Cleanup

1. EPA regulations require Superfund sites to be cleaned up to such a level that the risk of cancer from exposure to any residual contaminants is equivalent to the risk of dying from which of the following?

1. Living two months with a cigarette smoker
2. Traveling 300 miles by car
3. Flying 1000 miles by jet
4. Traveling 6 miles by canoe
5. Any of the Above

Reference: Wilson R (1979) Analyzing the Daily Risks of Life, Technology Review; 81(4):41-46

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Reference: Wilson R (1979) Analyzing the Daily Risks of Life, Technology Review; 81(4):41-46

2. Past practices at the PGDP resulted in the spilling of two contaminants: Trichloroethylene (TCE) and Technetium 99 (Tc99) into the groundwater. As of 2000, how much groundwater has been contaminated?

Enough to fill…..

1. 1,000 Olympic size swimming pools
2. 5,000 Olympic size swimming pools
3. 10,000 Olympic size swimming pools
4. 16,000 Olympic size swimming pools
5. 20,000 Olympic size swimming pools

Reference: General Accounting Office {April 29, 2000: GAO/RCED-00-96}

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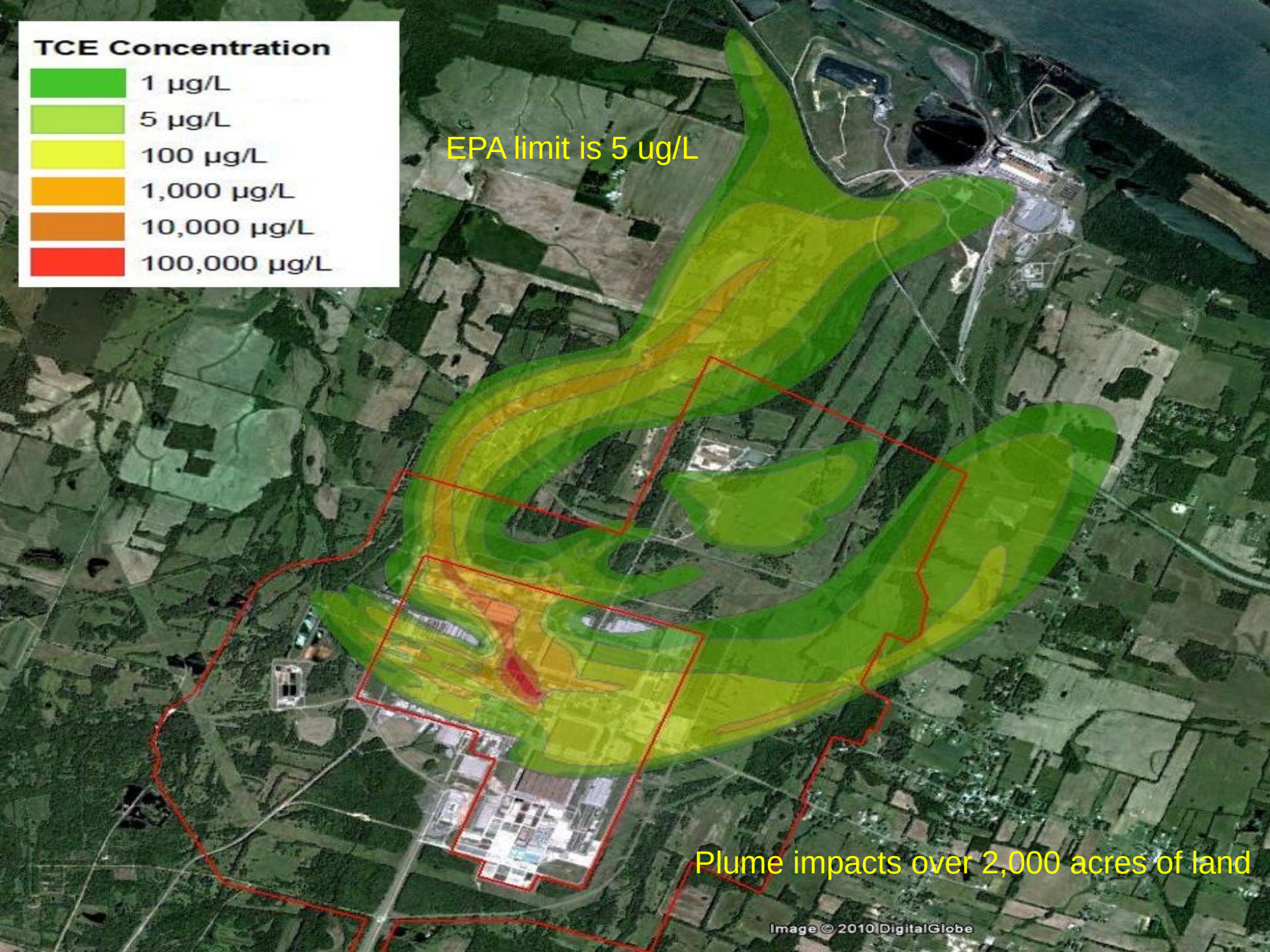
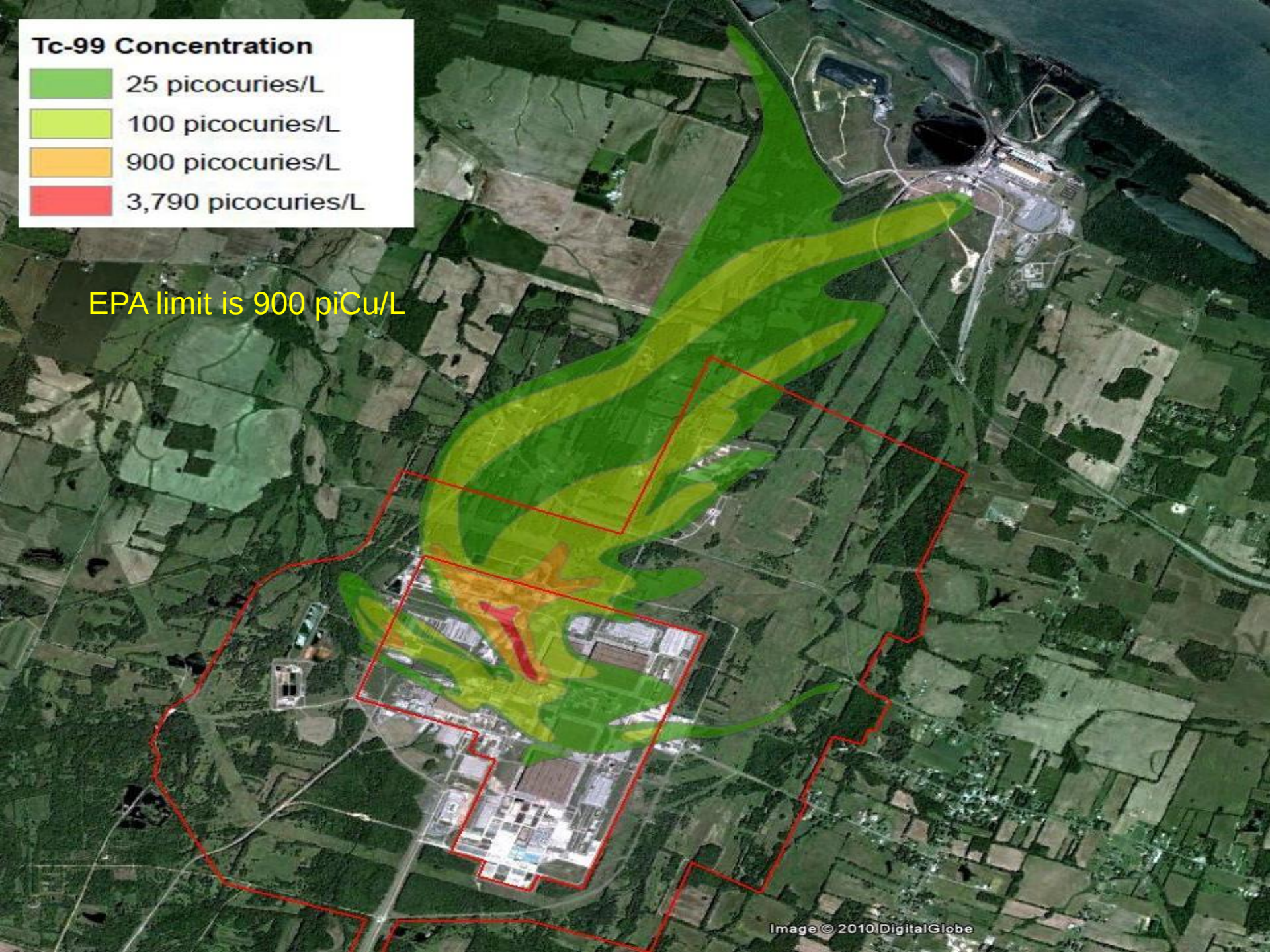

