

LOGISTICS

ZOOM MEETING SETUP

Welcome and thank you for participating in DEQ's COLSTRIP ANNUAL MEETING. Please read the following tips about participating in this virtual meeting:

- We are recording the meeting.
- All participants have been automatically muted. Please remain so until called on to speak.
- Use the “raise hand” feature in the app to indicate that you would like to speak.
- If you are called on to speak, please identify yourself by stating your first and last name.
- You may also use the chat box to type your questions.
- Joining by phone?
 - Press *6 to mute/unmute yourself.
 - Press *9 to raise your hand.
- Visit the following link for helpful tips about using Zoom software:
 - <https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-meeting>

Thank you in advance for your patience, cooperation, and courtesy in this unprecedented time.

Colstrip Annual Meeting

October 14, 2020

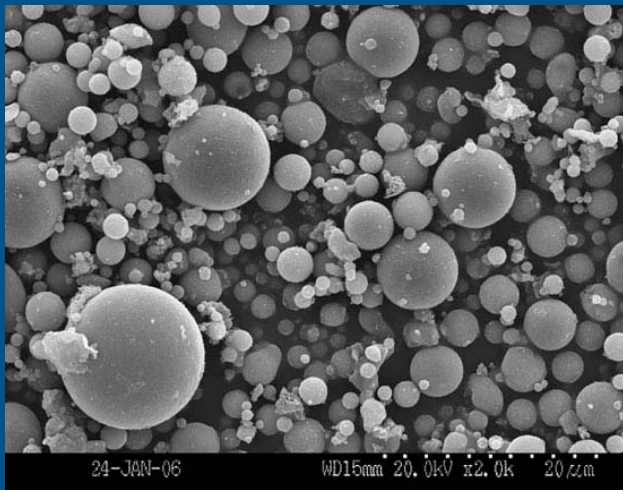


Agenda

- Background/AOC Overview
 - Previously Approved Reports & Financial Assurance Update
- Units 3&4 Remedy Evaluation Report/Selection of Corrective Measures
- Units 1&2 Remediation Act Plan Overview
- Units 1&2 Integrated Remedy Evaluation Report Overview
- What's Next?
- Questions/Comments

What is coal ash?

- Coal Combustion Residual (CCR); byproduct of burned coal
- May contain traces of metals naturally present in the coal
- Regulated by Federal CCR Rule



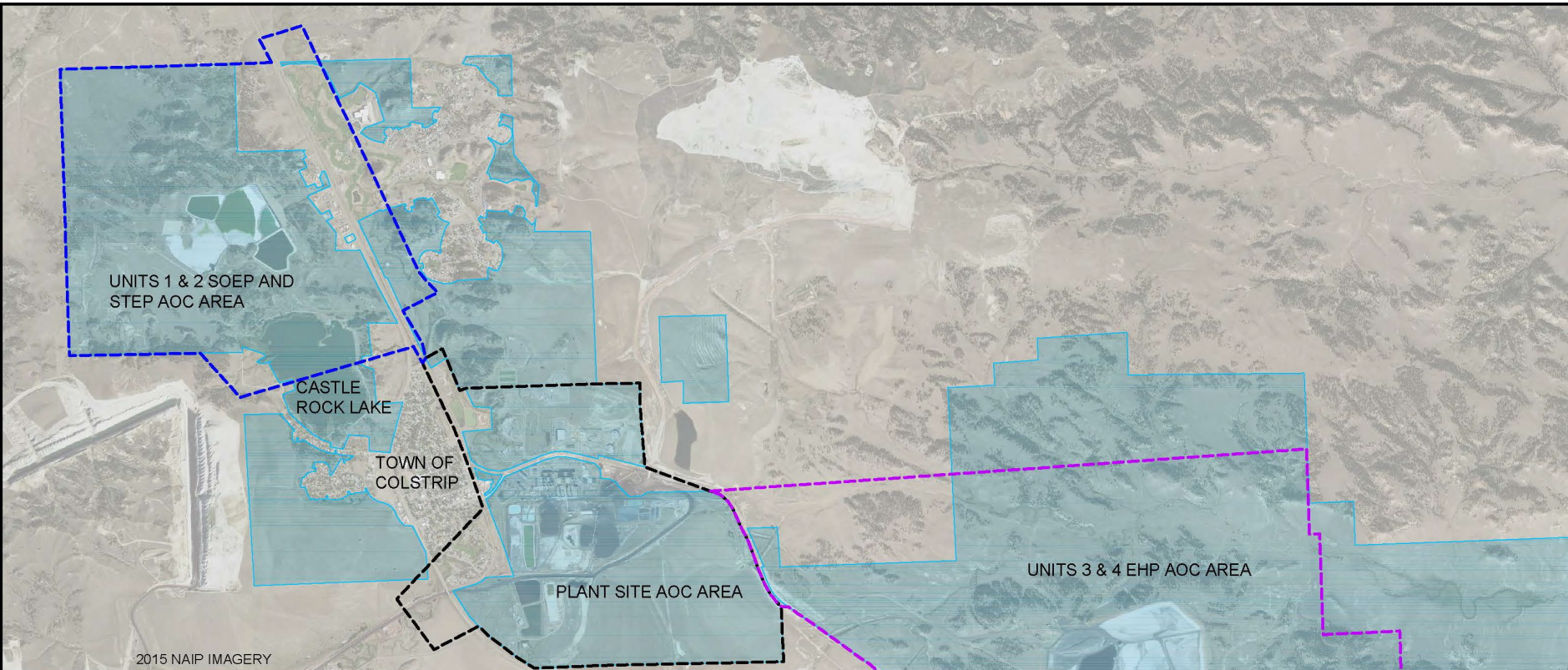
Fly ash (magnified 2000x)



