



July 6, 2005

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Ms. Amy Williams
Remedial Project Manager
U.S. Environmental Protection Agency, Region IV
4WD-SRTMB
61 Forsyth Street
Atlanta, Georgia 30303-3104

**RE: 2005 First Quarter Floridan Aquifer Groundwater Monitoring Report
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida**

Dear Ms. Williams:

On behalf of Beazer East, Inc. (Beazer), The RETEC Group, Inc. (RETEC) hereby submits the 2005 First Quarter Floridan Aquifer Groundwater Monitoring Report for the Cabot Carbon/Koppers Superfund Site in Gainesville, Florida. RETEC conducted this sampling in accordance with the *Revised Floridan Aquifer Monitoring Plan, Cabot Carbon/Koppers Superfund Site, Gainesville, Florida* (Monitoring Plan) (TRC Environmental Solutions, Inc. [TRC], 2004)¹. This report documents the field and laboratory results of the groundwater monitoring event performed on March 8 and 9, 2005. We apologize for the delay in submittal of this report; the departure of a Beazer team member from TRC resulted in an unforeseen delay in completing this report.

Monitoring Procedures

The Monitoring Plan originally specified quarterly sampling of two wells (FW-3 and FW-6) with semiannual sampling of the remaining seven wells (in the 2nd and 4th quarters). However, after evaluation of the analytical results from the last sampling event, Beazer opted to temporarily increase the frequency for sampling well FW-7 from semiannually to quarterly.

In accordance with the Monitoring Plan, the RETEC field crew:

- Gauged and recorded depth to water, depth to non-aqueous phase liquid (NAPL), and total well depth in nine Floridan Aquifer wells (Figure 1).
- Purged the three wells to be sampled (FW-3, FW-6, and FW-7) and measured and recorded field parameters while purging.
- Collected groundwater samples from those three wells for analysis of the parameters listed in Table 2 of the Monitoring Plan.

The RETEC field crew sampled the three groundwater monitoring wells by low-flow/low-stress methods using a bladder pump (Teflon[®] bladder and Teflon[®]-lined tubing). While purging, they

¹ TRC Environmental Solutions, Inc., 2004. *Revised Floridan Aquifer Monitoring Plan, Cabot Carbon/Koppers Superfund Site, Gainesville, Florida*. June 23, 2004.

measured and recorded pH, specific conductance, temperature, dissolved oxygen, oxidation-reduction potential, and turbidity to document changes in purge water quality. They continued purging until the field parameters stabilized and then collected the groundwater samples. Attachment A contains copies of the field forms.

The field technicians submitted the groundwater samples to Columbia Analytical Services Inc. of Jacksonville, Florida. As directed by TRC, RETEC did not collect split samples from the wells for analysis at a second laboratory. Upon receipt, RETEC reviewed the analytical data for completeness and quality using the protocols of the United States Environmental Protection Agency (USEPA) National Functional Guidelines (USEPA 1999² and 2002³) and USEPA method specifications. Attachment B includes the analytical reports and the Data Evaluation Report.

Groundwater Flow Patterns

At the start of the event, RETEC measured and recorded groundwater levels in nine of the Floridan monitoring wells. The resulting calculated groundwater elevations are summarized on Table 1, and the resulting groundwater potentiometric surface map is presented as Figure 1.

The potentiometric surface for the Upper Floridan Aquifer has continued to rise since July 2004 and is approximately 7.4 feet higher than it was in July 2004 and approximately 2 feet higher than November 2004. As shown on Figure 1, the March 2005 groundwater gradient in the Floridan Aquifer is low, with an average value of 0.00064 feet/feet. The Upper Floridan Aquifer average groundwater flow direction at the Site is to the north and northeast. This hydraulic gradient and groundwater flow direction are consistent with those observed in the November 2004 event. Attachment C contains temporal plots of groundwater elevation versus time.

Historically, NAPL has never been detected in any of the Upper Floridan Aquifer wells at the Site. Similar to previous monitoring results, NAPL was not detected nor were any sheens observed in any Upper Floridan Aquifer wells during the March 2005 groundwater monitoring event (Attachment A).

Groundwater Quality Results

Groundwater samples were collected from Upper Floridan Aquifer monitoring wells FW-3, FW-6, and FW-7. All of the Upper Floridan Aquifer monitoring wells, with the exception of FW-1, will be sampled during the 2nd quarter sampling event. Table 2 presents a summary of the field parameter measurements taken during this sampling event, including the minimum and maximum values. Table 3 summarizes the analytical results from this sampling event. Figure 1 shows the spatial distribution of results from this event for select constituents of interest (naphthalene, benzene, 2,4-dimethylphenol, 2-methylphenol, 3&4-methylphenol, and dissolved

² USEPA, 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (EPA-540/R-99-008); October 1999.

³ USEPA, 2002. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (EPA540-R-01-008); July 2002.

arsenic). Attachment C contains temporal plots of concentration versus time for these same constituents. Please note, these graphs were modified from the 2004 Fourth Quarter Report to present the data on a logarithmic axis, such that the relatively low detections for these constituents are more readily visible.

For the March 2005 event, wells FW-3 and FW-6 were the only Upper Floridan Aquifer monitoring wells that contained select organic constituents that exceeded Florida Groundwater Cleanup Target Levels (GCTLs) or the Florida maximum contaminant levels (MCLs) for drinking water. In addition, all organic constituents in well FW-7 were either nondetect or below the Florida GCTLs and drinking water standards. Most of the organic constituent detections in wells FW-3 and FW-7 were estimated results (and therefore assigned a "J" qualifier) because they were detected below the laboratory reporting limit, but above the method detection limit.

Both wells FW-3 and FW-7 contained select organic constituents that were elevated in the initial groundwater samples collected immediately after the well was installed. In general, the concentration of these elevated organic constituents continued to decline to where they are currently below State and Federal regulatory standards. The only exception is benzene in FW-3, which is slightly above the Florida MCL (1 µg/L), but less than the federal MCLs (5 µg/L).

