

First Quarter (Q1) 2024 Colstrip Remediation Stakeholder Meeting

COLSTRIP STEAM ELECTRIC STATION Remedial Activities April 16, 2024

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Logistics

Welcome and thank you for participating in DEQ's Q1 2024 Colstrip Remediation Stakeholder Meeting. Please read the following tips about participating in this hybrid meeting:

- All Zoom participants have been automatically muted. Please remain so until called on to speak. We will have a question and answer period at the end of the annual AOC presentation. You will need to be given permission to unmute. Once you have spoken, please re-mute yourself.
- On Zoom, use the “raise hand” feature in the app to indicate that you would like to speak. For those in the room, please also raise your hand.



- If you are called on to speak, please identify yourself by stating your first and last name.
- You may also use the chat box and/or Q&A (Zoom webinar) to type your questions.
- If you are 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>

Agenda

- Colstrip Steam Electric Station (SES) Plant
 - Network of Remediation Laws/Agreements
 - MT Major Facility Siting Act/Water Quality Act
 - Administrative Order on Consent (AOC)
 - MT Coal-Fired Plant Remediation Act
 - Federal EPA Coal Combustion Residuals (CCR) Rules
- Annual Update on AOC Remediation Progress
 - Plant Site: Remedy Implementation
 - Units 1&2: Settlement to Remedy Design
 - Units 3&4: Remedy Design Progress & Dry Disposal
- What's Next & Public Participation in Future
- Questions/Comments – Open to stakeholder input

Process from MFSA/WQA to AOC

Major Facility Siting Act (MFSA) Colstrip Operational Certificate

Seepage from coal ash ponds/cells greater than certificate allowed and not able to be mitigated by engineered controls (groundwater capture and return to ponds/cell)

Montana Water Quality Act

Seepage from coal ash ponds affected underlying state waters (groundwater) and was not being mitigated within the MFSA pond/cell boundaries

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Administrative Order on Consent (AOC)

DEQ and Talen Montana (formerly PPL Montana) entered into AOC in 2012
(2017 & 2021 Amendments)

Addresses groundwater contamination from coal ash disposal ponds and operations
Outlines Process and Deadlines to investigate and remedy contamination

- Divides site into 3 AOC areas:
 - Plant Site
 - Units 1&2 Evaporation Ponds
 - Units 3&4 Effluent Holding Ponds

Coal-Fired Generating Unit Remediation Act ("Remediation Act")