Bottom ash (magnified 6000x)

Administrative Order on Consent (AOC)

- Addresses groundwater contamination from coal ash disposal ponds
- Divides site into 3 areas:
 - Plant Site
 - Units 1&2 Evaporation Ponds
 - Units 3&4 Effluent Holding Ponds



SCALE
(In Feet) 0 3,000

LEGEND

- ▬ PROPERTY BOUNDARY
- UNITS 1 & 2 SOEP AND STEP AOC AREA
- PLANT SITE AOC AREA
- UNITS 3 & 4 EHP AOC AREA

Revised May 8, 2017

COLSTRIP WASTEWATER AOC AREAS

FIGURE

UPDATE TIME: 8:50 AM
JBERGIN\BIL\20170508\F\LAND PROJECTS\TALEN\1207116\1207116B006.DWG

AOC Process

Site Characterization Report (describes the current condition of each area)*



Cleanup Criteria & Risk Assessment Report (identifies constituents of interest, risk for exposure to contaminants, and cleanup criteria for contaminants)*



Remedy Evaluation Report (evaluates remediation alternatives)*



DEQ selects remedy

AOC Process (continued)

DEQ selects remedy



Financial assurance for selected remedy



Remedial Design/Remedial Action Work Plan (implementing selected remedy)



Final Remedial Action Report (describes completed remedy)



Facility Closure Plan (long-term maintenance and monitoring)*



Financial assurance for closure plans

AOC Report Status

Report Name	Plant Site	Units 1&2	Units 3&4
Site Characterization Report	✓	✓	✓
Background Screening Level Report	✓	✓	✓
Cleanup Criteria & Risk Assessment Report	✓	✓	✓
Remedy Evaluation Report	✓	✓	✓
Remedial Design/Remedial Action Report	✓	--	✓
Final Remedial Action Report	--	--	--
Closure Plans	✓	✓	✓

✓ = Approved by DEQ

✓ = Under review

-- = Not yet submitted

Financial Assurance

Colstrip Owners	FA Provided as of 12/15/2019	FA Provided as of 10/1/2020
Talen	\$51.3 million	\$68.3 million
Puget Sound Energy	\$51.6 million	\$83.6 million
Northwestern Energy	\$13 million	\$22.8 million
Portland General Electric	\$17.4 million	\$30.4 million
Avista	\$13 million	\$22.8 million
PacifiCorp	\$8.7 million	\$15.2 million
Total	\$171.4 million	\$243.1 million

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Units 3&4 Remedy Evaluation Report

Selection of Corrective Measures
Coal Combustion Residual (CCR) Rule

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Coal-Fired Generating Unit Remediation Act

MCA §75-8-101 through 109



Coal-Fired Generating Unit Remediation Act

- MCA §75-8-101 through 109 (2017 Legislative Session)
- Requires Colstrip owners to submit a remediation plan within 90 days of Unit shutdown
- The purpose of this plan was to provide remediation information for items not covered under the AOC

Coal-Fired Generating Unit Remediation Act

- Due to safety and other considerations related to operation of Units 3&4, demolition and removal will be deferred until after Units 3&4 are retired
- Periodic inspections of Units 1&2 will be performed to maintain safe conditions
- Future use of land would continue to be industrial
- Remediation measures will comply with §75-8-107, requiring contractors and subcontractors to use a skilled and trained workforce and pay the standard prevailing rate of wages.



