

May 1, 2009

Mr. Scott Miller  
U.S. Environmental Protection Agency, Region IV  
4WD-SRTMB  
61 Forsyth Street, S.W.  
Atlanta, Georgia 30303-3104

**VIA EMAIL**

Subject: Responses to Comments on the *Upper Floridan Aquifer Interim Remedial Measure Work Plan* for the Cabot Carbon/Koppers Superfund Site, Gainesville, Florida

Dear Mr. Miller:

On behalf of Beazer East, Inc. (Beazer), we are providing responses to your March 30, 2009 comments on the December 28, 2008 *Upper Floridan Aquifer Interim Remedial Measure Work Plan*. The comments are repeated below, along with our responses.

### **Responses to Comments**

1. *All groundwater samples should be analyzed for volatiles, semi-volatiles, and arsenic using methods able to obtain the analytical detection limits achieved in previous groundwater testing at the Koppers Site from 2004 to 2007.*

Response:

Except as noted in the response to comment #6, Beazer agrees to analyze all groundwater samples associated with this Interim Remedial Measure (IRM) for dissolved arsenic (by SW846-6020), and the following volatile and semi-volatile organic compounds (VOCs and SVOCs):

- VOCs by SW846-8260 – benzene, ethylbenzene, toluene, and xylene (total).
- SVOCs by SW846-8270C – 2,4-dimethylphenol, 2-methylnaphthalene, 2-methylphenol, 3/4-methylphenol, acenaphthene, acenaphthylene, anthracene, carbazole, dibenzofuran, fluoranthene, fluorene, naphthalene, pentachlorophenol, phenanthrene, phenol, pyrene.

The reporting limits will be the laboratory practical quantitation limits (PQLs) which are, in almost all cases, lower than Florida default GCTLs. For the exceptions – carbazole and pentachlorophenol – estimated concentrations below the PQLs, but above the GCTLs will be reported and appropriately flagged.

2. *EPA does not agree with the language in the first paragraph of Section 2.6 regarding cessation of monitoring at FW-12B, FW-16B, and FW-20B. We suggest that rather than specify any particular numeric criterion for stopping monitoring (or changing the monitoring frequency, zones sampled, et cetera), the IRM plan needs to indicate that quarterly monitoring data will continue to be obtained after the first quarterly sampling until the regulatory agencies and Beazer agree that the data being collected allow for a comprehensive assessment of the effects of the IRM on ground water at those monitoring points. Furthermore, the plan should then state that at that time, modifications to the monitoring plan or additional remedial actions would be considered, as appropriate.*

Response:

Beazer will continue monitoring these three wells quarterly during IRM operation until the EPA and Beazer agree that less frequent monitoring would be appropriate. The changes to the effectiveness monitoring plan would be specified in that agreement. Additional remedial actions should be (and are being) considered as part of the broader final remedy selection and implementation program.

- 3. The FW-21B sampling proposed in the second paragraph of Section 2.6 is not entirely acceptable. The IRM Work Plan proposes to only sample the upper two FW-21B monitoring zones. While these zones have historically been the most contaminated of the four zones, the deeper two monitoring zones have also periodically shown contamination. If the contamination detected at FW-21B is only partially a result of leakage around that well, then it is conceivable that post-pumping monitoring of the upper zones will indicate water-quality improvement there, even though the contribution from other sources of leakage has not been addressed by the IRM. Any effects of leakage around the well casing are expected to diminish with greater depth, and thus persistence of contamination in the deeper monitoring zones would more clearly indicate the source of Floridan aquifer contamination is from some other area(s) of vertical contaminant leakage.*

*The plan proposes to install a plug between the two upper and two lower FW-21B monitoring zones. The rationale for installing the plug needs to be included in the Work Plan. Additionally, monitoring of the deeper zones should be considered for the periods when pumping is stopped to monitor the upper two FW-21B zones. This monitoring might be accomplished by removing the plug, and either monitoring all four zones without any hydraulic isolation between the zones or, if necessary, installing a temporary packer or seal to isolate the well between zone 2 and zone 3 with provisions made for sampling zones 3 and 4 while the temporary seal is in place. This plan, or some variant on this plan, entails some additional effort, but may be the best way to determine if there is any alternative pathway for contaminant leakage into the upper Floridan aquifer in the vicinity of FW-21B.*

*The Section 2.6 text should also note the possibility of further sampling of the FW- 21B monitoring zones beyond the second sampling event (after the sampling that the Work Plan proposes after six months of IRM operation).*

Response:

The primary objective for installing the bridge plug below the second screen of FW-21B is to maximize withdrawal from the upper zones with higher constituent concentrations and minimize the potential for inducing impacted groundwater flow to deeper zones within the Floridan Aquifer. Since September 2007, the deeper two zones have only once had measured concentrations of any constituent above GCTLs and all past exceedances in these two zones have been relatively minor.

Beazer does not believe it will be possible to obtain meaningful concentration data from the two lower screened zones of FW-21B during IRM operation. Removing the plug will lead to inter-well flow between screen intervals during non-pumping periods. In addition, it is not technically practical to both isolate the lower screen intervals and to collect groundwater samples from these lower zones.

Additional low-flow sampling adjacent to the upper two screens of FW-21B will be conducted if requested by EPA.

