each other and with the site foreman, and can relay messages to the Sheriff's office and other emergency services.

R. In-Service and Reserve Equipment

The landfill has two compactors, three dozers, and two four wheel drive dump trucks. Also at the landfill are 1 dragline, 1 backhoe, 1 loader, and 1 grader. Should any one piece of equipment be disabled the landfill could continue to operate. In addition, the Volusia County Department of Public Works Division of Roads and Bridges also has equipment which could be loaned to the Division of Solid Waste for use during an emergency.

S. Safety Devices

All landfill vehicles are equipped with roll bars to protect operators. Each vehicle also is equipped with fire extinguishers to assist in preventing small fires from spreading out of control. Site employees are also equipped with safety boots, rain gear, gloves, and goggles for personal protection while working at the landfill.

DEPARTMENT OF ENVIRONMENTAL REGULATION
STATE OF FLORIDA

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Biological Assessment of

Volusia County (Tomoka Farms) Landfill

Volusia County

NPDES #FL0037877

Sampled September 1991

MAY 1992
RECEIVED

March 1992

Biology Section
Division of Technical Services

Department of Environmental Regulation
Results of Fifth Year Inspections

Discharger: Volusia County Landfill (Tomoka Farms)
County: Volusia
NPDES Number: FL0037877
State Permit Expiration Date:

Toxics Sampling Inspection (XSI)

Date Sampled: 23 September 1991

Results: The only organics found in water collected at the test site were 34 µg/L of aliphatic compounds. The concentrations of the three metals detected were within Class III standards.

Results:

Compliance Biomonitoring Inspection (CBI)

Date Sampled: 23 September 1991

Results: The water from the Tomoka Farms test site was not toxic to the fish, *Notropis leedsi*, or to the water flea, *Ceriodaphnia dubia*, in 48 hour acute screening bioassays.

Impact Bioassessment Inspection (IBI)

Date Sampled: 23 September 1991

Results: Benthic macroinvertebrate communities were stressed at both sites, although conditions were somewhat worse at the test site. This may be explained by the fairly substantial differences in morphology between the two sites (borrow pit vs. ditch) and the very low D.O. at the test site. Although not measured, it is possible that the BOD of the leachate contributed to this low dissolved oxygen.

Water Quality Inspection (WQI)

Date Sampled: 23 September 1991

Results: Dissolved oxygen at the test site (0.5 mg/L) was below Class III standards. Fecal and total coliform densities were above standards, but holding times were exceeded. Nutrients were somewhat elevated.

These fifth year inspections provide the necessary information to evaluate the facility's impact on its receiving waters and to provide the basis for specific condition recommendations for permit renewal. **Please note that the water and biota sampled from the test site during this present study may or may not represent conditions that actually occur when the facility does discharge. Furthermore, since many necessary parameters were not sampled during this investigation, the results must be viewed with caution.**

Introduction

The Volusia County (Tomoka Farms) Sanitary Landfill is located on Tomoka Farms Road, South of Interstate 4, in Volusia County, Florida (see map in Appendix). Although this facility has a permitted surface water outfall, it has not had an active discharge in approximately the past two years.

Leachate is treated in two settling ponds, a marsh system, and a holding pond. A flow of 2.5 MGD is permitted from the facility into the Tomoka River and Spruce Creek, both Outstanding Florida Waters. Permit limits are equivalent to Class III surface water standards.

Please note that the water and biota sampled from the test site during this present study may or may not represent conditions that actually occur when the facility does discharge. Furthermore, since many necessary parameters were not sampled during this investigation, the results must be viewed with caution.

Methods

The focus of this investigation was to determine the discharger's effects on the receiving waters. A comparison of biological community health was made between a reference site (located in a borrow pit up gradient of the landfill) and a test site (located in a ditch which receives runoff from the facility during episodes of pumping). A habitat assessment was performed in situ to establish comparability between sites. Supplemental physical/chemical data were also collected on the study sites. Acute screening toxicity bioassays, using *Ceriodaphnia dubia* and *Notropis leedsi* as test organisms, were performed on a test site sample (Weber 1991). The test site was analyzed for metals and for organic constituents (base neutral and acid extractables, and pesticide extractables). Additionally, nutrient analyses were performed on reference and test sites. Methods used for all chemical analyses are on file at the Tallahassee DER Chemistry Laboratory.

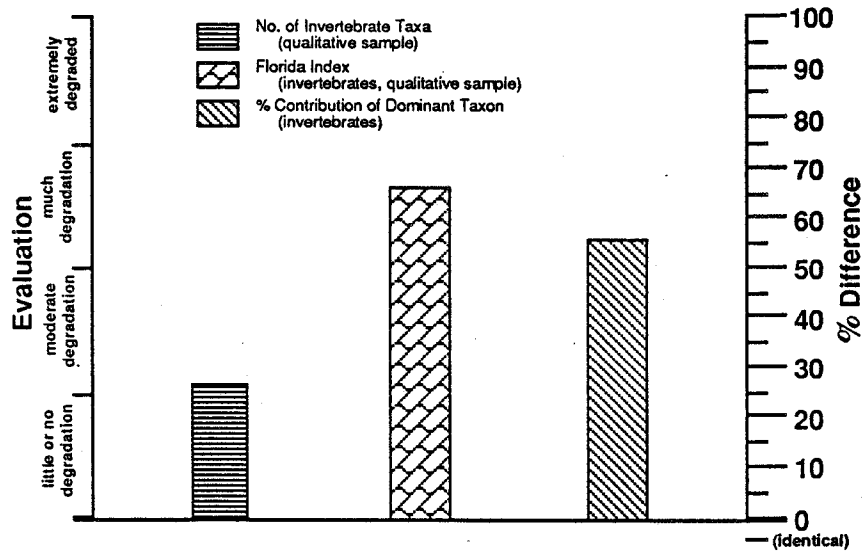
Benthic macroinvertebrate communities were evaluated at reference and test sites. Invertebrates were collected from multiple substrates (*e.g.*, snags, leaf packs, vegetation) using discrete dip net sweeps. Bacterial populations were analyzed for total and fecal coliforms following the methods of APHA (1989). Algal Growth Potential tests, using *Selenastrum capricornutum* as the test organism, followed Miller *et al.* (1978).

Explanation of Measurements of Community Health

Several different measurements of macroinvertebrate community health have been employed. Many of these, such as the number of taxa and Shannon-Weaver Diversity Index are well known. Others are briefly explained here. The Florida Index assigns points to stream-dwelling macroinvertebrates based on their sensitivity to pollution (see Ross 1990). A site with a high Florida Index score is considered healthy (*i.e.*, many clean-water organisms are present). Excessive numerical dominance of a single type of organism (a high % contribution of dominant taxon) is usually associated with distur-

Major characteristics of community structure of control and test sites.

	Control Site	Test Site
Macroinvertebrate Qualitative		
Number of Taxa	15	11
Florida Index	3	1
% Contribution of Dominant Taxon	32.6	51.1
% Oligochaeta	45.7	53.3
% Diptera	30.4	13.3
% Ephemeroptera	8.7	8.9
% Trichoptera	0	11.1
% Odonata	8.7	4.4
% Coleoptera	0	4.4
% Other	6.5	4.4
% Predators	34.4	68.9
% Collector-Gatherers	46.0	17.8
% Collector-Filterers	2.2	11.1
% Scrapers	3.6	2.2
% Shredders	13.8	0
% Parasites	0	0
Algal Growth Potential (mg dry wt/l)		31.1



Effect of discharge on receiving stream
(measured as difference between control and test sites).

bance. The determination of the Quantitative Stability Index (for taxonomic % composition) is a two step process. First, the relative proportions of major taxonomic groups are calculated for each site. Then, the lesser of the two percentages for each discrete taxonomic group is totaled. A QSI (% composition) of 100% means that the two sites being compared are identical. This same type of procedure is used for calculating the QSI (functional feeding groups).

For graphical purposes, the percent differences between the reference and test sites involving the number of taxa, the diversity index, and Florida Index are measured as the reference site minus test site divided by the reference site. The percent differences between sites involving the percent contribution of dominant taxon and algal growth potential are measured as the test site minus reference site divided by the reference site.

The following personnel were involved in this investigation: Phillip Kane (DER Central District) and Lyn Burton, Russel Frydenborg, Kathleen Lurding, and Sandy McClure (Tallahassee Biology Laboratory).

Results and Discussion

Habitat quality at the Tomoka Farms Landfill was poor at both the test site (48 points) and the reference site (36 points). Both sites were man-made water bodies with no flow. The outfall site was a mud and muck bottomed ditch at the edge of a marsh which receives runoff from the facility during episodes of pumping. The reference site was an impounded borrow pit located up-gradient of all landfill runoff and groundwater flow. Substrate there consisted of a sand, silt, and clay mix, coarse organic deris, and mud/muck. Another major difference between the two sites was dissolved oxygen concentrations. Dissolved oxygen at the reference site was an adequate 6.9 mg/L, while D.O. at the test site was a low 0.5 mg/L. This is below Class III standards. Conductivity was measured only at the reference site (80 umhos/cm). Neither site was tested for pH.

The water from the test site was not toxic to the fish, *Notropis leedsi*, nor to the water flea, *Ceriodaphnia dubia*, in 48 hour acute screening bioassays. Results of organics analyses indicated that 34 µg/L of aliphatic compounds were found in water samples collected at the test site. Aluminum (161µg/L), cadmium (0.2 µg/L), and iron (671 µg/L) were detected at the test site. These concentrations were within Class III standards.

Bacteriological populations were high at the test site. Fecal and total coliforms measured there were 1,800 organisms/100 ml and 3,000 organisms/100 ml, respectively. These levels would have constituted violations of ambient standards, but holding times were exceeded.

Some nutrient levels were elevated in the test site samples. Ortho and total phosphorus concentrations were both 0.8 mg/L. Ammonia (4.7 mg/L) and TKN (6.1 mg/L) were high, although nitrate-nitrite was undetected. AGP values (31.1 mg algal dry wt/L) were above the 5.0 mg algal dry wt/L "problem threshold". It is difficult to determine how detrimental these enrichment effects would be during a discharge event, due to the dilution that would presumably oc-

cur before contact with Waters of the State.

Benthic macroinvertebrate communities were stressed at both sites, although some measures indicated that conditions were worse at the test site. This may be explained by the fairly substantial differences in morphology between the two sites (borrow pit vs. ditch) and the very low D.O. at the test site. The figure on p. 2 indicates the degree of difference between the control and test sites. Larger differences (that is, higher percentages) correspond with greater degrees of degradation. Negative values mean that the test site is better than the control. The figure on this page summarizes similarities between the sites. Smaller similarities (lower percentages) generally correspond with greater degradation.

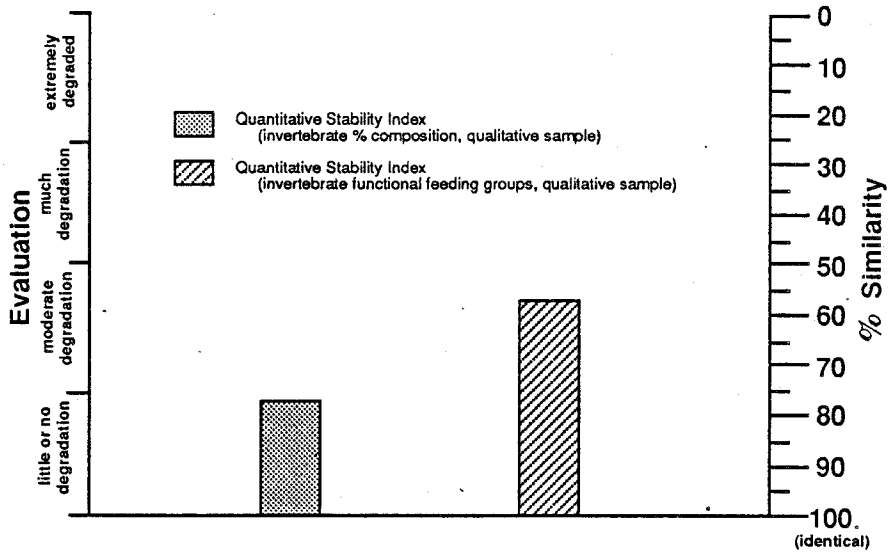
Taxa richness decreased from 15 taxa to 11 taxa (26%), and Florida Index dropped from 3 to 1 (66%), when comparing the reference site to the test site. It should be noted that the absolute values involved in these decreases were not large. Percent composition of the dominant taxon increased at the test site by 56%. This was due to the presence of the ubiquitous phantom midge, *Chaoborus* sp. The Quantitative Stability Index for functional feeding groups showed additional dissimilarities between the two sites involving trophic functioning. As mentioned earlier, the very low dissolved oxygen at the test site was one factor that contributed to the observed biological degradation. It is likely that this low D.O. was a function of the system morphology (a stagnant, man-made ditch) and possibly due to the BOD of the leachate entering the ditch, or of the sediment oxygen demand in the ditch.

Conclusions

The water from the Tomoka Farms test site was not toxic to the fish, *Notropis leedsi*, nor to the water flea, *Ceriodaphnia dubia*, in 48 hour acute screening bioassays. The only organics found in water collected at the test site were 34 µg/L of aliphatic compounds. The concentrations of the three metals detected were within Class III standards. However, dissolved oxygen at the test site (0.5 mg/L) was below Class III standards. Fecal and total coliforms were above standards, although holding times were exceeded. Nutrients and AGP were also elevated at the test site.

Benthic macroinvertebrate communities were stressed at both sites, although conditions were somewhat worse at the test site. This may be explained by the fairly substantial differences in morphology between the two sites (borrow pit vs. ditch) and the very low D.O. at the test site. Although not measured, it is possible that the BOD of the leachate, or the sediment oxygen demand of the ditch, contributed to this low dissolved oxygen.

Please note that the water and biota sampled from the test site during this present study may or may not represent conditions that actually occur when the facility does discharge. Furthermore, since many necessary parameters were not sampled during this investigation, the results must be viewed with caution.



Effect of discharge on receiving stream
(measured as similarity between control and test sites).

Literature Cited

American Public Health Assoc., American Water Works Assoc., and Water Pollution Control Federation. 1989. Standard Methods for the Examination of Water and Wastewater, 17th ed. New York, N.Y. 1268 p.

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The Selenastrum capricornutum Printz algal assay bottle test. U. S. Environ. Prot. Agency, EPA-600/9-78-018. 126 p.

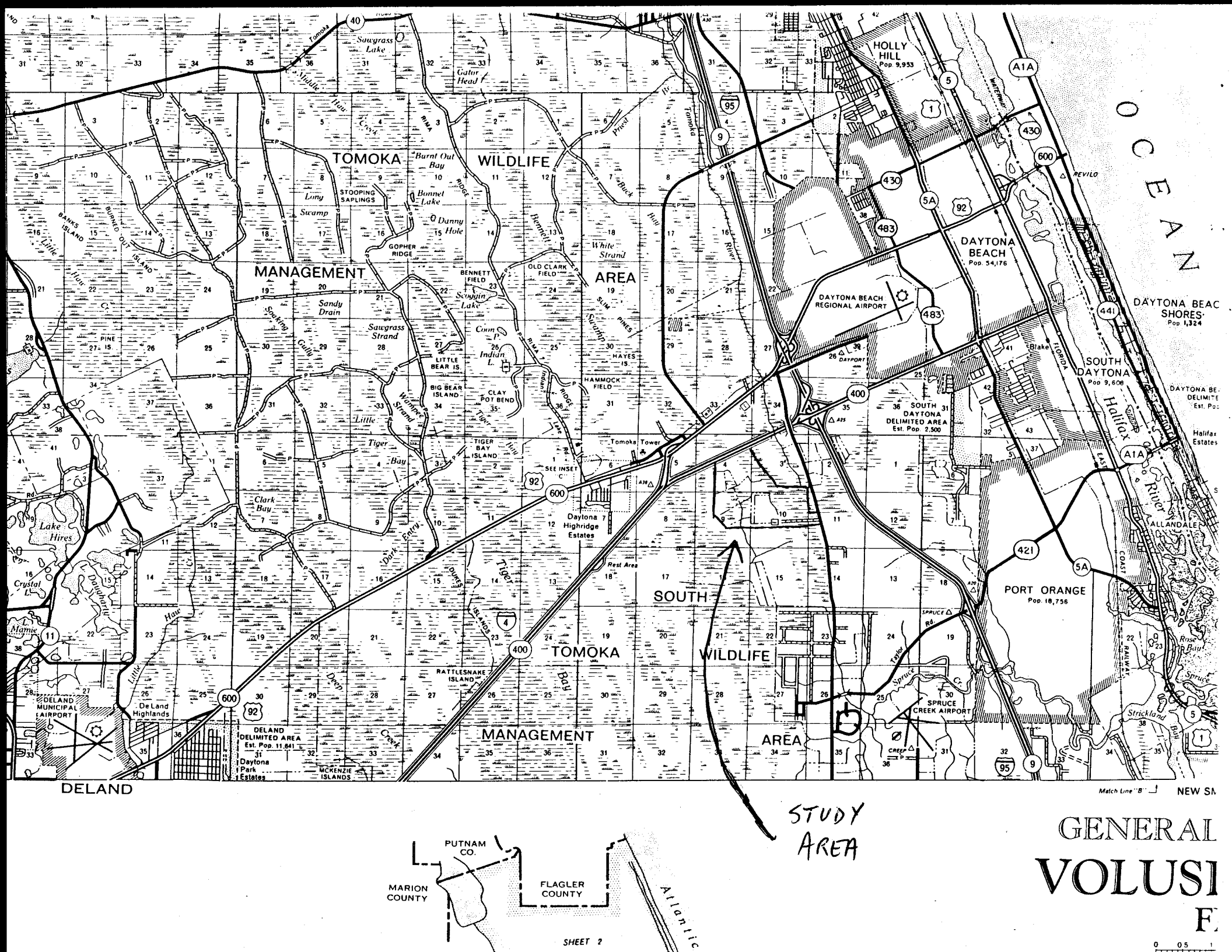
Ross, L. T. 1990. Methods for aquatic biology. Fla. Dept. Environ. Reg. Tech. Ser. 10(1): 1-47.

Weber, C. I. 1991. Methods for measuring the acute toxicity of effluents to freshwater and marine organisms. 4th edition. EPA/600/4-90/027. U. S. EPA, Cincinnati, Ohio. 216 pp.

Chemistry summary table for Tomoka farms landfill.

	Control Site	Test Site
Organic Constituents (ug/L)		
Aliphatic Compounds		34
Metals (ug/L)		
Aluminum		161
Arsenic		20U
Cadmium		0.2
Copper		5U
Chromium		10U
Iron		671
Lead		1.0U
Mercury		0.1U
Nickel		5U
Silver		NR
Zinc		5U
Nutrients (mg/L)		
Ortho-phosphorus		0.8A
Total phosphorus		0.8A
Ammonia		4.7A
Nitrate+Nitrite		0.04U
TKN		6.1
TOC		26
Other Parameters		
Habitat Assessment	36	48
D.O. (mg/L)	6.4	0.5
pH (SU's)	-	-
Conductivity (µmhos/cm)	80	-
Temperature (°C)	26.0	26.0
Bioassay Fish-Dechlorinated		Not toxic
Bioassay Invertebrate-Dechlorinated		Not toxic
Fecal coliform (org/100 ml)		1,800
Total coliform (org/100 ml)		3,000
AGP		31.1

A - Value reported is the mean of two or more determinations
L - Actual value is known to be greater than value given
U - Material analyzed for but not detected; value reported is the minimum detection limit
NR - Not requested



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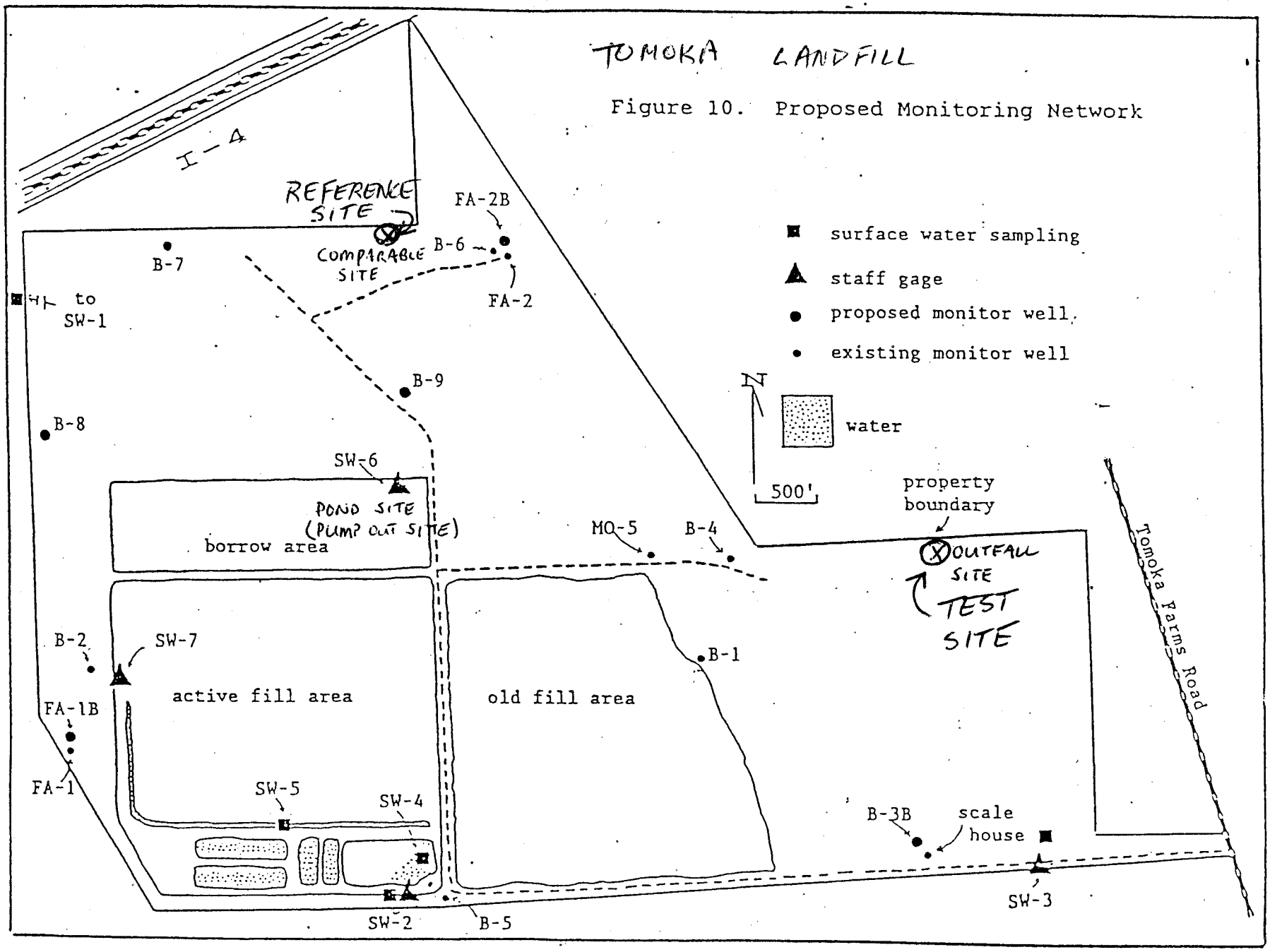

Figure 10. Proposed Monitoring Network

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FACILITY SUMMARY

Facility Name: TOMOKA FARMS ROAD LANDFILL - DISCHARGE PERMIT		Prepared by: AKAZI Date:
Location (attach detailed map): ATTACHED	County: VOLUSIA	District: CENTRAL (20)
Federal Permit # FL0037877 and expiration date: Sept 30, 1994	State GMS # and 306A00810 State expiration date: July 1, 1992	Facility Type: Industrial Municipal Federal Agricultural Other (list): County Landfill

Function of facility:

dewatering and surface run-off for landfill

Description of treatment process:

Treatment system consisting of two (2) settling ponds and a marsh area treatment and holding pond.

Receiving waters: Tomoka River + Spruce Creek	Classification: Class III
Design Flow: 2.5 MGD	Actual Mean Flow: N/A

Discharge is: Continuous Intermittent Seasonal (Rainfall dependent)
Other (describe)

therefore, the best time to sample is:

If facility has a mixing zone, give details (size, parameters affected, etc.): N/A

List effluent limits:

Parameter	Limit (units)
See attached list	

Describe special permit conditions and permit modifications:

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FACILITY SUMMARY

permitted outfall(s):

SW-1
SW-2
SW-3
SW-4
SW-5
SW-6
SW-7

for location see attached map

permit violations (from MOR data or other source) and plant upsets that occurred within past ar:

N/A

Describe previous impact bioassessments, WQBEL's, and previous or current enforcement actions:

N/A

Discuss comparability of MOR results to past DER results and whether there are trends (improving, declining) in the data set:

N/A

Additional information:

VOLUSIA CO. LANDFILL

PART I

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - Final

During the period beginning on the effective date and lasting through the expiration date permit, the permittee is authorized to discharge from outfall 001, stormwater from the lan perimeter ditch (no leachate collection).

Such discharges shall be limited and monitored by the permittee as specified below:

ARAMETERS	DISCHARGE LIMITATIONS	MONITORING REQUIREMENTS		
	Daily Maximum	Measurement Frequency (During Discharge)	Sample Type	Sampl Point
Flow, MGD	Report	Monthly	Instantaneous	Effluen
COD, mg/l	Report	Quarterly	Grab	Effluen
Total Cadmium, mg/l	Report	Quarterly	Grab	Effluen
Total Lead, mg/l	Report	Quarterly	Grab	Effluen
Total Chromium, mg/l	Report	Quarterly	Grab	Effluen
Total Iron, mg/l	Report	Quarterly	Grab	Effluen
Total Copper, mg/l	Report	Quarterly	Grab	Effluen
Total Zinc, mg/l	Report	Quarterly	Grab	Effluen
Total Mercury, mg/l	Report	Quarterly	Grab	Effluen
Specific Conductance micromhos/cm	Report	Quarterly	Grab	Effluen
Total Organic Carbon,(TOC), mg/l	Report	Quarterly	Grab	Effluen

VOLUSIA CO. LANDFILL

PART I (CONTINUATION)
EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. The effluent shall not cause a visible sheen on the receiving water.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts.

4. Any bypass of the treatment facility which is not included in the effluent monitored above is to be monitored for flow and reported on a Discharge Monitoring report (DMR) Form (3320-1).

5. The pH of the effluent shall not be less than 6.0 standard units nor greater than 8.5 standard units and shall be monitored once per month by a grab sample.

