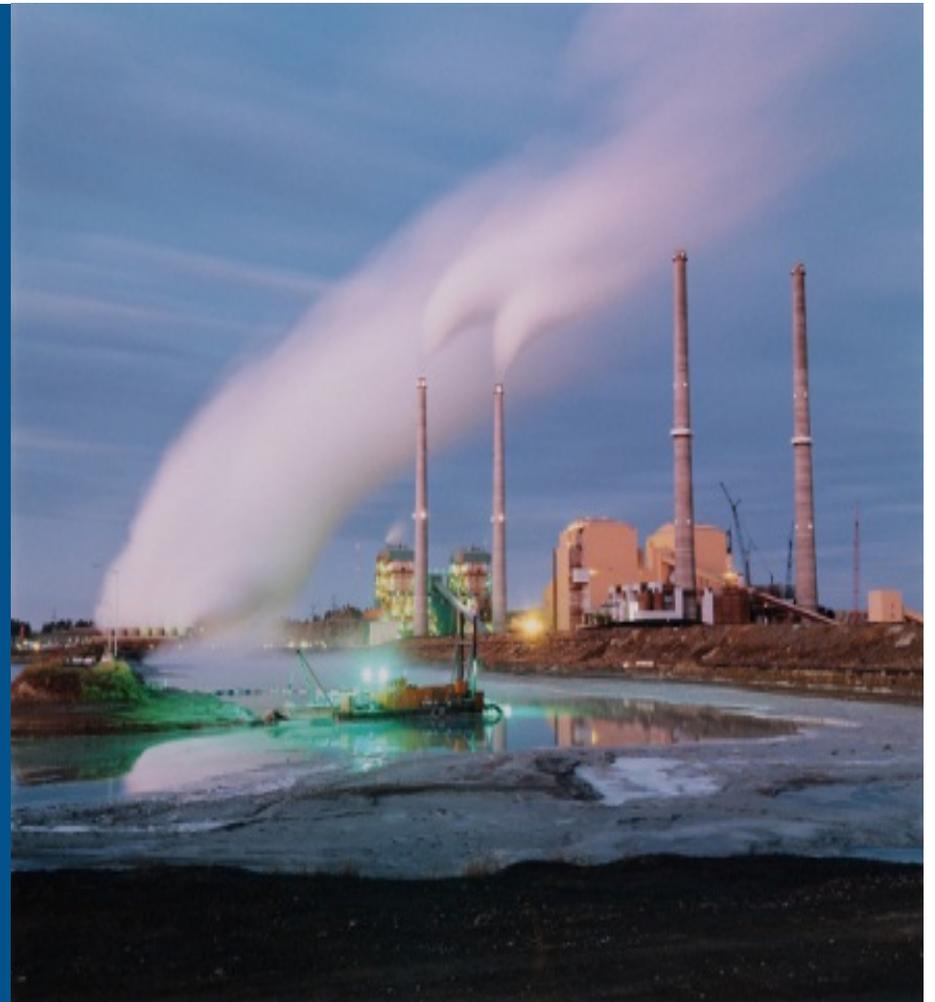


# Colstrip Update November 4, 2015

Jake Kandelin  
Remediation Division  
Department of  
Environmental Quality



# Agenda

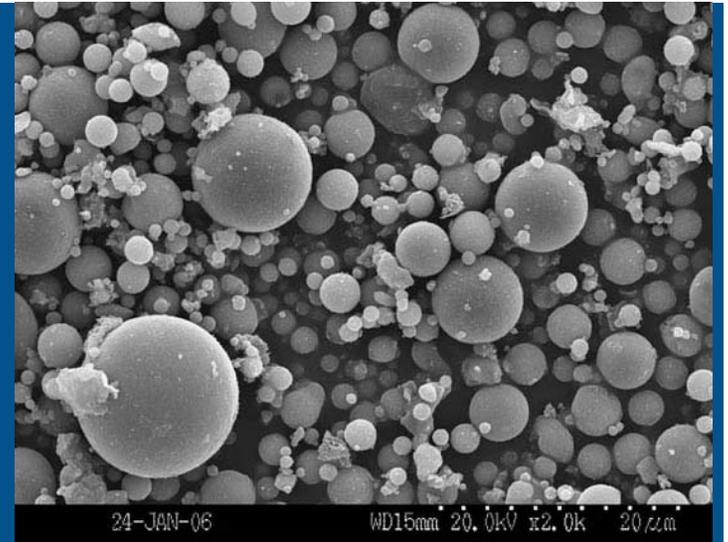
- Administrative Order On Consent (AOC) Process
- Questions
- Coal Combustion Residuals Generated by Electric Utilities (CCR) Rule Overview by Gordon Criswell, Talen Energy
- Final Questions