The only organic constituents that remain above GCTLs or MCLs are benzene in well FW-3 and naphthalene, 2-methylnaphthalene, acenaphthene, benzo(a)anthracene, benzene, carbazole, and dibenzofuran in well FW-6. Because 3-methylphenol and 4-methylphenol are isomers, the current standard analytical methods cannot separately quantify them. However, there are separate GCTLs for these two constituents that differ by an order of magnitude. The 1st quarter 2005 combined concentration for 3-methylphenol and 4-methylphenol for wells FW-3 and FW-6 were estimated values that are less than the GCTL for 3-methylphenol but greater than the GCTL for 4-methylphenol. Given the uncertainty of the laboratory estimates and the unknown relative mixture of these two constituents in the samples, it is not clear if either of these two constituents are above Florida's GCTLs.

The FW-6 naphthalene concentration was 1,400 µg/L, which is approximately the same value as the 4th quarter concentration in this well. There has been over a 45-percent reduction in naphthalene concentrations in well FW-6 since the first sample collected on July 12, 2004.

Dissolved arsenic concentrations continue to show significant declines in the Upper Floridan Aquifer wells. The dissolved arsenic concentration in FW-3 was 16.7 µg/L in March 2005, which is a 69-percent reduction from the 4th quarter 2004 sampling event and a 75-percent reduction from the 3rd quarter 2004 sampling event. Similarly, the arsenic concentration in well FW-7 was 83.1 µg/L in March 2005, which is a 50-percent reduction from the 4th quarter 2004 sampling event. The continued reduction in dissolved arsenic for both on-site and off-site Upper Floridan Aquifer wells is consistent with the conceptual model of the dissolution and mobilization of naturally occurring arsenic due to the introduction of oxygenated drilling fluids. Beazer has recently implemented a comprehensive geochemical investigation of the Upper Floridan Aquifer to evaluate arsenic concentrations and geochemical controls. This investigation

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will expand the arsenic study performed by Dr. Pichler, on behalf of the Gainesville Regional Utility (GRU).

Summary

In summary, the 1st quarter 2005 groundwater sampling results are consistent with previous sampling events and indicate that wide-spread groundwater impacts are not present in the Upper Floridan Aquifer beneath the Site. The only Upper Floridan Aquifer wells that currently contain select organic constituent concentrations above State groundwater and drinking water quality standards are wells FW-3 and FW-6. All organic constituents in FW-3 are below State standards, with the exception of benzene which is just slightly above the State MCL. Organic constituent concentrations in well FW-7 were below State groundwater and drinking water standards. Similarly, arsenic concentrations continue to decline in wells FW-3 and FW-7, which is consistent with the conceptual model of temporary remobilization of naturally occurring arsenic. Beazer will continue the groundwater monitoring and evaluation of the potential impacts to the Floridan Aquifer, as required by the Monitoring Plan.

Should you have any questions regarding these results, please feel free to contact Mr. Michael Slenska, Beazer Environmental Manager, at (412) 208-8867.

Sincerely,

The RETEC Group, Inc.



Jennifer L. Atkins
Groundwater Monitoring Task Manager

JA:mvc

Attachments

cc: K. Helton, FDEP
J. Herber, Jones Edmunds & Associates, Inc.
J. Moussa, ACEPD
B. Goodman, GRU
M. Slenska, Beazer (CD-ROM)
T. Basilone, Koppers Inc. (CD-ROM)
M. McKinney, RETEC (Site copy)
J. Erickson, GeoTrans, Inc.
J. Mercer, GeoTrans, Inc.

Tables

Table 1
Summary of Groundwater Elevations
2005 First Quarter Floridan Aquifer Groundwater Monitoring Event
Cabot Carbon/Koppers Superfund Site
Gainesville, FL

Well Number	Gauging Date	Top of Casing Elevation (ft msl)	Depth to Water (ft TOC)	Groundwater Elevation (ft msl)	Measured Total Depth (ft TOC)
FW-2	03/08/05	183.83	132.98	50.85	159.98
FW-3	03/08/05	188.56	137.57	50.99	156.67
FW-4	03/08/05	173.91	123.65	50.26	159.99
FW-5	03/08/05	182.21	131.30	50.91	160.20
FW-6	03/08/05	185.23	134.61	50.62	162.98
FW-7	03/08/05	168.55	118.43	50.12	157.59
FW-8	03/08/05	186.96	135.21	51.75	152.97
FW-9	03/08/05	184.55	133.63	50.92	156.23
MWTP-MW-1	03/08/05	160.94	112.26	48.68	169.20

Notes

ft msl - feet above mean sea level

ft TOC - feet below top of casing



Table 2
Summary of Field Parameter Measurements
2005 First Quarter Floridan Aquifer Groundwater Monitoring Event
Cabot Carbon/Koppers Superfund Site
Gainesville, FL

Well Number	Sample Date	Temperature (°C)	pH (S.U.)	Conductivity (umhos/cm)	ORP (mv)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)
FW-3	03/09/05	14.30	11.89	786	-317	1.91	23.7
FW-6	03/08/05	16.40	10.49	478	-198	4.70	4.1
FW-7	03/08/05	20.90	7.68	353	-92	1.97	15.4
	Minimum	14.30	7.68	353	-317	1.91	4.1
	Maximum	20.90	11.89	786	-92	4.7	23.7

Table 3
Summary of Analytical Results
2005 First Quarter Floridan Aquifer Groundwater Monitoring Event
Cabot Carbon/Koppers Superfund Site
Gainesville, FL

