

NEPA REVIEW SCREENING FORM 3A  
Actions Likely to be Categorically Excluded

Document ID #:  
DOE/CX-00174

I. Project Title:

Interim Structural Stabilization of Tunnel 2

II. Describe the proposed action, including location, time period over which proposed action will occur, project dimension (e.g., acres displaced/disturbed, excavation length/depth), and area/location/number of buildings. Attach narratives, maps and drawings of proposed action if doing so will assist in DOE's evaluation. Describe existing environmental conditions and potential for environmental impacts from the proposed action. If the proposed action is not a project, describe the action or plan.

Following subsidence at PUREX Tunnel 1 in May 2017, a structural integrity evaluation was submitted to Ecology in June 2017 (17-AMRP-0201) identifying that the potential risk of localized collapse of PUREX Storage Tunnel 2 is high, thus stabilization of the tunnel is recommended to be implemented as soon as possible to minimize the risk of failure.

Similar to Tunnel 1, DOE is proposing to fill Tunnel 2 with engineered grout to stabilize the tunnel and minimize the risk of future collapse [February 8, 2018, permit modification request letter to Ecology from DOE]. Filling the voids in Tunnel 2 with grout would increase the tunnel's stability and provide additional radiological protection durability while not precluding options for final closure [CHPRC-03619]. Grouting would also protect the equipment and waste containers stored in the tunnel from damage caused by a collapse, and would reduce or prevent releases of radiation and hazardous materials and/or contamination to the environment in the event of a breach of the tunnel.

The engineered grout would be pumped into the tunnel through existing risers using a conveyance and pumping system. The grout would be produced at either an off-site batching facility, or onsite at a portable grout batch plant, which would be located at the Integrated Disposal Facility (IDF) for the duration of the project. Both off-site and on-site grout batch plants will require the grout to be trucked to Tunnel 2 and pumped into the tunnel, after which the grout truck chute would be washed out and the truck would return to the grout batch plant (either onsite or offsite) in a continuous loop (see Attachment 1).

The operation of a grout wash-out station and all operations necessary to support grouting, including the trucks used to transport the grout between the IDF and Tunnel 2, would be necessary whether the on-site or off-site option is selected. Up to 43,000 cubic yards of grout would be used to stabilize the tunnel, and with each truck holding approximately 6.5 cubic yards of grout, approximately 5000 loads of grout would be delivered from IDF to Tunnel 2. Additional work activities in support of tunnel stabilization could include investigative work to obtain information on the tunnel's interior structure, and grading, excavation, road construction to allow access to the tunnel exterior.

Grouting is planned to start in August 2018, and is anticipated to take approximately 6 months.

PUREX is located in the 200 East area of the Hanford Site. The project footprint (see Attachment 1) includes the area containing Tunnel 2, as well as areas located adjacent to the tunnel, and the area within IDF that would be used for the operation of the grout batch plant. The project activities include clearing and grubbing approximately 5.5 acres of vegetation in order to expand the area necessary to facilitate grouting activities. However, the majority of the project area consists of existing roadways and graveled, heavily disturbed industrial areas.

The project area consists of construction grade fill and gravel with limited vegetation cover. Coordination between Hanford Site contractors and DOE has occurred to address historic preservation and wildlife issues, including migratory birds. Due to the conditions described above, DOE and CHPRC have enacted the emergency provision for cultural resource reviews in order to postpone the completion of the cultural resources review until the work on Tunnel 2 is complete [April 12, 2018, email communication between N. Cruz - CHPRC, C. Currie - MSA, and K. Mendez - DOE] [April 30, 2018, email communication between K. Cranna - MSA and N. Cruz - CHPRC].

Potential hazards during performance of the work and how they will be addressed include:

- Structural collapse - Conveyance system would utilize existing riser locations and would not add load to the roof.
- Release of radiological contamination- High efficiency particulate air (HEPA) filter skid would be installed to contain potential release of contamination.
- Hydrogen - HEPA Vent would minimize buildup of Hydrogen.
- Equipment buoyancy - short lifts of grout will not cause uplift on equipment and dried grout

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would anchor equipment.

