Tritium Update

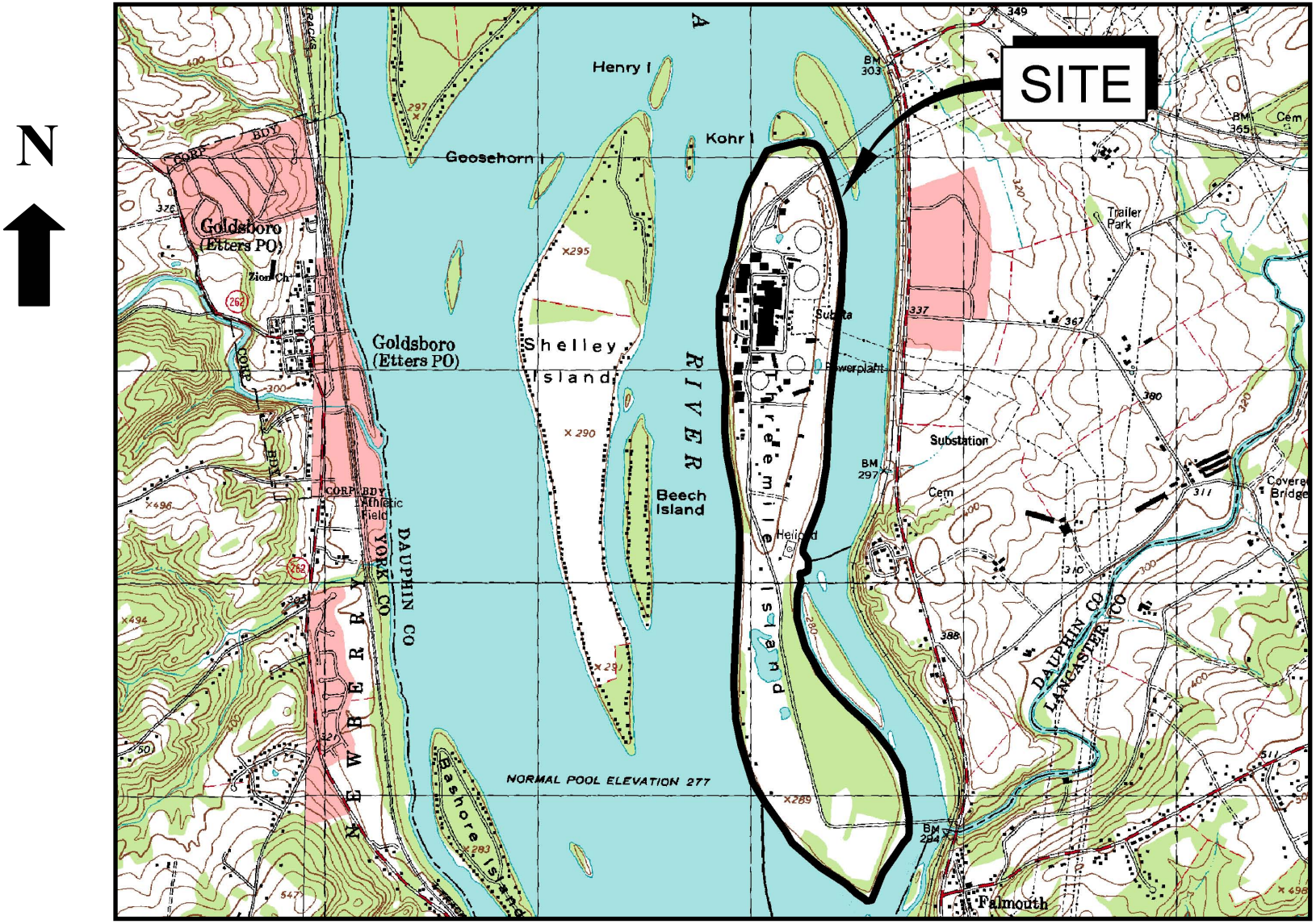
Three Mile Island
Londonderry Township, Pennsylvania

August 14, 2007

Objectives

- Geology/Hydrogeology
- Fleetwide Tritium Assessment
- Mass Flux Calculations
- Additional Data (2006/2007)
- Actions Taken
- Path Forward

