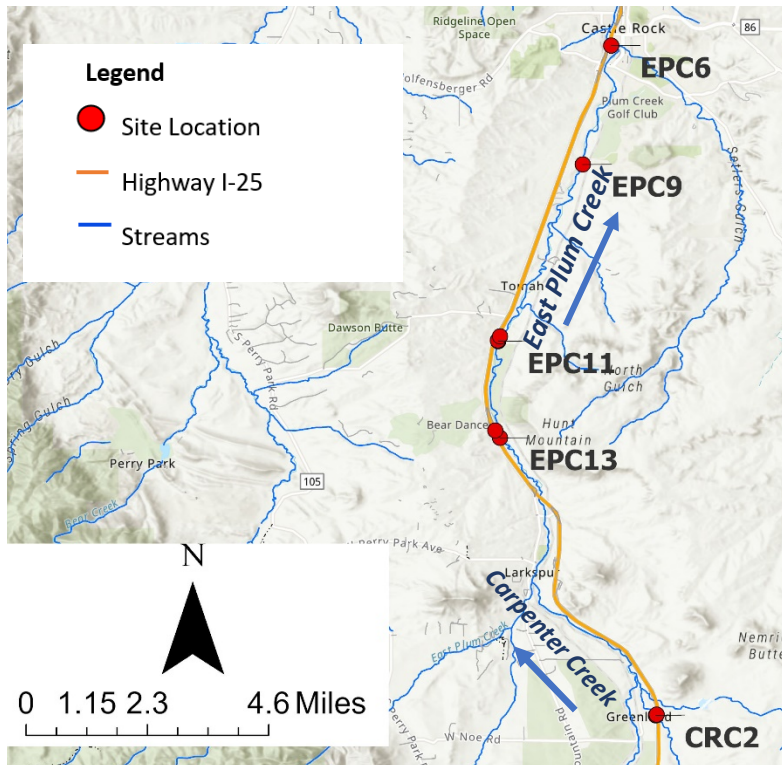


# East Plum Creek Near I-25 and Seller's Gulch 2022

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**Table 1. Site Data**

Site Code	Latitude	Longitude	Site Description
CRC2	104.8510018 W	39.1876644 N	Carpenter Creek at Greenland Ave
CRC2 DP	104.8507288 W	39.1878726 N	Highway I-25 detention pond
CRC2 RO	104.850614 W	39.187771 N	Highway outflow pipes below bridge
EPC13	104.893686 W	39.263728 N	E. Plum Creek below Larkspur
EPC 13 E174	104.89496 W	39.26582 N	Drainage pond off I-25
EPC11	104.8941696 W	39.2902906 N	E. Plum Creek near Brannon Sand and Gravel
EPC11 HP	104.8943215 W	39.2904864 N	Holding pond across access road
EPC 11 BI-25	104.8936827 W	39.2916033 N	Along I-25 near Brannon S & G and HP
EPC9	104.871044 W	39.338722 N	E. Plum Creek at Crystal Valley Parkway
EPC9 RDD	104.871 W	39.339011 N	Erosional ditch downstream from ranch
EPC6	104.8632298 W	39.3713345 N	E. Plum Ck above confluence of Sellers Gulch

### Key Points

- Reduction of As, P, and Tl and increase of Fe and Mn, compared to 2021 data
- Sole presence of phosphorus directly from CRC 2 highway runoff and soil samples
- New presence of chloride and zinc surpassing CDPHE Chronic standards across the board
- Conductivity, alkalinity, and total suspended solids were high at CRC2 and CRC2 DP
- The gulch entering E. Plum Creek at EPC9 has high Fe and Al levels and lower Mn and Zn levels
- Beaver dam caused flow through channel diversion into holding pond with iron flocculant

**Figure 1.** Map of site locations within Chatfield Watershed

**Table 2.** East Plum Creek Water Quality Characteristics 2022

Date	Site ID	Conductivity (µs/cm)	Alkalinity (CaCO <sub>3</sub> mg/L)	Total Suspended Solids (mg/L)	Salt Tracer Flow Rate (cfs)
5/17/2022	CRC2	1400	300	52	N/M
	CRC2 DP	2800	110	530	0.024
	EPC13	510	120	3.0	N/M
	EPC11	660	45	25	N/M
	EPC11 HP	680	70	6.0	N/M
	EPC9	760	65	3.0	N/M
	EPC6	880	260	1.0	N/M
5/20/2022	EPC6	580	82	N/M	2.1
	CRC2 RO	890	180	N/M	0.025
	E174	900	95	N/M	N/M

