



A Successful HSCA Funded Cleanup:

Karnish Instruments Site

Lock Haven, Clinton County, PA

The Karnish Instruments site contained radioactive waste associated with radium-painted dials on aircraft instruments which contaminated soil and interior surfaces of an apartment property. The cleanup included building demolition and removal of materials and contaminated soil to a disposal site. The site was restored with backfill, topsoil, and grass seed, and a new apartment building was constructed, suitable for unrestricted use. The project's completion in 2018 was the culmination of more than 11 years of effort among local municipal authorities, DEP, and its contractors.

Karnish Instruments Site

In 2006, a load of waste set off the radiation alarm at the Wayne Township Landfill in McElhattan, Clinton County, PA. An initial investigation was led by the Pennsylvania Department of Environmental Protection (DEP) to determine if Keystone Instruments, an aircraft instrument repair facility, was mishandling radioactive waste associated with radium-painted dials on the aircraft instruments from the 1950 through the 1970s. Adjacent to this property was Karnish Instruments, a former aircraft instrument manufacturing and repair facility. From the late 1980s through 2008, the facility operated as Ron's Rental business at 210 Third Avenue.

In 2007, DEP personnel, acting on anecdotal information from a former Karnish employee, performed radiation measurements in the vicinity of the Karnish Instruments property. Finding elevated levels of radiation, DEP investigated further and determined that the site was contaminated. Extensive radiation surveys were performed to help determine the extent of contamination on the Ron's Rental property and the adjacent properties. Five adjacent properties were found to be impacted by radiation contamination. One of these sites was the Lock Haven Court senior apartment property, at 250 Third Avenue.

The site was contaminated with a radioactive element, radium-226, as a result of work that was performed on aircraft instruments by Karnish Instruments during their operation. Radium was used from before World War II until around 1970 to make glow-in-the-dark paint that illuminated aircraft gauge dials and pointers.

Radiation measurements indicated that the Ron's Rental property contained not only contaminated soil, but also the interior surfaces (i.e. floors and walls) of the building onsite were impacted with radium contamination. Five adjacent properties that were impacted contained contaminated soils only. Radiation surveys and testing performed by DEP indicated that the general public was not exposed to harmful levels of radiation. DEP was concerned, however, that without remediation, the radioactive materials on the site could result in increased public exposure to radiation.

Project at a Glance

Name:

Karnish Instruments Site

Location:

Lock Haven, PA

Project Size:

Approximately 1.0 acre

Principal Use:

Mixed commercial/residential; Low-income senior apartment buildings

Total Project Cost:

\$11.0 M

Consultant:

AECOM Energy & Construction

Project Period:

2007-2018 (11 years)

Additionally, radium decays to radon, a radioactive gas. Radon gas can result in exposure to radiation in indoor air. Interior testing in both the Ron's Rental and Lock Haven Court buildings confirmed that radon was present at levels above which DEP would recommend mitigation efforts. For Ron's Rental, the tenants of the second-floor apartments were told their leases would not be renewed. At Lock Haven Court, a previously existing passive mitigation system was activated with fans, and post-installation testing confirmed that the system brought radon levels down to the acceptable range.

The cleanup of exterior areas at Ron's Rental and the five adjacent properties involved removing, packaging, and shipping the contaminated soil to a permitted and licensed out-of-state waste disposal site. Because the interior of the Ron's Rental building itself had been contaminated, that building was demolished, and building materials were also packaged and shipped to the disposal site.

In November 2017, a new apartment building was constructed on an uncontaminated portion of the property, together with a parcel purchased from the Clinton County Housing Authority, to provide permanent housing for the tenants of Lock Haven Court.

In May 2018, the old Lock Haven Court apartment building was demolished. The debris, a concrete slab, and all contaminated soil remaining underneath were transported to a licensed disposal facility. The site was restored with backfill, topsoil, and grass seed and is now suitable for unrestricted use.

Due to the lack of funding from the Karnish Instruments estate, the Hazardous Sites Cleanup Act (HSCA) provided funding. The Hazardous Sites Cleanup Fund (HSCF), a special fund established under HSCA (35 P.S. §6020.101 et seq.), provides the funding for DEP to carry out a number of activities to address releases and threatened releases of hazardous substances to the environment.

Highlights:

- Demolished Radium-226 Contaminated Buildings
- Over 90,500 Tons of Contaminated Debris and Soil Removed
- New Housing for Low-Income Seniors was Constructed

Project Photos



Radium Illuminated Aircraft Gauge Dials



DEP Surveying Radiation Contamination at the Former Keystone Instruments Site

Project Photos



Former Lock Haven Court Building



Ron's Rental Excavation



Soil Removal at the Former Lock Haven Court Building



DEP Radiation Survey Inside the Former Lock Haven Court Building



Ron's Rental Interior Radiation Contamination Demolition



Ron's Rental Demolition

Project Photos



Former Lock Haven Court Demolition

The Hazardous Sites Cleanup Fund (HSCF), a special fund established under the Hazardous Sites Cleanup Act (HSCA) (35 P.S. §6020.101 et seq.), provides the funding for the Department of Environmental Protection (DEP) to carry out a number of activities to address releases and threatened releases of hazardous substances to the environment.



Lock Haven Court Ribbon Cutting



New Lock Haven Court Building