

# Health Consultation

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Technical Review

KOOLTRONICS INCORPORATED/ROCKWELL INTERNATIONAL CORPORATION

HOPEWELL BOROUGH, MERCER COUNTY, NEW JERSEY

APRIL 18, 2001

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service  
Agency for Toxic Substances and Disease Registry  
Division of Health Assessment and Consultation  
Atlanta, Georgia 30333

# HEALTH CONSULTATION

Technical Review

KOOLTRONICS INCORPORATED/ROCKWELL INTERNATIONAL CORPORATION  
HOPEWELL BOROUGH, MERCER COUNTY, NEW JERSEY

Prepared by:

New Jersey Department of Health and Senior Services  
Hazardous Site Health Evaluation Program  
Consumer and Environmental Health Services  
Division of Epidemiology, Environmental, and Occupational Health  
Under a Cooperative Agreement with the  
Agency For Toxic Substances and Disease Registry

## Statement of Issues

The New Jersey Department of Environmental Protection (NJDEP), Site Remediation Program, requested the New Jersey Department of Health and Senior Services (NJDHSS) to provide technical assistance regarding the investigation/remediation of the Kooltronic Inc./Rockwell (KIR) site. Specifically, the NJDHSS was asked to review two sets of indoor air data from an adjacent residence and to compare air data and detection limits with health-based screening values as a guide for future investigation by the NJDEP.

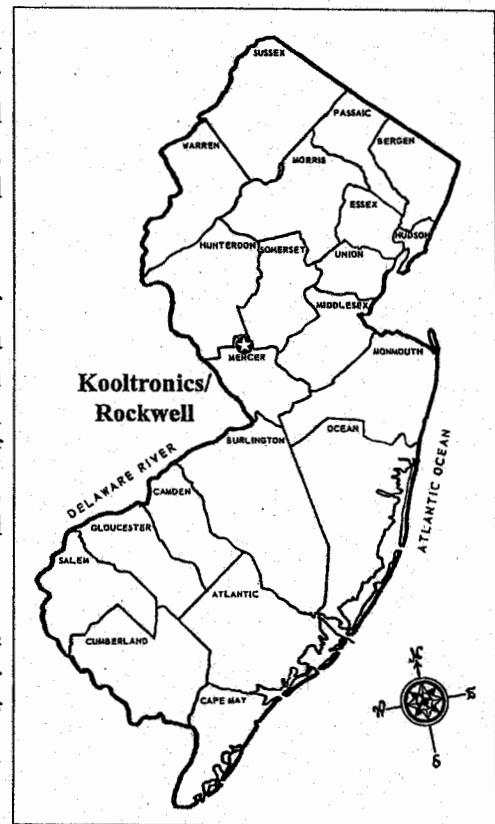
## Background

The KIR site is located in Hopewell Borough, Mercer County, New Jersey, at the intersection of Hamilton and Somerset Street (see Figure 1). The site occupies approximately 2.5 acres, and consists of a vacant manufacturing facility on the south side of Somerset Street, and a smaller area north of Somerset Street containing a storage building.

Industrial activity began at the site in the early 1900's. From the 1920's through World War II, a machine company operated at the site which produced radium painted instruments for airplanes. From 1946 through 1975, machining operations continued, with the property occupied by an air conditioner manufacturer from 1975 to 1999.

In 1999, the NJDEP signed an Administrative Consent Order (ACO) with the property owners, and began to develop a Remedial Action Work Plan (RAWP) for the KIR site. In September 1999, the responsible parties began remedial activity at the KIR site, excavating more than 12,000 tons of soil contaminated with volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and low levels of radionuclides.

Groundwater investigations are currently underway and have identified VOC contamination. While groundwater contamination has not been fully delineated, three rounds of potable well investigation at a nearby residential development and nearby areas have shown contamination by VOCs. (Point of Entry Treatment systems have been provided to affected residences).



## Discussion

The NJDEP has provided two sets of residential air data for review by the NJDHSS. These data describe indoor air from a residence directly adjacent to the KIR site, sampled in the basement over an 8 hour period utilizing *SUMMA* canisters. Samples were analyzed via methods TO14 and TO15 for: chloroform, carbon tetrachloride, trans-1,2-dichloroethylene, cis-1,2-dichloroethylene, methylene chloride, tetrachloroethylene (PCE), toluene, trichloroethylene (TCE), and vinyl chloride. These compounds were selected based upon their presence in previous samples taken at the KIR site.

For purposes of comparison in this Health Consultation, values are reported in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Table 1 presents sampling results and associated health based comparison values. Two comparison values are cited: the ATSDR Cancer Risk Evaluation Guide for air exposure (CREG, for  $10^{-6}$  excess cancer risk), and the USEPA Region 3 ambient air Risk Based Concentrations for carcinogenic ( $10^{-6}$ ) or non-carcinogenic outcomes. While these values are not predictors of adverse health outcomes, they do serve as screening values for human exposure pathways, above which public health implications should be fully evaluated.

