



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

November 17, 2016

Ms. Tracey Duncan
Federal Facility Agreement Manager
United States Department of Energy
Portsmouth/Paducah Project Site Office
5501 Hobbs Road
Kevil, KY 42053

RE: EPA Conditional Concurrence: Appendix C – Water Policy Additional Actions: Addendum to the Five-Year Review for Remedial Actions at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, (DOE/LX/07-1289&D2/R1/A2/R1), transmittal dated October 2016 (PPPO-02-3467420-16).

References

1. FFA Project Managers Conference Call. September 7, 2016. Subject: Discussion of DOE-PGPD Draft Responses (August 30, 2016) to EPA and Kentucky Department for Environmental Protection Comments on DOE/LX/07-1289&D2/R1/A2 (March 30, 2016).
2. Correspondence from R. Chaffins (EPA) to J. Woodard (DOE). September 30, 2014. Subject: EPA Deferred Protectiveness Determination – PGPD 2013 Five Year Review.

Dear Ms. Duncan,

The U. S. Environmental Protection Agency (EPA) Region 4 has reviewed the Department of Energy's (DOE) *Appendix C – Water Policy Additional Actions: Addendum to the Five-Year Review for Remedial Actions at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/LX/07-1289&D2/R1/A2/R1) and DOE responses to regulatory agency comments. Many of EPA's comments on the draft Addendum have been addressed by DOE in the revised document as discussed by the parties to the Federal Facility Agreement during the August 30, 2016, conference call (*Reference 1*). However, a few significant issues remain outstanding and Conditions that must be satisfied by DOE prior to EPA approval of the Water Policy Addendum to the 2013 Five Year Review for the PGDP are provided as an enclosure to this letter.

On September 30, 2014, EPA advised DOE of our determination to defer the protectiveness statement for the Water Policy response action pending completion of additional work and provision of additional information for Agency evaluation (*Reference 2*). Satisfactory resolution of EPA's enclosed Conditions for approval of the Appendix C Addendum to the 2013 Five Year Review is necessary to support EPA re-evaluation of DOE's Water Policy remedy protectiveness statement (protective in the short-term) and a revised protectiveness determination by EPA Region 4.

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If you have any questions about this correspondence, please do not hesitate to contact me at (404) 562-8547 or via electronic mail at corkran.julie@epa.gov.

Sincerely,



Julie L. Corkran, Ph.D.
Federal Facility Agreement Manager
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Enclosure

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**United States Environmental Protection Agency (U.S. EPA) Region 4
Conditions for Approval:**

Appendix C – Water Policy Additional Actions:
Addendum to the Five-Year Review for Remedial Actions
at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,
(DOE/LX/07-1289&D2/R1/A2/R1), dated October 2016

**McCracken County, KY
U.S. EPA ID KY8890008982**

EPA Conditions for Approval

Condition 1. DOE’s proposal to provide EPA and the Kentucky Department for Environmental Protection (KDEP) a copy of the annual educational fact sheet regarding risks associated with use of groundwater in the Water Policy Box two (2) days in advance of public distribution is not acceptable. DOE cites Section XXXIII (B) of the FFA as the basis for their proposal; Section XXXIII of the FFA deals with advance notice to the FFA Parties for publication of news releases. Educational Fact Sheets containing messages about potential risks associated with exposures to contaminated environmental media and the actions the public should take to avoid such exposures should be afforded sufficient time for tri-party collaboration. EPA notes that DOE failed to collaborate with either EPA and KDEP prior to issuance of the first annual fact sheet that was mailed on January 27, 2016: subsequent EPA review of that fact sheet found it to be inadequate in support of public education regarding the Water Policy response action.

- Revise page C-3 of the Addendum, and elsewhere in Appendix C as needed for internal consistency, to read as follows:

~~In accordance with Section XXXIII of the Federal Facility Agreement,~~ DOE will coordinate future educational fact sheets with EPA/Kentucky Department for Environmental Protection (KDEP) by providing a copy of the educational fact sheet ~~two~~ *thirty* days in advance of mailing *to afford sufficient time for three party discussion and agreement on the accuracy and clarity of the risk and human health protection messages prior to public distribution.*

Condition 2. In response to EPA’s Comment 6 (July 2016) on the January 2016 educational fact sheet, DOE responded that “DOE will take these comments under consideration in development of the subsequent annual Informational Brochure (educational fact sheet)” and provided a series of proposed revisions to the 2018 Fact Sheet. Similarly, EPA will take DOE’s proposed revisions (DOE Response to EPA Comment 6) to the 2018 Fact Sheet into consideration when the draft is provided to the regulatory agencies for tri-party discussion 30 days in advance of mailing.

- Revise Appendix C text to identify DOE’s target date for mailing of the 2018 annual update to the Water Policy educational fact sheet.

Condition 3. The revised Water Policy Vapor Intrusion Screening Study, presented as Attachment C-2, does not respond to EPA's Comment 7 on this Addendum to the 2013 Five Year Review (July 29, 2016), EPA's General Comment #2 (December 29, 2015), and the concerns discussed in tri-party conference calls on February 11, February 18, and September 7, 2016.

