ES CONSULTANTS, INC.
environmental and civil engineering

Civil Engineering

Construction Management

Environmental Services

Solid Waste

Water & Sewer

Water Resources

September 15, 2011

Mr. William "Lee" Martin
Florida Department of Environmental Protection
Division of Waste Management
Bob Martinez Center
2600 Blair Stone Rd.
Tallahassee, Florida 32399

Re: Biscayne Landing (F.K.A. Munisport Landfill)
2200 NE 143rd St. North Miami, Florida
(Closure Permit # 0219514-009-SF, December 2009;
DERM Consent Agreement, February 1998;
IRPAO, January 2002; and DERM SW-1178/File- 12838)

Subject: 2nd Semiannual Water Quality Monitoring Report for 2011
Response to the May 18, 2011 DERM Letter

Dear Mr. Martin:

On behalf of the City of North Miami (CNM), the owner, ES Consultants, Inc. (ESC) herein submits the Second Semi-annual Water Quality Monitoring Report for 2011 for the Munisport Landfill (a.k.a. Biscayne Landing) (Site) in accordance with Exhibit 1 of the Site closure permit and consent agreement/IRPAO, and FDEP correspondence dated April 24, 2009. This report also addresses DERM's comments in their correspondence dated May 18, 2011 (see **Attachment A**).

In the aforementioned letter, DERM generally requests the following information which has been included in the report:

- Trend analysis from select monitoring wells that represent the range of groundwater concentrations encountered within each groundwater vertical zone
- Summary of exceedance tables for parameters based on their presence in groundwater vertical zones
- Excel data tables
- Separate figures to include surface water sampling locations and groundwater monitoring wells, respectively
- Iron concentrations evaluation at one shallow groundwater monitoring well SCMW-2

The monitoring plan for sampling locations and parameters was established/approved in the subject closure permits and consent agreement/IRPAO. The water quality sampling program for the Site consists of 112 sampling locations: 24 surface water sampling points and 47 groundwater monitoring wells associated with the subject closure permit; six surface water sampling points and 34 groundwater monitoring wells associated with the subject consent agreement/IRPAO (Monitoring well CMW-B was damaged and removed from the program in accordance with the May 18, 2011 DERM letter). A Site location map is presented in **Figure 1**. At DERM's request, the groundwater and surface water sampling locations are presented in **Figure 2** and **Figure 3,**

respectively.

The groundwater monitoring wells at the Site are screened within four subsurface zones based on their screen elevations as detailed below:

- Zone 1 from 0 to -10 ft NGVD
- Zone 2 from -10 ft NGVD to -19.99 ft NGVD
- Zone 3 from -20 ft NGVD to -29.99 ft NGVD; and
- Zone 4 below -30 ft NGVD

Table 1 provides construction details for the Site's wells.

Groundwater and surface water samples were collected during June 20, 2011 through July 11, 2011 by ESC personnel. Existing monitoring wells were gauged for depth to water within one tidal cycle on July 11, 2011. The field measurements, sample collection, and sample preservation were conducted in accordance with the latest FDEP sampling SOPs. The groundwater and surface water samples were couriered under chain-of-custody protocol to Jupiter Environmental Laboratories, Inc., a NELAC-certified laboratory, for analysis.

Copies of the analytical laboratory reports are enclosed in the attached CD, including field sampling logs, chain-of-custody documentation, laboratory reports, ADaPT files, Excel spreadsheets for summary of field data and exceedance of analytical results, and ammonia trends from select monitoring wells in accordance with DERM's request in their May 18, 2011 letter. The field data and analytical results for this sampling event were reviewed and validated by ESC. The analytical results and concentration contours are presented in the attachments as follows:

- Groundwater contours were developed using select wells in each groundwater vertical zone as depicted in **Figure 4** through **Figure 7**. Groundwater flow direction in each vertical zone was generally towards the east/southeast.

- A summary of the field parameters and analytical results exceeding State/County surface water cleanup target levels (CTLs) is presented in **Table 2**.

- At DERM's request, a summary of the field parameters and analytical results exceeding State/County groundwater CTLs is presented in **Table 3.1** through **3.4** for each vertical zone, respectively.

- Ammonia concentrations and isoconcentration contours from each vertical zone are presented in **Figure 8** through **Figure 11**.

- Iron concentrations and iron isoconcentration contours from each groundwater vertical zone are presented in **Figure 12** through **Figure 15**.

- At DERM's request, historical ammonia trends from select monitoring wells are presented in **Figure 16** through **19** for each vertical zone, respectively. The select wells in each zone generally include the combination of monitoring wells representing the background, upgradient, source (or hot spot), and/or downgradient wells, as detailed below:

    - Zone 1: One background well (CMW-33); one upgradient well (SCMW-2); three source wells representing three hot spots (CMW-23, HMW-1D and HMW-6E); and one downgradient boundary well (LIT-3)

    - Zone 2: One upgradient well (CMW-37); three source wells representing two hot spots (C-3S, RDMW-2BR and HMW-12FR); and one downgradient well (RDMW-1A)

    - Zone 3: One upgradient well (CMW-31BR); two source wells representing two hot spots (C-3I and SWI-3); and one downgradient well (RDMW-1B)

    - Zone 4: One upgradient well (C-3D); and two source wells representing two hot spots (GW-4 and SWI-6)

- At DERM's request, historical iron trends from monitoring wells SCMW-2 and CMW-33 were developed to evaluate the iron concentrations at well SCMW-2 (see **Figure 20**). Historical iron concentrations exceeding the GCTL (0.3 mg/L) and DERM established background level (0.706 mg/L) have been reported at SCMW-2 since July 2003, while iron concentrations from the background well CMW-33 have been reported below the CTL. Iron concentrations from SCMW-2 have shown a decreasing trend in the last three sampling events (July 2010 through July 2011). ESC concurs that there appears to be a localized iron plume in the vicinity of SCMW-2. However, the source of the elevated iron concentrations is uncertain because of the following:

    - The iron trend (**Figure 20**) and the ammonia trend at SCMW-2 (**Figure 16**) are inconsistent; therefore, the source of the elevated iron concentrations may be different from the one causing the ammonia impact.
    - Since the elevated iron concentrations have been observed (since January 2008), we are unaware of any major site activities in the vicinity of SCMW-2 that may have caused the increased iron concentrations.

  ESC recommends continuing the monitoring in accordance with the approved semiannual monitoring program without further iron evaluation at SCMW-2 because of the following:

    - As mentioned above, the iron concentrations at SCMW-2 appear to be decreasing.
    - Based on the historical iron data in the vicinity, it does not appear that the iron plume is migrating significantly.

- Because of the eastward/southeastward groundwater flow direction observed onsite, if the iron plume were to migrate, it would be intercepted by the proposed groundwater extraction system along the eastern property boundary.

Should you have any questions regarding the information presented in this report, please do not hesitate to contact the undersigned.

Regards,

ES Consultants, Inc.

Fangmei Zhang, P.E.
Florida License No. 70325

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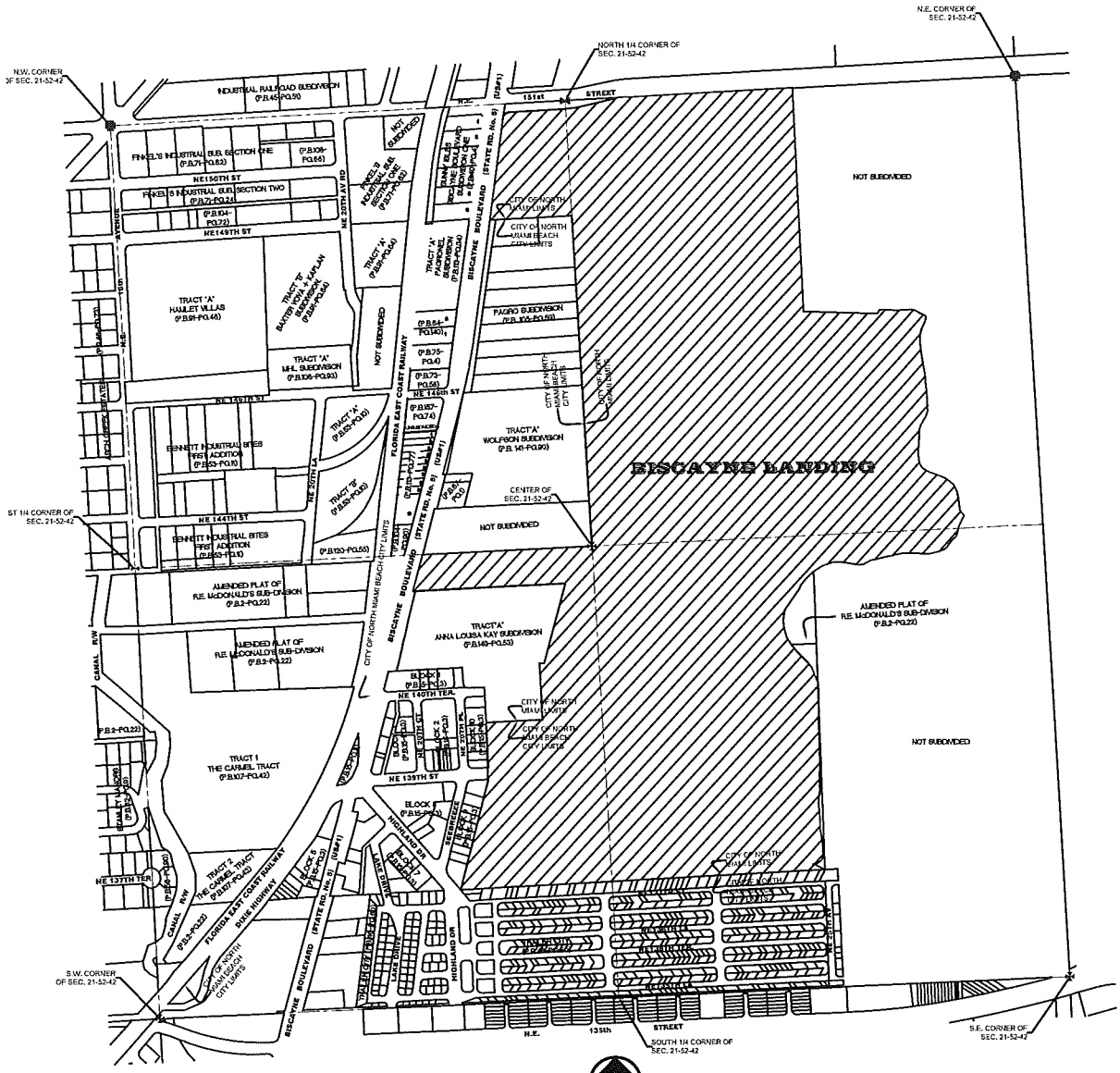
Attachments

A. DERM Correspondence
B. Form 62-522.900(2)
C. Laboratory Analytical Results, Chain of Custody, Sampling Logs, ADaPT files and Data Tables

cc: Aleem Ghany, City of North Miami
Lynn Whitfield, City Attorney
Richard Tedder, Peter Grasel, Tor Bejnar, FDEP Tallahassee
Joe Lurix, FDEP Southeast District
Lee Casey, DSWM
Tom Colios, SFWMD
Wilbur Mayorga, Hardeep Anand, DERM

Figures



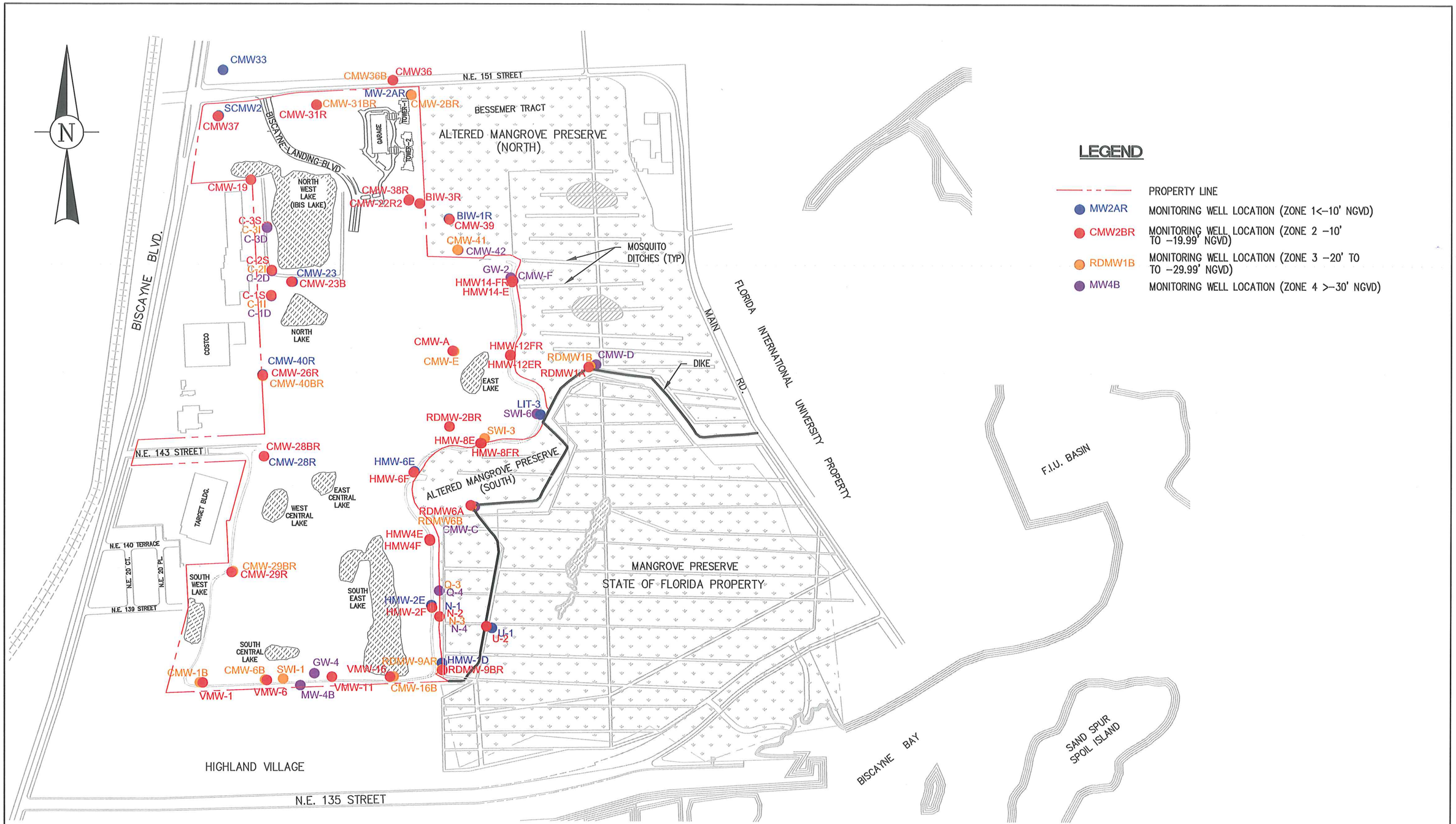
LOCATION MAP

SECTION 21, TOWNSHIP 52 SOUTH, RANGE 42 EAST

0 1000'