	WELL ID	FW-3	FW-6	FW-6	FW-7	
	SAMPLE DATE	3/9/2005	3/8/2005	3/8/2005	3/8/2005	
	SAMPLE TYPE	SMP	SMP	DUP	SMP	
ANALYTE	Florida GCTL ⁽²⁾	UNITS				
6020						
ARSENIC, Dissolved	10 ⁽³⁾	µg/L	16.7	0.54	0.442 J	83.1
CHROMIUM, Dissolved	100 ⁽³⁾	µg/L	U	U	U	U
COPPER, Dissolved	1000 ⁽⁴⁾	µg/L	U	U	U	U
ZINC, Dissolved	5000 ⁽⁴⁾	µg/L	U	U	U	U
8260B						
BENZENE	1 ⁽³⁾	µg/L	1.6	14	14	U
ETHYLBENZENE	30 ⁽⁴⁾	µg/L	0.46 J	7.6	7.5	U
TOLUENE	40 ⁽⁴⁾	µg/L	2.2	4.2	4.1	1.9
M,P-XYLENES	NA	µg/L	1.1 J	10	10	U
O-XYLENE	NA	µg/L	0.57 J	4.4	4.3	U
Calculated Total Xylenes ⁽¹⁾	20 ⁽⁴⁾	µg/L	1.67	14.4	14.3	U
Calculated Total BTEX ⁽¹⁾	NA	µg/L	5.93	40.2	39.9	1.9
8270C						
Phenols						
2,4-DIMETHYLPHENOL	140	µg/L	36 J	70 J	65 J	4.8 J
2-METHYLPHENOL	35	µg/L	13 J	14 J	12 J	1.7 J
3&4-METHYLPHENOL	35 / 3.5 ⁽⁵⁾	µg/L	13 J	26 J	22 J	UR
PENTACHLOROPHENOL	1 ⁽³⁾	µg/L	UR	UR	UR	UR
PHENOL	10	µg/L	8.1 J	UR	UR	UR
PAHs						
2-METHYLNAPHTHALENE	28	µg/L	U	110 D	110 D	U
ACENAPHTHENE	20	µg/L	1.1 J	150	130	U
ACENAPHTHYLENE	210	µg/L	U	2.8 J	2.4 J	U
ANTHRACENE	2100	µg/L	U	14	16	U
BENZO(A)ANTHRACENE	0.05	µg/L	U	1 J	0.91 J	U
BENZO(A)PYRENE	0.2 ⁽³⁾	µg/L	U	U	U	U
BENZO(B)FLUORANTHENE	0.05	µg/L	U	U	U	U
BENZO(G,H,I)PERYLENE	210	µg/L	U	U	U	U
BENZO(K)FLUORANTHENE	0.5	µg/L	U	U	U	U
CARBAZOLE	1.8	µg/L	1.5 J	66	62	U
CHRYSENE	4.8	µg/L	U	1 J	0.82 J	U
DIBENZO(A,H)ANTHRACENE	0.005	µg/L	U	U	U	U
DIBENZOFURAN	28	µg/L	U	100	91	U
FLUORANTHENE	280	µg/L	U	33	31	U
FLUORENE	280	µg/L	U	120	110	U
INDENO(1,2,3-CD)PYRENE	0.05	µg/L	U	U	U	U
NAPHTHALENE	14	µg/L	1.9 J	1400 D	1400 D	U
PHENANTHRENE	210	µg/L	1.3 J	170	160	U
PYRENE	210	µg/L	U	18	17	U
Calculated Total PAHs ⁽¹⁾	NA	µg/L	5.8	2186	2131	U

Notes

U - Indicates analyte was not detected above the MDL.

J - Indicates result is estimated

D - Indicates result is from reanalysis of the sample at a secondary dilution.

R - Indicates result is rejected.

SMP - Primary field sample

DUP - Field duplicate sample

NA - Not applicable

BTEX - Benzene, toluene, ethylbenzene, and xylenes

PAHs - Polynuclear aromatic hydrocarbons

RED text indicates that the detection is above the Floridan GCTL.

⁽¹⁾ Total Xylenes, Total BTEX, and Total PAHs were calculated using a value of zero for results reported as non-detect.

⁽²⁾ Florida Groundwater Cleanup Target Levels (GCTLs) are guidelines as set forth in 62-777 Florida Administrative Code (F.A.C.).

⁽³⁾ Florida GCTL is the Primary Drinking Water Standard as set forth in 62-550 F.A.C.

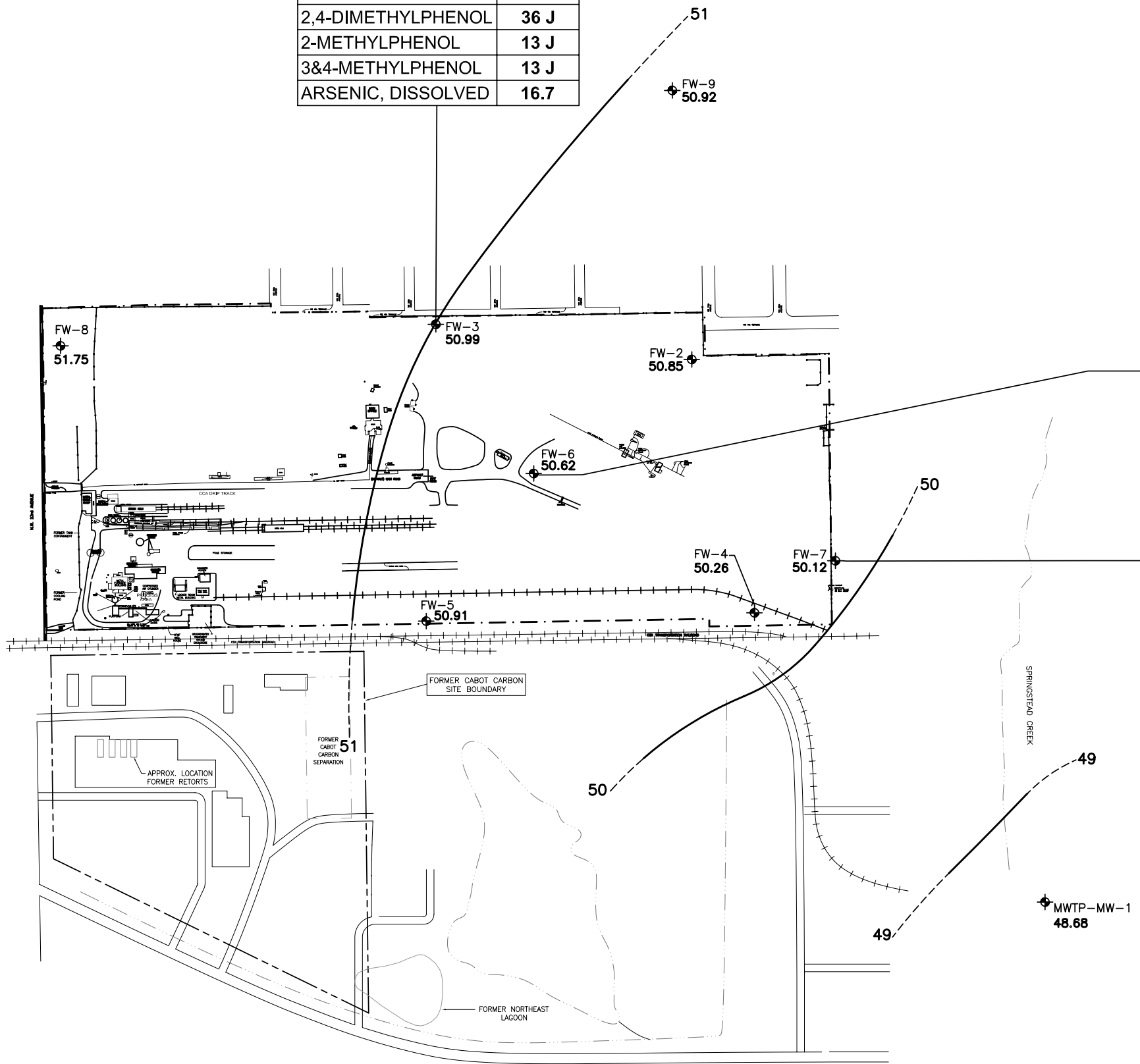
⁽⁴⁾ Florida GCTL is the Secondary Drinking Water Standard as set forth in 62-550 F.A.C.

