

**COMMONWEALTH OF PENNSYLVANIA**  
**Department of Environmental Protection**  
**Bureau of Radiation Protection**  
Tuesday, November 16, 2010

**SUBJECT:** Scoping Survey of Former Keystone Metals Reduction Co.

**To:** David Allard  
Director  
Bureau of Radiation Protection

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Radiation Protection Program Manager  
Southwest Regional Office

**FROM:** Robert Maiers  
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Decommissioning and Surveillance Division  
Bureau of Radiation Protection

Staff from the Bureau of Radiation Protection Decommissioning and Surveillance Division (CO) and the Southwestern Regional Office performed a radiological scoping survey of areas around two Cheswick, PA businesses (Pro-Mechanical and North American Fencing) currently operating on the former Keystone Metals Reduction Co. (KMR) site on August 18, 2010.

During the early 1900's KMR operated a small scale facility producing radium at this location. Records are scarce on the operation, but indicate the standard chemical extraction process on previously 'milled' uranium ore was performed at the site. The initial scoping survey was performed to determine if waste products left at the site may remain in quantities that could impact on the environment and public health and safety.

The radiological scoping survey of the Pro-Mechanical property showed no elevated radiation levels on the surface. However, there were two (2) notable areas identified on the North American Fencing property. In one small area, surface soil radiation readings of 35 micro-roentgens per hour (uR/hr) were found. A larger area of surface soil was identified along the foundation of the fabrication shop where readings ranged up to 140 uR/hr (see Attachment 1 for locations). Background radiation levels for this area range from 3-7 uR/hr.

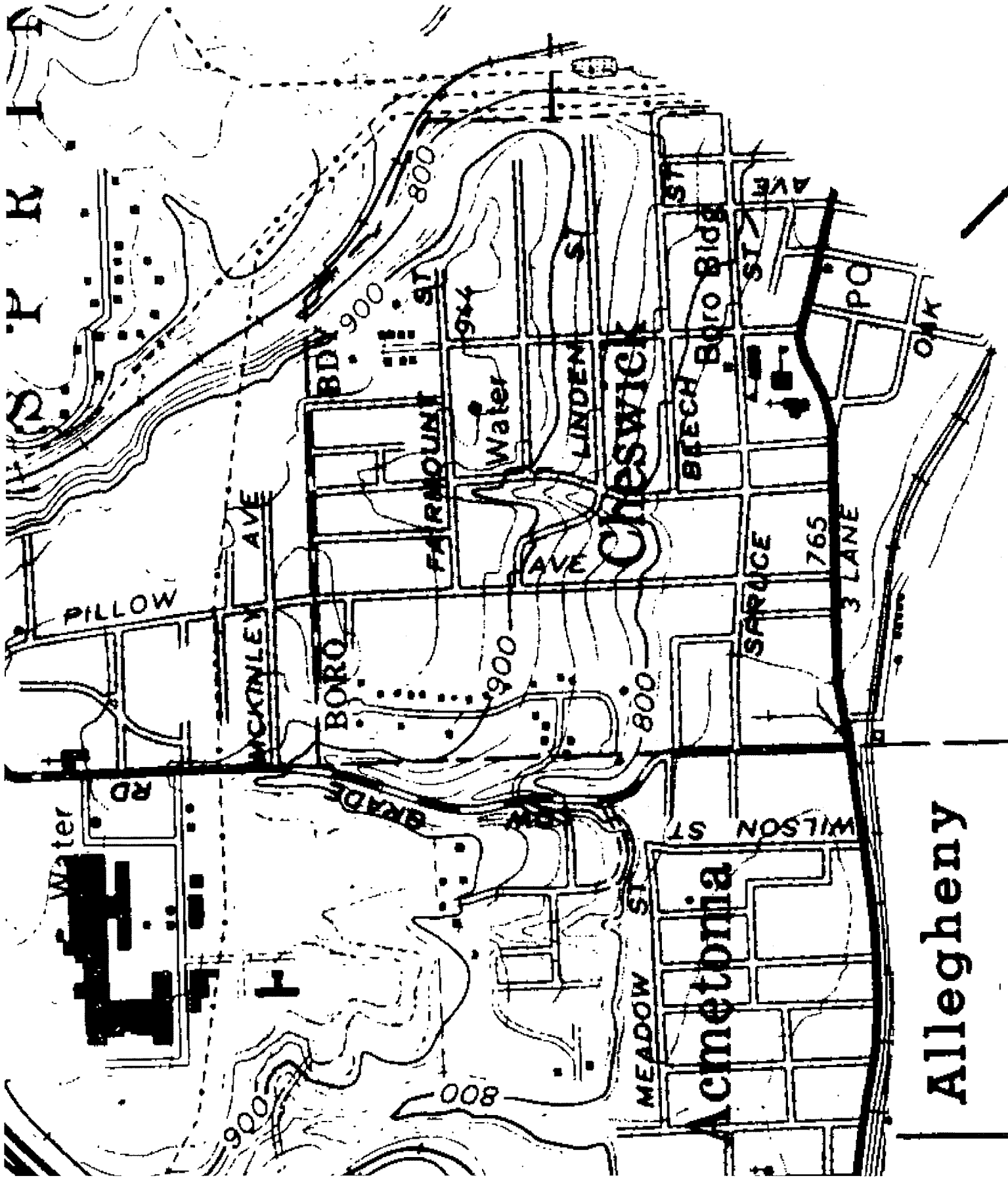
A soil sample was collected from the area where the highest surface radiation measurement reading (140 uR/hr) was taken. Laboratory analysis of this sample showed elevated levels of radium-226 (66.4 pCi/g). This sample exceeds the EPA's criteria for radium-226 in surface soil (5 pCi/g) by over a factor of 10 (see Attachment 2).

