

# Montana Pole And Treating Plant (MPTP)



DEQ/EPA Presentation for  
Citizens Technical Environmental  
Committee (CTEC)  
October 29, 2013



# Purpose of Meeting

- Foster better communication
- Improve responsiveness
- Address CTEC August 28, 2013 email <sup>a</sup>

<sup>a</sup> “The particular focus of the meeting will be to try to “clear the air” regarding what appears to be conflicting data pertaining to emissions/discharges from the Montana Pole Plant. Last spring there was conflicting data presented regarding the nature, extent and potential risk associated with current discharges of toxic materials from the Pole Plant. We thought having a meeting on this topic would afford a good opportunity to discuss the differing data and perhaps reach some consensus as to what is occurring at the Pole Plant.”

– CTEC email August 28, 2013 9:45AM to DEQ/EPA/Magruder@Kirk



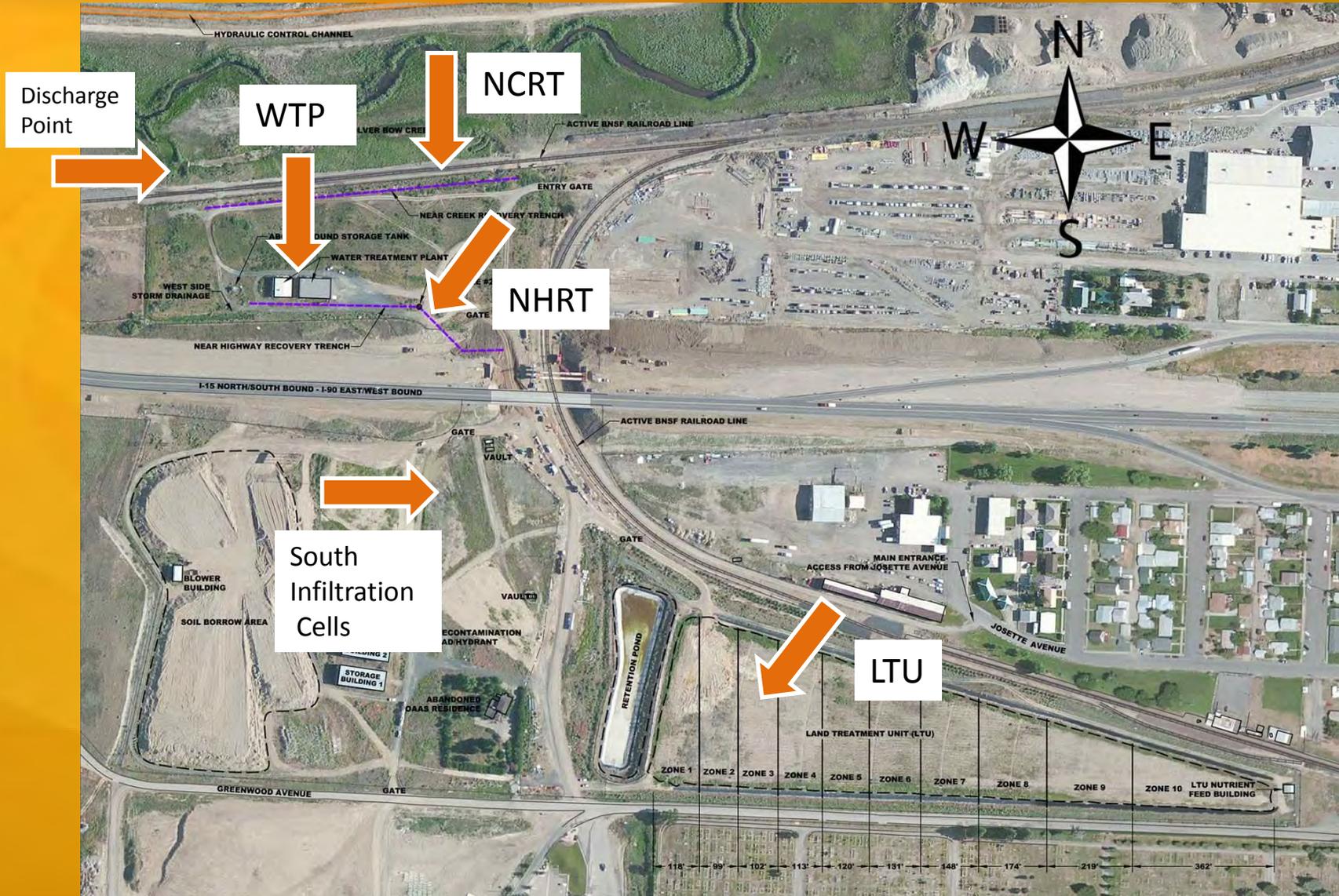
# Outline for Tonight

- 1. Review MPTP site remedial features**
- 2. Respond to CTEC concerns (March meeting)**
- 3. Discuss ROD cleanup levels vs. DEQ-7 standards**
- 4. Review the data – clarify some things**
- 5. Progress report - Discuss redevelopment - Path forward**
- 6. Q&A – Please hold Questions until end**

# Acronyms Used

- COC Contaminant of concern
- DEQ Montana Department of Environmental Quality
- Dioxins Polychlorinated dibenzo-p dioxins
- EPA U.S. Environmental Protection Agency
- Furans Polychlorinated dibenzofurans
- gpm Gallons per minute
- LNAPL Light nonaqueous phase liquid
- LTU Land treatment unit
- MPTP Montana Pole and Treating Plant
- NCRT Near creek recovery trench
- NHRT Near highway recovery trench
- PAH Polycyclic aromatic hydrocarbon
- PCP Pentachlorophenol
- ROD Record of Decision
- TEQ Toxicity equivalence quotient
- WTP MPTP water treatment plant
- WWTP Butte Metro Sewer Treatment Plant

# MPTP Site Map & Features



# 1. Review MPTP Site Remedial Features

## Important site features:

- Two underground trenches:
  - Near highway recovery trench (NHRT)
  - Near creek recovery trench (NCRT)
- Water treatment plant & discharge point
- South side infiltration system
- Land treatment unit (LTU) and retention pond

# NHRT & NCRT



# NHRT and NCRT

- NHRT is first line of defense (in most contaminated area)
- NCRT is second line of defense (minimizes offsite migration)
- High concentrations in NHRT shows collection system is working well
- Samples from NHRT/NCRT are not representative for purpose of compliance monitoring –
- NHRT pumping 120 gpm; NCRT pumping 210 gpm
- Combined pumping from both is about 330 gpm = 175 million gallons a year
- Combined flow from both trenches feed one pipe to water treatment plant
- DEQ now believes all floating products has been collected (goal of ROD) – as no oil or product to collect since 2009



# Installing NHRT



# Installing NCRT



# NHRT (and vicinity) Now



NHRT



Oil tank



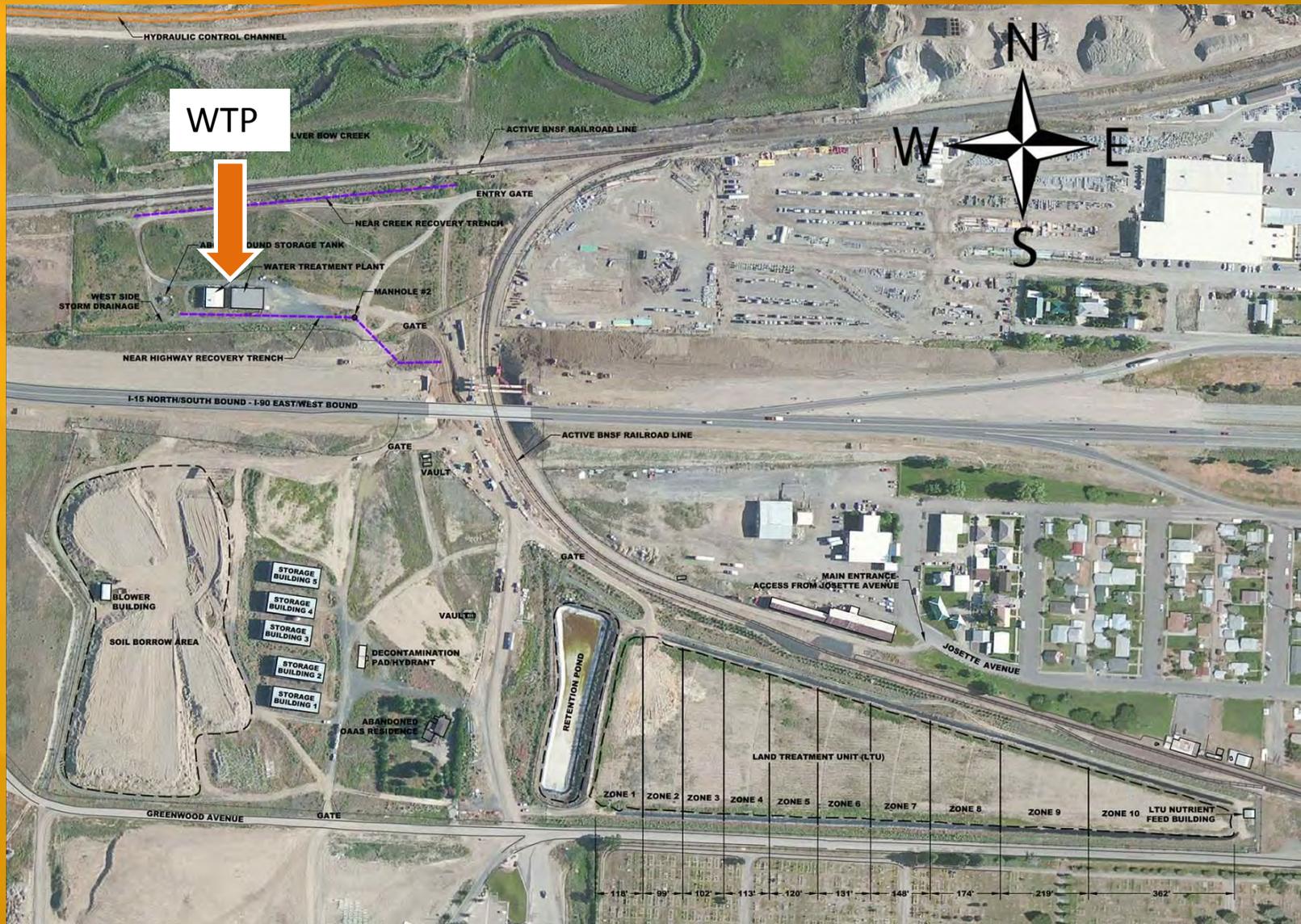
Sump

# ROD Contaminants of Concern (COCs)

- **Primary COC: Pentachlorophenol (PCP)**
- **Other COCs listed in ROD:**
  - Chlorophenols
  - Polycyclic aromatic hydrocarbons (PAH)
  - Polychlorinated dibenzo-p-dioxins (dioxins)
  - Polychlorinated dibenzofurans (furans)
  - metals – As, Cd, Cr, Cu, Pb, & Zn (Plant effluent only, not groundwater or surface water)



