

# Former ASARCO Smelter East Helena Facility Annual Project Update



**December 8, 2021 - Public Meeting**

**US Environmental Protection Agency**

**Montana Environmental Trust Group**

**Trustee of the Montana Environmental Custodial Trust**



**Montana Environmental Trust Group, LLC**

**Trustee of the Montana Environmental Custodial Trust**

# Welcome

- Presentation will be followed by a question-and-answer period
- Unless you are speaking, please mute yourself by:
  - ✓ Using microphone icon (Zoom)
  - ✓ Pressing \*6 (phone)
- You can type questions/comments in the chat box (Zoom)
- If your Zoom computer audio is not working, mute yourself and phone in to hear the meeting:
  - ✓ Call 646-876-9923
  - ✓ Use meeting ID 816 5567 5621# and passcode 781655#
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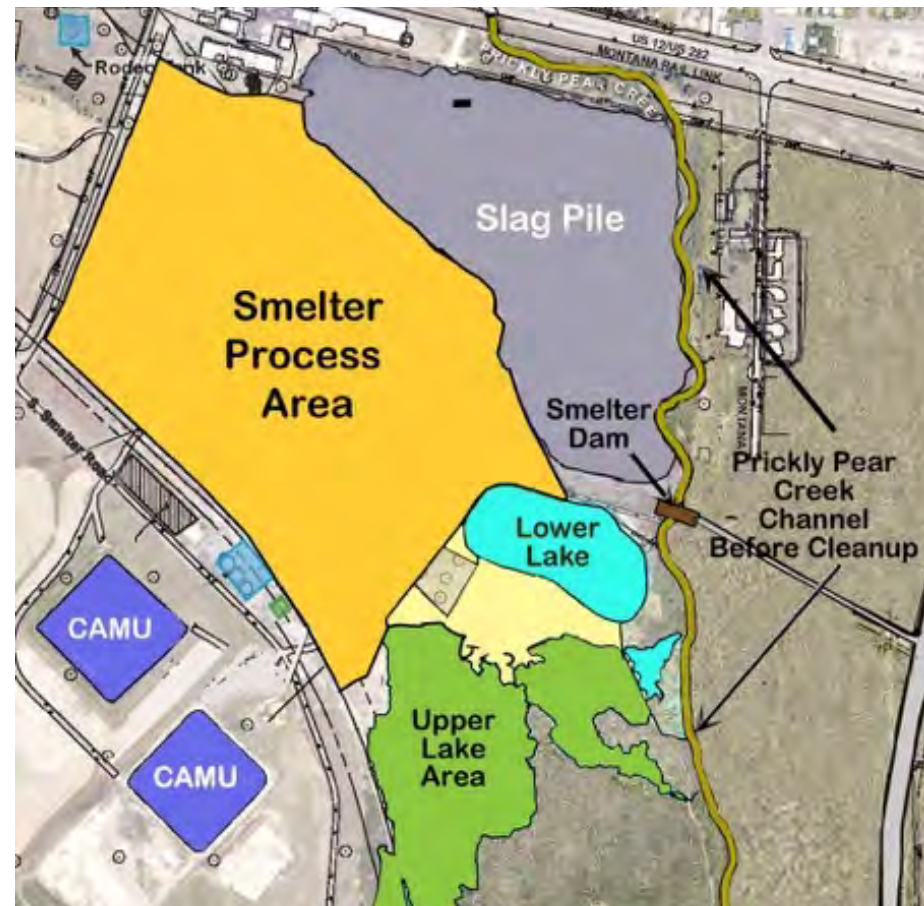


# Agenda

- Welcome and Introductions – Bridget Williams (USEPA)
- East Helena Cleanup Update – Cindy Brooks (METG) and Mark Rhodes (Hydrometrics)
- East Helena Groundwater Update – Bob Anderson (Hydrometrics)
- East Helena Redevelopment Progress – Cindy Brooks (METG)
- Greenway Project Overview – Mary Hollow/Nate Kopp (PPLT)
- State NRD Update – Greg Mullen (NRDP)
- Questions and Comments – Bridget Williams (USEPA)



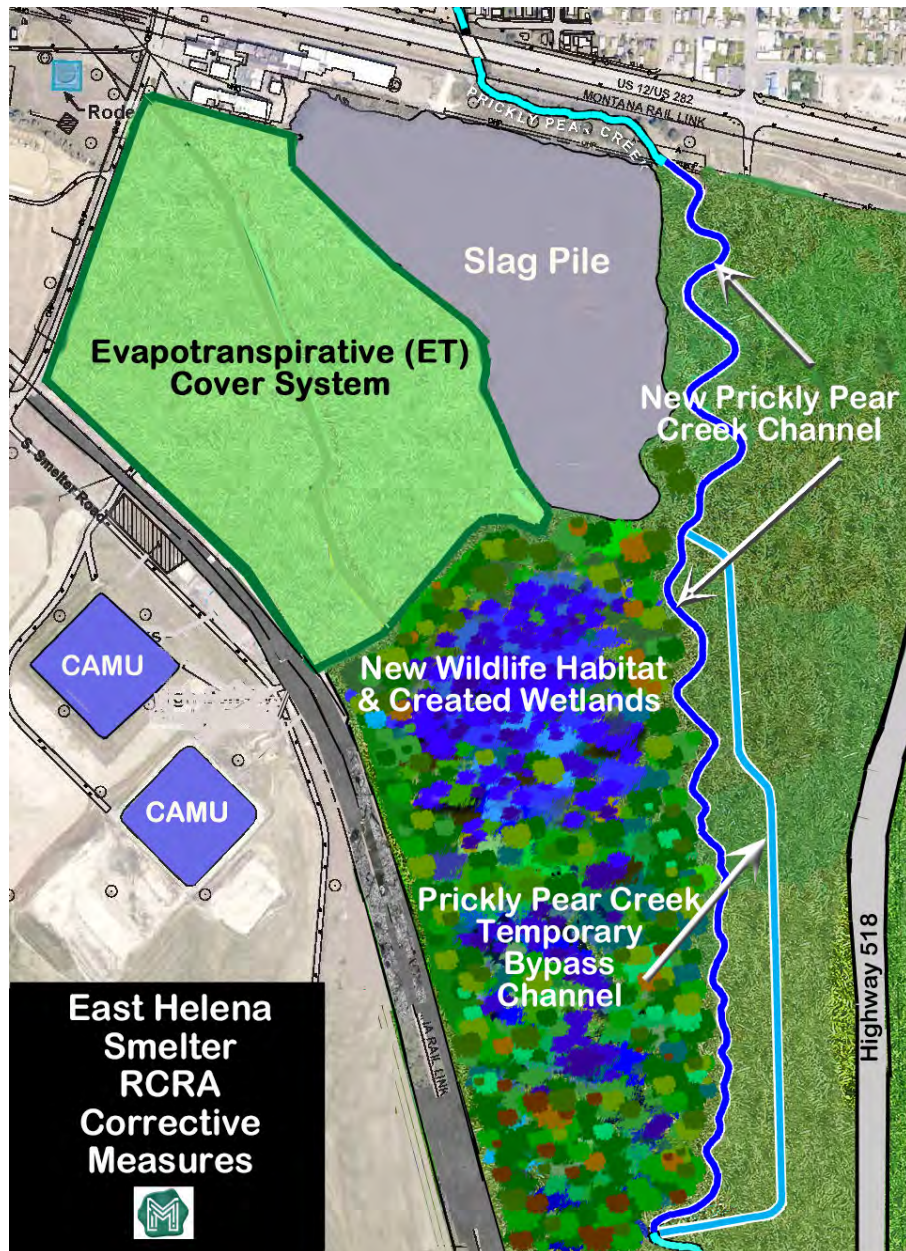
# Former ASARCO Smelter Site Conditions



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# ASARCO Smelter Corrective Measures Completed to Date



- Fully characterize nature and extent of contamination in soil and groundwater
- Demolished more than 70 buildings from former smelter operations
- Processed/placed 900,000 cubic yards (cy) of material from East Bench and constructed largest contiguous ET cover system in U.S. (62-acre)
- Removed 80,000 cy of source material loading contaminants to ground water and closed CAMU #2
- Relocated utilities and constructed a one-half mile bypass channel to divert PPC
- Removed failing smelter dam
- Constructed 1.25 mile new PPC channel and created 100 acres of new floodplain and wetlands



# East Helena Smelter RCRA Corrective Action

**Then**



**Now**



# Results of East Helena Corrective Actions



- Demonstrably reduced contaminant concentrations in groundwater
- Replaced remnants of former smelter with graded, vegetated, self-sustaining ET Cover
- Eliminated need to treat impacted stormwater that is now shed clean
- Created enhanced riparian habitat and scenic open space
- Removed failing smelter dam and last remaining impediment to fish passage in PPC
- Created flood storage capacity to mitigate flooding in downstream flood-prone areas of East Helena
- Moved PPC away from Slag Pile

# Remaining East Helena Corrective Measures

- Complete PPC Realignment Project: remove PPC Temporary Bypass Channel, remediate/regrade East Bench and satisfy all PPC realignment final permit requirements
- Control unaddressed source of selenium loading to groundwater from East Helena Slag Pile
  - ✓ Unfumed Slag Removal Project
  - ✓ Grading and capping Slag Pile
- Monitor groundwater quality and confirm need for additional measures to address groundwater contamination





