

Evaluating Liquid Waste Transfers and their Impacts to the SRS Tank Farms to Support Operations and Closure

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Savannah River Mission Completion



Teaming Partners



Proudly led by



Integrated subcontractors



Responsible for eliminating radioactive liquid waste produced from Cold War era nuclear weapons production

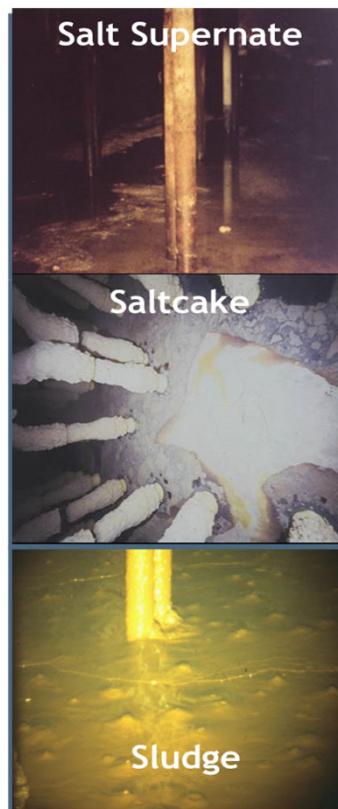
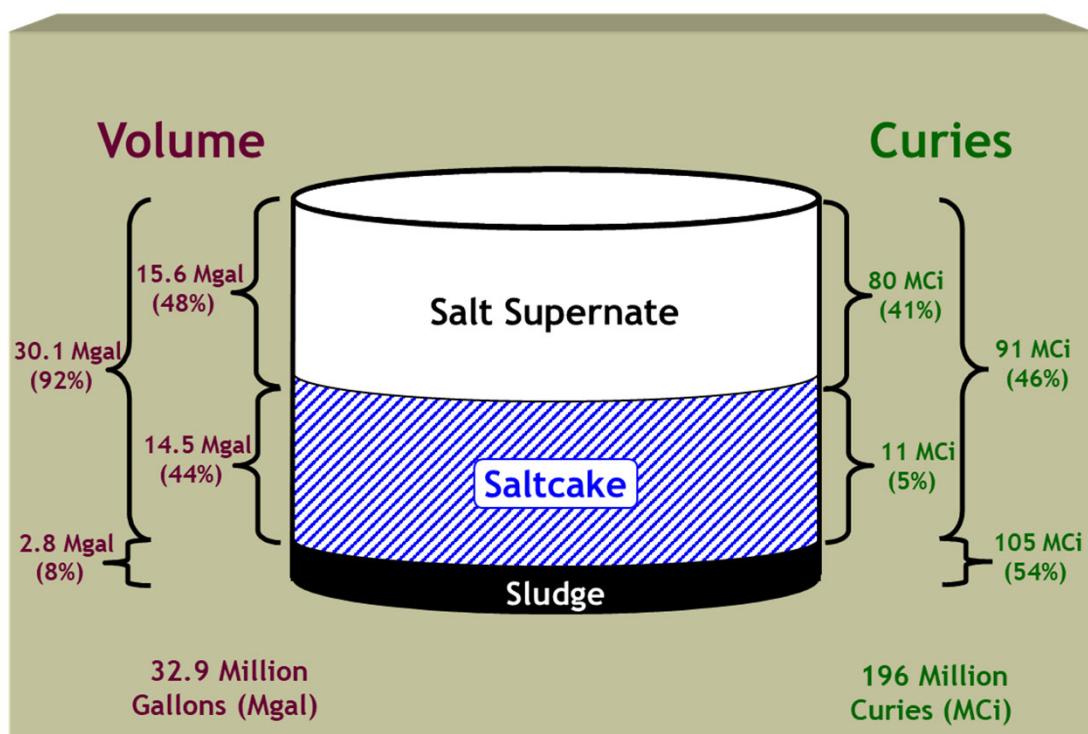
- SRMC's 10-year contract began operations on **February 27, 2022**
- Current workforce of **~3,700 employees** (including subcontractors)

