CDM Camp Dresser & McKee Inc.

consulting
engineering
construction
operations

Westshore Center
1715 North Westshore Boulevard, Suite 875
Tampa, Florida 33607
Tel: 813 281-2900 Fax: 813 288-8787

October 3, 2001

Mr. Kim B. Ford, P.E.
Solid Waste Section
Division of Waste Management
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619

Subject: West Pasco Class III Landfill, Permit Renewal Application
Responses to Request for Additional Information

Dear Mr. Ford:

We are in receipt of your Request for Additional Information Dated August15, 2001 as relates to the subject facility. The following responses are provided in support of all previously submitted information:

1. **62-701.320 (7) (c).** 1) Revisions to the Operations Plan to include a table of contents and list of all referenced figures; and 2) Deletion of references to "the approved closure plan". A closure plan has not been approved. This permit is limited to facility operation only.

   Response: Provided as Attachment 1 to this letter is a revised Landfill Operations Plan with the requested information.

2. **62-701.320 (7) (h).** Description of how this facility contributes to the County's recycling goals. The West Pasco Recycling Center is considered part of this facility covered by this permit application.

   Response: The only recycling activities conducted at the Class III Landfill are those related to the white goods drop-off area adjacent to the site. Discarded white goods are picked up on at least a weekly basis by a metals recovery dealer for eventual recycling. Currently, the County recycles approximately 2937 tons/year of white goods, which accounts for approximately 12% of the total Fe recycled in the County.

3. **62-701.320 (15).** Training plan to demonstrate compliance with the requirements for initial and continued training.

   Response: A Training Plan is included in the revised Operations Plan as Section 16. Please see the revised Operations Plan in Attachment 1.

4. **62-701.500 (2) (a).** Revision to the Operations Plan to identify the new Solid Waste Facility Manager.

Response: Revision has been made to the Operations Plan to identify the new Solid Waste Facility Manager. Please see revised Landfill Operations Plan in Attachment 1.

5. **62-701.500 (2) (j).** Description of procedures for maintaining and cleaning the leachate collection system.

Response: Staff from the County's Wastewater Lift Station Maintenance Program inspect the leachate collection holding tanks on a monthly basis. Staff test the alarms and manually operate the float switches to verify proper operation. In addition, the County will video inspect and record the leachate collection system every five years prior to permit renewal in accordance with the recently amended Rule 62-701.500 (8)(h), F.A.C.

6. **62-701.510.** A response to each of Mr. John Morris's comments and concerns expressed in his August 14,2001 memorandum, attached. You may call Mr. Morris at extension 336 to discuss your response to this item.

Response: Following Item No. 8 herein are responses to each of Mr. John Morris's comments and concerns expressed in his August 14,2001 memorandum.

7. **62-701.630** Proof of financial assurance. A copy of Pasco County's letter of confirmation from the Department's Tallahassee Solid Waste Section will be sufficient.

Response: Provided as Attachment 2 to this letter is a copy of the latest approval from the Department, dated 08/15/2000. Law Engineering is currently working on the 2001 Financial Assurance provisions with the Department.

8. **62-709.320** Authorization to operate the yard trash processing facility. A copy of Pasco County's letter of registration confirmation from the Department's Tallahassee Solid Waste Section will be sufficient.

Response: Provided as Attachment 3 to this letter is a copy of Pasco County's letter of registration confirmation from the Department's Tallahassee Solid Waste Section.

The following are the responses to Mr. John Morris's Hydrogeologic and Monitoring Review Comments Dated August 14, 2001.

GROUND WATER MONITORING PLAN EVAULATION (Rule 62-701.510(9)(b), F.A.C.)

Section 1.2 - Ground Water Monitoring Plan

1. The response provided by CDM to clarify the correct identification number for wells 2MW-3/3A and 4MW-3/3A appears to be incomplete. The indication that 2MW-3A is the correct designation is noted, however the response does not clarify

the correct identification number for well 4MW-3/3A. It is noted that the revised Figure 1 (Attachment 5) shows wells 2MW-3 and 4MW-3. Please submit a revised Figure 1 that is consistent with the correct well designations.

Response: The existing monitoring wells 2MW-3 and 4MW-3 should be designated as 2-MW-3A and 4MW-3A respectively. It was confirmed from the Pasco County groundwater monitoring data reports. Provided as Attachment 4 is a revised map showing all existing monitoring wells with correct designations.

Section 2.1 – Data Tabulation

2. The indicated revisions to the analytical results summary tables do not appear to be reflected in Tables 2-1 through 2-4 provided in Attachment 6. Please review the following items and provide revisions, as appropriate:
   a. Tables 2-2, 2-3, and 2-4 do no include the results for vinyl acetate, vinyl chloride, and xylenes.

   b. Table 2-1, Quarter 1, 1999 sampling event result for mercury of 0.004 mg/L was indicated to be 0.0004 mg/L by Pasco County.

   c. Table 2-1, Quarter 3, 1999 sampling event result for turbidity of 0 NTU was indicated to be 1.7 NTU by Pasco County.

   d. Table 2-1, Quarter 3, 1999 sampling event result for methyl chloride of 4.18 ug/L was indicated to be methylene chloride by Pasco County.

   e. Tables 2-1, 2-3, and 2-4, Quarter 3, 2000 sampling event results for turbidity of 0.01 NTU were omitted from the Pasco County report (not analyzed).

Response: Provided as Attachment 5 to this letter are revised Tables 2-1, 2-2, 2-3, and 2-4 with the requested information.

3. The response that the results of future ground water samples will be reported at detection levels that allow comparison with ground water standards is noted. **No additional information is requested.**

4. The revisions to Table 2-10 provided in Attachment 7 are noted. It is the department's intention to prepare the permit condition regarding leachate sampling frequency and analytical parameters to be consistent with the requirements of Rule 62-701.510(6)(c), F.A.C. (rule effective date May 27, 2001). **No Additional information is requested.**

Section 2.2 – Graphical Presentations

5. The revision to Figure 2-1 provided in Attachment 8 regarding the memory concentration reported for well 4MW-3A for the Quarter 1, 1999 sampling event is noted. **No additional information is required.**

Section 3.1 – Data Tabulation

6. The response provided regarding the ground water elevation reported for well 4MW-9 during Quarter 3, 2000 (25.3 or 35.3 feet) appears to be incomplete. The importance of reviewing all available data (including the field notes) to resolve the 10 feet difference in ground water elevation for this sampling event at well 4MW-9 cannot be overstated. As indicated on Figure 3-1, and elevation of 35.3 feet would represent the highest water level during the period from 3Q95 to 3Q00, and would also represent a significant change when compared with the adjacent monitor wells. In the event that it is confirmed that the correct ground water elevation for this date was 35.3 feet, please provide a discussion of possible reasons for this localized ground water mounding and provide a revised ground water elevation contour map for 3Q00.

Response: It is our interpretation of the existing data that the correct value should be 25.3'. There is no indication of groundwater mounding, and, elevation data collected subsequent to the quarter in question remain consistent.

7. The revision to Table 3-1 is noted, however the comment was intended to request that the actual elevation of the bottom of existing well 4MW-7 be calculated and inserted into the table to further characterize the relationship between well construction and ground water occurrence at this location. Please modify Table 3-2 to include the elevations of the top and bottom of the well screen/open hole interval for each well. Please include the calculated elevation of the bottom of well 4MW-7 in Table 3-2 that reflects the well depth measurement of 28 feet as indicated in Attachment 11.

Response: Provided as Attachment 6 to this letter is a modified Table 3-2 with the requested information. It includes the elevations of the top and bottom of the well screen/open hole interval for each well and also the calculated elevation of the bottom of well 4MW-7 in Table 3-2 that reflects the well depth measurement of 28 feet.

Section 3.2 – Well Hydrographs

8. Please revise Figure 3-1 to reflect Comment No. 6, above, as appropriate.

Response: Provided as Attachment 7 is a revised Figure 3-1.

Section 3.3 – Summary/Investigations

9. It is agreed that currently available data is not sufficient to characterize the direction of ground water flow in the vicinity of the Class III Landfill. Rather than requiring further characterization of ground water flow prior to issuance, it is the Department's intention to include a permit condition that requires the repair/replacement of existing well 4MW-7 and the collection of supplemental ground water elevation data at the Class III landfill on a monthly frequency for one year to characterize seasonal fluctuations. This permit condition shall also require the submittal of an evaluation of the direction/rate of ground water flow in the vicinity of the Class III landfill and the adequacy of the existing monitor wells. Please note that a permit modification shall be required if the monitoring program requires changes to reflect site conditions.

Response: The Department's intention is acknowledged.

10. The Department does not object to the use of the hydraulic conductivity values obtained from slug tests at the adjacent Class I disposal areas in the calculation of ground water velocity at the Class III facility. However, this calculation must include the seasonal range of hydraulic gradients that is representative of the Class III facility. It is the Department's intention that the calculation of ground water velocity be included in the permit condition described in Item 9, above.

Response: The Department's intention is acknowledged.

Section 4.1 – Sampling Locations

11. The proposed work plan to repair or replace well 4MW-7 submitted as Attachment 11 (QORE, Inc. dated July 9, 2001) appears to be incomplete. Please revise this work plan to include the proposed elevation of the well screen and provide the requested justification for the screen interval to meet the requirements of Rule 62-701.510(3)(d), F.A.C. Please include the information provided in the response to item No. 7 above, regarding the open hole interval elevations and ground water elevations recorded at well 4MW-7 when justifying the proposed screen elevations and screen length. Please note that the Department intends to maintain the well identification number in the event that the well can be repaired, but a new identification number shall be required if a replacement well is needed.

Response: Qore. Inc. will be addressing the Department's comment under separate cover.

12. The response that well 4MW-7 has been dry as a result of drawdown associated with operation of the production well that supplies water to the cooling towers appears to be incomplete. The response does not address the information provided in Attachment 11 (QORE, Inc., dated July 9, 2001) that indicated well 4MW-7 has collapsed from an original total depth of 50 feet below land surface to a measured depth of 28 feet below land surface. The response also appears to be inconsistent

with the general ground water flow to the northwest that is reported for the nearby Class I disposal areas. It is the Department's intention that the evaluation of the adequacy of the designated background and downgradient monitor wells be included in the permit condition described in item No. 9, above.

Response: The Department's intention is acknowledged.

Section 4.2 – Sampling Frequency

13. Please refer to item No. 10, above, regarding the calculation of ground water velocity. It is Department's intention that the calculation of ground water velocity for the Class III landfill be included in the permit condition described in item No. 9, above.

Response: The Department's intention is acknowledged.

GAS MIGRATION AND ENGINEERING EVALUATION (Rule 62-701.400(10), F.A.C.)

Section 1.0 – Introduction

14. The revisions to the Operations Plan to include quarterly gas monitoring at existing surficial aquifer wells 2MW-7, 2MW-8, and 2MW-10 (Attachment 2) is noted. **No Additional information is requested.**

Very truly yours,

CAMP DRESSER & McKEE INC.

Jason M. Gorrie, P.E.

c: John Power, Pasco County

Attachment 1

Attachment 2

Department of Environmental Protection

Jeb Bush
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

David B. Struhs
Secretary

August 15, 2000

Robert J. Sigmond
Utilities Fiscal Services/
Special Projects Dept.
Public Works / Util. Bldg.
7530 Little Road, Suite 204
New Port Richey, FL 34654

Post-it® Fax Note 7671	Date 4/9	# of pages ▶ 6
To Jason Gorrie	From Vincent Mannella	
Co./Dept. CDM	Co. Pasco County	
Phone # 1-813-281-2900	Phone # 856-0119	
Fax # 1-813-288-8187	Fax # 861-3099	

RE: Financial Assurance - 2000
West Pasco Class III Landfill
Permit No. SO51-267334 Pasco County
GMS - 4051M30035

Dear Mr. Sigmond:

This letter is to acknowledge receipt of the revised cost estimates dated August 1, 2000 (received August 3, 2000), for closing and long-term care of the West Pasco Class III Landfill. The following cost estimates are **APPROVED for 2000**. The next annual adjustment (revised or inflation-adjusted estimates) is due no later than September 1, 2001.

Closing	Long-Term Care
$1,526,660.56	$92,380.37 x 30 years = $2,771,411.10

A copy of these estimates will be forwarded to Mr. Fred Wick, Solid Waste Section, FDEP, 2600 Blair Stone Road, Tallahassee, Florida 32399-2407. Please work with him directly to assess the facility's compliance with the funding mechanism requirements of Rule 62-701.630, F.A.C. If you have any questions, you may contact me at (813) 744-6100 ext. 375.

Sincerely,

Stephanie Petro

Stephanie Petro
Environmental Specialist 1
Solid Waste Section
Southwest District

cc: Douglas Bramlett, Pasco County, 7530 Little Road, S-204, New Port Richey, FL 34654
Vincent Mannella, P.E., Pasco County, 14230 Hays Road, Spring Hill, FL 34610
Fred Wick, FDEP, Tallahassee, w/attachment
Robert Butera, P.E., FDEP Tampa
Susan Pelz, P.E., FDEP Tampa

PASCO COUNTY, FLORIDA

DADE CITY (352) 521-4274
LAND O'LAKES (813) 996-7341
NEW PORT RICHEY (727) 847-8041
FAX (727) 847-8064

UTILITIES FISCAL SERVICES/
SPECIAL PROJECTS DEPT.
PUBLIC WORKS/UTIL.BLDG
7530 LITTLE RD., SUITE 204
NEW PORT RICHEY, FL 34654

August 1, 2000

Ms. Susan J. Pelz, E.I.
Solid Waste Section
Division of Waste Management
Florida Department of
Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33619

Re: Financial Assurance Cost Estimates
West Pasco Class III Landfill
Permit No. SO51-267334 Pasco County
CMS-4051M30035

Dear Ms. Pelz:

Pasco County is submitting inflation adjusted financial assurance cost estimates based on the Florida Department of Environmental Protection's approved costs dated September 8, 1999. The site is still open and for the purpose of calculation - this year will constitute the tenth year of a fifty year life. Inflation factor of 1.015 from F.D.E.P. - Tallahassee.

1999 F.D.E.P. approved estimated closure cost	$1,504,099.07	
	.015	inflation factor
	$ 22,561.49	
	$1,504,099.07	
	22,561.49	
2000 Estimated closure cost	$1,526,660.56	
1999 Approved estimated annual Long Term Care	$ 91,015.14	
	.015	inflation factor
	$ 1,365.23	
2000 Estimated annual Long Term Care Cost	$ 91,015.14	
	1,365.23	
	$ 92,380.37	

PASCO COUNTY, FLORIDA
INTER-OFFICE MEMORANDUM

TO: William Schnedler
Assistant Director of
Financial Services

DATE: 7/17/00 FILE: UTFSSP00-648

SUBJECT: West Pasco Class III
Financial Assurance
Permit No. S051-267334
GMC 4051M30035

FROM: Robert J. Sigmond
Utilities Fiscal Services/
Special Projects Director

REFERENCE:

Please find attached the following:

West Pasco Class III - 20 Acres
Hays Road, Spring Hill

Design is 575,000 Cy (per Camp Dresser & McKee). Built as a Construction/Demolition, Yardwaste Landfill) - receiving only Construction/ Demolition wastes as all yard trash goes to the Waste-To-Energy facility.

Inception to September 28, 1991		1,128.74 Tons
September 29, 1991 thru	September 29, 1992	992.26
September 30, 1992 thru	September 29, 1993	1,755.98
September 30, 1993 thru	September 29, 1994	1,409.08
September 30, 1994 thru	September 29, 1995	1,680.45
September 30, 1995 thru	September 29, 1996	2,546.04
September 30, 1996 thru	September 29, 1997	2,531.22
September 30, 1997 thru	June 30, 1998	3,879.27
July 01, 1998 thru	July 31, 1999	2,850.23
August 01, 1999 thru	June 30, 2000	2,412.45
		21,185.72 Tons

* Construction/Demolition waste 1,000 lbs. = 1 cubic yard.

Construction/Demolition cover at 90 Cubic yards per month for 2 years. One year at 90 cubic yards per week.

	24 months	@ 90 cy	=	2,160 cy
1992/93	52 weeks	@ 90 cy	=	4,680 cy
1993/94	52 weeks	@ 90 cy	=	4,680 cy
1994/95	52 weeks	@ 90 cy	=	4,680 cy
1995/96	52 weeks	@ 90 cy	=	4,680 cy
1996/97	52 weeks	@ 90 cy	=	4,680 cy
1997/98	41 weeks	@ 90 cy	=	3,690 cy
1998/99	55 weeks	@ 90 cy	=	4,950 cy
1999/00	48 weeks	@ 90 cy	=	4,320 cy
	Total Yards			38,520 cy

Total yards 42,371.40 cy of Construction/Demolition
38,520.00 cy of Cover
80,891.40 cy

Total percent of capacity utilized = 80,891.40/575,000 = 14.07%

Landfill design is for 50 year life.

Escrow

Estimated closure costs $1,526,660.56
Long Term Care 0.00 (Still open)
$1,526,660.56

$1,526,660.56
20.16%*
$ 307,774.77

* CE x (DE/DL) - E
1,526,660.56 x (121 months/600 months) - 0
121 months is calculated through September 30, 2000 for Escrow.

Accrual

Estimated closure costs $1,526,660.56
2,771,411.10 (92,380.37 x 30 years)
$4,298,071.66

$4,298,071.66
14.07%
$ 604,738.68

Escrow	Accrual
$307,774.77	$604,738.68

a.) Please increase the Escrow from $270,737.83 to $307,774.77

b.) Please increase the Accrual from $528,472.25 to $604,738.68

Should you have any questions, please do not hesitate to contact me at Extension 8646.

RJS/mh

cc: Ms. Sandra M. Maddi, Florida Department of Environmental Protection, Twin Towers Office Bldg., 2600 Blair Stone Road, Tallahassee, Fl 32301
Douglas S. Bramlett, Assistant County Administrator (Utilities Services Branch)
Michael F. Landi, Accountant II

PASCO COUNTY UTILITIES - SOLID WASTE
TONNAGE SUMMARY - WEST PASCO Class III
8/1/99 - 6/30/00

07/17/2000

MATERIAL	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	11 Month TOTAL
W/P - Class III (C & D)	317.52	157.42	195.08	178.63	160.22	204.91	243.79	250.72	220.67	236.40	247.09	2,412.45
W/P - Class III (Yard Waste)	560.25	493.74	659.55	613.43	465.62	495.74	656.82	884.74	815.53	680.08	799.51	7,125.01
Total Received	877.77	651.16	854.63	792.06	625.84	700.65	900.61	1,135.46	1,036.20	916.48	1,046.60	9,537.46

- STONED @ CLASS III
TAKEN TO WTE FACILITY

Note: Prior year reported 7/1/98 - 7/31/99 (13 Mos)

Attachment 3

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

June 1, 2001

Mr. Vincent Mannella, P.E.
Solid Waste Facility Manager
West Pasco County Class III
14230 Hays Road
Spring Hill, Florida 34610

Dear Mr. Mannella:

Your Application for Registration of a Yard Trash Processing Facility for West Pasco County Class III is complete. Your facility identification number is 051-01-YT. This registration is valid until **May 1, 2002.** The receipt number for the registration fee you paid is 351197.

You must comply with the following requirements in order to maintain qualification for the registration program:

1. Monthly records of incoming and outgoing material shall be kept on site or at another location as indicated on the registration form for at least three years.

2. An Annual Report for a Yard Trash Processing Facility, DEP Form 62-709.320 (7)(b), shall be submitted by April 1 of each year.

3. A registration renewal, DEP Form 62-709.320(7)(a), shall be submitted by April 1 of each year to renew this registration.

4. The facility shall be operated in accordance with Rules 62-709.320(3) and (4), Florida Administrative Code. A summary of these requirements is enclosed.

If you need further information, please contact Francine Joyal at the above address, Mail Station 4565, telephone 850/921/9977, or email Francine.Joyal@dep.state.fl.us.

Sincerely,

Francine Joyal

Francine Joyal
Environmental Specialist

Enclosure

cc: Bob Butera, Southwest District

Requirements for yard trash processing facilities (recycling and transfer stations) that qualifying for the permit exemption in Rule 62-709.320 are:

Rule / Referenced Rule	Provision
62-709.320(3)	Yard trash and processed yard trash at the facility shall:
62-709.320(3) / 62-701.300(1)(b)	Be stored in a manner or location that does not violate air quality or water quality standards.
62-709.320(3)(a)	Be 100 feet beyond any existing or approved off-site potable water well that existed before the facility was registered.
62-709.320(3)(b)	Be 200 feet beyond any existing or approved potable water well serving a community water system as defined in Rule 62-550.200(9), F.A.C., that existed before the facility was registered.
62-709.320(3)(c)	Be 50 feet beyond any natural or artificial body of water, including wetlands within the jurisdiction of the Department. This does not include ponds, ditches or other structures that are part of a permitted stormwater management system, or water bodies contained totally within facility boundaries that do not discharge from the site to surface waters.
62-709.320(3) / 62-701.300(2)(d)	Not be placed in a dewatered pit unless the pit is lined and permanent leachate containment and special design techniques are use to ensure the integrity of the liner.
62-709.320(3) / 62-701.300(2)(e)	Not be placed in an area subject to frequent and periodic flooding unless flood protection measures are in place.
62-709.320(3) / 62-701.300(2)(f)	Not be placed in any natural or artificial body of water, including ground water.
62-709.320(3) / 62-701.300(2)(h)	Not be placed on the right of way of any public highway, road, or alley.
62-709.320(3) / 62-701.300(3)	There shall be no open burning in the recycling area of the facility. Any controlled burning at the facility will comply with Department rules, including for air curtain incinerators.
62-709.320(4)(a)1	Facility has an effective barrier to prevent unauthorized entry and dumping into the facility site.
62-709.320(4)(a)2	Facility has dust control methods.
62-709.320(4)(a)3	Facility has fire protection and control provisions to deal with accidental burning of solid waste, including:
62-709.320(4)(a)3.a	A 20-foot perimeter, all weather access road.
62-709.320(4)(a)3.b	15-foot interior lanes.
62-709.320(4)(a)3.c	All unprocessed or processed yard trash shall be within 50 feet of access by motorized fire fighting equipment.
62-709.320(4)(b)	Facility will be operated in a manner to control disease vectors and objectionable odors.
62-709.320(4)(c)	Yard trash will be processed so that it will pass a 6-inch sieve. Any unprocessed yard trash will be removed from the facility within six months, or within the period required to accumulate 3,000 tons or 12,000 cubic yards which ever is greatest, except unprocessed and segregated logs with a diameter greater than six inches that will be processed within 12 months.
62-709.320(4)(d)	Processed yard trash will be removed or marketed within 18 months. Storage of processed material for a longer period may be allowed where the yard trash processing facility is authorized under another Department solid waste permit.
62-709.320(4)(e)	Only yard trash, bags used to collect yard trash, and clean wood are allowed.
62-709.320(4)(e)	Any material other than yard trash, bags used to collect yard trash, and clean wood will be containerized.
62-709.320(4)(e)	Putrescible material will be removed in 48 hours.
62-709.320(4)(e)	Upon discovery, any treated or untreated biomedical waste, hazardous waste, or liquids or non-liquids (such as contaminated soil, rags, or other debris) containing a polychlorinated biphenyl (PCB) concentration of 50 parts per million or greater will be immediately containerized and removed from the facility.

Attachment 4

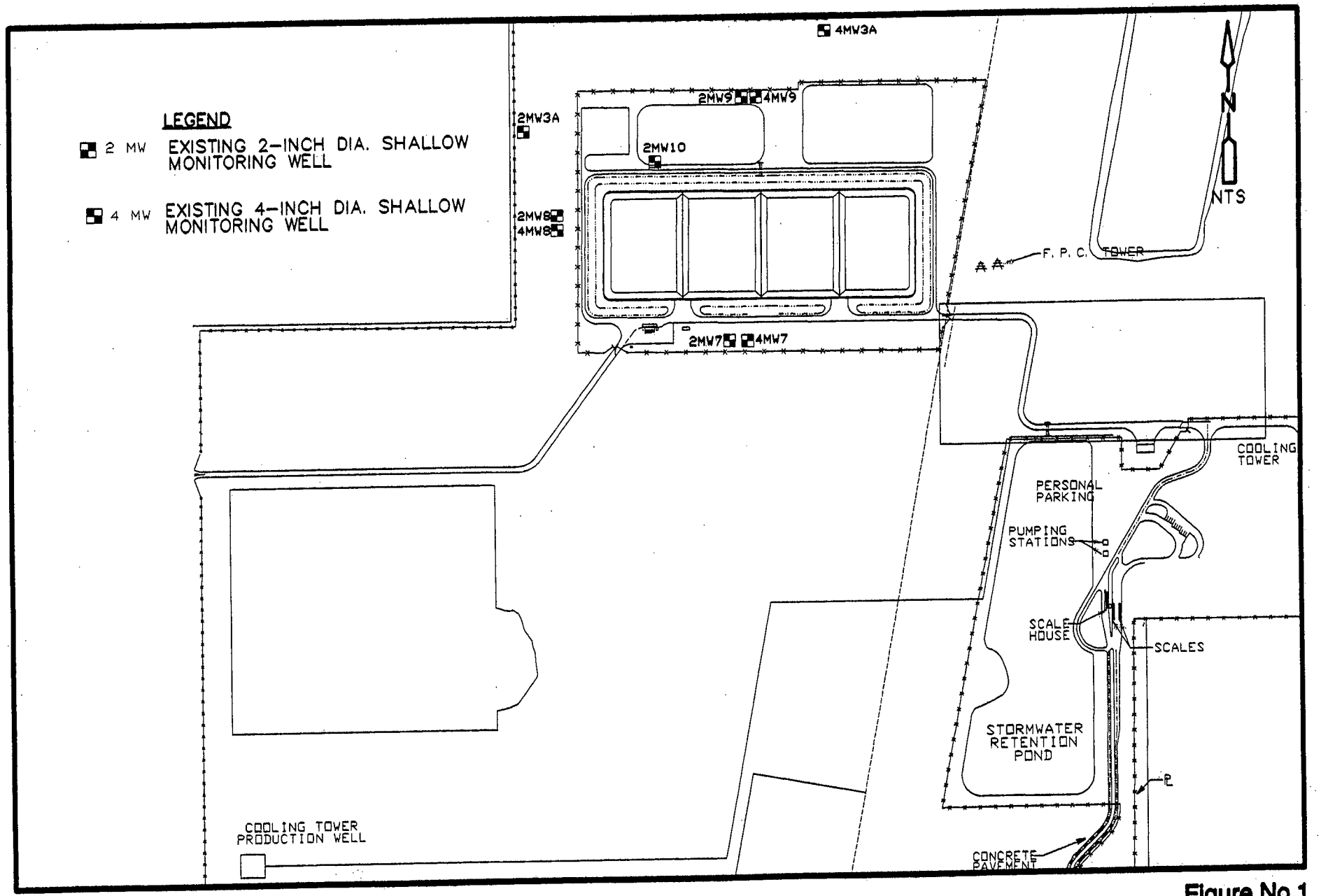


Figure No.1
West Pasco
Class III Landfill
Ground Water Monitoring Wells

CDM Camp Dresser & McKee

Attachment 5

Table 2-1
Monitoring Well 4MW-3a (background)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
conductivity	mhos/c	301	339	249	482	388	383	761	740	580	425	336	350
pH	s.u.	7.22	7.35	7.3	7.25	7	7.25	7.29	6.95	7.08	7.25	6.79	7.14
dissolved oxygen	mg/l	1.7	1.6	1.88			0.87				0.55	1.2	1
turbidity	NTU	1.5	1.17	0.944	3.46	0.9	1.18	0.28	0.3	0.37	0	0	0.01
total ammonia	mg/l		0.16	0.24	0.1	0.29	0.12	0.08	ND	ND	0.17	ND	ND
chlorides	mg/l	22.4	23.7	47.7	67.2	39.6	41.9	150	143	105	41	30.1	30
iron	mg/l	0.16	0.19	0.19	0.34	0.25	0.21	0.17	0.15	0.17	0.4	0.29	0.28
mercury	mg/l			ND	0.0005	0.0002	0.0007	0.0007	0.0009	0.0004	ND	ND	ND
sulfate	mg/l	ND	2.76	5.4	8	2.73	4.68	27.1	33.7	22.6	29.1	3.31	3.37
bicarbonate	mg/l	150	146	145	143	146	148	143	160	151	151	148	149
TOC	mg/l	9.05	14.6	23.2	1.11	2.57	2.19	2.12	3.05	ND	2.02	1.77	1.31
nitrate	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sodium	mg/l	6.02	6.25	10.9	17.2	9.26	10.7	43	38.5	29	12.7	8.71	7.58
TDS	mg/l	244	221	295	402	270	305	1020	480	445	282	230	252
antimony	mg/l			ND	ND	ND	ND	ND	ND	ND	0.00104	0.011	ND
arsenic	mg/l			ND	ND	ND	0.0029	ND	ND	0.0064	0.00168	0.00124	0.00129
barium	mg/l			ND	0.045	0.011	ND	0.035	0.027	0.019	0.0132	0.0118	0.00989
beryllium	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cadmium	mg/l			ND	ND	ND	ND	0.00017	ND	ND	ND	ND	ND
chromium	mg/l			0.0008	ND	ND	ND	0.09	ND	ND	0.00132	0.00032	ND
cobalt	mg/l			ND	ND	ND	ND	0.042	ND	ND	0.000121	0.000217	0.000164
copper	mg/l			ND	ND	ND	0.012	0.014	ND	ND	0.00164	0.00282	0.000906
lead	mg/l			ND	ND	ND	0.00056	ND	ND	ND	0.000188	0.00116	ND
nickel	mg/l			ND	ND	ND	0.047	0.079	ND	ND	0.00182	0.00194	0.00172
selenium	mg/l			ND	ND	ND	ND	0.0038	ND	ND	0.00305	0.000994	ND
silver	mg/l			ND	ND	ND	ND	ND	ND	ND	0.000338	0.000263	ND
thallium	mg/l			ND	ND	ND	ND	ND	ND	ND	0.000427	0.000202	ND
vanadium	mg/l			ND	ND	ND	ND	0.013	ND	0.00049	0.000811	0.000978	0.000509
zinc	mg/l			ND	ND	ND	ND	0.024	ND	ND	ND	0.0128	0.0344
acetone	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
acrylonitrile	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
benzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromochloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromodichloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromoform	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon disulfide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon tetrachloride	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-1
Monitoring Well 4MW-3a (background)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
chlorobenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroform	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bibromochloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloroprop	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromomethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-dichlorobenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-dichlorobenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trasns-1,4-Dichloro-2-bute	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylen	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride	ug/l			ND	ND	ND	ND	ND	ND	ND	4.18	ND	ND
Methylene bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroflouromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-1
Monitoring Well 4MW-3a (background)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	*3Q95*	*1Q96*	*3Q96*	*1Q97*	*3Q97*	*1Q98*	*3Q98*	*1Q99*	*3Q99*	*1Q00*	*3Q00*
Xylenes	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-2
Monitoring Well 4MW-7 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
conductivity	mhos/c	211	222	245	229	DRY	DRY	270	270	225	DRY	DRY	DRY
pH	s.u.	7.24	7.21	7.14	7.78	DRY	DRY	7.65	7.24	7.38	DRY	DRY	DRY
dissolved oxygen	mg/l	1.72	2.4	1.29		DRY	DRY				DRY	DRY	DRY
turbidity	NTU	0.3	0.61	0.425	0.3	DRY	DRY	0.56	0.3	0.18	DRY	DRY	DRY
total ammonia	mg/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
chlorides	mg/l	6.64	6.2	4.7	5.15	DRY	DRY	5.18	7.34	5.3	DRY	DRY	DRY
iron	mg/l	0.07	0.02	0.04	ND	DRY	DRY	0.03	ND	ND	DRY	DRY	DRY
mercury	mg/l			0.0008	0.0005	DRY	DRY	0.0009	0.0007	0.0003	DRY	DRY	DRY
sulfate	mg/l	1.44	3.55	1	18.7	DRY	DRY	2.5	ND	ND	DRY	DRY	DRY
bicarbonate	mg/l	114	111	131	110	DRY	DRY	136	152	123	DRY	DRY	DRY
TOC	mg/l	4.87	7.63	16.6	1.56	DRY	DRY	1.97	1.58	ND	DRY	DRY	DRY
nitrate	mg/l	ND	0.2	0.19	ND	DRY	DRY	0.21	ND	ND	DRY	DRY	DRY
sodium	mg/l	3.88	3.56	3.3	3.45	DRY	DRY	3.51	3.23	3.44	DRY	DRY	DRY
TDS	mg/l	141	136	204	149	DRY	DRY	268	180	159	DRY	DRY	DRY
antimony	mg/l		0.004	0.026	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
arsenic	mg/l		ND	ND	ND	DRY	DRY	ND	ND	0.0034	DRY	DRY	DRY
barium	mg/l		ND	ND	ND	DRY	DRY	ND	0.011	0.0048	DRY	DRY	DRY
beryllium	mg/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
cadmium	mg/l		ND	ND	ND	DRY	DRY	0.00009	ND	ND	DRY	DRY	DRY
chromium	mg/l		ND	ND	ND	DRY	DRY	0.024	ND	ND	DRY	DRY	DRY
cobalt	mg/l		ND	ND	ND	DRY	DRY	0.037	ND	ND	DRY	DRY	DRY
copper	mg/l		ND	ND	ND	DRY	DRY	0.003	ND	ND	DRY	DRY	DRY
lead	mg/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
nickel	mg/l		ND	ND	ND	DRY	DRY	0.064	ND	ND	DRY	DRY	DRY
selenium	mg/l		ND	ND	ND	DRY	DRY	0.0032	ND	ND	DRY	DRY	DRY
silver	mg/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
thallium	mg/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
vanadium	mg/l		ND	ND	ND	DRY	DRY	0.02	ND	0.0013	DRY	DRY	DRY
zinc	mg/l		0.004	ND	ND	DRY	DRY	0.027	ND	ND	DRY	DRY	DRY
acetone	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
acrylonitrile	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
benzene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
bromochloromethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
bromodichloromethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
bromoform	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
carbon disulfide	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
carbon tetrachloride	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY

Table 2-2
Monitoring Well 4MW-7 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
chlorobenzene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
chloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
chloroform	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
bibromochloromethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,2-Dibromo-3-chloroprop	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,2-Dibromomethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
o-dichlorobenzene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
p-dichlorobenzene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
trasns-1,4-Dichloro-2-bute	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1-Dichloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,2-Dichloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1-Dichloroethylene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
cis-1,2-Dichloroethylene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
trans-1,2-Dichloroethylen	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,2-Dichloropropane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
cis-1,3-Dichloropropene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
trans-1,3-Dichloropropene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Ethylbenzene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
2-Hexanone	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methyl bromide	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methyl chloride	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methylene bromide	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methylene chloride	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methyl ethyl ketone	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methyl iodide	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
4-Methyl-2-pentanone	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Styrene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1,1,2-Tetrachloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1,2,2-Tetrachloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Tetrachloroethylene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Toluene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1,1-Trichloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1,2-Trichloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Trichloroethylene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Trichloroflouromethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,2,3-Trichloropropane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Vinyl acetate	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Vinyl chloride	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY

Table 2-2
Monitoring Well 4MW-7 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	*3Q95*	*1Q96*	*3Q96*	*1Q97*	*3Q97*	*1Q98*	*3Q98*	*1Q99*	*3Q99*	*1Q00*	*3Q00*
Xylenes	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY

Table 2-3
Monitoring Well 4MW-8 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		3Q95	4Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
conductivity	umhos/c	248	271	262	282	279	261	285	275	260	287	274	290
pH	s.u.	7.25	7.27	7.12	7.54	7.21	7.02	7.54	7.13	7.22	7.28	7.12	7
dissolved oxygen	mg/l	1.1	1	0.58			1				0.7	1	1
turbidity	NTU	0.8	0.89	1.72	1.3	0.8	0.24	0.6	0.9	1.09	0.84	0	0.01
total ammonia	mg/l		ND	ND	ND	0.24	ND	ND	ND	ND	ND	ND	ND
chlorides	mg/l	6.64	6.3	5.6	6.2	5.5	5.31	6.82	7.31	7.89	9.69	8.16	7.33
iron	mg/l	ND	0.08	0.08	0.02	0.06	0.05	0.04	ND	ND	ND	0.06	0.07
mercury	mg/l			0.0009	ND	0.0003	0.0006	0.001	0.0007	0.0004	0.0006	ND	ND
sulfate	mg/l	1.6	ND	ND	15.4	1.36	1.96	1.26	ND	ND	ND	ND	ND
bicarbonate	mg/l	141	137	138	138	142	146	148	152	145	144	143	149
TOC	mg/l	5.96	11.3	19.8	2.06	1.18	0.86	1.38	0.77	ND	0.59	0.83	ND
nitrate	mg/l	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.27
sodium	mg/l	3.7	3.55	3.54	3.56	3.49	3.51	3.55	3.73	3.59	3.49	3.61	3.53
TDS	mg/l	186	151	181	176	161	181	192	176	207	196	184	208
antimony	mg/l		ND	0.027	ND	ND	ND	ND	ND	ND	0.000889	0.00188	ND
arsenic	mg/l		ND	ND	ND	ND	0.0009	ND	ND	0.004	0.000989	0.00095	0.000844
barium	mg/l		ND	ND	0.025	0.007	ND	0.019	0.011	0.0062	0.0101	0.0105	0.00678
beryllium	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cadmium	mg/l		ND	ND	ND	ND	ND	0.00051	ND	ND	0.000166	ND	ND
chromium	mg/l		ND	ND	ND	ND	0.061	0.028	ND	ND	0.00173	0.000191	0.000683
cobalt	mg/l		ND	ND	ND	ND	ND	0.057	ND	ND	0.000208	0.000128	0.000136
copper	mg/l		ND	ND	ND	ND	0.01	0.006	ND	ND	0.00656	0.00303	0.00117
lead	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	0.000372	0.000269	0.000191
nickel	mg/l		ND	ND	ND	ND	0.07	ND	0.006	ND	0.00134	0.00165	0.00139
selenium	mg/l		ND	ND	ND	ND	ND	0.0038	ND	ND	0.00118	0.000594	0.000989
silver	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	0.000241	ND	ND
thallium	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	0.000183	ND	ND
vanadium	mg/l		ND	ND	ND	ND	ND	ND	ND	0.0011	0.00142	0.00183	0.000917
zinc	mg/l		0.005	0.088	ND	ND	ND	ND	ND	ND	0.00266	ND	0.0045
acetone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
acrylonitrile	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
benzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromochloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromodichloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromoform	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-3
Monitoring Well 4MW-8 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		3Q95	4Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
carbon disulfide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon tetrachloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroform	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bibromochloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropa	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromomethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-dichlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-dichlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trasns-1,4-Dichloro-2-buten	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene bromide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	5.78	1.21	ND
Methyl ethyl ketone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-3
Monitoring Well 4MW-8 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		3Q95	4Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
Trichloroflouromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-4
Monitoring Well 4MW-9 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
conductivity	mhos/c	282	271	334	310	313	315	348	340	315	357	336	424
pH	s.u.	7.15	7.19	7.47	7.26	7.09	7.11	7.3	7	7.2	7.12	7	6.7
dissolved oxygen	mg/l	0.8	1	0.76		0.5					0.5	0.9	0.9
turbidity	NTU	0.7	0.32	0.563	0.3	0.3	0.15	0.11	0.55	0.1	0.08	0	0.01
total ammonia	mg/l		ND	ND	ND	0.08	ND	ND	ND	ND	0.03	ND	ND
chlorides	mg/l	9.69	16.3	9.7	6.6	10.8	12.1	9.9	18.1	19	20.4	18.5	3.8
iron	mg/l	ND	0.05	0.08	0.03	0.06	0.07	0.03	0.03	ND	ND	0.02	0.09
mercury	mg/l			0.0007	ND	0.0003	0.0006	0.001	0.0009	0.0003	0.0002	ND	ND
sulfate	mg/l	1.25	3.5	ND	ND	1.41	2.63	ND	2.12	1.89	1.77	1.7	2.41
bicarbonate	mg/l	160	137	159	146	153	158	179	170	152	161	167	207
TOC	mg/l	6.82	15	20.9	1.67	1.18	1.15	1.81	1.01	ND	0.99	0.89	2.32
nitrate	mg/l	ND	0.55	ND	ND	ND	ND	ND	ND	0.19	0.12	ND	1.75
sodium	mg/l	3.6	5.39	4.22	3.82	3.8	4.08	4.24	4.88	4.6	4.67	4.55	5.03
TDS	mg/l	209	226	232	185	199	217	295	232	229	212	233	306
antimony	mg/l		ND	0.018	ND	ND	0.0049	ND	ND	ND	ND	0.00034	ND
arsenic	mg/l		ND	ND	ND	ND	0.0043	ND	ND	0.004	0.000961	0.000889	0.00112
barium	mg/l		ND	ND	ND	0.007	ND	0.028	0.012	0.019	0.00894	0.009	0.0123
beryllium	mg/l		ND	ND	ND	ND	ND	0.0021	ND	ND	ND	ND	ND
cadmium	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chromium	mg/l		ND	ND	ND	ND	0.036	0.036	ND	ND	0.00323	0.000429	0.00102
cobalt	mg/l		ND	ND	ND	ND	ND	0.066	ND	ND	ND	0.000122	0.000211
copper	mg/l		ND	ND	ND	ND	0.035	0.006	ND	ND	0.00389	0.00137	0.00177
lead	mg/l		ND	ND	ND	ND	0.00025	ND	ND	ND	0.000822	0.000326	0.000114
nickel	mg/l		ND	ND	ND	ND	0.055	0.151	ND	ND	0.00152	0.00233	0.00221
selenium	mg/l		ND	ND	ND	ND	ND	0.005	ND	ND	0.00181	ND	0.000155
silver	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	0.000253	ND	ND
thallium	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	0.000163	ND	ND
vanadium	mg/l		ND	ND	ND	ND	ND	0.033	ND	ND	0.000477	0.000542	0.000526
zinc	mg/l		ND	0.083	ND	ND	ND	0.039	ND	ND	0.0182	ND	0.0101
acetone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
acrylonitrile	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
benzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromochloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromodichloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromoform	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon disulfide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon tetrachloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-4
Monitoring Well 4MW-9 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
chlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroform	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bibromochloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloroprop	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromomethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-dichlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-dichlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trasns-1,4-Dichloro-2-bute	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylen	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene bromide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	5169	ND	ND
Methyl ethyl ketone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroflouromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-4
Monitoring Well 4MW-9 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	*3Q95*	*1Q96*	*3Q96*	*1Q97*	*3Q97*	*1Q98*	*3Q98*	*1Q99*	*3Q99*	*1Q00*	*3Q00*
Xylenes	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Attachment 6

