

Letter Health Consultation

Soil Data Evaluation
SENECA NATION SENIOR HOUSING COMPLEX
TOWN OF SALAMANCA, CATTARAUGUS COUNTY, NEW YORK

Prepared by the
New York State Department of Health

MAY 6, 2009

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

A health consultation is a verbal or written response from ATSDR or ATSDR's Cooperative Agreement Partners to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR or ATSDR's Cooperative Agreement Partner which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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LETTER HEALTH CONSULTATION

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STATE OF NEW YORK
DEPARTMENT OF HEALTH

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April 24, 2009

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Removal Action Branch
EPA Region II (MS-211)
2890 Woodbridge Avenue
Edison, New Jersey 08837

Re: Letter Health Consultation
Soil Data Evaluation
Seneca Nation Senior Housing Complex
Salamanca, Cattaraugus Co.

Dear Ms.Hriczko:

In March of 2009, the United States Environmental Protection Agency (USEPA) requested assistance from the Agency for Toxic Substances and Disease Registry (ATSDR) and the New York State Department of Health (NYSDOH) to evaluate possible exposures associated with contaminated surface soil at the Seneca Nation Senior Housing Complex property in Cattaraugus County, New York. This letter is a summary of the NYSDOH's public health evaluation of the potential current and future exposures to surface soil contaminants at the property.

Background and Statement of Issues

The Seneca Nation Senior Housing Complex is a senior residential facility on Seneca Street in the Town of Salamanca, Cattaraugus County, New York. A general location map is included on the following page as Figure 1.

The Seneca Nation Housing Authority, a tribally chartered corporation legally distinct from the government of the Nation, constructed the senior housing facility on the property between 1979 and 1980. The property was historically utilized as the U.S. Leather Company tannery, which operated from the 1860's to approximately 1950, when the buildings were razed by fire and the building debris was reportedly buried on-site.

Several environmental investigations have been completed on the property. In response to unusual subsidence and sinkhole formation, the Seneca Nation Housing Authority commissioned an environmental site investigation in August of 1998. An additional environmental site investigation was completed in 2000. Information provided by the Seneca Nation of Indians

Environmental Protection Department indicated that analytical results from the assessment were inconclusive and that additional evaluation was recommended.

In July of 2007, the USEPA received a formal request to perform a site assessment from the Seneca Nation and conducted a property visit on August 9, 2007. As part of the site assessment process, the USEPA requested that the Seneca Nation provide aerial photographs, historical information and Sanborn Maps to identify areas of concern. This information was considered necessary to guide the location and number of environmental samples.

Discussion

The USEPA received copies of historical information, aerial photographs and Sanborn Maps between November 2007 to April 2008 and proceeded with the collection of soil and groundwater samples on the property in July of 2008. A total of 25



Figure 1: Site Location Map

surface soil samples and 9 groundwater samples were collected at the property. The samples were analyzed for volatile organic compounds, semi-volatile organic compounds and metals. The surface soil samples were reportedly collected from mostly grass-covered areas on the facility, including near a picnic table and gazebo area. The facility and the surrounding area is served by a municipal potable water supply and facility residents do not drink the local groundwater. The groundwater data is not considered in this letter health consultation. This letter health consultation is focused on the soil data.

Surface soil sample results were compared to chemical-specific Soil Cleanup Objectives (SCOs) for restricted residential use (6 NYCRR Part 375 Environmental Restoration Programs Soil Cleanup Objectives). SCOs are contaminant-specific remedial action objectives for soil based on a property's current, intended or reasonably anticipated future use. In developing the SCOs, New York State Department of Environmental Conservation (NYSDEC) and NYSDOH considered many factors including multiple human exposure pathways (soil ingestion, dermal contact, inhalation, homegrown vegetable consumption, home-produced animal product consumption), short-term and long-term exposures, protection of ecological resources, protection of groundwater and background levels of chemicals in rural soils. Soil cleanup objectives have been developed for several land use categories, including "unrestricted" land use, residential use, restricted residential use, commercial use and industrial use. The restricted residential land use

category is considered applicable to properties where there is common ownership or a single owner/managing entity of the property. The soil cleanup objectives established for the restricted residential use category are considered applicable to properties used as apartment complexes, town homes and senior housing.

Table 1, below, presents the surface soil data in comparison to the NYSDEC SCOs for restricted residential use for those analytes that had at least one sample exceeding the applicable soil cleanup objective.

