West Valley Demonstration Project
Project Update
Quarterly Public Meeting

Presented by: Dan Coyne, President
CH2M HILL B&W West Valley, LLC.
August 28, 2013

One Project. One Team. One Goal.

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

Facility Deactivation Continues

Main Plant Process Building (MPPB)

- Completed deactivation activity and asbestos abatement in the Analytical Aisle Labs and Laundry
- Completed interference removal for Liquid Waste Cell access
- Deactivation activities continue in Upper Warm Aisle, Hot Cells and Plant Office
- Continued characterization of high-hazard areas

Downdraft Table Loadout in Vitrification Cell

Vitrification Facility

- Completed deactivation of out-of-service piping systems in Operating Aisles
- Continued clean out of materials and debris from Vitrification Cell

Balance of Site Facilities (BOSF) Accomplishments

Completed

- Demolition and waste loadout of Waste Tank Farm (WTF) Test Tower foundation
- Demolition of 01-14 Building, RCRA closure sampling, and soil cover placement

Piers Removal from WTF Test Tower Foundation

01-14 Demolition in Progress…

…and Complete

Waste Operations Accomplishments

Waste Processing and Shipping Accomplishments

- Repackaging in the Waste Processing Area
  - Completed 113 drums and 64 B-25 boxes (177 out of 489 containers completed)
- Legacy waste shipped contract-to-date
  - 54,998 ft^3 of Low-level Waste (LLW)
  - 1,615 ft^3 of Mixed Low-level Waste (MLLW)
  - 120 ft^3 hazardous waste
  - 976 ft^3 industrial waste

Loading LLW Shipment in LSA 3

Repackaging LLW in Waste Processing Area

Waste Operations Accomplishments

Contract-to-Date New Generation Waste Shipments Completed

- Hazardous/Universal waste – 211 ft^3
- Industrial waste – 67,865 ft^3
- LLW – 69,790 ft^3
- MLLW – 596 ft^3

Vitrification Components

- Preparing for off-site shipment and disposal
  - Vitrification melter
  - Concentrator Feed Makeup Tank (CFMT)
  - Melter Feed Hold Tank (MFHT)

Building 01-14 LLW Shipments to Alaron

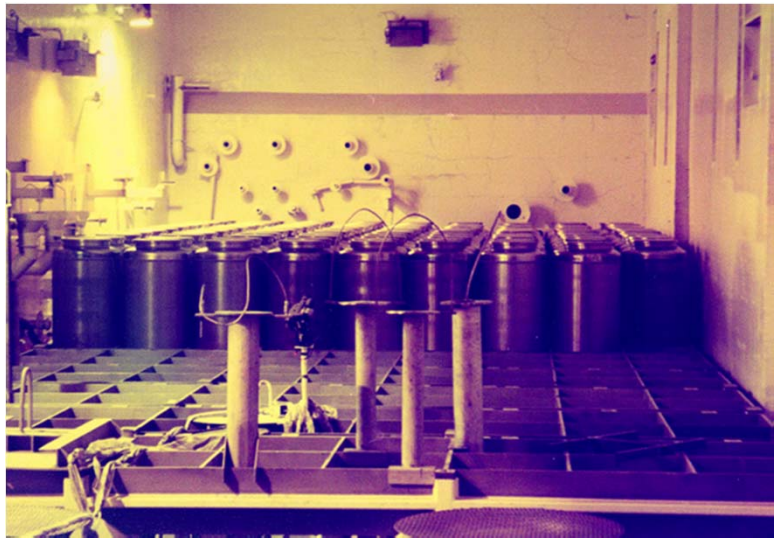
Vitrification Components will be Prepared for Shipment

Six-Month Look Ahead

Milestone 1: Complete high-level waste (HLW) canister relocation	Complete Storage Pad Construction
Milestone 2: Process, ship and dispose of all legacy waste off-site	Prepare Vitrification melter and components for off-site shipment; Complete low-dose transuranic drum removal from Chemical Process Cell
Milestone 3: Demolition and removal of the MPPB and Vitrification Facility	Commence Vitrification Cell decontamination
Milestone 4: Complete all work described in the Performance Work Statement	Conduct pre-demolition and initiate demolition activities for seven site facilities

Questions?

High-Level Waste Canisters Relocation and Storage Project Overview Quarterly Public Meeting



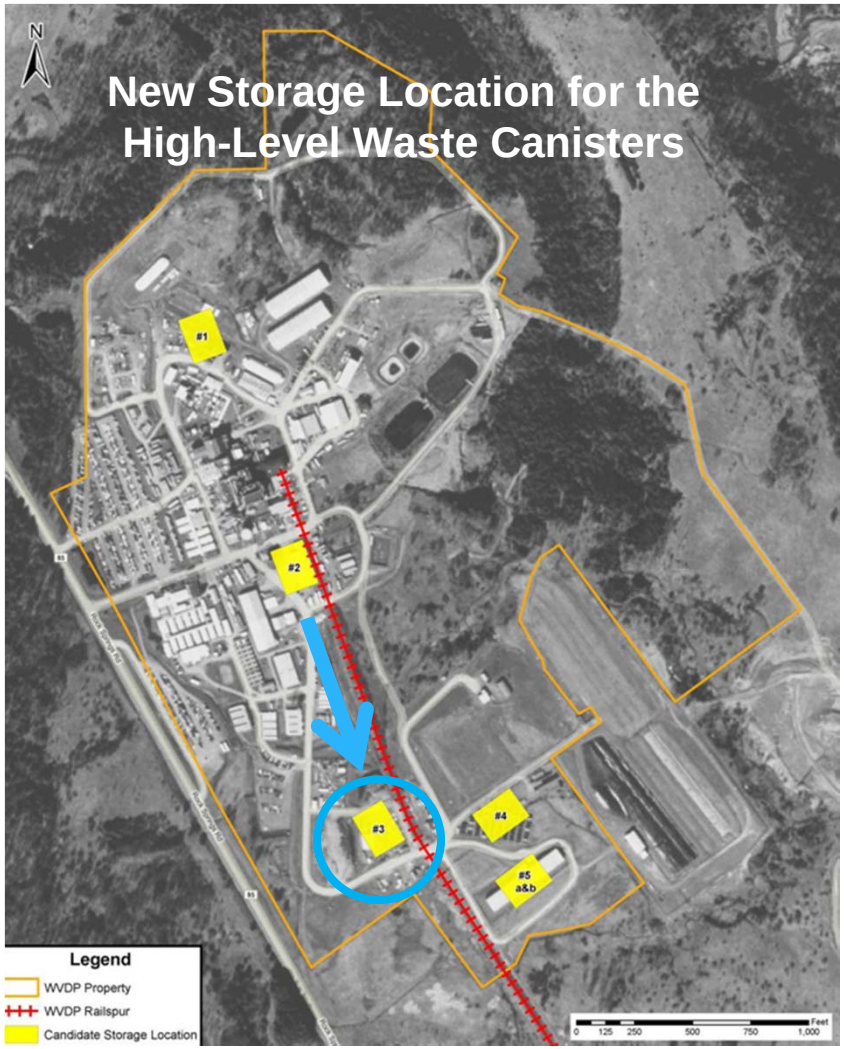
Presented by: Heatherly Dukes,
High-Level Waste Project
CH2M HILL B&W West Valley, LLC.
August 28, 2013

One Project. One Team. One Goal.

