

## Supplemental Analysis of New Treatment Facility and Transfer Facility for Disposition of Waste and Materials

### Introduction

The U.S. Department of Energy (DOE) has prepared this supplement analysis (SA) to evaluate one or more existing environmental assessments (EAs) (listed below) in light of changes that could have bearing on the potential environmental impacts previously analyzed. Based on the analysis in DOE/EA-2116, *Paducah Gaseous Diffusion Plant Final Environmental Assessment for Disposition of Waste and Materials* (Final EA), DOE determined that the proposed action was not a major federal action and would not significantly alter the quality of the human environment within the context of National Environmental Policy Act (NEPA); therefore, no Environmental Impact Statement (EIS) is required. This SA provides sufficient information for DOE to determine whether the existing Final EA remains adequate, whether to prepare a new EA, revise the Finding of No Significant Impact (FONSI), or prepare an EIS, as appropriate.

Existing EA evaluated in this SA:

- *Paducah Gaseous Diffusion Plant Final Environmental Assessment for Disposition of Waste and Materials* (DOE/EA-2116), <https://www.energy.gov/nepa/downloads/doeea-2116-environmental-assessment-and-finding-no-significant-impact>.

### Changes to the Proposed Action or New Circumstances or Information<sup>1</sup>

This SA was prepared in order to include a new treatment facility and transfer facility that have been identified since the completion of the Final EA dated June 2020. The facilities listed in Table 1 is an additional potential treatment facility and a transfer facility for waste generated, managed, and shipped from the Paducah Site. Activities at the treatment facility and transfer station would be similar to those described in sections 2.1.3 and 2.1.5 of the Final EA.

**Table 1. Additional Treatment and/or Transfer Facilities/Locations**

Treatment and/or Disposal Facility/Location	Accepted Paducah Site Waste Type	Transport Modes	Site Activities
Perma-Fix Environmental Waste Operations Center, Oak Ridge, TN	Low-level waste	Highway, Rail	Treatment
Clean Harbors Greenbrier Transfer Station, Greenbrier, TN	Nonradioactive Resource Conservation and Recovery Act-hazardous waste	Highway	Transfer station

### Background

The Final EA was prepared for the disposition of approximately 5,050,000 ft<sup>3</sup> of waste and excess material over a 12-year period to support deactivation and other non-Comprehensive Environmental Response, Compensation, and Liabilities Act (Public Law 95-510) DOE Environmental Management activities at the Paducah Site; a DOE-owned facility in Paducah, Kentucky. The waste management and disposition

<sup>1</sup> Throughout this document, the phrase “changes to the proposed action or new circumstances or information” refers to a substantial change to the proposed action that may be relevant to environmental concerns or significant new circumstances or information that may be relevant to environmental concerns and have bearing on the proposed action or its impacts.

activities include waste generation/handling; waste staging and storage; container movement; packaging/overpacking/repackaging; equipment and container sorting; physical volume reduction; equipment and waste container decontamination; marking, labeling, inspection, tracking and inventory; and characterization, sampling, treatment, loading, and transporting of Paducah Site wastes to existing off-site DOE and commercial treatment and disposal facilities across the United States including Arkansas, Florida, Georgia, Nevada, North Carolina, Ohio, Pennsylvania, Tennessee, Texas, Utah, and Washington. Since the finalization of the EA, a new waste treatment facility has started operations. This new Perma-Fix Environmental Waste Operations Center facility will potentially be used to treat wastes from the Paducah Site in the future.

In addition, a transfer facility that may be used by one or more of the waste treatment and/or disposal facilities that have already been evaluated in the EA has been included in this analysis. The Final EA analyzed the environmental impacts of transporting nonradioactive RCRA-hazardous waste through the Clean Harbors Greenbrier Transfer Station, Greenbrier, TN, to the Clean Harbors end path facility. Transportation routes for the Clean Harbors facility in the Final EA are documented in Figure 4, Representative Highway Routes for Waste Transportation. The analysis in the Final EA did not specifically identify, but did include, waste containers spending a finite amount of time at the transfer station to sort and redirect the waste containers to their final treatment and/or disposal facility.

#### Resource Areas Not Analyzed in Detail in this SA

DOE conducted an initial screening analysis of impacts to determine if there was a need for a detailed analysis in the Final EA. Where appropriate, DOE has conducted impact analysis specific to the proposed action to support a decision regarding the environmental impacts of the Proposed Action. Table 5 in the Final EA describes the subject areas that have been dismissed from detailed analysis in the Final EA, which subsequently have not been analyzed in detail in this SA. The new treatment and transfer facility do not affect the subject areas listed in Table 5 of the Final EA, and has negligible to no impact for on-site waste storage, staging, treatment, transportation, and supporting activities for off-site waste transportation. Activities at the treatment or transfer facility would be similar to those described in sections 2.1.3 of the Final EA since such activities and impacts would be similar regardless of the treatment or transfer facility site.