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Inside the Tanks



Similar to

Pancake syrup

Similar to

Table salt

Similar to

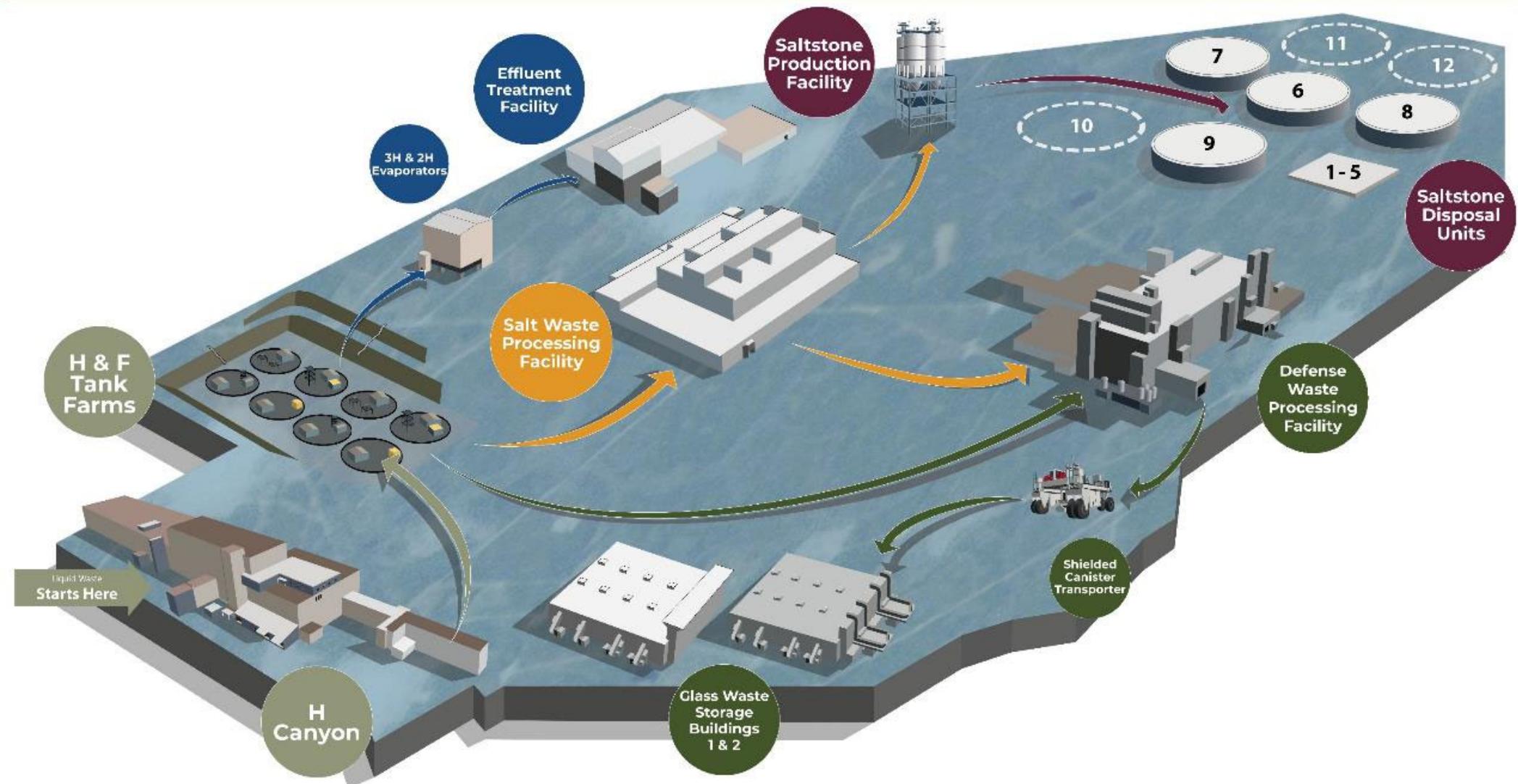
Peanut butter

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SRS Liquid Waste Facilities



Background

- **SRMC mission critical milestones**
 - 34 million liters (9 million gallons) Salt Waste Processing Facility (SWPF) Processing Rate
 - Accelerated Waste Tank Closures
- **Results in an increase in Tank Farm transfers**
- **Barriers**
 - Equipment failures, replacements, and adjustments
 - Weather
 - Procedure development
 - Outside facility changes

How has the Tank Farm adapted to meet these milestones?