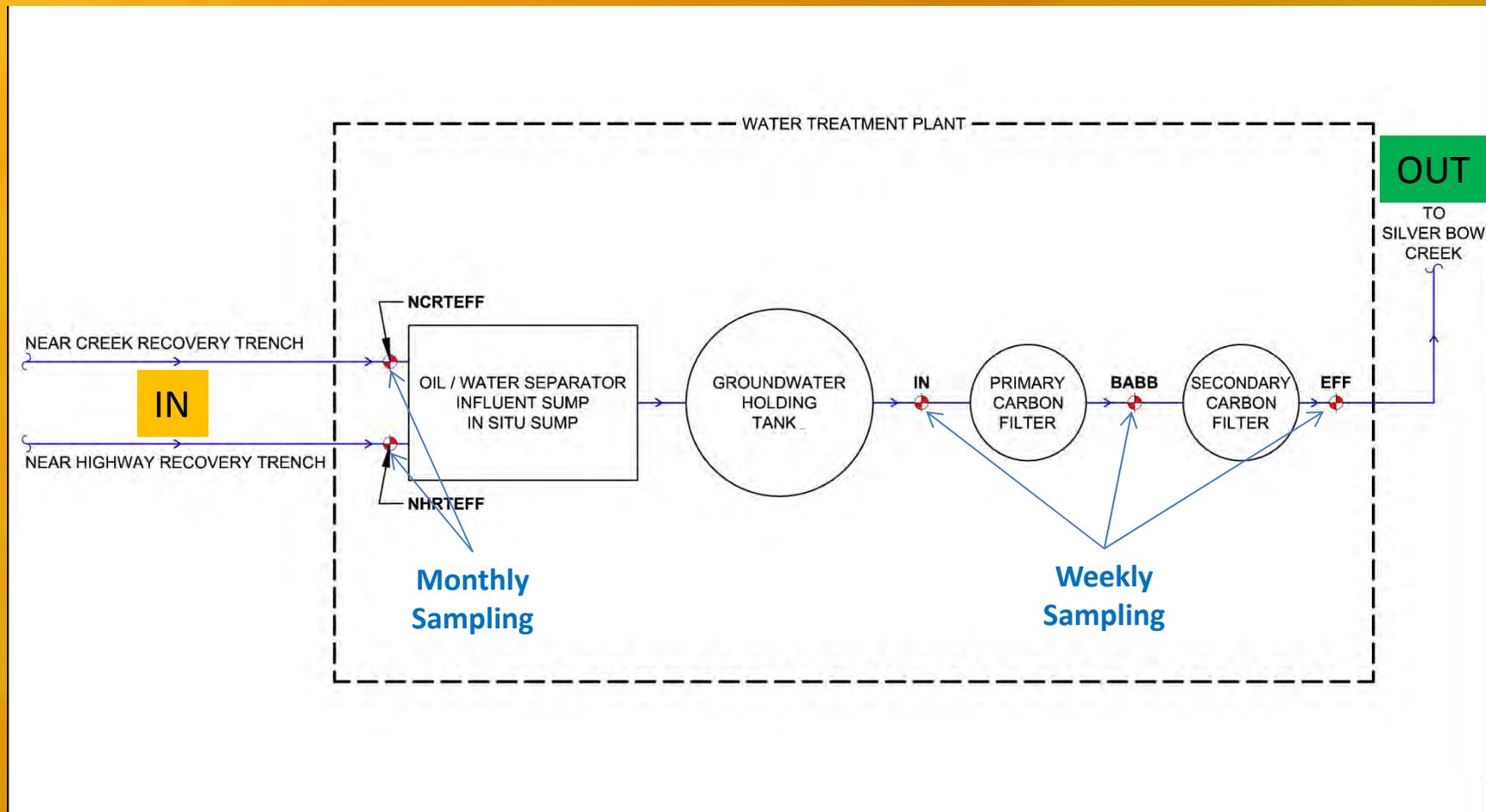
# Water Treatment Plant (WTP)



# Water Treatment Plant (WTP)



# WTP - Flow of Water



# Groundwater Holding Tank

NHRT and NCRT flow to this tank and water is held prior to being treated.



From  
Trenches  
and  
separator



To primary  
carbon units

# Carbon Units - Water Treatment Plant

- Combined flow from NHRT/NCRT (about 330 gpm) feeds one pipe to water treatment plant
- Currently treating about 175 million gallons per year
- 4 carbon units (2 primary and 2 polishing)
- Treated 2.8 billion gallons of water since 1993
- Weekly monitoring of inflow, between carbon, and discharge water quality



# Statistics - Water Treatment Plant

- Removed more than 3,500 pounds of dissolved PCP since 1993
- Removed more than 150 pounds of dissolved PCP in 2012
- Removes PCP to below the ROD cleanup level (1 ug/L)
- Removes dioxin to below the ROD cleanup level (10 pg/L)
- Twelve year average Dioxin TEQ at EFF = 0.57 pg/L (TEQ=toxicity equivalence quotient)
- PAH concentrations routinely below ROD cleanup levels



# Inside Water Treatment Plant



Carbon units scrub contamination



Typical piping

# WTP Discharge Point

Discharge Point  
→



# Water Treatment Plant Discharge Point - 2013



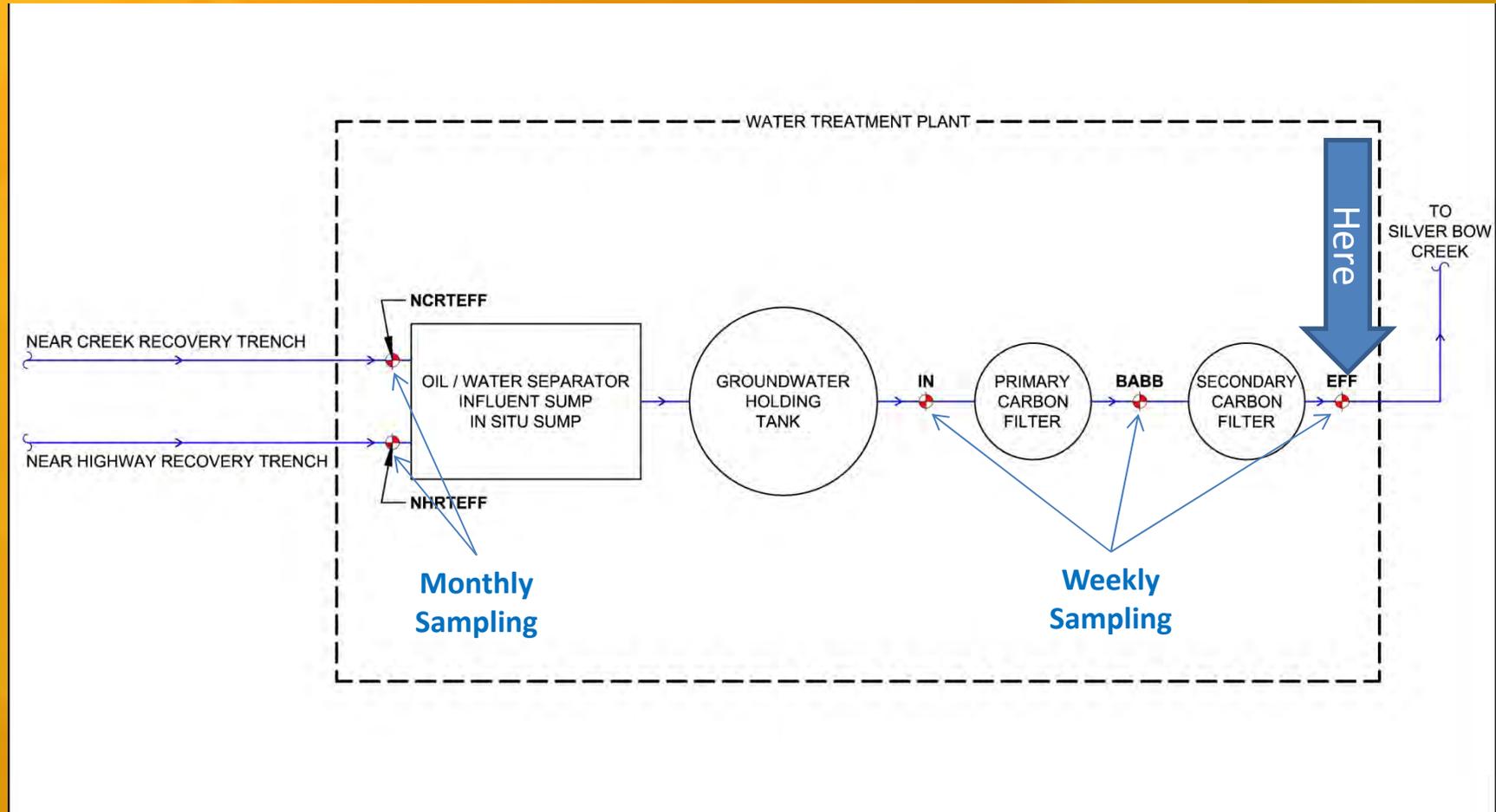
Discharges right here

# Water Treatment Plant Discharge Point

- 6-inch diameter pipe to small tributary of SBC
- Approximate flow ranges from about 200 to 300 gpm
- Plant effluent is monitored for ROD compliance on a [weekly](#) basis
- Abundant aquatic life in discharge channel



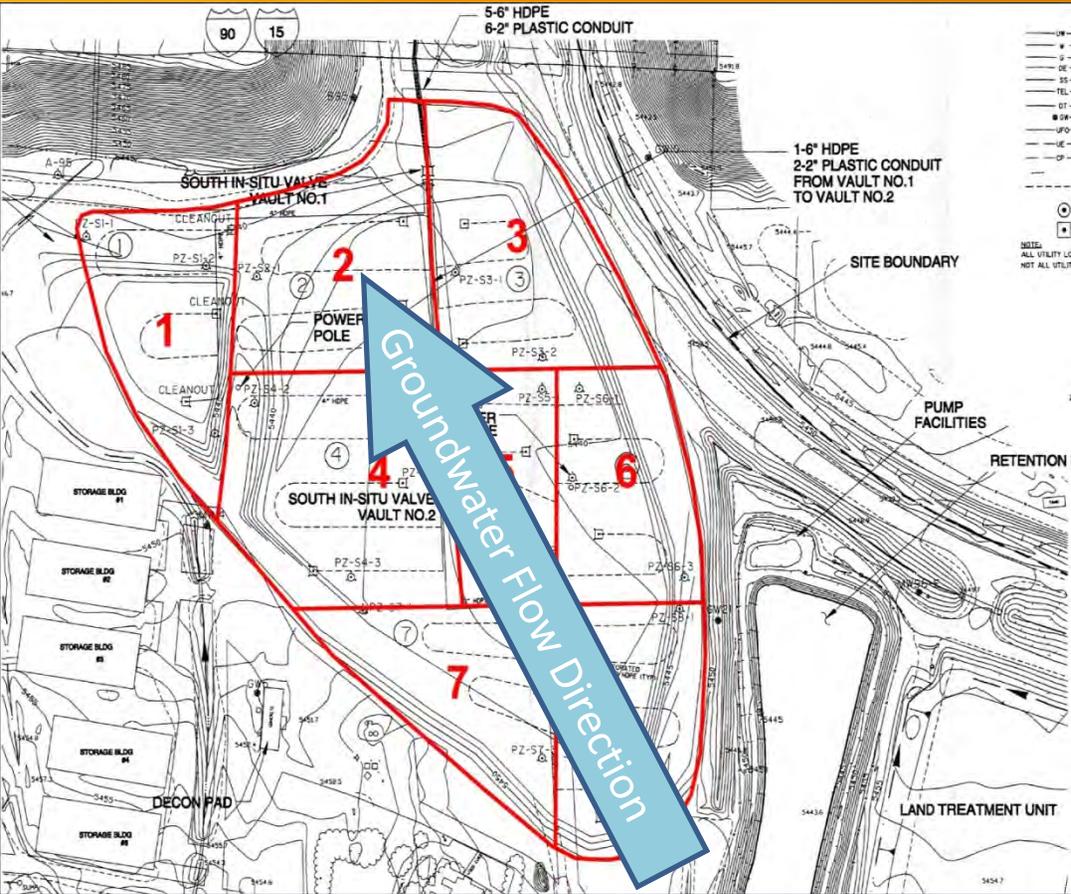
# WTP Treated Effluent Sampling Point



# South Side Infiltration System



# South Side Infiltration System



# South Side Infiltration System

- Engineered infiltration facility
- Piping is all underground; control boxes above ground
- Treated plant effluent is periodically redirected here
- Primarily used to flush the worst contamination out from under the highway
- Groundwater/contaminants collected in NHRT

