

1.0 Hazardous and Toxic Materials and Waste

1.1 Introduction

This Technical Memorandum describes Hazardous and Toxic Materials and Waste (HTMW) in the Proposed Action's Region of Influence (ROI) and potential impacts from the Proposed Action (i.e., Preferred Alternative) and No Action Alternative. Measures to reduce potential adverse HTMW impacts from the Proposed Action are identified.

The term HTMW, or "hazardous substance," collectively refers to hazardous materials, hazardous wastes, and other contaminants that are managed under one or more applicable regulatory programs because they have been determined to present risks to human health, safety, or the environment when they occur above certain concentrations. The improper release of, or exposure to, HTMW may also threaten soils, water quality, and biological resources. Localized conditions (e.g., climate, topography, soils, and water resources) may affect the extent of contamination from, or exposure to, HTMW.

Treasury received comments related to HTMW from stakeholders during the public scoping period. Scoping comments expressed concern over the potential HTMW impacts of the Proposed Action, such as past contamination within the Project Site, the types of hazardous substances proposed for use during production operations; and the proposed handling, treatment, and disposal processes for these substances. Some comments reflected public concern over potential impacts from wastewater discharge and surface runoff from the Proposed Action, particularly downstream effects on Beaverdam Creek. The reader is referred to the [Utilities Technical Memorandum](#) and the [Water Resources Technical Memorandum](#) for information on wastewater disposal and stormwater runoff, respectively.

Please refer to Treasury's [Public Scoping Report](#) for further details on the comments received during the scoping period. Concerns expressed during public scoping regarding HTMW are considered and addressed in this analysis.