6. Samples taken in compliance with the monitoring requirements specified in this permit shall be taken at the nearest accessible point after final treatment but prior to the actual discharge or mixing with the receiving waters.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

SUBMITTING AGENCY CODE: 30 SUBMITTING AGENCY NAME: FDER CENTRAL DISTRICT	STORET STATION NUMBER:	DATE (M/D/Y): 09/23/91	RECEIVING BODY OF WATER: TOMOKA RIVER

REMARKS: COMPARABLE	LOCATION: TOMOKA FARMS ROAD VOLUSIA COUNTY LANDFILL PUBLIC WORKS DEPARTMENT 123 WEST INDIANA AVENUE DELAND, FLORIDA 32720	FIELD ID/NAME: TOMOKA FARMS LANDFILL

Habitat Parameter (score)	Excellent	Good	Fair	Poor
Bottom Substrate/ Available Cover (15)	Greater than 40% snags, logs, tree roots, emergent vegetation, leaf packs, undercut banks, rubble, or other stable habitat. **23-30 points**	20% to 40% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Adequate habitat. **16-22 points**	5% to 20% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Less than desirable habitat. **8-15 points**	Less than 5% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Lack of habitat is obvious. **0-7 points**
Water Velocity (1)	Max. observed; >0.3 m/sec. **23-30 points**	Max. observed; 0.1 to 0.3 m/sec **16-22 points**	Max. observed; 0.05 to 0.1 m/sec **8-15 points**	Max. observed; <0.05 m/sec **0-7 points**
Artificial Channel/ Flow Alteration (3)	No artificial channelization. Little activity (impervious surface) in watershed which would cause scouring during spates. **12-15 points**	—	—	Artificially channelized, or scouring present during spates because of excess impervious surface in watershed. **0-3 points**
Bank Stability (9)	Stable. No evidence of erosion or bank failure. Little potential for future problems. **9-10 points**	Moderately stable. Infrequent or small areas of erosion, mostly healed over. **6-8 points**	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. **3-5 points**	Unstable. Many raw, eroded areas. Obvious bank sloughing. **0-2 points**
Riparian Zone Vegetation Quality (8)	Over 80% of streambank surfaces consist of native plants, classified as: bottomland hardwoods, understory shrubs, or non-woody macrophytes. **9-10 points**	50% to 80% of riparian zone is vegetated, but one class of plants is not represented. **6-8 points**	25% to 50% of riparian zone is vegetated, but one or two classes of plants are not represented. **3-5 points**	Less than 25% of streambank surfaces are vegetated. Poor plant community (e.g. grass monoculture) present. **0-2 points**

Adjustments	Add **5 points** if cross-sectional area of flow is estimated to be greater than one square meter during periods of normal flow.	TOTAL SCORE: 36

COMMENTS: "UPSTREAM" IMPOUNDED BORROW PIT

ANALYSIS DATE: 09/23/91	ANALYST: PHILLIP N. KAWZ, Ed.D.	SIGNATURE: Philip N. Kawz

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET

SUBMITTING AGENCY CODE: 50	STORET STATION NUMBER:	DATE (M/D/Y): 09/23/91	RECEIVING BODY OF WATER: TOMOKA RIVER
SUBMITTING AGENCY NAME: FDER CENTRAL DISTRICT			

REMARKS:	LOCATION: TOMOKA FARMS ROAD, VOLUSIA COUNTY LANDFILL PUBLIC WORKS DEPARTMENT, 123 WEST INDIANA AVENUE, DELAND, FLORIDA 32720	FIELD ID/NAME:
COMPARABLE		TOMOKA FARMS LANDFILL

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Surrounding Land-Use (specify relative percent in each category):

Forest	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other
50%	50%					

Local Watershed Erosion (check box): None [✓] Moderate [ ] Heavy [ ]

Local Watershed NPS Pollution (check box): No evidence [ ] Some potential sources [✓] Obvious sources [ ]

Point-Source Pollution (list location and describe):

Estimated Stream Width (range, m): 100m	Estimated Stream Depth (range, m): 5m	yes
High Water Mark (m above bed): 0.5m	Velocity (range, m/s): 0	Impounded [✓] Channelized [ ]

Canopy Cover % (check box): Open: [✓] Lightly Shaded: [✓] Moderately Shaded: [ ] Heavily Shaded: [ ]

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: [✓] Sewage: [ ] Petroleum: [ ] Chemical: [ ] Anaerobic: [ ] Other: [ ]

Sediment Oils: Absent: [✓] Slight: [ ] Moderate: [ ] Profuse: [ ]

Sediment Deposits: Sludge: [ ] Paper Fiber: [ ] Mud: [✓] Sand: [✓] Shell: [ ] Other: [ ]

Substrate Types (estimated % surface coverage):

Limestone:		Sand/Silt/Clay Mix:	25%
Consolidated Clay:		Clay/Silt (inorganic):	
Gravel/Shell		Coarse Organic Debris:	25%
Sand:		Mud/Muck (organic):	50%

WATER QUALITY

	Temp. (°C):	D.O. (mg/l):		
Top			Secchi Depth (m):	0.75m
Mid-depth	26°C	6.9	pH (SU):	
Bottom			Conductivity (µmho/cm):	80
			Other Parameters:	

Stream Type (check box): Blackwater: [ ] Deep Aquifer Fed: [ ] Surficial Aquifer Fed: [✓] Alluvial: [ ] Other: [✓]

Water Odors (check box): Normal: [✓] Sewage: [ ] Petroleum: [ ] Chemical: [ ] Other: [ ]

Water Surface Oils (check box): Slick: [ ] Sheen: [ ] Globs: [ ] None: [✓]

Clarity (check box): Clear: [✓] Slightly turbid: [ ] Turbid: [ ] Opaque: [ ]

Color (check box): Tannic: [ ] Green (algae): [ ] Clear: [✓] Other: [ ]

Weather Conditions: SUN/CLOUD

Abundance:	Absent	Rare	Common	Abundant
Periphyton	[ ]	[ ]	[✓]	[ ]
Fish	[ ]	[ ]	[✓]	[ ]
Aquatic Macrophytes	[ ]	[ ]	[✓]	[ ]
Iron/sulfur Bacteria	[✓]	[ ]	[ ]	[ ]

ANALYSIS DATE:	ANALYST:	SIGNATURE:
09/23/91	PHILIP N. KANE, Ed.D.	Philip N. Kane, Ed.D.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

SUBMITTING AGENCY CODE: 30 SUBMITTING AGENCY NAME: CENTRAL DISTRICT	STORET STATION NUMBER:	DATE (M/D/Y): 09/23/91	RECEIVING BODY OF WATER: TOMOKA RIVER

REMARKS: OUTFALL	LOCATION: TOMOKA FARMS ROAD VOLUSIA COUNTY PUBLIC WORKS DEPARTMENT 123 WEST INDIANA AVENUE DELAND, FLORIDA 32720	FIELD ID/NAME: TOMOKA FARMS LANDFILL

Habitat Parameter score	Excellent	Good	Fair	Poor
Bottom Substrate/ Available Cover 25	Greater than 40% snags, logs, tree roots, emergent vegetation, leaf packs, undercut banks, rubble, or other stable habitat. **23-30 points**	20% to 40% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Adequate habitat. **16-22 points**	5% to 20% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Less than desirable habitat. **8-15 points**	Less than 5% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Lack of habitat is obvious. **0-7 points**
Water Velocity 1	Max. observed; >0.3 m/sec. **23-30 points**	Max. observed; 0.1 to 0.3 m/sec **16-22 points**	Max. observed; 0.05 to 0.1 m/sec **8-15 points**	Max. observed; <0.05 m/sec **0-7 points**
Artificial Channel/ Flow Alteration 3	No artificial channelization. Little activity (impervious surface) in watershed which would cause scouring during spates. **12-15 points**	—	—	Artificially channelized, or scouring present during spates because of excess impervious surface in watershed. **0-3 points**
Bank Stability 10	Stable. No evidence of erosion or bank failure. Little potential for future problems. **9-10 points**	Moderately stable. Infrequent or small areas of erosion, mostly healed over. **6-8 points**	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. **3-5 points**	Unstable. Many raw, eroded areas. Obvious bank sloughing. **0-2 points**
Riparian Zone Vegetation Quality 9	Over 80% of streambank surfaces consist of native plants, classified as: bottomland hardwoods, understory shrubs, or non-woody macrophytes. **9-10 points**	50% to 80% of riparian zone is vegetated, but one class of plants is not represented. **6-8 points**	25% to 50% of riparian zone is vegetated, but one or two classes of plants are not represented. **3-5 points**	Less than 25% of streambank surfaces are vegetated. Poor plant community (e.g. grass monoculture) present. **0-2 points**

Adjustments		TOTAL SCORE
	Add 5 points if cross-sectional area of flow is estimated to be greater than one square meter during periods of normal flow.	48

COMMENTS: "OUTFALL" AT END OF TERRESTRIAL DOWNSTREAM FLOW

ANALYSIS DATE: 09/23/91	ANALYST: PHILIP N. KAVE, Ed.D.	SIGNATURE: Philip N. Kave, Ed.D.

DEPARTMENT OF ENVIRONMENTAL REGULATION

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET

SUBMITTING AGENCY CODE: 30 SUBMITTING AGENCY NAME: CENTRAL DISTRICT FDER	STORET STATION NUMBER:	DATE (M/DAY): 09/23/91	RECEIVING BODY OF WATER: TOMOKA RIVER

REMARKS: OUTFALL	LOCATION: TOMOKA FARMS ROAD VOLUSIA COUNTY PUBLIC WORKS DEPARTMENT 123 W. INDIANA AVENUE DELAND, FLORIDA 32720	FIELD ID/NAME: TOMOKA FARMS LANDFILL

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Surrounding Land-Use (specify relative percent in each category):

Forest	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other
100%						

Local Watershed Erosion (check box): None [✓] Moderate [ ] Heavy [ ]

Local Watershed NPS Pollution (check box): No evidence [ ] Some potential sources [✓] Obvious sources [ ]

Point-Source Pollution (list location and describe):

Estimated Stream Width (range, m): 5M	Estimated Stream Depth (range, m): 2M			yes
High Water Mark (m above bed): 0.5M	Velocity (range, m/s): 0		Impounded	[✓]
			Channelized	[✓]

Canopy Cover % (check box): Open: [ ] Lightly Shaded: [✓] Moderately Shaded: [ ] Heavily Shaded: [ ]

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: [✓] Sewage: [ ] Petroleum: [ ] Chemical: [ ] Anaerobic: [ ] Other: [ ]

Sediment Oils: Absent: [✓] Slight: [ ] Moderate: [ ] Profuse: [ ]

Sediment Deposits: Sludge: [ ] Paper Fiber: [✓] Mud: [✓] Sand: [ ] Shell: [ ] Other: [ ]

Substrate Types (estimated % surface coverage):

Limestone:		Sand/Silt/Clay Mix:	
Consolidated Clay:		Clay/Silt (inorganic):	
Gravel/Shell		Coarse Organic Debris:	10%
Sand:		Mud/Muck (organic):	90%

WATER QUALITY

	Temp. (°C):	D.O. (mg/l):		
Top			Secchi Depth (m):	0.5M
Mid-depth	26°C	0.5M	pH (SU):	
Bottom			Conductivity (µmho/cm):	
			Other Parameters:	

Stream Type (check box): Blackwater: [ ] Deep Aquifer Fed: [ ] Surficial Aquifer Fed: [✓] Alluvial: [ ] Other: [✓]

Water Odors (check box): Normal: [✓] Sewage: [ ] Petroleum: [ ] Chemical: [ ] Other: [ ]

Water Surface Oils (check box): Slick: [ ] Sheen: [ ] Globs: [ ] None: [✓]

Clarity (check box): Clear: [✓] Slightly turbid: [ ] Turbid: [ ] Opaque: [ ]

Color (check box): Tannic: [✓] Green (algae): [ ] Clear: [ ] Other: [ ]

Weather Conditions: SUN/CLOUD

Abundance:	Absent	Rare	Common	Abundant
Periphyton	[ ]	[ ]	[✓]	[ ]
Fish	[ ]	[ ]	[✓]	[ ]
Aquatic Macrophytes	[ ]	[ ]	[✓]	[ ]
Iron/sulfur Bacteria	[✓]	[ ]	[ ]	[ ]

ANALYSIS DATE: 09/23/91	ANALYST: PHILIP W. KANE, Ed.D.	SIGNATURE: Philip W. Kane, Ed.D

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: TOMOKA FARMS LANDFILL
Address/City:
County: VOLUSIA
Contact/District: DR. PHIL KANE - CENTRAL
NPDES Permit #: FL0037877 **Outfall #:** 001

Sample Collection: Date 9-23-91 Time 1030
Test Beginning: Date 9-24-91 Time 1300
Test Ending: Date _____ Time _____
Test Organism: CERIODAPHNIA DUBIA
Life Stage/Age: <24 HOURS

Test Number: 1 of 2 **Test Type:** (Screening) | Definitive
(Static) | Static Renewal | Flow-through

Remarks:

Instrument Calibrations:

	pH	DO	Temp	Cond
0 hr	7@7, 9@9	8.9@21.5	20.9@23.9	1368@24@ 1381
24 hr	7@7, 9@9	8.9@21.5	20.2@23.2	1361@23.6
48 hr	7@7, 9@9	8.8@22	20.5@23.5	1366@23.8 1375

		Number Live			pH			Temp. (°C)			DO (mg/L)			Cond. (µmhos/cm)		
Conc.	Chamber #	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
control	A	5	5	5	8.2		8.2	20.2		20.8	8.4		8.6	179		188
control	B	5	5	5			8.2						8.6			
control	C	5	5	5			8.2						8.6			
control	D	5	5	5			8.2						8.6			
100%	A	5	5	5	7.3		8.3	20.2		20.9	5.5		8.6	276		285
100%	B	5	5	5			8.3						8.6			
100%	C	5	5	5			8.3						8.6			
100%	D	5	5	5			8.3						8.6			
Measured/Loaded by:		MF	MF		TM		MF	TM		MF	TM		MF	TM		MF
Recorded by:		MF	TM	TM	TM		TM	TM		TM	TM		TM	TM		TM

Investigators' Signatures

Kim Pearce
Alison Jordan
Thomas Macom
Marshall Finchett

Reviewer

Water-quality Parameters

	Well Water	Cond. Water	Sample	Method	Measured by
Field Tot. Resid. Cl2:			n/m		
Lab Tot. Resid. Cl2:	0.0	0.0	0.0	Hach	MF
Alkalinity:	126	73	109	Hach	TM
Hardness:	130	76	103	Hach	TM
Total Ammonia:	0	0	7.5	Hach	TM

Ammonia Meter Slope: _____ Ammonia Blank: 0.0 Salinity Sample: _____ ppt

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: TOMOKA FARMS LANDFILL
Address/City:
County: VOLUSIA
Contact/District: DR. PHIL KANE
NPDES Permit #: FL00 37877 Outfall #: 001

Sample Collection: Date 9-23-91 Time 1030
Test Beginning: Date 9-24-91 Time 1330
Test Ending: Date ____ Time ____
Test Organism: NOTROPIS LEEDSI
Life Stage/Age: 24 DAYS

Test Number: 2 of 2 Test Type: (Screening) | Definitive
(Static) | Static Renewal | Flow-through

Remarks:

Instrument Calibrations:

	pH	DO	Temp	Cond
0 hr	7@7.9@9	8.9 @21.5	20.9@23.9	1368 @ 24 °@ 1351
24 hr	7@7.9@9	8.9@21.5	20.2@23.2	1361@23.6
48 hr	7@7.9@9	8.8 @22	20.5@23.5	1366 @ 23.8 1375

Conc.	Chamber #	Number Live 0	24	48	pH 0	24	48	Temp. (°C) 0	24	48	DO (mg/L) 0	24	48	Cond. (µmhos/cm) 0	24	48
control	47	5	5	5	7.9	8.1	8.2	21.0	21.0	~~[illegible]~~	8.7	7.6	8.0			
control	3	5	5	5	7.9	8.1	8.2			20.1	8.7	7.8	8.0	243	246	246
100%	48	5	5	5	7.1	7.7	7.9	19.9	20.5	~~[illegible]~~	3.7	6.5	7.4			
100%	14	5	5	5	7.1	7.6	7.9			20.0	3.5	6.5	7.4	283	289	288
Measured/Loaded by:		MF	KP	TM	AZ	KP	MF	AZ	KD	MF	AZ	KP		AZ	KP	MF
Recorded by:		MF	GD	TM	AZ	GD	TM	AZ	GD	TM	AZ	GD		AZ	GD	TM

wrong volume 9/26/91

Investigators' Signatures

Kim Pearce
Thomas Macom
Alison Jordan
Marshall Faircloth
Reviewer

Water-quality Parameters

	Well Water	Cond. Water	Sample	Method	Measured by
Field Tot. Resid. Cl2:	[illegible] 0.0		n/m		
Lab Tot. Resid. Cl2:	0.0	0.0	0.0	Hach	MF
Alkalinity:	126	73	109	Hach	TM
Hardness:	130	70	103	Hach	TM
Total Ammonia:	0	0	7.5	Hach	TM

Ammonia Meter Slope: ____ Ammonia Blank: 0.0 Salinity Sample: ____ ppt

Taxa list for Tomoka Farms Landfill, collected via discrete dip net sweeps of multiple substrates on 23 September 1991.

	Test Site	Reference Site
Coleoptera		
Bagous sp.	0	1
Berosus sp.	0	1
Undetermined Dytiscidae	0	1
Suphisellus sp.	2	1
Diptera		
Chaoborus sp.	23	0
Cryptochironomus sp.	0	2
Guttipelopia guttipennis	1	0
Polypedilum scalaenum	0	15
Procladius sp.	0	1
Tanytarsus sp.	0	2
Tanypus carinatus	0	1
Ephemeroptera		
Caenis sp.	0	2
Gastropoda		
Physella sp.	1	0
Hemiptera		
Undetermined Naucoridae	1	0
Malacostraca		
Palaemonetes paludosus	2	0
Odonata		
Erythemis simplicicollis	3	0
Pachydiplax longipennis	1	4
Oligochaeta		
Dero digitata	6	12
Lumbriculus inconstans	0	1
Nais variabilis	0	1
Pelecypoda		
Elliptio sp.	1	0
Musculium sp.	4	0
Trichoptera		
Polycentropus sp.	0	1

Fill Out This Section For All Surface Water Discharger Inspections (CEI, CSI, CBI, PAI, XSI - RI Optional)

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 FL0037877 11	12 910923 17	18 X	19 S	20 1

Remarks

21 66

Fill Out This Section For All Surface Water Discharger Inspections (CEI, CSI, CBI, PAI, XSI - RI Optional)

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 FL0037877 11	12 910923 17	18 B	19 S	20 1

Remarks

21 66

JUL 1990
Central Florida
District

JUL 1990
Central Florida
District

APPLICATION FOR MODIFICATION

OF

EXISTING PERMIT

TO

ALLOW VERTICAL EXPANSION

OF

THE TOMOKA FARMS ROAD LANDFILL

VOLUSIA COUNTY, FLORIDA

JULY, 1990

VC 89121-6E

PERMIT No. S064-121811
(MODIFICATION S064-184337)
ISSUE DATE: SEPT. 20, 1990

24 Jul 90

BRILEY, WILD & ASSOCIATES, INC.

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2.0 Background

3.0 Service Area

4.0 Wasteload Projection

5.0 Estimated Site Life

6.0 Cover Material

7.0 Groundwater Monitoring

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9.0 Proposed Drainage

10.0 Foundation Analysis

11.0 Closure

APPENDIX

A. Drainage Calculations

B. Foundation Analysis

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

PAID 21,000.00 JUL 30 1990

CENTRAL FLORIDA DISTRICT

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

DEPARTMENT OF ENVIRONMENTAL REGULATION STATE OF FLORIDA

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

1990 Permit Code

APPLICATION FOR PERMIT TO CONSTRUCT [X] OPERATE [ ]

A SOLID WASTE RESOURCE RECOVERY AND MANAGEMENT FACILITY

GENERAL REQUIREMENTS

Solid Waste Resource Recovery and Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes, and in accordance with Florida Administrative Code Rule 17-7. A minimum of six copies of the application shall be submitted to the Department District Office having jurisdiction over the facility. Complete appropriate sections for the type of facility for which application is made. Entries should be typed or printed in ink. All blanks should be filled in or marked not applicable. The application shall include all information, drawings, and reports necessary to evaluate the facility. Information required to support the application is listed on the attached pages of this form.

Facility Type: Existing X Proposed ____

Sanitary Landfill:
- X Class I,
- __ Class II,
- __ Class III: Trash/yard Trash
- __ Class III: Yard Trash Composting

Volume Reduction:
- __ Composting
- __ Shredder
- __ Incinerator/Trench Burner
- __ Resource Recovery: __ Energy __ Materials

Sludge Landspreading:
- __ Grade I
- __ Grade II
- __ Grade III
- __ Septage/Food Service

FACILITY NAME: Tomoka Farms Road Landfill / DER ID Number

FACILITY LOCATION (main entrance): Tomoka Farms Road

S 3,4,9,10&11 (section), T 16S (township), R 32E (range) / Latitude 29 °08 ' 00 " Longitude 81 °05 ' 30 "

Applicant Name (operating authority): County of Volusia

Street Address & P. O. Box: 123 West Indiana Avenue, DeLand, (City) Volusia (County) 32720 (Zip)

Contact Person: James L. Griffin (Name) (904) 736-2700 (Phone Number)

Authorized Agent/Consultant: Briley, Wild & Associates, Inc. (Name) (904) 672-5660 (Phone Number)

Contact Person: Lee Powell (Name) 1040 North US1 (Street) (P. O. Box) (904) 672-5660 (Phone Number)

Ormond Beach, (City) Volusia, (County) Florida (State) 32174 (Zip)

Landowner (if different than applicant): N/A

Address of Landowner: N/A (Street, P. O. Box) (City) (State) (Zip)

Cities, Towns and Areas to be Served: Volusia County

Current and Projected Population to Served: 400 214 (1990) 425 686 (1992)

Acres within Waste Site Boundary: 112 Acres within Property Boundary: 846

Protecting Florida and Your Quality of Life

REQUIRED ATTACHEMENTS FOR CONSTRUCTION/OPERATION PERMIT FOR A RESOURCE RECOVERY AND MANAGEMENT FACILITY

GENERAL

Permit application and supporting information shall include the following (17-7.030(2), F.A.C.):

Completeness Check

1. A letter of transmittal to the Department; (17-7.030(3)(a) F.A.C.) ___

2. A table of contents listing the main sections of the application: (17-7.030(3)(b), F.A.C.) ___

3. The permit fee specified in Florida Aministrative Code Rule 17-4.05 in check or money order payable to the Department: (17-7.030(3)(c), F.A.C.) ___

4. Six copies, at minimum, of the completed application form, all supporting data, and reports; (17-7.030(2), F.A.C.) ___

5. Engineer seal; (17-7.030(2)(d), F.A.C.) ___

6. Engineer's letter of appointment if applicable; (17-7.030(3)(e), F.A.C) ___

7. Copy of any lease agreement, transfer of property agreement with right of entry for long-term care, or any other agreement between operator and property owner by which the closing and long-term care of the facility may be affected; (17-7.030(3)(h) ___

8. Proof of publication of notice of application for the proposed activity in a newspaper of general circulation; (17-7.03(4), F.A.C) ___

SPECIFICATION ATTACHMENT ITEMS

The following information items must be included in the application or an explanation given if they are not applicable.

Construction Permits:

A. Landfills - Submit items 1, 2, 3, 4, 5, 6, 7, 8, 10.
B. Volume Reduction - Submit items 1, 2, 3, 4, 5, 6, 7, 9, 10.
C. Sludge Landspreading - Submit items 2, 3, 4, 5, 6, 8, 10.

Operation Permits:

A. Landfills - All the items above.
B. Volume Reduction - All the items above.
C. Sludge Landspreading - All the items above.

NOTE: For facilities that have been satisfactorily constructed in accordance with their construction permit the information required for A, B, and C type facilities does not have to be resubmitted for an operation permit if the information has not changed during the construction period.

1. A foundation analysis (17-7.050(2)(b), F.A.C.) ___

2. Evidence that the facility is in conformance with local zoning (17-7.050(2)(c)4, F.A.C) ___

3. Facility Design (17-7.050(3), F.A.C.:

NOTE: All maps, plan sheets, drawings, isometrics, cross-sections, or aerial photographs shall be legible; be signed and sealed by the registered professional engineer responsible for their preparation; be of appripriate scale to show clearly all required datails; be numbered, referenced to narrative, titled, have a legend of symbols used, contain horizontal and vertical scales (where applicable), and specify drafting or origination dates; and use uniform scales as much as possible, contain a north arrow, and use NGVD for all elevations.

Completeness Check

4. Landfill Performance and Design Standards (17-7.050(4), F.A.C.)

a. Liner performance (17-7.050(4)(a)(b), F.A.C.) ___
   (1) Material type (soil, synthetic, other) ___
   (2) Adequate base support ___
   (3) Planned installation adequate to cover all surrounding earth ___
   (4) Equivalency to design standards ___

b. Liner quality control plan (17-7.050(4)(c), F.A.C.) ___
   (1) Specifications ___
   (2) Construction/installation methods ___
   (3) Sampling and testing ___
   (4) Manufacturer's specifications and recommendations ___

c. Leachate control and removal system performance (17-7.050(4)(e), F.A.C.) ___
   (1) Construction materials ___
   (2) Strength and thickness ___
   (3) Measures to prevent clogging ___
   (4) Central collection point for treatment and disposal ___
   (5) Leachate depth not to exceed one foot ___
   (6) Equivalency to design standards ___

d. Surface water management system performance (17-7.050(4)(g), F.A.C) ___
   (1) Prevention of surface water flow onto waste-filled areas ___
   (2) Stormwater run-off controls; retention, detention ponds ___
   (3) Equivalency to design standards ___
   (4) Water management district approval ___

e. Gas control system performance (17-7.050(4)(i), F.A.C.) ___
   (1) Prevention of methane migration ___
   (2) Prevention of damage to vegetation ___
   (3) Prevention of objectionable odors off site ___
   (4) Equivalency to design standards ___

5. Operations Plan (17-7.050(5)(b),(c)(d) & (e), F.A.C.) ___

a. Designation of responsible person(s) ___

b. Contingency operations ___

c. Controlling the type of waste received at the site: ___

SOLID WASTE DISPOSAL FACILITY DATA FORM

Date Form Completed: _____

Permit No.: _____ Issue Date: _____ Expires: _____

DER ACTION: ___ Add ___ Delete ___ Change ___ Deactivate Site

1. DER IDENTIFICATION NUMBER	2. SITE NAME Tomoka Farms Road Landfill
3. COUNTY Volusia	4. FACILITY ADDRESS (Road, cross road, street) Tomoka Farms Road
4a. Facility Phone Number: 904-255-4824	4b. Facility Site Supervisor Gene Palmatier
5a. 29 ° 08 ' 00 " (Latitude) 81 ° 05 '30 " (Longitude)	5b. 165 (Township) 32E (Range) 3,4,9,10 & 11 (Section)
6. Operating Authority Name County of Volusia	8. Operating Authority Address 123 West Indiana Avneue DeLand, Florida
7. Phone Number 904=736-2700	
9. Owner of Site Property (if different from operator) same as above	11. Address of Owner same as above
10. Phone Number of Owner	

12. Facility Type
- X Class I, Sanitary Landfill
- __ Class II, Sanitary Landfill
- __ Class III, Trash/Yard Trash
- __ Class III Yard trash comp.

Sludge Landspreading:
- __ Grade I
- __ Grade II
- __ Grade III
- __ Septage

Type
- __ Other Facility

13. Month Year Begun Before 1980	14. Disposal Area 112 Acres	15. Population Served 400 214
16. Expected Useful Lifetime 1.5 Years	17. Weighing Scales X Yes __ No	18. Security to Prevent Unauthorized Used X Yes __ No
19. Depth of Water Table 26 Ft. (NGVD)	20. Quantity of Waste/Day 2300 tons or XXXXXXXXXX	21. Charge $ 18 XXX/ton

22. Surrounding Land Use Zoning
__ Residential __ None X Agricultural __ Commercial __ Industrial __ Other

23. Types of Waste Received
- X Residential
- X Commercial
- __ Incinerator Residue
- __ Pathological/Infectious
- X Agricultural
- __ Septic Tank
- X Industrial
- X Water/Air Treat Sludge
- X Yard Trash/Trash
- X Sewage Sludge
- X Industrial Sludge
- X Hospital
- X Other: DER approved materials

24. Number of Monitoring Wells 12

25. Number of Surface Monitoring Points 5

26. Gas Control / Recovery __ Yes X No / __ Yes X No	27. Salvaging Permitted __ Yes X No	28. Attendant X Yes __ No

SOLID WASTE VOLUME REDUCTION AND RESOURCE RECOVERY FACILITY DATA FORM

Permit No.: _____ Issue Date: _____ Expires: _____

Facility No. (DER Identification): _____

DER ACTION: ☐ Add ☐ Delete ☐ Change ☐ Deactivate Site ☐ Other

1. County	2. Site Name
3. Date Form Completed	4. Facility Address
4a. Facility Phone No.	4b. Facility Site Supervisor
5a. ° ' " ° ' " Latitude Longitude	5b. Township Range Section
6. Operating Authority Name	8. Operating Authority Address
7. Phone Number	
9. Owner of Site Property (if different from Operator)	11. Address of Owner
10. Phone Number of Owner	

12. Facility Type (check one or more)
☐ Incinerator Only ☐ Biomass Gas Production ☐ Pyrolysis ☐ Other:
☐ Sludge Concentration ☐ Baler (compactor) ☐ Composting Plant
☐ Transfer Station ☐ Waterwall Incinerator ☐ Shredder (pulverizer)

13. Month/Year Begun	14. Disposal Area Acres	15. Population Served
16. Expected Useful Lifetime Years	17. Weighing Scales ☐ Yes ☐ No	18. Waste Processed Per Operational Day tons/gal/yd
19. Charge/_____	20. Days Operated S M T W T F S	21. Hours/Day Operated

22. Maximum Processing Rate tons/day

23. Material Recovered, Tons/Week
_____ Paper _____ Glass Other:
_____ Ferrous Metals _____ Non-Ferrous Metals
_____ Aluminum _____ Plastics

24. Energy Recovery, in units shown
_____ High Pressure Steam-lb/hr _____ Chilled Water-gal/hr _____ Gas-ft^3/hr
_____ Low Pressure Steam-lb/hr _____ Oil-gal/hr _____ Gas-BTU/hr
_____ Electricity-kw/hr _____ Oil-BTU/hr Other:

25. Process Water Recycled ☐ Yes ☐ No	Treatment Method Used
Discharged to: ☐ Surface Waters ☐ Underground	Class Receiving Water
26. Final Residue is % of waste intake	Residue is disposed of at (Site Name)

27. Supplementary Fuel Used

Type	Quantity Used/Hour	
28. Estimated Operating Costs Material – Energy Revenue $	Total Cost/Ton $	Net Cost/Ton $

29. Number of Staff	30. State Pollution Control Bond Financing Amount $	31. Estimated Amount of Tax Exemptions that will be Requested $

32. Name and Title of Person Completing Form

Note: All blanks must be filled or marked as not applicable.