Major Facility Siting Act
(MFSA) Colstrip Operational
Certificate

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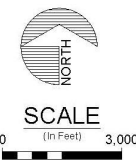
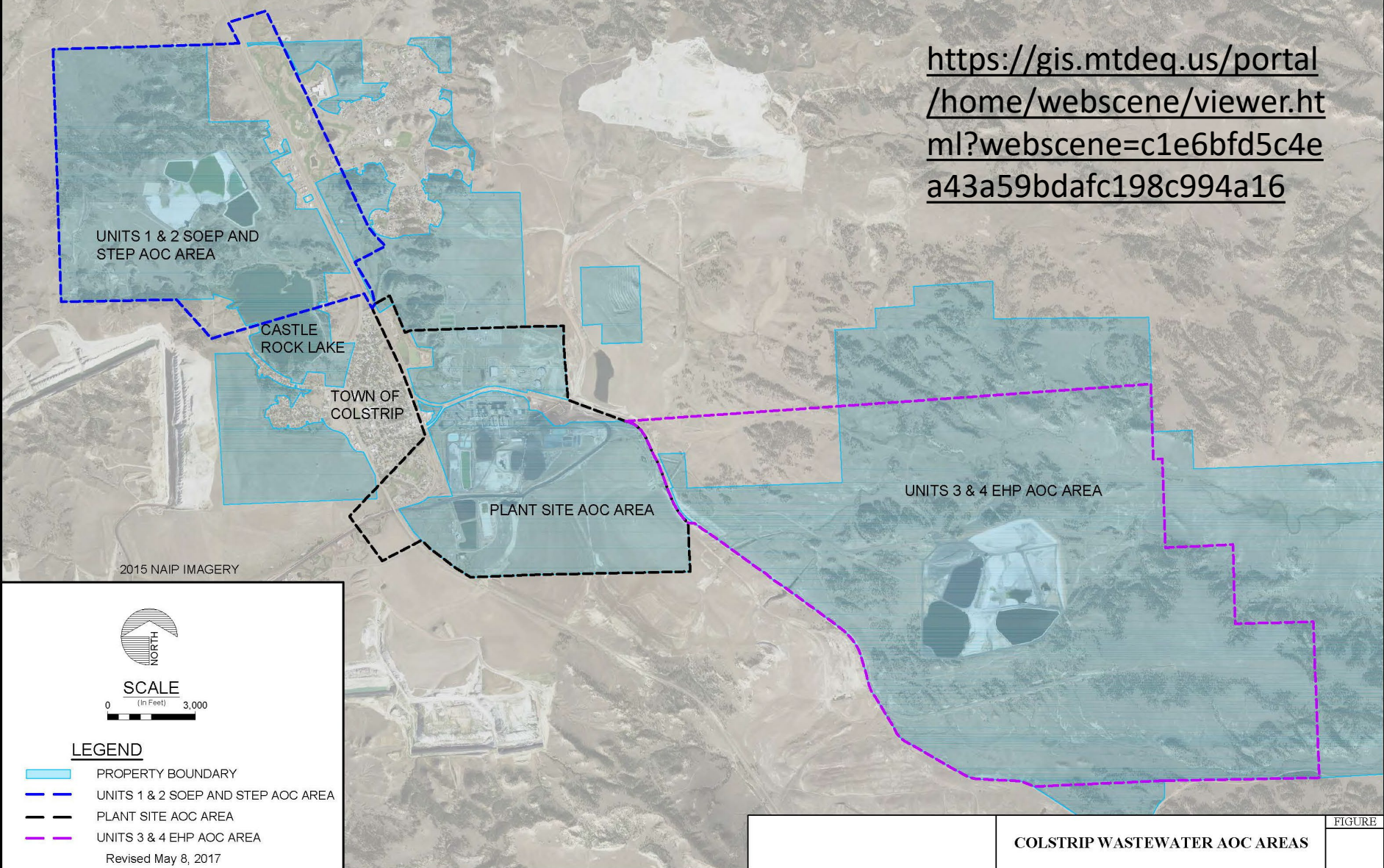
Montana Water Quality Act

Administrative Order on Consent (AOC)
DEQ and Talen Montana (formerly PPL
Montana) entered into AOC in 2012
(2017 & 2021 Amendments)

Coal-Fired Generating Unit
Remediation Act

- MCA §75-8-101 through 110 (2017
Legislative Session)
- Requires Colstrip owners to
submit a remediation plan
within 90 days of shutdown

<https://gis.mtdeq.us/portal/home/webscene/viewer.html?webscene=c1e6bfd5c4ea43a59bdafc198c994a16>