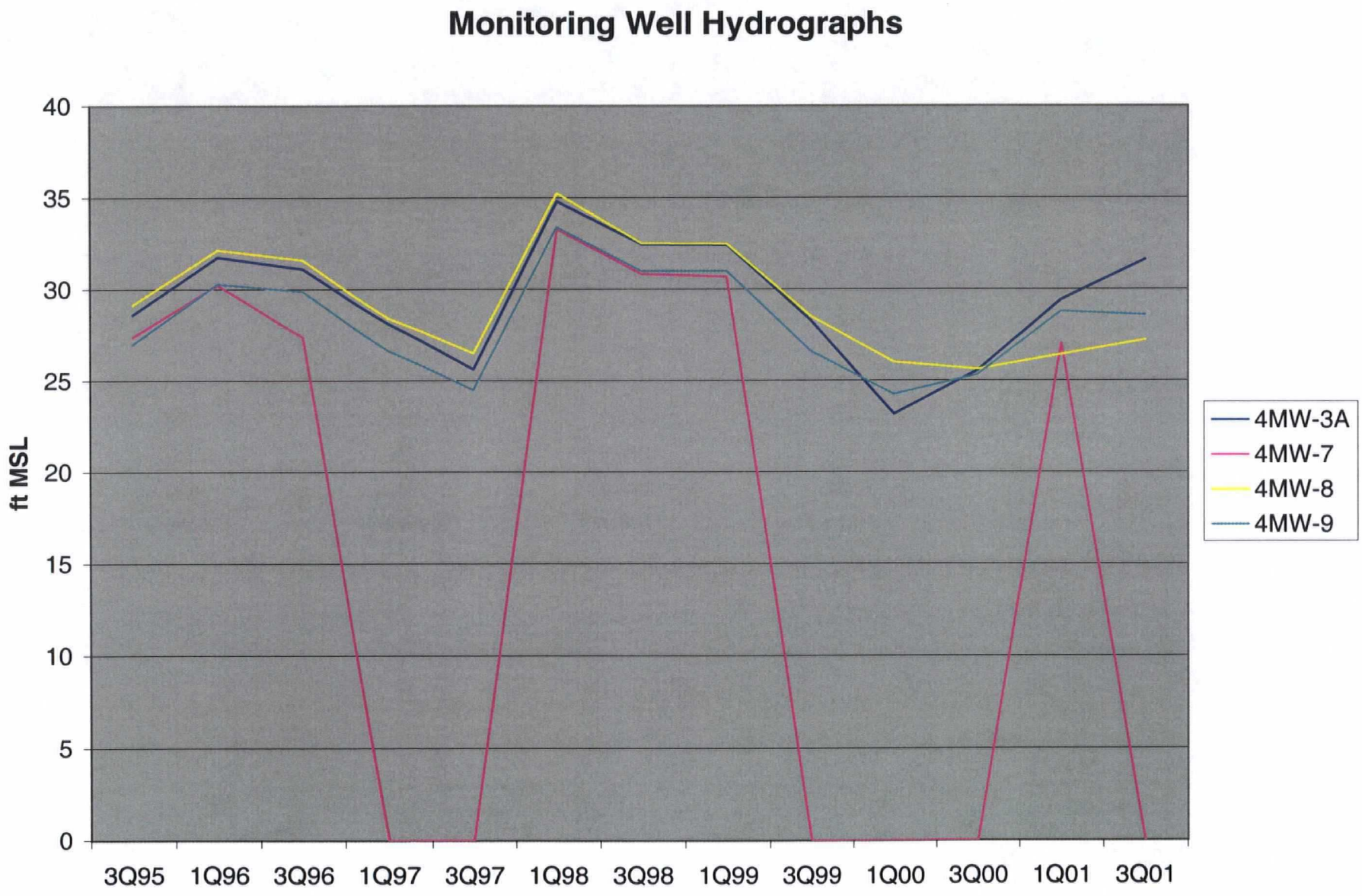
Table 3-2
Class III Landfill
Monitoring Well Construction Details

Monitoring Well	Length of Casing	Total Depth (Below Ground Surface)	Depth of Screen (Below Ground Surface)	Screen Length	Top of Casing MSL	Ground Surface Elevation (MSL)	Ground water level MSL		Top of the well screen/open bore MSL (feet)	Bottom of the well screen/open bore MSL (feet)
	(feet)	(feet)	(feet)	(Feet)	(feet)	(feet)	Minimum (feet)	Maximum (feet)		
4MW3A	Unable to Locate Construction Details						23.15	34.8		
4MW7	20	28	Open Bore	N/A	47.3	47.3	BEBW	33.28	27.3	19.3
4MW8	32	65	Open Bore	N/A	49.5	49.5	25.6	35.25	17.5	-15.5
4MW9	30	60	Open Bore	N/A	48.8	48.8	24.23	33.38	18.8	-11.2
2MW7	12	12	Top of Screen at 7 feet	5	48.3	48.3	BEBW	BEBW	41.3	36.3
2MW8	12	13	Top of Screen at 7 feet	5	49.5	49.5	BEBW	BEBW	42.5	37.5
2MW9	10	11	Top of Screen at 5 feet	5	48.8	48.8	BEBW	BEBW	43.8	38.8
2MW10	11	12	Top of Screen at 6 feet	5	49.8	49.8	BEBW	BEBW	43.8	38.8

BEBW -- Below Elevation of Bottom of Well.

Attachment 7

Figure 3-1



CDM Camp Dresser & McKee Inc.

X:\Pasco\Class III\Response Letter 2\Attachment 7\Water Level.XLS

CDM Camp Dresser & McKee Inc.

consulting engineering construction operations

Westshore Center
1715 North Westshore Boulevard, Suite 875
Tampa, Florida 33607
Tel: 813 281-2900 Fax: 813 288-8787

July 12, 2001

Mr. Kim B. Ford, P.E.
Florida Department of Environmental Protection
Southwest District Office
Solid Waste Section
3804 Coconut Palm Drive
Tampa, Florida 33619

Subject: West Pasco Class III Landfill, Permit Renewal Application
Responses to Request for Additional Information

Dear Mr. Ford:

We are in receipt of your Request for Additional Information dated March 21, 2001 as relates to the subject facility. The following responses are provided in support of all previously submitted information.

1. **Application Form Part B. 3., 23 and 24.** Revisions to application form are requested to verify the number of acres for disposal, to confirm that leachate is pumped directly to a WWTP (after collection in each lift station/ holding tank) , and to indicate the type of off-site treatment.

Response: The sections of the application specified above have been modified as follows: The total disposal area is 14 acres (3.5 used, 10.5 available); leachate is stored in tanks prior to being pumped directly to the Shady Hills Wastewater Treatment Facility, where the leachate undergoes oxidation and secondary treatment. The revisions to the application form are included as Attachment 1.

2. **Application Form Parts D. 7. , 8. , 9. , 11. and E. 3. , 4. , 5. , 6. , and 7.** Reference are requested for each item not resubmitted for confirmation of no substantial change. The Department will review the referenced site plans and supporting documents if the documents are available in Department files. Should a referenced document not be available, the Department's review and processing of this permit renewal may be delayed. The current operation permit #SO51-267334 specific condition #2 is a suggested source of references.

Response: Provided as Attachment 2 is a revised Landfill Operations Plan. This revised Plan addresses items D.7, D.8, E.5, and E.6. The information requested in items D.9, E.3, and E.4 can be found in the Permit/Construction Drawings and Record Drawings previously submitted to the Department on July 7, 1995. Item D.11 should be designated as N/A on the application form, as this disposal relates only to Class III material and does not affect the County's recycling goals (see Attachment 1). Mr. Bob Sigmund with Pasco

County will be directly providing updated financial assurance documents to the Department to address item E.7 of the application.

3. **62-701.320 (8) (a).** Proof of publication of notice of application, see attached notice.

Response: The Notice of Application was published in the Pasco Times on March 6, 2001. The Proof of Publication is provided as Attachment 3.

4. **Application Form Part K.** The following comments are based on a review of the Operations Plan received May 16, 1996. Revisions are requested for clarification to demonstrate compliance with the following subsections of 62-701.500 entitled Landfill Operation Requirements:

(1) – One trained operator, and one trained spotter at the working face.

(2) (c) – Inspection Procedures, number and location of spotters, and procedures for removal of prohibited wastes.

(6) (a) 2. – Procedures and information recorded as part of the load checking program.

(7) (c) – Working face slope no greater than 3 to 1.

(7) (i) – Litter collection procedures.

(9) – A gas monitoring program sufficient to detect the gas migration north and west of the active disposal unit, as required by 62-701.400 (10).

Response: Provided as Attachment 2 to this letter is a revised Landfill Operations Plan with the requested information.

5. **62-701.510.** Comprehensive updated groundwater monitoring plan and a response to each of Mr. John Morris's comments and concerns expressed in his March 20, 2001 memorandum, attached. You may call Mr. Morris at extension 336 to discuss your response to this item.

Response: Following Item No. 7 herein are responses to each of Mr. John Morris's comments and concerns expressed in his March 20, 2001 memorandum.

6. **62-701.630** Proof of financial assurance. A copy of Pasco County's letter of confirmation from the Department's Tallahassee Solid Waste Section will be sufficient.

Response: Provided as Attachment 4 to this letter is a Proof of Financial Assurance.

7. **62-709.320.** A description of the yard trash processing facility, including a drawing to show the perimeter access road and lines, to demonstrate compliance with these requirements is requested. Pasco County may amend its operations plan or apply for a separate registration.

Response: Pasco County is applying for a separate registration to comply with the requirements of rule 62-709.

The following are the responses to Mr. John Morris's Hydrogeologic and Monitoring Review Comments Dated March 20, 2001.

GROUND WATER MONITORING PLAN EVAULATION (Rule 62-701.510(9)(b), F.A.C.)

Section 1.2 - Ground Water Monitoring Plan

1. Please clarify the identification numbers for two of the existing wells. The CDM submittal references wells 2MW-3 and 4MW-3A, the Pasco County ground water monitoring data reports for the semi-annual sampling events reference wells 2MW-3A and 4MW-3A, and the ground water contour maps prepared by Law Engineering reference wells 2MW-3 and 4MW-3. Please provide a to-scale site map that provides locations for all the existing monitoring wells, the proposed replacement for monitor well 4MW-7, and the supply well for the resource recovery facility cooling tower.

Response: The existing monitoring well 2MW-3 should be designated as 2MW-3A. It was a typing mistake in earlier CDM submittals. It was confirmed from the Pasco County ground water monitoring data reports. Provided as Attachment 5 is map showing all existing monitoring wells and the supply well for the resource recovery facility cooling tower. Qore, Inc. will be contacting you directly regarding the location of the replacement (or repair) for monitoring well 4MW-7.

Section 2.1 – Data Tabulation

2. The Analytical results provided in Tables 2-1 through 2-4 appear to be inconsistent with the ground water monitoring data reports provided by Pasco County. Please review the following items and provide revisions, as appropriate:

   a. Tables 2-2, 2-3, and 2-4 do no include the results for vinyl acetate, vinyl chloride, and xylenes.

   b. Table 2-1, Quarter 1, 1999 sampling event result for mercury of 0.004 mg/L was indicated to be 0.0004 mg/L by Pasco County.

   c. Table 2-1, Quarter 3, 1999 sampling event result for turbidity of 0 NTU was indicated to be 1.7 NTU by Pasco County.

d. Table 2-1, Quarter 3, 1999 sampling event result for methyl chloride of 4.18 ug/L was indicated to be methylene chloride by Pasco County.

e. Tables 2-1, 2-3, and 2-4, Quarter 3, 2000 sampling event results for turbidity of 0.01 NTU were omitted from the Pasco County report (not analyzed).

Response: Provided as Attachment 6 to this letter are revised Tables 2-1, 2-2, 2-3, and 2-4 with the requested information.

3. Review of the ground water monitoring reports submitted by Pasco County indicate that the method detection limits reported for 1,2-dibromomethane (EDB) and 1,2-dibromo-3-chloropropene (DBCP) exceeded their respective ground water standards for the August 1999, February 2000, and July 2000 sampling events. Please coordinate with the analytical laboratory to use an appropriate methodology to allow comparison of the results for these parameters with ground water standards.

Response: We have informed the Pasco County Environmental Laboratory of the Department's concerns. They will insure that future samples are analyzed with the appropriate precision to determine compliance with groundwater standards.

4. It is indicated that Table 2-10 provides a summary of leachate analysis from Tanks 1 and 2 as required by the permit, however the results from an undated sampling event are included. Please revise Table 2-10 to provide the results of the leachate sampling events conducted since 1995. Although Specific Condition No. 31 of the current permit requires annual leachate sampling for a reduced list of parameters, Pasco County has been conducting semi-annual leachate sampling events which are consistent with the requirements of Rule 62-701.510(6)(b), F.A.C. Please note that it is Department's intention to revise the leachate sampling requirements in the new permit to be consistent with this rule.

Response: Provided as Attachment 7 to this letter is a revised Table 2-10 with the requested information. Pasco County will continue the leachate analysis on a semi-annual basis unless the Department determines that a different sampling frequency is necessary.

Section 2.2 – Graphical Presentations

5. Please provide a revised Figure 2-1 that reflects the mercury concentration reported for well 4MW-3A for the Quarter 1, 1999 sampling event, as referenced in comment No.2.b. above.

Response: Provided as Attachment 8 to this letter is a revised Figure 2-1 with the requested correction.

Section 3.1 – Data Tabulation

6. The ground water elevation provided in Table 3-1 for well 4MW-9 during Quarter 3, 2000 (35.3 feet) is consistent with the data report provided by Pasco County for well 4MW-9, but is inconsistent with the elevation reported on the ground water contour map prepared by Law Engineering (25.3 feet) for this sampling event. Please review the field notes and revise as appropriate.

Response: After reviewing the data reports provided by Pasco County, the ground water elevation was confirmed to be 35.3 feet for well 4MW-9 during Quarter 3, 2000. Please note that the field notes were not available for review.

7. Please revise Table 3-1 to indicate ground water occurred below the elevation of the bottom of well 4MW-7 for each sampling event where this well was dry. Please also provide a table that summarizes construction details of the existing monitor wells including elevations of: land surface; ground surface; top and bottom of well screen; and, maximum and minimum ground water levels.

Response: Provided as Attachment 9 to this letter is a revised Table 3-1 with the requested correction and a new Table 3-2 summarizing the construction details of existing monitor wells. Please note that we were unable to locate the driller's logs for 4MW-3A. Monitor Well Completion Reports for the existing wells are also included in Attachment 9.

Section 3.2 – Well Hydrographs

8. Please revise Figure 3-1 to reflect comment no.6, above, if appropriate.

Response: Please refer to our response to item 6 above.

Section 3.3 Summary/Interpretation

9. It is indicated that the contour maps provided to the Department show ground water flow to the south/southwest. Ground water flow directions shown on the contour maps enclosed with the ground water monitoring data reports provided by Pasco County for the four most recent semi-annual sampling events are summarized as follows: Quarter 1, 1999 to the northwest and south; Quarter 3, 1999 to the northwest and south; Quarter 1, 2000 – to the east; and, Quarter 3, 2000 – to the southeast. Please provide a more complete discussion of the direction of ground water flow in the vicinity of the west Pasco Class III landfill as required by Rule 62-701.510(9)(b)7, F.A.C.

Response: As previously noted, monitoring well 4MW-7 ground water level is below bottom of the well. Once monitoring well 4MW-7 is replaced (or repaired) a more complete picture of the ground water contours surrounding the Class III facility will be

available. It is difficult to interpret ground water flows without elevation data from the southern side of the site.

10. Please provide an evaluation of the ground water flow rates observed at the facility during the sampling events conducted from 1995 through 2000 as required by Rule 62-701.510(9)(b)7, F.A.C. Please develop a seasonal range for ground water flow rates using site specific values for horizontal hydraulic conductivity, maximum and minimum hydraulic gradients measured during the sampling events, and a range of effective porosity values from reference texts that represent the formation of the uppermost water bearing unit.

Response: Recently, CDM provided site specific ground water flow analysis for the adjacent ash disposal cells. A copy of this analysis is provided as Attachment 10. Given the immediate proximity of the Class III disposal area to the ash disposal cells, we request that the Department accept this data as representative of groundwater flow velocity in the vicinity of the Class III disposal cells.

Section 4.1 – Sampling Locations

11. The Department agrees with the recommendation to install a deeper well to replace 4MW-7. A site map drawn to scale that provides the location of this proposed replacement well was requested in comment no.1 above. Please provide the construction details including justification of the proposed elevation of the well screen to meet the requirements of Rule 62-701.510(3)(d), F.A.C.

Response: At the direction of Pasco County, Qore, Inc. will be contacting you directly regarding permitting and installation of the replacement well. Provided as Attachment 11 is a copy of Qore's proposed work plan.

12. Please provide an evaluation of the adequacy of the locations of the designated background and downgradient monitor wells as required by 62-701.510(9)(b)8, F.A.C., utilizing the direction of ground water flow as requested in comment no. 9 above.

Response: The fact that the monitoring well 4MW-7 is dry suggests that the ground water is being drawn down by the consumptive use well serving the resource recovery facility cooling towers. As such the background well should remain 4MW-3 and the downgradient well should be the replacement for 4MW-7.

Section 4.2 – Sampling Frequency

13. The technical basis for the statement that the semi-annual monitoring frequency should remain in effect was not provided. Please note that the range of site-specific ground water velocity values that reflect seasonal fluctuations (requested in comment

no.10 above) are required to determine the appropriateness of the sampling frequency. Please revise Section 4.2 to meet the requirements of 62-701.510(9)(b)8, F.A.C.

Response: Groundwater flow velocities at the site are conservatively estimated to be approximately 0.1 feet per day (see Attachment 10). As discussed in response to Item 10 above, this value was calculated from hydraulic conductivity tests on wells at the immediately adjacent ash disposal cells. We believe that this estimated velocity is sufficiently low to warrant continuation of the previously imposed semi-annual sampling frequency, however, Pasco County is not opposed to quarterly sampling should the Department deem such practice necessary.

GAS MIGRATION AND ENGINEERING EVALUATION (Rule 62-701.400(10), F.A.C.)

Section 1.0 – Introduction

14. It does not appear that the current landfill gas monitoring conducted at the scalehouse and at the landfill operator's office meets the requirements of Rule 62-701.400(10)(c), F.A.C. Existing surficial aquifer wells 2MW-7, 2MW-8 and 2MW-10 may be suitable for conducting subsurface landfill gas monitoring adjacent to Cells 1 and 2. Please evaluate the feasibility of using these shallow wells as landfill gas monitoring locations.

Response: Existing surficial aquifer wells 2MW-7, 2MW-8 and 2MW-10 will be used as landfill gas monitoring locations. Please refer to Attachment 2 for the revised Landfill Operations Plan.

Very truly yours,

CAMP DRESSER & McKEE INC.

Jason M. Gorrie, P.E.

c. Doug Brammlett, P.E., Pasco County

Attachment 1

B. DISPOSAL FACILITY GENERAL INFORMATION

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

This application is for the renewal of an existing operating permit for the facility. No changes in the operation of the facility are requested or proposed.

2. Facility site supervisor: Mr. Vince Mannella, P.E.

Title: Solid Waste Facility Manager Telephone: (727) 856-0119

3. Disposal area: Total 14 acres; Used 3.5 acres; Available 10.5 acres

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

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

6. Charge for waste received: _____ $/yds^3 50 $/ton

7. Surrounding land use, zoning:

Residential	[✔]	Industrial	[✔]
Agricultural	[ ]	None	[ ]
Commercial	[ ]	Other	[ ] _____

8. Types of waste received:

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

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

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

11. Spotters: Yes [✔] No [ ] Number of spotters used: 1

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

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

14. Days of operation: Monday through Saturday

15. Hours of operation: 7:00 AM through 4:30 PM

16. Days Working Face covered: weekly

17. Elevation of water table: 32 Ft. NGVD

18. Number of monitoring wells: 7

19. Number of surface monitoring points: 0

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

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

21. Landfill Unit - liner type:

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

22. Leachate collection method:

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

23. Leachate storage method:

Tanks	[✔]	Surface impoundments	[ ]
Other	[ ]		

24. Leachate treatment method:

Oxidation	[✔]	Chemical treatment	[ ]
Secondary	[✔]	Settling	[ ]
Advanced	[ ]	None	[ ]
Other	[ ]	treatment provided at WWTP	

Attachment 2

Attachment 3

991051515

PASCO TIMES

An Edition of the St. Petersburg Times

Published Daily
Port Richey, Pasco County, Florida

STATE OF FLORIDA
COUNTY OF PASCO:

Before the undersigned authority personally appeared Debra Hoover who on oath says that she is Legal Clerk of the Pasco Times a daily newspaper published at Port Richey, in Pasco County, Florida: that the attached copy of advertisement, being a Legal Notice in the matter of RE: Notice of Application

in the Court was published in said newspaper in the issues of March 6, 2001.

Affiant further says the said Pasco Times is a newspaper published at Port Richey, in said Pasco County, Florida, and that the said newspaper has heretofore been continuously published in said Pasco County, Florida, each day and has been entered as second class mail matter at the post office in Port Richey in said Pasco County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, firm, or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Debra Hoover
Signature of Affiant

Sworn to and subscribed before me this 6th day of March, 2001.

Kimberly L Cronshaw
MY COMMISSION # CC815950 EXPIRES
June 26, 2003
BONDED THRU TROY FAIN INSURANCE, INC.

Kimberly L. Cronshaw
Signature of Notary Public

Personally known X or produced identification ____

Type of identification produced ____

State of Florida
Department of
Environmental Protection
Notice of Application

The Department announces receipt of an application for permit from Pasco County for an operation permit renewal to continue to operate the existing Class III landfill, subject to Department rules, located at 14230 Hays Road, 3 miles north of State Road 52 in Spring Hill, in Pasco County, Florida.

This application is being processed and is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the Department of Environmental Protection, Southwest District Office, 3804 Coconut Palm Drive, Tampa, Florida 33619-1352.
(991051515) 3/06/01

Attachment 4

Department of Environmental Protection

Jeb Bush
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

David B. Struhs
Secretary

August 15, 2000

Robert J. Sigmond
Utilities Fiscal Services/
Special Projects Dept.
Public Works / Util. Bldg.
7530 Little Road, Suite 204
New Port Richey, FL 34654

Post-it® Fax Note 7671	Date 4/9	# of pages ▶ 6
To Jason Gorrie	From Vincent Mannella	
Co./Dept. CDM	Co. Pasco County	
Phone # 1-813-281-2700	Phone # 856-0119	
Fax # 1-813-258-8787	Fax # 861-3099	

RE: Financial Assurance - 2000
West Pasco Class III Landfill
Permit No. SO51-267334 Pasco County
GMS - 4051M30035

Dear Mr. Sigmond:

This letter is to acknowledge receipt of the revised cost estimates dated August 1, 2000 (received August 3, 2000), for closing and long-term care of the West Pasco Class III Landfill. The following cost estimates are **APPROVED for 2000**. The next annual adjustment (revised or inflation-adjusted estimates) is due no later than September 1, 2001.

Closing	Long-Term Care
$1,526,660.56	$92,380.37 x 30 years = $2,771,411.10

A copy of these estimates will be forwarded to Mr. Fred Wick, Solid Waste Section, FDEP, 2600 Blair Stone Road, Tallahassee, Florida 32399-2407. Please work with him directly to assess the facility's compliance with the funding mechanism requirements of Rule 62-701.630, F.A.C. If you have any questions, you may contact me at (813) 744-6100 ext. 375.

Sincerely,

Stephanie Petro

Stephanie Petro
Environmental Specialist 1
Solid Waste Section
Southwest District

cc: Douglas Bramlett, Pasco County, 7530 Little Road, S-204, New Port Richey, FL 34654
Vincent Mannella, P.E., Pasco County, 14230 Hays Road, Spring Hill, FL 34610
Fred Wick, FDEP, Tallahassee, w/attachment
Robert Butera, P.E., FDEP Tampa
Susan Pelz, P.E., FDEP Tampa

PASCO COUNTY, FLORIDA

DADE CITY (352) 521-4274
LAND O'LAKES (813) 996-7341
NEW PORT RICHEY (727) 847-8041
FAX (727) 847-8064

UTILITIES FISCAL SERVICES/
SPECIAL PROJECTS DEPT.
PUBLIC WORKS/UTIL.BLDG
7530 LITTLE RD., SUITE 204
NEW PORT RICHEY, FL 34654

August 1, 2000

Ms. Susan J. Pelz, E.I.
Solid Waste Section
Division of Waste Management
Florida Department of
Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33619

Re: Financial Assurance Cost Estimates
West Pasco Class III Landfill
Permit No. SO51-267334 Pasco County
CMS-4051M30035

Dear Ms. Pelz:

Pasco County is submitting inflation adjusted financial assurance cost estimates based on the Florida Department of Environmental Protection's approved costs dated September 8, 1999. The site is still open and for the purpose of calculation - this year will constitute the tenth year of a fifty year life. Inflation factor of 1.015 from F.D.E.P. - Tallahassee.

1999 F.D.E.P. approved estimated closure cost	$1,504,099.07	
	.015	inflation factor
	$ 22,561.49	
	$1,504,099.07	
	22,561.49	
2000 Estimated closure cost	$1,526,660.56	
1999 Approved estimated annual Long Term Care	$ 91,015.14	
	.015	inflation factor
	$ 1,365.23	
2000 Estimated annual Long Term Care Cost	$ 91,015.14	
	1,365.23	
	$ 92,380.37	

PASCO COUNTY, FLORIDA
INTER-OFFICE MEMORANDUM

TO: William Schnedler
Assistant Director of
Financial Services

DATE: 7/17/00 FILE: UTFSSP00-648

SUBJECT: West Pasco Class III
Financial Assurance
Permit No. S051-267334
GMC 4051M30035

FROM: Robert J. Sigmond
Utilities Fiscal Services/
Special Projects Director

REFERENCE:

Please find attached the following:

West Pasco Class III - 20 Acres
Hays Road, Spring Hill

Design is 575,000 Cy (per Camp Dresser & McKee). Built as a Construction/Demolition, Yardwaste Landfill) - receiving only Construction/ Demolition wastes as all yard trash goes to the Waste-To-Energy facility.

Inception to	September 28, 1991	1,128.74 Tons
September 29, 1991 thru	September 29, 1992	992.26
September 30, 1992 thru	September 29, 1993	1,755.98
September 30, 1993 thru	September 29, 1994	1,409.08
September 30, 1994 thru	September 29, 1995	1,680.45
September 30, 1995 thru	September 29, 1996	2,546.04
September 30, 1996 thru	September 29, 1997	2,531.22
September 30, 1997 thru	June 30, 1998	3,879.27
July 01, 1998 thru	July 31, 1999	2,850.23
August 01, 1999 thru	June 30, 2000	2,412.45
		21,185.72 Tons

* Construction/Demolition waste 1,000 lbs. = 1 cubic yard.

Construction/Demolition cover at 90 Cubic yards per month for 2 years. One year at 90 cubic yards per week.

	24 months	@ 90 cy	=	2,160 cy
1992/93	52 weeks	@ 90 cy	=	4,680 cy
1993/94	52 weeks	@ 90 cy	=	4,680 cy
1994/95	52 weeks	@ 90 cy	=	4,680 cy
1995/96	52 weeks	@ 90 cy	=	4,680 cy
1996/97	52 weeks	@ 90 cy	=	4,680 cy
1997/98	41 weeks	@ 90 cy	=	3,690 cy
1998/99	55 weeks	@ 90 cy	=	4,950 cy
1999/00	48 weeks	@ 90 cy	=	4,320 cy
	Total Yards			38,520 cy

Total yards 42,371.40 cy of Construction/Demolition
38,520.00 cy of Cover
80,891.40 cy

Total percent of capacity utilized = 80,891.40/575,000 = 14.07%

Landfill design is for 50 year life.

Escrow

Estimated closure costs	$1,526,660.56	
Long Term Care	0.00	(Still open)
	$1,526,660.56	
	$1,526,660.56	
	20.16%*	
	$ 307,774.77	

* CE x (DE/DL) - E
1,526,660.56 x (121 months/600 months) - 0
121 months is calculated through September 30, 2000 for Escrow.

Accrual

Estimated closure costs	$1,526,660.56	
	2,771,411.10	(92,380.37 x 30 years)
	$4,298,071.66	
	$4,298,071.66	
	14.07%	
	$ 604,738.68	

Escrow	Accrual
$307,774.77	$604,738.68

a.) Please increase the Escrow from $270,737.83 to $307,774.77

b.) Please increase the Accrual from $528,472.25 to $604,738.68

Should you have any questions, please do not hesitate to contact me at Extension 8646.

RJS/mh

cc: Ms. Sandra M. Maddi, Florida Department of Environmental Protection, Twin Towers Office Bldg., 2600 Blair Stone Road, Tallahassee, Fl 32301
Douglas S. Bramlett, Assistant County Administrator
(Utilities Services Branch)
Michael F. Landi, Accountant II

PASCO COUNTY UTILITIES - SOLID WASTE
TONNAGE SUMMARY - WEST PASCO Class III
8/1/99 - 6/30/00

07/17/2000

MATERIAL	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	11 Month TOTAL
W/P - Class III (C & D)	317.52	157.42	195.08	178.83	160.22	204.91	243.79	250.72	220.87	236.40	247.09	2,412.45
W/P - Class III (Yard Waste)	560.25	493.74	659.55	613.43	465.62	495.74	656.82	884.74	815.53	680.08	799.51	7,125.01
Total Received	877.77	651.16	854.63	792.06	625.84	700.65	900.61	1,135.46	1,036.20	916.48	1,046.60	9,537.46

STORED @ CLASS III
THEN TO WTE FACILITY

Note: Prior year reported 7/1/98 - 7/31/99 (13 Mos)

Attachment 5

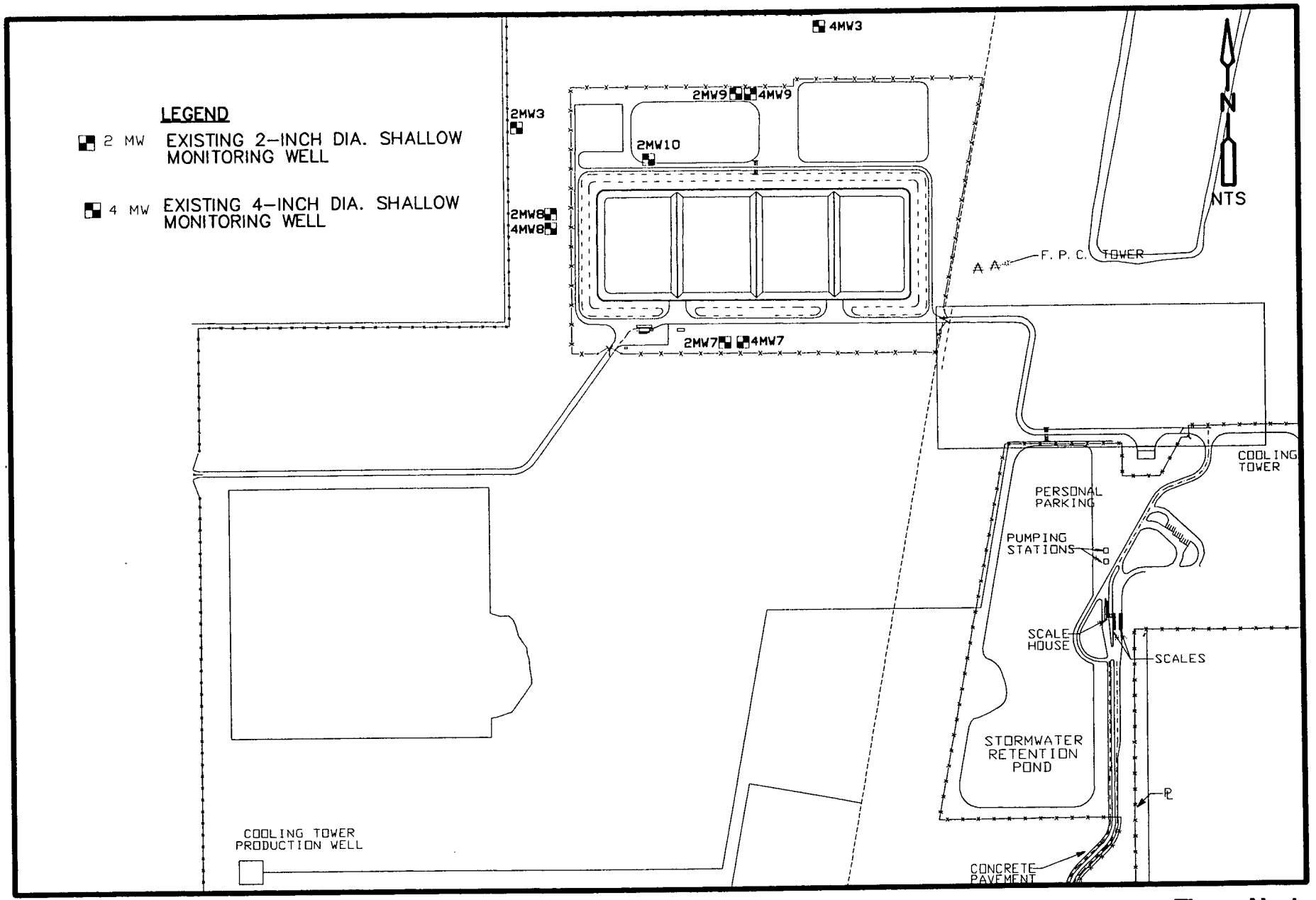


Figure No.1
West Pasco
Class III Landfill
Ground Water Monitoring Wells

CDM Camp Dresser & McKee

Attachment 6

Table 2-1
Monitoring Well 4MW-3a (background)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
conductivity	umhos/cm	301	339	249	482	388	383	761	740	580	425	336	350
pH	s.u.	7.22	7.35	7.3	7.25	7	7.25	7.29	6.95	7.08	7.25	6.79	7.14
dissolved oxygen	mg/l	1.7	1.6	1.88			0.87				0.55	1.2	1
turbidity	NTU	1.5	1.17	0.944	3.46	0.9	1.18	0.28	0.3	0.37	0	0	0.01
total ammonia	mg/l		0.16	0.24	0.1	0.29	0.12	0.08	ND	ND	0.17	ND	ND
chlorides	mg/l	22.4	23.7	47.7	67.2	39.6	41.9	150	143	105	41	30.1	30
iron	mg/l	0.16	0.19	0.19	0.34	0.25	0.21	0.17	0.15	0.17	0.4	0.29	0.28
mercury	mg/l			ND	0.0005	0.0002	0.0007	0.0007	0.0009	0.004	ND	ND	ND
sulfate	mg/l	ND	2.76	5.4	8	2.73	4.68	27.1	33.7	22.6	29.1	3.31	3.37
bicarbonate	mg/l	150	146	145	143	146	148	143	160	151	151	148	149
TOC	mg/l	9.05	14.6	23.2	1.11	2.57	2.19	2.12	3.05	ND	2.02	1.77	1.31
nitrate	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sodium	mg/l	6.02	6.25	10.9	17.2	9.26	10.7	43	38.5	29	12.7	8.71	7.58
TDS	mg/l	244	221	295	402	270	305	1020	480	445	282	230	252
antimony	mg/l			ND	ND	ND	ND	ND	ND	ND	0.00104	0.011	ND
arsenic	mg/l			ND	ND	ND	0.0029	ND	ND	0.0064	0.00168	0.00124	0.00129
barium	mg/l			ND	0.045	0.011	ND	0.035	0.027	0.019	0.0132	0.0118	0.00989
beryllium	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cadmium	mg/l			ND	ND	ND	ND	0.00017	ND	ND	ND	ND	ND
chromium	mg/l			0.0008	ND	ND	ND	0.09	ND	ND	0.00132	0.00032	ND
cobalt	mg/l			ND	ND	ND	ND	0.042	ND	ND	0.000121	0.000217	0.000164
copper	mg/l			ND	ND	ND	0.012	0.014	ND	ND	0.00164	0.00282	0.000906
lead	mg/l			ND	ND	ND	0.00056	ND	ND	ND	0.000188	0.00116	ND
nickel	mg/l			ND	ND	ND	0.047	0.079	ND	ND	0.00182	0.00194	0.00172
selenium	mg/l			ND	ND	ND	ND	0.0038	ND	ND	0.00305	0.000994	ND
silver	mg/l			ND	ND	ND	ND	ND	ND	ND	0.000338	0.000263	ND
thallium	mg/l			ND	ND	ND	ND	ND	ND	ND	0.000427	0.000202	ND
vanadium	mg/l			ND	ND	ND	ND	0.013	ND	0.00049	0.000811	0.000978	0.000509
zinc	mg/l			ND	ND	ND	ND	0.024	ND	ND	ND	0.0128	0.0344
acetone	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
acrylonitrile	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
benzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromochloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromodichloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromoform	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon disulfide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon tetrachloride	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chlorobenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroform	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-1
Monitoring Well 4MW-3a (background)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
bibromochloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromomethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-dichlorobenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-dichlorobenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trasns-1,4-Dichloro-2-butene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride	ug/l			ND	ND	ND	ND	ND	ND	ND	4.18	ND	ND
Methylene bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroflouromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-2
Monitoring Well 4MW-7 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
conductivity	umhos/cm	211	222	245	229	DRY	DRY	270	270	225	DRY	DRY	DRY
pH	s.u.	7.24	7.21	7.14	7.78	DRY	DRY	7.65	7.24	7.38	DRY	DRY	DRY
dissolved oxygen	mg/l	1.72	2.4	1.29		DRY	DRY				DRY	DRY	DRY
turbidity	NTU	0.3	0.61	0.425	0.3	DRY	DRY	0.56	0.3	0.18	DRY	DRY	DRY
total ammonia	mg/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
chlorides	mg/l	6.64	6.2	4.7	5.15	DRY	DRY	5.18	7.34	5.3	DRY	DRY	DRY
iron	mg/l	0.07	0.02	0.04	ND	DRY	DRY	0.03	ND	ND	DRY	DRY	DRY
mercury	mg/l			0.0008	0.0005	DRY	DRY	0.0009	0.0007	0.0003	DRY	DRY	DRY
sulfate	mg/l	1.44	3.55	1	18.7	DRY	DRY	2.5	ND	ND	DRY	DRY	DRY
bicarbonate	mg/l	114	111	131	110	DRY	DRY	136	152	123	DRY	DRY	DRY
TOC	mg/l	4.87	7.63	16.6	1.56	DRY	DRY	1.97	1.58	ND	DRY	DRY	DRY
nitrate	mg/l	ND	0.2	0.19	ND	DRY	DRY	0.21	ND	ND	DRY	DRY	DRY
sodium	mg/l	3.88	3.56	3.3	3.45	DRY	DRY	3.51	3.23	3.44	DRY	DRY	DRY
TDS	mg/l	141	136	204	149	DRY	DRY	268	180	159	DRY	DRY	DRY
antimony	mg/l		0.004	0.026	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
arsenic	mg/l		ND	ND	ND	DRY	DRY	ND	ND	0.0034	DRY	DRY	DRY
barium	mg/l		ND	ND	ND	DRY	DRY	ND	0.011	0.0048	DRY	DRY	DRY
beryllium	mg/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
cadmium	mg/l		ND	ND	ND	DRY	DRY	0.00009	ND	ND	DRY	DRY	DRY
chromium	mg/l		ND	ND	ND	DRY	DRY	0.024	ND	ND	DRY	DRY	DRY
cobalt	mg/l		ND	ND	ND	DRY	DRY	0.037	ND	ND	DRY	DRY	DRY
copper	mg/l		ND	ND	ND	DRY	DRY	0.003	ND	ND	DRY	DRY	DRY
lead	mg/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
nickel	mg/l		ND	ND	ND	DRY	DRY	0.064	ND	ND	DRY	DRY	DRY
selenium	mg/l		ND	ND	ND	DRY	DRY	0.0032	ND	ND	DRY	DRY	DRY
silver	mg/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
thallium	mg/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
vanadium	mg/l		ND	ND	ND	DRY	DRY	0.02	ND	0.0013	DRY	DRY	DRY
zinc	mg/l		0.004	ND	ND	DRY	DRY	0.027	ND	ND	DRY	DRY	DRY
acetone	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
acrylonitrile	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
benzene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
bromochloromethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
bromodichloromethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
bromoform	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
carbon disulfide	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
carbon tetrachloride	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
chlorobenzene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
chloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
chloroform	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY

Table 2-2
Monitoring Well 4MW-7 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
bibromochloromethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,2-Dibromo-3-chloropropane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,2-Dibromomethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
o-dichlorobenzene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
p-dichlorobenzene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
trasns-1,4-Dichloro-2-butene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1-Dichloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,2-Dichloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1-Dichloroethylene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
cis-1,2-Dichloroethylene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
trans-1,2-Dichloroethylene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,2-Dichloropropane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
cis-1,3-Dichloropropene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
trans-1,3-Dichloropropene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Ethylbenzene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
2-Hexanone	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methyl bromide	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methyl chloride	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methylene bromide	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methylene chloride	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methyl ethyl ketone	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Methyl iodide	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
4-Methyl-2-pentanone	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Styrene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1,1,2-Tetrachloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1,2,2-Tetrachloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Tetrachloroethylene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Toluene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1,1-Trichloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,1,2-Trichloroethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Trichloroethylene	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
Trichloroflouromethane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY
1,2,3-Trichloropropane	ug/l		ND	ND	ND	DRY	DRY	ND	ND	ND	DRY	DRY	DRY

Table 2-3
Monitoring Well 4MW-8 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		3Q95	4Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
conductivity	umhos/cm	248	271	262	282	279	261	285	275	260	287	274	290
pH	s.u.	7.25	7.27	7.12	7.54	7.21	7.02	7.54	7.13	7.22	7.28	7.12	7
dissolved oxygen	mg/l	1.1	1	0.58			1				0.7	1	1
turbidity	NTU	0.8	0.89	1.72	1.3	0.8	0.24	0.6	0.9	1.09	0.84	0	0.01
total ammonia	mg/l		ND	ND	ND	0.24	ND	ND	ND	ND	ND	ND	ND
chlorides	mg/l	6.64	6.3	5.6	6.2	5.5	5.31	6.82	7.31	7.89	9.69	8.16	7.33
iron	mg/l	ND	0.08	0.08	0.02	0.06	0.05	0.04	ND	ND	ND	0.06	0.07
mercury	mg/l			0.0009	ND	0.0003	0.0006	0.001	0.0007	0.0004	0.0006	ND	ND
sulfate	mg/l	1.6	ND	ND	15.4	1.36	1.96	1.26	ND	ND	ND	ND	ND
bicarbonate	mg/l	141	137	138	138	142	146	148	152	145	144	143	149
TOC	mg/l	5.96	11.3	19.8	2.06	1.18	0.86	1.38	0.77	ND	0.59	0.83	ND
nitrate	mg/l	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.27
sodium	mg/l	3.7	3.55	3.54	3.56	3.49	3.51	3.55	3.73	3.59	3.49	3.61	3.53
TDS	mg/l	186	151	181	176	161	181	192	176	207	196	184	208
antimony	mg/l		ND	0.027	ND	ND	ND	ND	ND	ND	0.000889	0.00188	ND
arsenic	mg/l		ND	ND	ND	ND	0.0009	ND	ND	0.004	0.000989	0.00095	0.000844
barium	mg/l		ND	ND	0.025	0.007	ND	0.019	0.011	0.0062	0.0101	0.0105	0.00678
beryllium	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cadmium	mg/l		ND	ND	ND	ND	ND	0.00051	ND	ND	0.000166	ND	ND
chromium	mg/l		ND	ND	ND	ND	0.061	0.028	ND	ND	0.00173	0.000191	0.000683
cobalt	mg/l		ND	ND	ND	ND	ND	0.057	ND	ND	0.000208	0.000128	0.000136
copper	mg/l		ND	ND	ND	ND	0.01	0.006	ND	ND	0.00656	0.00303	0.00117
lead	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	0.000372	0.000269	0.000191
nickel	mg/l		ND	ND	ND	ND	0.07	ND	0.006	ND	0.00134	0.00165	0.00139
selenium	mg/l		ND	ND	ND	ND	ND	0.0038	ND	ND	0.00118	0.000594	0.000989
silver	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	0.000241	ND	ND
thallium	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	0.000183	ND	ND
vanadium	mg/l		ND	ND	ND	ND	ND	ND	ND	0.0011	0.00142	0.00183	0.000917
zinc	mg/l		0.005	0.088	ND	ND	ND	ND	ND	ND	0.00266	ND	0.0045
acetone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
acrylonitrile	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
benzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromochloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromodichloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromoform	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon disulfide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-3
Monitoring Well 4MW-8 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		3Q95	4Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
carbon tetrachloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroform	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bibromochloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromomethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-dichlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-dichlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trasns-1,4-Dichloro-2-butene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene bromide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	5.78	1.21	ND
Methyl ethyl ketone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroflouromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-4
Monitoring Well 4MW-9 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
conductivity	umhos/cm	282	271	334	310	313	315	348	340	315	357	336	424
pH	s.u.	7.15	7.19	7.47	7.26	7.09	7.11	7.3	7	7.2	7.12	7	6.7
dissolved oxygen	mg/l	0.8	1	0.76		0.5					0.5	0.9	0.9
turbidity	NTU	0.7	0.32	0.563	0.3	0.3	0.15	0.11	0.55	0.1	0.08	0	0.01
total ammonia	mg/l		ND	ND	ND	0.08	ND	ND	ND	ND	0.03	ND	ND
chlorides	mg/l	9.69	16.3	9.7	6.6	10.8	12.1	9.9	18.1	19	20.4	18.5	3.8
iron	mg/l	ND	0.05	0.08	0.03	0.06	0.07	0.03	0.03	ND	ND	0.02	0.09
mercury	mg/l			0.0007	ND	0.0003	0.0006	0.001	0.0009	0.0003	0.0002	ND	ND
sulfate	mg/l	1.25	3.5	ND	ND	1.41	2.63	ND	2.12	1.89	1.77	1.7	2.41
bicarbonate	mg/l	160	137	159	146	153	158	179	170	152	161	167	207
TOC	mg/l	6.82	15	20.9	1.67	1.18	1.15	1.81	1.01	ND	0.99	0.89	2.32
nitrate	mg/l	ND	0.55	ND	ND	ND	ND	ND	ND	0.19	0.12	ND	1.75
sodium	mg/l	3.6	5.39	4.22	3.82	3.8	4.08	4.24	4.88	4.6	4.67	4.55	5.03
TDS	mg/l	209	226	232	185	199	217	295	232	229	212	233	306
antimony	mg/l		ND	0.018	ND	ND	0.0049	ND	ND	ND	ND	0.00034	ND
arsenic	mg/l		ND	ND	ND	ND	0.0043	ND	ND	0.004	0.000961	0.000889	0.00112
barium	mg/l		ND	ND	ND	0.007	ND	0.028	0.012	0.019	0.00894	0.009	0.0123
beryllium	mg/l		ND	ND	ND	ND	ND	0.0021	ND	ND	ND	ND	ND
cadmium	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chromium	mg/l		ND	ND	ND	ND	0.036	0.036	ND	ND	0.00323	0.000429	0.00102
cobalt	mg/l		ND	ND	ND	ND	ND	0.066	ND	ND	ND	0.000122	0.000211
copper	mg/l		ND	ND	ND	ND	0.035	0.006	ND	ND	0.00389	0.00137	0.00177
lead	mg/l		ND	ND	ND	ND	0.00025	ND	ND	ND	0.000822	0.000326	0.000114
nickel	mg/l		ND	ND	ND	ND	0.055	0.151	ND	ND	0.00152	0.00233	0.00221
selenium	mg/l		ND	ND	ND	ND	ND	0.005	ND	ND	0.00181	ND	0.000155
silver	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	0.000253	ND	ND
thallium	mg/l		ND	ND	ND	ND	ND	ND	ND	ND	0.000163	ND	ND
vanadium	mg/l		ND	ND	ND	ND	ND	0.033	ND	ND	0.000477	0.000542	0.000526
zinc	mg/l		ND	0.083	ND	ND	ND	0.039	ND	ND	0.0182	ND	0.0101
acetone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
acrylonitrile	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
benzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromochloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromodichloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromoform	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon disulfide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon tetrachloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroform	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2-4
Monitoring Well 4MW-9 (compliance)

parameter	units	1995		1996		1997		1998		1999		2000	
		1Q95	3Q95	1Q96	3Q96	1Q97	3Q97	1Q98	3Q98	1Q99	3Q99	1Q00	3Q00
bibromochloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromomethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-dichlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-dichlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trasns-1,4-Dichloro-2-butene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene bromide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	5.69	ND	ND
Methyl ethyl ketone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroflouromethane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Attachment 7

Table 2-10 (a)
Leachate Tank 1

parameter	units	1995		1996		1997		1998		1999		2000		2001
		Sem1 95	Sem2 95	Sem1 96	Sem2 96	Sem1 97	Sem2 97	Sem1 98	Sem2 98	Sem1 99	Sem2 99	Sem1 00	Sem2 00	Sem1 01
conductivity	umhos/cm	6270	4777	6099	4888	6555	5320	5450	5920			6390	6380	
pH	s.u.	6.94	6.7	6.73	6.63	6.93	6.82	7.01	6.92			6.92	6.86	
dissolved oxygen	mg/l	0.7	0.19	0.55	0.8	0.6	0.3	0.8	0.7			1.2	0.3	
total ammonia	mg/l	385	274		298.5	412	316	294	513.4			354	288	
chlorides	mg/l	768	575	761	505	775	590	583	638			489	713	
iron	mg/l	24.7	26.9	24.2	22.1	23.6	5.9	24	27.1			4.48	16.1	
mercury	mg/l	0.0011	0.0007	ND	< 0.0005	0.0003	0.0007	0.0003	0.0008			0.0002	< 0.0005	
bicarbonate	mg/l	2965	1942	2681	1994	2811	2301	2227	2422			2771	2747	
TOC	mg/l	330.8	336.4	643										
nitrate	mg/l	< 0.10	<0.15	< 0.15	< 0.15	< 0.11	< 0.11	< 0.11	< 0.11			< 0.11	< 0.11	
sodium	mg/l	560	394	566	443	586	520	0.01	540			624	639	
TDS	mg/l	3120	2300	3000	2240	3760	2438	2740	3420			3740	3600	
antimony	mg/l	ND		0.082	0.018	ND	ND	ND	ND			ND	0.00187	0.00412
arsenic	mg/l	ND	0.0145	0.022	0.022	0.016	ND	0.0135	0.022			0.0183	0.0224	0.0222
barium	mg/l	49		ND	0.027	0.042	0.025	0.036	0.065			0.0391	0.041	0.0456
beryllium	mg/l	ND		ND	ND	ND	ND	ND	ND			ND	0.000374	ND
cadmium	mg/l	ND	0.001	ND	ND	ND	0.00028	ND	ND			0.000345	ND	ND
chromium	mg/l	ND	0.0055	0.027	ND	0.007	ND	0.054	0.007			0.0106	0.00756	0.00689
cobalt	mg/l	21		0.019	0.012	0.02	ND	0.068	0.016			0.0228	0.0191	0.0203
copper	mg/l	12		ND	ND	0.003	0.189	ND	0.005			0.00525	ND	ND
lead	mg/l	ND	0.0021	ND	ND	ND	0.0115	ND	ND			0.0009	0.000255	ND
nickel	mg/l	46		ND	ND	0.04	ND	0.06	0.029			0.0383	0.0315	0.0301
selenium	mg/l	ND		ND	ND	ND	ND	0.0359	ND			0.0706	0.0391	0.0416
silver	mg/l	8		ND	ND	ND	ND	ND	0.007			0.000373	ND	ND
thallium	mg/l	ND		ND	ND	ND	ND	ND	ND			0.00196	ND	ND
vanadium	mg/l	ND		0.064	0.048	0.003	0.131	ND	0.008			0.00956	0.0101	0.0124
zinc	mg/l	ND		ND	0.08	0.029	0.031	0.058	ND			0.00508	0.007	0.117
acetone	ug/l	93		26	1002	ND	ND	ND	ND			ND	ND	ND
acrylonitrile	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	
benzene	ug/l	1.9	2	2.2	ND	ND	ND	ND	ND			ND	ND	ND
bromochloromethane	ug/l			ND	ND	ND	ND	ND	ND			ND	ND	ND
bromodichloromethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
bromomethane	ug/l	ND	ND									ND	ND	ND
bromoform	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
carbon disulfide	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
carbon tetrachloride	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
chlorobenzene	ug/l	1.3	2	2.4	ND	ND	ND	ND	ND			ND	ND	ND
chloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND

Table 2-10 (a)
Leachate Tank 1

parameter	units	1995		1996		1997		1998		1999		2000		2001
		Sem1 95	Sem2 95	Sem1 96	Sem2 96	Sem1 97	Sem2 97	Sem1 98	Sem2 98	Sem1 99	Sem2 99	Sem1 00	Sem2 00	Sem1 01
chloroform	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
dibromochloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
1,2-Dibromomethane	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
o-dichlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
p-dichlorobenzene	ug/l		ND	16	12.1	9.3	ND	ND	ND			17.7	13.2	ND
trasns-1,4-Dichloro-2-butene	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
1,1-Dichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,2-Dichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,1-Dichloroethylene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,2-Dichloropropane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
cis-1,3-Dichloropropene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
trans-1,3-Dichloropropene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
Ethylbenzene	ug/l	36	48	34	50.9	ND	ND	ND	ND			ND	13.4	ND
2-Hexanone	ug/l	ND		23	ND	ND	ND	ND	ND			ND	ND	ND
Methyl bromide	ug/l			ND	ND	ND	ND	ND	ND					
Methyl chloride	ug/l			ND	ND	ND	ND	ND	ND					
Methylene bromide	ug/l			ND	ND	ND	ND		ND			ND		ND
Methylene chloride	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
Methyl ethyl ketone	ug/l			13	ND	ND	ND		ND					
Methyl iodide	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
4-Methyl-2-pentanone	ug/l	31		6	ND	ND	ND	ND	ND			ND	ND	
Styrene	ug/l	ND		2.3	ND	ND	ND	ND	ND			ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
Tetrachloroethylene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
Toluene	ug/l	32	31	14	ND	ND	ND	ND	ND			ND	2.6	ND
1,1,1-Trichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,1,2-Trichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
Trichloroethylene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
Trichloroflouromethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,2,3-Trichloropropane	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
Vinyl acetate	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
Vinyl chloride	ug/l	ND	1	1.1	ND	ND	ND	ND	ND			ND	ND	ND
Xylenes	ug/l	130	129	81	ND	41	ND	ND	ND			52.1	43.5	71.9

Table 2-10 (b)
Leachate Tank 2

parameter	units	1995		1996		1997		1998		1999		2000		2001
		Sem1 95	Sem2 95	Sem1 96	Sem2 96	Sem1 97	Sem2 97	Sem1 98	Sem2 98	Sem1 99	Sem 2 99	Sem1 00	Sem2 00	Sem1 01
conductivity	umhos/cm	2972	3796	4168	2744	5400	3000	3600	4940			5235	5210	
pH	s.u.	6.66	6.58	6.55	6.46	7.01	6.6	6.89	6.82			6.9	6.8	
dissolved oxygen	mg/l	0.5	0.29	0.56	1.1	1.8	1	0.8	0.5			1	0.5	
total ammonia	mg/l	242	231		146.7	318	134	166	412.4			286	271	
chlorides	mg/l	591	497	623	283	747	342	360	598			569	694	
iron	mg/l	23.4	37.3	41.8	24.8	8.48	12.4	21.1	19.6			10	14.2	
mercury	mg/l	0.0016	< 0.0005	ND	< 0.0005	< 0.0002	0.0006	< 0.0002	0.0008			0.0003	< 0.0005	
bicarbonate	mg/l	1378	1298	1594	1001	1997	1208	1261	1885			1999	1982	
TOC	mg/l	230.2	258.3	447										
nitrate	mg/l	< 0.10	< 0.15	< 0.15	< 0.15	< 0.11	< 0.11	< 0.11	< 0.11			0.15	< 0.11	
sodium	mg/l	384	344	453	278	531	267	353	522			534	554	
TDS	mg/l	1900	2420	2060	1140	3220	1180	1430	2760			2980	2560	
antimony	mg/l	ND		0.025	0.01	ND	ND	ND	ND			ND	0.000128	0.00128
arsenic	mg/l	ND	0.0131	0.017	0.013	0.004	ND	ND	0.023			0.0163	0.0172	0.0196
barium	mg/l	41		ND	ND	0.012	0.058	0.047	0.043			0.026	0.0224	0.0333
beryllium	mg/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
cadmium	mg/l	ND	0.0021	ND	ND	ND	0.00016	ND	ND			0.000656	ND	ND
chromium	mg/l	ND	0.0026	0.029	ND	0.002	ND	ND	ND			0.00822	0.0107	0.00378
cobalt	mg/l	ND		ND	ND	0.006	0.176	0.068	0.006			0.00989	0.0075	0.00856
copper	mg/l	7		ND	ND	0.003	0.204	ND	ND			0.0117	0.00137	ND
lead	mg/l	ND	0.001	ND	ND	ND	0.00055	ND	ND			0.00107	0.000363	ND
nickel	mg/l	ND		ND	ND	0.029	ND	ND	0.021			0.0306	0.0238	0.0331
selenium	mg/l	ND		ND	ND	0.004	0.0032	0.0121	ND			0.065	0.0468	0.0416
silver	mg/l	7		ND	ND	ND	ND	ND	ND			0.000397	ND	ND
thallium	mg/l	ND		ND	ND	ND	ND	ND	ND			0.00198	ND	ND
vanadium	mg/l	ND		0.023	0.023	ND	0.127	ND	ND			0.00413	0.00391	0.00622
zinc	mg/l	ND		ND	ND	0.02	0.031	0.19	ND			0.0239	0.0139	0.00789
acetone	ug/l	100		31	ND	ND	ND	ND	ND			ND	ND	ND
acrylonitrile	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	
benzene	ug/l	3	2	1.8	ND	ND	ND	ND	ND			ND	ND	ND
bromochloromethane	ug/l			ND	ND	ND	ND	ND	ND			ND	ND	ND
bromodichloromethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
bromoform	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
carbon disulfide	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
carbon tetrachloride	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
chlorobenzene	ug/l	1.4	2	1.5	ND	ND	ND	ND	ND			ND	ND	ND
chloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
chloroform	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
dibromochloromethane	ug/l		ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
1,2-Dibromomethane	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
o-dichlorobenzene	ug/l		ND	ND	ND	ND	ND	ND	ND			ND	ND	ND

Table 2-10 (b)
Leachate Tank 2

parameter	units	1995		1996		1997		1998		1999		2000		2001
		Sem1 95	Sem2 95	Sem1 96	Sem2 96	Sem1 97	Sem2 97	Sem1 98	Sem2 98	Sem1 99	Sem 2 99	Sem1 00	Sem2 00	Sem1 01
p-dichlorobenzene	ug/l		ND	11	ND	5.5	ND	ND	ND			11.1	7.67	ND
trasns-1,4-Dichloro-2-butene	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
1,1-Dichloroethane	ug/l	ND	1	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,2-Dichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,1-Dichloroethylene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	2.2	2	ND	ND	ND	ND	ND	ND			ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,2-Dichloropropane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
cis-1,3-Dichloropropene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
trans-1,3-Dichloropropene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
Ethylbenzene	ug/l	45	35	23	ND	ND	ND	ND	ND			ND	ND	ND
2-Hexanone	ug/l	ND		24	ND	ND	ND	ND	ND			ND	ND	ND
Methyl bromide	ug/l			ND	ND	ND	ND	ND	ND					
Methyl chloride	ug/l			ND	ND	ND	ND	ND	ND					
Methylene bromide	ug/l			ND	ND	ND	ND		ND			ND		ND
Methylene chloride	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			10.6	ND	ND
Methyl ethyl ketone	ug/l			24	ND	ND	ND		ND					
Methyl iodide	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
4-Methyl-2-pentanone	ug/l	23		3	ND	ND	ND	ND	ND			ND	ND	ND
Styrene	ug/l	ND		1.5	ND	ND	ND	ND	ND			ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
Tetrachloroethylene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
Toluene	ug/l	59	24	16	ND	ND	ND	ND	ND			ND	ND	ND
1,1,1-Trichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,1,2-Trichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
Trichloroethylene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
Trichloroflouromethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND
1,2,3-Trichloropropane	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
Vinyl acetate	ug/l	ND		ND	ND	ND	ND	ND	ND			ND	ND	ND
Vinyl chloride	ug/l	ND	2	2.1	ND	ND	ND	ND	ND			ND	ND	ND
Xylenes	ug/l	110	73	45	65.8	20.8	ND	ND	ND			7.85	11.7	34.3

Attachment 8

Figure 2-1
4MW3A

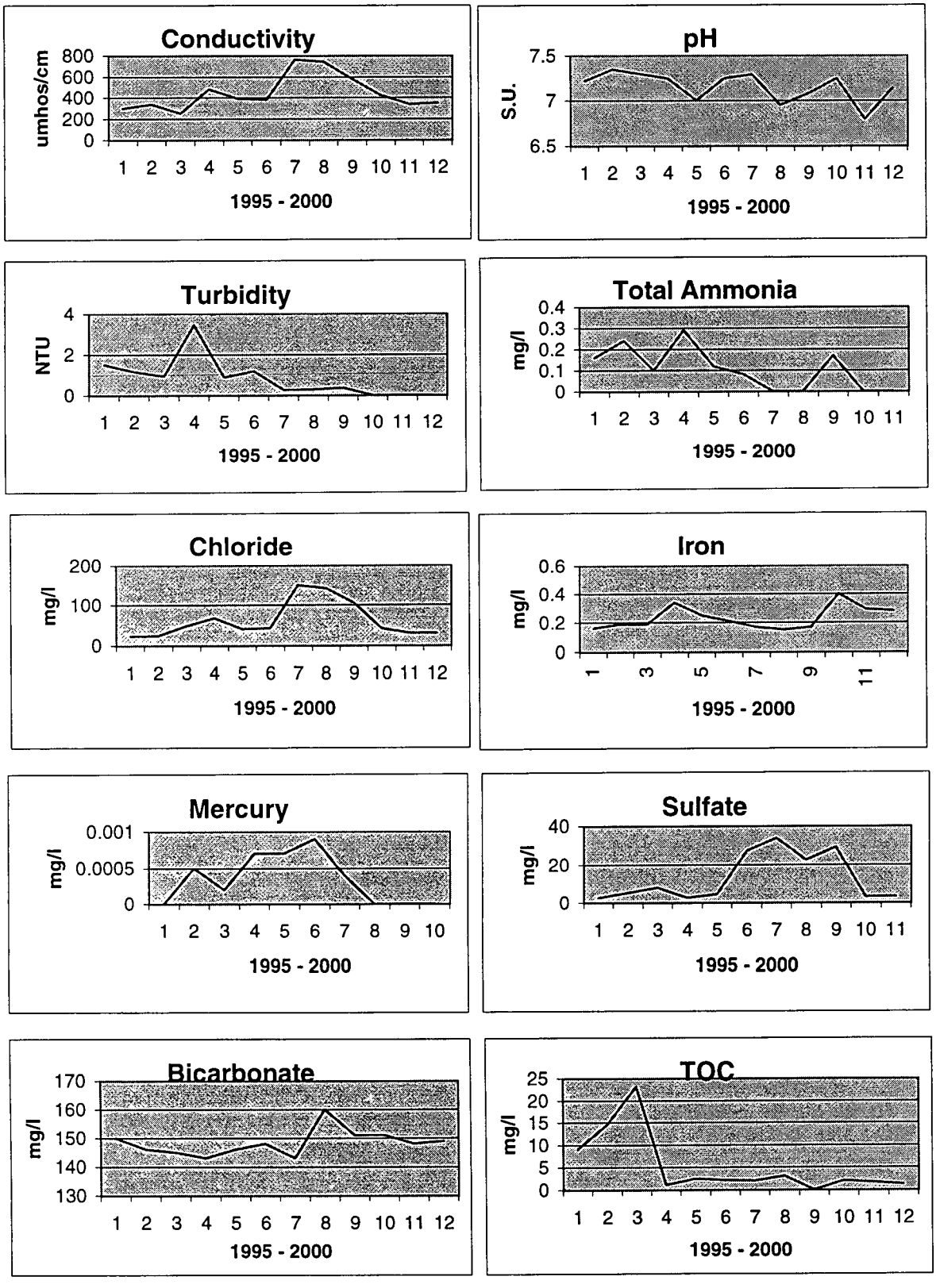
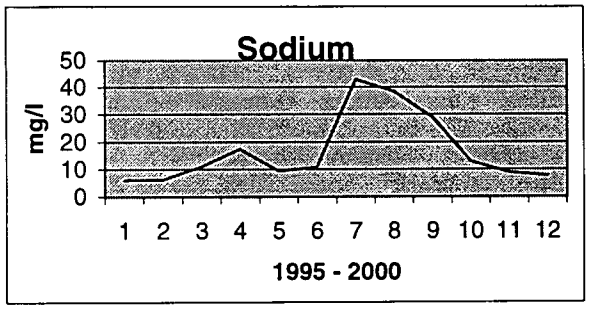
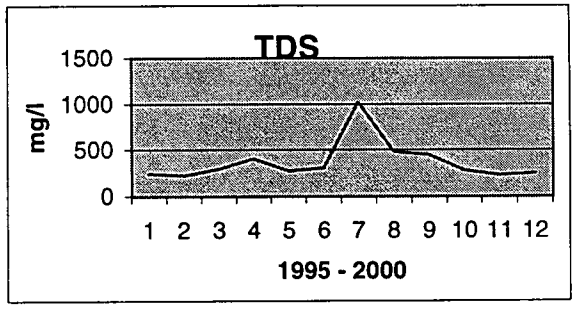
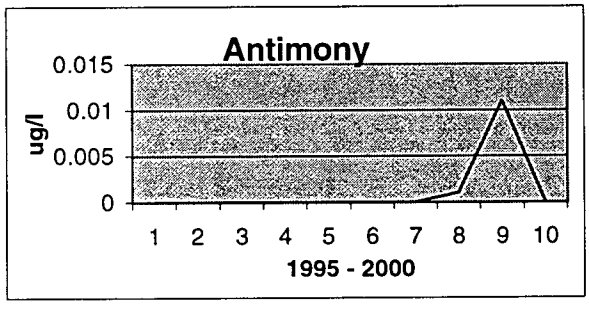
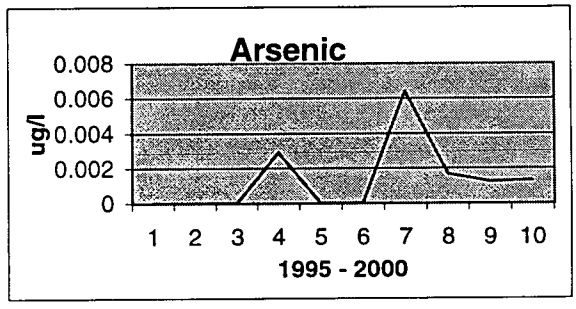


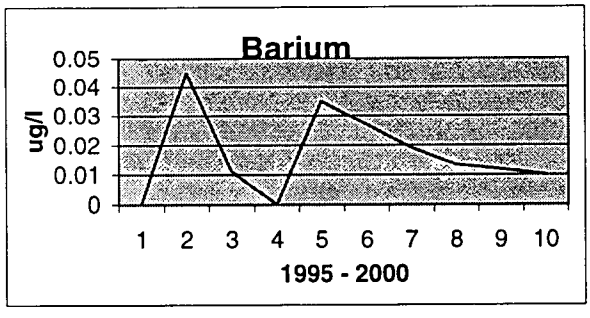
Figure 2-1
4MW3A

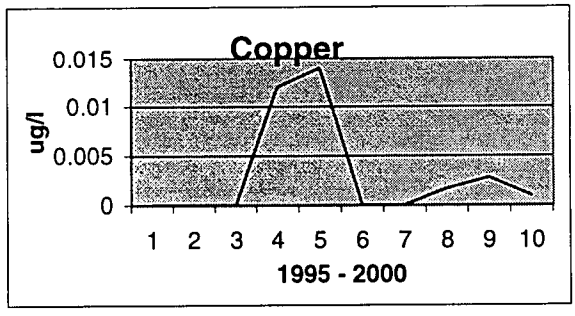


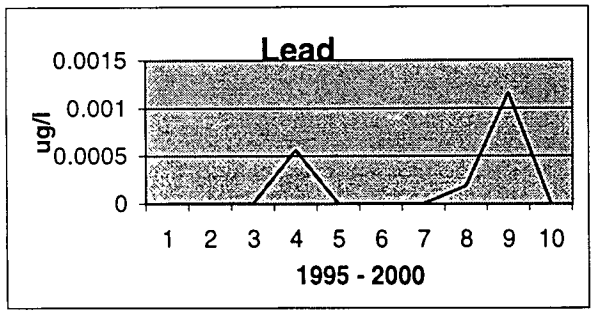


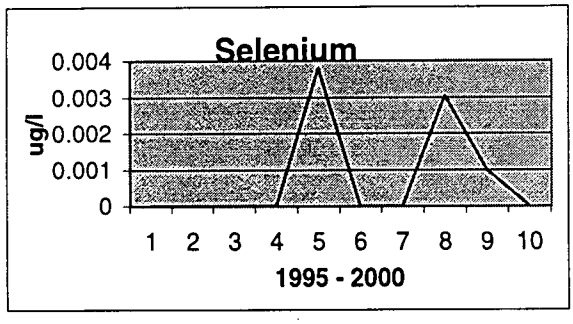


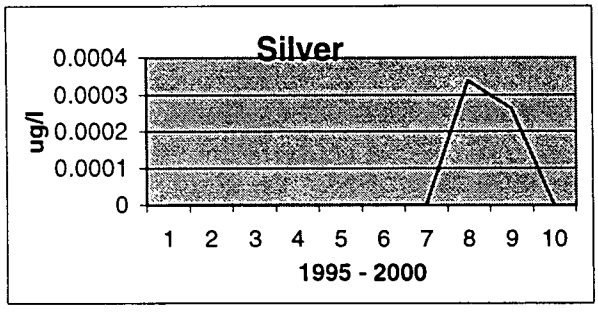












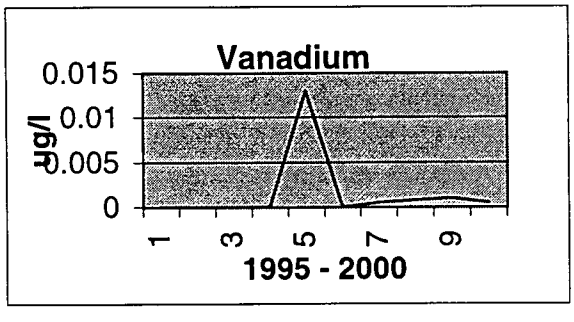
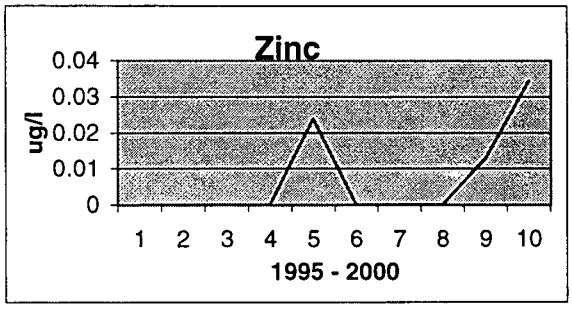


Figure 2-1
4MW3A



Attachment 9

Table 3-1
Groundwater Level (MSL)

	3Q95	*1Q96*	*3Q96*	*1Q97*	*3Q97*	*1Q98*	*3Q98*	*1Q99*	*3Q99*	*1Q00*	*3Q00*
4MW-3A	28.6	31.75	31.1	28.1	25.6	34.8	32.45	32.42	28.3	23.15	25.54
4MW-7	27.38	30.23	27.38	BEBW	BEBW	33.28	30.83	30.68	BEBW	BEBW	BEBW
4MW-8	29.15	32.15	31.6	28.4	26.5	35.25	32.5	32.48	28.52	26	25.6
4MW-9	26.98	30.28	29.88	26.63	24.48	33.38	30.98	30.98	26.6	24.23	35.3

BEBW-- Below Elevation of Bottom of Well

Table 3-2
Class III Landfill
Monitoring Well Construction Details

Monitoring Well	Length of Casing	Total Depth (Below Ground Surface)	Depth of Screen (Below Ground Surface)	Screen Length	Top of Casing MSL	Ground Surface Elevation (MSL)	Ground water level MSL	
	(feet)	(feet)	(feet)	(Feet)	(feet)	(feet)	Minimum (feet)	Maximum (feet)
4MW3A	Unable to Locate Construction Details						23.15	34.8
4MW7	20	50	Open Bore	N/A	47.3	47.3	BEBW	33.28
4MW8	32	65	Open Bore	N/A	49.5	49.5	25.6	35.25
4MW9	30	60	Open Bore	N/A	48.8	48.8	24.23	35.3
2MW7	12	12	Top of Screen at 7 feet	5	48.3	48.3	BEBW	BEBW
2MW8	12	13	Top of Screen at 7 feet	5	49.5	49.5	BEBW	BEBW
2MW9	10	11	Top of Screen at 5 feet	5	48.8	48.8	BEBW	BEBW
2MW10	11	12	Top of Screen at 6 feet	5	49.8	49.8	BEBW	BEBW

BEBW -- Below Elevation of Bottom of Well.

MONITOR WELL COMPLETION REPORT

DATE: 6/12/90

INSTALLATION NAME: West Pasco County Class III Landfill Monitor Wells

DER PERMIT NUMBER: 494693-15 GMS NO.: N/A

WELL NO.: 4MW7 WELL NAME: N/A

DESIGNATION: Background _____ Intermediate _____ Compliance X

LATITUDE/LONGITUDE: N1468153.38/E317102.97

AQUIFER MONITORED: Floridan

INSTALLATION METHOD: Rotary

INSTALLED BY: Crum Well Drilling, Inc.

TOTAL DEPTH: 50 ft. (bls) DEPTH OF SCREEN: open bore (bls)

SCREEN LENGTH: N/A SCREEN SLOT SIZE: N/A SCREEN TYPE: N/A

CASING DIAMETER: 4 in. CASING TYPE: Flush SC40 PVC

LENGTH OF CASING: 20 ft FILTER PACK MATERIAL: N/A

TOP OF CASING ELEVATION (MSL): 47.3

GROUND SURFACE ELEVATION (MSL): 47.3

COMPLETION DATE: 3/2/90

DESCRIBE WELL DEVELOPMENT: Pumped water at 35 gpm for 4 hours. Water turned clear after pumping.

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL): 28.3

DATE AND TIME MEASURED: 3/5/90, 1:40 p.m.

REMARKS (Soils information, Stratigraphy, etc.): See attached boring log.

REPORT PREPARED BY : Larry Sung, Camp Dresser & McKee Inc. 530-9984
(name, company, phone no.)

