

# First Quarter (Q1) 2024 Colstrip Remediation Stakeholder Meeting

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## *COLSTRIP STEAM ELECTRIC STATION Remedial Activities*

*April 16, 2024*

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Waste Management & Remediation Division

# 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)

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## 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

## 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

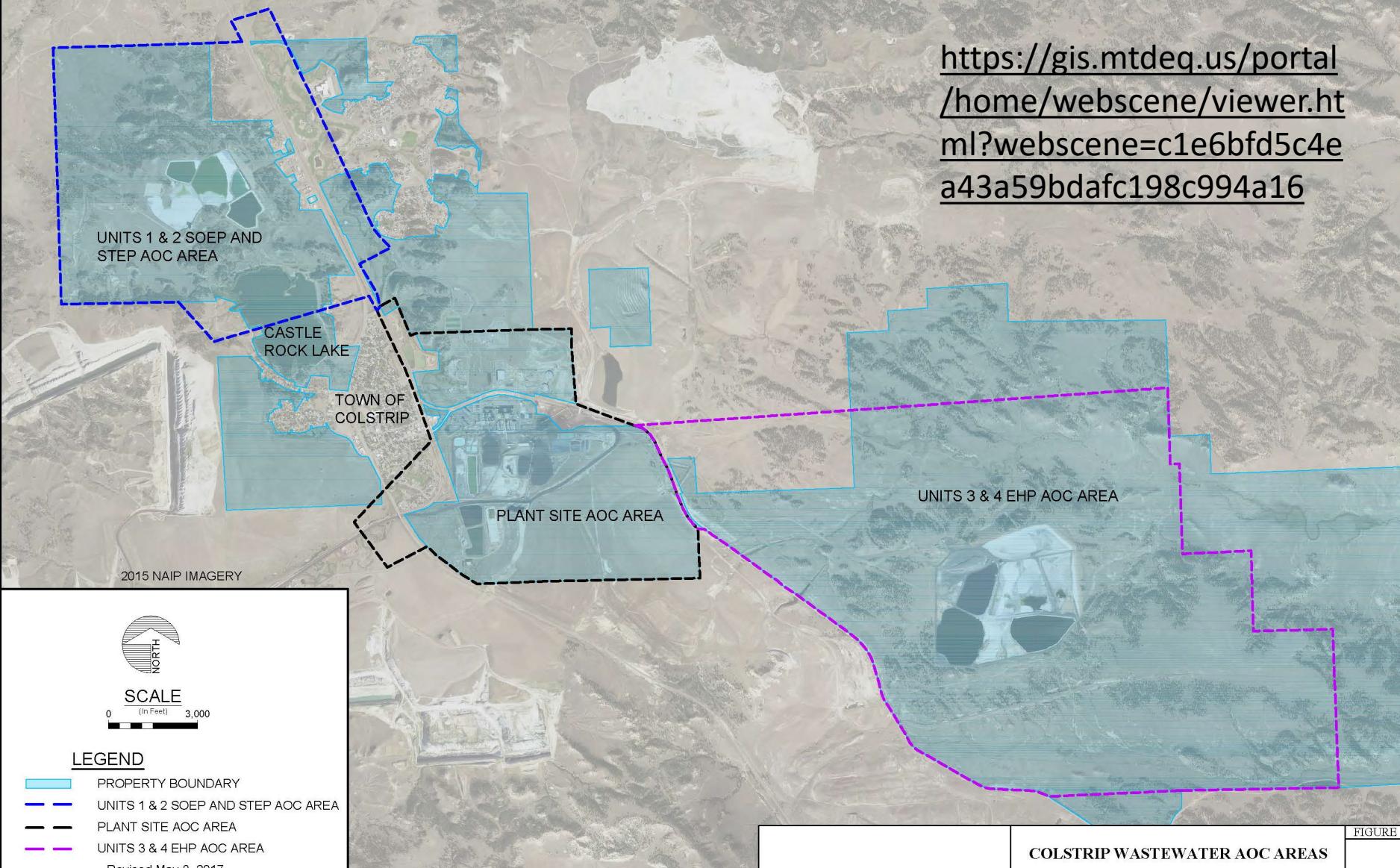
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Montana Water Quality Act