The extent of elevated surface readings was not large, at most a few square meters. However, it was noted the radiation levels increased significantly where the soil sample was taken, indicating there may be subsurface contamination that would not be detected when doing walkover surveys.

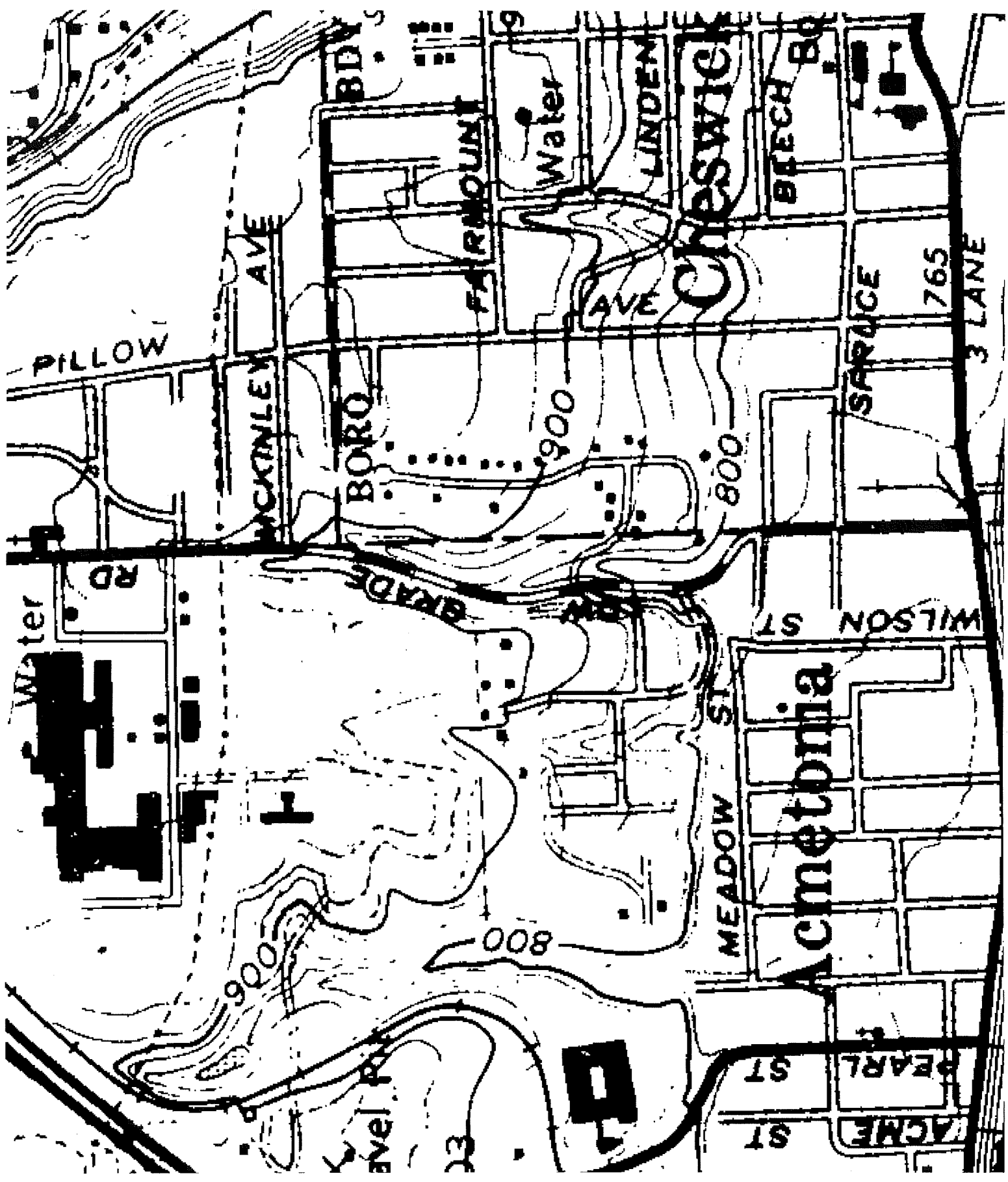
In addition to the radiological surveys performed, fourteen diffusion barrier charcoal canisters were placed in occupied areas of the two businesses to test for radon-222. The results of the tests ranged from 0.1 to 1.6 pCi/l, well below the E.P.A. suggested level of 4.0 pCi/l (see Attachment 3).