# Remove PPC Temporary Bypass Channel



# Unfumed Slag Removal Project

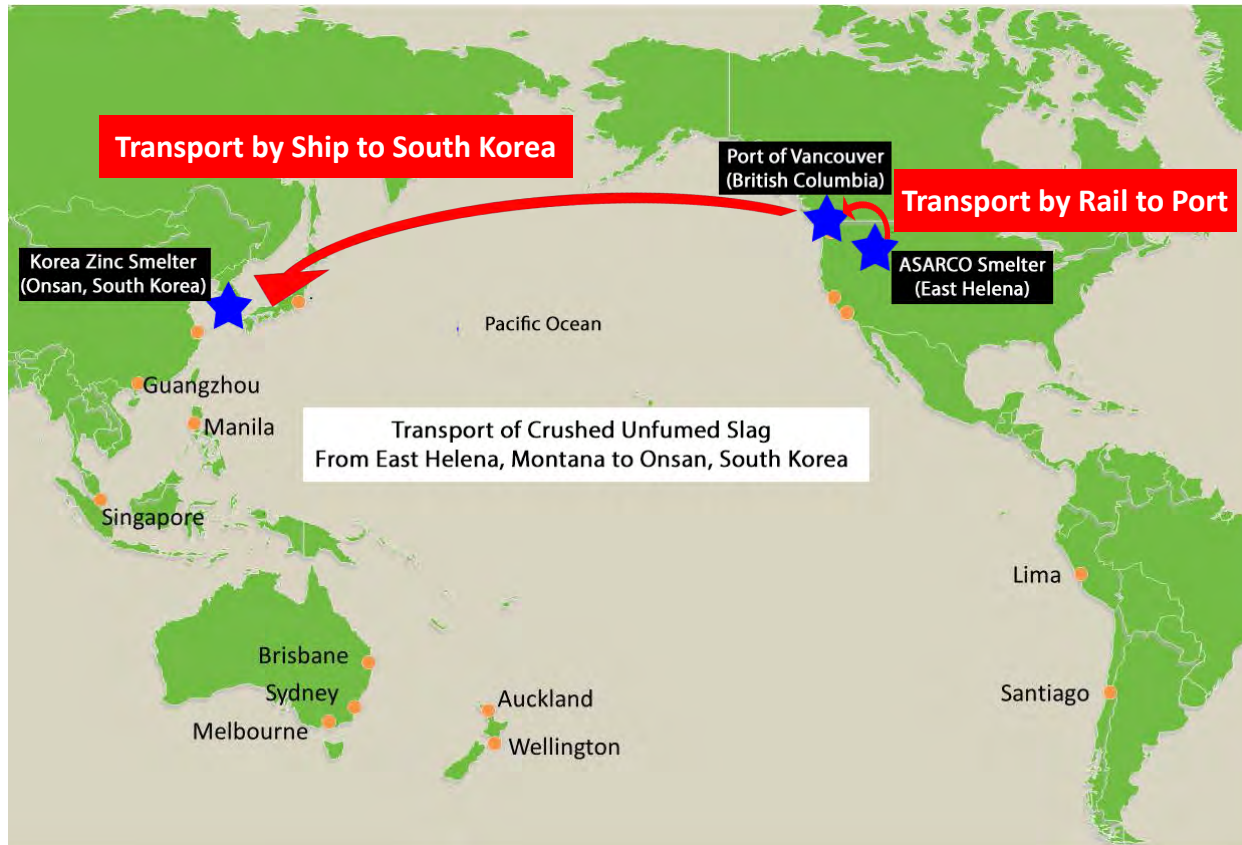


- METG partnered with Metallica
- Remove “upper lift” - 2 million tons of unfumed (zinc-bearing) slag
  - Crush to 2 inches
  - Transport by conveyor from crushing area to stockpile
- Transport from stockpile to rail loadout by overland conveyor
  - Weigh and load onto railcars



# Unfumed Slag Removal Project

- ✓ Transport by rail from East Helena to Port of Vancouver, British Columbia
  - ✓ Load material on ships at Port of Vancouver
- ✓ Transport to South Korea by oceangoing vessels





# Unfumed Slag Removal Project

Aerial View of Slag Pile (Looking Northeast)



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# Unfumed Slag Removal Project



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# Unfumed Slag Removal Project – Stockpile



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# Unfumed Slag Removal Project

Overland Conveyor (Looking West)



Overland Conveyor (Looking Northeast)



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# Unfumed Slag Removal Project

Unfumed Slag Crushing Operations

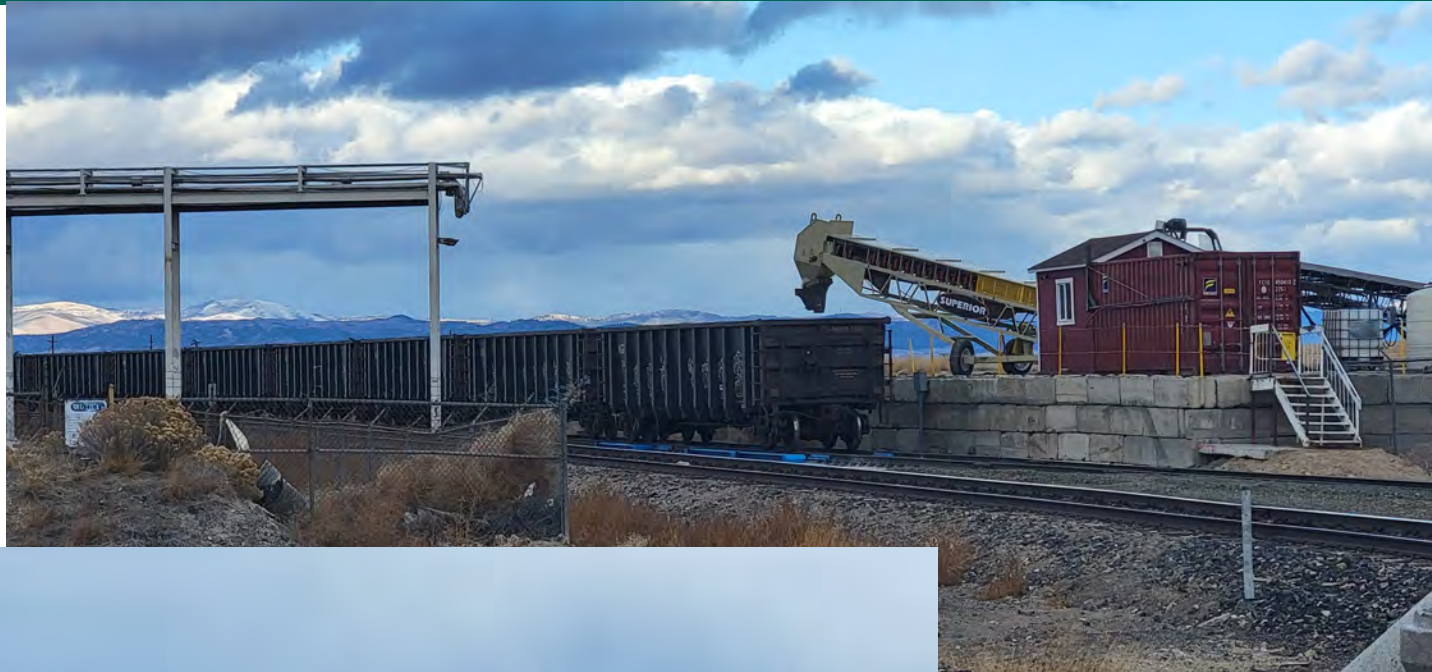


Unfumed Slag Crushing/Screening Plant)





# Unfumed Slag Removal Project – Loading Rail Cars





# Video of UFS Operations (Mark Rhodes)



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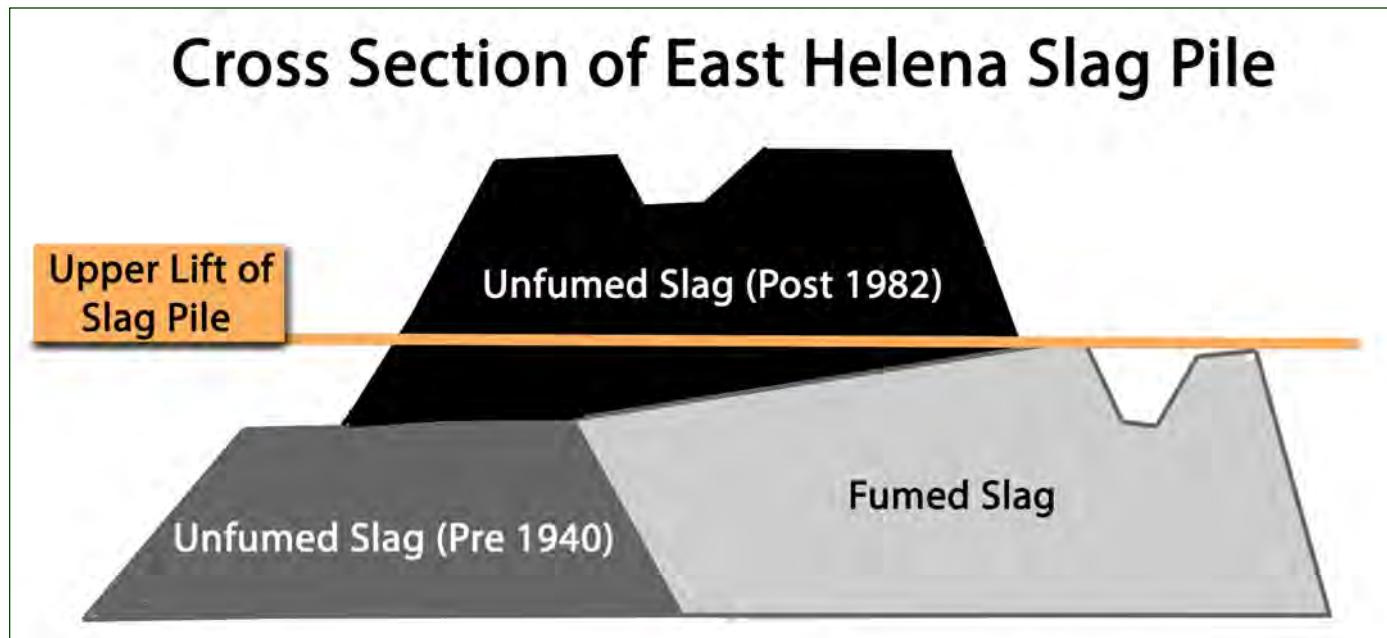
# Unfumed Slag Removal Project Schedule