Site Location

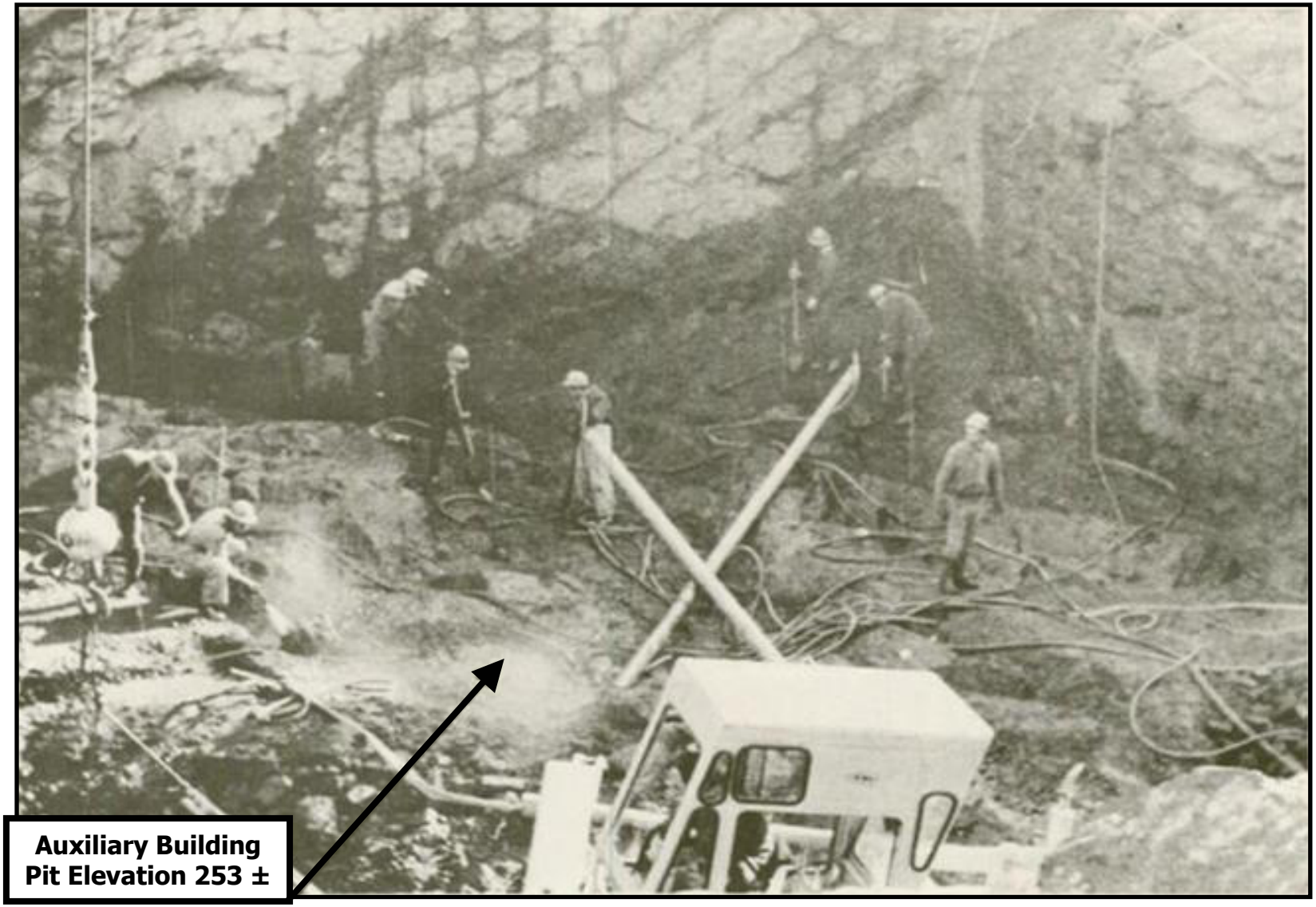


Site Photo

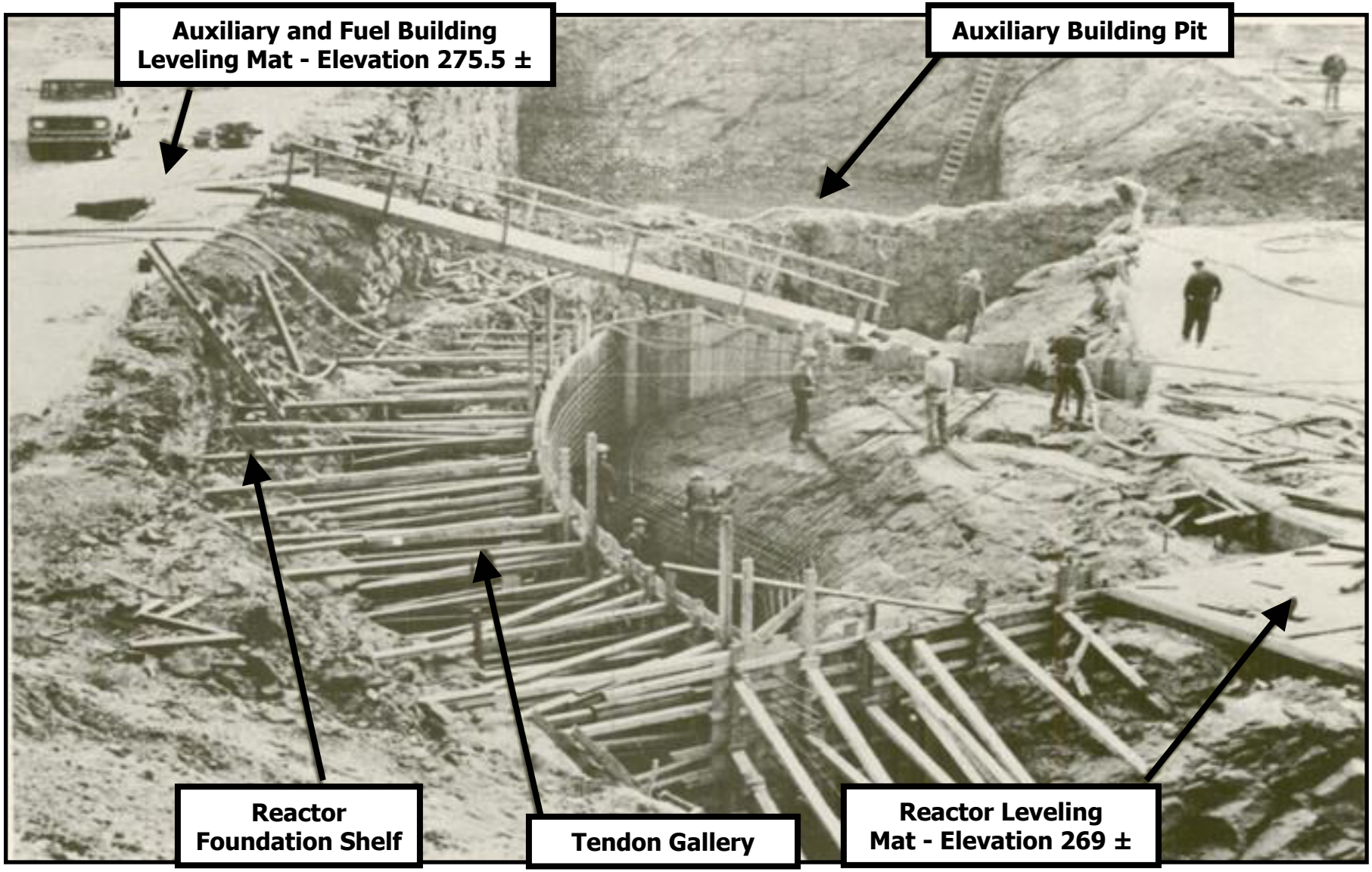
Geology

Unit	Sub-Unit	Depth (feet)	Name	Description
Overburden	Backfill	0 to 40	Backfill	Crushed rock
	Native Overburden	25	Glacial Outwash	Silts and Sands deposited on top of rock surface
Bedrock	Shallow Bedrock	60	Gettysburg Formation	Shale
	Deep Bedrock	100	Gettysburg Formation	Shale

