

## Comment on FTS CGMSAP dated Sept 18, 2009

GRU

February 12, 2010

### General Comment

This document describes our recommended revisions to the CGMSAP dated September 18, 2009. Our recommendations relate to analytical reporting limits, analytes, groundwater elevation monitoring, sampling frequency, and sampling locations to address specific issues in the Surficial aquifer, Hawthorn Group sediments, and Floridan Aquifer. In addition to the following specific recommendations, we recommend that all groundwater monitoring wells shown on Figure 1-4 of the August 2009 Feasibility Study be sampled at least once every two years, in order to use the existing groundwater monitoring network at the site to the greatest extent possible for evaluating regulatory compliance and contaminant fate and transport at and near the site.

GRU anticipates that this CGMSAP will be revised in the near future to reflect additional monitoring wells requested in FDEP comments to the FS dated January 22, 2010 (Comment #5) and GRU's 4b (this document).

### Original DNAPL Team / GRU Issues Unresolved in Sept 18, 2009 CGMSAP

#### 1) Chemical Analyses

- a) Analytical reporting limits.

*GRU requested that future analyses meet the reporting limits achieved in analyses performed during 2006 and 2007. The Method Reporting Limits proposed in the original CGMSAP proposal were unacceptable. Those proposed in the September 18, 2009 version are improved. GRU presumes that the method detection limit ("MDL") for the analyses will be about 5-fold lower than the MRL and that detections between the MDL and MRL will be reported with an appropriate "J" flag indicating an estimated value. If this is the case, GRU considers the proposed MRLs to be generally acceptable.*

However, GRU remains puzzled why the MDLs achieved previously in 2006 and 2007 cannot be maintained for future monitoring. For example, acenaphthene is a Koppers-related contaminant that has been a key indicator of groundwater contaminant migration in the Floridan Aquifer at the northwest corner of the site. FW-22B has shown the highest concentrations of acenaphthene in this area. During 2003 through 2007, acenaphthene was detected also with relative consistency in adjacent wells FW-2, FW-11B-z1, FW-23B, and FW-24B, as further indication of groundwater impacts from the Koppers site in this area. However, these detections were evident the when the MDL was about 0.4 µg/L. After 2007, the MDL for acenaphthene increased to about 1.2 µg/L (3-fold higher) and detections in FW-23B and FW-24B became less frequent. GRU considers that acenaphthene concentrations, in particular, provide a useful “early warning” of Koppers-related contaminant migration in groundwater that will be lost with the use of higher MDLs (and MRLs). **Beazer previously reported Arsenic values of 0.3 ug/L and less and this reporting limit should be achieved in future analyses.**

b) List of Analytes

***The list of organic analytes should be the same for each aquifer. Specifically: 4-Methylphenol, 3&4-Methylphenol, Anthracene, and Pentachlorophenol should be analyzed and reported for all Surficial, Hawthorn, and Floridan groundwater samples. Arsenic should be included in analyses of the HG and FLA groundwater sampled for all wells – not just the Surficial aquifer.***

**2) Floridan Aquifer**

- a) Frequency and locations for groundwater elevation monitoring in FLA. ***Frequency of monitoring groundwater elevations (“GWE”) is still not specified in the CGMSAP. The frequency is insufficient if groundwater levels will only be monitored when wells are sampled semi-annually or annually. GWE should be monitored quarterly at a minimum to assess seasonal changes. Much more frequent monitoring will be required to evaluate the performance of Floridan extraction systems. All single-screen wells (FW-2 through FW-9) must be retained for monitoring of GWE; otherwise, it will not be possible to draw potentiometric maps for the Koppers site. FTS does not rely now on GWE data from the multi-port wells to construct potentiometric maps.***

b) Frequency and locations for groundwater chemistry monitoring in FLA. ***Perimeter multi-port wells FW-11B, FW-23B and FW-24B - and FW-2 (single screen) - should be monitored more frequently than annually. These wells are located near the northwest corner of the site where Koppers-related contaminants exceed GCTLs at FW-22B. Koppers-related contaminants have been already detected in these other wells and they should be used to monitor potential off-site migration in this area. FW-11B should be monitored semiannually. The CGMSAP should specify Quarterly sampling for FW-22B, FW-23B, FW-24B, FW-28B, and FW-2 (the wells closest to FW-22B and MW31BE). A separate work plan should be submitted for testing, operation, and monitoring the effect of proposed groundwater extraction at FW-31BE. (Comment 2b applies to all zones in the cited Floridan multiport wells.)***

c) Additional FLA wells at northern property boundary.