Based upon the data provided, trans-1,2-dichloroethylene, cis-1,2-dichloroethylene, PCE, and TCE were found in concentrations exceeding one or both comparison values. In addition, minimum detection limits (MDLs) for vinyl chloride, chloroform, and carbon tetrachloride were insufficient to yield meaningful information with respect to comparison values.

The presence of these compounds in basement sumps suggests infiltration though the movement of soil gases. This circumstance together with evidence of impact to private wells by a site-related plume indicate the existence of at least two potential human exposure pathways associated with the KIR site.

## Conclusions

At least four compounds (trans-1,2 dichloroethane, cis-1,2 dichloroethylene, PCE, and TCE) were detected above health based comparison values. TCE is present at a relatively high concentration, roughly 300 - 600 times the USEPA Region RBC. Since the data describe indoor air for a residence where chronic exposure is likely, such concentrations may represent a public health concern.

The presence of vinyl chloride and carbon tetrachloride, although unverified, could serve to compound the potential public health significance of the data presented.

Limited data suggest that contaminants in groundwater may be infiltrating into indoor air in at least one residence adjacent to the KIR site. Inasmuch as radium was a contaminant of concern for soil removal activities it should be considered a potential contaminant of concern for groundwater, and consequently, radon gas should be considered during indoor air sampling.

Additional pathway analysis may be indicated for the KIR site. Based upon available data and information, potential human exposure pathways may exist to contaminated groundwater and soil gases (through indoor air).

### **Recommendations**

The NJDEP may consider interim measures to interrupt indoor air pathways at the residence where sampling has occurred. In addition, the NJDEP may consider additional delineation at those potentially affected residences, if any, where sampling has not yet taken place.

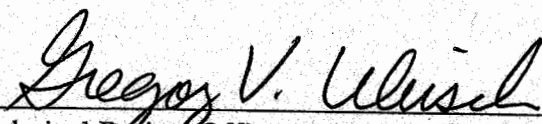
If possible, indoor air sample analysis should achieve MDLs consistent with health based comparison values. This is particularly desirable for vinyl chloride and carbon tetrachloride.

The potential presence of compounds other than those sampled for may be considered by the NJDEP during future sampling.

As groundwater contamination is further characterized, the NJDHSS should review data and information for potential public health implications as warranted.

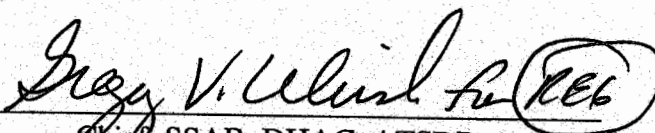
### Certification

The Health Consultation for the Kooltronics Inc./Rockwell International Corporation site was prepared by the New Jersey Department of Health and Senior Services under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was initiated.

  
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Technical Project Officer, SPS, SSAB, DHAC

The Superfund Site Assessment Branch (SSAB), Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this health consultation and concurs with its findings.

  
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Chief, SSAB, DHAC, ATSDR

## **Preparers of Report**

### **Preparers of Report:**

James Pasqualo  
Research Scientist; ATSDR Health Assessment Project  
Consumer and Environmental Health Services  
New Jersey Department of Health and Senior Services

### **ATSDR Regional Representative:**

Tom Mignone  
Regional Representative; Region II  
Regional Operations  
Office of the Assistant Administrator

### **ATSDR Technical Project Officer:**

Gregory V. Ulirsch  
Environmental Health Engineer  
Superfund Site Assessment Branch (SSAB)  
Division of Health Assessment and Consultation

### **Any questions concerning this document should be directed to:**

ATSDR Project Manager  
New Jersey Department of Health and Senior Services  
Consumer and Environmental Health Service  
210 South Broad Street  
PO Box 360  
Trenton, NJ 08625-0360

Table 1 - Kooltronics Inc./Rockwell site, Hopewell, N.J. Indoor air contaminants of concern and health based comparison values.

	Sample Date 10/31/00 Range: $\mu\text{g}/\text{m}^3$	Sample Date 1/5/01 Range: $\mu\text{g}/\text{m}^3$	ATSDR Comparison Value: $\mu\text{g}/\text{m}^3$	USEPA Region III Risk Based Value: $\mu\text{g}/\text{m}^3$
Trans-1,2-dichloroethane	(0.78 MDL) - 0.55(j)	0.59(j) - 0.79(j)	0.04 CREG	0.069 C
(Cis)-1,2-dichloroethylene	69.1 - 105	56 - 110	NA	37 NC
Methylene Chloride	1 - 1.6	0.72(j) - 0.83(j)	3 CREG	3.8 C
Tetrachloroethylene	12 - 21	1.4 - 18	NA	3.1 C
Toluene	2.4 - 5.6	1.4 - 5.7	NA	420 NC
Trichloroethylene	399 - 596	310 - 590	NA	1.0 C
Vinyl Chloride	(5.1 MDL)	(1.0 MDL)	0.1 CREG	0.021 C
Chloroform	0.58(j)	(1.0 MDL)	0.04 CREG	0.077 C
Carbon Tetrachloride	0.62 (j)	(1.0 MDL)	0.07 CREG	0.12 C