⁽⁵⁾ 3-Methylphenol and 4-methylphenol cannot be quantified separately using USEPA SW-846 Method 8270C.

Figures

File: F:\PROJECTS\Beazer\Gainesville\03610\CAD\2005\03610-FL-GW_2005.dwg Layout: 1st0-05 User: Blyershan Plotted: Jun 06, 2005 - 2:54pm Xref's:

FW-3	
BENZENE	1.6
NAPHTHALENE	1.9 J
2,4-DIMETHYLPHENOL	36 J
2-METHYLPHENOL	13 J
3&4-METHYLPHENOL	13 J
ARSENIC, DISSOLVED	16.7



FW-6	
BENZENE	14
NAPHTHALENE	1400 D
2,4-DIMETHYLPHENOL	70 J
2-METHYLPHENOL	14 J
3&4-METHYLPHENOL	26 J
ARSENIC, DISSOLVED	0.54

FW-7	
BENZENE	0.88 U
NAPHTHALENE	0.49 U
2,4-DIMETHYLPHENOL	4.8 J
2-METHYLPHENOL	1.7 J
3&4-METHYLPHENOL	0.87 UR
ARSENIC, DISSOLVED	83.1

NOTES

CONCENTRATIONS IN ug/L.

U – INDICATES ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT.

J – INDICATES RESULT IS ESTIMATED.

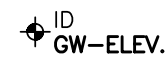

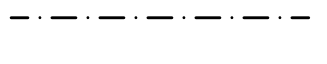


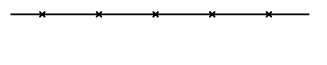




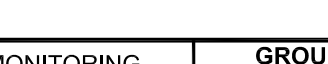
D – INDICATES RESULT IS FROM REANALYSIS OF THE SAMPLE AT A SECOND DILUTION.

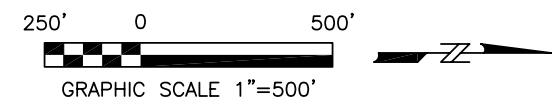
R – INDICATES RESULT WAS REJECTED.

THE HIGHEST RESULT FOR EACH ANALYTE FROM THIS SAMPLING EVENT IS PRESENTED.

WELLS GAUGED AND SAMPLED ON MARCH 8&9, 2005.

LEGEND

-  MONITORING WELL WITH GROUNDWATER ELEVATION
-  GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
-  PROPERTY LINE (APPROXIMATE)
-  EASEMENT
-  ROAD
-  DITCH
-  FENCE
-  ELECTRIC UTILITY
-  WATER UTILITY
-  GAS UTILITY
-  SEWER UTILITY