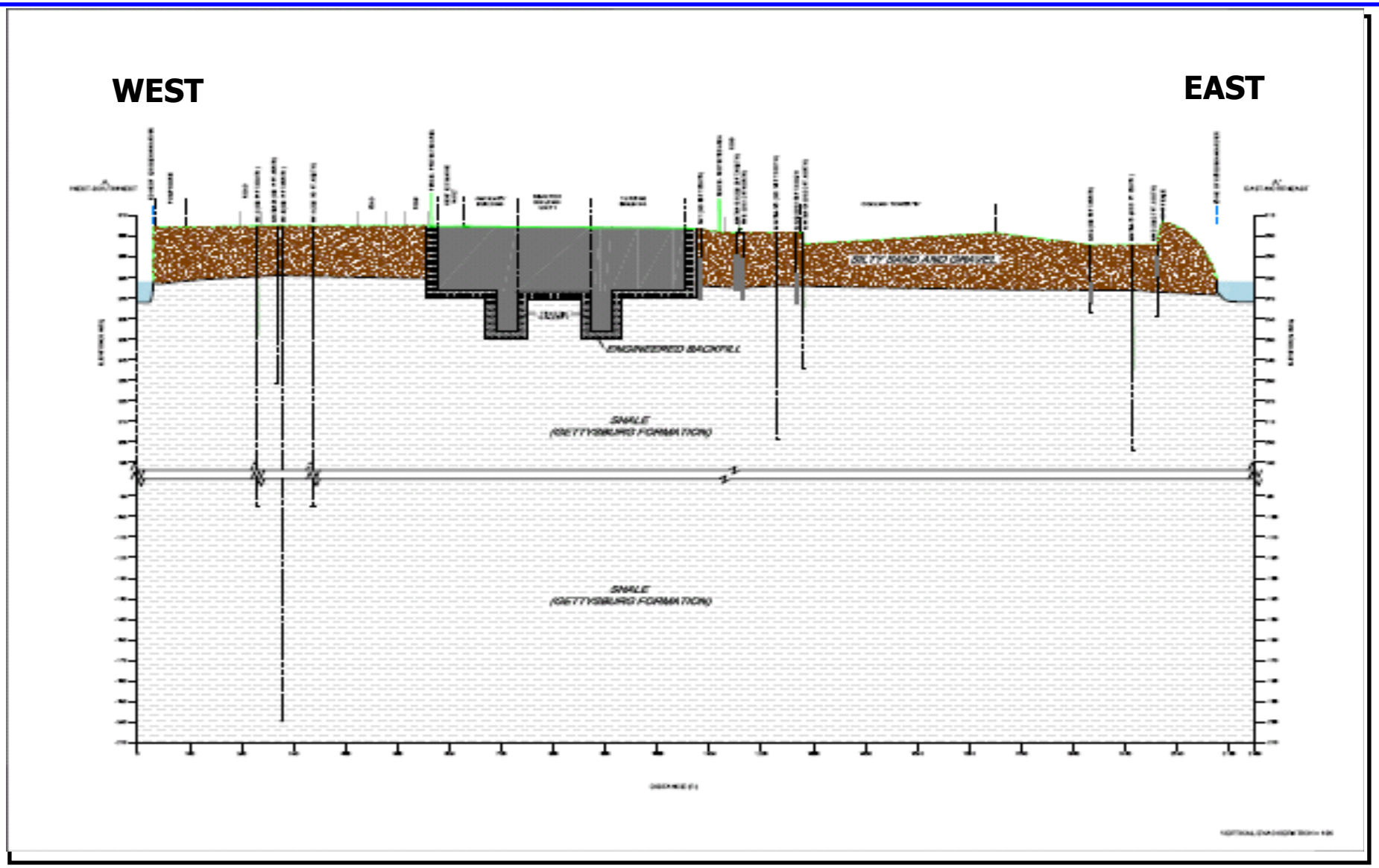
Construction Photo



Construction Photo



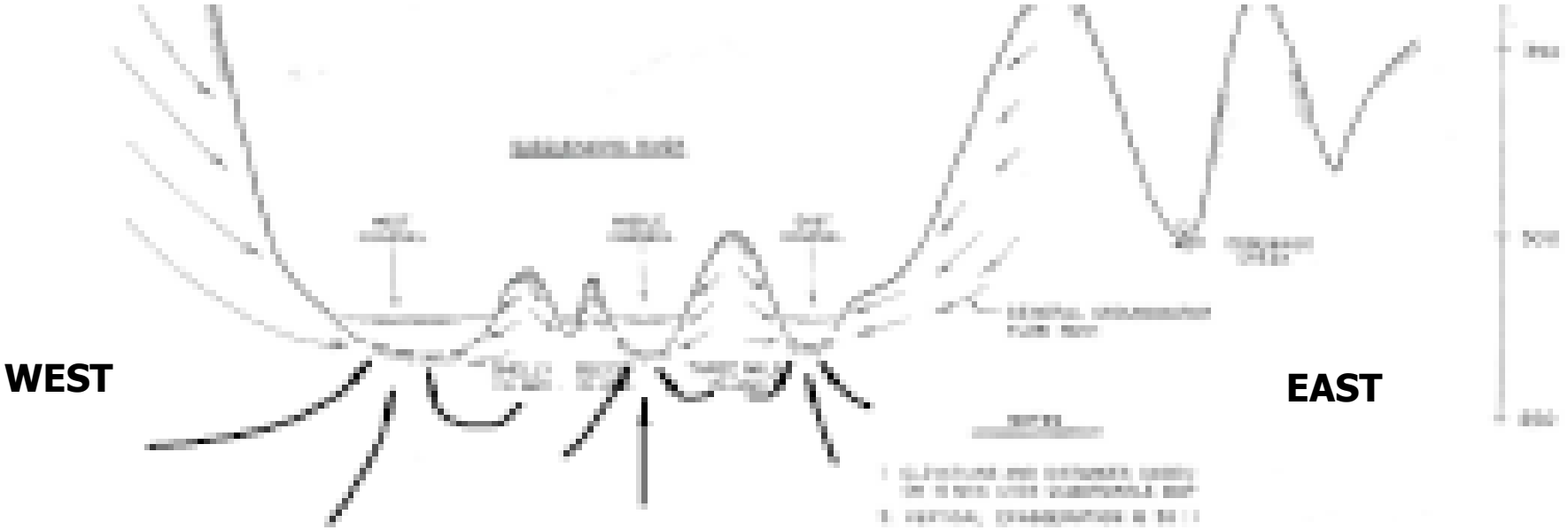
Geologic Cross-Section



Hydrogeologic Units

Unit	Sub-Unit	Flow Characteristics	Range of Tritium Concentrations (pCi/L)
Overburden	Backfill	High permeability	ND to 33,100
	Native Overburden	Minimal	ND to 28,100
Bedrock	Shallow Bedrock	Moderate permeability	ND to 24,200
	Deep Bedrock	Moderate permeability	ND to 14,000

