

# FUSRAP Investigation DuPont Chambers Works

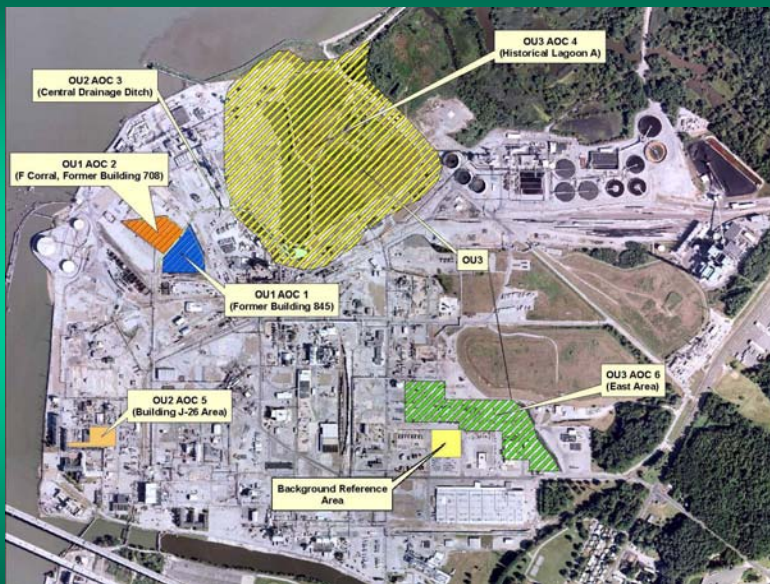
## Sitewide Remedial Investigation including Baseline Risk Assessment



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### Areas of Concern



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## Eligible Contaminants

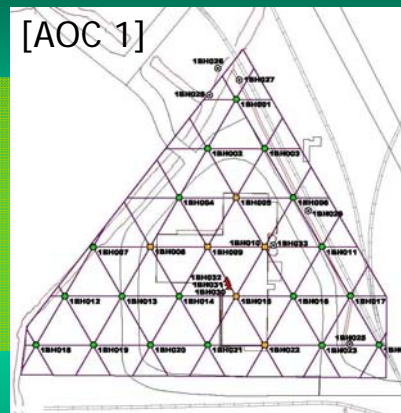
- Radionuclides
  - Uranium (U-234, U-235, and U-238)
  - Radium (Ra-226)
  - Thorium (Th-230)



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## Environmental Sampling of All Media

