Letter Health Consultation

FRASIER PAINT AND PAPER SITE

GLENS FALLS, WARREN COUNTY, NEW YORK

EPA FACILITY ID: NYN000206215

Prepared by
State of New York Department of Health

MAY 10, 2010

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

An ATSDR health consultation is a verbal or written response from ATSDR 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 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
Flanigan Square 547 River Street Troy, New York 12180-2216

Richard F. Daines, M.D.
Commissioner

James W. Clyne, Jr.
Executive Deputy Commissioner

April 30, 2010

Michael J. DiPietro
Engineering Geologist
NYSDEC - Division of Environmental Remediation
232 Golf Course Road
Warrensburg, NY 12885

Re: Letter Health Consultation
Frasier Paint and Paper
Glens Falls, Warren County
Site #557814N
CERCLIS # NYN000206215

Dear Mr. DiPietro,

The United States Environmental Protection Agency (USEPA) and the New York State Department of Environmental Conservation (NYS DEC) requested that the New York State Department of Health (NYSDOH), under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), evaluate the public health implications of soil data that were collected from two residential yards and one commercial property surrounding the Frasier Paint and Paper Site in Warren County, New York. This letter summarizes the NYSDOH's public health evaluation of the risk from potential exposures to mercury in soil on properties near the site.

Site Background and Statement of Issues:

The Frasier Paint and Paper Site (Site) is located at 5 Logan Avenue in the City of Glens Falls, Warren County, New York. The Site is adjacent to the Sanford Street Elementary School, residences, and small commercial businesses (Figure 1).

The former site building was built in the late 1800s and was used for the gold refining process. In the early 1900s, the site was converted to a machine shop. From the 1940's through the late 1970's the site was used to store spring water. A paint and wallpaper store operated on the site from 1985 until 2005, when the site was abandoned. The City of Glens Falls (City) took possession of the property in 2007, and requested that the USEPA conduct a removal assessment

on the site. Dangerous conditions, including the discovery of over 1,000 cans of paint and solvents stored in the deteriorating building adjacent to an elementary school prompted this request.

The containers were removed by the USEPA emergency removal team. The building was subsequently demolished by the City. During a Phase II environmental site assessment in mid-2008, elevated mercury levels and radioactive fly-ash were discovered in on-site soils under the footprint of the building. Additionally, the former concrete floor of the site building (now removed) was painted with lead-based paint. Based on this discovery, the City and NYSDEC referred the site back to the USEPA for further corrective action.

Soil Sampling:

USEPA returned to the site in August 2008 and collected on-site soil samples, analyzing them for total mercury. Mercury was found at levels up to 150 milligrams per kilogram (mg/kg). USEPA performed a speciation analysis on some samples, and determined that elemental mercury was present. Because elemental mercury was present, USEPA's site-specific removal action level for mercury in soils of 20 mg/kg, and their cleanup goal of 10 mg/kg, were used to make remedial decisions. Based on the data collected, the USEPA mobilized to remove on-site soil to a depth of 5 feet below the ground surface. The site was back-filled with clean sand from an off-site source.

USEPA then collected ten off-site surface soil samples in September 2008 from three private properties bordering the site (Figure 2). The purpose of this sampling was to determine if off-site surface soil was contaminated with mercury that may have migrated off-site.

The September 2008 off-site soil investigation included 9 surface soil samples and one duplicate from two residences and one commercial property. The samples were analyzed for total mercury (Table 1) and mercury speciation to determine if elemental mercury was present. The highest mercury concentration in soil was 0.37 mg/kg. The mercury speciation analysis showed that a small portion of the mercury detected was elemental mercury (ranging from 0 to about 45% of total mercury).

The soil sample results were compared to chemical-specific Soil Cleanup Objectives (SCOs) for residential use (6 NYCRR Part 375 Environmental Restoration Programs Soil Cleanup Objectives). The soil cleanup objectives established for the residential use category are considered applicable to the adjacent residential properties that were sampled and are also protective for commercial use. The NYS Part 375 Soil Cleanup Objective for total mercury in soil, under the residential land use scenario, is 0.81 mg/kg (Table 1). The results were also compared to the rural NYS surface soil survey background level of 0.18 mg/kg for total mercury (Table 1).

