



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

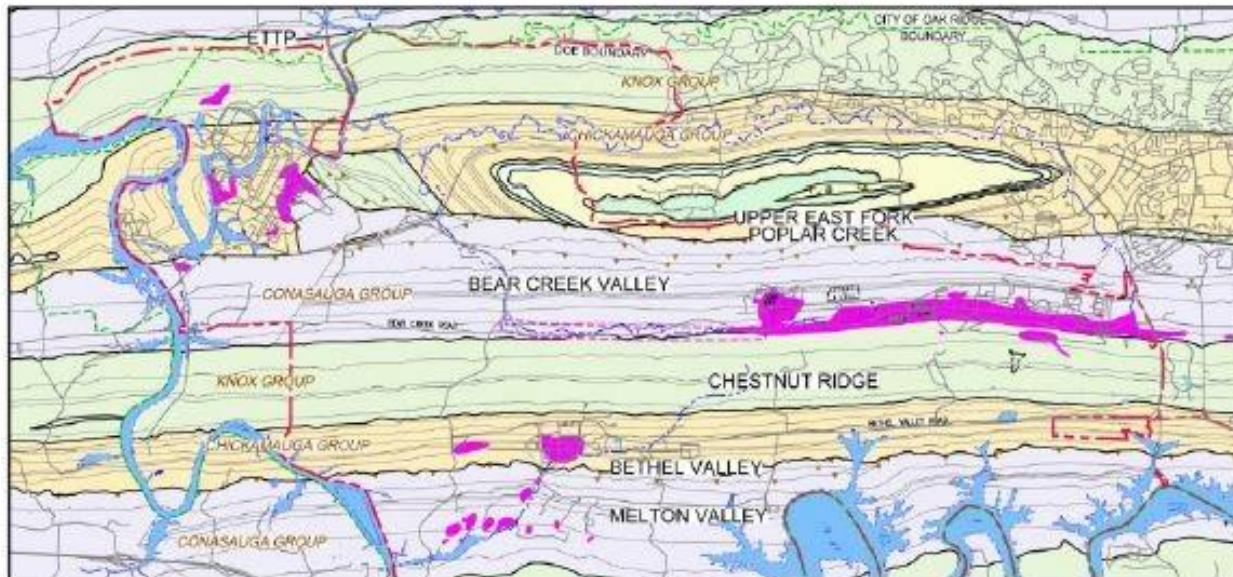
Groundwater Strategy Status

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Groundwater Strategy put in place to document path forward for managing legacy groundwater challenges

- Workshops held with regulators in 2013
- DOE/EPA/TDEC agreement on Groundwater Strategy document in 2014



35 "plumes"

- major constituents of potential concern: tritium, strontium-90, technetium-99, uranium, nitrate, VOCs, and mercury
- shallow (<100 ft), intermediate, and deep (>400 ft) contamination
- data gaps and uncertainties