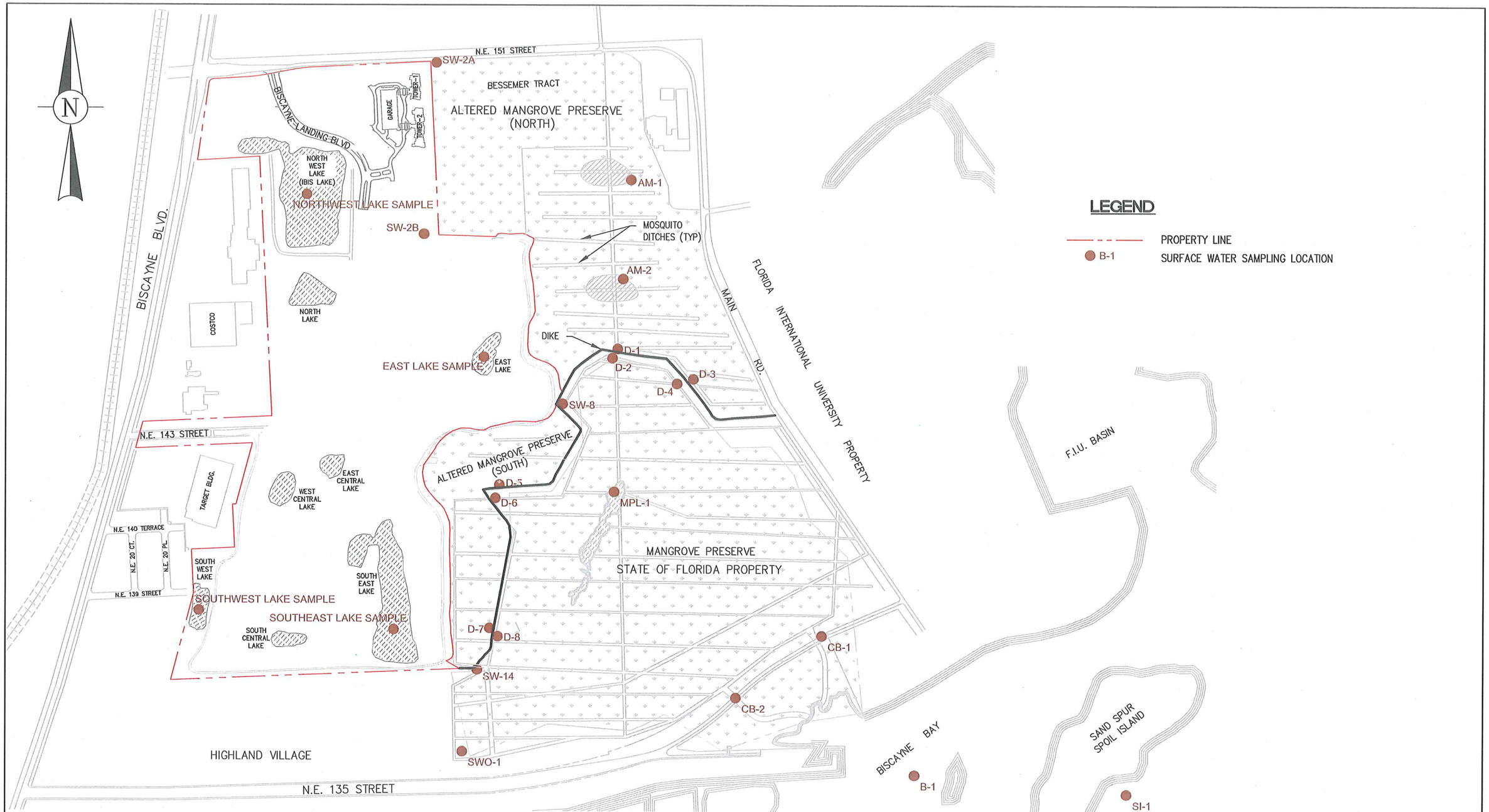
SCALE

CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FL	SITE LOCATION MAP
ES CONSULTANTS, INC. environmental & civil engineering	PROJECT 2011048	JULY 2011 Fig. 1

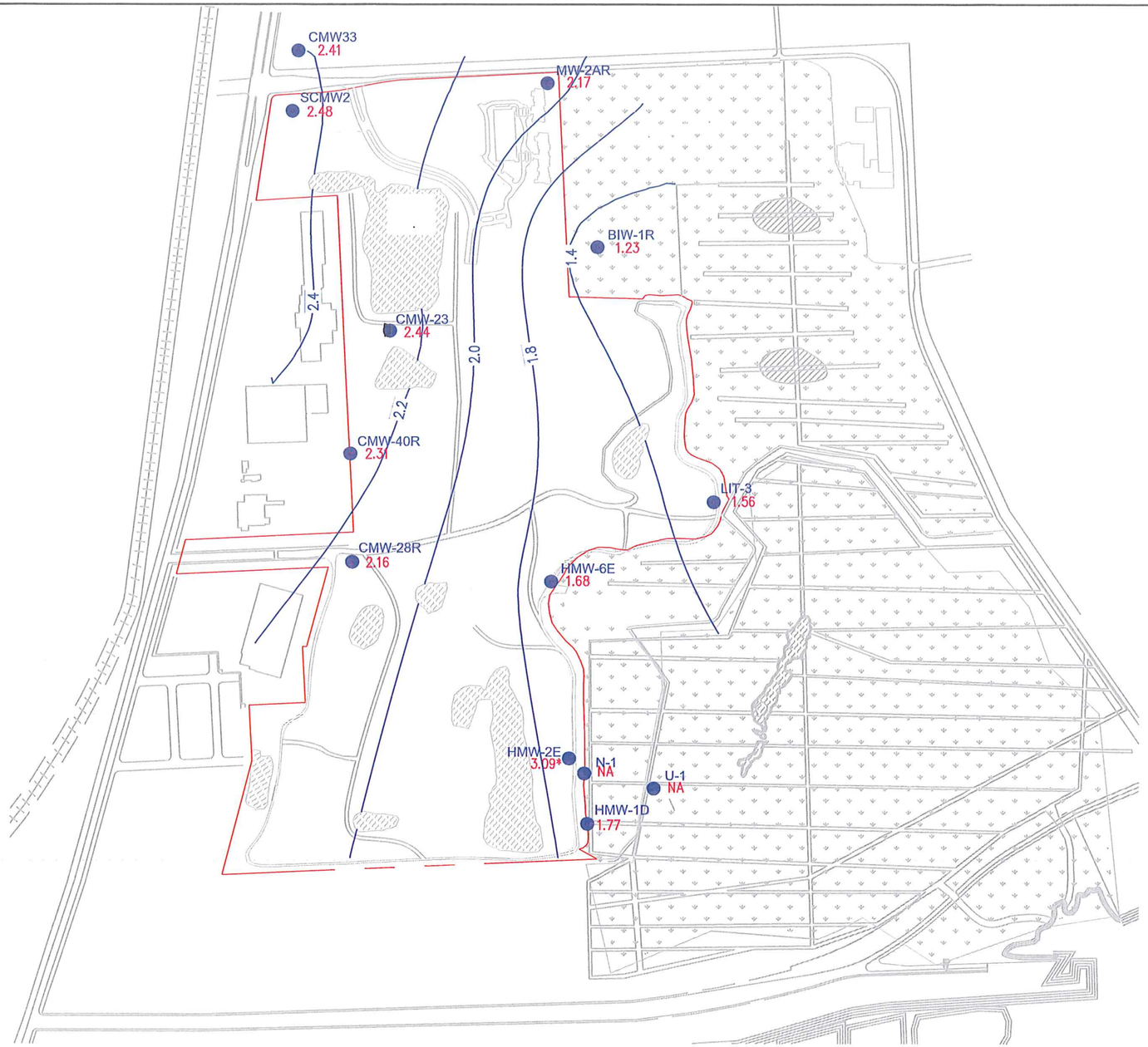


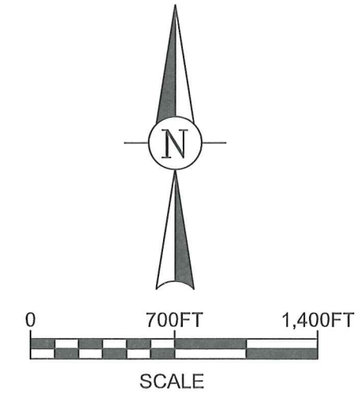
0 700FT 1400FT
SCALE

CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	GROUNDWATER QUALITY MONITORING LOCATIONS
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	JULY 2011 Fig. 2



CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	SURFACE WATER SAMPLING LOCATIONS
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	JULY 2011 Fig. 3

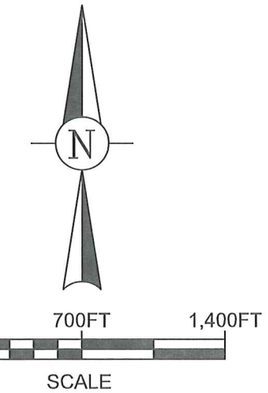




LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
MW2AR	MONITORING WELL LOCATION (ZONE 1<-10' NGVD)
1.13	GROUNDWATER ELEVATION, FT NGVD
1.2	GROUNDWATER ELEVATION CONTOUR
NA	GROUNDWATER ELEVATION NOT COLLECTED
3.09*	DATA NOT USED FOR CONTOUR DEVELOPMENT

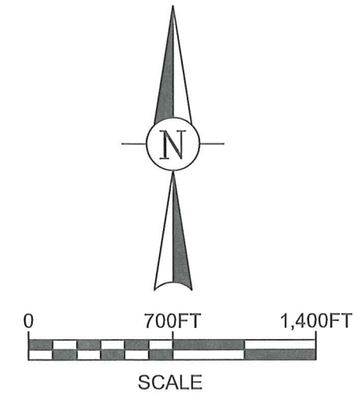
CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	GROUNDWATER ELEVATIONS – ZONE 1 (JULY 11, 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 4



LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
CMW2BR	MONITORING WELL LOCATION (ZONE 2 –10 TO –19.99' NGVD)
1.13	GROUNDWATER ELEVATION, FT NGVD
1.2	GROUNDWATER ELEVATION CONTOUR, DAHSED WHERE INFERRED
NA	GROUNDWATER ELEVATION NOT COLLECTED
6.37*	DATA NOT USED FOR CONTOUR DEVELOPMENT
**	AVERAGE GROUNDWATER ELEVATION IN TWO ADJACENT WELLS USED FOR CONTOUR DEVELOPMENT

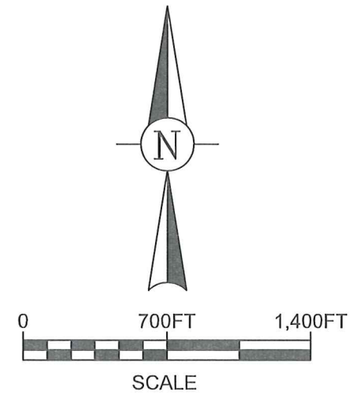
CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	GROUNDWATER ELEVATIONS – ZONE 2 (JULY 11, 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 5



LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
RDMW1B	MONITORING WELL LOCATION (ZONE 3 –20' TO –29.99' NGVD)
1.13	GROUNDWATER ELEVATION, FT NGVD
2.2	GROUNDWATER ELEVATION CONTOUR
NA	GROUNDWATER ELEVATION NOT COLLECTED
6.38*	DATA NOT USED FOR CONTOUR DEVELOPMENT

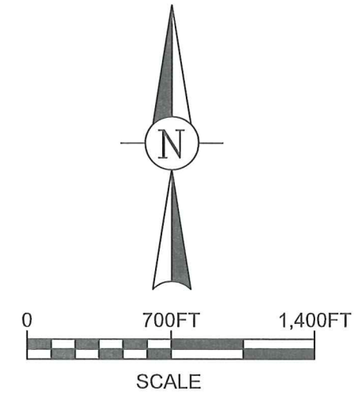
CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	GROUNDWATER ELEVATIONS – ZONE 3 (JULY 11, 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 6



LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
CMW-C	MONITORING WELL LOCATION (ZONE 4 >– 30' NGVD)
1.13	GROUNDWATER ELEVATION, FT NGVD
—1.2—	GROUNDWATER ELEVATION CONTOUR
NA	GROUNDWATER ELEVATION NOT COLLECTED
6.16*	DATA NOT USED FOR CONTOUR DEVELOPMENT