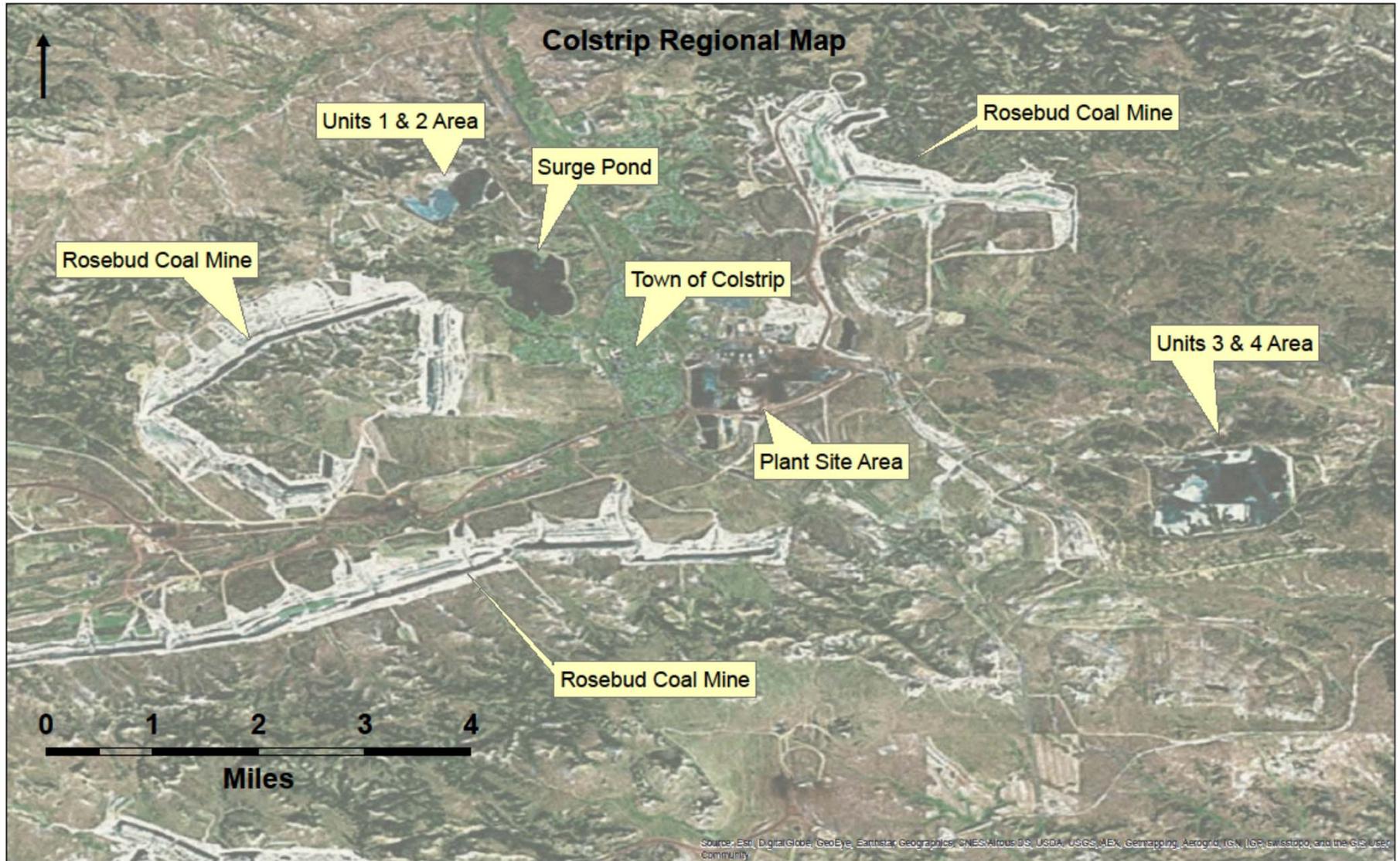


# Coal Ash – Product of Coal Combustion

- Fly Ash
- Bottom Ash

Carried to ponds by water pipelines





# Primary Indicators in Ponds and Groundwater

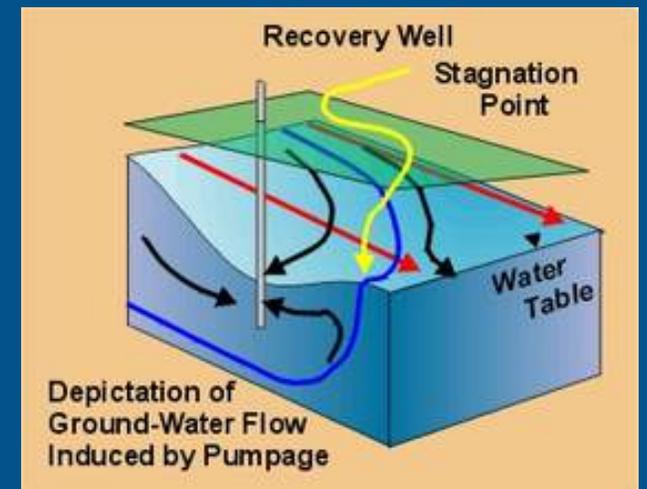
Dissolved into pond water  
from coal ash:

- Sulfate
- Chloride
- Boron



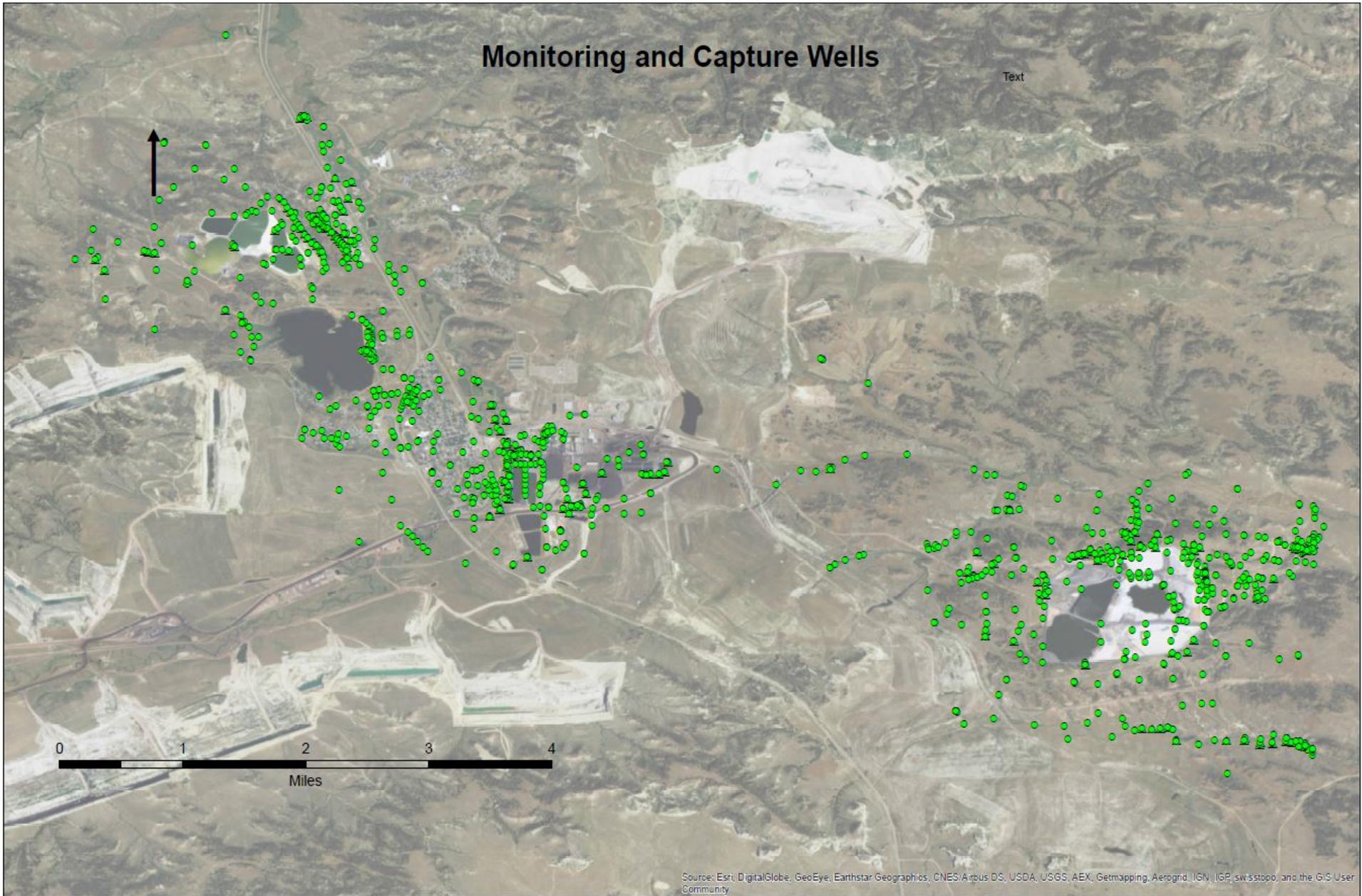
# Colstrip Well Network

- Monitoring Wells
- Capture Wells

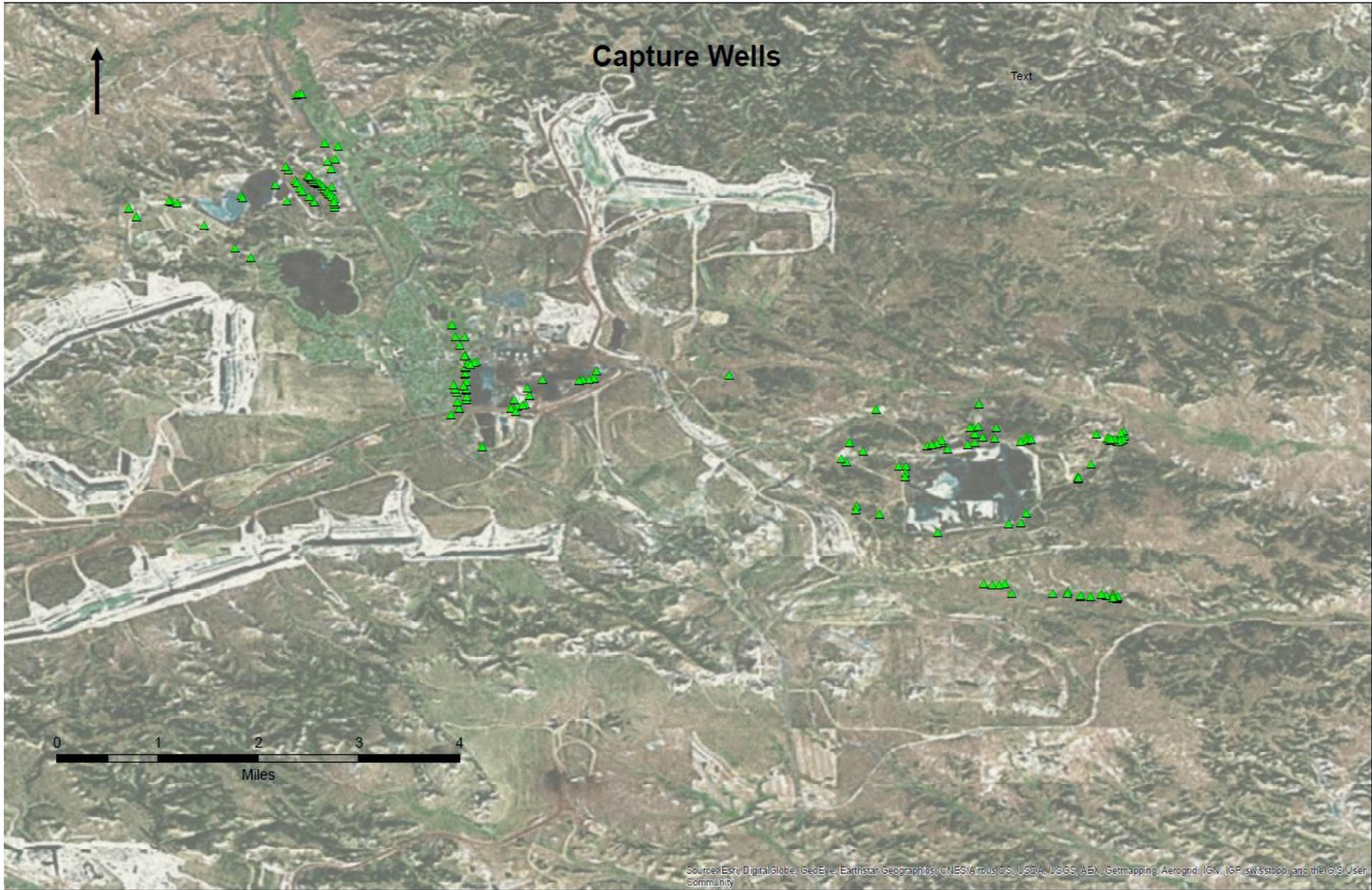


# Monitoring and Capture Wells

Text



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



# Colstrip Coal Ash Storage – Plant Site Area

- Current bottom ash deposition only
