



Activities in Alaska



ATSDR in Partnership With Alaska

The Agency for Toxic Substances and Disease Registry (ATSDR) is the lead public health agency responsible for implementing the health-related provisions of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). ATSDR is an Atlanta-based federal agency with more than 400 employees and a budget for 2004 of approximately \$73 million. ATSDR assesses the presence and nature of health hazards at specific Superfund sites, helps to prevent or reduce further exposure and illnesses resulting from those hazards, and expands the knowledge base about the health effects of exposure to hazardous substances.

ATSDR works closely with state agencies to carry out its mission to serve the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and disease related to toxic substances. ATSDR provides funding and technical assistance to states and other partners through cooperative agreements and grants to identify and evaluate environmental health threats to communities. These resources enable state and local health departments and other grantees to further investigate environmental health concerns and to educate communities. In **fiscal years 1993–2002**, ATSDR awarded more than **\$1.9 million** in direct funds and services to **Alaska** for financial support of specific environmental health activities. In addition to direct funds and services, ATSDR provides technical and administrative guidance for state-conducted site activities.

ATSDR Site-Specific Activities Public Health Assessment-Related Activities

One of ATSDR's important mandates is to conduct **public health assessments** of all National Priorities List (NPL) sites and of other sites where a significant threat to public health might exist. A public health

assessment is a written, comprehensive evaluation of available data and information about the release of hazardous substances

into the environment in a specific geographic area. Such releases are assessed for past, current, or future impact on public health. ATSDR, in collaboration with public health and environmental officials from **Alaska**, has conducted **10** public health assessments in the state, including the following recent example.

- **Fort Wainwright**—Fort Wainwright is an active U.S. Army installation in **Fairbanks**. Accidents or waste management practices over the years have resulted in spills or releases of industrial materials into the soil or the underlying groundwater of the installation. The most common contaminants at the post are volatile organic compounds; pesticides; polychlorinated biphenyls; and petroleum, oils, and lubricants.

In September 2003, ATSDR released a public health assessment to evaluate exposure pathways and respond to community members' concerns about past and current exposures to contaminants originating at the site. ATSDR assessed past and current potential exposure pathways (via groundwater, soil, and air) at the site. ATSDR did not identify public health hazards associated with the majority of the on-post contaminated sites because they are not widely accessible to the public, they contain only low levels of contamination, or remedial activities to remove contaminants were completed.

ATSDR assessed past exposures for three potential exposure pathways. The groundwater pathway from a nearby contaminated church well and possible exposure pathways resulting from coal ash and its use as road grit on the post posed no apparent public health hazard. However, ATSDR concluded that on-post coal-fired power

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plant emissions periodically could have reached concentrations that exceed the current National Ambient Air Quality Standards. Because data to assess possible exposures are not available, exposures to these emissions were categorized as an indeterminate public health hazard.

ATSDR identified several possible current exposure pathways. Four of these were categorized as no apparent health hazard: contaminants in on-post or off-post drinking water supplies; on-post surface soil and Chena River surface water or sediment; lead-based paint in on-post housing; and hazards in on-post housing, administrative, and industrial buildings.

ATSDR categorized current exposure to radiation associated with buried radiologic material as no public health hazard.

ATSDR categorized current exposure to contaminants from ingestion of Chena River fish as an indeterminate public health hazard because insufficient sampling data are available to determine whether concentrations of metals exist in the river at levels that could indicate a public health hazard for fish consumers. ATSDR recommends considering additional sampling for the Chena River to determine whether the one arsenic sampling event was representative of chronic contamination or a random occurrence. The Army is scheduled to reevaluate the sampling needs for the river in 2005; the need for additional arsenic sampling will be considered at that time.

During visits to the site, ATSDR was concerned that children could enter the underground corridor system (utilidors). The post's Department of Public Works will replace the unlocked utilidor lids with new lids to prevent children from entering utilidors and to maintain worker safety.

