



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

Ref: 4WD-SRB

APR 14 2011

Via Delivery as Email-attachment to Prashant.gupta@honeywell.com and U.S. Mail

Mr. Prashant K. Gupta  
Honeywell, Inc.  
4101 Bermuda Hundred Road  
Chester, VA 23836

Re: Comments on Draft Work Plan (Work Plan) for Dioxin/Furan Characterization: LCP  
Chemical Site (Site), Brunswick, Glynn County, GA

Dear Mr. Gupta:

Below are comments jointly developed by EPA and the Georgia Environmental Protection Department (GA EPD) for the above-referenced draft Work Plan, dated March 16, 2011, which Honeywell International, Inc. (Honeywell) voluntarily submitted to the Environmental Protection Agency (EPA) for review.

General Comment

The terms "sampling unit" and "decision unit" are not adequately defined in the text. This is especially important since these terms are often used interchangeably.

No sampling Data Quality Objectives (DQOs) were included in the Work Plan. Targeted levels of precision or confidence for the mean concentrations and other statistical parameters should be identified in the systematic planning process. The degree of precision required to support the decision, expressed as percent relative standard deviation<sup>1</sup> (RSD) of replicate samples from a sampling unit, should be specified as part of the DQOs, such that:

$$\%RSD = 100 (s) / x$$

where

s = standard deviation

x = sample mean (mean of replicate IS results)

EPA suggests a RSD of 30% or less. At RSDs greater than 35%, the data distribution starts to become non-normal and confidence in the representativeness of the sample results diminishes.<sup>2</sup> If the RSD is greater than 35%, re-sampling may, but not necessarily, be required.

There was no mention in the document about the establishment of a background level of dioxin/furan, although there was acknowledgement by GA EPD, EPA, and Honeywell that a

<sup>1</sup> US Army Corp of Engineers, Interim Guidance 09-02, Implementation of Incremental Sampling (IS) of Soil for the Military Munitions Response Program, 20 July 2009.

<sup>2</sup> State of Alaska Dept. of Environmental Conservation Draft Guidance on Multi-Increment Soil Sampling, March 2009.

regional background value would be used for this characterization. Using a regional background value helps in assessing the total impact on human health by examining sources of dioxin/furan contamination that may occur within the region. However, other point sources that may be more localized and have a more significant impact on the Site would not be included. For this reason, EPA does not recommend the use of a regional background value for this application, and suggests that Honeywell collect a site-specific background sample. Since the regional background value is anticipated to be a more conservative comparative benchmark, the decision to use a site-specific or regional background value is left to Honeywell. The Work Plan should specifically state how background will be determined.

### Specific Comments

**Section 1.2, Page 2.** This is the first reference in the document to the dioxin screening criteria. This reference and all subsequent mentions should refer to the 950 nanogram per kilogram (ng/kg) dioxin total toxic equivalents (TEQ) value as the “draft recommended interim Preliminary Remediation Goal (PRG).” The text should also note that this PRG (950 ng/kg) may change when the PRG document is released.

**Footnote 1, Page 2.** The text in this footnote states that the results of the incremental samples for the sampling units (SUs) may be combined to estimate the concentration of an analyte in the decision unit (DU). This discussion in the text does not explain how the data will be used in all quadrants. In Quadrant 1 the samples will be combined to estimate the average concentration in the DU. In Quadrants 2, 3, and 4, the data will not be combined to estimate the average concentration of the DU, but will be used separately in making a decision on the SU and/or DU.

**Section 2.1, Page 3.** This section should include a brief statement of the problem that the proposed sampling will attempt to answer.

**Section 2.3.1, Page 4.** In Quadrant 1, the sampling unit and the decision unit are the same. For clarity in terminology used in the document, it is recommended that the text be changed to read, “...a single SU that covers the entire quadrant is recommended. Figure 5A illustrates the proposed sampling grid for this SU.”

**Section 2.5, Page 6.** It is not clear from this section of the SOP attached as Appendix A whether soil aliquots will be mixed in the field and/or in the laboratory and whether the soil will be ground prior to analysis. EPA recommends that the soil sample should be mixed and sieved by the laboratory (Section 11.4.4 of the SOP) prior to laboratory sub-sampling. Please revise Section 2.5 for clarity.

