SSAB Information Portfolio
Waste Acceptance Criteria

JD Chiou

Fluor-B&W Portsmouth, LLC

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Waste Acceptance Criteria (WAC)

"Waste Acceptance Criteria" ("WAC") means the criteria developed by Respondent ***with community input*** *and approved by Ohio EPA which specify standards that must be met by each waste prior to its acceptance into any on site disposal facility, if such a facility is selected as a remedy pursuant to these orders. The criteria must specify: waste evaluation and characterization standards, waste physical characteristics standards, waste packaging standards, waste safe handling standards, waste transportation standards, activity criteria and chemical concentration criteria.*

No Dispute Resolution Process for Matter Pertaining to WAC and OSDC

Waste Acceptance Criteria

Components Of WAC Specified In DFF&O

1. Waste Evaluation and Characterization Standards
2. Waste Physical Characteristics Standards
3. Physical Structure
4. Waste Packaging Standards
5. Waste Safe Handling Standards
6. Waste Transportation Standards
7. Removable and Fixed Activity Criteria
8. Chemical Concentration Criteria

Waste Acceptance Criteria

Other Potential Components Of WAC

1. Negotiated Administrative Prohibitions
   - Any Selected Administrative Prohibitions Invoked By Ohio EPA/DOE Including Offsite Wastes, etc.
2. Applicable or Relevant and Appropriate Requirements (ARAR)/To Be Considered (TBC) Defined Requirements
3. Waste Acceptance Organization, Quality Assurance/Quality Control, And Documentation/Record Requirements
4. Nuclear Safety Requirements As Specified in The Documented Safety Analysis and Technical Safety Requirement (if required)
5. Security Driven Requirements

OSDC Waste Acceptance Criteria – Components And Documentations

	Waste Disposition RI/FS	Proposed Plan	ROD	Preliminary Design (60% and 90% Designs)	Final Design (100%) Package RA Work Plan	Remedial Action Report
Community And Public Input	• Fence Line Neighbors Meeting • Quarterly Public Meetings • Monthly SSAB Meetings • Envoy Program	• 30-Day Public Review and Comment	• Public Input Incorporated	• Quarterly Public Meetings • Monthly SSAB Meetings • Envoy Program	• Quarterly Public Meetings • Monthly SSAB Meetings • Envoy Program	

Activity Criteria and Chemical Concentration Criteria	• **ARARs and TBCs**
	• **Conceptual Model Development**
	• **Field Data Collection**
	• **Lab Tests**
	• **F&T Modeling for WAC Development**
	• **Draft Limits in RI/FS**
		• **Ohio EPA Approved Limits**
		• **Negotiated Administrative Exclusion and Restrictions of Waste Streams**
		• Compliance Strategy
		• **Incorporate Community Input**
			• Performance and Protective Statement of the OSDC
			• Updates or Changes from the Proposed Plan If Necessary
					• **<u>WAC Implementation Plan:</u>**
					  • Acceptable Process Knowledge
					  • NDA Requirements
					  • Sampling Requirements
					  • QA/QC Requirements
						• Actual Compliance Record
						• Summary of Placed Waste Inventory and Characteristics

Waste Physical Characteristics Standards	• ARARs and TBCs • Simple Assumptions for Cost Estimation Purposes	• General Summary of the Proposed Approach		• **Categories, Sizes, Void Space, Grid/ Layer/distance, Compaction, etc.** • **Based on Long-Term Physical Stability Requirements**	• **<u>OSDC Impacted Materials Placement Plan</u>** • Updates or Changes From the Preliminary Designs If Necessary	• Actual Compliance Record • Completed 3-D Waste Layer Structure in the OSDC
Waste Packaging, Safe Handling, and Transportation Standards	• Simple Assumptions Consistent With D&D Approaches and Lessons Learned form Other DOE Sites for Cost Estimation Purposes	• General Summary of the Proposed Approach		• **By ESH&Q, NCS Engineering, and Security Based on All Relevant Short- and Long-Term Safety and Security Requirements**	• Updates or Changes From the Preliminary Designs If Necessary	• Actual Compliance Record

Waste Evaluation and Characterization Standards	• ARARs and TBCs
	• Simple Assumptions for Cost Estimation Purposes
		• General Summary of the Proposed Approach		• Updates or Changes If Necessary	• **<u>WAC Implementation Plan:</u>**
					  • WAO System Document
					  • Waste Profile Requirements
					  • Waste Tracking Requirements
					  • OEPA Inspection
						• Actual Compliance Record
						• Summary of Waste Placement Record
						• Summary of Project Performance Statistics