TCE Concentration
1 µg/L
5 µg/L
100 µg/L
1,000 µg/L
10,000 µg/L
100,000 µg/L
EPA limit is 5 ug/L
Plume impacts over 2,000 acres of land
Image © 2010 DigitalGlobe


Tc-99 Concentration
25 picocuries/L
100 picocuries/L
900 picocuries/L
3,790 picocuries/L
EPA limit is 900 piCu/L
Image © 2010 DigitalGlobe

3. If all the residual sources of TCE in soils and groundwater inside the PGDP facility were removed, approximately how long would it take for the TCE concentration in the groundwater plume outside of the plant to drop below what EPA deems an acceptable contamination level?

1. 5 years
2. 10 years
3. 15 years
4. 30 years
5. Over 100 years

Reference: KRCEE – Property Acquisition Study for Areas near the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, April 2007

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3. 15 years
4. 30 years
5. Over 100 years

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4. Non-hazardous waste from ongoing operations and cleanup at the PGDP are currently being placed where?

1. Disposed on DOE property in a landfill
2. Dumped in the Ohio River
3. Shipped to another location out of state
4. Stored in the Paducah Landfill
5. There are no non-hazardous wastes

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PGDP Landfills
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5. The total estimated waste volume from the demolition of the PGDP existing facilities could fill how many football fields a yard deep?

1. 100
2. 500
3. 675
4. 1,000
5. 1,500

Reference: 3,596,000 cubic yards from DOE CERCLA Waste Disposal Alternatives RI/FS Workplan

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6. Approximately how much would it cost to ship all the PGDP waste off-site, compared to burying the waste in an on-site landfill?