HLW Canister Relocation & Storage Project

Objective: Relocating waste from Main Plant's High-Level Waste (HLW) Interim Storage to a stand-alone dry cask storage system:

- 275 HLW canisters
- 2 evacuated canisters
- 1 non-routine HLW canister (WV-413)
- 2 Spent Nuclear Fuel (SNF) debris drums



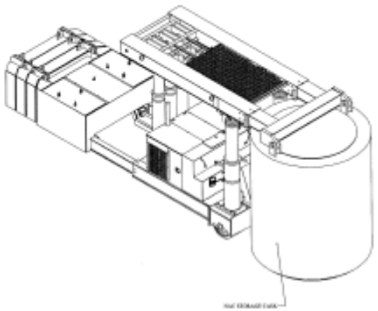
HLW Canister Relocation & Storage Project

Technical Approach

- Move HLW canisters from Chemical Process Cell racks to decontamination station
- Decontaminate each HLW canister
- Load 5 HLW canisters loaded into multi-purpose canister (MPC) within shielded cask
- Secure and weld the MPC lid remotely
- Transfer the casks to new storage location for eventual shipping

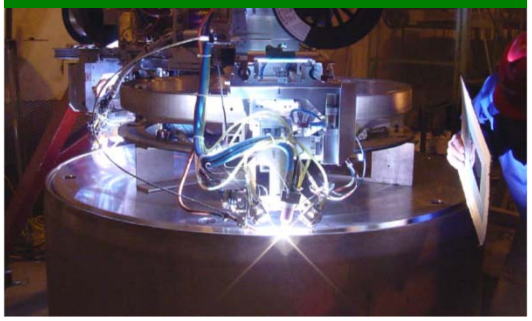
MPC and Vertical Storage Cask
5 Canister Arrangement

TL220 Transporter to Solve In-Facility Challenges



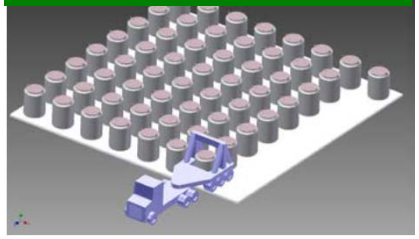
Loaded TL220 Transporter

Remote MPC Lid Welding



Simple, Proven Transport to Pad

Cask Storage Pad



HLW Canister Relocation & Storage Project

Use current licensed SNF shipping cask, multi-purpose canister (MPC) overpacks, and current SNF storage cask designs.

MPC Transfer (Future)

5 Canister MPC/Cask

When ready to ship, MPC transferred from Storage Cask to Shipping Cask

MPC/Shipping Cask configuration will be NRC licensed for HLW Certificate of Compliance (CoC)

HLW Destined for Storage Pad

- 278 HLW Canisters
- Canister Features
  - 10’ high x 2’diameter
  - 304L stainless steel
  - Filled weight: 5,200 lbs. each

HLW Overpack w/ Internal Basket

- 304L stainless steel with welded 4” thick lid
- Each overpack to hold 5 HLW canisters
- Unloaded weight: 14,500 lbs.

NAC-STC Shipping Cask

Major Subcontracts

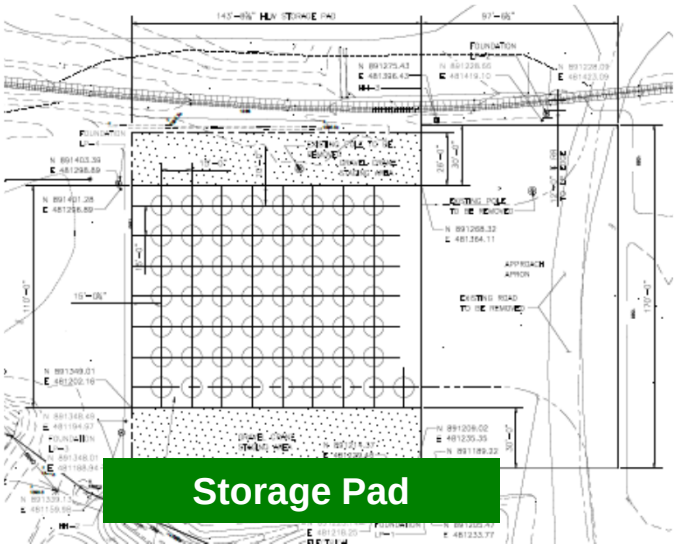
NAC International

- HLW Storage System

5 Canister MPC/Cask

Butler Construction Co.

- Construction of Storage Pad



Storage Pad

NAC Scope

- The design, fabrication, and delivery of a HLW Storage System
  - 56 overpacks and storage casks
  - Storage Pad (design only)
- In-facility transport equipment
- MPC lid welding equipment
- Ancillary equipment (e.g., lifting fixtures)
- Equipment and transportation of loaded storage casks from the Main Plant to the storage pad
- Design and specifications of storage pad
- Data and analysis to support the design and safety analysis (DOE 10 CFR 830)
- NRC CoC for HLW Shipping using an approved shipping cask (NAC-STC)
- Training and mockup support

