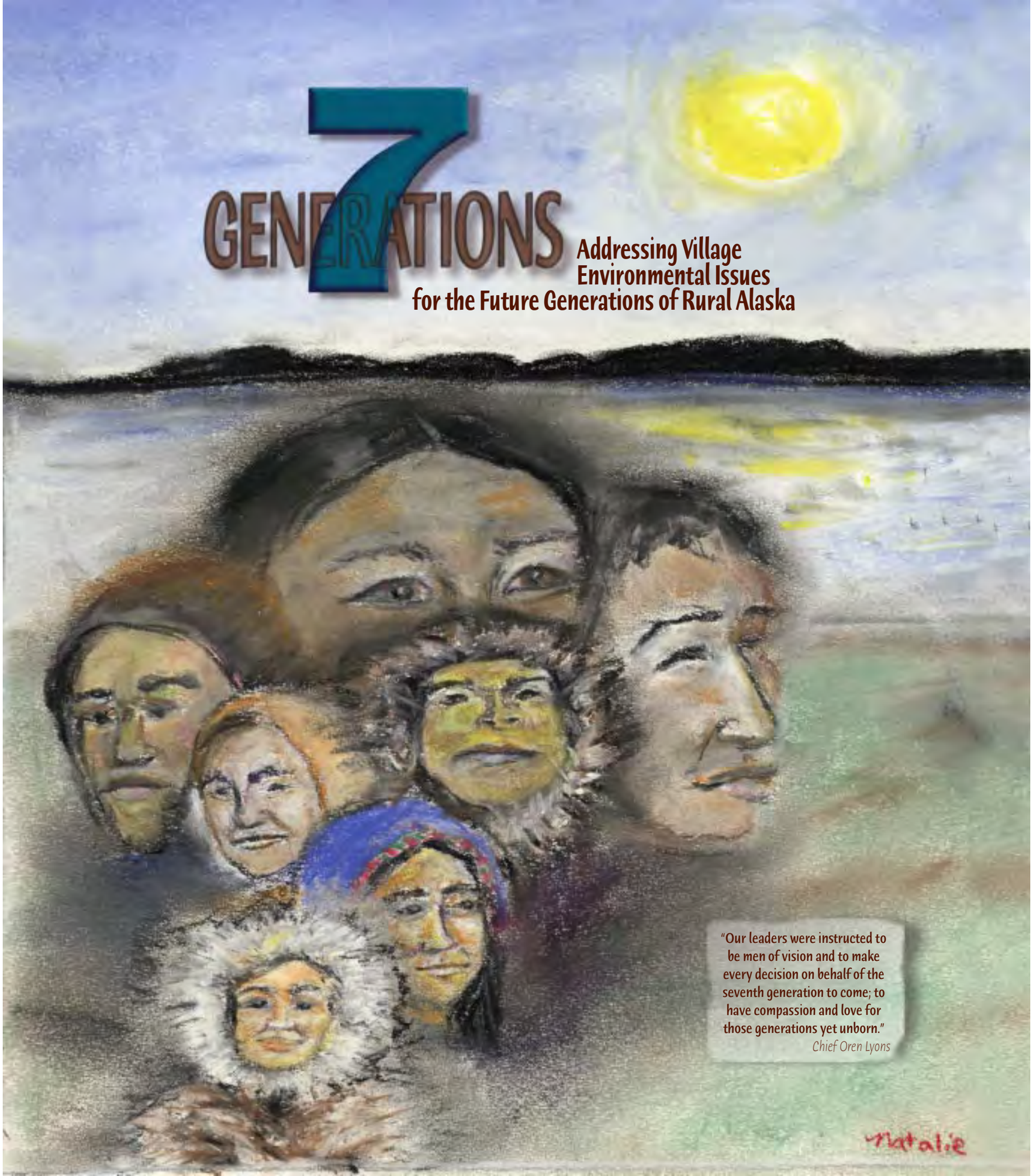
7 GENERATIONS

Addressing Village Environmental Issues for the Future Generations of Rural Alaska



"Our leaders were instructed to be men of vision and to make every decision on behalf of the seventh generation to come; to have compassion and love for those generations yet unborn."