\*N/M = Not Measured

### Recommendations

- Monitor I-25 runoff for constituents of concern to investigate the impacts on East Plum Creek, including sites upstream of CRC2 and EPC13 E174
- Improve I-25 drainage systems to further decline erosion; erosional controls include wetland development and revegetation at I-25 DP and E174
- Increase preventative highway I-25 cleanup
- Continue monitoring soil sites between EPC11 and EPC6 to better understand non-point sources of Fe, Mn, Zn, and Al
- Sample soil at EPC6 to compare with EPC9
- Evaluate if the residential car lot at EPC9 results in leaching to East Plum Creek

**Table 3.** East Plum Creek Metals, Anions, Pathogen, and Organics Analysis 2022

			Concentrations											
			Metals or Anions (mg/L)							Pathogens (mpn/100 mL)		Organic (mg/L)		
			As	P	Se	Cl <sup>-</sup>	Al	Fe	Mn	Zn	Coliform	<i>E. coli</i>	COD	DOC
EPA	Aquatic Life Chronic [1]		0.15	N/A	N/A	230	N/A	1.0	N/A	0.12	N/A	N/A	N/A	N/A
	Aquatic Life Acute [1]		0.34	N/A	N/A	860	N/A	N/A	N/A	0.12	N/A	N/A	N/A	N/A
	Human Recreation and Fishing [2]		1.8E-05	N/A	0.17	N/A	N/A	N/A	0.05	7.4	N/A	N/A	N/A	N/A
	Drinking Water [3]		0.01	N/A	0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Secondary Drinking Water [4]		N/A	N/A	N/A	250	0.05	0.3	0.05	5	N/A	N/A	N/A	N/A
CDPHE	CDPHE Chronic [5]		0.002	0.11	0.0046	250	N/A	N/A	1.43	0.0082	200	126	N/A	N/A
	CDPHE Acute [5]		0.34	N/A	0.0184	N/A	N/A	N/A	2.59	0.11	200	N/A	N/A	N/A
	USDA Livestock [6]		0.01	N/A	0.05	1500	5	0.3	0.05	25	200	N/A	N/A	N/A
	Detection Limit (mg/L)		0.017	0.029	0.011	0.1	0.0042	0.0003	0.0001	0.0003	1	1	3.0	0.1
Sample Type	Site ID	Date	As	P	Se	Cl <sup>-</sup>	Al	Fe	Mn	Zn	Coliform	<i>E. coli</i>	COD	DOC
Water	CRC2	5/17/2022	BDL	0.22	BDL	420	0.046	12	1.3	0.023	200	0	18	9.0
	CRC2 DP	5/17/2022	BDL	BDL	BDL	840	0.044	4.3	1.0	0.025	2200	0	5.0	3.3
	EPC13	5/17/2022	BDL	BDL	BDL	ADL	0.032	0.45	0.15	0.014	370	24	11	4.1
	EPC11	5/17/2022	BDL	BDL	BDL	180	0.036	0.55	0.14	0.020	67	0	15	4.8
	EPC11 HP	5/17/2022	BDL	BDL	BDL	180	0.27	4.5	0.52	0.036	190	0	12	4.9
	EPC9	5/17/2022	BDL	BDL	BDL	210	0.035	0.34	0.22	0.009	200	0	9.8	4.3
	EPC6	5/17/2022	BDL	BDL	BDL	230	0.038	0.76	0.25	0.036	420	8.2	12	4.8
	EPC6	5/20/2022	BDL	BDL	0.014	ADL	0.038	0.89	0.49	BDL	100	50	N/M	4.8
	CRC2 RO	5/20/2022	BDL	0.20	BDL	ADL	0.88	1.5	0.21	0.38	94	46	N/M	74
	E174	5/20/2022	N/M	N/M	N/M	ADL	N/M	N/M	N/M	N/M	55	20	N/M	30
Soil	EPC 13 E174	5/17/2022	0.019	0.083	0.038	N/M	0.18	0.09	2.7	0.81	N/M	N/M	N/M	N/M
	EPC11	5/17/2022	0.063	0.89	0.047	N/M	0.12	0.09	2.7	1.2	N/M	N/M	N/M	N/M
	EPC 11 BI-25	5/17/2022	BDL	0.083	0.038	N/M	0.14	0.21	2.7	0.66	N/M	N/M	N/M	N/M
	EPC9 RDD	5/17/2022	BDL	0.60	0.035	N/M	1.0	0.45	0.99	0.06	N/M	N/M	N/M	N/M
<b>Notes:</b> A/BDL = Above/Below Detection Limit N/M = Not Measured * Total Recoverable Standards  For information on other constituents, see Data Appendix					<b>References:</b> [1] US EPA National Recommended Water Quality Criteria - Aquatic Life Criteria Table [2] US EPA National Recommended Water Quality Criteria - Human Health Criteria Table [3] US EPA Drinking Water [4] US EPA Secondary Standards [5] CDPHE (reg 38) [6] USDA Livestock									