A scenic landscape of the Cache La Poudre River. The river flows over numerous large, smooth, light-colored rocks. The banks are covered in snow and patches of evergreen trees. In the background, a steep, rocky mountain slope rises, partially covered in snow and dotted with evergreen trees under a clear blue sky.

# Water Quality

## Cache La Poudre River

February 28, 2020





# Outline

1. Role of WQCD and priorities
2. Water Quality Uses and Standards
3. Status of Water Quality for the Poudre River
4. 401 certification
5. Produced Water Regulations
6. Questions

# Background - Water Quality Control Division



# Water Quality Control Division

## Clean Water Program

Watershed Section

Permits Section

Compliance and  
Enforcement Section

## Drinking Water Program

Community  
Development and  
Partnership Section

Engineering Section

Field Services Section

Compliance Assurance  
Section



# Water Quality Control Division Goals

1. Waters of state meeting intended uses by 2050
2. Promote a culture of health for drinking water
3. Improve the efficiency of administration section
4. Develop leaders in the division



# Water Quality Uses and Standards





# Water Quality Uses and Standards

## Use Classifications

- Aquatic Life - fish, aquatic invertebrates, amphibians, etc.
- Recreation - swimming, boating, tubing
- Water Supply - private wells, public water intakes
- Agriculture - crop irrigation, livestock drinking water

## Water Quality Standards

- Protect uses
- Can be numeric or narrative
  - E.g., selenium standards to protect aquatic life
    - acute =  $18.4 \mu\text{g/L}$
    - chronic =  $4.6 \mu\text{g/L}$
  - E.g., all surface waters shall be “free from” discharged substances that settle and accumulate on the stream bottom



# Poudre River Uses and Standards

Uses and standards for the Cache la Poudre River and its tributaries and lakes are included in Regulation No. 38

- Implemented on a segment-by-segment basis
  - Poudre and its tributaries and lakes are divided into 26 segments
    - COSPCP01 through COSPCP22
- Find Regulation No. 38 on the WQCC website, under “Water Quality Standards”
- Find a map of stream segmentation on the WQCD website, under “Clean water”





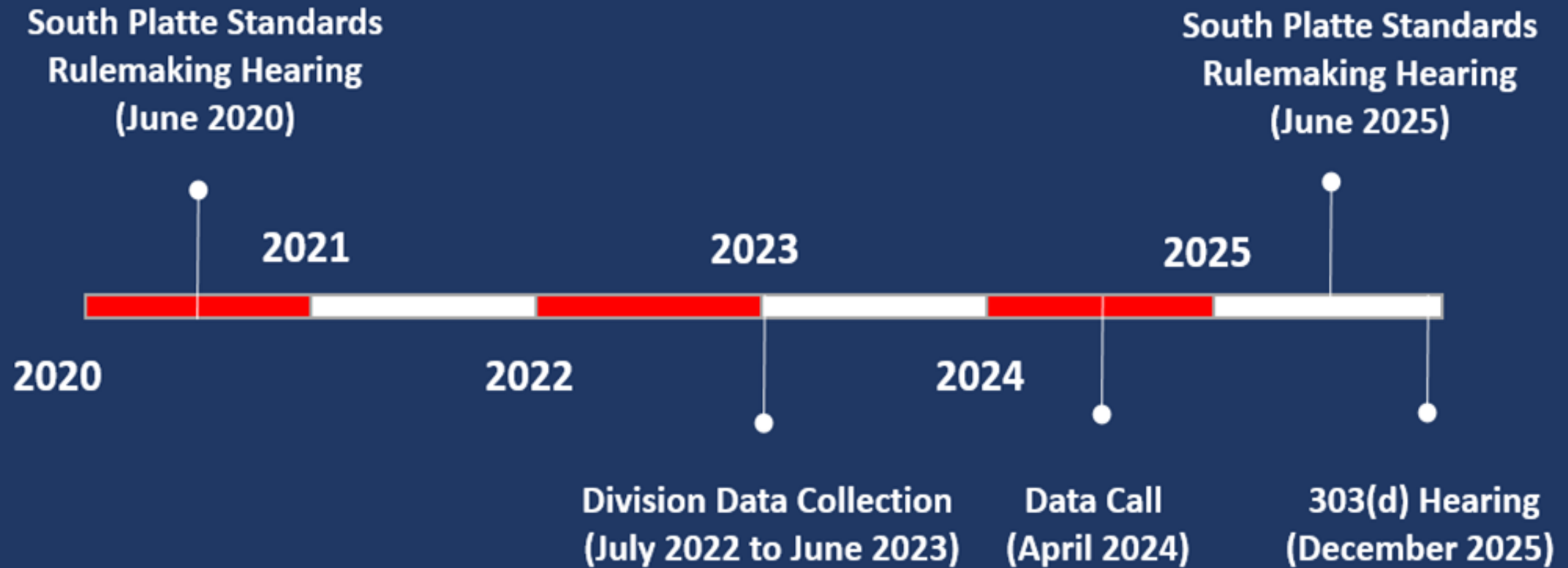
# Upcoming Rulemaking Hearing

Requirement to conduct a review at least once every  
3 years (“triennial review”)