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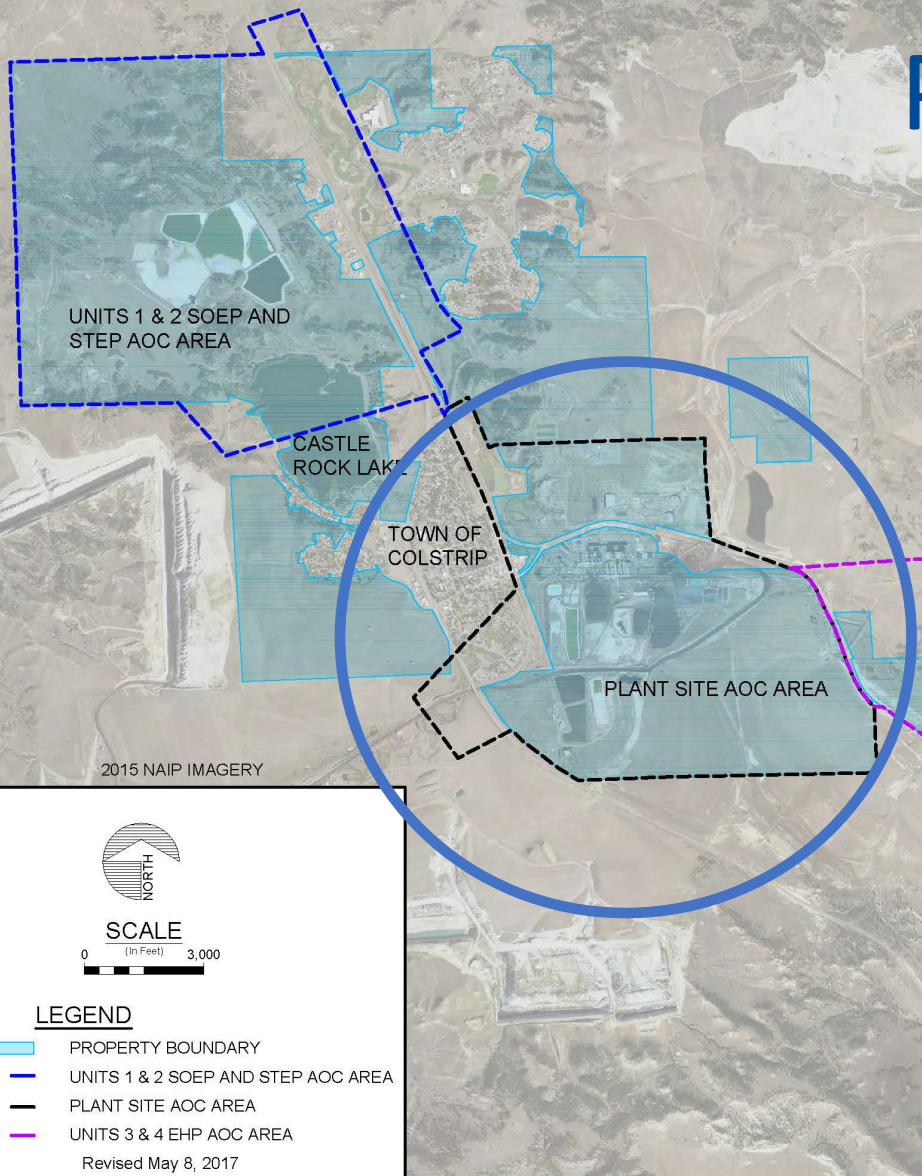
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AOC Progress

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 Workplan	✓	✓	✓*
Annual Remedy Progress Report (Annual Hydrologic & Remedial Progress Report)	✓	✓	✓
Final Remedial Action Report	--	--	--
Closure Plans	✓	✓	✓

Plant Site Remedy

- Approved remedy addresses groundwater contamination from coal ash process/disposal ponds
 - Closure of ponds and ash dewatering (in place)
 - Freshwater flushing and groundwater capture system
 - Additional Measures:
 - Monitored Natural Attenuation (MNA)
 - Permeable Reactive Barriers (PRB)



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Plant Site Ponds – Remedy Modification Process

- DEQ/Talen steps on modification of remedy/closure design for **A Pond**, **B Pond** and **Bottom Ash/Clearwell Pond**
 - Talen Closure Evaluation:
 - DEQ agreed to delayed Closure Activities – Jan 2023
 - Model Updates – Completed March 2023
 - Talen Alternatives Assessment – May 1, 2023
 - 1.35 M cubic yards
 - Three viable alternatives mod remedy
 - Alternative A – Closure in Place
 - Alternative B – Closure by Removal to New Plant Site Landfills
 - Alternative C – Closure in Place with Vertical Barrier Walls
 - DEQ requested selection and evaluation of viable modified remedy – June 2023
 - Talen submitted Request to Modify Remedy to Alternative 4B – Closure by removal to new plant site landfills



Plant Site Ponds – Remedy Modification Alternative 4B

Next Steps

- DEQ – Final Remedy Modification Decision Document with Responsiveness Summary – April 2024
- Letter to Talen MT, post on website, notice to stakeholders
- Design process for RD/RA Work Plan Addendum and Updated Closure Plan
 - Landfill design – DEQ Remediation/SW
 - Landfill 1 – Former Bottom ash storage area, removed previously
 - Planning/design
 - Purchasing stockpile materials
 - Design review –
 - DEQ April – June 2024
 - Plan to move ash and close landfill in 2025 (CCR compliance timeline)
 - Landfill 2 –
 - Design later 2024
 - Construction 2025
 - Move ash and close in 2026