- Soil
- Groundwater
- Sediment
- Surface Water
- Air

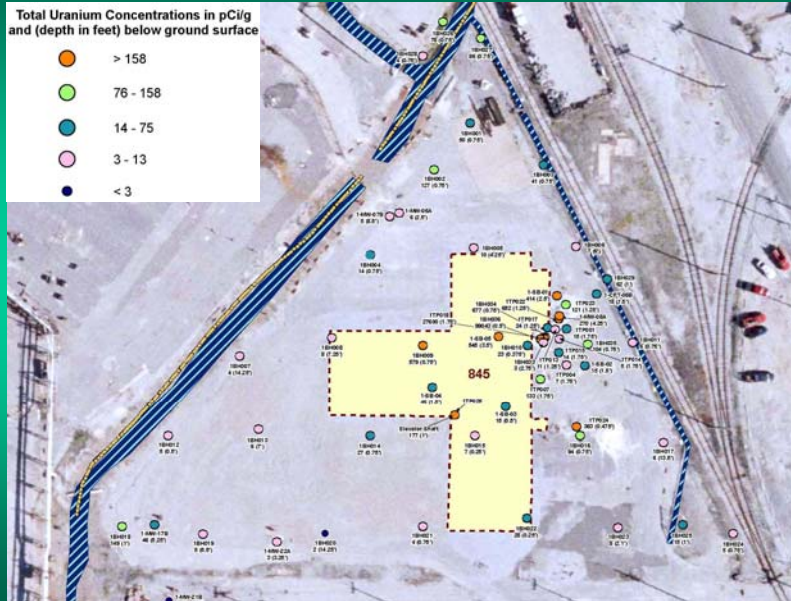


Total Number of Data Points: over 95,000

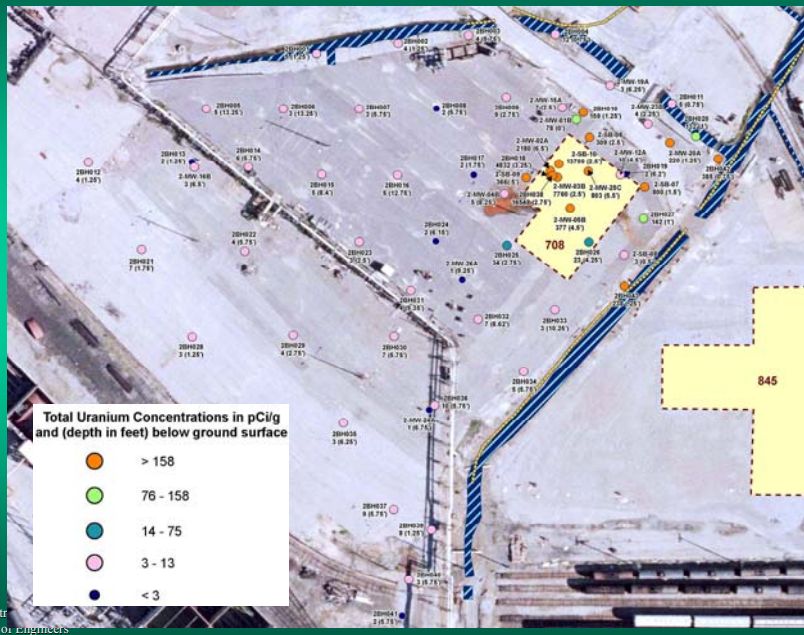


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## AOC 1 – Soil Sampling Results



## AOC 2 – Soil Sampling Results





## OU 1 - Groundwater Results



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## AOC 3 – Soil Sampling Results



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## AOC 3 – Sediment Sampling Results



## AOC 5 – Sampling Locations



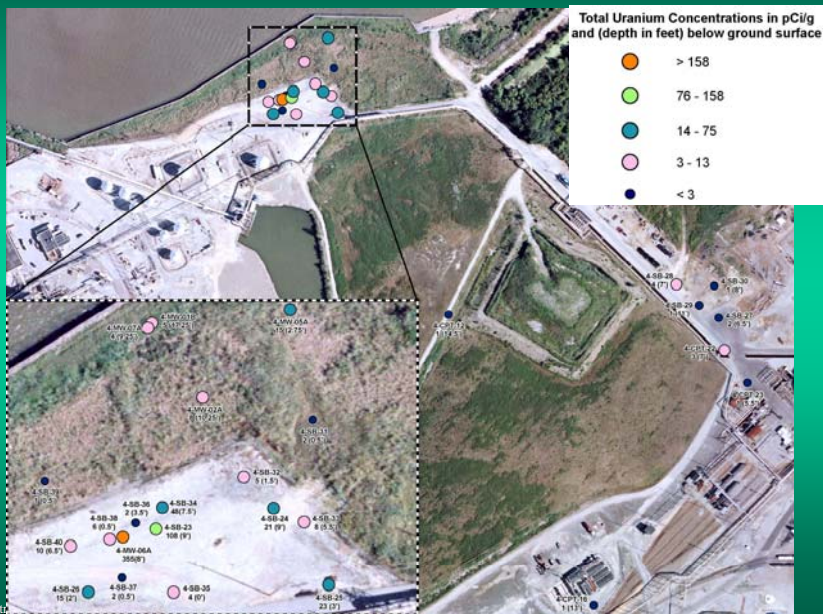
No contamination above the screening value



