



March 6, 2006

Amy L. McLaughlin
United States Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303

Re: Eastern Portion of Cabot Carbon/Koppers Superfund Site, Gainesville, Florida

Dear Ms. McLaughlin:

On behalf of Cabot Corporation (Cabot), this letter addresses the USEPA comments (letter dated January 23, 2006) on the September 2005 Remedy Status and Expanded Remedy Performance Monitoring Report (Remedy Status Report; Gradient, 2005)¹, summarizes the discussions we had during the conference call of February 6, 2006, and presents additional information requested by USEPA and others during the call. USEPA, Florida DEP, Alachua County EPD, and the GRU participated on that call. This letter also responds to aspects of the report prepared by Jones Edmunds & Associates, Inc., on the behalf of GRU (Jones Edmunds Report; 2006)², regarding the status of remedial actions at the Eastern Portion of the Cabot Carbon/Koppers Superfund Site located in Gainesville, Florida.

USEPA comments and the ensuing discussions on our conference call focused primarily on two areas. These are: 1) the nature and vertical extent of contamination originating at the Cabot Carbon portion of the NPL Site; and, 2) the potential for that contamination to reach the base of the surficial aquifer and then migrate through the lower surficial aquifer, bypassing the trench for downgradient discharge. USEPA also had two specific comments related to the inclusion of the supporting data used to create groundwater elevation contour maps and an inconsistency between a table and figure in the Remedy Status Report.³

The Jones Edmunds report primarily focuses on the Koppers facility, but does contain a brief discussion of environmental conditions at the eastern portion of the Superfund Site. The Jones Edmunds report raises similar questions as USEPA although the report does not appear to have fully considered the data and information presented in the September 2005 Remedy Status Report. Nevertheless, the Jones Edmunds report recommends additional studies and actions at the Site.

Cabot remains committed to protecting human health and the environment at the Site as demonstrated by the following actions:

- Entry into a Consent Decree in 1992 agreeing to implement remedial actions required by the Record of Decision (ROD) for the eastern portion of the Superfund Site;

¹ Gradient Corporation. 2005. "Remedy Status and Expanded Remedy Performance Monitoring Program." September 30.

² Jones Edmunds & Associates. 2006. "Review and Recommendations Report for the Cabot Carbon/Koppers Superfund Site." February 20.

³ Updated figures in response to these specific comments are included in Attachment A.



- Implemented all ROD required remedial actions and supplemental confirmation and verification studies;
- Continued operation of a groundwater interception trench system, which was installed in 1995, and is meeting its design objectives [approximately 500 million gallons of groundwater from the eastern portion of the Site has been extracted and treated using the interim (Project Jumpstart) and final interceptor trench];
- Our meeting with USEPA and other stakeholders (*e.g.*, FDEP, GRU, Alachua County) in January 2005 to present a comprehensive overview of the history and conditions at the eastern portion of the Site, implementation of an expanded groundwater quality monitoring assessment in March 2005 – after the scope of this program had been approved by EPA and FDEP, and the preparation of a comprehensive report (Gradient, 2005) that presents the results of this expanded round of monitoring and conclusions based on the review of all historical soil and groundwater quality data regarding the likelihood of the presence of Dense Non-Aqueous Phase Liquid (DNAPL) at the eastern portion of the Superfund Site.

The comprehensive data evaluation contained in the Remedy Status Report indicates that remedial actions undertaken at the Eastern Site continue to remain protective of human health and the environment – confirming the conclusion reached in the previous 5-year review undertaken in 2000 by the Army Corp. of Engineers on behalf of USEPA. Groundwater elevation and groundwater quality data collected along and downgradient of the interceptor trench indicate that the trench is effectively capturing groundwater from the surficial aquifer; groundwater concentrations at monitoring wells throughout the Eastern Site continue to decline; and groundwater concentrations for pine processing compounds at the former Cabot Lagoons continue to comply with the ROD-specified groundwater cleanup goals. Furthermore, an examination of soil and groundwater quality data indicates that no DNAPL is expected to be present at the former Cabot property and that although a limited quantity of residual NAPL may be present at the water table at the Northeast Lagoon, DNAPL is not likely to be present.

The Jones Edmunds report does not appear to have considered these data and other relevant information. Accordingly, we are surprised by the conclusions reached in the report and respectfully disagree with the GRU conclusions that additional studies and actions need to be implemented at the eastern portion of the Superfund Site. The Jones Edmunds conclusions appear to be based on selectively using old and unrepresentative data. For example, the Jones Edmunds Report considers results from only 1 out of over 60 soil samples collected in the vicinity of the former Cabot Lagoons, and pre-remedy groundwater quality data from the late 1980s/early 1990s, despite significant additional data having been collected since then. When the entire data set for the Eastern Site, (*i.e.*, over 130 soil samples and 15 years of groundwater quality data) are considered together, it is clear that the remedies implemented at the eastern portion of the Site remain protective of human health and the environment and no additional actions are necessary.

In the remainder of this letter, we address USEPA's comments, briefly discuss Jones Edmunds' positions regarding the eastern portion of the Superfund Site and present a response supported by the comprehensive database that exists for the Site.



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USEPA Comments and Responses

Potential for Contaminant Migration Into the Hawthorn/Floridian Formations

USEPA General Comment #1: What is the nature and extent of any dissolved phase groundwater contamination originating at the Cabot Carbon portion of the NPL Site that migrates across the interface between the surficial and upper Hawthorn before reaching the trench interception zone in the surficial aquifer?

Response: Prior to examining the environmental data set and evaluating the potential for downward contaminant migration, an understanding of the source areas at the eastern portion of the Site is critical. There are two distinctly different (in operational history and chemical signatures) source areas at the eastern portion of the Superfund Site (Gradient, 2005):

- *Former Cabot Lagoons* – pine oils/tar from former Cabot Carbon pine processing operations were handled in this area. Phenol is the key remedy driving compound associated with the former Cabot pine processing operations.
- *Northeast Lagoon* – aerial photographs and property ownership records, obtained after Cabot signed the Consent Decree, indicate that Cabot never owned, operated, or used this lagoon. This lagoon abuts and is believed to be associated with a former railroad operation. Note, elevated levels of PAHs (especially carcinogenic PAHs) are present at the Northeast Lagoon compared to the Cabot property (Tables 4-2 and 4-4, Gradient, 2005), *i.e.*, PAHs are associated with the Northeast Lagoon and not the entire eastern portion of the Superfund Site.

The discussion below presents a summary of the soil/groundwater quality and hydrogeologic data for these potential source areas.

Former Cabot Lagoons

The former Cabot Lagoons pose no threat to the Hawthorn and Floridian aquifers because:

1. No pine tar DNAPL source is present at the Lagoons as demonstrated by the relatively low soil concentrations recorded in the lagoon area (total of 63 samples) that decline with depth and declining temporal trend in groundwater concentrations (Gradient, 2005). Note, USEPA acknowledged in the February 6, 2006 conference call that DNAPL presence is not a concern for the former Cabot property.
2. For the sake of demonstration, even if small quantities of pine tar were present in the former Lagoon area, the high viscosity of pine tar renders it essentially immobile (would take between 62 to 400 years to migrate through the surficial aquifer deposits; Gradient, 2005). A DNAPL pool height of 23 to 44 ft would be required to overcome the capillary resistance offered by the Upper Hawthorn clays before migration into the underlying sand could begin. This is significant, especially given that no DNAPL or NAPL has been measured in any former Cabot property monitoring well.⁴
3. A review of the groundwater quality data for phenol at the former Cabot Carbon property indicates that groundwater concentrations have declined sharply over time

⁴ Note, ITW-14, the well where NAPL has been observed, is not associated with former Cabot operations.



and the groundwater cleanup goal (CUG) for phenol has not been exceeded at any of the 14 monitoring wells at or near the Cabot property in the last 10 years of monitoring (Figure 4-5 and Appendix A, Gradient, 2005; also refer to Attachment A for a complete summary of groundwater quality data and well screen intervals, as requested by USEPA in the February 6, 2006 conference call). This dataset includes 4 wells (ITW-6, ITW-8, ITW-10 and ITW-15) in the vicinity of the former Cabot Lagoons that are screened at the base of the surficial aquifer – representative of the groundwater that would be migrating into the Hawthorn and Floridian Formations. Since groundwater in the lower surficial aquifer (which could infiltrate into the underlying aquifers) has been in compliance with the phenol groundwater CUG for a decade now, it poses no threat to the underlying aquifers.

4. Due to the strong influence of the groundwater interceptor trench, surficial aquifer groundwater (and any dissolved contamination) at the former Cabot property flows predominantly horizontally (towards the trench), with only a very small component of flow downward into the Hawthorn aquifer. This is demonstrated by the horizontal to vertical groundwater flux ratio, which is at least 40 (Attachment B), *i.e.*, the driving force on a particle of water is 40 times greater in the horizontal direction compared to the vertical direction.⁵ Therefore, under current conditions, an insignificant portion of the surficial aquifer water on the Cabot property, which already meets the phenol groundwater CUG, could potentially migrate into the underlying aquifer units.
5. Finally, groundwater quality data collected at the Hawthorn Formation monitoring well ITF-3, located just northeast of the former Cabot Lagoons, has shown minimal levels of ubiquitous BTEX compounds and no phenol (Table 1). These data confirm that groundwater quality in the Hawthorn Formation at the Eastern portion of the Site remains unaffected.

Overall, the former Cabot property poses no threat to groundwater quality in the deep aquifer units, and no additional actions are required.

Northeast Lagoon

A review of available data for the Northeast Lagoon area indicate ROD groundwater CUG exceedances for compounds not related to pine processing operations (*e.g.*, PAHs) and the occasional presence of NAPL at the water table monitoring well ITW-14. However, these impacts are being addressed by the groundwater interceptor trench and pose no threat to the Hawthorn and Floridian aquifers for the following reasons:

1. Although Cabot never owned, operated, or used the Northeast Lagoon, in the mid-1990s Cabot excavated and disposed a total of 4,673 tons of soil from the Northeast Lagoon. This action removed a majority of the source area and NAPL. Currently, limited quantities (a few inches) of NAPL are sporadically recorded at ITW-14, the water table monitoring well. The NAPL, which is trapped in-place by the soil matrix, is minimal in extent, and is not readily recoverable (*e.g.*, by pumping). Nonetheless, the declining groundwater concentrations for the soluble compounds (*e.g.*, benzene) at ITW-14, indicate that continued operation of the interceptor

⁵ The Jones Edmunds report presented a horizontal to vertical flux ratio of 5 for pre-remedy (prior to the installation of the interceptor trench) conditions – which are not relevant now.



trench, a portion of which runs through the Northeast Lagoon, will over time reduce groundwater concentrations in this localized area to insignificant levels.

2. Although a limited quantity of NAPL may be present at the water table at the Northeast Lagoon, no DNAPL is present at the base of the surficial aquifer. [Note, no DNAPL or other visual evidence (e.g., discoloration) has been observed at the deep monitoring well ITW-13 in over 35 groundwater sampling events.] The NAPL is localized at and near the water table as indicated by soil concentration-depth profiling data, which found elevated concentrations of PAHs at and near the water table (5 to 10 ft-bgs) and a sharp decline in concentrations beyond that depth (Gradient, 2005). In addition, the overall (annual average) trend of groundwater concentrations at the deep monitoring well (ITW-13) continues to be downward due to the operation of the groundwater interceptor trench (Figure 1). Furthermore, the lack of contaminants at well ITW-17/WMW-17E (well screen extends to the base of the surficial aquifer), the well that is located just downgradient of the Northeast Lagoon and the interceptor trench, clearly demonstrates that the trench is effectively capturing groundwater even from the base of the surficial aquifer (Figure 2).

Overall, given that a portion of the groundwater interceptor trench runs through the Northeast Lagoon and that source removal activities have already been implemented, no additional actions are needed.

Groundwater Interceptor Trench Effectiveness

USEPA General Comment #2: Is there any potential for contamination originating at the Cabot Carbon portion of the Site to reach the base of the surficial aquifer and then migrate through the lowermost surficial aquifer, bypassing the trench for some discharge point further downgradient?

Response: Multiple lines of evidence indicate that the Cabot groundwater interceptor trench is effectively containing migration of groundwater across the entire surficial aquifer thickness:

1. Groundwater flow rate calculations indicate the vertical extent of the trench capture zone to be approximately 40 feet, *i.e.*, the entire thickness of the surficial aquifer (Attachment C). Note, these calculations utilized the following conservative values: average groundwater extraction rate at the trench (47 gpm), the WHI-defined hydraulic conductivity for the surficial aquifer (21 ft/day), the measured hydraulic gradient (0.011), and an estimated lateral capture zone extent (~1000 ft).
2. Groundwater quality data from monitoring wells located downgradient of the trench that have well screens extending to the base of the aquifer (ITW-17/WMW-17 and ITW-18/WMW-18E)⁶ continue to demonstrate the absence of Site-related compounds. In fact, the absence of Site-related compounds now for over 10 years at ITW-17/WMW-17 and ITW-18/WMW-18E is clear indication that the trench system is capturing the entire saturated thickness of the surficial aquifer (Figure 2).

To summarize, the Cabot interceptor trench system is performing effectively and no modifications are required.