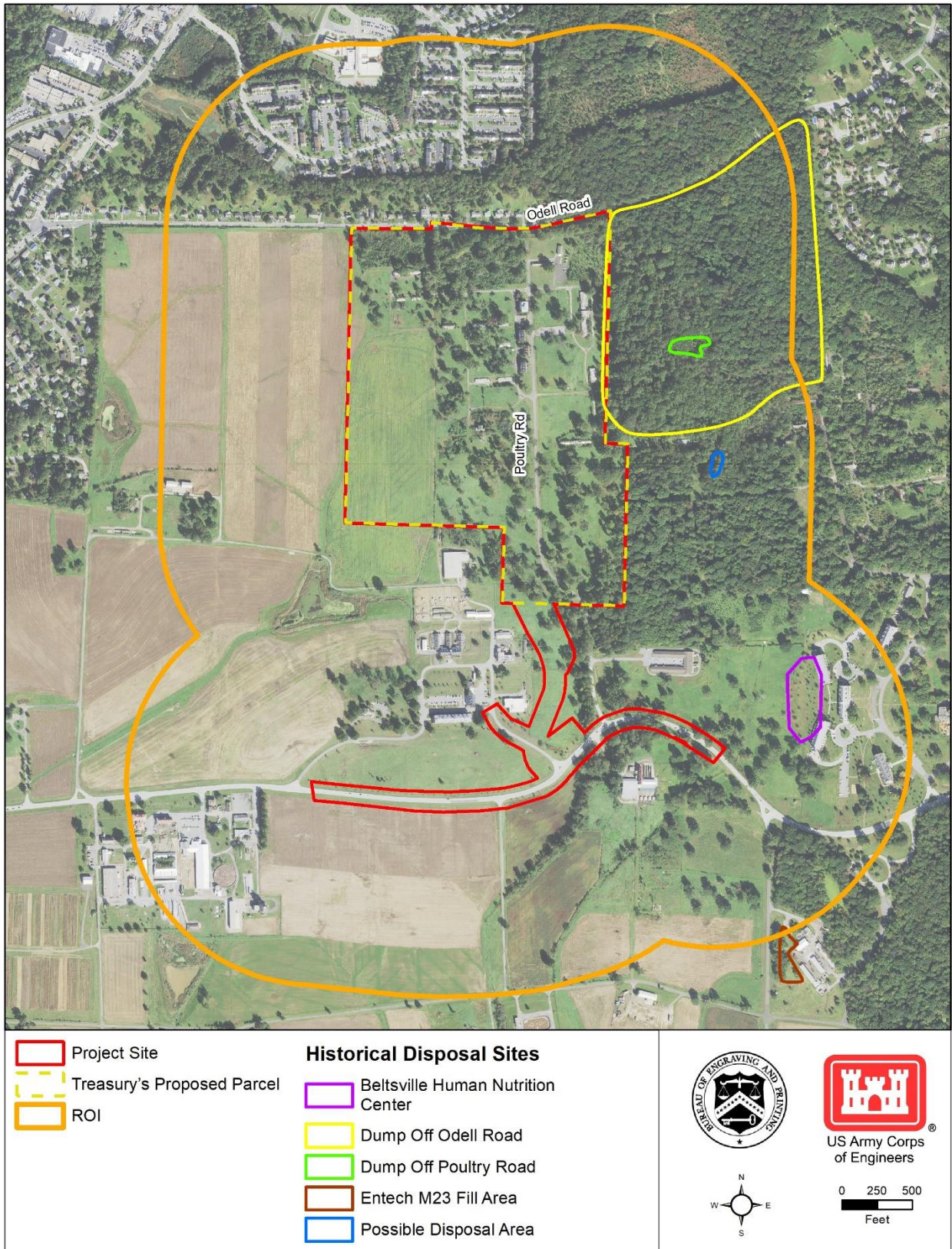
1.2 Affected Environment

1.2.1 Region of Influence

The ROI for this analysis includes the Project Site and areas in and adjacent to the Beltsville Agricultural Research Center (BARC) within 0.25 mile of the Project Site (see **Figure 1**). These are the areas that may have had prior uses that could have resulted in a material effect on the HTMW condition of the Project Site. Similarly, these are generally the same areas that could be affected, directly or indirectly, by activities associated with the Proposed Action. Operational activities that could have an indirect influence on HTMW outside of this ROI would be associated with the transportation of hazardous materials used for, or generated by, Currency Production Facility (CPF) manufacturing processes. However, these indirect HTMW impacts associated with the Proposed Action would not be appreciable beyond the ROI.

1.2.2 Applicable Guidance

Table 1 identifies federal and state guidance and regulations relevant to this analysis. Treasury would comply with these guidelines and requirements under the Proposed Action.



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Figure 1: HTMW ROI

Table 1: HTMW Applicable Guidance and Regulations

Guidance/Regulation	Description/Applicability to Proposed Action
<p><u>Resource Conservation and Recovery Act (RCRA) (42 United States Code [USC] §6901 et seq.)</u></p>	<p>Establishes the mandatory procedures and requirements for compliance by federal facilities that use, accumulate, transport, treat, store, or dispose of hazardous waste or substances. Under RCRA, the US Environmental Protection Agency (USEPA) can grant authority to the state to establish and enforce its own hazardous waste management program, provided that the state's requirements are no less stringent than the USEPA's. In the State of Maryland, the Maryland Department of the Environment (MDE), implements the RCRA program.</p>
<p><u>Maryland Disposal of Controlled Hazardous Substances (Code of Maryland Regulations [COMAR] 26-11)</u></p>	<p>Establishes responsibilities for implementing Maryland's program for the regulatory oversight of hazardous waste distributed among several units within the MDE's <u>Land Management Administration</u>. In particular, the Hazardous Waste Program within the MDE's Resource Management Program is responsible for the regulation of hazardous waste in Maryland (MDE, 2020).</p>
<p><u>Toxic Substances Control Act (TSCA) (15 USC §2601 et seq.)</u></p>	<p>Regulates the use, management, and disposal of asbestos-containing materials (ACM), lead-based paint (LBP), and polychlorinated biphenyls (PCB) that are often found in buildings constructed prior to the federal government banning them in 1978 (USEPA, 2020).</p>
<p><u>Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC §6901 et seq.)</u></p>	<p>Commonly known as Superfund, this Act created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.</p>
<p><u>USEPA Identification and Listing of Hazardous Waste (40 CFR Section 261)</u></p>	<p>The USEPA identifies solid wastes that are subject to regulation as hazardous wastes. This chapter sets forth the USEPA's criteria to identify characteristics of hazardous waste and lists particular hazardous wastes.</p>
<p><u>USEPA Designation, Reportable Quantities, and Notification of Hazardous Substances (40 Code of Federal Regulations [CFR] Section 302.4)</u></p>	<p>The USEPA designates hazardous substances under CERCLA, identifies reportable quantities for these substances, and establishes the notification requirements for releases of these substances. This regulation also determines reportable quantities for hazardous substances designated under the Clean Water Act.</p>
<p><u>Department of Transportation (DOT) Hazardous Materials and Oil Transportation (49 CFR Section 100-199)</u></p>	<p>The DOT establishes regulations for the safe and secure transportation of hazardous materials in commerce. These regulations apply to persons who transport hazardous materials in commerce, persons who cause hazardous materials to be transported in commerce, and persons who manufacture or maintain packaging or a component of a hazardous material.</p>