DOE screened other activities analyzed in detail in the Final EA that are not analyzed in detail in this SA. Affected environment on-site, described in section 3.2.1 (i.e., air quality, demography, on-site worker, public health and safety, accidents, and intentional destructive acts) would be similar to those analyzed in the Final EA regardless of the treatment or transfer facility site. Activities at the Paducah Site would be similar to those described in sections 2.1.5 of the Final EA since such activities and impacts would be the same regardless of the treatment or transfer facility site.

#### Resource Areas Analyzed in Detail in this SA

The resource areas in Table 2 are analyzed in detail in this SA.

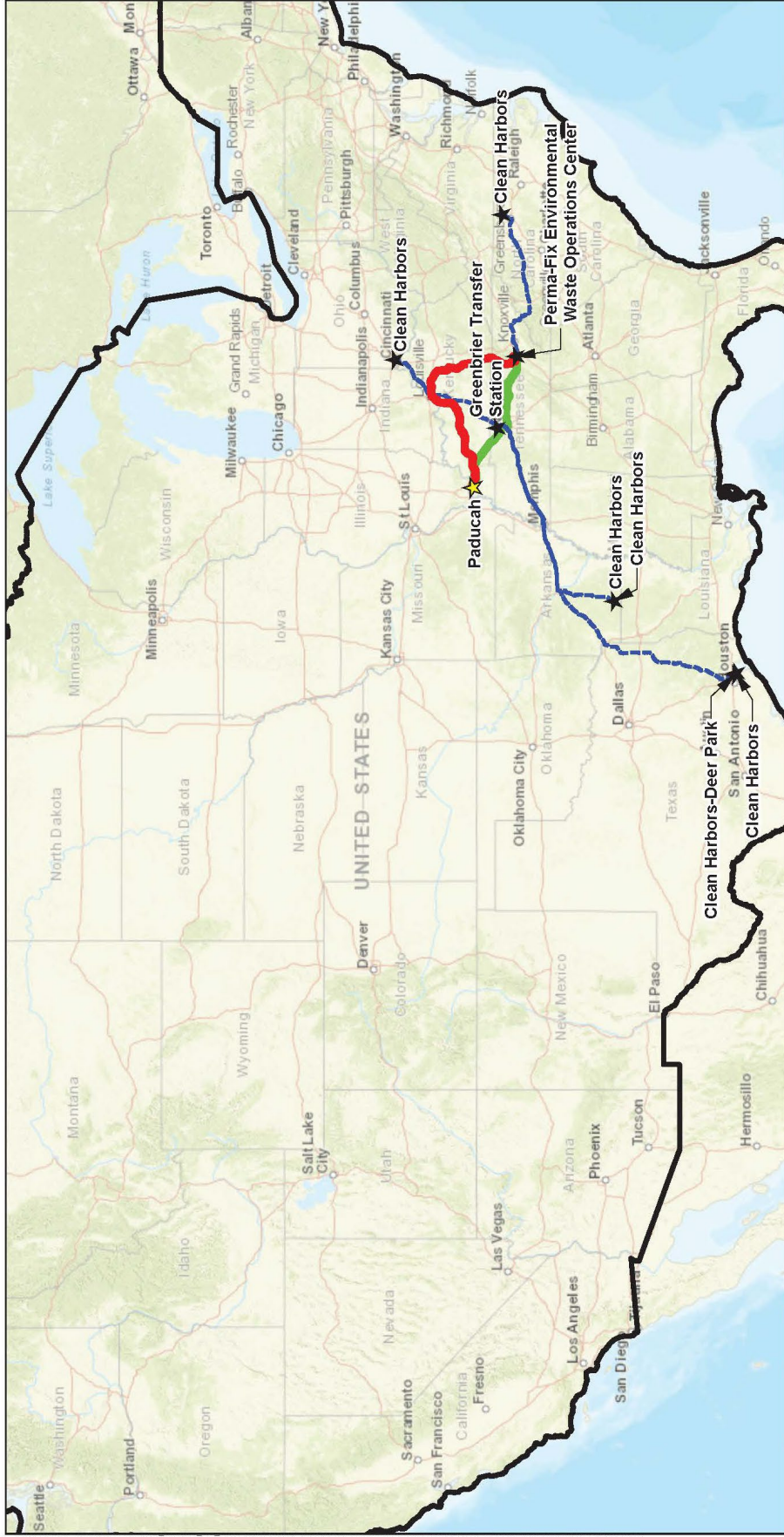
**Table 2. Comparison of Potential Environmental Impacts**