NAC Project Using Vertical Storage

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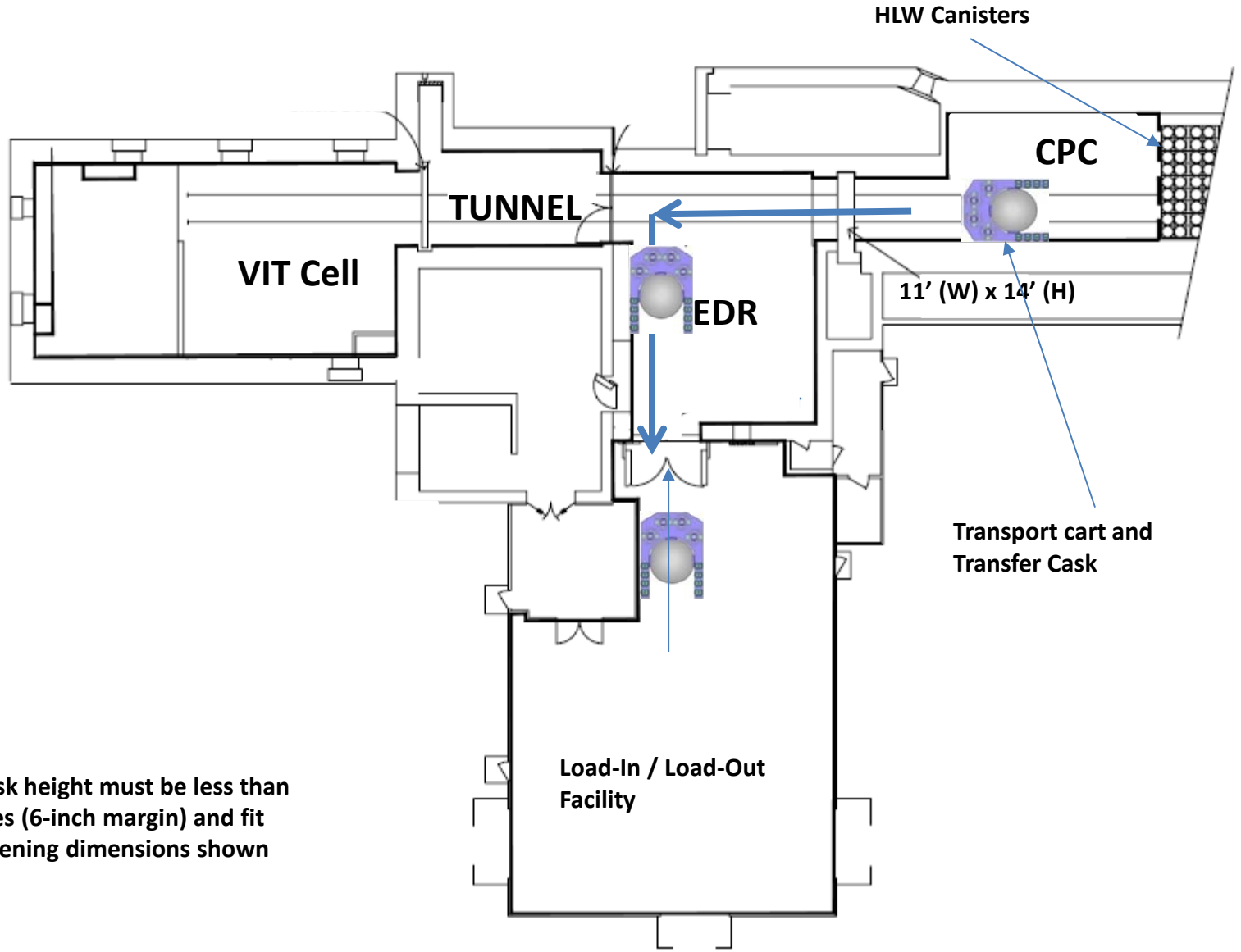
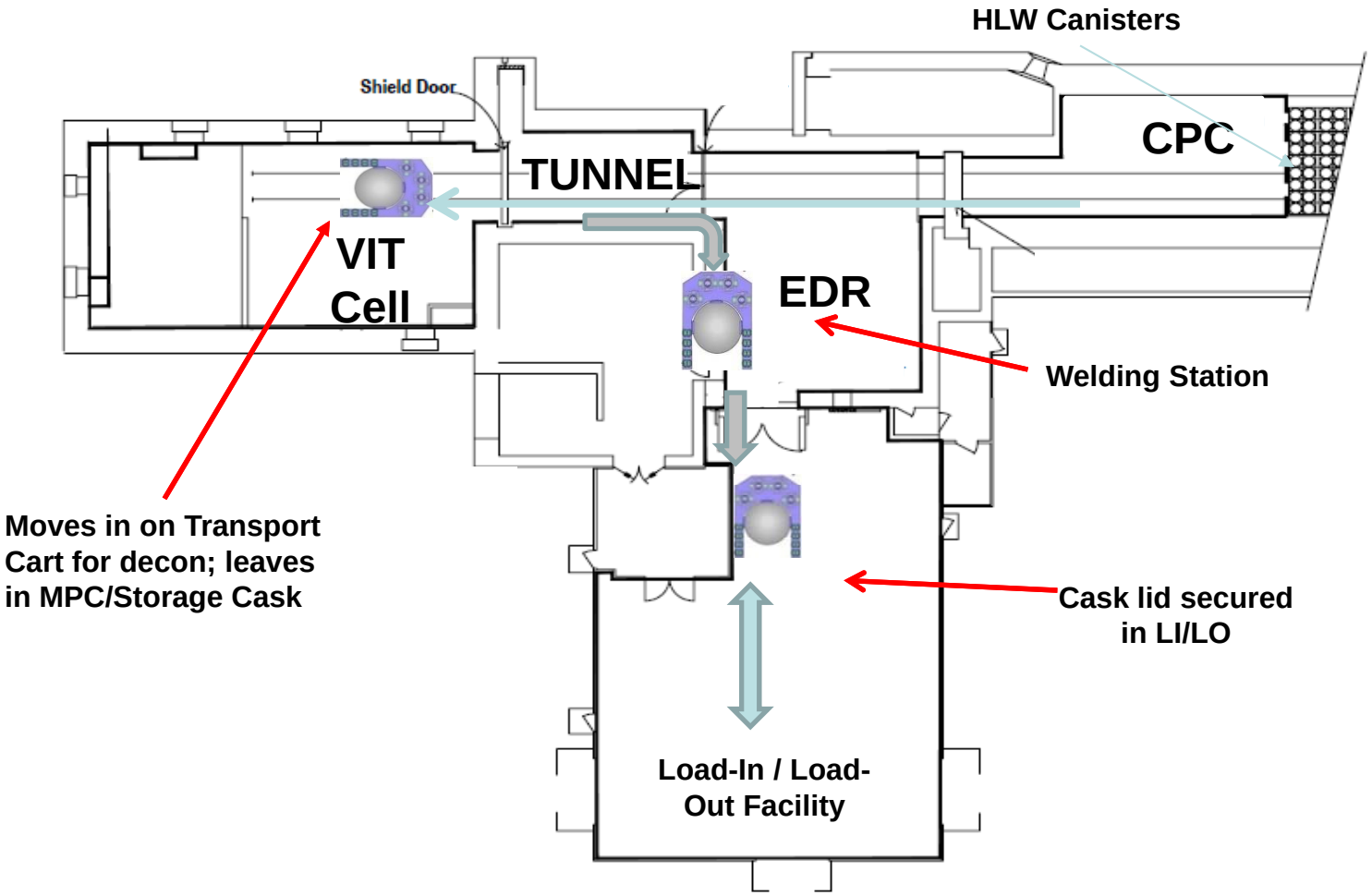
HLW Canisters Relocation – Pathway 1



Notes:
Transfer cask height must be less than 137.5-inches (6-inch margin) and fit through opening dimensions shown

HLW Canisters Relocation – Pathway 2

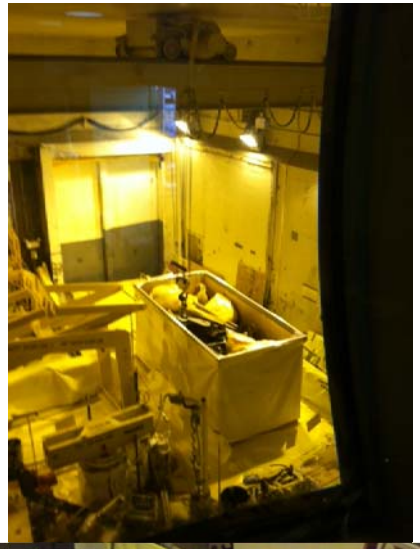


Recent/Current Activities

Chemical Process Cell (CPC) and Equipment Decontamination Room (EDR) Cleanup/Preparations