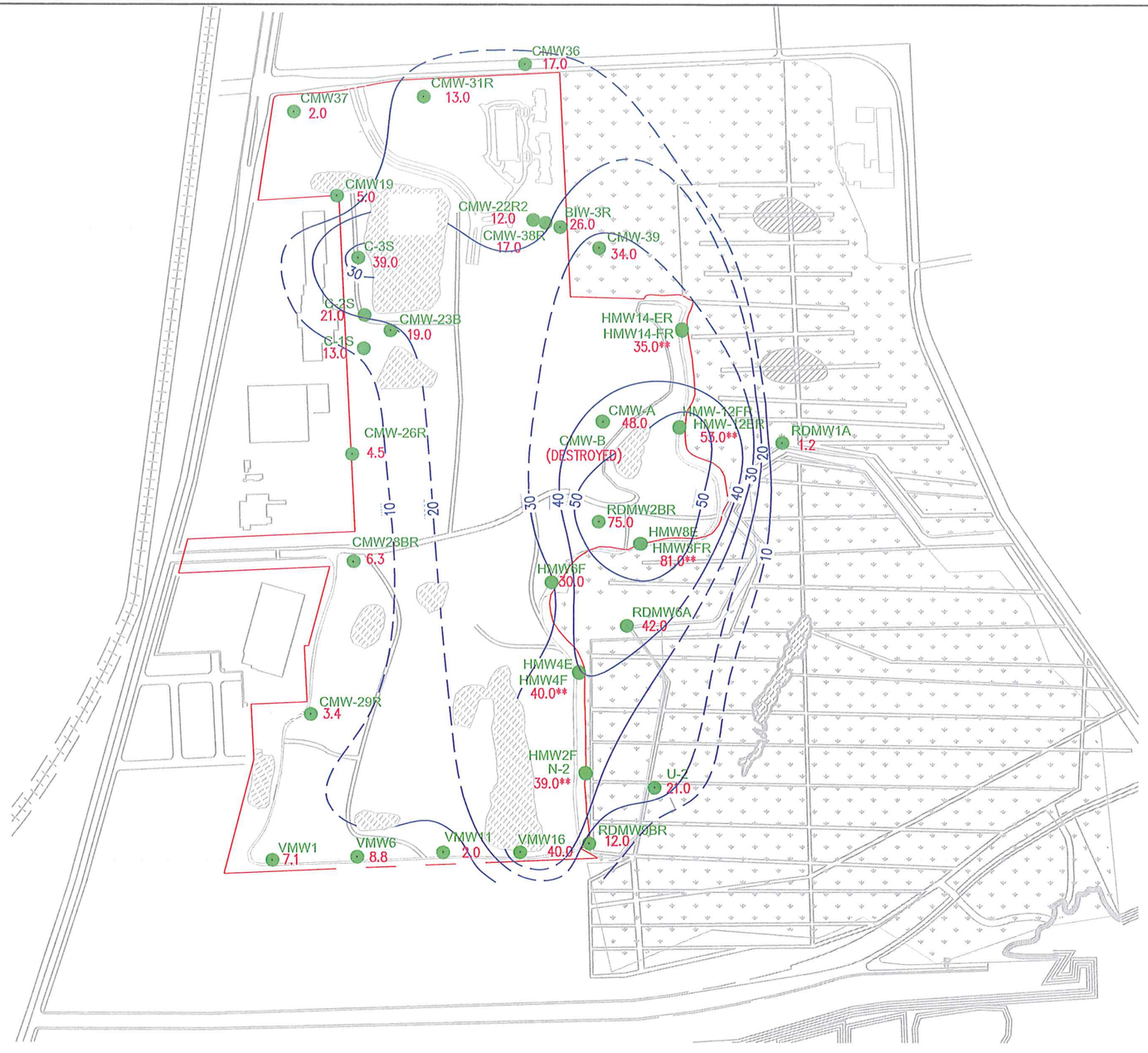
CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	GROUNDWATER ELEVATIONS – ZONE 4 (JULY 11, 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 7

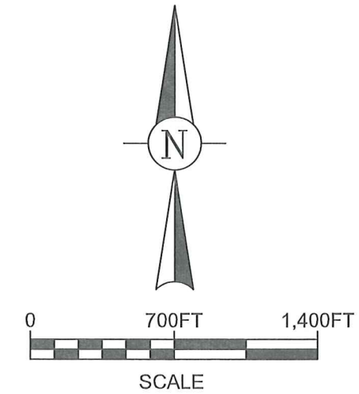


LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
MW2AR	MONITORING WELL LOCATION (ZONE 1<–10' NGVD)
7.50	AMMONIA CONCENTRATION, mg/L
10	AMMONIA ISOCONCENTRATION CONTOUR, DASHED WHERE INFERRED

CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	AMMONIA CONCENTRATIONS IN GROUNDWATER – ZONE 1 (JULY 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 8

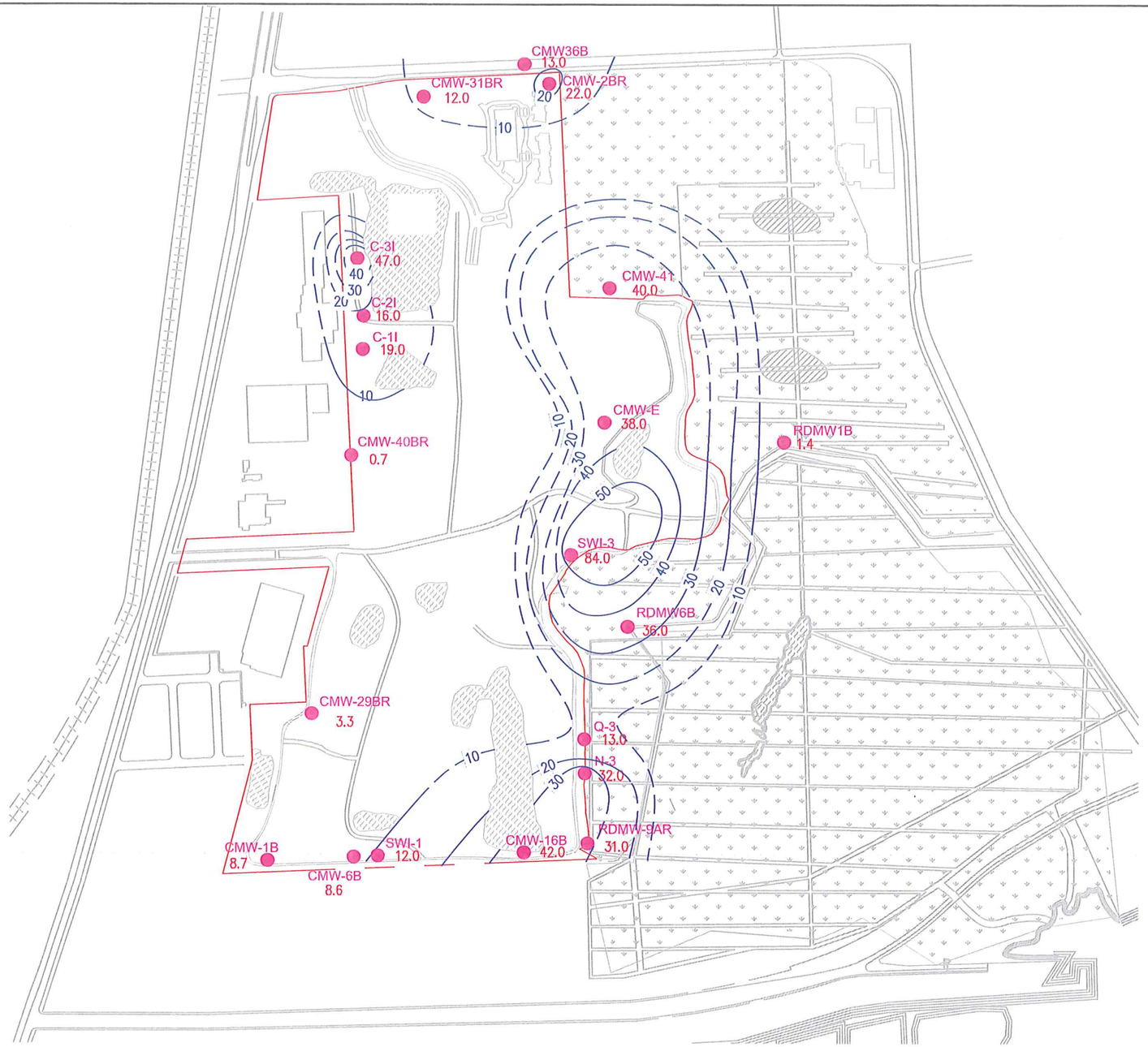


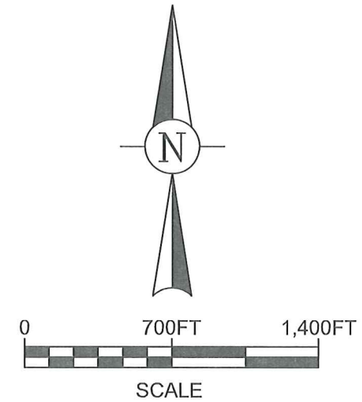


LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
CMW2BR	MONITORING WELL LOCATION (ZONE 2 –10' TO –19.99' NGVD)
2.2	AMMONIA CONCENTRATION, mg/L
10	AMMONIA ISOCONCENTRATION CONTOUR, DASHED WHERE INFERRED
NA	DATA NOT COLLECTED
**	AVERAGE CONCENTRATION IN TWO ADJACENT WELLS USED FOR CONTOUR DEVELOPMENT

CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	AMMONIA CONCENTRATIONS IN GROUNDWATER – ZONE 2 (JULY 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 9

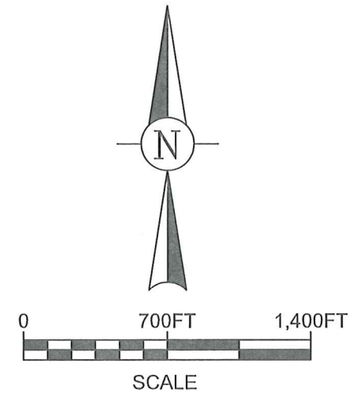




LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
RDMW1B	MONITORING WELL LOCATION (ZONE 3 –20' TO TO –29.99' NGVD)
2.8	AMMONIA CONCENTRATION, mg/L
10	AMMONIA ISOCONCENTRATION CONTOUR, DASHED WHERE INFERRED

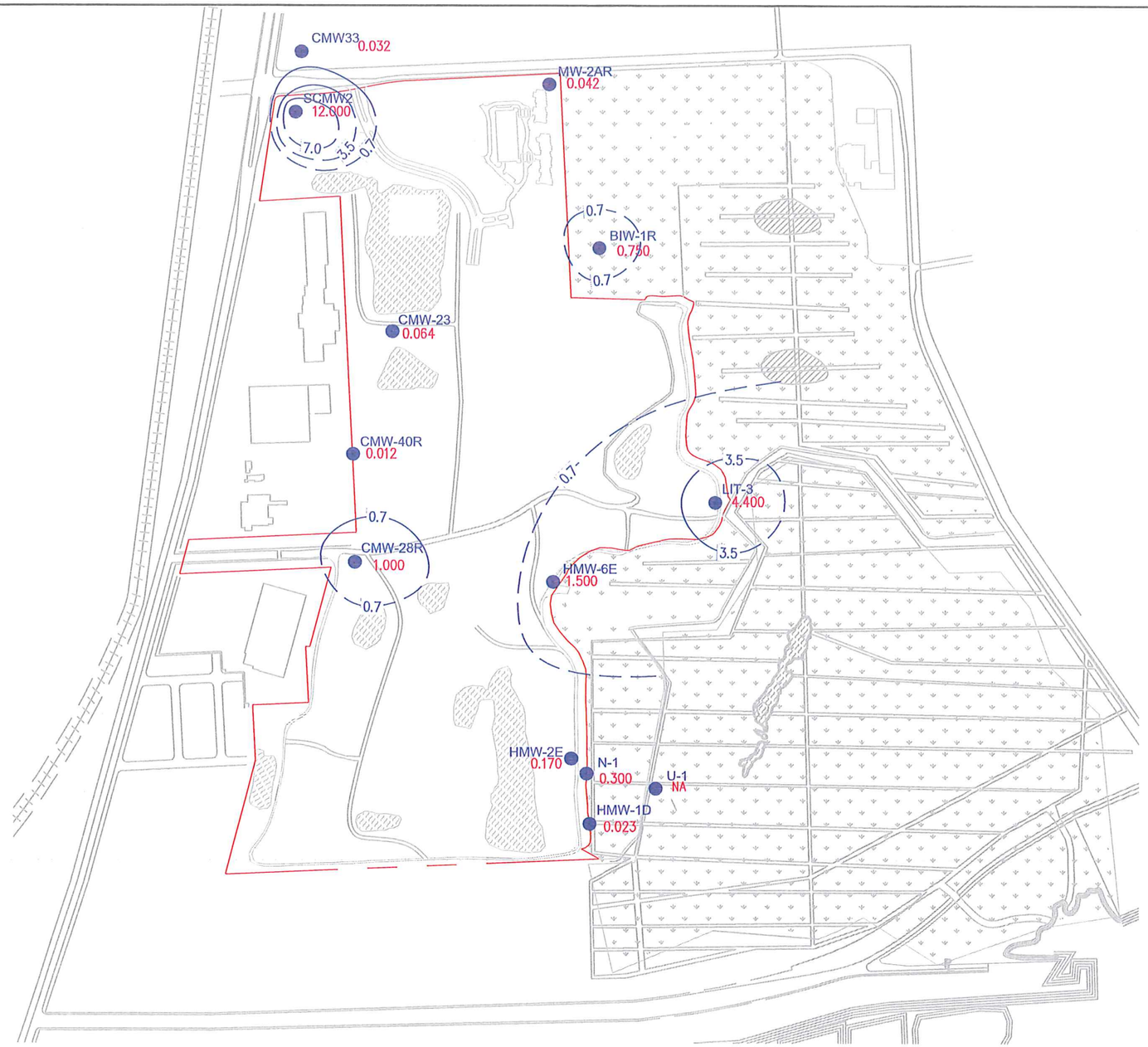
CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	AMMONIA CONCENTRATIONS IN GROUNDWATER – ZONE 3 (JULY 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 10

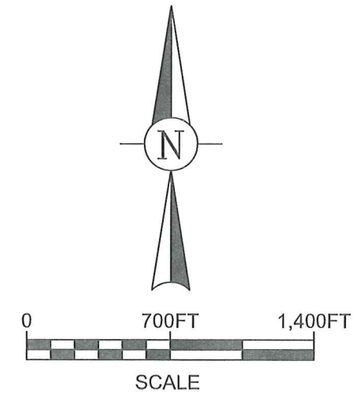


LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
MW4B	MONITORING WELL LOCATION (ZONE 4 >-30' NGVD)
7.60	AMMONIA CONCENTRATIONS, mg/L
10	AMMONIA ISOCONCENTRATIONS CONTOUR, DASHED WHERE INFERRED

CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	AMMONIA CONCENTRATIONS IN GROUNDWATER – ZONE 4 (JULY 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 11

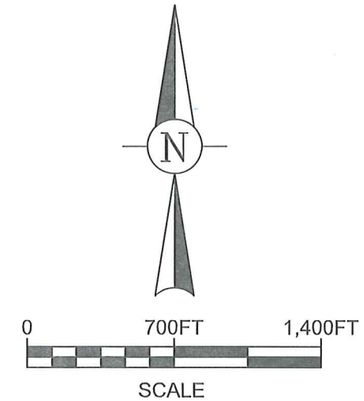




LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
MW2AR	MONITORING WELL LOCATION (ZONE 1 <–10')
0.542	IRON CONCENTRATION, mg/L
0.7	IRON ISOCONCENTRATION CONTOUR, DASHED WHERE INFERRED
NA	DATA NOT COLLECTED

CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	IRON CONCENTRATIONS IN GROUNDWATER – ZONE 1 (JULY 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 12



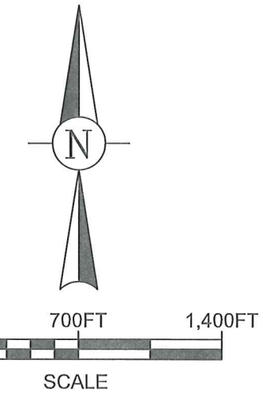
LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
CMW-B	MONITORING WELL LOCATION (ZONE 2 –10' TO –19.99' NGVD)
1.950	IRON CONCENTRATION, mg/L
0.7	IRON ISOCONCENTRATION CONTOUR, DASHED WHERE INFERRED
NA	DATA NOT COLLECTED
**	AVERAGE CONCENTRATION IN TWO ADJACENT WELLS USED FOR CONTOUR DEVELOPMENT

NOTE:

1. ZERO VALUES USED FOR CONTOUR DEVELOPMENT WHEN BDL WAS REPORTED

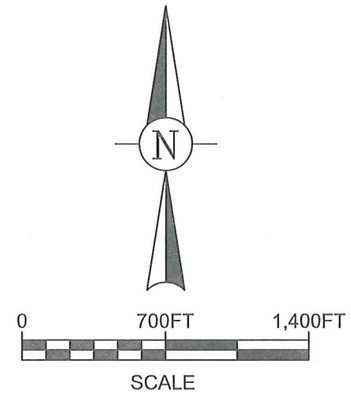
CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	IRON CONCENTRATIONS IN GROUNDWATER – ZONE 2 (JULY 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 13



LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
CMW-E	MONITORING WELL LOCATION (ZONE 3 –20' TO –29.99' NGVD)
3.190	IRON CONCENTRATION, mg/L
0.7	IRON ISOCONCENTRATION CONTOUR
NA	DATA NOT COLLECTED

CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	IRON CONCENTRATIONS IN GROUNDWATER – ZONE 3 (JULY 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 14



LEGEND

	PROPERTY LINE
	MOSQUITO DITCH
CMW-C	MONITORING WELL LOCATION (ZONE 4 >-30' NGVD
0.105	IRON CONCENTRATION, mg/L
0.7	IRON ISOCONCENTRATION CONTOUR, DASHED WHERE INFERRED
NA	DATA NOT COLLECTED

CITY OF NORTH MIAMI, FLORIDA	BISCAYNE LANDING (FORMER MUNISPORT LANDFILL) NORTH MIAMI, FLORIDA	IRON CONCENTRATIONS IN GROUNDWATER – ZONE 4 (JULY 2011)
ES CONSULTANTS, INC. environmental & civil engineering	Project 2011048	AUGUST 2011 Fig. 15

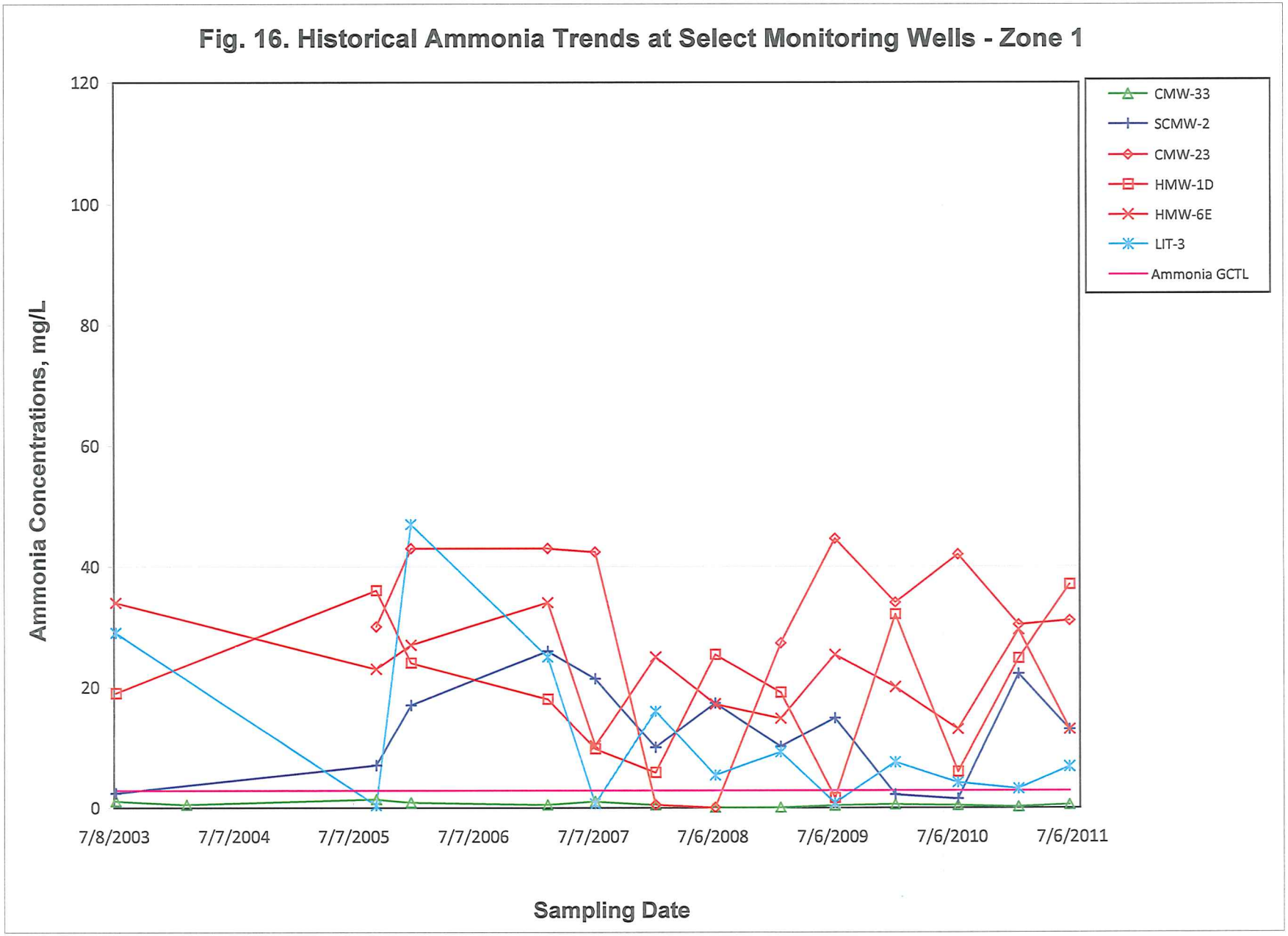


Fig. 16. Historical Ammonia Trends at Select Monitoring Wells - Zone 1
Ammonia Concentrations, mg/L
120
100
80
60
40
20
0
7/8/2003
7/7/2004
7/7/2005
7/7/2006
7/7/2007
7/6/2008
7/6/2009
7/6/2010
7/6/2011
Sampling Date
CMW-33
SCMW-2
CMW-23
HMW-1D
HMW-6E
LIT-3
Ammonia GCTL

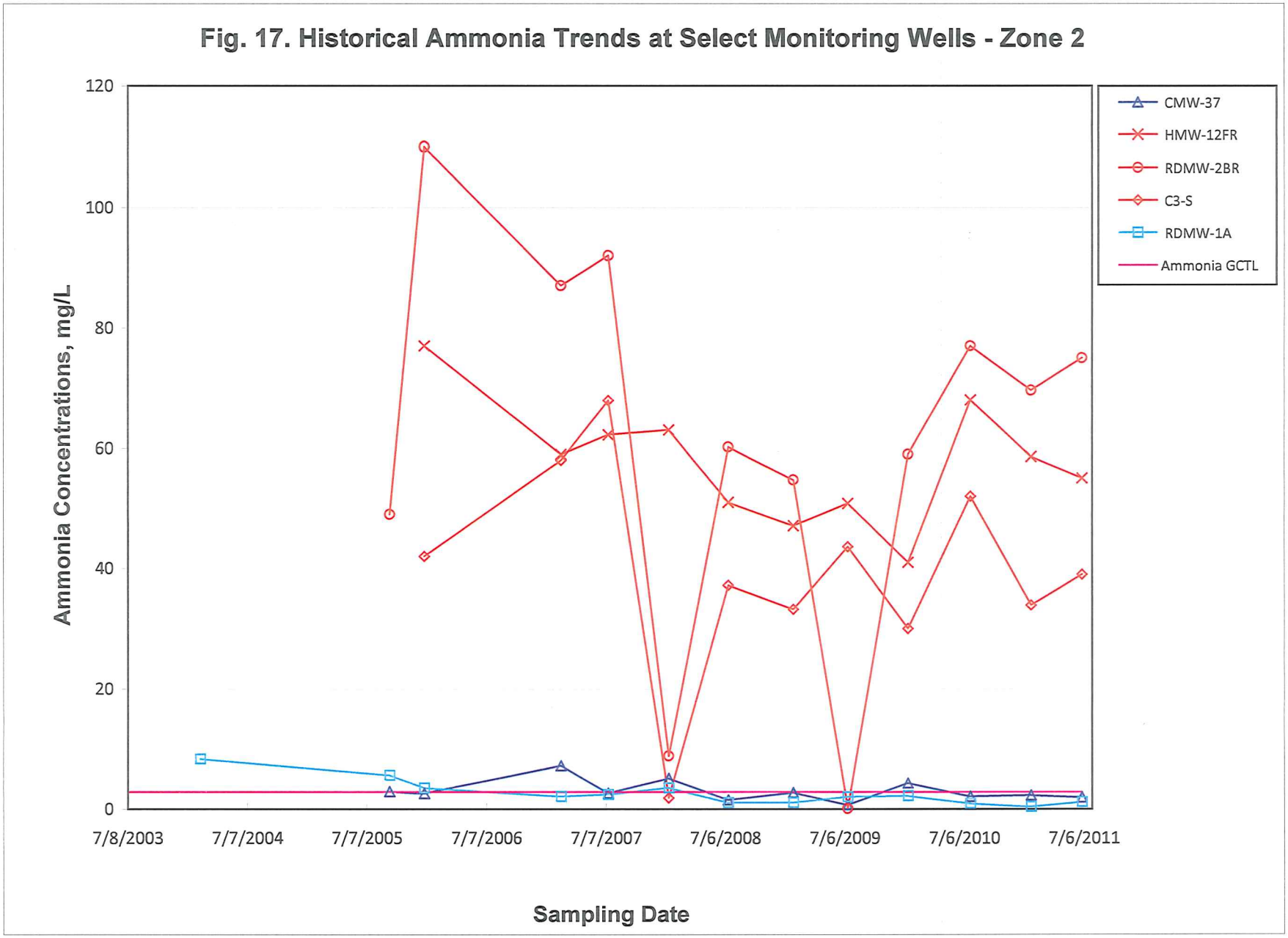


Fig. 17. Historical Ammonia Trends at Select Monitoring Wells - Zone 2
Ammonia Concentrations, mg/L
120
100
80
60
40
20
0
7/8/2003
7/7/2004
7/7/2005
7/7/2006
7/7/2007
7/6/2008
7/6/2009
7/6/2010
7/6/2011
Sampling Date
CMW-37
HMW-12FR
RDMW-2BR
C3-S
RDMW-1A
Ammonia GCTL

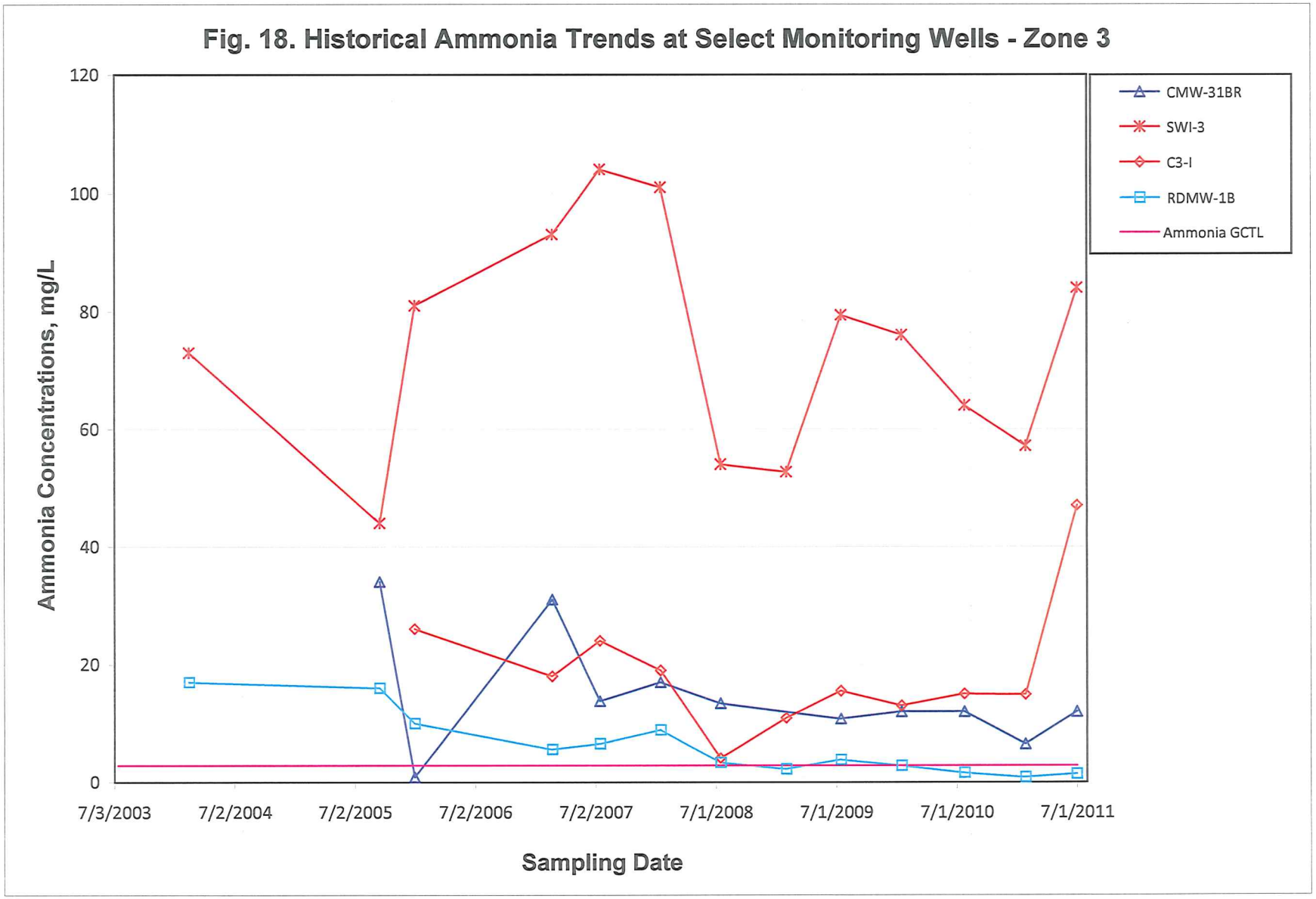


Fig. 18. Historical Ammonia Trends at Select Monitoring Wells - Zone 3
Ammonia Concentrations, mg/L
120
100
80
60
40
20
0
7/3/2003
7/2/2004
7/2/2005
7/2/2006
7/2/2007
7/1/2008
7/1/2009
7/1/2010
7/1/2011
Sampling Date
CMW-31BR
SWI-3
C3-I
RDMW-1B
Ammonia GCTL