⁶ Note, as a follow-up to the February 6, 2006 conference call, we checked the groundwater quality data presented in the September 2005 quarterly groundwater quality monitoring report text for WMW-18E (phenol at 69 µg/L in Table 4-1). This was a typographical error and the laboratory data included in Appendix B of the report confirm that phenol was not detected (< 9.1 µg/L) at this monitoring well. In fact, a review of the data indicated that phenol has never been detected at this monitoring well in almost 15 years of quarterly monitoring.



Jones Edmunds' Positions and Responses

Potential for Contaminant Migration Into the Hawthorn/Floridian Formations

Jones Edmunds Position #1: The Executive Summary of the Jones Edmunds report (pp. viii) states that: "The Cabot Carbon site appears to be a major source of contaminant (phenols and aromatic hydrocarbons) infiltration to the Hawthorn Group sediments that may ultimately reach the Floridian aquifer. NAPL was detected beneath the site as recently as June 2005 and, similar to the Koppers site, strong downward gradients exist from the surficial aquifer across the Upper Hawthorn Group clay, indicating that contaminant infiltration is likely occurring."

Response: This conclusion is very generalized, simplistic, and is not supported by the facts. As discussed above in response to USEPA Comment #1, a review of the more than 15 years of groundwater quality monitoring data and the hydrogeologic conditions clearly indicate that the eastern portion of the Superfund Site poses no threat to the Hawthorn and Floridian aquifers.

Jones Edmunds Position #2: The report asks for a "re-appraisal" of the Cabot interceptor trench system and questions the vertical extent of the trench's capture zone (pp. x).

Response: As discussed in response to USEPA Comment #2, the Cabot groundwater interceptor trench is effectively containing migration of groundwater across the entire surficial aquifer thickness, and no modifications to the system are required.

Representation of the Groundwater Interceptor Trench in the WHI Model

Jones Edmunds Position #3: The report is relying on the WHI particle tracking model to draw conclusions regarding the fate of groundwater (and contaminants) on the former Cabot property.

Response: The approach used to define the groundwater interceptor trench in the WHI model is not clearly presented in the WHI (WHI, 2005)⁷ report. For example, it is unclear whether the construction details of the interceptor trench (*e.g.*, bottom elevation) are correctly specified in the model. As-built drawings indicate that the trench bottom extends a significant distance into the surficial aquifer – elevation of the lower pipe ranges from 158 to 166 feet (Figure 3). If the trench is simulated as a typical "drain", *i.e.*, only present in the uppermost model layer, this representation would not be accurate and could significantly affect the accuracy of the groundwater flow and particle track predictions on the Cabot property. WHI should review the accuracy of the representation of the trench in their model and provide additional details regarding the approach used (depth, flow rate) to represent the trench in the model.

DNAPL at the Former Cabot Lagoons

Jones Edmunds Position # 4: The report applies the maximum total organics concentration detected at the Site (2,300 mg/kg) over the entire Cabot Lagoon foot print area and concludes that there are several tons of DNAPL at the Site.

⁷ Waterloo Hydrogeologic Inc. (WHI). 2005. "Cabot Carbon/Koppers Superfund Site Technical Memorandum Number 2." November 2.



Response: The approach used by Jones Edmunds is inappropriate since it applies the concentration measured in one sample over the entire lagoon foot print, while ignoring numerous other measurements:

- A total of 135 soil samples were collected during the advancement of 108 soil borings on the Cabot property. The analytical results indicated that 90% of these samples showed organics concentrations below 250 mg/kg and 75%, below 100 mg/kg (Figure 4-6, Gradient, 2005). Of these, 63 soil samples were collected from 17 locations at and in the vicinity of the former Cabot Lagoons. Low levels of organics, typically less than 100 mg/kg, were detected in these soil samples. Only shallow soil samples (0 to 14 feet bgs) collected at one location (Z-1; Figure 4-3, Gradient, 2005) contained total organics concentrations greater than 1000 mg/kg. Therefore, applying the maximum detected concentration over the entire area is not scientifically sound.
- The elevated organics concentration (2,300 mg/kg) was detected at the water table (5 to 8 feet bgs at location Z-1; Figure 4-3, Gradient, 2005) and is reflective of potential historical pine oil impacts and not DNAPL. Furthermore, soil concentrations at this location declined with depth, thus confirming impacts to be predominantly at the water table.

In addition to the soil data, the over 10 years of groundwater quality data near and downgradient of the former Cabot Lagoons that continue to show insignificant concentrations and declining temporal trends clearly indicate that no LNAPL or DNAPL is present at the former Cabot Lagoons.

Phenol Groundwater Cleanup Goal

Jones Edmunds Position #5: The Jones Edmunds report is advocating lowering the current phenol groundwater cleanup goal (CUG), a human health protection-based value assuming that groundwater from the surficial aquifer were used as a source of potable water, a value based on taste and odor considerations.

Response: The current phenol groundwater CUG is based on sound science, consistent with Superfund risk assessment practice (USEPA, 1991)⁸, and conservative.⁹ The taste and odor based threshold may be appropriate for a drinking water supply, where chlorination occurs, producing chlorophenols that impart the medicinal taste to water. However, the taste and odor threshold is not appropriate for groundwater at the Site because:

- Phenol is only present in small localized areas in the surficial aquifer (max. of 260 µg/l near/downgradient of the former Cabot Lagoons and max of 2,400 µg/l at the Northeast Lagoon; Table 4-2, Gradient, 2005) and these concentrations continue to decline temporally with the groundwater interceptor trench operations.
- Phenol or phenolic compounds were not detected in the two most recent sampling rounds – May 2003 (TRC, 2003) and March 2005 (Gradient, 2005) – at the

⁸ USEPA. 1991. "Risk Assessment Guidance for Superfund: Volume I – Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals)." December.

⁹ Note, the ROD groundwater CUG for phenol (2,630 µg/L) is conservative. USEPA's groundwater CUG in the ROD amendment proposed for the KII facility was 22,000 µg/L (US EPA, 2001).



Hawthorn Group well (ITF-3) indicating that the Hawthorn aquifer has not been affected at the eastern portion of the Site.

Overall, groundwater at the eastern portion of the Superfund Site poses no threat to the Murphree well field (GRU's main concern), and use of the taste and odor based phenol groundwater CUG is not warranted.

Groundwater Quality at Hawthorn Monitoring Well ITF-3

Jones Edmunds Position #6: For ITF-3, the Jones Edmunds report utilizes groundwater quality data (total VOCs at 168 µg/l and 2,4-dimethyl phenol at 11 µg/l) from the RI report (Hunter/ESE, 1989), to assert that the Hawthorn deposits are impacted. In addition, the report states that this well has not been sampled since 1995.

Response: Monitoring well ITF-3, which is located northeast of the former Cabot Lagoons and screened in the Hawthorn deposits, has been sampled a total of 12 times since 1987 and 3 times since 1995 (Table 1). In fact, a sample was collected from this well as part of the March 2005 expanded round of groundwater quality monitoring and reported in the Gradient (2005) report (copy of which was provided to the GRU).

In these multiple rounds of sampling events, only low levels of benzene and xylenes (less than 5 µg/l) have been detected in this well (Table 1). Phenol has never been detected. The total VOC concentration of 168 µg/l, which was "presumed" by the Jones Edmunds to be benzene and xylenes, was a "screening" level measurement (Hunter/ESE, 1989, Volume III, pp. B-67), and hence not a reliable value. Also note that the upgradient Hawthorn Formation well (ITF-1) historically also indicated low levels of toluene, ethylbenzene, and xylenes – a potential indicator that these low levels of BTEX compounds are ubiquitous in this developed area. Overall, groundwater quality data at ITF-3 indicates that the eastern portion of the Site is not affecting groundwater quality in the Hawthorn Aquifer.

Groundwater Sampling Frequency at Monitoring Well ITW-10

Jones Edmunds Position #7: The report presents groundwater quality data at ITW-10 measured in 1993-1994 and states that no data has been collected at this well since 1995.

Response: This well has been sampled 5 times since 1995, including once prior to its abandonment in 2004 (Table 2). These data are consistent with the prior 11 rounds of data that indicated phenol concentrations to be well below the ROD CUG. Overall, no phenol CUG exceedances have been detected at this well in the last decade.

Groundwater Quality Monitoring at Historical Wells

Jones Edmunds Position #8: The Jones Edmunds report recommends redeveloping the historical (1984-1995) network of monitoring wells and collection of groundwater samples at these wells.

Response: This has already been done at the eastern portion of the Superfund Site as requested by USEPA and FDEP in January 2005. Monitoring well installed during the RI and initial studies were redeveloped and sampled as part of the expanded round of monitoring conducted in March 2005 (Gradient, 2005).



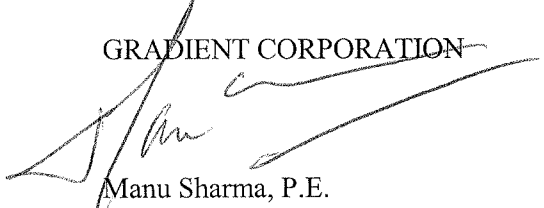
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We hope that the preceding discussion addresses the USEPA comments and the issues raised in the Jones Edmunds report regarding the status of the eastern portion of the Superfund Site. Please let Wayne Reiber or me know if we can be of further assistance.

We would be happy to meet with you and others to discuss these issues if you believe this would be helpful.

Yours truly,

~~GRADIENT CORPORATION~~


Manu Sharma, P.E.
Principal

cc: K. Helton, FDEP
J. Mousa, Alachua EPD
R. Hutton, GRU
L. Roebuck, US ACOE
R. McKeen, Weston
W. Reiber, Cabot

Tables

Table 1
Summary of Detections - ITF3
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida

Pre-Remedy Data

Parameters	IT Corp 1987 Results (µg/L) (1)	Hunter/ ESE 1989 Results (µg/L) (2)	WESTON June 1992 Results (µg/L) (3)	WESTON October 1992 Results (µg/L) (3)	WESTON January 1993 Results (µg/L) (3)	WESTON April 1993 Results (µg/L) (3)	WESTON July 1993 Results (µg/L) (3)	WESTON October 1993 Results (µg/L) (3)	WESTON January 1994 Results (µg/L) (3)+	ROD Cleanup Goal (µg/L)
Arsenic	9	NS	NS	NS	NS	NS	NS	NS	NS	50
Chromium	110	19.1	NS	NS	NS	NS	NS	NS	NS	100**
Copper	42	NS	NS	NS	NS	NS	NS	NS	NS	*
Total VOCs (screening level)	NS	168	NS	NS	NS	NS	NS	NS	NS	*
Benzene	ND	ND	2.8	3.5	3.6	2.4	2.6	3.5	2.7	1
Toluene	ND	ND	1	ND	ND	ND	ND	ND	ND	*
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	*
Xylenes	NS	NS	1.1	1.6	1.4	1.3	3	2	2.1	*
Bis (2- Ethylhexyl) phthalate	ND	74	NS	NS	NS	NS	NS	NS	NS	*
2,4- Dimethylphenol	ND	11	NS	NS	NS	NS	NS	NS	NS	*

Post-Remedy Data

PARAMETER S	WESTON March 2000 Results (µg/L) (3)	TRC May 2003 Results (µg/L) (4)	WESTON March 2005 Results (µg/L) (3)	ROD cleanup goal
Arsenic	NS	ND	ND	50
Chromium	NS	NS	ND	100
Copper	NS	NS	NS	*
Total VOCs (screening level)	NS	NS	NS	*
Benzene	ND	ND	ND	1
Toluene	ND	ND	ND	*
Ethylbenzene	ND	ND	ND	*
Total Xylenes	1.1	ND	2	*
Napthalene	ND	ND	7.6	18
Bis (2- Ethylhexyl) phthalate	NS	ND	ND	*
2,4- Dimethylphenol	ND	ND	ND	*

Notes:

- (1) Please see Table 6 of Remedial Investigation Report, Cabot Carbon/Koppers Site Vol. 1 (IT Corp., 1987) for analytical detection limits of individual compounds.
- (2) Please see Appendix B of Remedial Investigation/Risk Assessment at the Cabot Carbon/Koppers Site, Gainesville, Florida Vol. 3 (Hunter/ESE, 1989).
- (3) Please see individual Weston groundwater reports for analytical detection limits of compounds for different sampling events.
- (4) TRC. 2003. "Addendum, Hawthorn Group Field Investigation Report, Cabot Carbon/Koppers Superfund Site, Gainesville, Florida." Report to Beazer East Inc. Submitted to US EPA Region IV, August.

All results are in µg/L.

ND = not detected.

NS = not sampled for indicated compound.

+ Analytical results from January 1994 are suspect. Past groundwater data review indicates sample bottles may have been mislabeled.

* Cleanup goal for indicated compound has not been established.

** The new EPA MCL for chromium is 100 mg/L. As per the ROD, this new MCL replaces the previous cleanup goals of 50 mg/L.