Regional Groundwater Flow



No groundwater flow from island beneath river to the mainland.

Fleetwide Tritium Investigation

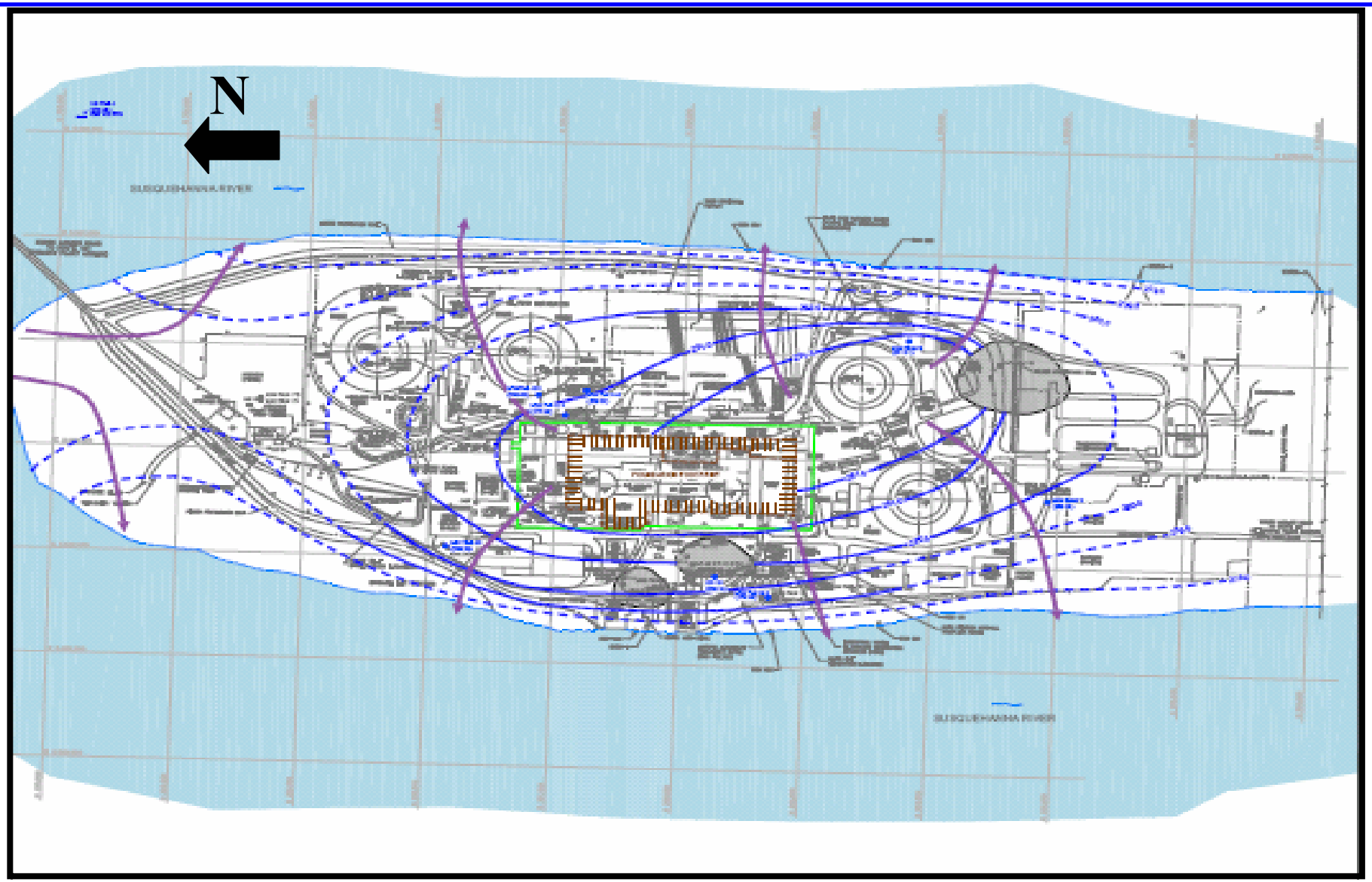
- Identification of Areas for Further Evaluation
- Installation of Additional Monitoring Wells and Staff Gauges
  - 59 previously existing wells, but many wells screened in both overburden/backfill and bedrock
  - Installed 31 new "formation-specific" wells to better understand lateral and vertical distribution of tritium and evaluate potential sources
- Groundwater and Surface Water Sampling
- Data Evaluation and Hydrogeologic Report