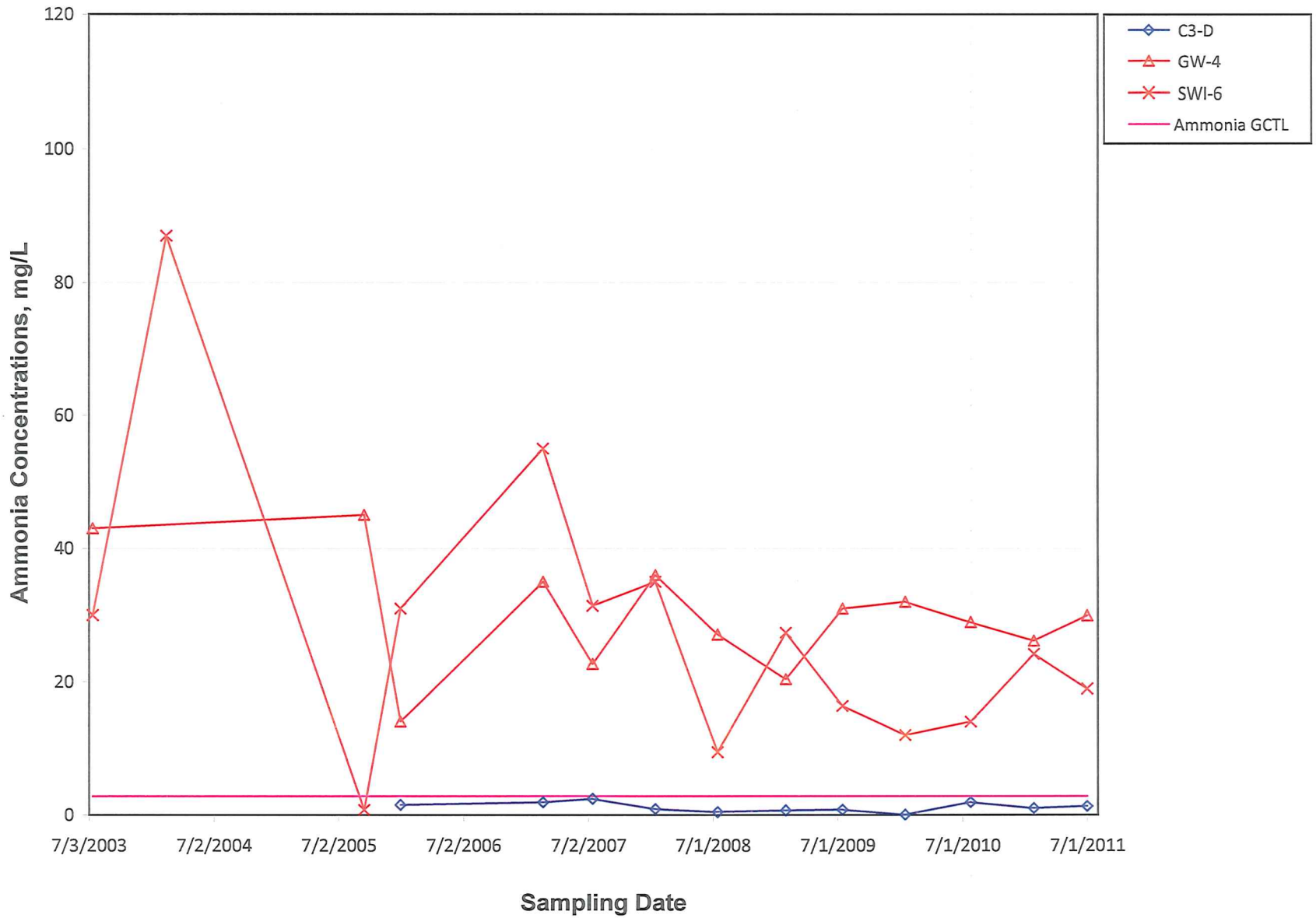
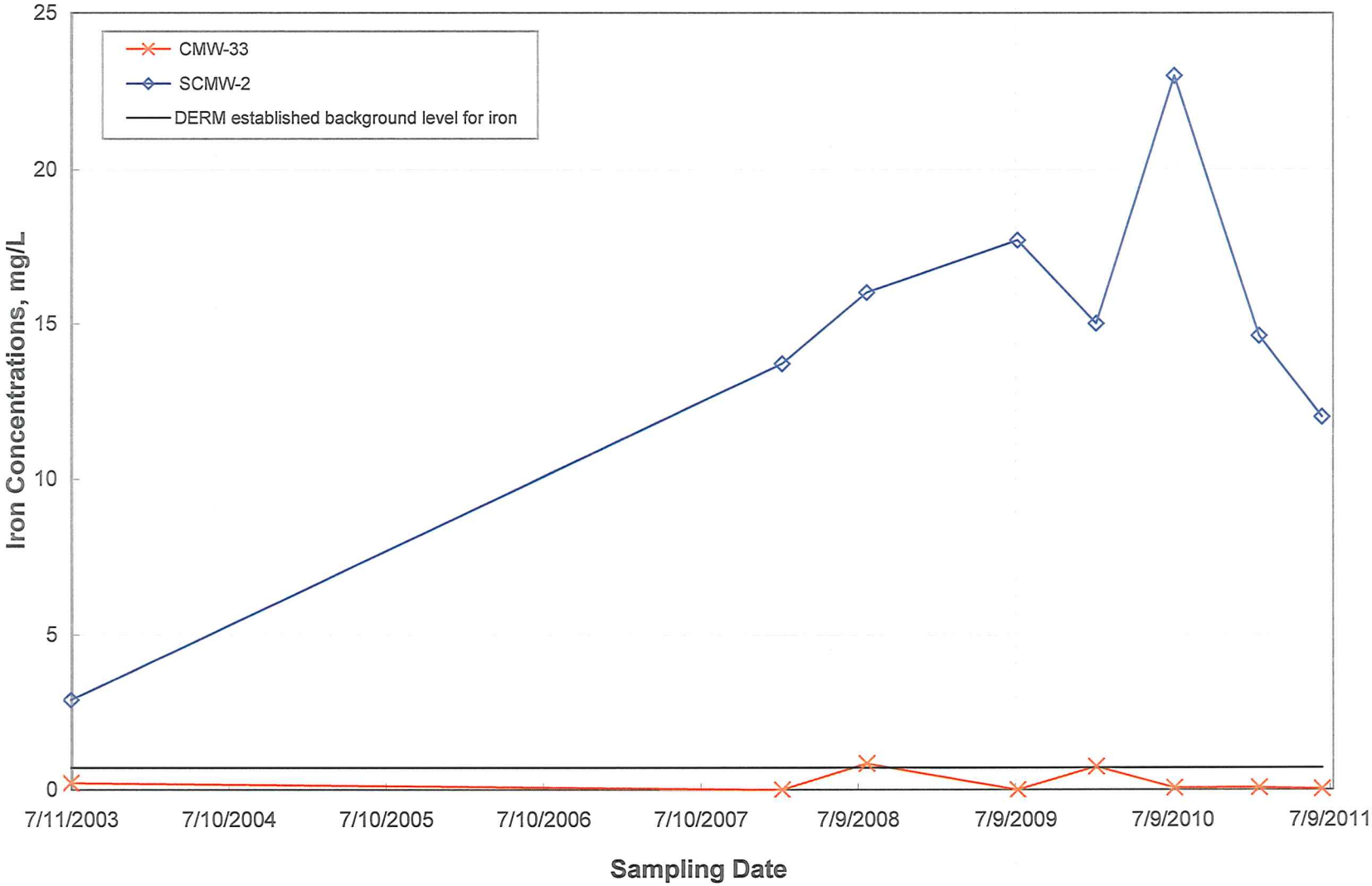


Fig. 19. Historical Ammonia Trends at Select Monitoring Wells - Zone 4
Ammonia Concentrations, mg/L
120
100
80
60
40
20
0
7/3/2003
7/2/2004
7/2/2005
7/2/2006
7/2/2007
7/1/2008
7/1/2009
7/1/2010
7/1/2011
Sampling Date
C3-D
GW-4
SWI-6
Ammonia GCTL

Fig. 20. Historical Iron Trends at CMW-33 and SCMW-2



Tables

Table 1. Monitoring Well Construction and Groundwater Elevations Summary - July 2011
Biscayne Landing (F.K.A. Munisport), North Miami, Florida

Well ID	Well Types	IRPAO Zone	TOC	DTW	WLE	Screen Elevation		Screen Depth (ft BG)	
			(ft)	(ft)	(ft NGVD)	Top	Bottom	Top	Bottom
ZONE 1									
BIW-1R	FDEP Closure Permit	1	5.18	3.95	1.23	-2.8	-7.8	6	16
CMW-23	FDEP Closure Permit	1	18.95	16.51	2.44	1.0	-4.1	15	20
CMW-28R	FDEP Closure Permit	1	17.69	15.53	2.16	1.7	-8.3	16	26
CMW-33	FDEP Closure Permit	1	6.24	3.83	2.41	1.2	-8.8	3	13
CMW-40R	FDEP Closure Permit	1	12.37	10.06	2.31	-0.6	-5.6	10	15
HMW-1D	FDEP Closure Permit	1	7.62	5.85	1.77	6.5	-6.5	1	14
HMW-2E	FDEP Closure Permit	1	8.96	5.87	3.09	4.1	-10.0	3	17
HMW-6E	FDEP Closure Permit	1	9.27	7.59	1.68	4.2	-9.8	4	18
LIT-3	FDEP Closure Permit	1	6.53	4.97	1.56	3.9	-6.1	3	13
MW-2AR	FDEP Closure Permit	1	10.69	8.52	2.17	-2.3	-7.3	10	15
N-1	DERM Phase II	1	7.90	NM	NA	4.9	-7.1	3	15
SCMW-2	FDEP Closure Permit	1	9.62	7.14	2.48	1.6	-3.4	10	15
U-1	DERM Phase II	1	4.11	NM	NA	3.1	-8.9	1	13
ZONE 2									
BIW-3R	FDEP Closure Permit	2	7.97	6.48	1.49	-8.0	-13.0	13	18
C1-S	DERM Phase II	2	15.77	13.43	2.34	-7.2	-12.2	20	25
C2-S	DERM Phase II	2	15.51	14.74	0.77	-7.5	-12.5	20	25
C3-S	DERM Phase II	2	14.08	11.82	2.26	-8.9	-13.9	20	25
CMW-19	DERM Phase II	2	12.66	10.27	2.39	-4.2	-14.2	14	24
CMW-22R2	FDEP Closure Permit	2	NA	7.35	NA	NA	NA	20	25
CMW-23B	FDEP Closure Permit	2	18.57	16.12	2.45	-13.4	-18.4	30	35
CMW-26R	DERM Phase II	2	12.47	10.16	2.31	-10.5	-15.5	20	25
CMW-28BR	FDEP Closure Permit	2	17.44	15.3	2.14	-13.6	-18.6	31	36
CMW-29R	FDEP Closure Permit	2	19.75	18.21	1.54	-0.1	-10.8	18	28
CMW-31R	FDEP Closure Permit	2	9.87	7.48	2.39	-13.1	-18.1	20	25
CMW-36	FDEP Closure Permit	2	7.69	5.15	2.54	-14.3	-19.3	20	25
CMW-37	FDEP Closure Permit	2	9.65	7.22	2.43	-8.9	-13.9	20	25
CMW-38R	FDEP Closure Permit	2	8.96	9.54	-0.58	-14.0	-19.0	20	25
CMW-39	FDEP Closure Permit	2	5.87	4.66	1.21	-14.1	-19.1	20	25
CMW-A	DERM Phase II	2	22.09	20.38	1.71	-5.9	-10.9	25	30
HMW-2F	FDEP Closure Permit	2	7.03	5.12	1.91	-13.5	-18.5	19	24
HMW-4E	FDEP Closure Permit	2	7.36	5.91	1.45	3.9	-10.1	3	17
HMW-4F	FDEP Closure Permit	2	7.32	5.86	1.46	-10.3	-15.3	19	24
HMW-6F	FDEP Closure Permit	2	9.30	7.65	1.65	-9.8	-14.8	19	24
HMW-8E	FDEP Closure Permit	2	7.17	5.72	1.45	3.3	-10.7	3	17
HMW-8FR	FDEP Closure Permit	2	7.01	5.34	1.67	-10.8	-15.8	18	23
HMW-12ER	FDEP Closure Permit	2	4.73	3.27	1.46	-5.2	-10.2	10	15
HMW-12FR	FDEP Closure Permit	2	4.53	3.07	1.46	-10.6	-15.6	11	16
HMW-14ER	FDEP Closure Permit	2	6.69	5.21	1.48	3.1	-10.9	3	17
HMW-14FR	FDEP Closure Permit	2	NA	8.21	NA	-10.5	-15.5	17	22
N-2	DERM Phase II	2	7.90	NM	NA	-12.1	-17.1	20	25
RDMW-1A	DERM Phase II	2	11.19	4.82	6.37	-4.7	-14.7	8	18
RDMW-2BR	FDEP Closure Permit	2	22.46	21.57	0.89	-14.5	-19.5	34	39
RDMW-6A	DERM Phase II	2	5.88	4.46	1.42	-4.1	-14.1	7	17
RDMW-9BR	DERM Phase II	2	8.66	7.86	0.8	-6.3	-16.3	12	22
U-2	DERM Phase II	2	4.11	NM	NA	-13.9	-18.9	18	23
VMW-1	FDEP Closure Permit	2	11.71	10.3	1.41	3.5	-11.5	4	19
VMW-6	FDEP Closure Permit	2	9.35	8.24	1.11	1.1	-13.9	8	23
VMW-11	FDEP Closure Permit	2	13.26	10.95	2.31	1.5	-13.5	9	24
VMW-16	FDEP Closure Permit	2	7.37	5.9	1.47	1.3	-13.7	6	21

