



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

Sept. 29, 2014

4WD-FFB

Jennifer Woodard, Site Lead  
United States Department of Energy  
P.O. Box 1410  
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**EPA Disapproval of the discharge of wastewater from Building C-410  
Removal Action, Paducah Gaseous Diffusion Plant**

Dear Ms. Woodard:

The Environmental Protection Agency (EPA) has received the September 26, 2014 email to EPA band Commonwealth of Kentucky (KY) in regard to the Department of Energy (DOE) proposal to discharge wastewater (~200,000 gal. of collected storm water entering the C-410 building that is currently stored in the basement) into the ditch north of C-410 that conveys into the 616 lagoon. According to DOE, the C-410 wastewater contains radionuclide contamination including Tc-99 (~38,000 pCi/L) and uranium (~300 pCi/L), as well as possibly other contaminants that are a result of water contacting the building's contaminated equipment and floor. The CERCLA removal action documentation (including the EE/CA, Action Memorandum, Work Plan as well as the Addendums) do not address management of this type of waste stream and the ARARs/TBC table does not include specific requirements (e.g. effluent limits and monitoring requirements) for discharge of wastewater into a surface water.

As previously stated on other CERCLA projects at PGDP, EPA does not agree that the DOE Order 5400.5 [or 10 CFR 20.130(a)(1)] dose limit of 100 mrem/year is protective since it is outside EPA's generally accepted risk range utilized for CERCLA response actions and the use of dose based guidance is inconsistent with the NCP's remedy selection criteria. [Reference *Radiation Risk Assessment At CERCLA Sites: Q & A*, OSWER No. 9200.4-40, May 2014, *Distribution of OSWER's Radiation Risk Assessment At CERCLA Sites: Q & A Final Guidance*, December 17, 1999, *Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination*, OSWER No. 9200.4-18, Aug 22, 1997, and EPA OSWER letter to DOE Raymond P. Berube dated Dec. 12, 1997 on DOE Draft 10 CFR 834 *Radiation Protection of the Public and the Environment*] Accordingly, any derived concentration guidelines established by DOE under that Order will not be recognized by EPA as acceptable effluent limits for discharge of radionuclides from a CERCLA response action.

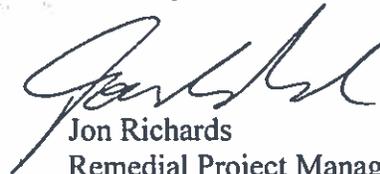
EPA is concerned with the level of protectiveness of human health and the environment from DOE's proposed discharge of the C-410 wastewater with its high concentration of Tc-99 without first employing treatment. Mixing, blending, or dilution of contaminated water with uncontaminated soils and water in order to achieve remedial goals is inconsistent with Section 121(b)(1) of CERCLA which provides that "remedial actions in which treatment which

permanently and significantly reduces the volume, toxicity or mobility of the hazardous substances, pollutants, and contaminants is a principal element, are to be preferred over remedial actions not involving such treatment ." We are also concerned with combining the C-410 wastewater with other waste waters collected in the 616 lagoon (estimated to be 60,000,000 gal.), which according to DOE takes ~69 days to thoroughly mix, and results in dilution of the contaminants. As a result of this mixing, the identity of C-410 wastewater is essentially lost and thus any effluent measurement at Outfall 001 may not be representative of contaminants from C-410. Also, under the KPDES permit, DOE is only required to monitor radionuclides in the effluent from Outfall 001 and report the levels monthly. Moreover, there are no limits agreed upon by the FFA parties on the discharge of radionuclides resultant from CERCLA projects at this Outfall. In addition, EPA is concerned with possible cross-media contamination resulting from use of the unlined ditch for conveyance of the 200,000 gal. over a five day period that could potentially leach contaminants (e.g., Tc-99) into sub-surface soil and shallow groundwater. In general, CERCLA response actions are designed to address and mitigate the adverse effects of releases of hazardous substances, pollutants and contaminants into the environment, not cause new ones. Thus, this CERCLA removal action should not result in a new uncontrolled release of hazardous substances into the environment.

DOE has told EPA and KY that there are other ways of managing the C-410 wastewater that could include treatment at the Northwest Groundwater Plume treatment unit which utilizes ion exchange to effectively treat the Tc-99, or shipping the wastewater off-site for treatment. Also, we believe there may be other approaches for managing this wastewater that may be feasible and more appropriate (e.g., not releasing the entire volume at one time and instead treating in batches at Northwest Groundwater Plume treatment unit). EPA recognizes that these options will cost more than what DOE has proposed so far but believes these options (or other treatment options) should be used to manage the C-410 wastewater as part of the CERCLA removal action to ensure protectiveness of human health and the environment. Accordingly, this letter serves to inform you that the EPA does not approve of DOE's proposal to discharge untreated C-410 wastewater into the ditch and 616 lagoon. In accordance with FFA Section XX., Paragraph J. *Subsequent Modification of Final Documents*, the EPA believes the FFA parties should revise the Action Memorandum with an Addendum or otherwise document the requirements for management of any additional wastewater that is expected to be collected from the C-410 removal action in order for DOE to continue implementation of this CERCLA project.

If you have any questions or would like to further discuss this matter, please contact me at (404) 562-8648.

Sincerely,



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ec:

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