NOTE: PLEASE ATTACH BORING LOG.
(bls) = Below Land Surface
Ground Water Permit Conditions

MONITOR WELL COMPLETION REPORT

DATE: 6/12/90

INSTALLATION NAME: West Pasco County Class III Landfill Monitor Wells

DER PERMIT NUMBER: 494692-15 GMS NO.: N/A

WELL NO.: 4MW8 WELL NAME: N/A

DESIGNATION: Background _____ Intermediate _____ Compliance X

LATITUDE/LONGITUDE: N1468626.63/E316385.85

AQUIFER MONITORED: Floridan

INSTALLATION METHOD: Rotary

INSTALLED BY: Crum Well Drilling Inc.

TOTAL DEPTH: 65 ft (bls) DEPTH OF SCREEN: open bore (bls)

SCREEN LENGTH: N/A SCREEN SLOT SIZE: N/A SCREEN TYPE: N/A

CASING DIAMETER: 4 in CASING TYPE: Flush Jt. SC40 PVC

LENGTH OF CASING: 32 ft FILTER PACK MATERIAL: N/A

TOP OF CASING ELEVATION (MSL): 49.5

GROUND SURFACE ELEVATION (MSL): 49.5

COMPLETION DATE: 3/7/90

DESCRIBE WELL DEVELOPMENT: Pumped water on 3/7, 3/8 and 3/9 until water turned clear.

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL): 30.0

DATE AND TIME MEASURED: 3/9/90, 12:12 p.m.

REMARKS (Soils information, Stratigraphy, etc.): see attached boring log.

REPORT PREPARED BY : Larry Sung, Camp Dresser & McKee Inc. 530-9984
(name, company, phone no.)

NOTE: PLEASE ATTACH BORING LOG.
(bls) = Below Land Surface
Ground Water Permit Conditions

MONITOR WELL COMPLETION REPORT

DATE: 6/12/90

INSTALLATION NAME: West Pasco County Class III Landfill Monitor Wells

DER PERMIT NUMBER: 494691-15 GMS NO.: N/A

WELL NO.: 4MW9 WELL NAME: N/A

DESIGNATION: Background _____ Intermediate _____ Compliance X

LATITUDE/LONGITUDE: N1469122.98/E317156.34

AQUIFER MONITORED: Floridan

INSTALLATION METHOD: Rotary

INSTALLED BY: Crum Well Drilling Inc.

TOTAL DEPTH: 60 ft (bls) DEPTH OF SCREEN: open bore (bls)

SCREEN LENGTH: N/A SCREEN SLOT SIZE: N/A SCREEN TYPE: N/A

CASING DIAMETER: 4 in CASING TYPE: Flush SC40 PVC

LENGTH OF CASING: 30 ft FILTER PACK MATERIAL: N/A

TOP OF CASING ELEVATION (MSL): 48.8

GROUND SURFACE ELEVATION (MSL): 48.8

COMPLETION DATE: 3/1/90

DESCRIBE WELL DEVELOPMENT: Pumped water for 1.5 hours on 3/2 and 3 hours on 3/9. Water was clear after final pumping.

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL): 27.8

DATE AND TIME MEASURED: 3/9/90, 3:12 p.m.

REMARKS (Soils information, Stratigraphy, etc.): See attached boring log.

REPORT PREPARED BY : Larry Sung, Camp Dresser & McKee Inc. 530-9984
(name, company, phone no.)

NOTE: PLEASE ATTACH BORING LOG.
(bls) = Below Land Surface
Ground Water Permit Conditions

MONITOR WELL COMPLETION REPORT

DATE: 6/12/90

INSTALLATION NAME: West Pasco County Class III Landfill Monitor Wells

DER PERMIT NUMBER: 494690-15 GMS NO.: N/A

WELL NO.: 2MW7 WELL NAME: N/A

DESIGNATION: Background _____ Intermediate _____ Compliance X

LATITUDE/LONGITUDE: N1468153.54/E317092.57

AQUIFER MONITORED: Surficial

INSTALLATION METHOD: Auger

INSTALLED BY: Crum Well Drilling Inc.

TOTAL DEPTH: 12 ft (bls) DEPTH OF SCREEN: top of screen at 7 ft (bls)

SCREEN LENGTH: 5 ft SCREEN SLOT SIZE: #10 SCREEN TYPE: PVC

CASING DIAMETER: 2 in CASING TYPE: Flush Jt. PVC

LENGTH OF CASING: 12 ft FILTER PACK MATERIAL: sand

TOP OF CASING ELEVATION (MSL): 48.3

GROUND SURFACE ELEVATION (MSL): 48.3

COMPLETION DATE: 2/28/90

DESCRIBE WELL DEVELOPMENT: Dry

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL): Dry

DATE AND TIME MEASURED: 2/28/90

REMARKS (Soils information, Stratigraphy, etc.): See attached boring log.

REPORT PREPARED BY : Larry Sung, Camp Dresser & McKee Inc. 530-9984
(name, company, phone no.)

NOTE: PLEASE ATTACH BORING LOG.
(bls) = Below Land Surface
Ground Water Permit Conditions

MONITOR WELL COMPLETION REPORT

DATE: 6/12/90

INSTALLATION NAME: West Pasco County Class III Landfill Monitor Wells

DER PERMIT NUMBER: 494689-15 GMS NO.: N/A

WELL NO.: 2MW8 WELL NAME: N/A

DESIGNATION: Background _____ Intermediate _____ Compliance X

LATITUDE/LONGITUDE: N1468637.26/E316386.11

AQUIFER MONITORED: Surficial

INSTALLATION METHOD: Auger

INSTALLED BY: Crum Well Drilling Inc.

TOTAL DEPTH: 13 ft (bls) DEPTH OF SCREEN: Top of screen at 7 ft (bls)

SCREEN LENGTH: 5 ft SCREEN SLOT SIZE: #10 SCREEN TYPE: PVC

CASING DIAMETER: 2 in CASING TYPE: Flush Jt. PVC

LENGTH OF CASING: 12 ft FILTER PACK MATERIAL: Sand

TOP OF CASING ELEVATION (MSL): 49.5

GROUND SURFACE ELEVATION (MSL): 49.5

COMPLETION DATE: 3/5/90

DESCRIBE WELL DEVELOPMENT: Dry

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL): Dry

DATE AND TIME MEASURED: 3/5/90

REMARKS (Soils information, Stratigraphy, etc.): See attached boring log.

REPORT PREPARED BY : Larry Sung, Camp Dresser & McKee Inc. 530-9984
(name, company, phone no.)

NOTE: PLEASE ATTACH BORING LOG.
(bls) = Below Land Surface
Ground Water Permit Conditions

MONITOR WELL COMPLETION REPORT

DATE: 6/12/90

INSTALLATION NAME: West Pasco County Class III Landfill Monitor Wells

DER PERMIT NUMBER: 494688-15 GMS NO.: N/A

WELL NO.: 2MW9 WELL NAME: N/A

DESIGNATION: Background _____ Intermediate _____ Compliance X

LATITUDE/LONGITUDE: N1469123.35/E317146.98

AQUIFER MONITORED: Surficial

INSTALLATION METHOD: Auger

INSTALLED BY: Crum Well Drilling Inc.

TOTAL DEPTH: 11 ft (bls) DEPTH OF SCREEN: Top of Screen at 5 ft (bls)

SCREEN LENGTH: 5 ft SCREEN SLOT SIZE: #10 SCREEN TYPE: PVC

CASING DIAMETER: 2 in CASING TYPE: Flush Jt. PVC

LENGTH OF CASING: 10 ft FILTER PACK MATERIAL: Sand

TOP OF CASING ELEVATION (MSL): 48.8

GROUND SURFACE ELEVATION (MSL): 48.8

COMPLETION DATE: 2/27/90

DESCRIBE WELL DEVELOPMENT: Dry

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL): Dry

DATE AND TIME MEASURED: _____

REMARKS (Soils information, Stratigraphy, etc.): See attached boring log.

REPORT PREPARED BY : Larry Sung, Camp Dresser & McKee Inc. 530-9984
(name, company, phone no.)

NOTE: PLEASE ATTACH BORING LOG.
(bls) = Below Land Surface
Ground Water Permit Conditions

MONITOR WELL COMPLETION REPORT

DATE: 6/12/90

INSTALLATION NAME: West Pasco County Class III Landfill Monitor Wells

DER PERMIT NUMBER: 494694-15 GMS NO.: N/A

WELL NO.: 2MW10 WELL NAME: N/A

DESIGNATION: Background _____ Intermediate _____ Compliance X

LATITUDE/LONGITUDE: N1468858.05/E316557.34

AQUIFER MONITORED: Surficial

INSTALLATION METHOD: Auger

INSTALLED BY: Crum Well Drilling Inc.

TOTAL DEPTH: 12 ft (bls) DEPTH OF SCREEN: Top of screen at 6 ft(bls)

SCREEN LENGTH: 5 ft SCREEN SLOT SIZE: #10 SCREEN TYPE: PVC

CASING DIAMETER: 2 in CASING TYPE: Flush Jt. PVC

LENGTH OF CASING: 11 ft FILTER PACK MATERIAL: Sand

TOP OF CASING ELEVATION (MSL): 49.8

GROUND SURFACE ELEVATION (MSL): 49.8

COMPLETION DATE: 2/27/90

DESCRIBE WELL DEVELOPMENT: Dry

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL): Dry

DATE AND TIME MEASURED: 2/27/90

REMARKS (Soils information, Stratigraphy, etc.): See attached boring log.

REPORT PREPARED BY : Larry Sung, Camp Dresser & McKee Inc. 530-9984
(name, company, phone no.)

NOTE: PLEASE ATTACH BORING LOG.
(bls) = Below Land Surface
Ground Water Permit Conditions

Attachment 10

5.0 Hydraulic Conductivity Tests

Hydraulic conductivity (K) testing was conducted on two existing monitor wells completed in the Upper Floridan Aquifer at the landfill site. The tests were conducted on wells 4MW-13D and 2MW-18D. The tests conducted were recovery tests following groundwater pumping and the data analysis used Theis's Recovery Method (Kruseman, G.P., and de Ridder, N.A., Analysis and Evaluation of Pumping Test Data, Second Edition, ILRA Publication 47, 1991). Application requires that the well is pumped at a constant flow rate and the rate of water level recovery is recorded once pumping has ceased. The test results and data calculations are included in **Appendix B**. The estimated transmissivity (T) for well 4MW-13D is approximately 85 square feet per day (ft^2/d). The estimated T value for well 2MW-18D is approximately 4.3 ft^2/d. Based on the boring logs available for the site, the portion of Upper Floridan Aquifer penetrated by the test wells ranges from highly weathered limestone to sandy calcareous clay and represents either the Tampa Limestone, if present, or otherwise the Suwannee Limestone. Based on Jammal (1987), the upper limestone formations are approximately 100 feet thick at the site. However, it is unlikely that the well tests were hydraulically impacted by such an aquifer thickness because of interbedded, lower permeability zones. Applying an assumed thickness equal to the open interval of these wells to be conservative, K values of approximately 9 feet per day (ft/d) for 4MW-13D and 0.3 ft/d for 2MW-18D are obtained. Although these variations are high, such variations are not uncommon for single well tests conducted in the variable matrix of the Upper Floridan Aquifer. In estimating the groundwater flow velocities, the higher K value is used to be conservative.

$V = Ki/n$

$V = 9 \times 0.0015 / .15$

V = 0.1 feet per day or just over 16 feet per 6 months

Attachment 11

QORE

PROPERTY SCIENCES

July 9, 2001

Mr. John Morris, P.G.
Florida Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

Re: Proposed Repair/Replacement of Monitor Well 4MW-7
West Pasco Class III Landfill
Pasco County, Florida
QORE Project No. 27-2440W

Dear Mr. Morris,

On behalf of Pasco County, QORE, Inc. (QORE) is pleased to submit this letter with the proposed activities to repair or replace monitor well 4MW-7 located at the West Pasco Class III Landfill site near Spring Hill, Florida. This letter has been prepared in response to your recent telephone discussion with Mr. Jason Gorrie of Camp, Dresser & McKee (CDM). The following sections present a brief project background and proposed scope of work at the site.

PROJECT BACKGROUND

Monitoring well 4MW-7 was installed to monitor ground water quality downgradient of the West Pasco Class III Landfill located off of Hayes Road in Spring Hill, Florida. For at least the past two years, this well has been reported to be dry during the periodic ground water monitoring events required by the landfill permit. In a recent report submitted to the Florida Department of Environmental Protection (FDEP), CDM stated that a new well must be installed at the location of 4MW-7 to "adequately monitor ground water effects resulting from operation of the landfill".

Construction information for well 4MW-7 indicates that this well was drilled to a total depth of 50 feet below ground surface (bgs). Four-inch diameter casing was installed to a depth of 20 feet bgs and the remainder of the well consists of a four-inch diameter open hole in what was described as "soft limestone with cavities". Discussions with the Pasco County Environmental Laboratory's field sampling person revealed that, at the time of the periodic sampling events, the measured well depth was only on the order of 28 feet bgs. At that depth, the well has a small amount of water but it is not enough to collect a ground water sample – hence, the well is reported as "dry".

The measured well depth of 28 feet indicates that the open-hole section has partially collapsed or "squeezed in". Similar collapse has reportedly occurred at other monitor wells constructed in a similar manner in the area of the Class III landfill. In response to an inquiry by QORE, CDM discussed the possibility of repairing the existing well with the FDEP in lieu of drilling a new well. It is our understanding that repair of the well is acceptable to the FDEP; however, the FDEP

requested that a plan for the repair be provided to the FDEP for review and approval before the work is conducted. This letter fulfills that request. If the well can not be repaired, then a new well will be drilled.

PROPOSED WORK PLAN

Well Repair

After approval by the FDEP, well 4MW-7 will be repaired by mobilizing a drill rig to the site. The open hole section will be re-drilled using air rotary drilling techniques. If air rotary techniques do not adequately work, then the open hole section will be drilled with mud-rotary drilling techniques. If mud-rotary methods are used, the drilling fluid will be flushed from the hole with clear water. Two-inch diameter, flush-joint, threaded Schedule 40 PVC screen and casing will be installed within the well. The screen section will extend from the bottom of the cleaned-out well bore to approximately 2 to 3 feet from the bottom of the existing well casing. The screen will have 0.010 inch slots. The annular space between the open hole and the screen will be filled with 20/30 gradation sand. This sand will extend approximately one foot above the top of the screen. A one-foot fine sand seal will be placed on top of the 20/30 sand and the remaining portion of the well bore will be filled with a neat cement grout.

After installation, the well will be developed by pumping and surging until the discharge is visually free of suspended sediments. The above-ground portion of the well will be finished with an above-ground locking steel cover.

A diagram of the proposed well repair is shown on Plate 1.

Well Replacement

In the event that the existing open hole section can not be drilled out or if it will not stay open due to in-filling or collapse of the borehole walls, then the existing well will be abandoned by filling with a neat cement grout. A new well will be drilled adjacent to the existing well. This well will be installed using hollow-stem auger drilling techniques. This well will be installed to a depth of approximately 45 feet. The well will be constructed of 2-inch diameter, flush-joint, threaded Schedule 40 PVC screen and casing. The screened section is anticipated to be 20 feet in length and will have 0.010-inch slots. The remainder of the well bore will be finished as described above for the monitor well repair. An above-ground, locking steel protective cover will be installed in a 2-foot square concrete pad.

After installation, the well will be developed by pumping and surging until the discharge is visually free of suspended sediments.

A diagram of the replacement well, if needed, is shown on Plate 1.

Reporting

At the completion of the work, a brief letter report will be prepared and submitted to the FDEP and Pasco County. This report will summarize the work performed and will present the well construction diagram for the repaired/replaced monitor well. If a replacement well is drilled, the well construction permit and the driller's well log will be submitted with the report.

If a replacement well is drilled or the casing elevation of the existing well is modified during the repair, the elevation of the top of the new well casing will be determined by a Professional Surveyor licensed in the State of Florida. If needed, this work will be performed by Pasco County personnel.

* * * *

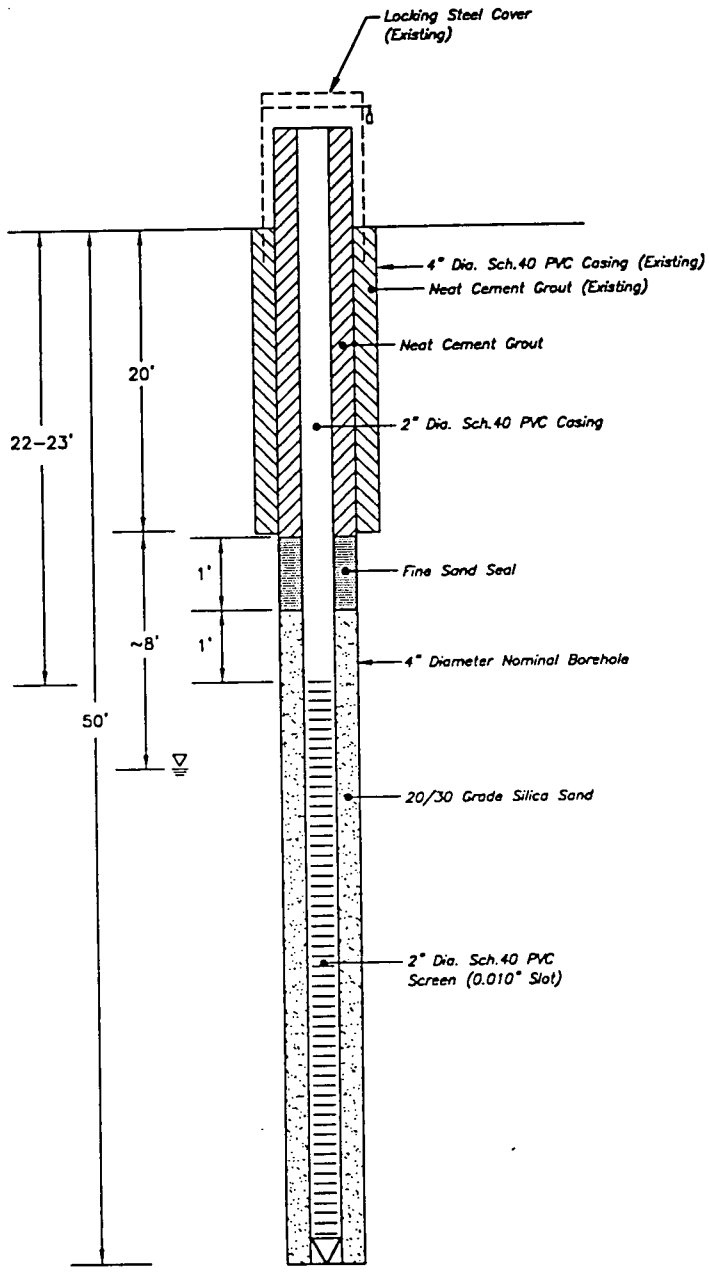
After your review, we will be happy to discuss any questions you may have. If, in the meantime, you have any questions, please do not hesitate to contact me at (813) 623-6646.

Yours very truly,
QORE, Inc.

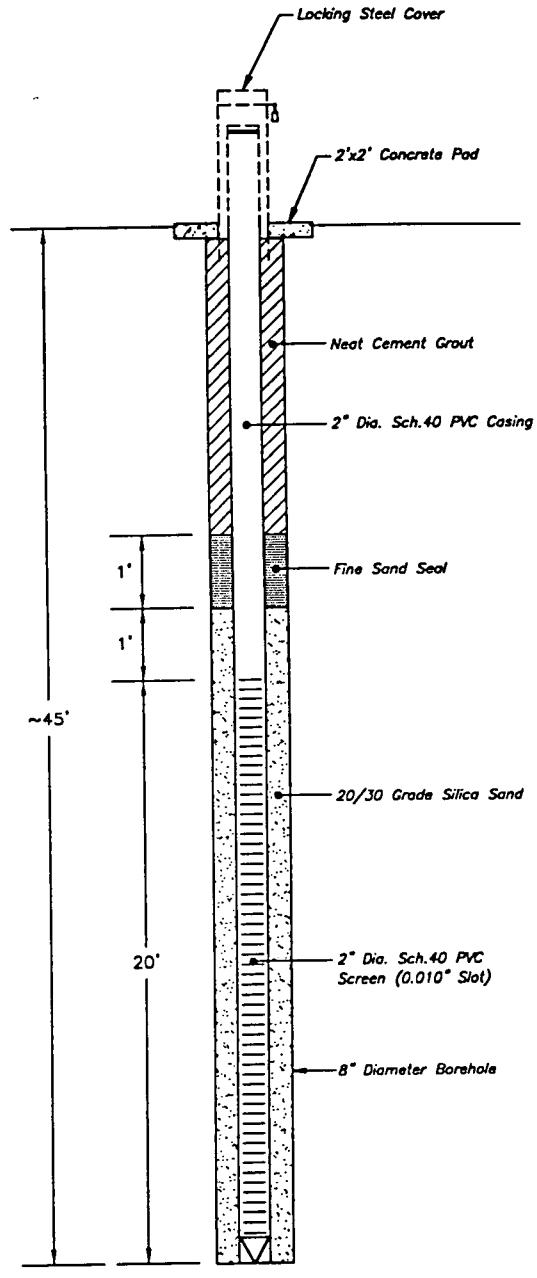
Lawrence J. Maron, P.E.
Senior Engineer

Attachment

cc: Mr. Douglas Bramlett – Pasco County
Mr. Jason Gorrie - CDM



REPAIR OF 4MW-7



4MW-7 REPLACEMENT WELL
(If Repairs are Ineffective)

PASCO COUNTY UTILITIES SERVICES	DATE 6/29/01	JOB NO. 27-2440W	PLATE NO. 1
QORE™ PROPERTY SCIENCES 1211 Tech Blvd. Suite 200 Tampa, Florida 33619 (813) 623-6646	PROPOSED WELL CONSTRUCTION REPAIR/REPLACEMENT OF WELL 4MW-7 WEST PASCO CLASS III LANDFILL PASCO COUNTY, FLORIDA		

WELL.DGN

LAWGIBB GROUP

December 13, 2001

Ms. Susan J. Pelz, P.E.
Florida Department of Environmental Protection
Solid Waste Section
3804 Coconut Palm Drive
Tampa, Florida 34654

Subject: **Additional Information for Financial Assurance Cost Estimates**
West Pasco Class III Landfill, FDEP Permit No.SO51-267334
Pending Permit No.26255-001-SO, Pasco County
LAW Project 40141-8-0451.07

Dear Ms. Pelz:

Law Engineering and Environmental Services, Inc. (LAW) is pleased to submit the enclosed eight copies of the Additional Information for Financial Assurance Cost Estimates for East Pasco Landfill. The following additional information is in response to the comments in your correspondence dated November 15, 2001, which was received on November 19, 2001.

The closure cost estimate has been revised to provide for closure of two 5-acre cells at the West Pasco Class III Landfill. There are two 5-acre cells at the West Pasco Class III Landfill that have not been activated or received any solid waste to date.

Closing Costs:

Comment 1: Cover Material, $0.22/SY. Table 2-3, Appendix F, page A-3. Please provide documentation, which indicates that this cost includes delivery and installation of the material.

Response: A revised cost estimate is provided using a geomembrane that is at least 40 mils in thickness per the Bee Ridge Landfill Design Criteria 3.3.1 (see Attachment B, Table 2-3, Item 1.c). See Section 2.5 page 2-6 of the Sarasota Bee Ridge Bid Documents that stipulates that the ***estimated quantities are for in place materials based on the design requirements and do not include settlement etc., thus the bid costs include delivery and installation.***

Comment 2: Top Soil, 64,533 CY. Please clarify if this quantity is as-placed or as received. The information in Attachment G, J.T. Branch & Sons quote does not indicate that the price includes placement/spreading of the material. Since the J.T. Branch & Sons quote is dated May 1, 2000, and is only valid for 365 days, please provide an updated quote.

RECEIVED
DEC 14 2001
Department of Environmental Protection
BY SOUTHWEST DISTRICT

LAW Engineering & Environmental Services, Inc.
4919 W. Laurel Street • Tampa, FL 33607
813-289-0750 • Fax: 813-289-5474

Response: The cost estimate is from Sarasota County Bee Ridge Bid not JT Branch and Sons. The cost estimate has been revised using 18 inches of protective soil (see Attachment B, Table 2-3, Item 1b1 at $3.083 and Item 1b2 at $5.21). Costs include transportation, placement and grading. See Section 2.5 of the Sarasota Bee Ridge Bid Documents that stipulates that the estimated quantities are for in place materials based on the design requirements and do not included settlement, etceteras, thus the bid costs include compaction and settlement.

Comment 3: Please provide the basis for this decrease from the July 2001.

Response: The amount has been revised to the July 2001 submittal amount.

Comment 4: Gas Control, N/A. The information indicates that the approved closure plan does not include a gas control system for this facility. Since Rule 62-701.530, F.A.C., requires that landfills that receive biodegradable wastes shall have a gas monitoring and control system designed to prevent explosions and fires and to minimize off-site odors and damage to vegetation, it appears that the closure plan does not comply with the requirements of the Rule. Since Class II landfills receive biodegradable waste, please include a cost for installation of a gas monitoring and control system.

Response: Costs for the installation of a passive gas control system (wells/vents with collection pipes) are provided even though the County directs the bulk of the biodegradable wastes to else where in its solid waste management system and the generation of significant amounts of landfill gas are not expected after closure. An existing gas monitoring system is in place.

Comment 8: Waste Tire Site - $35.00/ton. The information submitted in Attachment G (Diggers Towing and Recovery) does not appear to be a valid cost estimate. The disposal location was not specified, and Diggers Towings and Recovery does not appear to be a registered waste tire collector. Please provide revised estimate for the maximum quantity of waste tires, processed tires and residuals (i.e. off-road tires scraps, rims, etc.) which may be at the site as any time. The cost must include loading hauling, disposal and de-riming if appropriate.

Response: Pasco County is awarding a new contract for Waste Tire Management Services to Modern Recycling after evaluating Diggers Towing and Recovering's low bid (see Attachment C, Modern Recycling Bid).

Long Term Closing Costs:

Comment 6: Maintenance of gas migration/control system, NA. Please provide a cost for this item.

Response: Costs are provided for the maintenance of the gas control system that provides for replacement of 10 percent of the system every year or the complete replacement of the system every 10 years.

Comment 7: Maintenance of Cover. Please provide the basis for the reduction in quantity from the July 2001 submittal (1,000 s.f. vs. 1,000 s.y.). The estimate of the sodding/soil (0.2% of the total area per year) seems low.

Response: Revised costs are provided for the maintenance of the final cover that provides for replacement of approximately 5 percent of the Slope and Fill Costs under Section 2 and the Sodding under Section 7 every year or the complete replacement of the system every 20 years.

LAW appreciates the opportunity to be of service to Pasco County. If you have any questions or comments concerning this report, please contact Mr. George Ellsworth at 813/289-0750.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

George W. Ellsworth, P.G.
Senior Environmental Geologist
Florida Registration 848

Curtis J. Roos, P.E.
Chief Engineer
Florida Registration 27570

CURTIS J. ROOS NO. 27570 STATE OF FLORIDA REGISTERED ENGINEER

GWE/CJR:cjs\G:\ENVIRO\1998\Projects\4014180451 PASCO\40140180451.07_FA_WP_ADD_INFO_2.doc

cc: Mr. Robert J. Sigmond, Pasco County, Pasco County

Supporting Attachments

ATTACHMENT A

FDEP FINANCIAL ASSURANCE COST ESTIMATE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

FINANCIAL ASSURANCE COST ESTIMATES

Date: 12/11/01

Date of FDEP Approval: _____

I. GENERAL INFORMATION:

Facility Name: **West Pasco Class III** GMS No.: _____

Permit No.: **SO51-267334** Expiration Date: _____

Address (facility): 14230 Hays Road, Springhill, FL 34610

Address (mailing): 7530 Little Road, New Port Richey, Florida 33654

Permittee (operating authority): Pasco County Utilities

Facility Lat. 28° 22' 5" N Long. 82° 33' 30" W or UTM's _____

Solid Waste Disposal Units included: _____

Landfill Acreage included in this Estimate: 10

Date Disposal Unit Began Accepting Waste 1990 Design Life of Disposal Unit 60 years

Type of Landfill: _____ Class I X Class III

_____ Exempt; Type of Exemption: _____

Closure Plan Approved:

Phase/Cell#	Acres	Date Unit Began Accepting Waste	Design Life of Unit
1	5	Jun-90	20
2	5	not utilized	20
3	5	not utilized	20
4	5	Jun-90	20

II. TYPE OF FINANCIAL DOCUMENT SUBMITTED TO ENSURE FINANCIAL ASSURANCE:

___ Trust Fund Agreement
___ Letter of Credit
___ Insurance Certificate
___ Financial Guarantee Bond
___ Performance Bond (only for landfills with an approved closure plan)
___ Standby Trust Fund Agreement
___ Escrow Account
X Other (Explain) Letter of Understanding

III. For the time period in the landfill operation when the extent and manner of its operation makes closing most expensive.

**** Third Party Estimate/Quote must be provided for each item.**
**** Costs must be for a third party providing all material and labor.**

All items must be addressed.

Attach a detailed explanation for all items marked not applicable (N/A).

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL**	
1. Monitoring Wells:					
Borehole Excavation	CY		inplace	$0	
Backfill	CY		inplace	$0	
Gravel Pack	CY		inplace	$0	
Casing	LF		inplace	$0	
Screen	EA		inplace	$0	
Cap	EA		inplace	$0	
			Subtotal Monitoring Wells		$0
2. Slope and Fill:					
Site Grading	AC	10	5537	$55,370	
Placement/Spreadin *	CY	8067	3.08	$24,845	
Compaction *	CY			$0	
Off Site Material	CY			$0	
			Subtotal Slope and Fill		$80,215
3. Cover Material:					
Off-Site Clay	CY			$0	
On-Site Clay	CY			$0	
Synthetic-40 mil	SF	435,600	0.22	$95,832	
Synthetic-30 mil	SY			$0	
Synthetic-GCL	SY			$0	
Synethetic-Geonet	SY			$0	
Synthetic-Other	SY			$0	
			Subtotal Cover Material		**$95,832**

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL**	
4. Top Soil Cover:					
Off-Site Material 18 inches	CY	24,200	$ 3.083	$74,609	
Off Site Material Top Soil	CY	8,067	$5.21	$42,027	
Delivery *	CY			$0	
Spreading *	CY			$0	
Compaction *	CY			$0	
			Subtotal Top Soil Cover		$116,636
5. Stormwater Control:					
Excavation, Grading & Recontouring	CY			$0	
Stormwater Sideslope Conveyances	LS	200	$51.45	$10,290	
Ditch Construction	LF			$0	
Berm Construction	CY			$0	
			Subtotal Stormwater Control		$10,290
6. Gas Migration Control:					
Wells (8@25ft)	LF	200	$67.00	$13,400	
Pipe and Fittings	LF	1200	$31.00	$37,200	
Traps	EA		Not Applicable	$0	
Sump	EA		Not Applicable	$0	
Flare Assembly	EA		Not Applicable	$0	
Flame Arrestor	EA		Not Applicable	$0	
Mist Elimimator	EA		Not Applicable	$0	
Flow Meter	EA		Not Applicable	$0	
Blowers	EA		Not Applicable	$0	
Other Describe Mobilization	LS	1	8000	$8,000	
Monitoring Probes	LF		Not Applicable	$0	
NSPS/Title V Requirements	LS		Not Applicable	$0	
				$0	
				$0	
			Subtotal Gas Migration Control		$58,600

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL**	
7. Revegetation:					
Sodding	**SY**	48,400	$1.04	$50,336	
Irrigation 1st 30 days	LS			$0	
Hydroseeding *	AC				
Fertilizer *	AC			$0	
Mulch *	AC			$0	
			Subtotal Revegetation		$50,336
8. Landscape Irrigation System:					
Temporatory Watering (30 days)	**LS**	1	5000	$5,000	
Pumps	EA			$0	
			Subtotal Landscape Irrigation System		$5,000
9. Security System:					
Fencing	LF			$0	
Gate(s)	EA			$0	
Sign(s)	EA			$0	
			Subtotal Security System		$0
10. Engineering:					
Closure Plan Report	LS	1	$20,000	$20,000	
Certified Engineering					
Drawings(for construction)	LS	1	$5,000	$5,000	
Closure Permit	LS	1	$10,000	$10,000	
NSPS/Title V Air Permit	LS			$0	
Other (Detail):					
				$0	
				$0	
				$0	
			Subtotal Engineering		$35,000

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL**	
11. Benchmark Installation	EA	1	$1,000	$1,000	
Final Survey	LS	1	$1,000	$1,000	
			Subtotal Benchmark Installation		$2,000
12. Certification of Closure	LS	1	$5,000	$5,000	
			Subtotal Certification of Closure		$5,000
13. Administrative:					
P.E. Supervisor	HR	16	$85.00	$1,360	
On-Site Engineer	HR	32	$71.40	$2,285	
Office Engineer	HR	32	$51.50	$1,648	
On-Site Technician 40 hrs for 4 wks	HR	160	$39.10	$6,256	
Other (Explain):					
Travel	DAY	24	$50	$1,200	
	Acre				
			Subtotal Administrative		$12,749
14. Quality Assurance:					
P.E. Supervisor	HR	26	85.00	$2,210	
On-Site Engineer	HR	104	71.40	$7,426	
Office Engineer	HR	26	51.50	$1,339	
On-Site Technician	HR	520	39.10	$20,332	
Secretarial	HR	20	29.75	$595	
Travel	DAY	65	50	$3,250	
Testing	ACRE	20	1000	$20,000	
			Subtotal Quality Assurance		$55,152
15. Site Specific Costs (Explain):					
General Closure Const. (Mob					
Demob.,Bonds, Ins. Survey.,	LS	0.114942529	1,013,650.00	$116,511	
Tire Processin :Reg Tires	Tons	2450	60.95	$149,328	
Tire Processing: De-riming	TONS	25	0.50	$13	
Tire Processing: Large Tire	TONS	50	70.89	$3,545	
Tire processing includes shredding, loading, transporting and dumping on site					
			Subtotal Site Specific Costs		$269,396

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL**	
			SUBTOTAL CLOSING COSTS		$796,206
16. Contingency	% of Total		5%		$39,810
			TOTAL CLOSING COSTS		$836,016

CERTIFICATION BY ENGINEER

This is to certify that the Financial Assurance Cost Estimates pertaining to the engineering features of this solid waste management facility have been examined by me and found to conform to engineering principals applicable to such facilities. In my professional judgement, the Cost Estimates are a true, correct and complete representation of the financial liabilities for closing and long-term care of the facility, and comply with the requirements of Florida Administrative Code (FAC), Rule 17-701.630 and all other Department of Environmental Protection rules, and statutes of the State of Florida. It is understood that the Financial Assurance Cost Estimates shall be revised and submitted to the Department annually as required by FAC 17-701.630(4).

Signature

4919 West Laurel Street
Mailing Address

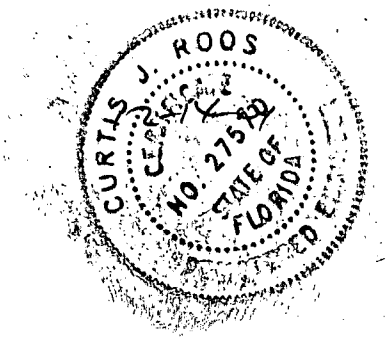
Curtis J. Roos, PE, Chief Engineer
Name and Title (please type)

Tampa, FL 33607
City, State, Zip Code

27570
Florida Registration Number (please affix seal)

(813) 289-0750
Telephone Number

Date: 10/10/01



IV. (for 30 yrs., see 17-701.630 (3) (a))

(circle one)

**** Third Party Estimate/Quote must be provided for each item.**
**** Costs must be for a thrid party providing material and labor.**
All items must be addressed.

Attach a detailed explanation for all items marked not applicable (N/A).

DESCRIPTION	UNIT (A)	QUANTITY (B)	UNIT COST (C)	ANNUAL COST** (D)=(B)x(C)	
1. Groundwater Monitoring 17-701.510(6), (8)(a)	sampling frequency events/yr	# of wells	$/well/event	$/yr	
Monthly				$0.00	
Quarterly				$0.00	
Semi-Annual	2	10	$368	$7,360.00	
Annual				$0.00	
			Subtotal Groundwater Monitoring		$7,360
2. Gas Monitoring 17-701.400(10)	sampling frequency events/yr	# of locations	$/location/event	$/yr	
Monthly		None		$0.00	
Quarterly	**4**	**3**	**$72.14**	**$865.68**	
Semi-Annual		None		$0.00	
Annual		None		$0.00	
			Subtotal Gas Migration Monitoring		$866
3. Leachate Monitoring 17-701.510(5), (6)(b), 17-701.510(8)(c)	sampling frequency events/yr	# of locations	$/location/event	$/yr	
Monthly				$0.00	
Quarterly				$0.00	
Semi-Annual	2	1	$368	$736.00	
Annual				$0.00	
			Subtotal Leachate Monitoring		$736

DESCRIPTION	UNIT (A)	QUANTITY (B)	UNIT COST (C)	ANNUAL COST** (D)=(B)x(C)
4. Surface Water Monitoring 17-701.510(4),(8)(b)	sampling frequency events/yr	# of locations	$/location/event	$/yr
Monthly				$0
Quaterly				$0
Semi-Annual				$0
Annual				$0
		Subtotal Surface Water Monitoring		$ -
5. Leachate Collection/Treatment Systems Maintenance & Operation				
Collection Pipes	LS	1	$10,000.00	$10,000
Sumps, Traps	EA			$0
Lift Stations	EA			$0
Tanks	EA			$0
Impoundment				
Liner Repair	SY			$0
Sludge Removal	CY			$0
Aeration Systems				
Floating Aerators	EA			$0
Spray Aerators	EA			$0
				$0
Off-Site Disposal (include transportation and disposal)	1000gal	5690	$ 2.87	$16,330
Operation				
P.E. Supervisor	HR	8	$85.00	$680
On-Site Engineer	HR	16	$71.40	$1,142
Office Engineer	HR	8	$59.40	$475
On-Site Technician	HR	48	$39.10	$1,877
On-Site Pretreatment System Maintenance				
				$0
				$0
Other (Describe)				
				$0
				$0
		Subtotal Leachate Collection/Treatment System Maintenance & Ope		$30,505

DESCRIPTION	UNIT (A)	QUANTITY (B)	UNIT COST (C)	ANNUAL COST** (D)=(B)x(C)	
6. Maintenance of Groundwater Monitoring Wells	LS	1	$453.00	$453	
Subtotal Groundwater Monitoring Well Maintenance					$453
7. Maintenance of Gas Migrati (10 percent of Section 6, Closure Costs)					
Piping, Vents, wells	LS	1	$5,860.00	$5,860.00	
Wells/Vents	LF			$0.00	
Flaring Units	EA			$0.00	
Meters, Valves				$0.00	
Compressors				$0.00	
Flame Arrestors	EA			$0.00	
Subtotal Gas Migration System Maintenance					$5,860
8. Landscape Maintenance					
Mowing	AC	160	$15	$2,400	
Fertilizer	AC			$0	
Irrigation	AC			$0	
Subtotal Landscape Maintenance					$2,400
9. Benchmark Maintenance	EA	1	$312.80	$313	
Subtotal Benchmark Maintenance					$313
10. Administrative/Overhead-					
P.E. Supervisor	HR	8	$85.00	$680	
On-Site Engineer	HR	32	$71.40	$2,285	
Office Engineer	HR	8	$59.40	$475	
On-Site Technician	HR	32	$39.10	$1,251	
Other (Explain):					
Bian GWP Rpt	LS	0.5	$6,000	$3,000	
Electricity - include: Leachate Pumps, Blowers, Lighting, etc.	LS	1	$1,243	$1,243	
Subtotal Administrative					$8,934

DESCRIPTION	UNIT (A)	QUANTITY (B)	UNIT COST (C)	ANNUAL COST** (D)=(B)x(C)	
11. Maintenance of Cover					
(10 % of Sect. 2 & 7, Closure Costs)					
Sodding, Soil	**LS**	1	$6,527.55	$6,527.55	
Regrading	AC			$0.00	
Liner Repair-Synthetic	LS	1	$800.00	$800.00	
Clay	CY			$0.00	
			Subtotal Cover Integrity Maintenance		$7,328
12. Surface Water Drainage Maintenance		Lumps Sum			
Ditch Cleaning	LF			$0	
Stormwater Conveyance Maint.	EA			$0	
			Subtotal Drainage Maintenance		$0
13. Security System Maintenance		***Lumps Sum***			
Fences	LF	1	$ 800.00	$800	
Gate(s)	EA	1	$ 100.00	$100	
Sign(s)	EA	1	$ 100.00	$100	
			Subtotal Security System Maintenance		$1,000
14. Contingency					
% of Total	LS		0.05	$65,754	
				Subtotal Contingency	$3,288
15. Site Specific Costs (Explain):					
				$0.00	
				$0.00	
				Subtotal Site Specific Costs	$0
				LONG-TERM CARE COSTS ($/yr)	$69,042
				TOTAL LONG-TERM CARE COSTS ($)	$2,071,251

CERTIFICATION BY ENGINEER

solid This is to certify that the Financial Assurance Cost Estimates pertaining to the engineering features of this applicable to such facilities. In my professional judgement, the Cost Estimates are a true, correct and complete representation of the financial liabilities for closing and long-term care of the facility, and comply with the requirements of Florida Administrative Code (FAC), Rule 17-701.630 and all other Department of Environmental Protection rules, and statutes of the State of Florida. It is understood that the Financial Assurance Cost Estimates shall be revised and submitted to the Department annually as required by FAC 17-701.630(4).