Guidance/Regulation	Description/Applicability to Proposed Action
Occupational Safety and Health Administration (OSHA) Standards for Toxic and Hazardous Substances (29 CFR Section 1910.1200)	OSHA ensures that the hazards of all produced or imported chemicals are classified, and that information concerning the classified hazards is transmitted to employers and employees, consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labelling of Chemicals. This standard is intended to address the proper classification of potential hazards of chemicals and the appropriate communication of hazards and appropriate protective measures in the workplace.
Nuclear Regulatory Commission (NRC) Standards for Protection against Radiation (10 CFR Part 20)	The NRC establishes standards for protection against ionizing radiation. Such standards control the receipt, possession, use, transfer, and disposal of licensed material by any licensee in such a manner that the total dose to an individual does not exceed regulated thresholds for protection against radiation.

40 1.2.3 Existing Conditions

41 Treasury commissioned Project Site investigations to characterize environmental conditions of the Project
 42 Site and identify HTMW resulting from past activities conducted in the ROI. An [Environmental Condition of](#)
 43 [Property \(ECOP\)](#) report identified specific Recognized Environmental Conditions (RECs) within 0.25 mile
 44 of Treasury's proposed parcel, including Underground Storage Tanks (USTs), petroleum-related spills,
 45 ACMs, LBPs, PCBs, radioactive materials, chemical and biological hazards, rusted equipment, and
 46 disposal sites. **Table 2** provides the locations and descriptions of these RECs (SIA-TPMC, LLC, 2020a);
 47 most RECs are associated with specific buildings shown on **Figure 2**.