- Regulation No. 38 will be reviewed in June 2020
- Using information collected since last review, consider the need for changes to uses or standards
  - Also make general updates, clean-up, corrections
  - Address site-specific issues
- Division is proposing several changes to many segments
  - Upgrades to Aquatic Life and Recreation uses and standards
  - Addition of Water Supply use and standards
  - Updates to some site-specific standards
  - Various updates, corrections, and clarifications
- Hearing notice is posted on the WQCC website
- Public participation is encouraged -- see WQCC website for guidance



# South Platte Basin Timeline







## Poudre River Water Quality Status



# Water Quality & Impaired Waters

- Section 303(d) of the Clean Water Act – Requires states to identify impaired waters where water quality standards are not met.
- 303(d) List of Impaired Waters – Waterbodies exceeding standards and/or not attaining uses.



# Water Quality of the Cache la Poudre River

Organizations that monitor the Poudre:

- City of Ft. Collins
- City of Greeley
- Northern Water
- RiverWatch
- USGS
- WQCD

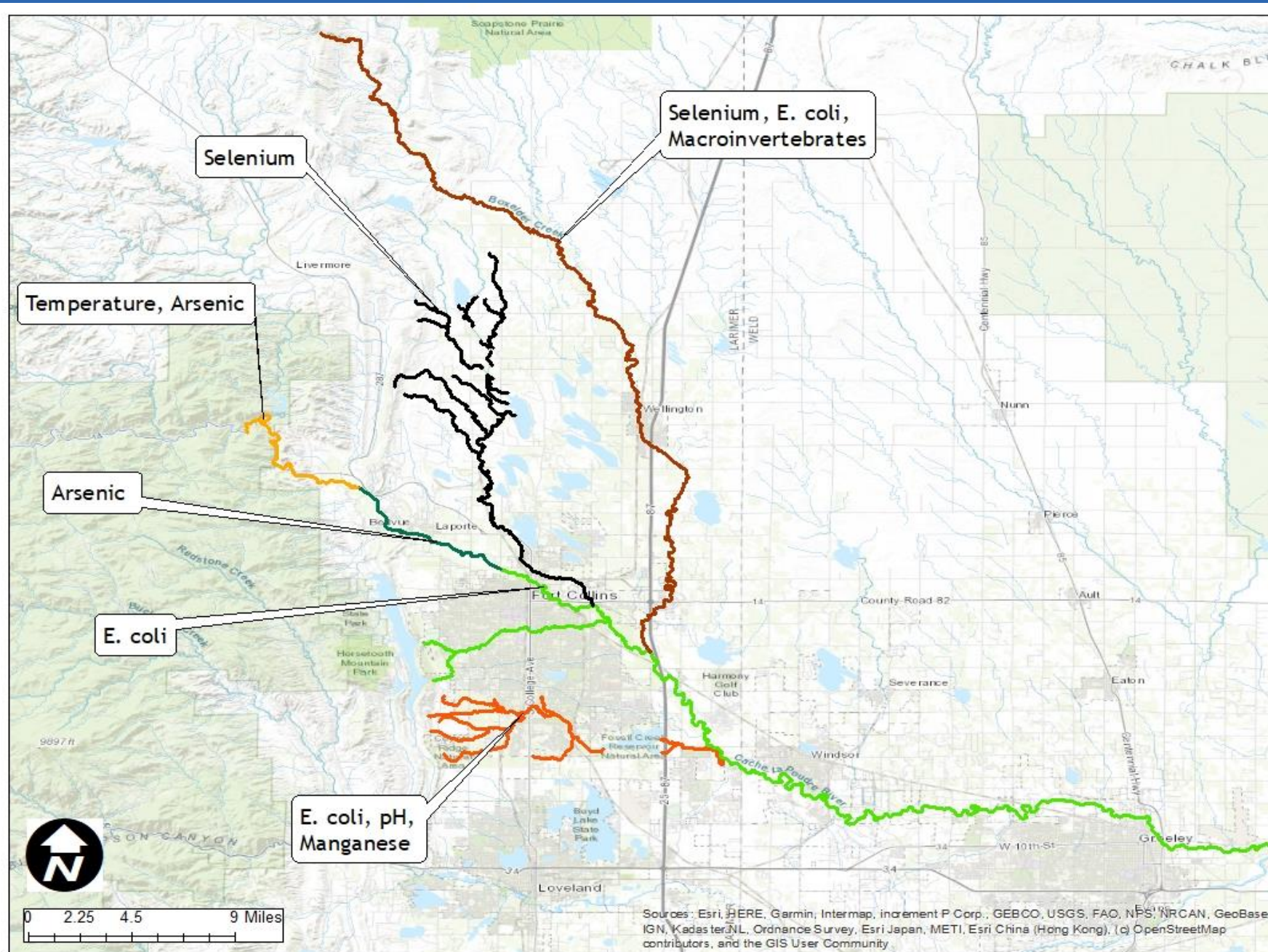


**COLORADO**  
Department of Public  
Health & Environment



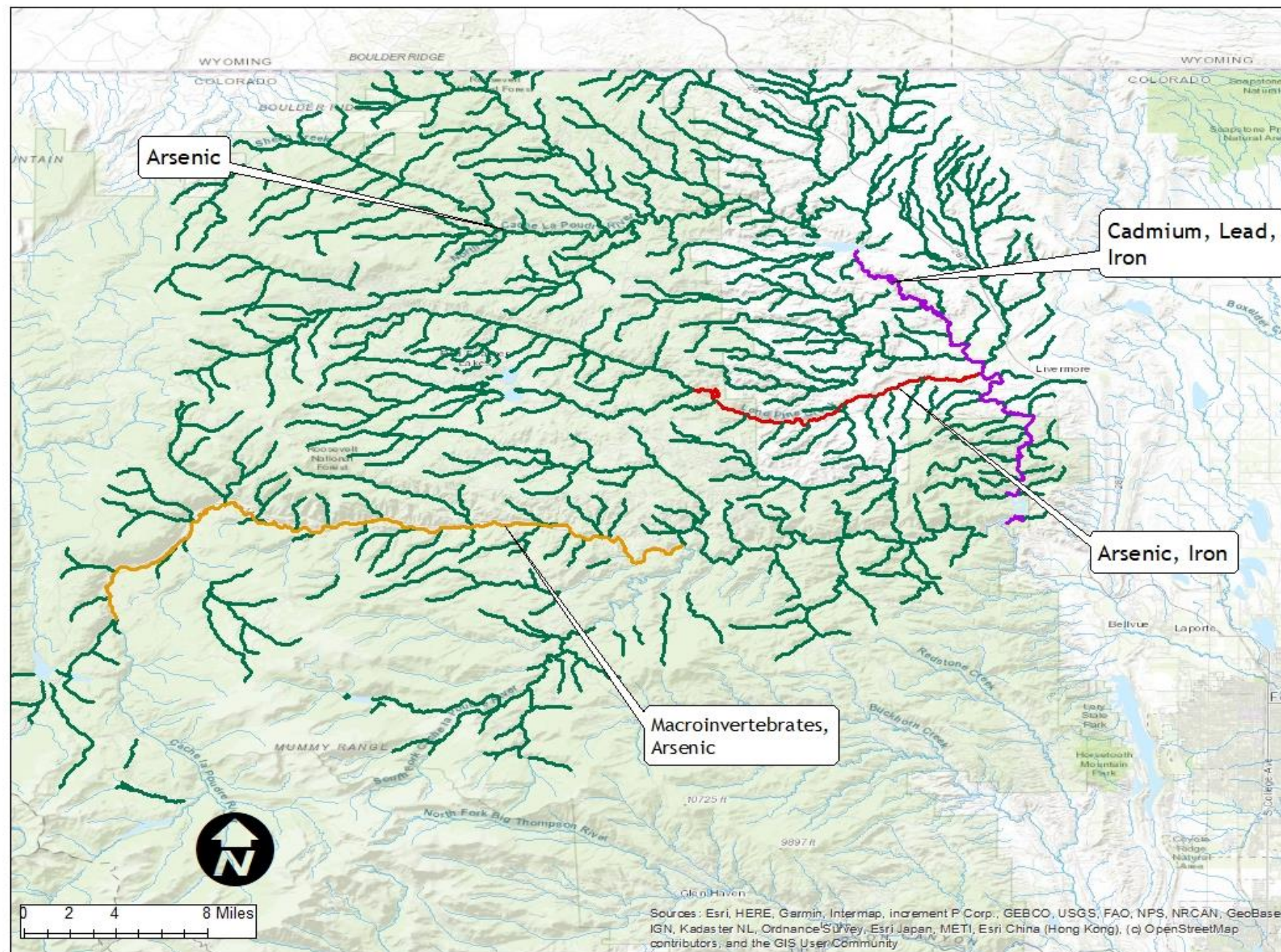


# Lower Cache la Poudre River Impairments



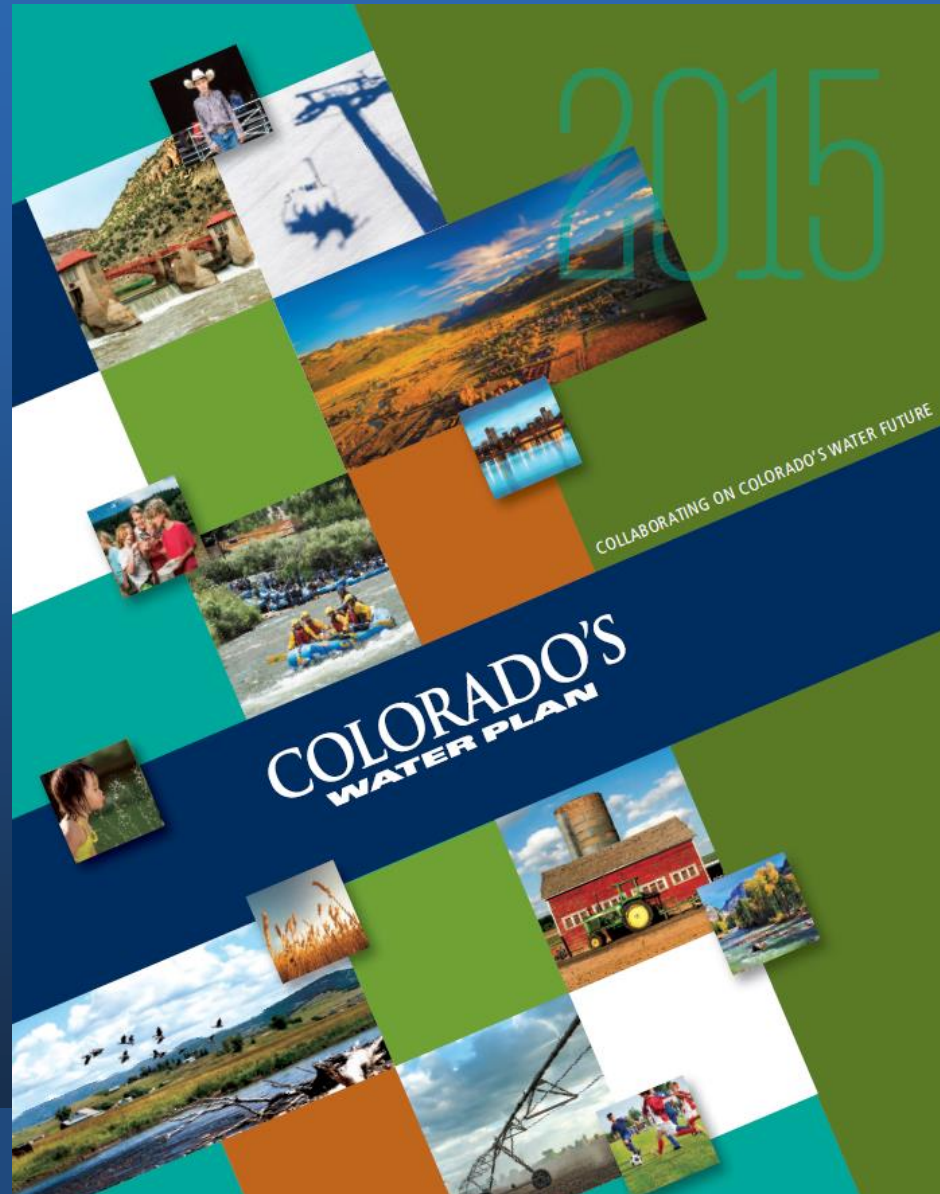
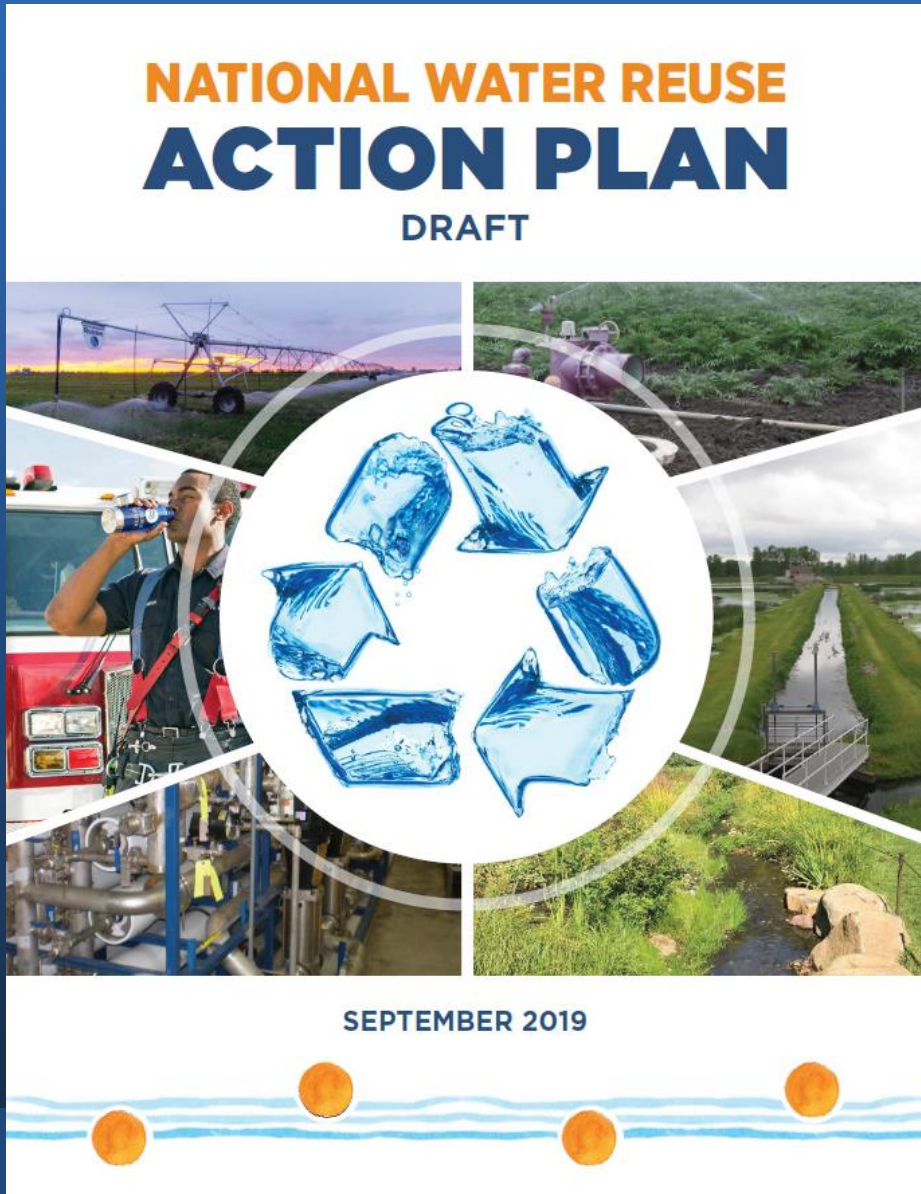


