

Attachment 2  
DEC Combination Pond Sediment Analysis

## Sediment Analysis

### Combination Pond

#### City of Rutland

The VDEC conducted a sediment assessment of Combination Pond in October 2009. Information regarding the sampling stations is provided below in Table 1. The samples were collected on October 29, 2009 and laboratory results are provided in Table 3.

<b>Table 1</b> <b>Station Locations for Sediment Assessment of Combination Pond</b> Vermont Department of Environmental Conservation		
Station	Depth to Sediment (ft) (Depth of water)	Sediment Depth (ft) (Includes depth of water)
Combo 30 <sup>1</sup>	9	11.5
Combo 60 <sup>1</sup>	10	13
Combo 90 <sup>1</sup>	10.5	12.2
Combo 120 <sup>1</sup>	10.5	11
Combo 150 <sup>1</sup>	7	8.5
Combo outlet <sup>2</sup>	10.5	14
Combo mid <sup>2</sup>	8	8.5
Combo inlet <sup>2</sup>	3.5	6
<sup>1</sup> Stations established every 30 feet along a 170 foot cross section paralleling Sharon Drive (approximately 100 feet off of the southern shoreline) <sup>2</sup> Three additional stations established along mid points in general area of outlet, center of pond, and inlet		

<b>Table 2</b> <b>Toxicity Characteristic Leaching Procedure</b> Maximum Concentration of Contaminants for the Characteristic of Toxicity Hazardous Waste Code Containment			
Parameter	Cadmium	Chromium	Lead
Maximum Reported Value*	2.72	18.9	36.6
Maximum Reported Value Divided by 20 (for comparison to TCLP)	0.136	0.945	1.83
<b>TCLP Maximum concentration</b>	<b>1.0</b>	<b>5.0</b>	<b>5.0</b>
*Combination Pond Sediment Samples from October 2009			

**Table 3  
DEC Laboratory Results of Combination Pond Sediment Samples Collected in October 2009**

Station	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Iron	Manganese	TPH	Solids	TVS
Combo 120	6.25	2.66	17.3	18.7	34.6	16.1	172	38,500	847	200	22.8	19.9
Combo 150	3.94	1.74	10	11.7	21.7	11.1	103	26,200	604	200	28.8	12.8
Combo 30	5.63	2.55	17.6	19.3	34.2	15.8	168	35,900	853	200	23.2	20.2
Combo 60	6.24	2.72	18.9	20.7	35.6	16.8	177	39,300	922	200	23	20.4
Combo 90	5.93	2.66	17.3	20.4	35.2	16.5	175	38,700	872	205	22.1	20.6
Combo Inlet	2.95	1.2	7.03	6.93	16	7.4	79.8	16,400	317		37.6	10.6
Combo Mid	6.66	2.64	17.1	18.6	34.6	16.2	176	37,700	808	200	20.5	20.9
Combo Outlet	5.71	2.70	18.6	20.4	36.6	17	180	38,800	842	200	21.3	21.1
<b>TEC</b>	<b>9.79</b>	<b>0.99</b>	<b>43.4</b>	<b>31.6</b>	<b>35.8</b>	<b>22.7</b>	<b>121</b>					
<b>PEC</b>	<b>33</b>	<b>4.98</b>	<b>111</b>	<b>149</b>	<b>128</b>	<b>48.6</b>	<b>459</b>					
<b>LEL</b>								<b>20,000</b>	<b>460</b>			
<b>SEL</b>								<b>40,000</b>	<b>1100</b>			
<b>RSL (residential)</b>	<b>0.039</b>	See TCLP	See TCLP	<b>3100</b>	See TCLP	<b>3,800</b>	<b>23,00</b>	<b>55,000</b>	<b>1,800</b>	<b>200</b>		
<b>RSL (industrial)</b>	<b>1.6</b>	See TCLP	See TCLP	<b>41000</b>	See TCLP	<b>47,000</b>	<b>310,000</b>	<b>720,000</b>	<b>23,000</b>	<b>1,000</b>		

Yellow highlight indicates laboratory value exceeds the threshold effects concentration (TEC<sup>1</sup>)

PEC<sup>2</sup> – probable effects concentration;

LEL - Lowest effect level (similar to TEC); SEL (similar to PEC)

RSL – Regional screening levels for chemical contaminants at superfund sites – red box indicates concentration is exceeds RSL (From VTDEC, Investigation and Remediation of Contaminated Properties (DRAFT))

References

(1) VTDEC (DRAFT). Investigation and Remediation of Contaminated Properties.

- TEC and PEC values from Recommended Sediment Quality Guidelines for Protection of Aquatic Biota in Freshwater Ecosystems (p. 74)
- RSL screening levels from Appendix A: Soil Screening Values (p. 39 – 58)

(2) Buckman, 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration.

- LEL and SEL screening values (p. 2)

<sup>1</sup> TEC is a concentration below which adverse effects are unlikely to occur.

<sup>2</sup> PEC is a concentration above which adverse effect are likely to be observed.