CPC Waste Disposition

Size Reduction



Waste Packaging Activities

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Recent/Current Activities

Planning Canister Decontamination

Canister Decontamination

- Performed testing
- Received/evaluated proposals for system

Vertical Decontamination Testing

Remote Vacuuming of a Canister Top

Remote Wiping of a Canister Top

Recent/Current Activities

Completed Storage System Design
- Multi-purpose Canister Overpack
- Vertical Storage Casks
- Transport system

Performed Hazard Analysis
- < Hazard Category 3

Certificate of Compliance
- Drafted/reviewed NAC shipping cask Safety Analysis Report amendment

Preparing for Vertical Storage Cask fabrication
- Liners being fabricated
- Planning on-site rebar/concrete forming for casks

Quality Control/Vendor Visits for Procurements

Vertical Storage Cask Being Fabricated

Vertical Storage Cask (VSC)

- 161” tall with lifting lugs
- 120” diameter, 20” concrete with 4” thick steel liner
- 14” thick bolted lid comprised of 4” steel and 10” concrete
- Unloaded weight: 133,500 pounds

Recent/Current Activities

Video Inspection of Pit

EDR Design and Modifications

- Soaking Pit inspected/sampled
- Design 90% complete/includes floor loading upgrades

Equipment Procurement Awards for

- 8 VSC liners
- Materials for 8 MPCs
- TL220 transporter
- Transport A Frame and Tugger
- Quality Control/Vendor visit completed for Vertical Storage Cask liner

Recent/Current Activities

Storage Pad Design/Construction

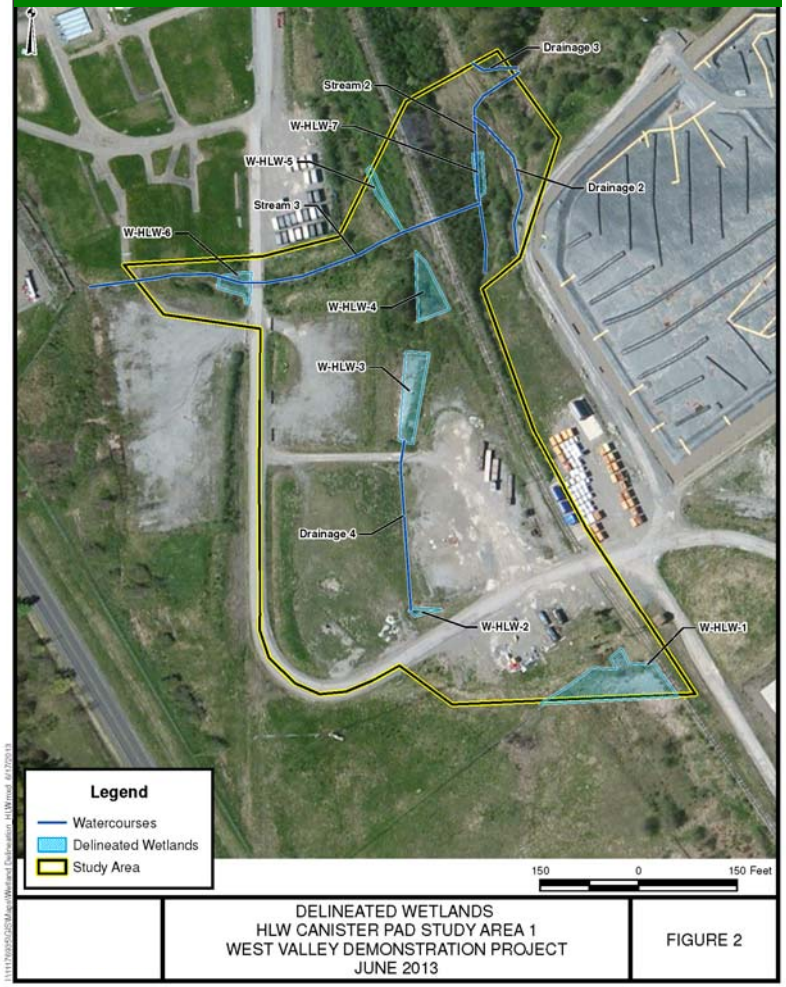
- Subsurface soil characterization, hydrologic and hydraulic testing completed for pad site
- Surface soils and structural conditions testing/analysis completed for haul road
- Final design completed
- Developed Stormwater Pollution Prevention Plan for construction
- Awarded construction contract to Butler

Geotechnical Sampling

Future Pad Location

Recent/Current Activities

Wetlands Re-Delineation



Recent/Current Activities

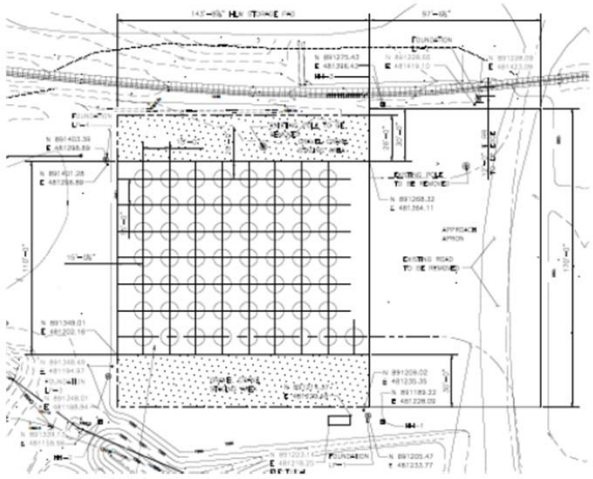
Storage Pad Features

- Excavation up to 12 feet
- Placement of approximately 2,800 cubic yards of locally-produced concrete.
- Three-foot-thick structurally engineered reinforced concrete
- Pad dimensions: 144’ X 110’
- Engineered crane and approach pads
  - Concrete approach: 98’ X 170’
  - 2-Crane pads: 26’ X 144’ each
- Construction to complete in November

Storage System Features

- Minimum design life of 50 years (casks and pad)
- Loaded individual storage cask weight is ~175,000 pounds (87.5 tons)

Typical Storage Pad



Pad Dimension 144 x 110

Project Look Ahead

- Evaluate and award procurement for
  - Design and fabrication of decontamination system
  - Automatic Welding System for MPCs
  - Engineering and construction for structural floor modifications
- Vertical Storage Cask fabrication startup
- Characterize/Grout Soaking Pit
- Waste Compliance Plan submittal
- EDR floor core borings
- Haul road upgrades
- Deliveries
  - 8 Vertical Storage Cask liners - Oct
  - Materials for 8 MPCs - Dec
  - TL220 transporter - April
  - Transport A Frame and Tugger - April

Vertical Storage Cask Liner w/ Rebar

GT-50 Tugger and A-Frame

Current HLW Project Schedule

Major Tasks	Projected Date
Construct Storage Pad	November 2013
Obtain DSA Approval (DOE Safety Evaluation Report)	December 2013
Obtain NRC Certificate of Compliance (CoC) for Shipping HLW	November 2014
Approved Start of Transfers (Operations)	September 2016
Complete Relocation of Canisters/SNF Debris/etc.	June 2018

West Valley Demonstration Project
Permeable Treatment Wall (PTW) Update
Quarterly Public Meeting