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>

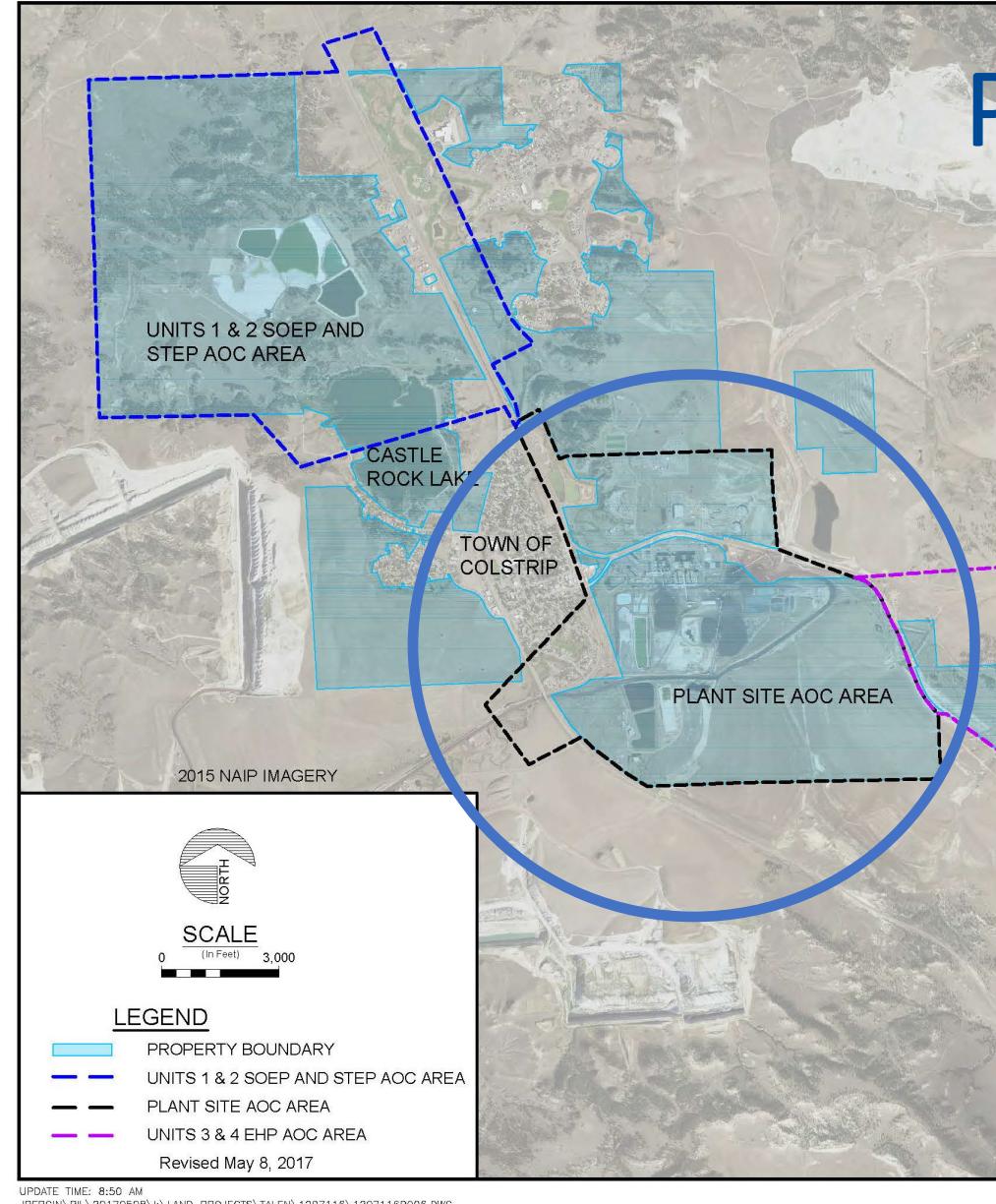


# AOC Progress

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)