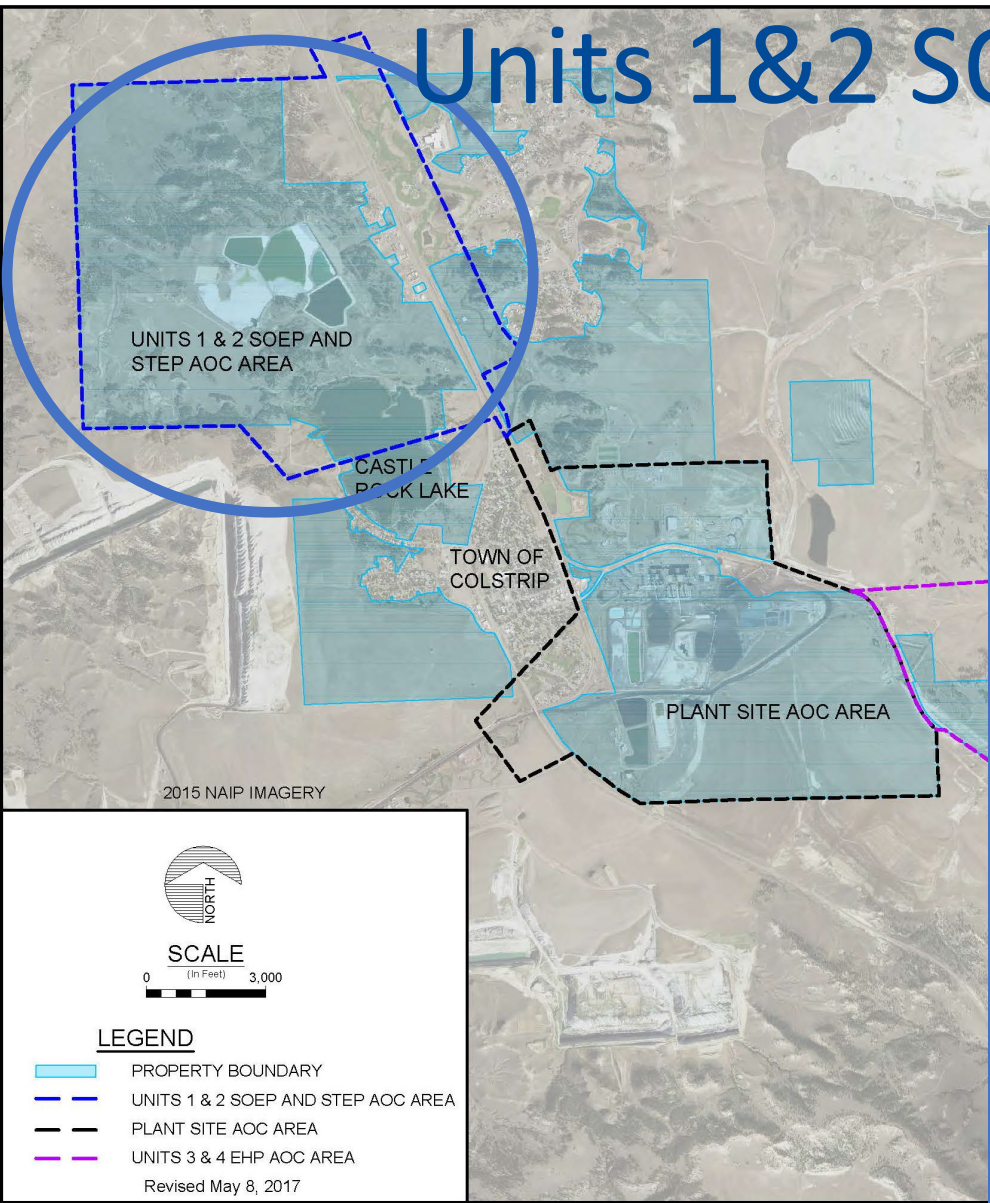
Potential Landfill 1 Area:



Plant Site – Hydrologic and Remedial Progress

- Hydraulic Capture maintained 2020 through 2022
- Boron and Sulfate plumes primarily in the shallow groundwater and decreases with depth to McKay groundwater and Sub-McKay groundwater
 - Concentrations in wells decreased since 2020
 - Generally, about 50% less wells with cleanup criteria exceedances since 2020
 - Boron: Approx. 40-50% decrease in concentration in wells in shallow and McKay groundwater
 - Sulfate: Approx. 20-50% decrease in concentration in wells in shallow and McKay groundwater
- Continue to watch trends
 - Well-by-well and groundwater unit general trends
 - Statistical analysis/additional data points post-implementation
 - Optimization and future possible modifications with landfill implementation