Coal-Fired Generating Unit Remediation Act

Universal Wastes

- Consists of lamps/bulbs, mercury devices, batteries and electronic wastes
- Quantities have been identified and will be disposed of in accordance with Administrative Rules of Montana regulations



Coal-Fired Generating Unit Remediation Act

Asbestos

- Asbestos-containing materials (ACMs) and presumed asbestos-containing materials (PACMs) will be removed prior to any demolition, per EPA regulations
- ACMs and PACMs will be identified by a licensed Asbestos Inspector as part of the demolition contract
- Any identified material will be removed by a certified contractor and disposed of in a certified landfill
- Talen has completed an asbestos survey; over the last 10 years of operation, ACMs have been previously identified and removed

Coal-Fired Generating Unit Remediation Act

Other Regulated Material, Including Hazardous Material

- Includes lubricating oils, hydraulic oils, non-PCB transformer oils, fuel and waste oil, fire extinguishers, refrigerants, and devices containing small amounts of nuclear materials (e.g., exit signs, smoke detectors, coal handling density gauges).
- Initial site reconnaissance identified products containing hazardous substances; these will be tracked and disposed of per applicable waste regulations



Coal-Fired Generating Unit Remediation Act

Polychlorinated biphenyl (PCB) wastes

- Regulated under the Toxic Substances Control Act (TSCA), with US EPA having regulatory authority
- Potential materials at Colstrip that may have PCBs include fluorescent lighting ballasts and high intensity discharge fixtures, small transformers, capacitors and ballasts, oil, and building materials such as caulk, glazing and paint
- Potential PCB materials will be sampled and properly disposed of if determined to contain PCBs

Coal-Fired Generating Unit Remediation Act

Petroleum Releases

Two known petroleum release sites in the Units 1&2 area:

- MDEQ Facility ID #44-08921, Release #562: Located near current Units 1-4 Buildings and Grounds Crew building. This was a previous location of Units 1-4 mobile equipment fueling USTs. The hydrocarbon plume is stable; no migration has been observed and potential for migration is minimal. MDEQ's Petroleum Tank Cleanup Section is working with Talen to address this release.
- MDEQ Facility ID #44-08922, Release #332: Located just north of Unit 1 in the previous location of the Units 1&2 turbine lube oil underground pipeline. Underground piping and associated soil were removed in 1990; 18 wells have been monitored since then. Migration of hydrocarbons have not been detected, however free product has been observed at 3 wells and 1 well exceeds state standards. MDEQ's Petroleum Tank Cleanup Section is working with Talen to address this release.

Coal-Fired Generating Unit Remediation Act

Petroleum Releases, Continued

- Other small releases have been found but are within the footprint of the two identified releases; these are being addressed as part of these releases
- The Remediation Plan addresses potential unknown petroleum releases that may be identified in the future. Talen will comply with state regulations (ARM 17.56.601 through 608) to address potential future identified releases.

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Units 1&2 Remedy Evaluation Report

Colstrip Administrative Order on Consent (AOC)

Units 1&2 Remedy Evaluation Report

- Units 1&2 Area Remedy Evaluation was split into two parts:
 - Part One addresses existing groundwater contamination from pond seepage
 - Part Two/“Integrated Report” addresses source control options for the ponds



Units 1&2 Ponds Overview

- Stage I Pond
 - Original ponds that serviced Units 1&2
 - Closed by placing an evapotranspiration (soil) cap in 2002
 - Partially clay-lined on the bottom
- Stage II Ponds
 - Operated from early 1990s until unit closure in January 2020
 - Ponds are lined with HDPE (plastic) liners
- Groundwater in this area will remain above the bottom elevation of the ponds