1. Twice as much
2. Three times as much
3. The same
4. One half as much
5. One third as much

Reference: DOE, based on shipping 2,640,000 cubic yards at $1.1 billion

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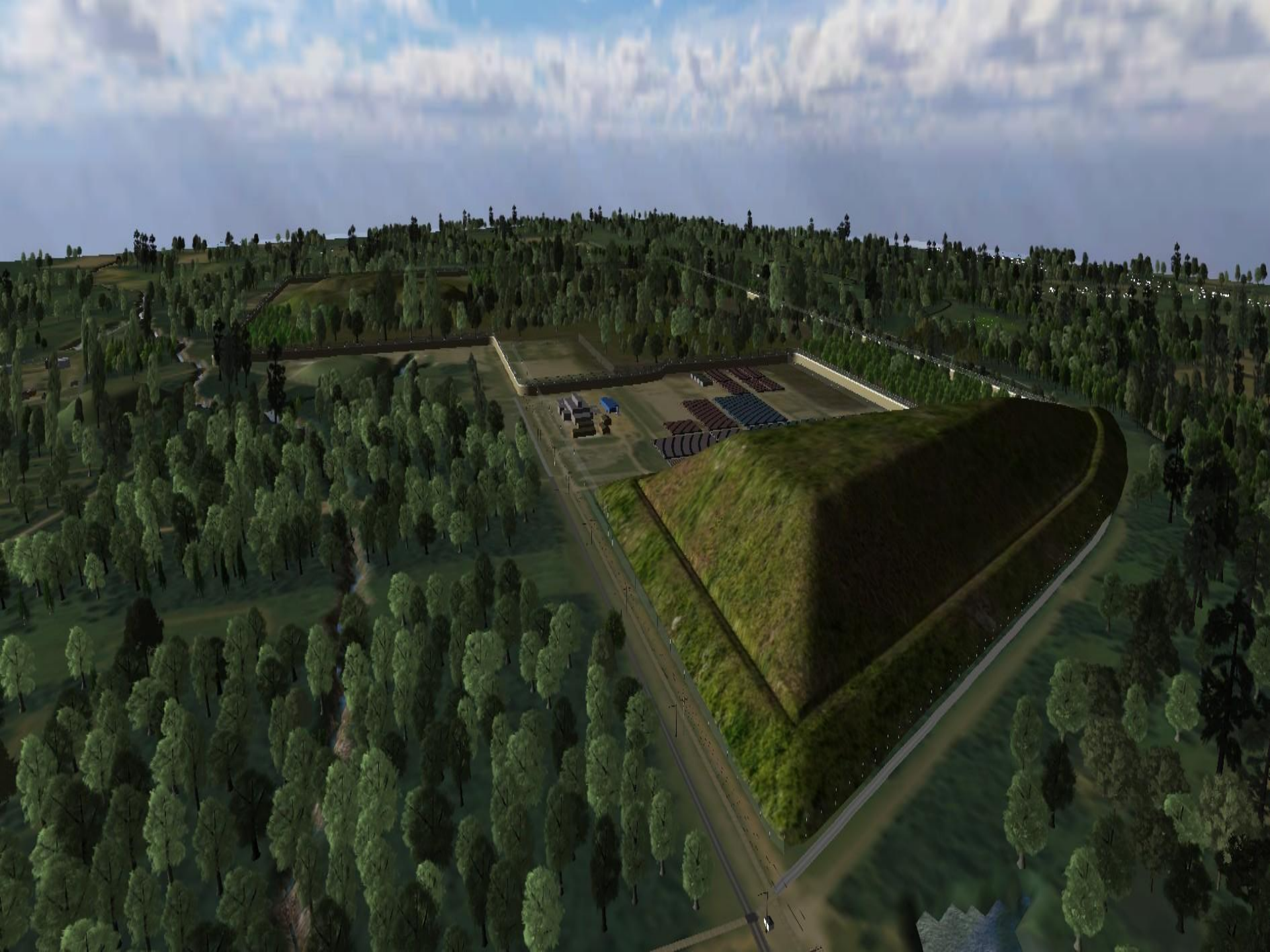
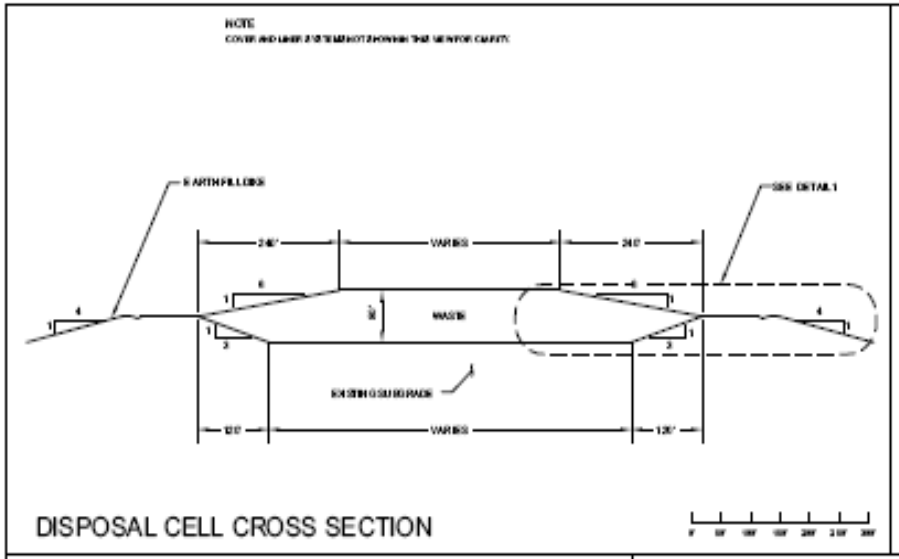
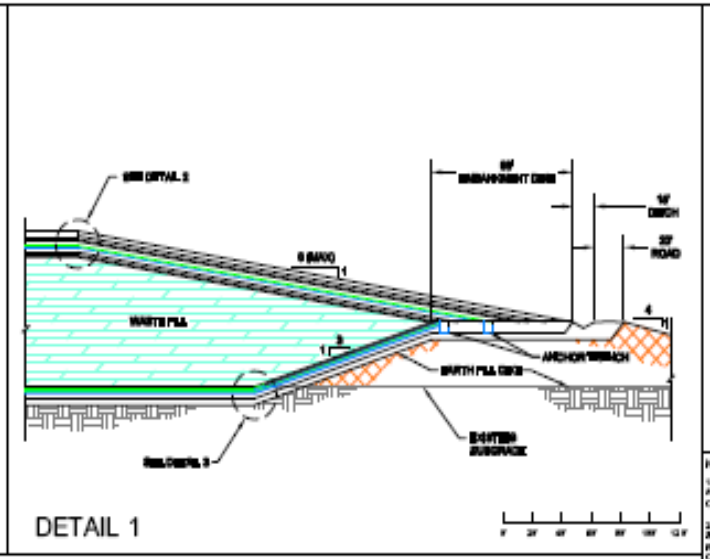
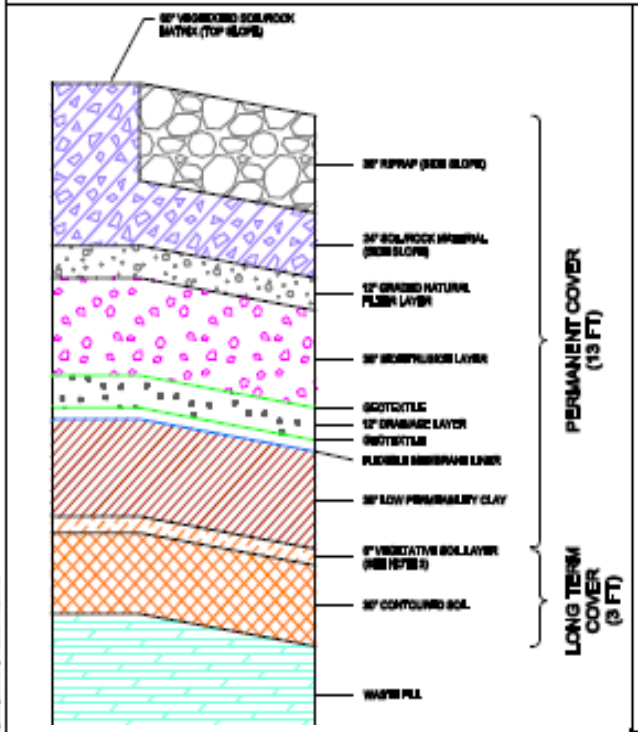
Possible Sites for On-Site
Waste Disposal Cell
11
9
5A
1
3A









