

Soil Sample Analytical Results
CSX Railroad Crossing Thornapple River

Constituent	CAS Number	SB-1 (1.0') (µg/Kg)	SB-2 (1.0') (µg/Kg)	SB-3 (1.5') (µg/Kg)	GRCC for Soil (µg/Kg)
Polynuclear Aromatic Hydrocarbons (PNAs)					
acenaphthene	83329	< 330	< 330	< 330	4,400 ^a
acenaphthylene	208968	< 330	< 330	490	5,900 ^b
anthracene	120127	< 330	< 330	< 330	41,000 ^b
benzo(a)anthracene	56553	< 330	350	< 330	20,000 ^c
benzo(a)pyrene	50328	< 330	< 330	< 330	2,000 ^c
benzo(b)fluoranthene	205992	< 330	< 330	340	20,000 ^c
benzo(g,h,i)perylene	191242	< 330	< 330	< 330	2,500,000 ^c
benzo(k)fluoranthene	207089	< 330	< 330	< 330	200,000 ^c
chrysene	218019	< 330	360	410	2,000,000 ^c
dibenzo(a,h)anthracene	53703	< 330	< 330	< 330	2,000 ^c
fluoranthene	206440	< 330	800	410	5,500 ^a
fluorene	86737	< 330	< 330	< 330	5,300 ^a
indeno(1,2,3-cd)pyrene	193395	< 330	< 330	< 330	20,000 ^c
2-methylnaphthylene	91576	< 330	< 330	< 330	57,000 ^b
naphthalene	91203	< 330	< 330	< 330	870 ^a
phenanthrene	85018	< 330	< 330	360	5,300 ^a
pyrene	129000	< 330	630	400	480,000 ^c
Inorganic Metallic Constituents					
arsenic	7440382	< 500	1,100	2,900	5,800 ^d
barium	7440393	4,500	30,000	23,000	440,000 ^{a*}
cadmium	7440439	< 200	< 200	< 200	3,600 ^{a*}
chromium (total)	varies	5,200	11,000	8,700	18,000 ^d
copper	7440508	2,800	6,200	13,000	75,000 ^{a*}
lead (total)	7439921	6,700	180,000	64,000	400,000 ^c
mercury	varies	< 50	< 50	< 50	130 ^d
selenium	7782492	< 200	210	360	410 ^d
silver	7440224	< 100	< 100	< 100	1,000 ^d
zinc	744066	9,600	19,000	37,000	170,000 ^{a*}

Notes:

- ^a Groundwater Surface Water Interface Criteria.
- ^b Residential and Commercial I Drinking Water Protection Criteria.
- ^c Residential and Commercial I Direct Contact Criteria.
- ^d Statewide Default Background Level.
- * GSI-Acute chemical specific values derived from calculations involving the receiving surface water body quality parameters of Grand River (hardness 150mg/L and pH 7.0). See RRD Op Memo 5 (September 30, 2004).
- Results in **Bold** Exceed the Generic Residential Cleanup Criteria (GRCC) as outlined in the Remediation and Redevelopment Division Operational Memorandum # 1: Part 201 Cleanup Criteria and Part 213 Risk Based Screening Level tables, last updated January 23, 2006.
- Sediment Samples collected on October 15, 2006, while river was lowered.