**Stage II Pond
B Cell**

**Stage II Pond
E Cell**

**Stage II Pond
Old Clearwell**

**Stage II Pond
A Cell**

**Stage II
Pond
D Cell**

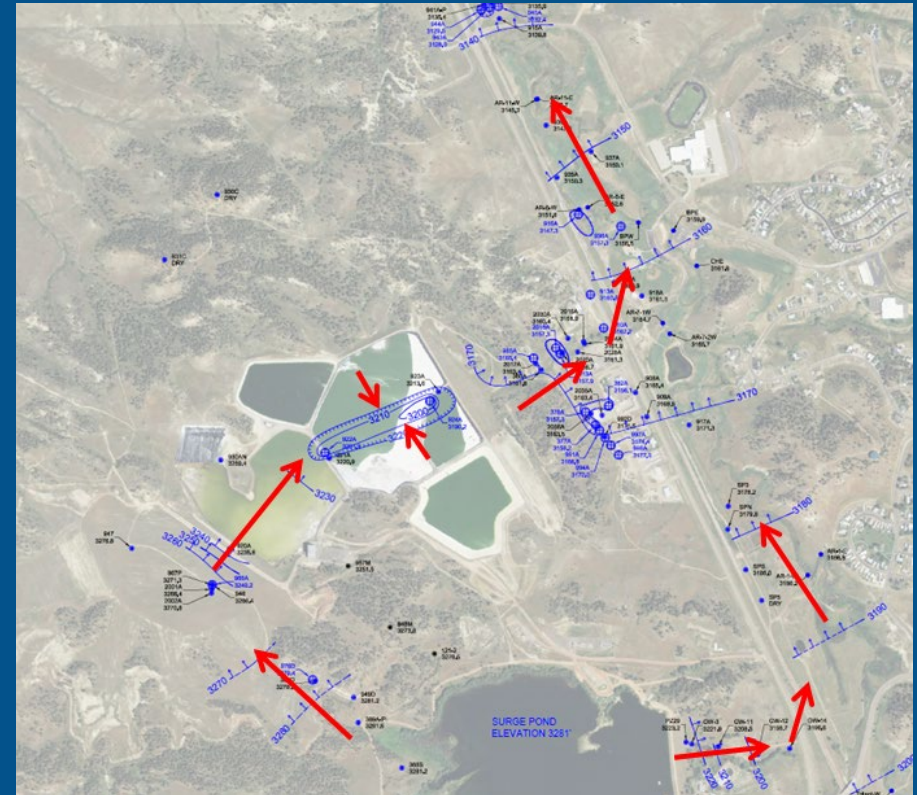
Stage I Pond

Castle Rock Lake

Units 1&2 Ponds Overview

Hydrogeology

- Groundwater generally flows to the east/northeast
- Locally influenced by capture units



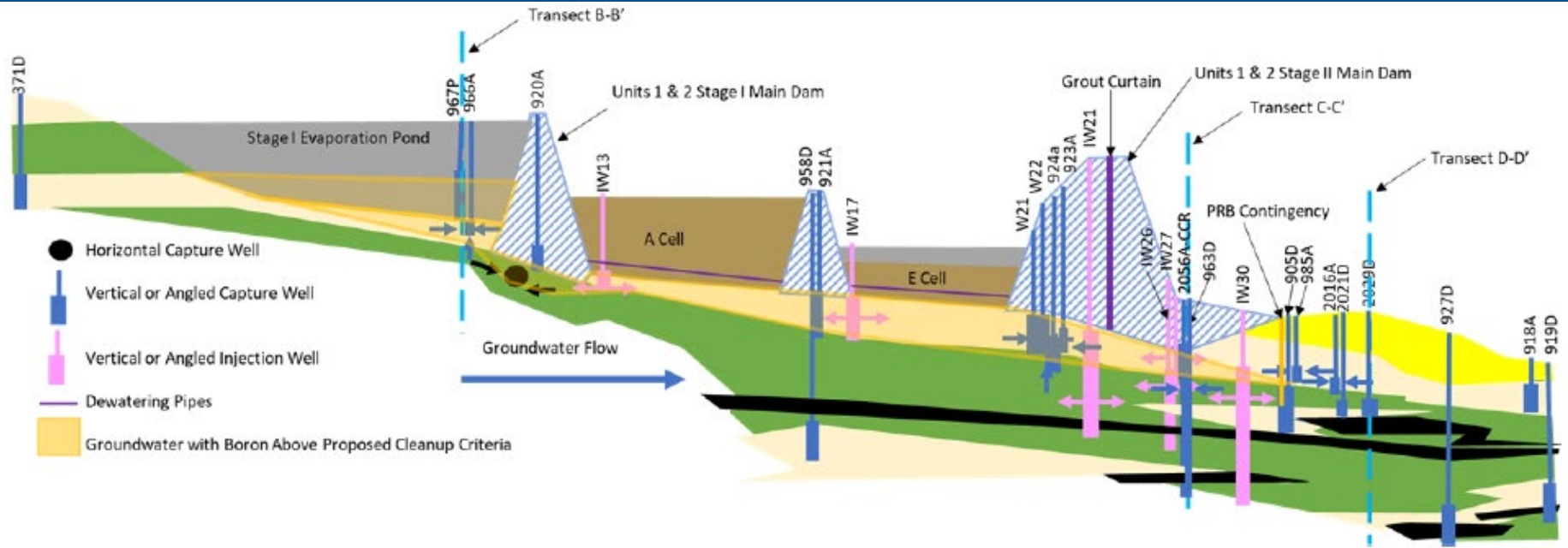
Shallow potentiometric surface

Contaminants of Concern (COCs)

- Boron
- Sulfate
- Cobalt
- Lithium
- Selenium
- Manganese



Units 1&2 Remedy Evaluation Report, Part One



- Consists of a groundwater capture/freshwater injection system
- Includes dewatering A Cell, E Cell, and Old Clearwell
- Approved by DEQ in June 2020; \$16 million of additional financial assurance secured