Exposure Pathways:

The potential for contact with low-levels of mercury in off-site soil exists, however, contact with soil is unlikely since adjacent areas are vegetated or paved (Figure 3).

Public Health Implications:

The SCOs derived by the New York State Department of Health and the New York State Department of Environmental Conservation are chemical-specific soil concentrations that are protective of public health and the environment. The SCO for total mercury for residential exposure (the type of land use most consistent with the off-site properties) is 0.81 mg/kg, and is protective against health effects from exposure to elemental mercury and other forms of this metal (e.g. inorganic). While several of the samples from the off-site properties showed mercury levels slightly above those we typically expect to find in soil, none of the mercury levels (which ranged from non-detect to 0.37 mg/kg) exceed the residential SCO for total mercury, and therefore the risk for adverse health effects from exposure to these soils is minimal.

Conclusion:

NYSDOH and ATSDR conclude that exposure to mercury in soil near the Frasier Paint and Paper site is not expected to harm people's health. (Appendices C & D).

Basis for Decision:

This is because the source has been removed and residual mercury levels meet all regulatory guidelines. The concentrations of mercury in nearby residential yards studied, while slightly above the New York State background levels, are below soil cleanup objectives. Exposure below soil cleanup objectives poses a minimal risk for adverse health effects.

Recommendations:

Based on an evaluation of the available data, the NYSDOH does not recommend additional actions to reduce the potential for exposure to mercury in off-site soils.

Sincerely,

Scarlett Messier
Public Health Specialist
Bureau of Environmental Exposure Investigation

ec: G. Litwin / D. Miles / R. Fedigan/FILE/
T. Johnson Ph. D.
P. Kahn - USEPA
G. Ulirsch Ph. D.– ATSDR, Central office
L. Graziano/ R. Stephenson – ATSDR, Region 2

References:

Clough Harbour & Associates, LLP, 2008, “Submission of Phase II Subsurface Investigation Reports,” July 2008

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

New York State Department of Environmental Conservation, 2005, “Appendix D: Concentrations of Selected Analytes in Rural New York State Surface Soils: A Summary Report on the Statewide Rural Surface Soil Survey,” August 2005 http://www.dec.ny.gov/docs/remediation_hudson_pdf/appendixde.pd

Weston Solutions, 2008, “Frasier Paint and Paper Site, Data Validation Assessment,” For USEPA, September 2008

USEPA OSC Website for Frasier Paint and Paper Soil Site: http://www.epaosc.org/site/site_profile.aspx?site_id=4214

Appendix A
Table

Table 1

Mercury Concentrations in Off-Site Soil

All units in milligrams per kilogram (mg/kg)

	Sample Number	Total Mercury	NYS Background	NYSDEC SCO Residential
Commercial	19	**0.37**	0.18	0.81
	20	**0.33**	0.18	0.81
	21	0.089	0.18	0.81
	22*	0.09	0.18	0.81
Residence 1	23	**0.37**	0.18	0.81
	24	**0.21**	0.18	0.81
	25	**0.25**	0.18	0.81
Residence 2	26	ND	0.18	0.81
	27	ND	0.18	0.81
	28	ND	0.18	0.81

*Duplicate Sample of 21
Bolded results are levels above NYS background.
ND = Non-detect (maximum reporting limit of 0.032 mg/kg)