Signature

4919 West Laurel Street
Mailing Address

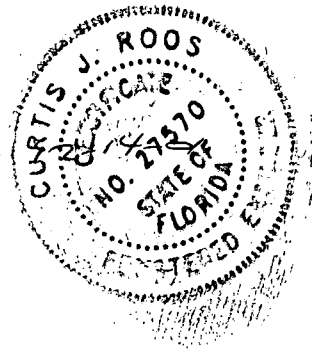
Curtis J. Roos, P.E., Chief Engineer
Name and Title (please type)

Tampa, FL 33607
City, State, Zip Code

27570
Florida Registration Number (please affix seal)

(813) 289-0750
Telephone Number

Date: 10/10/01



ATTACHMENT B

SARASOTA COUNTY
BEE RIDGE LANDFILL BID COST ESTIMATES

SARASOTA COUNTY
"Dedicated to Quality Service"

FACSIMILE

To:	George Ellsworth
Affiliation:	Law Engineering
Facsimile number:	(813) 289-5474

From:	Gerald Bennett

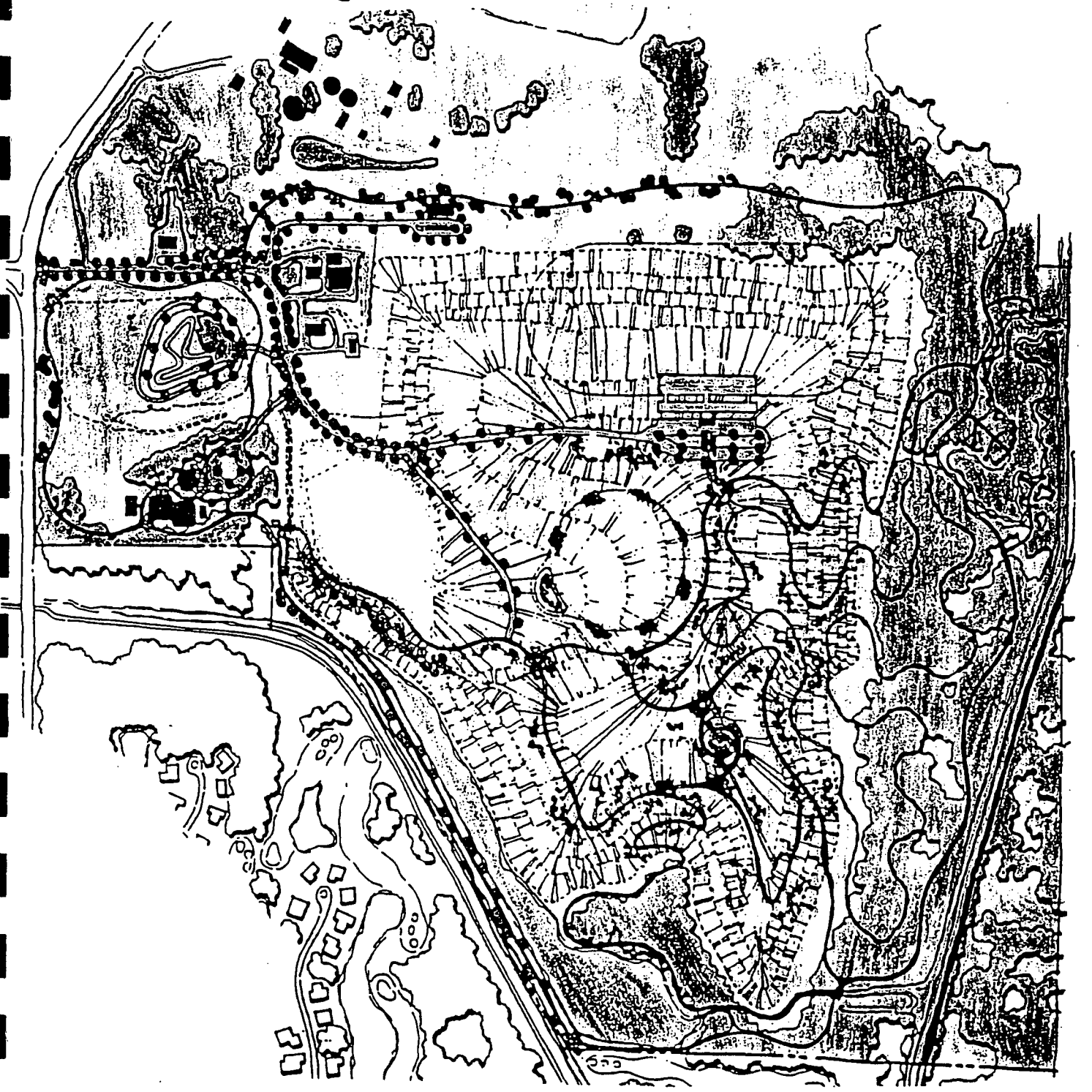
Number of pages including this cover page:7

If all pages are not received, call the phone number at the bottom of this page.

Subject:	Bee Ridge Landfill – Closure Bid
Date:	May 14, 2001
Comments:	Per your request.

ENVIRONMENTAL SERVICES, Solid Waste Operations • 4000 Knights Trail Road, Nokomis, FL 34275
Tel 941-486-2600 • Fax 941-486-2620

REQUEST FOR PROPOSAL



DESIGN, PERMIT AND BUILD
CLOSURE OF THE SARASOTA COUNTY
BEE RIDGE LANDFILL

SARASOTA, FLORIDA

MAY 15, 1998

PBS&J

SARASOTA COUNTY GOVERNMENT

REQUEST FOR PROPOSALS

The Sarasota County Government invites proposals from qualified vendors to perform the following work which is described in detail in the Request for Proposal (RFP) specifications.

RFP NUMBER: **8100H**

RFP TITLE: Closure of Sarasota County Bee Ridge Landfill

RFP OPENING LOCATION: **Second Floor Meeting Room A/B**
The Sarasota County Administration Center
1660 Ringling Blvd.
Sarasota, Florida 34236

RFP SUBMITTAL DEADLINE AND RFP OPENING DATE & TIME: July 15, 1998, 2:30 p.m.

MANDATORY PRE-PROPOSAL CONFERENCE: June 10, 1998, 10:00 a.m.

Solid Waste Operations Division
Bee Ridge Landfill
8350 Bee Ridge Road
Sarasota, FL 34241

Qualified firms are invited to deliver eight (8) copies of their proposals, in a **sealed envelope marked "SEALED REQUEST FOR PROPOSALS, RFP #8100H"**, and delivered to the third floor, General Services Department, County Administration Center, 1660 Ringling Boulevard, Sarasota, Florida 34236, or mailed to P.O. Box 8, Sarasota, Florida 34230. The County assumes no responsibility for proposals received after 2:30 p.m., July 15, 1998, or at any office or location other than that specified herein, whether due to mail delay, courier mistake, mishandling or any other reason. Late proposals will be held unopened and will not be considered for award.

Specifications and Request for Proposal documents are available at the Sarasota County Purchasing office, third floor, County Administration Center, 1660 Ringling Boulevard, Sarasota, Florida, 34236. Phone (941) 951-5760.

For additional information, please contact Jack Haley, Contract Management Specialist, at (941) 951-5760, fax (941) 364-4385.

SARASOTA COUNTY GOVERNMENT
PURCHASING & CONTRACTS MANAGEMENT DIVISION

PUBLISH: May 20, 1998

OPEN: July 15, 1998

SARASOTA COUNTY
REQUEST FOR PROPOSAL (RFP)

PROPOSERS MUST COMPLY WITH THE FOLLOWING INSTRUCTIONS TO BE CONSIDERED FOR SELECTION.

1. QUESTIONS OR CLARIFICATIONS

Any questions or requests for clarification must be sent via facsimile, hand delivered, or mailed to Sarasota County Purchasing (FAX 941-364-4385). Any request must include the RFP number and title.

2. OPENING LOCATION

These proposals will be publicly opened at Sarasota County Administrative Building, 1660 Ringling Blvd. Sarasota, Florida, 34230, in the presence of County officials at the time and date stated on the cover sheet. All proposers or their representatives are invited to attend.

3. PROPOSAL FORM DELIVERY REQUIREMENTS

Any proposals received after the stated time and date will not be considered. It shall be the sole responsibility of the proposer to have their proposal delivered to the Sarasota County Purchasing & Contracts Management Division for receipt on or before the stated time and date.

If a proposal is sent by U.S. Mail, the proposer shall be responsible for its timely delivery to the Purchasing & Contracts Management Division. Proposals delayed by mail shall not be considered, or opened at the public opening, and arrangements shall be made for their return at the proposer's request and expense.

4. CLARIFICATION & ADDENDA

Each proposer shall examine all Request for Proposal documents and shall judge all matters relating to the adequacy and accuracy of such documents. Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to the Request for Proposal shall be made in writing through the Sarasota County Purchasing & Contracts Management Division. The County shall not be responsible for oral interpretations given by any County employee, representative, or others. The issuance of a written addendum is the only official method whereby interpretation, clarification or additional information can be given. If any addenda are issued to this Request for Proposal, the County will attempt to notify all prospective proposers who have secured same, however, it shall be the responsibility of each proposer, prior to submitting their proposal, to contact the Sarasota County Purchasing & Contracts Management Division at 941-951-5760, to determine if addenda were issued.

10. CODE OF ETHICS

With respect to this RFP, if any proposer violates or is a party to a violation of the State of Florida Code of Ethics for Public Officers and Employees, per Florida Statutes, Chapter 112, Part III, such proposer may be disqualified from performing the work described in this RFP or from furnishing the goods or services for which the proposal is submitted and may be further disqualified from submitting any future proposals for work or for goods or services for Sarasota County.

11. COLLUSION

By offering a submission to this Request for Proposal the proposer certifies the proposer has not divulged to, discussed or compared his proposal with other proposers and has not colluded with any other proposer or parties to this proposal whatsoever. Also, proposer certifies, and in the case of a joint proposal, each party thereto certifies, as to their own organization that in connection with this proposal:

a. Any prices and/or data submitted have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices and/or cost data, with any other proposer or with any competitor;

b. Any prices and/or cost data quoted for this proposal have not been knowingly disclosed by the proposer prior to the scheduled opening directly or indirectly to any competitor;

c. No attempt has been made or will be made by the proposer to induce any other person or firm to submit or not to submit a proposal for the purpose of restricting competition;

d. The only person or persons interested in this proposal as principal or principals is/are named therein and that no person other than therein mentioned has any interest in this proposal or in the contract to be entered into; and

e. No person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or established commercial agencies maintained by the proposer for the purpose of doing business.

12. SUBCONTRACTING

Contractors for construction projects shall obtain written approval from the County for any subcontractors and that portion of work, which they will subcontract. A Subcontractor shall be considered any individual, partnership or corporation supplying materials or service for work under subcontract to the Contractor.

19. EQUAL EMPLOYMENT OPPORTUNITY

Sarasota County, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 and the Regulations of the Department of Commerce (15 CFR, Part 8) issued pursuant to such Act, hereby notifies all prospective proposers that they will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to participate in response to this advertisement and will not be discriminated against on the grounds of race, color, creed, sex, age or national origin in consideration for an award.

SARASOTA COUNTY GOVERNMENT
MINORITY BUSINESS ENTERPRISE
PROJECT PLAN

1) Project Name:	2) Total Bid Price:	3) 5% of Total Bid Price:

4) Type of Subcontract Work	5) Subcontractor	6) Dollar Amount	7) H- I- J- K M or AD	8) A or G.F.E.
TOTAL DOLLAR AMOUNT				

I certify, under penalty of perjury, for the project shown above, that for the subcontracts, material-men contracts and the good faith effort listed above, Sarasota County Government Certified Minority Business Enterprises will complete the subcontracts as shown or that Good Faith Effort did occur. I further certify that this plan will be carried out through-out the project life and that any proposed changes will be submitted in writing, for prior approval of the owner.

Company Name _____ Address _____

By _____ State _____ Telephone _____

Signature of Company Officer _____ Title _____ Date _____

Notary Signature _____ Notary Seal _____ Type of Identification _____ Date _____

GENERAL INFORMATION: Only the vendor selected for award of this bid is required to complete, sign, and submit this Minority Business Enterprise (MBE) plan. The awardee is encouraged to subcontract no less than 5% of their total bid price with Sarasota County Certified MBE firms. Copies of the County's list of Certified MBE firms are available from:

Purchasing & Contracts Management Division
1660 Ringling Boulevard, Third Floor
Sarasota, Florida 34230

Office Number: (941) 951-5760
Fax Number (941) 364-4385

Within seven working days following the date of the County's "Notice of Bid Action", the bid awardee will deliver to the Purchasing management division this completed and signed MBE.Project Plan showing award of 5% or more of the bid price to Sarasota County Certified Minority Business Enterprises and/or Good Faith Effort, as described herein.

Sarasota County certification of MBE firms listed in a contractors MBE Project Plan, should be accomplished prior to submittal of the contractor's plan. MBE firms that have completed certification with Sarasota County's Transit Department or the State of Florida will be automatically eligible for Sarasota County Certification but must still complete and submit Sarasota County's certification application and list of commodities supplied. Subcontractors listed in the MBE Project Plan are subject to the subcontractor terms and requirements listed in the bid specifications and project contract. (If needed continue on attached pages.)

CONTINUED ON NEXT PAGE

TABLE OF CONTENTS

TABLES

G:\ENV\COMMON\WASTEMAN\SARASOTA\PROCURE\RFP\FINAL\8100RFP.FIN

Section 1

PURPOSE, APPROACH AND SCHEDULE

Section 1

PURPOSE, APPROACH, AND SCHEDULE

1.1 PURPOSE AND APPROACH

Sarasota County (County) is seeking to procure services to design, permit, and build the Sarasota County Bee Ridge Landfill Closure. The Bee Ridge Landfill is scheduled to cease operations in August 1998. The County is seeking to procure these services using a one-step selection process. This Request for Proposal (RFP) includes the required qualifications of the Design-Build firm as well as the required project approach, cost projections and financial information.

1.2 SCHEDULE

Following in Table 1-1 is a tentative schedule which represents the current timetable of the County for the procurement process. The County reserves the right to amend the schedule as it deems appropriate.

Table 1-1 Tentative Schedule of Events

Issue RFP Documents	May 20, 1998
Pre Proposal Meeting	June 10, 1998
Preparation of Proposals by Design-Build Firms	May, 1998 to July, 1998
Receive Proposals	July 15, 1998
Evaluation and Selection	July, 1998
Contract Negotiation with Highest Ranking Design-Build Firm	August, 1998
Present Contract to Board of County Commissioners	September 8, 1998
Issue Notice to Proceed	September, 1998
Design permit Preparation	September, 1998 to January, 1999
Submit Closure Permit Application to FDEP	December, 1998
Permitting	December, 1998 to July, 1999
Closure Construction	July, 1999 to April, 2000

The qualifications and experience for the Design-Build Firm are discussed in Section 2.

1.3.4 Florida Department of Environmental Protection (FDEP)

The Bee Ridge Landfill is located within the jurisdiction of the FDEP Southwest District. Their office is located at 3804 Coconut Palm Drive, Tampa, Florida 33619-8318, (813)744-6100.

Section 2

INSTRUCTION FOR PROPOSAL PREPARATION AND SUBMISSION

Section 2

INSTRUCTIONS FOR PROPOSAL PREPARATION AND SUBMISSION

2.1 GENERAL

2.1.1 Contacts/Questions

For the purposes of responding to this RFP, the term "Design-Build Firm" means the firm responding to the Request for Proposal (RFP) and is further defined in Section 2.2. All Design-Build firms and their Agents are hereby placed on notice that the Sarasota County Board of County Commissioners, County staff, and employees of Post, Buckley, Schuh & Jernigan, Inc. (PBS&J), or their professional associates, shall not be contacted about this RFP (with the exception of the designated County liaison).

The designated liaison for the RFP process is Jack Haley. All questions shall be directed in writing to the contact person at the office of the Purchasing and Contracts Management Division of Sarasota County, 1660 Ringling Boulevard, Third Floor, Sarasota, Florida 34236. Such written requests for information must be received at the designated address at least ten (10) days prior to the closing date of the RFP. No interpretation shall be considered binding unless provided in writing by the County. All communications shall cite the subject RFP number. If a deficiency in this RFP is discovered, a correction or elaboration will be provided to all firms that have received it from the County. Design-Build Firms must acknowledge in their proposals the receipt of any clarifications issued by the County.

Any contact by a Design-Build Firm other than specified in this paragraph may be cause for rejection of the Design-Build Firm's proposal.

All site visits shall be coordinated with the contact person.

2.1.2 Submission Date/Location

All proposals must be received no later than 2:30 p.m. on July 15, 1998, at the office of the Purchasing and Contracts Management Division of Sarasota County, 1660 Ringling Boulevard, Third floor, Sarasota, Florida 34236.

2.1.3 Submission Method

The proposal shall be enclosed in a sealed package, addressed to the office specified in Section 2.1.2 of this RFP, with the name and address of the Design-Build Firm, the date of opening of the response, the title of the RFP (Request for Proposal to Design, Permit, and Build the Closure of the Sarasota County Bee Ridge Landfill), and the RFP number (RFP 8100H) on the face of the package. Any proposal received after the stated time and date for the receipt of the documents will not be

II. Qualifications

This section shall include the Design-Build Firm's experience and qualifications required in Sections 2.2 and 2.3.

III. Project Approach

This section shall include a description of the project approach required in Section 2.4.

IV. Cost Projections and Preliminary Schedule

This section shall include the information required in Section 2.5.

V. Financial Information

This section shall include the financial information required in Section 2.6.

VI. Insurance and Bonding Requirements

This section shall include evidence that insurance is available as required in Section 2.7.

VII. Other Information

This section shall include any information that is not included in the above items that the Design-Build Firm determines is appropriate.

2.1.5 Cost of Responding to the RFP

Any and all costs incurred by a Design-Build Firm while responding to the County's RFP process are solely the responsibility of the Design-Build Firm. The County assumes no responsibility whatsoever for any such costs.

2.1.6 Proprietary Information

Upon receipt, proposals become "Public Records" and shall be subject to public disclosure consistent with Chapter 119, Florida Statutes.

2.1.7 Signature and Authority Requirements

The County will only contract with a single firm. The proposal package shall clearly state the leading authority for the Design-Build Firm. Authority for a corporate officer of the Design-Build Firm to negotiate and enter into any and all contracts necessary to provide all services associated with this project shall be included in the proposal. Forms 1 and 2 shall be completed and included in the Proposal.

- A description of any lawsuits filed or arbitration requested with regard to construction contracts within the last 5 years.

Additional experience that shall be addressed includes experience with the design build process, specifically with projects similar to the County's.

2.3 QUALIFICATION INFORMATION REQUIRED

The description of the Design-Build Firm's qualifications must include all of the information requested in the following subsections:

2.3.1 Design-Build Firm Profiles

The Design-Build Firm shall submit a profile, which will include:

- name
- principal business address
- principal business contact
- letter of understanding and interest regarding the RFP
- form of business (corporation, partnership, joint venture, etc.)
- names of partners or officers
- if a corporation, date and state of incorporation
- if partnership or joint venture
  - date of agreement specific to this project
  - list of major firms or joint venture members
  - identify assignments of legal or financial liabilities or responsibilities
- if the Design-Build Firm(s) is a partially or fully owned subsidiary, identify parent firm and relationship with the parent corporation
- resumes of key personnel

2.3.2 Key Personnel

The key personnel for each phase of the proposed project (design members, construction manager, etc.) shall be listed. These personnel should have been involved in the projects discussed in the previous section. A complete organizational chart shall be included in the proposal.

2.4 PROJECT APPROACH

Each Design-Build Firm shall submit a project approach. This approach shall include the milestones expected in each phase of the project. The overall management of the project and proposed interactions and responsibilities of each member of the Project Team should be discussed.

A description of the Design Build Firm's Quality Control philosophy and a proposed method of implementation during design and construction should be included.

Section 3

DESIGN CRITERIA PACKAGE

3.3 CONCEPTUAL DESIGN CRITERIA

3.3.1 General Closure Requirements

The area to be lined is approximately 87 acres and is shown on Sheet SW-1 of the Design Criteria Drawings. This does not include the administration area which is inside the slurry wall, but is not planned to be lined and is designated as previously closed.

The liner for this project shall be a minimum 40 mil geomembrane compatible with the existing liner system in the closed phases. The proposed liner system shall extend at least two-feet past the slurry wall and consist at a minimum of:

- Bahia sod with a minimum 2-inch organic base.
- Minimum 24-inches of a sandy protective cover soil meeting the liner manufacturers recommendation for maximum particle size. All fill material shall be from off-site sources.
- A geosynthetic drainage composite along the lower areas of the landfill with accompanying interceptor drain discharging into the stormwater system.
- 6-inches of liner bedding/leveling course.

All slopes in the Phase IV area shall be at a minimum of 5% and no steeper than 4 horizontal to 1 vertical (4:1) as indicated on the Design Criteria Drawings.

All remaining slopes in the construction area (existing yard waste mulching area) shall be kept at a minimum slope of 2 percent or as otherwise approved by FDEP and the County.

A closure permit application will be required to be submitted to FDEP that at a minimum meets the requirements of Rule 62-701.600 and 62-701.610 F.A.C.. This permit application will be processed through the FDEP's southwest district. Detailed construction plans and specifications are required by FDEP as part of the closure application submittal. Previous closure applications for the Bee Ridge Landfill are available for review at FDEP's office by appointment.

The placement of the liner along the western edge of the existing yard waste mulching area involves crossing the slurry wall. Extreme care in working around the slurry wall will be required.

The protective cover soil shall be free of deleterious material. It shall have physical properties such that it can be readily spread and compacted. This material shall contain no more than 20 percent by weight material finer than the No. 200 mesh sieve. The Design-Build Firm is responsible for locating sources and providing acceptable material.

3.3.2 LFG System

The existing LFG collection system will require expansion for this closure. This expansion will include the installation of approximately 18 vertical LFG collection wells and associated condensate control system. A header pipe connecting two of the existing closed areas and installation of a header pipe connecting the existing southern closed area and the proposed closed area to the flare facility will need to be installed. The proposed LFG collection wells and headers are shown on Sheets 2 and 3 of the Criteria Design Drawings included with this RFP.

The following is the design criteria for the LFG collection system expansion:

- Header and lateral piping shall be high density polyethylene (HDPE). All nuts, bolts and other miscellaneous metal accessories shall be corrosion resistant. Vertical piping can be either HDPE or chlorinated poly vinyl chloride (CPVC) depending on the temperature of the waste encountered during drilling and the requirements of FDEP. Horizontal LFG piping shall be HDPE. The SDR or schedule of the pipe shall be determined by the Design-Build Firm.

- All header and lateral piping shall be placed at a minimum slope of 2 percent. Piping shall be laid so that differential settlement shall not unduly create low points. Sufficient slack shall be allowed in the piping to allow for possible settlement and thermal expansion and contraction.

- Unless otherwise indicated, all LFG collection wells shall be protected by bollards or other structure and signs designating the well number shall be placed with each well.

- The proposed locations of the LFG are shown on Sheet SW-2 on the Design Criteria Drawings. The final locations and depths of the LFG collection wells shall be calculated by the Design-Build Firm and approved by FDEP.

- The existing temporary 10-inch header pipe shall be abandoned in place if possible. If the header interferes with closure operations it should be removed as necessary or in total.

- A new 10-inch header pipe shall be installed on the western perimeter of the site connecting phase II and Phase III to the blower facility.

- An 8-inch header pipe shall be installed connecting the Phase III LFG collection system with the Phase I East system.

- Condensate drip legs shall be installed at a minimum, as shown on the Design Criteria Drawings. The condensate shall be directed into the landfill. A proposed condensate drip leg is shown on Detail 1, Sheet SW-3 of the Design Criteria Drawings included with this RFP.

- Knock out condensate drums should be installed as part of the header piping construction and the condensate drained into the landfill. A proposed condensate drum is shown on Detail 4 on Sheet SW-3 of the Design Criteria Drawings included with this RFP.

- The well heads for the new gas collection wells shall be installed above ground with manufactured well heads such as that made by Landtec Landfill Control Technologies, Landfill Gas & Environmental Products, Inc., or an equal product accepted by the County. The well heads shall be connected to the lateral piping by flexible piping that has been shown to be resistant to LFG. Monitoring equipment designed to interface with the manufactured wellheads shall be supplied with the wellheads. Computer software required to download data from the monitoring equipment shall be loaded onto the County's computer system and County personnel instructed in use of the newly installed software.

3.3.5 Groundwater Monitoring System

Modifications to the groundwater monitoring system are not anticipated for the closure permit.

3.3.6 Post-Closure Considerations

The conceptual plans for a radio control airplane airport are shown on sheets R1-R4 of the Design Criteria Drawings, included with this RFP. The County is requesting a proposal from the Design-Build Firm to design, permit and build this work. An County optional proposal item for this work is included on Table 2-4. The County may chose what items, if any, are constructed.

G:\ENV\COMMON\WASTEMAN\SARASOTA\PROCURE\RFP\FINAL\8100RFP.FIN

EXHIBIT A

Table 2-1

COST ESTIMATION FORM
Design/Permitting

		Total
a.	Administration	$ 207,957
b.	Geotechnical	$ 22,000
c.	Initial Design/Permit Submittal (60% completion level)	$ 148,027
d.	Final Design/Permit Submittal (90% completion level)	$ 116,323
e.	Permit RAI Response and Permit Review	$ 241,732
f.	Construction Support	$ 408,846
g.	Construction Certification	$ 34,877
	Total Design/Permitting	$ 1,179,762

Design/Permitting shall be compensated on a Lump Sum basis for the work indicated above and described in the RFP.

LS	=	Lump Sum
AC	=	Acres
CY	=	Cubic Yard
SY	=	Square Yard
SF	=	Square Foot
LF	=	Linear Foot
EA	=	Each Feet

EXHIBIT A

Table 2-2

COST ESTIMATION FORM
General Closure Construction

	Total
a. Mobilization	$ 636,550
b. Demobilization	$ 14,000
c. Insurance	$ 25,000
d. Bonds	$ 2,000
e. Administration	$ 218,100
f. Contractor's Field Office	$ 8,000
g. Surveying	$ 80,000
h. Testing	$ 25,000
i. Trench Safety Act	$ 5,000
Total General Construction	$ 1,013,650

General Closure Construction shall be compensated on a Lump Sum basis for the work indicated above and described in the RFP.

EXHIBIT A

Table 2-3

COST ESTIMATION FORM
Closure Construction Field Work

	Estimated Quantity	Unit	Firm's Quantity	Firm's Unit Price	Total
1. Site Work					
a. Site Grading	87	AC	87	5,537.356	481,750
b. Fill					
1. Liner Base	177,000	CY	73,080	3.083	225,306
2. Protective Cover Soil	354,000	CY	250,000	5.21	1,302,500
c. Geomembrane	3,980,000	SF	3,980,000	0.22	875,600
d. Drainage Net	406,400	SF	203,200	0.30	60,960
e. Sod	460,000	SY	420,000	1.04	436,800
f. Erosion Control	1	LS			16,000
g. 4" Subdrain	2,100	LF	2,100	4.54	9,534
h. Access Roads	1	LS			75,000
i. Surface Water Controls	1	LS			25,000
Sub Total Item 1 - Site Work					$3,508,450
2. Gas Collection System					
a. Gas Collection Wells	19	EA	19	4,954.58	94,137
b. Gas Collection Wellheads	19	EA	19	1,226.32	23,300
c. Gas Collection Header					
1. 8" HDPE Header	2,700	LF	2,700	16.12	43,524
2. 10" HDPE Header	2,000	LF	2,000	20.41	40,820
d. HDPE Valves	12	EA	12	1,213.15	14,557
e. Gas Collection Laterals	7,500	LF	7,500	10.70	80,250
f. Horizontal Gas Lines	2,500	LF	2,500	17	42,500
g. Condensate Drip Legs	8	EA	8	2,862	22,896
h. Knockout Drums & Drip Legs	3	EA	3	9,708.33	29,125
Sub Total Item 2 - Gas Collection System					$ 391,109

EXHIBIT A

Table 2-3

COST ESTIMATION FORM
Closure Construction Field Work - CONTINUED

	Estimated Quantity	Unit	Firm's Quantity	Firm's Unit Price	Total
3. Retrofit of Existing LFG Collection System					
a. Manufactured Well Heads	30	EA	30	800.00	24,000.00
b. Condensate Drip Legs	15	EA	15	1,612.00	24,180.00
c. Sod	1	LS			17,000.00
Sub Total Item 3 - Retrofit of Existing LFG Collection System					$65,180.00
4. RC Flyers Facility					
1. Design/Permitting		LS			46,451.00
2. General Construction		LS			28,000.00
3. Post Closure Construction Field Work		LS			30,678.40
a. Runways and Taxiways					
1. Additional Fill Placement and Compaction	2,550	CY	2,550	19.69	50,209.50
2. 100' x 500' x 9" Limerock Base	6,450	SY	6,450	7.46	48,117.00
b. Parking Areas					
1. 8" Compacted Subgrade	5,000	SY	5,000	7.38	36,900.00
2. Bahia Sod	5,000	SY	5,000	1.10	5,500.00
c. On-Site Utility Extensions					
1. 1½" Water Supply	2,800	LF	2,800	9.57	26,796.00

EXHIBIT A

Table 2-3
COST ESTIMATION FORM
Closure Construction Field Work - CONTINUED

	Estimated Quantity	Unit	Firm's Quantity	Firm's Unit Price	Total
2. 2" Sanitary Sewer Force Main	2,800	LF	2,800	10.27	28,756.00
3. Electrical Supply (conduit only)	1	LS			32,200

Sub Total Item 4 - RC Flyers Facility $ 333,607.00

TOTAL CLOSURE CONSTRUCTION FIELD WORK (1, 2, 3 & 4) $ 4,298,386

In-place area does not include overlap, anchor trench, or wastage.
All volumes are in place.

Costs for Closure Construction Field Work shall be compensated on a lump sum basis based on the unit costs provided above and the quantities determined after final permit issuance and acceptance by the County. Costs for additional items encountered during the design and permitting process shall be negotiated with the County in accordance with the Agreement.

CONTINGENCY CALCULATION WORK SHEET

Design/Permitting Total	$1,179,762
General Construction Total	1,013,650
Closure Construction Field Work	4,298,346
Total Agreement Cost for Design, Permitting and Construction	$6,491,758
Contingency - 5% of Total Agreement Cost	324,588
TOTAL AGREEMENT PRICE	$6,816,346

ATTACHMENT C

PASCO COUNTY
WASTE TIRE MANAGEMENT

PASCO COUNTY, FLORIDA
INTER-OFFICE MEMORANDUM

TO: Scott Stromer
Purchasing Director

DATE: 11/14/01 FILE: UTFSSP02-132

THRU: Douglas S. Bramlett
Assistant County Administrator
(Utilities Services)

SUBJECT: Waste Tire Management Services, Annual Award

FROM: Robert J. Sigmond
Utilities Fiscal Services/
Special Projects Director

REF: Bid No. 01-166F

We have reviewed all the submittals received from you regarding Bid No. 01-166F, Waste Tire Management Services. We recommend awarding a contract to Modern Recycling, Inc. to perform all tasks required under Option A as detailed in our bid.

We thank you for all the assistance you have been giving us throughout.

If you have any questions, please call me.

RJS/jmt

PASCO COUNTY, FLORIDA
INTEROFFICE MEMORANDUM

TO: Robert J. Sigmond
Utilities Fiscal Services/
Special Projects Director

DATE: 11/1/01 FILE: PU02-032

SUBJECT: Waste Tire Management Services, Annual Award

FROM: Frank C. Aleskwiz
Buyer

REFERENCES: Bid No. 01-166F

At the request of the Utilities Fiscal Services/Special Projects Department, the Purchasing Department solicited bids for waste tire management services (annual award). Attached are the bid copies and a tabulation sheet for your review. Upon your review, please submit your recommendation, confirm the account number(s) to be charged, and provide an estimate of the annual expenditure.

A preliminary evaluation indicates that Modern Recycling, Inc., of Florida was the sole bidder on Option A; Diggers Towing and Recovering was low bid on Option B; and Rinker Mat. Corp./Florida Crushed Stone was low bidder on Option C.

As always, we appreciate your cooperation. If I may be of further assistance, please do not hesitate to contact me.

FCA/mo/g110137/37

Attachments:

1. Bid Copies
2. Bid Tabulation Sheet

1.	Cost per Ton for Shredding, Loading, Transporting, and Dumping of Waste Tires on Site.	$ 60.95 Per Ton
2.	Cost per Ton for the Cutting of Large Waste Tires that Cannot be Shredded (or Eight Pieces).	$ 70.89 Per Ton
3.	Cost per Tire for the Removal of the Tire Rim (Only One Price Quote will be Accepted for All Sizes of Tire Rim Removal).	$ .50 Per Ton
Minimum Notice Required to Come On Site and Shred Accumulated Waste Tires		30 Days
Minimum Accumulation of Waste Tires Required Before Coming On Site to Shred		300 Tons/Tires

State any limitations placed on the service. Attach a separate page, if necessary.

NONE

State any exceptions to the bid. Attach a separate page, if necessary.

NONE

END OF SPECIFICATIONS FOR OPTION A

BID01-166F				
WASTE TIRE MANAGEMENT SVS.				
ANNUAL AWARD				
OCTOBER 30, 2001				
	DIGGERS TOWING & RECOVERY	RINKER MAT. CORP./ FL CRUSHED STONE	MODERN RECYCLING INC. OF FL.	AMERICAN RUBBER TECH.
	ZEPHYRHILLS FL	BROOKSVILLE FL	BONITA SPRINGS FL	JACKSONVILLE FL
OPTION A				
ITEM NO. 1.				
COST PER TON FOR SHREDDING				
LOADING,TRANSPORTING/DUMPING				
PRICE PER TON			$60.95	
ITEM NO. 2				
COST PER TON FOR CUTTING OF				
LARGE WASTE TIRES				
PRICE PER TON			$70.89	
ITEM NO. 3.				
COST PER TIRE FOR REMOVAL TIRE				
RIM				
PRICE PER TON			$0.50	
MIN.NOTICE/SHRED WASTE TIRES			30 DAYS	
MIN. ACCUMULATION BEFORE				
ON SITE SHRED/TONS/TIRES			300	
OPTION B				
ITEM NO. 1.				
REGULAR AUTOMOBILE TIRES				
COST PER TON	$35.00		$125.00	
ITEM NO. 2.				
OFF-THE ROAD TIRES				
COST PER TON	$35.00		$150.00	
ITEM NO. 3.				
REMOVAL OF TIRE-RIM				
COST PER TIRE	$35.00 Tom		$1.00	
MINIMUN NOTICE/ON SITE DERIM/	1-2 DAYS		30 DAYS	
HAULING TIRES				
MIN ACCUMULATION BEFORE ON				
SITE DERIM & HAUL/TONS/TIRES	20		300	
OPTION C				
ITEM NO. 1.				
REGULAR AUTOMOBILE TIRES				
PRICE PER TON		$35.00	$125.00	$78.00
ITEM NO. 2.				
TRUCK TIRES				
PRICE PER TON		$35.00	$130.00	$78.00
ACCEPT ANY AMT WHOLE TIRES			YES	YES
ONLY MAXIMUM /TONS ANNUALLY		3000		

DEC. 12. 2001 11:42AM PASCO CNTY SOLID WASTE

Post-it® Fax Note 7671	Date 12/12	pages 1
To George Ellsworth	From John Power	
Co./Dept. CAW	Co. Pasco County RRF	
Phone # 813-289-0750	Phone # 727-856-6119	
Fax # 813-289-5474	Fax # 727-861-3099	

DEP Form # 62-701.900(23)
Form Title Waste Tire Processing Facility Permit Application
Effective Date 3/22/00
DEP Application No. ______ (Filled in by DEP)

C. **Land Owner Information (if different from applicant):**

1. Owner's name: same as applicant
2. Land owner's mailing address:
3. City: State: Zip:
4. Authorized Agent: Agent's phone ( )
5. Current lease expires:

D. **Facility Operator Information (if different from applicant):**

1. Operator's name: same as applicant
2. Operator's mailing address:
3. City: State: Zip:
4. Contact person: Phone: ( )

E. **Preparer of Application:**

1. Name of person preparing application: Jason M. Gorrie, P.E. -- Camp Dresser & McKee
2. Mailing address: 1715 N. Westshore Blvd., Suite 875
3. City: Tampa State: Florida Zip: 33607
4. Phone: (813) 281-2900
5. Affiliation with facility: Engineering Consultant

Part II-Operations:

A. **Facility type (check appropriate box):**

☐ Waste tire processing facility.

☐ Waste tire processing facility with on-site disposal of processed tires or processing residuals. See Attachment ______

☐ Waste tire processing facility with on-site consumption of waste tires or processing residuals. See Attachment F

☐ Permitted solid waste management facility modification to allow waste tire site and processing.

B. **Type of processing facility (check as many as apply):**

☒ Shredder ☐ Cutter ☐ Chopper ☐ Incinerator only ☒ Incinerator with energy recovery
☐ Pyrolysis ☐ Supplemental fuel user ☒ Other, explain landfill daily cover

C. Storage: Indicate the maximum quantities of whole waste tires, processed waste tires, and processing residuals, expressed in tons, to be stored at the facility, in accordance with Rule 62-711.530(2), F.A.C.