2.0 BACKGROUND

Volusia County was issued permits from the Florida Department of Environmental Regulation (DER) to operate the Tomoka Farms Road Landfill in 1981 and 1987. The site has been constructed and operated by the County in accordance with those permits. Previous hydrogeological information on the site has been obtained and submitted to the DER indicating that the site is ideally suited for sanitary landfill activities, being underlain by extensive clay deposits. Extensive groundwater monitoring has confirmed that leachate is not contaminating groundwater at this site.

The County is not proposing to change its operation or construction except as noted in this application, and information previously submitted to the DER remains valid except as specifically identified in this application.

3.0 SERVICE AREA

The landfill was designed to serve as the sole Class I disposal facility for Volusia County. Responding to a solid waste crisis in adjacent Flagler County, Volusia County has agreed to accept waste from Flagler County on a temporary basis, until a long term solution can be worked out. The short-term service area includes both Volusia and Flagler Counties. The University of Florida population projections for Volusia and Flagler Counties for 1990 and 1995 with interpolation for 1992, are as follows:

	1990	1992	1995
Volusia	371,900	393,260	425,300
Flagler	28,314	32,426	38,594
Total	400,214	425,686	463,894

4.0 WASTELOAD PROJECTION

Tomoka Farms Road Landfill receives typical municipal refuse including residential, commercial, and industrial solid wastes. Yard trash, agricultural wastes, hospital wastes, and certain dewatered sludges are also accepted for disposal. Certain DER approved material such as asbestos and air dried decontaminated soils are also accepted. Septic tank waste, liquid wastes, and infectious medical wastes are not accepted at the landfill.

Currently, the landfill has been receiving an average of 2,300 tons per day of solid waste. If this loading increases with the projected population, by 1992 the average loading will be 2,450 tons per day.

5.0 ESTIMATED SITE LIFE

The County is proposing in this application to continue operating in the existing 112 acre active landfill area, extending the side slopes to elevation 110.0 and the center of the landfill to elevation 126.0. The volume difference between the landfill contours as calculated on May 25, 1990 and the proposed contours is approximately 3,151,680 cubic yards. Assuming an in-place density of 1,000 lb per cubic yard and 20 percent cover material, increasing the elevation of the landfill will allow the disposal of an additional 1,260,672 tons of solid waste. At an average daily loading of 2,375 tons per day, the proposed expansion would extend the life of the existing landfill area by 531 days or about 1 1/2 years.

6.0 COVER MATERIAL

Cover material for daily cover will continue to be taken from the borrow area located north of the active landfill area.

7.0 GROUNDWATER MONITORING

The proposed expansion is vertical, not horizontal, and the existing groundwater monitoring plan will not need to be modified based on this proposed expansion.

8.0 PROPOSED EXPANSION

The County is proposing to continue landfill activities in the existing active area to elevation 110, with sixteen foot wide terraces after every 20-ft. of vertical rise. Side slopes shall be 6:1 on the north, east, south and side slopes and 5:1 on the west side slope. To provide access during landfill activities and for maintenance, a 24-ft. roadway is located on the east side slope. At the top of the side slope the completed landfill will rise at a 4% grade to elevation 126 to allow for good drainage after closure and post-closure settlement.

9.0 PROPOSED DRAINAGE

The proposed drainage plan is as described in the "Erosion Control Plan for Tomoka Farms Road Landfill" submitted to the DER in March, 1990. As the landfill is constructed a temporary berm will be maintained along the top of the side slope to catch and retain surface runoff and divert it from flowing down the side slopes.

Terraces will be constructed after every 20-ft. of vertical rise to collect water sheet flowing down the side slopes and divert that water to the drainage ditches at the base of the landfill.

A computer program, Basic Runoff Networking, Ver. 2.3 by James J. Boyd, was used to calculate the volume of runoff generated by the 25-year, 24-hour design storm of 9-inches. As indicated in the Appendix, the total volume of runoff and the peak discharge rates from that storm that would be generated on the landfill top and on each of the terraces was calculated to be as follows:

Drainage Area	Acres	Volume acre-ft.	Peak Rate cfs
Top (above elevation 110)	26.63	15.9	177
Elevation H0- elevation 90	16.57	9.9	110
Elevation 90 - elevation 70	15.69	9.4	105
Elevation 70 - elevation 50	24.44	14.6	163

To accommodate these anticipated flows, 18-inch corrugated polyethylene pipes are proposed to transmit the runoff collected by the diversion berm along the top and by the terraces to the drainage ditches at the base of the landfill.

10.0 FOUNDATION ANALYSIS

A foundation analysis was carried out to determine the ability of the underlying soils to support the weight of the additional landfill construction. The results of this analysis are included in the Appendix.

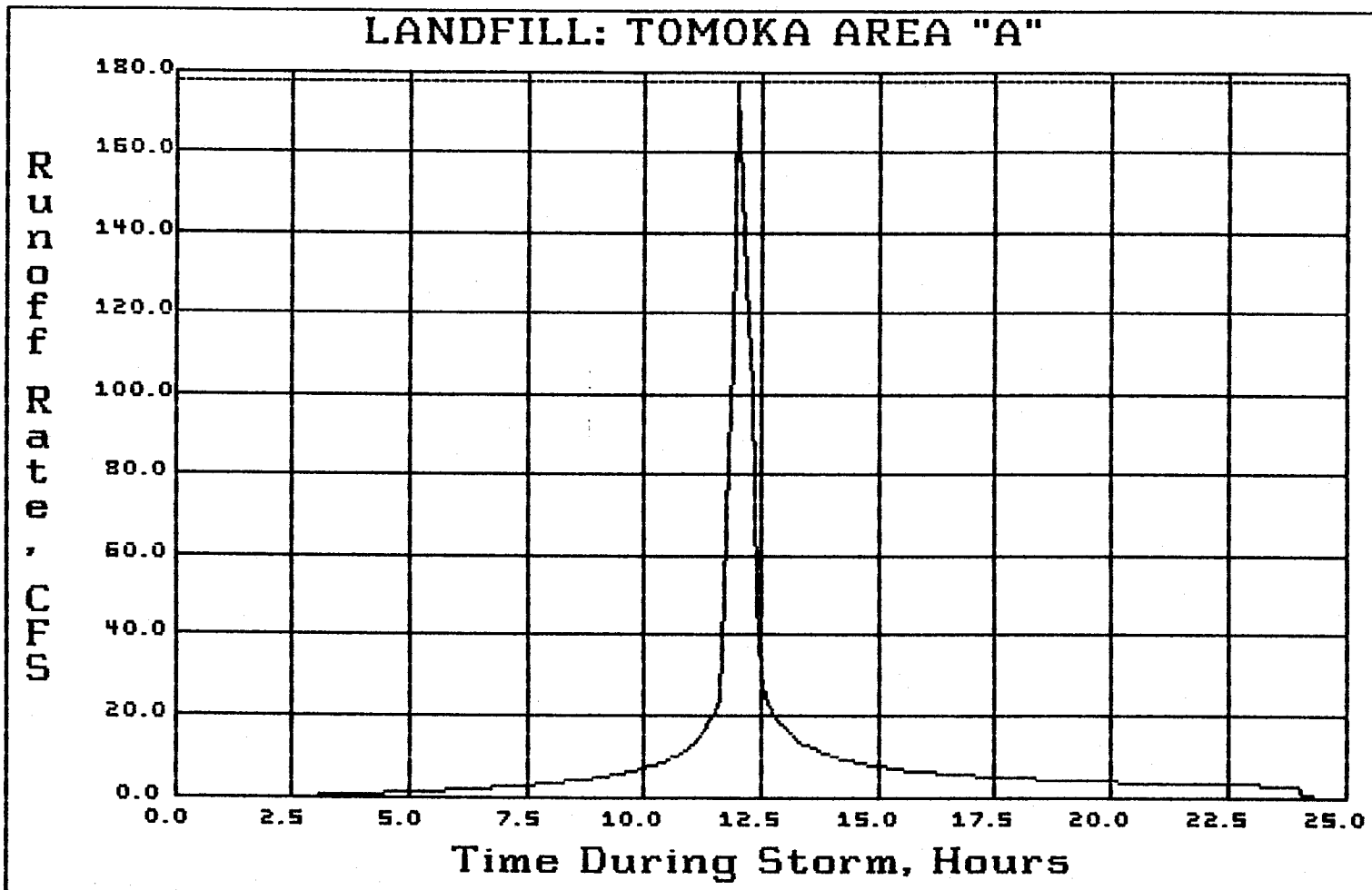
11.0 CLOSURE

The final closure plan for this landfill calls for a six inch compacted clay layer to be constructed. This clay layer would overlay a (minimum) six inch soil cover and be covered with a six inch drainage layer and a six inch soil layer capable of supporting vegetative growth.

APPENDIX

A. Drainage Calculations

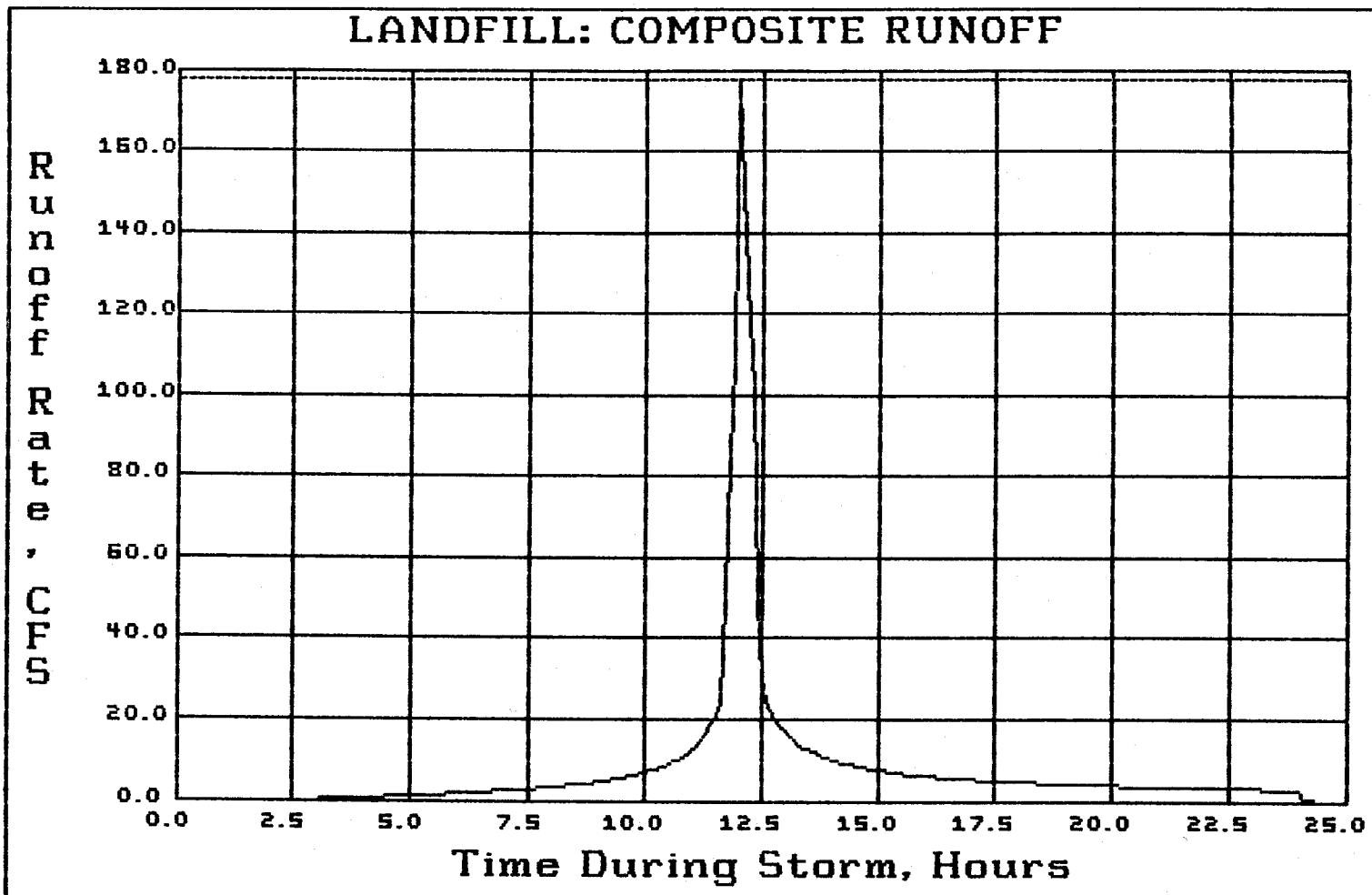
B. Foundation Analysis



Rainfall File: SCS_IIM
24.00 Hours, 9.00 Inches

Peak Runoff 177.4036 CFS
Volume of Runoff 15.9425 ACFT

BRN 2.3: P BRILEY, WILD & ASSOCIATES



Rainfall File: SCS_IIM
24.00 Hours, 9.00 Inches

Total Subbasin 26.6300 Acres
Peak 177.4036 CFS; 15.9425 ACFT

BRN 2.3: P BRILEY, WILD & ASSOCIATES

Subbasin File: LANDFILL, SUBBASIN TOKENS

```
00001: Number of Paths   1
00002: Path Number   1
00003: From Node..   1
00004: To Node....   2
00005: Path Type..   1
00006: *
00007: ************************************
00008: Number of Nodes   2
00009: Node   1
00010: TOMOKA AREA "A"
00011: Type 1
00012: SCS_484
00013: total acres.............   26.6300
00014: weighted curve number...   85.0000
00015: hydraulic length, feet..   25.0000
00016: ground slope, percent...    0.4000
00017: percent impervious cover   98.0000
00018: initial abstraction k...    0.2000
00019: abstraction loss, in....    0.3529
00020: Time of Conc, Hours.....    0.1000
00021: ************************************
00022: Node   2
00023: TO DRAIN PIPES
00024: Type 4
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00026: Checksum 3
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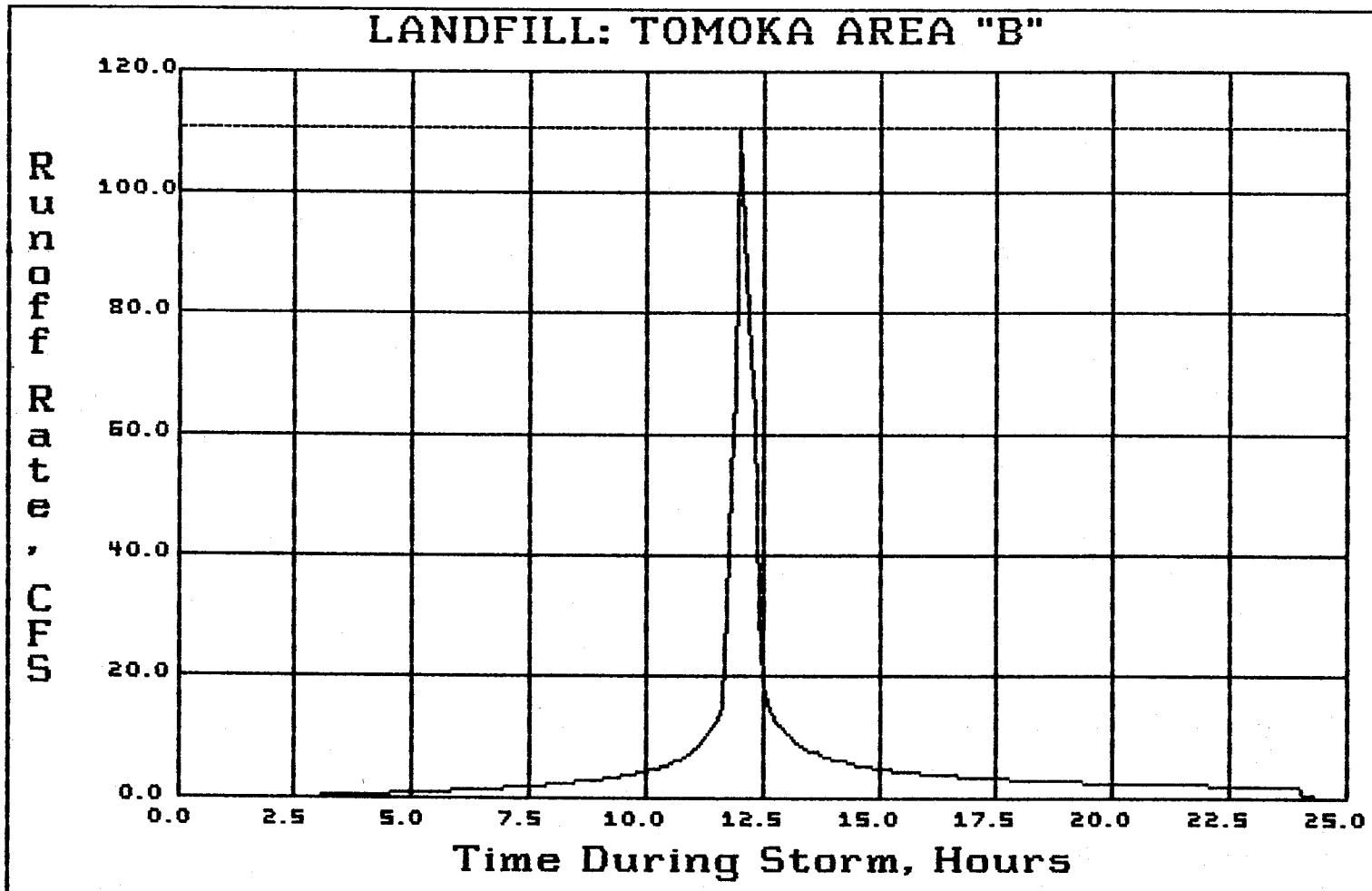
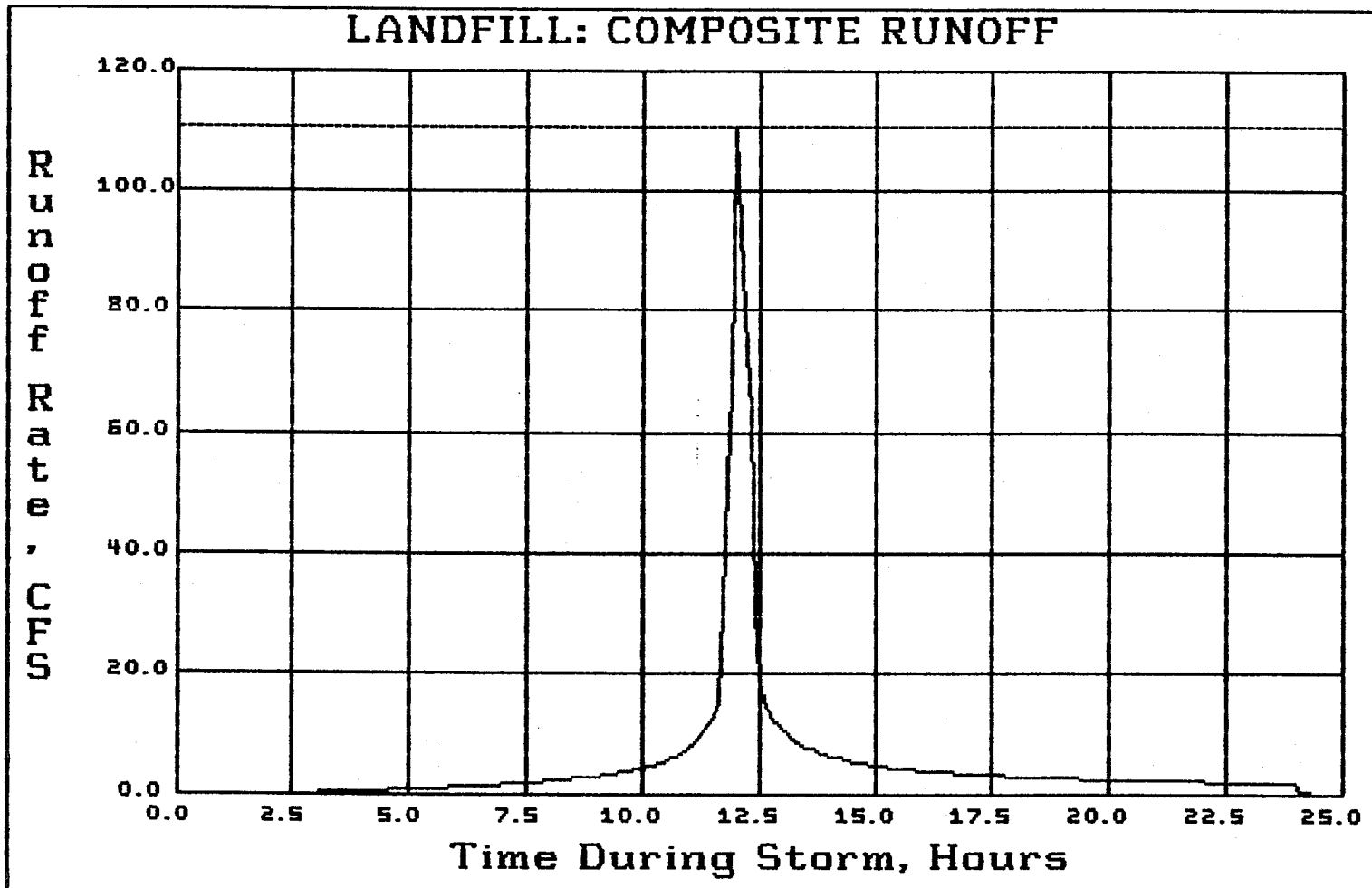


Rainfall File: SCS_IIM
24.00 Hours, 9.00 Inches

Peak Runoff 110.3860 CFS
Volume of Runoff 9.9199 ACFT

BRN 2.3: P BRILEY, WILD & ASSOCIATES



Rainfall File: SCS_IIM
24.00 Hours, 9.00 Inches

Total Subbasin 16.5700 Acres
Peak 110.3860 CFS; 9.9199 ACFT

BRN 2.3: P BRILEY, WILD & ASSOCIATES

Subbasin File: LANDFILL, SUBBASIN TOKENS

```
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00002: Path Number   1
00003: From Node..   1
00004: To Node....   2
00005: Path Type..   1
00006: *
00007: ************************************
00008: Number of Nodes   2
00009: Node   1
00010: TOMOKA AREA "B"
00011: Type 1
00012: SCS_484
00013: total acres.............   16.5700
00014: weighted curve number...   85.0000
00015: hydraulic length, feet..  140.0000
00016: ground slope, percent...    7.1400
00017: percent impervious cover   98.0000
00018: initial abstraction k...    0.2000
00019: abstraction loss, in....    0.3529
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00022: Node   2
00023: TO DRAIN PIPES
00024: Type 4
00025: ************************************
00026: Checksum 3
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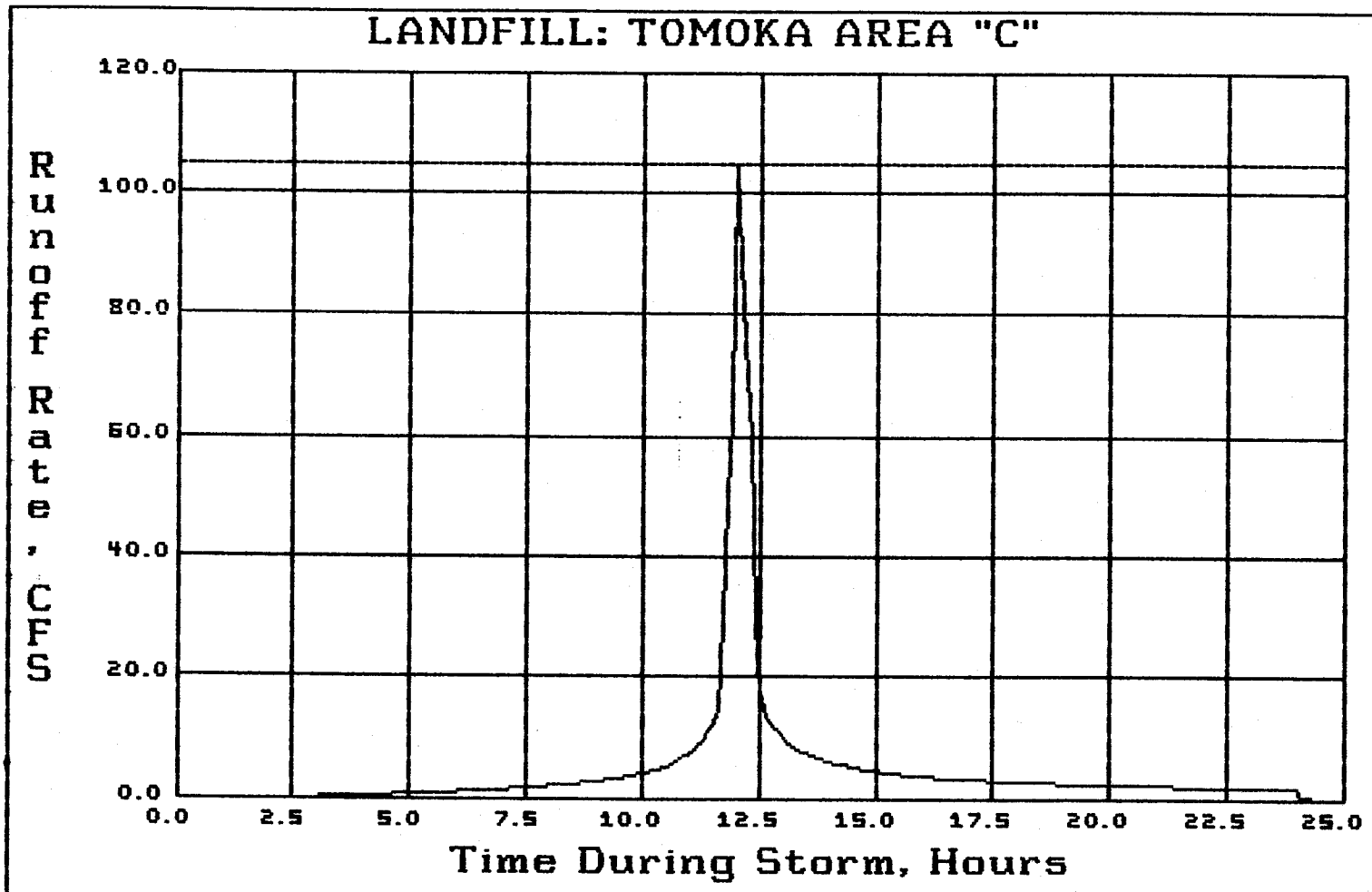
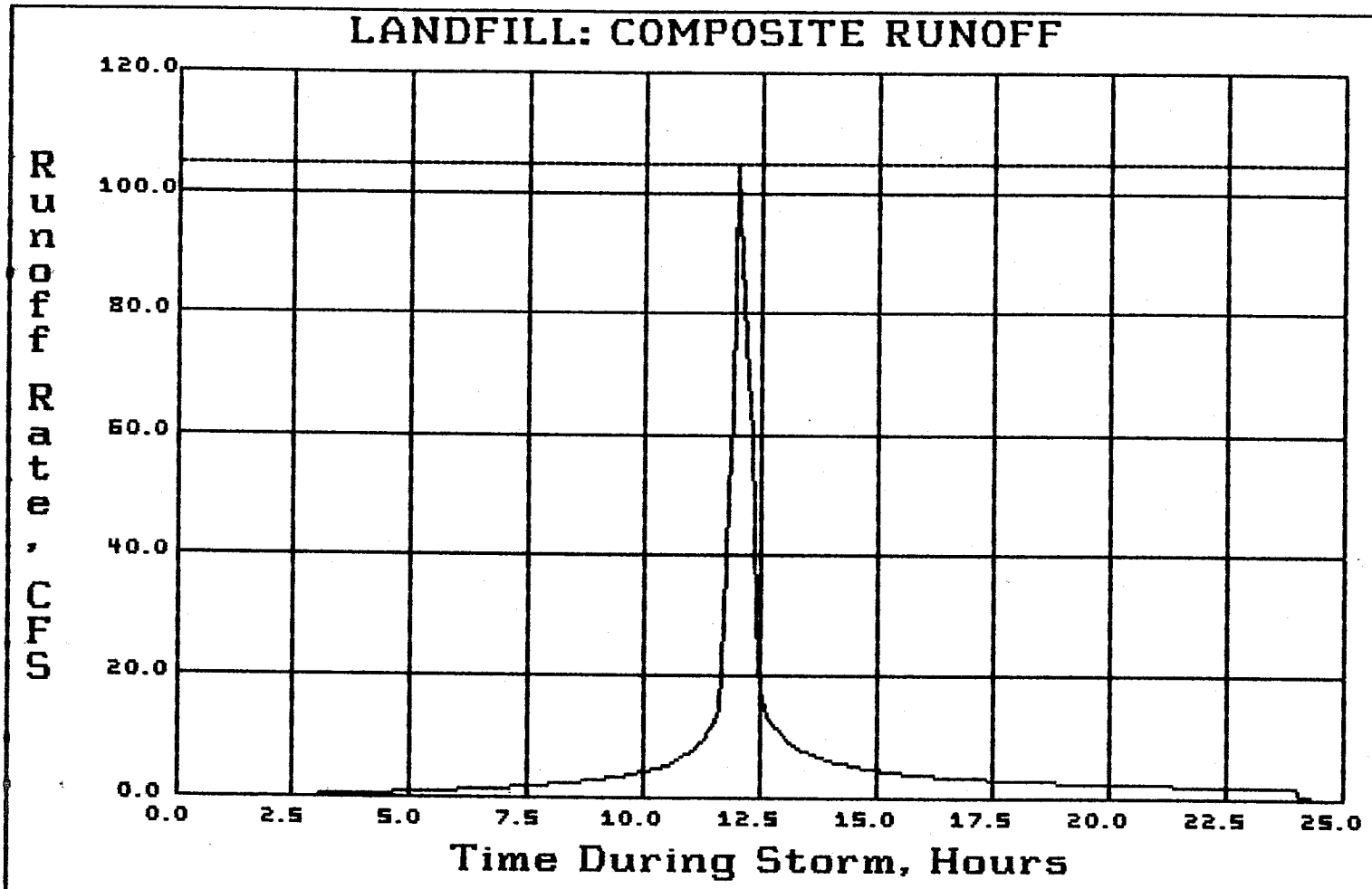