APPENDIX B

Figures

Figure 1
Site Location Map

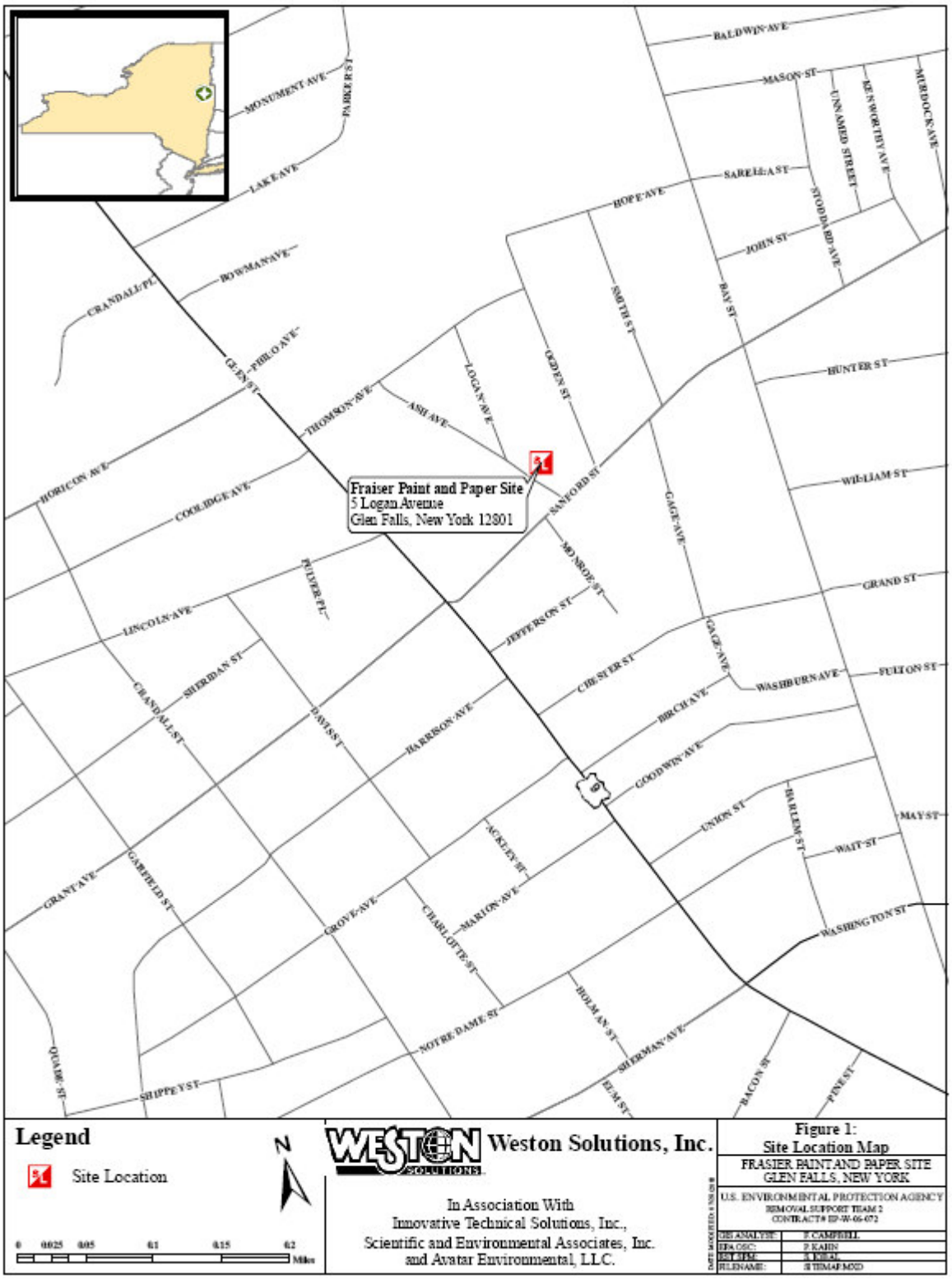

Figure 2
Surface Soil Sample Location Map
Total Mercury levels in parts per million (ppm)