Site Map with New Wells

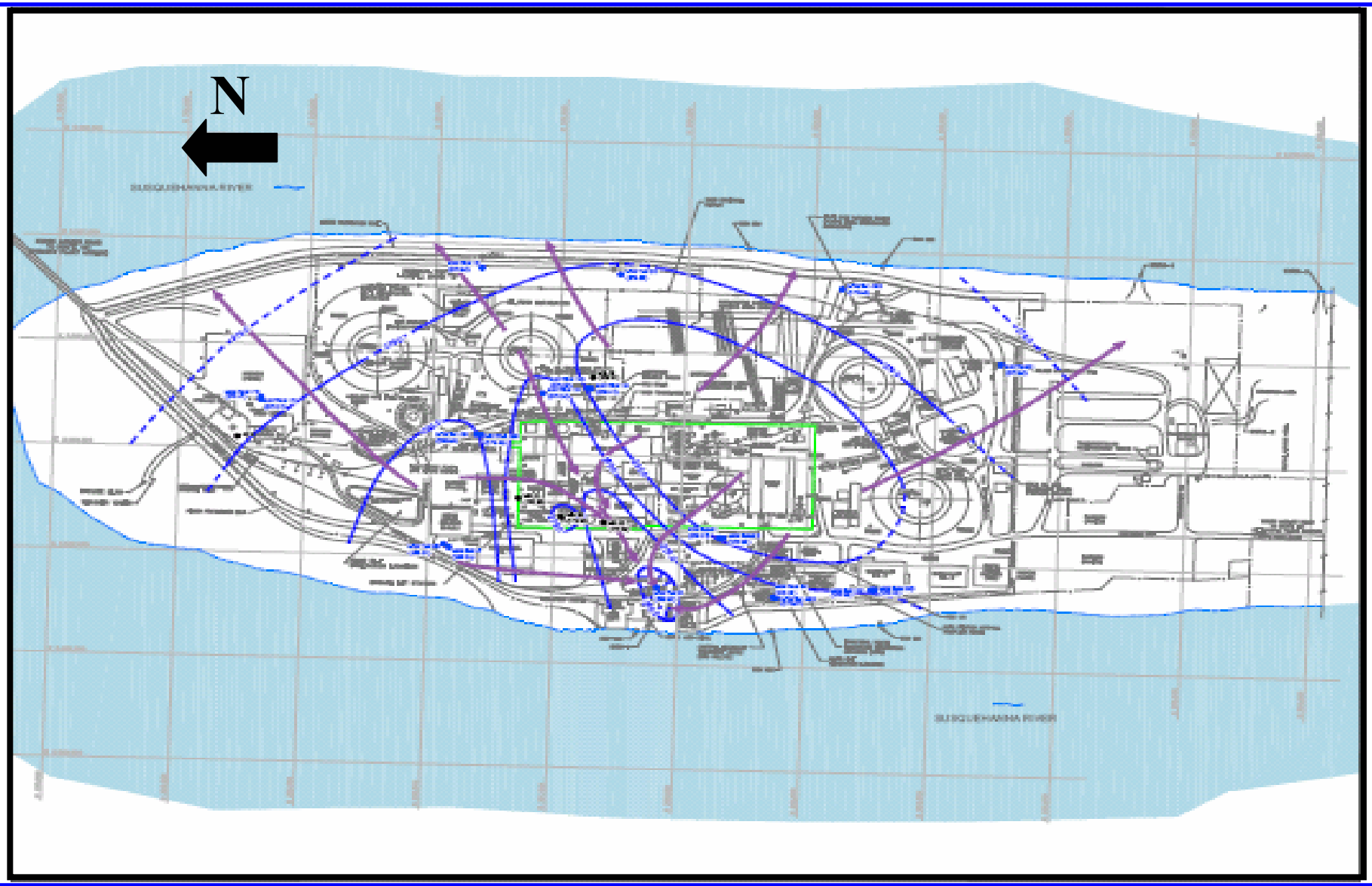
Fleetwide Tritium Assessment Results

- Groundwater Flow
  - Overburden and bedrock groundwater flows outward from the center of the island toward the Susquehanna River
  - Industrial wells capture a significant portion of the bedrock groundwater
- Tritium
  - No tritium or radionuclides were detected in surface water
  - Tritium was not detected in groundwater at concentrations greater than the USEPA drinking water standard of 20,000 pCi/L
  - Tritium concentrations ranged from 223 ±114 pCi/L to 13,500 ±1,390 pCi/L
  - Only 11 of the 58 groundwater samples contained tritium at concentrations greater than 1,000 pCi/L