- 4. The IRM Work Plan needs to include a proposal for monitoring the discharge rate for the two extraction wells. Although the Work Plan proposes that each well will be pumped at a 2 gallon per minute rate, the actual flow rates of the pumping wells need to be established. I note that a 2 gallon per minute rate is apparently considered to be a maximum rate needed to contain potential leakage around the two wells (reference Work Plan Section 2.1). This approximate flow rate needs to be established and confirmed through documentation. If this rate is established through flow monitoring*

*as the actual average approximate value for containment of any leakage around FW-6 and FW-21B, EPA would probably not conclude that stable or continued unacceptable contaminant concentrations observed at key Floridan aquifer monitoring points after IRM implementation are a result of an insufficient IRM pumping rate that is not capturing all of the leakage around the suspect monitoring wells. Instead, EPA will probably conclude that the persistence in concentrations is a result of contaminant leakage into the Floridan aquifer from some alternative pathways.*

Response:

The actual discharge rate from each of the two extraction wells will be monitored and reported. Beazer anticipates that the EPA will remain open to the data analysis and technically defensible conceptual models for constituent transport that may result from the proposed IRM.

- 5. Groundwater samples should be collected from HG-16D near FW-6 and from HG-12D near FW - 21B before pumping each IRM well. Additional samples from the noted Hawthorn wells should be collected after the start of IRM pumping on the first day of pumping, weekly for the first month, monthly for 2 months, and then quarterly or at the end of the test(s) if the test ends before a scheduled sampling event. Sampling the Hawthorn groundwater is essential to compare the chemical composition and any temporal changes to the groundwater recovered from FW -6 and FW-21B.*

Response:

Beazer agrees to sample these Lower Hawthorn wells as part of the IRM. However, the proposed withdrawals from the Upper Floridan Aquifer will very likely not affect the chemistry of the Lower Hawthorn. Therefore, it is not necessary to sample these wells often. Beazer proposes to sample these wells before the commencement of pumping, after 2 weeks of pumping, and quarterly thereafter during IRM operation. Beazer will analyze the samples as stated in the response to comment #1.

- 6. Groundwater samples should be collected from FW-6 and FW-21B (multi-level removed) immediately before pumping starts. Samples should be collected hourly for the first four hours of the testes) and then daily for the first week, weekly for the next month, monthly for 2 months, and then quarterly - or at the end of the test(s) if the test ends before a scheduled sampling event. Because the travel time to the Floridan is hypothesized to be very short in the Beazer Independent Groundwater Panel Report, initial groundwater samples should be collected hourly for the first four hours of the test and then daily for the first week. Groundwater samples should be collected from surrounding Floridan wells FW-12B, FW-16B, and FW-20B monthly for the first three months and then quarterly thereafter.*

Response:

Beazer agrees to sample these wells at the times and frequency proposed in this comment. Beazer proposes to analyze the samples as stated in the response to comment #1 except that the samples collected after 2 hours, 3 hours, 2 days, 3, days, 4 days, 5 days, and 6 days will be analyzed only for SVOCs. Given the past analytical results, it is highly likely that the SVOC data (particularly naphthalene) will be most important for effectiveness monitoring and establishment of trends.

- 7. The Workplan does not include a discussion of what criteria will be used to interpret data obtained from the IRM. As you are aware, there is extensive debate as to the route that groundwater contamination took to make its way into the Floridan Aquifer. EPA would like to establish in advance criteria that Beazer will use to answer this specific question.*

Response:

Beazer's stated purpose for this IRM is to hydraulically control constituents present in the Upper Floridan Aquifer. If the IRM operation and monitoring also yields information useful to establish the route by which constituents entered the Upper Floridan Aquifer, then Beazer will evaluate that

information by appropriate scientific methods at that time. Beazer has not already identified what criteria may be appropriate for such an analysis and does not believe it is necessary to do so before any data are obtained.

8. *Tracer tests should be conducted at the existing lower Hawthorn monitoring wells closest to wells FW-6 and FW-21B in conjunction with more rigorous groundwater sampling during IRM implementation. The lower Hawthorn wells where the tracer should be added are HG-16D near FW-6 and HG-12D (the closest well to FW-21B). The intention of the tests is to further evaluate the hypothesis that rapid movement of ground water around the two Floridan aquifer monitoring wells is responsible for significant movement of contamination from the lower Hawthorn into the upper Floridan aquifer. Details of the tests can be further discussed later, but because of the proximity differences between the Hawthorn and Floridan wells at the two test areas, the test at FW-21B is expected to differ from the test at FW-6.*

Response:

Beazer requests further technical discussion of the merits and methodologies for these requested tracer tests after approval of IRM implementation. If a technically defensible approach and analysis for the tracer tests can be developed and agreed upon, then a separate workplan will be developed to perform these tests. Implementation of any required tracer tests can occur at any time after the IRM is in operation. It is not necessary (or advisable) to expedite the implementation of tracer tests as part of extraction system startup.

### **Conclusion**

Beazer appreciates the thoughtful review of this workplan by EPA and others. Implementation of the IRM will be useful in limiting the migration potential for Site-related constituents in the Upper Floridan Aquifer. Beazer believes it is prudent to move forward with implementation of this workplan, and respectfully requests USEPA approval of the workplan, as amended by the responses to comments above. A prompt approval would be advantageous since Beazer currently has construction contractors on Site.

Sincerely,



Gregory W. Council, P.E.  
Principal Engineer

cc: Bill O'Steen, USEPA  
Kelsey Helton, FDEP  
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