# Land Treatment Unit (LTU)



# Land Treatment Unit (LTU)



# Land Treatment Unit (LTU)

- Significant biological degradation of PCP, PAHs, etc. (But NOT dioxin)
- Currently approximately 53,000 cubic yards (CY) material in LTU; still being treated
- Tilling aerates soil
- Irrigation improves degradation and surface vegetation
- Irrigation controls surface dust
- Changed operations to address neighbor complaints
- No reported odor problems of recent
- No blowing dust concerns of recent

## Greenwood Ave. LTU Tree-line Mortality Issue

Tree-line sampling conducted in September 2011:

- PCP used as an indicator contaminant
- 10 soil samples analyzed
- 7 samples non-detect for PCP
- 3 samples range 0.27 – 0.29 mg/Kg
- ROD cleanup level = 34 mg/Kg

Conclusion: On-site contamination not responsible for tree mortality



# Greenwood Ave. Tree-line Mortality Issue

- Other possible sources might include:



## 2. Removal vs. Treatment

Some folks say:

It looks like “*nothing is happening*” at this site!

- Excavation of accessible soil contamination is complete
- Treatment is below ground
- There is less visible-to-the-eye progress
- **Conclusion: MPTP is unlike other Superfund sites in Butte**



But progress is happening!

THEN



NOW



### 3. Summary of CTEC concerns (as we understand them)

Per initial planning meeting with CTEC on October 15<sup>th</sup>:

- Better communication – and higher degree of responsiveness needed
- ROD cleanup levels vs. DEQ-7 standards – What's up?
- ROD cleanup levels not always met (i.e dioxin in soil)
- More info on trends in concentration of PCP and dioxins
- More info on dioxin concentrations in Silver Bow Creek
- How do dioxin concentrations in groundwater and soil compare to other urban areas?
- Future uses for MPTP site (considering the presence of dioxin)?

## 4. ROD cleanup levels vs. DEQ-7 standards

- DEQ/EPA recognize there is a difference between ROD cleanup levels vs. DEQ-7 water quality standards
- Re-evaluating **protectiveness** of ROD cleanup levels
- Will determine if DEQ-7 standards are to be adopted
- An EPA risk assessor will conduct this evaluation

# ROD Cleanup Levels vs. DEQ-7 Standards

	Record of Decision				DEQ-7 Criteria	
	PCP (ug/L)	Basis	Dioxin TEQ (pg/L)	Basis	PCP (ug/L)	Dioxin TEQ (pg/L)
Groundwater Cleanup Level	1.0	MCL	30	MCL	1.0	2
Discharge to Surface Water Cleanup Level	1.0	MCL	10	Aquatic Criteria	NA	NA
Surface Water Cleanup Level	1.0	MCL	10	Aquatic Criteria	1.0	0.005

# Dioxin Cleanup Levels at Other NPL Sites

## MPTP AND OTHER PCP AND DIOXIN REMEDIATION SITES IN MONTANA

PENTACHLOROPHENOL							
Medium	Location	Document	Contaminant	Cleanup level	Basis	Cancer risk	Noncancer HQ
Soil (mg/kg)	MPTP	ROD	PCP	34	Risk	1 x 10E-4	<1
	Idaho Pole	ROD	PCP	48	Risk	1 x 10E-6	<1
	KRY – surface	ROD	PCP	12			
	KRY – subsurface	ROD	PCP	0.43			
	White Pine – industrial			PCP	45		
Groundwater (ug/l)	Libby Groundwater	ROD - SD	PCP	36	Risk	1 x 10E-5	
	MPTP	ROD	PCP	1.0	MCL	1.7 x 10E-6	NA
	Idaho Pole	ROD	PCP	1.0	MCL	3 x 10E-6	< 1
	KRY	ROD	PCP	1.0	DEQ-7		
Surface Water (ug/l)	Libby Groundwater	ROD - SD	PCP	1.0	MCL		
	MPTP	ROD	PCP	1.0	MCL	1.7 x 10E-6	<1
Discharge to SW (ug/l)	MPTP	ROD	PCP	1.0	MCL	1.7 x 10E-6	<1
DIOXIN (TEQ)							
Medium	Location	Document	Contaminant	Cleanup level	Basis	Cancer risk	Noncancer HQ
Soil (ug/kg)	MPTP	ROD	Dioxin	0.2	Risk	1 x 10E-4	<1
	Idaho Pole	ROD	Dioxin	1.0	Risk	1 x 10E-6	<1
	KRY – surface – commercial/industrial	ROD	Dioxin	0.103			
	KRY – subsurface – construction	ROD	Dioxin	0.85			
	White Pine – industrial			Dioxin	0.310		
	White Pine – construction worker			Dioxin	0.470		
	Libby Groundwater	ROD – SD		Dioxin	individual		
Groundwater (pg/l)	MPTP	ROD	Dioxin	30	MCL	6.2 x 10E-5	<1
	Idaho Pole	ROD	Dioxin	30	MCL	1.3 x 10E-4	NA
	KRY	ROD	Dioxin	5.61	background		
	Libby Groundwater	ROD - SD	Dioxin	30	MCL		
Surface Water (pg/l)	MPTP	ROD	Dioxin	10	Aquatic criteria	2 x 10E-5	<1
Discharge to SW (pg/l)	MPTP	ROD	Dioxin	10	Aquatic criteria	2 x 10E-5	<1

Notes:

S&W Sawmill Facility – no ROD yet

Frenchtown Mill – RI just completed

KRY Kalispell Pole and Timber, Reliance, and Yale Oil Facilities site

KRY WHO – 1998 (GW)

KRY WHO – 2005 (soils)

ROD Record of Decision

SD Explanation of Significant Differences

# Dioxin Cleanup – Path Forward

- Continuing to follow the ROD
- Cleanup is consistent with other dioxin sites
- Options for dioxin-contaminated soils are limited
- Remedy will need to include **capping** and **land use restrictions**

## 5. Trends in Concentrations Over Time

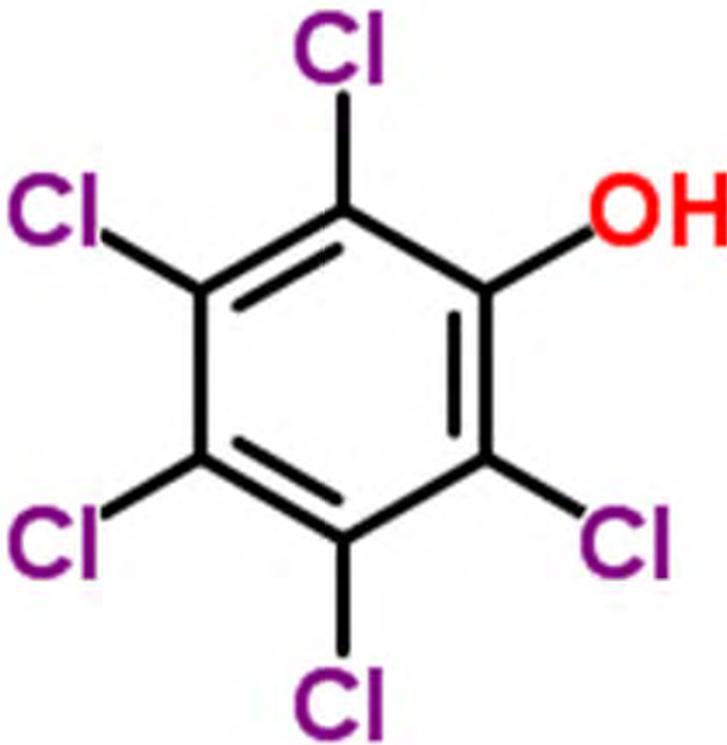
Clarify using data sets for PCP and Dioxins for:

- Groundwater
- Treated plant effluent
- Surface water
- LTU soils

Note: Data for PAHs not presented tonight because concentrations are well below ROD cleanup levels.



# PCP Data



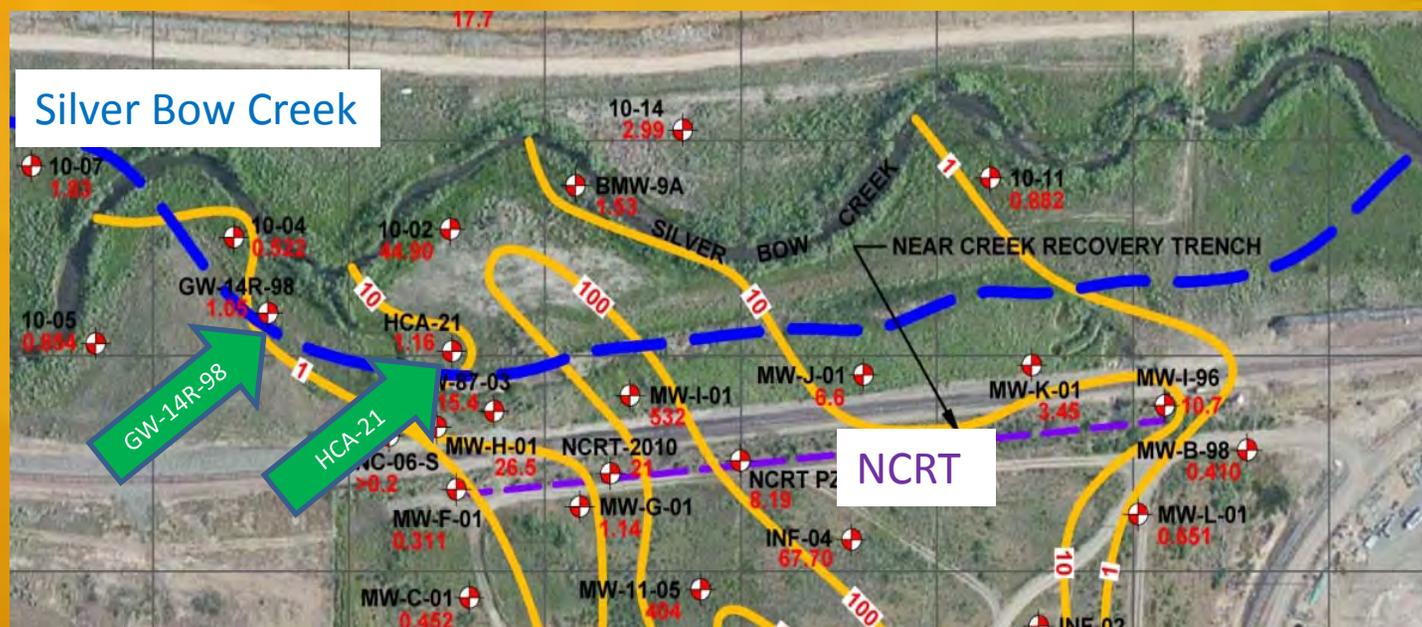
Pentachlorophenol

# PCP in Groundwater

Representative monitoring wells:

**HCA-21** and **GW-14R-98** (good for compliance monitoring)

- Both wells on south bank of current Silver Bow Creek
- Both wells are downgradient of NCRT, but within capture zone
- Both wells have long term records (since 1998)
- GW-14R-98 at leading edge of plume
- HCA-21 historically located along or near plume centerline

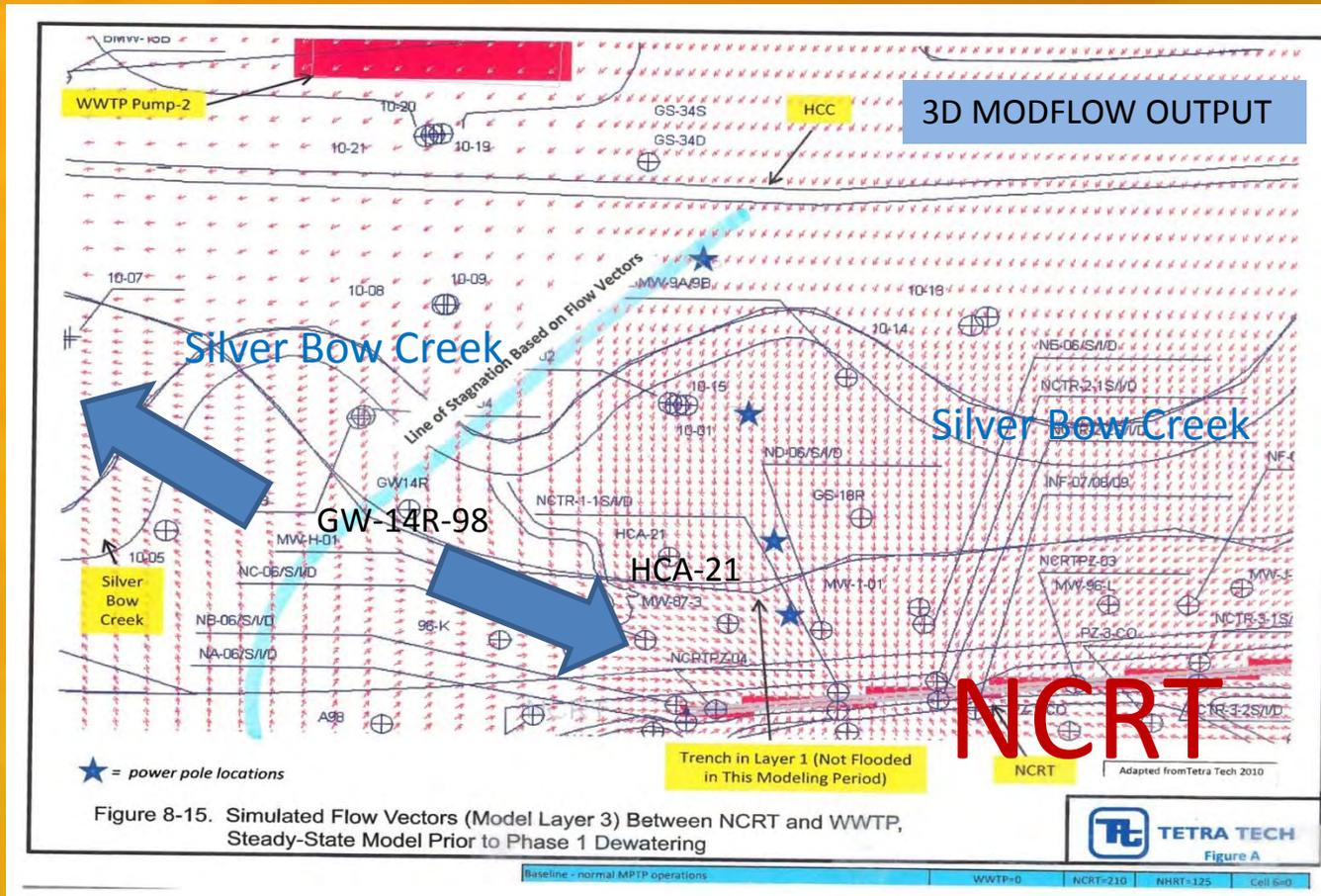


Historic Silver Bow Creek (1993)



August 2012

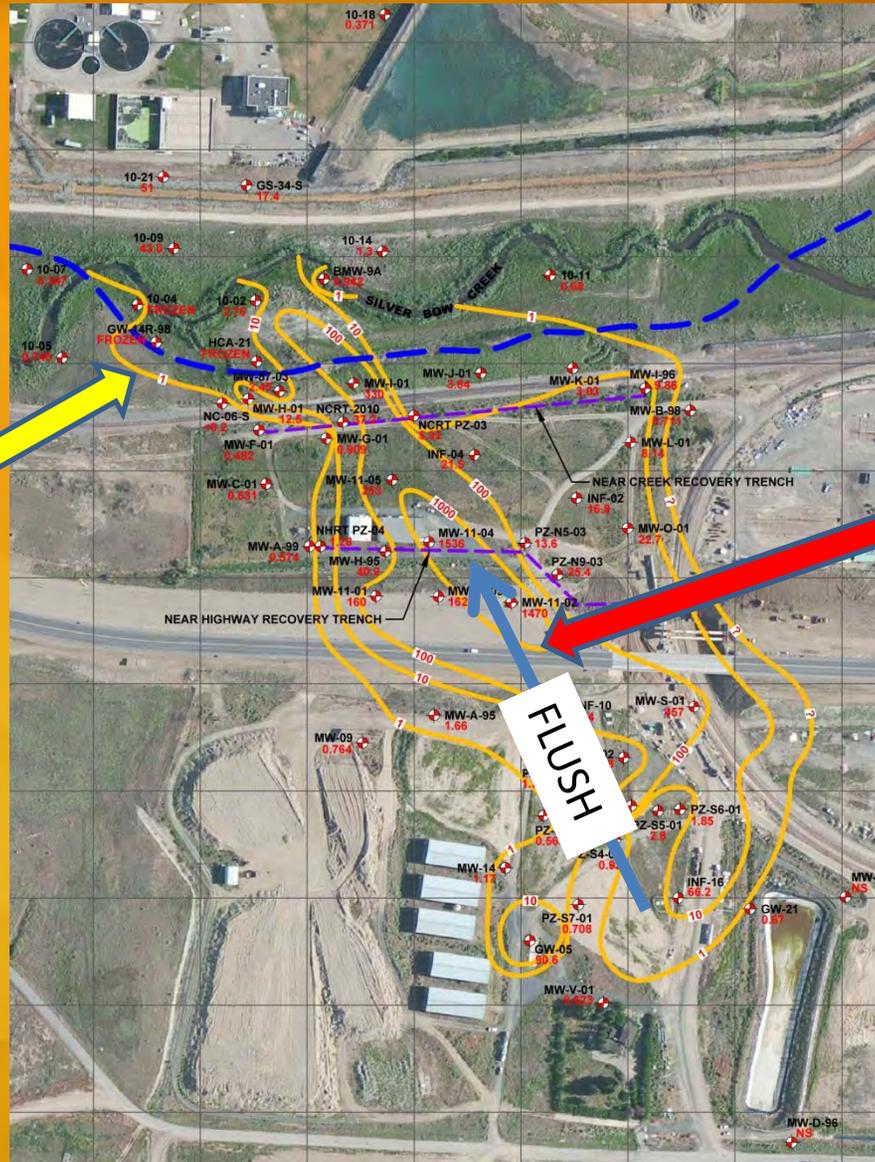
# Modeling: Capture Zone of NCRT



**Conclusion:** NCRT captures essentially contamination south of Silver Bow Creek under normal operating conditions

# PCP Plume – February 2013

Boundary of the PCP plume as defined by the 1 ug/L isocontour



PCP **Hotspot** Under Interstate Highway

- May require P&T for extended period of time
- Currently assessing possible alternatives to treat soils in this area

# PCP in Groundwater

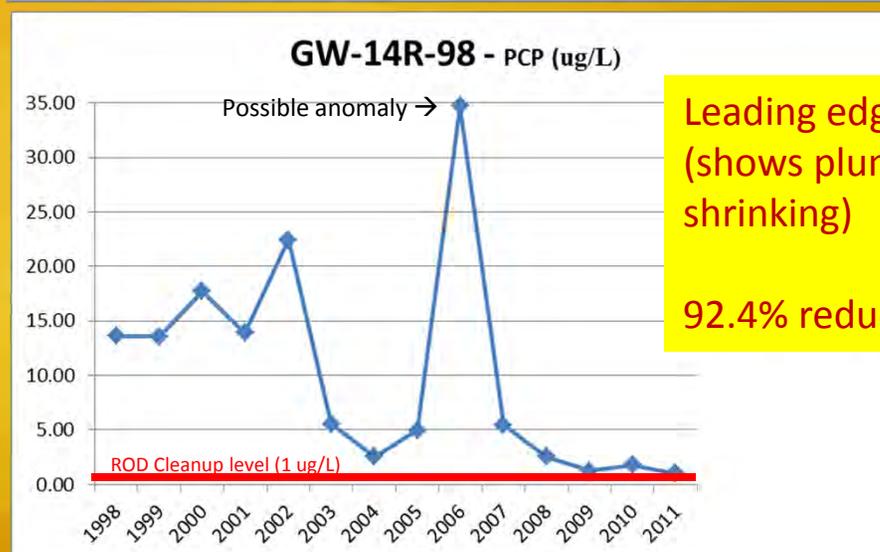
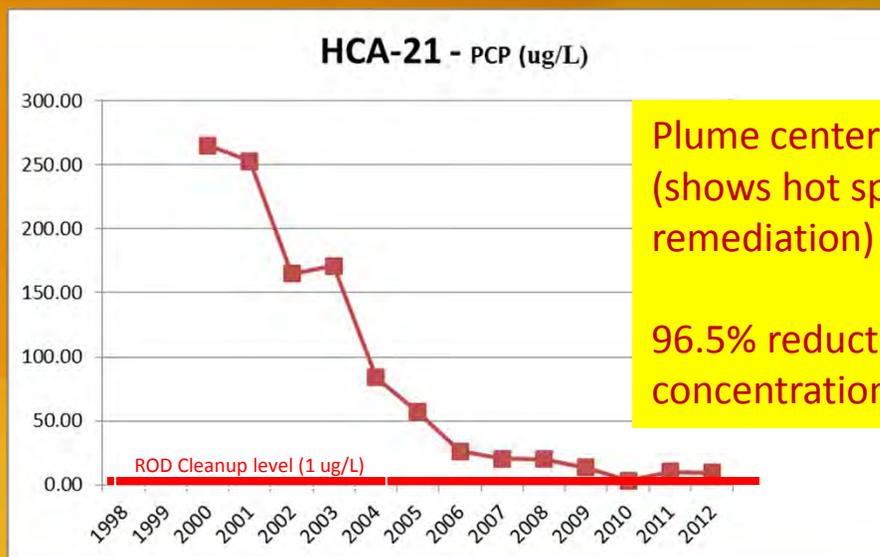
## Average Annual Concentrations Of PCP In Plume Monitoring Wells