	Outdoor Storage(tons)	Outdoor Storage (sq.ft)	Indoor Storage (tons)	Indoor Storage (sq.ft)	Total Storage (tons)
Whole waste tires:	2000	40,000	0	0	2000
Processed tires:	450 (avg.)	10,000	0	0	450 (avg.)
Processing residuals:	50 (avg.)	2500	0	0	50 (avg.)
TOTALS:	2500	52,500	0	0	2500

PASCO COUNTY, FLORIDA
INTER-OFFICE MEMORANDUM

TO: Scott Stromer
Purchasing Director

DATE: 11/14/01 FILE: UTFSSP02-132

THRU: Douglas S. Bramlett
Assistant County Administrator
(Utilities Services)

SUBJECT: Waste Tire Management Services, Annual Award

FROM: Robert J. Sigmond
Utilities Fiscal Services/
Special Projects Director

REF: Bid No. 01-166F

We have reviewed all the submittals received from you regarding Bid No. 01-166F, Waste Tire Management Services. We recommend awarding a contract to Modern Recycling, Inc. to perform all tasks required under Option A as detailed in our bid.

We thank you for all the assistance you have been giving us throughout.

If you have any questions, please call me.

RJS/jmt

PASCO COUNTY, FLORIDA
INTEROFFICE MEMORANDUM

TO: Robert J. Sigmond
Utilities Fiscal Services/
Special Projects Director

DATE: 11/1/01

FILE: PU02-032

SUBJECT: Waste Tire Management Services, Annual Award

FROM: Frank C. Aleskwiz
Buyer

REFERENCES: Bid No. 01-166F

At the request of the Utilities Fiscal Services/Special Projects Department, the Purchasing Department solicited bids for waste tire management services (annual award). Attached are the bid copies and a tabulation sheet for your review. Upon your review, please submit your recommendation, confirm the account number(s) to be charged, and provide an estimate of the annual expenditure.

A preliminary evaluation indicates that Modern Recycling, Inc., of Florida was the sole bidder on Option A; Diggers Towing and Recovering was low bid on Option B; and Rinker Mat. Corp./Florida Crushed Stone was low bidder on Option C.

As always, we appreciate your cooperation. If I may be of further assistance, please do not hesitate to contact me.

FCA/mo/g110137/37

Attachments:

1. Bid Copies
2. Bid Tabulation Sheet

1.	Cost per Ton for Shredding, Loading, Transporting, and Dumping of Waste Tires on Site.	$ 60.95 Per Ton
2.	Cost per Ton for the Cutting of Large Waste Tires that Cannot be Shredded (or Eight Pieces).	$ 70.89 Per Ton
3.	Cost per Tire for the Removal of the Tire Rim (Only One Price Quote will be Accepted for All Sizes of Tire Rim Removal).	$ .50 Per Ton
Minimum Notice Required to Come On Site and Shred Accumulated Waste Tires		30 Days
Minimum Accumulation of Waste Tires Required Before Coming On Site to Shred		300 Tons/Tires

State any limitations placed on the service. Attach a separate page, if necessary.

NONE

State any exceptions to the bid. Attach a separate page, if necessary.

NONE

END OF SPECIFICATIONS FOR OPTION A

BID01-166F				
WASTE TIRE MANAGEMENT SVS.				
ANNUAL AWARD				
OCTOBER 30, 2001				
	DIGGERS TOWING & RECOVERY	RINKER MAT. CORP./ FL CRUSHED STONE	MODERN RECYCLING INC. OF FL.	AMERICAN RUBBER TECH.
	ZEPHYRHILLS FL	BROOKSVILLE FL	BONITA SPRINGS FL	JACKSONVILLE FL
OPTION A				
ITEM NO. 1.				
COST PER TON FOR SHREDDING				
LOADING,TRANSPORTING/DUMPING				
PRICE PER TON			$60.95	
ITEM NO. 2				
COST PER TON FOR CUTTING OF				
LARGE WASTE TIRES				
PRICE PER TON			$70.89	
ITEM NO. 3.				
COST PER TIRE FOR REMOVAL TIRE				
RIM				
PRICE PER TON			$0.50	
MIN.NOTICE/SHRED WASTE TIRES			30 DAYS	
MIN. ACCUMULATION BEFORE				
ON SITE SHRED/TONS/TIRES			300	
OPTION B				
ITEM NO. 1.				
REGULAR AUTOMOBILE TIRES				
COST PER TON	$35.00		$125.00	
ITEM NO. 2.				
OFF-THE ROAD TIRES				
COST PER TON	$35.00		$150.00	
ITEM NO. 3.				
REMOVAL OF TIRE-RIM				
COST PER TIRE	$35.00 TON		$1.00	
MINIMUN NOTICE/ON SITE DERIM/	1-2 DAYS		30 DAYS	
HAULING TIRES				
MIN ACCUMULATION BEFORE ON				
SITE DERIM & HAUL/TONS/TIRES	20		300	
OPTION C				
ITEM NO. 1.				
REGULAR AUTOMOBILE TIRES				
PRICE PER TON		$35.00	$125.00	$78.00
ITEM NO. 2.				
TRUCK TIRES				
PRICE PER TON		$35.00	$130.00	$78.00
ACCEPT ANY AMT WHOLE TIRES			YES	YES
ONLY MAXIMUM /TONS ANNUALLY		3000		

Post-it® Fax Note 7671	pages 1
To George Ellsworth	From John Power
Co./Dept. L&W	Co. Pasco County RRF
Phone # 813-289-0750	Phone # 727-856-5119
Fax # 813-289-5474	Fax # 727-861-3099

DEP Form # 62-701.900(23)
Waste Tire Processing Facility
Form Title Permit Application
Effective Date 3/22/00
DEP Application No. _____ (Filled in by DEP)

C. **Land Owner Information** (if different from applicant):

1. Owner's name: same as applicant
2. Land owner's mailing address: _____
3. City: _____ State: _____ Zip: _____
4. Authorized Agent: _____ Agent's phone ( ) _____
5. Current lease expires: _____

D. **Facility Operator Information** (if different from applicant):

1. Operator's name: same as applicant
2. Operator's mailing address: _____
3. City: _____ State: _____ Zip: _____
4. Contact person: _____ Phone: ( ) _____

E. **Preparer of Application:**

1. Name of person preparing application: Jason M. Gorrie, P.E. -- Camp Dresser & McKee
2. Mailing address: 1715 N. Westshore Blvd., Suite 875
3. City: Tampa State: Florida Zip: 33607
4. Phone: (813) 281-2900
5. Affiliation with facility: Engineering Consultant

Part II-Operations:

A. **Facility type (check appropriate box):**

☐ Waste tire processing facility.

☐ Waste tire processing facility with on-site disposal of processed tires or processing residuals.
See Attachment _____

☐ Waste tire processing facility with on-site consumption of waste tires or processing residuals.
See Attachment F

☐ Permitted solid waste management facility modification to allow waste tire site and processing.

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☑ Shredder ☐ Cutter ☐ Chopper ☐ Incinerator only ☑ Incinerator with energy recovery
☐ Pyrolysis ☐ Supplemental fuel user ☑ Other, explain landfill daily cover

C. **Storage:** Indicate the maximum quantities of whole waste tires, processed waste tires, and processing residuals, expressed in tons, to be stored at the facility, in accordance with Rule 62-711.530(2), F.A.C.

	Outdoor Storage(tons)	Outdoor Storage (sq.ft)	Indoor Storage (tons)	Indoor Storage (sq.ft)	Total Storage (tons)
Whole waste tires:	2000	40,000	0	0	2000
Processed tires:	450 (avg.)	10,000	0	0	450 (avg.)
Processing residuals:	50 (avg.)	2500	0	0	50 (avg.)
TOTALS:	2500	52,500	0	0	2500

HAPPY HOLIDAYS FROM:

PASCO COUNTY, FLORIDA

NEW PORT RICHEY (727) 847-8145
SUNCOM 569-8145

UTILITIES SERVICES BRANCH
PUB. WKS./UTILITIES BLDG., S-205
7530 LITTLE ROAD
NEW PORT RICHEY, FL 34654

FACSIMILE TRANSMISSION

TO: George Ellsworth

FAX 813-289-5474

FROM: Bob Sigmon

DATE: 11-29-01

RE:

REMARKS: Waste Tire Service Factor - going to The Board. Daigger did not work out. Modern is going to the Board

TRANSMITTING 7 PAGES INCLUDING COVER SHEET.

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL

AT (727) 847-8145 OR (727) 847-8041,
SUNCOM 596-8145

OUR FACSIMILE NUMBER IS (727) 847-8064 OR SUNCOM 596-8064.

Department of Environmental Protection

Jeb Bush
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

David B. Struhs
Secretary

NOV 19 2001

November 15, 2001

Mr. Doug Bramlett, Assistant County Administrator
Pasco County Utilities Services
7536 State Street
New Port Richey, FL 34654

RE: Financial Assurance Cost Estimates
West Pasco Class III Landfill,
Permit No.: SO51-267334, Pending permit #26255-001-SO, Pasco County

Dear Mr. Bramlett:

This letter is to acknowledge receipt of the revised financial assurance cost estimates dated October 10, 2001 (received October 18, 2001), prepared by Law Engineering and Environmental Services, Inc., for the closing and long-term care of the West Pasco Class III Landfill. The cost estimates received October 18, 2001 are not approved. Additional information is needed to fully evaluate the estimates submitted. Please respond to the following:

CLOSING COSTS:

1. Cover Material, $0.22/SY. Table 2-3, Appendix F, page A-3. Please provide documentation which indicates that this cost includes *delivery and installation* of the material.

2. Top Soil, 64,533 CY. Please clarify if this quantity is as-placed or as-received. The information in Attachment G, J.T Branch & Sons quote does not indicate that the price includes placement/spreading of the material. Since the J.T. Branch & Sons quote is dated May 1, 2000 and is only valid for 365 days, please provide an updated quote.

3. Stormwater Control. Please provide the basis for this decrease from the July 2001 submittal.

4. Gas Control, N/A. The information indicates that the approved closure plan does not include a gas control system for this facility. Since Rule 62-701.530, F.A.C., *requires* that landfills that receive biodegradable wastes shall have a gas monitoring and control system designed to prevent explosions and fires and to minimize off-site odors and damage to vegetation, it appears that the closure plan does not comply with the requirements of the Rule. Since Class III landfills receive biodegradable wastes, please include a cost for installation of a gas monitoring and control system.

5. Waste Tire Site - $35.00/ton. The information submitted in Attachment G (Diggers Towing and Recovery) does not appear to be a valid cost estimate. The disposal location was not specified, and Diggers Towing and Recovery does not appear to be a registered waste tire collector. Please provide a revised estimate for the maximum quantity of waste tires, processed tires and residuals (i.e. off-road tires, scraps, rims, etc.) which may be at the site at any time. The costs must include loading, hauling, disposal and de-rimming if appropriate.

LONG TERM CARE COSTS:

6. Maintenance of gas migration/control system, N/A. Please provide a cost for this item.

7. Maintenance of Cover. Please provide the basis for the reduction in quantity from the July 2001 submittal (1000 sf vs. 1000 sy). The estimated amount of sodding/soil (0.2% of the total area per year) seems low. Please provide the basis for this estimate.

The Department requests that two copies of all information be provided to the Solid Waste Section, FDEP, Tampa office **within thirty (30) days** of this notice. In order to expedite the review, please provide all responses directly to the writer. If you have any questions, you may contact me at (813) 744-6100 ext. 386.

Sincerely,

Susan J. Pelz, P.E.
Solid Waste Section
Southwest District

sjp
cc: Robert J. Sigmond, Utilities Fiscal Services/Special Project Director, Pasco County, 7530 Little Road, S-204, New Port Richey, FL 34654
Curtis Roos, P.E., Law Environmental, 4919 W. Laurel Street, Tampa, Fl 33623
Fred Wick, FDEP, Tallahassee, w/attachment
Robert Butera, P.E., FDEP Tampa
Kim Ford, P.E., FDEP Tampa

LAW

LAWGIBB Group Member

BI-ANNUAL GROUND-WATER MONITORING PLAN REVIEW WEST PASCO CLASS III LANDFILL

Prepared for

PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS

January 1999

LAW

LAWGIBB Group Member

February 16, 1999

Ms. Danielle Nichols, Environmental Specialist
Division of Waste Management
Florida Department of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Subject: **Bi-Annual Ground-Water Monitoring Plan Review**
West Pasco Class III Landfill
LAW Project 40141-8-0452

Dear Ms. Nichols:

Law Engineering and Environmental Services, Inc. (LAW), on behalf of Pasco County, is submitting this addendum to the Bi-annual Ground-Water Monitoring Plan Review for the West Pasco Class III Landfill. The review document was dated January 7, 1999. In Paragraph 1.1, Background, of the document it was stated that the eastern cell was used for disposal of yard trash. No yard trash has been placed in the eastern cell for the last seven years.

If you have any questions concerning this response, please contact Richard Mayer or George Ellsworth at 813/289-0750.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

George W. Ellsworth, P.G.
Senior Environmental Geologist
Florida Registration 0848

Richard E. Mayer, P.E.
Principal Engineer
Florida Registration 41759

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cc: Vincent Mannella
Douglas Bramlett

LAW Engineering and Environmental Services, Inc.
4919 West Laurel Street
Tampa, FL 33607
813-289-0750 • Fax: 813-289-5474

LAW

LAWGIBB Group Member

D.E.P.
JAN 14 1999
Southwest District Tampa

January 7, 1999

Ms. Danielle Nichols, Environmental Specialist
Division of Waste Management
Florida Department of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Subject: **Bi-Annual Ground-Water Monitoring Plan Review**
West Pasco Class III Landfill
LAW Project 40141-8-0452

Dear Ms. Nichols:

Law Engineering and Environmental Services, Inc. (LAW), on behalf of Pasco County, is submitting this Bi-Annual Ground-Water Monitoring Plan Review for the West Pasco Class III Landfill. The review covers the years 1995, 1996, 1997 and 1998.

If you have any questions concerning this response, please contact Richard Mayer or George Ellsworth at 813/289-0750.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

George W. Ellsworth, P.G.
Senior Environmental Geologist
Florida Registration 0848

Richard E. Mayer, P.E.
Principal Engineer
Florida Registration 41759

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cc: Vincent Mannella
Douglas Bramlett

GEORGE W. ELLSWORTH LICENSE NO. 848 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

LAW Engineering and Environmental Services, Inc.
4919 West Laurel Street
Tampa, FL 33607
813-289-0750 • Fax: 813-289-5474

BI-ANNUAL GROUND-WATER MONITORING PLAN REVIEW WEST PASCO CLASS III LANDFILL

Prepared for

PASCO COUNTY BOARD OF COUNTY COMMISSIONERS

Prepared by

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
Tampa, Florida

January 1999

LAW Project 40141-8-0452

TABLE OF CONTENTS

LIST OF TABLES

Table

LIST OF FIGURES

Figure

1.0 INTRODUCTION

1.1 BACKGROUND

The West Pasco Classes III Landfill is located in northwest Pasco County on Hays Road, approximately 2.5 miles north of State Road 52. The landfill is located adjacent to the Pasco County Resource Recovery facility and the West Pasco Class I Landfill. The West Pasco Class III Landfill is permitted separately from the adjacent West Pasco Class I Landfill.

The Ground-Water Monitoring Plan provides coverage for the 20-acre Class III Landfill which consists of four cells. The individual cells are five acres in size and are separated by interior berms.

The entire 20-acre landfill is lined with 60 mil HDPE geomembrane liner. Each cell has a separate leachate collection system.

Currently, only two cells are in use. The western most cell is being used for construction and demolition debris disposal. The eastern most cell is being used for yard-waste disposal.

1.2 FDEP-APPROVED QAPP

Pasco County Environmental Laboratory (County Lab) has been collecting and analyzing samples from the ground-water monitoring system since 1990. Ground-water sampling procedures used by the County Lab, including sampling equipment decontamination, field measurements, and sample shipment, adhere to the FDEP-approved QAPP. The County Lab also performs analytical work. The laboratory procedures and analytical methods used at the County Lab are also described in the FDEP-approved QAPP.

Pasco County contracts for some laboratory services and currently has several FDEP-approved laboratories under annual contract. The contracts for laboratory services are re-bid every two to three years. The use of these contracted laboratories is reflected in the County Lab's FDEP-approved QAPP.

1.3 GROUND-WATER MONITORING PLAN

The current ground-water monitoring plan consists of five surficial aquifer monitoring wells (2MW3A, 2MW7, 2MW8, 2MW9, and 2MW10) and four Floridan aquifer monitoring wells (4MW3A, 4MW7, 4MW8, and 4MW9). The well locations are shown on Figures 2 and 3. The monitoring wells are sampled and analyzed quarterly in 1995 and semi-annually during 1996, 1997, and 1998.

Florida Aquifer monitoring wells, 4MW7, 4MW8 and 4MW9, are located around the perimeter of the West Pasco Class III Landfill. These wells were installed during the construction of the West Pasco Class III Landfill. Florida Aquifer monitoring well 4MW-3A is located approximately 500 feet northeast of and downgradient of the next closest Floridan Aquifer monitoring well, 4MW9.

2.0 WATER LEVEL DATA

2.1 DATA TABULATION

Water level measurements were tabulated for the years 1995, 1996, 1997, and 1998. Water level elevations are shown in feet, NGVD (see Table 1). Water level measurements are available for all the Floridan aquifer wells. However, no water level measurements are available for the surficial aquifer wells because the wells were consistently dry.

2.2 HYDROGRAPHS

Hydrographs were prepared for the Floridan aquifer monitoring wells. The Class III Landfill monitoring well hydrographs are presented on Figure 1.

2.3 GROUND-WATER CONTOUR MAPS

Ground-water contour maps were prepared for the Floridan aquifer for the dry season and for wet seasons for 1998 (see Figures 2 through 3). No surficial aquifer water table maps were prepared because as previously stated, all the surficial aquifer wells were dry.

2.4 DATA INTERPRETATION

2.4.1 Water Levels

Water levels in the Floridan aquifer ground-water monitoring wells do not vary significantly across the site. Water levels differ by less than five feet during individual sampling events. During the past four years, the fluctuation of water levels in the monitoring wells have been less than ten feet between the high and low values.

The surficial aquifer ground-water monitoring wells are dry because of their location on a topographic high.

2.4.2 Ground-Water Flow Direction

The ground-water flow direction in the Floridan aquifer is consistently determined to be to the northwest (see Figures 2 and 3). This conforms to regional flow which is towards Weeki-Wachi Springs to the northwest. There is a slight depression to the southwest related to sinkholes and a water supply well located southwest of the site.

2.4.3 Ground-Water Gradient

The hydraulic gradient in the Floridan aquifer, based on the wet season potentiometric maps, is approximately 1.50 feet per 1,000 feet or 1.5×10^{-3} feet/foot. The hydraulic gradient during the dry season is approximately the same.

3.0 WATER QUALITY DATA

3.1 DATA TABULATION

Ground-water sampling analytical results were tabulated for years 1995, 1996, 1997, and 1998 (see Tables 2 through 7). Individual tables were prepared for the following water quality parameters:

- Total Dissolved Solids (TDS)
- pH
- Sodium
- Chlorides
- Iron

3.2 GRAPHICAL PRESENTATIONS

All tabulated parameters are presented graphically (see Figures 4 through 8).

3.3 DATA INTERPRETATION

Maximum contaminant levels for seven parameters were exceeded in ground-water monitoring wells sampled at the West Pasco Class III Landfill. These were antimony, barium, chromium, fluoride, iron, total dissolved solids and zinc. These were one-time occurrences in a single well that were not subsequently repeated. These exceedances are shown in Table 7. Several of the tabulated parameters showed trends. Each of the tabulated parameters is discussed in the following sections.

3.3.1 pH

The established acceptable range for pH values in drinking water is between standard values of 6.5 and 8.5. Outside this range, the water quality is considered to be too acidic or caustic. The pH readings taken in the Floridan aquifer monitoring wells relative to the West Pasco Class III Landfill all were within the acceptable range (see Table 3).

3.3.2 Total Dissolved Solids

One exceedances of the established MCL of 500 mg/l for total dissolved solids was detected in Florida Aquifer monitoring well 4MW-3A. This exceedance occurred in January 1998. In July 1998, the total dissolved solids concentration for 4MW-3A drop from the high of 1,040 mg/l to 480 mg/l (see Table 2).

3.3.3 Sodium

No exceedances of the established MCL of the 160 mg/l for sodium were detected. The recorded values were less than 10 mg/l for three of the monitoring wells. However, in Floridan Aquifer monitoring well, 4MW-3A, sodium concentrations were up to 43 mg/l (see Figure 4).

3.3.4 Chlorides

No exceedances of the established MCL of 250 mg/l for chloride were detected. The recorded values were less than 20 mg/l for three of the monitoring wells. However, in Floridan Aquifer monitoring well, 4MW-3A, chloride concentrations were up to 150 mg/l (see Figure 4).

3.3.5 Iron

Only one exceedance of the MCL of 0.3 mg/l for iron was detected in the Floridan aquifer monitoring wells. This occurred in Floridan Aquifer monitoring well, 4MW-3A, in July 1996 (see Table 6).

3.4 SUMMARY

None of the ground-water monitoring wells in the West Pasco Class III Landfill had any significant exceedances of the established regulatory levels. Occasional exceedances were observed for seven parameters. These were one-time occurrences in a single well that was not subsequently repeated.

There were noticeable trends observed in Floridan Aquifer monitoring well 4MW-3A. Total dissolved solids, sodium and chloride concentrations show a general increase over the four-year period from 1995 to 1998. This trend is shown on graphs prepared for these parameters. The concentrations of analytes of interest in the other three Florida Aquifer monitoring wells, 4MW-7, 4MW-8, and 4MW-9, are generally consistently, lower each year (see Figures 4 through 8).

4.0 GROUND-WATER MONITORING PLAN REVIEW

4.1 SAMPLING LOCATIONS

The existing well spacing on the downgradient side of the landfill does not meet the current rule, Chapter 62-701.510(3)(d)2, maximum spacing of "no greater than 500 feet apart across the down gradient direction of the ground-water flow". The existing spacing on the downgradient side of the landfill is approximately 1,000 feet. The spacing between monitoring wells on the upgradient side of the landfill is also about 1,000 feet, which is sufficient. The current rules specifies a maximum spacing of 1,500 feet in the upgradient direction.

4.2 MONITORING FREQUENCY

The ground-water monitoring wells are currently sampled and analyzed semi-annually as specified in the current rule, Chapter 62-701 of the FAC.

5.0 CONCLUSIONS

The ground-water monitoring wells sampling frequency and parameter suite are in compliance with FAC Rule 62-701.

The spacing between ground-water monitoring wells on the downgradient side of the landfill is not in strict compliance with FAC Rule 62-701. However, given the landfill use and design, the spacing is adequate. The West Pasco Class III Landfill is lined with a 60 mil HDPE geomembrane and has a leachate collection system. Generally, Class III Landfills are not lined. Additionally, the waste stream is well monitored. Construction debris and yard waste are disposed of in different cells.

No significant exceedances of the established ground-water MCLs were observed for any of the wells located around the perimeter the West Pasco Class III Landfill. However, the trend is rising levels for several parameters monitored were observed in Floridan Aquifer monitoring well, 4MW-3A. No comparable trend was observed in Florida Aquifer monitoring, 4MW-9, which is located between 4MW-3A and the West Pasco Class III Landfill and upgradient of 4MW-3A. Based on the analytical results from the 4MW-9 and its upgradient position relative to 4MW-3A, it is concluded that the observed trends showing an increase in total dissolved solids, sodium and chlorides in Floridan Aquifer monitoring well 4MW-3A, are not a result of a source emanating from the West Pasco Class III Landfill.

6.0 RECOMMENDATIONS

No changes in the ground-water monitoring plan are recommended.

TABLES

Table 1: Water Level Elevations

Units: feet

Well / Date	Jan-95	Apr-95	Aug-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98
2MW- 3A	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW-7	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 8	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 9	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 10	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
4MW- 3A	29.45	29.10	28.60	N/A	31.75	31.10	28.10	25.60	34.80	32.45
4MW- 7	27.93	27.68	27.38	29.80	30.23	27.38	BDL	BDL	33.28	30.83
4MW- 8	29.65	29.50	29.15	30.95	32.15	31.60	28.40	26.50	35.25	32.50
4MW- 9	27.88	27.53	26.98	29.03	30.28	29.88	26.63	24.48	33.38	30.98
Well / Date	Jan-95	Apr-95	Aug-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98

ENIRO/4014180452.XLS/WATERLEVEL

Prepared/Date: _____/_____
Check/Date: GWE/ 1/7/99

Table 2: Total Dissolved Solids Analytical Results

MCL: 500

Units: mg/L

Well / Date	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98
2MW- 3A	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW-7	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 8	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 9	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 10	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
4MW- 3A	272	244	221	N/A	295	402	270	305	1020	480
4MW- 7	161	142	136	170	204	149	BDL	BDL	268	180
4MW- 8	181	186	151	185	181	176	161	181	192	176
4MW- 9	202	209	226	203	232	185	199	217	295	232
Well / Date	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98

ENVIRO/4014180452.XLS/TDS

MCL = Maximum Contaminant Limit
DL = Detection Limit
BDL = Below Detection Limit

Prepared/Date: _____ / _____
Checked/Date: GWE / 1/7/99

Table 3: pH Analytical Results

MCL: 6.5 to 8.5

Units: Std. Units

Well / Date	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98
2MW- 3A	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW-7	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 8	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 9	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 10	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
4MW- 3A	7.31	7.22	7.35	N/A	7.30	7.25	7.35	7.25	7.29	6.95
4MW- 7	7.42	7.24	7.21	7.57	7.14	7.78	BDL	BDL	7.65	7.24
4MW- 8	7.35	7.25	7.27	7.55	7.12	7.54	7.21	7.02	7.54	7.13
4MW- 9	7.25	7.15	7.19	7.49	7.47	7.26	7.09	7.11	7.30	7.00
Well / Date	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98

ENVIRO/4014180452.XLS/Ph

MCL = Maximum Contaminant Limit
DL = Detection Limit
BDL = Below Detection Limit

Prepared/Date: DH / 1/7/99
Checked/Date: GWE / 1/7/99

Table 4: Sodium Analytical Results

MCL: 160

Units: mg/L

Well / Date	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98
2MW- 3A	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW-7	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 8	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 9	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 10	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
4MW- 3A	7.55	6.02	6.25	N/A	10.90	17.20	9.26	10.7	43.00	38.50
4MW- 7	3.62	3.88	3.56	3.23	3.30	3.45	BDL	BDL	3.51	3.23
4MW- 8	3.41	3.70	3.55	3.44	3.54	3.56	3.49	3.51	3.55	3.73
4MW- 9	3.61	3.60	5.39	4.30	4.22	3.82	3.80	4.08	4.24	4.88
Well / Date	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98

ENVIRO/4014180452.XLS/SODIUM

MCL = Maximum Contaminant Level
DL = Detection Limit
BDL = Below Detection Limit

Prepared/Date: DWM / 1/7/99
Checked/Date: GWE / 1/7/99

Table 5: Chloride Analytical Results

MCL: 250

Units: mg/L

Well / Date	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98
2MW- 3A	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW-7	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 8	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 9	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 10	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
4MW- 3A	33.90	22.40	23.70	N/A	47.70	67.20	39.60	41.90	150.00	143.00
4MW- 7	4.70	6.64	6.20	5.08	4.70	5.15	BDL	BDL	5.18	7.34
4MW- 8	6.40	6.64	6.30	6.11	5.60	6.20	5.50	5.31	6.82	7.31
4MW- 9	8.00	9.69	16.30	10.20	9.70	6.60	10.80	12.10	9.90	18.10
Well / Date	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98

ENVIRO/4014180452.XLS/CHLORIDE

MCL = Maximum Contaminant Limit
DL = Detection Limit
BDL = Below Detection Limit

Prepared/Date: DWI / 1/7/99
Checked/Date: BWE / 1/7/99

Table 6: Iron Analytical Results

MCL: 0.3

Units: mg/L

Well / Date	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98
2MW- 3A	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW-7	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 8	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 9	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2MW- 10	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
4MW- 3A	0.11	0.16	0.19	N/A	0.19	0.34	0.25	0.21	0.17	0.15
4MW- 7	<0.02	0.07	0.02	0.02	0.04	<0.01	BDL	BDL	0.03	<0.02
4MW- 8	<0.02	<0.02	0.08	0.21	0.08	0.02	0.06	0.05	0.04	<0.02
4MW- 9	<0.02	0.02	0.05	0.08	0.08	0.03	0.06	0.07	0.03	0.03
Well / Date	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Jul-96	Feb-97	Jul-97	Jan-98	Jul-98

ENVIRO/4014180452.XLS/IRON

MCL = Maximum Contaminant Limit
DL = Detection Limit
BDL = Below Detection Limit

Prepared/Date: DWL / 1/7/99
Checked/Date: GWE / 1/7/99

Table 7: Parameters Exceeding MCLs

Units: mg/L

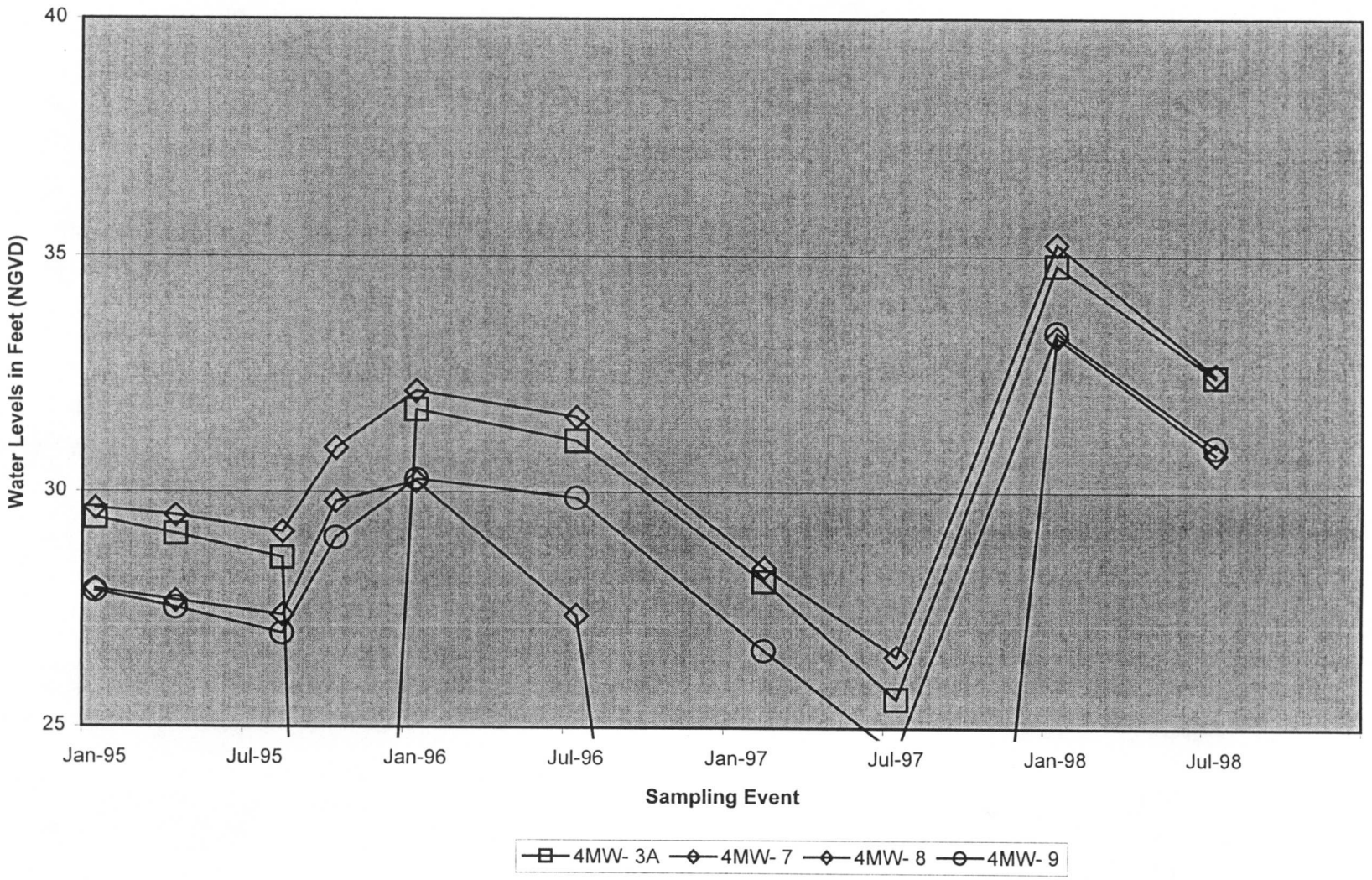
Well / Date	Antimony	Barium	Chromium	Flouride	Iron	TDS	Zinc
4MW- 3A	0.022, 1/96	0.045, 8/96	0.008, 2/96		0.34, 7/96	1020, 7/98	
4MW- 7	0.026, 2/96; 0.027, 1/96			5.61, 7/95			
4MW- 8	0.027, 1/96	0.025, 7/96					
4MW- 9	0.018, 1/96						0.083, 2/96

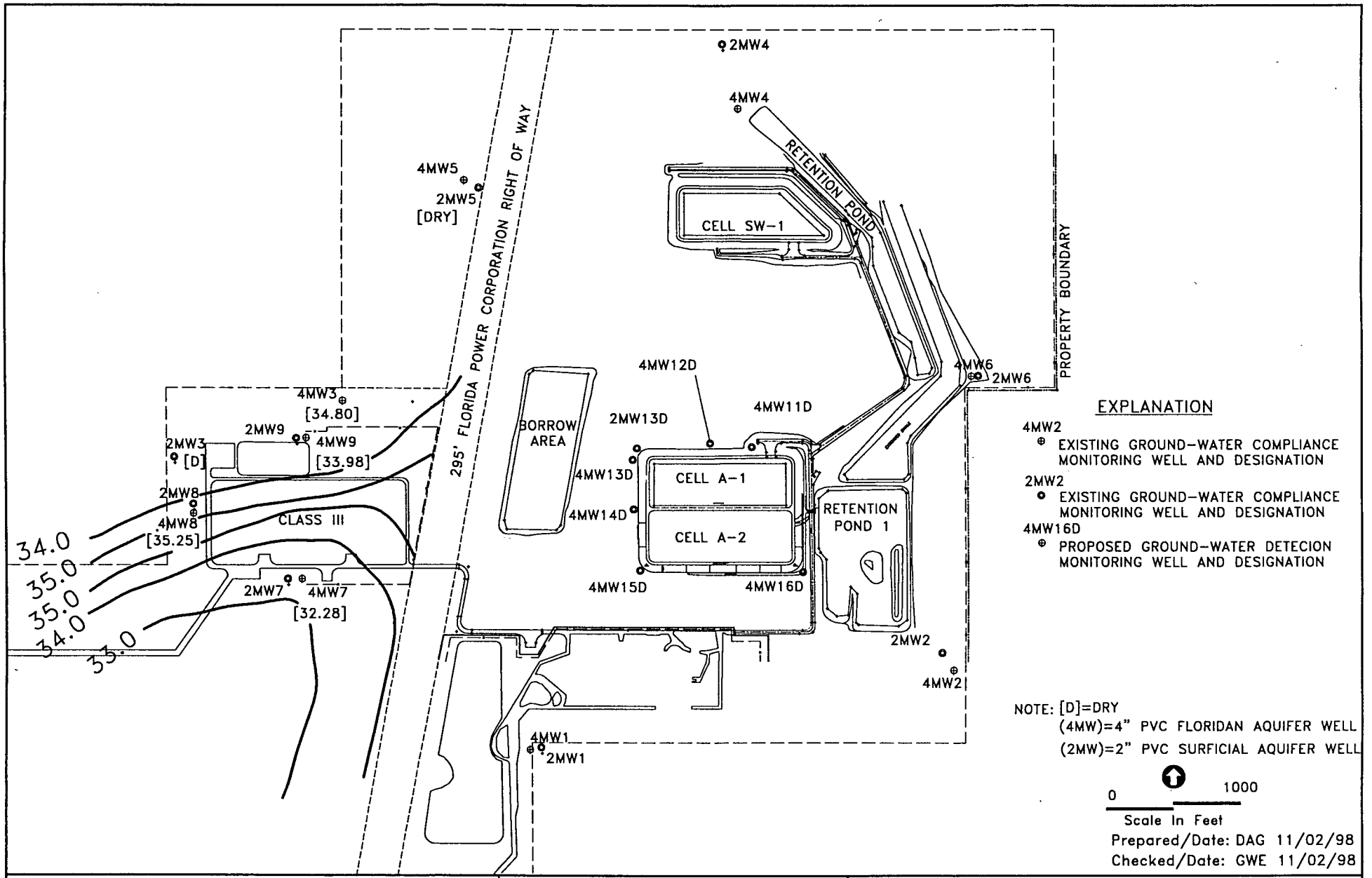
ENVIRO/4014180452.XLS/EXCEEDINGMD

Prepared/Date: DM / 1/7/99
Checked/Date: GWE / 1/7/99

FIGURES

Figure 1: Hydrographs - West Pasco Class III Landfill





PASCO/4180323

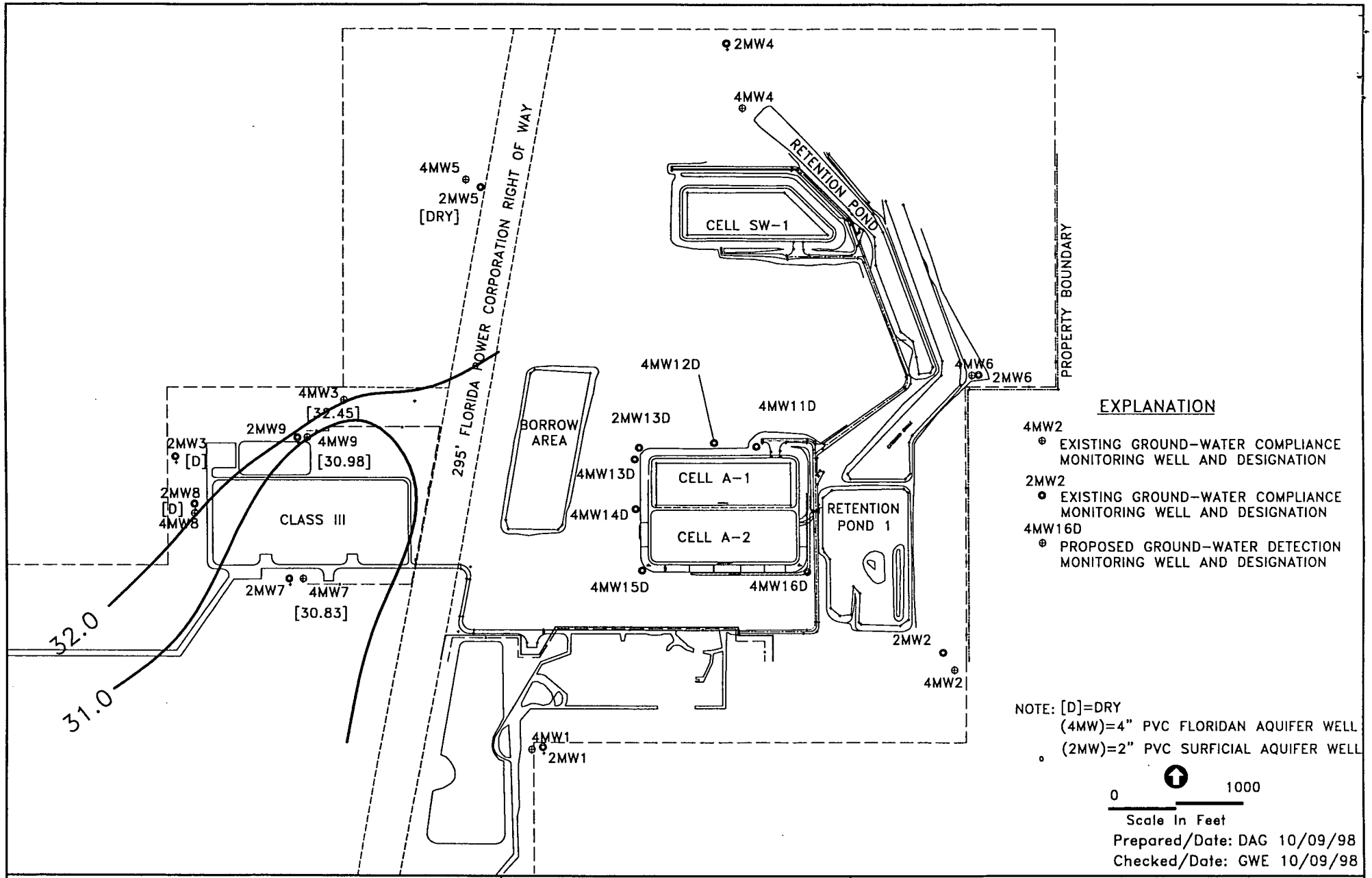
West Pasco Class III Landfill
Pasco County
Board of County Commissioners
Utility Services Branch
Pasco County, Florida