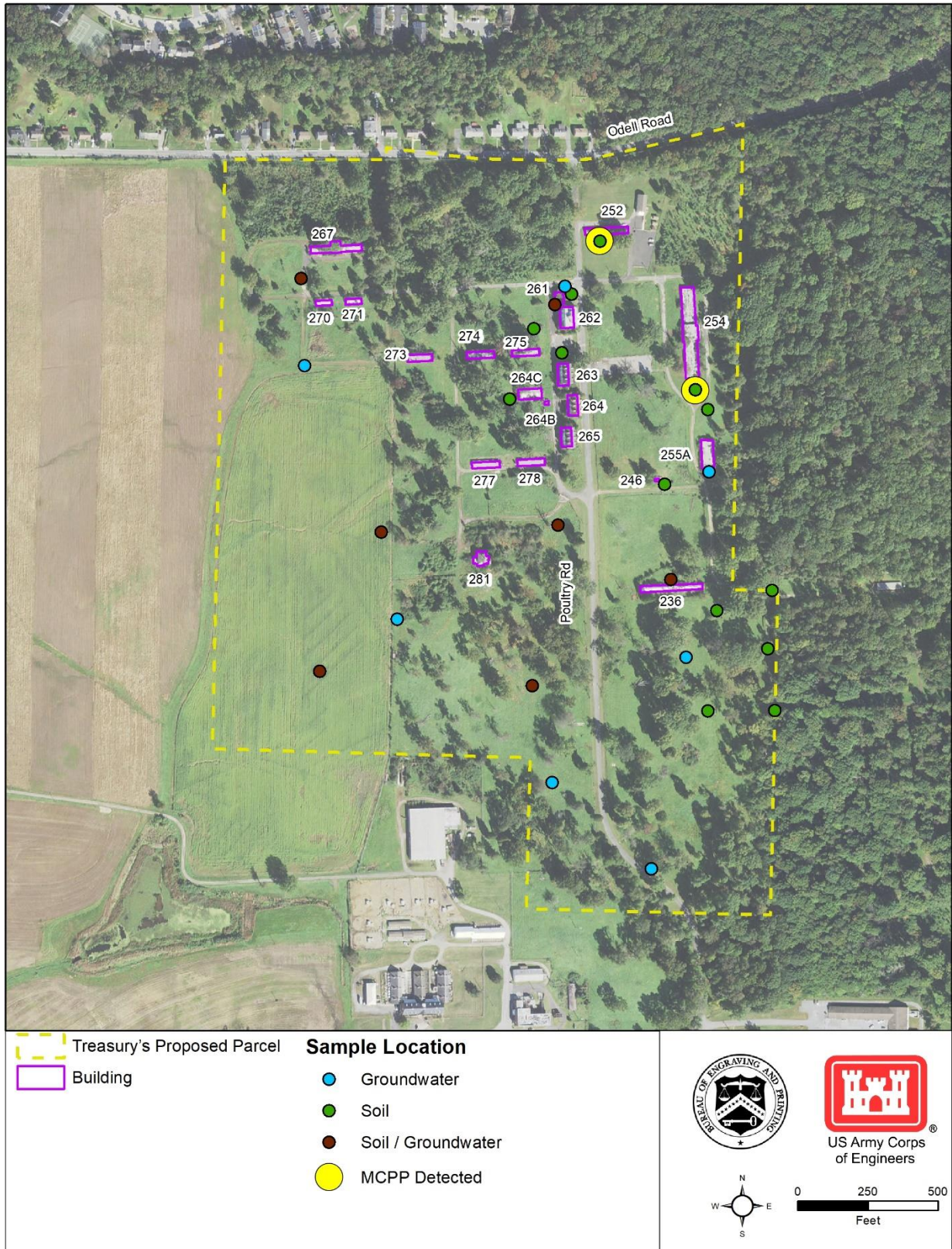
48 Treasury also analyzed the portion of the Project Site associated with the proposed entrance road and
 49 Powder Mill Road modifications. With the exception of two AOCs located within 0.25 mile, but outside, of
 50 the Project Site (see **Table 2** and **Figure 1**), no RECs or other HTMW concerns are anticipated in these
 51 areas (USDA, 2020).

52 Based on the RECs identified in the ECOP report, Treasury's proposed parcel qualifies as an ECOP Area
 53 Type 2, which is defined as an area or parcel of real property where only the release of petroleum products
 54 or their derivatives has occurred (SIA-TPMC, LLC, 2020a). To further evaluate these RECs, Treasury
 55 commissioned a Phase II Investigation (SIA-TPMC, LLC, 2020b). From October 14 to November 4, 2019,
 56 a total of 27 soil samples and 13 groundwater samples were collected to assess the potential risk posed to
 57 Treasury's proposed parcel from possible contamination sources (see **Figure 2**).

58 The Phase II Investigation identified shallow soil contaminated by the pesticide Mecoprop (MCP), although
 59 the ECOP report did not identify any known prior use of pesticides within Treasury's proposed parcel. MCP
 60 concentrations were found at only two soil sample locations: one next to Building 252 and one next to
 61 Building 254 (see **Figure 2**). High concentration levels of arsenic were also detected in the shallow soil
 62 samples. While arsenic amounts at individual sample locations were slightly higher than background
 63 concentrations reported by the MDE, the average concentrations correlated with MDE-reported data,
 64 indicating levels typical of the area. Average radionuclide concentrations detected in soil were lower than
 65 naturally occurring background concentrations. Groundwater sampling results yielded high concentrations
 66 of metals (e.g., arsenic, chromium, and lead) that exceeded screening levels; however, these
 67 concentrations naturally occur in the soil and sediment in the ROI.