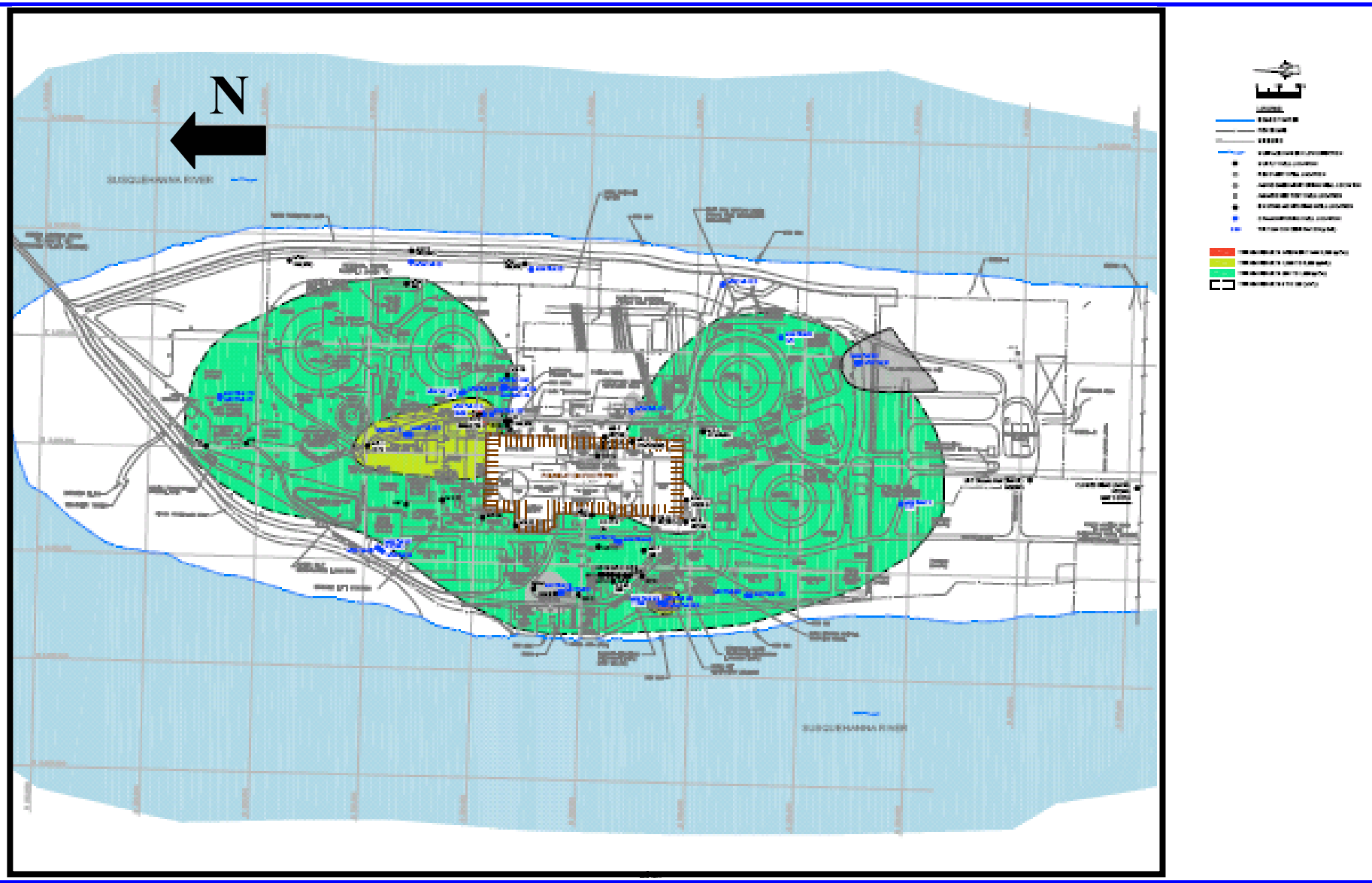
Overburden Groundwater Map



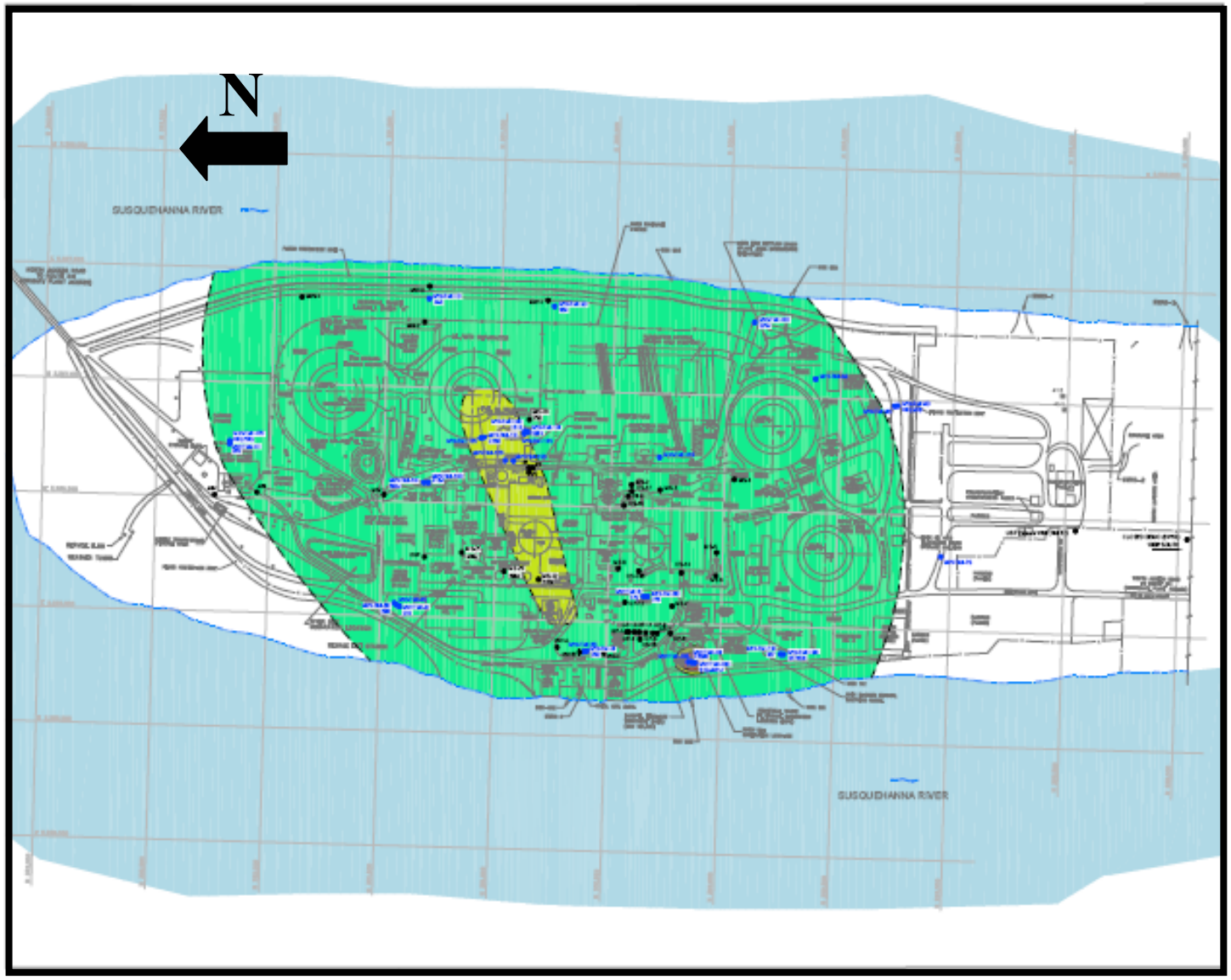
Bedrock Potentiometric Map