By improving the transfer evaluation process

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Evaluated Transfer Approval Form (ETAF) Overview

- **Required prior to any waste tank to waste tank transfer**
- **Evaluated against Documented Safety Analysis (DSA) programs including**
 - Flammability
 - Corrosion
 - Sludge Carry-Over Minimization (SCOM)
 - Waste Acceptance Criteria (WAC)
 - Transfer control
- **Performed in the Waste Characterization System (WCS) Online application**

View ETAF

Reviewed By

Reviewed On

Scientific

Inputs

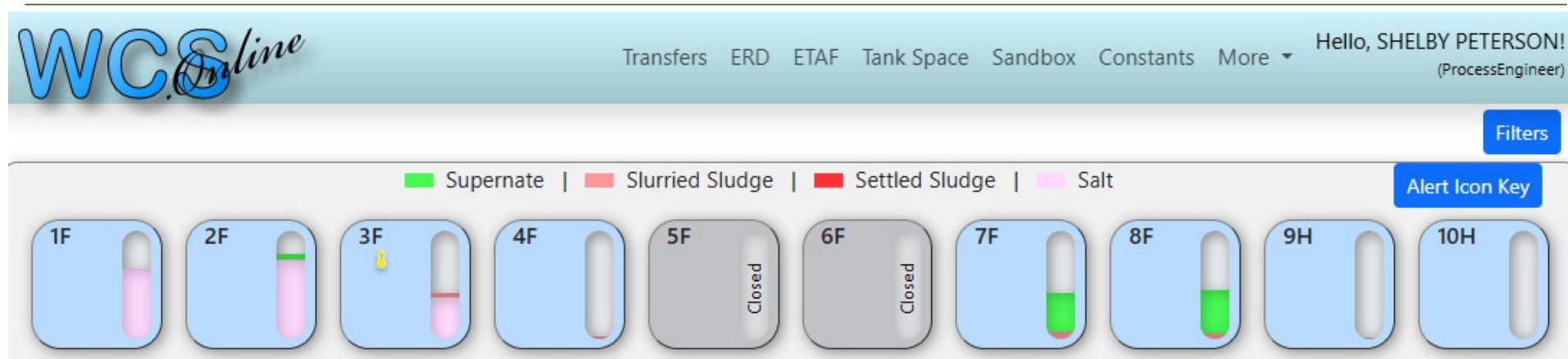
Outputs

Evaluations

Comp Measures

Projected ERD

WCS Online Overview



- Web-based software application
- Contains status/contents of waste tanks
- Provides evaluation of activities and data entry to efficiently determine facility impacts
- Controlled, safety software

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Emergency Response Datasheet (ERD) Overview