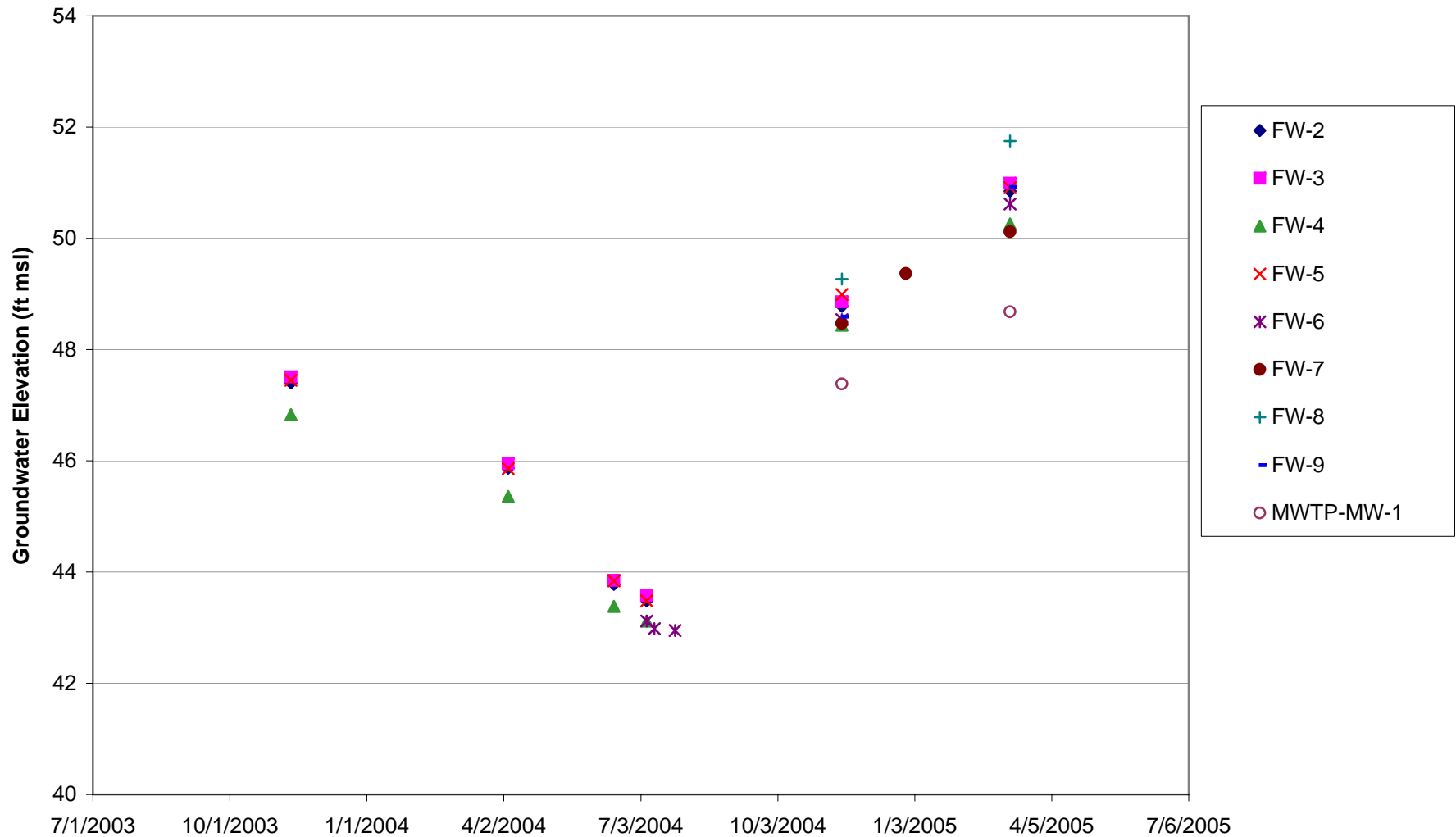
GROUNDWATER COMPLIANCE MONITORING BEAZER EAST INC. BEAZ7-03610		GROUNDWATER ELEVATION CONTOURS FLORIDAN AQUIFER 1st QUARTER 2005 CABOT CARBON/KOPPERS SUPERFUND SITE GAINESVILLE, FLORIDA	
DATE: 05/24/05	DRWN: BcV/CON	FIGURE: 1	

Attachment A
Field Forms

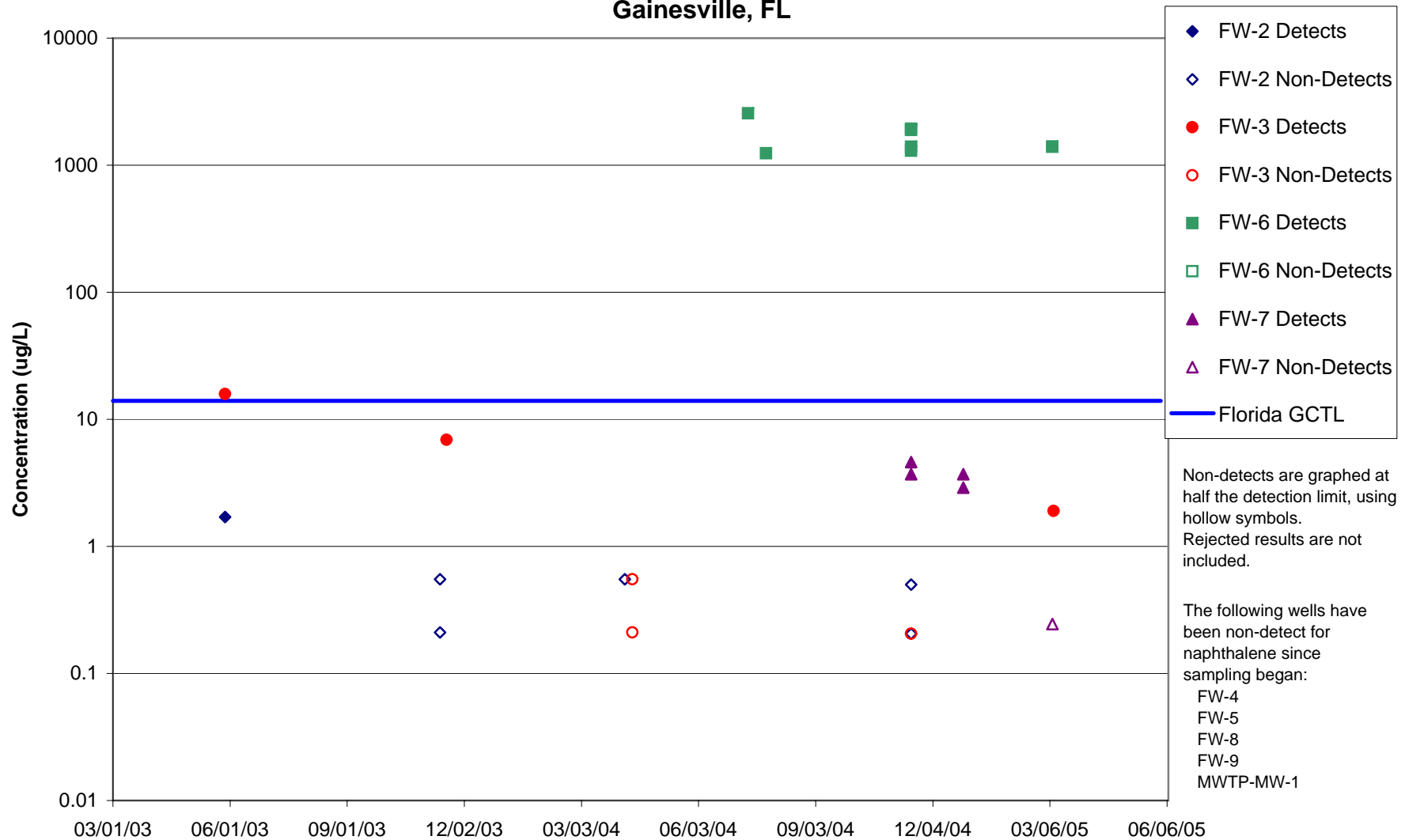
Attachment B
Analytical Laboratory Reports