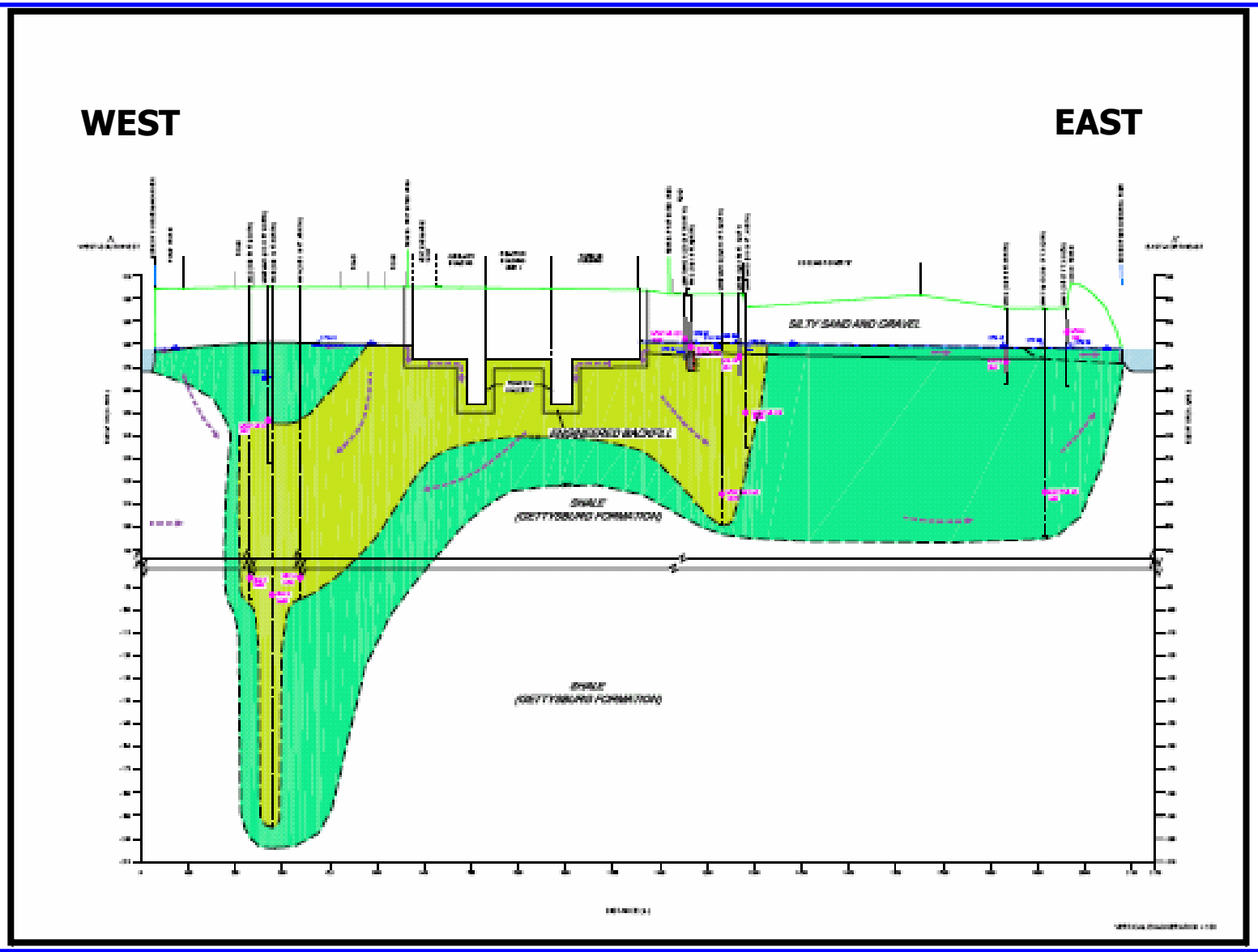
Tritium Isoconcentrations in Overburden



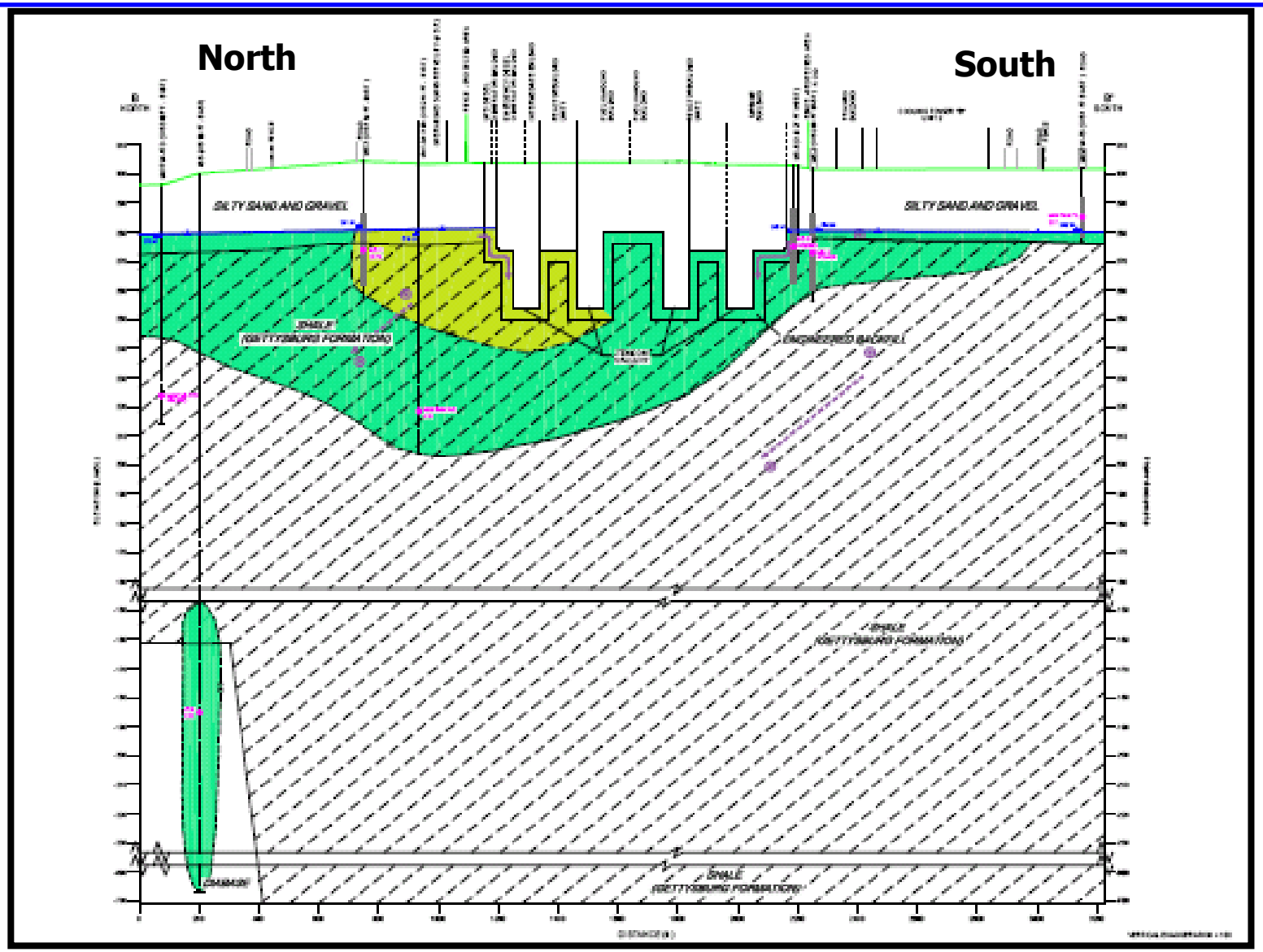
Tritium Isoconcentrations in Shallow Bedrock



