

# Buchans

Heavy Metals in Soil Near the Residential  
Area

# Recent Test Results



- An engineering consultant for the Provincial Government took 12 soil samples from the perimeter of the town as well as 12 background samples.
- Test results indicate exceedances of the Canadian Council of Ministers of the Environment (CCME) Environmental Guidelines for :
  - Antimony
  - Arsenic
  - Barium
  - Copper
  - Lead
  - Molybdenum
  - Selenium
  - Thallium
  - Uranium
  - Zinc





SOURCE: 2017 AERIAL PROVIDED BY THE TOWN OF BUCHANS

**LEGEND**

▲ SURFICIAL SOIL SAMPLE LOCATION



figure 1  
**RESIDENTIAL SURFICIAL SOIL EXCEEDANCES**  
**ENVIRONMENTAL SITE ASSESSMENT**  
**FORMER ABITIBI PROPERTIES**  
*Buchans, NL*

# Buchans Soil Test Results

(Number of Guideline Exceedances)



Parameter	CCME Residential Soil Guideline (mg/kg)	Health Specific Guideline (mg/kg)	Residential Area CCME Exceedances	Residential Area Health Specific Exceedances	Background Area CCME Exceedances	Background Area Health Specific Exceedances
Antimony	20	13 <sup>3</sup>	1	1		
Arsenic	12	same	1	1		
Barium	500	3,700 <sup>3</sup>	8		1	
Copper	63	1,100	6		3	
Lead	140	same	8	8	6	6
Molybdenum	10	170 <sup>3</sup>	1			
Selenium	1	80	2			
Thallium	1	4.1 <sup>3</sup>	1			
Uranium	23	same	1	1		
Zinc	200	16,000 <sup>3</sup>	4		6	

1. The generic CCME guidelines are derived for a number of exposure pathways for both human and ecological receptors, with the most critical guideline shown. However, since the primary concern is human health, the human health specific guideline can be applied, where present.
2. Where no CCME human health guidelines are present, refer to other guidelines in Canada or US Environmental Protection Agency.
3. Ontario Soil Standards - - Human Health Specific Guideline
4. Total number of samples for both residential and background is 12, not counting duplicate samples.

# Implications



- An environmental risk assessment expert from the Department of Environment and Conservation, the Department of Health and Community Services, and the consultant's toxicologist all agree that the lead values are of primary concern.
- It is advised, based on the limited data set, more information is needed to fully understand risk to human health.
- Long-term exposure to this soil should be minimized.
- Young children and pregnant women are most susceptible to adverse health effects.

# Path Forward



- Further testing of soil for metals in public places, playgrounds and school property.
- Remediation of the tailings spill area will be carried out.
- The Department of Health and Community Services will carry out blood lead level tests for individuals who may wish to participate, especially recommended for children aged 2-6 and pregnant women.

# Further Recommendations



- The Medical Officer of Health recommends that, since the actual exposure to heavy metals is unknown, the impact on health is unknown, hence measures to reduce exposure are necessary.
- These measures include:
  - Ensuring hands are washed after playing in exposed soil.
  - Not walking through the home with outside footwear.
  - Carrying out good housekeeping practices.