Table 2
Summary of Detections - ITW10
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida

Parameters	IT Corp 1987 Results (µg/L) (1)	WESTON June 1992 Results (µg/L) (2)	WESTON October 1992 Results (µg/L) (2)	WESTON January 1993 Results (µg/L) (2)	WESTON April 1993 Results (µg/L) (2)	WESTON July 1993 Results (µg/L) (2)	WESTON October 1993 Results (µg/L) (2)	WESTON January 1994 Results (µg/L) (2)	WESTON April 1994 Results (µg/L) (2)	WESTON July 1994 Results (µg/L) (2)	WESTON October 1994 Results (µg/L) (2)	WESTON January 1995 Results (µg/L) (2)	WESTON April 1995 Results (µg/L) (2)	WESTON August 1995 Results (µg/L) (2)	WESTON May 1998 Results (µg/L) (2)	TRC February 2004 Results (µg/L) (3)	ROD Cleanup Goal (µg/L)
Chromium	100	77	53	71	19	12	30	9	ND	ND	8	5	5	ND	4.2	ND	100**
Phenol	ND	5,400	3,060	7,900	13,000	13,000	8,300	8,500	1,800	1,200	500	284	310	630	270	34	2,630
Naphthalene	ND	ND	ND	14	35	84	ND	ND	ND	ND	ND	ND	ND	ND	4.8	6.4	18
Acenaphthylene	ND	ND	ND	640	41	470	25	8.5	ND	ND	310	ND	ND	ND	ND	ND	130
Fluorene	ND	ND	ND	2.6	ND	ND	1.1	ND	ND	0.7	ND	ND	ND	ND	ND	ND	323
Benzene	150	320	200	250	130	120	120	61	59	65	12	64	60	70	1.3	146	1
Ethylbenzene	100		80		78	120		40	37	42	33	42	38	45		80.3	8
Toluene	910		1,100		850	830		440	320	480	360	330	280	380		567	*
Total xylenes	NS		170		160	170		100	76	87	62	99	76	80		172	*
2,4-Dimethylphenol	270	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	31.4	*
2-Methylphenol	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	11.1	*
3&4-Methylphenol	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	54.5	*

Notes:

(1) Please see Table 6 of Remedial Investigation Report, Cabot Carbon/Koppers Site Vol. 1 (IT Corp., 1987) for analytical detection limits of individual compounds.

(2) Please see individual Weston groundwater reports for analytical detection limits of compounds for different sampling events.

(3) TRC (Irvine, CA) April 2004. "Well abandonment and modification, Cabot Carbon/Koppers Superfund Site, Gainesville, Florida." Report to Beazer East, Inc. Submitted to US EPA Region IV; Well ITW10 was abandoned in February 2004.

All results are in µg/L.

ND = not detected.

NS = not sampled for indicated compound.

Blank cells indicate that data were not available.

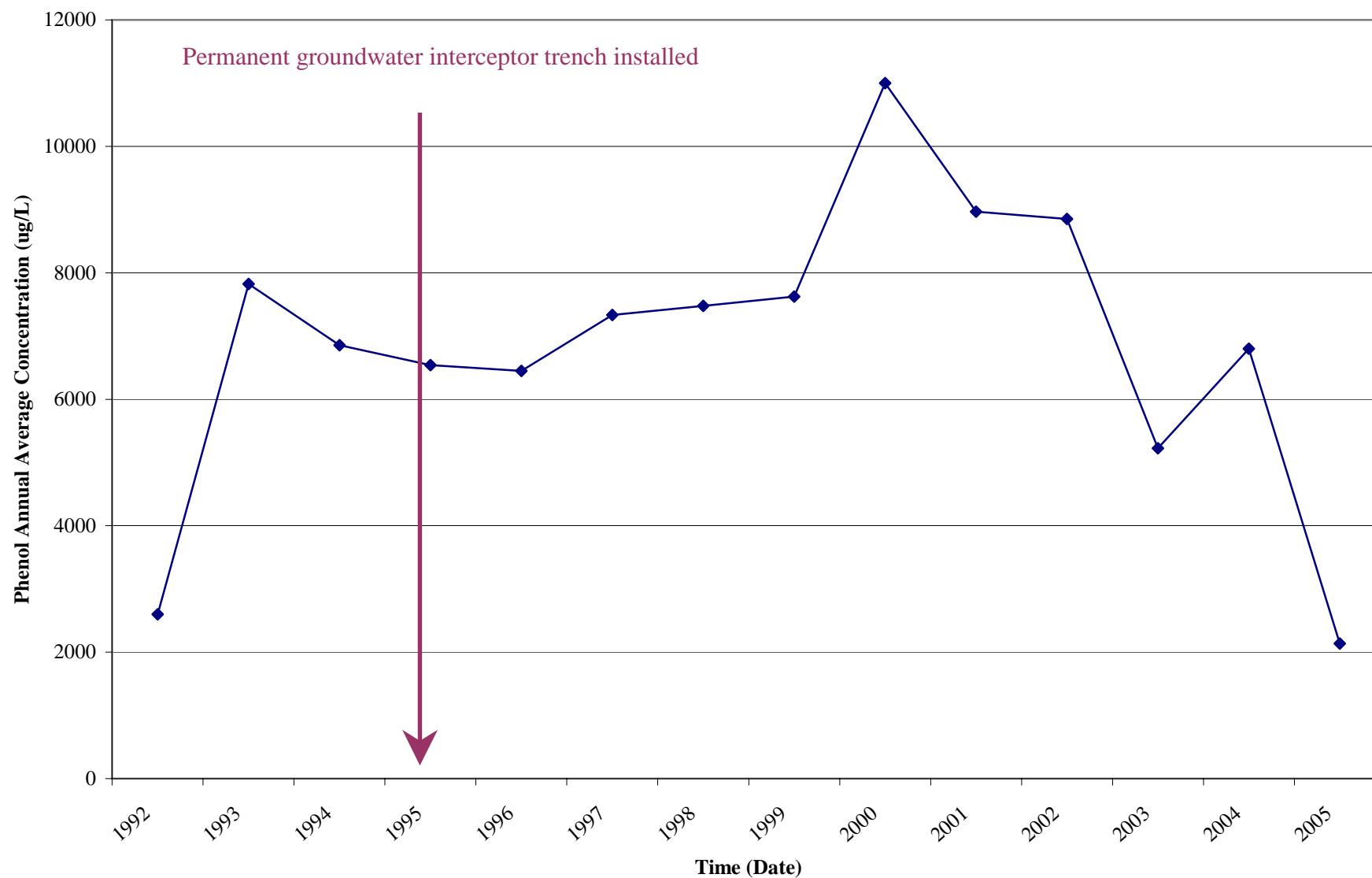
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Figures

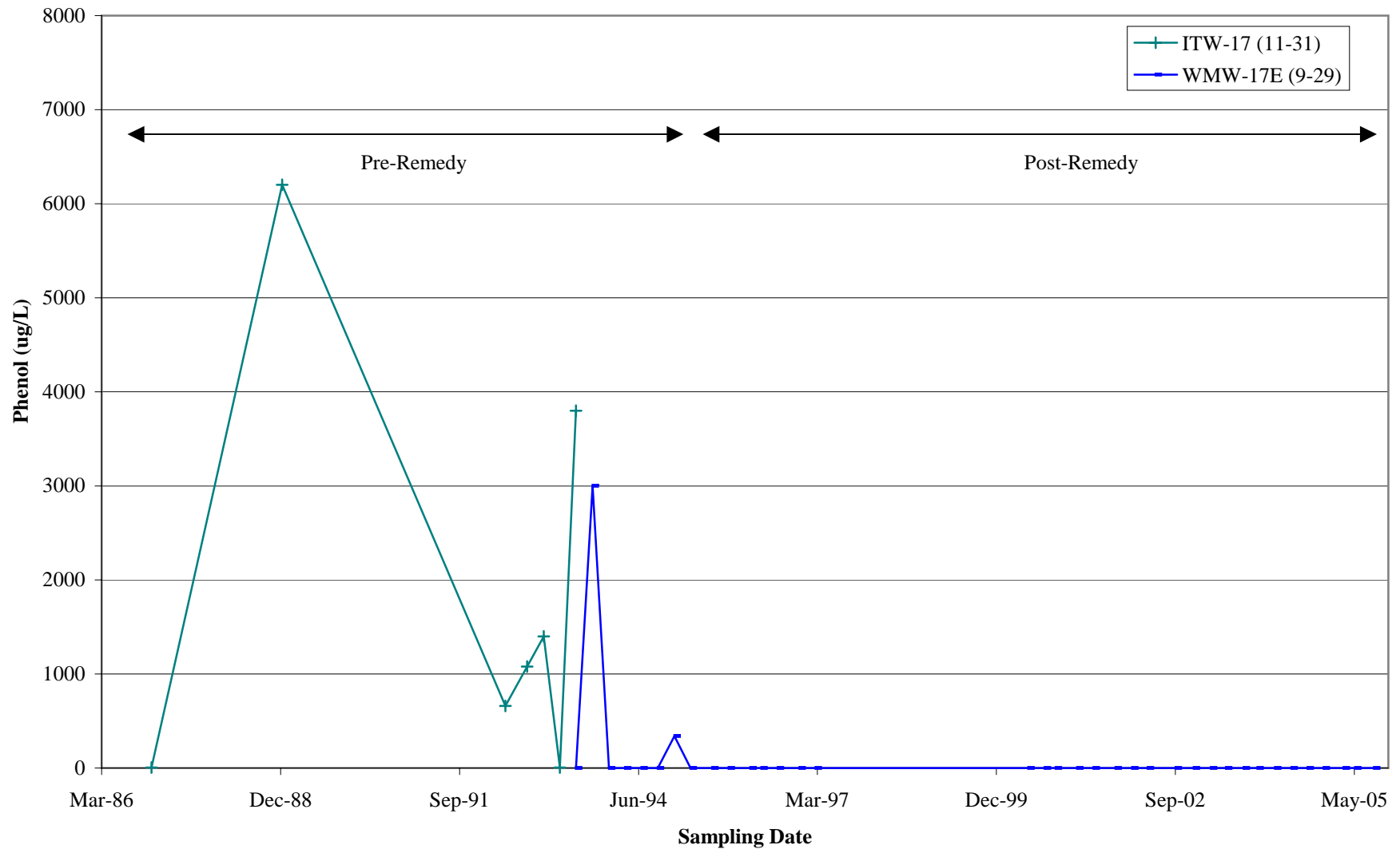
Figure 1
Northeast Lagoon - Phenol Annual Average Groundwater Concentrations at ITW-13 over Time
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida



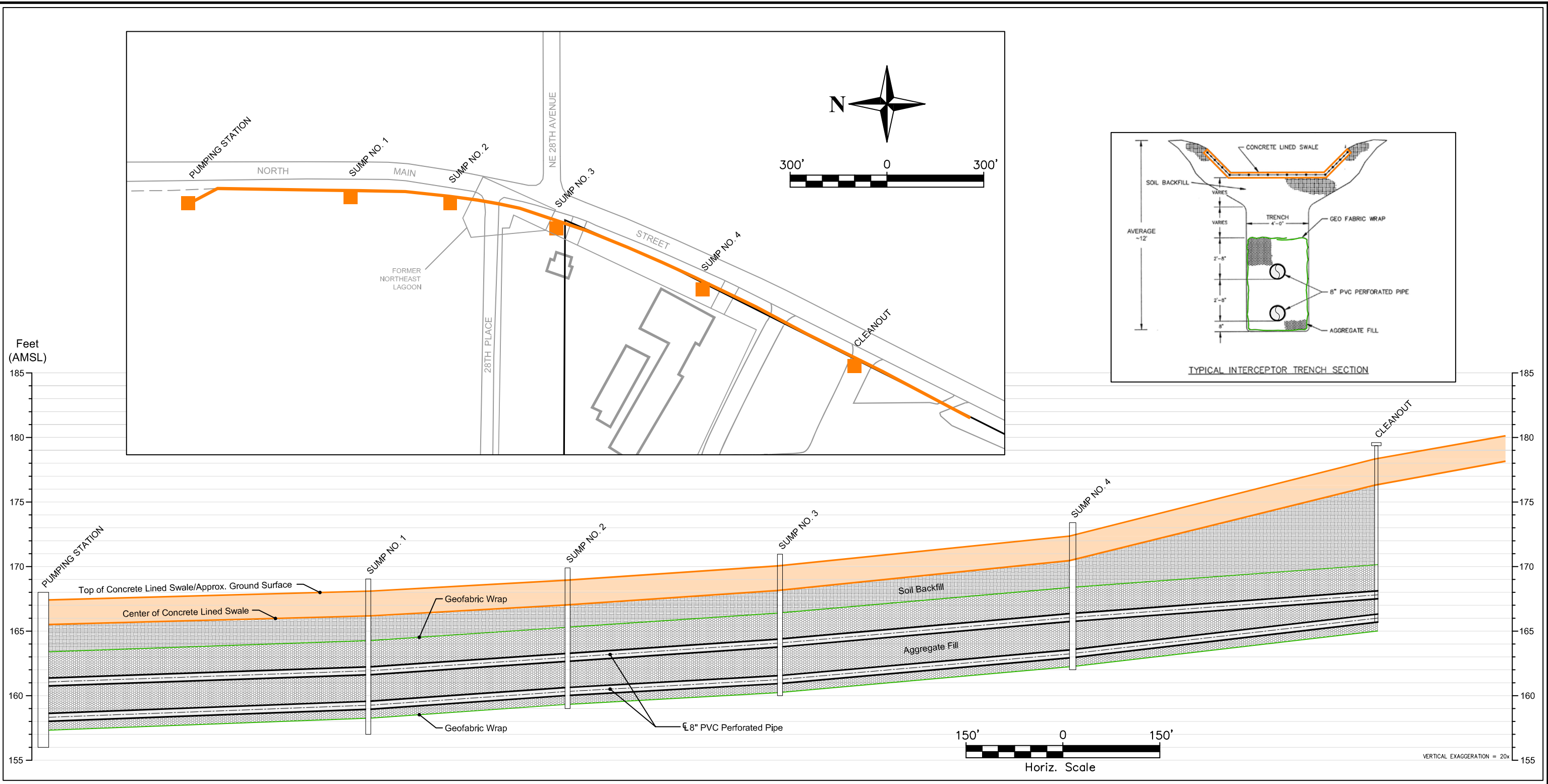
Note:

- Value of 0 was used for non-detects in the annual average calculation.