Units 1&2 Integrated Remedy Evaluation Report

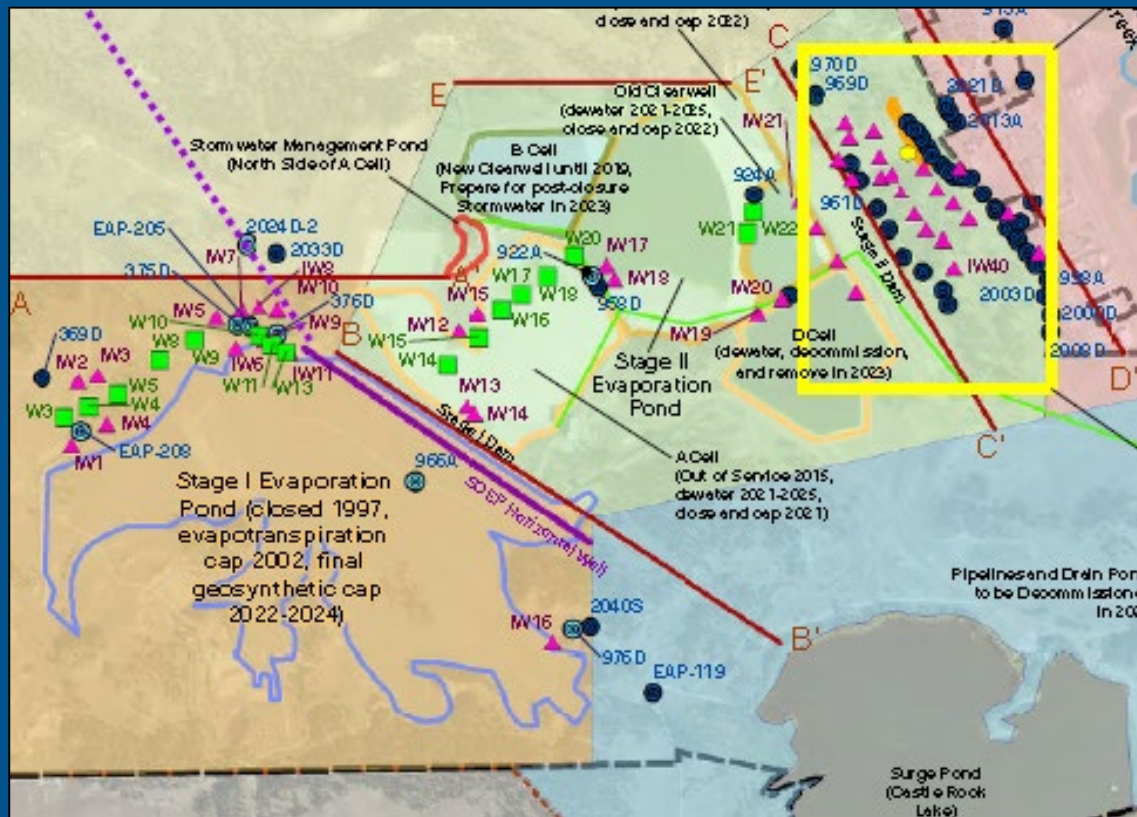
- Talen and DEQ screened a large list of alternatives to address source control throughout Spring 2020
- The screening process narrowed the list down to four alternatives
- The integrated report provides in-depth analysis of the four alternatives, and identifies Talen's preferred alternative
- These alternatives are in addition to the remedy components approved in the Part One report