DOE's response (October 2016) to EPA's Comment 7 (July 2016) stated:

"Site groundwater professionals reviewed the available data and determined that the available samples points do not provide adequate control for contouring a 1 ug/L TCE plume boundary. As a result of the concerns, the last published 1 ug/L TCE contour was in 2004."

EPA is perplexed that, in lieu of planning and taking action over the last 12 years to advance the minimum number of wells necessary to provide adequate well control for tracking the extent of the off-site plumes migrating from the PGPD, DOE chose instead to simply stop plotting extent of contamination for TCE.

Simply stated, absent a figure that illustrates the estimated 1 ug/L contour for TCE in RGA groundwater on the map of VI screening locations, an individual resident or property owner is unable to visualize why his/her property was not included in the vapor intrusion screening study sampling effort to evaluate the protectiveness of the Water Policy Area remedy for the vapor intrusion exposure pathway. The EPA Vapor Intrusion Screening Level for TCE is 1.2 ug/L. By way of example, EPA project manager notes from the April 2015 vapor screening study scoping meeting demonstrates that location NE3, originally proposed for inclusion in the study, was subsequently eliminated from the study due to recent RGA data showing concentrations less than 1 ug/L TCE. It is not reasonable, as DOE suggests in their response to EPA's Comment 7, that a resident or business owner should be expected to read and understand the Screening Study Sampling and Analysis Plan in order to understand why their property was, or was not, included in the vapor intrusion screening study. A reader should have access to a clear figure in the Addendum to the 2013 Five Year Review of the Water Policy response action protectiveness.

- Revise an existing figure (or provide a new figure) in the report to clearly illustrate the 1 ug/L TCE contour line. Per industry standard, use dashed lines where the contour is interpreted based on available data. Clearly denote the wells that were included in the vapor intrusion screening study analysis and include sufficient geographic features (roads, watercourses, etc) such that individual home/business owners in the Water Policy Box can reasonably determine where their property is located relative to the 1 ug/L contour. Revise the text as necessary to explain the significance of the contour with reference to the map.

EPA will make our agency groundwater professionals available to work with the DOE-PGPD and KDEP groundwater professionals to revise an existing figure, or develop a new figure, to clearly illustrate the 1 ug/L contour line in order to resolve this Condition.

Condition 4: In EPA’s protectiveness deferred letter of September 2014 for the Water Policy response action, EPA stated: “The protectiveness determination of the removal action for the Water Policy cannot be made at this time until further information is obtained. Further information will be obtained by taking the following actions: DOE demonstrates that all residents located above the contaminated groundwater plume are not using groundwater from their wells...”.

In the decision documentation for the Water Policy Area, the “affected area” was defined as the entire area inside the Water Policy Box and 1 ug/L TCE was a criterion used to define those properties that would receive municipal water. In the Appendix C Addendum to the 2013 Five Year Review, DOE introduces a new term - “affected properties” - defined as properties that overlie the 5 ug/L TCE contour on a map of the Water Policy Area. DOE’s newly introduced term, “affected properties” does not supersede the decision documentation for the Water Policy Box and the definition of “affected area” for the purpose of satisfying the additional work conditions in EPA’s September 2014 protectiveness deferred letter.

EPA’s “protectiveness deferred” determination (September 2014) and requirement that DOE demonstrate to EPA that all residents located above the contaminated groundwater plume are not using their wells is based on the decision documentation for the Water Policy response action.

- Revise Figure 1 (*2014 Plume Map with Parcels*) and Figure 2 (*Parcels Identified as Affected Properties*) to include illustration of the 1 ug/L contour for TCE so that the extent of the contaminated groundwater plume is transparent to the regulatory agencies and the public. (See EPA **Condition 3**, above).
- Upon revision by DOE of Figure 1 and Figure 2, DOE should evaluate: (i) whether any additional parcels are located above the contaminated groundwater plume, (ii) determine whether the efforts described in the current report are sufficient to demonstrate that all wells above the contaminated groundwater are not in use, and (iii) revise the Addendum to describe the outcome of, including any uncertainties associated with, this evaluation.
- Revise Appendix C text for internal consistency with demonstrating that all residents located above the contaminated groundwater plume are not using groundwater from their wells. This may require deletion from Appendix C of the new term coined by DOE – “affected properties” – to ensure consistency with the decision documentation for the Water Policy response action and avoid confusing the public and the Administrative Record.

Condition 5. DOE provides a protectiveness statement for the Water Policy Removal Action (Short-Term Protective) on page C-4. Satisfactory resolution of EPA’s Conditions listed above is necessary to support Agency re-evaluation of DOE’s protectiveness statement and a revised protectiveness determination by EPA Region 4. No change to the protectiveness statement on page C-4 is requested at this time, pending satisfaction by DOE of EPA’s Conditions for document approval.