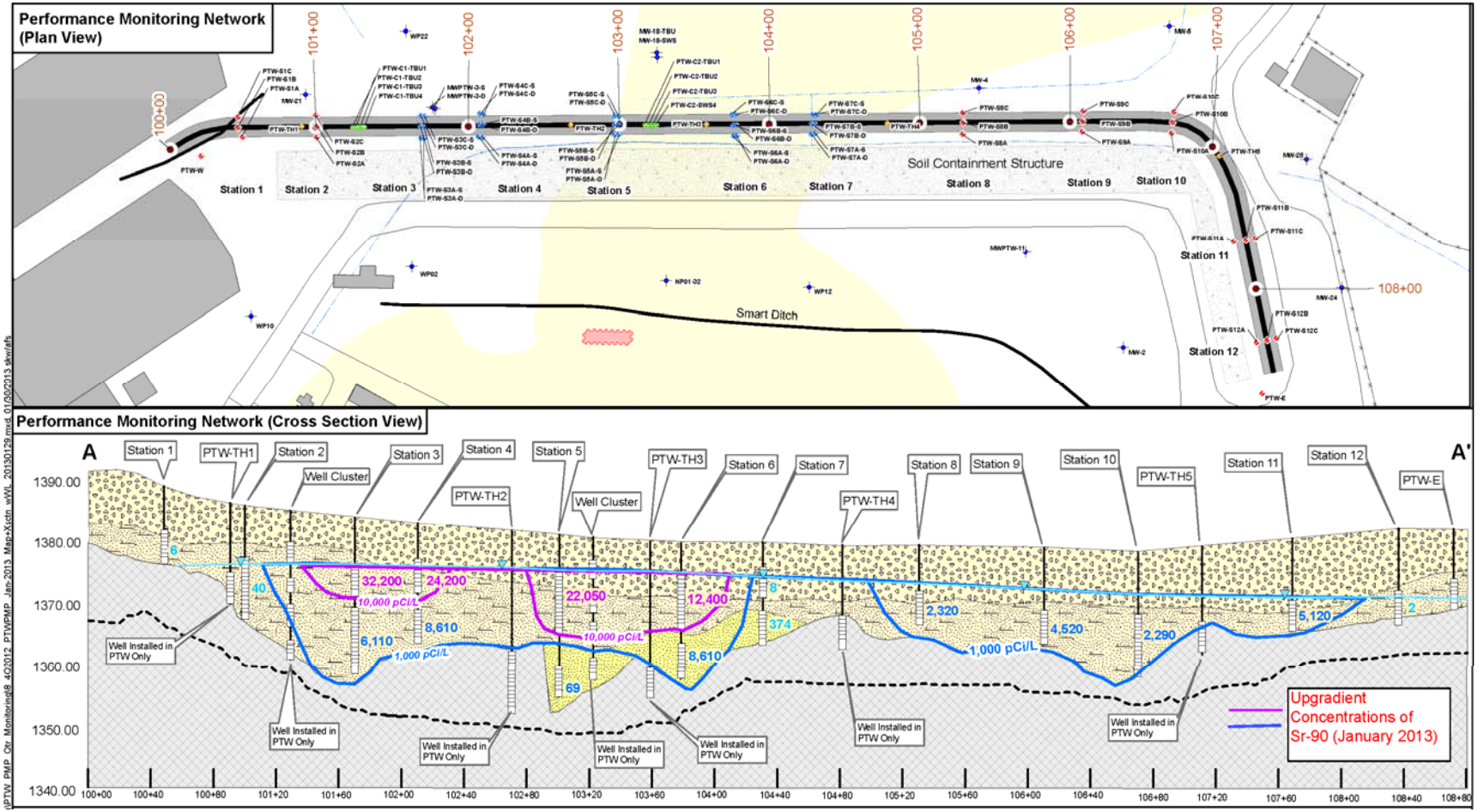
Presented by: Charles Biedermann, Regulatory Strategy & Compliance
CH2M HILL B&W West Valley, LLC.
August 28, 2013

One Project. One Team. One Goal.

Monitoring and Maintenance

- PTW Installation: Completed November 2010
- Monitoring System
  - 66 wells installed – December 2010
  - 22 existing (off- platform wells)
- Monitoring Activities
  - Monthly visual inspections (erosion, standing water, rutting, excessive vegetation growth)
  - Hydraulic (water level) monitoring – January 2011 to January 2012
  - Baseline sampling & monitoring – Completed January 2011
  - Quarterly sampling and monitoring – Ongoing beginning in April 2011
  - Expanded Annual sampling and monitoring – Ongoing beginning in January 2012
  - Five Year Comprehensive sampling and monitoring – Beginning in January 2015