- Historical fly ash deposits



# Colstrip Coal Ash Storage – Units 1 & 2 Area

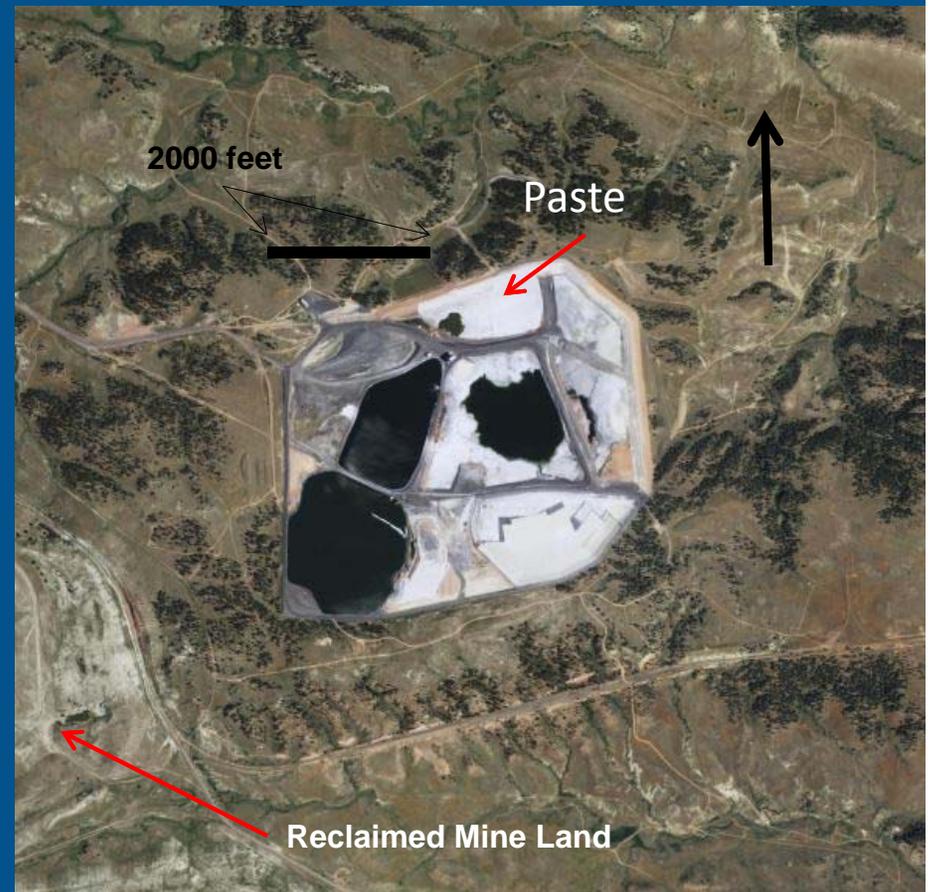
- Fly ash deposition only

Active Mining



# Colstrip Coal Ash Storage – Units 3 & 4 Area

- Fly ash deposition only



# Sulfate concentrations in shallow groundwater Plant Site Area

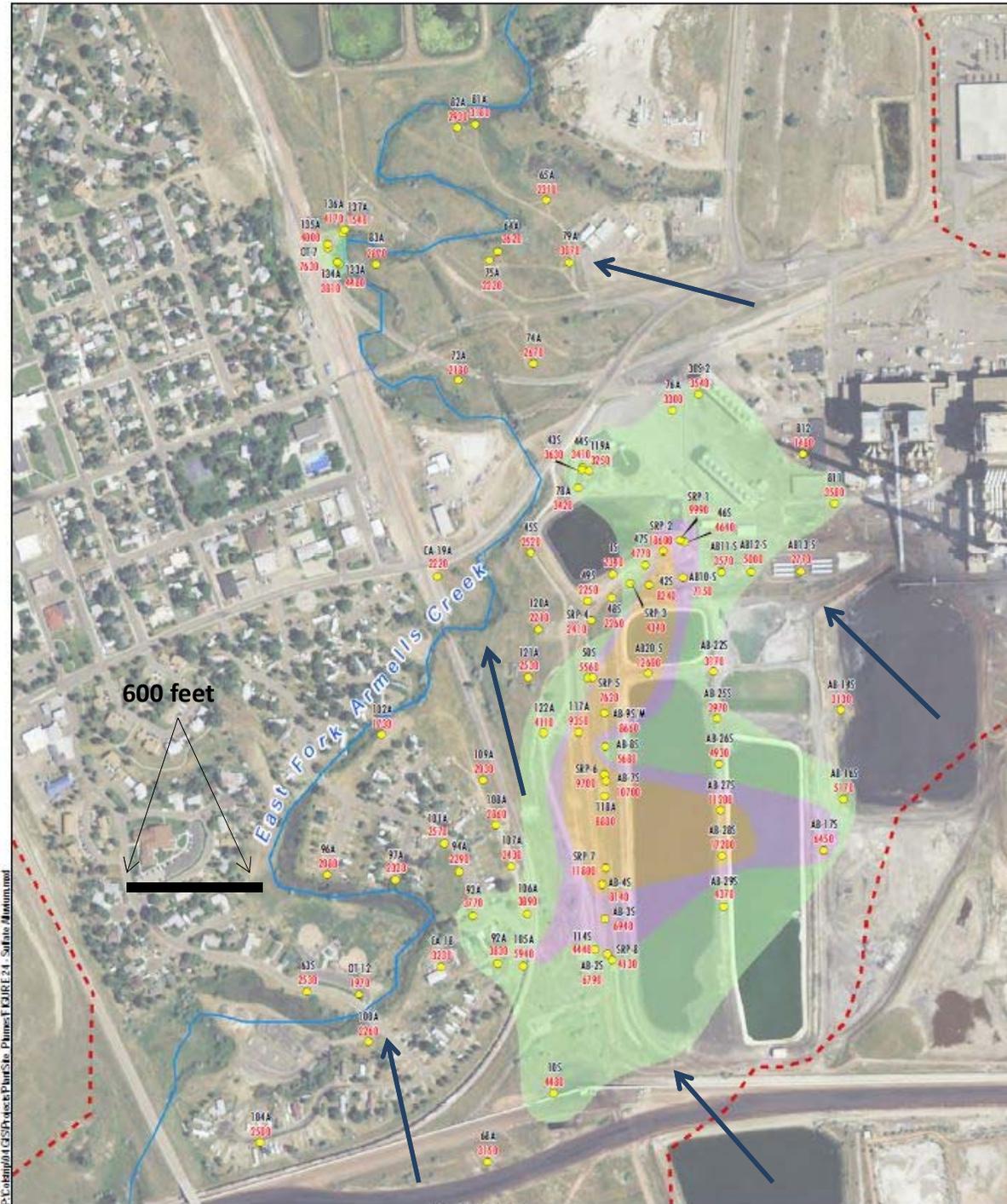