Waste Acceptance Criteria

Protectiveness Performance Requirements To Guide WAC Modeling And Development

- **Compliance Timeframe**: *1,000 Years*
- **Groundwater Protection Point of Compliance and Limits:** *At The Edge of Waste Footprint; Maximum Contaminant Limits (MCLs) for drinking water or Equivalent*
- **RME POC and Limits**: 100 Meters Down Gradient Of OSDC; Cumulative Elevated Lifetime Cancer Risk ≤ 10^{-5}, Hazard Index ≤ 1,
- **Ecological Receptors, POC, and Risk Limits:** TBD
- **Radon Flux through Cover:** ≤ 20 pCi/M^2/S
- **DOE Order 435 Requirements:** Performance Assessment and Composite Analysis Dose Limits (100mR/Yr Outside of The Buffer Zone)

Updated OSDC Conceptual Site Model

5/6. Calculate Uptake/Risk and WAC

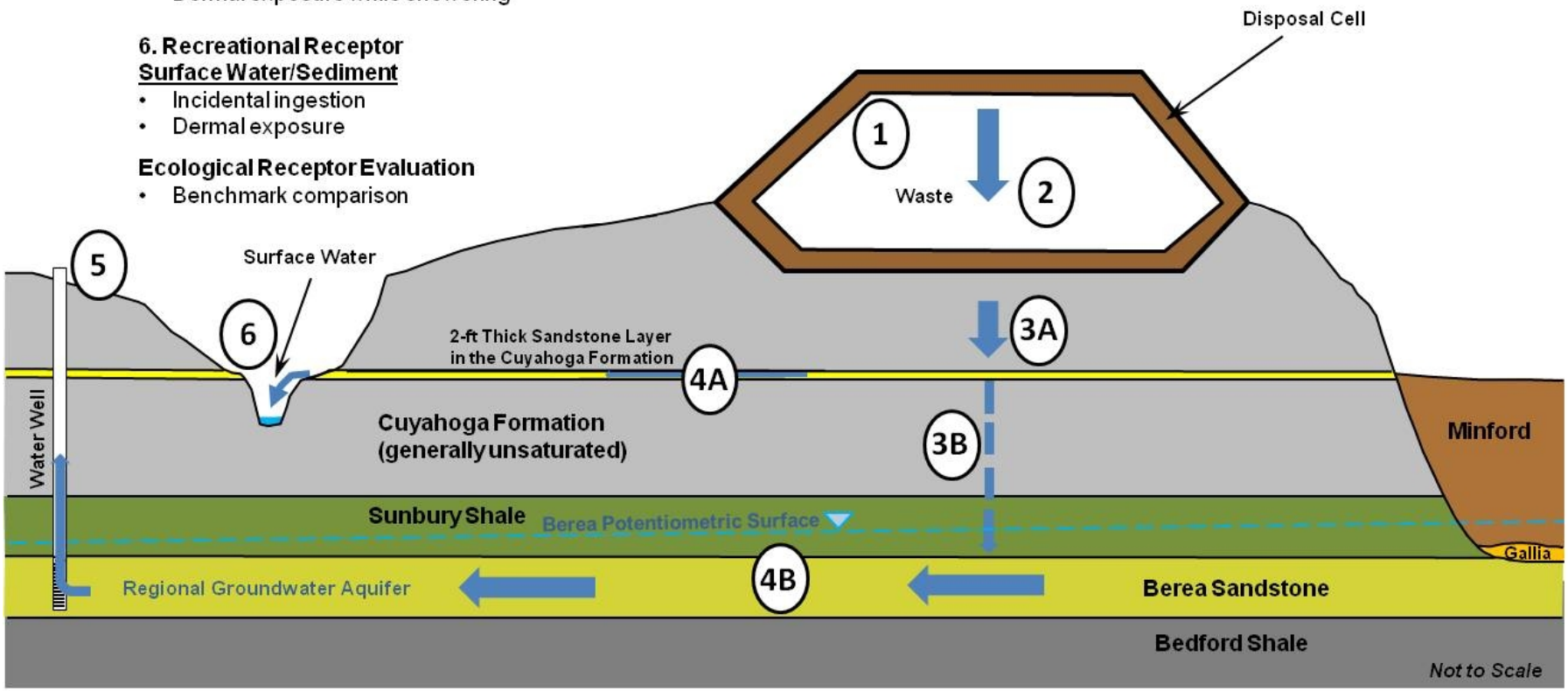
5. Resident Receptor
Well Water
- Ingestion of drinking water
- Inhalation of volatiles while showering
- Dermal exposure while showering