Chief Oren Lyons

Natalie

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Addressing Village Environmental Issues for the Future Generations of Rural Alaska.

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This manual is dedicated to all of the people in rural Alaska who have committed time and energy to improving the environmental health conditions of their communities.

Environmental Change is about Commitment

"There were two or three times that my boat battery didn't start up my boat motor and my boyfriend and I used poles and paddles to move our aluminum boat. He said 'Sarah is an environmentalist and we save on gasoline.' So, we worked hard to get our boat around, we spent lots of time and effort. Then we really worked to get the driftwood and the fish, not to mention the body muscles that complain after we made many many extra body movements to get our boat home again."

Sarah Weisner,
AmeriCorps Member, Shungnak
Photo courtesy Brian Connors

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Many people have offered their time, knowledge, stories and support in the preparation of this manual. **Simon Mawson** and **Bill Stokes** of the State of Alaska Department of Environmental Conservation, Rural Issues Program provided overall technical guidance in the production of this manual. Your help in making this a useful and informative document is greatly appreciated. Thank you!

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[1] United States Environmental Protection Agency = USEPA
[2] Alaska Department of Environmental Conservation = ADEC

Table of Contents

About this manual . . .

Communities in rural Alaska are faced with many unique and complex environmental issues. The presence of honey buckets, permafrost landfills, remote access, and extreme winter conditions are examples of issues that make rural Alaska unique from other parts of the United States. This manual has been produced in order to address these unique environmental issues using a common sense approach that promotes and encourages community-driven environmental management.

The approach to environmental planning taken in this manual can be described as "community-based." A "community-based" approach to any type of planning is essential in order for communities to develop a greater sense of ownership to problems and solutions. **Environmental planning is most successful when the community is involved in the entire process from identifying problems to solving them.** Although many environmental planning guides focus on community-based efforts, this manual is specific to rural Alaskan issues and provides many examples from rural communities throughout Alaska.

7 GENERATIONS *Addressing Village Environmental Issues for the Future Generations of Alaska* is divided into three parts:

Part 1

Part 1 of the manual describes one approach to village environmental planning. It also describes how to use the surveys in Part 2 of this manual in village environmental planning.

Part 2

Part 2 of the manual includes the Village Environmental Planning Survey & Technical Environmental Survey. These surveys are used to identify community environmental priorities and to identify environmental issues. Both of the surveys are described in detail and examples from rural Alaska are included.

Part 3

Part 3 includes a directory, list of resources, and appendices.

Why do you need this manual?

7 GENERATIONS *Addressing Village Environmental Issues for the Future Generations of Alaska* is a manual designed for people in rural Alaska who want to accomplish environmental planning and management by using a community-based approach. The manual contains valuable tools that enable a community to prioritize and identify environmental issues of concern within their community. This manual was written to assist communities to more self-reliant and to take responsibility for their own environmental issues.

As communities begin to take more responsibility for their own environmental concerns and issues, they will rely less on others to solve problems. Clarence Alexander, Chairman of the Board for the Council of Athabascan Tribal Governments, described this issue at the Yukon River Inter-Tribal Watershed Summit:

> ***"You know we always had our hands out. We were hoping that some miracle would happen that would help us survive in our land. And, today we are finding out that we are the ones who have to take the lead. We have to be the ones to initiate. We are the ones who have to do something in our community. We are the ones who have to teach in order for those younger ones to know."***
>
> *Clarence Alexander*

Building community strength to identify and solve problems is a powerful process that can lead to a healthier and more sustainable community. A community that is driven by the interests of its members rather than by outside interests will have a greater sense of ownership and pride in its accomplishments. A self-governing community also will have a greater influence over the goals and future direction of the community in the environmental realm or other domains. Although this manual focuses solely on selected environmental issues, the people driven initiatives discussed are an effective way for a community to take its inherent right to self-govern in all areas by influencing and taking responsibility for educational, social, judicial and health efforts within a community.