Table 1

Analyte ¹	Analyte Concentration Range (mg/kg)	Average Concentration (mg/kg) ²	Soil Cleanup Objective (mg/kg) ³	Frequency of Samples Exceeding Soil Cleanup Objective
Semivolatile Organic Compounds				
Chrysene	0.033 – 9.6	1.2	3.9	1 of 25
Benzo(b)fluoranthene	0.043 – 12	1.51	1	7 of 25
Benzo(a)pyrene	0.03 – 7	0.87	1	3 of 25
Indeno(1,2,3-cd)pyrene	0.11 – 4.5	0.67	0.5	9 of 25
Dibenz(a,h)anthracene	ND - 0.920	0.16	0.33	1 of 25
Metals				
Arsenic	7.7 – 36	19.2	16	18 of 25

ND indicates that the compound was not detected in the sample at a concentration above the method detection limit.

¹ No volatile organic compounds were detected in surface soil at concentrations that exceeded the NYS Restricted Use Soil Cleanup Objectives for the restricted residential land use category, and therefore are not listed in Table 1.

² Non-detects were assigned one-half the detection limit for the purposes of averaging.

³ 6 NYCRR Part 375 NYS Soil Cleanup Objectives for the restricted residential land use category.

As indicated in Table 1, five semivolatile organic compounds (chrysene, benzo(b)fluoranthene, benzo(a)pyrene, ideno(1,2,3-cd)pyrene and dibenz(a,h)anthracene) and one metal compound (arsenic) were detected in surface soil at concentrations above soil cleanup criteria for restricted residential uses in at least one sample. For all but two of these chemicals, the average concentration for this set of samples did not exceed the SCO. For two, indeno(1,2,3-cd)pyrene and arsenic, the average slightly exceeded the SCOs, which are based on rural background levels. Semi-volatile organic compounds and metals were detected at concentrations that exceed the SCOs in samples collected in grassy areas that are reportedly not used by facility residents. Samples collected from use-areas (e.g. outside a resident's door, beneath a picnic table and near a gazebo) did not have compounds detected in exceedance of the SCOs. Vegetable gardening is prohibited at the facility, therefore the potential for direct soil contact is limited. The restriction on vegetable gardening at the facility is consistent with the land uses considered in the development of the restricted residential SCOs that were used as comparison values in this letter

health consultation. The health risk associated with exposure to indeno(1,2,3-cd)pyrene and arsenic are expected to be similar to risks associated with exposure to typical rural soils.

Conclusions

The semivolatile organic compounds detected in surface soil are a class of compounds known as polycyclic aromatic hydrocarbons, or PAHs. PAHs are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. These compounds are often found in developed areas and are a group of contaminants that are typically found at properties that were subject to a fire, such as the site facility. Therefore, the presence of PAHs in surface soil at the facility is not unexpected. Arsenic was also detected in the surface soil samples at a concentration greater than the SCO. Arsenic is a naturally occurring element in soil and may also be present in soil as a result of environmental contamination. Based on the information provided, it cannot be determined if the levels of PAHs and arsenic in surface soil are related to past property uses and property events or are reflective of local background in a developed area.

While PAHs and arsenic were detected in some surface soil samples at concentrations greater than the SCOs, for all but two of these chemicals, the average concentration for this set of samples did not exceed the SCOs. This suggests that there may be isolated areas of elevated PAHs and arsenic in surface soil and does not indicate widespread facility contamination. Given how the residents might use the property and the lack of contaminant exceedances in higher-use areas, contact with contaminants at a level of health concern in surface soil is not likely. Therefore, the elevated levels of a few semivolatile organic compounds and arsenic detected in some on-site surface soil samples poses no apparent public health hazard.

Recommendations

Although contact with contaminants in surface soil is not likely given the location of the exceedances and the use of the facility, maintaining the grass cover helps to minimize the potential for exposures. NYS DOH and ATSDR recommend that, should the use of the site change, and the potential for exposures increased, these sampling data should be reevaluated for possible remedial or other actions, such as implementation of a soil management plan.

References:

NYS DEC (New York State Department of Environmental Conservation). 2006a. Superfund/Brownfield Regulation, 6 NYCRR Part 375 - Environmental Remediation Programs. <http://www.dec.ny.gov/regs/15507.html>

Sincerely,



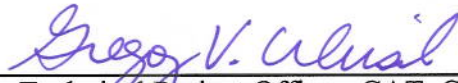
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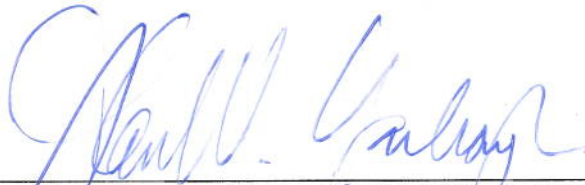
CERTIFICATION

The letter health consultation for the Seneca Nation Senior Housing Complex site was prepared by the New York State Department of Health 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 letter health consultation was initiated. Editorial review was completed by the cooperative agreement partner.



Technical Project Officer, CAT, CAPEB, DHAC

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



Team Leader, CAT, CAPEB, DHAC, ATSDR