



DEPARTMENT OF ENERGY

**Office of River Protection**

HANFORD SITE

## Tank Waste Committee Tank Farms to WTP Transfer Lines

Jeremy Johnson

ORP Tank and Pipeline Integrity Program  
Manager

February 13, 2013



# Transfer System

ORP-11242  
Revision 8

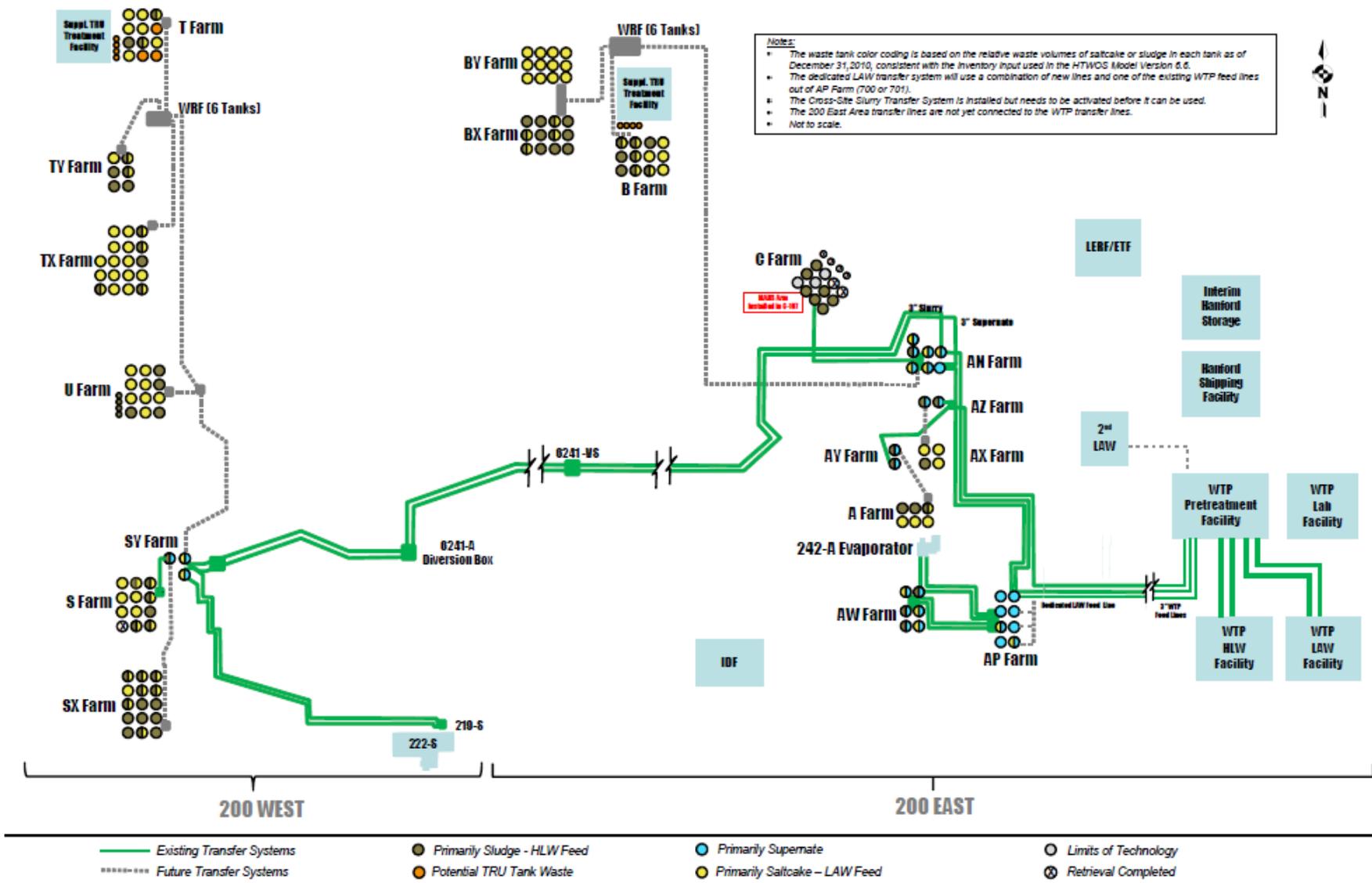


Figure 3-3. Hanford Tank Cleanup Status and Waste Transfer System



# WTP Feed Lines Background

- 3 Lines currently installed from Tank Farms to WTP Interface
  - SN-637 – Originates in the AZ Valve Pit
  - SN-700, SN-701 – Originates in AP-02D Pump Pit
  
- Lines were installed 2000-2001 as part of Projects W-314, W-211
  
- Lines are capped at the WTP interface and have not seen waste
  
- Designed to be maintenance free
  - Operational standards for flushing etc.