36 candidate projects

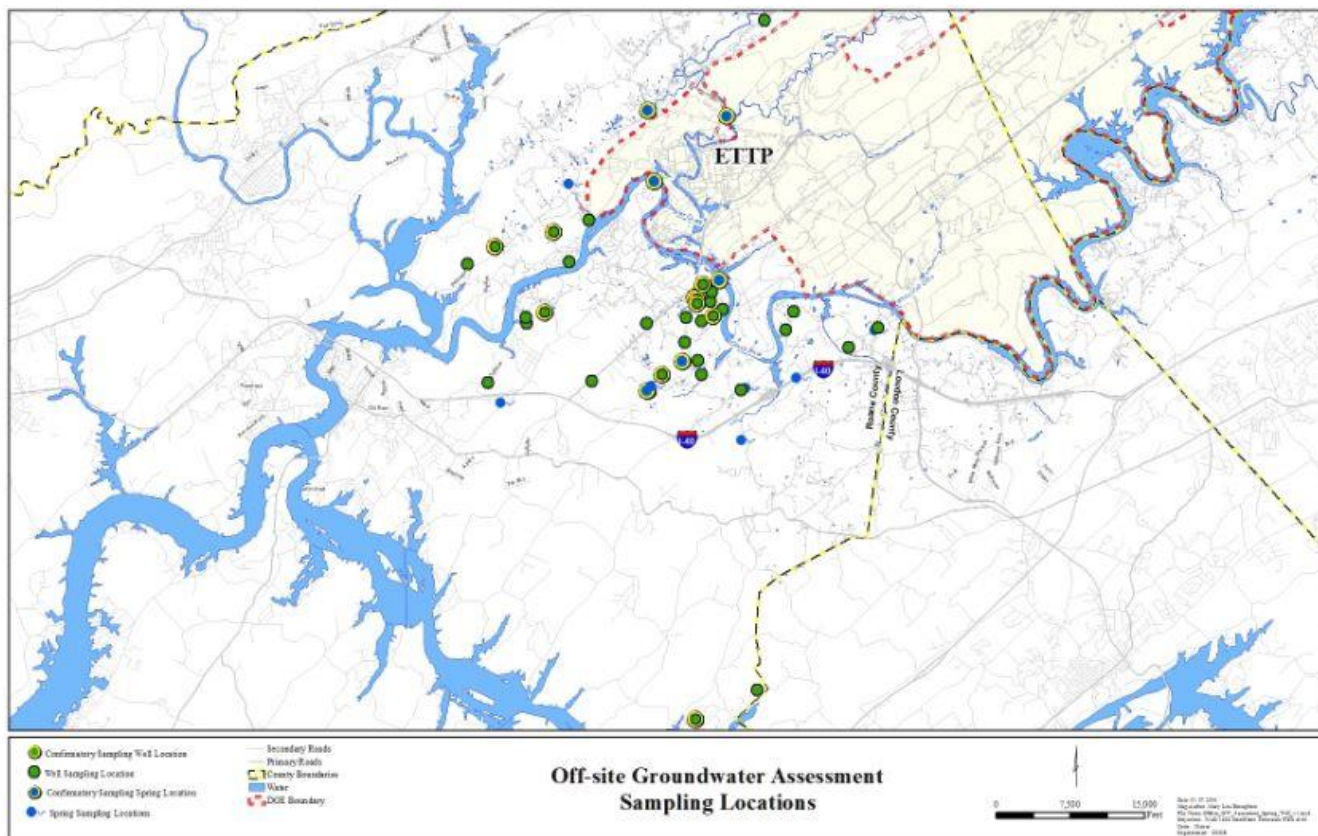
- projects address one or more plumes
- investigations
- early actions
- other projects to be identified based on findings

- Resources assigned and program initiated in 2014
 - Systematically prioritize and investigate plumes and data gaps, identify actions that may be warranted, and support CERCLA decisions
 - Full time hydrogeologist plus technical support
 - 1st project: Off-Site Groundwater Assessment
 - Regional groundwater model



First groundwater strategy priority is to examine potential for off-site migration and protection of off-site human health and environment

- Top-ranked project: Off-site Groundwater Assessment
- Remedial Site Evaluation Work Plan approved in 2014
 - Anions, metals, radioactive constituents, volatile organics, general chemistry, and field parameters
- Conducted site visits and obtained access agreements



All groundwater sampling events have been completed successfully

- First Sampling Event FY2015 Q2 (43 locations)
 - Three locations showed exceedances of U.S. EPA National Primary Drinking Water Standards (lead at one location, lead and gross alpha activity (another location), and combined radium -226 and -228 activity (at third location))
- Second Sampling Event in FY2015 Q4 (49 locations)
 - No exceedances of U.S. EPA National Primary Drinking Water Standards
- Third Event (Confirmatory Sampling) FY2016 Q2 (18 locations)
 - Completed 1st week of February 2016



- Meeting between DOE/EPA/TDEC/Tennessee Department of Health to evaluate results
- Remedial Site Evaluation Report milestone November 15, 2016

	FISCAL YEAR															
	14				15				16				17			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Off-site Groundwater Assessment																
Gather data/DQO	█	█														
RSE Work Plan		█	█	█												
FY 2015 Q2 Sampling						█										
FY 2015 Q4 Sampling								█								
FY 2016 Q2 Confirmatory Sampling										█						
RSE Report (D1 and D2)										█	█	█	◆	█	█	

◆ FFA Milestone (D1 RSE Report)

Development of a regional groundwater flow model is a key recommendation of the Groundwater Strategy