Attachment C
Constituent Trend Graphs

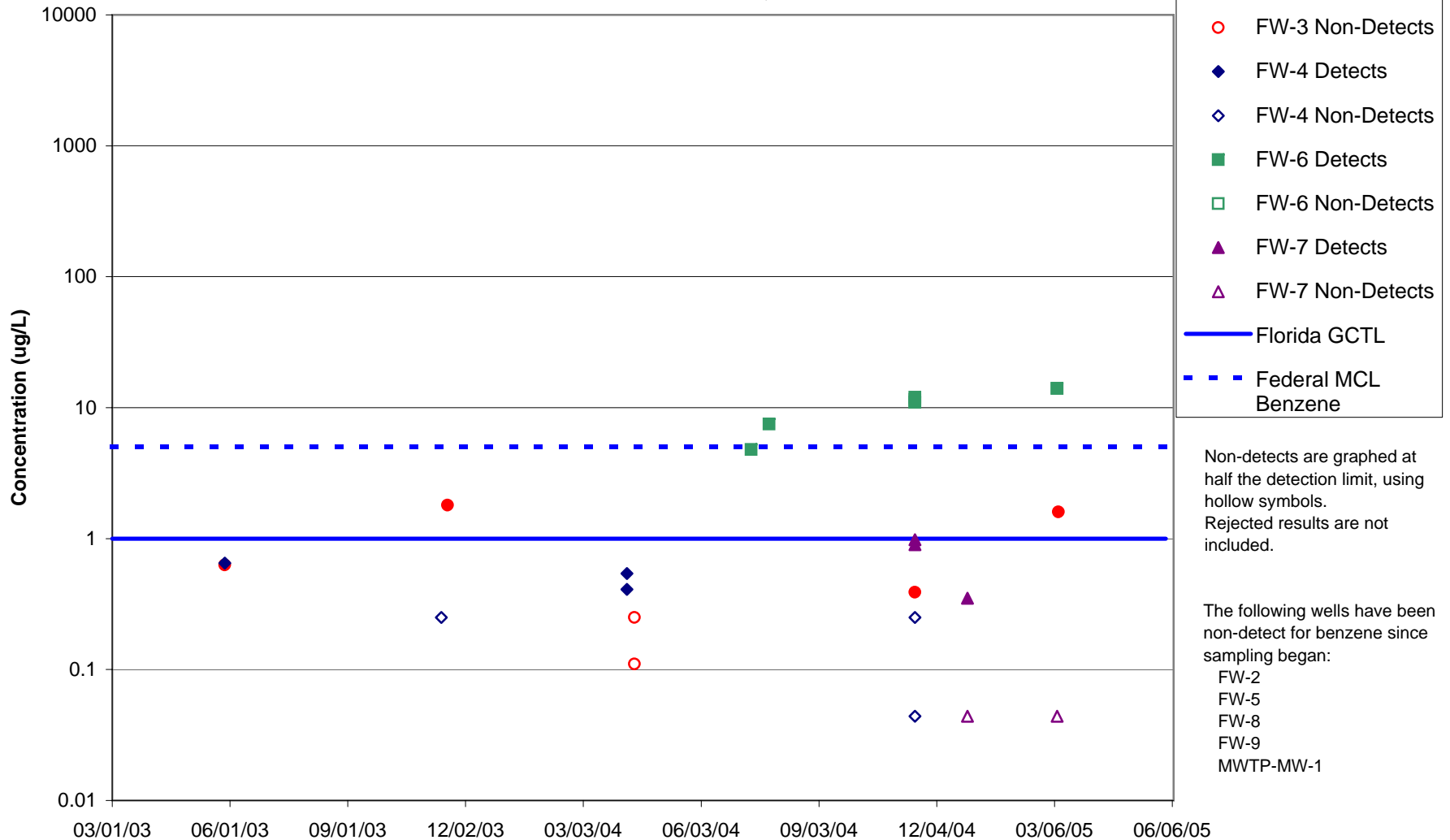
Groundwater Elevation Trends in Floridan Aquifer
November 2003 through March 2005
Cabot Carbon / Koppers Superfund Site
Gainesville, FL