NA = not available

j = estimated value

CREG = Cancer Risk Evaluation Guide

C = Carcinogenic Effects (based upon  $10^{-6}$  excess cancer risk)

NC = Non Cancer Effects

MDL = Minimum Detection Level

Bold = Levels detected above health-based comparison values



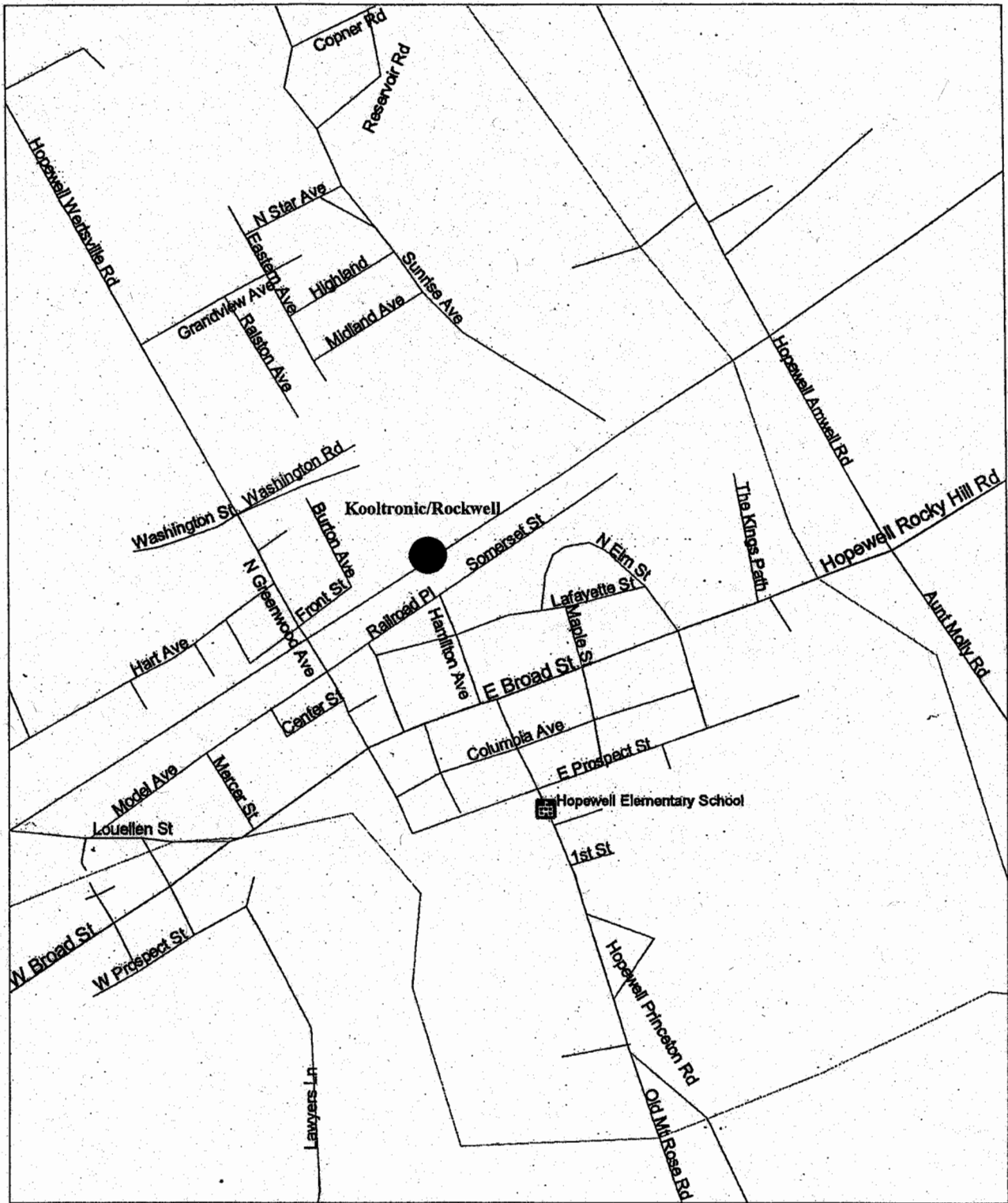


Figure 1 - Kooltronics/Rockwell; Hopewell, New Jersey; site location.