**Section 2.6, Page 6.** This section does not appear to accurately reflect EPA’s understanding of the agreed upon processes that will be used to make decisions for the four quadrants. The decision methodology for Quadrant 1 is acceptable as written. However, EPA recommends the following changes to the process for Quadrants 2, 3, and 4:

For Quadrants 2, 3, and 4, the results for the two replicate ISM samples from each SU will be averaged and compared to EPA's ~~current~~ draft recommended interim PRG for dioxin in commercial/industrial soil. If the average 2,3,7,8 tetrachlorodibenzo-p-dioxin (TCDD) TEQ result for each SU is below the PRG value, no further action will be necessary. ~~If the results in one or more of the SUs exceed the PRG value but the variance among SUs is relatively low, it may be appropriate to average TCDD TEQ results between the three SUs in a quadrant for comparison with the PRG value.~~ If the representative TCDD TEQ concentration(s) for any SU ~~or DU~~ exceeds the draft recommended interim PRG value, the individual SU concentrations will be examined to ~~evaluate spatial trends in the data and~~ to develop recommendations for follow-up actions. In that event, Honeywell will submit a separate work plan to EPA for review for these recommended follow-up actions. If none of the SUs within a DU exceed the draft recommended interim PRG, then no further action will be necessary for the DU.

For each TCDD-TEQ analytical result, the hazard quotient (HQ) and the carcinogenic risk associated with the industrial worker exposure should be provided. This can be done using a risk ratio approach using the values in the 2009 draft recommended interim PRG document.

A flow-chart style decision tree should be added to the Work Plan to help facilitate better understanding going forward.

In addition, the section states that the "replicate ISM samples ... will be averaged and compared with EPA's current PRG for ...". EPA and EPD request that the maximum detected concentration should be used for comparison.

Finally, Section 2.6 (Data Evaluation) also states that the replicate ISM samples will be compared with EPA's current PRG of 950 ng/kg for dioxin in commercial/industrial soil. It is recommended that the TEQ concentrations should first be screened against the residential Interim Draft PRG for soil, 72 ppt. If the soil concentrations exceed this value, the associated risks should be quantified. A standard risk assessment guidance (RAGs) risk calculation cannot be performed for dioxin, because there are currently no EPA-accepted consensus toxicity values for dioxin. Therefore, until the pending completion of EPA's dioxin reassessment, a risk estimate should be approximated using the Interim Draft PRGs in a risk-ratio calculation. The need for an action at the Site could then be determined by screening the dioxin value against the commercial/industrial Draft Interim PRG. It is recommended that a decision process flowchart should be added to the document for clarity.

**Section 3.1, pg 7; Section 4.2, pg 11.** The text discusses the use of Ziploc storage bags for storage and transport of soil samples. Region 4 procedure is generally to use amber glass jars for soil samples that are to be analyzed for organic constituents. If plastic bags are to be used, the analysis of trip blanks would help to ensure that no constituents of interest are released from the plastic bag, and that any released plastics components do not interfere with the lab analyses for the constituents of interest.

**Section 3.1.** The handling of sample increments should be explained in greater detail for clarity. For example, it is difficult to tell if there will be 100 Ziploc bags containing increments

that get combined into one sample, or whether each sample (of x increments) will be collected in a single bag.

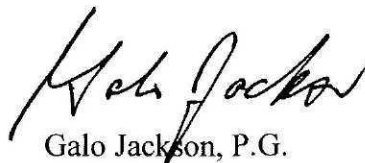
**Figure 5d- proposed ISM sampling units for Quadrant 4.** Based on the orange marker indicating a high detection of Aroclor 1268 on the eastern portion of the quadrant, collection of some additional soil samples in this portion of Quadrant 4 appears to be warranted. If the soil in the area of this detection was previously removed, this should be stated in the text.

**Other items for consideration:**

- Please indicate in the Work Plan that GPS coordinates will be recorded and made available for the location of each increment. Each increment location should be tied to its unique sample number in the database.
- Please state how the GPS coordinates will be recorded for data management purposes. For example, Quadrant 1 will have 100 GPS locations but only one analytical result. What GPS coordinates will be linked to that result?
- Please define the data quality objectives and any performance measurement criteria in the Work Plan.
- A proposed schedule (with relative or absolute dates) should be added to the Work Plan.

If you have any questions about this letter, you may contact me by telephone at (404) 562-8937 or by e-mail at [jackson.galo@epa.gov](mailto:jackson.galo@epa.gov).

Sincerely,



Galo Jackson, P.G.  
Remedial Project Manager  
Superfund Remedial Branch

cc: J. McNamara, Georgia EPD