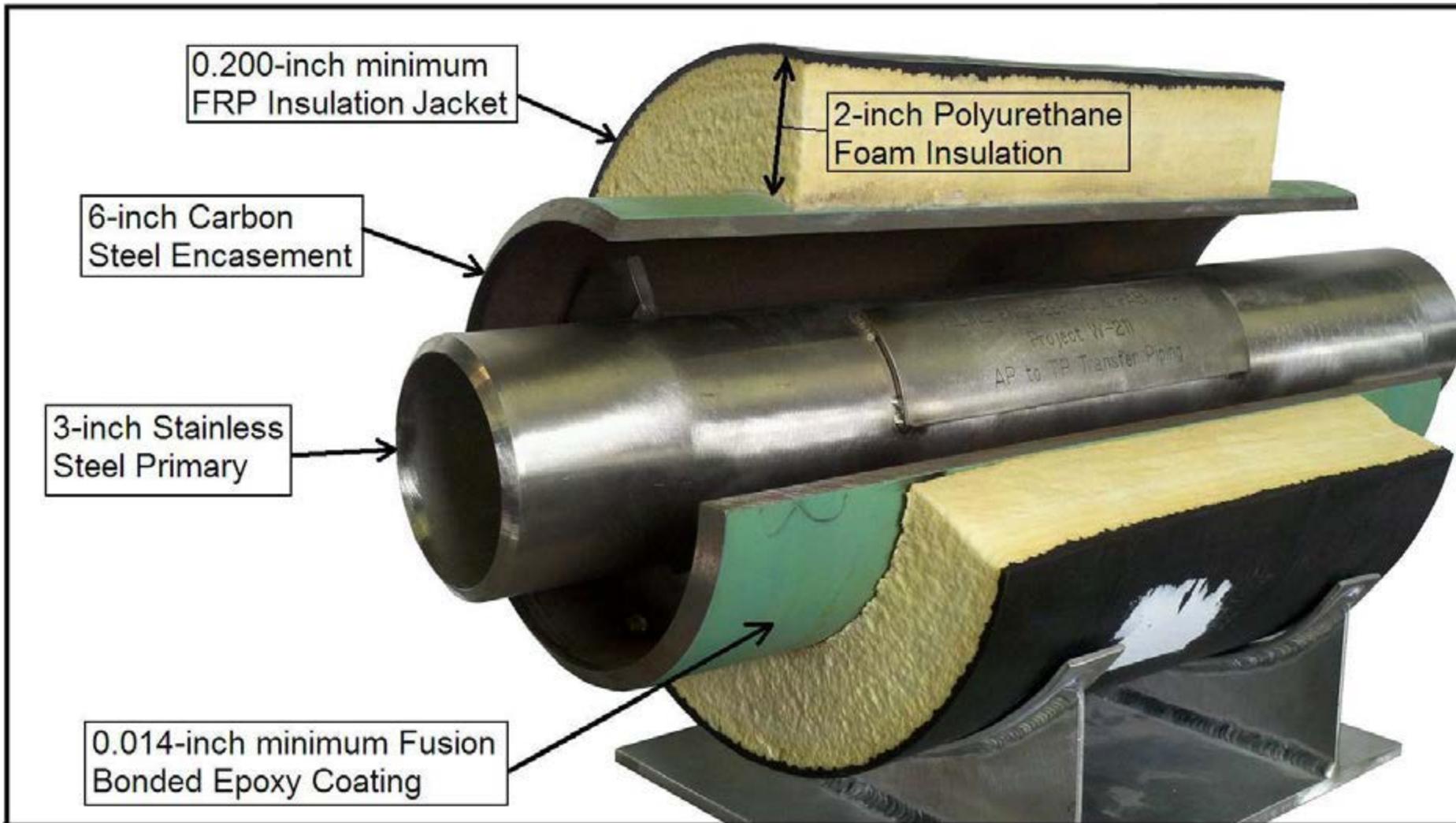


# Erosion and Corrosion Considerations

- Washington Administrative Code (WAC) and Code of Federal Regulations (CFR)
  - Require erosion and corrosion be considered during design, installation and post installation integrity assessments
- Lines were included in the 2006 IQRPE DST Integrity Assessment
  - Design Standards
  - Waste Compatibility
  - Corrosion Protection Measures
  - Past Integrity Assessments
  - Results of leak tests, internal inspections and examinations



# WTP Feed Lines





## Transfer Line Operations

- Tank Farms Waste Transfer Compatibility Program
  - Risk of line plugging and propensity for corrosion evaluated prior to all transfers
  
- Waste Transfer, Dilution, and Flushing Requirements
  - Minimum velocity requirements for transfers and flushing
  - Concentration of the overall waste or specific components may require dilution prior to transfer
  - Temperature considered to avoid solids precipitation or gelling
  - Flushing performed to remove deposited solids and reduce propensity for corrosion



# Fitness for Service Program

- Program objective is to monitor and assess the Tank Farms Waste Transfer System for degradation in order to maximize it's service life.
- Program recently initiated but will be maintained similar to tank integrity programs
- FY-13 Activities
  - Erosion/corrosion monitoring of C-Farm slurry jumpers.(Over 2M gallons no wall thinning)
  - DST transfer system jumpers shipment to 222-S lab for forensics and pipe wall thickness measurements.
  - Pipe wall thickness measurements of 242-A evaporator slurry and supernatant jumpers.
  - Transfer system valve abrasion/cycle testing.
  - Completion of non-metallic degradation test plan.
  - Pneumatic encasement pressure testing.



# C-Farm Jumper





## SY Transfer Lines