## AOC 4 – Sampling Locations



## AOC 4 – Soil Sampling Results



## AOC 4 - Groundwater



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## AOC 6 – East Area



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## AOC 6 – Soil Sampling



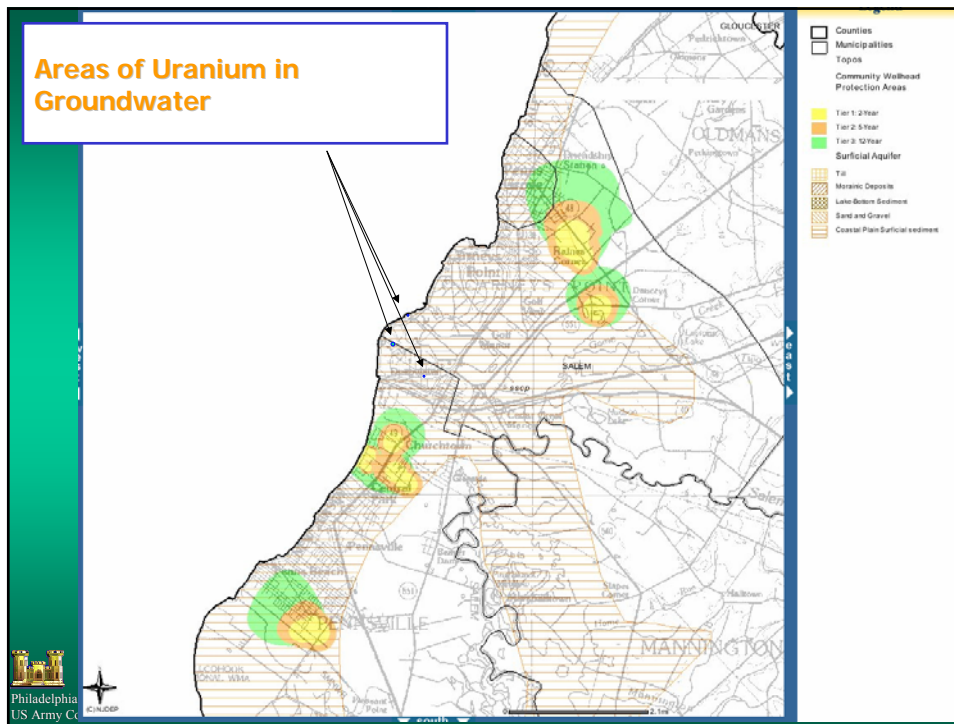

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## AOC 6 - Groundwater




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## Investigation Results

- **Soil:** Uranium impacted area is about 2.5 acres in OU1 and <0.1 acre in AOC6. Depth limited to <8 feet.
- **Groundwater:** Uranium impact is within the operable units with little or no migration. Vertical impact 20 feet or less.
- **Sediment:** Limited impact in drainage ditches near source zones.
- **Surface water:** No impact.

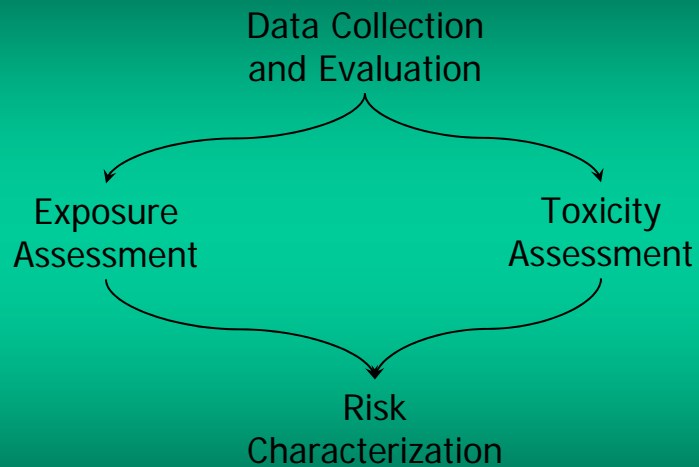
## Baseline Risk Assessment

- Estimate ecological and human health risks.
- Identify areas with unacceptable risks.



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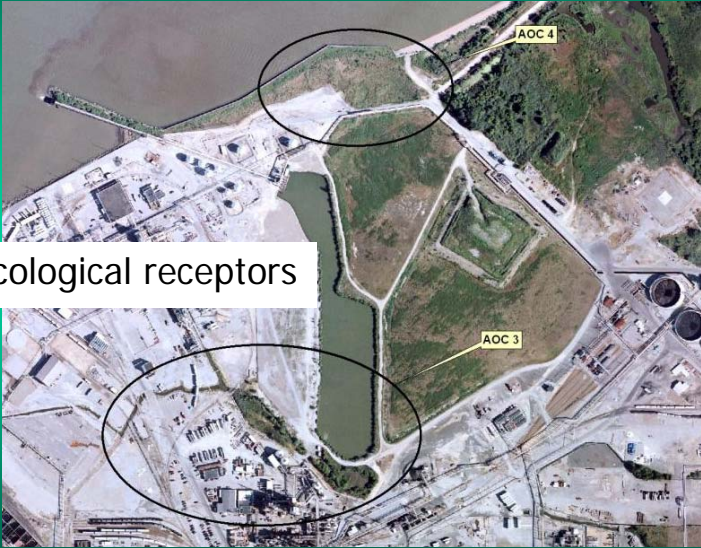
## The Risk Assessment Process