*Additional wells have been proposed in other documents from Beazer.*

d) Additional FLA wells in site interior.

*Additional wells have been proposed in other documents from Beazer.*

e) Status of FW-3 and FW-6.

***Koppers-related contaminants have been detected at the western property boundary in FW-3 in the past. FW-3 should be included in the CGMSAP and should be sampled annually. FW-6 should be retained in the CGMSAP and sampled semi-annually after the IRM ceases.***

### 3) Hawthorn Group Monitoring

a) Frequency and locations for groundwater elevation monitoring in HG.

***Our comment regarding the frequency of monitoring GWE in the Floridan applies to the HG also.***

b) Frequency and locations for groundwater chemistry monitoring in HG.

*Now acceptable for perimeter and off-site wells.*

c) Monitoring of source chemistry.

***Interior HG wells (HG-10S, 10D, 12S, 12D, 15S, 16S, 16D) should be sampled annually to define the “source concentrations” in different areas of the site that may be***

*migrating off-site in the HG or downward into the FLA. (GRU continues to believe it is important for the on-going assessment of the migration of dissolved contaminants in the Hawthorn units and the Floridan aquifer, that there be regular sampling and chemical testing of “contact water” from the Hawthorn wells that contain DNAPL. Such wells have been tested only once or twice since 2004. Dissolved contaminants emitted from such DNAPL zones migrate off-site within the Hawthorn units and the Floridan. Interpretation of the origins and attenuation of the dissolved-phase contamination requires an understanding of the magnitudes and relative proportions (i.e. ratios) of the various contaminants (VOCs, SVOCs and phenols) emitted from the source zones. We recommend that there be routine testing of “contact water” from the DNAPL wells on an annual basis.)*

#### **4) Surficial Aquifer**

- a) Frequency and locations for groundwater elevation monitoring in SA.

***Our comment regarding the frequency of monitoring GWE in the Floridan applies to the HG also. Monitoring of GWE should be no less than quarterly to assess seasonal changes and performance of extraction systems.***