# Upper Cache la Poudre River Impairments





# Produced Water Regulations



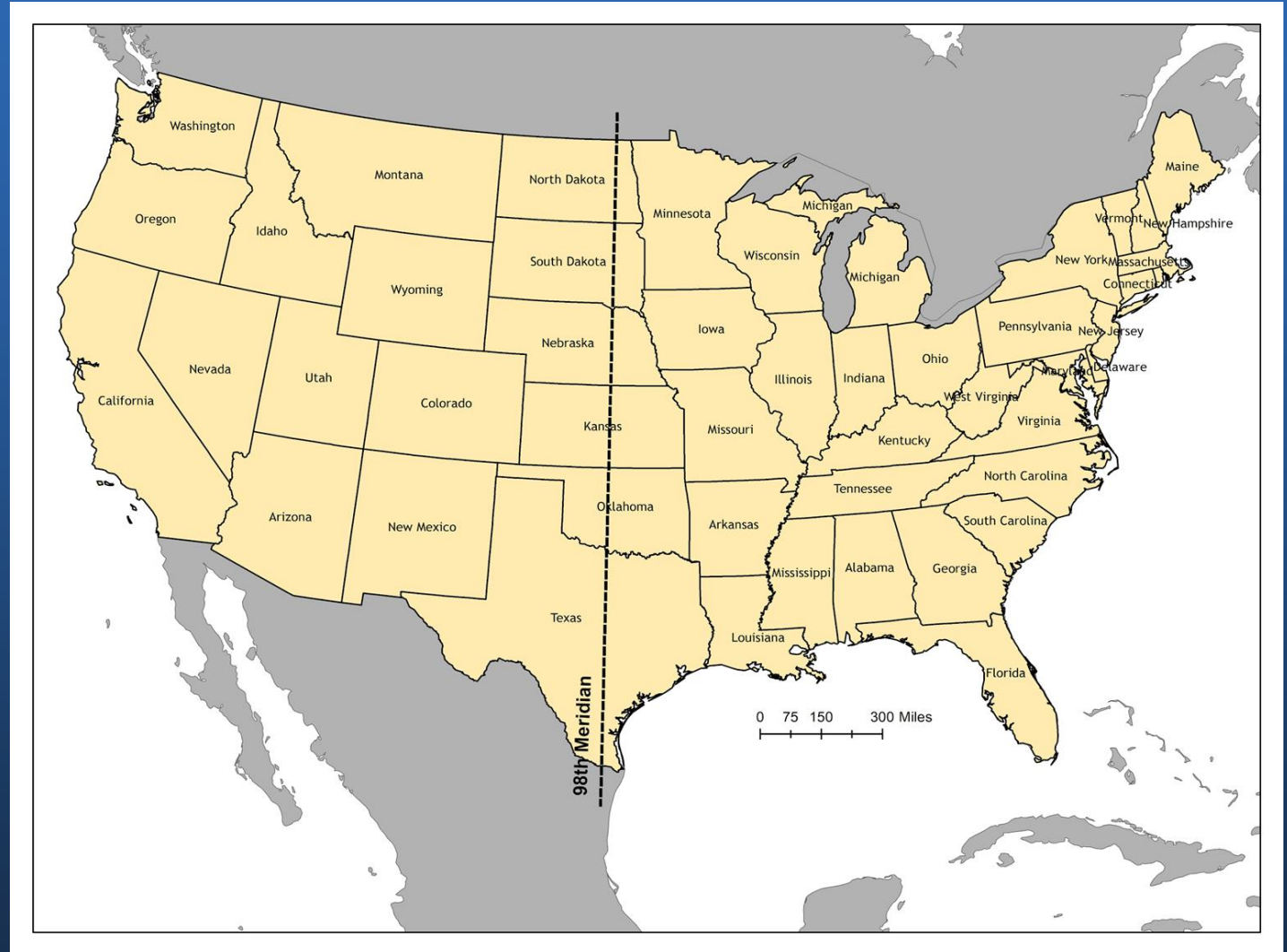
# What is produced water and why has it been treated differently than other wastes?