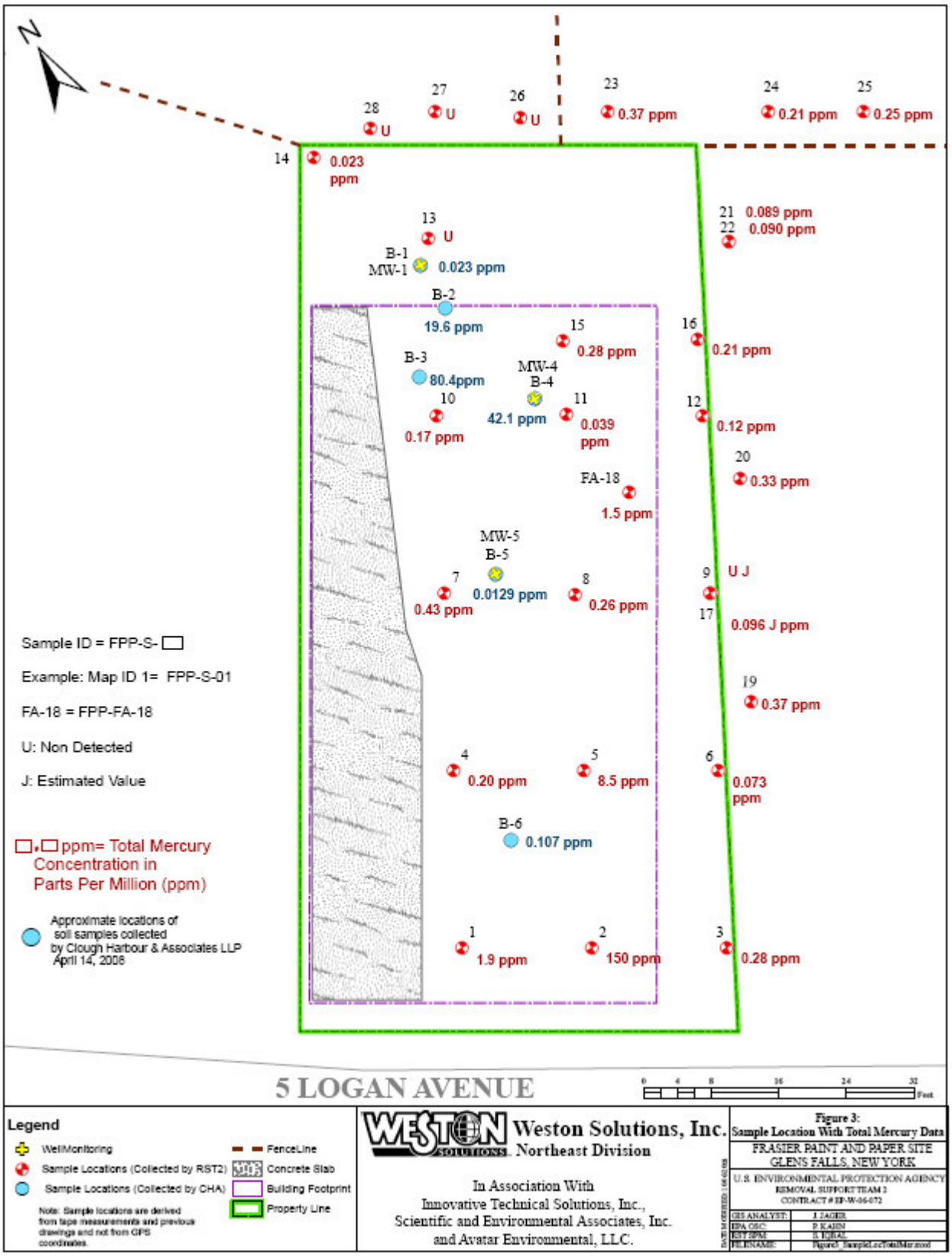

Figure 3
Site Aerial Photo

*Birds Eye View courtesy of Bing Maps

APPENDIX C

NYSDOH PROCEDURE FOR EVALUATING POTENTIAL HEALTH RISKS
FOR CONTAMINANTS OF CONCERN

NYSDOH PROCEDURE FOR EVALUATING POTENTIAL HEALTH RISKS FOR CONTAMINANTS OF CONCERN

To evaluate the potential health risks from contaminants of concern associated with the Frasier Paint and Paper Site, the New York State Department of Health assessed the risks for cancer and non-cancer health effects.

Increased cancer risks were estimated by using site-specific information on exposure levels for the contaminant of concern and interpreting them using cancer potency estimates derived for that contaminant by the US EPA or, in some cases, by the NYSDOH. The following qualitative ranking of cancer risk estimates, developed by the NYSDOH, was then used to rank the risk from very low to very high. For example, if the qualitative descriptor was "low", then the excess lifetime cancer risk from that exposure is in the range of greater than one per million to less than one per ten thousand. Other qualitative descriptors are listed below:

Qualitative Descriptions for Excess Lifetime Cancer Risk

Risk Ratio	Qualitative Descriptor
equal to or less than one per million	very low
greater than one per million to less than one per ten thousand	low
one per ten thousand to less than one per thousand	moderate
one per thousand to less than one per ten	high
equal to or greater than one per ten	very high

An estimated increased excess lifetime cancer risk is not a specific estimate of expected cancers. Rather, it is a plausible upper bound estimate of the probability that a person may develop cancer sometime in his or her lifetime following exposure to that contaminant.