DATE	GW-14R-98	HCA-21
	Shallow PCP (ug/L)	Shallow PCP (ug/L)
1998	13.60	
1999	13.56	
2000	17.72	265.00
2001	13.88	253.00
2002	22.45	165.00
2003	5.56	171.00
2004	2.54	84.00
2005	4.95	57.00
2006	34.70	26.04
2007	5.45	20.40
2008	2.51	20.00
2009	1.25	13.45
2010	1.75	3.35
2011	1.03	10.37
2012	1.05	9.35

**Note:**

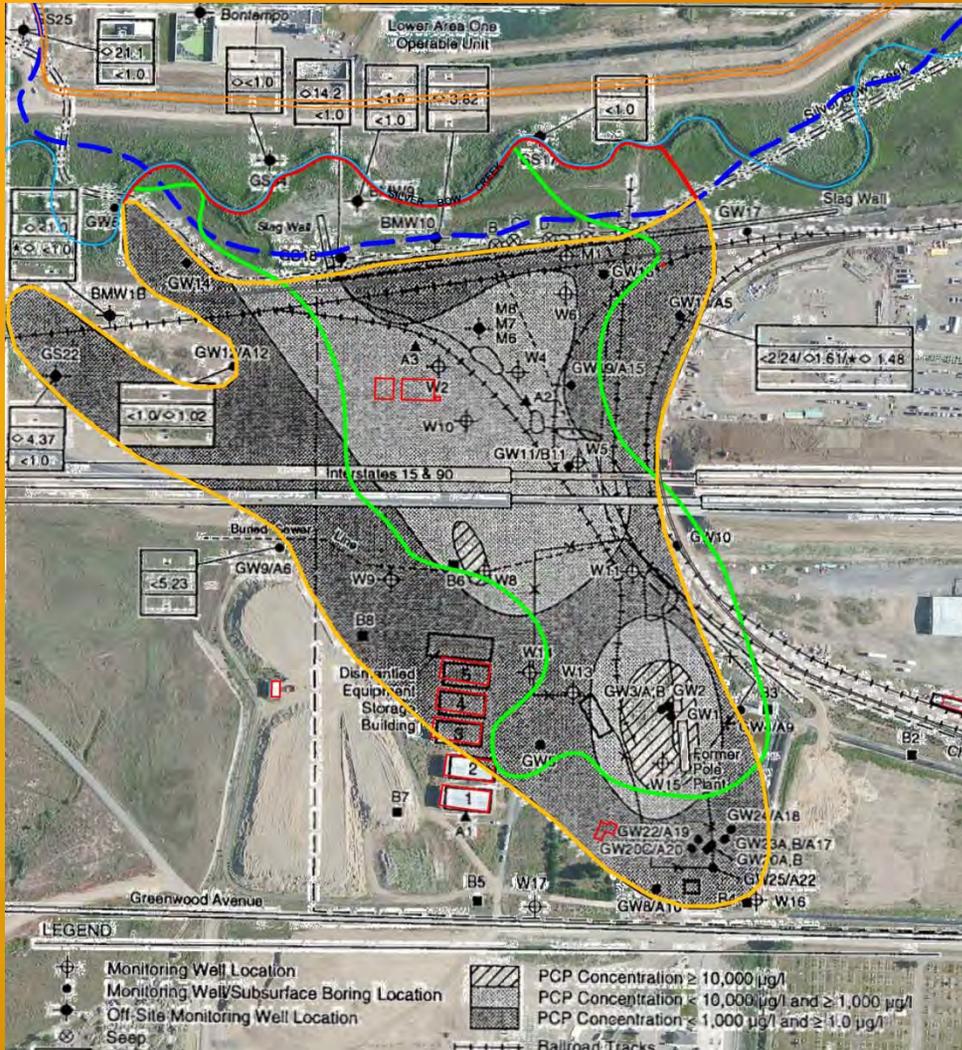
Blank cell = No data available for this date

RED = Exceeds 1 ug/L groundwater cleanup level



# Plume Area Comparison (PCP) 1993 vs. 2013

## RESULTS OF EFFORTS TO DATE:



1993: ~ 42 acres

2013: ~ 24 acres

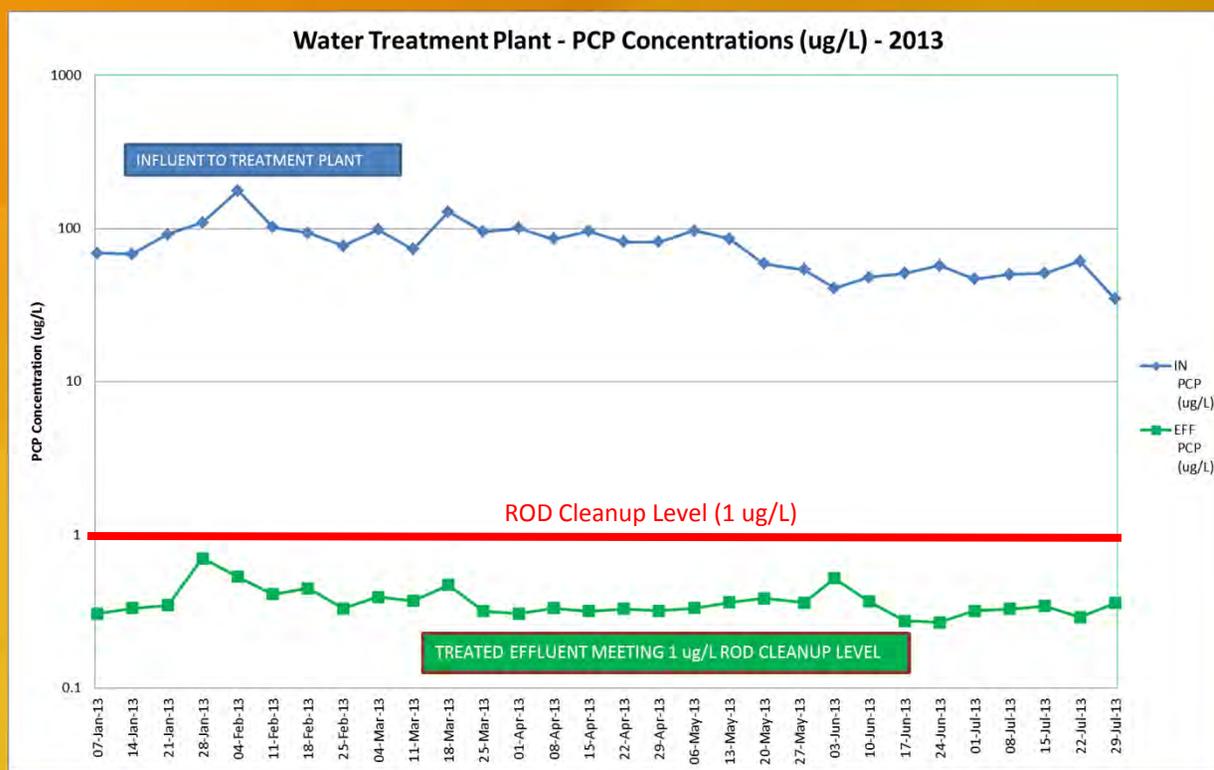
42% decrease in  
plume area



# PCP in MPTP Effluent

1. Graph shows weekly data for 2012 – Log Scale 0.1 to 1,000 ug/L
2. With few exceptions, plant effluent always meets the ROD cleanup level (1 ug/L)

Date Sampled	IN PCP (ug/L)	EFF PCP (ug/L)	ROD Cleanup Level (ug/L)
07-Jan-13	68.5	0.306	1.0
14-Jan-13	67.8	0.332	1.0
21-Jan-13	91.2	0.347	1.0
28-Jan-13	108	0.702	1.0
04-Feb-13	176	0.532	1.0
11-Feb-13	101	0.408	1.0
18-Feb-13	93	0.449	1.0
25-Feb-13	76.5	0.33	1.0
04-Mar-13	97.9	0.394	1.0
11-Mar-13	72.8	0.371	1.0
18-Mar-13	128	0.472	1.0
25-Mar-13	94.5	0.318	1.0
01-Apr-13	100	0.306	1.0
08-Apr-13	84.9	0.332	1.0
15-Apr-13	95.8	0.318	1.0
22-Apr-13	81.2	0.328	1.0
29-Apr-13	81.1	0.32	1.0
06-May-13	96.5	0.333	1.0
13-May-13	85.4	0.362	1.0
20-May-13	58.2	0.384	1.0
28-May-13	53.4	0.36	1.0
03-Jun-13	40.2	0.52	1.0
10-Jun-13	47.6	0.367	1.0
17-Jun-13	50.8	0.274	1.0
24-Jun-13	56.9	0.268	1.0
01-Jul-13	46.4	0.32	1.0
08-Jul-13	49.7	0.328	1.0
15-Jul-13	50.6	0.344	1.0
22-Jul-13	60.6	0.29	1.0
29-Jul-13	34.4	0.359	1.0



Exceptions to this trend Since January 2010:

5/3/2010	1.12 ug/L	(Due to rigorous backwashing of carbon unit)	4/4/2011	2.54 ug/L	(Due to rigorous backwashing of carbon unit)
6/28/2010	1.12 ug/L	(Due to rigorous backwashing of carbon unit)	4/11/2011	1.16 ug/L	(Due to rigorous backwashing of carbon unit)
9/20/2010	1.46 ug/L	(Due to rigorous backwashing of carbon unit)	6/13/2011	15.7 ug/L	(Major flood event and processed 356 ug/L from retention pond)
9/27/2010	1.42 ug/L	(Due to water line break south of highway)	6/25/2012	1.03 ug/L	(Due to mild backwashing of carbon unit)