Table 2: RECs in the ROI

REC	Location	Description
USTs	Building 261	Two USTs were identified in Building 261, located east of the Boiler House, from floor plans dated 1934. The current status of these USTs is unknown as none were visible during recent site reconnaissance.
Petroleum-Related Spills	Buildings 236, 254, 255, 261, and 267	Twelve spills occurred between 1987 and 2009 on the Project Site. All reported incidents have been closed, with the last incidents occurring in October 2009 at Buildings 236 and 255.
ACMs	Buildings 236, 252, 254, 255A, 261, 262, 263, 264, 265, 267, 270, 271, 273, 274, 275, 277, 278, 281	The following building materials used for these facilities were identified to contain ACM: shingles, pipe insulation, floor tiles, mastic, and dry wall.
LBP and PCBs	All buildings constructed prior to 1978	LBP, other lead sources, and PCBs are potentially present in facilities constructed prior to 1978. As the buildings within the ROI were built between 1914 and 1957, Treasury assumes that LBP was likely used, and that PCBs are present within the ballasts in fluorescent light fixtures installed during that time.
Radioactive Materials	Building 246	Radiological waste was historically stored in Building 246. The US Department of Agriculture's (USDA) Radiation Safety Division considers Building 246 released for unrestricted use and has determined that no additional radiation contamination surveys are required.
Chemical and Biological Hazards	Entire Project Site	Potential chemical and biological hazards may be present within the Project Site given its historical use for poultry research and scientific studies.
Rusted Equipment	Between Buildings 262 and 263	Rusted equipment was observed between Buildings 262 and 263.
Historical Disposal Sites	Areas of Concern (AOCs) east of the Project Site	Five AOCs located immediately adjacent to and within 0.25 mile to the east of the Project Site were identified as containing disposal sites (see Figure 1): 1) Dump off Odell Road 2) Dump off Old Poultry Road 3) Possible Disposal Area 4) Entech M23 Fill Area 5) Beltsville Human Nutrition Research Center The USEPA has issued a status of "no further action" for each AOC (USDA ARS, 2018). Therefore, these AOCs do not pose a hazard to environmental quality at the Project Site or elsewhere at BARC.



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Figure 2: Soil and Groundwater Sampling Sites within Treasury's Proposed Parcel

71 Overall, no elevated HTMW concentrations associated with USTs, petroleum-related spill incidents, or other
72 property conditions (e.g., rusted equipment, radionuclides, and biological and chemical hazards) were
73 detected in the soil or groundwater samples collected within the vicinity of the RECs. Currently, the USDA
74 does not use hazardous materials or generate hazardous waste at the Project Site. Of the three existing
75 operational buildings on the Project Site, one is used for administrative purposes and the other two are
76 used to support poultry research activities.

77 **1.3 Environmental Effects**

78 This section analyzes the potential HTMW impacts within the ROI that could occur under the Proposed
79 Action (i.e., Preferred Alternative) and No Action Alternative. Measures to reduce potential adverse HTMW
80 effects from the Proposed Action are also identified.

81 **1.3.1 Approach to the Analysis**

82 For this analysis, Treasury defined a significant adverse impact as one that would result in:

- 83 • An increase in the amount of hazardous substances used, stored, or requiring disposal by a site
84 user beyond what is permitted or manageable.
- 85 • An increase in the potential for soil, surface water, or groundwater contamination within the ROI
86 that could increase human health or ecological risk.
- 87 • An interruption or impediment to any ongoing cleanup efforts.
- 88 • An interference with the unrestricted use of properties located outside of the Project Site due to
89 contamination within the Project Site.

90 To determine potential HTMW impacts, Treasury analyzed the existing conditions at the Proposed Site
91 through site investigations (see **Section 1.2.3**).