- Metallica completed construction and setup in 10/2021
  - ✓ Million-gallon tanks removed
  - ✓ MRL new rail siding
  - ✓ Equipment staged on site (crushers, conveyors, stackers and other stackers)
- Metallica's contractor (HS&G) crushing and screening
  - ✓ Began 10/2021
  - ✓ Expected to continue through 12/2021
- Currently loading railcars for shipping to Port of Vancouver
- Project will be completed by 12/31/2025



# Unfumed Slag Removal Project Benefits

- ✓ “Upper lift” represents 75% of selenium source loading to groundwater from the Slag Pile
- ✓ Beneficial re-use of by-products of Korea Zinc smelting used for manufacturing cement in South Korea
- ✓ Reduced cost to grade/cap Slag Pile (final Corrective Measure) and sale proceeds conserve East Helena Cleanup Funds for additional future work
- ✓ Removal of “upper lift” will reduce height of Slag Pile by more than 50%





# East Helena Groundwater Update

Bob Anderson  
Hydrometrics



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# Former ASARCO Smelter Project Groundwater Conditions Update

- **Corrective Action Monitoring Plan (CAMP)**
- **Groundwater Flow Patterns**
- **Groundwater Plumes and Trends**
- **Plume Stability Metrics**
- **Public Water Supply Well**



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# Groundwater Contaminant Source Areas Addressed by Corrective Measures



## Corrective Measures

- South Plant Hydraulic Control (SPHC)
- Source Removals
- Evapotranspiration (ET) Cover
- Speiss-Dross Slurry Wall
- *Slag Pile Cover (Planned)*



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# Primary Current Groundwater Contaminant Source Areas

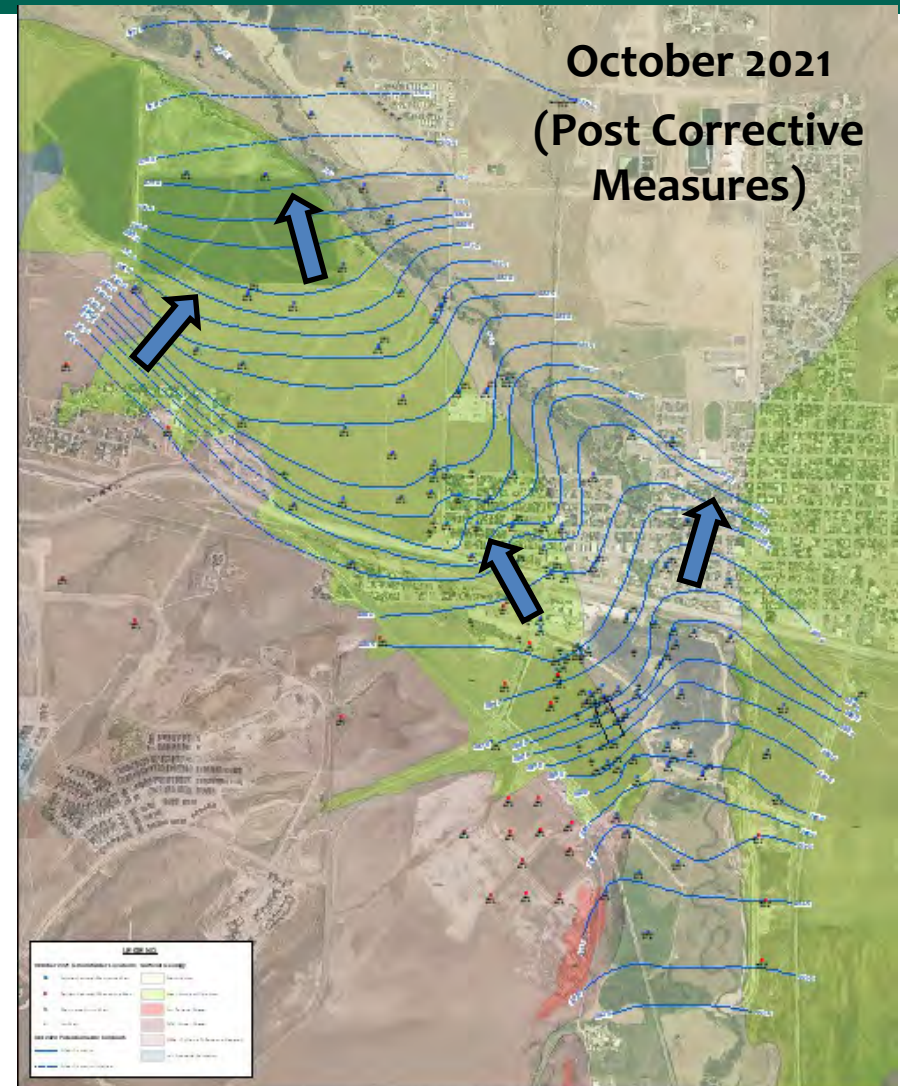
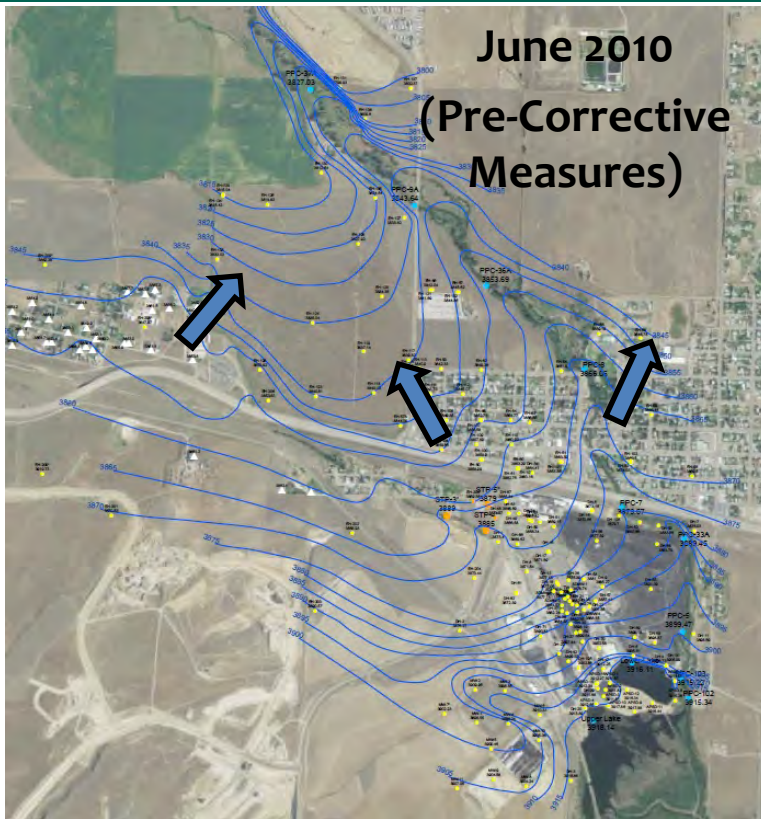


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# Groundwater Potentiometric Map



Overall pre- and post-corrective measure groundwater flow directions consistent even with observed water level changes