Units 1&2 SOEP/STEP Remedy



- Approved remedy addresses groundwater contamination from coal ash process/disposal ponds and cells
 - Ash dewatering
 - Ash removal to a new landfill (>7.5 M cubic yds)
 - Freshwater flushing and groundwater capture system
 - Additional Measures:
 - Monitored Natural Attenuation (MNA)
 - Permeable Reactive Barriers (PRB)

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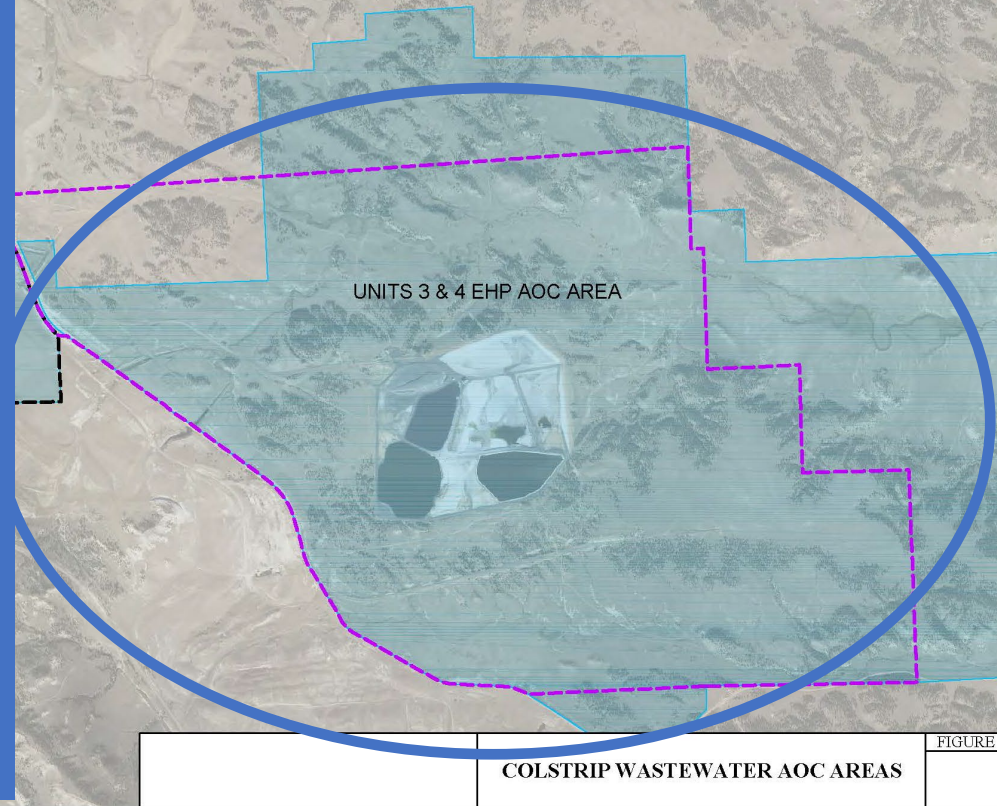
Units 1&2 SOEP/STEP Update

- Groundwater Remedy Started 2nd Quarter 2023 –
 - Small-Scale Capture/Flushing System
 - Annual Review 2024 – Spring 2024
- Remedial Design/Remedial Action (RD/RA) Work Plan
- Continued oversight by CPRS under the AOC Process
 - Landfill Design Reviews – CPRS and SW
 - EPA Region 8 CCR Compliance Coordination
 - DEQ coordination and share design documents
- **Revised RD/RA Workplan – Review completed by DEQ in early 2024**
 - **Talen submitted a response to DEQ comments last week (April 2024)**
 - **DEQ in review of comments and scheduling Revised RD/RA Workplan and Landfill Engineering Report with Talen**



