Health Consultation

Draft Environmental Assessment Proposal

Y ROAD LANDFILL
WHATCOM COUNTY, WASHINGTON

March 13, 2000

Prepared by
The Washington State Department of Health
Under a Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

FOREWORD

The Washington State Department of Health (WDOH) has prepared this Health Consultation in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR is part of the U.S. Department of Health and Human Services and is the principal federal public health agency responsible for health issues related to hazardous waste. This Health Consultation was prepared in accordance with methodologies and guidelines developed by ATSDR.

The purpose of this Health Consultation is to identify and prevent harmful human health effects resulting from exposure to hazardous substances in the environment. The Health Consultation allows WDOH to respond quickly to a request from concerned residents for health information on hazardous substances. It provides advice on specific public health issues. WDOH evaluates sampling data collected from a hazardous waste site, determines whether exposures have occurred or could occur, reports any potential harmful effects, and recommends actions to protect public health.

For additional information or questions regarding WDOH, ATSDR or the contents of this Health Consultation, please call the Health Advisor who prepared this document:

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BACKGROUND AND STATEMENT OF ISSUES

The Washington State Department of Health (WDOH) has prepared this health consultation in response to a request from the Whatcom County Health and Human Services Department to review and comment on its July 20, 1999, draft request for an environmental assessment proposal for the Y Road Landfill located in Whatcom County, Washington. Additional information about the draft request for a proposal was also provided on August 4, 1999, (letter from Chris Chesson, Whatcom County Health and Human Services to Barbara Trejo, WDOH). WDOH prepares health consultations under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR).

The Y Road Landfill, owned and formerly operated by Whatcom County, is located on Y Road, northeast of the City of Bellingham in Whatcom County, Washington. Final closure of the landfill occurred in 1991. The landfill consists of two parcels that are separated by Y Road. The western parcel is located west of Y Road; the eastern parcel is north and east of the western parcel on the east side of Y Road. Both parcels contain waste disposal areas that are covered with one to two feet of soil. In general, five-acre rural residential properties that use private water supply wells as a potable water source are located north, south, and west of the landfill; forested land is located to the east. Surface water including springs near the landfill may also be used as a potable water source. The landfill is located in the Carpenter Creek drainage basin. Carpenter Creek discharges to Lake Whatcom, the City of Bellingham's public water supply.[1]

There is currently insufficient information to evaluate the effect of the landfill on potable water sources in the area. The draft request for an environmental assessment proposal is the first step towards addressing the data gaps.

DISCUSSION

The draft request for an environmental assessment proposal outlines tasks necessary to investigate environmental conditions including surface water and groundwater quality at and adjacent to the landfill. Phase I of the proposed environmental assessment will include collecting and analyzing geologic and hydrogeologic information about the landfill and the surrounding area to develop a preliminary conceptual model of the area; identifying and locating water supply wells within 2,000 feet of the landfill; surveying landfill property boundaries; and collecting and analyzing preliminary groundwater and surface water samples. Monitoring well installation, additional groundwater and surface water sampling, waste characterization, and a landfill cover evaluation are proposed for Phase II of the proposed environmental assessment.[2, 3]

The tasks proposed for the two phases of the environmental assessment, with some minor modifications, should provide the information needed to evaluate the effect of the landfill on the sources of potable water used by residents living near the landfill. This, in turn, will allow an evaluation of the potential risks posed by the potable water sources on human health.

The following items are WDOH's comments regarding the draft request for an environmental assessment proposal:

- A work plan/sampling and analysis plan should be prepared for the first five tasks described in the request for an environmental assessment proposal. This will provide Whatcom County Health and Human Services Department an opportunity to review how data will be collected and analyzed before the tasks are completed. This is especially important for the planned surface water and groundwater sampling to ensure that appropriate sampling procedures and analytical methods are used.

- Task 1, Literature Search – Water supply well logs generated by the well driller should be included as key data to be reviewed. The logs can provide information about individual water supply wells as well as limited geologic and hydrogeologic information. Water supply papers and geologic reports are other important documents to be reviewed.

- Task 2, Survey – The waste disposal boundaries should be included as part of the survey. This information will be useful for locating monitoring wells.

- Task 3, Existing Wells – It should be determined during the investigation of existing wells whether the wells are being used as a potable water source. This is important when evaluating potential risks to human health.

  Springs and surface water may also be used as a potable water source near the landfill. Appropriate information should also be obtained about springs and surface water.