Units 1&2 Integrated Remedy Evaluation Report

Alternative 6A

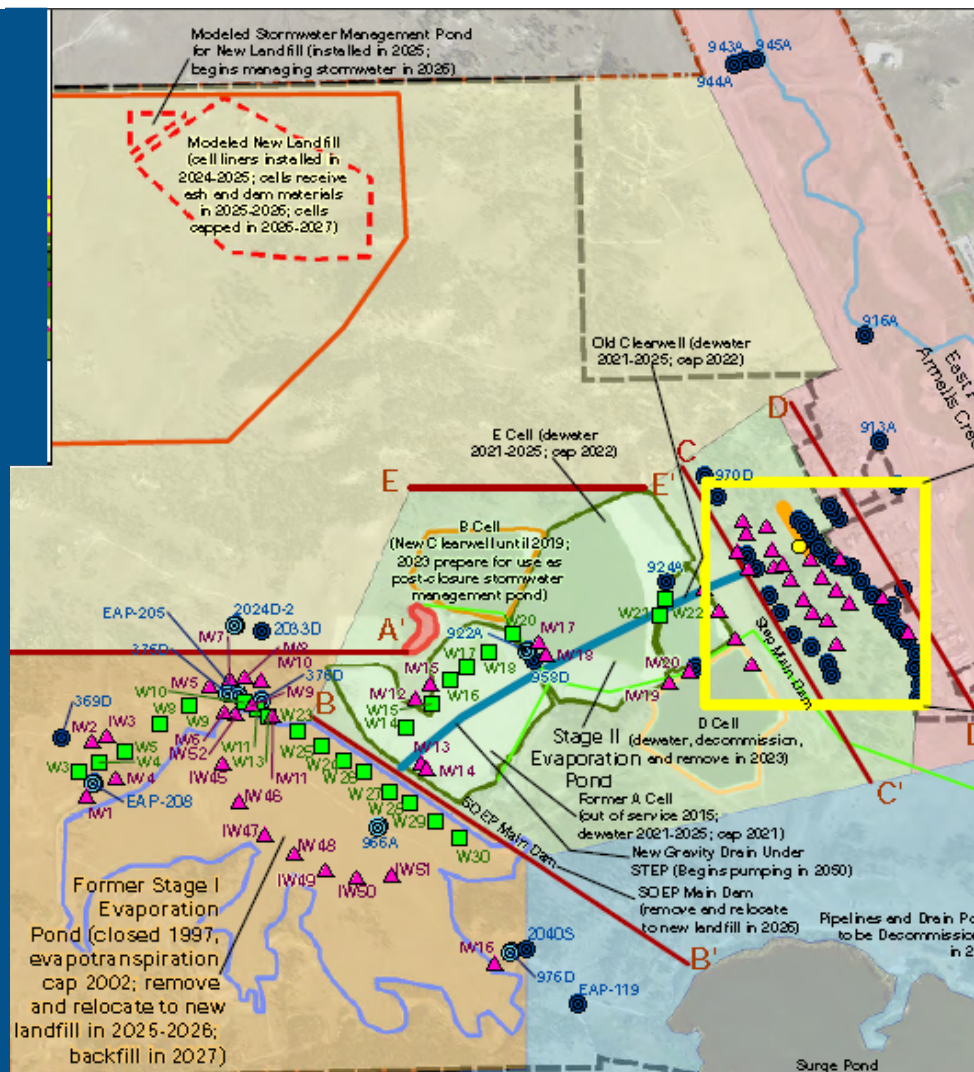
- Close and cap Stage II Ponds in place, with CCR Rule-compliant geomembrane caps
- Replace cap on Stage I Pond with a geomembrane cap
- Capture/injection system would operate through 2050



Units 1&2 Integrated Remedy Evaluation Report

Alternative 7C

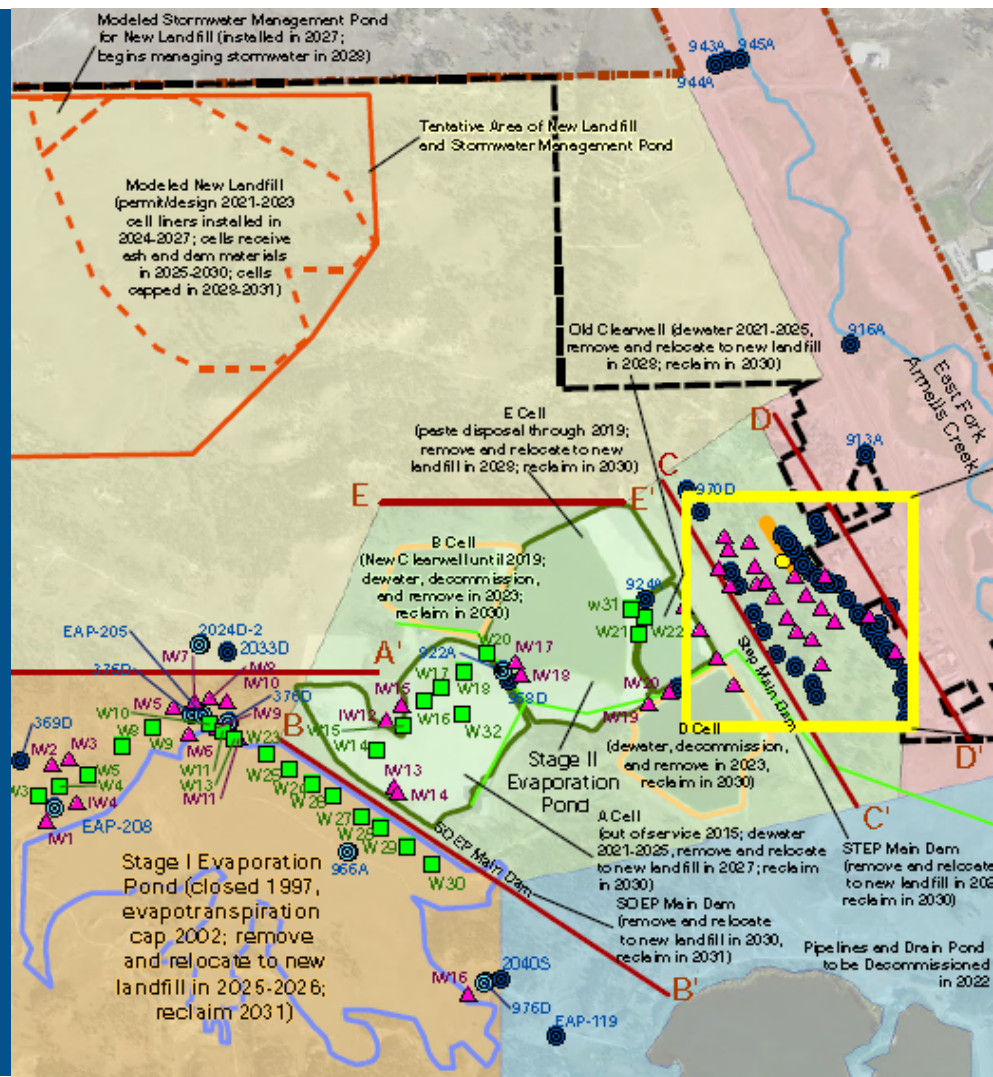
- Excavate and relocate all ash in Stage I Pond to a new, lined landfill on Talen property
 - Total of 2.7 million cubic yards of ash
 - New landfill would be approximately 46 acres
- Close and cap Stage II ponds in place with CCR Rule-compliant caps
- Install a gravity drain beneath the Stage II ponds to lower the water table below the bottom of the ponds