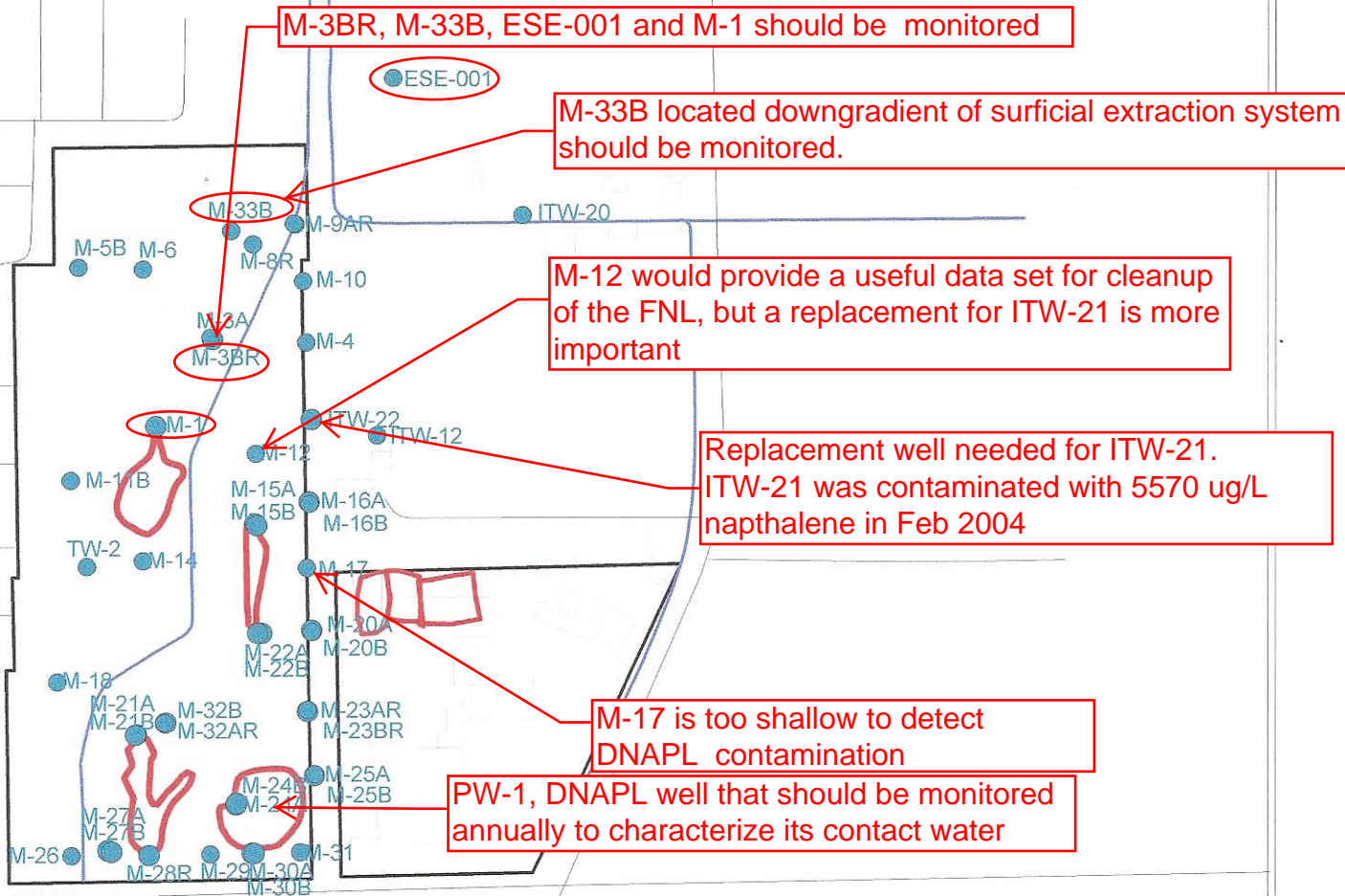
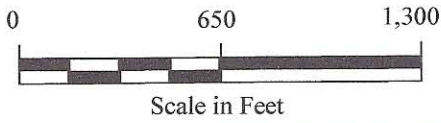
- b) Frequency and locations for groundwater chemistry monitoring in SA.

*GRU recommended in our comments dated December 3, 2008 that the CGMSAP include regular monitoring of five additional wells are M-1 [FNL], M-3BR [NE of FNL], M-12 [Former Drip Track], ESE-001 [off-site to the NE] and a replacement well for ITW-21 (ITW-21R), and PW-1. **Please see attached figure that shows the locations of those five MWs.** We see no reason to monitor ITW-12 and -22, once ITW-21R has been installed. The September 18, 2009 version of the CGMSAP does not include these wells. We believe that wells (ITW-12, ITW-21R), and M-33B should be added to the list. All surficial wells that are monitored should be sampled semiannually.*

- c) Monitoring of perimeter extraction wells and trenches in SA. ***Current CGMSAP still does not include long-term monitoring of GWE or chemistry in perimeter extraction wells and nearby monitoring wells or trenches and monitoring wells near them. This should be conducted on a frequent interval so performance of the extraction systems can be evaluated.***