# PCP in Surface Water – Station Locations



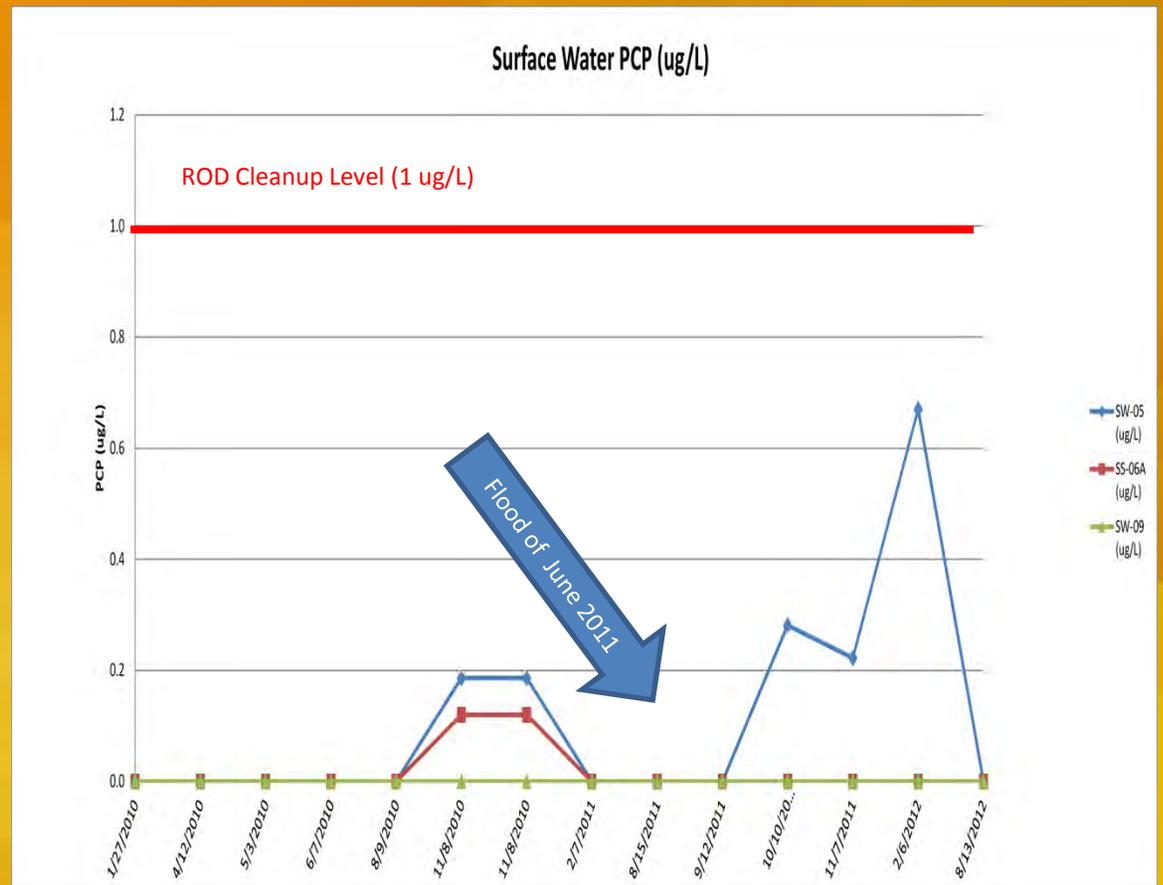
Figure 4.1 Surface Water Stations.dwg - DWH - 03/21/2013

# PCP in Surface Water

1. Graph shows Monthly data for 2010 through 2012 – Linear Scale 0.0 to 1.2 ug/L
2. Surface water in SBC consistently meets the ROD cleanup level (1 ug/L)

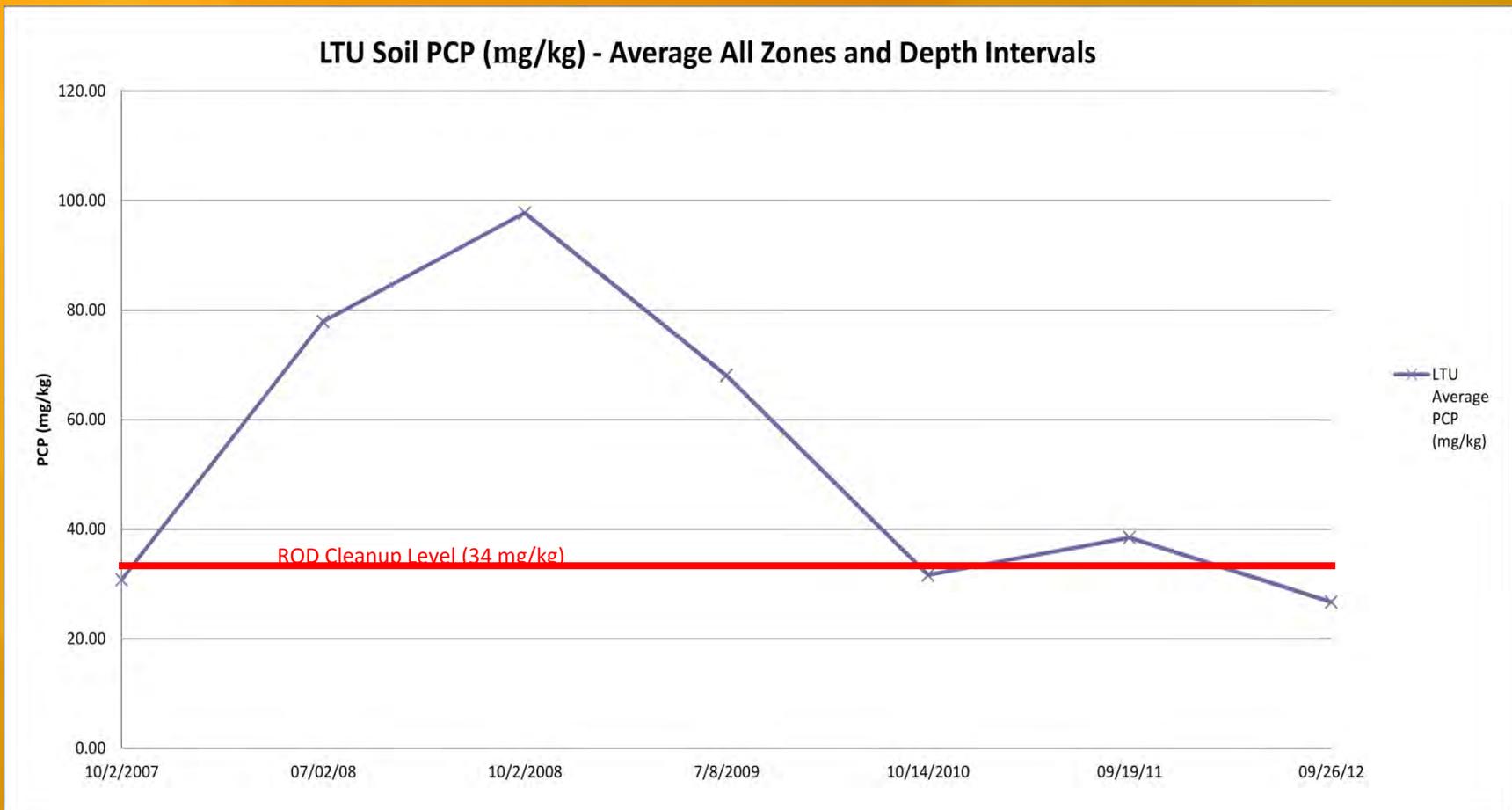
HISTORICAL CONCENTRATIONS OF PCP FOR SURFACE WATER SAMPLES (ug/L)

Sample Date	SW-05 (ug/L)	SS-06A (ug/L)	SW-09 (ug/L)	ROD Cleanup Level (ug/L)
1/27/2010	<0.2	<0.2	<0.2	1.0
4/12/2010	<0.2	<0.2	<0.2	1.0
5/3/2010	<0.2	<0.2	<0.2	1.0
6/7/2010	<0.2	<0.2	<0.2	1.0
8/9/2010	<0.2	<0.2	<0.2	1.0
11/8/2010	0.186	0.120	<0.2	1.0
11/8/2010	0.186	0.120	<0.2	1.0
2/7/2011	<0.2	<0.2	<0.2	1.0
8/15/2011	<0.2	<0.2	<0.2	1.0
9/12/2011	<0.2	<0.2	<0.2	1.0
10/10/2011	0.28	<0.2	<0.2	1.0
11/7/2011	0.22	<0.2	<0.2	1.0
2/6/2012	0.67	<0.2	<0.2	1.0
8/13/2012	<0.2	<0.2	<0.2	1.0

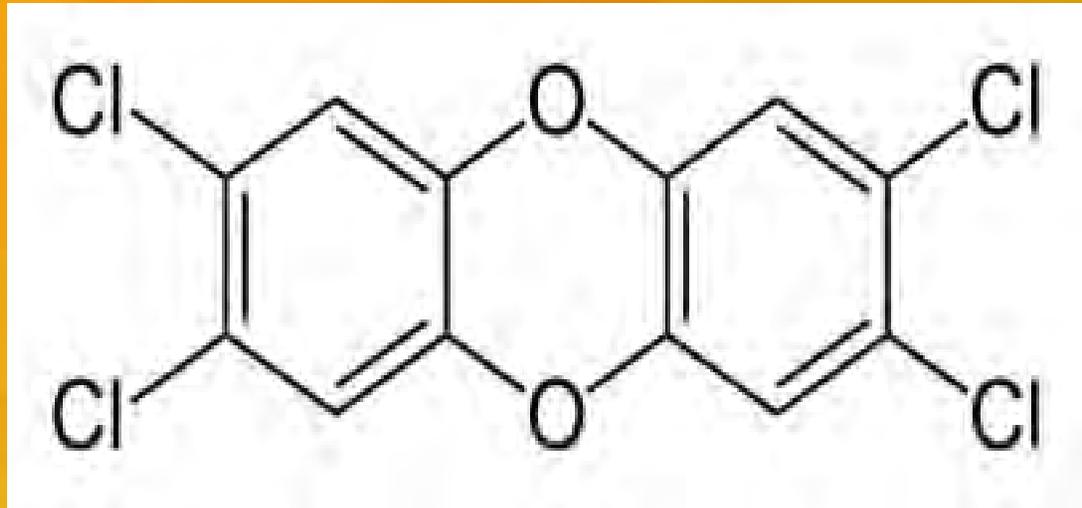


# PCP in LTU Soils

Graph shows annual data since 2007 offload – Linear Scale



# Dioxin Data



Polychlorinated dibenzo-p-dioxins

Example only; many isomers exist

# Dioxin in Groundwater

HISTORICAL CONCENTRATIONS OF DIOXIN (TEQ) FOR GROUNDWATER SAMPLES (pg/L)

Sample Date	GW-12 (pg/L)	GW-14R-98 (pg/L)	INF-04 (pg/L)	INF-05 (pg/L)	INF-06 (pg/L)	MW-B-98 (pg/L)	MW-D-96 (pg/L)	MW-E-01 (pg/L)	MW-L-96 (pg/L)	MW-U-01 (pg/L)	MW-V-01 (pg/L)	NWW (pg/L)	ROD Cleanup Level (pg/L)
8/13/2001					3.83			0.077	0.021				30.00
8/12/2002					0.20			0.21	0.17				30.00
8/4/2003					0.049			0.11	0.00				30.00
8/2/2004					0.70			43.45	0.00				30.00
8/1/2005					0.092			2.695	0.53				30.00
8/21/2006	0.079		12.92	0.00	0.072	0.078	0.092	59.63	0.00				30.00
8/26/2007	0.28		0.69	0.07	0.00	0.00	0.00	0.10	0.00				30.00
8/25/2008	0.00		12.64	0.08	0.00	0.00	0.650	0.13	0.00				30.00
8/10/2009		0.00	0.14			0.00				0.00			30.00
8/16/2010		0.00	45.0			0.00				0.00			30.00
8/15/2011		1.05	4.09			0.009					0.028	0.017	30.00
8/13/2012		0.12	27.50			0.104					0.033	0.074	30.00
8/12/2013													30.00

- Collected 57 samples from 12 wells over past 13 years at wide variety of locations
- 95% of the data met the 30 pg/L ROD groundwater cleanup level

These wells are downgradient of NCRT

INF-04 and MW-E-01 are captured by NCRT

# Dioxin in Groundwater

## Important points to consider:

- Collected 57 samples from 12 wells over past 13 years at wide variety of locations
- 95% of the data met the ROD groundwater cleanup level (30 pg/L)
- Only 2 wells (MW-E-01 and INF-04) showed historic exceedences but recently meet the cleanup level
- Only 3 samples exceeded the ROD cleanup level
- Both wells that exceeded the ROD cleanup level are within the capture zone of the NCRT
- Wells downgradient of the NCRT (i.e. GW-14R-98 and MW-L-96) exhibited low or ND concentrations
- **Conclusions:**
  - \*No discrete plume of dioxin in groundwater
  - \*Dioxin in groundwater is not moving off site