Rainfall File: SCS_IIM
24.00 Hours, 9.00 Inches

Peak Runoff 104.5236 CFS
Volume of Runoff 9.3931 ACFT

BRN 2.3: P BRILEY, WILD & ASSOCIATES



Rainfall File: SCS_IIM
24.00 Hours, 9.00 Inches

Total Subbasin 15.6900 Acres
Peak 104.5236 CFS; 9.3931 ACFT

BRN 2.3: P BRILEY, WILD & ASSOCIATES

Subbasin File: LANDFILL, SUBBASIN TOKENS

```
00001: Number of Paths    1
00002: Path Number    1
00003: From Node..    1
00004: To Node....    2
00005: Path Type..    1
00006: *
00007: ************************************
00008: Number of Nodes    2
00009: Node    1
00010: TOMOKA AREA "C"
00011: Type 1
00012: SCS_484
00013: total acres.............    15.6900
00014: weighted curve number...    85.0000
00015: hydraulic length, feet..   110.0000
00016: ground slope, percent...    18.0000
00017: percent impervious cover    98.0000
00018: initial abstraction k...     0.2000
00019: abstraction loss, in....     0.3529
00020: Time of Conc, Hours.....     0.1000
00021: ************************************
00022: Node    2
00023: TO DRAIN PIPES
00024: Type 4
00025: ************************************
00026: Checksum 3
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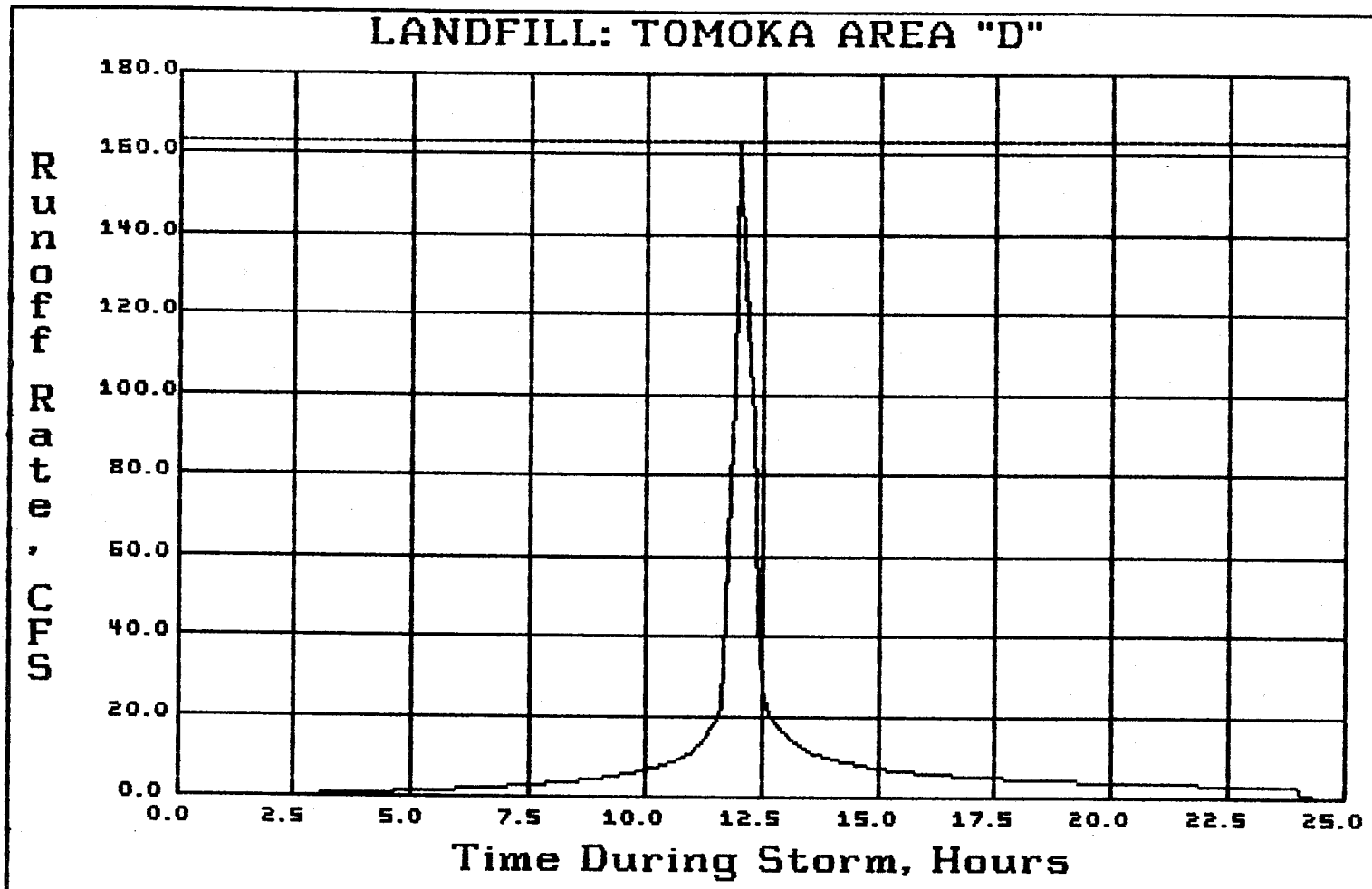
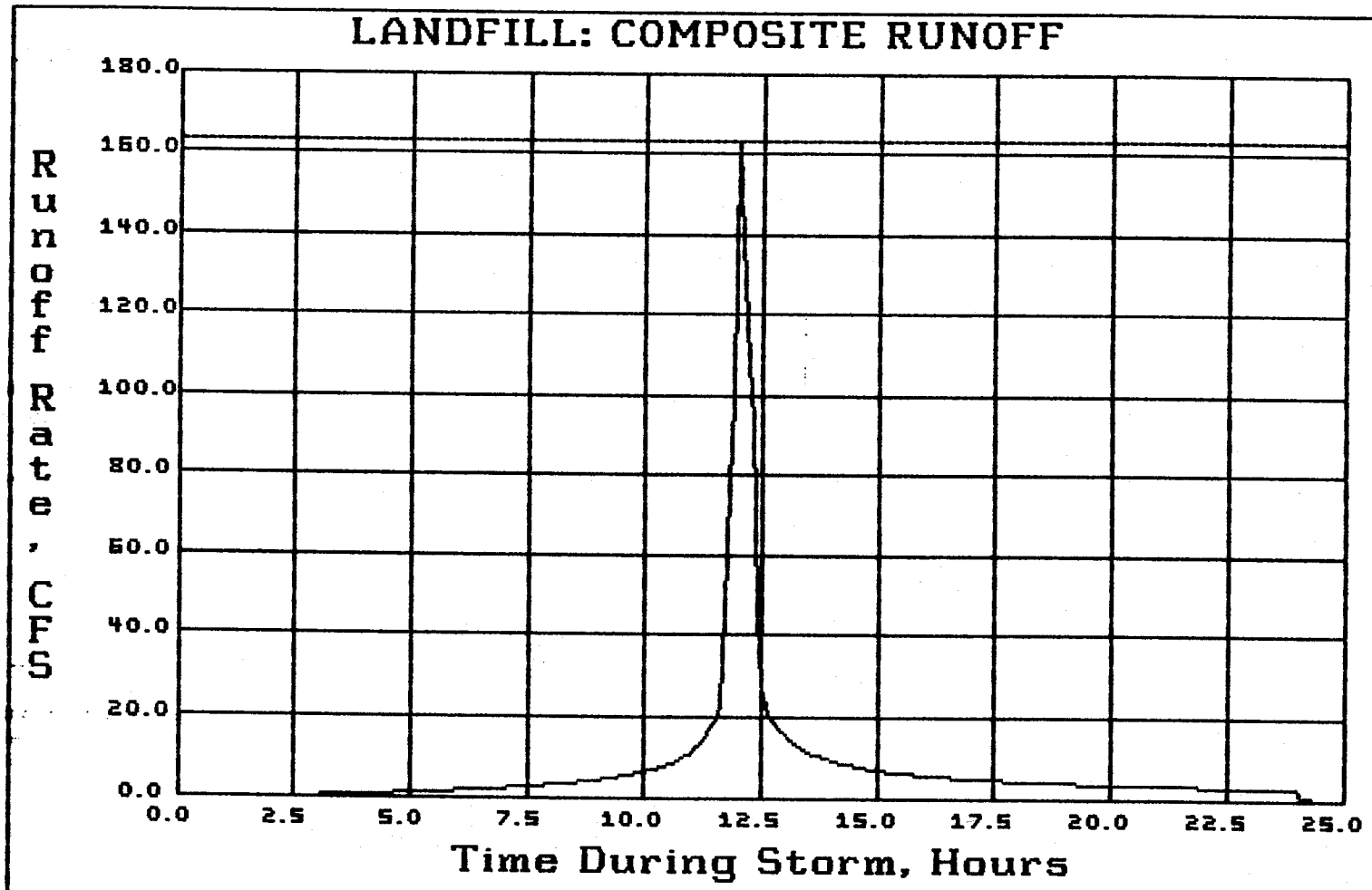


BRN 2.3: P BRILEY, WILD & ASSOCIATES



BRN 2.3: P BRILEY, WILD & ASSOCIATES

Subbasin File: LANDFILL, SUBBASIN TOKENS