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# Ecological Risk Evaluation



No risk to ecological receptors

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# Potential Human Receptors

Human Receptors	Exposure Duration
Industrial Workers	8 hours/day; 250 days/year; and 25 years
Construction Workers	8 hours/day; 250 days/year; and 1 year
Utility Workers	Single event = 80 hours
Maintenance Workers	8 hours/day; 26 days/year; and 25 years

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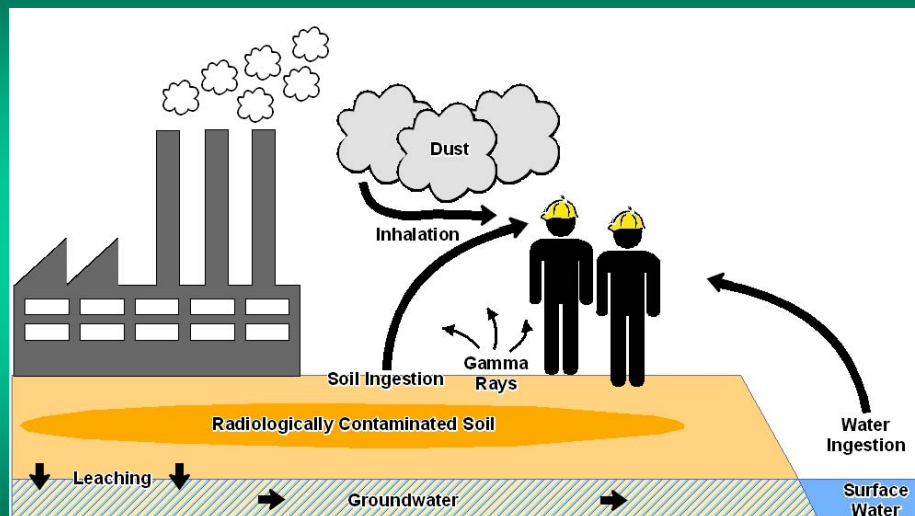
## Potential Human Receptors

- Industrial Workers
- Construction Workers
- Utility Workers
- Maintenance Workers



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## Conceptual Site Model



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## Dose and Risk Characterization

Type of Assessment	Dose	Risk
Criteria	15 mrem/yr [NJDEP & EPA]	1:10,000 – 1:1,000,000 [EPA]



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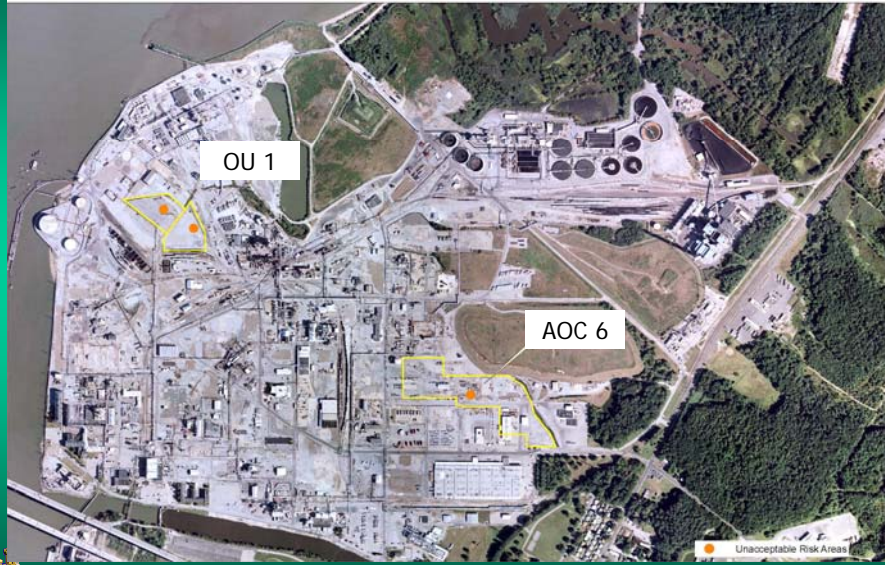
## Areas with Unacceptable Dose and Risk

	Receptor Scenarios	AOC 1 & AOC 2	AOC 3	AOC 5	AOC 4	AOC 6
<b>Radiological Contaminants</b>	Industrial Worker					√
	Construction Worker	√				√
	Utility Worker	√				
	Maintenance Worker					



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## Risk Assessment Results



  
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