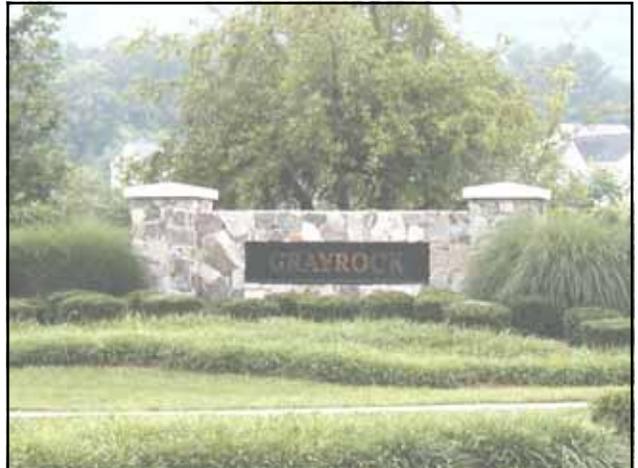


Emerging Sites Crozet Subdivision Site

Linda C. Baxter
HRS/NPL Coordinator and
Site Assessment Manager
U.S. EPA Region III

1







Site History

- Results of the Phase I became known in the community.
- Residents near the property where the Phase I was completed contracted with an environmental consulting firm to collect and analyze soils for lead and arsenic concentrations. Results indicated elevated concentrations of lead and arsenic.

11

Site History

- In 2002, a Phase I was conducted for a property formerly used as orchard.
- Soil sample analytical results indicated elevated concentrations of lead and arsenic on the property where the Phase I was completed.

10

Site History

- Residents contacted Albemarle County for further assistance.
- Albemarle County contacted the Virginia Department of Environmental Quality (VADEQ).

12

Notification

- VADEQ conducted a windshield assessment and determined that no further investigation was warranted.
- This determination was based on the finding that it was unlikely for the lead and arsenic contamination detected to migrate and impact surrounding properties.

13



EPA Notification

- Due to budgetary constraints, VADEQ could not offer additional assistance; therefore, Albemarle County contacted EPA Region 3.
- EPA's initial response mechanism needed to be determined:
 - Pre-remedial or Removal

14

EPA Objectives

- To determine the presence and, if present the concentrations of lead, arsenic and/or pesticides in soils. Also to determine the presence of contaminants in groundwater collected from residential wells.
- Use data collected to:
 1. Determine areas warranting future removal action.
 2. Prepare human health risk assessment for specific exposure scenarios.

16

Sampling Approach



17

SUMMARY OF XRF RESULTS

Property Identifier	XRF Run #	Date	Time	Arsenic Result	Lead Result
Pro. erty 22 - 1*	6	11/2/02	1408	129.9 L	445.6 K
Pro. erty 22 - 2*	105	11/10/02	1951	41.9 L	261.2 K
Pro. erty 22 - 3*	106	11/10/02	1954	58.4 L	499.8 K
Pro. erty 22 - 4*	107	11/10/02	1958	68.8 L	420.4 K
Property 23 - 1A*	40	11/2/02	2026	<LOD	84.7 K
Property 23 - 1B*	115	11/10/02	2026	<LOD	77.8 K
Pro. erty 23 - 2*	116	11/10/02	2030	35.6 L	188.8 K
Pro. erty 23 - 3*	113	11/2/02	1938	<LOD	<LOD
Pro. erty 23 - 3*	117	11/10/02	2033	89.2 L	779.6 K
Pro. erty 23 - 4*	118	11/10/02	2037	138.1 L	793.2 K
Property 21 - 1	56	11/2/02	2124	<LOD	2308.8 K
Property 19 - 2	95	11/10/02	1914	31.1 L	264.2 K
Property 19 - 3	96	11/10/02	1918	52.6 L	244.8 K
Property 12	127	11/10/02	2109	30.4 L	194.7 K
Property 21 - 2	57	11/2/02	2128	<LOD	189.6 K
Property 11	125	11/10/02	2102	41.1 L	171.7 K
Property 5 - 2	109	11/10/02	2005	42.5 L	160.5 K
Property 20 - 3	58	11/2/02	2132	<LOD	151.6 K
Property 31 - 2	111	11/10/02	2012	26.5 L	151 K
Property 19 - 1	94	11/10/02	1911	<LOD	150.8 K
Property 13	121	11/10/02	2048	30.1 L	147.8 K
Property 26 - 1	93	11/10/02	1907	<LOD	139 K
Property 1 - 2	126	11/10/02	2105	<LOD	138.6 K
Property 27 - 3	120	11/10/02	2044	37.4 L	138 K
Property 1 - 1	33	11/2/02	1959	<LOD	133.7 K
Property 26 - 2	92	11/10/02	1904	26.8 L	124.7 K
Property 17 - 1	97	11/10/02	1922	<LOD	113.3 K
Property 7 - 2	35	11/2/02	2007	<LOD	111.2 K
Property 14 - 2	36	11/2/02	2011	<LOD	111 K
Property 20 - 2	52	11/2/02	2109	<LOD	110.1 K
Property 20 - 3	53	11/2/02	2113	<LOD	109.1 K
Property 18 - 2	104	11/10/02	1947	<LOD	105 K
Property 31 - 1	110	11/10/02	2009	24.8 L	99.7 K



Laboratory Analysis

- Thirty samples were submitted to an EPA Region 3 CLP laboratory for metals analysis and 7 soil samples were submitted to a CLP laboratory for pesticides analysis.
- Ten background samples were collected from areas located around Crozet that were not historically used for orchards. All background soil samples were sent to the laboratory for analysis so that a statistically defensible lead and arsenic background concentration could be established.

20

Groundwater Sampling

- In addition to the soil samples collected in Crozet, groundwater samples were collected from 10 residential wells.
- Concentrations of lead, arsenic, or pesticides were not elevated in any of the wells sampled.

21



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Crozet, VA 22932

Re: Soil Sample Analytical Results
Crozet, Virginia

Dear:

The U.S. Environmental Protection Agency (EPA) collected soil samples from your yard in October 2002. The purpose of this soil sampling event was to determine the significance and potential health risks associated with pesticides used in the orchards that formerly occupied a large portion of Crozet. The potential metal and pesticide contaminants of concern in Crozet include lead, arsenic, 1,1-dichloro-2,2-bis(p-chlorophenyl)ethane (4,4'-DDE), 1,1-dichloro-2,2-bis(p-chlorophenyl)ethylene (4,4'-DDEE), and 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane (4,4'-DDE).

Four samples were collected from your yard: (1) one sample was collected under the window located in the back of the house (identified as CT-SS-05); (2) samples were collected from five locations in the backyard to form one composite sample (CT-SS-06); (3) samples were collected from five locations in the front yard to form one composite sample (CT-SS-07); (4) and a third composite sample was collected from soils gathered from five locations in the garden area (CT-SS-16). A portion of each sample was initially analyzed with an x-ray fluorescence (XRF) instrument (to determine the approximate concentrations of arsenic and lead) and an Ezyso soil test kit (to determine the presence and approximate concentrations of pesticides). The arsenic concentration estimated with the XRF instrument was sufficiently high in each of the four samples to warrant submitting these samples to a laboratory for confirmation metal analysis.

23

Soil Results

- Human Health Risk Assessment prepared using analytical results.
- Results of risk assessment indicated additional work should be completed at several properties.

22

Current Actions

- EPA Region 3 Removal Branch has initiated removal actions at several properties.

24



Summary

- Approach undertaken at Crozet allowed EPA to effectively address residential concerns in a timely fashion, while providing reliable data that could be used to make defensible decisions regarding future work.