Table 1. Monitoring Well Construction and Groundwater Elevations Summary - July 2011
Biscayne Landing (F.K.A. Munisport), North Miami, Florida

Well ID	Well Types	IRPAO Zone	TOC	DTW	WLE	Screen Elevation		Screen Depth (ft BG)	
			(ft)	(ft)	(ft NGVD)	Top	Bottom	Top	Bottom
ZONE 3									
C1-I	DERM Phase II	3	16.68	14.34	2.34	-20.3	-25.3	34	39
C2-I	DERM Phase II	3	16.48	14.24	2.24	-20.5	-25.5	34	39
C3-I	DERM Phase II	3	14.08	11.83	2.25	-22.9	-27.9	34	39
CMW-1B	FDEP Closure Permit	3	12.58	10.75	1.83	-20.4	-25.4	30	35
CMW-2BR	FDEP Closure Permit	3	9.70	7.55	2.15	-12.3	-22.3	19	29
CMW-6B	FDEP Closure Permit	3	10.32	8.14	2.18	-22.7	-27.7	30	35
CMW-16B	FDEP Closure Permit	3	10.37	8.98	1.39	-22.6	-27.6	30	35
CMW-29BR	FDEP Closure Permit	3	20.59	19.04	1.55	-15.4	-20.4	33	38
CMW-31BR	FDEP Closure Permit	3	10.40	7.95	2.45	-21.9	-26.9	30	35
CMW-36B	FDEP Closure Permit	3	7.42	5.71	1.71	-22.7	-27.7	30	35
CMW-40BR	FDEP Closure Permit	3	12.70	10.36	2.34	-20.3	-25.3	30	35
CMW-41	DERM Phase II	3	6.89	5.66	1.23	-16.1	-21.1	20	25
CMW-E	DERM Phase II	3	22.68	21.29	1.39	-24.3	-29.3	44	49
N-3	DERM Phase II	3	7.90	NM	NA	-22.1	-27.1	30	35
Q3	DERM Phase II	3	6.51	NM	NA	-22.5	-26.5	29	33
RDMW-1B	DERM Phase II	3	12.46	6.08	6.38	2.5	-24.5	19	29
RDMW-6B	DERM Phase II	3	5.67	4.26	1.41	-18.3	-28.3	21	31
RDMW-9AR	FDEP Closure Permit	3	9.60	8.69	0.91	-15.0	-20.0	18	23
SWI-1	DERM Phase II	3	10.90	9.04	1.86	-16.2	-26.2	24	34
SWI-3	DERM Phase II	3	11.09	9.62	1.47	-17.6	-27.6	25	35
ZONE 4									
C1-D	DERM Phase II	4	16.20	14.38	1.82	-41.8	-46.8	55	60
C2-D	DERM Phase II	4	16.82	13.26	3.56	-40.2	-45.2	54	59
C3-D	DERM Phase II	4	14.39	12.29	2.1	-39.6	-44.6	54	59
CMW-42	DERM Phase II	4	7.13	6.34	0.79	-39.9	-44.9	44	49
CMW-C	DERM Phase II	4	5.73	4.72	1.01	-39.2	-44.2	44	49
CMW-D	DERM Phase II	4	12.58	6.42	6.16	-37.4	-42.4	45	50
CMW-F	DERM Phase II	4	10.94	9.75	1.19	-34.1	-39.1	42	47
GW-2	DERM Phase II	4	6.99	5.38	1.61	-29.5	-34.5	37	42
GW-4	FDEP Closure Permit	4	10.87	9.03	1.84	-27.6	-32.6	37	42
MW-4B	DERM Phase II	4	7.08	6.63	0.45	-33.0	-43.0	37	47
N-4	DERM Phase II	4	7.90	NM	NA	-37.1	-47.1	45	55
Q-4	DERM Phase II	4	6.51	NM	NA	-36.5	-46.5	43	53
SWI-6	FDEP Closure Permit	4	10.91	9.61	1.3	3.6	-31.4	5	40

Notes:
1. IRPAO = Intermediate Remedial Plan Approval Order
2. TOC = Top of casing. Elevations for TOC and screen in feet NGVD (National Geodetic Vertical Datum)
4. ft = feet
3. ft BG = feet Below grade, approximate
5. DTW = Depth to water, in feet below TOC
6. WLE = Water level elevation, in feet NGVD
7. NM = Not measured; NA= Not available
8. IRPAO ZONES: 1 = <-10 FT NGVD; 2 = -10 TO -19.99 FT NGVD; 3 = -20 -29.99 FT NGVD; 4 = >-30 FT NGVD
9. DTW collected within one tidal cycle on 7/11/2011

Table 2.
Summary of Field Parameters and Exceedances for Surface water Analytical Results
July 2011
Biscayne Landing (F.K.A. Munisport), North Miami, Florida

			Sample Id	CB-2	CB-1	SWD-1	SW-2A	AM-1	D-1	D-2	D-3	D-4	SW-14	D-8	D-7	D-5	D-6	AM-2	MPL-1	SW-8
			Date Collected	6/20/2011	6/20/2011	6/20/2011	6/20/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/23/2011	6/23/2011	6/23/2011
Field Parameters	**Units**	**Freshwater Surface Water CTL**	**Marine Surface Water CTL**																	
pH - 12408-02-5	SU	N/A	N/A	7.92	8.08	7.03	7.47	7.2	7.18	7.24	6.6	6.97	6.38	7.19	7.52	7.49	7.32	6.48	6.63	6.93
Temperature	Deg C	N/A	N/A	29.67	30.05	28.95	27.18	25.4	25.89	28.16	28.53	27.71	28.5	28.8	30.49	38.79	30.5	27.74	30.25	29.37
Specific conductance	uS/cm	N/A	N/A	58400	58259	54925	4702	1584	2988	59515	9044	63457	63897	58551	33874	19886	60939	925	61150	63356
Dissolved Oxygen - 7782-44-7	mg/L	N/A	N/A	2.87	3.54	1.04	0.55	2.16	0.78	1.06	0.59	0.68	0.98	2.48	0.09	4.06	1.33	1.72	1.61	1.91
Turbidity	NTU	N/A	N/A	2.52	1.84	9.62	5.07	2.92	1.55	2.54	43.3	2.68	2.57	3.83	3.77	5.67	1091	0.64	0.85	4.65
Metals	**Units**																			
Arsenic - 7440-38-2	ug/L	50	50	57	56	52	7.9 I	1.1 I	2.3I	53	8.3	54	72	65	38	17	73	<0.65	74	83
Chromium - 7440-47-3	ug/L	11	50	7.9I	6.7 I	24	34	20	11	12	14	11	29	18	35	25	17	28	20	22
Selenium - 7782-49-2	ug/L	5	71	270	260	280	<2.1	<2.1	8.4	250	34	260	400	340	190	91	370	<2.1	370	420
Nickel - 7440-02-0	ug/L	1.23*	8.3	*4.8 I*	*4.3 I*	*4.9 I*	*4 I*	*2.7 I*	*2.1I*	*5.5I*	*3.4I*	*5.1I*	12	12	12	11	13	2.8	14	15
Beryllium - 7440-41-7	ug/L	0.13	0.13	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
Copper - 7440-50-8	ug/L	0.19*	2.9	*3.7 I*	*3.6 I*	*4.1 I*	*1.3 I*	*0.56 I*	*0.57I*	*3.8I*	*1.1I*	*4.1I*	*4I*	*4.3I*	*2.7I*	*1.9I*	*4.6I*	0.9	5.4	5.2
Iron - 7439-89-6	ug/L	1000	300	18	15	410	240	170	95	82	3100	150	200 V	79 V	58 V	25 V	34 V	6.7	270	77
Inorganic Compounds	**Units**																			
Nitrogen- Total	mg/L	N/A	N/A	1	0.71	3.9	6.5	1.8	2.9	1.7	45	<0.09	4.2	2.8	4.4	4.6	2	1.5	0.29	1.7
Nitrate (N) - 14797-55-8	mg/L	N/A	N/A	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.042I	<0.04	<0.04	<0.04	<0.04	<0.04
Ammonia (N) - 7664-41-7	mg/L	0.02	N/A	0.14	0.12	1	1.6	0.21	0.32	0.24	0.23	*0.071I*	1.5	0.11	0.61	0.33	0.2	0.2	0.32	0.13
Phosphorus- Total - 7723-14-0	mg/L	N/A	N/A	0.0078 I	0.007 I	0.12	0.078	0.071	0.27	0.031	0.92	0.023	<0.005 J4	<0.005	0.046	<0.005	<0.005	0.06	0.021	0.059
COD	mg/L	N/A	N/A	3100 I-01	5300 I-01	2600 I-01	340	87	130	1400	1800	1600	1300	2500	940	640	2600	130	1200	1200
Carbon- Total Organic	mg/L	N/A	N/A	<0.168	<0.168	2.2	81	31	32	12	40	5.2	3.7	2.8	28	51	8.4	22	2.3	3.2
Coliform Fecal	CFU/100mL	N/A	N/A	40	<10	2000 Z	200	1700	220	450	16000	1600	300	1400	15000	<100	300	4400	100	1000
Chlorophyll a	mg/m3	N/A	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Residues- Filterable (TDS)	mg/L	N/A	N/A	42000	42000	36000	2600	900	1000	40000	5500	42000	42000	44000	22000	14000	44000	600	44000	45000
Residues- Nonfilterable (TSS)	mg/L	N/A	N/A	48	5.6 I	20	5.6 I P1	5.6I	4I	14I	970	35	47	31	45	50	20	26	32	31
BOD	mg/L	N/A	N/A	<2	<2	66	6.3	22	23	16	<2	5.7I	57	11	160	18	17	260	75	39

Notes:
1. mg/L = Milligrams per Liter; equivalent to parts per million (ppm).
2. ug/L = Micrograms per Liter; equivalent to parts per billion (ppb).
3. < = Analyte was not detected above the laboratory detection limit, in which case the value presented is the Method Detection Limit (MDL).
4. CTLs = Cleanup target levels. CTLs presented are cited from Chapter 24, Miami-Dade County Code.
5. CFU/100mL = Colony Forming Units per 100 milliliters.
6. P1 = RPD value not applicable for sample concentrations less than 5 times the PQL.
7. J4 = MS/MSD recovery exceeded control limits due to matrix interference; LCS/LCSD recovery was within acceptable range.
8. V = Analyte was detected in both the sample and the associated method blank.
9. I = The reported value is between the MDL and the practical quantitation limit (PQL).
10. COD = Chemical Oxygen Demand.
11. J = (EPA) - Estimated value below the lowest calibration point.
12. N/A = Not Available/ No CTLs available for this compound in which case the values presented may not necessarily represent exceedance.
13. SU = Standard Units.
14. Highlighted values indicate an exceedence of the applicable CTL.
15. * = Calculated CTL using the formula e(0.8545[lnH]-1.702) and e(0.846[lnH]+0.0584) for Nickel and Copper respectively as cited from Chapter 24, Miami-Dade County Code. The pH value of 7, which was average pH value observed onsite for groundwater, was used for the calculations.
16. Highlighted values reported in italics indicate an exceedence of applicable CTL with an I flag.

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Table 2.
Summary of Field Parameters and Exceedances for Surface water Analytical Resu
July 2011
Biscayne Landing (F.K.A. Munisport), North Miami, Florida