- Water from oil and gas and coal bed methane wells
- Lack of reliable data about contents - big variety in quality and contamination depending upon the formation and proprietary chemicals added
- Usually VERY high in salts that EPA doesn't have water quality standards for - but we know can be bad for agriculture and fish
- Also often contain heavy metals, organic compounds, & radionuclides
- Flows can be so big and fast that they cause huge amounts of erosion and sediment deposition into streams
- Domestic wastewater plants aren't designed to treat it - may actually make it more toxic



# What is going on with produced water - federal

- Cannot be sent to WWTPs with federal pretreatment programs
- Bans discharge to surface waters east of the 98th meridian
- Allows discharges to surface waters west of the 98th meridian when it has a agriculture or wildlife use - Colorado
- EPA is conducting a study, expected to support repeal of the current ban on discharges east of Colorado



# What is going on with produced water - Colorado

Does not allow discharge to WWTPs

Permits the discharge of oil and gas and CBM produced waters to surface waters with strong protections

- Developed and applies an EC/SAR policy to protect agriculture from water too high in salts
- Requires chronic Whole Effluent Toxicity tests to protect sensitive aquatic life when needed
- Requires discharges meet effluent limits for organic parameters
- Require producers meet radionuclide limits

Colorado submitted comments in July 2019 to EPA supporting a similar conditions for permits nationally & asking that EPA first develop national standards to protect agriculture and aquatic life from salts



# How to get involved....

- Participate in the Standards RMH
  - Rulemaking Hearing is June 2020
  - Sign up for Party Status through the WQCC Office
  - Participation in WQCC Process:

<https://www.colorado.gov/pacific/cdphe/wqcc-how-get-notices-upcoming-hearings>

- Collect and Submit Water Quality Data.
  - Next Data Call for South Platte in 2023/2024

# Water Quality Resources

- Impaired Waters - 303(d) List:

<https://www.colorado.gov/pacific/cdphe/impaired-waters>

- Colorado Stream Attainment Maps:

<https://www.colorado.gov/pacific/cdphe/clean-water-gis-maps>





# Questions?

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# Backup slides for reference



NEXT 4 Slides on 401 WQ Certs

# CWA § 401 Certification Requirements of the Water Quality Control Division

- Preliminary Antidegradation (AD) review and Draft Certification is published in the Division's Public Notice (PN);
- 30 Day comment period;
- Final certification determination (published in the Divisions PN:
  - Regular Certification (Typical Construction BMP's)
  - Conditional Certification (Conditions to mitigate Water Quality impacts are implemented)
  - Denial of Certification
- One year to issue after receipt of a complete 401 Certification Application
- <https://www.colorado.gov/pacific/cdphe/wq-401-water-quality-certification>



# Examples of Conditions

- Sampling - assessment of results may require future mitigation
- Adaptive Management – if impairments are related to project operation a plan is required
- Construction conditions – open bottom bridges, pond liners, fencing
- Operating conditions – pet waste and litter control, detention pond maintenance
- Additional Best Management Practices (BMP)

# Examples of the different types of projects

- Erosion control and bank stabilization
- Flood Control
- Land development (commercial and residential)
- Replacing existing diversion structures
- New roads
- Whitewater parks
- FERC projects
- Large water developments





## 401 Projects – Poudre River

- Timnath Reservoir-Segment COSPCP21, Road Improvement
- East Side Detention Facility-Segment COSPCP13b, Construct a detention facility for flood events
- CDOT I-25 Improvements-Multiple segments, I-25 Improvements

# Large Water Developments

- Southern Delivery System (SDS)  
(401 Certification issued 4/23/2010)
- Windy Gap Firming Project  
(401 Certification issued 3/25/2016)
- Moffat Collection System  
(401 Certification pending)
- Seaman Reservoir Water Management Project  
(Project status unknown)



# NEXT SLIDES ABOUT IMPAIRMENTS IN THE POUUDRE

# Water Quality of the Cache la Poudre River

## Arsenic – COSPCP10a/10b

- Increased 303(d) listings in 2016 (95)
  - Assessment for entire segment, not point of intake
  - Geologic sources of arsenic prevalent in Colorado
  - Background levels typically high & may exceed WS standard
  - Standard is being reviewed at both the state and federal levels





# Water Quality of the Cache la Poudre River

## TMDL's *E.Coli*

- *E.coli* – High priority TMDL– to be completed by 2022
- Scoping and project planning phase – looking for partners for data collection

Other *E. Coli* TMDL's in the state –  
Identify sources (Nonpoint & Point)

1. COSPBO02- From 13<sup>th</sup> street to the Confluence with South Boulder Creek
2. COSPUS14-Bowles Avenue to the Burlington Ditch Diversion
3. COSPUS15- Mainstem of the South Platte from the Burlington Ditch diversion in Denver, Colorado, to a point immediately below the confluence with Big Dry Creek

# Water Quality of the Cache la Poudre River



## Manganese and Sulfate – COSPCP13a

- Current standard – Table Value Standards or existing quality 2000
- In this case, we used table value standards as the standard
- Conclusion of impairment impairment:
  - Mn – 75.4 ug/L (n=9)
  - SO<sub>4</sub> – 1000 mg/L (n=11)