92 **1.3.2 No Action Alternative**

93 Under the No Action Alternative, Treasury would not construct the proposed CPF at BARC. HTMW within
94 the ROI would not change due to the Proposed Action. The existing facilities within the Project Site would
95 continue to fall into disrepair, potentially releasing existing contaminants into the environment and resulting
96 in a continued **less-than-significant adverse impact** on the Project Site and ROI.

97 **1.3.3 Preferred Alternative**

98 *Construction*

99 Implementation of the Proposed Action would require the demolition of existing buildings within the Project
100 Site that likely contain regulated materials (see **Table 2**). Prior to conducting demolition activities, Treasury
101 would conduct a survey to identify any regulated building materials and remove or encapsulate them to
102 avoid the release of HTMW into the environment during the demolition process. Additionally, Treasury has
103 not identified evidence of HTMW or former aboveground or belowground structures elsewhere within the
104 Project Site outside Treasury's proposed parcel. Should an unexpected discovery of an HTMW concern
105 occur during construction, however, work in that location would stop until the potential contamination is
106 assessed and addressed.

107 With implementation of the impact-reduction measures described in **Section 1.4**, the removal and off-site
108 disposal of regulated building materials would result in a **beneficial impact** on the environment of the ROI,
109 as these materials would no longer be available for potential release due to lack of building maintenance.
110 No contaminants were detected at concentrations that would pose a risk to construction workers.

111 The use of construction equipment and vehicles during construction of the Proposed Action would create
112 the potential for discharge, spills, and contamination of commonly used products, such as diesel fuel,
113 gasoline, oil, antifreeze, and lubricants, at the Project Site. Even without major release events, multiple
114 minor releases could potentially affect the environment within the ROI. All hazardous materials or waste
115 discovered, generated, or used during construction, however, would be handled, containerized, and
116 disposed of in accordance with applicable federal and state regulations. With implementation of the impact-
117 reduction measures described in **Section 1.4**, the potential for accidental releases of HTMW would have
118 **less-than-significant adverse impacts** on the Project Site and ROI, which would be minimized to the
119 extent practicable through adherence to these procedures and requirements.

120 *Operation*

121 The proposed CPF would use limited quantities of hazardous materials for the currency production process,
122 as documented in [Treasury's Tier II Emergency and Hazardous Chemical Inventory Report to the USEPA](#)
123 (BEP, 2019). Hazardous materials may include solvents, acids, bases, inks, petroleum-based lubricants,
124 and batteries. When not in use, hazardous materials would be stored in sealed, labeled containers and
125 drums secured in marked cabinets, lockers, and tanks, and with appropriate secondary containment. Some
126 hazardous materials would also be stored in bulk quantities in a bulk chemical storage area.

127 Hazardous materials would be stored and used according to applicable federal and state regulatory
128 requirements and established Treasury procedures (BEP, 2017). These process controls, combined with
129 Treasury's experience handling these hazardous materials without significant incident, would ensure that
130 any adverse impacts or potential accidental release from the use, handling, or storage of HTMW during
131 operation of the proposed CPF would be **less than significant**, and managed in accordance with all safety
132 regulations.

133 **Table 3** summarizes the hazardous wastes anticipated to be generated at the proposed CPF in an average
134 year (US Department of the Treasury, 2018). The largest amount of hazardous waste would be generated
135 from wastewater treatment from nickel and chrome plating operations (i.e., 22,500 pounds [lbs] per year).
136 Generated hazardous waste would either be treated off-site prior to disposal or incinerated off-site in
137 accordance with federal and state requirements.

138 While **Table 3** provides anticipated hazardous waste amounts generated in an average year, the annual
139 quantity of hazardous waste may vary depending on the demand for monetary notes and other
140 requirements. For comparison, at the WCF, wastewater from electroplating comprised the greatest share
141 of hazardous waste in 2016 due to systems maintenance, whereas waste solvent is the primary source of
142 hazardous waste during most years (US Department of the Treasury, 2018). Further, it is possible that
143 demand and/or new environmentally sensitive manufacturing processes could reduce hazardous waste
144 generation types and quantities in future years.