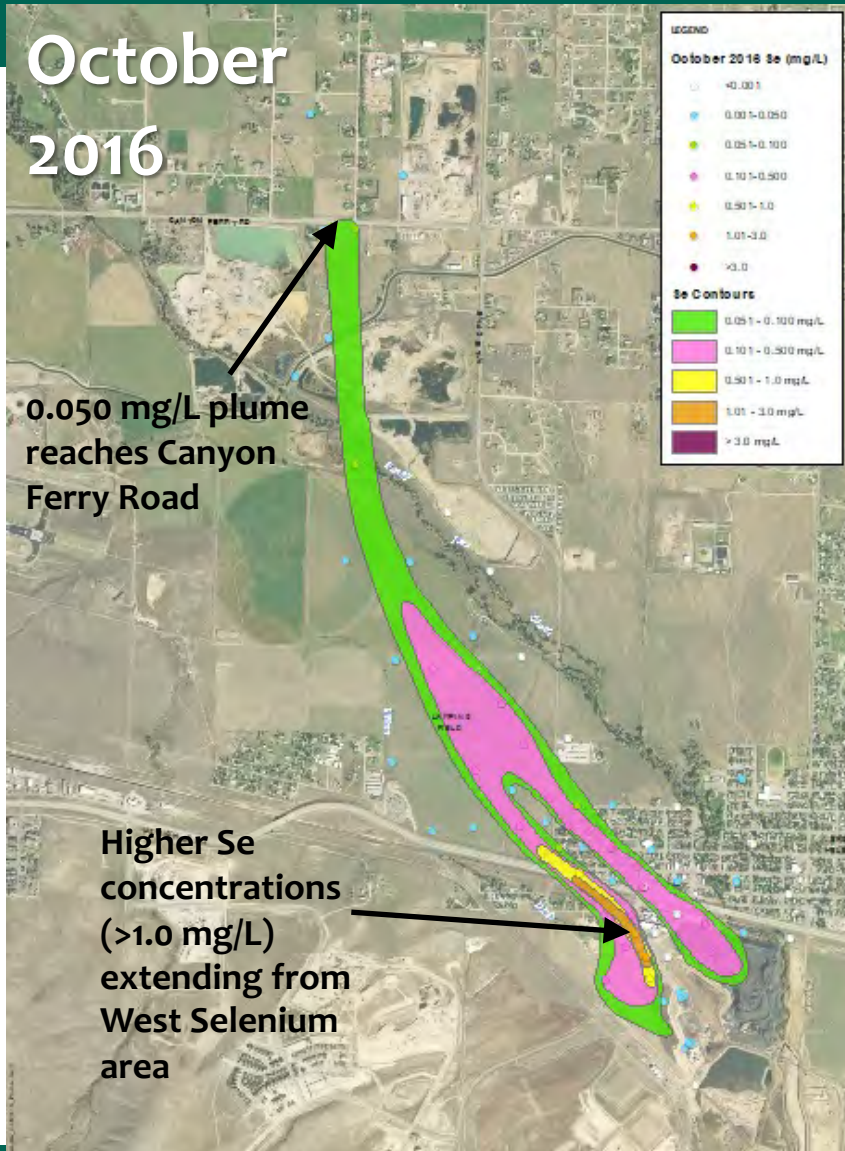


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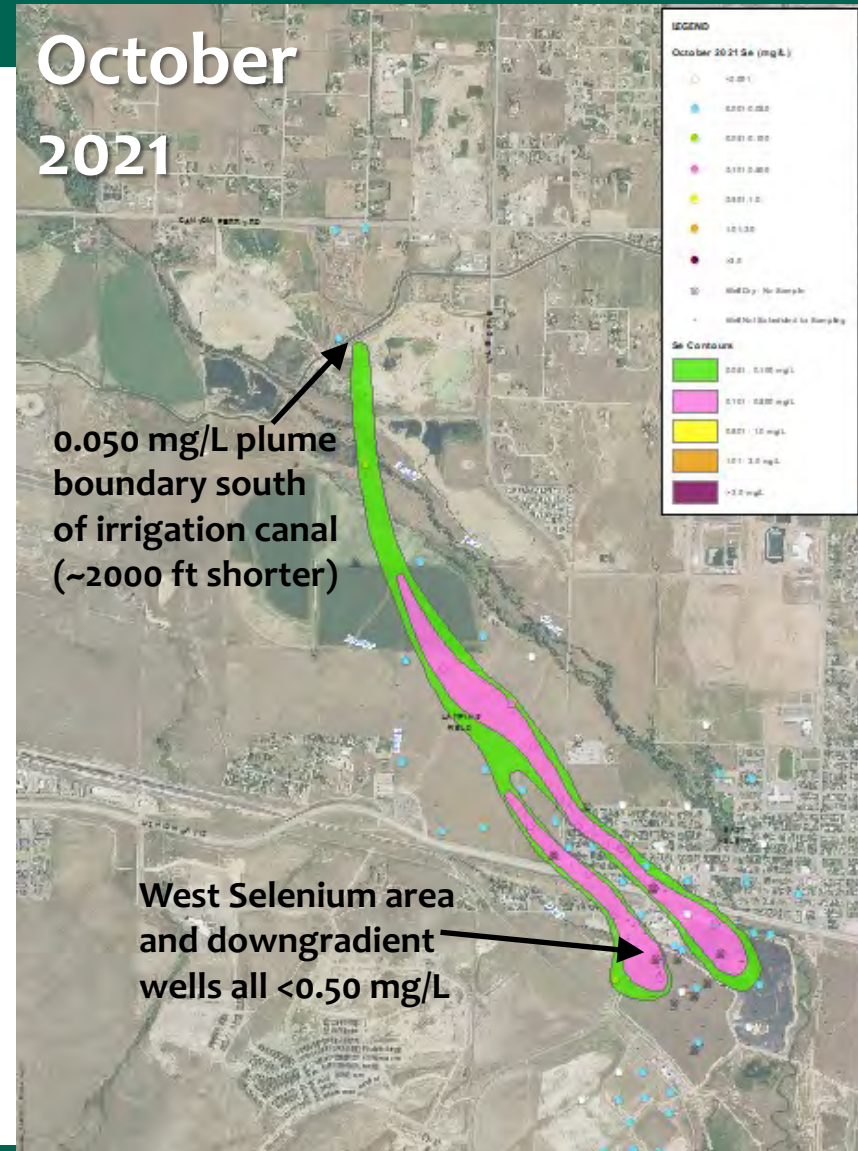


# Groundwater Selenium Plume

October  
2016



October  
2021

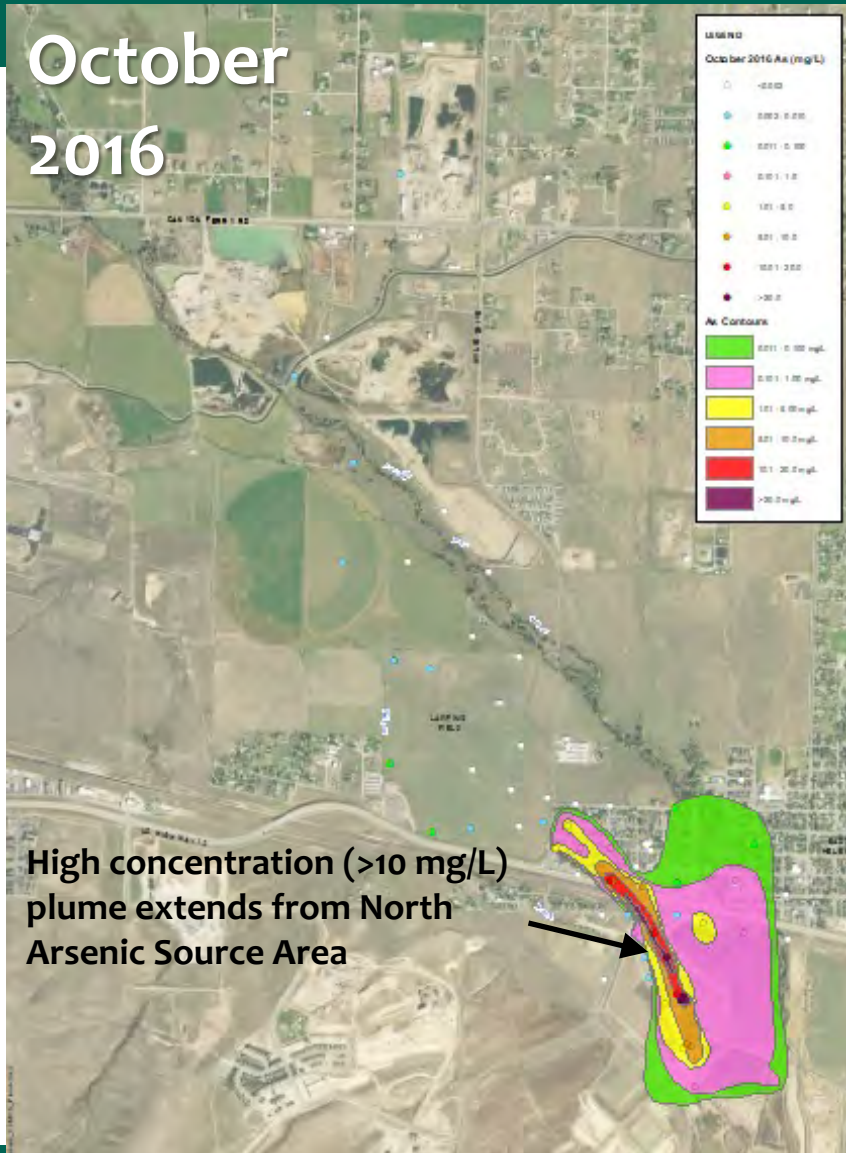


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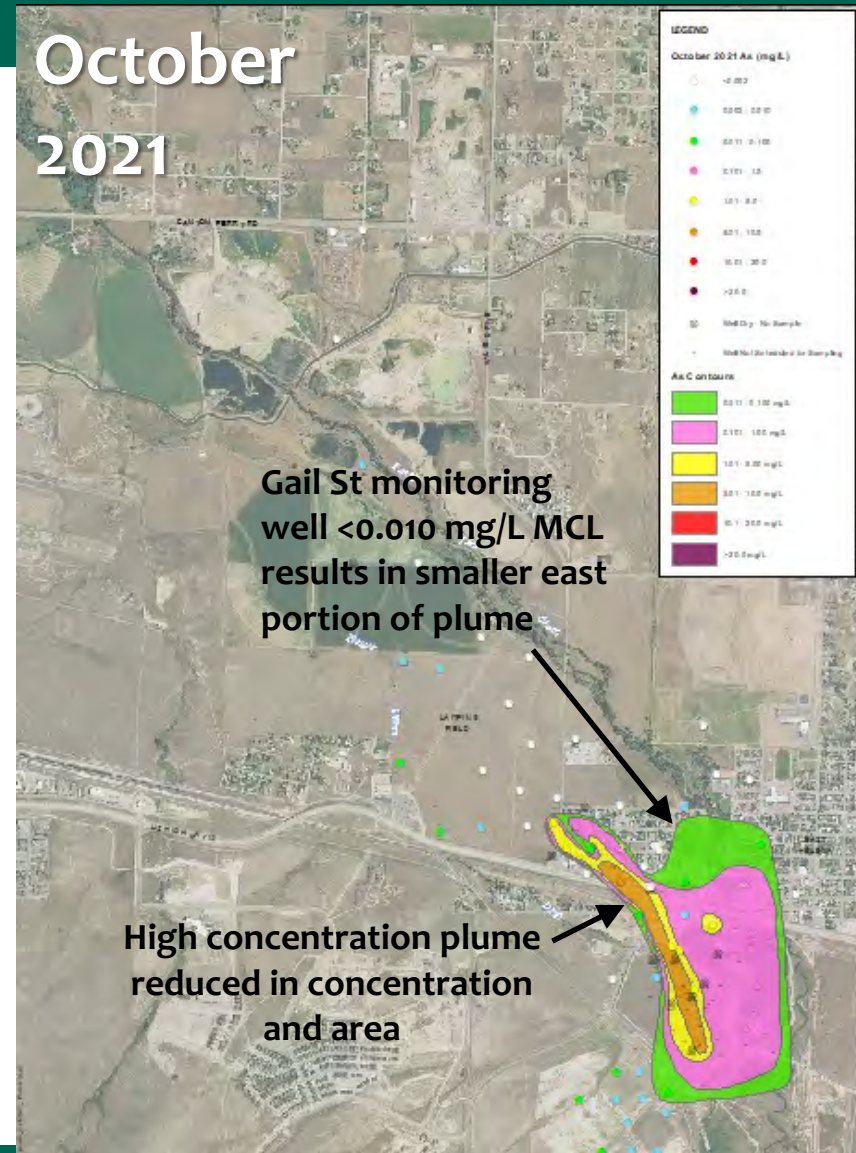