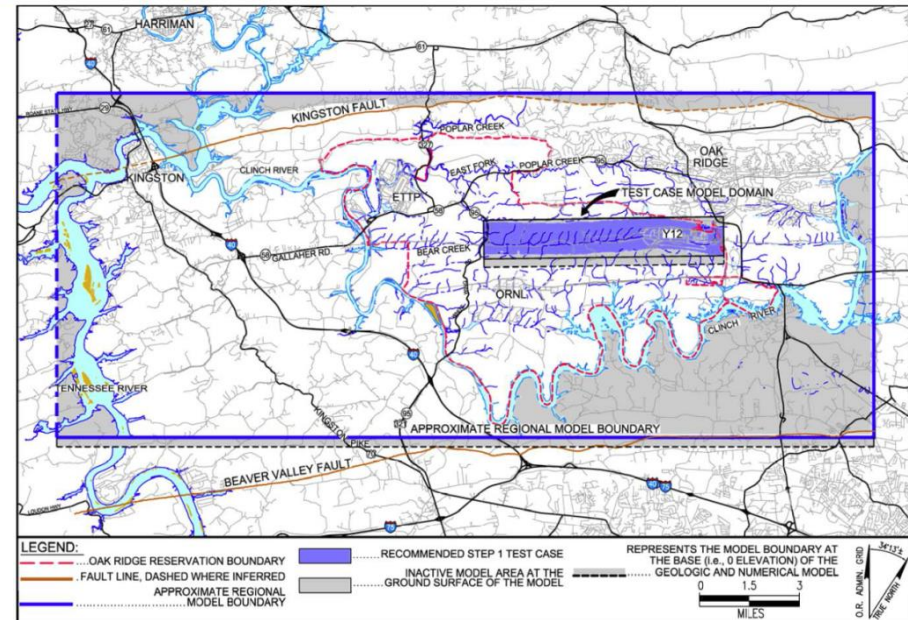
- The model will be used to support future cleanup decisions and development of site-specific models
 - help predict flowpaths
 - optimize investigations

FY 2014

- A Technical Advisory Group (TAG) was formed and data was collected.
- Model software and boundaries were identified and construction of a Test Case model began

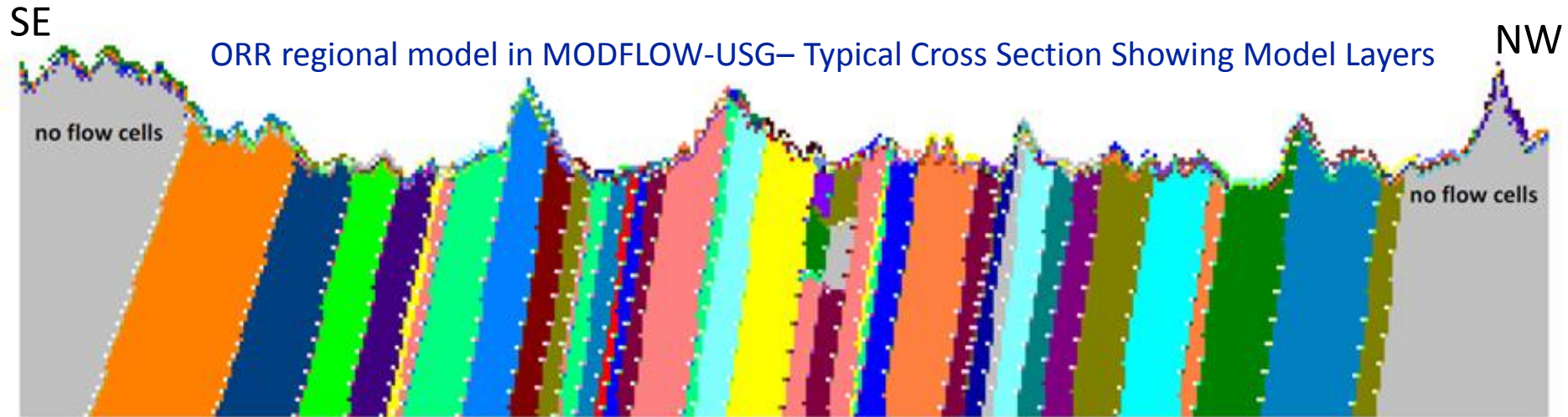
FY 2015

- Testing of the Test Case model and geologic framework for the regional model were completed