Figure 2
Pre- and Post-Remedy Concentrations of Phenol at ITW-17/WMW-17E
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida



G:\PROJECTS\204079\Graphics Group\CAD\GIS\100\204079-100_01.dwg



- LEGEND
- GROUNDWATER INTERCEPTOR TRENCH
 - DRAINAGE DITCH
 - FORMER CABOT PROPERTY BOUNDARY
 - CURRENT SITE FEATURES

MAP SOURCE:
ALACHUA COUNTY LAND SURVEYORS, INC. (1992, 1995) AND WWL;
GRADIENT, SOILBASE.DWG 9/9/96 PROJECT# 9204950 KJA

Gradient CORPORATION
20 UNIVERSITY ROAD • CAMBRIDGE, MA 02138 • (617) 395-5000

FIGURE 3

Groundwater Interceptor Trench

Cabot Carbon/Koppers Superfund Site
Gainesville, Florida

Drawing By:	JJC	Checked By:	MHS	Project No.:	204079
Date:	03/01/06	Date:	03/01/06	File:	204079-100_01.dwg

Attachment A
Response to Information Request –
February 6, 2006 Conference Call

Attachment A-1
Pre-Remedy Groundwater Quality Data

Attachment A-1

**Summary of Pre-Remedial Action Groundwater Data
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida**

Well Designation	Screened Intervals (ft.)	Parameters	IT Corp 1987 Results (µg/L) (1)	Hunter/ESE 1989 Results (µg/L) (2)	WESTON June 1992 Results (µg/L) (3)	WESTON October 1992 Results (µg/L) (3)	WESTON January 1993 Results (µg/L) (3)	WESTON April 1993 Results (µg/L) (3)	WESTON July 1993 Results (µg/L) (3)	WESTON October 1993 Results (µg/L) (3)	WESTON January 1994 Results (µg/L) (3)	WESTON April 1994 Results (µg/L) (3)	WESTON July 1994 Results (µg/L) (3)	WESTON October 1994 Results (µg/L) (3)	WESTON January 1995 Results (µg/L) (3)	WESTON April 1995 Results (Fg/L) (3)	ROD Cleanup Goal (µg/L)
ITW-1	15.5-25.5	Chromium	110	60.4	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	*100
ITW-2	5.5-15.5	Chromium	100	124	39	NS	ND	NS	ND	NS	8	NS	ND	NS	ND	NS	*100
ITW-3	15.5-25.5	Chromium	40	NS	11	10	24	NS	NS	NS	NS	NS	NS	NS	NS	NS	*100
ITW-4	5-15	Chromium	110	45.1	10	9	27	ND	ND	NS	7	ND	ND	ND	23	ND	*100
		Naphthalene	40	35	30	27	17	27	31	NS	5.8	25	58	81	46	25	18
		Acenaphthylene	ND	<1.0	11	13	ND	ND	17	NS	ND	16	7.7	13	8	5.7	130
		Acenaphthene	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	2	3.5	ND	ND	260
		Benzene	140	ND	20	52	20	24	11	NS	21	20	26	25	9.2	8	1
ITW-5	19-24	Chromium	<140	47.1	42	NS	26	8	14	26	5	ND	ND	6	6	5	*100
		Arsenic	73	NS	56	NS	65	43	45	48	45	38	34	50	43	46	50
		PCP	30	120	300	NS	980	690	1,500	890	730	1,100	580	550	440	ND	0.1
		Phenol	ND	65	30	NS	750	990	2,600	2,000	1,850	2,600	1,200	900	700	1,200	2,630
		Naphthalene	1,600	1,000	500	NS	860	2,700	1,300	1,200	900	1,500	1,600	1,600	1,500	670	18
		Acenaphthylene	18	12	44	NS	ND	48	ND	34	69	59	73	74	100	20	130
		Acenaphthene	370	540	ND	NS	190	ND	440	ND	ND	220	460	530	610	320	260
		Fluorene	340	210	180	NS	ND	ND	ND	330	300	320	380	470	450	240	323
		Phenanthrene	290	280	160	NS	ND	130	ND	ND	210	280	300	380	320	200	130
		Anthracene	25	17	12	NS	ND	ND	ND	ND	ND	29	22	31	20	15	1,310
		Benzene	<10	ND	4.8	NS	4.3	4.4	4.7	5	0.8	4.1	4.6	ND	5.7	4.6	1
ITW-6	18.5-28.5	Chromium	170	NS	170	110	NS	NS	NS	NS	NS	NS	7	NS	NS	NS	*100
		Naphthalene	1,700	NS	1,100	580	NS	NS	NS	NS	NS	NS	450	NS	NS	NS	18
		Acenaphthylene	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	11	NS	NS	NS	130
		Acenaphthene	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	90	NS	NS	NS	260
		Fluorene	200	NS	73	ND	NS	NS	NS	NS	NS	NS	83	NS	NS	NS	323
		Phenanthrene	32	NS	19	ND	NS	NS	NS	NS	NS	NS	28	NS	NS	NS	130
		Anthracene	<10	NS	2	ND	NS	NS	NS	NS	NS	NS	2	NS	NS	NS	1,310
ITW-7	8.5-18.5	Benzene	<10	NS	1.2	1.5	NS	NS	NS	NS	NS	NS	1	NS	NS	NS	1
		Chromium	280	NS	110	82	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	*100
		Arsenic	23	NS	57	ND	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	50
		Acenaphthylene	10	NS	ND	11	NS	NS	NS	NS	NS	NS	7.4	NS	NS	NS	130
		Acenaphthene	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	2.7	NS	NS	NS	260
		Fluorene	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	3.3	NS	NS	NS	323
		Phenanthrene	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	0.4	NS	NS	NS	130
		Anthracene	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	0.4	NS	NS	NS	1,310
		Total Potentially Carcinogenic PAHs	ND	NS	0.8	ND	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	0.003
		Benzene	25	NS	14	12	NS	NS	NS	NS	NS	NS	16	NS	NS	NS	1

Attachment A-1

**Summary of Pre-Remedial Action Groundwater Data
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida**

Well Designation	Screened Intervals (ft.)	Parameters	IT Corp 1987 Results (µg/L) (1)	Hunter/ESE 1989 Results (µg/L) (2)	WESTON June 1992 Results (µg/L) (3)	WESTON October 1992 Results (µg/L) (3)	WESTON January 1993 Results (µg/L) (3)	WESTON April 1993 Results (µg/L) (3)	WESTON July 1993 Results (µg/L) (3)	WESTON October 1993 Results (µg/L) (3)	WESTON January 1994 Results (µg/L) (3)	WESTON April 1994 Results (µg/L) (3)	WESTON July 1994 Results (µg/L) (3)	WESTON October 1994 Results (µg/L) (3)	WESTON January 1995 Results (µg/L) (3)	WESTON April 1995 Results (Fg/L) (3)	ROD Cleanup Goal (µg/L)
ITW-8	18.5-28.5	Chromium	80	NS	7	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	*100
		Arsenic	1	NS	ND	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	50
		Phenol	890	NS	720	NS	NS	NS	NS	NS	NS	NS	350	NS	NS	NS	2,630
		Naphthalene	48	NS	15	NS	NS	NS	NS	NS	NS	NS	8.2	NS	NS	NS	18
		Acenaphthylene	ND	NS	73	NS	NS	NS	NS	NS	NS	NS	100	NS	NS	NS	130
		Acenaphthene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	22	NS	NS	NS	260
		Fluorene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	1.2	NS	NS	NS	323
		Benzene	40	NS	ND	NS	NS	NS	NS	47	NS	NS	31	NS	NS	NS	1
ITW-9	8-18	Chromium	170	NS	14	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	*100
		Arsenic	4	NS	ND	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	50
		Naphthalene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	30	NS	NS	NS	18
		Acenaphthylene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	120	NS	NS	NS	130
		Acenaphthene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	54	NS	NS	NS	260
		Fluorene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	3.6	NS	NS	NS	323
		Phenanthrene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	0.5	NS	NS	NS	130
		Phenol	76	NS	180	NS	NS	NS	NS	NS	NS	NS	190	NS	NS	NS	2,630
ITW-10 +	23.5-33.5	Benzene	<10	NS	31	NS	NS	NS	NS	22	NS	NS	ND	NS	NS	NS	1
		Chromium	100	NS	77	53	71	19	12	30	9	ND	ND	8	5	5	*100
		Phenol	ND	NS	5,400	3,060	7,900	13,000	13,000	8,300	ND	1,800	1,200	500	284	310	2,630
		Naphthalene	ND	NS	ND	ND	14	35	84	ND	ND	ND	ND	ND	ND	ND	18
		Acenaphthylene	ND	NS	ND	ND	640	41	470	25	8.5	ND	ND	310	ND	ND	130
		Fluorene	ND	NS	ND	ND	2.6	ND	ND	1.1	ND	ND	0.7	ND	ND	ND	323
ITW-11 +	6-16	Benzene	150	NS	320	200	250	130	120	120	61	59	65	12	64	60	1
		Chromium	240	NS	130	12	23	ND	ND	ND	ND	ND	ND	ND	ND	ND	*100
		Arsenic	9	NS	21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
		Acenaphthylene	ND	NS	ND	15	ND	7.8	59	61	400	ND	ND	ND	ND	ND	130
		Fluorene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.8	ND	ND	ND	323
		Phenanthrene	ND	NS	ND	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.4	130
		Pyrene	ND	NS	ND	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	130
		Total Potentially Carcinogenic PAHs	ND	NS	ND	4.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003
		Benzene	<10	NS	3.3	2.7	2.5	1.6	2.7	3.7	2.8	2.5	1.1	0.6	3.7	4.1	1
		Phenol	ND	NS	ND	ND	ND	ND	ND	ND	8,500	ND	ND	ND	ND	ND	2,630

Attachment A-1

**Summary of Pre-Remedial Action Groundwater Data
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida**

Well Designation	Screened Intervals (ft.)	Parameters	IT Corp 1987 Results (µg/L) (1)	Hunter/ ESE 1989 Results (µg/L) (2)	WESTON June 1992 Results (µg/L) (3)	WESTON October 1992 Results (µg/L) (3)	WESTON January 1993 Results (µg/L) (3)	WESTON April 1993 Results (µg/L) (3)	WESTON July 1993 Results (µg/L) (3)	WESTON October 1993 Results (µg/L) (3)	WESTON January 1994 Results (µg/L) (3)	WESTON April 1994 Results (µg/L) (3)	WESTON July 1994 Results (µg/L) (3)	WESTON October 1994 Results (µg/L) (3)	WESTON January 1995 Results (µg/L) (3)	WESTON April 1995 Results (Fg/L) (3)	ROD Cleanup Goal (µg/L)
ITW-12	6.5-26.5	Chromium	0.06	NS	NS	NS	NS	NS	12	ND	ND	NS	NS	NS	NS	NS	*100
ITW-13	23-33	Chromium	80	34.4	10	13	10	ND	ND	ND	ND	ND	ND	6	ND	ND	*100
		Phenol	ND	6,500	2,700	2,500	4,000	11,000	7,000	9,300	8,900	6,200	7,500	4,820	5,720	7,100	2,630
		Naphthalene	ND	59	38	6.1	32	84	71	83	51	35	63	40	47	34	18
		Acenaphthylene	ND	<20	35	46	210	240	12	ND	300	ND	ND	370	ND	ND	130
		Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	33	ND	260
		Fluorene	ND	<20	0.3	0.7	0.8	1.2	1.1	1.6	1.8	ND	2.8	3.7	2.1	1.7	323
		Phenanthrene	ND	<20	0.3	ND	0.3	ND	0.4	0.4	0.2	0.26	0.5	0.5	0.6	0.43	130
		Anthracene	ND	?	ND	ND	ND	ND	ND	ND	ND	ND	0.2	ND	0.18	0.16	1,310
		Total Potentially Carcinogenic PAHs	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.47	ND	ND	0.003
ITW-14	5-15	Benzene	100	ND	130	140	130	82	49	65	55	75	64	59	62	66	1
		Chromium	140	NS	ND	7	10	ND	5	ND	6	ND	ND	ND	ND	5	*100
		Phenol	4,100	NS	2,700	2,300	1,600	14,000	9,900	12,000	8,600	5,000	6,700	910	4,460	1,700	2,630
		Naphthalene	18	NS	170	ND	ND	1,100	390	ND	1,100	480	5,400	700	350	240	18
		Acenaphthylene	<10	NS	190	1,600	360	1,200	1,800	9,900	2,700	1,200	13,000	2,000	890	650	130
		Acenaphthene	<10	NS	ND	ND	83	ND	ND	ND	ND	3,100	48,000	3,300	1,400	720	260
		Fluorene	ND	NS	72	80	51	31	50	1,100	370	700	3,500	330	71	59	323
		Phenanthrene	<10	NS	40	12	ND	37	36	ND	230	190	2,000	180	25	23	130
		Anthracene	ND	NS	ND	ND	ND	ND	ND	ND	ND	53	270	16	3.1	3.8	1,310
ITW-15	20-30	Total Potentially Carcinogenic PAHs	ND	NS	49	1,000	19.6	ND	ND	6,040	1,590	ND	ND	410	32	71	0.003
		Benzene	130	NS	45	180	170	68	150	180	120	130	140	160	160	120	1
		Pyrene	ND	NS	ND	ND	ND	ND	ND	5,000	ND	ND	ND	69	ND	6.4	130
		Chromium	70	NS	6	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	*100
		Arsenic	9	NS	ND	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	50
		Phenol	2,200	NS	260	NS	NS	NS	NS	NS	NS	NS	140	NS	NS	NS	2,630
		Naphthalene	ND	NS	ND	NS	NS	NS	NS	NS	NS	NS	4.2	NS	NS	NS	18
		Acenaphthylene	ND	NS	120	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	130
		Fluorene	ND	NS	0.6	NS	NS	NS	NS	NS	NS	NS	1.4	NS	NS	NS	323
ITW-16	12.5-22.5	Benzene	19	NS	7	NS	NS	NS	NS	NS	NS	NS	3	NS	NS	NS	1
		Chromium	200	NS	61	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	*100
		Arsenic	10	NS	ND	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	50
		Naphthalene	16	NS	3.5	NS	NS	NS	NS	NS	NS	NS	7.9	NS	NS	NS	18
		Acenaphthylene	ND	NS	130	NS	NS	NS	NS	NS	NS	NS	140	NS	NS	NS	130
		Acenaphthene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	3.6	NS	NS	NS	260
		Fluorene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	0.5	NS	NS	NS	323
		Benzene	<10	NS	ND	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	1