- Fire - Grout materials have been evaluated for chemical reactivity with the contents of the tunnel and it has been determined that grouting the tunnel would not result in an increased fire hazard.
- Heat generation - short lifts of grout and mix design with low cement content would minimize heat generation.

Other options for stabilizing the PUREX tunnels were discussed, evaluating relative factors and risk(s). Grouting of the tunnels would improve stability, provide additional radiological protection, and increase durability. Filling the tunnel with engineered grout was determined by a DOE assembled expert panel to be the best alternative to provide stabilization and to protect human health and the environment, while not precluding any long-term action that will be determined at a later date through the CERCLA process [CHPRC-03519].

**III. Existing Evaluations (Attach them):**

**Ecological Review Report No. and Title:**

ECR-2018-233 PUREX Tunnel 2 Grout Stabilization in the 200 East Area, Hanford Site, Benton County, Washington

**Cultural Review Report No. and Title:**

2018-200-022 PUREX Tunnel 2 Grout Stabilization in the 200 East Area, Hanford Site, Benton County, Washington

**Maps:**

Attachment 1

**Other Attachments:**

**IV. Other Considerations**

	Yes	No
Does the proposed action fall within one or more of the actions listed in Appendixes A or B to Subpart D of 10 CFR 1021 and is thus categorically excluded (CX)? List applicable CX(s):	<input checked="" type="radio"/>	<input type="radio"/>
B2.5 Facility Safety and Environmental Improvements		
Are there extraordinary circumstances that may affect the significance of the environmental effects of the proposal, such as those set forth in 10 CFR 1021.410(2)? If yes, describe them.	<input type="radio"/>	<input checked="" type="radio"/>
Is the proposal connected to other actions with potentially significant impacts, or that could result in cumulatively significant impacts? If yes, describe them.	<input type="radio"/>	<input checked="" type="radio"/>
Would the proposed action threaten a violation of applicable statutory, regulatory, or permit requirements related to the environment, safety, health, or similar requirements of DOE or Executive Orders?	<input type="radio"/>	<input checked="" type="radio"/>
Would the proposed action require siting, construction, or major expansion of waste storage, disposal, recovery, or treatment facilities?	<input type="radio"/>	<input checked="" type="radio"/>
Would the proposed action disturb hazardous substances, pollutants, contaminants, or natural gas products already in the environment such that there might be uncontrolled or unpermitted releases?	<input type="radio"/>	<input checked="" type="radio"/>
Would the proposed action have the potential to cause significant impacts on environmentally sensitive resources? See examples in Appendix B(4) to Subpart D of 10 CFR 1021.	<input type="radio"/>	<input checked="" type="radio"/>
Would the proposed action involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species?	<input type="radio"/>	<input checked="" type="radio"/>

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**V. Responsible Organization's Signatures:**

Initiator:

Noah Cruz

*Print First and Last Name*

*[Handwritten Signature]*

*Signature*

5-9-2018

*Date*

Cognizant Program/Project Representative:

Al Farabee

*Print First and Last Name*

*[Handwritten Signature]*

*Signature*

5/9/18

*Date*

**VI. DOE NEPA Compliance Officer Approval/Determination:**

Based on my review of information conveyed to me concerning the proposed action, the proposed action fits within the specified CX(s):