There is insufficient knowledge of cancer mechanisms to decide if there exists a level of exposure to a cancer-causing agent below which there is no risk of getting cancer, namely, a threshold level. Therefore, every exposure, no matter how low, to a cancer-causing compound is assumed to be associated with some increased risk. As the dose of a carcinogen decreases, the chance of developing cancer decreases, but each exposure is accompanied by some increased risk. There is general consensus among the scientific and regulatory communities on what level of estimated excess cancer risk is acceptable. An increased lifetime cancer risk of one in one million or less is generally not considered a significant public health concern.

For non-carcinogenic health risks, the contaminant intake was estimated using exposure assumptions for the site conditions. This dose was then compared to a risk reference dose (estimated daily intake of a chemical that is likely to be without an appreciable risk of health effects) developed by the US EPA, ATSDR and/or NYSDOH. The resulting ratio was then compared to the following qualitative scale of health risk:

Qualitative Descriptions for Non-carcinogenic Health Risks

Ratio of Estimated Contaminant Intake to Risk Reference Dose	Qualitative Descriptor
equal to or less than the risk reference dose	minimal
greater than one to five times the risk reference dose	low
greater than five to ten times the risk reference dose	moderate
greater than ten times the risk reference dose	high

Non-carcinogenic effects unlike carcinogenic effects are believed to have a threshold, that is, a dose below which adverse effects will not occur. As a result, the current practice is to identify, usually from animal toxicology experiments, a no-observed-effect-level (NOEL). This is the experimental exposure level in animals at which no adverse toxic effect is observed. The NOEL is then divided by an uncertainty factor to yield the risk reference dose. The uncertainty factor is a number that reflects the degree of uncertainty that exists when experimental animal data are extrapolated to the general human population. The magnitude of the uncertainty factor takes into consideration various factors such as sensitive sub-populations (for example, children or the elderly), extrapolation from animals to humans, and the incompleteness of available data. Thus, the risk reference dose is not expected to cause health effects because it is selected to be much lower than dosages that do not cause adverse health effects in laboratory animals. The measure used to describe the potential for non-cancer health effects to occur in an individual is expressed as a ratio of estimated contaminant intake to the risk reference dose. A ratio equal to or less than one is generally not considered a significant public health concern. If exposure to the contaminant exceeds the risk reference dose, there may be concern for potential non-cancer health effects because the margin of protection is less than that afforded by the reference dose. As a rule, the greater the ratio of the estimated contaminant intake to the risk reference dose, the greater the level of concern. This level of concern depends upon an evaluation of a number of factors such as the actual potential for exposure, background exposure, and the strength of the toxicologic data.

Appendix D

Conclusion Categories and Hazard Statements

Conclusion Categories and Hazard Statements

ATSDR has five distinct descriptive conclusion categories that convey the overall public health conclusion about a site or release, or some specific pathway by which the public may encounter site-related contamination. These defined categories help ensure a consistent approach in drawing conclusions across sites and assist the public health agencies in determining the type of follow-up actions that might be warranted.

1. **Short-term Exposure, Acute Hazard *"ATSDR concludes that...could harm people's health."***

This category is used for sites where short-term exposures (e.g. < 1 yr) to hazardous substances or conditions could result in adverse health effects that require rapid public health intervention.

2. **Long-term Exposure, Chronic Hazard *"ATSDR concludes that...could harm people's health"***

This category is used for sites that pose a public health hazard due to the existence of long-term exposures (e.g. > 1 yr) to hazardous substance or conditions that could result in adverse health effects.

3. **Lack of Data or Information *"ATSDR cannot currently conclude whether...could harm people's health."***

This category is used for sites in which data are insufficient with regard to extent of exposure and/or toxicologic properties at estimated exposure levels to support a public health decision.

4. **Exposure, No Harm Expected** "***ATSDR concludes that ... is not expected to harm people's health"***

This category is used for sites where human exposure to contaminated media may be occurring, may have occurred in the past, and/or may occur in the future, but the exposure is not expected to cause any adverse health effects.

5: **No Exposure, No Harm Expected *"ATSDR concludes that ...will not harm people's health."***

This category is used for sites that, because of the absence of exposure, are not expected to cause any adverse health effects.

CERTIFICATION

The letter health consultation for the Frasier Paint and Paper—Evaluation of Soil Sampling Data from Two Residential Yards and One Commercial Property, 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 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