The scoping survey and radon tests performed indicate there is no imminent threat to public health and safety under the current conditions. However further investigation should be performed to insure significant amounts of radium-226 are not present in historical waste (uranium tailings) and buried below the ground surface. It is recommended that further investigation/characterization of the former KMR site be performed under a SWRO DEP HSCA response as soon as weather permits in 2011. Based on discussions with the CO HSCA Program, funding is available for performing this investigation in the near term. Lastly, we also need to formally communicate our findings to the two property owners.

Cc: Tonda Lewis, BRP  
Bryan Werner, BRP  
Barbara Bookser, SWRO



Allegheny



McKinley Ave

Boro

Farmquait

Water

Linden

Cheswick Ave

Beech

Spruce

765

3 Lane

Pillow Rd

Water

GRADE

900

Meadow St

Wilson St

Acmetonia

800

900

Pearl St

Wache St

ST

ST

23

Level Rd

71 JUL 11 1964 +  
PS 1 of 2

vrc levels

-7 pci/g

Test Codes/CAS#  
Test  
Description  
Analyst Method  
95% LLD  
Sample Value  
95% CE  
Date And Time  
Analyzed

U238	Uranium 238	684	15900 PCI/KG	480	09/24/2010 09:35 AM
TMATUKAITI					
PB214	PB 214	90	35400 PCI/KG	200	09/24/2010 09:35 AM
TMATUKAITI					
U235	Uranium 235	309	0 PCI/KG	0	09/24/2010 09:35 AM
TMATUKAITI					
PB212	PB 212	52	623 PCI/KG	52	09/24/2010 09:35 AM
TMATUKAITI					
RA228	RA 228	49	582 PCI/KG	48	09/24/2010 09:35 AM
TMATUKAITI					
RA226	RA 226	448	66400 PCI/KG	542	09/24/2010 09:35 AM
TMATUKAITI					

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The results of the analyses provided in this laboratory report relate only to the sample(s) identified in the report. Unless otherwise noted, the results presented on this laboratory report meet all the requirements of the NELAP Institute (TNI). Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report. Tests noted with "\*\*\*\*" are not included in our NJ NELAP Annual Certified Parameter List.  
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Taru Upadhyay, Technical Director, Bureau of Laboratories

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