Yes

No

Diori Kreske

*Print First and Last Name*

*[Handwritten Signature]*

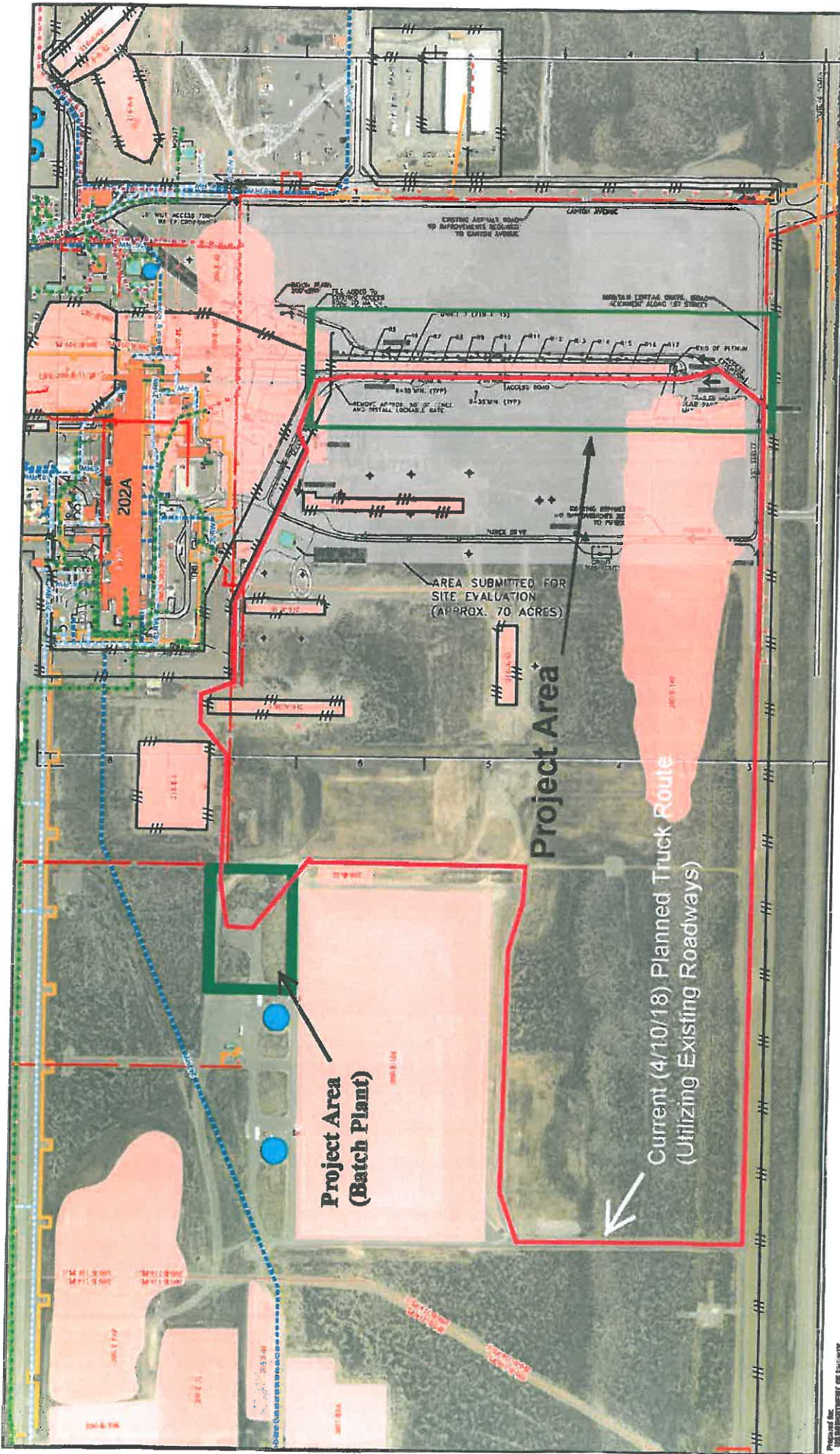
*Signature*

5/10/18

*Date*

NCO Comments:





■ Project Area    ■ Grout Truck Route    **Attachment 1**  
 Site Evaluation Map  
 Purex Tunnel 2  
 200 East Area

Prepared for:  
 THE DEPARTMENT OF ENERGY  
 AND ENVIRONMENTAL PROTECTION  
 OFFICE OF REGULATORY SERVICES  
 315 SOUTH CAPITOL AVENUE, INDIANAPOLIS, IN 46204  
 PROJECT: PUREX TUNNEL 2, 200 EAST AREA  
 DRAWING: SITE EVALUATION MAP  
 DATE: 03/28/2018 08:23 AM