# 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



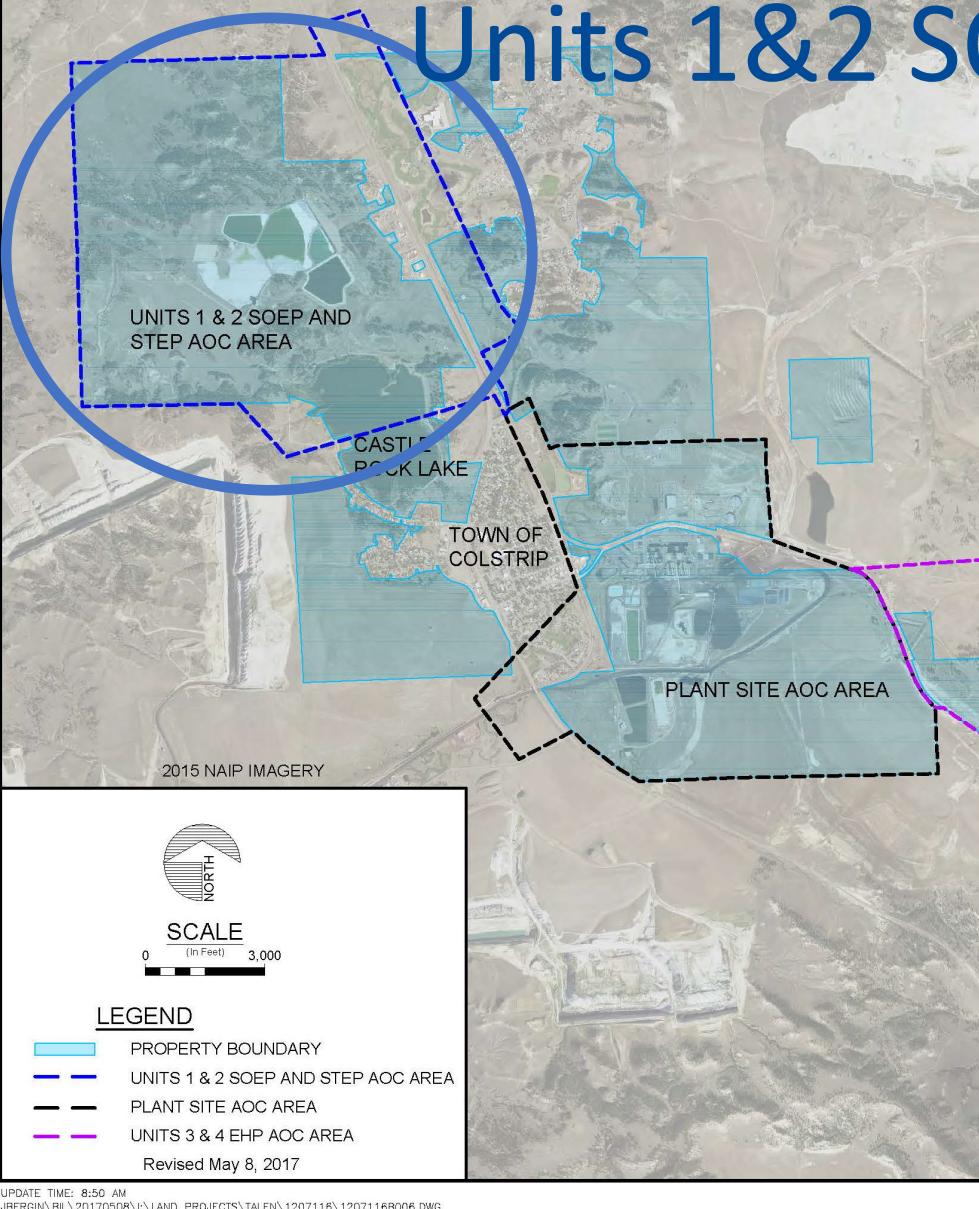
# Potential Landfill 1 Area:



# 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)

# Units 1&2 SOEP/STEP Update

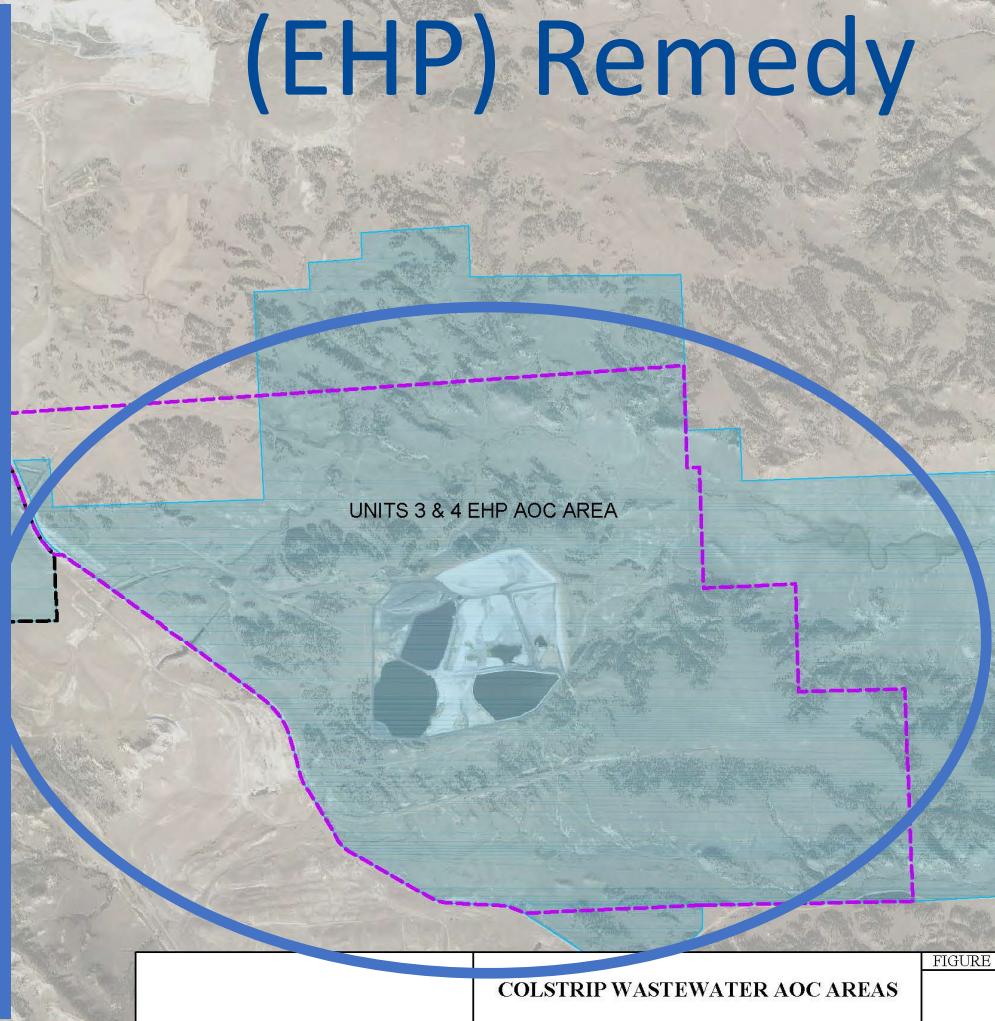
- Groundwater Remedy Started 2<sup>nd</sup> Quarter 2023 –
  - Small-Scale Capture/Flushing System
    - Annual Review 2024 – Spring 2024
- Remedial Design/Remedial Action (RD/RA) Work Plan
- Continued oversight by CPRS under the AOC Process
  - Landfill Design Reviews – CPRS and SW
  - EPA Region 8 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)



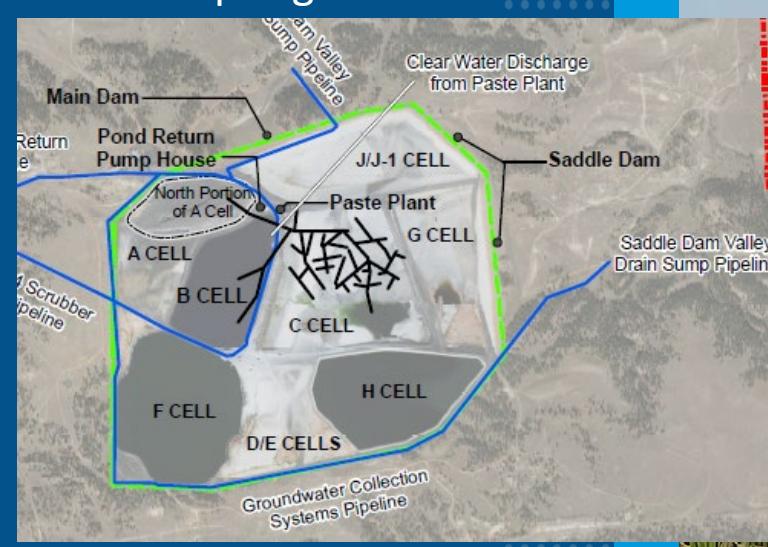
FIGURE

Hydrometrics, Inc.  
Consulting scientists and engineers

UPDATE TIME: 8:50 AM  
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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