# Dioxin at Water Treatment Plant

HISTORICAL CONCENTRATIONS OF DIOXIN (TEQ) FOR WTP SAMPLES (pg/L)

Sample Date	NHRT Effluent (pg/L)	NCRT Effluent (pg/L)	WTP Influent (pg/L)	WTP Treated Effluent (pg/L)	ROD Cleanup Level (pg/L)
8/13/2001	0.46	0.92	2.03	0.24	10.00
2/4/2002	0.46	0.16	3.21	0.13	10.00
8/12/2002	0.55	1.19	1.53	0.21	10.00
2/3/2003	0.27	4.17	2.16	0.69	10.00
8/4/2003	0.23	2.16	1.57	0.30	10.00
2/2/2004	0.15	0.83	0.85	0.14	10.00
8/2/2004	0.22	3.09	1.40	0.56	10.00
8/8/2005	0.76	1.29	19.50	1.28	10.00
2/6/2006	0.21	0.85	2.78	1.00	10.00
8/21/2006	0.21	0.27	0.77	2.86	10.00
8/27/2007	0.09	0.81	0.00	0.31	10.00
8/26/2008	0.17	1.58	0.56	0.17	10.00
8/10/2009	0.62	3.92	1.80	0.18	10.00
8/16/2010	11.20	5.84	4.40	0.58	10.00
8/15/2011	0.19	0.19	0.39	0.08	10.00
8/13/2012	22.70 <sup>a</sup>	12.10	7.26	0.44	10.00

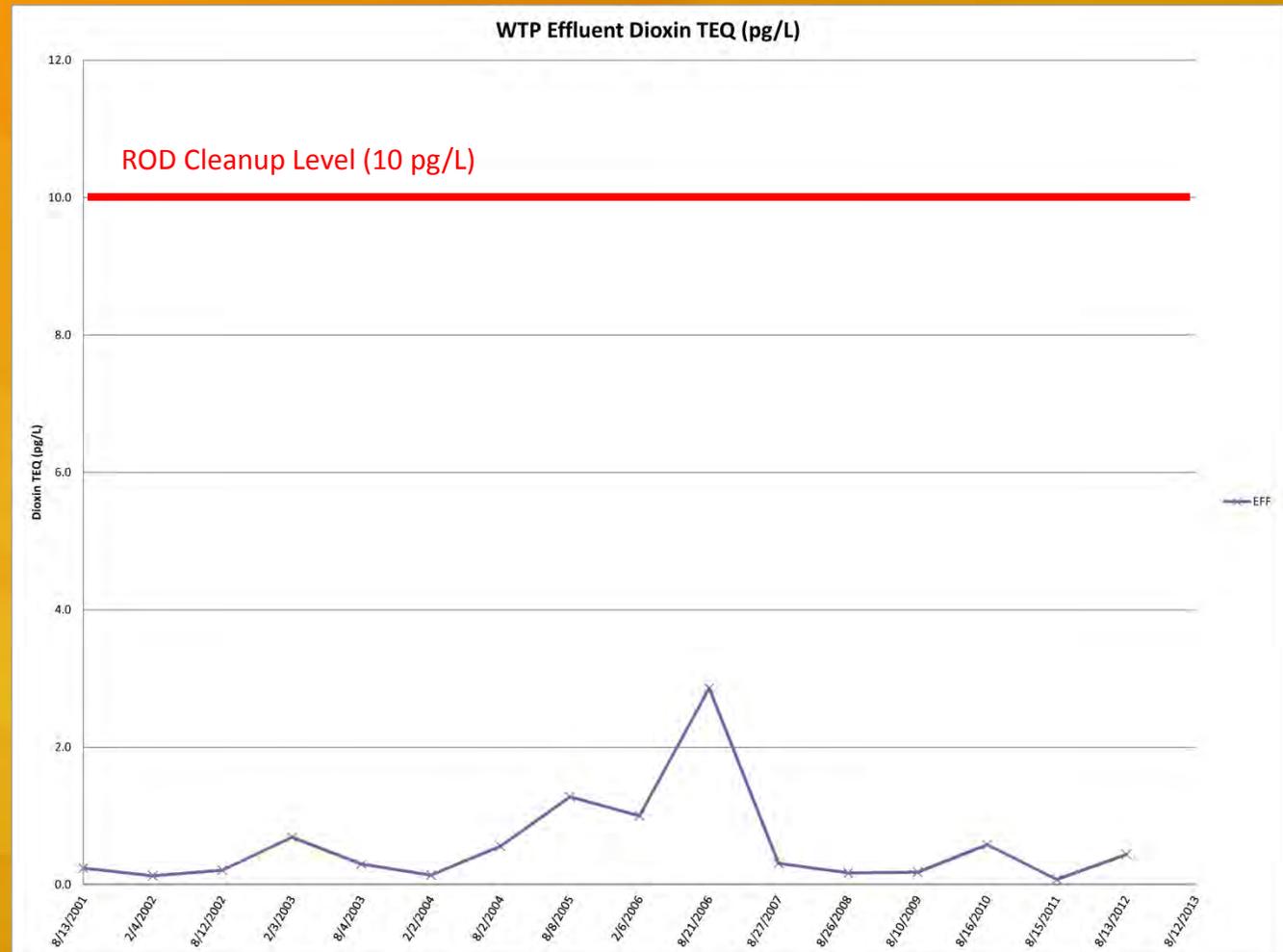
**Conclusion: WTP effluent always meets ROD cleanup level for dioxin**

a vigorous flushing under highway conducted to treat soils in this area

# Dioxin in MPTP Effluent (EFF)

1. Graph shows annual data since 2001 – Linear scale 0.0 to 12.0 pg/L

1. Plant effluent consistently meets the ROD cleanup level (10 pg/L)



# Dioxin in Silver Bow Creek

HISTORICAL CONCENTRATIONS OF DIOXIN (TEQ) FOR SURFACE WATER SAMPLES (pg/L)

Sample Date	SW-05 (pg/L)	SS-06A (pg/L)	SW-09 (pg/L)	WTP EFF	ROD Cleanup Level (pg/L)
8/21/2006	0.00	NS	0.00	2.86	10.00
8/26/2007	0.77	NS	NS	0.31	10.00
8/25/2008	0.00	NS	0.05	0.17	10.00
8/10/2009	0.00	NS	0.00	0.18	10.00
8/16/2010	0.00	NS	0.00	0.58	10.00
8/15/2011	0.08	0.11	0.02	0.08	10.00
8/13/2012	0.35	0.04	0.03	0.44	10.00
8/12/2013	0.23	0.03	1.86	0.37	10.00

## Conclusions:

- Apparently an upstream source of dioxin – not related to MPTP
- All samples are below the ROD Cleanup Level
- Note: 57% of upstream dioxin results are greater than DEQ-7 (0.005 pg/L)

# Dioxin in Silver Bow Creek

1. Graph shows annual data since 2006 - Linear Scale 0.0 to 12 pg/L
2. Consistently met ROD cleanup level (10 pg/L)
3. Recent sampling after heavy rain showed dioxin in upstream (SW-09) sample (1.86 pg/L)



# Dioxin in LTU Soils

- Dioxin concentrations were above ROD cleanup levels for soils offloaded in 2005 and 2007
- Anticipate final offload will **NOT** meet ROD cleanup level for dioxin in soil (0.2 ug/kg)
- Remedy must include a clean soil cap to isolate contamination
- Remedy must include institutional controls to restrict some future land uses
- **Dioxin is NOT mobile and does NOT leach from soil**



NOTE: Use of **white-rot fungi** not mentioned in ROD..... no indication (so far) that it would be effective for MPTP

Sample Date	LTU Average (ug/kg)	ROD Cleanup Level (ug/kg)
10/2/2007	2.2009	0.20
9/19/2011	0.4023	0.20
9/26/2012	2.7779	0.20

# “Clear the Air”

- March CTEC meeting notes stated:

“CDM’s Technical Memorandum Vadose Zone Soils Dioxin/Furan Mobility Evaluation, September 27, 2001 concludes dioxins could leach from soil at up to 30 pg/L.”

- CDM report actually says:

Leaching from soil to groundwater would take at least

“200,000 years.....” (A *very* long time!!)



## CONCLUSIONS:

- Leaching of dioxin is **NOT** the problem it was portrayed to be. But we will need institutional controls and land-use restrictions as part of remedy.
- Dioxin is immobile in soil

# Background Levels of Dioxin TEQ In Soils

Type of Area	Dioxin Level
Rural Background (US)*	<0.001 - 0.024 ug/kg
Urban Background - (US)*	0.022-0.067 ug/kg
Industrial Background - (US)*	2.192 ug/kg
Rural Background - (MT statewide)**	0.0018 ug/kg
Urban Background - (MT statewide)**	0.0075 ug/kg
MPTP LTU (Average)	1.63 ug/kg
MPTP ROD	0.20 ug/kg

**Notes:**

ND = Not Detected (detection level)

\*1994 Draft Assessment as quoted by Center for Health, Environment & Justice

On the web at:

<http://chej.org/wp-content/uploads/Documents/2010/Dioxin%20Key%20Letters/Background%20Levels%20of>

\*\*Montana Dioxin Background Investigation Report

On the web at:

<http://deq.mt.gov/StateSuperfund/dioxinguide.mcp>

## 6. Progress Report

### Progress of Remediation (since 1993)

- Removed and treated highly contaminated soils (PCP and PAH)
- LTU soil dioxin concentrations exceed the ROD cleanup level (0.2 ug/kg)
- Continued treatment of remaining soils in LTU to remove PCP
- Historically removed appx. 60,000 gallons of contaminated oil
- Eliminated floating product and oils from groundwater
- Eliminated source of oil seeps into creek
- Removed significant amounts of PCP and dioxin from groundwater
- Decrease in area of PCP plume (42% reduction)
- Decrease in PCP concentrations in groundwater near Silver Bow Creek (>90% reduction)
- Now resident populations of terrestrial wildlife and aquatic biota present
- Ready to start thinking about future uses of the site

# For perspective: THEN and NOW

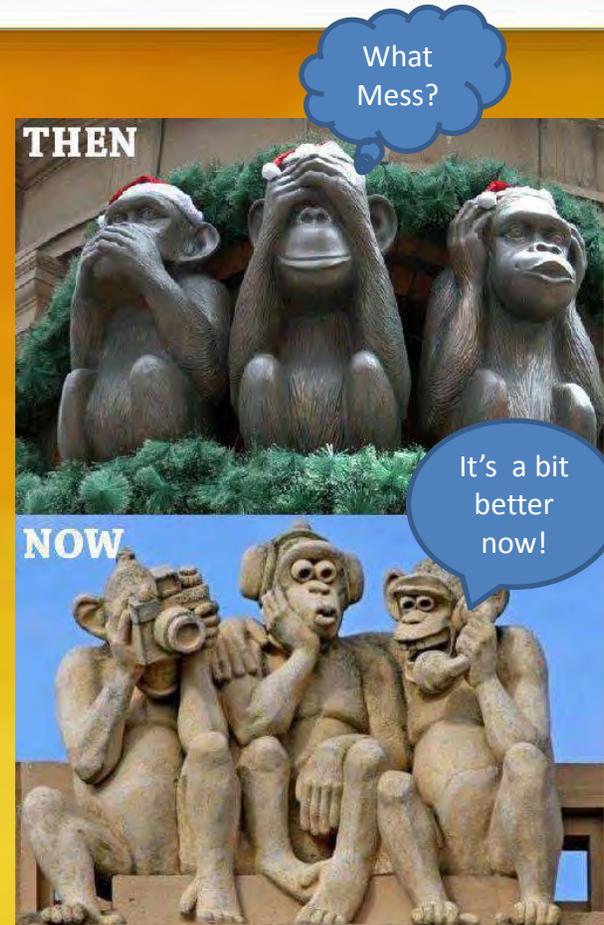
- **Conclusion:**

We've come a long way, but the previous data show we still have work to do at this site!