Units 1&2 Integrated Remedy Evaluation Report

Alternative 10

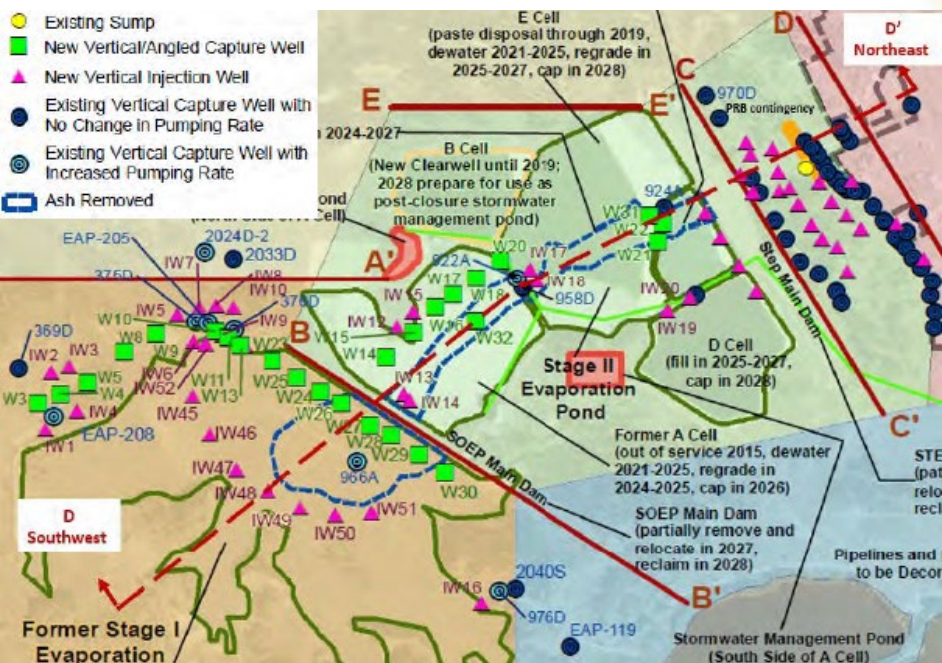
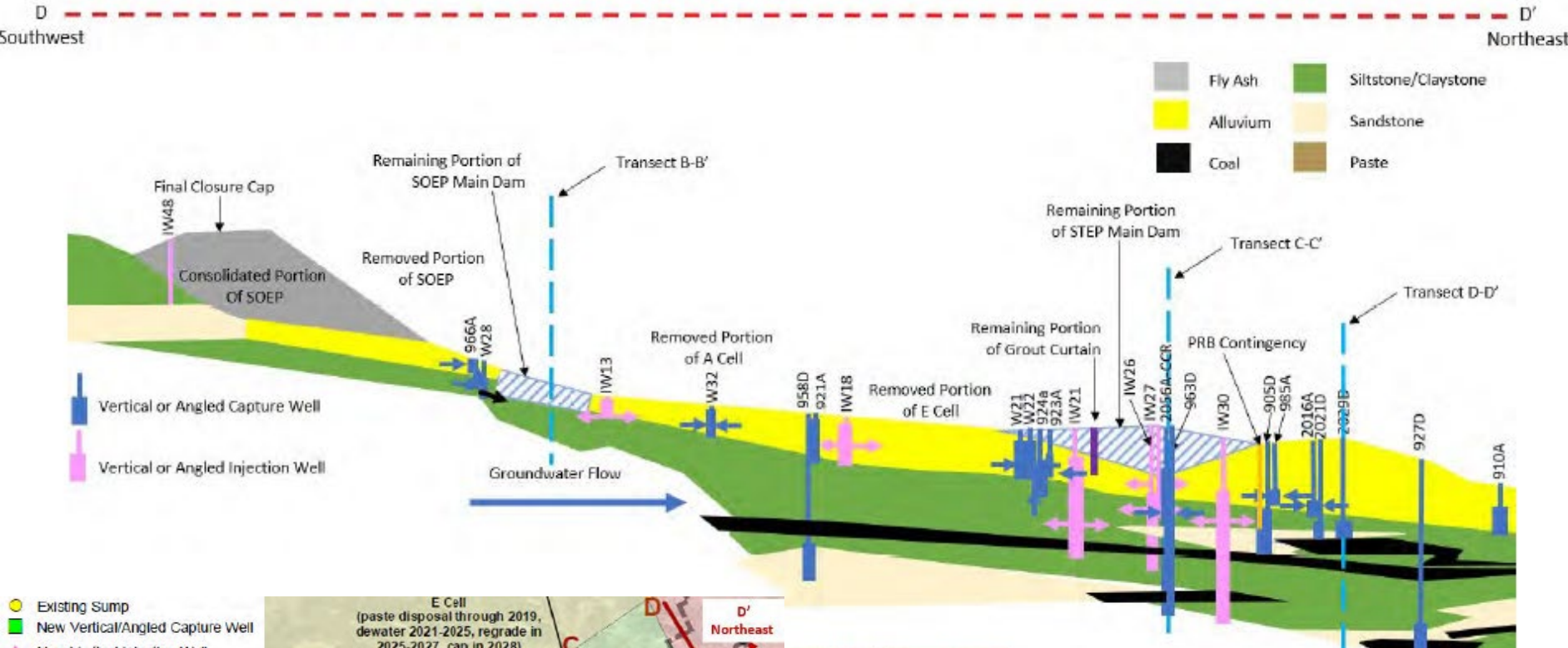
- Excavate and relocate all ash in Stage I and Stage II ponds to a new, lined landfill on Talen property
 - Total of 6.7 million cubic yards of ash, plus 2 million cubic yards of dam material
 - New landfill would be approximately 91 acres
- Footprint of original Stage I/Stage II Ponds would be reclaimed