LAW
ENGINEERING AND ENVIRONMENTAL SERVICES

WEST PASCO CLASS III LANDFILL FLORIDAN AQUIFER POTENTIOMETRIC SURFACE MAP JANUARY 1998

Project 40141-8-0452

Figure 2



PASCO/4180323

West Pasco Class III Landfill
Pasco County
Board of County Commissioners
Utility Services Branch
Pasco County, Florida

LAW
ENGINEERING AND ENVIRONMENTAL SERVICES

WEST PASCO CLASS III LANDFILL FLORIDAN AQUIFER POTENTIOMETRIC SURFACE MAP JULY 1998

Project 40141-8-0452

Figure 3

Figure 4: pH Analytical Results

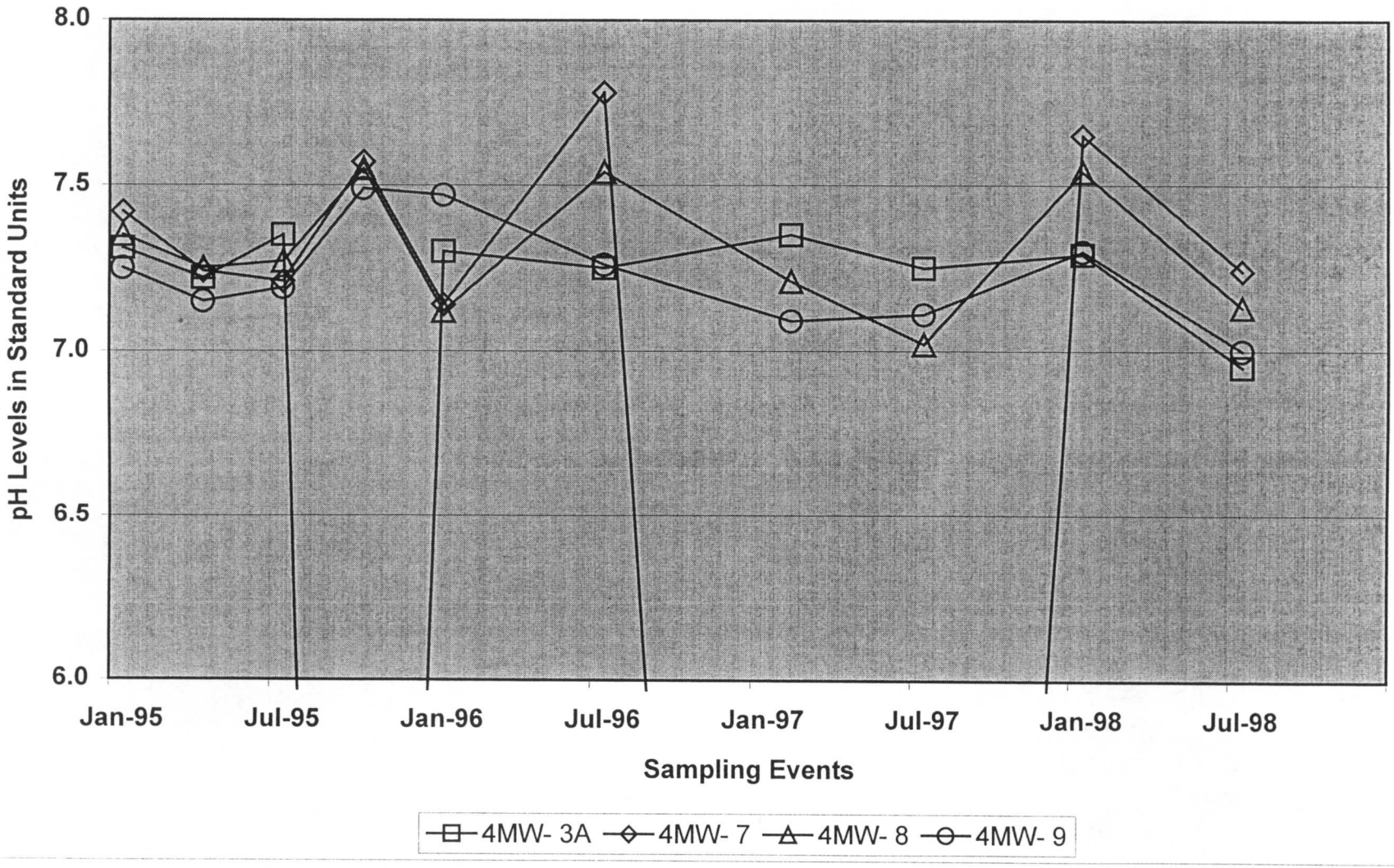


Figure 5: Total Dissolved Solids Analytical Results

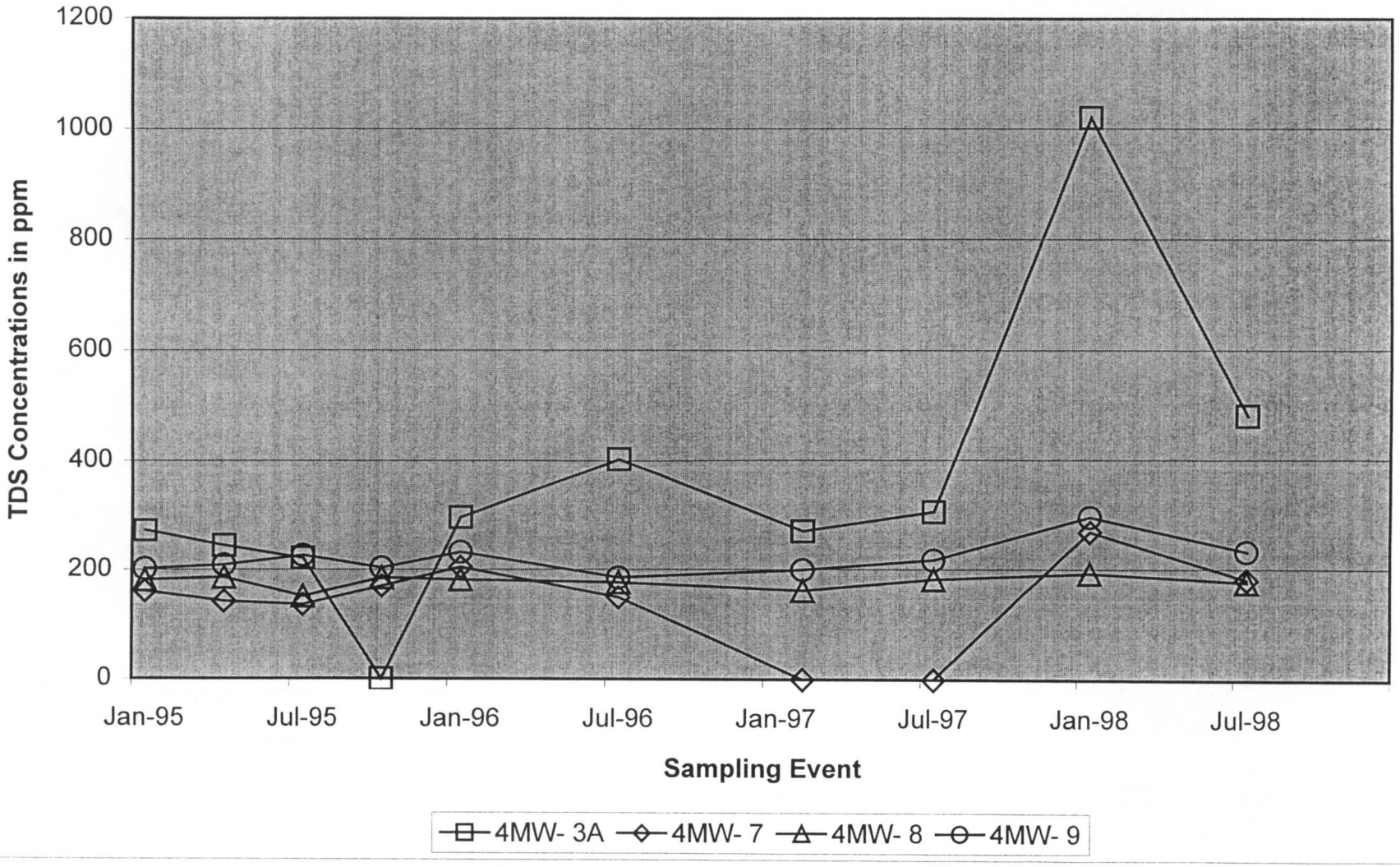


Figure 6: Sodium Analytical Results

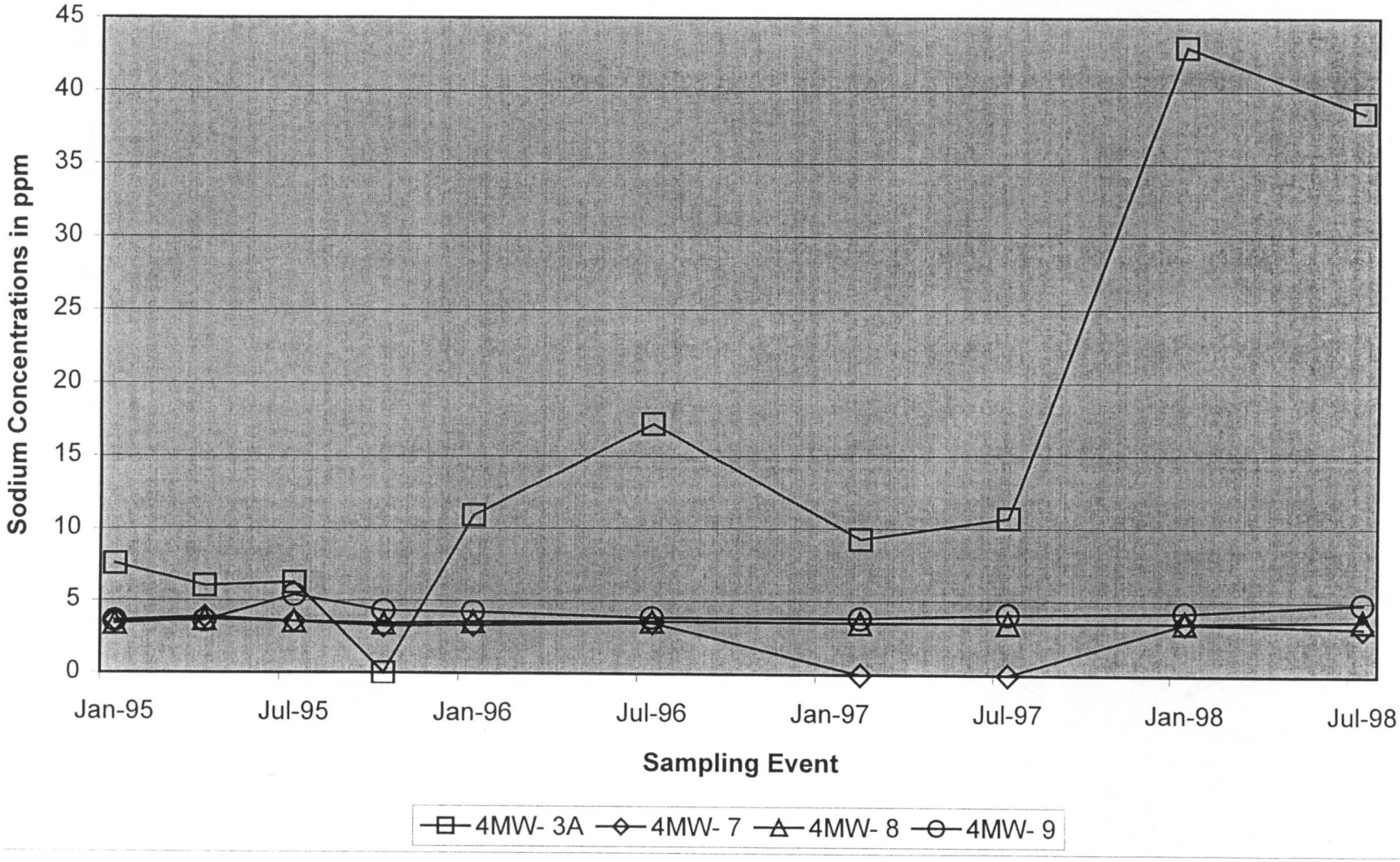


Figure 7: Chloride Analytical Results

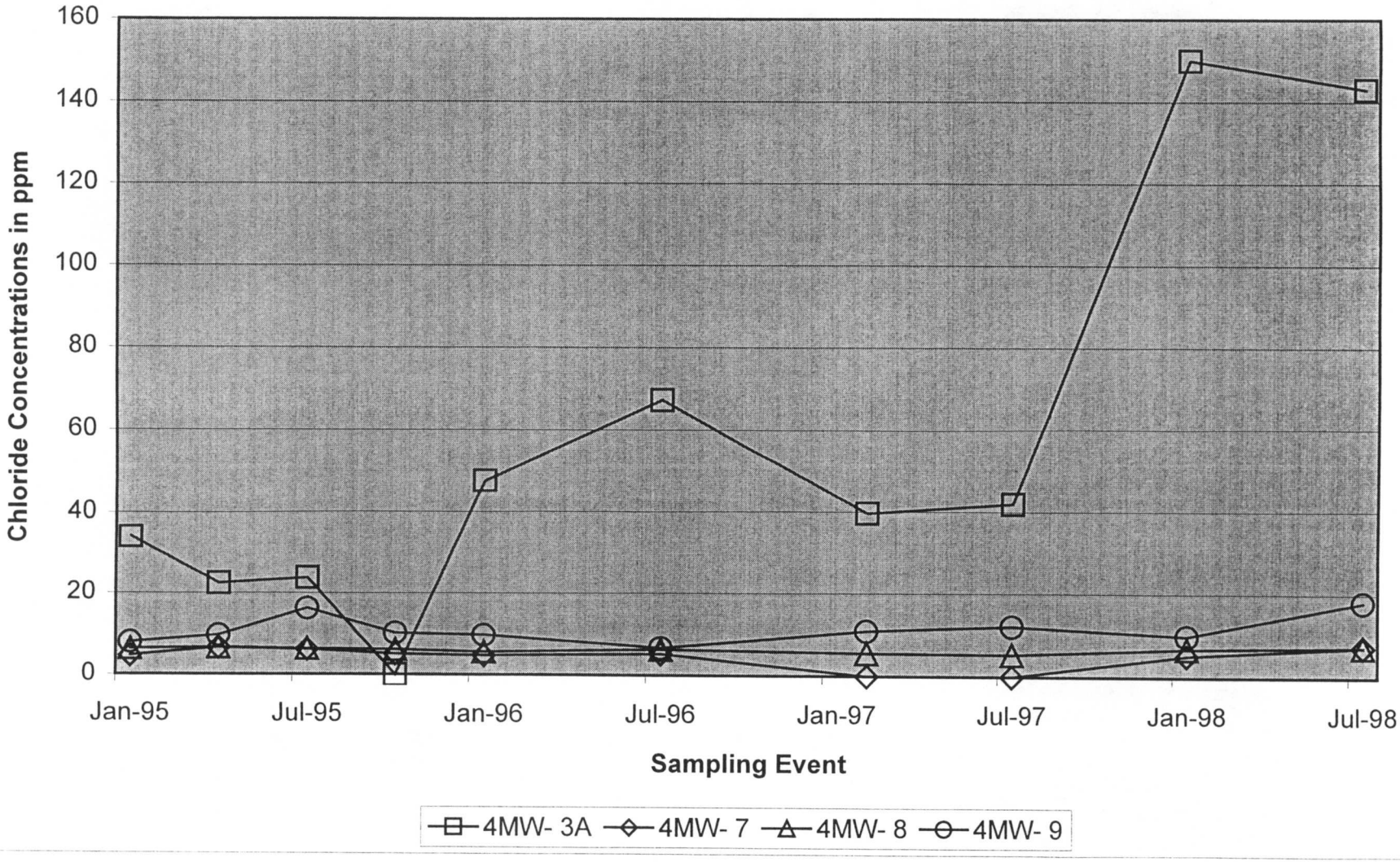
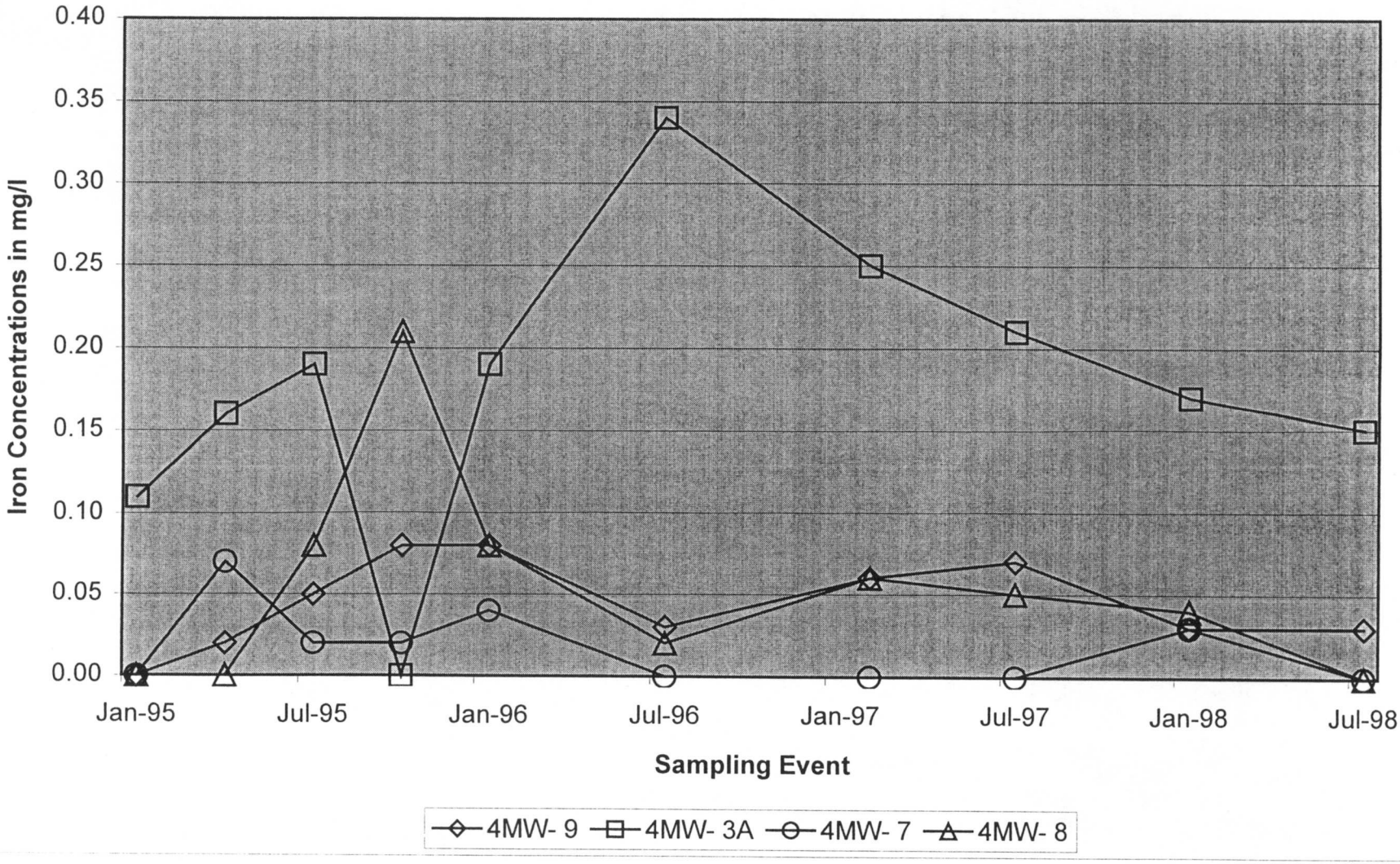


Figure 8: Iron Analytical Results



LAW

ENGINEERING AND ENVIRONMENTAL SERVICES

BI-ANNUAL GROUND-WATER MONITORING PLAN REVIEW WEST PASCO CLASS III LANDFILL

Prepared For

PASCO COUNTY BOARD OF COUNTY COMMISSIONERS

MARCH 1995

BI-ANNUAL GROUND-WATER MONITORING PLAN REVIEW EAST PASCO CLASS III LANDFILL

Prepared For

PASCO COUNTY BOARD OF COUNTY COMMISSIONERS

Prepared By

LAW ENGINEERING, INC.
Tampa, Florida

MARCH 1995

Project 464-83565.03

TABLE OF CONTENTS

TABLE OF CONTENTS - Continued

LIST OF TABLES

Table

LIST OF FIGURES

Figure

1.0 INTRODUCTION

1.1 BACKGROUND

The West Pasco Classes III Landfill is located in northwest Pasco County on Hays Road, approximately 2.5 miles north of State Road 52. The landfill is located adjacent to the Pasco County Resource Recovery facility and the West Pasco Class I Landfill. The West Pasco Class III Landfill is permitted separately from the adjacent West Pasco Class I Landfill.

The Ground-Water Monitoring Plan provides coverage for the 20-acre Class III Landfill which consists of four cells. The individual cells are 5-acres in size and are separated by interior berms.

The entire 20 acres landfill is lined with 60 mil HDPE geomembrane liner. Each cell has a separate leachate collection system.

Currently, only two cells are in use. The western most cell is being used for construction and demolition debris disposal. The eastern most cell is being used for yard-waste disposal.

1.2 FDEP-APPROVED QAPP

Pasco County Environmental Laboratory (County Lab) has been collecting and analyzing samples from the ground-water monitoring system on a quarterly basis since 1990. Ground-water sampling procedures used by the County Lab, including sampling equipment decontamination, field measurements, and sample shipment, adhere to the FDEP-approved QAPP. The County Lab also performs analytical work. The laboratory procedures and analytical methods used at the County Lab are also described in the FDEP-approved QAPP.

Pasco County contracts for some laboratory services and currently has several FDEP-approved laboratories under annual contract. The contracts for laboratory services are rebid every two to three years. The use of these contracted laboratories is reflected in the County Lab's FDEP-approved QAPP.

1.3 GROUND-WATER MONITORING PLAN

The current ground-water monitoring plan consists of four surficial aquifer monitoring wells (2MW3, 2MW7, 2MW8, and 2MW9) and four Floridan aquifer monitoring wells (4MW3, 4MW7, 4MW8, and 4MW9). The other monitoring wells are part of the ground-water monitoring plan for the adjacent Class I Landfill. The monitoring wells are sampled and analyzed quarterly (see Figure 1).

2.0 WATER LEVEL DATA

2.1 DATA TABULATION

Quarterly water level measurements were tabulated for the years 1992, 1993, and 1994. Water level elevations are shown in feet, NGVD (see Table 1).

Water level measurements are available for all the Floridan aquifer wells. Water wells are only available for one surficial aquifer well 2MW2 which is part of groundwater monitoring system for the Class I Landfill. All the other surficial aquifer monitoring wells were consistently dry.

2.2 HYDROGRAPHS

Hydrographs were prepared for the monitoring wells that were not consistently dry. The Class III Landfill monitoring wells are presented on Figure 1. The Class I Landfill monitoring wells are presented on Figure 2.

2.3 GROUND-WATER CONTOUR MAPS

Ground-water contour maps were prepared for the Floridan aquifer for the dry season and for wet seasons for 1993 and 1994 (see Figures 3 through 6). Water level data from the Class I landfill groundwater monitoring plan were not used because the data are obtained during a different month in the quarter. No surficial aquifer water table maps were prepared. Water levels, as previously stated, were only available in one well. The other surficial aquifer wells were dry.

2.4 DATA INTERPRETATION

2.4.1 Water Levels

Water levels in the Floridan aquifer ground-water monitoring wells do not vary significantly across the site. Water levels differ by less than five feet during individual sampling events. During the past two years, water levels in the monitoring wells have remained within a ten foot range.

The surficial aquifer ground-water monitoring wells are dry because of their location on a topographic high. Water has been encountered in only the one monitoring well, 2MW2, during the past three years. Monitoring well 2MW2 has consistently been wet.

2.4.2 Ground-Water Flow Direction

The ground-water flow direction in the Floridan aquifer is consistently determined to be to the northwest (see Figures 3 through 6). This conforms to required flow toward Weeki-Wachi Springs to the northwest. There is a slight depression to the southwest related to sinkholes and a water supply well located in the southwest corner of the site.

2.4.3 Ground-Water Gradient

The hydraulic gradient in the Floridan aquifer, based on the wet season potentiometric maps, is approximately 1.50 feet per 1,000 feet or 1.5×10^{-3} feet/foot. The hydraulic gradient during the dry season is approximately the same.

3.0 WATER QUALITY DATA

3.1 DATA TABULATION

Ground-water sampling analytical results were tabulated for years 1992, 1993, and ~~1995~~ 1994 (see Tables 2 through 14). Individual tables were prepared for the following water quality parameters:

- Dissolved Oxygen
- Specific Conductivity
- pH
- Total Ammonia-N
- Chlorides
- Iron
- Mercury
- Nitrate
- Sodium
- Total Dissolved Solids (TDS)
- Fecal Coliform MF
- Turbidity
- Sulfate

3.2 GRAPHICAL PRESENTATIONS

Parameters were selected for graphical presentation by trial and error. Parameters that tended to clearly illustrate patterns were selected. The parameters selected were pH, specific conductivity, total dissolved solids, sodium, and chlorides. Field conductivity and total dissolved solids were plotted against pH in x4 plots in Figures 7 and 8, respectively. Sodium was plotted against chlorides in an x4 plot in Figure 9.

3.3 DATA INTERPRETATION

Maximum contaminant levels for two parameters were exceeded in ground-water monitoring wells sampled at the West Pasco Class III Landfill. These were iron and fecal coliform.

3.3.1 Dissolved Oxygen

Dissolved oxygen does not have an established maximum contaminant level (MCL). The dissolved oxygen was analyzed for prior to 1994. Results have been 1.32 mg/L and lower in the Floridan aquifer wells in the Class III Landfill ground-water monitoring plan coverage (see Table 2).

3.3.2 Specific Conductivity

Specific conductivity also does not have an established maximum contaminant level (MCL). Specific conductivity is used as an indicated parameter. All values recorded were below 350 μmhos/cm (see Table 3).

3.3.3 pH

The established acceptable range for pH values in drinking water is between values of 6.5 and 8.5. Outside this range, the water quality is considered to be too acidic or caustic.

Values for pH recorded in the field for the one wet surficial aquifer monitoring well were occasionally below 6.5 standard units (su). Readings ranged from 5.45 to 6.96 su. Even though these values represent exceedances of a Secondary Drinking Water Standard, the values are typical of surficial aquifer water quality. The pH readings taken in the Floridan aquifer monitoring wells relative to the West Pasco Class III Landfill all fell within the acceptable range (see Table 4).

3.3.4 Total Ammonia-Nitrogen

Total ammonia-nitrogen also does not have an established MCL. Generally, the values were either less than 1 mg/L or were undetected in all monitoring wells. Detected levels of total ammonia-nitrogen showed no particular trend (see Table 5).

3.3.5 Chlorides

No exceedances of the established MCL were detected. All values from the monitoring wells in the Class III Landfill ground-water monitoring plan were below 60 mg/L which iswell below the MCL of 250 mg/L for chloride (see Table 6).

3.3.6 Iron

The iron concentrations detected in the one wet surficial aquifer monitoring well generally exceeded the established MCL of 0.3 mg/L for iron. High iron levels is typical for the surficial aquifer. The only occasional exceedances of the MCL for iron were detected in Floridan aquifer monitoring wells. No distinct pattern was distinguishable (see Table 7).

3.3.7 Mercury

Mercury analytical results were not available.

3.3.8 Nitrate

Exceedances of the established MCL for nitrate were not detected in any monitoring wells relative to the Class III Landfill. No exceedances were detected in any Floridan aquifer ground-water monitoring results (see Table 9).

3.3.9 Sodium

No exceedances of the established MCL for sodium were detected in the West Pasco Class I Landfill ground-water monitoring plan coverage. Generally, the recorded values were less than 10 mg/L, significantly less than the established MCL of 160 mg/L. All the results recorded are shown in Table 10.

3.3.10 Total Dissolved Solids

No exceedances of the established MCL for total dissolved solids were detected in any of the monitoring wells relative to the Class III Landfill. Recorded total dissolved solid levels were below 250 mg/L for the wells in the monitoring plan for the Class III Landfill (see Table 11).

3.3.11 Total Coliform MF

The MCL for total coliform MF was exceeded only once for the wells in the Class III Landfill monitoring plan. This exceedance was not repeated (see Table 12).

3.3.12 Turbidity

Generally, the ground-water samples were not turbid. Only once were the turbidity levels above the accepted value (see Table 13).

3.3.13 Sulfate

No exceedances of the established MCL were detected. All values were well below the established MCL for the wells in the Class III Landfill monitoring plan (see Table 14).

3.4 SUMMARY

None of the ground-water monitoring wells in the West Pasco Class III Landfill had any significant exceedances of the established regulatory levels. Occasional exceedances were observed for iron, total coliform, and turbidity. The cross plots provided in Figures 7, 8, and 9 show no particular pattern to distinguish one well in the monitoring plan from the other monitoring wells in the plan.

4.0 GROUND-WATER MONITORING PLAN REVIEW

4.1 SAMPLING LOCATIONS

The existing well spacing on the down gradient side of the landfill does not meet the current rule, Chapter 62-701.510(3)(d)2, maximum spacing of "no greater than 500 feet apart across the down gradient direction of the ground-water flow". The existing spacing on the down gradient side of the landfill is approximately 1,000 feet. The spacing between monitoring wells on the up gradient side of the landfill is also about 1,000 feet, which is sufficient. The current rules specifies a maximum spacing of 1,500 feet in the up gradient direction.

4.2 MONITORING FREQUENCY

The ground-water monitoring wells are currently sampled and analyzed quarterly. The current rule, Chapter 62-701.510(1)(a)2, only requires that the monitoring wells "be sampled and analyzed semi-annually".

5.0 CONCLUSIONS

The ground-water monitoring wells are being sampled and analyzed more frequently than necessary. A semi-annual monitoring frequency for the required parameters in FAC Rule 62-701 would be adequate.

The spacing between ground-water monitoring wells on the down gradient side of the landfill are not considered to be of concern because of the landfill use and design. The West Pasco Class III Landfill is lined with a 60 mil HDPE geomembrane and has a leachate collection system. Generally, Class III Landfills are not lined. Additionally, the waste stream is well monitored. Construction debris and yard waste are disposed of in different cells.

No significant exceedances of the established ground-water MCLs or trends showing rising levels for any of the parameters monitored were observed for any of the wells comprising the West Pasco Class III Landfill ground-water monitoring plan. Only occasional low level exceedances were detected for iron, total coliform and turbidity.

6.0 RECOMMENDATIONS

The monitoring frequency should be decreased to semi-annually, as specified in FAC Rule 62-701.

TABLES

TABLE 1: WATER LEVELS (in feet, N.G.V.D.)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				ND								
2MW2		33.21	37.20	35.76	33.46	33.56	32.26	32.11	31.71	30.29	33.66	35.11
2MW4												
2MW5												
2MW6												
2MW10												
4MW1		32.11	35.41	33.96	32.61	32.16	30.26	31.01	30.76	29.26	33.61	33.46
4MW2		32.26	36.16	34.86	32.71	32.66	31.21	31.06	30.36	29.21	32.86	32.86
4MW4	27.77	25.52	29.32	28.02	25.77	25.82	24.17	26.51	26.96	28.16	27.26	
4MW5	28.11	25.61	29.76	28.31	26.91	26.96	25.31	24.86	24.61	25.05	28.21	28.46
4MW6		29.03	33.03	31.88	30.38	30.38	28.93	28.53	28.30	26.63	30.53	32.13
2MW3												
2MW7												
2MW8												
2MW9												
4MW3		27.81	27.01	30.31	27.96	28.39	26.11	27.54	25.46	26.34	26.31	25.00
4MW7	28.48	28.48	27.48	31.28	28.08	28.38						30.23
4MW8	31.00	30.30	29.25	32.20	29.90	30.15	28.05	29.10	27.20	26.95	26.85	31.95
4MW9	32.08	28.38	27.13	25.50	28.13	28.38	26.23	27.13	25.28	26.95	24.53	29.88

TABLE 2: DISSOLVED OXYGEN (measured in field in mg/l)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				ND								
2MW2	NA	NA	NA	NA	NA	NA	NA	NA	3.50	NA	3.20	3.90
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	NA	NA	NA	NA	NA	NA	NA	NA	0.80	NA	1.30	1.40
4MW2	NA	NA	NA	NA	NA	NA	NA	NA	1.50	NA	1.40	1.50
4MW4	NA	NA	NA	NA	NA	NA	NA	NA	1.70	NA	2.00	2.00
4MW5	NA	NA	NA	NA	NA	NA	NA	NA	1.60	NA	2.20	2.30
4MW6	NA	NA	NA	NA	NA	NA	NA	NA	3.10	NA	3.00	2.90
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.32	1.00	1.20
4MW7	NA	NA	NA	NA	NA	NA	NA					1.00
4MW8	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.80	1.00	1.50
4MW9	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.50	1.00	0.80

TABLE 3: FIELD SPECIFIC CONDUCTIVITY (in um/hos)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				ND								
2MW2	ND	115	111	121	159	456	137	120	131	120	120	61
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	ND	500	713	709	641	573	628	689	857	1000	788	840
4MW2	ND	160	163	153	167	152	162	160	174	160	152	160
4MW4	200	260	285	177	296	266	286	278	307	290	279	292
4MW5	80	75	207	126	201	188	199	202	224	210	279	249
4MW6	ND	120	125	269	142	128	137	131	140	130	124	132
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	ND	210	255	338	302	292	294	310	332	300	270	437
4MW7	210	210	245	250	230	258						273
4MW8	220	230	260	261	261	261	262	267	284	272	253	261
4MW9	120	230	260	294	291	295	293	308	299	316	299	316

TABLE 4: FIELD pH (in std. units)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				5.19								
2MW2	ND	6.03	6.96	5.71	6.25	6.21	5.83	5.78	6.64	6.61	5.81	5.45
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	ND	7.38	7.21	7.22	7.18	7.06	6.99	7.15	7.14	7.12	7.01	7.07
4MW2	ND	7.78	7.60	7.93	7.68	7.56	7.21	7.65	7.61	7.20	7.09	7.11
4MW4	6.88	7.10	7.06	7.45	7.36	7.21	7.21	7.10	7.20	7.20	7.15	7.24
4MW5	9.14	8.45	7.40	8.13	7.71	7.41	7.84	7.83	6.94	7.53	7.51	7.57
4MW6	ND	8.20	7.90	8.07	7.57	7.64	7.01	7.53	7.09	7.00	7.27	7.71
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	ND	7.08	7.45	7.21	7.41	7.04	7.30	7.28	7.54	7.01	7.19	7.25
4MW7	7.46	6.95	7.48	7.20	7.48	7.07						7.25
4MW8	7.35	7.37	7.51	7.12	7.32	6.89	7.04	7.29	7.12	7.21	7.12	7.31
4MW9	7.21	7.40	7.33	7.01	7.29	6.97	7.19	7.17	7.25	7.04	6.69	7.15
MCL	6.5-8.	6.5-8.	6.5-8.	6.5-8.	6.5-8.	6.5-8.	6.5-8.	6.5-8.	6.5-8.	6.5-8.	6.5-8.	6.5-8.

