

**From:** [jim\\_mueller@adventusgroup.com](mailto:jim_mueller@adventusgroup.com)  
**To:** "Helton, Kelsey"; "Brouman, Mitch (Pittsburgh) NA"; "John Valkenburg"; "Gregory W. Council "  
**Cc:** "Cowdery, Robert"; [Miller.Scott@epamail.epa.gov](mailto:Miller.Scott@epamail.epa.gov); "McCarty, Cathleen"; John Mousa; "Slenska, Mike (Pittsburgh) NA"  
**Subject:** UPDATE: Koppers- ISBS Pilot observations - PI respond  
**Date:** Thursday, March 13, 2008 2:59:16 PM  
**Attachments:** [Draft Report Figures.pdf](#)

---

Hi Kelsey et al. -

Sorry for the delay in getting you our report, but it remains under internal review. We understand and appreciate your interest in being informed about our sampling plans. So, in the meantime we are providing you with this summary of our groundwater sampling plans.

We will be in the field next week (est. March 18-20, 2008) to collect the Round 1 soil cores. At this same time, groundwater sampling will continue to be conducted at M-1, M-14 and ZOD-1 in accordance with the final variance requirements. Thereafter, groundwater sampling from these same wells will be conducted quarterly for one year from the time of the injections.

In addition to the Variance requirements summarized above, we will also monitor wells UHG-MW-2S and UHG-MW-16S for the same variance parameters and analytes as for M-1, M-14 and ZOD-1 (**Figures attached**). This is due to the observed presence of ISBS reagents in UHG-EW-01 (as indicated by purple coloration). These additional monitoring data will serve to document that the impacts to the Upper Hawthorne Group are spatially limited. Although UHG-EW-01 was purple, it is important to note that other UHG wells HG-10S, HG-10D, HG-18S and HG-19S (which are also in very close proximity to the ISBS test area) have not shown any signs of purple impact.

I believe that you will find Beazer's plan to be proactive and responsive. However, please let me know if there are any comments questions or concerns.

Thanks.

---

**Jim Mueller**, Ph.D.  
Director Remedial Solutions & Strategies  
2871 W. Forest Rd, Suite 2, Freeport IL 61032  
[Jim.Mueller@AdventusGroup.com](mailto:Jim.Mueller@AdventusGroup.com)  
Toll-free: 888.295.8661  
Direct: (+01) 815.235.3503  
Cell (+01) 630.309.1175  
Fax: (+01) 815.235.3506  
[www.AdventusGroup.com](http://www.AdventusGroup.com)  
[www.Adventus.eu](http://www.Adventus.eu)  
[www.ETI.ca](http://www.ETI.ca)

"North American Environmental Remediation Product Innovation of the Year" from Frost & Sullivan, May 2007

"Innovation Award for Technology 2007" from ICU, May 2007

"2007 Business Achievement Award for Remediation Technology," by the Environmental Business Journal.

-----Original Message-----

**From:** Helton, Kelsey [mailto:[Kelsey.Helton@dep.state.fl.us](mailto:Kelsey.Helton@dep.state.fl.us)]

**Sent:** Monday, March 10, 2008 10:51 AM

**To:** jim\_mueller@adventusgroup.com; Brouman, Mitch (Pittsburgh) NA; John Valkenburg

**Cc:** Cowdery, Robert; Miller.Scott@epamail.epa.gov; McCarty, Cathleen; JJM@alachua.fl.us; Slenska, Mike (Pittsburgh) NA; Helton, Kelsey  
**Subject:** RE: Koppers- ISBS Pilot observations - PI respond

Jim- Thanks for your response. Would appreciate receiving report in time to discuss any responses or monitoring needs timely before move for next UIC monitoring event.  
Looking forward to report. Thanks- Kelsey

---

**From:** jim mueller@adventusgroup.com [mailto:jim.mueller@adventusgroup.com]  
**Sent:** Thursday, March 06, 2008 12:44 PM  
**To:** Helton, Kelsey; 'Brouman, Mitch (Pittsburgh) NA'; 'John Valkenburg'  
**Cc:** Cowdery, Robert; Miller.Scott@epamail.epa.gov; McCarty, Cathleen; JJM@alachua.fl.us; 'Slenska, Mike (Pittsburgh) NA'  
**Subject:** RE: Koppers- ISBS Pilot observations - PI respond  
**Importance:** High

Hi Kelsey – I am sorry for not having replied sooner. Please be advised that our field report is undergoing internal review and it will be submitted to everyone prior to the round 1 sampling event that is scheduled for the week of March 17, 2008. In this report we will address the issues below and we will outline any additional sampling that we may be conducted in order to address your comments below - ok?

Also – I can confirm that at this time there is no plan for subsequent injections. Any future additions are clearly subject to the outcome of the pilot test, and we would surely solicit your review prior to such an effort.

Thanks again for your time and efforts.