# Groundwater Arsenic Plume

October  
2016



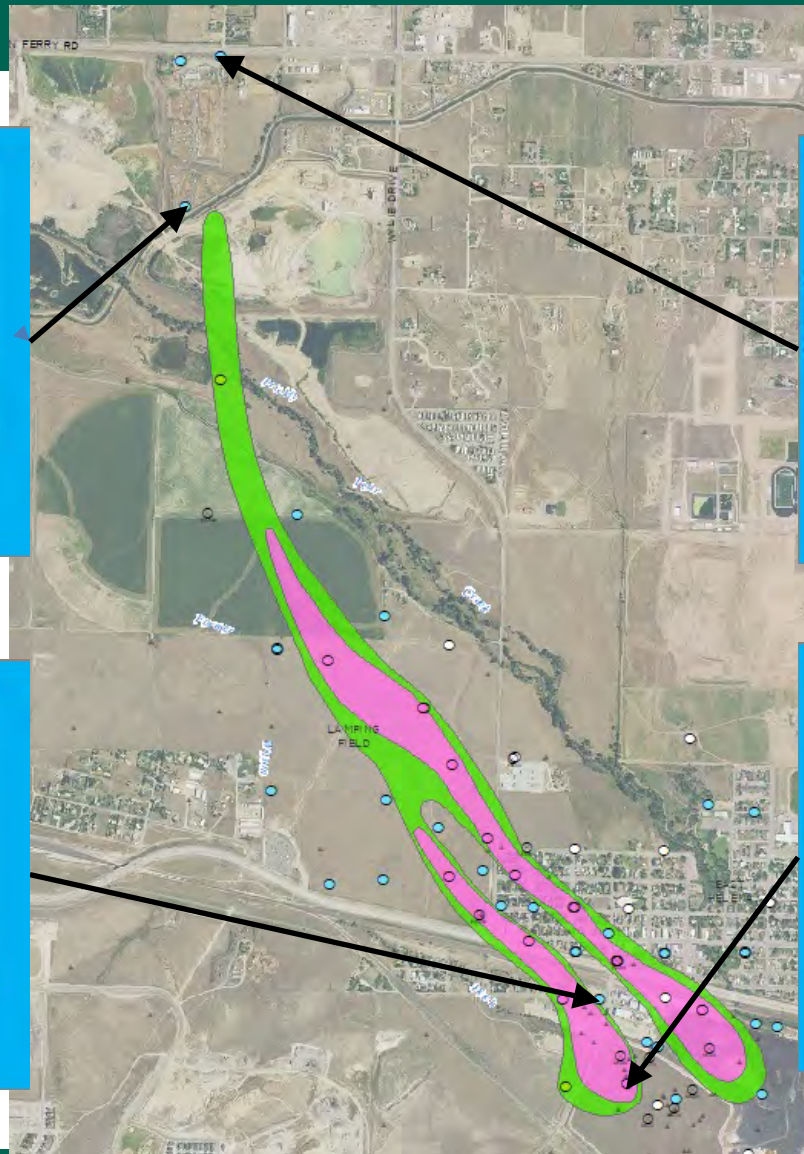
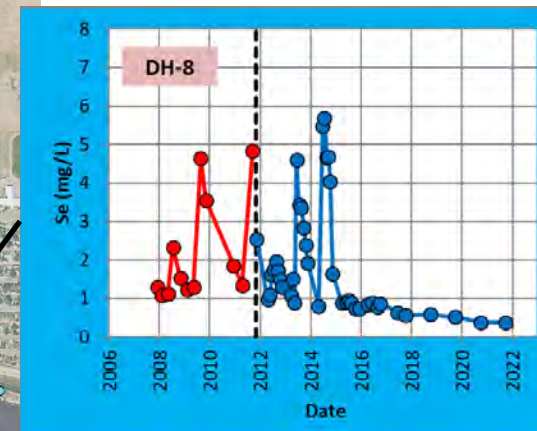
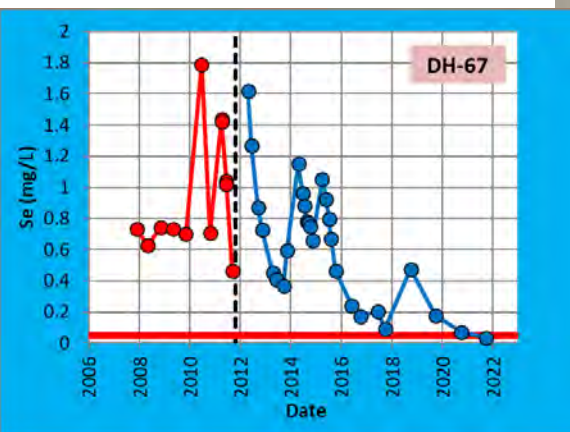
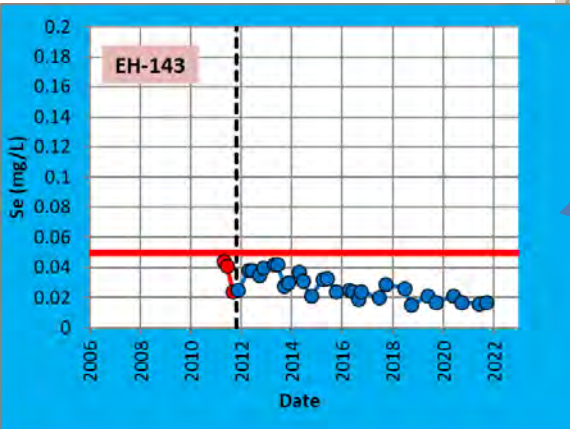
October  
2021



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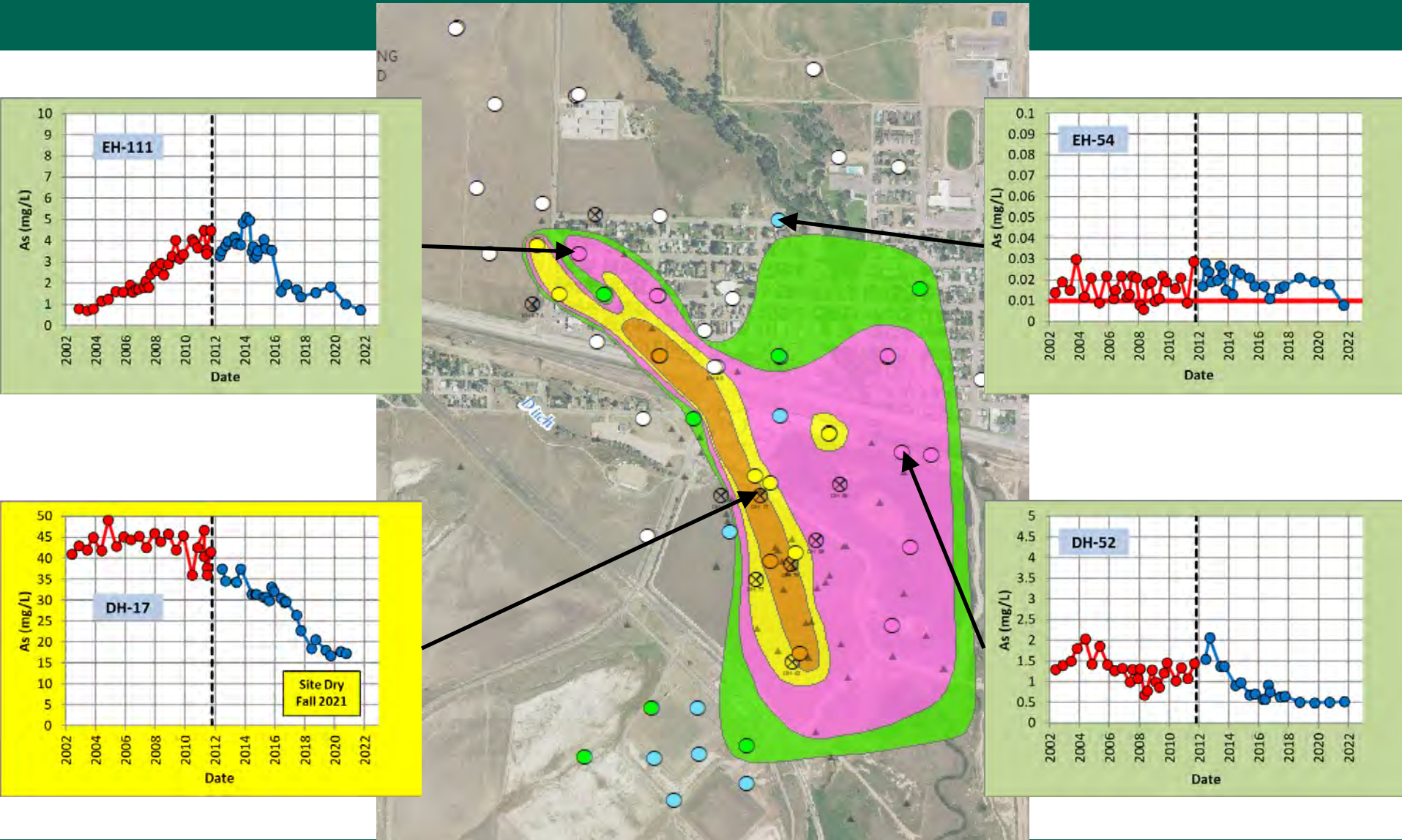
# Selenium Plume Well Trends



