



U.S. DEPARTMENT *of* ENERGY

Office of Environmental Management

Hanford Field Office



200 West Pump and Treat Operations and RPO (Remedial Process Optimization) Implementation and Challenges

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Introduction

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- Background
- Mass Removal Targets
- Facility Modifications
- Coordination Efforts
- Challenges



Background

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- Contaminated groundwater from former waste discharges
 - CCl₄, Hexavalent Chromium, I-129, Nitrate, Tc-99, TCE, Tritium, Uranium
- 200W Pump & Treat
 - Operational in 2012
 - Upgraded in 2016
 - Expanded in 2024 and 2025
 - 14.3 billion gallons treated & over 1.1 million pounds contaminants removed through FY2025

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Mass Removal Targets

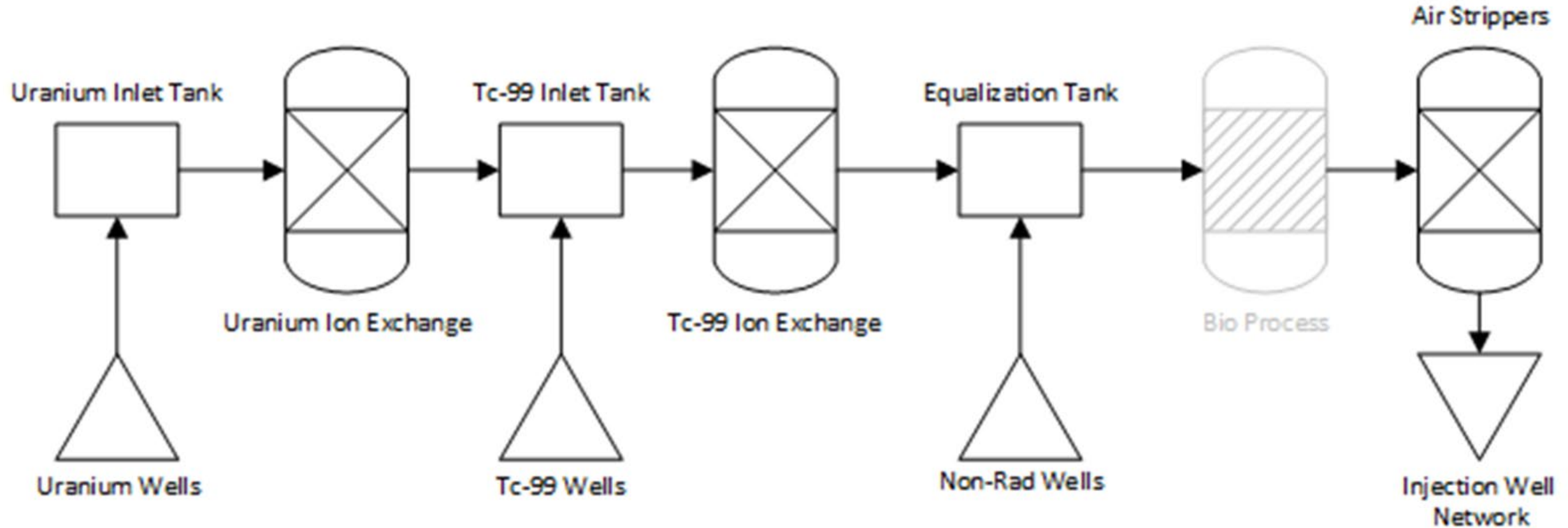
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- Remediation needs drive targets
- Acting now to yield largest reduction in active treatment duration
- Targets based on known concentration and expected plume conditions