<b>Comparison of Potential Environmental Impacts</b>			
<b>Resource Area</b>	<b>Summary of Potential Impacts in the Final EA</b>	<b>Summary of Potential Impacts as a Result of Changes to the Proposed Action or New Circumstances or Information</b>	<b>Difference in Potential Impacts</b>
Air Quality Off-Site	As described in Section 4.1.2.1, Air quality, the Final EA discusses the overall air quality impacts for transportation activities, which would be negligible, localized, and temporary.	Potential air quality impacts from transportation of the waste and material to the additional potential waste treatment facility and transfer facility would be negligible, localized, and temporary. Air emissions from transportation of the waste and materials to the additional locations would be essentially equivalent to the emissions analyzed in the Final EA. The new potential treatment facility transportation route distance is bounded by the previously analyzed alternatives in the Final EA. The transfer facility route would be the same, as analyzed in Figure 4 of the Final EA. Waste quantities are unchanged from those analyzed in the Final EA.	No difference in potential impacts.
Radiation and Chemical Risk Off-Site	As described in Section 4.1.2.2, Radiation and chemical impacts from off-site transportation, the Final EA discusses the risks associated with radiological impacts of shipments to the crew, population—routine, population—accident, and maximally exposed individual with the corresponding risks determined to be no latent cancer fatalities.	Potential radiation and chemical risk off-site from transportation of the waste and material to the additional potential waste treatment facility and transfer station will be essentially equivalent for crew, population—routine, population—accident, and maximally exposed individual as analyzed in the Final EA because the transportation routes are essentially unchanged from those analyzed in the Final EA. Waste quantities are unchanged from those analyzed in the Final EA.	No difference in potential impacts.

**Table 2. Comparison of Potential Environmental Impacts (Continued)**

<b>Comparison of Potential Environmental Impacts</b>			
<b>Resource Area</b>	<b>Summary of Potential Impacts in the Final EA</b>	<b>Summary of Potential Impacts as a Result of Changes to the Proposed Action or New Circumstances or Information</b>	<b>Difference in Potential Impacts</b>
Accident and intentional destructive act impacts from off-site transportation	As described in Section 4.1.2.3, Accident and intentional destructive act impacts from off-site transportation, the Final EA discusses impacts from deaths and injuries resulting from the increase in total shipments. Due to the proposed action, the estimated number of highway accidents would result in 0.2 deaths and 4.6 injuries during the 12-year period. Due to the proposed action, the estimated number of railway accidents would result in 0.2 deaths and 1.0 injuries during the 12-year period.	Potential accident and intentional destructive act impacts from off-site transportation of the waste and material to the additional potential waste treatment facility and transfer station will be the same as analyzed in the Final EA because the transportation routes are essentially unchanged from those analyzed in the Final EA. Waste quantities are unchanged from those analyzed in the Final EA.	No difference in potential impacts.

Transportation routes for the treatment and transfer facility are found in Figure 1.



Source: (ESRI ©OpenStreetMap)

- Legend**
- ★ Paducah Location
  - ★ Waste Facility Location
  - Representative Transfer Waste Route – Highway
  - Representative Transportation Waste Route – Highway
  - Representative Transportation Waste Route – Railway

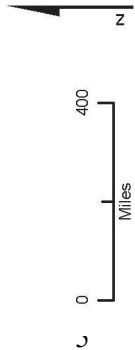


Figure 1. Representative Highway and Rail Routes for Waste Transportation

## Mitigation

Based on this analysis, DOE will continue to implement mitigation measures as described in the Final EA. Section 4.3 of the Final EA discusses mitigation measures that will be taken for the potentially adverse environmental impacts. Because the new circumstances are similar in nature to the existing potential adverse environmental impacts analyzed in the Final EA, no new mitigation measures were identified.

## Determination

In accordance with DOE's NEPA implementing regulations, and consistent with the *NEPA Recommendations for the Supplement Analysis Process*, 2nd Edition, DOE prepared this SA to evaluate whether the existing Final EA remains adequate or whether the addition of a new treatment facility and the transfer station requires DOE to prepare a new EA, revise the existing FONSI, or prepare an EIS. DOE concludes that the environmental analysis that relates to the potential impacts to resource areas stemming from the proposed action in the final *Paducah Gaseous Diffusion Plant Final Environmental Assessment for Disposition of Waste and Materials* (DOE/EA-2116), properly takes the environmental impacts resulting from the proposed use of one treatment facility and the transfer station into consideration, given the *de minimis* nature of the impacts as delineated in this SA. DOE concludes that the addition of the treatment facility and transfer station described in this SA do not require a new EA, revised FONSI, or preparation of an EIS. No further NEPA documentation is required.

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