Performance Sampling and Monitoring



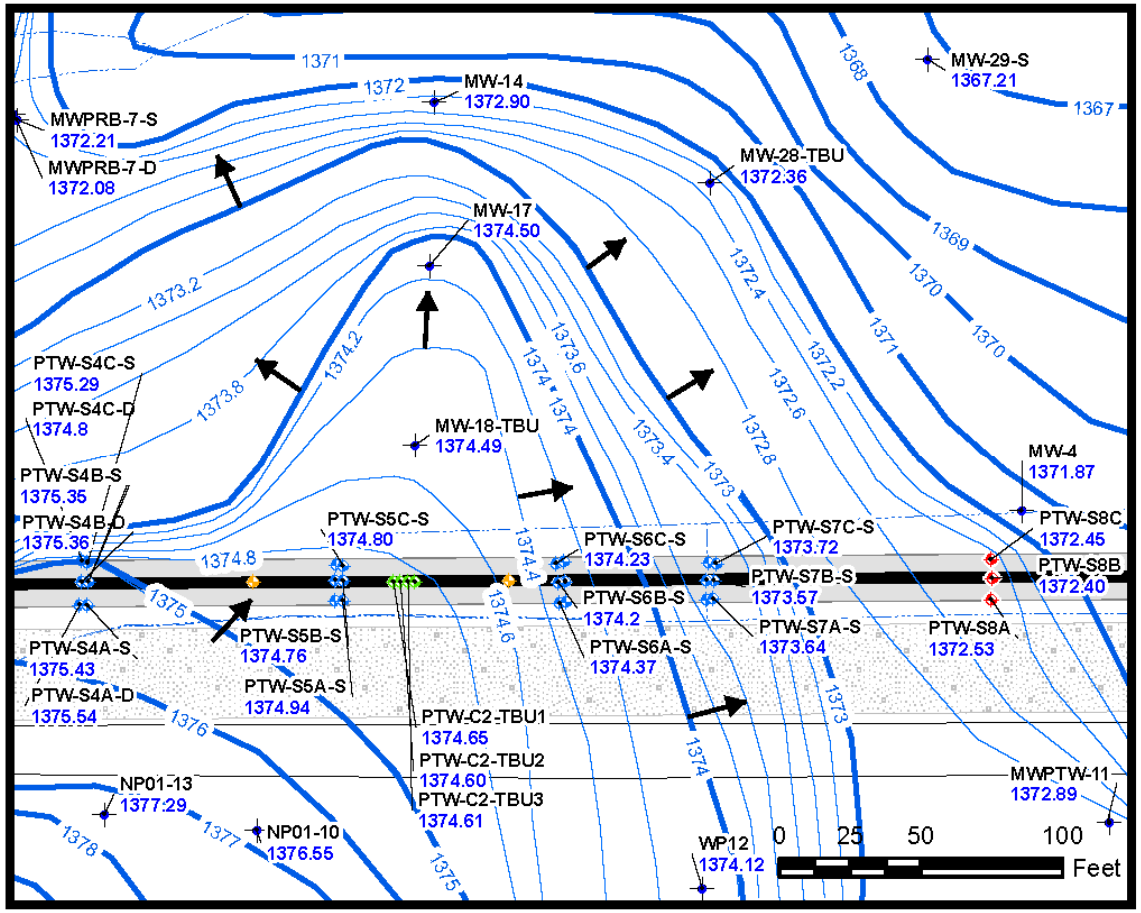
Sampling and Monitoring Indications

- Inspections: No significant erosion or standing water, monitoring wells in good condition, and only minor maintenance actions
- PTW does not substantially alter groundwater flow on the North Plateau
- Sampling continues to indicate effective removal of Sr-90:
  - Down-gradient platform wells exhibiting significant decreases in Sr-90
- Functional Design Requirements continue to be met

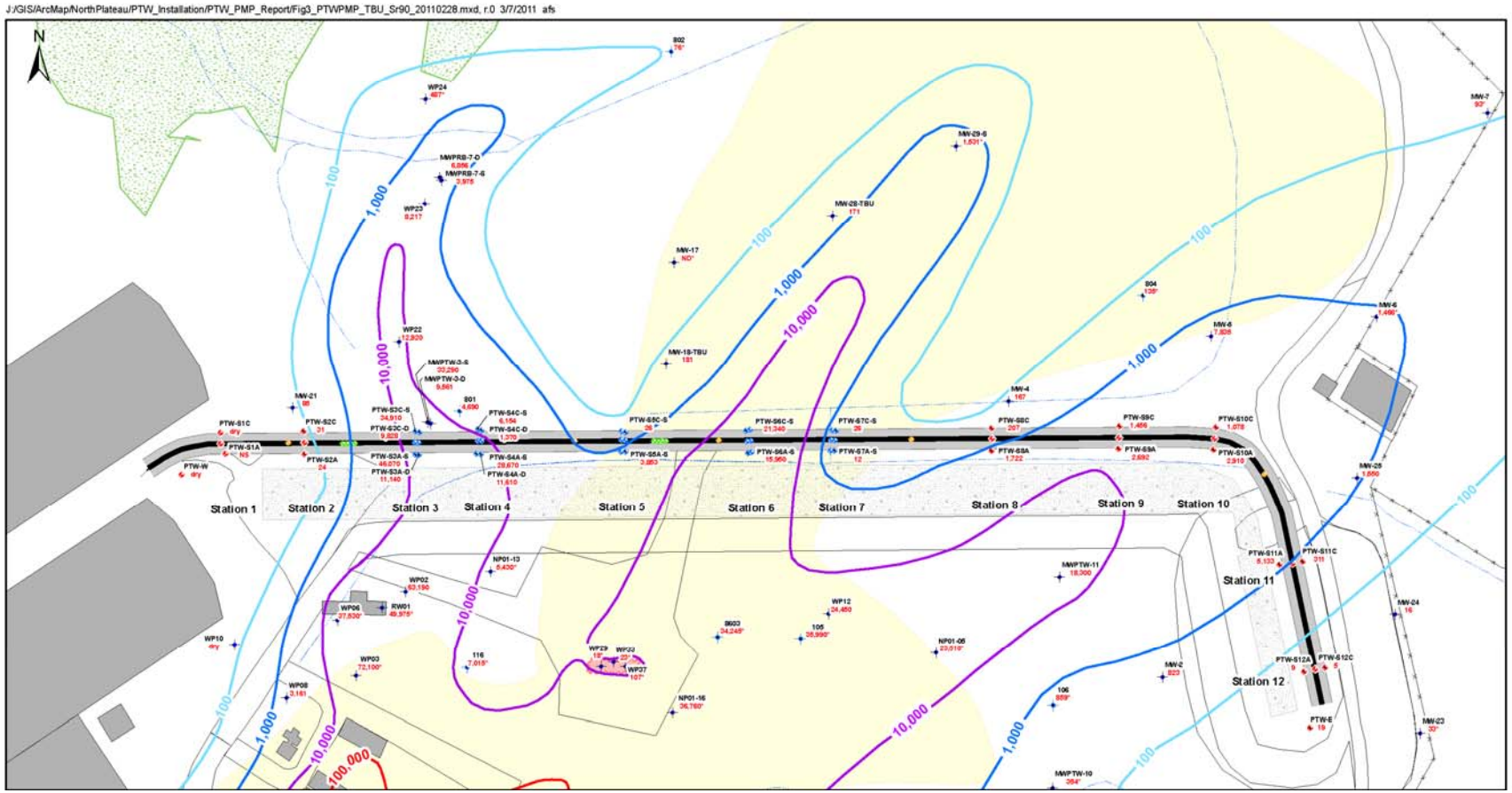
Sampling and Monitoring Indications

- The PTW is a large and complex system – expected local variation in performance observed:
  - Sr-90 detected in 6 intra-PTW wells
  - One north platform well has exhibited Sr-90 levels that exceed south platform well concentrations since the baseline, January 2011 sampling
    - This is the result of localized west to east groundwater flow
    - Concentrations in this down-gradient well have consistently decreased