			Sample Id	SW LAKE (15 FT)	SW LAKE (0.2 FT)	SE LAKE (15 FT)	SE LAKE (0.2 FT)	NW Lake (15 FT)	NW Lake (0.2 FT)	East Lake (15 FT)	East Lake (0.2 FT)	B-1D	B-1S	SI-1D	SI-1	SW-2B
			Date Collected	6/27/2011	6/27/2011	6/27/2011	6/27/2011	6/28/2011	6/28/2011	6/28/2011	6/28/2011	7/5/2011	7/5/2011	7/5/2011	7/5/2011	7/11/2011
Field Parameters	**Units**	**Freshwater Surface Water CTL**	**Marine Surface Water CTL**													
pH - 12408-02-5	SU	N/A	N/A	7.29	7.71	7.52	8.47	8.35	8.46	6.69	8.65	8.06	8.17	8.23	8.22	8.22
Temperature	Deg C	N/A	N/A	25.25	31.22	24.83	31.2	30.45	31.33	21.73	31.93	29.67	29.42	29.85	29.64	38.8
Specific conductance	uS/cm	N/A	N/A	989	905	2210	2201	762	760	2788	2743	57955	57930	57914	57941	409
Dissolved Oxygen - 7782-44-7	mg/L	N/A	N/A	4.02	4.44	14.2	4.29	8.82	8.73	0.51	9.09	3.35	3.73	3.35	3.65	4.14
Turbidity	NTU	N/A	N/A	1.99	1.59	7.11	12	15.8	4.9	1.81	13.7	7.55	3.36	5.84	2.19	1.2
Metals	**Units**															
Arsenic - 7440-38-2	ug/L	50	50	1.2I	<0.65	1.9	1.8I	0.82I	1.1I	1.4I	2.2I	47	49	51	51	2.9I
Chromium - 7440-47-3	ug/L	11	50	19	14	29	19	1.7I	0.43I	12	3.9I	9.4	10	12	13	3.6I
Selenium - 7782-49-2	ug/L	5	71	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	210	220	230	240	<2.1
Nickel - 7440-02-0	ug/L	1.23*	8.3	*4.4I*	*3.2I*	*3I*	*2.2I*	<0.24	*4.4I*	<0.24	<0.24	*5.9I*	*6.2I*	*7.8I*	9.2	*4I*
Beryllium - 7440-41-7	ug/L	0.13	0.13	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	*1.5I*	*1.5I*	*1.5I*	*1.7I*	<0.26
Copper - 7440-50-8	ug/L	0.19*	2.9	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	*3.2I*	*2.9I*	*3.2I*	*3.3I*	*1.5I*
Iron - 7439-89-6	ug/L	1000	300	57I V	220 V	260 V	60 V	25 V	9.4 V	26 V	20 V	17 V	3.1I V	5.7I V	5.4I V	300 V
Inorganic Compounds	**Units**															
Nitrogen- Total	mg/L	N/A	N/A	0.68	0.75	7.9	2	4.1	2.2	24	3.6	4	3.3	4.1	4.7	1.8
Nitrate (N) - 14797-55-8	mg/L	N/A	N/A	<0.04	<0.04	0.079I	0.24	<0.04	<0.04	<0.04	0.073I	<0.04	<0.04	<0.04	<0.04	<0.04
Ammonia (N) - 7664-41-7	mg/L	0.02	N/A	0.22	*0.16 J4*	8.1	0.49	0.9	0.2	24	0.41	0.18	0.12	0.11	0.15	0.22 J4
Phosphorus- Total - 7723-14-0	mg/L	N/A	N/A	0.044	0.012	0.031	0.034	0.029	0.014	0.037	0.08I	<0.005	<0.005	<0.005	0.015	0.11
COD	mg/L	N/A	N/A	21	66	85	94	68	64	110	250	1200	1300	1400	1100	52
Carbon- Total Organic	mg/L	N/A	N/A	5.2	5.5	12	21	13	14	14	35	10	0.54	0.36I	0.33I	13
Coliform Fecal	CFU/100mL	N/A	N/A	1300	110	200I	110	1300	30	20	200	170	<10	20	<10	200
Chlorophyll a	mg/m3	N/A	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Residues- Filterable (TDS)	mg/L	N/A	N/A	530	530	1200	1200	440	440	1400	1400	38000	39000	39000	39000	290
Residues- Nonfilterable (TSS)	mg/L	N/A	N/A	4I	<4	7.2I	17	18	9.2I	<4	30	61	50	58	50	<4
BOD	mg/L	N/A	N/A	3.2I	4.5I	18	14	7.4	6	19	19	<2	<2	<2	<2	20

Notes:
1. mg/L = Milligrams per Liter; equivalent to parts per million (ppm).
2. ug/L = Micrograms per Liter; equivalent to parts per billion (ppb).
3. < = Analyte was not detected above the laboratory detection limit, in which case the value presented is the Method Detection Limit (MDL).
4. CTLs = Cleanup target levels. CTLs presented are cited from Chapter 24, Miami-Dade County Code.
5. CFU/100mL = Colony Forming Units per 100 milliliters.
6. P1 = RPD value not applicable for sample concentrations less than 5 times the PQL.
7. J4 = MS/MSD recovery exceeded control limits due to matrix interference; LCS/LCSD recovery was within acceptable range.
8. V = Analyte was detected in both the sample and the associated method blank.
9. I = The reported value is between the MDL and the practical quantitation limit (PQL).
10. COD = Chemical Oxygen Demand.
11. J = (EPA) - Estimated value below the lowest calibration point.
12. N/A = Not Available/ No CTLs available for this compound in which case the values presented may not necessarily represent exceedance.
13. SU = Standard Units.
14. Highlighted values indicate an exceedence of the applicable CTL.
15. * = Calculated CTL using the formula e(0.8545[lnH]-1.702) and e(0.846[lnH]+0.0584) for Nicke and Copper respectively as cited from Chapter 24, Miami-Dade County Code. The pH value of which was average pH value observed onsite for groundwater, was used for the calculations.
16. Highlighted values reported in italics indicate an exceedence of applicable CTL with an I flag.

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Table 3.1.
Summary of Field Parameters and Exceedances for Groundwater Analytical Results - ZONE 1
July 2011
Biscayne Landing (F.K.A. Munisport), North Miami, Florida

		Sample Id	MW-2AR	CMW-33	SCMW-2	HMW-1D	CMW-23	N-1	HMW-2E	CMW-28R	CMW-40R	U-1	LIT3	BIW-1R	HMW-6E
		Date Collected	6/20/2011	6/21/2011	6/21/2011	6/22/2011	6/28/2011	6/27/2011	6/27/2011	6/27/2011	6/30/2011	7/8/2011	7/11/2011	7/6/2011	7/11/2011
Field Parameters	**Units**	**GCTL**													
pH - 12408-02-5	SU	N/A	7.02	7.33	7.2	6.78	6.68	6.82	6.9	6.88	7.1	6.77	6.54	7	6.42
Temperature	Deg C	N/A	25.24	26.33	25.05	26.43	26.75	27.57	2761	26.47	28.6	27.2	28.09	24.88	28.71
Specific conductance	uS/cm	N/A	1012	539	909	11863	1475	3030	3257	1126	1100	24091	2173	2313	1889
Dissolved Oxygen - 7782-44-7	mg/L	N/A	0.48	0.26	0.28	0.5	0.26	0.59	0.44	0.21	0.31	0.51	0.45	0.92	0.19
Turbidity	NTU	N/A	2.02	0	6.22	2.78	0.31	0.11	0.64	0.34	0.21	0	7.75	0	2.02
Metals	**Units**	**GCTL**													
Arsenic - 7440-38-2	ug/L	10	<0.65	1.6 I	1.7 I	11	<0.65	1.5 I	1.5 I	<0.65	<0.65	NA	9.1	<0.65	<0.65
Selenium - 7782-49-2	ug/L	50	<2.1	<2.1	<2.1	57	<2.1	<2.1	<2.1	<2.1	<2.1	NA	<2.1	<2.1	<2.1
Iron - 7439-89-6	ug/L	300/706	42	32 V	12000 V	23 V	64 V	300 V	170 V	1000 V	12 V	NA	4400 V	750 V	1500 V
Sodium - 7440-23-5	mg/L	160	45 V	28 V	39 V	1600 V	57	320 V	340 V	80 V	54	NA	110	220	64
Inorganic Compounds	**Units**	**GCTL**													
Ammonia (N) - 7664-41-7	mg/L	2.8	6.9	0.54	13	37	31	23	28	6.4	8.6	18	6.8	35	13
Residues- Filterable (TDS)	mg/L	500	530	300	400	6400	630	1700	1700	500	470	12000	1300	1100	1200
Chloride	mg/L	250	69	41	42	2900	82	540	600	150	91	NA	190	340	98

Notes:
1. SU = Standard Units
2. mg/L = Milligrams per Liter equivalent to parts per million (ppm).
3. ug/L = Micrograms per Liter equivalent to parts per billion (ppb).
4. < = Analyte was not detected above the laboratory detection limit, in which case the value presented is the Method Detection Limit (MDL)
5. GCTL = Groundwater cleanup target level. GCTLs presented are cited from Chapter 24, Miami-dade County Code.
   The DERM default background concentration of 706 ug/L for iron is also provided for comparison.
6. V = Analyte was detected in both the sample and the associated method blank.
7. I = The reported value is between the MDL and the practical quantitation limit (PQL).
8. NA = Not Analyzed.
9. N/A = No DERM CTL for this analyte.
10. Highlighted values indicate an exceedence of the applicable GCTL.

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Table 3.2.
Summary of Exceedance for Groundwater Analytical Results - ZONE 2
July 2011
Biscayne Landing (F.K.A. Munisport), North Miami, Florida

		Sample Id	CMW-31R	CMW-36	VMW-1	VMW-16	VMW-11	CMW-37	CMW-19	RDMW-9BR	C1-S	VMW-6	CMW-23B	N-2	HMW-8FR	HMW-8E	HMW-2F	HMW-4E	HMW-4F	CMW-26R	CMW-28BR	RDMW-1A
		Date Collected	6/20/2011	6/20/2011	6/20/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/22/2011	6/23/2011	6/23/2011	6/28/2011	6/28/2011	6/28/2011	6/28/2011	6/27/2011	6/27/2011	6/27/2011	6/27/2011	6/27/2011	6/30/2011
Field Parameters	**Units**	**GCTL**																				
pH - 12408-02-5	SU	N/A	6.98	6.99	6.51	6.48	6.64	7.39	7.02	6.84	6.71	6.99	6.79	6.83	6.82	6.76	6.82	6.76	6.73	6.99	6.97	6.86
Temperature	Deg C	N/A	26.49	27.09	27.09	26.71	27.61	26.99	26.98	26.6	25.33	25.4	26.93	26.2	27.77	28	26.96	27.7	26.8	26.54	23.6	23.85
Specific conductance	uS/cm	N/A	980	1298	1993	2751	1157	585	776	2837	1233	1320	1285	5715	2894	2880	3650	2475	3040	857	3405	5380
Dissolved Oxygen - 7782-44-7	mg/L	N/A	0.4	0.36	0.23	0.16	0.39	0.36	0.31	0.83	1.37	1.53	0.29	0.73	0.6	0.65	0.2	0.16	0.8	0.23	0.32	1.38
Turbidity	NTU	N/A	0.11	0.95	0.22	1.2	0.51	0.47	0.65	1.77	0.2	0	1.06	1.81	3.11	0.6	0.11	0.88	1.21	0.41	0.06	0.93
Metals	**Units**	**GCTL**																				
Arsenic - 7440-38-2	ug/L	10	1.1 I	0.96 I	NA	1.7 I	0.7 I	1.4 I	14	NA	NA	<0.65	<0.65	1.5 I	0.71 I	0.72 I	2 I	1.2 I	1.2 I	2 I	0.98 I	0.94 I
Iron - 7439-89-6	ug/L	300/706	150	62	NA	220 V	120 V	260 V	2600 V	NA	NA	98 V	150 V	5.7 I V	200 V	61 V	190 V	170 V	81 V	10 V	12 V	18 V
Sodium - 7440-23-5	mg/L	160	37 V	69 V	NA	230 V	28 V	33 V	29 V	NA	NA	98 V	61	690	230	200	390 V	180 V	290 V	45 V	340 V	730
Inorganic Compounds	**Units**	**GCTL**																				
Ammonia (N) - 7664-41-7	mg/L	2.8	13	17	7.1	40	2	2	5	12	13	8.8	19	44	76	85	34	44	35	4.5	6.3	1.2
Residues- Filterable (TDS)	mg/L	500	460	650	1300	1200 V	690	290	400	1900	580	690	610	2600	1400	1300	1900	1200	1500	430 I	1600	2700
Chloride	mg/L	250	43	96	NA	350	31 J4	46	42	NA	NA	190	94	1300	340	290	690	290	490	78	700	1300

Notes:
1. SU = Standard Units
2. mg/L = Milligrams per Liter equivalent to parts per million (ppm).
3. ug/L = Micrograms per Liter equivalent to parts per billion (ppb).
4. < = Analyte was not detected above the laboratory detection limit, in which case the value presented is the Method Detection Limit (MDL).
5. GCTL = Groundwater cleanup target level. GCTLs presented are cited from Chapter 24, Miami-dade County Code.The DERM default background concentration of 706 ug/L for iron is also provided for comparison.
6. NA = Not Analyzed.
7. P1 = RPD value not applicable for sample concentrations less than 5 times the PQL.
8. J4 = MS/MSD recovery exceeded control limits due to matrix interference. LCS/LCSD recovery was within acceptable range.
9. V = Analyte was detected in both the sample and the associated method blank.
10. I = The reported value is between the MDL and the practical quantitation limit (PQL).
11. N/A = No DERM CTL for this analyte.
12. Highlighted values indicate an exceedence of the applicable GCTL.

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Table 3.2.
Summary of Exceedance for Groundwater Analytical Results - ZONE 2
July 2011
Biscayne Landing (F.K.A. Munisport), North Miami, Florida

		Sample Id	RDMW-6A	HMW-14E	CMW-29R	U-2	RDMW-2BR	C-2S	C-3S	HMW-6F	HMW-14FR	HMW-12ER	HMW-12FR	CMW-22R2	CMW-38R	BIW-3R	CMW-39	CMW-A
		Date Collected	6/30/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/11/2011	7/11/2011	7/11/2011	7/6/2011	7/6/2011	7/6/2011	7/6/2011	7/6/2011	7/6/2011	7/6/2011	7/6/2011
Field Parameters	**Units**	**GCTL**																
pH - 12408-02-5	SU	N/A	6.89	6.73	6.81	6.76	6.9	6.84	6.81	6.85	6.72	6.64	6.64	6.99	6.89	7.11	7.17	6.86
Temperature	Deg C	N/A	25.46	25.95	26.81	26.23	28.61	26.86	27.9	27.4	25.92	27.32	27.36	26.43	26.45	26.03	24.19	28.6
Specific conductance	uS/cm	N/A	3172	2713	715	19999	2837	1210	1724	1938	2787	3513	3614	954	1381	1599	2626	2589
Dissolved Oxygen - 7782-44-7	mg/L	N/A	0.39	0.31	0.33	0.78	0.86	0.48	0.63	1.35	0.11	0.17	0.16	2.09	1.16	0.89	0.56	1.19
Turbidity	NTU	N/A	0.63	1.6	1.8	0.6	1.51	0.88	1.9	0	33.1	3.29	1.76	4.37	0.62	0.92	0.66	0.69
Metals	**Units**	**GCTL**																
Arsenic - 7440-38-2	ug/L	10	1 I P1	1.3 I	<0.65	NA	<0.65	<0.65	NA	0.7 I	<0.65	<0.65	2.3 I	1.1 I	NA	2.4	2.1 I	1.3 I
Iron - 7439-89-6	ug/L	300/706	7.2 I V	24 V	21 V	NA	130 V	710 V	NA	28 V	29 V	200 V	60 V	1300 V	NA	2000 V	3400 V	32 V
Sodium - 7440-23-5	mg/L	160	330	260	23	NA	210	54	NA	140	260	370	380	32	NA	110	280	210
Inorganic Compounds	**Units**	**GCTL**																
Ammonia (N) - 7664-41-7	mg/L	2.8	42	34	3.4	21	75	21	39	30	36	50	55	12	17	26	34	48
Residues- Filterable (TDS)	mg/L	500	1500	1300	350	11000	1200	610	910	950	1400	1700	1700	510	740	780	1300	1200
Chloride	mg/L	250	490	380	37 J4	NA	280	70	NA	250	390	600	601	46	120	180	440	330

Notes:
1. SU = Standard Units
2. mg/L = Milligrams per Liter equivalent to parts per million (ppm).
3. ug/L = Micrograms per Liter equivalent to parts per billion (ppb).
4. < = Analyte was not detected above the laboratory detection limit, in which case the value presented is the Method Detection Limit (MDL).
5. GCTL = Groundwater cleanup target level. GCTLs presented are cited from Chapter 24, Miami-dade County Code.The DERM default background concentration of 706 ug/L for iron is also provided for comparison.
6. NA = Not Analyzed.
7. P1 = RPD value not applicable for sample concentrations less than 5 times the PQL.
8. J4 = MS/MSD recovery exceeded control limits due to matrix interference. LCS/LCSD recovery was within acceptable range.
9. V = Analyte was detected in both the sample and the associated method blank.
10. I = The reported value is between the MDL and the practical quantitation limit (PQL).
11. N/A = No DERM CTL for this analyte.
12. Highlighted values indicate an exceedence of the applicable GCTL.