A **health consultation** is a written or oral response from ATSDR to a specific request for information about health risks related to a specific site, chemical release, or hazardous material. A health consultation is a more limited response than a public health assessment is. Sixty health consultations have been developed at 39 sites in Alaska, including the following recent example.

- **Umiat Air Force Station**—A Nuiqsut community member asked ATSDR to evaluate fish data collected from the Colville River in 2001, taking

into consideration specific exposures to the Nuiqsut community. In 2001, ATSDR released a health consultation that reviewed data from fish sampled near the former Umiat Air Force Station in 1997 and 1998. The health consultation focused on evaluating the potential risk to people who harvest fish in or near the Umiat site. Because of the small quantity of fish, ATSDR determined that human exposures to contaminants in fish at the Umiat site were not occurring at frequencies considered a current public health problem. Therefore, ATSDR concluded in the 2001 health consultation that current Colville River fish contamination data did not indicate the need for public health concern.

As part of the 2001 health consultation, ATSDR recommended that additional sampling be conducted to better characterize the nature and extent of downstream contamination in the river. To address this issue, 70 burbot were collected from the Colville River near Umiat and Nuiqsut. Burbot are the most numerous resident predatory fish in the river, and the species is actively sought and eaten by the subsistence population.

In a health consultation released in November 2003, ATSDR reviewed and evaluated potential exposures to the Nuiqsut community, which relies on fish from the Colville River. ATSDR recognizes that the use of these fish has high cultural and nutritional significance. To help the community weigh information about potential risk in terms of their personal values, the health consultation also presents information about the benefits of eating fish.

ATSDR reviewed and evaluated four potential exposure scenarios: eating fish from the river every day for 70 years, eating whole burbot in high quantities 4 months of the year, eating burbot livers 4 months of the year, and eating several burbot livers in one sitting.

Although PCBs, dichlorodiphenyltrichloroethane (DDT), and DDT derivatives were detected in fish collected from multiple areas of the river, the levels were low, and exposures to those levels are not expected to cause harmful health effects. Thus, ATSDR determined that the fish are safe to eat at all four exposure levels: conservative chronic exposure from eating a high quantity of fish (up to almost a pound) from the river every

day for 70 years; intermediate exposure from eating burbot in high quantities during certain times of the year (for example, during the seasonal harvest); intermediate exposure in which the elders of the Nuiqsut community eat about six burbot livers per week and children eat about three livers per week during the 4-month burbot harvest; and an acute exposure scenario in which elders eat six burbot livers during one meal.



ATSDR instructor at February 2003 training in Anchorage.

Health Education and Community Activities American Indian and Alaska Native Initiative

Through its Office of Tribal Affairs, ATSDR coordinates and consults with Alaska Native villages about health concerns related to hazardous exposures.

ATSDR is partnering with Alaska Native villages and corporations, federal agencies, and state agencies concerning possible environmental exposures from former military sites and the correlation to cancer rates in several areas. ATSDR also is collaborating with Alaska Natives to evaluate potential exposures to chemicals. The following sites, tribes, or villages have ongoing activities: **Aleutian Pribilof Islands, Annette Island, Cook Inlet, Dutch Harbor, Eielson Air Force Base, Elmendorf Air Force Base, Ft. Yukon, Gambell, Ketchikan, Northeast Cape, Port Graham, and Sitka.**

Training

In response to requests from communities and tribal governments in Alaska for training, ATSDR conducted the Basic Course for Health Assessment and Consultation in February 2003 in **Anchorage**. The 55 participants represented a variety of villages, organizations, and agencies and throughout the state, including the native villages of **Paimuit, Elim, Koyuk, and Kivalina; Tanana Chiefs Conference; Bristol Bay Health Corporation; Alaska Native Health Board (ANHB); Alaska Community Action on Toxics; University of Alaska;** as well as the state of Alaska, U.S. Army, and EPA. Participants traveled

from nearly every borough in Alaska to attend the course.