Why are you here?
Quotations from Rural Alaska

Environmental assessment training workshops have been held all over the State of Alaska to train local residents on how to use the tools in this manual to identify and assess environmental concerns in their communities. Most of these workshops are funded through Native non-profit health corporations through an Indian General Assistance Program grant from the U.S. Environmental Protection Agency.

At the start and conclusion of each workshop, participants were asked to answer the question "why are you here?" The following responses reflect the range of knowledge, technical tools and insights gained by the participants as well as the ownership and responsibility for applying what was learned when they return home. Moreover, they reaffirm the importance of developing a sustainable community-based approach to addressing environmental issues and problems that currently face rural Alaskan villages.

"…to become an example to the community in the prevention and reduction of solid waste garbage and other hazardous materials in our village. Also, to start a recycling program with our kids."

Casey Kalmakoff, Ivanof Bay

"I am here to learn from the experience of others. Here to become more aware of things that I know of now regarding the environment. I am here to take knowledge, resources and tools home. To improve the environment immediately."

Charlie Nelson, Iguigig

Tlingit Haida Central Council, Juneau

"I am here to learn environmental issues and to bring back to our village information about safe water and about solid waste. I have learned to test the water for chlorine levels… I also learned about some very toxic wastes in the dump or landfill and of some ideas of what shouldn't be in there such as aluminum cans, plastic bags, also batteries which have acid in them and lead."

Harry Wassily, Clark's Point

"I have learned a lot about drinking water and the landfill and what harm it can do to the community and the land around it. Education and being a role model will make the difference."

Georgie Alexie, Nondalton

Norton Sound Health Corporation, Nome

"I am here to learn as much as I can and become more aware of my environment. Being aware of how daily actions can be harmful. Making others aware of how ignorance is physically harmful to them and everything around them."

Mary Ann Johnson, Portage Creek

"I am here because of the lack of understanding I had pertaining to the environmental issues that the community is surrounded by. I care more now than I did before I arrived."

Roy White, Egegik

"I am here to learn about environmental issues that concern us all and to go back and present this to the community and make it a safer place to live. By educating them about the harmful things that we are doing to ourselves and to the world."

Robert Larson, Koliganek

Bristol Bay Native Association, Dillingham

"To get the ball rolling on all environmental matters. I am going to check wells for safe water. Dump matters like capping the old ones and working on the existing ones. Get the schools to crush the cans. Not only the schools but the whole village. To set an example for my son so he can start at a young age to think about environmental matters. Change the villages' eyes on environmental matters to open them towards prevention."

Fred Tom Hurley, Ekwok

"To learn more about solid waste in the landfill and more about pollution. To learn ways to educate other people about environmental problems we must face. Also, the importance of water quality."

Bobby Winer, Beaver

"I learned, listened and became very aware of how much the environment has to do with not only myself and others but with my children and possibly my future grandchildren. My only regret is that a lot more people are still in the dark–I am proud to be able (at least try) to explain this to my village. The 3 R's–reuse, recycle and reduce."

Valerie Carroll, Birch Creek

Association of
Village Council Presidents, Emmonak

"Take back to members of our tribe the knowledge I have learned, especially to our most important resource, the children, to continue the important reason for preserving our natural resources. The environmentally sound management of all of our natural resources for the enjoyment of all, far into the future."

Wally Flitt, Fort Yukon

"To protect our environment by educating others."

Melinda Peter, Fort Yukon

"… I also learned the steps I need to take to make my home a safe and clean place to live for myself, my children and my people."