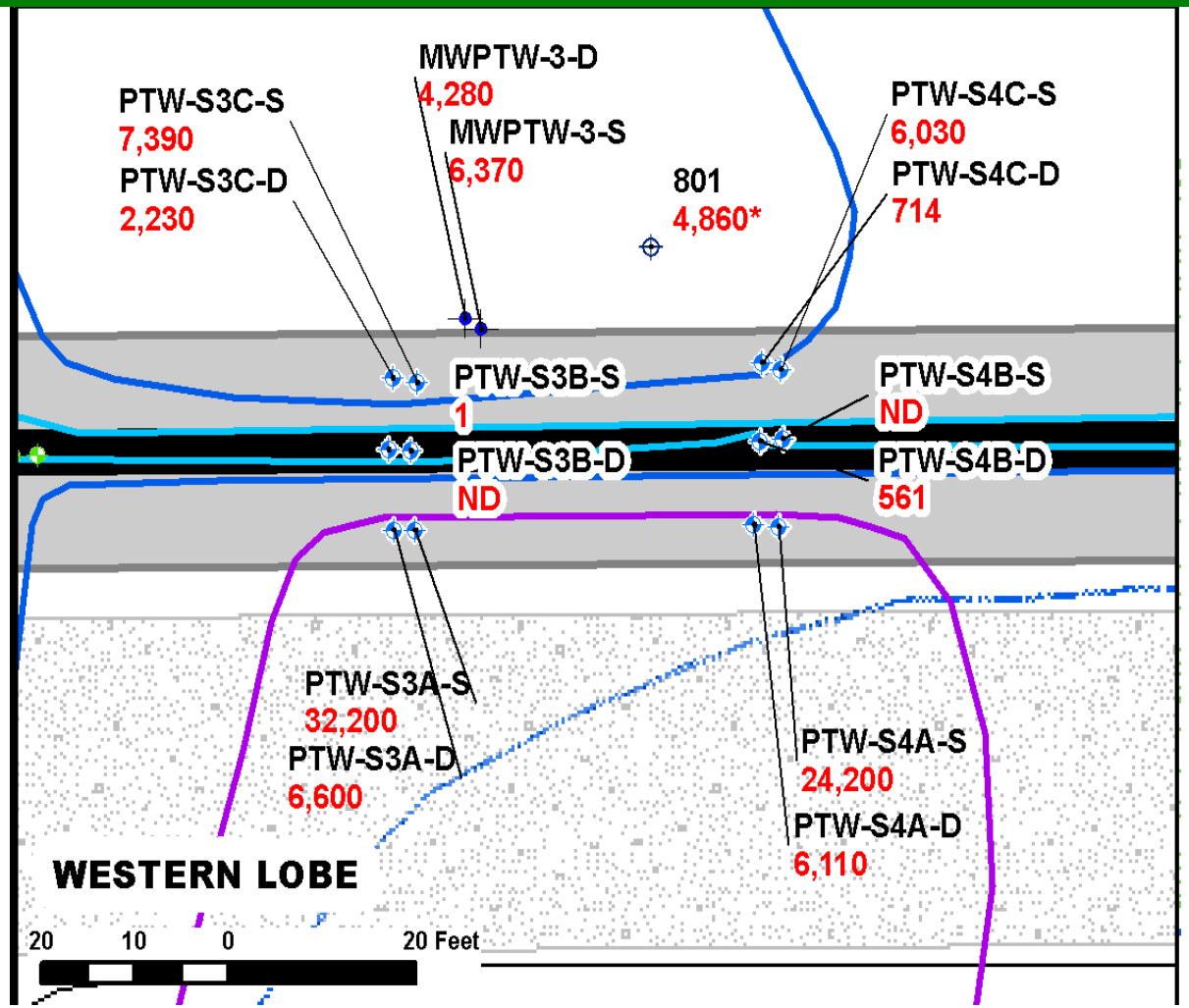
Hydraulic Gradient in Thick Bedded Unit



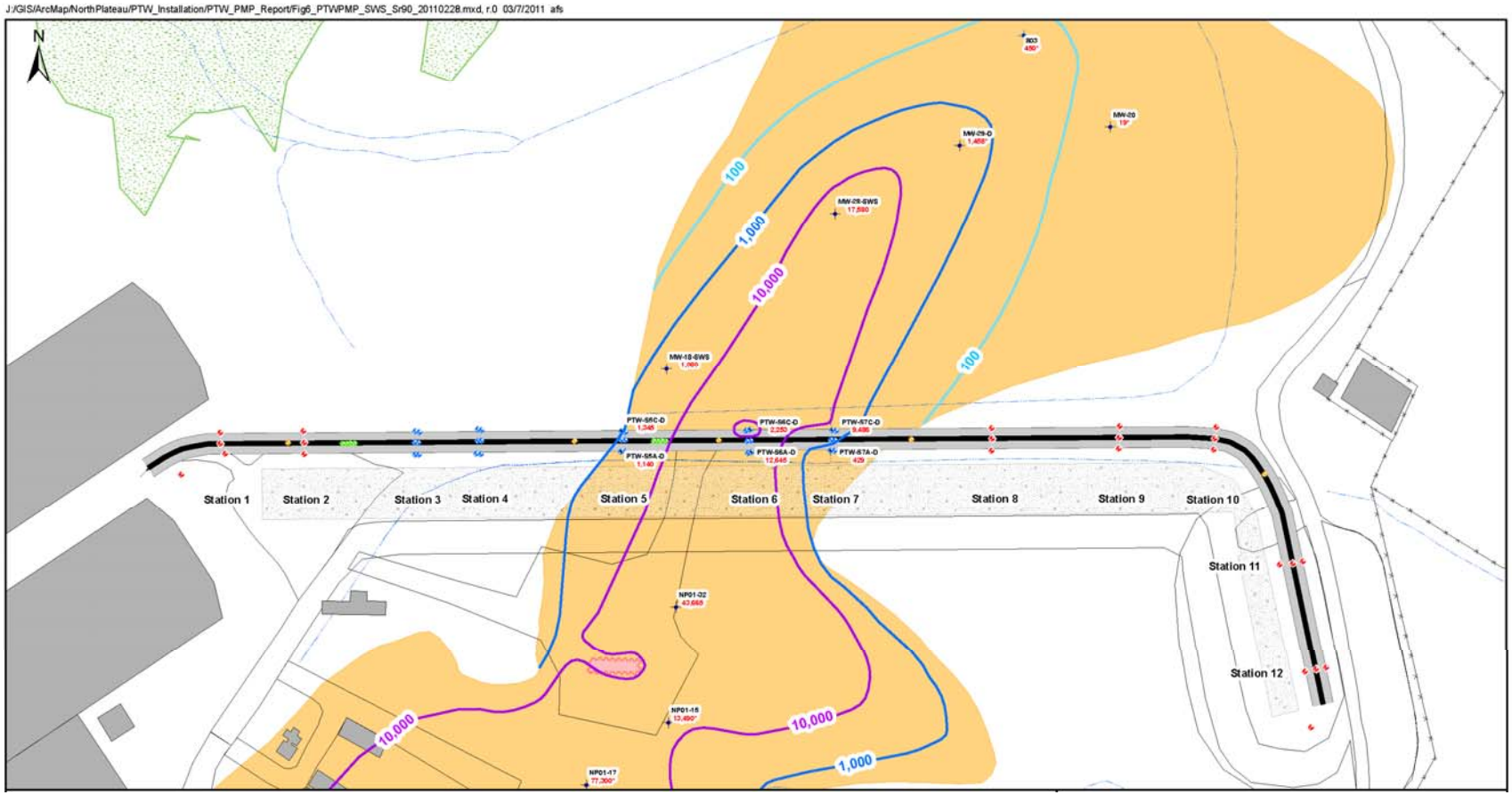
Sr-90 Plume Delineation in Thick-Bedded Unit (January 2011 Baseline)