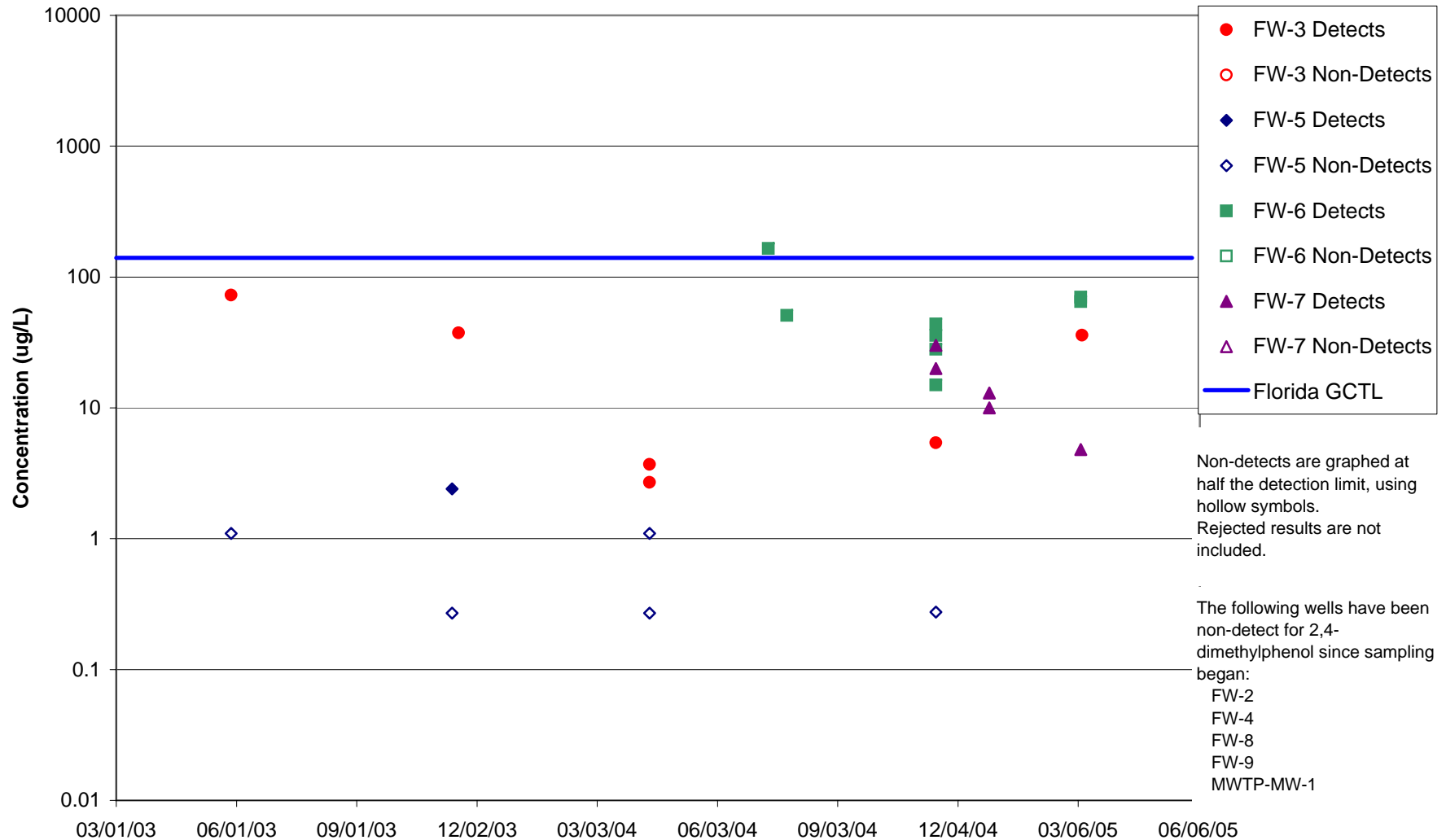
**Trends in Naphthalene Detections in the Floridan Aquifer
May 2003 through March 2005
Cabot Carbon / Koppers Superfund Site
Gainesville, FL**



**Trends in Benzene Detections in the Floridan Aquifer
May 2003 through March 2005
Cabot Carbon / Koppers Superfund Site
Gainesville, FL**



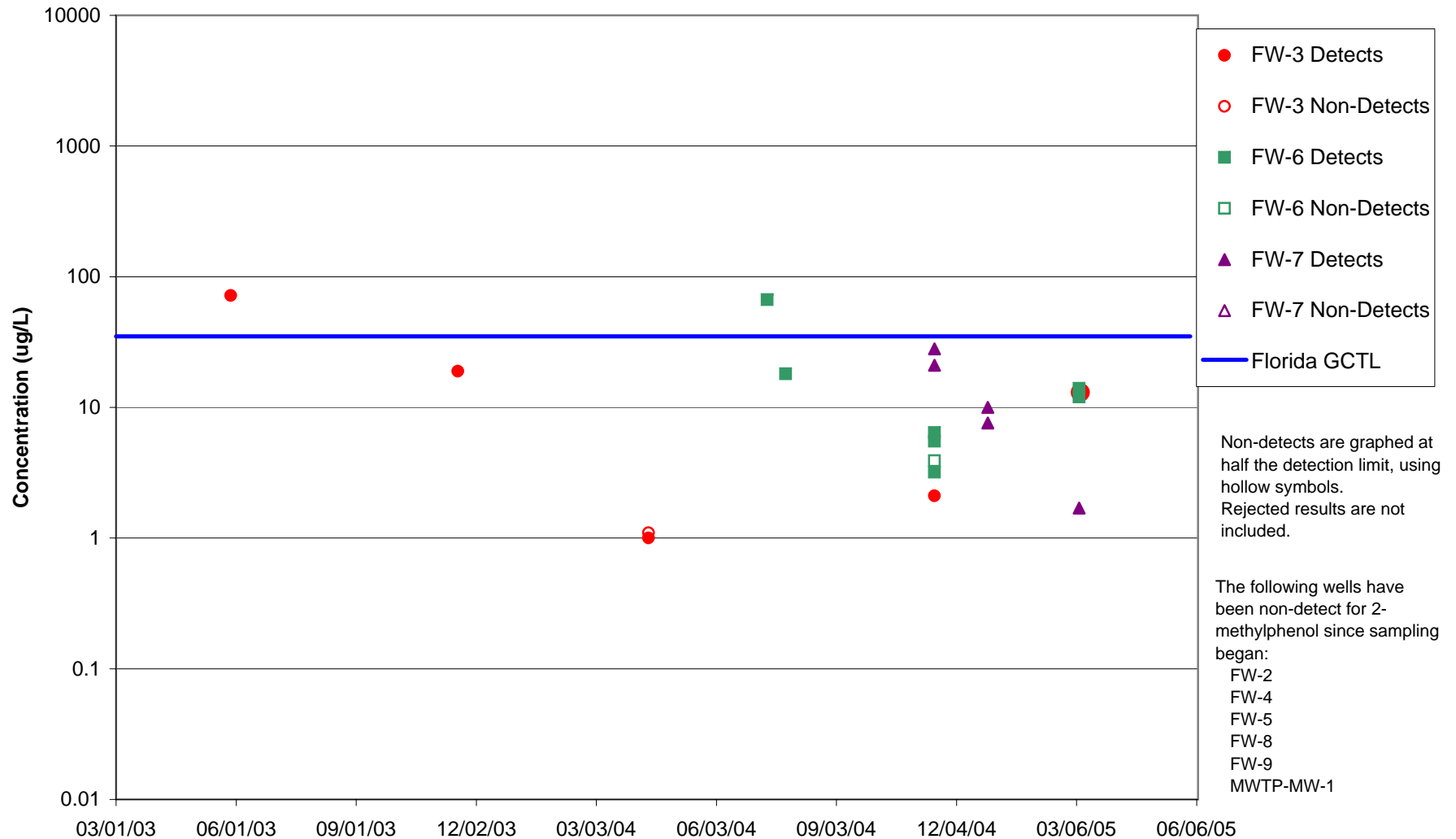
**Trends in 2,4-Dimethylphenol Detections in the Floridan Aquifer
May 2003 through March 2005
Cabot Carbon / Koppers Superfund Site
Gainesville, FL**