```
00001: Number of Paths    1
00002: Path Number    1
00003: From Node..    1
00004: To Node....    2
00005: Path Type..    1
00006: *
00007: ************************************
00008: Number of Nodes    2
00009: Node    1
00010: TOMOKA AREA "D"
00011: Type 1
00012: SCS_484
00013: total acres.............    24.4400
00014: weighted curve number...    85.0000
00015: hydraulic length, feet..   112.0000
00016: ground slope, percent...    17.8500
00017: percent impervious cover    98.0000
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00021: ************************************
00022: Node    2
00023: TO DRAIN PIPES
00024: Type 4
00025: ************************************
00026: Checksum 3
```

BECHTOL ENGINEERING AND TESTING, inc.

July 23, 1990
Project No. 02-90100

TO: Briley, Wild & Associates, Inc.
P.O. Box 607
Ormond Beach, Florida 32175

Attention: Lee Powell, P.E.

SUBJECT: General Geotechnical Evaluations, Tomoka Landfill, Volusia County, Florida.

Dear Mr. Powell:

As requested, we have conducted general geotechnical evaluations relative to existing and proposed expansions of refuse embankment fills at the subject site.

The following report summarizes the background of the site, proposed expansions, and general site subsurface conditions, and provides general geotechnical related evaluations and discussion.

For the purpose of this report, we have relied solely on subsurface information and landfill design data published by other entities noted herein. No site-specific subsurface data was compiled by Bechtol Engineering and Testing, Inc.. The following report is intended only to provide general geotechnical related evaluations, and should not be construed as a comprehensive geotechnical study.

We do trust however, that the information presented is sufficient for your immediate needs. In the event you should have any questions, or require any additional services, please do not hesitate to call.

Respectfully,

Bechtol Engineering and Testing, inc.

7/24/90

Thomas Bechtol, P.E.
President
Florida Registration No. 38538
TB/rer
0325

3 cc: Client

Consulting Geotechnical and Construction Materials Testing Engineers
1209 Saxon Boulevard, Suite 3 • Orange City, FL 32763 • Telephone (904) 774-1744
FAX (904) 774-1944

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SITE BACKGROUND

The Tomoka Landfill property consists of nearly 850 acres located west of Tomoka Farms Road and the Tomoka River, and south of Interstate No. 4 in Sections 3,4,9, and 10, Township 16 South, Range 32 East, Volusia County, Florida. According to various sources, the County of Volusia has operated a refuse landfill on this property, or portions thereof, for over 20 years.

The active portion of the landfill consists of a generally rectangular area, about 2500′ x 2000′ in size, located in the southwest portion of the site, or more specifically in the northeast quadrant of Section 9, Township 16 South, Range 32 East. Prior to it's inception as a landfill, we envision that the site existed primarily as pine/palmetto flatwoods, with average ground surface elevations on the order of +27′ NGVD, and average groundwater levels within a few feet of ground surface.

We understand that all or portions of the active landfill area may have been excavated to about elevation +15′ NGVD prior to refuse filling, in order to provide cover material for other landfill areas on site. In reference to Tomoka Farms Road Landfill Report (Briley, Wild & Associates, August, 1980), the fill design for the area was based on compacted refuse lifts of 8 feet in thickness with a 6-inch soil cover. Currently, the top of the refuse embankment lies at about elevation +75′ NGVD, and average side slopes are estimated to be about 6 horizontal to 1 vertical.

PROPOSED EXPANSION

As discussed with Lee Powell, P.E., it is proposed to continue filling the active landfill area to a top-of-embankment elevation on the order of +110' NGVD. We envision that the fill design will be generally consistent with that previously reported, and that the average 6:1 side slopes will be maintained.

GENERAL SITE SUBSURFACE CONDITIONS

In reference to a recent Hydrogeologic Evaluation (David N. Gomberg, Ph.D., September, 1986) a generalized hydrogeologic cross section below the active landfill can be summarized as follows:

ELEVATION (NGVD)	PREDOMINANT SOIL DESCRIPTION	HYDROGEOLOGIC FORMATION
+27 to +15	*Sands, Silty Sands	Shallow Non-Artesian Aquifer
+15 to +6	Clayey Sands	Semi-Confining Layer
+6 to -2	Sands	Semi-Unconfined Layer
-2 to -12	Sandy Clays	Confining Layer
-12 to -26	Sands and Shell	Secondary Artesian Aquifer
-26 to -36	Clay	Confining Layer
-36 to -53	Silty Sands and Shell	Upper Artesian Aquifer
-53 to -300+	Limestone	Artesian (Floridan) Aquifer

* May be partially or completely excavated and replaced with refuse fill.

Based on our previous experience in the site vicinity, we envision that the various deposits of sand, silty sand, clayey sand and sand/shell underlying the site are relatively dense. Testing of clay deposits similar to those anticipated below the site indicate that these deposits generally are normally consolidated and exist in a medium stiff to stiff condition.

Normal average groundwater levels associated with the shallow non-artesian aquifer would be expected at elevations on the order of +25′ NGVD when not artificially lowered. Actual groundwater elevations may be substantially lower due to artificial drainage or dewatering which may be associated with the landfill operations. Recent USGS Potentiometric Surface Maps (May, 1989) indicate the piezometric surface level of the Floridan Aquifer below the site to be on the order of +10′ NGVD.

GEOTECHNICAL EVALUATIONS

From a geotechnical standpoint, the primary concerns associated with existing and proposed landfill embankment construction are:

1. Bearing capacity of the underlying geologic formations for support of the induced embankment surcharge loading.

2. Consolidation of refuse fill and underlying geologic sediments.

3. Slope stability of the refuse embankment.

Bearing Capacity

Based on an estimated compacted refuse density of 1000 pcy, a cover material density of 100 pcf, the fill design of 6-inch cover for 8 feet of refuse, and the proposed top-of-embankment elevation of +110′ NGVD, the average surcharge loading imposed by the refuse fill on the underlying materials would be about 4000 psf or 2 tsf. With respect to the overall lateral limits of the refuse embankment fill and conservative estimates of subsurface soil properties, calculations using Terzaghi, Meyerhoh, and Hansen bearing capacity equations all indicate ultimate bearing capacity of the subsurface formations to be well in excess of 50 tsf. We therefore feel there is essentially no risk of shear failure or bearing capacity failure due to the existing or proposed refuse embankment.

Consolidation and Settlement

The proposed refuse embankment will induce soils stresses nearly equal to the total surcharge loading throughout the thickness of the geological formations overlying bedrock (limestones of the Floridan Aquifer). Due to these induced soil stresses, a certain degree of consolidation of these formations, and subsequent settlement of the overlying refuse embankment, can be expected.

Certain degrees of both short-term elastic settlement due primarily to deformation and compression of granular deposits, and long-term plastic settlement due primarily to compression of plastic clay deposits are likely. Elastic settlements of some extent have probably been experienced with each application of refuse lifts, and some long-term plastic settlement may be on-

going due to the existing surcharge load. Additional short-term and long-term settlement can be expected with additional refuse application. Insufficient data is available to provide specific calculations of potential consolidation of the subsurface deposits, however, we envision that overall long-term consolidation of 1 to 2 feet is not unlikely.

In addition, certain degrees of additional settlement are likely due to consolidation of the refuse fill itself due to stresses induced by overlying refuse applications and decomposition within. Refuse consolidation may vary dramatically throughout the embankment fill area, and average long-term settlement of several feet is possible. Potential settlements should be carefully considered for any future developments associated with planned recreational facilities.

Slope Stability

Due to the potential variability of refuse characteristics, placement of refuse and cover material and drainage characteristics, the ultimate stability of refuse embankment slopes may vary widely. Generally, if the average 6:1 side slopes are maintained throughout, we envision that the potential for significant slope failure is very low. Past performance of existing slopes should provide insight as to potential stability problems which may exist. If deemed necessary, certain methods such as slope flattening, benching, ditching, and construction of fill buttresses may be considered. Effective means of surface and subsurface drainage and surface treatment such as seeding or geotextile application is recommended in order to minimize potential erosion and seepage related problems.

File Copy

Application to Renew the Operating Permit

for the Tomoka Farms Road Landfill

Volusia County, Florida

July 1, 1996

JUL 1996
RECEIVED
D.E.P. - CENTRAL
DISTRICT

SCS Engineers
555 West Granada Boulevard, Suite E4
Ormond Beach, Florida

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Environmental Consultants

555 W. Granada Blvd.
Suite E4
Ormond Beach, FL 32174

904 673-6730
FAX 904 673-9940

SCS ENGINEERS

File No. 0995039.02
July 1, 1996

Dan R. Morrical, P.E.
Solid Waste Program Manager
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803

Subject: Operating Permit Renewal
Tomoka Farms Road Landfill
Volusia County

Dear Mr. Morrical:

Enclosed are six copies of an application for renewal of the operating permit for Volusia County's Tomoka Farms Road Landfill, along with the permit application fee of $10,000. We would be pleased to meet with you to discuss any permitting issues or other questions that you may have.

Very truly yours,

Lee A. Powell, P.E.
Project Manager
SCS ENGINEERS

Enclosures

cc: Jim Griffin
Susan Gaze

DEP Form # 62-701.900(1)
Form Title Solid Waste Management Facility Permit
Effective Date May 19, 1994

DEP Application No. _____
(Filled by DEP)

Florida Department of Environmental Protection

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOLID WASTE MANAGEMENT FACILITY PERMIT

APPLICATION INSTRUCTIONS AND FORMS

INSTRUCTIONS TO APPLY FOR A SOLID WASTE MANAGEMENT PERMIT

I. GENERAL

Solid Waste Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes, (FS) and in accordance with Florida Administrative Code (FAC) Chapter 62-701. A minimum of six copies of the application shall be submitted to the Department District Office having jurisdiction over the facility. The appropriate fee in accordance with Chapter 62-4, FAC, and Rule 62-701.320(5) (c), FAC, shall be submitted with the application by check made payable to the Department of Environmental Protection (DEP).

Complete appropriate sections for the type of facility for which application is made. Entries shall be typed or printed in ink. All blanks shall be filled in or marked "not applicable" or "no substantial change". Information provided in support of the application shall be marked "submitted" and the location of this information in the application package indicated. The application shall include all information, drawings, and reports necessary to evaluate the facility. Information required to complete the application is listed on the attached pages of this form.

II. Application Parts Required for Construction and Operation Permits

A. Landfills and Ash Monofills - Submit parts A, B, D through R, and T
B. Asbestos Monofills - Submit parts A, B, D, E, F, I, K, M through Q, and T
C. Industrial Solid Waste Facilities - Submit parts A, B, D through Q, and T
D. Volume Reduction Facilities - Submit parts A, C, D, S, and T
E. Materials Recovery Facilities - Submit parts A, C, D, S, and T

NOTE: Portions of some parts may not be applicable.

NOTE: For facilities that have been satisfactorily constructed in accordance with their construction permit, the information required for A, B, C, D and E type facilities does not have to be resubmitted for an operation permit if the information has not substantially changed during the construction period. The appropriate portion of the form should be marked "no substantial change".

III. Application Parts Required for Closure Permits

A. Landfills and Ash Monofills - Submit parts A, B, N through R, and T
B. Asbestos Monofills - Submit parts A, B, M through Q, and T
C. Industrial Solid Waste Facilities - Submit parts A, B, N through Q, and T
D. Volume Reduction Facilities - Submit parts A, C, S, and T
E. Materials Recovery Facilities - Submit parts A, C, S, and T

NOTE: Portions of some parts may not be applicable.

IV. Permit Renewals

The above information shall be submitted at time of permit renewal in support of the new permit. However, facility information that was submitted to the Department to support the expiring permit, and which is still valid, does not need to be re-submitted for permit renewal. Portions of the application not re-submitted shall be marked "no substantial change" on the application form.

V. Application Codes

S	-	Submitted
LOCATION	-	Physical location of information in application
N/A	-	Not Applicable
N/C	-	No Substantial Change

VI. LISTING OF APPLICATION PARTS

PART A - GENERAL INFORMATION

PART B - DISPOSAL FACILITY GENERAL INFORMATION

PART C - MATERIALS RECOVERY / VOLUME REDUCTION FACILITY GENERAL INFORMATION

PART D - SOLID WASTE MANAGEMENT FACILITY PERMIT GENERAL REQUIREMENTS

PART E - LANDFILL PERMIT GENERAL REQUIREMENTS

PART F - GENERAL CRITERIA FOR LANDFILLS

PART G - LANDFILL CONSTRUCTION REQUIREMENTS

PART H - HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS

PART I - GEOTECHNICAL INVESTIGATION REQUIREMENTS

PART J - VERTICAL EXPANSION OF LANDFILLS

PART K - LANDFILL OPERATION REQUIREMENTS

PART L - WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS

PART M - SPECIAL WASTE HANDLING REQUIREMENTS

PART N - LANDFILL CLOSURE REQUIREMENTS

PART O - CLOSURE PROCEDURES

PART P - LONG TERM CARE REQUIREMENTS

PART Q - FINANCIAL RESPONSIBILITY REQUIREMENTS

PART R - CLOSURE OF EXISTING LANDFILL REQUIREMENTS

PART S - MATERIALS RECOVERY FACILITY REQUIREMENTS

PART T - CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION FOR PERMIT TO CONSTRUCT, OPERATE, MODIFY OR CLOSE A SOLID WASTE MANAGEMENT FACILITY

Please Type or Print

A. GENERAL INFORMATION

1. Type of facility:

Disposal [X]

Class I Landfill	[X]	Ash Monofill	[ ]
Class II Landfill	[ ]	Asbestos Monofill	[ ]
Class III Landfill	[ ]	Industrial Solid Waste	[ ]
Other	[ ]		

Volume Reduction [ ]

Incinerator	[ ]	Pulverizer/Shredder	[ ]
Composting	[ ]	Compactor/Baling Plant	[ ]
Materials Recovery	[ ]	Energy Recovery	[ ]
Other	[ ]		

2. Type of application:

Construction	[ ]	Construction/Operation	[ ]
Operation	[X]	Closure	[ ]

3. Classification of application:

New	[ ]	Substantial Modification	[ ]
Renewal	[x]	Minor Modification	[ ]

4. Facility name: Tomoka Farms Road Landfill

5. DEP ID number: _____ County: Volusia

6. Facility location (main entrance): 1990 Tomoka Farms Road Daytona Beach

7. Location coordinates:

Section: 4 Township: 16S Range: 32E

UTMs: Zone _____ _____km E _____km N

Latitude: 29 ° 08 ' 10 " Longitude: 81 ° 06 ' 06 "

8. Applicant name (operating authority): Volusia County Solid Waste Services

Mailing address: 3151 East State Road 44 DeLand FL 32724
Street or P.O. Box City State Zip

Contact person: James L. Griffin Telephone: (904) 943-7889

Title: Director of Solid Waste Services

9. Authorized agent/Consultant: SCS Engineers

Mailing address: 555 West Granada Blvd. Suite E4 Ormond Beach FL 32174
Street or P.O. Box City State Zip

Contact person: Mr. Lee Powell Telephone: (904) 673-6730

Title: Project Manager

10. Landowner (if different than applicant): Same

Mailing address: _____
Street or P.O. Box City State Zip

Contact person: _____ Telephone: ( )

11. Cities, towns and areas to be served: Volusia County

12. Population to be served:

Current: 410,855 Five-Year Projection: 450,077

13. Volume of solid waste to be received: 1600 ~~yds³/day~~ tons/day ~~gallons/day~~

14. Date site will be ready to be inspected for completion: Currently In Service

15. Estimated life of facility: five years

16. Estimated costs:

Total Construction: $ N/A Closing Costs: $2,530,870

17. Anticipated construction starting and completion dates:

From: N/A To: N/A

B. DISPOSAL FACILITY GENERAL INFORMATION

1. Provide brief description of disposal facility design and operations planned by this application:

The existing Class I cell is a high rise landfill serving all of Volusia County. The side slopes are 5:1 to 6:1 The facility also includes a household hazardous waste facility, a tire and white goods facility, a yard trash facility, and a construction and demolition debris facility. The County operates a lime stabilization facility at the site to treat municipal sludge.

2. Facility site supervisor: Gene Palmatier

Title: Supervisor 4 Telephone: (904) 947-2952

3. Disposal area: Total 160 acres; Used 100 acres; Available 60 acres

4. Weighing scales used: Yes [X] No [ ]

5. Security to prevent unauthorized use: Yes [X] No [ ]

6. Charge for waste received: _____ $/yds^3 25 $/ton

7. Surrounding land use, zoning:

Residential	[ ]	Industrial	[ ]
Agricultural	[X]	None	[ ]
Commercial	[ ]	Other	[ ]

8. Types of waste received:

Residential	[X]	C & D debris	[X]
Commercial	[X]	Shredded/cut tires	[X]
Incinerator/WTE ash	[X]	Yard trash	[X]
Treated biohazardous	[ ]	Septic tank	[ ]
Water treatment sludge	[X]	Industrial	[X]
Air treatment sludge	[ ]	Industrial sludge	[X] only TCLP
Agricultural	[X]	Domestic sludge	[X]
Asbestos	[X]		
Other	[ ]		

9. Salvaging permitted: Yes [ ] No [X]

10. Attendant: Yes [X] No [ ] Trained operator: Yes [X] No [ ]

11. Spotters: Yes [X] No [ ] Number of spotters used: One at each pit

12. Site located in: Floodplain [ ] Wetlands [ ] Other [X] Upland

13. Property recorded as a Disposal Site in County Land Records: Yes [X] No [ ]

14. Days of operation: seven days per week

15. Hours of operation: M-F 7AM to 5:30 PM, SS 8 AM to 2 PM

16. Days Working Face covered: seven

17. Elevation of water table: 26 Ft. NGVD

18. Number of monitoring wells: 48

19. Number of surface monitoring points: 8

20. Gas controls used: Yes [X] No [ ] Type controls: Active [ ] Passive [X]

Gas flaring: Yes [X] No [ ] Gas recovery: Yes [ ] No [X]

21 Leachate control method - liner type:

Natural soils	[X]	Double geomembrane	[ ]
Single clay liner	[ ]	Geomembrane & composite	[ ]
Single geomembrane	[X]	Double composite	[ ]
Single composite	[ ]	None	[ ]
Slurry wall	[ ]		
Other	[ ]		

22. Leachate collection method:

Collection pipes	[ ]	Sand layer	[ ]
Geonets	[ ]	Gravel layer	[ ]
Well points	[ ]	Interceptor trench	[X]
Perimeter ditch	[ ]	None	[ ]
Other	[ ]		

23. Leachate storage method:

Tanks	[ ]	Surface impoundments	[ ]
Other	[ ]		

24. Leachate treatment method:

Oxidation	[ ]	Chemical treatment	[ ]
Secondary	[ ]	Settling	[ ]
Advanced	[ ]	None	[ ]
Other	[ ]		

25. Leachate disposal method:

Recirculated	[X]	Pumped to WWTP	[ ]
Transported to WWTP	[ ]	Discharged to surface water	[X]
Injection well	[ ]	Evaporation (ie: Perc Pond)	[X]
Other	[ ]		

26. For leachate discharged to surface waters:

Name and Class of receiving water: Headwaters of the Tomoka River

27. Storm Water:

Collected: Yes [X] No [ ] Type of treatment: Detention and natural treatment

Name and Class of receiving water: Headwaters of the Tomoka River

28. Management and Storage of Surface Waters (MSSW) Permit number or status: MS64-218726

C. **MATERIALS RECOVERY / VOLUME REDUCTION FACILITY GENERAL INFORMATION** N/A

1. Provide brief description of materials recovery / volume reduction facility design and operations planned by this application:

_____

_____

_____

2. Facility site supervisor:

Title: _____ Telephone: (___) _____

3. Disposal area: Total _____ acres; Used _____ acres; Available _____ acres

4. Security to prevent unauthorized use: Yes [ ] No [ ]

5. Site located in: Floodplain [ ] Wetlands [ ] Other [ ] _____

6. Days of operation: _____

7. Hours of operation: _____

8. Number of operating staff: _____

9. Expected useful life: _____ Years

10. Weighing scales used: Yes [ ] No [ ]

11. Normal processing rate: _____ yds^3/day tons/day gallons/day

12. Maximum processing rate: _____ yds^3/day tons/day gallons/day

13. Charge for waste received: _____

14. Type of facility (check one or more):

Incinerator	[ ]	Composting	[ ]
Pulverizer/shredder	[ ]	Materials recovery	[ ]
Compactor/baling	[ ]	Energy recovery	[ ]
Sludge concentration	[ ]	Pyrolysis	[ ]
Other	[ ]	_____	

15. Materials recovered, tons/week:

_____	Paper	_____	Glass
_____	Ferrous metals	_____	Non-ferrous metals
_____	Aluminum	_____	Plastics
_____	Other:	_____	

16. Energy recovery, in units shown:

_____	High pressure steam, lb/hr	_____	Chilled water, gal/hr
_____	Low pressure steam, lb/hr	_____	Oil, gal/hr
_____	Electricity, kw/hr	_____	Oil, BTU/hr
_____	Gas, ft^3/hr	_____	Gas, BTU/hr
_____	Other:	_____	

17. Process water management:

Recycled: Yes [ ] No [ ]

Treatment method used: _____

Discharged to: Surface water [ ] Underground [ ] Other [ ]

Name and Class of receiving water: _____

18. Storm Water:

Collected: Yes [ ] No [ ] Type of treatment: _____

Name and Class of receiving water: _____

19. MSSW Permit number or status: _____

20. Final residue produced:

_____% of normal processing rate

_____% of maximum processing rate

Disposed of at (Site name): _____

21. Supplemental fuel used:

Type: _____ Quantity used/hour: _____

22. Costs:

Estimated operating costs (material-energy revenue): $_____

Total cost/ton: $_____ Net cost/ton: $_____

23. State pollution control bond financing amount: $_____

24. Estimated amount of tax exemptions that will be requested: $_____

D. SOLID WASTE MANAGEMENT FACILITY PERMIT GENERAL REQUIREMENTS (62-701.320, FAC)

S	LOCATION	N/A	N/C		
S				1.	Six copies, at minimum, of the completed application form, all supporting data and reports; (62-701.320(5) (a), FAC)
S				2.	Engineering and/or professional certification (signature, date and seal) provided on the applications and all engineering plans, reports and supporting information for the application; (62-701.320(6), FAC)
S	Letter			3.	A letter of transmittal to the Department; (62-701.320(7) (a), FAC)
S	Application			4.	A completed application form dated and signed by the applicant; (62-701.320(7) (b), FAC)
S	Separate Cover			5.	Permit fee specified in Rule 62-4.050, FAC and Rule 62-701.320(5) (c), FAC in check or money order, payable to the Department; (62-701.320(7) (c), FAC)
S	Report			6.	An engineering report addressing the requirements of this rule and with the following format: a cover sheet, text printed on 8 1/2 inch by 11 inch consecutively numbered pages, a table of contents or index, the body of the report and all appendices including an operation plan, contingency plan, illustrative charts and graphs, records or logs of tests and investigations, engineering calculations; (62-701.320(7) (d), FAC)
	July 91		N/C	7.	Operation Plan; (62-701.320(7) (e)1, FAC)
	July 91		N/C	8.	Contingency Plan; (62-701.320(7) (e)2, FAC)
				9.	Plans or drawings for the solid waste management facilities in appropriate format (including sheet size restrictions, cover sheet, legends, north arrow, horizontal and vertical scales, elevations referenced to NGVD showing; (62-701.320(7) (f), FAC)
	Sheet 1/6		N/C		a. A regional map or plan with the project location;
	Sheet 2/14		N/C		b. A vicinity map ~~or aerial photograph no more than 1 year old;~~
S	Separate Cover				c. A site plan showing all property boundaries certified by a registered Florida land surveyor;
			N/C		d. Other necessary details to support the engineering report.
			N/C	10.	Proof of property ownership or a copy of appropriate agreements between the facility operator and property owner authorizing use of property; (62-701.320(7) (g), FAC)

S	LOCATION	N/A	N/C		
S	Report p1			11.	For facilities owned or operated by a county, provide a description of how, if any, the facilities covered in this application will contribute to the county's achievement of recycling goals contained in Section 403.706, FS; (62-701.320(7) (h), FAC)
S	Report p1			12.	Provide a history and description of any enforcement actions taken by the Department against the applicant for violations of applicable statutes, rules, orders, or permit conditions relating to the operation of any solid waste management facility in this state; (62-701.320(7) (i), FAC)
S	Separate Cover			13.	Proof of publication in a newspaper of general circulation of notice of application for a permit to construct or substantially modify a solid waste management facility; (62-701.320(8), FAC)
		N/A		14.	Provide a description of how the requirements for airport safety will be achieved including proof of required notices if applicable; (62-701.320(12), FAC)

S	LOCATION	N/A	N/C		

E. LANDFILL PERMIT GENERAL REQUIREMENTS (62-701.330, FAC)

S	LOCATION	N/A	N/C		
	Sheet 2/14		N/C	1.	Vicinity map or aerial photograph no more than 1 year old and of appropriate scale showing land use and local zoning within one mile of the landfill and of sufficient scale to show all homes or other structures, water bodies, and roads other significant features of the vicinity. All significant features shall be labeled; (62-701.330(4) (a), FAC)
S	Exhibit I			2.	Vicinity map or aerial photograph no more than 1 year old showing all airports that are located within five miles of the proposed landfill; (62-701.330(4) (b), FAC)
				3.	Plot plan with a scale not greater than 200 feet to the inch showing; (62-701.330(4) (c), FAC)
	Sheet 4/6		N/C		a. Dimensions;
	Monitoring Plan		N/C		b. Locations of proposed and existing water quality monitoring wells;
	Gomberg 1992		N/C		c. Locations of soil borings;
	Sheet 4/6		N/C		d. Proposed plan of trenching or disposal areas;
	Sheet 5/6		N/C		e. Cross sections showing original elevations and proposed final contours which shall be included either on the plot plan or on separate sheets;
	Sheet 4/6		N/C		f. Any previously filled waste disposal area;
	Sheet 3/14		N/C		g. Fencing or other measures to restrict access.
				4.	Topographic maps with a scale not greater than 200 feet to the inch with 5-foot contour intervals showing; (62-701.330(4) (d), FAC)
	Sheet 3/6		N/C		a. Proposed fill areas;
	Sheet 4/14		N/C		b. Borrow areas;
	Sheet 4/6		N/C		c. Access roads;
	Sheet 4/6		N/C		d. Grades required for proper drainage;
	Sheet 4/6		N/C		e. Cross sections of lifts;
	Sheet 5/6		N/C		f. Special drainage devices if necessary;
	Sheet 3/14		N/C		g. Fencing;
	Sheet 3/14		N/C		h. Equipment facilities.

Note: Drawings are Briley Wild and Assoc. Operation Permit Application Drawings, P-378 dated 5/28/91, and Tomoka Farms Road Landfill Expansion P-401 dated 8/12/92

S	LOCATION	N/A	N/C		
				5.	A report on the landfill describing the following; (62-701.330(4) (e), FAC)
S	Report p1				a. The current and projected population and area to be served by the proposed site;
S	Report p2				b. The anticipated type, annual quantity, and source of solid waste, expressed in tons;
S	Report p2				c. The anticipated facility life;
S	Report p2				d. The source and type of cover material used for the landfill.
S	Report p2			6.	Provide evidence that an approved laboratory shall conduct water quality monitoring for the facility in accordance with Rule 62-160, FAC; (62-701.330(4) (h), FAC)
			N/C	7.	Provide a statement of how the applicant will demonstrate financial responsibility for the closing and long-term care of the landfill; (62-701.330(4) (i), FAC)

F. GENERAL CRITERIA FOR LANDFILLS (62-701.340, FAC)

S	Exhibit II			1.	Describe (and show on a Federal Insurance Administration flood map, if available) how the landfill or solid waste disposal unit shall not be located in the 100-year floodplain where it will restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain unless compensating storage is provided, or result is a washout of solid waste; (62-701.340(4) (b), FAC)
S	Report p 2			2.	Describe how the minimum horizontal separation between waste deposits in the landfill and the landfill property boundary shall be 100 feet, measured from the toe of the proposed final cover slope; (62-701.340(4) (c), FAC)
S	Report p2			3.	Describe what methods shall be taken to screen the landfill from public view where such screening can practically be provided; (62-701.340(4) (d), FAC)

S	LOCATION	N/A	N/C		
G.	**LANDFILL CONSTRUCTION REQUIREMENTS** (62-701.400, FAC)				
			N/C	1.	Describe how the landfill shall be designed so that solid waste disposal units will be constructed and closed at planned intervals throughout the design period of the landfill; (62-701.400(2), FAC)
				2.	Landfill liner requirements; (62-701.400(3), FAC)
				a.	General construction requirements; (62-701.400(3) (a), FAC)
		N/A		(1)	Provide test information and documentation to ensure the liner will be constructed of materials that have appropriate physical, chemical, and mechanical properties to prevent failure;
		N/A		(2)	Document foundation is adequate to prevent liner failure;
		N/A		(3)	Constructed so bottom liner will not be adversely impacted by fluctuations of the ground water;
		N/A		(4)	Designed to resist hydrostatic uplift if bottom liner located below seasonal high ground water table;
		N/A		(5)	Installed to cover all surrounding earth which could come into contact with the waste or leachate.
				b.	Composite liners; (62-701.400(3) (b), FAC)
		N/A		(1)	Upper geomembrane thickness and properties;
		N/A		(2)	Design leachate head for primary LCRS including leachate recirculation if appropriate;
		N/A		(3)	Design thickness in accordance with Table A and number of lifts planned for lower soil component.
				c.	Double liners; (62-701.400(3) (c), FAC)
		N/A		(1)	Upper and lower geomembrane thicknesses and properties;
		N/A		(2)	Design leachate head for primary LCRS to limit the head to one foot above the liner;
		N/A		(3)	Lower geomembrane sub-base design;

S	LOCATION	N/A	N/C	
		N/A		(4) Leak detection and secondary leachate collection system minimum design criteria (k ≥ 1 cm/sec, head on lower liner ≤ 1 inch, head not to exceed thickness of drainage layer);
				d. Standards for geomembranes; (62-701.400(3) (d), FAC)
		N/A		(1) Field seam test methods to ensure all field seams are at least 90 percent of the yield strength for the lining material;
		N/A		(2) Design of 24-inch-thick protective layer above upper geomembrane liner;
		N/A		(3) Describe operational plans to protect the liner and leachate collection system when placing the first layer of waste above 24-inch-thick protective layer.
				e. Geosynthetic specification requirements; (62-701.400(3) (e), FAC)
		N/A		(1) Definition and qualifications of the designer, manufacturer, installer, QA consultant and laboratory, and QA program;
		N/A		(2) Material specifications for geomembranes, geotextiles, geogrids, and geonets;
		N/A		(3) Manufacturing and fabrication specifications including geomembrane raw material and roll QA, fabrication personnel qualifications, seaming equipment and procedures, overlaps, trial seams, destructive and nondestructive seam testing, seam testing location, frequency, procedure, sample size and geomembrane repairs;
		N/A		(4) Geomembrane installation specifications including earthwork, conformance testing, geomembrane placement, installation personnel qualifications, field seaming and testing, overlapping and repairs, materials in contact with geomembrane and procedures for lining system acceptance;
		N/A		(5) Geotextile and geogrid specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials;
		N/A		(6) Geonet specifications including handling and placement, conformance testing, stacking and joining, repair, and placement of soil materials;

S	LOCATION	N/A	N/C	
				f. Standards for soil components; (62-701.400(3) (f), FAC)
		N/A		(1) Description of construction procedures including overexcavation and backfilling to preclude structural inconsistencies and procedures for placing and compacting soil component in layers;
		N/A		(2) Demonstration of compatibility of the soil component with actual or simulated leachate in accordance with EPA Test Method 9100 or an equivalent test method;
		N/A		(3) Procedures for testing in-situ soils to demonstrate they meet the specifications for soil liners;
				(4) Specifications for soil component of liner including at a minimum:
		N/A		(a) Allowable particle size distribution, Atterberg limits, shrinkage limit;
		N/A		(b) Placement moisture and dry density criteria;
		N/A		(c) Maximum laboratory-determined saturated hydraulic conductivity using simulated leachate;
		N/A		(d) Minimum thickness of soil liner;
		N/A		(e) Lift thickness;
		N/A		(f) Surface preparation (scarification);
		N/A		(g) Type and percentage of clay mineral within the soil component;
		N/A		(5) Procedures for constructing and using a field test section to document the desired saturated hydraulic conductivity and thickness can be achieved in the field.
				3. Leachate collection and removal system (LCRS); (62-701.400(4), FAC)
				a. The primary and secondary LCRS requirements; (62-701.400(4) (a), FAC)
		N/A		(1) Constructed of materials chemically resistant to the waste and leachate;
		N/A		(2) Have sufficient mechanical properties to prevent collapse under pressure;

S	LOCATION	N/A	N/C	
		N/A		(3) Have granular material or synthetic geotextile to prevent clogging;
		N/A		(4) Have method for testing and cleaning clogged pipes or contingent designs for rerouting leachate around failed areas;