Attachment A-1

**Summary of Pre-Remedial Action Groundwater Data
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida**

Well Designation	Screened Intervals (ft.)	Parameters	IT Corp 1987 Results (µg/L) (1)	Hunter/ESE 1989 Results (µg/L) (2)	WESTON June 1992 Results (µg/L) (3)	WESTON October 1992 Results (µg/L) (3)	WESTON January 1993 Results (µg/L) (3)	WESTON April 1993 Results (µg/L) (3)	WESTON July 1993 Results (µg/L) (3)	WESTON October 1993 Results (µg/L) (3)	WESTON January 1994 Results (µg/L) (3)	WESTON April 1994 Results (µg/L) (3)	WESTON July 1994 Results (µg/L) (3)	WESTON October 1994 Results (µg/L) (3)	WESTON January 1995 Results (µg/L) (3)	WESTON April 1995 Results (Fg/L) (3)	ROD Cleanup Goal (µg/L)
ITW-17	11-31	Chromium	190	14.3	29	34	12	5	5	NS	NS	NS	NS	NS	NS	NS	*100
		Phenol	<10	6,200	660	1,080	1,400	ND	3,800	NS	NS	NS	NS	NS	NS	NS	2,630
		Naphthalene	ND	140	21	9.4	23	21	170	NS	NS	NS	NS	NS	NS	NS	18
		Acenaphthylene	ND	<20	ND	140	ND	25	310	NS	NS	NS	NS	NS	NS	NS	130
		Acenaphthene	ND	<20	ND	ND	3.7	ND	ND	NS	NS	NS	NS	NS	NS	NS	260
		Fluorene	ND	<20	ND	0.5	0.9	ND	7.3	NS	NS	NS	NS	NS	NS	NS	323
		Phenanthrene	<10	<20	1.3	ND	0.8	0.2	0.9	NS	NS	NS	NS	NS	NS	NS	130
		Benzene	12	ND	26	17	36	10	39	NS	NS	NS	NS	NS	NS	NS	1
WMW-17E	9-29	Chromium	NS	NS	NS	NS	NS	NS	25	5	ND	ND	ND	ND	6	10	*100
		Benzene	NS	NS	NS	NS	NS	NS	2.5	20	3.3	1.4	2.5	2.3	49	14	1
		Naphthalene	NS	NS	NS	NS	NS	NS	4.5	15	3.5	ND	2.1	ND	20	6	18
		Acenaphthylene	NS	NS	NS	NS	NS	NS	10	ND	7.1	ND	4.2	ND	ND	ND	130
		Acenaphthene	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	13	6.2	ND	260
		Anthracene	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	0.9	0.39	0.2	ND	1,310
		Pyrene	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	2.4	ND	ND	ND	130
		Fluorene	NS	NS	NS	NS	NS	NS	0.7	ND	ND	ND	0.3	1.2	1.3	ND	323
		PCP	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	94	ND	ND	0.1
		Phenol	NS	NS	NS	NS	NS	NS	ND	3,000	ND	ND	ND	ND	340	ND	2,630
		Phenanthrene	NS	NS	NS	NS	NS	NS	ND	0.5	ND	ND	ND	1.3	0.32	ND	130
		Total Potentially Carcinogenic PAHs	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	2	ND	ND	0.003
ITW-18	12-32	Chromium	110	126	44	47	33	14	16	NS	NS	NS	NS	NS	NS	NS	*100
WMW-18E	9-29	Chromium	NS	NS	NS	NS	NS	NS	130	10	8	29	17	230	140	50	*100
		Arsenic	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	19	ND	ND	50
		PCP	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	34	ND	ND	0.1
		Acenaphthylene	NS	NS	NS	NS	NS	NS	5.6	6.8	ND	3.2	7.6	10	ND	ND	130
		Pyrene	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	0.21	ND	130
		Fluorene	NS	NS	NS	NS	NS	NS	ND	ND	ND	0.5	ND	ND	ND	ND	323
		Total Potentially Carcinogenic PAHs	NS	NS	NS	NS	NS	NS	0.4	ND	ND	ND	0.5	0.88	ND	ND	0.003
ITW-19	11-31	Chromium	420	NS	47	10	7.4	7	9	ND	9	ND	ND	ND	ND	ND	*100
		Naphthalene	150	NS	96	89	62	88	110	59	68	79	180	170	180	130	18
		Acenaphthylene	ND	NS	ND	ND	ND	9.7	8.5	ND	ND	ND	13	7.2	8.4	ND	130
		Acenaphthene	ND	NS	ND	ND	7.5	ND	ND	ND	7.4	7.7	28	21	28	17	260
		Fluorene	<10	NS	ND	6.2	6	9.2	ND	ND	7.9	7.3	17	14	15	10	323
		Phenanthrene	ND	NS	ND	0.6	0.2	0.6	0.7	0.2	0.3	0.3	0.8	0.54	0.68	0.66	130
		Anthracene	ND	NS	ND	ND	ND	ND	ND	ND	ND	0.2	0.4	0.26	0.25	0.26	1,310
		Benzene	<10	NS	0.9	1.1	1	0.6	0.8	1.2	0.9	1	ND	0.9	0.9	0.9	1
ITW-20	11-31	Chromium	470	148	25	13	6.5	ND	ND	ND	8	21	ND	ND	ND	ND	*100
		Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7	1

Attachment A-1

**Summary of Pre-Remedial Action Groundwater Data
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida**

Well Designation	Screened Intervals (ft.)	Parameters	IT Corp 1987 Results (µg/L) (1)	Hunter/ESE 1989 Results (µg/L) (2)	WESTON June 1992 Results (µg/L) (3)	WESTON October 1992 Results (µg/L) (3)	WESTON January 1993 Results (µg/L) (3)	WESTON April 1993 Results (µg/L) (3)	WESTON July 1993 Results (µg/L) (3)	WESTON October 1993 Results (µg/L) (3)	WESTON January 1994 Results (µg/L) (3)	WESTON April 1994 Results (µg/L) (3)	WESTON July 1994 Results (µg/L) (3)	WESTON October 1994 Results (µg/L) (3)	WESTON January 1995 Results (µg/L) (3)	WESTON April 1995 Results (Fg/L) (3)	ROD Cleanup Goal (µg/L)
ITW-21	20.5-30.5	Chromium	60	29.9	8	NS	6.2	ND	ND	NS	ND	ND	ND	ND	ND	ND	*100
		Arsenic	2	NS	42	NS	46	18	20	NS	22	13	15	12	14	10	50
		PCP	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	124	ND	ND	0.1
		Naphthalene	3,400	2,700	4,600	NS	4,300	70	3,100	NS	6,000	3,000	6,600	7,200	6,200	4,500	18
		Acenaphthylene	11	<4.0	260	NS	ND	12	ND	NS	230	94	180	290	220	150	130
		Acenaphthene	210	380	ND	NS	200	ND	ND	NS	ND	100	460	430	380	300	260
		Fluorene	130	160	5.6	NS	120	ND	15	NS	180	100	210	270	220	180	323
		Phenanthrene	ND	69	82	NS	45	ND	5	NS	63	47	79	87	68	55	130
		Anthracene	ND	ND	ND	NS	ND	ND	ND	NS	ND	1.6	2	1.1	1.3	1.2	1,310
ITW-22	3-13	Chromium	100	NS	11	NS	11	ND	ND	NS	ND	ND	ND	ND	ND	ND	*100
		Arsenic	8	NS	13	NS	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	50
		PCP	ND	ND	ND	NS	ND	ND	ND	NS	ND	ND	ND	52	ND	ND	0.1
		Naphthalene	<10	NS	ND	NS	1.5	ND	ND	NS	ND	ND	11	ND	3.1	ND	18
		Acenaphthene	ND	ND	ND	NS	ND	ND	ND	NS	ND	ND	3.9	ND	ND	ND	260
		Phenanthrene	ND	ND	ND	NS	ND	ND	ND	NS	ND	ND	0.2	ND	ND	ND	130
		Total Potentially Carcinogenic PAHs	<10	NS	0.2	NS	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	0.003
		Chromium	NS	62.4	51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	*100
		Acenaphthene	NS	1.3	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	260
ESE-001	6.5-21.2	Naphthalene	NS	5.2	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	18
		Chromium	NS	55.6	170	120	39	ND	ND	ND	28	5	ND	19	ND	7	*100
		Naphthalene	NS	27	ND	ND	2	59	7.3	4.8	42	110	12	ND	9.5	6.7	18
		Acenaphthylene	NS	<1.0	ND	ND	ND	5.5	ND	ND	ND	2.9	4	11	ND	10	130
		Acenaphthene	NS	9.3	ND	ND	ND	ND	ND	ND	8.8	4.6	ND	ND	ND	ND	260
		Fluorene	NS	4.4	ND	ND	1	ND	ND	ND	13	9.4	5.1	1.2	2.5	ND	323
		Phenanthrene	NS	<1.0	18	0.4	1.5	3.7	1.2	1.4	12	9.4	9.4	1.2	1.1	0.55	130
		Anthracene	NS	<1.0	1.2	ND	ND	ND	ND	ND	0.8	0.5	0.9	0.29	0.28	0.16	1,310
		Benzene	NS	ND	13	5.2	7.7	4.3	9.2	11	4.2	2.5	2.5	0.8	5	5.1	1
ESE-002	8.-23	Pyrene	NS	<1.0	ND	ND	ND	ND	ND	ND	0.6	1.1	2.4	1.8	1.7	1.1	130
		Total Potentially Carcinogenic PAHs	NS	ND	ND	ND	ND	ND	ND	ND	0.3	ND	0.33	ND	ND	ND	0.003
		Chromium	NS	31.3	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	*100
		Benzene	NS	NS	0.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1
		Chromium	NS	62.4	51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	*100
		Acenaphthene	NS	1.3	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	260
		Naphthalene	NS	5.2	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	18
		Acenaphthylene	NS	<1.0	ND	ND	ND	5.5	ND	ND	ND	2.9	4	11	ND	10	130
		Acenaphthene	NS	9.3	ND	ND	ND	ND	ND	ND	8.8	4.6	ND	ND	ND	ND	260
ESE-003	9.-29	Fluorene	NS	4.4	ND	ND	1	ND	ND	ND	13	9.4	5.1	1.2	2.5	ND	323
		Phenanthrene	NS	<1.0	18	0.4	1.5	3.7	1.2	1.4	12	9.4	9.4	1.2	1.1	0.55	130
		Anthracene	NS	<1.0	1.2	ND	ND	ND	ND	ND	0.8	0.5	0.9	0.29	0.28	0.16	1,310
		Benzene	NS	ND	13	5.2	7.7	4.3	9.2	11	4.2	2.5	2.5	0.8	5	5.1	1
		Pyrene	NS	<1.0	ND	ND	ND	ND	ND	ND	0.6	1.1	2.4	1.8	1.7	1.1	130
		Total Potentially Carcinogenic PAHs	NS	ND	ND	ND	ND	ND	ND	ND	0.3	ND	0.33	ND	ND	ND	0.003
		Chromium	NS	31.3	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	*100
		Benzene	NS	NS	0.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1
		Chromium	NS	62.4	51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	*100
		Acenaphthene	NS	1.3	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	260
		Naphthalene	NS	5.2	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	18
		Acenaphthylene	NS	<1.0	ND	ND	ND	5.5	ND	ND	ND	2.9	4	11	ND	10	130
		Acenaphthene	NS	9.3	ND	ND	ND	ND	ND	ND	8.8	4.6	ND	ND	ND	ND	260
		Fluorene	NS	4.4	ND	ND	1	ND	ND	ND	13	9.4	5.1	1.2	2.5	ND	323
		Phenanthrene	NS	<1.0	18	0.4	1.5	3.7	1.2	1.4	12	9.4	9.4	1.2	1.1	0.55	130
		Anthracene	NS	<1.0	1.2	ND	ND	ND	ND	ND	0.8	0.5	0.9	0.29	0.28	0.16	1,310
		Benzene	NS	ND	13	5.2	7.7	4.3	9.2	11	4.2	2.5	2.5	0.8	5	5.1	1
		Pyrene	NS	<1.0	ND	ND	ND	ND	ND	ND	0.6	1.1	2.4	1.8	1.7	1.1	130
		Total Potentially Carcinogenic PAHs	NS	ND	ND	ND	ND	ND	ND	ND	0.3	ND	0.33	ND	ND	ND	0.003