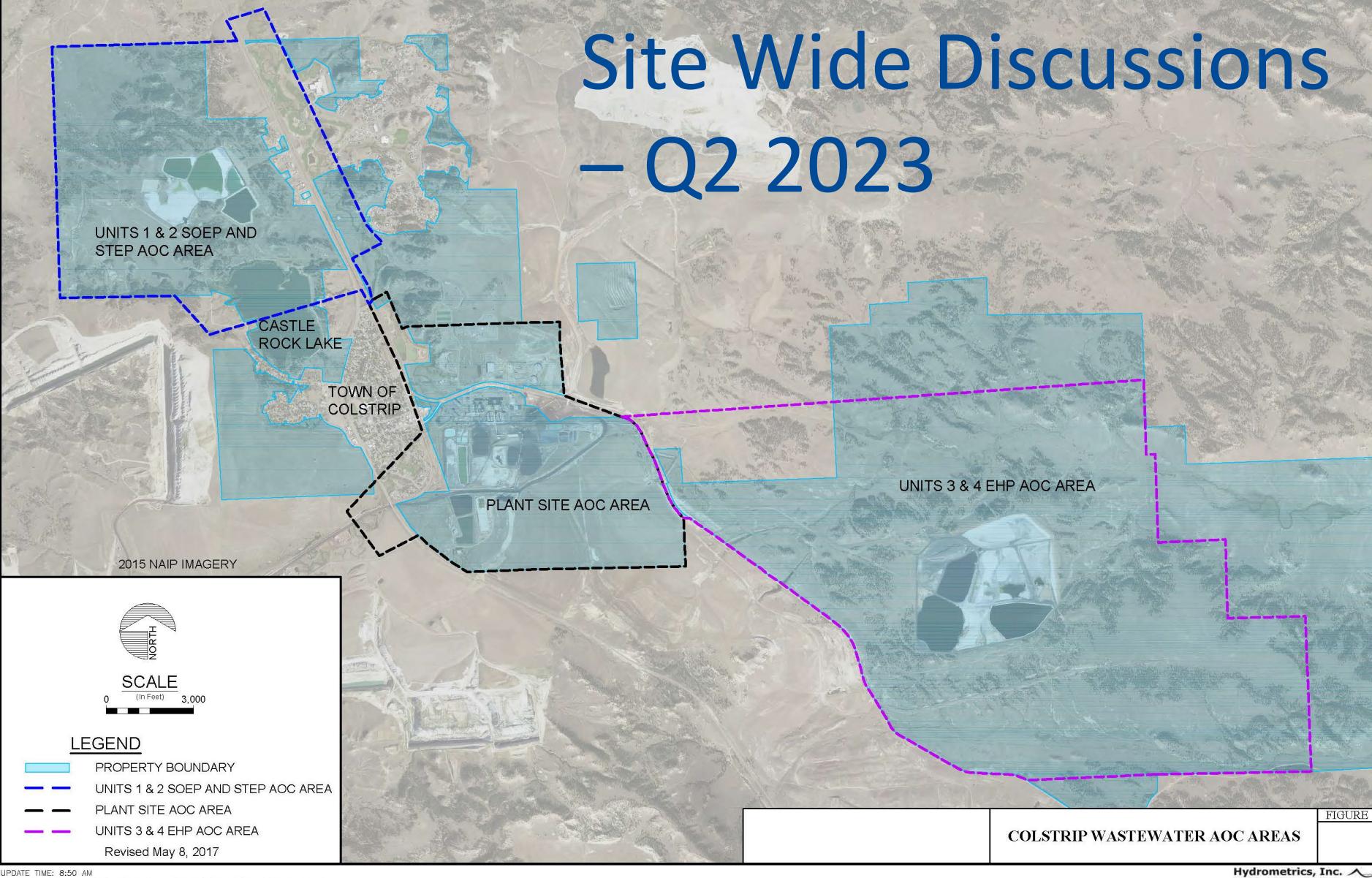
# Units 3&4 – J-1 Cell

## Active Bottom Ash and Fly Ash Storage



# Site Wide Discussions

## - Q2 2023





# AOC Q2 2024 Outlook

- Plant Site:
  - Remedy Modification Decision – Alternative 4B
    - DEQ website/mailed
  - 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](mailto: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**
- *Colstrip WMR Project Officer*
- [Sarah.Seitz@mt.gov](mailto:Sarah.Seitz@mt.gov)
- 406.444.6797
- <https://deq.mt.gov/cleanupandrec/Programs/colstrip>

- *Colstrip WMR – New DEQ Mgmt Track*
- Supervisor – Rick Thompson
  - Waste Management Bureau Chief
  - [rithompson@mt.gov](mailto:rithompson@mt.gov)
  - 406.444.5345



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# References

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*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](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)*