				b. Primary LCRS requirements; (62-701.400(4) (b), FAC)
		N/A		(1) Bottom 12 inches having hydraulic conductivity $\geq 1 \times 10^{-3}$ cm/sec;
		N/A		(2) Total thickness of 24 inches of material chemically resistant to the waste and leachate;
		N/A		(3) Bottom design to accommodate for predicted settlement;
		N/A		(4) Demonstration that synthetic drainage material, if used, is equivalent or better than granular material in chemical compatibility, flow under load and protection of geomembrane liner.
				4. Leachate recirculation; (62-701.400(5), FAC)
		N/A		a. Describe general procedures for recirculating leachate;
		N/A		b. Describe procedures for controlling leachate runoff and minimizing mixing of leachate runoff with storm water;
		N/A		c. Describe procedures for preventing perched water conditions and gas buildup;
		N/A		d. Describe alternate methods for leachate management when it cannot be recirculated due to weather or runoff conditions, surface seeps, wind-blown spray, or elevated levels of leachate head on the liner;
		N/A		e. Describe methods of gas management to control odors and migration of methane;
		N/A		f. If leachate irrigation is proposed, describe treatment methods and standards for leachate treatment prior to irrigation over final cover and provide documentation that irrigation does not contribute significantly to leachate generation.

S	LOCATION	N/A	N/C	
				5. Leachate storage tanks and leachate surface impoundments; (62-701.400(6), FAC)
		N/A		a. Surface impoundment requirements; (62-701.400(6) (b), FAC)
		N/A		(1) Documentation that the design of the bottom liner will not be adversely impacted by fluctuations of the ground water;
		N/A		(2) Designed in segments to allow for inspection and repair as needed without interruption of service;
				(3) General design requirements;
		N/A		(a) Double liner system consisting of an upper and lower 60-mil minimum thickness geomembrane;
		N/A		(b) Leak detection and collection system with hydraulic conductivity $\geq$ 1 cm/sec;
		N/A		(c) Lower geomembrane placed on subbase $\geq$ 6 inches thick with $k \leq 1x10^{-5}$ cm/sec;
		N/A		(d) Design calculation to predict potential leakage through the upper liner;
		N/A		(e) Daily inspection requirements and notification and corrective action requirements if leakage rates exceed that predicted by design calculations;
		N/A		(4) Description of procedures to prevent uplift, if applicable;
		N/A		(5) Design calculations to demonstrate minimum two feet of freeboard will be maintained;
		N/A		(6) Procedures for controlling vectors and off-site odors.
				b. Above-ground leachate storage tanks; (62-701.400(6) (c), FAC)
		N/A		(1) Describe tank materials of construction and ensure foundation is sufficient to support tank;
		N/A		(2) Describe procedures for cathodic protection if needed for the tank;

S	LOCATION	N/A	N/C
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	

(3) Describe exterior painting and interior lining of the tank to protect it from the weather and the leachate stored;

(4) Describe secondary containment design to ensure adequate capacity will be provided and compatibility of materials of construction;

(5) Describe design to remove and dispose of stormwater from the secondary containment system;

(6) Describe an overfill prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling;

(7) Inspections, corrective action and reporting requirements;

(a) Overfill prevention system weekly;

(b) Exposed tank exteriors weekly;

(c) Tank interiors when tank is drained or at least every three years;

(d) Procedures for immediate corrective action if failures detected;

(e) Inspection reports available for department review.

c. Underground leachate storage tanks; (62-701.400(6) (d), FAC)

(1) Describe materials of construction;

(2) A double-walled tank design system to be used with the following requirements;

(a) Interstitial space monitoring at least weekly;

(b) Corrosion protection provided for primary tank interior and external surface of outer shell;

(c) Interior tank coatings compatible with stored leachate;

(d) Cathodic protection inspected weekly and repaired as needed;

(3) Describe an overfill prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling and provide for weekly inspections;

S	LOCATION	N/A	N/C	
		N/A		(4) Inspection reports available for department review.
		N/A		d. Schedule provided for routine maintenance of LCRS; (62-701.400(6)(e), FAC)
				6. Liner systems construction quality assurance (CQA): (62-701.400(7), FAC)
		N/A		a. Provide CQA Plan including;
		N/A		(1) Specifications and construction requirements for liner system;
		N/A		(2) Detailed description of quality control testing procedures and frequencies;
		N/A		(3) Identification of supervising professional engineer;
		N/A		(4) Identify responsibility and authority of all appropriate organizations and key personnel involved in the construction project;
		N/A		(5) State qualifications of CQA professional engineer and support personnel;
		N/A		(6) Description of CQA reporting forms and documents;
		N/A		b. An independents laboratory experienced in the testing of geosynthetics to perform required testing;
				7. Soil Liner CQA (62-701.400(8) FAC)
		N/A		a. Documentation that an adequate borrow source has been located with test results or description of the field exploration and laboratory testing program to define a suitable borrow source;
		N/A		b. Description of field test section construction and test methods to be implemented prior to liner installation;
		N/A		c. Description of field test methods including rejection criteria and corrective measures to insure proper liner installation.
				8. Surface water management systems; (62-701.400(9), FAC)
S	Report p3			a. Design of surface water management system to isolate surface water from waste filled areas and to control stormwater run-off;
S	Report p3			b. Details of stormwater control design including retention ponds, detention ponds, and drainage ways;

S	LOCATION	N/A	N/C		
				9.	Gas control systems; (62-701.400(10), FAC)
			N/C		a. Design details for gas control system including collection pipes and vents, and passive venting or vacuum extraction details;
			N/C		b. Documentation that the gas control system will not impact the liner or leachate control system;
			N/C		c. Proposed methods of odor control including flaring designs in accordance with Chapter 62-210, FAC;
			N/C		d. Description of a routine gas monitoring program to ensure gas control system is operating properly including:
			N/C		(1) Location of monitoring points;
			N/C		(2) Requirements for quarterly sampling of all monitoring points;
			N/C		(3) Description of corrective measures to be completed within 60 days of detection of elevated levels of explosive gases;
		N/A			e. Description of condensate collection and disposal methods.
				10.	Landfill gas recovery facilities; (62-701.400(11), FAC)
		N/A			a. Information required in Rules 62-701.320(7) and 62-701.330(4), FAC supplied;
		N/A			b. Information required in Rule 62-701.600(4), FAC supplied where relevant and practical;
		N/A			c. Estimate of current and expected gas generation rates and description of condensate disposal methods provided;
		N/A			d. Description of procedures for condensate sampling, analyzing and data reporting provided;
		N/A			e. Closure plan provided describing methods to control gas after recovery facility ceases operation;
		N/A			f. Performance bond provided to cover closure costs if not already included in other landfill closure costs.
		N/A		11.	For landfills designed in ground water, provide documentation that the landfill will provide a degree of protection equivalent to landfills designed with bottom liners not in contact with ground water; (62-701.400(12), FAC)

S	LOCATION	N/A	N/C		
H.	**HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS** (62-701.410, FAC)				
				1.	Submit a hydrogeological investigation and site report including at least the following information;
	See Gomberg		N/C	a.	Regional and site specific geology and hydrogeology;
	May 1992 "Tomoka		N/C	b.	Direction and rate of ground water and surface water flow including seasonal variations;
	Landfill Hydrogeologic		N/C	c.	Background quality of ground water and surface water;
	Summary and		N/C	d.	Any on-site hydraulic connections between aquifers;
	Groundwater Mon-		N/C	e.	Site stratigraphy and aquifer characteristics for confining layers, semi-confining layers, and all aquifers below the landfill site that may be affected by the landfill;
	itoring Plan		N/C	f.	Site topography and soil characteristics;
			N/C	g.	Inventory of all public and private water wells within a one-mile radius of the landfill including well top of casing and bottom elevations, name of owner, age and usage of each well, stratigraphic unit screened, well construction technique and static water level;
			N/C	h.	Description of topography, soil types, and surface water drainage systems;
			N/C	I.	An inventory of all public and private water wells within one mile of the landfill.
			N/C	j.	Existing contaminated areas on landfill site.
			N/C	2.	Report signed, sealed and dated by PE or PG.

S	LOCATION	N/A	N/C		
I.	**GEOTECHNICAL INVESTIGATION REQUIREMENTS** (62-701.420, FAC)				
				1.	Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:
	See July 30 1990		N/C	a.	Description of subsurface conditions including soil stratigraphy and ground water table conditions;
	report by Bectol		N/C	b.	Investigate for the presence of muck, previously filled areas, soft ground, lineaments and sink holes;
	Engineering and		N/C	c.	Estimates of average and maximum high water table across the site;
	Testing, included		N/C	d.	Foundation analysis including;
	with July 1990		N/C		(1) Foundation bearing capacity analysis;
	application for a		N/C		(2) Total and differential subgrade settlement analysis;
	modification of		N/C		(3) Slope stability analysis;
	existing permit to		N/C	e.	Description of methods used in the investigation and includes soil boring logs, laboratory results, analytical calculations, cross sections, interpretations and conclusions;
	allow vertical ex-		N/C	f.	An evaluation of fault areas, seismic impact zones, and unstable areas as described in 40 CFR 258.13, 40 CFR 258.14, and 40 CFR 258.15.
	pansion		N/C	2.	Report signed, sealed and dated by PE or PG.

S	LOCATION	N/A	N/C		
J.	**VERTICAL EXPANSION OF LANDFILLS** (62-701.430, FAC)				
		N/A		1.	Describe how the vertical expansion shall not cause or contribute to leachate leakage from the existing landfill or adversely affect the closure design of the existing landfill;
		N/A		2.	Describe how the vertical expansion over unlined landfills will meet the requirements of Rule 62-701.400, FAC with the exceptions of Rule 62-701.430(1) (c), FAC;
		N/A		3.	Provide foundation and settlement analysis for the vertical expansion;
		N/A		4.	Provide total settlement calculations demonstrating that the final elevations of the lining system, that gravity drainage, and that no other component of the design will be adversely affected.
		N/A		5.	Minimum stability safety factor of 1.5 for the lining system component interface stability and deep stability;
		N/A		6.	Provide documentation to show the surface water management system will not be adversely affected by the vertical expansion;
		N/A		7.	Provide gas control designs to prevent accumulation of gas under the new liner for the vertical expansion.
K.	**LANDFILL OPERATION REQUIREMENTS** (62-701.500, FAC)				
S	Report p4			1.	Provide documentation that landfill will have at least one trained operator during operation and at least one trained spotter at each working face; (62-701.500(1), FAC)
	See July 1991			2.	Provide a landfill operation plan including procedures for: (62-701.500(2), FAC)
	Operation Plan p2		N/C		a. Designating responsible operating and maintenance personnel;
	P 2		N/C		b. Contingency operations for emergencies;
	P 2		N/C		c. Controlling types of waste received at the landfill;
	P3		N/C		d. Weighing incoming waste;
	P 3		N/C		e. Vehicle traffic control and unloading;
	P4		N/C		f. Method and sequence of filling waste;
	P4		N/C		g. Waste compaction and application of cover;
	P4		N/C		h. Operations of gas, leachate, and stormwater controls;
	P5		N/C		i. Water quality monitoring.

S	LOCATION	N/A	N/C		
S	Report p4			3.	Provide a description of the landfill operation record to be used at the landfill; details as to location of where various operational records will be kept (i.e. FDEP permit, engineering drawings, water quality records, etc.) (62-701.500(3), FAC)
S	Report p4			4.	Describe the waste records that will be compiled monthly and provided to the Department quarterly; (62-701.500(4), FAC)
S	Report p4			5.	Describe methods of access control; (62-701.500(5), FAC)
S	Report p4			6.	Describe load checking program to be implemented at the landfill to discourage disposal of unauthorized wastes at the landfill; (62-701.500(6), FAC)
				7.	Describe procedures for spreading and compacting waste at the landfill that include; (62-701.500(7), FAC
			N/C		a. Waste layer thickness and compaction frequencies;
		N/A			b. Special considerations for first layer of waste placed above liner and leachate collection system;
			N/C		c. Slopes of cell working face and side grades above land surface, planned lift depths during operation;
			N/C		d. Maximum width of working face;
					e. Description of type of initial cover to be used at the facility that controls:
			N/C		(1) Disease vector breeding/animal attraction
			N/C		(2) Fires
			N/C		(3) Odors
			N/C		(4) Blowing litter
			N/C		(5) Moisture infiltration
			N/C		f. Procedures for applying initial cover including minimum cover frequencies;
			N/C		g. Procedures for applying intermediate cover;
			N/C		h. Time frames for applying final cover;
			N/C		i. Description of litter policing methods;
			N/C		j. Erosion control procedures.

S	LOCATION	N/A	N/C		
				8.	Describe operational procedures for leachate management including; (62-701.500(8), FAC)
		N/A		a.	Leachate level monitoring, sampling, analysis and data results submitted to the Department;
		N/A		b.	Operation and maintenance of leachate collection and removal system, and treatment as required;
		N/A		c.	Procedures for managing leachate if it becomes regulated as a hazardous waste;
		N/A		d.	Agreements for off-site discharge and treatment of leachate;
		N/A		e.	Contingency plan for managing leachate during emergencies or equipment problems;
		N/A		f.	Procedures for recording quantities of leachate generated in gal/day;
		N/A		g.	Procedures for comparing precipitation experienced at the landfill with leachate generation rates.
S	Report p4			9.	Describe routine gas monitoring program for the landfill as required by Rule 62-701.400(10), FAC; (62-701.500(9), FAC)
S	Report p4			10.	Describe procedures for operating and maintaining the landfill stormwater management system to comply with the standards of Chapters 62-3, 62-302, and 62-25, FAC; (62-701.500(10), FAC)
				11.	Equipment and operation feature requirements; (62-701.500(11), FAC)
S	Report P5			a.	Sufficient equipment for excavating, spreading, compacting and covering waste;
S	Report p5			b.	Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;
S	Report p5			c.	Communications equipment;
S	Report p5			d.	Personnel shelter and sanitary facilities, first aid equipment;
			N/C	e.	Dust control methods;
			N/C	f.	Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;
			N/C	g.	Litter control devices;
			N/C	h.	Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.

S	LOCATION	N/A	N/C		
S	Report p5			12.	Provide a description of all-weather access road, inside perimeter road and other roads necessary for access which shall be provided at the landfill; (62-701.500(12), FAC)
				13.	Additional record keeping and reporting requirements; (62-701.500(13), FAC)
S	Report p5			a.	Records used for developing permit applications and supplemental information maintained for the design period of the landfill;
S	Report p5			b.	Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;
S	Report p5			c.	Background water quality records shall be maintained for the design period of the landfill;
S	Report p5			d.	Maintain annual estimates of the remaining life of constructed landfills and of other permitted areas not yet constructed and submit this estimate annually to the Department.

S	LOCATION	N/A	N/C		
L.	**WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS** (62-701.510, FAC)				
			N/C	1.	Water quality and leachate monitoring plan shall be submitted describing the proposed ground water, surface water and leachate monitoring systems and shall meet at least the following requirements;
			N/C	a.	Based on the information obtained in the hydrogeological investigation and signed, dated and sealed by the PG or PE who prepared it; (62-701.510(2) (a), FAC)
			N/C	b.	All sampling and analysis performed by organizations having Department approved Comprehensive Quality Assurance Plans; (62-701.510(2) (b), FAC)
				c.	Ground water monitoring requirements; (62-701.510(3), FAC)
			N/C	(1)	Detection wells located downgradient from and within 50 feet of disposal units;
			N/C	(2)	Downgradient compliance wells as required;
			N/C	(3)	Background wells screened in all aquifers below the landfill that may be affected by the landfill;
			N/C	(4)	Location information for each monitoring well;
			N/C	(5)	Well spacing no greater than 500 feet apart for downgradient wells and no greater than 1500 feet apart for upgradient wells unless site specific conditions justify alternate well spacings;
			N/C	(6)	Well screen locations properly selected;
			N/C	(7)	Procedures for properly abandoning monitoring wells;
			N/C	(8)	Detailed description of detection sensors if proposed.
				d.	Surface water monitoring requirements; (62-701.510(4), FAC)
			N/C	(1)	Location of and justification for all proposed surface water monitoring points;
			N/C	(2)	Each monitoring location to be marked and its position determined by a registered Florida land surveyor;
			N/C	e.	Leachate sampling locations proposed; (62-701.510(5), FAC)

S	LOCATION	N/A	N/C	
				f. Routine sampling frequency and requirements; (62-701.510(6), FAC)
			N/C	(1) Background ground water and surface water sampling and analysis requirements;
			N/C	(2) Leachate semi-annual and annual sampling and analysis requirements;
			N/C	(3) Detection well semi-annual sampling and analysis requirements;
			N/C	(4) Compliance well sampling and analysis as requirements;
			N/C	(5) Surface water sampling and analysis requirements;
			N/C	g. Describe procedures for implementing assessment monitoring and corrective action as required; (62-701.510(7), FAC)
				h. Water quality monitoring report requirements; (62-701.510(9), FAC)
			N/C	(1) Semi-annual report requirements;
			N/C	(2) Bi-annual report requirements signed, dated and sealed by PG or PE.

S	LOCATION	N/A	N/C		
M.	**SPECIAL WASTE HANDLING REQUIREMENTS** (62-701.520, FAC)				
		N/A		1.	Describe procedures for managing motor vehicles; (62-701.520(1), FAC)
		N/A		2.	Describe procedures for landfilling shredded waste; (62-701.520(3), FAC)
S	Report p5			3.	Describe procedures for asbestos waste disposal; (62-701.520(4), FAC)
S	Report p5			4.	Describe procedures for contaminated soil disposal; (62-701.520(5), FAC)
N.	**LANDFILL FINAL CLOSURE REQUIREMENTS** (62-701.600, FAC)				
				1.	Closure schedule requirements; (62-701.600(2), FAC)
		N/A			a. Documentation that a written notice including a schedule for closure will be provided to the Department at least one year prior to final receipt of wastes;
		N/A			b. Notice to user requirements within 120 days of final receipt of wastes;
		N/A			c. Notice to public requirements within 10 days of final receipt of wastes.
				2.	Closure permit general requirements; (62-701.600(3), FAC)
S	Report p6				a. Application submitted to Department at least 90 days prior to final receipt of wastes;
					b. Closure plan shall include the following;
		N/A			(1) Closure report;
		N/A			(2) Closure design plan;
		N/A			(3) Closure operation plan;
		N/A			(4) Closure procedures;
		N/A			(5) Plan for long term care;
		N/A			(6) A demonstration that proof of financial responsibility for long term care will be provided.

S	LOCATION	N/A	N/C		
				3.	Closure report requirements; (62-701.600(4), FAC)
		N/A		a.	General information requirements;
		N/A			(1) Identification of landfill;
		N/A			(2) Location, description and vicinity map;
		N/A			(3) Total acres of disposal areas and landfill property;
		N/A			(4) Legal property description;
		N/A			(5) History of landfill;
		N/A			(6) Identification of types of waste disposed of at the landfill.
		N/A		b.	Geotechnical investigation report and water quality monitoring plan required by Rule 62-701.330(4), FAC;
		N/A		c.	Land use information report indicating: identification of adjacent landowners; zoning; present land uses; and roads, highways right-of-way, or easements.
		N/A		d.	Report on actual or potential gas migration at landfills containing biodegradable wastes including detailed description of test and investigation methods used;
		N/A		e.	Report assessing the effectiveness of the landfill design and operation including results of geotechnical investigations, surface water and storm water management, gas migration and concentrations, condition of existing cover, and nature of waste disposed of at the landfill;
				4.	Closure design requirements to be included in the closure design plan: (62-701.600(5), FAC)
		N/A		a.	Plan sheet showing phases of site closing;
		N/A		b.	Drawings showing existing topography and proposed final grades;
		N/A		c.	Provisions to close units when they reach approved design dimensions;
		N/A		d.	Final elevations before settlement;
		N/A		e.	Side slope design including benches, terraces, down slope drainage ways, energy dissipators and discussion of expected precipitation effects;

S	LOCATION	N/A	N/C		
		N/A			f. Final cover installation plans including;
		N/A			(1) CQA plan for installing and testing final cover;
		N/A			(2) Schedule for installing final cover after final receipt of waste;
		N/A			(3) Description of drought-resistant species to be used in the vegetative cover;
		N/A			(4) Top gradient design to maximize runoff and minimize erosion;
		N/A			(5) Provisions for cover material to be used for final cover maintenance.
					g. Final cover design requirements:
		N/A			(1) Protective soil layer design;
		N/A			(2) Barrier soil layer design;
		N/A			(3) Erosion control vegetation;
		N/A			(4) Geomembrane barrier layer design.
		N/A			h. Proposed method of stormwater control;
		N/A			i. Proposed method of access control;
		N/A			j. Description of proposed final use of the closed landfill, if any;
				5.	Closure operation plan shall include: (62-701.600(6), FAC)
		N/A			a. Detailed description of actions which will be taken to close the landfill;
		N/A			b. Time schedule for completion of closing and long term care;
		N/A			c. Describe proposed method for demonstrating financial responsibility;
		N/A			d. Indicate any additional equipment and personnel needed to complete closure.
		N/A			e. Development and implementation of the water quality monitoring plan required in Rule 62-701.510, FAC.
		N/A			f. Development and implementation of routine gas monitoring program required in Rule 62-701.400(10)(c), FAC.
		N/A		6.	Justification for and detailed description of procedures to be followed for temporary closure of the landfill, if desired; (62-701.600(7), FAC)

S	LOCATION	N/A	N/C		
O.	**CLOSURE PROCEDURES** (62-701.610, FAC)				
		N/A		1.	Survey monuments; (62-701.610(2), FAC)
		N/A		2.	Final survey report; (62-701.610(3), FAC)
		N/A		3.	Certification of closure construction completion; (62-701.610(4), FAC)
		N/A		4.	Declaration to the public; (62-701.610(5), FAC)
		N/A		5.	Official date of closing; (62-701.610.(6), FAC)
		N/A		6.	Use of closed landfill areas; (62-701.610(7), FAC)
P.	**LONG TERM CARE REQUIREMENTS** (62-701.620, FAC)				
			N/C	1.	Right of property access requirements; (62-701.620(4), FAC)
			N/C	2.	Successors of interest requirements; (62-701.620(5), FAC)
			N/C	3.	Requirements for replacement of monitoring devices; (62-701.620(4), FAC)
Q.	**FINANCIAL RESPONSIBILITY REQUIREMENTS** (62-701.630, FAC)				
			N/C	1.	Provide cost estimates for closure costs and long term care costs estimated by a PE for a third party performing the work, on a per unit basis, with the source of estimates indicated; (62-701.630(3), FAC)
			N/C	2.	Describe procedures for providing annual cost adjustments to the Department based on inflation and changes in the closure and long-term care plans; (62-701.630(4), FAC)
			N/C	3.	Describe funding mechanisms for providing proof of financial responsibility and include appropriate financial responsibility forms; (62-701.630(5)&(6), FAC)
R.	**CLOSURE OF EXISTING LANDFILLS** (62-701.640, FAC)				
		N/A		1.	Demonstrate that facility does not pose a bird hazard to aircraft as specified in Rule 62-701.320(12)(b), FAC.
		N/A		2.	Demonstrate that facility does not restrict the flow of the 100-year flood, reduce water storage capacity or result in wash-out of solid waste as specified in Rule 62-701.340(4)(b), FAC.

S	LOCATION	N/A	N/C		
		N/A		3.	Demonstration that facility is not located in a fault area, seismic zone or unstable area as specified in Rule 62-701.420(1)(c), FAC.
		N/A		4.	Request for extension of closure criteria as specified in Rule 62-701.420(1)(c), FAC.
		N/A			a. Demonstration of no alternative disposal capacity.
		N/A			b. Demonstration of no threat to human health or the environment.

S. MATERIALS RECOVERY FACILITY REQUIREMENTS (62-701.700, FAC)

		N/A		1.	Proof of posting a performance bond payable to the Department to cover closing costs, if required; (62-701.700(4), FAC)
		N/A		2.	Materials recovery facility requirements; (62-701.700, FAC)
		N/A			a. Submit information required in Rule 62-701.320, FAC
		N/A			b. Submit an engineering report including the following:
		N/A			(1) Description of the solid waste proposed to be collected, stored, processed or disposed;
		N/A			(2) Projection with assumptions for waste types and quantities expected in future years;
		N/A			(3) Description of operation and functions of all processing equipment with design criteria and expected performance;
		N/A			(4) Description of flow of solid waste, expected regular facility operations, procedures for start up and shut down, potential safety hazards and control methods including fire protection;
		N/A			(5) Description of loading, unloading, and processing areas;
		N/A			(6) Identification and capacity of temporary on-site storage areas for materials handled and provisions for solid waste and leachate containment;
		N/A			(7) Identification of potential ground water and surface water contamination;

S	LOCATION	N/A	N/C
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	

(8) Plan for disposal of unmarketable recyclables and residue and contingencies for waste handling during breakdowns.

c. Submit the following operational information:

(1) Operation and maintenance manual;

(2) Waste control plan to manage unauthorized wastes;

(3) Contingency plan for emergencies;

(4) Closure plan including the following;

(a) Notification to Department 180 days prior to closure;

(b) Procedures for removal of all waste within 30 days of receipt of final waste;

(c) Completion of closure activities within 180 days of final waste and notification to the Department that closure is complete.

T. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

A. Applicant

The undersigned applicant or authorized representative of Volusia County is aware that statements made in this form and attached information are an application for an Operating Permit from the Florida Department of Environmental Protection and certifies that the information in this application is true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Permit is not transferable, and the Department will be notified prior to the sale or legal transfer of the permitted facility.

J. L. Griffin

Signature of Applicant or Agent

James L. Griffin Director of Solid Waste Services
Name and Title

Date: 7-1-96

Attach a letter of authorization if agent is not a governmental official, owner, or corporate officer.

B. Professional Engineer Registered in Florida or Public Officer as required in Section 403.707 and 403.707(5), Florida Statutes.

This is to certify that the engineering features of this solid waste management facility have been designed/examined by me and found to conform to engineering principals applicable to such facilities. In my professional judgement, this facility, when properly maintained and operated, will comply with all applicable statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and operation of the facility.

Signature

Lee A. Powell
Name and Title (please type)

35992
Florida Registration Number
(please affix seal)

SCS Engineers, 555 West Granada Boulevard, Suite E4
Mailing Address

Ormond Beach, FL 32174
City, State, Zip Code

(904) 673 - 6730
Telephone Number

Date: 1 Jul 96

Lee A Powell
1 Jul 96

APPLICATION REPORT

A. GENERAL INFORMATION

Provided on the application form.

B. DISPOSAL FACILITY GENERAL INFORMATION

Provided on the application form.

C. MATERIALS RECOVERY/VOLUME REDUCTION FACILITY GENERAL INFORMATION

Not Applicable

D. SOLID WASTE MANAGEMENT FACILITY PERMIT GENERAL REQUIREMENTS

The Tomoka Farms Road Landfill plays a major part in Volusia County's (County) achievement of it's recycling goals. The white goods facility, the tire facility, the construction and demolition debris facility, the yard waste processing facility, and the household hazardous waste facility all reduce the quantity of material placed in the Class I landfill. The municipal sludge lime stabilization facility also reduces the quantity of material being landfilled. The site is also used for educational tours, which further encourage recycling.

There are no enforcement actions against the County for operations at the Tomoka Farms Road Landfill. The County is working with the Florida Department of Environmental Protection (FDEP) on the investigation of vinyl chloride reported in monitor wells in the southwest corner of the old landfill. The County is implementing an approved Remedial Action Plan in response to reported nitrate in the ground water at the County's Plymouth Avenue Landfill in DeLand, Florida.

E. LANDFILL PERMIT GENERAL REQUIREMENTS

E1. Sheet 2/6 of the drawings submitted in 1991 for the previous operating permit is a regional map showing zoning and land use within one mile of the landfill. Land use and zoning have not changed significantly since that drawing was prepared.

E2. A vicinity map showing airports within five miles of the landfill is attached as Exhibit I. Two airports are within this range: Daytona Beach and Spruce Creek private runway.

E3. There is no change to the permit application drawings dated May 28, 1991.

E4. There is no change to the permit application drawings dated May 28, 1991.

E5. The 1995 population of Volusia County, according to the Bureau of Economic and Business Research,was 402,970. Their projections for the years 2000 and 2005 are

442,397 and 480,800, respectively. From these numbers, the 1996 population and the year 2001 population projections are 410,855 and 450,077, respectively. In addition, the County also accepts waste from Flagler County.

The waste loading to the landfill is based on the service area population, the economic conditions, and the amount of waste reduction, waste diversion, and recycling that takes place. Using the County's January 1996 Inventory Update and the above population estimates and projections, the following quantities of solid waste are anticipated:

Type of Waste	Tons/Year 1996	Tons/Year 2001
Asbestos	35	39
Demolition	47,511	52,047
Garbage	296,049	324,311
Inert	74,723	81,856
Land Clearing	17	18
Sludge	32,160	35,230
Tires	1,547	1,695
Yard Trash	34,427	37,714
Special Waste	2,633	2,884
Total	489,102	535,794

At the present loading rate, the landfill has an anticipated life of approximately two years. When the new lined cell is opened, selected waste will be placed in the new landfill for the first lift to protect the liner. With the reduced loading to the existing landfill, the anticipated life of the current landfill area is extended to five years.

Cover material for the landfill is taken from on-site borrow pits.

E6. The County has contracted with Karr Environmental to provide sampling and analysis of ground and surface water at the Tomoka Landfill. Karr is certified for environmental analysis and drinking water analysis. They also have an approved quality assurance plan, #82472.

E7. Financial assurance for closure and long term care is submitted annually to the FDEP for review.

F. GENERAL CRITERIA FOR LANDFILLS

F1. As shown on Exhibit II, Flood Insurance Rate Map Panel 125155 0288E, revised June 4, 1990, shows that the landfill is outside the 100-year flood plain.

F2. The distance from the toe of slope to the nearest property line is 2,250 feet, measured from the northeast corner of the landfill.

F3. The landfill is located on 3,500 acres, and is well screened from public view. The

landfill is visible from I-4 where the power line easement crosses the highway, but trees have been planted to help screen the landfill from the view of passing motorists. The landfill is located half a mile from I-4 and more than a mile from Tomoka Farms Road.

G. LANDFILL CONSTRUCTION REQUIREMENTS

G1. The landfill is designed with terraces after every 20 feet of vertical rise. The County is constructing the terraces and installing final cover including a low permeability barrier layer on areas that reach final grade.

G2. The landfill has been constructed under previous permits and no change is proposed.

G3. The landfill has been constructed under previous permits and no change is proposed.