Attachment A-1

**Summary of Pre-Remedial Action Groundwater Data
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida**

Well Designation	Screened Intervals (ft.)	Parameters	IT Corp 1987 Results (µg/L) (1)	Hunter/ ESE 1989 Results (µg/L) (2)	WESTON June 1992 Results (µg/L) (3)	WESTON October 1992 Results (µg/L) (3)	WESTON January 1993 Results (µg/L) (3)	WESTON April 1993 Results (µg/L) (3)	WESTON July 1993 Results (µg/L) (3)	WESTON October 1993 Results (µg/L) (3)	WESTON January 1994 Results (µg/L) (3)	WESTON April 1994 Results (µg/L) (3)	WESTON July 1994 Results (µg/L) (3)	WESTON October 1994 Results (µg/L) (3)	WESTON January 1995 Results (µg/L) (3)	WESTON April 1995 Results (Fg/L) (3)	ROD Cleanup Goal (µg/L)
ESE-004	6.5-21.5	Chromium	NS	70.2	120	29	29	ND	9	8	7	6	ND	8	5	13	*100
		Phenol	NS	260	ND	23	ND	50	40	ND	ND	315	ND	16	ND	610	2,630
		Naphthalene	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.5	18
		Acenaphthylene	NS	ND	ND	ND	ND	ND	5	ND	ND	ND	ND	ND	ND	ND	130
		Phenanthrene	NS	ND	ND	ND	ND	ND	ND	0.5	ND	ND	0.2	ND	ND	ND	130
		Anthracene	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21	ND	ND	1,310
		Benzene	NS	ND	ND	ND	ND	ND	ND	3.2	ND	1.8	ND	ND	ND	3.6	1
ESE-005	9.5-29.5	Fluorene	NS	<1.0	ND	ND	ND	ND	ND	ND	0.3	ND	0.7	ND	ND	ND	323
		Chromium	NS	59.2	110	53	20	11	ND	ND	ND	ND	ND	ND	ND	ND	*100
		PCP	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	90	ND	ND	0.1
		Phenol	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	90	ND	ND	56	2,630
		Naphthalene	NS	1,300	660	97	730	170	400	1,000	1,100	420	610	1,100	1,200	3,600	18
		Acenaphthylene	NS	<5.0	81	89	ND	ND	ND	320	ND	49	35	270	84	300	130
		Acenaphthene	NS	68	17	ND	ND	ND	360	ND	ND	ND	44	49	120	190	260
		Fluorene	NS	30	21	4.7	22	10	ND	3.9	45	13	16	42	41	61	323
		Phenanthrene	NS	4.3	4.1	1.1	3.7	1.8	3.4	2.5	8.9	3.5	2.9	5	8.1	20	130
		Anthracene	NS	ND	ND	ND	ND	ND	ND	ND	ND	0.3	0.3	0.62	0.53	0.96	1,310
		Pyrene	NS	ND	ND	ND	ND	ND	ND	ND	ND	0.7	ND	ND	ND	4.2	130
		Total Potentially Carcinogenic PAHs	NS	<61	ND	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003
ESE-006	7.5-27.5	Benzene	NS	<100	50	49	59	45	75	130	56	48	86	85	90	150	1
		Chromium	NS	230	64	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	*100
		Phenol	NS	81	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2,630
		Naphthalene	NS	340	560	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	18
		Acenaphthylene	NS	<20	880	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	130
		Fluorene	NS	ND	24	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	323
		Phenanthrene	NS	ND	7.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	130
ESE-007	7.5-22.5	Benzene	NS	320	65	NS	NS	60	NS	NS	NS	NS	NS	NS	NS	NS	1
		Chromium	NS	45.7	96	47	26	11	9	24	22	5	ND	15	9	10	*100
		Phenol	NS	11,000	240	490	1,550	890	5,000	4,300	6,400	2,100	4,000	3,200	830	540	2,630
		Naphthalene	NS	<40	2.4	12	21	14	25	13	14	15	19	17	35	21	18
		Acenaphthylene	NS	<40	130	210	320	110	ND	9.1	450	ND	ND	440	ND	ND	130
		Acenaphthene	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13	ND	260
		Phenanthrene	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.69	ND	0.31	130
		Anthracene	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.25	ND	0.22	1,310
		Fluorene	NS	<40	ND	ND	0.8	ND	ND	1	1.6	ND	2.1	ND	2.8	ND	323
		Total Potentially Carcinogenic PAHs	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29	ND	ND	0.003
		Benzene	NS	ND	74	30	48	9.8	37	25	33	30	38	35	34	10	1

Attachment A-1

**Summary of Pre-Remedial Action Groundwater Data
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida**

Well Designation	Screened Intervals (ft.)	Parameters	IT Corp 1987 Results (µg/L) (1)	Hunter/ESE 1989 Results (µg/L) (2)	WESTON June 1992 Results (µg/L) (3)	WESTON October 1992 Results (µg/L) (3)	WESTON January 1993 Results (µg/L) (3)	WESTON April 1993 Results (µg/L) (3)	WESTON July 1993 Results (µg/L) (3)	WESTON October 1993 Results (µg/L) (3)	WESTON January 1994 Results (µg/L) (3)	WESTON April 1994 Results (µg/L) (3)	WESTON July 1994 Results (µg/L) (3)	WESTON October 1994 Results (µg/L) (3)	WESTON January 1995 Results (µg/L) (3)	WESTON April 1995 Results (Fg/L) (3)	ROD Cleanup Goal (µg/L)
ITF-1 ++	69-79	Benzene	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1
		Toluene	ND	ND	1.6	1.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**
		Ethylbenzene	ND	ND	1.4	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**
		Xylenes	NS	NS	3.1	4.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**
ITF-2 ++	71-81	Benzene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1
		Toluene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**
		Ethylbenzene	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**
		Xylenes	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**
ITF-3 ++	69.5-79.5	Benzene	ND	ND	2.8	3.5	3.6	2.4	2.6	3.5	2.7	NS	NS	NS	NS	NS	1
		Toluene	ND	ND	1	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	**
		Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	**
		Xylenes	NS	NS	1.1	1.6	1.4	1.3	3	2	2.1	NS	NS	NS	NS	NS	**

The data presented in this table represents only those compounds that have been detected above detection limit in groundwater samples from the indicated wells.

- (1) Please see Table 6 of Remedial Investigation Report, Cabot Carbon/Koppers Site Vol. 1 (IT Corp., 1987) for analytical detection limits of individual compounds.
 (2) Please see Appendix B of Remedial Investigation/Risk Assessment at the Cabot Carbon/Koppers Site, Gainesville, Florida Vol. 3 (Hunter/ESE, 1989).
 (3) Please see individual groundwater report for analytical detection limits of compounds for different sampling events.

All results are in µg/L.

µg/L = micrograms per liter.

MDL = laboratory method detection limit.

ND = not detected above the MDL.

NS = not sampled for indicated compound.

* The new EPA MCL for chromium is 100 µg/L. As per the ROD, this new MCL replaces the previous cleanup goals of 50 µg/L.

** Cleanup goal for indicated compound has not been established.

+ Analytical results from January 1994 are suspect. Past groundwater data review indicates sample bottles may have been mislabeled.

++ Sampled only for BTEX constituents.

Attachment A-2
Post-Remedy Groundwater Quality Data

Summary of Recent Post-Remedial Action Groundwater Data Cabot Carbon/Koppers Superfund Site, Gainesville, Florida

k:\05791\003\GW_Sampling\Q2-03\Attachments.xls Att A-2

Summary of Recent Post-Remedial Action Groundwater Data Cabot Carbon/Koppers Superfund Site, Gainesville, Florida

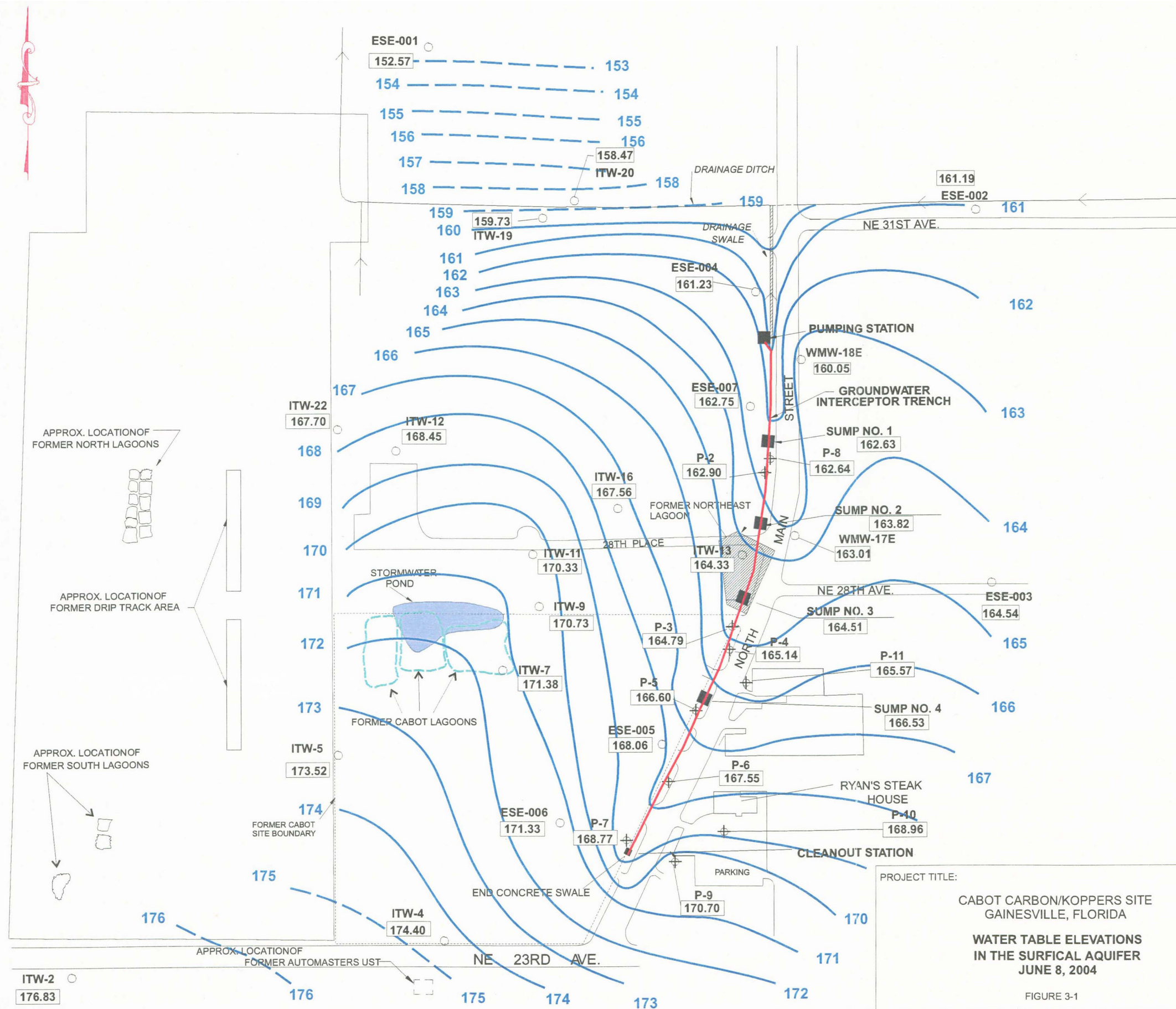
k:\05791\003\GW_Sampling\Q2-03\Attachments.xls Att A-2

Summary of Recent Post-Remedial Action Groundwater Data Cabot Carbon/Koppers Superfund Site, Gainesville, Florida

All results are in ug/l (micrograms per liter).
 ND = Not detected above the MDL.
 NS = Not sampled for indicated compound.
 * = No ROD Cleanup Goal for compound. Tested as part of complete scan for tests 8021, 8270 or 8310.
 Y = Target compounds were quantified from a secondary dilution due to analyte abundance in the sample.
 P = Identification of target analytes using LC methodology is based on retention time. Discretion should be employed during data review and interpretation of results for this target compound.

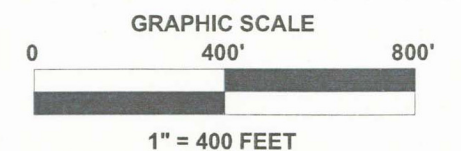
Attachment A-3
Updated Copies of Selected Figures
from Gradient (2005) Report

NOTE:
THIS FIGURE HAS BEEN GENERATED IN COLOR; IF REPRODUCED IN BLACK AND WHITE,
THE CLARITY OF THE INFORMATION PRESENTED WILL BE SUBSTANTIALLY DIMINISHED.