  Well screen depth or well screen elevation data should be extracted from the driller's water supply well logs so it can be determined where in the aquifer the well is withdrawing water. Information about the type of pump installed in the well should also be included. The type of pump is significant when collecting groundwater samples. For example, submersible pumps are water cooled. Samples collected using submersible pumps can be heated resulting in the loss of volatile organic compounds.

- Task 4, Site Evaluation – A portion of the Georgia Pacific property located east of the eastern parcel of the landfill receives surface water runoff that appears to recharge groundwater in the area. This area should be evaluated as part of Task 4.

- Task 5, Groundwater and Surface Water Sampling – WAC 173-352-990, Criteria for Municipal Solid Waste Landfills, is referred to in Task 5. It appears that the reference should actually be WAC 173-351-990.
  It is proposed that groundwater sampling be conducted at one or two water supply wells upgradient of the landfill and four or five water supply wells downgradient of the landfill.[3] The sampling should be conducted on water supply wells used as potable water sources so an evaluation of the potential risks to human health can be completed.

- Task 7, Phase II, Scope of Work - An understanding about the lateral extent of the waste disposal areas is necessary for selecting upgradient and downgradient monitoring well locations. This task should be completed in the Phase I investigation or early in the Phase II investigation, prior to the installation of the monitoring wells.

  The vertical extent of the waste disposal areas will be evaluated during Phase II.[3] Care should be taken to prevent contaminant transport to underlying soils and groundwater.

CONCLUSIONS

1. The data gaps that prevent the evaluation of the effect of the landfill on potable water sources near and downstream of the landfill should be significantly reduced with the completion of the tasks described in the draft environmental assessment proposal.

2. The data collected during the environmental assessment will likely allow an evaluation of the potential risks posed by the potable water sources on human health to be completed.

RECOMMENDATIONS

1. WDOH recommends that Whatcom County Health and Human Services Department incorporate WDOH's suggested changes into the final request for the environmental assessment proposal for the Y Road Landfill.

2. Whatcom County Health and Human Services Department and Whatcom County Public Works should consider expanding the environmental assessment proposal, in the future, if data gaps remain after the completion of the first two phases of the environmental assessment and the evaluation of the risks posed by the potable water sources on human health cannot be completed.

WDOH is available to review plans, data, and reports generated as part of the environmental assessment conducted at the Y Road Landfill.

REFERENCES

1. Draft Health Consultation, Y Road Landfill, Whatcom County, Washington, Washington State Department of Health, July 1999.

2. Draft Request for an Environmental Assessment Proposal, Letter from Chris Chesson, Whatcom County Health and Human Services Department, to Jon Einarsen, BEK Purnell, July 20, 1999.

3. Letter from Chris Chesson, Whatcom County Health and Human Services Department to Barbara Trejo, WDOH, dated August 4, 1999.

Glossary

Aquifer	An underground formation composed of materials such as sand, soil, or gravel that can store and/or supply groundwater to wells and springs.
Agency for Toxic Substances and Disease Registry (ATSDR)	The principal federal pubic health agency involved with hazardous waste issues, responsible for preventing or reducing the harmful effects of exposure to hazardous substances on human health and quality of life. ATSDR is part of the U.S. Department of Health and Human Services.
U.S. Environmental Protection Agency (EPA)	Established in 1970 to bring together parts of various government agencies involved with the control of pollution.
Exposure	Contact with a chemical by swallowing, by breathing, or by direct contact (such as through the skin or eyes). Exposure may be short term (acute) or long term (chronic).
Groundwater	Water found underground that fills pores between materials such as sand, soil, or gravel. In aquifers, groundwater often occurs in quantities where it can be used for drinking water, irrigation, and other purposes.
Hazardous substance	Any material that poses a threat to public health and/or the environment. Typical hazardous substances are materials that are toxic, corrosive, ignitable, explosive, or chemically reactive.
Ingestion rate	The amount of an environmental medium which could be ingested typically on a daily basis. Units for IR are usually liter/day for water, and mg/day for soil.
Monitoring wells	Special wells drilled at locations on or off a hazardous waste site so water can be sampled at selected depths and studied to determine the movement of groundwater and the amount, distribution, and type of contaminant.
Organic	Compounds composed of carbon, including materials such as solvents, oils, and pesticides which are not easily dissolved in water.
Risk	The probability that something will cause injury, linked with the potential severity of that injury. Risk is usually indicated by how many extra cancers may appear in a group of people who are exposed to a particular substance at a given concentration, in a particular pathway, and for a specified period of time. For example, a 1%, or 1 in 100 risk indicates that for 100 people who may be exposed, 1 person may experience cancer as a result of the exposure.