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# Arsenic Plume Well Trends





# Plume Stability Analysis - Arsenic

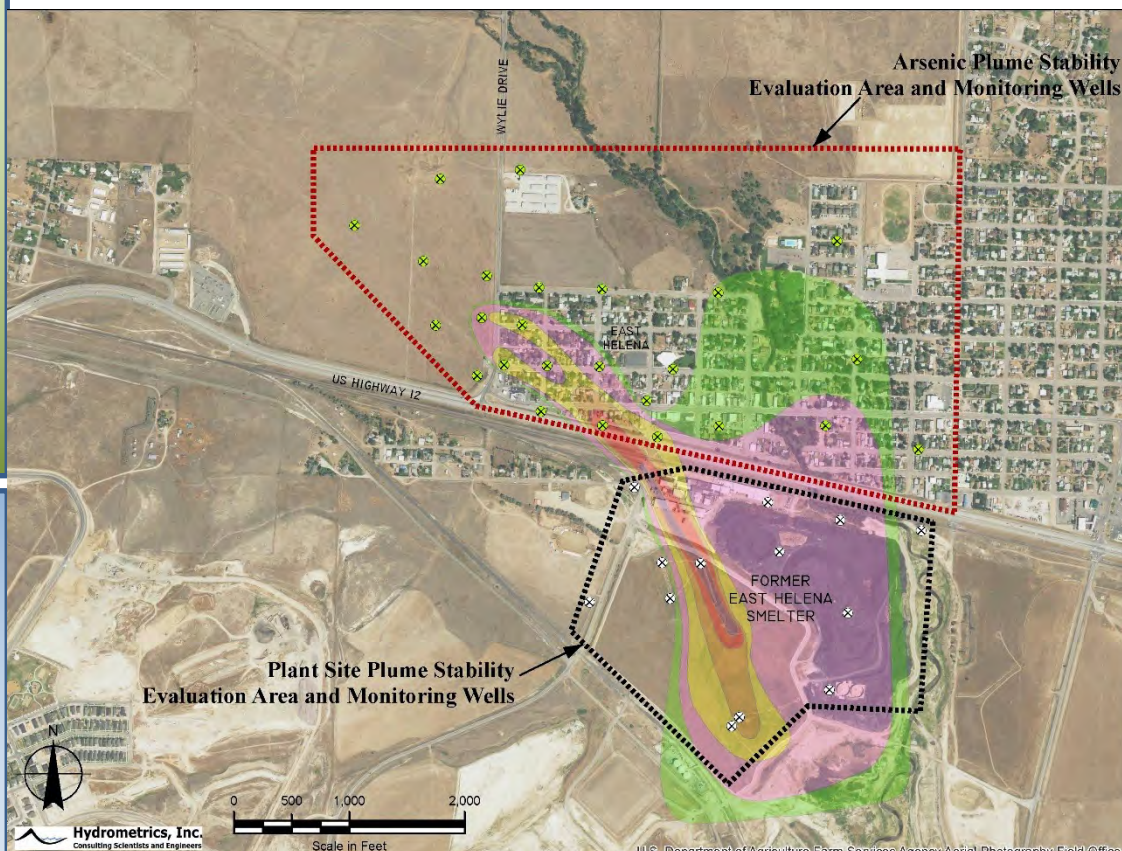
## Downgradient Arsenic

Year	Plume Area (acres)	Average Concentration (mg/L)
2010	66	0.203
2014	68	0.167
2015	68	0.175
2016	64	0.167
2017	65	0.173
2018	68	0.211
2019	66	0.203
2020	66	0.173
2021	57	0.186
<b>Change</b>	<b>-14%</b>	<b>-15%</b>

## Plant Site Arsenic

Year	Plume Area (acres)	Average Concentration (mg/L)
2010	82	2.25
2016	77	1.29
2017	77	1.19
2018	69	0.94
2019	71	1.02
2020	72	1.04
2021	NC	
<b>Change</b>	<b>-12%</b>	<b>-54%</b>

NC-Not calculated due to number of dry wells



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# Plume Stability Analysis - Selenium

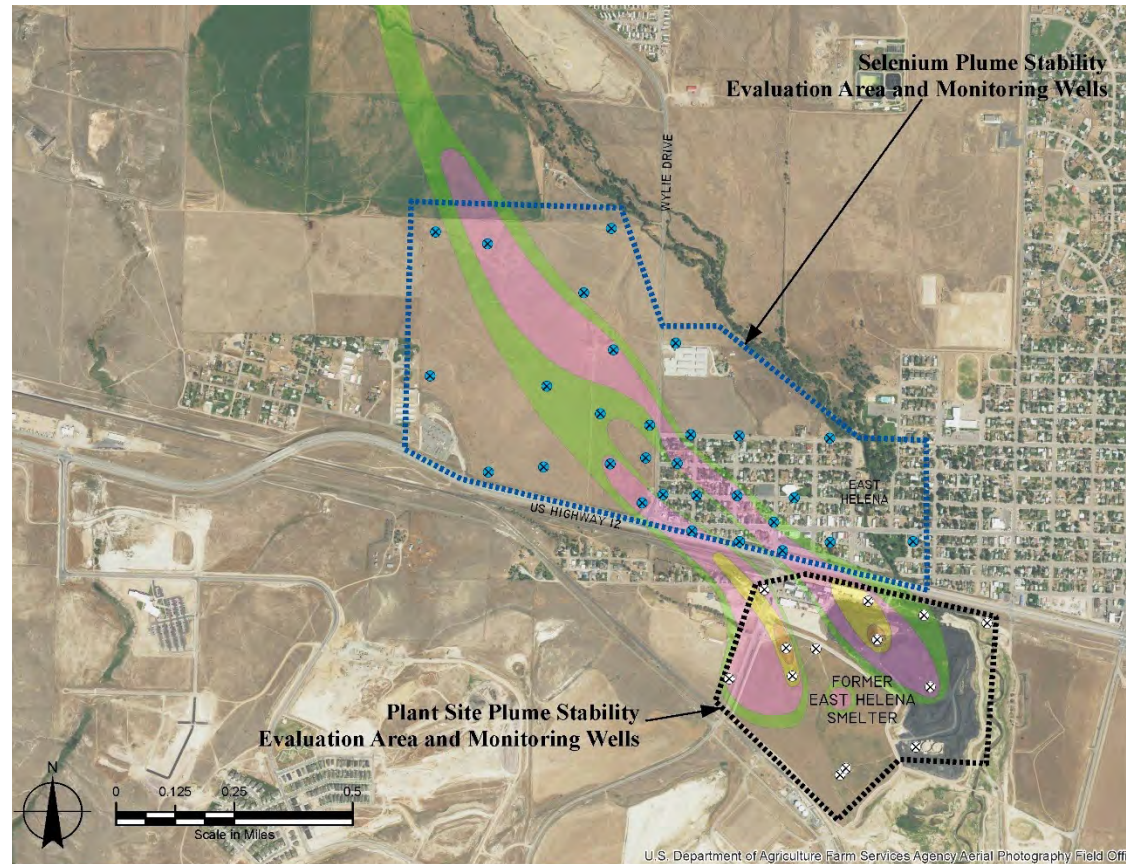
## Downgradient Selenium

Year	Plume Area (acres)	Average Concentration (mg/L)
2010	74	0.112
2014	111	0.123
2015	112	0.121
2016	114	0.136
2017	79	0.108
2018	74	0.078
2019	82	0.088
2020	79	0.086
2021	74	0.081
Change	0%	-28%

## Plant Site Selenium

Year	Plume Area (acres)	Average Concentration (mg/L)
2010	67	0.451
2016	48	0.27
2017	35	0.23
2018	52	0.34
2019	51	0.24
2020	33	0.22
2021	NC	
Change	-51%	-51%

NC-Not calculated due to number of dry wells

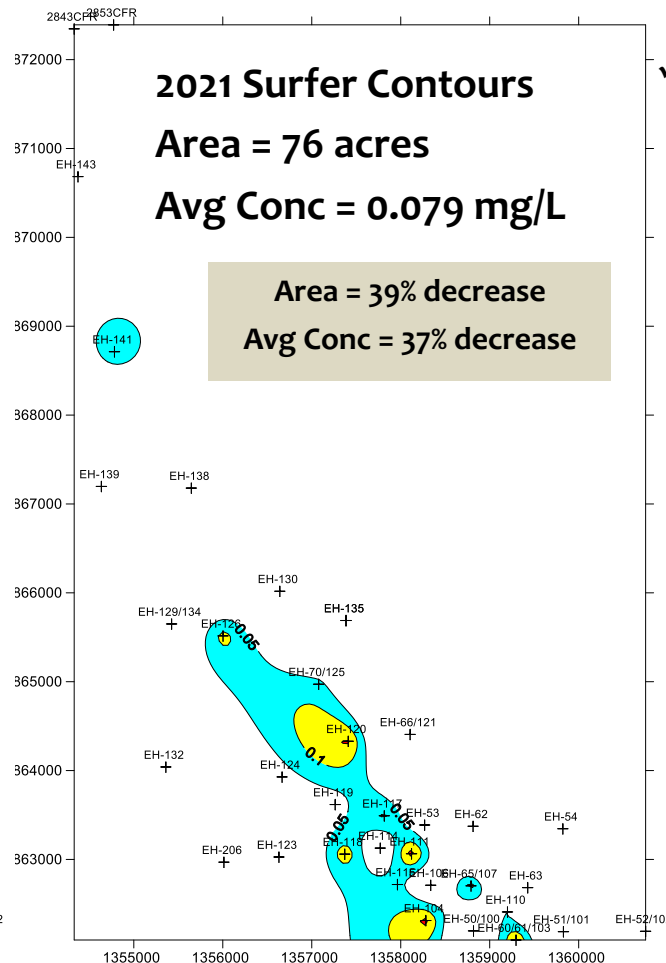
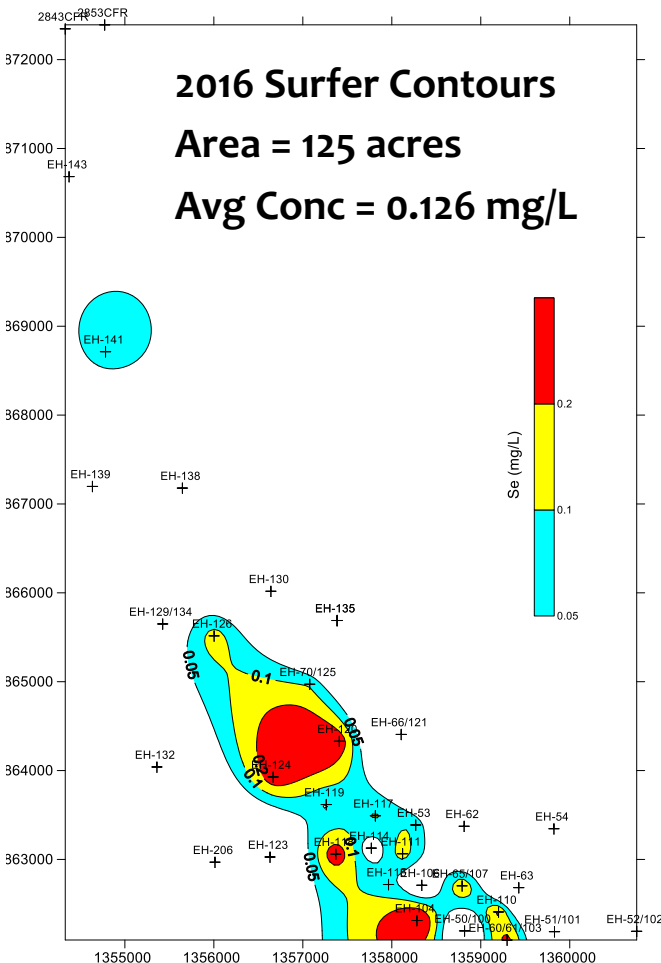