Top Layer 16 feet deep

Bottom Layer 8 feet deep

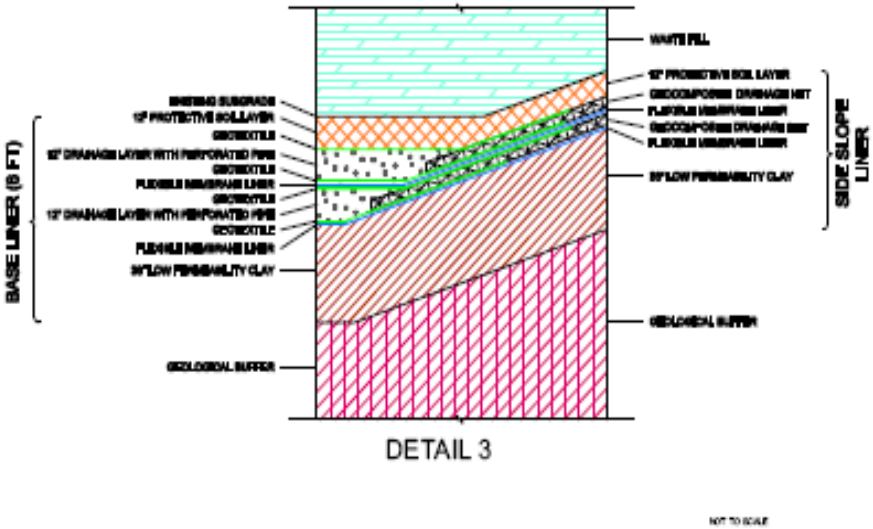


Figure 5.4. Conceptual Design Cross Sections

7. According to the Kentucky Division of Waste Management, after the PGDP site is cleaned up, what regulatory steps would be triggered if additional contamination were discovered off-site?