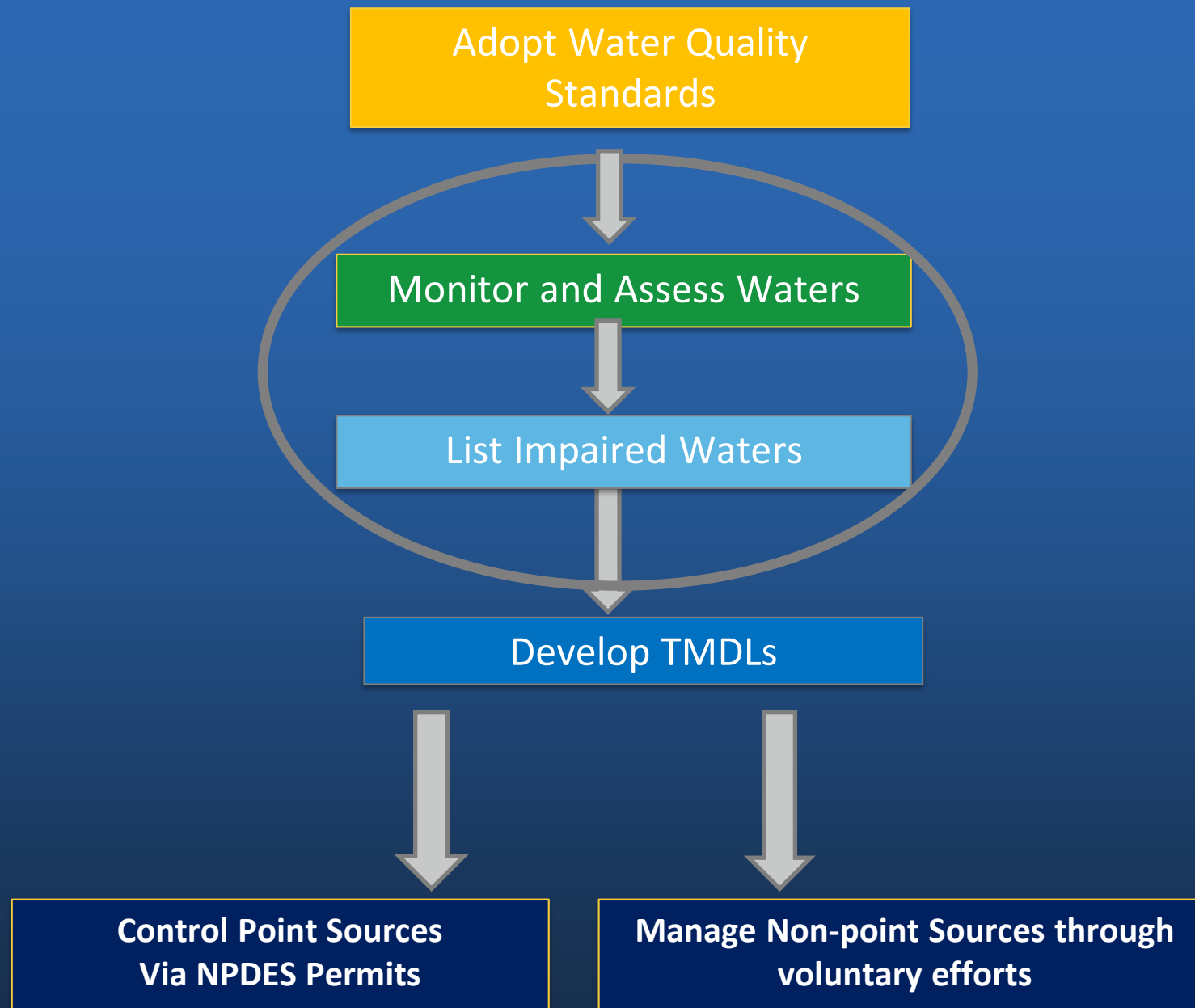


# Water Quality of the Cache la Poudre River

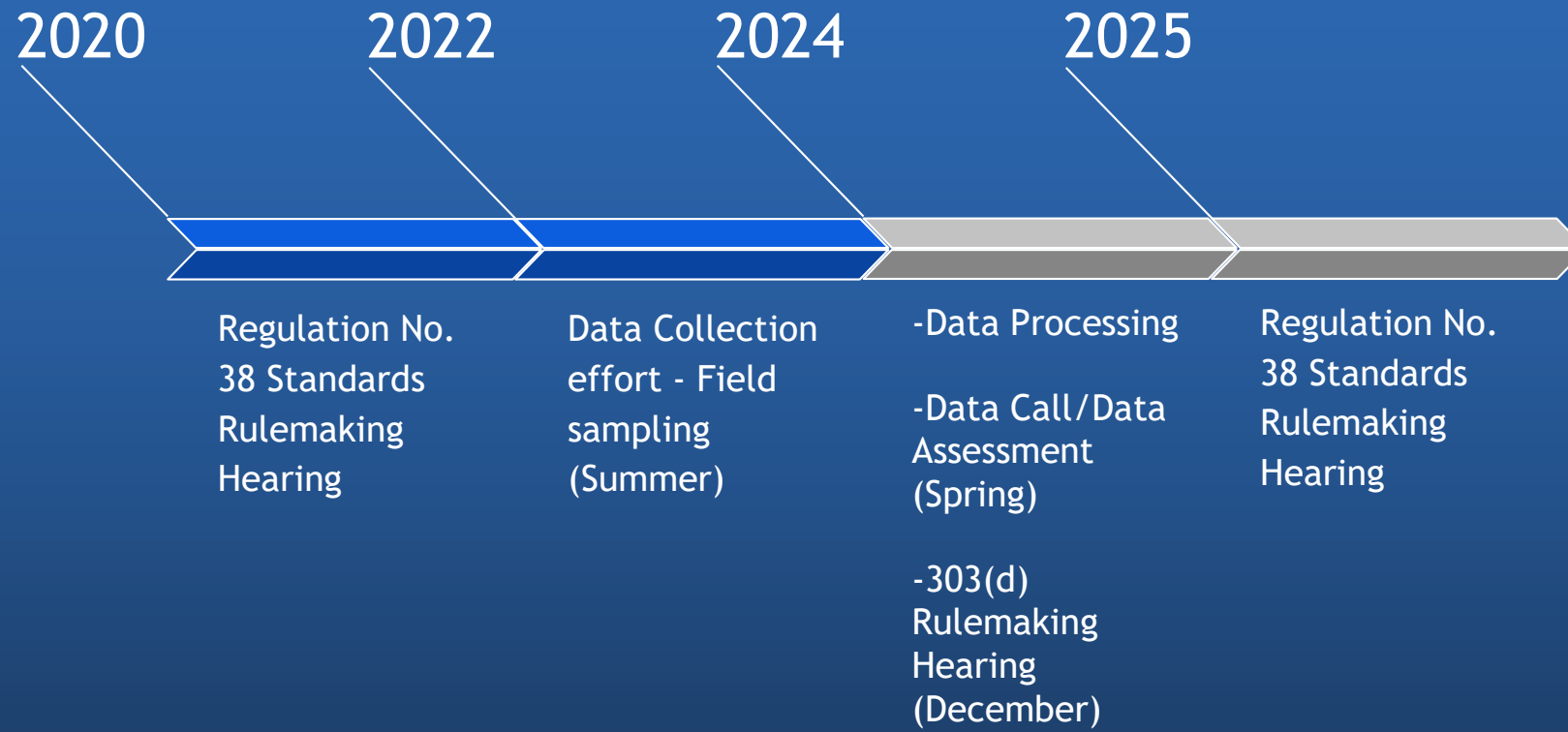
## Selenium – COSPCP13b

- Listed in 2008
- Standard = 4.6 ug/L
- Concentration = 13 ug/L with >150 samples collected by the Boxelder Sanitation District