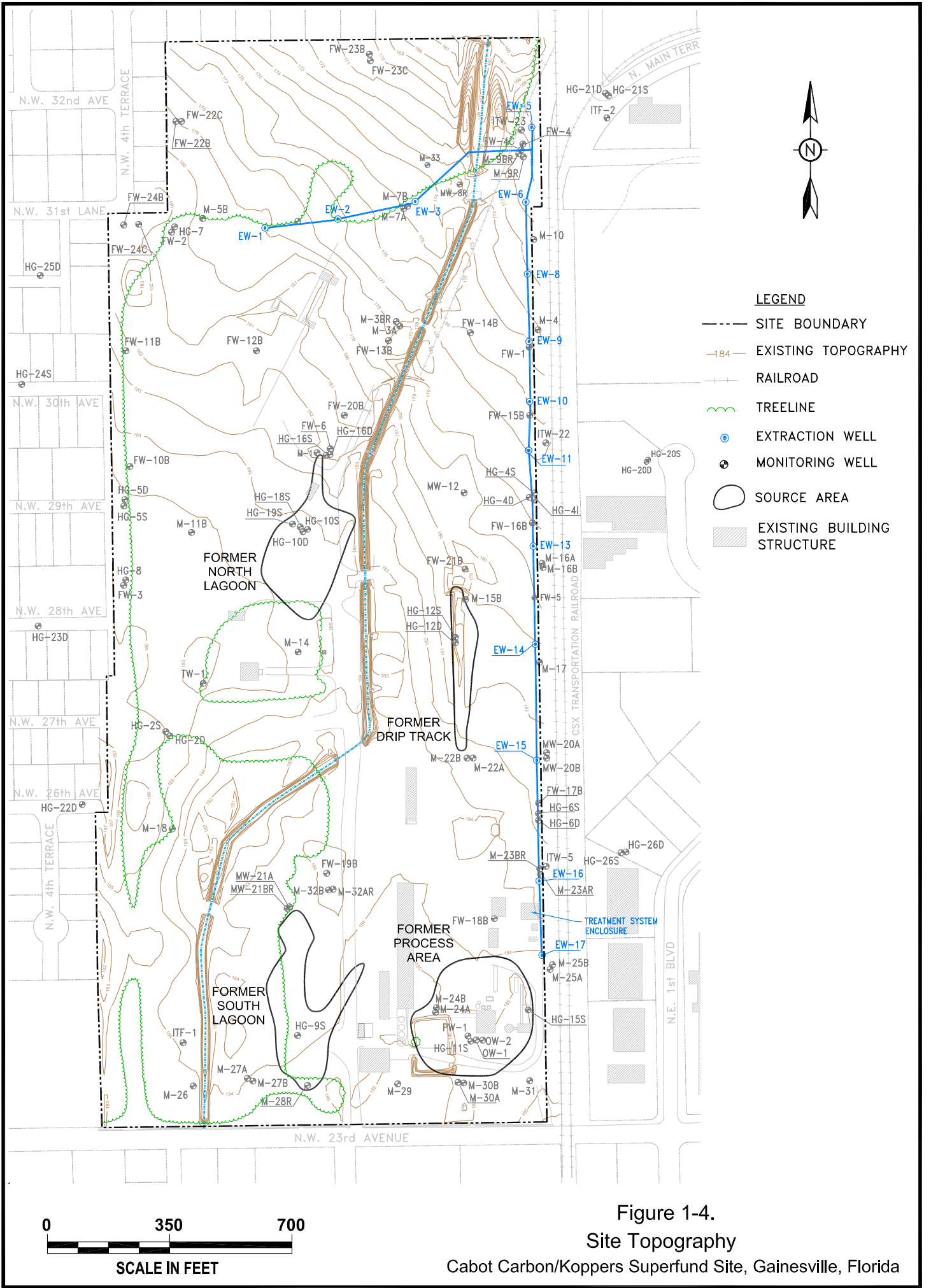
***Explanation***

- M-1 Surficial Well--Redevelop and Sample
- ◆ Extraction Well--Redevelop



**Figure 1. Locations of Surficial Aquifer wells proposed for sampling and redevelopment at the Cabot Carbon/Koppers Superfund Site.**





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