The course was tailored to meet the needs of Alaska Natives and those who work for Alaska Native organizations or on Alaska Native environmental health issues. Case studies and exercises used Alaskan hazardous waste sites as examples and addressed issues of concern for the area, such as contamination

in fish. This tailored course trained professionals and village workers in Alaska how to assess health implications at hazardous waste sites. The course increased participants' knowledge of ATSDR processes and resources, which will aid future collaborations. The course also provided networking opportunities to aid future cooperation between the diverse groups represented at the training and increased agency participants' abilities to conduct community involvement and health education activities in rural village settings.

The Alaska Traditional Diet Project Alaska Residents' Concerns

Persistent organic pollutants, heavy metals, and radionuclides from both local and distant sources have been found in **Alaska** and other Arctic areas. Concerns exist that exposure to contaminants resulting from a subsistence lifestyle, or through commercial and recreational exposure, can potentially lead to cancer, worsen existing conditions such as diabetes and asthma, and increase the incidence of other health problems. To enable them to make informed choices about their foods, Alaskans have asked for more information about the risk from these exposures and the nutritional benefits of traditional foods.

Congressional Mandate

In 2001, Congress asked ATSDR to identify and study "contaminants in the environment, subsistence resources, and people in Alaska Native populations." Subsequently, Congress expanded ATSDR's project to cover all consumers—including subsistence, commercial, and recreational consumers—of Alaskan traditional foods. Among its strengths, ATSDR brings

an extensive public health experience in helping state and tribal governments and communities identify and reduce exposures to contaminants in the environment.

ATSDR's Response to Mandate

ATSDR formed an **Alaska Traditional Diet Project (ATDP)** team to address the mandate from Congress. In consultation and collaboration with the **Alaska Department of Health and Social Services**, other state and federal agencies, Alaska Native organizations, and tribes, ATSDR provided funding to the **ANHB**. The monies supported a contaminants workshop in **Alaska**, development and implementation of a food frequency questionnaire (FFQ), and limited biota (food) sampling for environmental contaminant testing.

The grant to ANHB, which begun in September 2001 and has been extended through fiscal year 2004, includes training and monies to Alaska Native villages to conduct the FFQ and analyze the data collected. The FFQ provides information about food eaten seasonally and portions consumed. Data analysis by nutrition experts will provide information on the nutrients present in these foods.

The project is being closely coordinated with Alaska Natives and, through tribal input, will build capacity within the native villages for future projects. Thirteen villages were funded to collect FFQ data; these villages are located in four broad, regional areas of Alaska—the interior, the southeast, the west coast, and the Arctic slope. All 13 communities and their respective health corporations recently cleared the FFQ results for release. The FFQ results were used to identify foods being sampled for contaminants in two of these communities. This limited food sampling is ongoing.

Resource Materials

ATSDR develops materials for public health professionals and medical care providers to use to assess the public health impacts of chemical exposures. These resources are available in print, on the ATSDR Web site, and on CD-ROM. For example, medical management guidelines are available for acute chemical exposures to more than 50 chemicals. These guidelines were designed to aid emergency department physicians and other emergency health care professionals, such as first responders, who manage acute exposures resulting from chemical incidents. ATSDR's toxicological profiles comprehensively

describe health effects; pathways of human exposure; and the behavior of more than 250 hazardous substances in air, soil, and water at hazardous waste sites. The toxicological profiles primarily are used as a comprehensive resource by health professionals at all levels. These profiles have been sent to requesters, including representatives of federal, state, and local health and environmental departments; academic institutions; private industries; and nonprofit organizations in **Alaska**. ATSDR also has developed extensive resources for community members.

For more information, contact ATSDR toll-free at 1-888-42ATSDR (1-888-422-8737) or visit the ATSDR Web site at www.atsdr.cdc.gov.