Units 3&4 Evaporation Holding Pond (EHP) Remedy

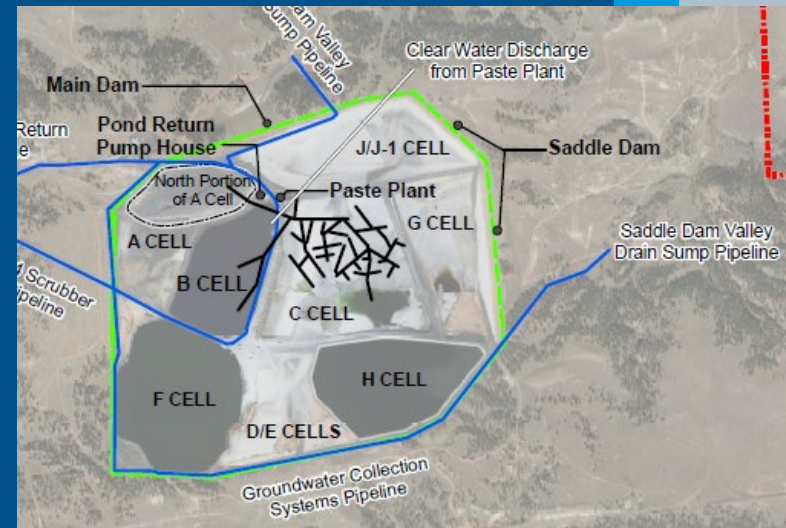
- Approved remedy addresses groundwater contamination from coal ash process/disposal ponds and cells
 - Cell Closures (in place) & Ash dewatering
 - Freshwater flushing and groundwater capture system
 - Additional Measures:
 - Monitored Natural Attenuation (MNA)
 - Permeable Reactive Barriers (PRB)



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Units 3&4

- Groundwater Remedy Starting –
 - Capture/Flushing System
 - Started July 2023
 - DEQ and Talen – 6-month review in February 2024
 - New Configuration – Dewater ash faster
 - Remedial Design – RD/RA Work Plan – 2024
 - Submittal by Talen to DEQ
 - Phased submittal
 - Model Update – Groundwater Model – Spring 2024
 - Coordinate with EPA
 - EPA requested groundwater data from Talen in early 2024
 - Hydrogeologist at EPA Region 8 Review