G4. There is no separate leachate collection or leachate recirculation.

G5. There are no leachate storage tanks.

G6. The landfill has been constructed under previous permits and no change is proposed.

G7. The landfill has been constructed under previous permits and no change is proposed.

G8. The surface water management system was constructed under permit number MS64-218726, issued March 11, 1993 and expiring February 5, 1998. No changes are proposed.

G9. At the present time, gas escapes through the daily and intermediate cover and from the working face. Two gas flares also assist in venting gas from the landfill. The County has proposed constructing an active gas recovery system at the landfill. The design of this system was submitted to the FDEP on June 25,1996.

G10. Information on the proposed landfill gas recovery facilities was submitted to the FDEP on June 25, 1996.

G11. The landfill has been constructed under previous permits and no change is proposed.

H. HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS

The landfill hydrogeology is described in Dr. David Gomberg's "Tomoka Landfill Hydrogeologic Summary and Groundwater Monitoring Plan", dated May 1992. The only known contamination on the site is the area adjacent to the southwest corner of the old landfill where vinyl chloride has been reported in monitoring well B-5.

I. GEOTECHNICAL INVESTIGATION REQUIREMENTS

A geotechnical report was prepared by Bechtol Engineering and Testing in July, 1990. This report was submitted to the FDEP with the Application for Modification of Existing Permit to Allow Vertical Expansion in July, 1990.

J. VERTICAL EXPANSION OF LANDFILLS

No vertical expansion is proposed.

K. LANDFILL OPERATION REQUIREMENTS

K1. The County always has at least one trained operator on the site when the landfill is open. The following County operators have completed the Solid Waste Landfill Operators Short School and meet the requirements of a certified landfill operator:

Gene Palmatier
Paul Ramias
Billy Bishop
Chuck Quinn
David Kelly
Chris Ellis
Hamp Arnold
Eric Hill
Greg Powers

K2. An Operation Plan dated July 1991 was submitted to the FDEP with the previous operating permit.

K3. All operations records are kept at the landfill site in the administration building in the office of the Environmental Specialist.

K4. The County submits an Inventory Update to the FDEP every six months. The Inventory Update provides information on the quantity and type of waste received at the site during the previous six months, along with other information about site operations.

K5. The site is surrounded by a security fence. Security personnel provide 24-hour security to prevent unauthorized access.

K6. Each day, the County randomly selects three incoming trucks for load checking. The selected trucks are directed to unload at a secure location near the working face. County personnel check the load for inappropriate material such as yard waste. When unauthorized material is found, the vehicle's owner is fined and a warning letter is issued.

K7. Site operations are described in the Operations Plan submitted with the previous operating permit application. The County uses on-site soil for daily cover. The County also uses "Black Magic", a proprietary bituminous mixture, for alternative daily cover. In the past, the County used prison inmates for collection of wind-blown litter. The County is currently using labor force personnel for this purpose.

K8. There is no separate leachate system at the landfill.

K9. The County monitors for landfill gas annually.

K10. The permitted stormwater system consists of vegetated sideslopes, terraces, collection manholes, downpipes, ditches, retention ponds and pumps. The County uses water from the retention ponds to irrigate the side slopes and terraces. This helps restore the capacity of the retention ponds and keeps the sideslope vegetation healthy. The County routinely inspects the manholes, pipes and pumps to assure that they are functioning properly.

K11. The County has adequate equipment to operate the landfill. The landfill has five landfill compactors, three excavators, twelve dozers, two graders, six wheel loaders, two draglines, ten dump trucks, one pan, one roller, one waterwagon, and numerous small vehicles. Additional equipment is available through other County agencies and from private contractors. Telephones are available at the scale house, the administration building, and at the maintenance building. The site foremen have cellular telephones in their trucks. This allows for good communication from the working face to the administration building. The spotters also have radios at the working face. Temporary shelter is provided at the working face for the spotters. Personnel and sanitary facilities are available at the maintenance building and at the administration building.

K12. The access road is paved to the toe of slope of the landfill. The paved road also serves the tire and white goods facility and the household hazardous waste facility. The County maintains all-weather access roads from the landfill toe of slope to the working face, and to the monitor wells, borrow areas, and other on-site facilities.

K13. The additional records described in 62-701.500(13), FAC are kept at the administration building and are available for FDEP review. An estimate of the remaining life of the facility is prepared every six months and is submitted to the FDEP with the Inventory Update.

L. WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS

The Tomoka Farms Road Landfill Class I Ground Water Surface Water and Leachate Monitoring Plan Implementation Schedule, Modification to Permit SO64-198377 was approved by the FDEP on October 26, 1994. No changes are proposed.

M. SPECIAL WASTE HANDLING REQUIREMENTS

M1. Motor vehicles are not accepted for disposal at the Tomoka Farms Road Landfill.

M2. Waste is not shredded at the Tomoka Farms Road Landfill.

M3. Anyone wishing to dispose of asbestos at the Tomoka Farms Road Landfill must call 24 hours in advance to make arrangements. They must be an approved asbestos abatement firm, with a completed chain of custody. The firm delivering the asbestos is responsible for unloading the truck. The asbestos is placed by hand in a hole located near the working face and covered the same day. Protective clothing is worn by personnel handling asbestos. The County charges $200 per ton for asbestos disposal.

M4. No contaminated soil is accepted for disposal at the Tomoka Farms Road Landfill unless it passes a Toxic Characteristic Leaching Procedure. Acceptable soils are used as daily cover.

N. LANDFILL FINAL CLOSURE REQUIREMENTS

The revised closure plan was submitted on August 23, 1991. This was modifies on January 1, 1995 to include a geosynthetic clay liner as the low permeability barrier layer. No change is proposed. A closure permit application will be submitted at least 90 days prior to final receipt of wastes.

O. CLOSURE PROCEDURES

Closure procedures, including the final survey report, will be described in the closure permit application, to be submitted to the FDEP at least 90 days before waste is no longer accepted at the facility.

P. LONG TERM CARE REQUIREMENTS

Long term care requirements have been described in the annual cost estimate submitted to the FDEP. Long term care will be more fully described in the closure permit application, which will be submitted at least 90 days prior to final receipt of wastes.

Q. FINANCIAL RESPONSIBILITY REQUIREMENTS

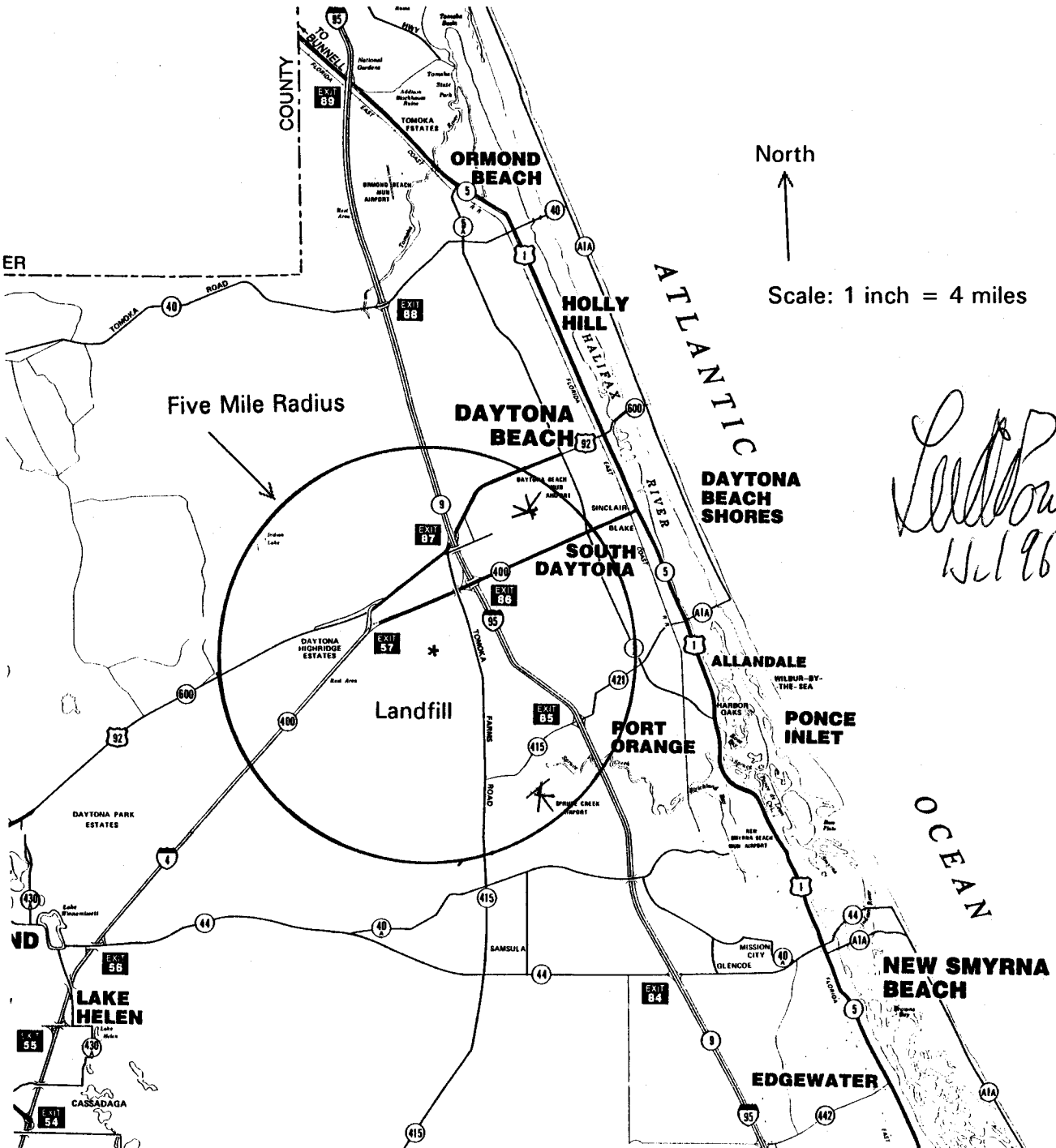
No change is proposed.

R. CLOSURE OF EXISTING LANDFILLS

Not applicable.

S. MATERIALS RECOVERY FACILITY REQUIREMENTS

Not applicable.



Lee Powell
11/96

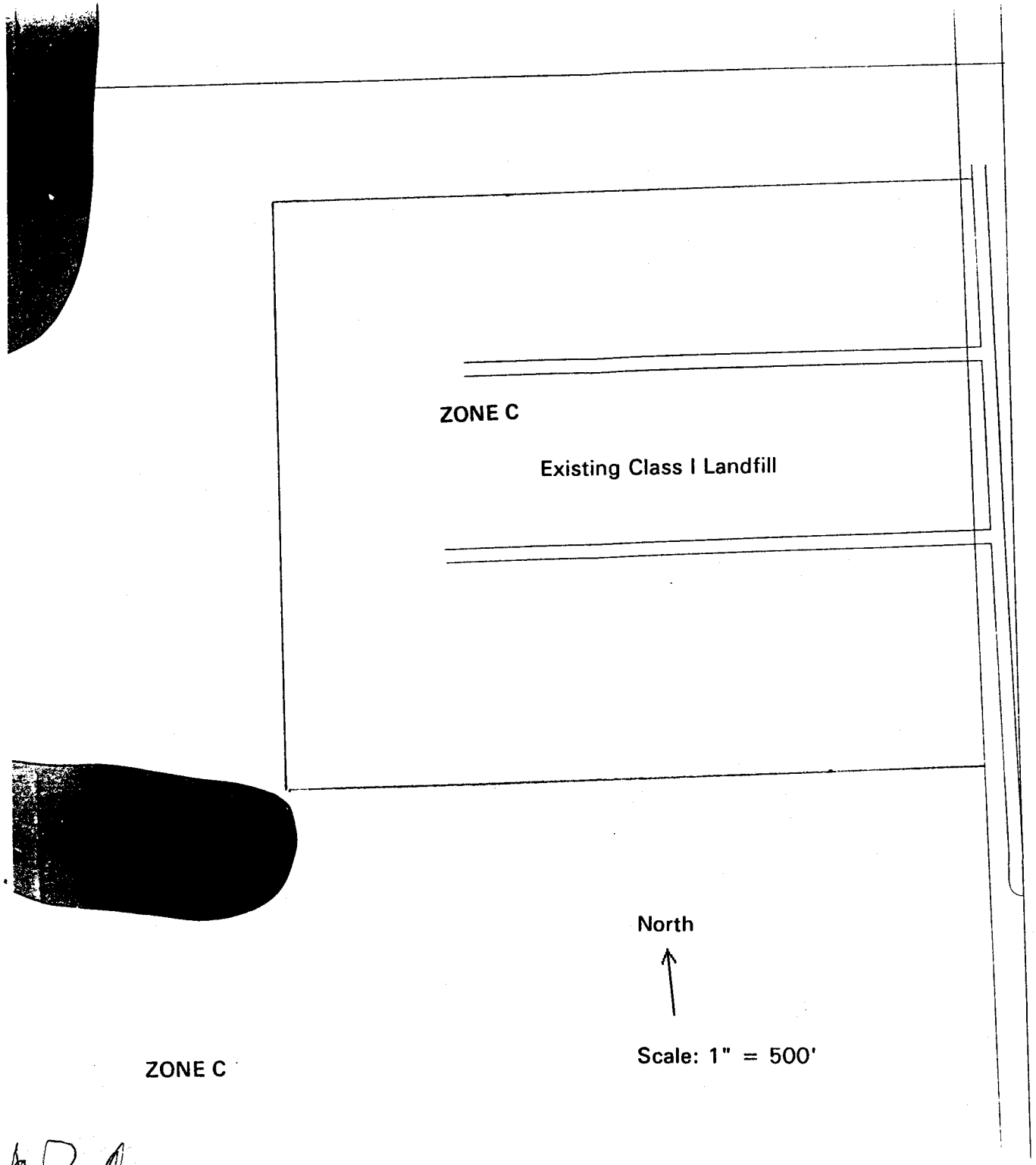


EXHIBIT II FLOOD INSURANCE RATE MAP
from Panel Number 125155 0288E
Federal Emergency Management Agency

Cheese basins

41' X 161' at the bottom (elevation 29.0)

6' depth

6' at 3 to 1 slope

at elevation 32.0' – mid section

41' + 2(9') X 161' + 2(9') => 62' X 179'

62' X 179' => 11,098 sq ft

11,096 sq ft (average area) X 6' depth

=> 66,588 cu ft - volume

2 ponds = 133,176 cu ft.

plan to receive 160,000 cu ft/year

at 1-3% solids.

- 12" of sand - plan
up to 24" on test
- Also - QA/QC plan for construct

- What type of liner - Must
prior to permit

- Hennosol - cracks when
Sum dry - how will the top
be kept wet?

- Removal - hyacinth scoop.
- protection - 24" of sand.

- Intended use when - perm. for const

- Liner Equi - John.

- Amoco 4 mil liner
is 4 mil adequate

State of Florida
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Interoffice Memorandum

TO: Dan Morrical, P.E. OCD-WCU-94-0257

FROM: G. Bret LeRoux, P.G. GBL

DATE: September 12, 1994

SUBJECT: Volusia County - Waste Cleanup
Tomoka Farms Road Landfill
Response to RAI

Volusia County has adequately answered the questions and comments in the Department's ~~June~~ January 15, 1994 letter. Volusia County should continue with the assessment of the extent of contamination at the Tomoka Farms Road Landfill.

State of Florida
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Interoffice Memorandum

TO: Bret LeRoy

FROM: Dan Monroe

DATE: 7/5/94

SUBJECT: County Volusia Permit No. _____

Facility Tomoka Farms Rd LF

Attachment CAR response to DEP's Jan. 15, 1994 RAI.

The attached is being sent to you for:

_____ Information only

✓ Review and comments

If review and comments are needed, please respond:

_____ By _____

(Solid Waste deadline date is _____)

✓ As soon as possible for your schedule.

Comments: _____

McKIM & CREED

June 24, 1994

10410002OF006RO

JUN 1994
RECEIVED
D.E.P. CENTRAL DISTRICT

ENGINEERS

SURVEYORS

PLANNERS

Mr. Dan R. Morrical, P.E.
Solid Waste Program Manager
Florida Department of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803-3767

RE: Volusia County
Tomoka Farms Road Landfill - Contamination Assessment Report

Dear Mr. Morrical:

Briley, Wild & Associates, has recently been merged into McKim & Creed Engineers, P.A., an engineering firm with several offices in North Carolina. Projects, such as the above Contamination Assessment, began under the name Briley, Wild & Associates, Inc., and are being completed under the name McKim & Creed Engineers, P.A. We apologize for any confusion such a name change might cause.

We appreciate the Department's previous discussion with Dr. David Gomberg, our hydrogeologist, about the comments in your January 15, 1994 letter on the subject project. Our response is as follows:

1. Enclosed are the requested laboratory reports.
2. Continuous split spoon sampling will be performed while test boring in Layer 6.
3. We will verify through split spoon sampling that the wells are installed in the Zone 4 Flow Zone.
4. We will use a finer 30/40 graded sand for filter pack, bentonite in lieu of REVERT drilling mud, and we intend to measure turbidity as a routine part of sample collections.
5. We have amended our proposal to the County to include the additional 5 wells, and will relocate the proposed well near P18 as requested.

NORTH CAROLINA

FLORIDA

P.O. BOX 607

ORMOND BEACH, FL 32175

904/672-5660

FAX 904/673-8264

1421 COURT STREET

SUITE C

CLEARWATER, FL 34616

813/442-7196

FAX 813/461-3827

We apologize for the infrequency of the written progress reports. These will be submitted in a more timely manner in the future.

Very truly yours,
McKIM & CREED ENGINEERS, P.A.

Lee A. Powell, P.E.

LAP:mbj

Enclosure

cc: Ms. Susan Gaze, Volusia County
Mr. James L. Griffin, Volusia County

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JUN 1993
RECEIVED
D.E.P. CENTRAL DISTRICT

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22480
Date Sampled: 05/17/93
Client Sample Number: 1
Sample Description: P.1 10' 05/17/93-09:50A

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/19/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	BENZENE	UG/L	<1.0	RM	05/19/93	
624	BROMOFORM	UG/L	<1.0	RM	05/19/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/19/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	TOLUENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/19/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/19/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/19/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	

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ATT:SUSAN GAZE

Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22480
Date Sampled: 05/17/93
Client Sample Number: 1
Sample Description: P.1 10' 05/17/93-09:50A

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= 2.0 UG/L

Order Number: 22481
Date Sampled: 05/17/93
Client Sample Number: 2
Sample Description: P.1 25' 05/17/93-10:00A

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/19/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	BENZENE	UG/L	1.7	RM	05/19/93	
624	BROMOFORM	UG/L	<1.0	RM	05/19/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/19/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	TOLUENE	UG/L	7.3	RM	05/19/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/19/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/19/93	

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DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22481
Date Sampled: 05/17/93
Client Sample Number: 2
Sample Description: P.1 25' 05/17/93-10:00A

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	1.4	RM	05/19/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/19/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	ETHYLBENZENE	UG/L	1.3	RM	05/19/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	VINYL CHLORIDE	UG/L	260	RM	05/19/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	

Note: TOTAL XYLENES= 7.9 UG/L

Order Number: 22482
Date Sampled: 05/17/93
Client Sample Number: 3
Sample Description: P.2 11' 05/17/93-10:15A

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/19/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	BENZENE	UG/L	<1.0	RM	05/19/93	
624	BROMOFORM	UG/L	<1.0	RM	05/19/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/19/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/19/93	

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Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22482
Date Sampled: 05/17/93
Client Sample Number: 3
Sample Description: P.2 11' 05/17/93-10:15A

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	TOLUENE	UG/L	1.0	RM	05/19/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/19/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROBENZENE	UG/L	1.3	RM	05/19/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/19/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/19/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	VINYL CHLORIDE	UG/L	3.8	RM	05/19/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	

Note: TOTAL XYLENES= 2.2 UG/L

Order Number: 22483
Date Sampled: 05/17/93
Client Sample Number: 4
Sample Description: P.2 25' 05/17/93-10:30A

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	

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DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22483
Date Sampled: 05/17/93
Client Sample Number: 4
Sample Description: P.2 25' 05/17/93-10:30A

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/19/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	BENZENE	UG/L	<1.0	RM	05/19/93	
624	BROMOFORM	UG/L	<1.0	RM	05/19/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/19/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	TOLUENE	UG/L	1.8	RM	05/19/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/19/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/19/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/19/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	VINYL CHLORIDE	UG/L	80	RM	05/19/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	

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Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22483
Date Sampled: 05/17/93
Client Sample Number: 4
Sample Description: P.2 25' 05/17/93-10:30A

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= 3.6 UG/L

Order Number: 22484
Date Sampled: 05/17/93
Client Sample Number: 5
Sample Description: P.3 11' 05/17/93-13:45P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/19/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	BENZENE	UG/L	<1.0	RM	05/19/93	
624	BROMOFORM	UG/L	<1.0	RM	05/19/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/19/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	TOLUENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	1.0	RM	05/19/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<1.0	RM	05/19/93	
624	BROMODICHLOROMETHANE	UG/L	<20	RM	05/19/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/19/93	
		UG/L	<1.0	RM	05/19/93	

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HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22484
Date Sampled: 05/17/93
Client Sample Number: 5
Sample Description: P.3 11' 05/17/93-13:45P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/19/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/19/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	VINYL CHLORIDE	UG/L	2.7	RM	05/19/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	

Note: TOTAL XYLENES= 2.0 UG/L

Order Number: 22485
Date Sampled: 05/17/93
Client Sample Number: 6
Sample Description: P.3 25' 05/17/93-13:55P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<5	RM	05/19/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<5	RM	05/19/93	
624	1,1-DICHLOROETHANE	UG/L	<5	RM	05/19/93	
624	1,2-DICHLOROBENZENE	UG/L	<5	RM	05/19/93	
624	1,2-DICHLOROPROPANE	UG/L	<5	RM	05/19/93	
624	1,4-DICHLOROBENZENE	UG/L	<5	RM	05/19/93	
624	BENZENE	UG/L	<5	RM	05/19/93	
624	BROMOFORM	UG/L	<5	RM	05/19/93	
624	CARBON TETRACHLORIDE	UG/L	<5	RM	05/19/93	
624	CHLOROETHANE	UG/L	<5	RM	05/19/93	
624	CHLOROMETHANE	UG/L	<5	RM	05/19/93	
624	DIBROMOCHLOROMETHANE	UG/L	<5	RM	05/19/93	

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VOLUSIA COUNTY DPW
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Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22485
Date Sampled: 05/17/93
Client Sample Number: 6
Sample Description: P.3 25' 05/17/93-13:55P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<5	RM	05/19/93	
624	TOLUENE	UG/L	920	RM	05/19/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<5	RM	05/19/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<5	RM	05/19/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<5	RM	05/19/93	
624	1,1-DICHLOROETHENE	UG/L	<5	RM	05/19/93	
624	1,2-DICHLOROETHANE	UG/L	<5	RM	05/19/93	
624	1,3-DICHLOROBENZENE	UG/L	<5	RM	05/19/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<100	RM	05/19/93	
624	BROMODICHLOROMETHANE	UG/L	<5	RM	05/19/93	
624	BROMOMETHANE	UG/L	<5	RM	05/19/93	
624	CHLOROBENZENE	UG/L	<5	RM	05/19/93	
624	CHLOROFORM	UG/L	<5	RM	05/19/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<5	RM	05/19/93	
624	ETHYLBENZENE	UG/L	15	RM	05/19/93	
624	TETRACHLOROETHENE	UG/L	<5	RM	05/19/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<5	RM	05/19/93	
624	TRICHLOROETHENE	UG/L	<5	RM	05/19/93	
624	VINYL CHLORIDE	UG/L	25000	RM	05/19/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<5	RM	05/19/93	

Note: TOTAL XYLENES= 56 UG/L

Order Number: 22486
Date Sampled: 05/17/93
Client Sample Number: 7
Sample Description: P.4 11' 05/17/93-14:15P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	

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Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22486
Date Sampled: 05/17/93
Client Sample Number: 7
Sample Description: P.4 11' 05/17/93-14:15P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/19/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	BENZENE	UG/L	10	RM	05/19/93	
624	BROMOFORM	UG/L	<1.0	RM	05/19/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/19/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	TOLUENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/19/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROBENZENE	UG/L	5.3	RM	05/19/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/19/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/19/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	

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Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22486
Date Sampled: 05/17/93
Client Sample Number: 7
Sample Description: P.4 11' 05/17/93-14:15P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
Note:	TOTAL XYLENES= 4.0 UG/L					

Order Number: 22487
Date Sampled: 05/17/93
Client Sample Number: 8
Sample Description: P.4 25' 05/17/93-14:25P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/19/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	BENZENE	UG/L	<1.0	RM	05/19/93	
624	BROMOFORM	UG/L	<1.0	RM	05/19/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/19/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	TOLUENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	13	RM	05/19/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<1.0	RM	05/19/93	
624	BROMODICHLOROMETHANE	UG/L	<20	RM	05/19/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/19/93	
		UG/L	<1.0	RM	05/19/93	

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Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22487
Date Sampled: 05/17/93
Client Sample Number: 8
Sample Description: P.4 25' 05/17/93-14:25P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/19/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/19/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	VINYL CHLORIDE	UG/L	320	RM	05/19/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	

Note: TOTAL XYLENES= 5.7 UG/L

Order Number: 22488
Date Sampled: 05/17/93
Client Sample Number: 9
Sample Description: P.5 11' 05/17/93-15:10P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/19/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	BENZENE	UG/L	17	RM	05/19/93	
624	BROMOFORM	UG/L	<1.0	RM	05/19/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/19/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/19/93	

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Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22488
Date Sampled: 05/17/93
Client Sample Number: 9
Sample Description: P.5 11' 05/17/93-15:10P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	TOLUENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/19/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROBENZENE	UG/L	43	RM	05/19/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/19/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/19/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	

Note: TOTAL XYLENES= 2.2 UG/L

Order Number: 22489
Date Sampled: 05/17/93
Client Sample Number: 10
Sample Description: P.5 25' 05/17/93-15:20P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	

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Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22489
Date Sampled: 05/17/93
Client Sample Number: 10
Sample Description: P.5 25' 05/17/93-15:20P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/19/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	BENZENE	UG/L	7.9	RM	05/19/93	
624	BROMOFORM	UG/L	<1.0	RM	05/19/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/19/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	TOLUENE	UG/L	1.8	RM	05/19/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/19/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/19/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/19/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/19/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/19/93	
624	CHLOROBENZENE	UG/L	14	RM	05/19/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/19/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/19/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/19/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/19/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/19/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/19/93	

ENVIROLAB

Environmental Certification
HRS #E83079

ENVIROLAB
1032 U.S. Highway One, North
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Fax (904) 673-4001
Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000226
Date Received: 05/18/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B5 STUDY

Order Number: 22489
Date Sampled: 05/17/93
Client Sample Number: 10
Sample Description: P.5 25' 05/17/93-15:20P

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= 4.4 UG/L

R. Sullivan / F. Guzman
President / Vice-President

QC ACCEPTABLE

MAY 28 1993

R.A. ELEFRITZ, SR.

Ormond Bch, Fl Tel# (904) 6 .668
Fax# (904) 673-4001

ENVIROLAB

CHAIN OF CUSTODY

Client
Company Name: Volusia County
Contact Name: Susan Gaze
Address:
City _____ State _____ Zip _____
Phone # _____ Fax # _____

Proj. # _____ P.O. # _____

Project Name: B5 Study

☐ Envirolab Cooler used ☐ Returned to Envirolab
☐ Client Cooler used ☐ Returned to Client

Sampled by EL __ Client __
Sampler (Signature): Grant D. Anderson
Sampler Name (Printed): Grant D. Anderson

LAB USE ONLY
Results Due (Date/Time)
Fax Results ☐ Yes ☑ No
Submission # 9305-0226

Sample No.	Sample Location/ Description	Date	Time	Matrix *	Sampling Method **	# of Containers	1/2 Gal Plastic	Qt. Plastic	Qt. Plastic HNO3	Qt. Plastic H2SO4	Qt. Plastic NaOH	Pt. Plastic	60 mL Plastic H2SO4	60 mL Plastic HCl	Qt. Glass	Qt. Glass H2SO4	Qt. Glass HCl	40 mL vial				Please List Analyses Below or Attatch Required Parameters	Order #
	P.1 10' 5.17.93 9:50a			E	G	1												1				EPA 624	22480
	P.1 25' 10:00a					1												1					22481
	P.2 11' 10:15A					1												1					22482
	P.2 25' 5.17.93 10:30a					1												1					22483
	P.3 11' 5.17.93 1:45p					1												1					22484
	P.3 25' 5.17.93 1:55p					1												1					22485
	P.4 11' 5.17.93 2:15p					1												1					22486
	P.4 25' 5.17.93 2:25p					1												1					22487
	P.5 11' 5.17.93 3:10pm			E	G	1												1					22488

* A. Drinking Water B. Surface Water C. Solid D. Sludge E. Ground Water Reg. F. Industrial G. Ground Water Orl. H. Air I. Lab DI ** C= Composite G= Grab
B1. Fresh B2. Salt F1. INF. F2. EFF.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Remarks:
Grant D. Anderson	5-17-93	4:10	Robert Sulo				
Received by: (Signature)	**Relinquished by: (Signature)**	**Date**	**Time**	**Received by Laboratory (Signature)**	**Date**	**Time**	
				Brenda Dudley	5/18/93	1630	

ENVIROLAB

CHAIN OF CUSTODY

Ormond Bch, Fl

Tel# (904) 6 568
Fax# (904) 673-4001

Client

Company Name: Volusia County

Contact Name:

Address:

City: State: Zip:

Phone #: Fax #:

Proj #:

P.O.#:

Project Name:

☐ Envirolab Cooler used ☐ Returned to Envirolab

☐ Client Cooler used ☐ Returned to Client

Sampled by EL ___ Client ___

Sampler(Signature): Grant D. Anderson

Sampler Name (Printed): Grant D. Anderson

LAB USE ONLY

Results Due (Date/Time):

Fax Results ☐ Yes ☐ No

Submission #:

Sample No.	Sample Location/ Description	Date	Time	* Matrix	** Sampling Method	# of Containers	1/2 Gal Plastic	Qt. Plastic	Qt. Plastic HNO3	Qt. Plastic H2SO4	Qt. Plastic NaOH	Pt. Plastic	60 mL Plastic H2SO4	60 mL Plastic HCl	Qt. Glass	Qt. Glass H2SO4	Qt. Glass HCl	40 mL vial				Please List Analyses Below or Attach Required Parameters	Order #
	P.5 25' 5.17.93 3:20p			E	G	1												1				EPA624	

* A. Drinking Water B. Surface Water C. Solid D. Sludge E. Ground Water Reg. F. Industrial G. Ground Water Orl. H. Air I. Lab DI ** C= Composite G= Grab
B1. Fresh B2. Salt F1. INF. F2. EFF.

Relinquished by: (Signature)	Date	Time	Received by (Signature)	Relinquished by: (Signature)	Date	Time	Remarks:
Grant D. Anderson	5.18.93	4:10	Robert Hall				
Received by (Signature)	Relinquished by: (Signature)	Date	Time	Received by Laboratory (Signature)	Date	Time	
				Brenda Dudley	5/18/93	1650	

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Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22545
Date Sampled: 05/17/93
Client Sample Number: 1
Sample Description: P-6 @ 8'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	BENZENE	UG/L	<1.0	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

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HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000248 **Client PO Number:**
Date Received: 05/19/93 **Project Number:**
Date Reported: 05/27/93 **Project:** B-5 STUDY

Order Number: 22545
Date Sampled: 05/17/93
Client Sample Number: 1
Sample Description: P-6 @ 8'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= 1.8 UG/L

Order Number: 22546
Date Sampled: 05/17/93
Client Sample Number: 2
Sample Description: P-6 @ 24'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	BENZENE	UG/L	1.2	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	5.6	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	

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Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22546
Date Sampled: 05/17/93
Client Sample Number: 2
Sample Description: P-6 @ 24'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	1.3	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	16	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

Note: TOTAL XYLENES= 7.6 UG/L

Order Number: 22547
Date Sampled: 05/17/93
Client Sample Number: 3
Sample Description: P-7 @ 10.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	BENZENE	UG/L	<1.0	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	

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VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22547
Date Sampled: 05/17/93
Client Sample Number: 3
Sample Description: P-7 @ 10.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

Note: TOTAL XYLENES= 1.8 UG/L

Order Number: 22548
Date Sampled: 05/17/93
Client Sample Number: 4
Sample Description: P-7 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	

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HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22548
Date Sampled: 05/17/93
Client Sample Number: 4
Sample Description: P-7 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	BENZENE	UG/L	<1.0	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	5500	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

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HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000248 **Client PO Number:**
Date Received: 05/19/93 **Project Number:**
Date Reported: 05/27/93 **Project:** B-5 STUDY

Order Number: 22548
Date Sampled: 05/17/93
Client Sample Number: 4
Sample Description: P-7 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
Note: TOTAL XYLENES= <1.0 UG/L						

Order Number: 22549
Date Sampled: 05/17/93
Client Sample Number: 5
Sample Description: P-8 @ 11'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	BENZENE	UG/L	<1.0	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	

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HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22549
Date Sampled: 05/17/93
Client Sample Number: 5
Sample Description: P-8 @ 11'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

Note: TOTAL XYLENES= 1.5 UG/L

Order Number: 22550
Date Sampled: 05/17/93
Client Sample Number: 6
Sample Description: P-8 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	BENZENE	UG/L	<1.0	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	

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Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22550
Date Sampled: 05/17/93
Client Sample Number: 6
Sample Description: P-8 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22551
Date Sampled: 05/17/93
Client Sample Number: 7
Sample Description: P-9 @ 11'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	

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Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22551
Date Sampled: 05/17/93
Client Sample Number: 7
Sample Description: P-9 @ 11'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	4.1	RM	05/20/93	
624	BENZENE	UG/L	1.2	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROBENZENE	UG/L	5.6	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

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VOLUSIA COUNTY DPW
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Submission #: 9305000248 **Client PO Number:**
Date Received: 05/19/93 **Project Number:**
Date Reported: 05/27/93 **Project:** B-5 STUDY

Order Number: 22551
Date Sampled: 05/17/93
Client Sample Number: 7
Sample Description: P-9 @ 11'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= 1.5 UG/L

Order Number: 22552
Date Sampled: 05/17/93
Client Sample Number: 8
Sample Description: P-9 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	BENZENE	UG/L	2.8	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	

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Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22552
Date Sampled: 05/17/93
Client Sample Number: 8
Sample Description: P-9 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	3.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22553
Date Sampled: 05/18/93
Client Sample Number: 9
Sample Description: P-10 @ 11'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	BENZENE	UG/L	<1.0	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	

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VOLUSIA COUNTY DPW
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Submission #: 9305000248 **Client PO Number:**
Date Received: 05/19/93 **Project Number:**
Date Reported: 05/27/93 **Project:** B-5 STUDY

Order Number: 22553
Date Sampled: 05/18/93
Client Sample Number: 9
Sample Description: P-10 @ 11'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

Note: TOTAL XYLENES= 1.4 UG/L

Order Number: 22554
Date Sampled: 05/18/93
Client Sample Number: 10
Sample Description: P-10 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	

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Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22554
Date Sampled: 05/18/93
Client Sample Number: 10