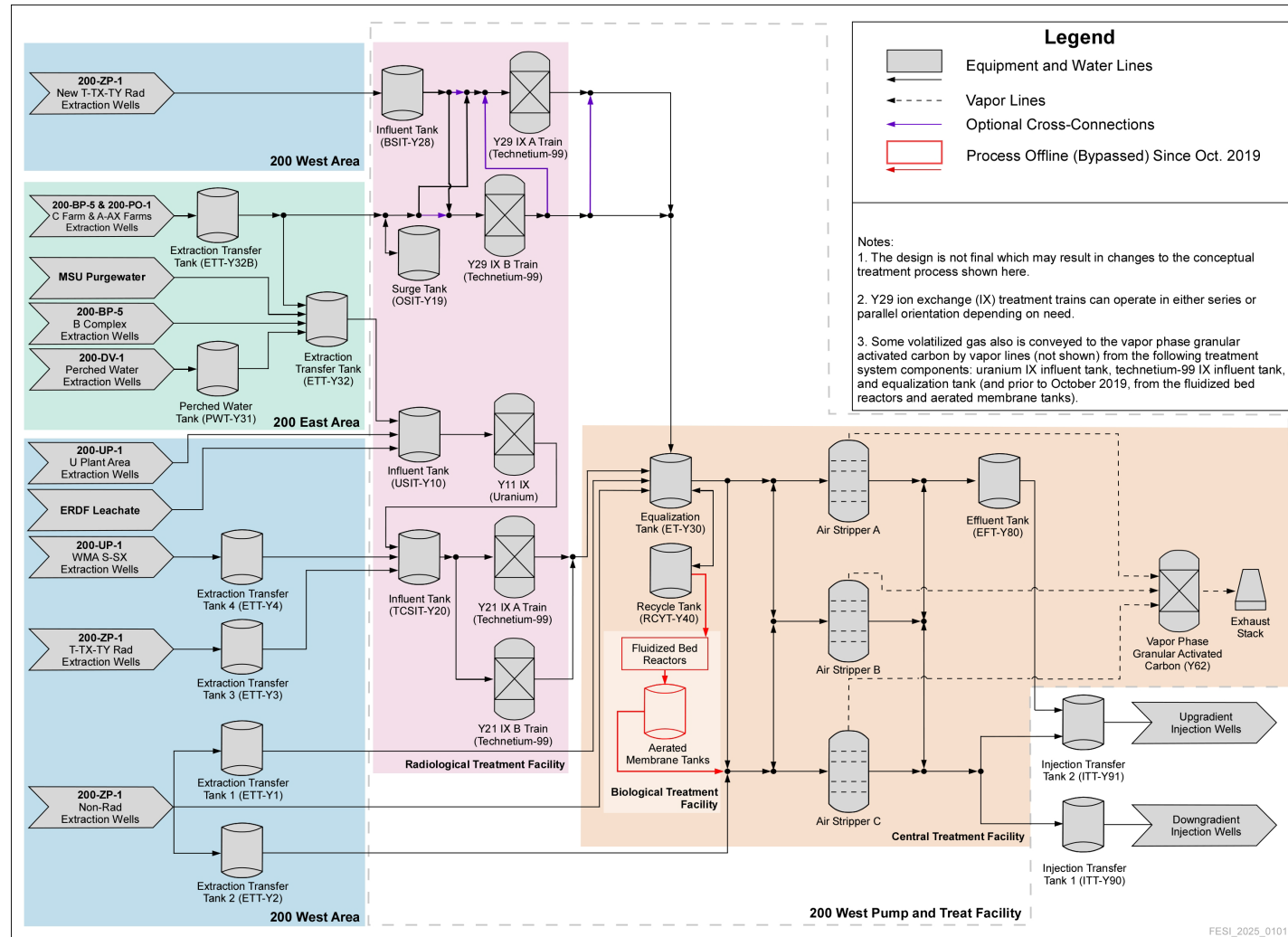
200W Pump & Treat (2014 to 2025 configuration)

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200W Pump & Treat (2025+ configuration)

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Facility Modifications

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- Suspension of Biological Treatment Process
 - Optimize carbon tetrachloride removal
 - Assess safe transitioning to managed natural attenuation of nitrate
- Modification of Flow Paths
 - Partial bypass of central system equalization tank
 - Upgrade of piping, pumps, and motors to achieve increased flow



Facility Modifications (continued)

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- Air Stripper Tower Testing
 - Design of 1,250 gpm
 - Testing up to 1,700 gpm
 - Good removal efficiency at 1,700 gpm
- Well Realignments & Network Expansion
 - Declining concentrations and/or rates at older wells
 - Target higher concentrations and increase extraction



Facility Modifications (continued)

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- Two additional ion exchange trains
- Third air stripper tower



Coordination Efforts: Well Locations

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- Modeling to show “ideal” locations
- Field walkdowns to confirm actual locations
- Balance needs of multiple stakeholders



Managing Competing Priorities and Challenges

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- Mass targets/plant efficiency
- Infrastructure upgrades and associated downtime
- Equipment maintenance and aging facility
- Constraints of differing parts of the system