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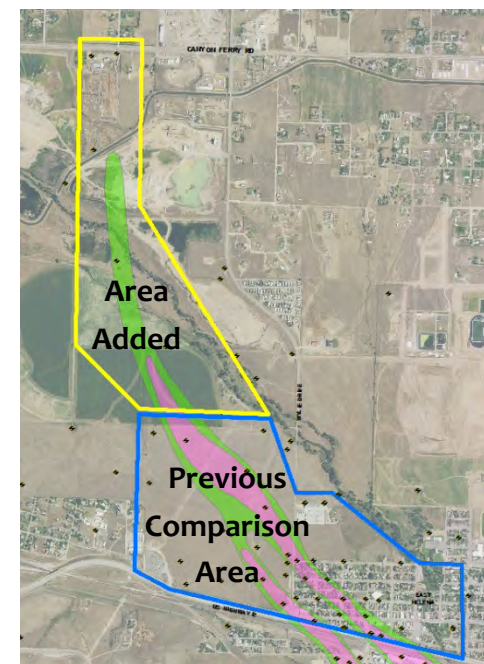


# Selenium Plume Metrics - 2016 and 2021

## Highway 12 to Canyon Ferry Road



✓ With sufficient downgradient data, plume metric comparison area will be expanded as shown for future comparisons



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# Results to Date and Future Groundwater Activities

- Groundwater quality response to date:
  - ✓ *groundwater selenium concentrations have decreased 50% on plant site and 35% downgradient of plant site.*
  - ✓ *Arsenic concentrations have decreased 55% on plant site and 10% downgradient.*
  - ✓ *The selenium plume front has receded 2000 feet and plume area reduced 40+%.*
- Following unfumed slag processing the remaining slag will be capped and revegetated
- Long-term monitoring to continue into future (30 years) to demonstrate effectiveness of corrective measures
- Corrective action approach to date shows continued groundwater quality improvements and has preserved sufficient funds to implement additional future remedies, if needed. Groundwater monitoring results will determine if performance criteria are met or additional actions needed.



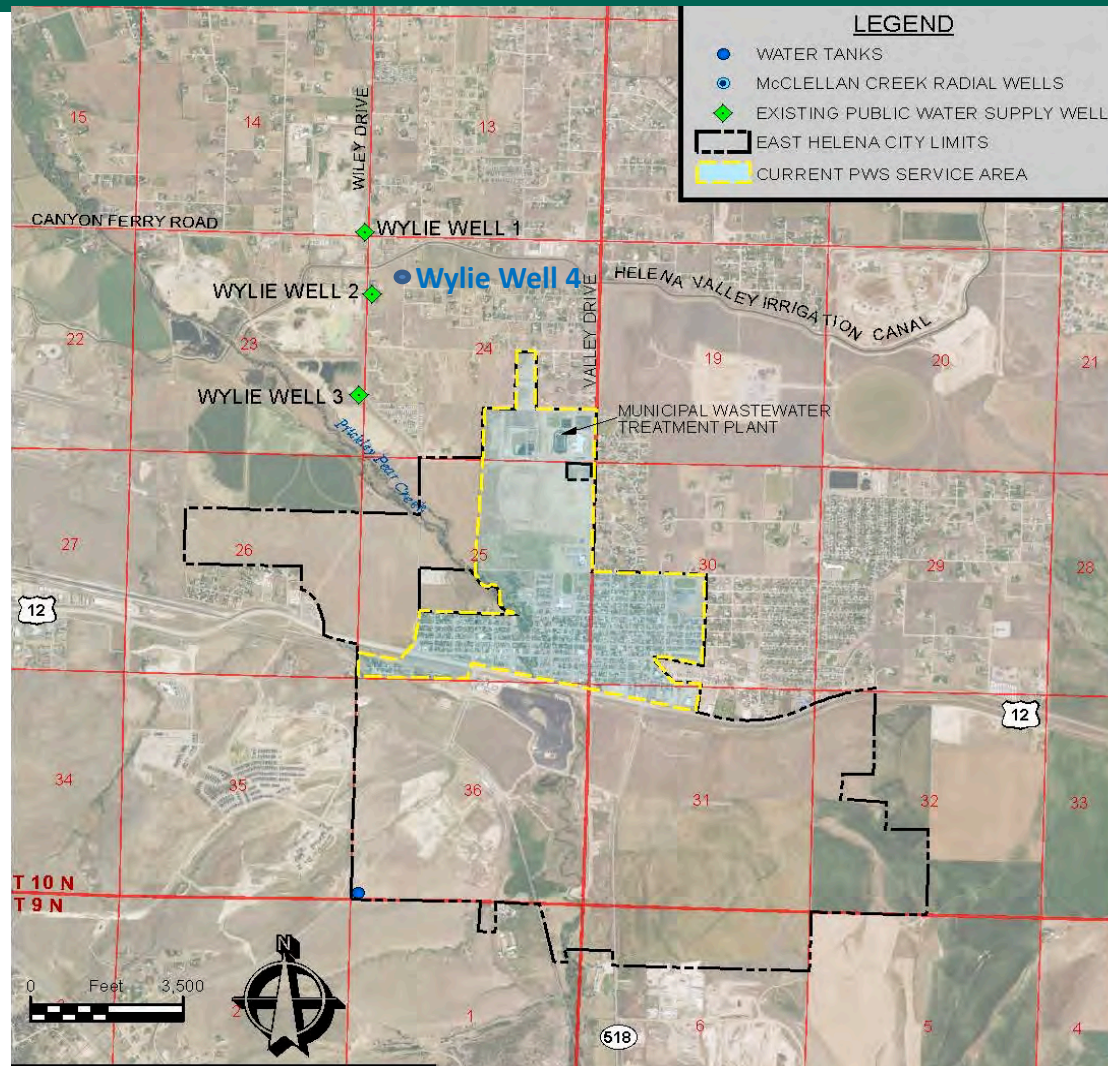
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# East Helena Public Water Supply Well

- City of East Helena currently has three municipal wells in Helena Valley; Wylie Wells 1, 2 and 3.
- METG financing and assisting with permitting and construction of a fourth well, proposed **Wylie Well 4**.
- Wylie Well 4 to be completed in 2022 to increase City's municipal water system capacity and operating flexibility.



# East Helena Redevelopment Update

Cindy Brooks

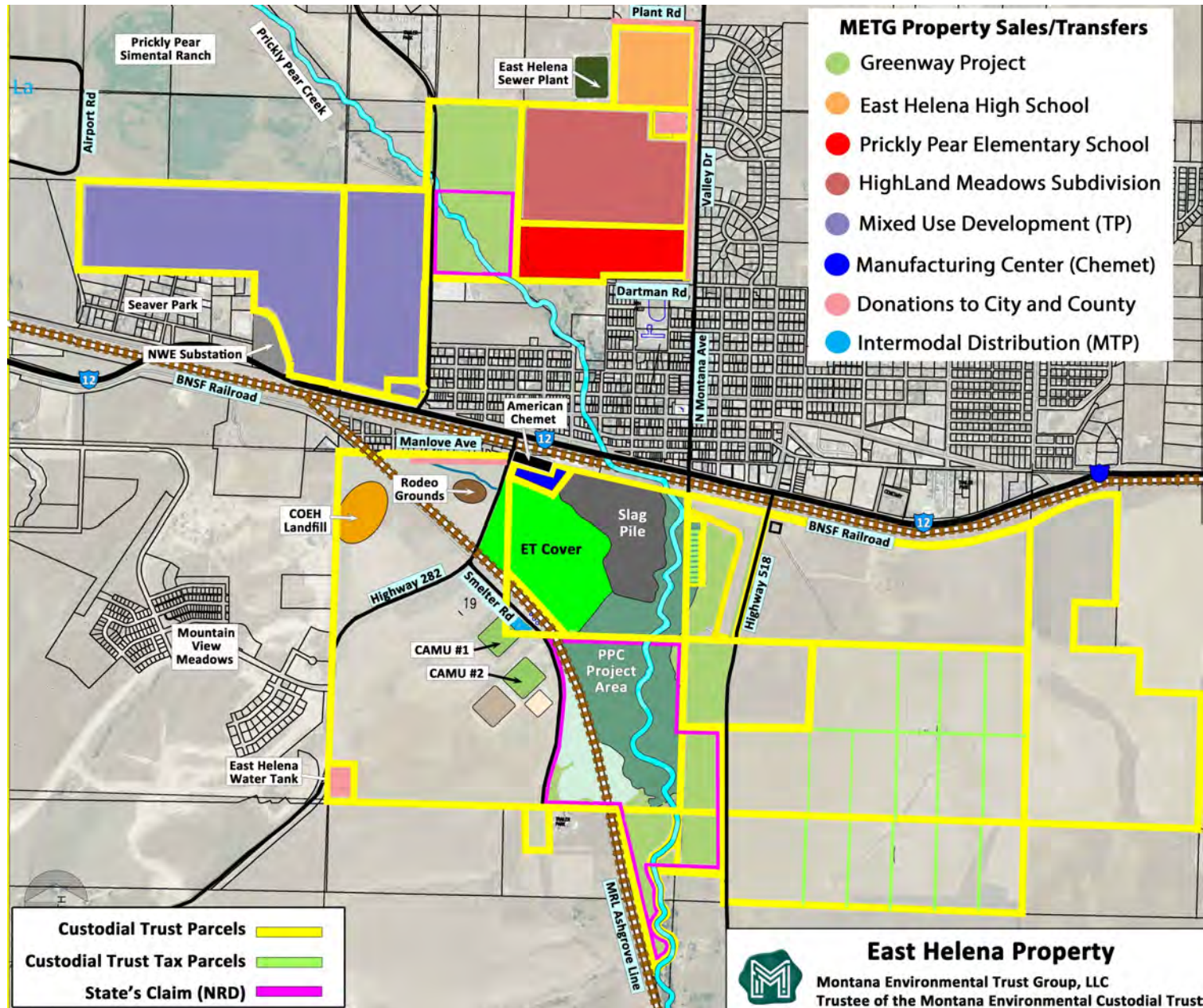
Montana Environmental Trust Group  
(METG)