---

**Jim Mueller**, Ph.D.  
Director Remedial Solutions & Strategies  
2871 W. Forest Rd, Suite 2, Freeport IL 61032  
[Jim.Mueller@AdventusGroup.com](mailto:Jim.Mueller@AdventusGroup.com)  
Toll-free: 888.295.8661  
Direct: (+01) 815.235.3503  
Cell (+01) 630.309.1175  
Fax: (+01) 815.235.3506  
[www.AdventusGroup.com](http://www.AdventusGroup.com)  
[www.Adventus.eu](http://www.Adventus.eu)  
[www.ETI.ca](http://www.ETI.ca)

"North American Environmental Remediation Product Innovation of the Year" from Frost & Sullivan, May 2007

"Innovation Award for Technology 2007" from ICU, May 2007

"2007 Business Achievement Award for Remediation Technology," by the Environmental Business Journal.

-----Original Message-----

**From:** Helton, Kelsey [mailto:Kelsey.Helton@dep.state.fl.us]  
**Sent:** Monday, February 25, 2008 3:49 PM  
**To:** Brouman, Mitch (Pittsburgh) NA  
**Cc:** Cowdery, Robert; Miller.Scott@epamail.epa.gov; McCarty, Cathleen; JJM@alachua.fl.us; Slenska, Mike (Pittsburgh) NA; jim mueller@adventusgroup.com; Helton, Kelsey  
**Subject:** RE: Koppers- ISBS Pilot observations - PI respond

Mitch- In the February 19, 2008 monthly Koppers site status call, Robin Halbourg with Alachua County mentioned that the purple color change caused by permanganate reactions was observed in groundwater, possibly from a Hawthorn Group monitoring well, being used as an observation well during the ISBS pilot. No one on the conference call was able to provide any specifics. This email is a followup to that issue.

While a color response of an injectant in groundwater does provide a good tracer, it also raises concerns regarding the possible vertical migration of the injected solution into the underlying aquifer, or aquitard. Migration of injectants with constituents exceeding groundwater standards across aquifers is not authorized by the site specific UIC variance issued for this pilot nor is it allowed by state or federal UIC rules. As such, DEP requests that Beazer provide a more detailed account of what was observed during the initial ISBS injection activities, any supporting groundwater analysis and a proposed monitoring scope to be initiated in the March 2008 sampling event- if not sooner- to ascertain the extent and magnitude of migration of the permanganate constituents into the Hawthorn. If subsequent injections are entertained, mechanisms to prevent such migration will need to be addressed prior to those injection activities.

Thank you for your continued responsiveness.

Kelsey Helton  
DEP- Bureau of Waste Cleanup  
Tallahassee, FL  
850-245-8969

---

**From:** jim.mueller@adventusgroup.com [mailto:jim.mueller@adventusgroup.com]  
**Sent:** Friday, February 08, 2008 1:00 PM  
**To:** Helton, Kelsey; 'Council, Greg'; 'Brouman, Mitch (Pittsburgh) NA'; nmisquitta@keyenvir.com  
**Cc:** Cowdery, Robert; Miller.Scott@epamail.epa.gov; 'John Valkenburg'; McCarty, Cathleen; JJM@alachua.fl.us; salisburyypm@koppers.com; 'Slenska, Mike (Pittsburgh) NA'  
**Subject:** RE: Koppers- UIC Variance and ISBS Pilot Work Plan - PI respond

Hi Kelsey – please see attached. Thanks.

---

**Jim Mueller**, Ph.D.  
Director Remedial Solutions & Strategies  
2871 W. Forest Rd, Suite 2, Freeport IL 61032  
[Jim.Mueller@AdventusGroup.com](mailto:Jim.Mueller@AdventusGroup.com)  
Toll-free: 888.295.8661  
Direct: (+01) 815.235.3503  
Cell (+01) 630.309.1175  
Fax: (+01) 815.235.3506  
[www.AdventusGroup.com](http://www.AdventusGroup.com)  
[www.Adventus.eu](http://www.Adventus.eu)  
[www.ETI.ca](http://www.ETI.ca)

"North American Environmental Remediation Product Innovation of the Year" from Frost & Sullivan, May 2007

"Innovation Award for Technology 2007" from ICU, May 2007

"2007 Business Achievement Award for Remediation Technology," by the Environmental Business Journal.

-----Original Message-----

**From:** Helton, Kelsey [mailto:Kelsey.Helton@dep.state.fl.us]  
**Sent:** Wednesday, January 30, 2008 12:34 PM  
**To:** Council, Greg; Brouman, Mitch (Pittsburgh) NA;  
jim.mueller@adventusgroup.com; nmisquitta@keyenvir.com  
**Cc:** Cowdery, Robert; Miller.Scott@epamail.epa.gov; Helton, Kelsey  
**Subject:** RE: Koppers- UIC Variance and ISBS Pilot Work Plan - PI respond

Beazer- I understand that the field activities for the ISBS pilot were to be initiated last week. Please acknowledge receipt of the UIC review comments below and indicate Beazer's intent on meeting the specified requirements. Thanks. I hope the pilot is going well and look forward to an update on your progress. –