145 The proposed CPF would use manufacturing process controls for hazardous waste containment (e.g., site
146 curbs, containment basins), recycling, and on-site treatment of aqueous effluent generated during the
147 production process (e.g., wastewater treatment processes) (BEP, 2019; US Department of the Treasury,
148 2018). In addition, the proposed CPF would incorporate measures described in the Bureau of Engraving
149 and Printing's (BEP) "[Reducing Environmental Impacts](#)" memorandum (BEP, 2017). Thus, operation of the
150 proposed CPF would have **less-than-significant adverse impacts** on the types and quantities of
151 hazardous wastes generated and Treasury's ability to manage these waste streams.

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Table 3: Anticipated Hazardous Waste Generation at the Proposed CPF

Material Description	Quantity Generated ¹ (lbs)	Disposal Method
Waste solvent from cleaning printing presses or other equipment, spill collection, and unused or expired shelf life non-halogenated solvents; Ignitable waste	7,200	Off-site treatment and landfill or surface impoundment
Waste from treatment of wastewater from nickel and chrome plating operation; Chromium, lead, and electroplating wastewater treatment sludge	22,500	Off-site treatment and landfill or surface impoundment
Depleted chromium acid bath from chromium plating of currency plates; Corrosive, chromium, and lead waste.	3,540	Landfill or surface impoundment
Waste liquids from printing press chrome cylinder repair process, involving electroplating; Chromium and corrosive waste.	125	Off-site treatment
Residual solvents, inks, oils collected from punctured aerosol cans, and solvent wastes from quality testing of currency in a lab. Ignitable waste	360	Incineration
Caustic filters from wiping solution system in Intaglio plate printing with free liquids	820	Off-site treatment and landfill or surface impoundment
Waste oil	360	Unknown

Source(s): (US Department of the Treasury, 2018)

1. Projected hazardous waste generation at the proposed CPF is based on hazardous waste generation in 2016 at the Western Currency Facility (WCF) in Fort Worth, Texas.

153 **1.4 Impact-Reduction Measures**

154 As part of the Proposed Action, Treasury would implement the following impact-reduction measures to
155 minimize potential adverse HTMW impacts:

156 Pre-Construction

- 157 • Survey buildings slated for demolition to determine presence of regulated building materials that
158 would need to be removed or encapsulated prior to demolition activities.
- 159 • Transport removed regulated building materials and contaminated soil to off-site, federally
160 approved waste management facilities.
- 161 • Contract USEPA- and MD-licensed workers to conduct all survey and removal actions in
162 accordance with applicable USEPA, MDE, and DOT regulations, including the [National Emissions](#)
163 [Standards for Hazardous Air Pollutants \(NESHAP\) Compliance Monitoring](#) for ACM (see the [Air](#)
164 [Quality Technical Memorandum](#)), the RCRA for LBP, and the TSCA for PCBs.

165 Construction

- 166 • Implement construction best management practices (BMPs) to minimize impacts from accidental
167 releases or potential discharge of construction materials and equipment.
- 168 • Implement spill and leak prevention and response procedures, including maintaining a spill kit at
169 the Project Site.
- 170 • Report releases of regulated quantities of petroleum-based fluids to Treasury and the MDE and
171 clean up releases according to applicable state regulatory requirements.

- 172 • In the event of an unexpected discovery of a HTMW concern, cease operations in that area until
173 further characterization is performed and the HTMW is properly managed.

174 Operation

- 175 • Store and secure hazardous materials in appropriate sealed and labeled containers in marked
176 cabinets, lockers, tanks, and storage areas.
- 177 • Incorporate hazardous material and waste reduction initiatives in accordance with the BEP's
178 "Reducing Environmental Impacts" memorandum.

179 **1.5 Mitigation Measures**

180 Treasury should implement the following project-specific mitigation measure to further reduce the potential
181 for adverse HTMW impacts:

- 182 • Characterize soils during excavation, particularly in the vicinity of Buildings 252 and 254, and route
183 any contaminated soils for proper disposal in accordance with applicable regulations.

184 **1.6 References**

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