

**MEMORANDUM OF AGREEMENT  
FOR RESOLUTION**

**of Informal Dispute for the Focused Feasibility Study for the Southwest Plume Volatile Organic Compound Sources Oil Landfarm and C-720 Northeast and Southeast Sites) at the Paducah Gaseous Diffusion Plant, Paducah, KY (DOE/LX/07-0186&D2)**

The undersigned agree that the Informal Dispute invoked by the U.S. Department of Energy (DOE) in the letter to the U.S. Environmental Protection Agency, Region 4 (EPA) and Kentucky Department for Environmental Protection (KDEP) dated April 12, 2010, is hereby resolved and includes the following Conditions:

**Kentucky Radionuclide Effluent Standards**

- 1) The effluent limits for radionuclides including Tc-99 listed in 902 Kentucky Administrative Regulation (KAR) 100:019 (44) Table II will be identified as 'relevant and appropriate' requirements<sup>1</sup> for the discharge of wastewater containing radionuclides from the Southwest Plume Volatile Organic (VOC) Sources CERCLA project into surface water of the Commonwealth of Kentucky. Accordingly, the entry provided by EPA Region 4 as part of its Conditional Concurrence on the Focused Feasibility Study (FFS) will be included on the ARARs/TBC table except as provided in Condition 3 below. These effluent limits do not apply to wastewater discharges from any non-CERCLA activities conducted by DOE at PGDP that are subject to requirements under other authorities such as the Atomic Energy Act.
- 2) For the Southwest Plume VOC Sources remedial action, the DOE will monitor for Tc-99 at the point the Southwest Plume project effluent is discharged into the internal ditch at PGDP that conveys wastewaters to the KPDES permitted outfall. The total concentration of Tc-99 in wastewater from the Southwest Plume project and any other DOE CERCLA project(s), where 902 KAR 100:019 (44) Table II was selected as an ARAR, shall not exceed the Table II effluent limits at the plant's Kentucky Pollution Discharge Elimination System (KPDES) permitted outfall(s), or at the point(s) of discharge into surface water in the event the wastewaters from a CERCLA project(s) do not pass through a permitted outfall. [See Condition 8 below] The method for calculating the annual average discharge of Tc-99 shall be detailed in either the Remedial Design Report or Remedial Action Work Plan. The radionuclide effluent limits in Table II are not under the KPDES permit for the referenced outfall(s).
- 3) The footnote to the 902 KAR:019(44) entry on the ARARs/TBC table was recommended by EPA and KDEP to provide an example of the expected concentration of Tc-99 in effluent with the application treatment and/or engineering controls through the As Low As Reasonably Achievable (ALARA) process. The footnote will be removed from the ARARs/TBC table since it does not provide any requirements that would be considered ARARs.
- 4) The entries on the Action-specific ARARs/TBC table for both the Kentucky and DOE 100 mrem radiation dose limits for protection of members of the public and the ALARA requirements will be removed from the ARARs/TBC table. Application of the ALARA process for all DOE activities at the PGDP will be outside the CERCLA process and will be under DOE's control.

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<sup>1</sup> See 40 CFR § 300.5 Definitions.

## Monitoring & Reporting

- 5) The requirement to report effluent monitoring results as specified in 40 CFR § 122.44(i)(2) will be removed from the ARARs/TBC table since it is an 'administrative' requirement for which CERCLA projects are not required to comply while conducting response actions on-site as defined in the NCP at 40 CFR § 300.5. However, the monitoring results must be reported to the FFA parties as part of the CERCLA process in order to evaluate whether specified effluent meets the limits and thereby complies with identified ARARs. Accordingly, language will be added to the Southwest Plume VOC Sources FFS that reflects the requirement for DOE to report effluent monitoring results through existing CERCLA documents/databases that are provided to EPA and KDEP. The content and frequency of the reporting will be specified in the Remedial Design, Remedial Action Work Plan or other appropriate FFA CERCLA document.
- 6) The FFS for the Southwest Plume VOC Sources includes alternatives for the remediation of VOCs, including extraction and treatment of VOCs, as well as potential discharge of the wastewaters from the CERCLA treatment unit. The numeric water quality criteria for fish consumption specified in Table I of 401 KAR 10:031 Section 6(1) have been identified as an ARAR and are included in the ARARs/TBC table. The Parties reasonably expect that the Southwest Plume project effluent will meet all ambient water quality criteria (AWQC) in the receiving stream if the concentration of TCE and the specified degradation products are at or below the Kentucky numeric water quality criteria for fish consumption specified in Table I of 401 KAR 10:031 Section 6(1). Therefore, ARAR entries related to water quality criteria, as well as the use of a mixing zone, are deemed unnecessary for this project and will be removed from the ARARs/TBC table.
- 7) For purpose of demonstrating compliance with ARARs related to effluent limits for wastewater discharges containing VOCs, DOE will sample for trichloroethylene (TCE) and its degradation products (1,1-dichloroethylene, 1,2-trans-dichloroethylene, and vinyl chloride) at the point the Southwest Plume effluent is discharged into the internal ditch at PGDP that conveys wastewaters to the KPDES permitted outfall. Although the Southwest Plume effluent is not per se subject to the KPDES permit requirements, monitoring in the receiving stream to assess compliance with AWQC and monitoring effluent at the permitted outfall would be covered by the KPDES permit. If there is an instream exceedance of AWQC under the permit, the parties assume that the cause of the exceedance is not the Southwest Plume provided the effluent meets the Kentucky numeric AWQC for fish consumption in Table I of 401 KAR 10:031 Section 6(1).
- 8) For future CERCLA projects involving a discharge of wastewater, DOE may follow an approach for monitoring effluent consistent with above Conditions 6, 7, and 8, or it could pursue other options, including two options that have been identified during dispute resolution meetings. The first option is to include the CERCLA discharge under the facility's KPDES permit, provided the wastewater meets any pre-treatment requirements that might be required under the permit. Under this option, the wastewaters are discharged into a ditch that also conveys other wastewaters generated from non-CERCLA projects, all of which are discharged thru a KPDES permitted outfall. ARARs for the discharge of wastewater would be limited and include, for example the requirements of 40 CFR 122.41(d) and (e). The discharge through the KPDES permitted outfall which includes CERCLA wastewaters would be subject to all administrative requirements of the permit. The second option is to establish a separate outfall for a discharge of wastewaters generated only from CERCLA projects. This discharge to surface water would be considered 'on-