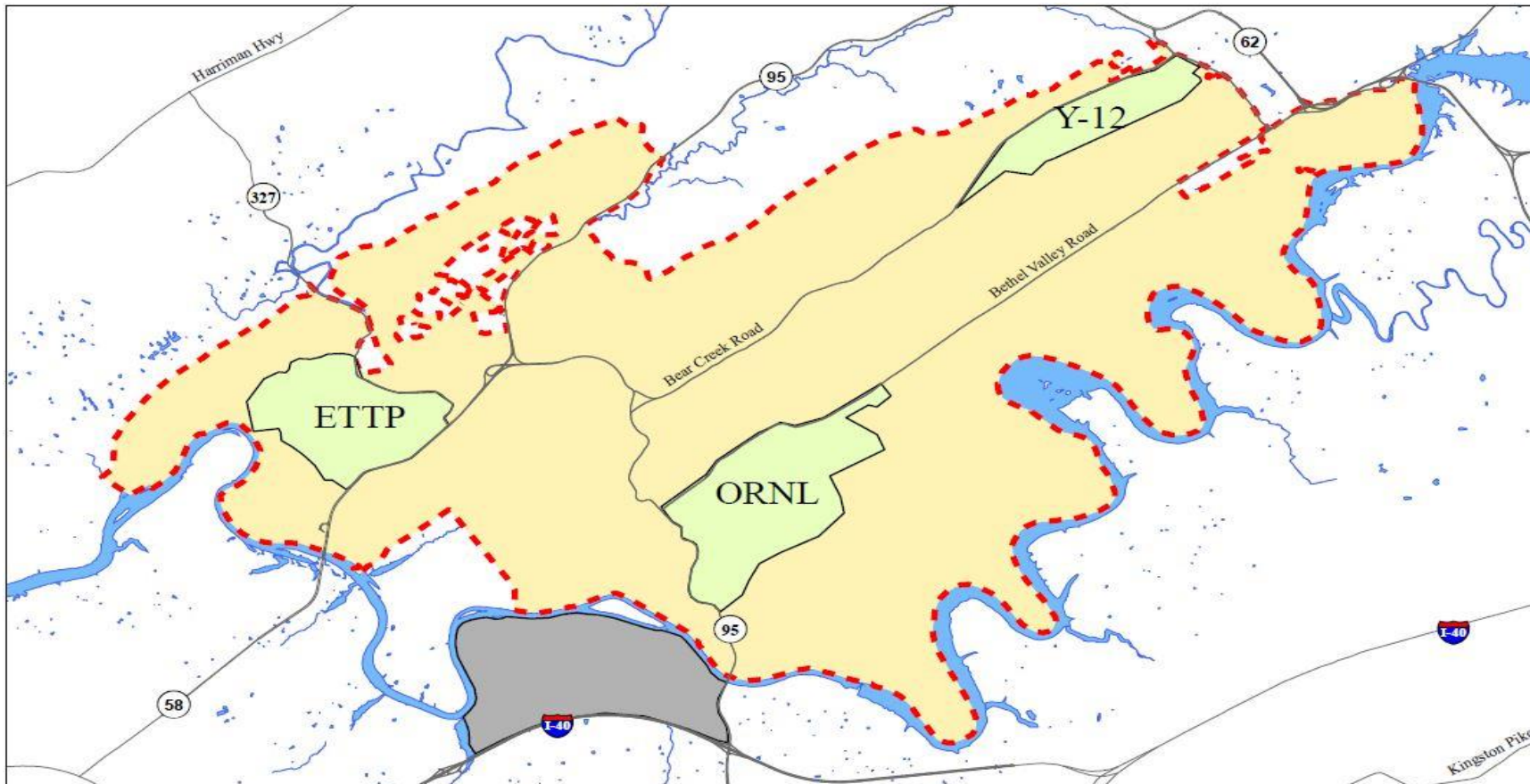
FY 2016

- The geologic framework has been successfully imported into the flow model
- Initial test runs of uncalibrated model and preparation for model calibration are ongoing
- A draft report about the calibrated flow model will be prepared



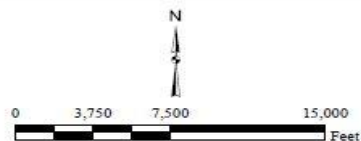
Vertical Exaggeration = 10

Questions?



Legend

- Plant Boundary
- DOE Boundary
- Roads
- Water



Date: 01/29/2016
Map Author: Mary Lou Broughton
File Name: Parcels_DOE_SSAB_v1.mxd
Projection: NAD 1983 StatePlane Tennessee FIPS 4100
Units: Meters