Green: 3400-6000

mg/l

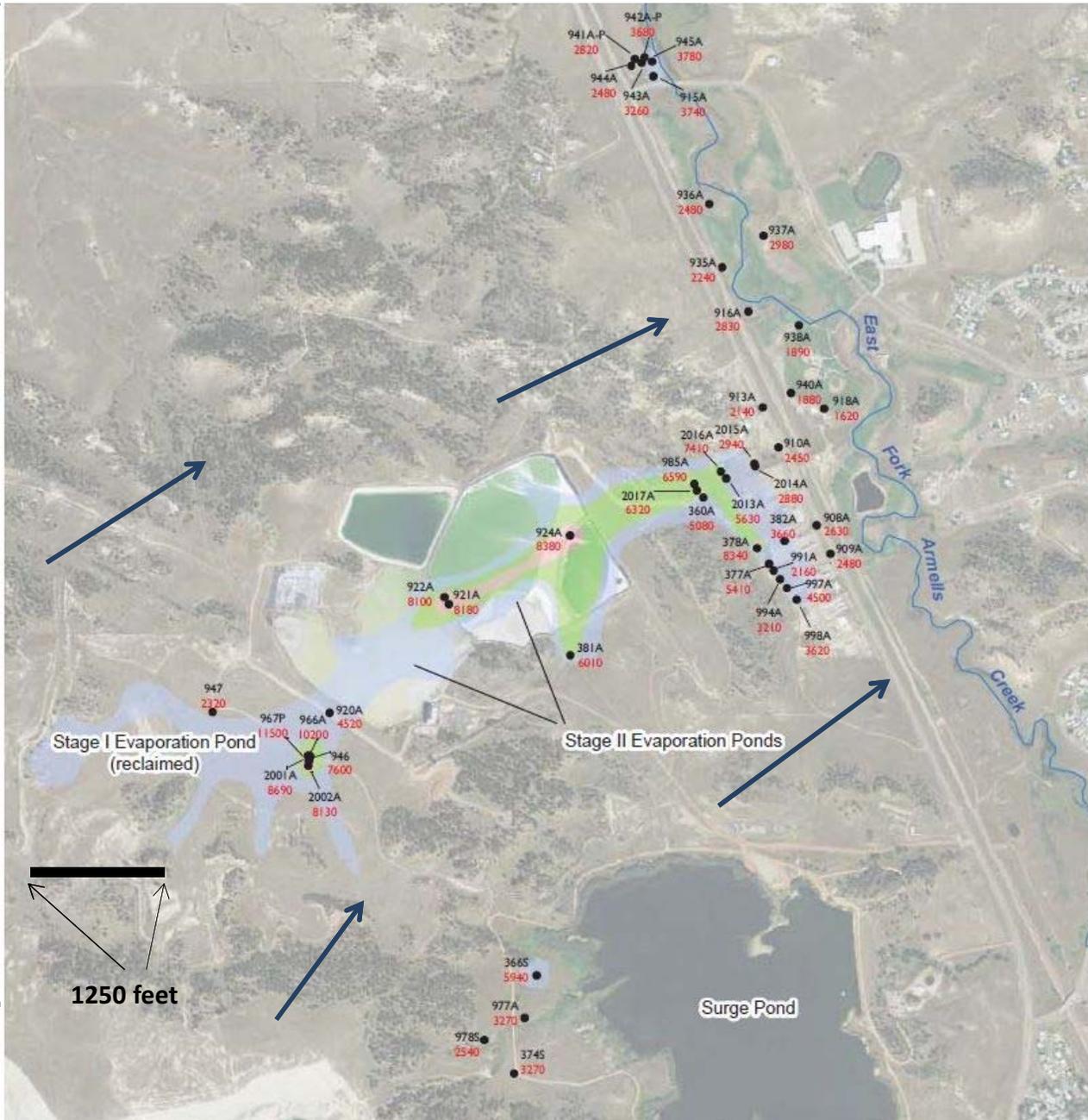
Purple: 6000-8000

mg/l

Orange: > 8000 mg/l



Groundwater direction  
→



# Sulfate concentrations in shallow groundwater in Units 1 & 2 Area

Blue: 3400-6000 mg/l

Green: 6000-8000 mg/l

Orange: > 8000 mg/l

Groundwater direction →



## AOC Process

AOC – Administrative Order on Consent

Enforcement agreement taken by DEQ and agreed to by Talen Energy to address groundwater contamination

Effective Date: August 3, 2012

# AOC Process

- All ash storage and transport
- Use of Montana water quality standards
- Where no standards risk based assessment
- Adaptive management practices
- Legal basis in Montana Major Facility Siting Act and Water Quality Act
- Financial assurance for site characterization
- Public participation

# AOC Process

Site Characterization (current step)



Risk Assessment and Cleanup Criteria  
Development



Remedy Evaluation



Remedy Selection by DEQ



# AOC Process

Remedial Design

Remedy Implementation

Facility Closure (ponds, groundwater)