6. Recreational Receptor
Surface Water/Sediment
- Incidental ingestion
- Dermal exposure

Ecological Receptor Evaluation
- Benchmark comparison

1. Source Estimate

2. Infiltration/leaching rate through waste

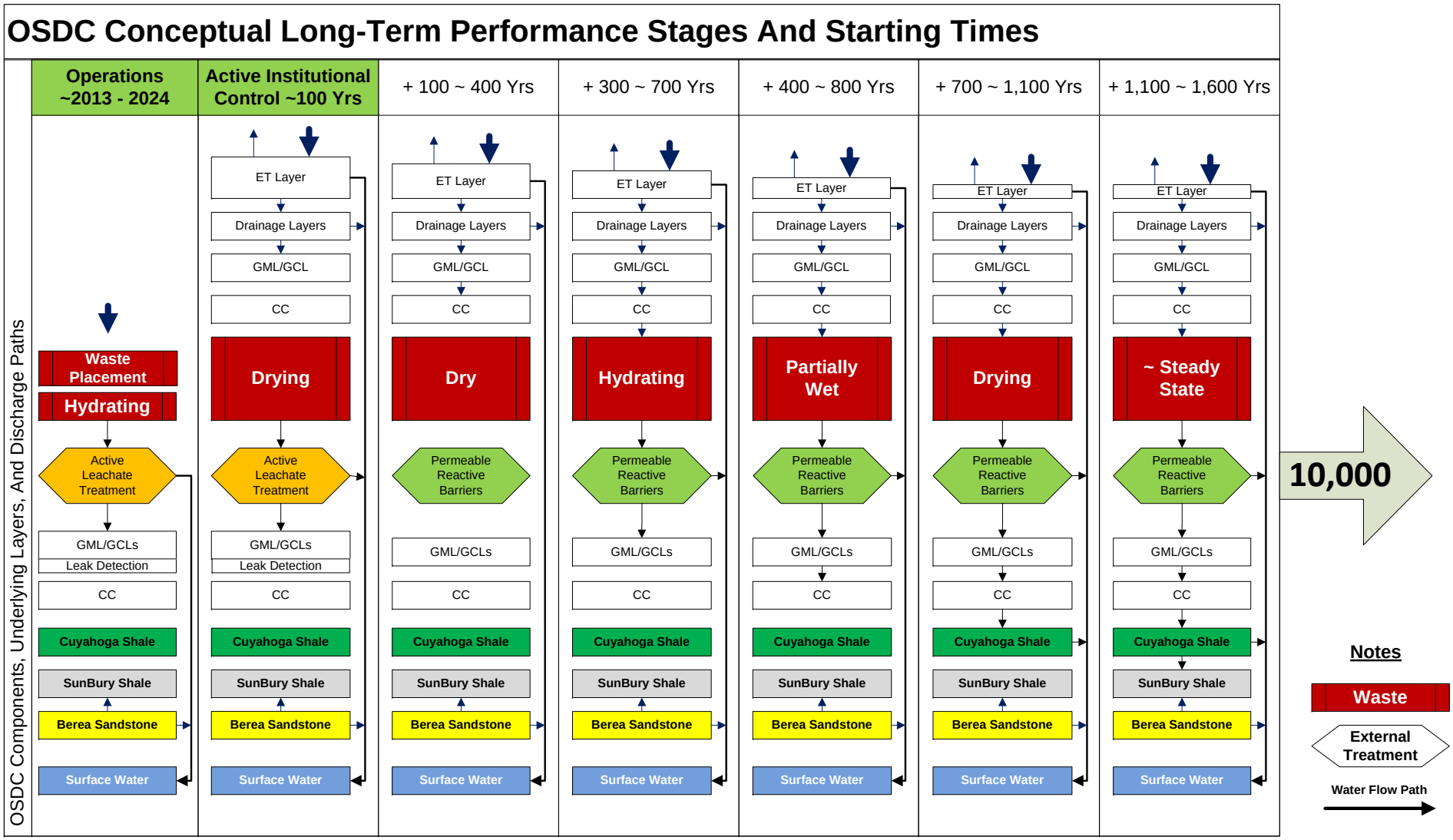


3A. Vertical migration to potential lateral pathway in Cuyahoga
3B. Potential vertical migration to lower confined saturated zone

4A. Lateral migration in potential lateral pathway
4B. Lateral migration in the regional groundwater aquifer

Information compiled for PORTS SSAB use by Fluor-B&W Portsmouth, LLC from DRAFT version of RI/FS

OSDC Conceptual Long-Term Performance



Modeling Assumptions: **100** GML/GCL/CC/DL **200** GCL/CC/DL **500** CC/(DL) **1,000** CC

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General Numerical WAC Development Steps

- **Step 0**: Identify potential Contaminants of Concern
- **Step 1**: Set limits so that Maximum Contaminant Limits (or equivalent) for individual Contaminants of Concern (COCs) will not be exceeded at the edge of waste footprint in 1,000 years
- **Step 2**: Check/revise limits so that Elevated Lifetime Cancer Risk ≤ 10^{-5}, HI ≤ 1, and DOE O 435.1 Performance Assessment requirements are met at location 100 meters down gradient for at least 1,000 years with combined impact from COCs
- **Step 3**: Verify DOE O 435.1 Composite Analysis requirements are met with combined impact from all residual sources for at least 1,000 years
- **Step 4:** Estimate the potential maximum dose up to 10,000 years