Soil contamination associated with illegal burn piles in West Haven, Vermont

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Abstract

Sampling Burn Pile 1

Top of Burn Pile 1

TD-ICP TD-ICP INAA INAA TD-ICP INAA TD-ICP INAA

what the source of these elements might be.

dumps contain household trash, construction debris, junked furniture, obsolete electronics,

2 km

Champlain Canal -  Mettawee River

South Bay

Poultney

Vermont Vermont

Poultney

49 elements was performed by ActLabs, Inc. (Ontario, Canada). The results are given in Table 1 (which also includes the detection limit for each element).

Each sample was stirred to mix it and an aliquot of approximately 10 g was measured into a small sealable plastic Whirl-Pak bag. Geochemical analysis (INAA and ICP) for

between Burn Pile 1 and river: surface 37 < 0.3 247 0.4 < 1 167

WH-11-13-15 Burn pile 3: surface 152 0.3 175 1.2 1 122

WH-11-13-2 Burn pile 2: bottom 1/3 of core < 2 < 0.3 16 < 0.3 < 1 17

WH-11-13-16 Burn pile 3: 3” down < 2 < 0.3 74 < 0.3 < 1 22

WH-11-13-11A Burn pile 2: bottom 1/3 of core < 2 < 0.3 16 < 0.3 < 1 17

WH-11-13-12 Burn pile 1: surface 68 1.5 920 2.3 12 > 5000

WH-11-13-1 Burn pile 1: surface 68 1.5 920 2.3 12 > 5000

Table 1: Concentration of selected elements in soil and sample.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Au (ppm)</th>
<th>Ag (ppm)</th>
<th>Cu (ppm)</th>
<th>Cd (ppm)</th>
<th>Mo (ppm)</th>
<th>Pb (ppm)</th>
<th>Ag (ppm)</th>
<th>Cd (ppm)</th>
<th>Mo (ppm)</th>
<th>Pb (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WH-11-13-1</td>
<td>68</td>
<td>1.5</td>
<td>920</td>
<td>2.3</td>
<td>12</td>
<td>&gt; 5000</td>
<td>2</td>
<td>21</td>
<td>20</td>
<td>5000</td>
</tr>
<tr>
<td>WH-11-13-6</td>
<td>37</td>
<td>&lt; 0.3</td>
<td>247</td>
<td>0.4</td>
<td>&lt; 1</td>
<td>167</td>
<td>1</td>
<td>21</td>
<td>49</td>
<td>167</td>
</tr>
<tr>
<td>WH-11-13-11A</td>
<td>&lt; 2</td>
<td>&lt; 0.3</td>
<td>16</td>
<td>&lt; 0.3</td>
<td>&lt; 1</td>
<td>17</td>
<td>&lt; 2</td>
<td>12</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>WH-11-13-11B</td>
<td>51</td>
<td>&lt; 1</td>
<td>1.2</td>
<td>3.26</td>
<td>12</td>
<td>&lt; 1</td>
<td>&lt; 5</td>
<td>1.21</td>
<td>33</td>
<td>1.23</td>
</tr>
<tr>
<td>WH-11-13-11C</td>
<td>&lt; 15</td>
<td>0.7</td>
<td>9.5</td>
<td>&lt; 3</td>
<td>98</td>
<td>&lt; 0.5</td>
<td>0.19</td>
<td>8.4</td>
<td>32</td>
<td>1.49</td>
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<td>WH-11-13-10A</td>
<td>92</td>
<td>0.7</td>
<td>9.6</td>
<td>&lt; 3</td>
<td>109</td>
<td>&lt; 0.5</td>
<td>0.17</td>
<td>7.8</td>
<td>4.3</td>
<td>34</td>
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<tr>
<td>WH-11-13-10B</td>
<td>23</td>
<td>6.1</td>
<td>&lt; 0.01</td>
<td>&lt; 0.5</td>
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<td>1.82</td>
<td>3.1</td>
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<tr>
<td>WH-11-13-10C</td>
<td>29</td>
<td>6.8</td>
<td>&lt; 0.01</td>
<td>&lt; 0.5</td>
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<td>1.61</td>
<td>58.8</td>
<td>520</td>
<td>0.93</td>
</tr>
</tbody>
</table>

Wh-11-13-1 Burn pile 1: surface 68 1.5 920 2.3 12 > 5000

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