TABLE 5: TOTAL AMMONIA-N (in mg/l)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				ND								
2MW2	ND	ND	0.19	0.315	<.07	<.07	0.056	<.07	<.07	<.07	<.07	<.10
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	ND	ND	<.07	0.168	<.07	<.07	0.049	<.07	<.07	<.07	<.07	<.07
4MW2	ND	ND	0.07	0.245	0.07	<.07	0.035	<.07	<.07	<.07	<.07	<.07
4MW4	ND	ND	<.07	0.231	<.07	<.07	0.049	<.07	<.07	<.07	<.07	<.07
4MW5	ND	ND	<.07	0.245	<.07	<.07	0.035	<.07	<.07	<.07	<.07	<.07
4MW6	ND	ND	0.08	<.07	0.08	<.07	0.056	<.07	<.07	<.07	<.07	<.07
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	ND	ND	<.10	<.10	ND	ND	ND	ND	ND	<.10	<.10	<.10
4MW7	ND	ND	0.34	0.19	ND	ND						<.10
4MW8	ND	ND	<.10	<.10	ND	ND	ND	ND	ND	<.10	<.10	<.10
4MW9	ND	ND	<.10	<.10	ND	ND	ND	ND	ND	<.10	<.10	<.10

TABLE 6: CHLORIDES (in mg/l)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				ND								
2MW2	ND	ND	8.20	6.60	159.00	4.80	4.50	4.70	3.80	4.70	6.10	6.70
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	ND	ND	139.20	155.70	113.20	113.40	108.00	138.90	179.00	203.00	186.00	206.00
4MW2	ND	ND	4.40	4.90	2.30	2.80	3.50	3.60	1.50	3.60	4.40	5.40
4MW4	ND	ND	4.90	3.90	2.70	4.10	3.20	4.10	4.10	4.80	6.40	9.40
4MW5	ND	ND	5.00	4.60	4.40	6.80	7.70	10.60	12.90	14.50	18.90	22.20
4MW6	ND	ND	21.20	3.90	2.90	3.50	3.90	4.20	3.60	3.60	5.40	7.70
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	ND	8.00	6.90	27.00	13.90	9.30	9.70	13.80	10.80	7.70	9.70	59.40
4MW7	5.90	4.00	3.70	5.10	3.90	3.90						5.40
4MW8	5.80	3.00	4.80	5.80	5.30	4.70	5.40	4.40	3.90	2.50	6.10	6.10
4MW9	5.50	4.00	4.20	6.40	4.70	4.40	6.00	7.40	6.70	5.60	7.30	9.90
MCL	250	250	250	250	250	250	250	250	250	250	250	250

Class I

Class III

TABLE 7: IRON (in mg/l)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				ND								
2MW2	ND	ND	7.56	0.91	5.27	1.58	0.93	0.31	0.06	0.46	0.03	<.01
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	ND	ND	0.04	0.03	0.06	0.08	0.03	<.02	<.02	<.02	<.02	0.02
4MW2	ND	ND	0.03	0.03	0.08	0.09	0.04	<.02	<.02	<.02	0.02	0.03
4MW4	ND	ND	1.22	0.03	0.07	0.08	2.76	0.10	0.52	0.32	<.02	0.19
4MW5	ND	ND	0.07	0.03	0.04	0.07	0.02	<.02	<.01	<.02	<.02	0.13
4MW6	ND	ND	0.07	0.03	0.03	0.07	0.01	<.02	<.02	<.02	<.02	<.01
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	ND	0.35	0.22	0.62	0.35	0.20	0.28	0.24	0.19	0.55	<.1	0.14
4MW7	0.07	0.09	0.06	0.03	0.04	0.05						0.04
4MW8	0.07	0.04	0.05	0.23	0.10	0.08	0.05	0.05	0.10	0.05	<.10	0.07
4MW9	0.05	0.04	0.06	0.05	0.19	0.33	0.02	0.05	0.19	0.44	<.10	0.22
MCL	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30

TABLE 8: MERCURY (in mg/l)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				NA								
2MW2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4MW2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4MW4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4MW5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4MW6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4MW7	NA	NA	NA	NA	NA	NA						NA
4MW8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4MW9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MCL	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002

NA - Not Available

TABLE 9: NITRATE (in mg/l)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				ND								
2MW2	ND	ND	9.62	12.5	16.2	13.3	14.5	12.9	10.9	0.15	12.14	17.4
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	ND	ND	1.21	1.05	0.41	0.67	0.049	0.797	0.754	<.10	0.78	0.78
4MW2	ND	ND	0.83	0.27	0.92	0.965	0.825	1.1	0.828	<.10	<.10	0.71
4MW4	ND	ND	<.10	0.33	0.34	0.503	0.049	0.576	0.45	<.02	0.17	0.22
4MW5	ND	ND	<.10	<.10	<10	<.10	0.035	0.309	0.355	<.02	<.10	<.10
4MW6	ND	ND	0.70	0.70	<.10	0.861	0.056	0.783	0.72	<.02	0.46	0.43
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	ND	ND	ND	ND	<.10	<.10	<.02	<.10	<.10	NA	NA	NA
4MW7	0.042	0.13	0.34	0.19	0.26	<.10						NA
4MW8	0.189	0.039	ND	ND	<.10	<.10	0.06	<.10	<.10	NA	NA	NA
4MW9	0.076	ND	ND	ND	<.10	<.10	0.07	<.10	<.10	NA	NA	NA
MCL	10	10	10	10	10	10	10	10	10	10	10	10

TABLE 10: SODIUM (in mg/l)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				5.19								
2MW2	ND	3.50	3.72	3.98	4.29	3.81	3.54	4.12	3.25	3.30	3.40	3.71
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	ND	16.76	34.00	37.50	24.70	29.20	27.70	32.80	38.00	35.80	36.60	32.60
4MW2	ND	2.92	2.73	2.73	2.64	2.81	2.65	2.76	2.76	2.55	2.80	2.54
4MW4	3.21	3.35	3.74	3.20	3.08	3.26	3.11	3.15	3.33	2.95	3.20	2.95
4MW5	7.74	6.38	3.24	3.31	3.11	3.29	3.19	3.43	3.51	3.37	3.49	3.38
4MW6	ND	3.77	3.05	3.12	2.99	3.18	2.92	3.19	3.10	2.92	2.90	2.89
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	ND	3.99	4.10	7.21	5.02	4.47	4.41	5.15	4.69	4.22	3.84	13.80
4MW7	3.63	3.05	3.25	3.27	3.50	3.79						2.75
4MW8	3.26	3.39	3.76	3.56	3.41	3.58	3.47	3.59	3.69	3.49	3.15	3.13
4MW9	3.63	3.25	3.53	3.47	3.54	3.55	3.47	3.76	3.82	3.88	3.32	4.17
MCL	160	160	160	160	160	160	160	160	160	160	160	160

TABLE 11: TOTAL DISSOLVED SOLIDS (in mg/l)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				38								
2MW2	ND	140	120	120	158	156	124	91	121	81	115	122
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	ND	340	576	536	484	460	508	456	546	522	656	502
4MW2	ND	112	101	100	97	90	118	108	97	236	107	74
4MW4	171	48	188	177	168	183	187	186	182	202	184	169
4MW5	54	83	115	115	112	128	114	130	145	144	169	149
4MW6	ND	ND	124	86	83	91	86	264	72	65	80	55
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	ND	182	179	230	201	186	195	181	203	212	178	362
4MW7	183	160	157	150	138	138						177
4MW8	156	153	161	160	177	160	167	155	208	202	162	165
4MW9	162	174	174	206	189	143	182	179	198	236	200	192
MCL	500	500	500	500	500	500	500	500	500	50	500	500

TABLE 12: FECAL COLIFORM MF (in MF/100 ml)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				ND								
2MW2	ND	ND	>23	A	3.6	NA	<1	A	<1.1	<1.1	ND	ND
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	ND	ND	A	A	ND	ND	<1	A	<2.2	1.1	ND	ND
4MW2	ND	ND	A	A	A	ND	<1	A	<1.1	<1.1	ND	ND
4MW4	ND	ND	100	A	A	ND	<1	A	5.1	>23	ND	ND
4MW5	ND	ND	ND	A	ND	ND	<1	1	<1.1	<1.1	ND	ND
4MW6	ND	ND	A	A	A	ND	<1	A	1.1	<1.1	ND	ND
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1.1	ND	<1
4MW7	<1	<1	<1	<1	<1	<1						<1
4MW8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ND	<1
4MW9	<1	<1	<1	<1	1	1	64	<1	<1	<1	ND	<1
MCL	3	3	3	3	3	3	3	3	3	3	3	3

TABLE 13: TURBIDITY (in NTUs)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1												
2MW2	ND	ND	150.50	10.48	16.78	20.30	0.70	1.40	0.80	1.63	0.72	0.25
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	ND	ND	0.14	0.11	0.05	0.04	0.04	0.07	0.96	0.30	0.16	0.14
4MW2	ND	ND	0.13	0.40	0.83	0.13	8.69	0.35	0.07	0.08	0.38	0.09
4MW4	ND	ND	25.60	0.31	0.94	0.20	27.40	1.30	4.14	3.56	0.74	0.35
4MW5	ND	ND	3.17	0.36	0.26	0.19	0.08	0.41	0.10	0.27	0.28	0.16
4MW6	ND	ND	0.71	0.95	0.24	0.01	0.22	0.08	0.07	0.10	0.06	0.77
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	ND	ND	2.38	9.02	4.45	1.14	2.38	0.95	0.53	1.00	0.80	2.36
4MW7	0.23	3.50	1.57	0.25	0.81	0.76						0.77
4MW8	0.72	0.25	0.53	3.47	1.92	1.60	0.90	0.64	1.02	0.20	0.30	1.62
4MW9	1.35	0.13	0.12	0.24	1.82	1.26	0.21	0.15	3.50	1.40	1.80	1.04
MCL	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

TABLE 14: SULFATE (in mg/l)
WEST PASCO CLASS I & III LANDFILLS
GROUNDWATER MONITORING WELLS

WELL	QUARTERLY SAMPLING EVENT											
NO.	I 92	II 92	III 92	IV 92	I 93	II 93	III 93	IV 93	I 94	II 94	III 94	IV 94
2MW1				2.30								
2MW2	ND	ND	,5	1.90	4.30	<1	1.30	<1	<1	<1	<1	<1
2MW4												
2MW5												
2MW6												
2MW10												
4MW1	ND	ND	29.80	30.90	25.60	24.90	35.20	18.70	30.60	32.80	26.50	32.20
4MW2	ND	ND	<5	1.90	2.90	2.37	1.20	<1	2.10	<1	1.64	1.60
4MW4	ND	ND	<5	5.80	5.10	6.00	3.91	<1	7.50	7.60	4.71	5.40
4MW5	ND	ND	<5	2.30	2.20	2.87	1.00	<1	<1	47.90	2.33	2.80
4MW6	ND	ND	<5	2.60	2.30	2.75	<1	<1	3.90	3.50	1.93	3.00
2MW3												
2MW7												
2MW8												
2MW9												
4MW3	ND	ND	<1	10.00	ND	ND	27.40	ND	ND	<1	<1	6.70
4MW7	ND	ND	<1	<5	NA	NA						1.00
4MW8	ND	ND	<1	<5	NA	NA	NA	NA	NA	<1	1.00	<1
4MW9	ND	ND	<1	<5	NA	NA	NA	NA	NA	1.50	1.50	1.10
MCL	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00

FIGURES

FIGURE 1: HYDROGRAPHS - WEST PASCO CLASS III LANDFILL

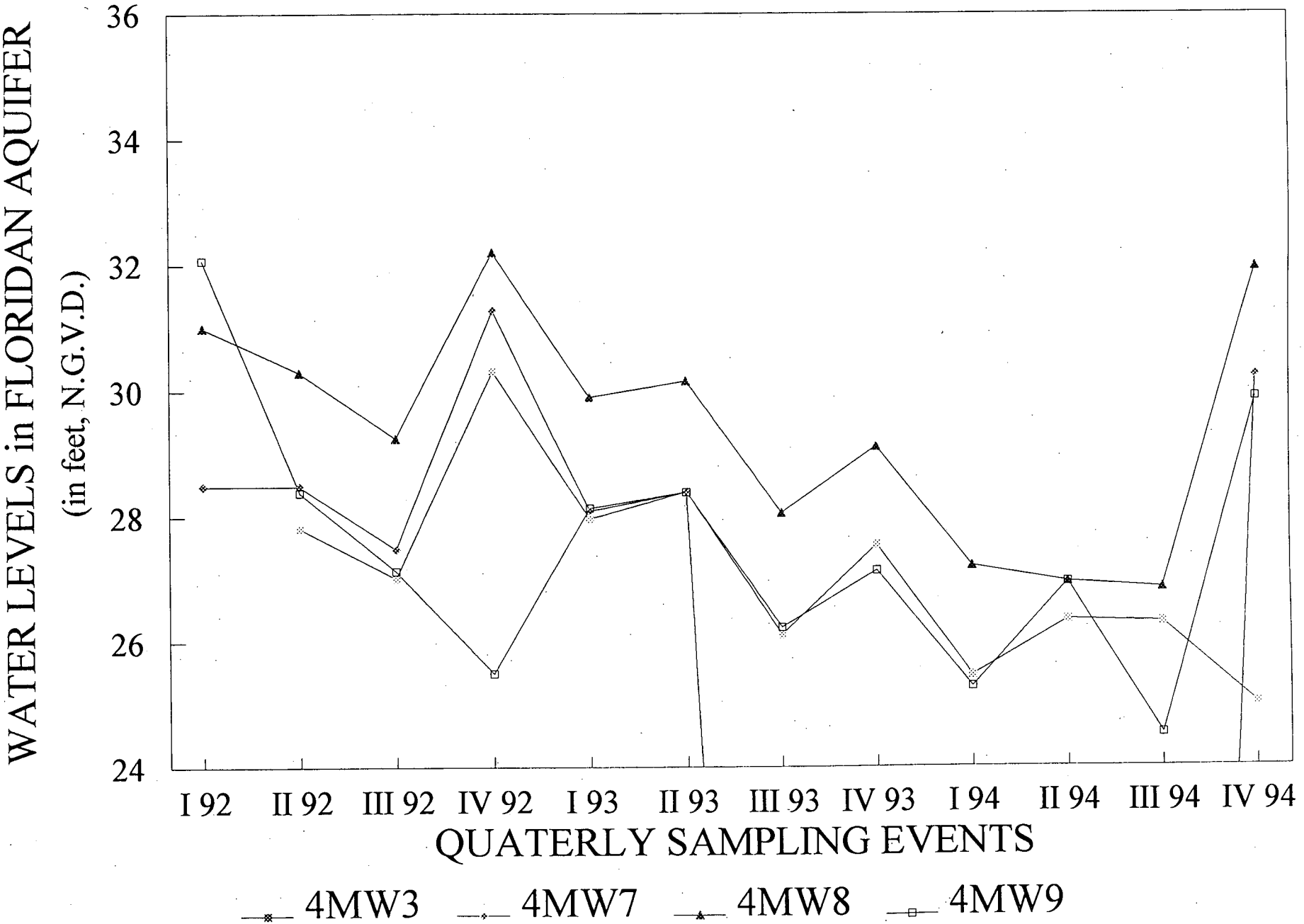
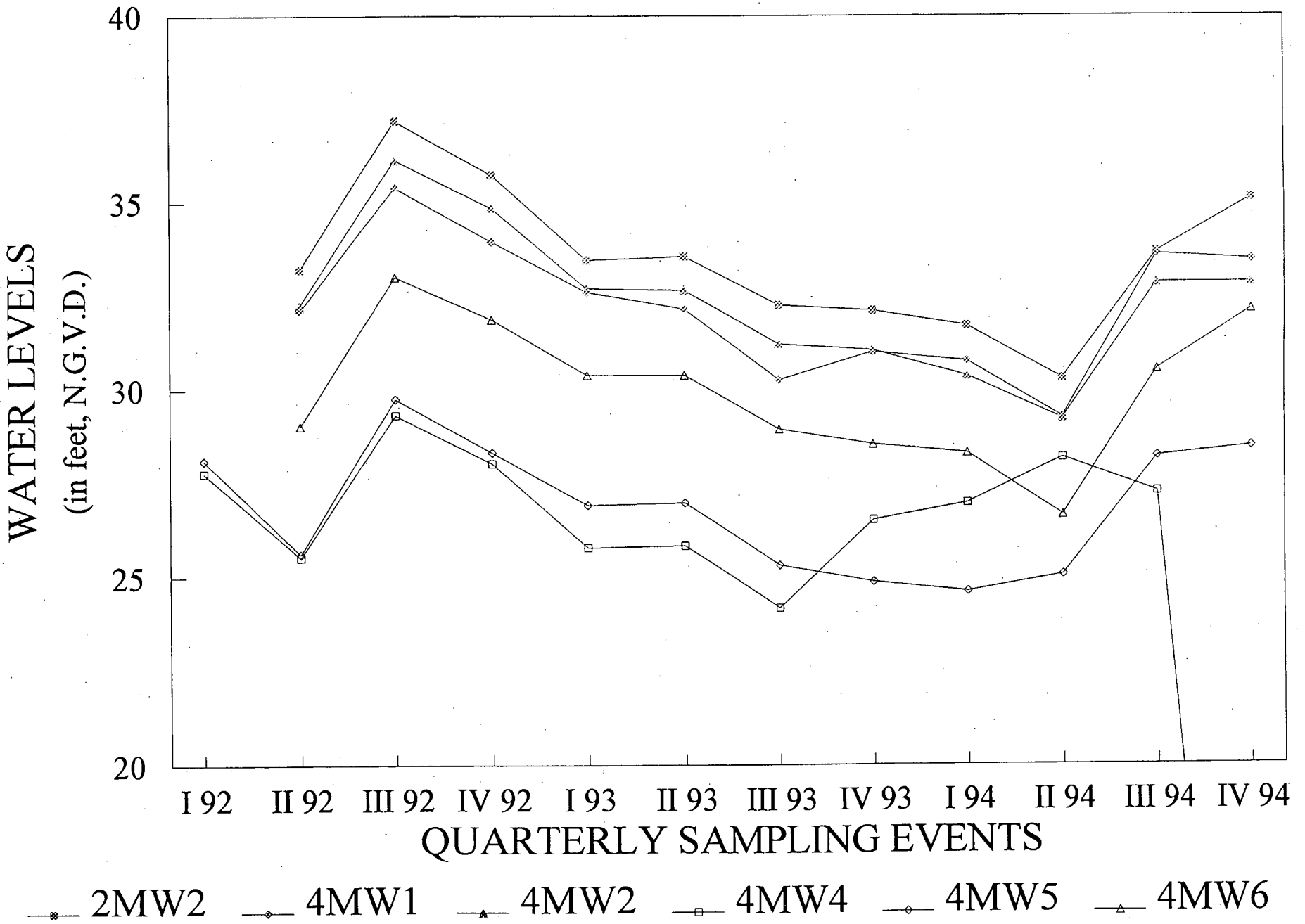
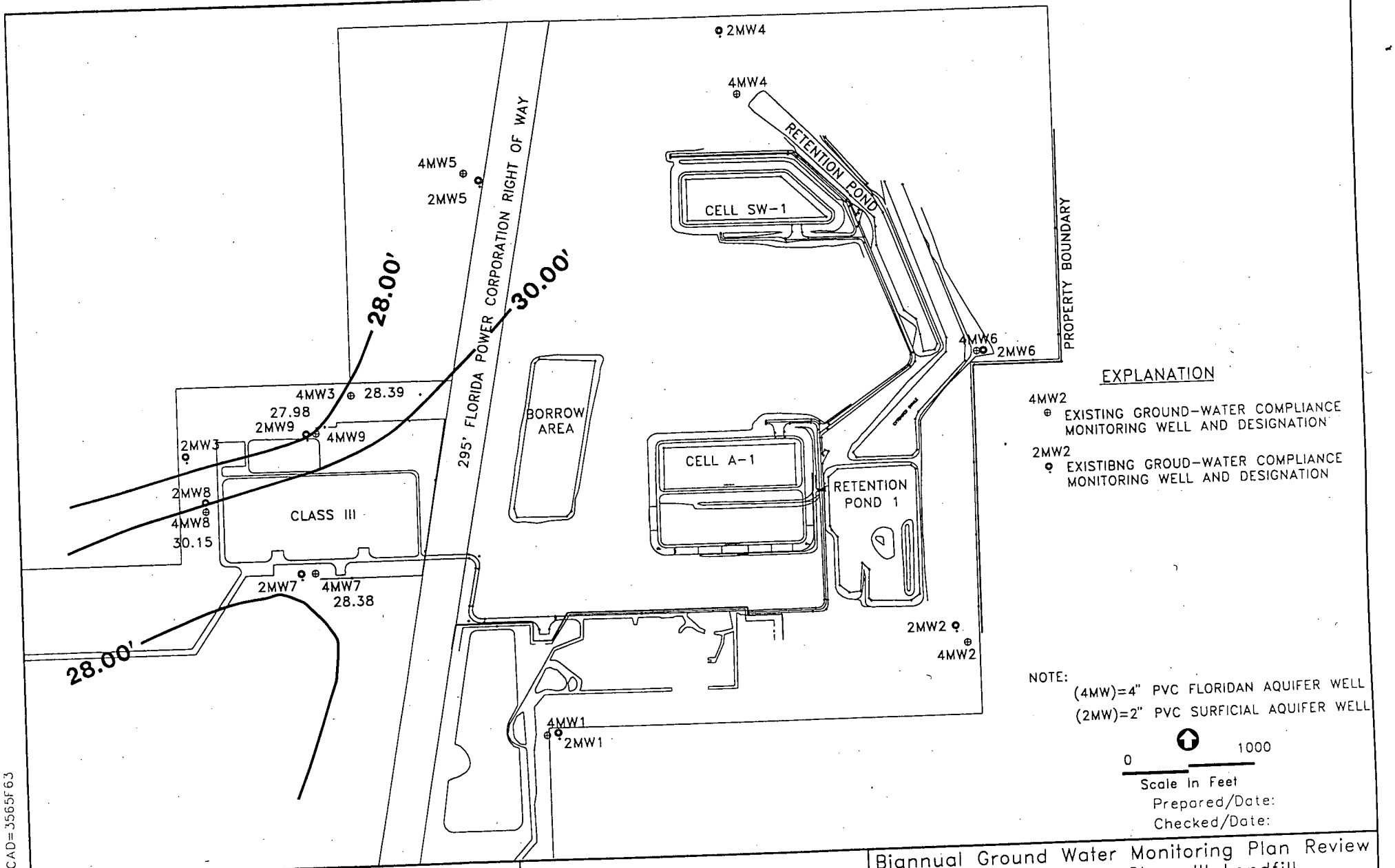


FIGURE 2: HYDROGRAPHS - WEST PASCO CLASS I LANDFILL





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West Pasco Class III Landfill

Floridan Aquifer Potentiometric Surface Map
Quarter II 1993

Project 464-83565.03

Figure 3

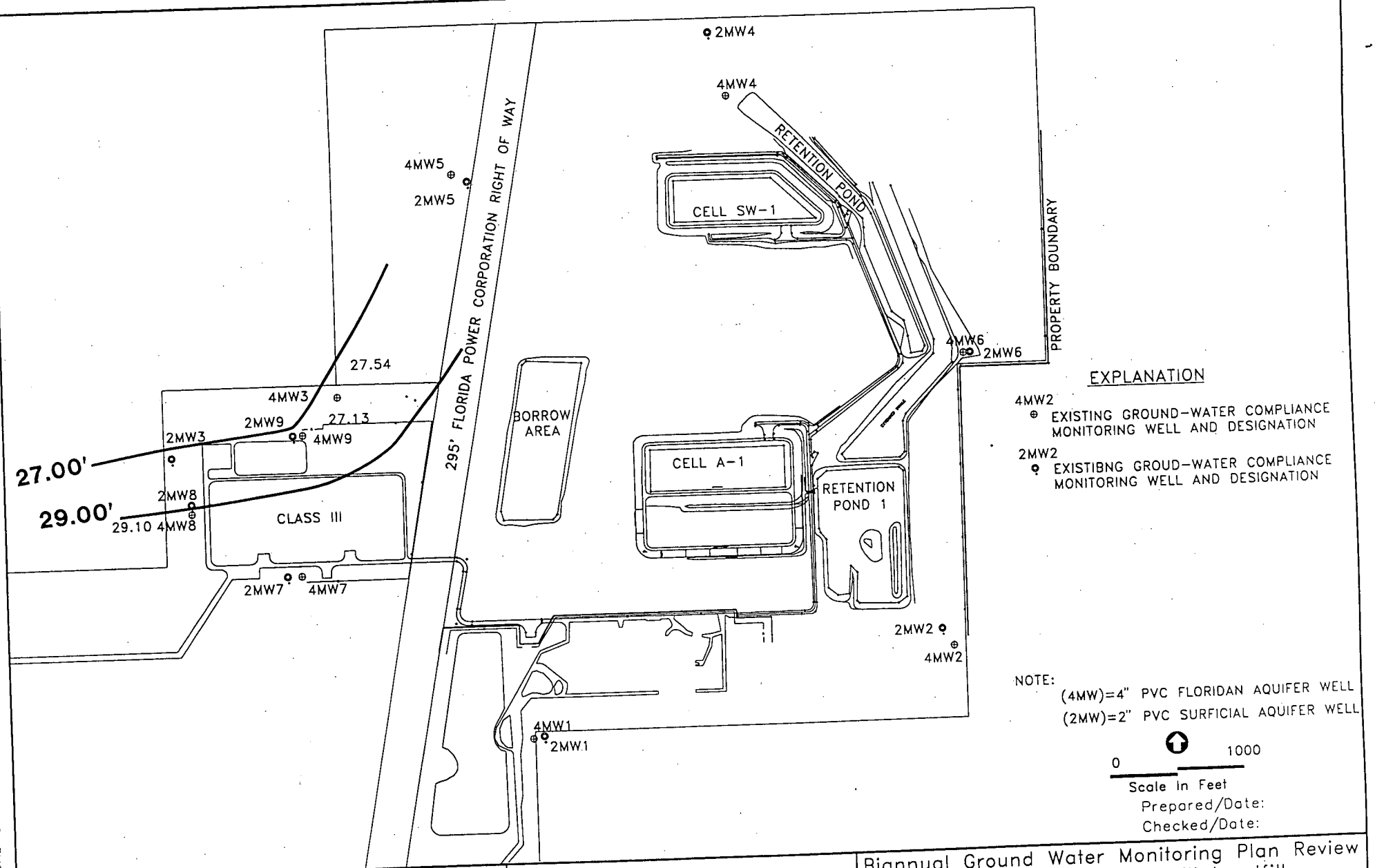

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Figure 4

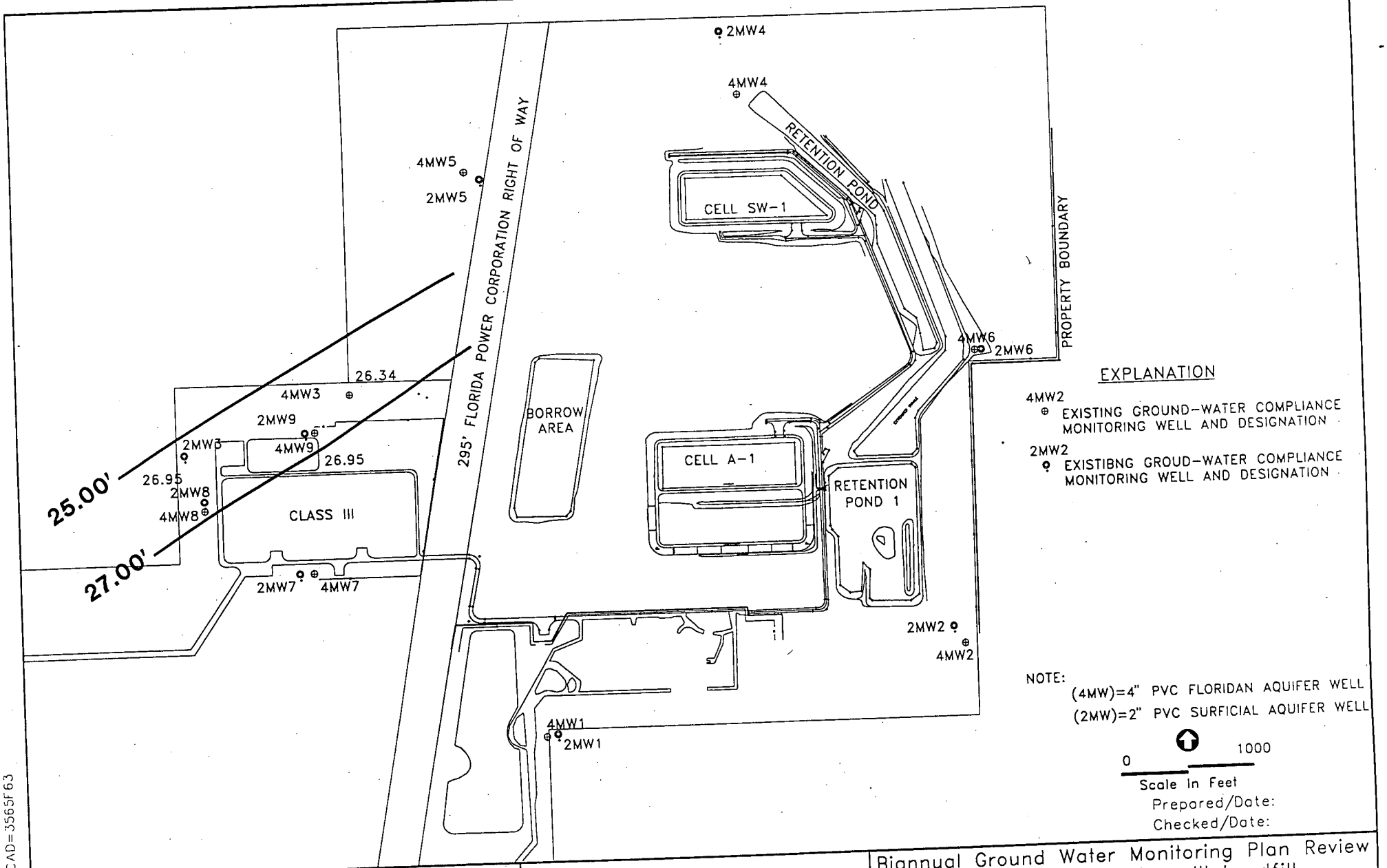

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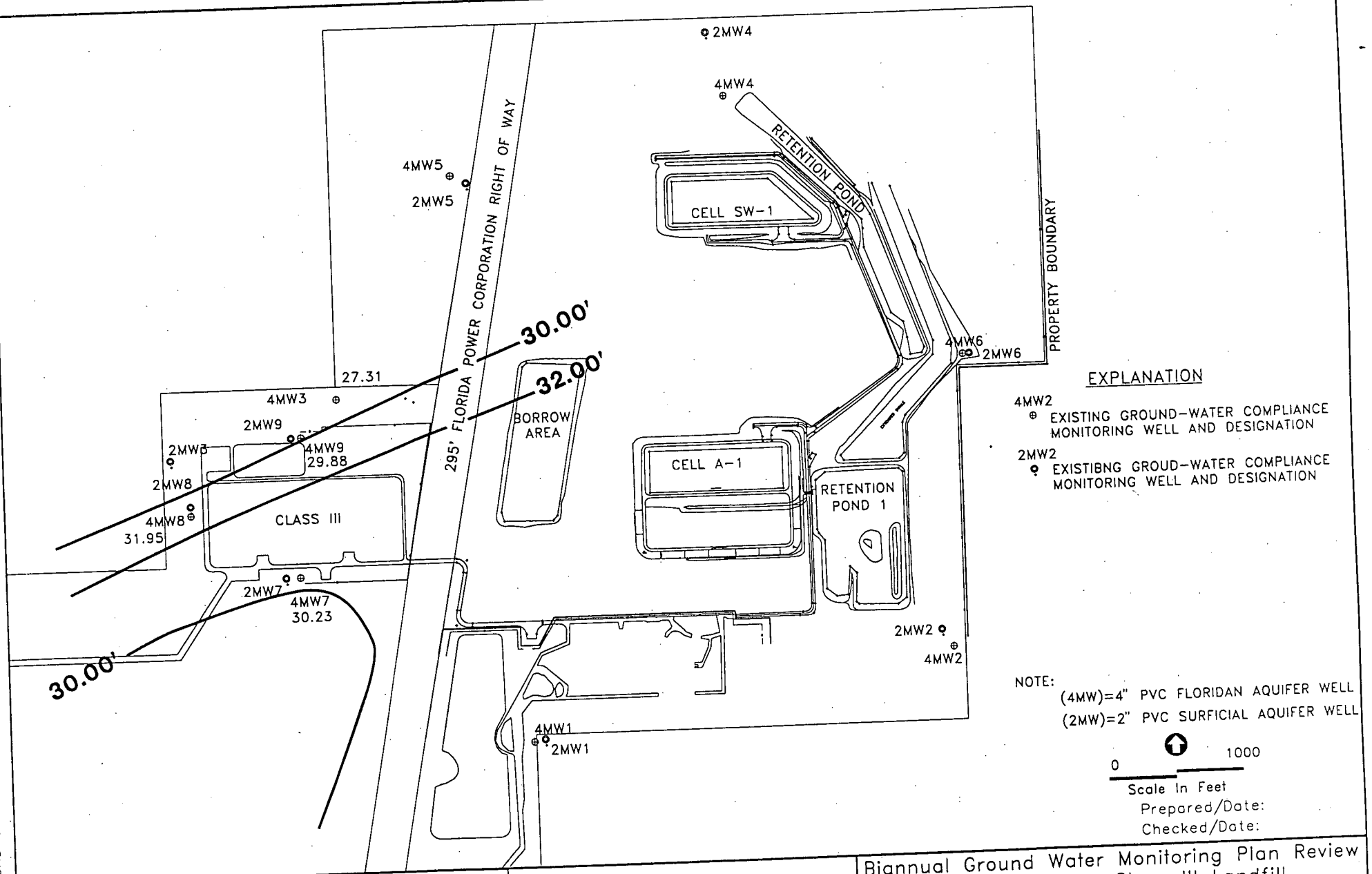
Figure 5



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Project 464-83565.03 Figure 6

FIGURE 7: SPECIFIC CONDUCTIVITY vs pH

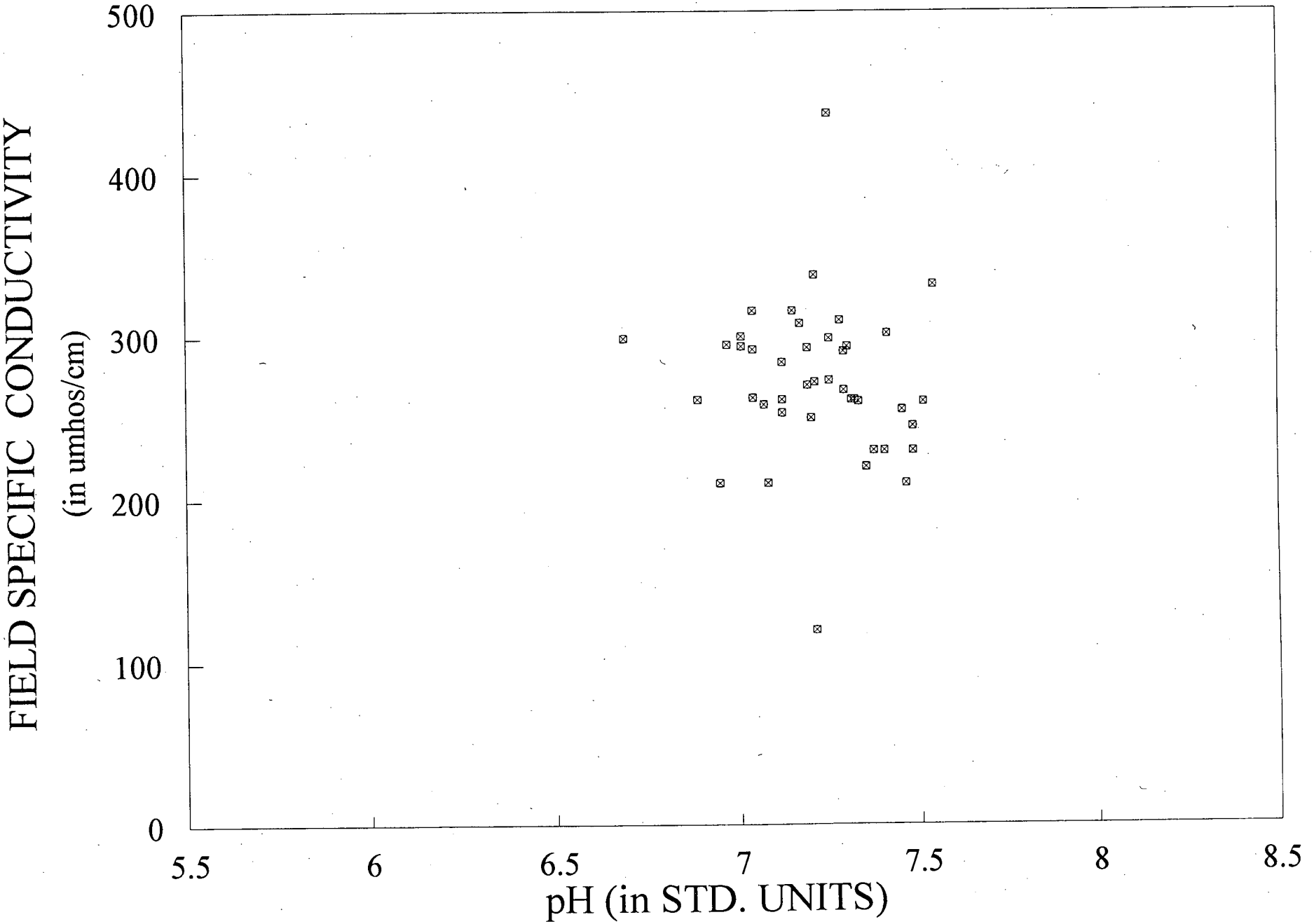

FIGURE 8: TOTAL DISSOLVED SOLIDS vs FIELD pH

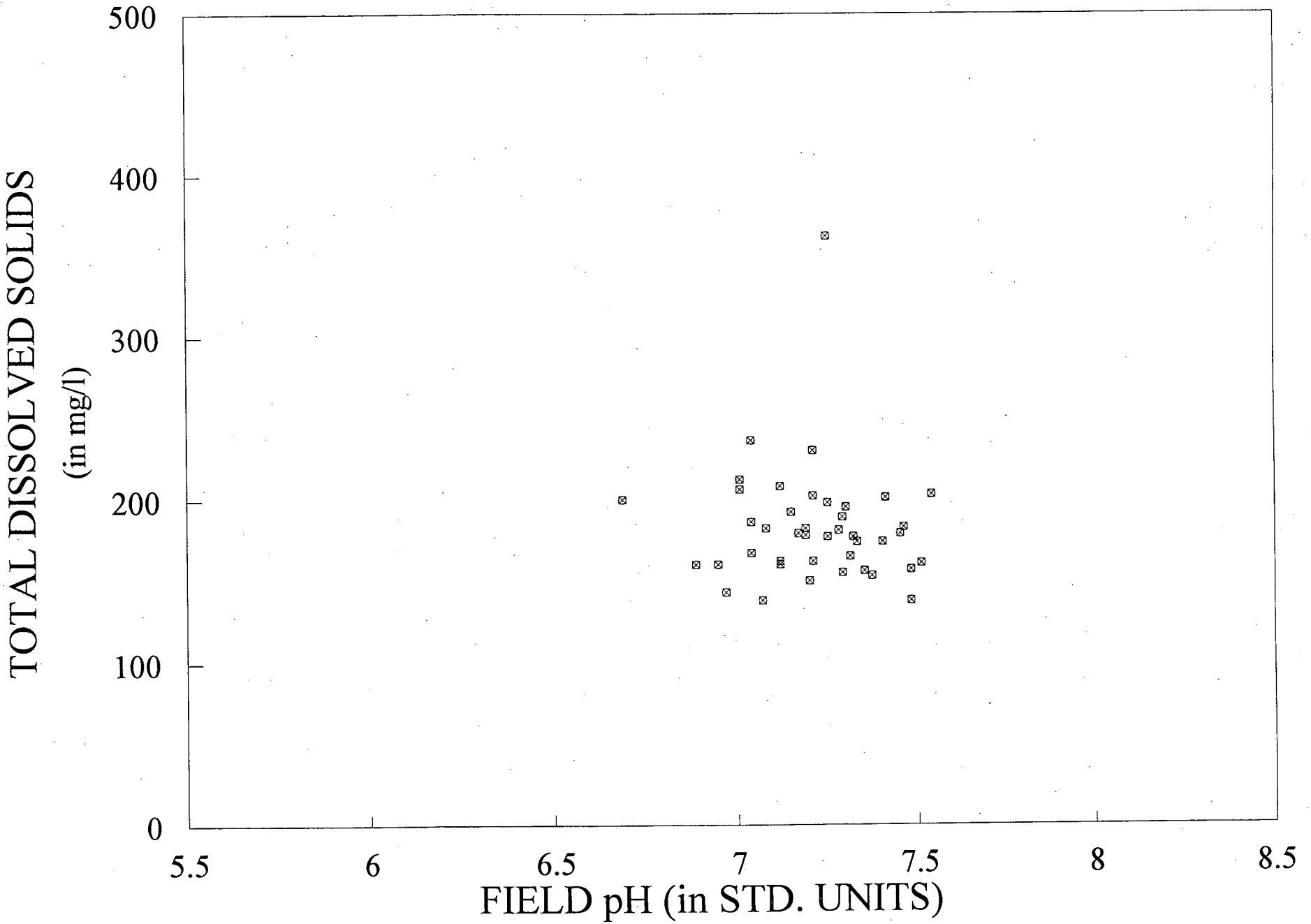

FIGURE 9: SODIUM vs CHLORIDE