E-W Cross-Section with Tritium Isoconcentrations



N-S Cross-Section with Tritium Isoconcentrations



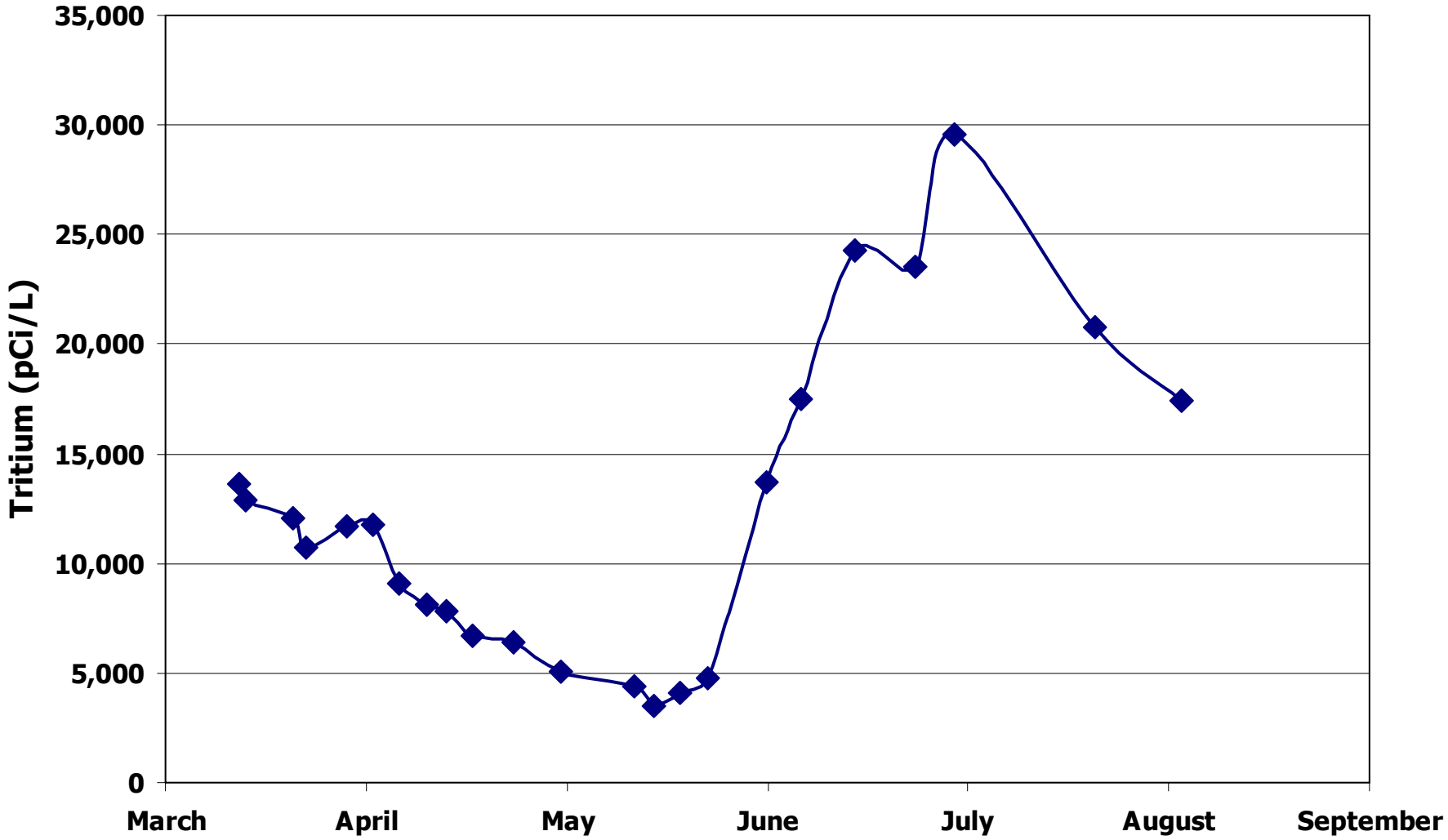
Mass Flux to River

- To quantify the amount of tritium entering the river, mass flux calculations were completed
- The results show that 0.05 Ci/year of tritium is entering the river from groundwater

Additional Data

- Groundwater samples collected in November 2006 and 2007
  - Results are consistent with Fleetwide Tritium Results with the exception of RW-2
- Focused investigation around RW-2 to investigate potential leak
  - Samples collected frequently (weekly) in 2007 at 9 wells
  - New spike in RW-2 identified (see next slide)
  - Leak found and under repair

RW-2 - Tritium Results for 2007



Action Taken

- Ongoing periodic monitoring of select wells
- REMP sampling
- Identification of potential sources
  - Focused investigations to determine if source is ongoing
  - E.g., RW-2
- Continued operation of the industrial supply wells, which capture the majority of tritium at the island

Path Forward

- Groundwater and surface water sampling for tritium
- Periodic updates of mass flux calculations to river
- Open and frequent communications with regulatory agencies
- Evaluate groundwater results for evidence of leaks
  - If evidence, further evaluate the area and potential sources
  - Fix leaks, if identified
- Pumping of industrial supply wells, which serve to capture the majority of tritium on the island