1. A new site investigation would be mandated by EPA
2. Any new property owners would be responsible
3. The site would be closed
4. The site would be placed back on the NPL Superfund list
5. Nothing

Reference: Kentucky Division of Waste Management

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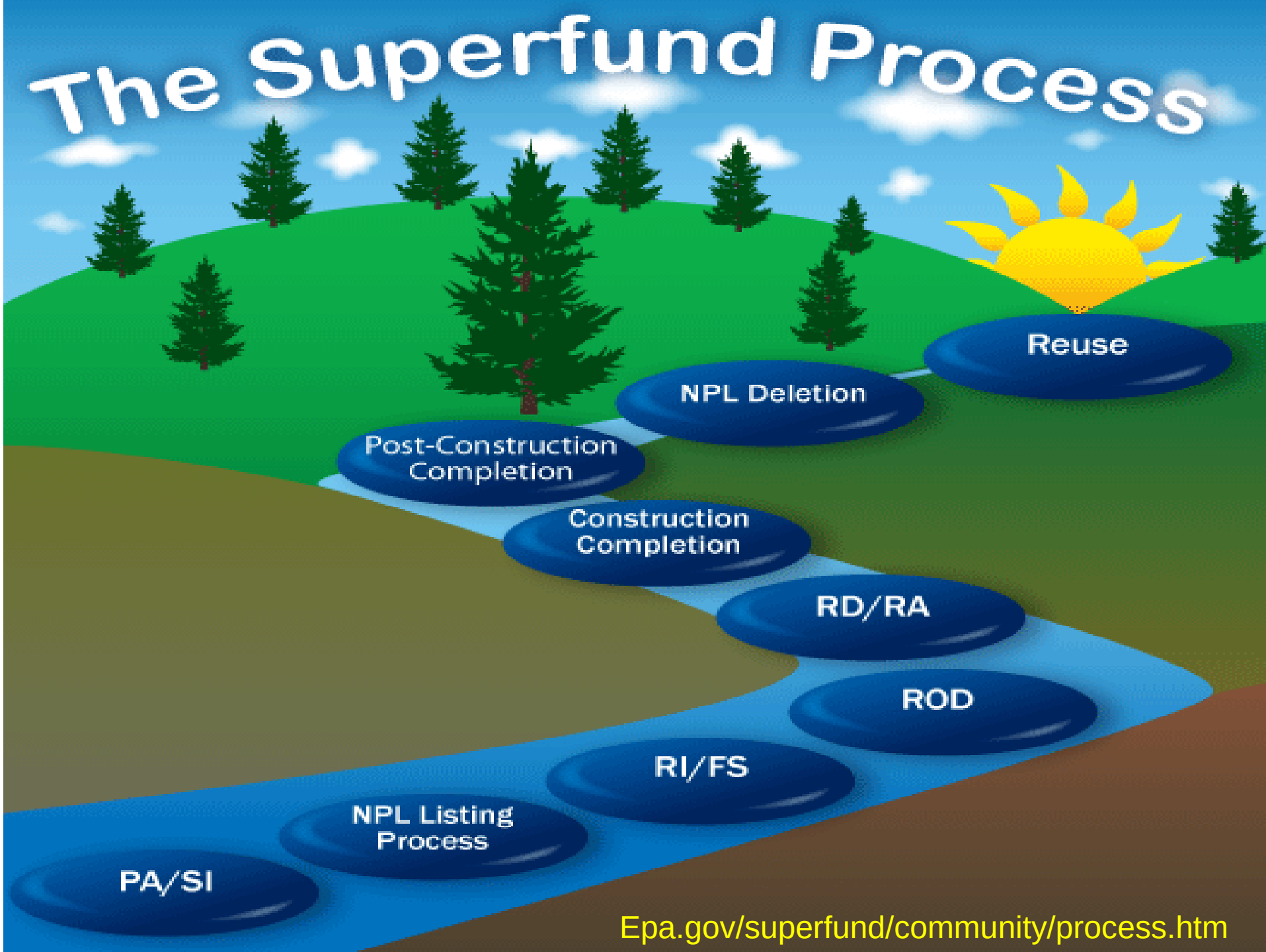
The Superfund Process
Reuse
NPL Deletion
Post-Construction Completion
Construction Completion
RD/RA
ROD
RI/FS
NPL Listing Process
PA/SI
Epa.gov/superfund/community/process.htm