- **For perspective:**

THEN (1990)...

... and NOW (2013)



**SLIDE SHOW**

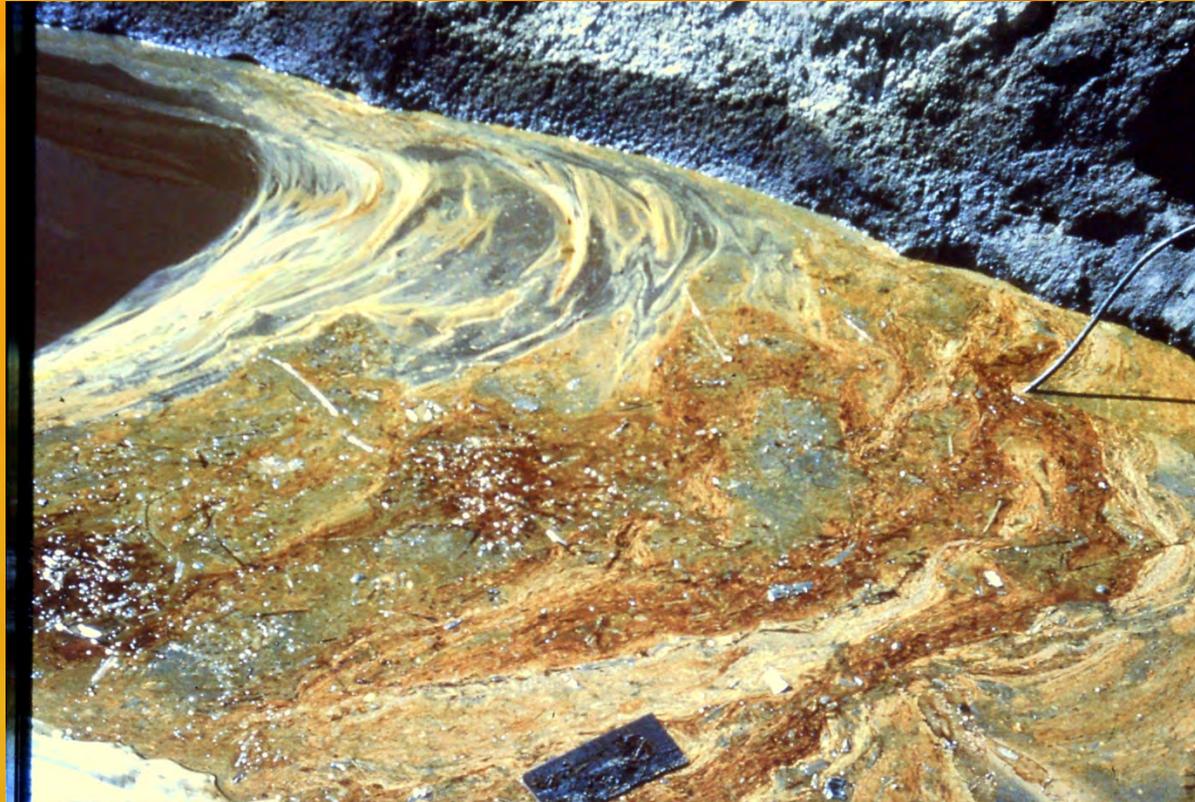


# THEN (1990's)



South side of Montana Pole site in fall of 1999 prior to debris removal and excavation

# THEN (1990's)



Likely a mix of free product, chemical precipitates, and biological material in a recovery trench or pit during the Coast Guard emergency response

## THEN (1990's)



Former treatment chemical storage tanks from the Montana Pole process, probably re-used until 1999 for storage of recovered site free product

## THEN (1990's)



Sorbent pad recovery of free product as a seep along the former Silver Bow Creek, probably during the emergency response or early recovery actions

## THEN (1990's)



Non-PCP containing waste oil drums in former Saw Mill Building. Tested and disposed of at waste oil recycler 1999

# THEN (1990)



Oil recovery belt skimmer operating in a recovery trench, likely during the Coast Guard emergency response

## THEN (1990's)



Former ditch in Montana Pole process area where vessel residual after treating a load of wood products was allowed to flow – “where it ran a short distance across the ground and just disappeared”

**NOW (2013)** – photo courtesy of Tom Bowler, MPTP plant operator



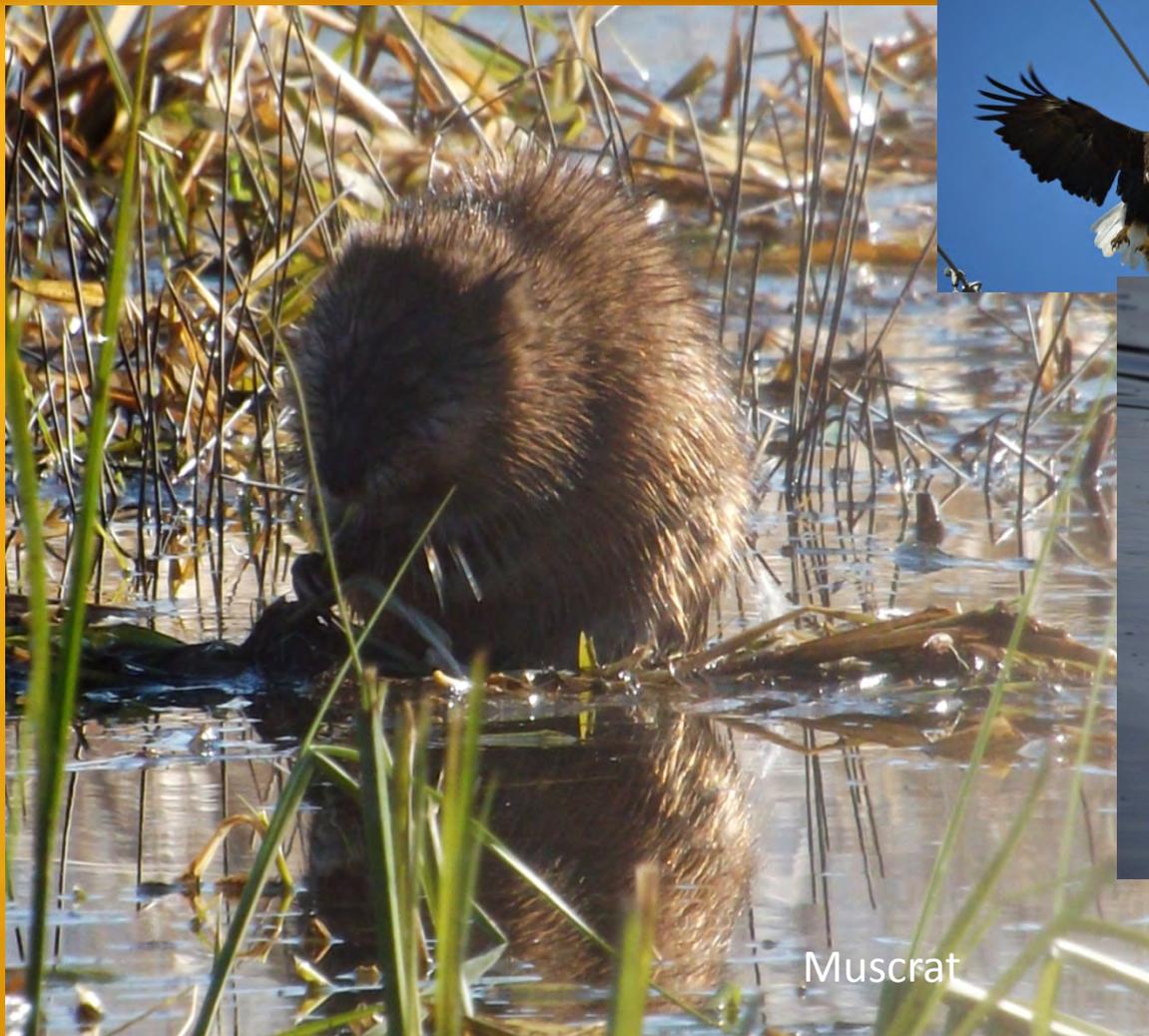
MPTP treated discharge  
into Silver Bow Creek

**NOW (2013)** – *photo courtesy of Tom Bowler, MPTP plant operator*



Fish fry in discharge channel

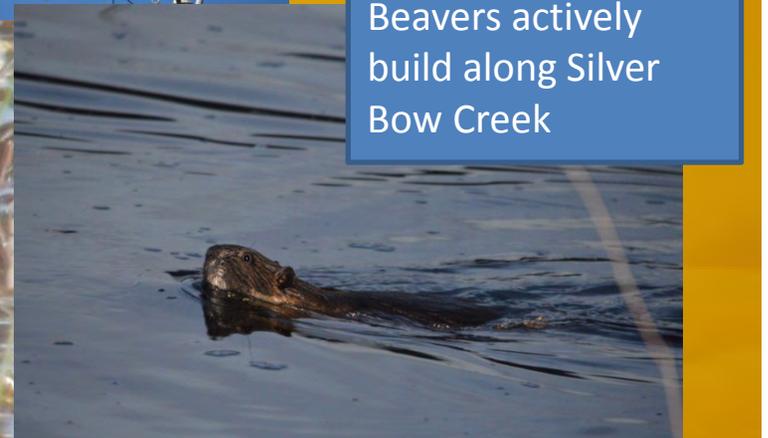
# NOW (2013) – photo courtesy of Tom Bowler, MPTP plant operator



Muskrat



Eagles



Beavers actively build along Silver Bow Creek



Resident deer

# NOW (2013) – photo courtesy of Tom Bowler, MPTP plant operator



Abundant aquatic biota

**NOW (2013)** – *photo courtesy of Tom Bowler, MPTP plant operator*



Mother and goslings on Silver Bow Creek adjacent to MPTP treatment plant

# Redevelopment

- Idaho Pole – (another Montana example)
- Current Thinking
- Path Forward

# Better Communication

- Meetings on October 15<sup>th</sup> and tonight
- Community Involvement Plan
- Updates to web site
- Neighborhood group
- Access to information and data through Tetra Tech

# In Summary:

- With few exceptions, plant effluent always meets ROD cleanup levels for all ROD COCs
- Except for PCP (& 3 dioxin hits) groundwater meets ROD cleanup levels for ROD COCs
- Continue to operate water treatment system as designed for an extended time
- Significant progress made towards remediating soils, groundwater and surface water
- **However, dioxin concentrations in soils will require future institutional controls and land use restrictions**
- Continue to operate LTU until ROD cleanup levels for PCP are met
  - Offload treated LTU soil to MPTP property west of LTU
  - Soil will not likely meet ROD cleanup levels for dioxins
  - Soils will be capped and institutional controls implemented
- Time to start thinking about future uses of the MPTP site

*MPTP has come long way since late 80's, but there is still work to be done*



## 7. Questions and Answers