site' and therefore be required to comply only with any substantive requirements of any identified ARARs for effluent limits and Kentucky water quality standards including instream AWQC.

### Land Use Controls

- 9) Signage that provides notice and warning of environmental contamination, along with the excavation penetration permit program, will be identified in the FFS as an interim land use control (LUC) for the Southwest Plume VOC Sources remedy pending final remedy selection as part of a subsequent Operable Unit (OU) that addresses the relevant media. Such controls are necessary for any residual or remaining VOC and non-VOC contamination that is not treated by this remedial action and whose concentrations prevent unrestricted use/unlimited exposure in the Southwest Plume Source areas. Existing security/access controls at the PGDP that are established and maintained outside of the CERCLA process will not be identified as a LUC for this remedial action. However, the DOE will include language in the Southwest Plume VOC Sources FFS and ROD that acknowledges that these access controls exist at the PGDP and are effective at preventing public access and unwanted trespassers to contaminated areas of the facility.
- 10) The Southwest Plume VOC Sources ROD will specify that warning signs will be posted for the Southwest Plume VOC Source areas before beginning field activities that involve worker exposure to contaminated groundwater or soils. Details on implementation of the LUCs, including timing and approximate location for posting the warning signs shall be included in the ROD or a post-ROD document such as the Remedial Design. The signs shall: 1) include lettering that is legible from a distance of least 25 feet; 2) contain contact information for DOE and/or contractor personnel; and 3) be visible from surrounding areas and at potential routes of entry into the Southwest Plume VOC Sources area. The warning signs shall contain language similar to the following:

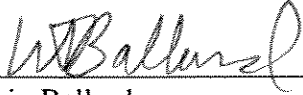
WARNING: CONTAMINATED AREA  
Hazardous Substances in Soil and Groundwater  
Authorized Access Only  
Contact: [Insert phone number]


- 11) Consistent with Federal Facility Agreement for the Paducah Gaseous Diffusion Plant Section XXV.B.11, the Parties agree that the submittal date for the following documents has been affected by this dispute and shall be extended as follows:

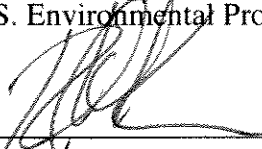
D2 R1 Focused Feasibility Study	27-Jun-10
D2 Proposed Plan	27-Jun-10
D1 ROD	24-Oct-10
D1 Remedial Design Work Plan	02-Jan-11
D1 Remedial Design Report	28-Mar-12
D1 Remedial Action Work Plan	26-Apr-12
D1 Remedial Action Completion Report	05-Aug-15

Subsequent changes to these submittal dates are subject to the Federal Facility Agreement for the Paducah Gaseous Diffusion Plant (FFA).


Nothing in this resolution shall prevent any of the Parties from disputing, under the FFA, any other matters related to aforementioned projects. The Parties also agree that the DOE's failure to perform or abide by any of the aforementioned actions or conditions may be viewed as a nullification of the Parties' agreement herein. Such failure could result in the initiation of the formal dispute process in accordance with the FFA Section XXV.B with respect to the originally disputed Southwest Plume issues.

  
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Turpin Ballard  
PGDP FFA Manager  
U.S. Environmental Protection Agency, Region 4

  
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Date

  
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Reinhard Knerr  
PGDP FFA Manager  
Paducah Site Lead  
DOE Portsmouth/Paducah Project Office

  
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Date

  
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Edward Winner  
PGDP FFA Manager  
Division of Waste Management  
Kentucky Department for Environmental Protection

  
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Date