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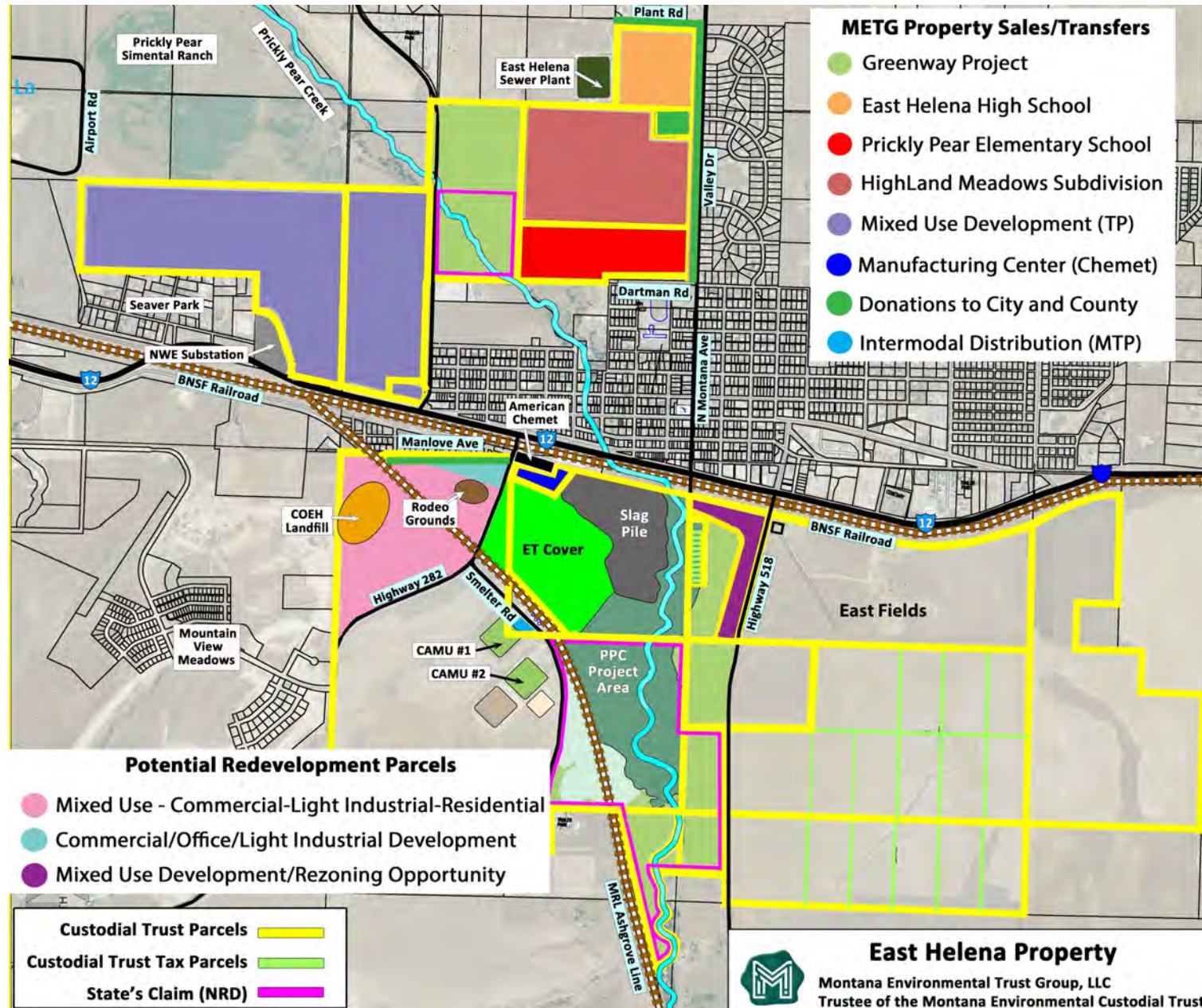


# Custodial Trust Property Redevelopment





# Custodial Trust Property Redevelopment





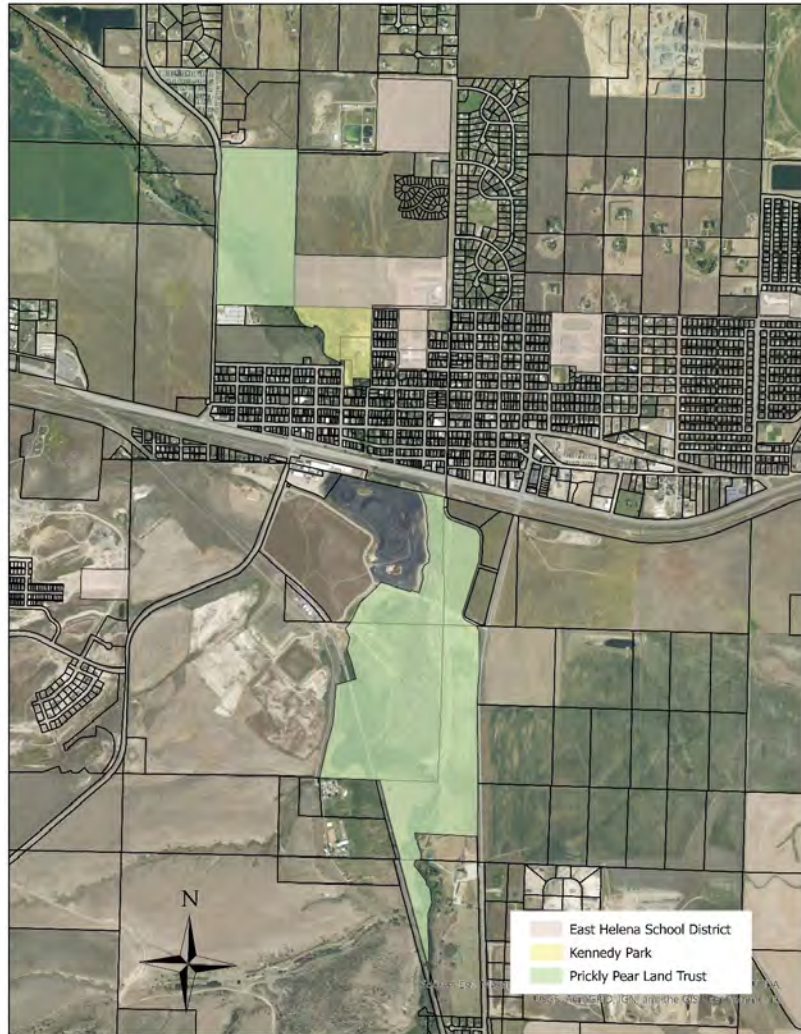
# Greenway Project Update

Mary Hollow/Nate Kopp  
Prickly Pear Land Trust (PPLT)



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# Greenway Project – Prickly Pear Land Trust



## Prickly Pear Land Trust Greenway Project





# Greenway Project – Prickly Pear Land Trust

## Timeline

- 2021-2022 – East Helena Outreach
- January 2022 - East Helena Public Meeting
- Summer 2022 – Trail construction at Wylie Drive property
- Fall 2022 – Trails open to the public
- 2023 – EPA work concludes on Southern parcel
- 2024-2025 – Park and trail development on southern parcel
- 2025 and beyond – Work continues on Greenway project connecting by trail Montana City, East Helena and Helena



Nate Kopp – Program  
and Trails Director  
[nate@pricklypearlt.org](mailto:nate@pricklypearlt.org)  
(406)475-5083

Mary Hollow –  
Executive Director



East Helena Christmas Stroll

# State of Montana Update

Greg Mullen

Natural Resource Damage Program  
(NRDP)



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# State of Montana Natural Resource Damage Program

## Restoration Plan Overview

- NRDP works with METG, DEQ and EPA per the 2009 ASARCO bankruptcy Consent Decree
- The 2009 Consent Decree allocated \$5 million plus interest for natural resource damages to the State for restoration actions;
- In Nov 2019 the State finalized a Restoration Plan (3 major actions)
  1. Recreation replacement action \$3.2 M for the Greenway trail;
  2. Groundwater replacement action: \$2.3M for replacement of the McClellan water tanks;
  3. \$125K for Prickly Pear Creek rewatering. Also, we are working with Fish Wildlife & Parks (FWP) on the transfer of water rights to instream flow.



# East Helena Smelter Public Meeting

Questions and Comments?



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# East Helena Team Contact Information

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