Kelsey Helton  
DEP- Bureau of Waste Cleanup  
Hazardous Waste Cleanup Section  
850-245-8969

*The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on [this link to the DEP Customer Survey](#). Thank you in advance for completing the survey.*

---

**From:** Helton, Kelsey  
**Sent:** Saturday, January 12, 2008 4:41 PM  
**To:** 'Council, Greg'; 'Brouman, Mitch (Pittsburgh) NA';  
'jim.mueller@adventusgroup.com'; 'nmisquitta@keyenvir.com'  
**Cc:** Helton, Kelsey; Cowdery, Robert; McCarty, Cathleen;  
'Miller.Scott@epamail.epa.gov'  
**Subject:** FW: Koppers- UIC Variance and ISBS Pilot Work Plan

Mr. Brouman, Mr. Council, Mr. Misquitta, Mr. Mueller -

This email provides review comments from the DEP/ Bureau of Waste Cleanup/Hazardous Waste Cleanup Section (HWCS) on the proposed ISBS pilot study in the surficial aquifer at the Koppers Superfund site, Gainesville. As acknowledged in a previous email to EPA, while the administrative components of a variance or permit are exempt under

Superfund, demonstration that the substantive (technical) requirements of that variance have been met is necessary and not exempt. It's the role of the HWCS to review the proposed scope of work/design and UIC Memo Summary to ensure consistency and compliance with those substantive requirements. To this end, the HWCS PE and I have reviewed and discussed the attached documents as well as related submittals discussed below and consulted with the DEP- UIC Section. Please note that DEP- UIC has not finalized the site-specific variance, and there may be additional analytes or conditions substantive to compliance with the variance requirements; however, we anticipate that any necessary adjustments, beyond those identified below, can be incorporated to minimize delays or impacts to the project. And are making every attempt to finalized those requirements prior to the January 23, 2008, pilot mobe date. We appreciate Beazer's continued efforts to accommodate those adjustments.

The focus of HWCS review is on the proposed monitoring points, and frequency and scope of sampling and analysis to demonstrate compliance with substantive UIC rule and variance requirements. Briefly- based on initial DEP comments and subsequent response and revised petition, we anticipate that substantive Site-Specific Variance requirements will include the following. These requirements should be specifically incorporated into the previously submitted (September 27, 2007) Field Plan including Table 3 and figures and the (October 2, 2007) UIC Summary Memo -

- 1) 150' radius temporary Zone of Discharge (ZOD) extending downgradient from the injection area(s) where temporary exceedances of Primary and/or Secondary groundwater standards are allowed by UIC Variance or Rule.
- 2) For this proposed remedial pilot, Primary standard analytes must include sodium, , antimony, arsenic, beryllium, cadmium, chromium, lead, mercury, selenium, thallium.
- 3) For this proposed remedial pilot, Secondary standard analytes must include aluminum, chloride, color, iron, manganese, pH and total dissolved solids (TDS).
- 4) Pre-Injection background and baseline sampling of groundwater monitoring wells prior to ISBS injection w/ analysis for the above 10 Primary and 7 Secondary standard analytes. Monitoring wells should include MW-14 (upgradient background), the 2 proposed MWs in the ISBS test areas, existing MW-1 ( approx 250' downgradient) and a surficial aquifer MW to be installed & located at the ZOD point of compliance, approx 150' downgradient of the test areas, per the variance application. Please note, the proposed existing monitoring well HG-10S is not sufficient as a compliance well since it is not screened in the surficial aquifer where the temporary ZOD applies. However, we are not opposed to inclusion

of HG-10S in the monitoring program if it may provide some information as to potential vertical communication into the Hawthorn Group.

- 5) Post-Injection Monitoring- UIC compliance monitoring should include sampling of the above monitoring wells (excluding MW-14) approx the 16 weeks after injections (approx 3 months) as proposed in the Field Plan as well as Quarterly thereafter (3 events), corresponding to the 1 year post- injection duration of the temporary ZOD proposed in the variance application. The monitoring frequency may be adjusted if subsequent injections are proposed. Please correct Section 3.3.4 of Field Plan to reflect above monitoring wells and that groundwater sample analyses will include the Primary and Secondary standard analytes identified above and monitoring will continue until those standards or background are met.
- 6) Please note that in the UIC memo, there is incorrect reference to an ISBS pilot test in the Upper Hawthorn Group, rather than the surficial aquifer at the site. This should be corrected.
- 7) Note- on Table 3 of Field Plan, soil/water analytical method is identified as EPA Method 8270 while in the text Section 3.3.4, post treatment monitoring, Method 8260 is referenced.

Thank you in advance for your responsiveness to the above comments. If you have any questions, I can be reached at 850-245-8969 or the HWCS PE, Rob Cowdery can be reached at 850-245-8964. Next week (1/13), I am in Texas part of time and then Delray Bch, FL at a soil dig, but you can reach me on my cell at 850-567-6234, if necessary.

Thank you-

Kelsey Helton  
DEP- Bureau of Waste Cleanup  
Hazardous Waste Cleanup Section  
850-245-8969