Maintenance and Monitoring

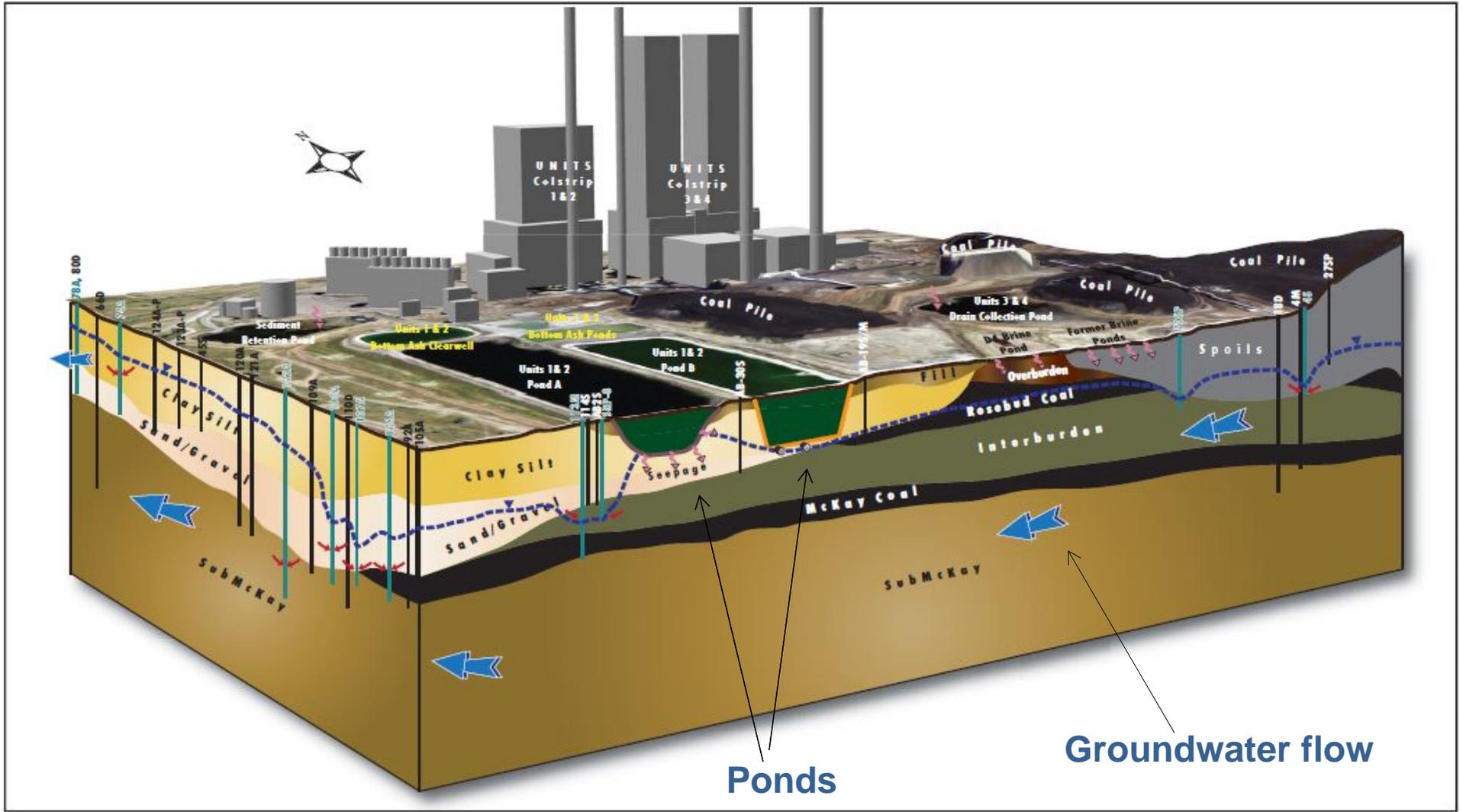
# Approval of Plant Site Characterization Report

DEQ requested significant modifications:

- Groundwater models
- Description of pond construction, contents, leakage estimates
- Effectiveness of current remedial actions

**Result: clearer communication to public**

# Plant Site Groundwater



Sub McKay, Interburden,  
Overburden = Rock

Blue Wells = Capture Wells

# Approval of Plant Site Characterization Report

DEQ approved the Plant Site Characterization Report on October 21, 2015.

Approved report is being used as template to revise other site characterization reports :

- Revised Units 1 & 2 report November 2015.
- Revised Units 3 & 4 report to March 2016.

# Current Reanalysis of Background Screening Levels (BSLs)

BSLs are concentrations of groundwater constituents that are **not** the result of plant operations

- Specific to Colstrip area
- Naturally-occurring
- Caused by strip mining of coal
- Caused by other human activity

# BSLs

Valid BSLs are required to define:

- Primary indicators
- Extent of contamination
- Potential cleanup criteria

# Move of Colstrip AOC process to DEQ Remediation

- AOC process transferred in January 2015 from Environmental Management Bureau
- AOC process is very similar to other projects (mines, underground tanks, ..) administered by DEQ Remediation
- More technical resources available in Remediation

# Contact Information

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Colstrip Web Site

<http://deq.mt.gov/mfs/ColstripSteamElectricStation/default.mcp>

Colstrip Email

[DEQColstrip@mt.gov](mailto:DEQColstrip@mt.gov)

# Questions?