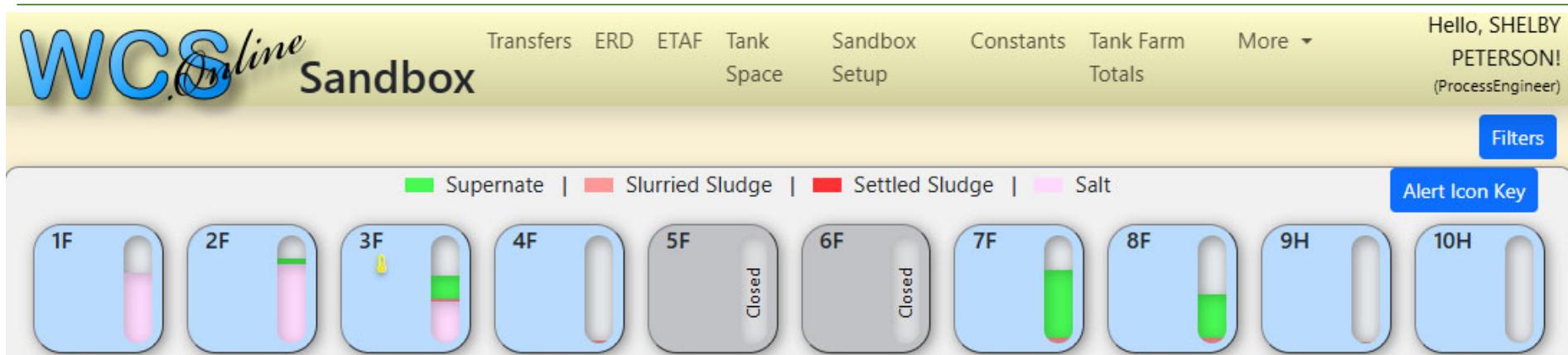
- Originally for use in emergency situations as a snap-shot of the Tank Farms current conditions
- Expanded to support day to day operations
- Emergency information includes
 - Dose concentrations in the event of a leak
 - Flammability emergency response priority
- Operational information includes
 - Temperature limits
 - Corrosion sample frequencies
- Data updated with WCS Online or external evaluations
- Contains conservative information
- Implemented by facility prior to activity causing impact

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Processing Improvements – Early Identification of Impacts



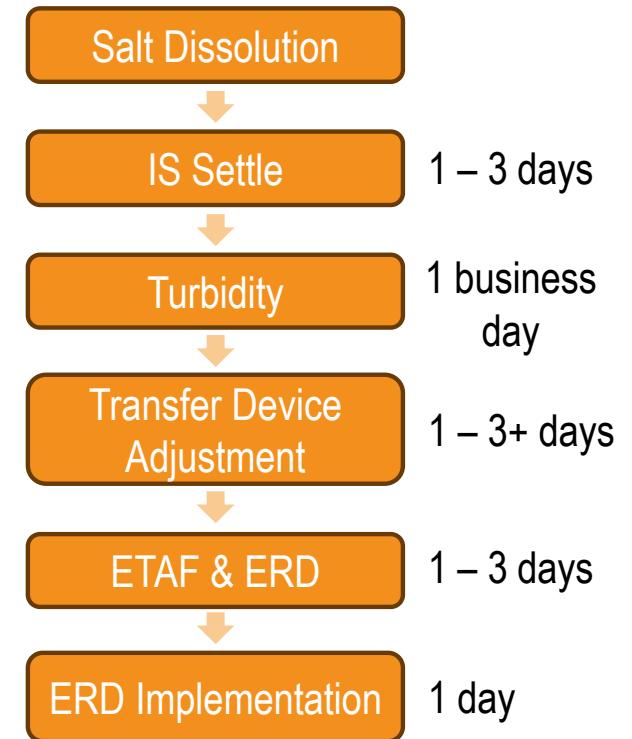
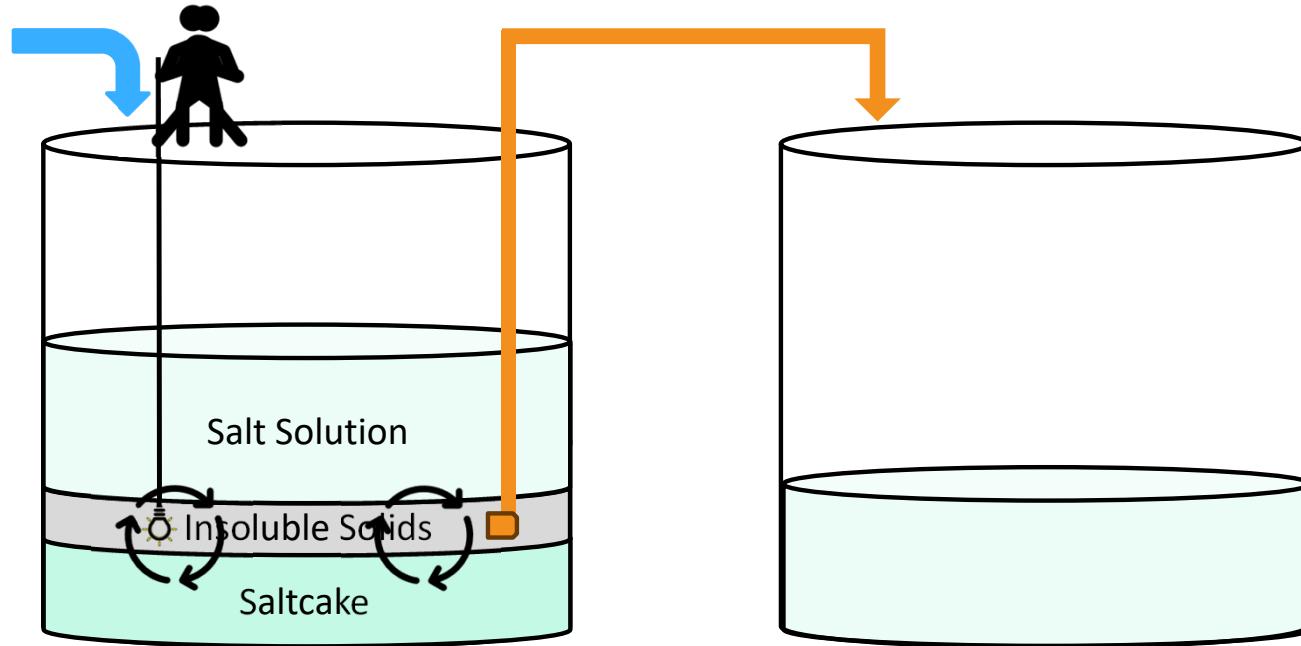
- WCS Online Sandbox
- Increased ERD Coordination
 - Communication
 - Optimization
 - Timing