Units 3&4 – Plant Site Bottom Ash Collection/Transport



Units 3&4 – J-1 Cell

Active Bottom Ash and Fly Ash Storage

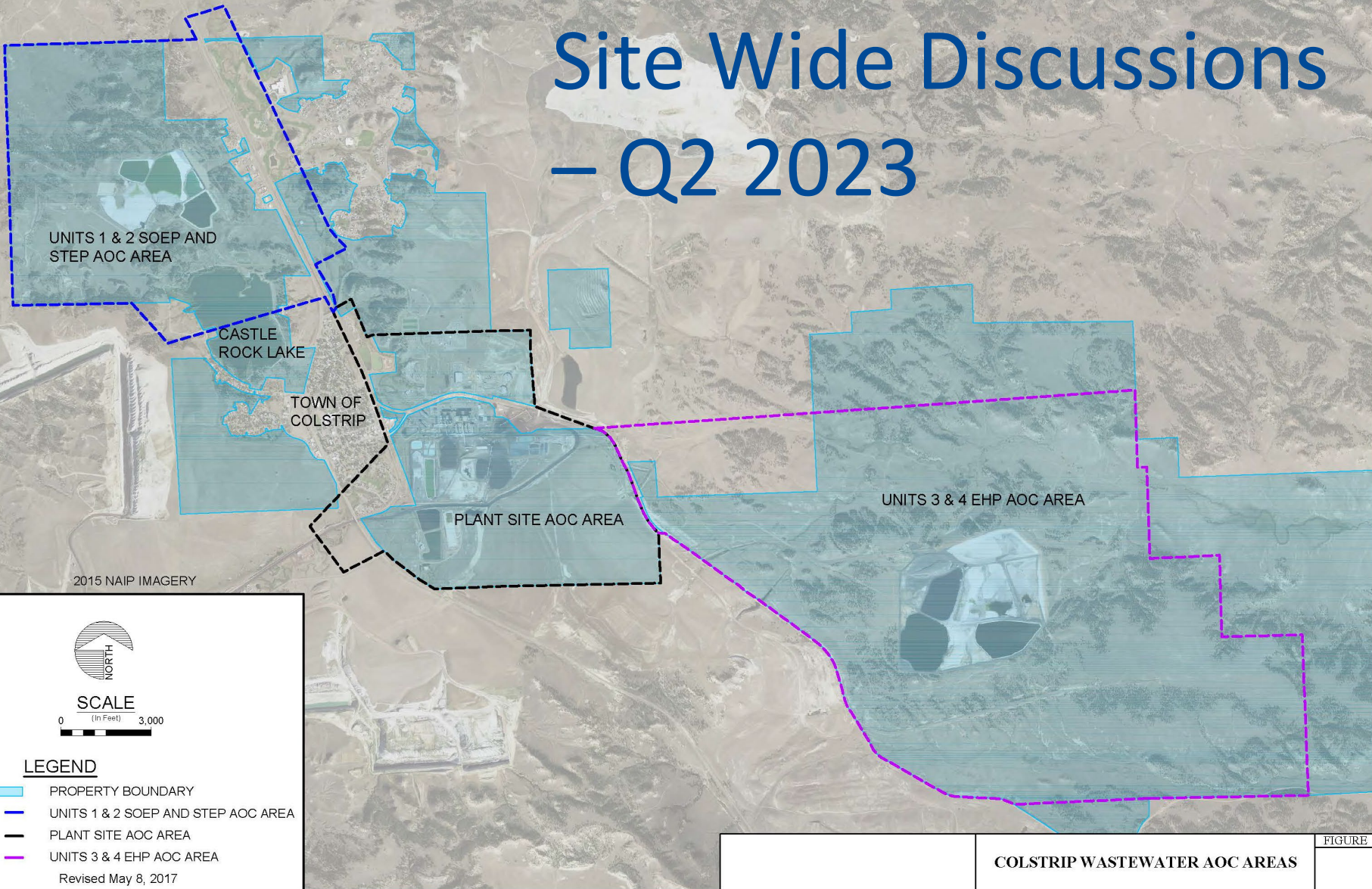


Units 3&4 – J-1 Cell

Active Bottom Ash and Fly Ash Storage



Site Wide Discussions – Q2 2023



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AOC Q2 2024 Outlook

Plant Site:

- Remedy Modification Decision – Alternative 4B
 - DEQ website/emailed
- RD/RA Workplan Addendum on Landfill Design for Remedy Modification
- Model Update planned for 2024

Units 1&2:

- RD/RA Workplan and Landfill Design – Revised

Units 3&4:

- Groundwater Model Review – Minor update 2023, summary to DEQ 2024
 - Next major model update 2026
- RD/RA Workplan Design – Revised 2024 Submittal

Public/Stakeholder Participation:

- *Annual AOC Meetings*
- *Quarterly Stakeholder Meetings*
- *Direct contact – DEQ*
- In case of Remedy Modifications
- Final Remedial Action Report



AOC Future & Site Wide Activities

- Water Feasibility Study
 - DEQ facilitate continued semi-annual meetings for discussions with Local Government (City/County/State) and Colstrip SES Power Plant Owner Representatives
 - Next Mtg July 2024
- Database update at the state – EQUIS 2024
- Files electronic – completed 2024
- Quarterly Stakeholder Mtgs
 - Email sarah.seitz@mt.gov
 - Online slides
- DEQ's Coal Ash Website:
- <https://deq.mt.gov/cleanupandrec/Programs/colstrip>

CCR Rules – Federal EPA

Talen Montana responsible for self-implementing and reporting for coal combustion residual (CCR) Rule Compliance – website

- <https://www.talenenergy.com/ccr-colstrip/>
- DEQ joined for EPA's CCR Inspection of Colstrip Steam Electric Station CCR
 - July 11 and 12, 2023
 - EPA is reviewing notes and CCR documents
 - EPA will send inspection notes to Talen
- EPA Contact: Doug Knappe – Region 8 EPA - POC
 - <https://www.epa.gov/coalash>
 - No update or inspection report at this time
- DEQ will continue to be part of future discussions
- DEQ and EPA will continue coordination of remedy design, implementation, and progress



Connect with us!

- **Sarah Seitz**
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- <https://deq.mt.gov/cleanupandrec/Programs/colstrip>

- *Colstrip WMR – New DEQ Mgmt Track*
- Supervisor – Rick Thompson
 - Waste Management Bureau Chief
 - rithompson@mt.gov
 - 406.444.5345



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References

DEQ Colstrip Coal Ash Pond Cleanup Website:
<https://deq.mt.gov/cleanupandrec/Programs/colstrip>

MCA Title 75 Chpt 8 – Coal Fired Generating Unit Remediation Act:
https://leg.mt.gov/bills/mca/title_0750/chapter_0080/part_0010/sections_index.html

Talen CCR Rule Website:
<https://www.talenenergy.com/ccr-colstrip/>

EPA Region 8 CCR: Doug Knappe (Knappe.Doug@epa.gov)