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Table 3.3.
Summary of Field Parameters and Exceedances for Groundwater Analytical Results - ZONE 3
July 2011
Biscayne Landing (F.K.A. Munisport), North Miami, Florida

		Sample Id	CMW-2BR	CMW-24BR	CMW-1B	CMW-36B	CMW-6B	CMW-16B	RDMW-9AR	C2-I	C1-I	SWI-1	N-3	C3-I	Q-3	CMW-40BR	RDMW-1B	RDMW-6B	CMW-29BR	CMW-41	CMW-E	SWI-3
		Date Collected	6/20/2011	6/20/2011	6/20/2011	6/20/2011	6/20/2011	6/21/2011	6/22/2011	6/22/2011	6/23/2011	6/23/2011	6/23/2011	6/28/2011	6/28/2011	6/27/2011	6/30/2011	6/30/2011	7/8/2011	7/8/2011	7/8/2011	7/11/2011
Field Parameters	**Units**	**GCTL**																				
pH - 12408-02-5	SU	N/A	7.13	7.11	6.67	7.06	6.86	6.58	6.77	2.77	6.6	7.05	6.87	7.08	6.84	7.81	7.09	7.06	6.99	7.09	6.94	6.52
Temperature	Deg C	N/A	25.72	26.49	26.8	27.22	27.69	24.6	26.56	27.14	25.31	27.33	26.42	27.8	26.28	26.35	24.31	25.54	26.32	25.4	28.61	28.97
Specific conductance	uS/cm	N/A	2086	1115	2152	1159	1438	10382	4460	1202	1500	1345	18328	1527	9901	1907	8754	5310	578	2256	7508	3134
Dissolved Oxygen - 7782-44-7	mg/L	N/A	0.46	0.41	0.26	0.35	0.45	0.13	0.95	0.33	0.39	0.63	0.68	0.28	2.15	0.75	0.67	0.59	0.26	1.46	0.73	0.17
Turbidity	NTU	N/A	1.09	0.2	15.8	0.25	0.88	2.74	2.2	1.9	3.23	0.65	0.11	1.95	0.09	0.77	0.64	2.11	2.51	0.22	2.13	1.37
Metals	**Units**	**GCTL**																				
Arsenic - 7440-38-2	ug/L	10	2.2 I	0.67 I	1.2 I	1.2 I	1.1 I	10	<0.65	<0.65	NA	NA	20	NA	NA	<0.65	2.7 I	4.1 I	<0.65	1.1 I	5.7 I	NA
Selenium - 7782-49-2	ug/L	50	5.4 I	<2.1	3.4 I	4.5 I	4.2 I	47	<2.1	<2.1	NA	NA	100	NA	NA	<2.1	19	33	<2.1	<2.1	29	NA
Iron - 7439-89-6	ug/L	300/706	1900	82	950	16	300	19 V	7.8 V	68 V	NA	NA	360 V	NA	NA	26 V	8.1 I V	23 V	67 V	19 V	15 V	NA
Sodium - 7440-23-5	mg/L	160	190 V	49 V	150 V	64 V	110 V	1400 V	480 V	50 V	NA	NA	2800 V	NA	NA	230 V	1700	1800	25	180	1100	NA
Inorganic Compounds	**Units**	**GCTL**																				
Ammonia (N) - 7664-41-7	mg/L	2.8	22	12	8.7	13	8.6	42	31	16	19	12	32	47	43	0.66	1.4	36	3.3	40	38	84
Residues- Filterable (TDS)	mg/L	500	1000	550	1300	610	690	6000	2400	560	710	720	9800	590	5400	880	6100	4600	260	1000	4000	1400
Chloride	mg/L	250	290	65	260	87	180	2500	860	78	NA	NA	5000	NA	NA	440	3200	2600	42	280	1900	NA

Notes:
1. SU = Standard Units
2. mg/L = Milligrams per Liter equivalent to parts per million (ppm).
3. ug/L = Micrograms per Liter equivalent to parts per billion (ppb).
4. < = Analyte was not detected above the laboratory detection limit, in which case the value presented is the Method Detection Limit (MDL).
5. GCTL = Groundwater cleanup target level. GCTLs presented are cited from Chapter 24, Miami-dade County Code. The DERM default background concentration of 706 ug/L for iron is also provided for comparison.
6. NA = Not Analyzed.
7. V = Analyte was detected in both the sample and the associated method blank.
8. I = The reported value is between the MDL and the practical quantitation limit (PQL).
9. N/A = No DERM CTL for this analyte.
10. Highlighted values indicate an exceedence of the applicable GCTL.

Table 3.4.
Summary of Field Parameters and Exceedances for Groundwater Analytical Results - Zone 4
July 2011
Biscayne Landing (F.K.A. Munisport), North Miami, Florida

		Sample Id	C3-D	C2-D	N-4	C1-D	MW-4B	Q-4	CMW-D	CMW-C	GW-4	CMW-42	GW-2	SWI-6	CMW-F
		Date Collected	6/22/2011	6/22/2011	6/22/2011	6/23/2011	6/23/2011	6/28/2011	6/30/2011	6/30/2011	7/8/2011	7/8/2011	7/11/2011	7/11/2011	7/6/2011
Field Parameters	**Units**	**GCTL**													
pH - 12408-02-5	SU	N/A	7.13	6.92	6.72	6.8	6.9	6.68	6.78	6.76	6.9	7.03	6.48	6.76	7.29
Temperature	Deg C	N/A	28.86	28.14	26.61	26.54	26.61	26.2	23.48	25.9	27.38	25.14	25.64	26.73	24.97
Specific conductance	uS/cm	N/A	14783	11584	42822	14612	1414	40264	35964	38699	1817	22208	19383	3530	29812
Dissolved Oxygen - 7782-44-7	mg/L	N/A	0.29	0.27	0.44	0.23	0.67	2.71	0.39	0.8	1.98	1.7	0.58	0.17	0.28
Turbidity	NTU	N/A	1.64	3.51	2.07	0.41	1.05	0.1	0.14	0.96	0.19	0.1	0.69	1.63	2.28
Metals	**Units**	**GCTL**													
Arsenic - 7440-38-2	ug/L	10	NA	16	42	NA	<0.65	NA	18	22	<0.65	20	17	2.1 I	24
Selenium - 7782-49-2	ug/L	50	NA	74	210	NA	<2.1	NA	110	140	<2.1	99	89	<2.1	110
Iron - 7439-89-6	ug/L	300/706	NA	8000 V	1100 V	NA	7.5 I V	NA	20 V	48 V	140 V	25 V	96 V	180 V	4.8 I V
Sodium - 7440-23-5	mg/L	160	NA	2100 V	7200 V	NA	75 V	NA	6200	7200	160	3800	3100	390	4200
Inorganic Compounds	**Units**	**GCTL**													
Ammonia (N) - 7664-41-7	mg/L	2.8	1.3	2.1	15	1.2	10	18	8.1	15	30	7.3	17	19	9.7
Residues- Filterable (TDS)	mg/L	500	9700	6700	28000	9600	790	24000	21000	25000	920	11000	11000	1800	20000
Chloride	mg/L	250	NA	3600	14000	NA	130	NA	12000	13000	220	7200	NA	650	9500

Notes:
1. SU = Standard Units
2. mg/L = Milligrams per Liter equivalent to parts per million (ppm).
3. ug/L = Micrograms per Liter equivalent to parts per billion (ppb).
4. < = Analyte was not detected above the laboratory detection limit, in which case the value presented is the Method Detection Limit (MDL).
5. GCTL = Groundwater cleanup target level. GCTLs presented are cited from Chapter 24, Miami-dade County Code.
   The DERM default background concentration of 706 ug/L for iron is also provided for comparison.
6. NA = Not Analyzed.
7. V = Analyte was detected in both the sample and the associated method blank.
8. I = The reported value is between the MDL and the practical quantitation limit (PQL).
9. N/A = No DERM CTL for this analyte.
10. Highlighted values indicate an exceedence of the applicable GCTL.

ES CONSULTANTS, INC.
environmental and civil engineering

Attachment A

DERM Correspondence

ES CONSULTANTS, INC.
environmental and civil engineering

MIAMI-DADE COUNTY
miamidade.gov

Department of Environmental Resources Management
Pollution Control Division
701 NW 1st Court, 4th Floor
Miami, Florida 33136-3912
T 305-372-6700 F 305-372-6982

May 18, 2011

CERTIFIED MAIL NO. 7010 2780 0003 4054 9046
RETURN RECEIPT REQUESTED

Mr. Russell Benford
City Manager
City of North Miami
776 Northeast 125th Street
North Miami, Fl 33161

Re: Site-Wide Surface Water and Groundwater Sampling Reports, dated October 29, 2010 and April 1, 2011, 2010, prepared by ES Consultants, Inc. for the Biscayne Landing (F.K.A MUNISPORT) site located in the vicinity of Biscayne Boulevard (US-1) and Northeast 151st Street, Miami-Dade County, Florida (SW-1178/File # 12838).

Dear Mr. Benford:

The Department of Environmental Resources Management (DERM) has reviewed the referenced submittals, received November 2, 2010 and April 8, 2011 and hereby approves the Site-Wide Surface Water and Groundwater Sampling Reports with the following comments:

1. The site wide surface and groundwater sampling reports shall include trend analysis for a selection of wells that are considered to be representative of the range of groundwater concentrations encountered within each vertical zone.

2. DERM requires that the Summary of Exceedence Table present data for each contaminant by vertical zone and not in descending order of concentration as previously presented.

3. The data tables provided with the reports shall be provided in Excel format to facilitate the DERM's evaluation of the data.

4. For clarity and legibility, the surface water sampling locations shall be depicted on a separate site map than the groundwater monitoring wells.

5. The persistently elevated groundwater iron concentration in the vicinity of Zone 1 monitoring well SCMW-2 located in the northwest corner of the property is inconsistent with groundwater iron concentrations throughout the remainder of the property and appears to represent a localized source. The next report shall include a evaluation of the historical iron data from monitoring well SCMW-2 along with monitoring well CMW33 the monitoring well located offsite and to the

north of SCMW-2. Be advised that based on the review of the historical data evaluation, DERM may require additional assessment in the vicinity of SCMW-2.

6. DERM concurs with the recommendation provided in the November, 2010 report that based on the screened interval and proximity, monitoring well CMW-B is appropriately represented by CMW-A and as such does not need to be replaced.

Pursuant to Chapter 24, Code of Miami-Dade County and Chapter 62-701, Florida Administrative Code, continue with the designated monitoring, items and timeframes as stipulated in the permit. The next semiannual report shall address the requirements in Items 1 through 4 above. A review fee of $800 shall be included with the submittal.

DERM has the option to split any samples deemed necessary with the consultant or laboratory at the subject site. The consultant collecting the samples shall perform field sampling work in accordance with the Standard Operating Procedures provided in Chapter 62-160, Florida Administrative Code (FAC), as amended. The laboratory analyzing the samples shall perform laboratory analyses pursuant to the National Environmental Laboratory Accreditation Program (NELAP) certification requirements. If the data submitted exhibits a substantial variance from the DERM split sample analysis, a complete resampling using two independent certified laboratories will be required.

Beth Baughman of DERM shall be notified in writing a minimum of three (3) working days prior to the implementation of any sampling or field activities. Email notifications shall be directed to DERMPCD@miamidade.gov. Please include the DERM file number on all correspondence.

If you have any questions concerning the above, please contact Lorna Bucknor of the Pollution Control Division via email at bucknl@miamidade.gov or at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Pollution Control Division

pc: Lee Martin, PE / Peter Grasel, PG, FDEP-TLH • Joe Lurix, FDEP-WPB • Susan Markley, PhD / • Otto, Fernandez, Cole & Bryant, P.A. (OFC&B) •Lucas Barroso-Giachetti, ES Consultants, lucasbg@esconsultants.net

Attachment B

FDEP Form 62-522.900(2) – July 2011

ES CONSULTANTS, INC.
environmental and civil engineering

Florida Department of Environmental Protection

2600 Blair Stone Road, MS# 4565, Tallahassee, FL 32399-2400

GROUND WATER MONITORING REPORT

Rule 62-522.600(11)

PART I GENERAL INFORMATION

(1) Facility Name Munisport Landfill

Address 2200 N.E. 43rd Street

City North Miami, Florida Zip 33161 County Miami-Dade

Telephone Number ( ) NA

(2) WACS_Facility 57135

(3) DEP Permit Number 0219514-009-SF

(4) Authorized Representative's Name NAME Title TITLE

Address ADDRESS

City North Miami, Florida Zip 33161 County Miami-Dade

Telephone Number (305) 000-0000

(5) Type of Discharge NA

(6) Method of Discharge NA

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submission of false information including the possibility of fine and imprisonment.

09/22/11

Date

Owner or Authorized Representative's Signature

PART II QUALITY ASSURANCE REQUIREMENTS

Sampling Organization Comp QAP # Not Applicable

Analytical Lab Comp QAP #/ HRS Certification NELAC Certification E86546

Lab Name Jupiter Environmental Laboratories, Inc

Address 150 South Old Dixie Hwy, Jupiter, FL, 33458

Phone Number (561) 575-0030

DER Form 62-522.900(2)
Effective April 14, 1994

Attachment C

Laboratory Analytical Results
Chain-of-Custody
Sampling Logs
ADAPT Files
Data Tables
(See Attached CD)

ES CONSULTANTS, INC.
environmental and civil engineering