LEGEND

- SURFICIAL AQUIFER MONITORING WELL
- LOCATION AND FLOW DIRECTION OF DRAINAGE DITCH.
- GROUNDWATER ELEVATIONS (FT MSL) MEASURED ON JUNE 8, 2004.
- PIEZOMETER LOCATIONS
- GROUNDWATER INTERCEPTOR TRENCH
- GROUNDWATER ELEVATION CONTOURS FT MSL
CONTOUR INTERVAL = ONE FOOT
(DASHED WHERE INFERRED)
ARROWS INDICATE GROUNDWATER FLOW DIRECTION
- NOT MEASURED DUE TO WELL BEING DAMAGED.



PROJECT TITLE:

CABOT CARBON/KOPPERS SITE
GAINESVILLE, FLORIDA

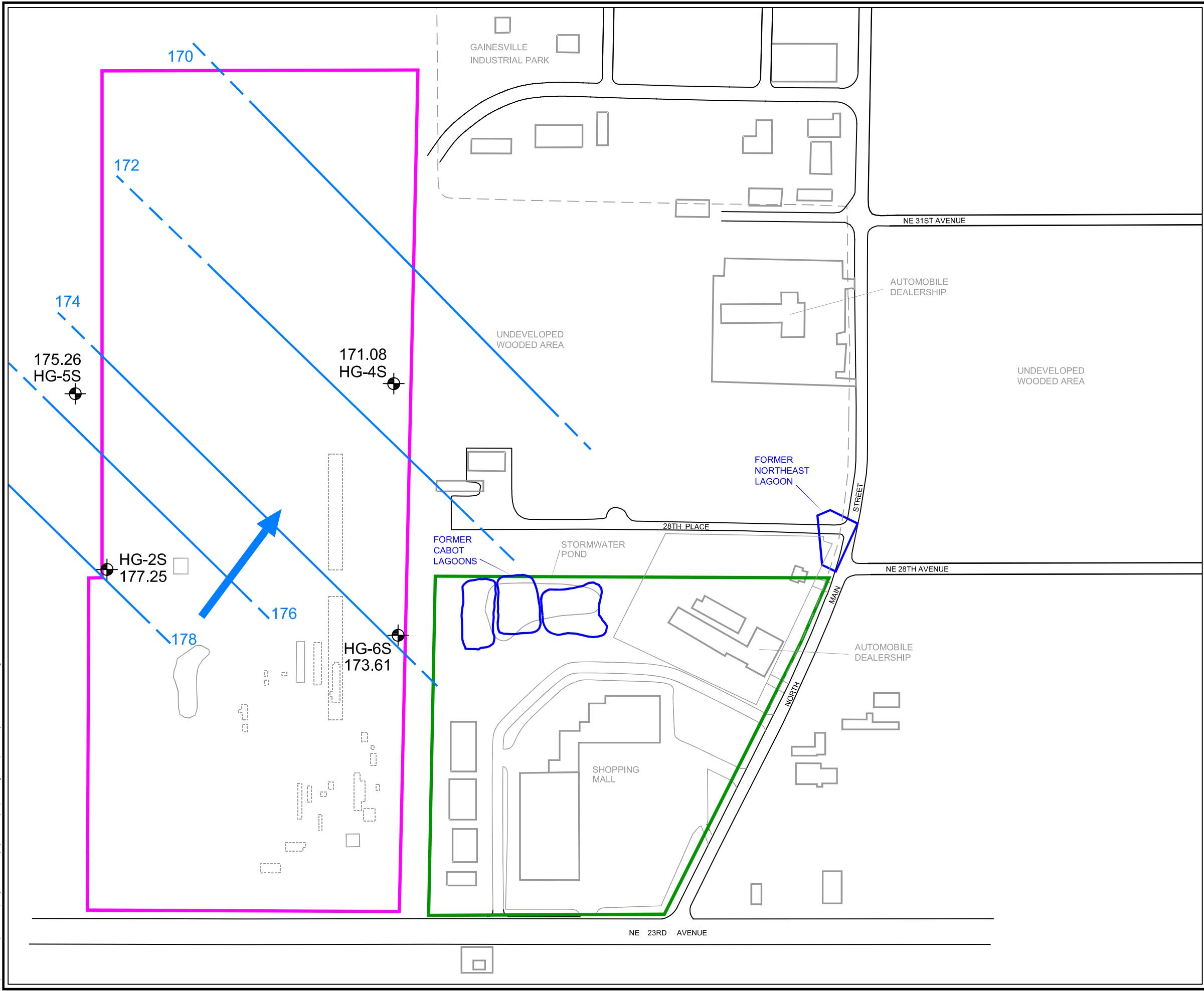
WATER TABLE ELEVATIONS
IN THE SURFICIAL AQUIFER
JUNE 8, 2004

FIGURE 3-1



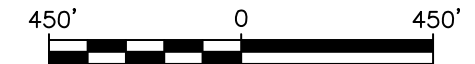
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CHECKED R. McKEEN	DATE 19 JUL 04	APPROVED	DATE	FILE NAME JUN-04.CDR

G:\PROJECTS\204079\Graphics Group\CADGIS\Report figures\basemap_w-features.dwg



L E G E N D

- FORMER CABOT PROPERTY BOUNDARY
- KOPPERS PROPERTY BOUNDARY
- DRAINAGE DITCH
- CURRENT SITE FEATURES
- FORMER KOPPERS SITE FEATURES
- PRIMARY DIRECTION OF GROUNDWATER FLOW
- UPPER HAWTHORN GROUP
POTENTIOMETRIC HEAD CONTOUR LINE
(MEASURED JUNE, 2003)



MAP SOURCE: ALACHUA COUNTY LAND SURVEYORS, INC. (1992) AND WWL;
GRADIENT, SOILBASE.DWG 9/9/96 PROJECT# 9204950 KJA; TRC, 2003

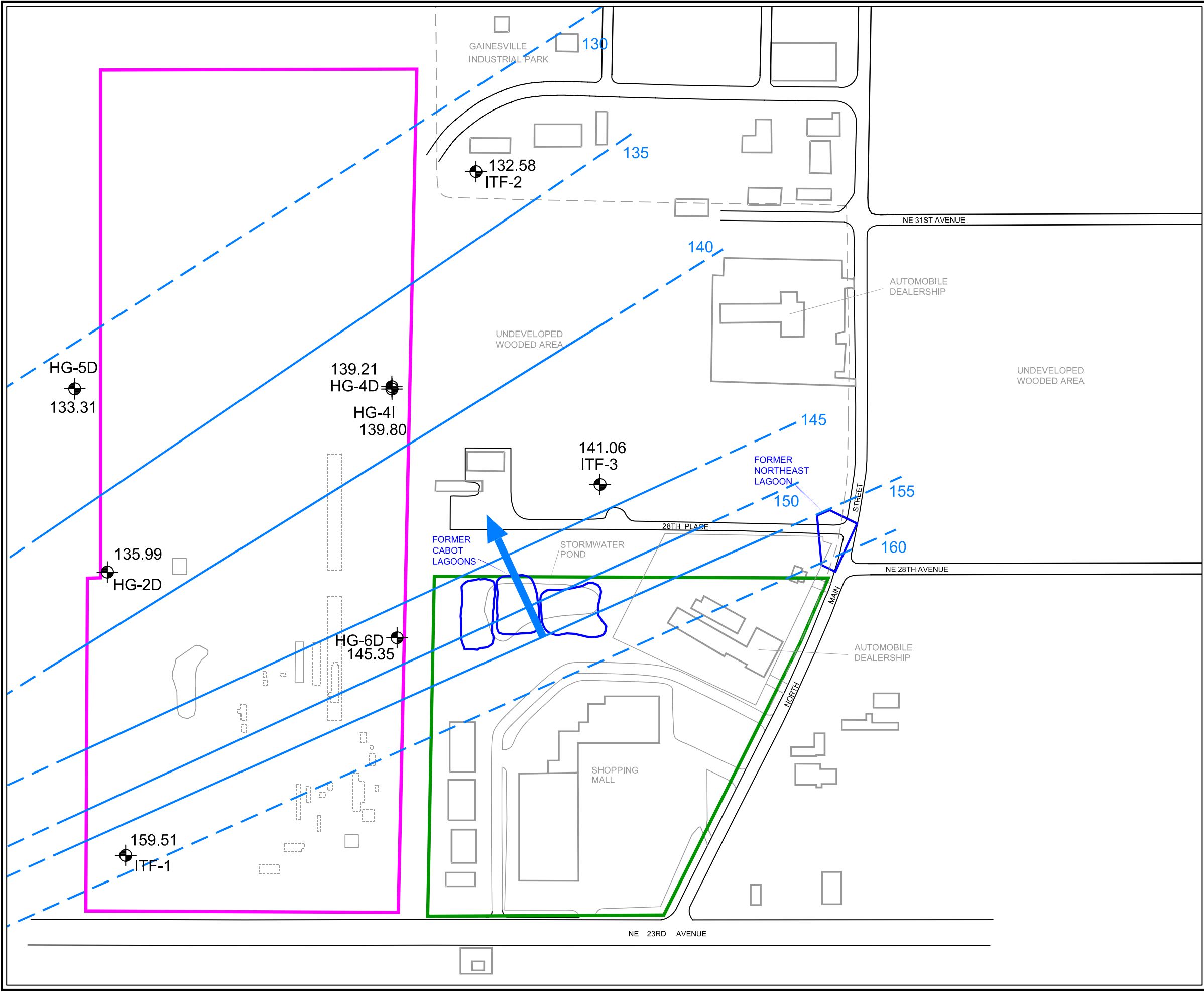
Gradient CORPORATION
20 UNIVERSITY ROAD • CAMBRIDGE, MA 02138 • (617) 395-5000

FIGURE 2-4
Groundwater Flow Direction
in Upper Hawthorn Formation
(TRC, 2003)

Cabot Carbon/Koppers Superfund Site
Gainesville, FL

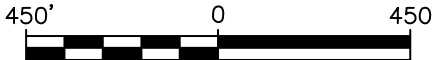
Drawing By:	JMP	Checked By:	MHS	Project No.:	204079
Date:	07/13/05	Date:	07/13/05	File:	basemap_w-features

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L E G E N D

- FORMER CABOT PROPERTY BOUNDARY
- KOPPERS PROPERTY BOUNDARY
- DRAINAGE DITCH
- CURRENT SITE FEATURES
- FORMER KOPPERS SITE FEATURES
- PRIMARY DIRECTION OF GROUNDWATER FLOW
- LOWER HAWTHORN GROUP POTENTIOMETRIC HEAD CONTOUR LINE (MEASURED JUNE, 2003)



MAP SOURCE: ALACHUA COUNTY LAND SURVEYORS, INC. (1992) AND WWL; GRADIENT, SOILBASE.DWG 9/9/96 PROJECT# 9204950 KJA; TRC, 2003

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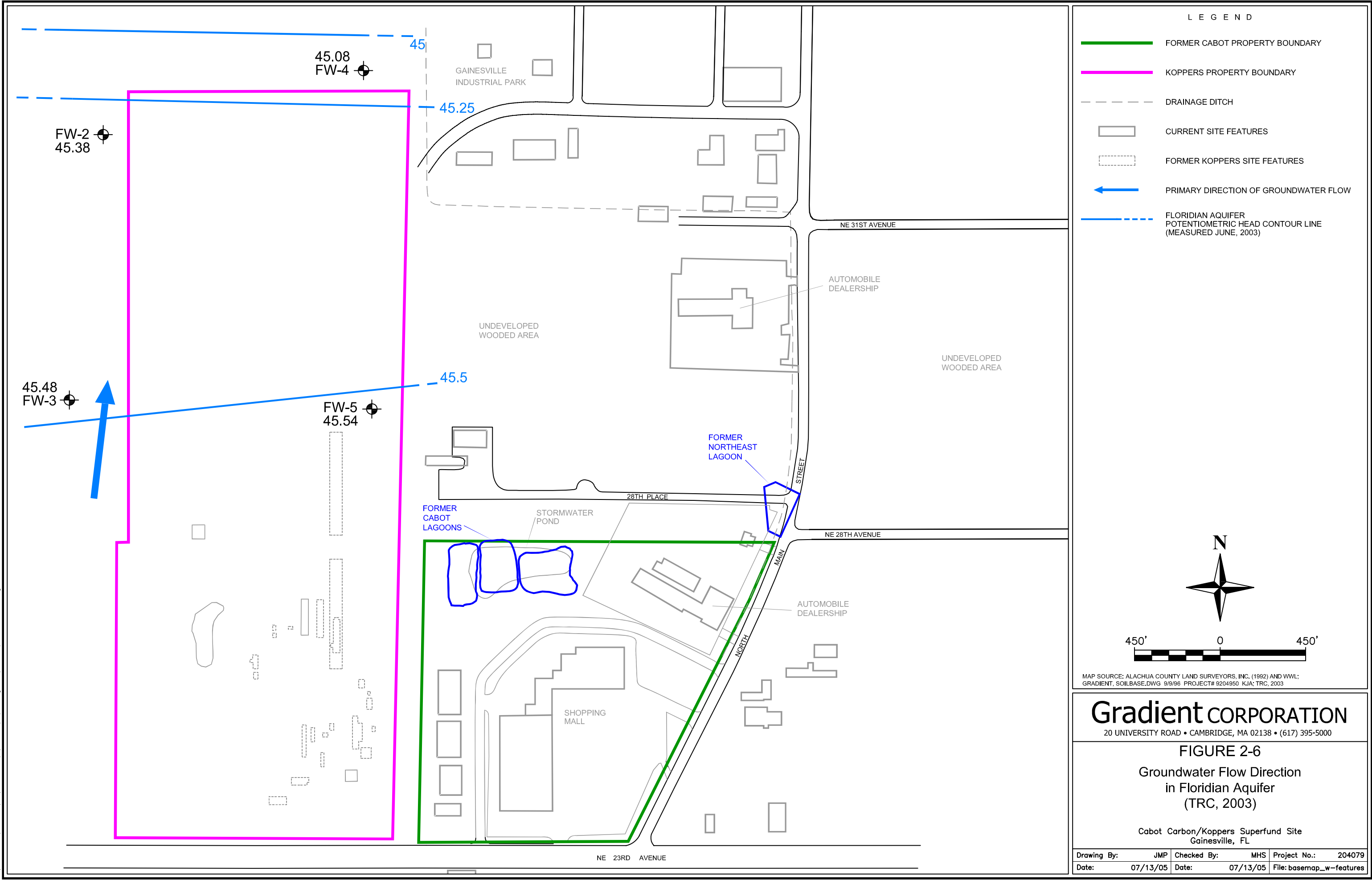
FIGURE 2-5