Sample Description: P-10 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	BENZENE	UG/L	4.1	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	11	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	3900	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

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Submission #: 9305000248 **Client PO Number:**
Date Received: 05/19/93 **Project Number:**
Date Reported: 05/27/93 **Project:** B-5 STUDY

Order Number: 22554
Date Sampled: 05/18/93
Client Sample Number: 10
Sample Description: P-10 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= 1.8 UG/L

Order Number: 22555
Date Sampled: 05/18/93
Client Sample Number: 11
Sample Description: P-11 @ 10'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	BENZENE	UG/L	<1.0	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	

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HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22555
Date Sampled: 05/18/93
Client Sample Number: 11
Sample Description: P-11 @ 10'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22556
Date Sampled: 05/18/93
Client Sample Number: 12
Sample Description: P-11 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	BENZENE	UG/L	<1.0	RM	05/20/93	
624	BROMOFORM	UG/L	<1.0	RM	05/20/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	

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Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22556
Date Sampled: 05/18/93
Client Sample Number: 12
Sample Description: P-11 @ 25'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	TOLUENE	UG/L	1.4	RM	05/20/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22557
Date Sampled: 05/18/93
Client Sample Number: 13
Sample Description: P-12 @ 9'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	

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Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22557
Date Sampled: 05/18/93
Client Sample Number: 13
Sample Description: P-12 @ 9'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
524	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/20/93	
524	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
524	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
524	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/20/93	
524	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
524	BENZENE	UG/L	<1.0	RM	05/20/93	
524	BROMOFORM	UG/L	<1.0	RM	05/20/93	
524	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/20/93	
524	CHLOROETHANE	UG/L	<1.0	RM	05/20/93	
524	CHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
524	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
524	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/20/93	
524	TOLUENE	UG/L	<1.0	RM	05/20/93	
524	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
524	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/20/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/20/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/20/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/20/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/20/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/20/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/20/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/20/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/20/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/20/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/20/93	

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VOLUSIA COUNTY DPW
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Submission #: 9305000248
Date Received: 05/19/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22557
Date Sampled: 05/18/93
Client Sample Number: 13
Sample Description: P-12 @ 9'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22558
Date Sampled: 05/18/93
Client Sample Number: 14
Sample Description: P-12 @ 23'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	BENZENE	UG/L	<1.0	RM	05/21/93	
624	BROMOFORM	UG/L	<1.0	RM	05/21/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	1.6	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	

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VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

ubmission #: 9305000248 Client PO Number:
ate Received: 05/19/93 Project Number:
ate Reported: 05/27/93 Project: B-5 STUDY

rder Number: 22558
ate Sampled: 05/18/93
lient Sample Number: 14
ample Description: P-12 @ 23'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
524	CHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
524	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
524	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
524	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
524	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
524	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
524	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
524	VINYL CHLORIDE	UG/L	93	RM	05/21/93	
524	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

ote: TOTAL XYLENES= <1.0 UG/L

rder Number: 22559
ate Sampled: 05/18/93
lient Sample Number: 15
ample Description: P-13 @ 8'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
524	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
524	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
524	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
524	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
524	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
524	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
524	BENZENE	UG/L	10	RM	05/21/93	
524	BROMOFORM	UG/L	<1.0	RM	05/21/93	
524	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
524	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
524	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
524	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	

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VOLUSIA COUNTY DPW
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DAYTONA,FL 32114
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Submission #: 9305000248 **Client PO Number:**
Date Received: 05/19/93 **Project Number:**
Date Reported: 05/27/93 **Project:** B-5 STUDY

Order Number: 22559
Date Sampled: 05/18/93
Client Sample Number: 15
Sample Description: P-13 @ 8'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22560
Date Sampled: 05/18/93
Client Sample Number: 16
Sample Description: P-13 @ 23'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	

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Submission #: 9305000248 **Client PO Number:**
Date Received: 05/19/93 **Project Number:**
Date Reported: 05/27/93 **Project:** B-5 STUDY

Order Number: 22560
Date Sampled: 05/18/93
Client Sample Number: 16
Sample Description: P-13 @ 23'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	BENZENE	UG/L	6.4	RM	05/22/93	
624	BROMOFORM	UG/L	<1.0	RM	05/22/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	TOLUENE	UG/L	1.1	RM	05/22/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/22/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	VINYL CHLORIDE	UG/L	5.7	RM	05/22/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

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ubmission #: 9305000248 Client PO Number:
ate Received: 05/19/93 Project Number:
ate Reported: 05/27/93 Project: B-5 STUDY

rder Number: 22560
ate Sampled: 05/18/93
lient Sample Number: 16
ample Description: P-13 @ 23'

ethod	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
ote: TOTAL XYLENES= 1.1 UG/L						

rder Number: 22561
ate Sampled: 05/18/93
lient Sample Number: 17
ample Description: P-14 @ 8'

ethod	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
24	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
24	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
24	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
24	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
24	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
24	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
24	BENZENE	UG/L	12	RM	05/22/93	
24	BROMOFORM	UG/L	<1.0	RM	05/22/93	
24	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
24	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
24	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
24	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
24	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
24	TOLUENE	UG/L	<1.0	RM	05/22/93	
24	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
24	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
24	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
24	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
24	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
24	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
24	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
24	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
24	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	

ENVIROLAB

Environmental Certification
HRS #E83079

ENVIROLAB
1032 U.S. Highway One, North
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Fax (904) 673-4001
Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

ubmission #: 9305000248
ate Received: 05/19/93
ate Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

rder Number: 22561
ate Sampled: 05/18/93
lient Sample Number: 17
ample Description: P-14 @ 8'

thod	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
24	CHLOROBENZENE	UG/L	5.5	RM	05/22/93	
24	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
24	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
24	ETHYLBENZENE	UG/L	1.2	RM	05/22/93	
24	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
24	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
24	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
24	VINYL CHLORIDE	UG/L	<1.0	RM	05/22/93	
24	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

ote: TOTAL XYLENES= <1.0 UG/L

QC ACCEPTABLE

MAY 28 1993

R.A. ELEFRITZ, SR.

R. Sullivan / F. Guzman
President / Vice-President

Ormond Bch, Fl Tel# (904) 6 68
Fax# (904) 673-4001

ENVIROLAB

CHAIN OF CUSTODY

Client
Company Name: Volusia County DPW
Contact Name:
Address:
City: State: Zip:
Phone #: Fax #:

Proj #:
P.O #:
Project Name: BS Study

☒ Envirolab Cooler used ☒ Returned to Envirolab
☐ Client Cooler used ☐ Returned to Client

Sampled by EL ___ Client ☒
Sampler (Signature): Grant D. Anderson
Sampler Name (Printed): Grant D. Anderson

LAB USE ONLY
Results Due (Date/Time):
Fax Results ☐ Yes ☐ No
Submission #: 93-5-246

Sample No.	Sample Location/ Description	Date	Time	* Matrix	** Sampling Method	# of Containers	1/2 Gal Plastic	Qt. Plastic	Qt. Plastic HNO3	Qt. Plastic H2SO4	Qt. Plastic NaOH	Pt. Plastic	60 mL Plastic H2SO4	60 mL Plastic HCl	Qt. Glass	Qt. Glass H2SO4	Qt. Glass HCl	40 mL vial				Please List Analyses Below or Attach Required Parameters	Order #
																						~~Vial Ch~~	22545
1	P-6 @ 8'	5/17	4:30	E	G	1	D											1				624	22546
2	P-6 @ 24'	5/17	4:15	E	G	1	D											1					22547
3	P-7 @ 10.5'	5/17	5:00	E	G	1	D											1					22548
4	P-7 @ 25'	5/17	5:20	E	G	1	D											1					22549
5	P-8 @ 11'			E	G	1	D											1					22550
6	P-8 @ 25'			E	G	1	D											1					22551
7	P-9 @ 11'			E	G	1												1					22552
8	P-9 @ 25'			E	G	1												1					

* A. Drinking Water B. Surface Water C. Solid D. Sludge E. Ground Water Reg. F. Industrial G. Ground Water Orl. H. Air I. Lab DI ** C= Composite G= Grab
B1. Fresh B2. Salt F1. INF. F2. EFF.

Relinquished by: (Signature)	Date	Time	Received by (Signature)	Relinquished by: (Signature)	Date	Time
Grant D. Anderson	5/19/93	5:55	[illegible]			

Received by (Signature)	Relinquished by: (Signature)	Date	Time	Received by Laboratory (Signature)	Date	Time
	[illegible]	5/19/93	1630	[illegible]	5/19/93	1630

Remarks: possible hits

Ormond Bch, Fl Tel# (904) 6 68
Fax# (904) 673-4001

ENVIROLAB

CHAIN OF CUSTODY

Client
Company Name: Volusia County DPW
Contact Name:
Address:
City: State: Zip:
Phone #: Fax #:

Proj #:
P.O #:
Project Name: BS Study
☒ Envirolab Cooler used ☒ Returned to Envirolab
☐ Client Cooler used ☐ Returned to Client

Sampled by EL ___ Client ☒
Sampler(Signature): Grant D. Anderson
Sampler Name (Printed): Grant D. Anderson

LAB USE ONLY
Results Due (Date/Time):
Fax Results ☐ Yes ☐ No
Submission #:

Sample No.	Sample Location/ Description	Date 1993	Time	* Matrix	** Sampling Method	# of Containers	1/2 Gal Plastic	Qt. Plastic	Qt. Plastic HNO3	Qt. Plastic H2SO4	Qt. Plastic NaOH	Pt. Plastic	60 mL Plastic H2SO4	60 mL Plastic HCl	Qt. Glass	Qt. Glass H2SO4	Qt. Glass HCl	40 mL vial				Please List Analyses Below or Attach Required Parameters	Order #
9	P-10 @ 11'	5/18		E	G	1												1				624	22553
10	P-10 @ 25'	5/18	2:45	E	G	1												1					22554
11	P-11 @ 10'	5/18	3:15	E	G	1												1					22555
12	P-11 @ 25'	5/18	3:50	E	G	1												1					22556
13	P-12 @ 9'	5/18	4:20	E	G	1												1					22557
14	P-12 @ 23'	5/18	4:45	E	G	1												1					22558
15	P-13 @ 8'	5/18	5:15	E	G	1												1					22559
16	P-13 @ 23'	5/18	5:20	E	G	1												1					22560
17	P-14 @ 8'	5/18	5:50	E	G	1												1					22561

* A. Drinking Water B. Surface Water C. Solid D. Sludge E. Ground Water Reg. F. Industrial G. Ground Water Orl. H. Air I. Lab DI ** C= Composite G= Grab
B1. Fresh B2. Salt F1. INF. F2. EFF.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time
Grant D. Anderson	5/19/93	3:30	Kurt Day			

Received by (Signature)	Relinquished by: (Signature)	Date	Time	Received by Laboratory (Signature)	Date	Time
	Kurt Day	5/19/93	1630	Brent Dudley	5/19/93	1630

Remarks: possible Lits

Envirolab Log-In Report
SUBMISSION NUMBER: 9305000248

CLIENT NAME: VOLUSIA COUNTY DPW

NUMBER OF SAMPLES: 17

PROJECT NAME: B-5 STUDY

PROJECT NUMBER:

DATE RECEIVED: 05/19/93

LOG-IN DATE: 05/19/93

REPORT DUE: 5-21-93

LOGGED BY: PT

SAMPLE NUMBER	SAMPLE DESCRIPTION	#	MATRIX	ORDER NUMBER	DATE SAMPLED
1	P-6 @ 8'	1	GROUND WA	22545	05/17/93
2	P-6 @ 24'	2	GROUND WA	22546	05/17/93
3	P-7 @ 10.5'	3	GROUND WA	22547	05/17/93
4	P-7 @ 25'	4	GROUND WA	22548	05/17/93
5	P-8 @ 11'	5	GROUND WA	22549	05/17/93
6	P-8 @ 25'	6	GROUND WA	22550	05/17/93
7	P-9 @ 11'	7	GROUND WA	22551	05/17/93
8	P-9 @ 25'	8	GROUND WA	22552	05/17/93
9	P-10 @ 11'	9	GROUND WA	22553	05/18/93
10	P-10 @ 25'	10	GROUND WA	22554	05/18/93
11	P-11 @ 10'	11	GROUND WA	22555	05/18/93
12	P-11 @ 25'	12	GROUND WA	22556	05/18/93
13	P-12 @ 9'	13	GROUND WA	22557	05/18/93
14	P-12 @ 23'	14	GROUND WA	22558	05/18/93
15	P-13 @ 8'	15	GROUND WA	22559	05/18/93

COMMENTS: O Possible Hits Be Careful !

DEPARTMENTS: WET CHEMISTRY _____ ; METALS _____ ; ORGANICS _____ ; BIOLOGY _____

QC REQUIRED: _____YES; _____NO.

REPORT REQUIRED:

ENVIROLAB

Environmental Certification
HRS #E83079

ENVIROLAB
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Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22653
Date Sampled: 05/18/93
Client Sample Number: 1
Sample Description: P-15 @ 11'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	BENZENE	UG/L	3.8	RM	05/21/93	
624	BROMOFORM	UG/L	<1.0	RM	05/21/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROBENZENE	UG/L	2.0	RM	05/21/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

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Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22653
Date Sampled: 05/18/93
Client Sample Number: 1
Sample Description: P-15 @ 11'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22654
Date Sampled: 05/18/93
Client Sample Number: 2
Sample Description: P-15 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	BENZENE	UG/L	5.6	RM	05/21/93	
624	BROMOFORM	UG/L	<1.0	RM	05/21/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	

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Environmental Certification
HRS #E83079

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Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22654
Date Sampled: 05/18/93
Client Sample Number: 2
Sample Description: P-15 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	7.0	RM	05/21/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22655
Date Sampled: 05/18/93
Client Sample Number: 3
Sample Description: P-14 @ 23'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	BENZENE	UG/L	3.3	RM	05/21/93	
624	BROMOFORM	UG/L	<1.0	RM	05/21/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	

ENVIROLAB

Environmental Certification
HRS #E83079

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Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22655
Date Sampled: 05/18/93
Client Sample Number: 3
Sample Description: P-14 @ 23'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROBENZENE	UG/L	3.2	RM	05/21/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22656
Date Sampled: 05/19/93
Client Sample Number: 4
Sample Description: P-18 @ 8.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	

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Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22656
Date Sampled: 05/19/93
Client Sample Number: 4
Sample Description: P-18 @ 8.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	BENZENE	UG/L	<1.0	RM	05/21/93	
624	BROMOFORM	UG/L	<1.0	RM	05/21/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

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Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22656
Date Sampled: 05/19/93
Client Sample Number: 4
Sample Description: P-18 @ 8.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22657
Date Sampled: 05/19/93
Client Sample Number: 5
Sample Description: P-18 @ 23'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	BENZENE	UG/L	<1.0	RM	05/21/93	
624	BROMOFORM	UG/L	<1.0	RM	05/21/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	

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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22657
Date Sampled: 05/19/93
Client Sample Number: 5
Sample Description: P-18 @ 23'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22658
Date Sampled: 05/19/93
Client Sample Number: 6
Sample Description: P-19 @ 48'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	BENZENE	UG/L	<1.0	RM	05/21/93	
624	BROMOFORM	UG/L	<1.0	RM	05/21/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	

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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22658
Date Sampled: 05/19/93
Client Sample Number: 6
Sample Description: P-19 @ 48'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22659
Date Sampled: 05/19/93
Client Sample Number: 7
Sample Description: P-20 @ 10'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	

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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22659
Date Sampled: 05/19/93
Client Sample Number: 7
Sample Description: P-20 @ 10'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	BENZENE	UG/L	<1.0	RM	05/21/93	
624	BROMOFORM	UG/L	<1.0	RM	05/21/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22659
Date Sampled: 05/19/93
Client Sample Number: 7
Sample Description: P-20 @ 10'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22660
Date Sampled: 05/19/93
Client Sample Number: 8
Sample Description: P-20 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	BENZENE	UG/L	<1.0	RM	05/21/93	
624	BROMOFORM	UG/L	<1.0	RM	05/21/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	

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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22660
Date Sampled: 05/19/93
Client Sample Number: 8
Sample Description: P-20 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22661
Date Sampled: 05/19/93
Client Sample Number: 9
Sample Description: P-21 @ 10'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	BENZENE	UG/L	<1.0	RM	05/21/93	
624	BROMOFORM	UG/L	<1.0	RM	05/21/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	

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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22661
Date Sampled: 05/19/93
Client Sample Number: 9
Sample Description: P-21 @ 10'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22662
Date Sampled: 05/19/93
Client Sample Number: 10
Sample Description: P-21 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	

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Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22662
Date Sampled: 05/19/93
Client Sample Number: 10
Sample Description: P-21 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/21/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	BENZENE	UG/L	<1.0	RM	05/21/93	
624	BROMOFORM	UG/L	<1.0	RM	05/21/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/21/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	TOLUENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/21/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/21/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/21/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/21/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/21/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/21/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/21/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/21/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/21/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/21/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/21/93	

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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22662
Date Sampled: 05/19/93
Client Sample Number: 10
Sample Description: P-21 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22663
Date Sampled: 05/20/93
Client Sample Number: 11
Sample Description: P-22 @ 10'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	BENZENE	UG/L	<1.0	RM	05/22/93	
624	BROMOFORM	UG/L	<1.0	RM	05/22/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	TOLUENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	

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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22663
Date Sampled: 05/20/93
Client Sample Number: 11
Sample Description: P-22 @ 10'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/22/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22664
Date Sampled: 05/20/93
Client Sample Number: 12
Sample Description: P-22 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	BENZENE	UG/L	<1.0	RM	05/22/93	
624	BROMOFORM	UG/L	<1.0	RM	05/22/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	

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VOLUSIA COUNTY DPW
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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22664
Date Sampled: 05/20/93
Client Sample Number: 12
Sample Description: P-22 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	TOLUENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/22/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22665
Date Sampled: 05/19/93
Client Sample Number: 13
Sample Description: P-23 @ 47.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	

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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22665
Date Sampled: 05/19/93
Client Sample Number: 13
Sample Description: P-23 @ 47.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	BENZENE	UG/L	<1.0	RM	05/22/93	
624	BROMOFORM	UG/L	<1.0	RM	05/22/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	TOLUENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/22/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22665
Date Sampled: 05/19/93
Client Sample Number: 13
Sample Description: P-23 @ 47.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22666
Date Sampled: 05/20/93
Client Sample Number: 14
Sample Description: P-24 @ 47.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	BENZENE	UG/L	<1.0	RM	05/22/93	
624	BROMOFORM	UG/L	<1.0	RM	05/22/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	TOLUENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	

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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22666
Date Sampled: 05/20/93
Client Sample Number: 14
Sample Description: P-24 @ 47.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/22/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22667
Date Sampled: 05/20/93
Client Sample Number: 15
Sample Description: P-26 @ 47.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	BENZENE	UG/L	<1.0	RM	05/22/93	
624	BROMOFORM	UG/L	<1.0	RM	05/22/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	

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VOLUSIA COUNTY DPW
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Submission #: 9305000268
Date Received: 05/20/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22667
Date Sampled: 05/20/93
Client Sample Number: 15
Sample Description: P-26 @ 47.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	TOLUENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/22/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

Note: TOTAL XYLENES= <1.0 UG/L

QC ACCEPTABLE

MAY 28 1993

R.A. ELEFRITZ, SR.

R. Sullivan / F. Guzman
President / Vice-President

Ormond Bch, Fl Tel# (904) 6. 368
Fax# (904) 673-4001

ENVIROLAB

CHAIN OF CUSTODY

Client
Company Name: Volusia County DPW
Contact Name:
Address:
City: State: Zip:
Phone #: Fax #:

Proj #:
P.O #:
Project Name: BS Study
☐ Envirolab Cooler used ☐ Returned to Envirolab
☐ Client Cooler used ☐ Returned to Client

Sampled by EL __ Client __
Sampler (Signature): Grant D. Anderson
Sampler Name (Printed): Grant D. Anderson

LAB USE ONLY
Results Due (Date/Time):
Fax Results ☐ Yes ☐ No
Submission #: 9305-268

Sample No.	Sample Location/ Description	Date	Time	* Matrix	** Sampling Method	# of Containers	1/2 Gal Plastic	Qt. Plastic	Qt. Plastic HNO3	Qt. Plastic H2SO4	Qt. Plastic NaOH	Pt. Plastic	60 mL Plastic H2SO4	60 mL Plastic HCl	Qt. Glass	Qt. Glass H2SO4	Qt. Glass HCl	40 mL vial				Please List Analyses Below or Attach Required Parameters	Order #
	P-15 @ 11'	5/18	6:46	E	G													2				C24	27653
	P-15 @ 23.5'	5/18	7:06	E	G													2					27654
	P-14 @ 23'	5/18	6:10	E	G													2					27655
	P-18 @ 8.5'	5/19	11:10	E	G													2					27656
	P-18 @ 23'	5/19	11:20	E	G													2					27657
	P-19 @ 48'	5/19	3:25	E	G													3					27658
	P-20 @ 10'	5/19	5:35	E	G													2					27659
	P-20 @ 23.5'	5/19	5:55	E	G													2					27660
	P-21 @ 10'	5/19	4:45	E	G													2					27661

* A. Drinking Water B. Surface Water C. Solid D. Sludge E. Ground Water Reg. F. Industrial G. Ground Water Orl. H. Air I. Lab DI ** C= Composite G= Grab
B1. Fresh B2. Salt F1. INF. F2. EFF.

Relinquished by: (Signature)	Date	Time	Received by (Signature)	Relinquished by: (Signature)	Date	Time	Remarks:
Grant D. Anderson	5/20/93	1645	Kurt Ly				
Received by (Signature)	Relinquished by: (Signature)	Date	Time	Received by Laboratory (Signature)	Date	Time	
	Kurt Ly	5/20/93	1700	Brenda Dudley	5/20/93	1710	

ENVIROLAB

Environmental Certification
HRS #E83079

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1032 U.S. Highway One, North
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Drinking Water Certification
HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000282
Date Received: 05/21/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22700
Date Sampled: 05/21/93
Client Sample Number: 1
Sample Description: P.12 @ 47.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	BENZENE	UG/L	<1.0	RM	05/22/93	
624	BROMOFORM	UG/L	<1.0	RM	05/22/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	TOLUENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/22/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

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HRS #83160

VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000282
Date Received: 05/21/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22700
Date Sampled: 05/21/93
Client Sample Number: 1
Sample Description: P.12 @ 47.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22701
Date Sampled: 05/20/93
Client Sample Number: 2
Sample Description: P.27 @ 8.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	BENZENE	UG/L	26	RM	05/22/93	
624	BROMOFORM	UG/L	<1.0	RM	05/22/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	TOLUENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	

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VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000282
Date Received: 05/21/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22701
Date Sampled: 05/20/93
Client Sample Number: 2
Sample Description: P.27 @ 8.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	2.6	RM	05/22/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	ETHYLBENZENE	UG/L	1.1	RM	05/22/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22702
Date Sampled: 05/21/93
Client Sample Number: 3
Sample Description: P.28 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	BENZENE	UG/L	<1.0	RM	05/22/93	
624	BROMOFORM	UG/L	<1.0	RM	05/22/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	

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VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000282
Date Received: 05/21/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22702
Date Sampled: 05/21/93
Client Sample Number: 3
Sample Description: P.28 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	TOLUENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/22/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22703
Date Sampled: 05/21/93
Client Sample Number: 4
Sample Description: P.29 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	

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VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000282
Date Received: 05/21/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22703
Date Sampled: 05/21/93
Client Sample Number: 4
Sample Description: P.29 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	BENZENE	UG/L	<1.0	RM	05/22/93	
624	BROMOFORM	UG/L	<1.0	RM	05/22/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	TOLUENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/22/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

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VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000282
Date Received: 05/21/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22703
Date Sampled: 05/21/93
Client Sample Number: 4
Sample Description: P.29 @ 23.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared

Note: TOTAL XYLENES= <1.0 UG/L

Order Number: 22704
Date Sampled: 05/21/93
Client Sample Number: 5
Sample Description: P.22 @ 47.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	1,1,1-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2,2-TETRACHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROPROPANE	UG/L	<1.0	RM	05/22/93	
624	1,4-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	BENZENE	UG/L	<1.0	RM	05/22/93	
624	BROMOFORM	UG/L	<1.0	RM	05/22/93	
624	CARBON TETRACHLORIDE	UG/L	<1.0	RM	05/22/93	
624	CHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	CHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	DIBROMOCHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	METHYLENE CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	TOLUENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1,2-TRICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,1-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	1,2-DICHLOROETHANE	UG/L	<1.0	RM	05/22/93	
624	1,3-DICHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	2-CHLOROETHYLVINYL ETHER	UG/L	<20	RM	05/22/93	
624	BROMODICHLOROMETHANE	UG/L	<1.0	RM	05/22/93	
624	BROMOMETHANE	UG/L	<1.0	RM	05/22/93	

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VOLUSIA COUNTY DPW
1990 TOMOKA FARMS RD.
DAYTONA,FL 32114
ATT:SUSAN GAZE

Submission #: 9305000282
Date Received: 05/21/93
Date Reported: 05/27/93

Client PO Number:
Project Number:
Project: B-5 STUDY

Order Number: 22704
Date Sampled: 05/21/93
Client Sample Number: 5
Sample Description: P.22 @ 47.5'

Method	Component	Units	Result	Analyst	Date Analyzed	Date Prepared
624	CHLOROBENZENE	UG/L	<1.0	RM	05/22/93	
624	CHLOROFORM	UG/L	<1.0	RM	05/22/93	
624	CIS-1,3-DICHLOROPROPENE	UG/L	<1.0	RM	05/22/93	
624	ETHYLBENZENE	UG/L	<1.0	RM	05/22/93	
624	TETRACHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRANS-1,2-DICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	TRICHLOROETHENE	UG/L	<1.0	RM	05/22/93	
624	VINYL CHLORIDE	UG/L	<1.0	RM	05/22/93	
624	DICHLORODIFLUOROMETHANE	UG/L	<1.0	RM	05/22/93	

Note: TOTAL XYLENES= <1.0 UG/L

QC ACCEPTABLE

MAY 28 1993

R.A. ELEFRITZ, SR.

R. Sullivan / F. Guzman
President / Vice-President

Ormond Bch, Fl Tel# (904) 6 68
Fax# (904) 673-4001

ENVIROLAB

CHAIN OF CUSTODY

Client
Company Name: V.C DPU
Contact Name: Suzan Gaze
Address:
City _____ State _____ Zip _____
Phone # _____ Fax # _____

Proj #

P.O.#

Project Name: B-5 Study

☐ Envirolab Cooler used ☐ Returned to Envirolab
☐ Client Cooler used ☐ Returned to Client

Sampled by EL __ Client __
Sampler(Signature): Grant D. Anderson
Sampler Name (Printed): Grant D. Anderson

LAB USE ONLY
Results Due (Date/Time)
Fax Results ☐ Yes ☐ No
Submission #

Sample No.	Sample Location/ Description	Date	Time	* Matrix	** Sampling Method	# of Containers	1/2 Gal Plastic	Qt. Plastic	Qt. Plastic HNO3	Qt. Plastic H2SO4	Qt. Plastic NaOH	Pt. Plastic	60 mL Plastic H2SO4	60 mL Plastic HCl	Qt. Glass	Qt. Glass H2SO4	Qt. Glass HCl	40 mL vial				Please List Analyses Below or Attach Required Parameters	Order #
1	P.23 @ 47.5'	5/21	9:50	E	G	3												3				624	
2	P.27 @ 8.5'	5/20	5:30p	E	G	2												2					
3	P.28 @ 23.5'	5/21	10:30	E	G	2												2					
4	P.29 @ 23.5'	5/21	11:35	E	G	2												2					
5	P.22 @ 47.5'	5/21	2:15p	E	G	3												3					

* A. Drinking Water B. Surface Water C. Solid D. Sludge E. Ground Water Reg. F. Industrial G. Ground Water Orl. H. Air I. Lab DI ** C= Composite G= Grab
B1. Fresh B2. Salt F1. INF. F2. EFF.

Relinquished by: (Signature)	Date	Time	Received by (Signature)	Relinquished by: (Signature)	Date	Time	Remarks:
Grant D. Anderson	5/21/93	3:15p					
Received by (Signature)	Relinquished by: (Signature)	Date	Time	Received by Laboratory (Signature)	Date	Time	
		5/21/93	1548	Paula Simmons	5/21/93	1600	