- 2016 assessment, n=2, < detection limit
- Possibly attaining but need more data







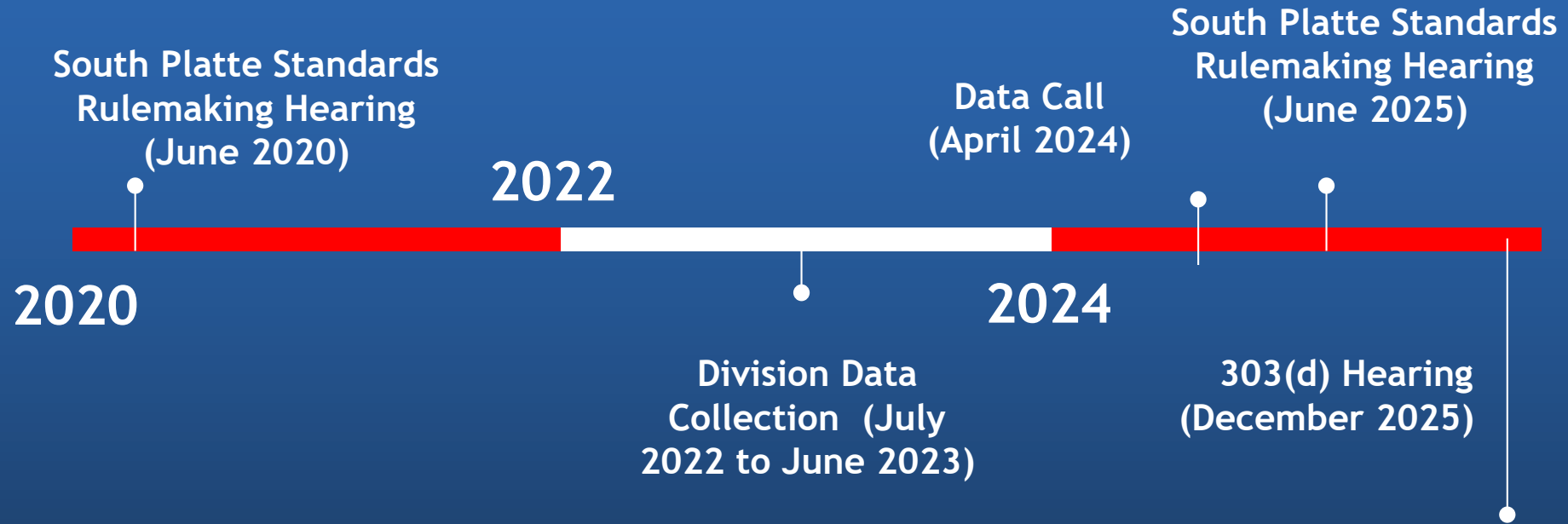


## South Platte Assessment Timeline

# South Platte Standards and Assessment Timelines



# South Platte Basin Timeline





# Water Quality of the Cache la Poudre River