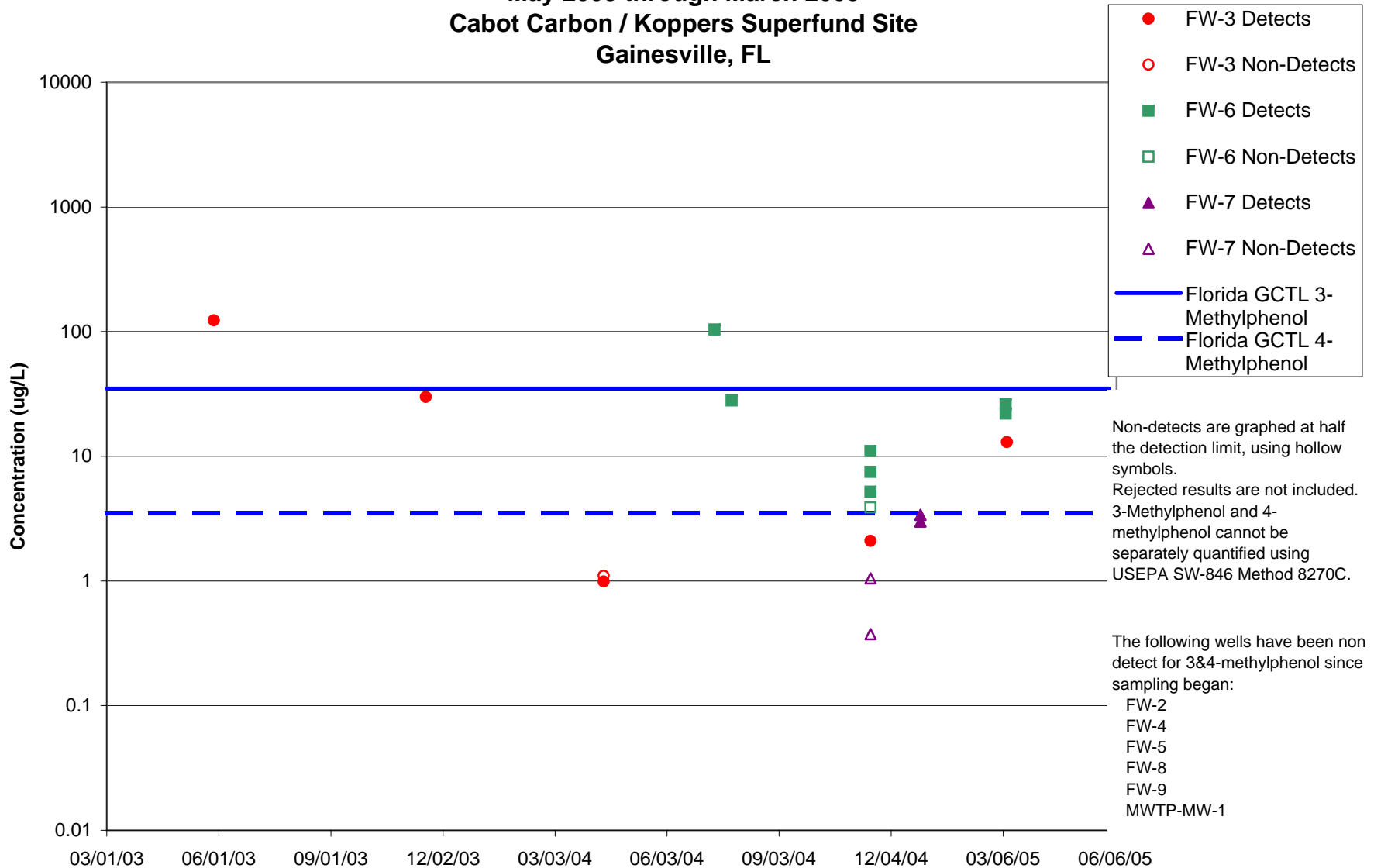
Non-detects are graphed at half the detection limit, using hollow symbols. Rejected results are not included.

The following wells have been non-detect for 2,4-dimethylphenol since sampling began:
FW-2
FW-4
FW-8
FW-9
MWTP-MW-1

**Trends in 2-Methylphenol Detections in the Floridan Aquifer
May 2003 through March 2005
Cabot Carbon / Koppers Superfund Site
Gainesville, FL**



**Trends in 3&4-Methylphenol Detections in the Floridan Aquifer
May 2003 through March 2005
Cabot Carbon / Koppers Superfund Site
Gainesville, FL**



**Trends in Dissolved Arsenic Detections in the Floridan Aquifer
May 2003 through March 2005
Cabot Carbon / Koppers Superfund Site
Gainesville, FL**