Units 1&2 Integrated Remedy Evaluation Report

Alternative 11

- Partial removal of ash in Stage I and Stage II ponds
- All ash within 5 feet of the high water table would be excavated and relocated within the existing pond footprint
 - Stage I ash would be relocated within the Stage I pond
 - A Cell (Stage II pond) ash would be relocated to the Stage I pond
 - E Cell and Old Clearwell (Stage II pond) ash would be relocated to D Cell and other areas of the Stage II ponds
- Stage I and Stage II Ponds will be capped and closed after partial ash removal with geosynthetic caps



Total of 1.1 million cubic yards of ash would be relocated from Stage I; 3.7 million cubic yards of ash would be relocated from Stage II ponds

Units 1&2 Integrated Remedy Evaluation Report

- Talen's preferred alternative:
 - Alternative 6A performs the best based on metrics evaluated by Talen
 - DEQ has stated that it will not approve a remedy that leaves a long-term source in contact with groundwater
 - Talen is proposing Alternative 11 (partial excavation) as its preferred remedy
- DEQ is currently reviewing the report and evaluating the alternatives presented by Talen
- A public comment period is currently in progress through Oct. 26

Public Comment Periods

- AOC requires a 30-day public comment period on reports
 - Comment period for Units 1&2 Integrated Remedy Evaluation Report ends Oct 26
- Coal-Fired Generating Unit Remediation Act requires a 45-day public comment period on the Plan
 - Comment period for Remediation Act Plan ends Nov 2
- Submit public comments to:

DEQColstrip@mt.gov

or

DEQ Waste Management & Remediation Division
c/o Sara Edinberg
1225 Cedar St
Helena, MT 59601

What's Next?

- Approval of the Units 1&2 Remedy Evaluation Report will trigger the financial assurance requirement – this will be the final piece of the financial assurance
- Remedial Design documents will be submitted for the Units 3&4 ponds and the Units 1&2 ponds
 - These provide detailed design specifications for the selected remedies
 - A 30% design has already been submitted for the 3&4 ponds
- The remedies will be implemented, and annual progress reports will be submitted to DEQ

Questions?

Contact Info:

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<http://deq.mt.gov/DEQAdmin/mfs/ColstripSteamElectricStation>