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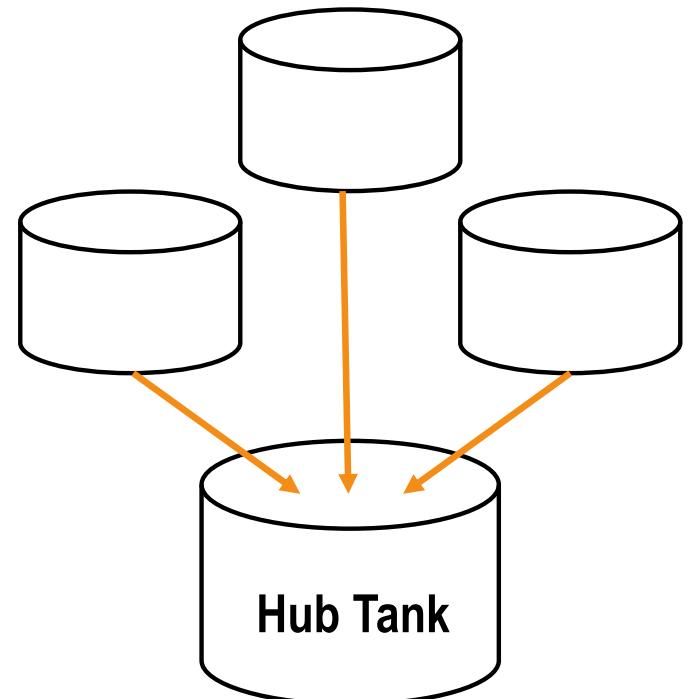


Processing Improvements Cont. – Streamlining Transfers



Processing Improvements Cont. – Waste Tank Maintenance

- **Hub tanks**
 - Receive salt dissolution/sludge removal material
 - Typically, last waste tanks to be closed
- **Lower layer/difficult to mobilize waste results in dilute batches**
- **Negative corrosion impacts**
- **Improvements**
 - Pre-treat waste tanks
 - Add excess, highly concentrated chemicals
 - Simultaneous transfers in



Conclusion

- Increased Tank Farm processing, increases ETAFs & ERDs
- Improvements made to ETAF & ERD process
 - Early identification of impacts
 - Streamlining transfers
 - Waste tank maintenance
- Allows efficiency while remaining in DSA compliance
- Supports SRMC to achieve mission critical milestones