Groundwater Flow Direction
in Lower Hawthorn Formation
(TRC, 2003)

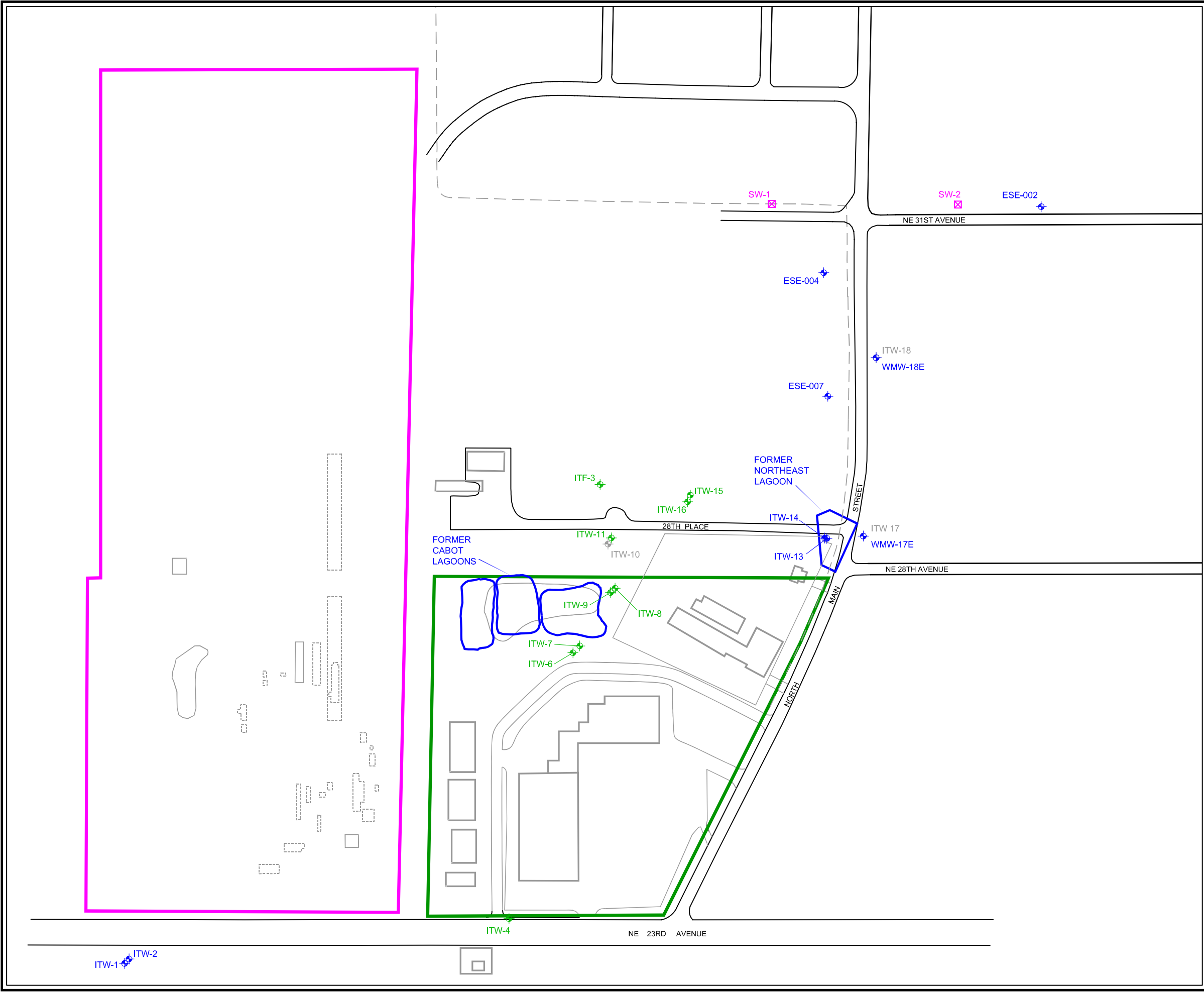
Cabot Carbon/Koppers Superfund Site
Gainesville, FL

Drawing By:	JMP	Checked By:	MHS	Project No.:	204079
Date:	07/13/05	Date:	07/13/05	File:	basemap_w-features

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L E G E N D

- FORMER CABOT PROPERTY BOUNDARY
- KOPPERS PROPERTY BOUNDARY
- DRAINAGE DITCH
- CURRENT SITE FEATURES
- ITW-2
WELLS ROUTINELY MONITORED
- ITW-6
ADDITIONAL WELLS SAMPLED IN EXPANDED MONITORING EVENT IN MARCH 2005
- ITW-10
ABANDONED WELLS
- SW-2
SURFACE WATER SAMPLE LOCATIONS

MAP SOURCE: ALACHUA COUNTY LAND SURVEYORS, INC. (1992) AND WWL;
GRADIENT, SOILBASE.DWG 9/9/96 PROJECT# 9204950 KJA

Gradient CORPORATION

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FIGURE 4-1

Monitoring Wells Included in March 2005 Expanded Groundwater Monitoring Program

Cabot Carbon/Koppers Superfund Site
Gainesville, FL

Drawing By:	JMP	Checked By:	MHS	Project No.:	204079
Date:	07/12/05	Date:	07/12/05	File:	basemap_w-features

Attachment B
Ratio of Horizontal to Vertical Groundwater Flux

Attachment B
Horizontal/Vertical Flux Analysis
Cabot Carbon/Koppers Superfund Site
Gainesville, Florida

Horizontal Flux

Hydraulic Conductivity K_h (cm/s)	Horizontal Flux q_h (cm/s)¹	Source of K_h Value
3.50E-03	3.85E-05	Jones Edmunds & Associates, Inc., February 2006
7.40E-03	8.14E-05	Waterloo Hydrogeologic, Inc., June 2005

Range of q_h : 3.85E-05 to 8.14E-05

Note: 1) Horizontal flux calculated utilizing a measured hydraulic gradient value of 1.1E-02 for the northern portion of Cabot property (Weston, November 2005).

Vertical Flux

Hydraulic Conductivity K_v (cm/s)	Vertical Flux q_v (cm/s)²	Source of K_v Value
1.00E-08	5.00E-09	IT, 1987
2.00E-06	1.00E-06	IT, 1987

Range of q_v : 5.0E-09 to 1.00E-06

Note: 2) Vertical flux calculated using a vertical hydraulic gradient value of 0.5 (Jones Edmunds & Associates, Inc., February 2006).

Range of Ratios of $q_h:q_v$: 40 to 16000

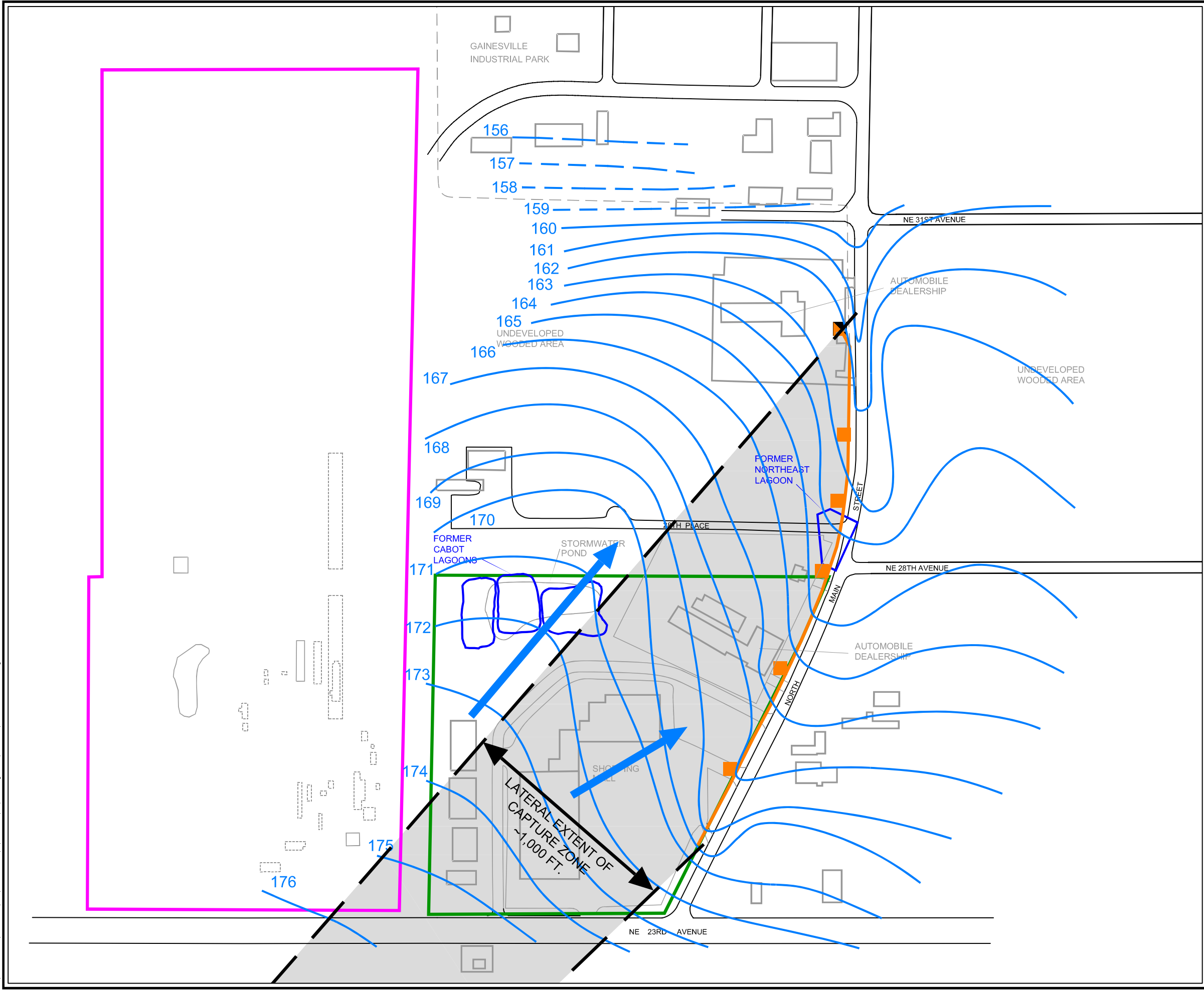
Attachment C
Vertical Extent of Groundwater
Inceptor Trench Calculation

Table C-1
Depth of Vertical Capture Zone of
Groundwater Interceptor Trench

Parameter		Value	Units	Source
Average extraction rate of groundwater interceptor trench (approx. half a billion gallons of water extracted in 20 years)	Q	9156	ft ³ /d	Gradient, 2005
Surficial aquifer hydraulic conductivity	K	21	ft./d	Waterloo Hydrogeologic, Inc., June 2005
Surficial aquifer hydraulic gradient	i	1.10E-02		Weston, November 2005
Width of surficial aquifer intercepted by trench	L	1000	ft.	Figure C-1

$$\begin{aligned}
 \text{Thickness of surficial aquifer intercepted by trench} &= Q/(K*i*L) \\
 &= 40 \text{ ft.}
 \end{aligned}$$

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LEGEND

- FORMER CABOT PROPERTY BOUNDARY
- KOPPERS PROPERTY BOUNDARY
- DRAINAGE DITCH
- CURRENT SITE FEATURES
- FORMER KOPPERS SITE FEATURES
- GROUNDWATER INTERCEPTOR TRENCH
- PRIMARY DIRECTION OF GROUNDWATER FLOW
- SURFICIAL AQUIFER POTENTIOMETRIC HEAD CONTOUR LINE (MEASURED JUNE, 2004)

MAP SOURCE: ALACHUA COUNTY LAND SURVEYORS, INC., (1992) AND WWL; GRADIENT, SOILBASE.DWG 9/9/96 PROJECT# 9204950 KJA; TRC, 2003

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FIGURE C-1
Lateral Extent of Capture Zone of Groundwater Interceptor Trench in Surficial Aquifer (Weston, 2004)

Cabot Carbon/Koppers Superfund Site
Gainesville, FL

Drawing By:	JJC	Checked By:	MHS	Project No.:	204079
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