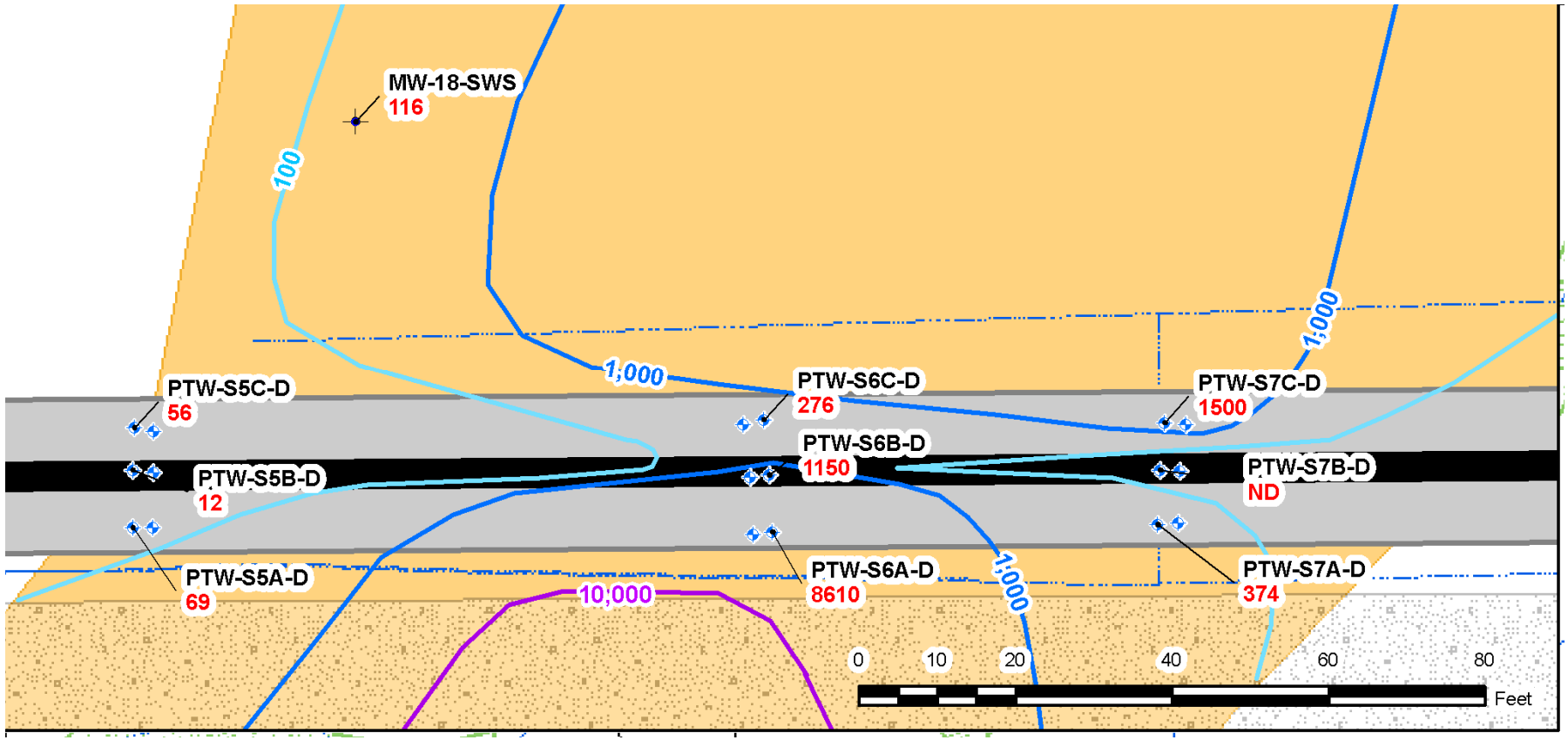
Sr-90 Plume Delineation in Thick-Bedded Unit (January 2013)



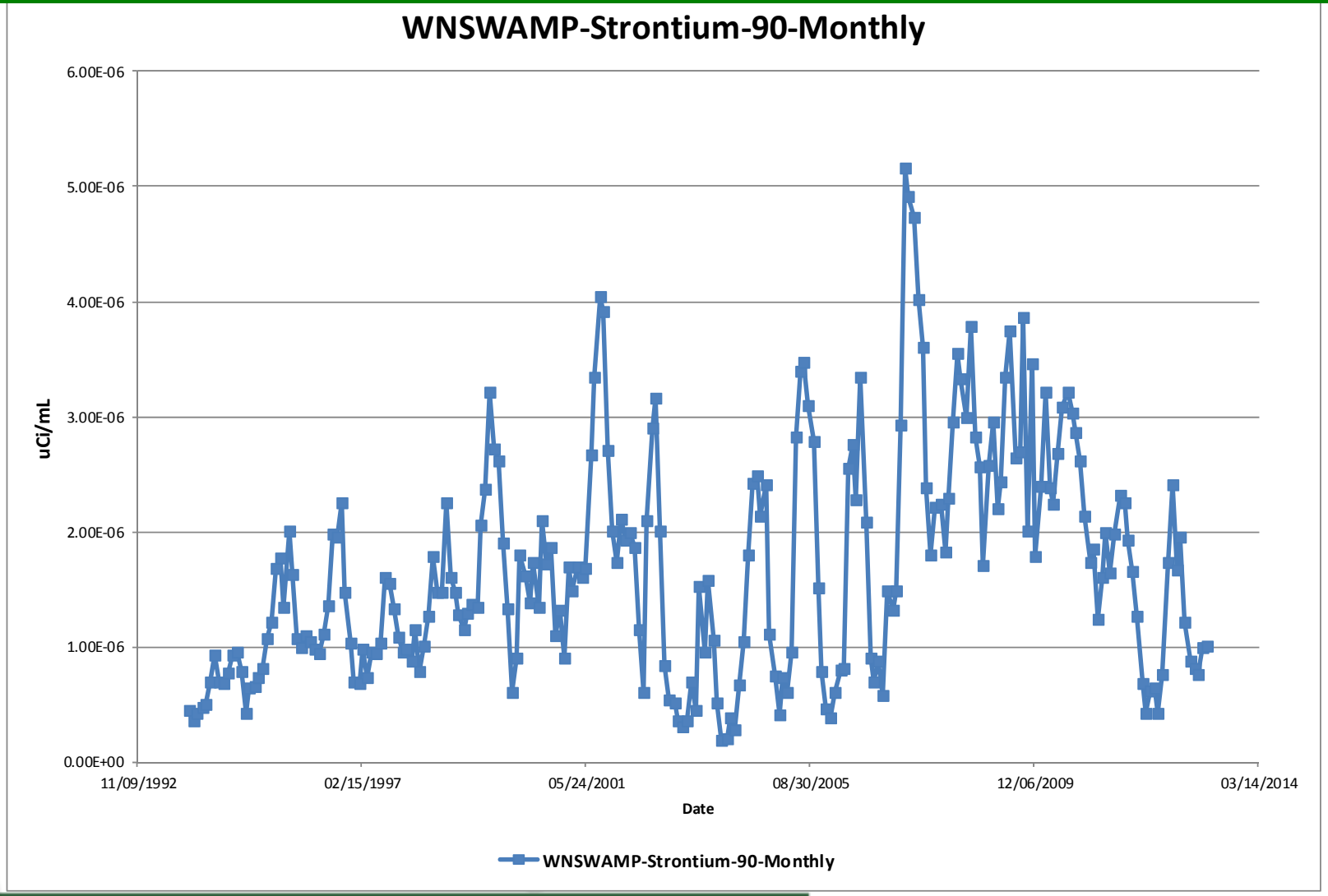
Sr-90 Plume Delineation in Slack Water Sequence (January 2011 Baseline)



Sr-90 Plume Delineation in Slack Water Sequence (January 2013)



Swamp Ditch Sr-90 Concentrations



Conclusions and Future Actions

- PTW continues to perform as designed
- Continue quarterly monitoring and performance evaluations, document in annual reports
- Passive System – DOE 2012 Sustainability Award Honorable Mention
- Review and Improve PTW and North Plateau monitoring procedure manuals

Questions?