Pamela Sam, Venetie

"During the course of the week I've learned what is involved with an environmental assessment/ survey and problem areas to look for. There are many serious conditions in various parts of the village we've seen so often. They've become the background and we've been living among such things for so long it's not an issue. It is now my goal to identify problem areas, find solutions and educate the community about these issues."

Samantha Hoover, Kasigluk

Aleutian Pribilof Islands Association,
Dutch Harbor

"My goal is to share the information that I have gathered and put the tools to work, community awareness, solid solutions, without money, small steps, by example-talk the talk/walk the walk."

William Andrew, Marshall

"To use the tools I learned and use these tools to educate the community I work with."

Harvey Anvil, Napaskiak

Council of Athabascan Tribal Governments, Chalkyitsik

"To pass on the knowledge and create environmental awareness and educate the youngsters and to keep trying no matter what."

Walter Johnson, Quinhagak

"I am here because I want to learn as much as I can about waste on the land and in the water. I want to know what I can do about it and I want to know what resources I have to work with. Also, on what this waste is doing to our people's health. Then I plan on taking this back to my community and teach the children and their families."

Ruth Farrens, Sand Point

"I am here to better my knowledge on how to better the environment in my community and make it safer to live in Nelson Lagoon for everybody."

Ray Johnson, Nelson Lagoon

Mannilaq, Kotzebue

"I will live here for the rest of my life. Our environment we are in today is unsafe. I would like to implement a program through our tribe to educate all who reside here, such as local households, schools and processing plants about the importance of recycling, hazardous disposal and re-use."

Janis Krukoff, Unalaska

Part 1: Environmental Assessments and the Environmental Planning Process

Overview of Part 1:

In Part 1 of this manual you will find a definition of 'environmental assessments' and a summary of general steps that can be followed in village environmental planning. Included within the steps (mostly in Step 3) is a description of how you can use two different surveys in this manual to build an environmental assessment of your community. These two surveys were developed specifically for rural communities in Alaska. Both surveys are described in further detail in Part 2 of this manual.

Part 1–Environmental assessments and the environmental planning process

Defining environmental assessment:

What does the word "environment" mean?




An elder best described the word environment as "everything outside of your body." The word environment has different meanings to different people. Another definition of environment is everything that surrounds us, both living and nonliving. This includes plants, animals, earth, mountains, ocean, air, weather and sky. To many traditional cultures, the environment includes the natural world and spiritual world, and the connections between these two worlds. For example, in Yupiaq the word *ella* is the closest translation to the English word environment. When *ella* is combined with different Yupiaq words, it can mean weather, world, creative force, god, or awareness.

> ***"This we know: the earth does not belong to man, man belongs to the earth. All things are connected like the blood that unites us all. Man did not weave the web of life, he is merely a strand in it. Whatever he does to the web, he does to himself."***
>
> *Chief Seattle, Chief of the Suquamish Indians*

What is an "assessment"?

An assessment is the result of carefully looking at something and then making conclusions based on what you see. In other words, an assessment is the result of *analyzing* and *evaluating* something. Analyzing something involves making careful observations. Evaluating something involves making a judgement or opinion based on what you see and know to be true. For example, before crossing a river on snowmachine in the winter, you would analyze how thick the ice is and then make a judgement, or evaluate, whether the river would be safe to cross.

What is an environmental assessment?

An environmental assessment is an analysis and evaluation of your surroundings. This may include plants, animals, air, earth, and water. For example, in Galena there is an old military site. When doing an assessment of the site, the community analyzed how many barrels of contaminants (dangerous or toxic materials) existed, the contents of the barrels, and how long the contaminants had been there. After analyzing the site, they evaluated the possible impact that the contaminants could have on human health and the environment. After all of the information is gathered the assessment is usually presented as a report or other document.

> There are many ways to complete an environmental assessment in your community. One way that is described in this manual is by involving the community and using surveys. However, an environmental assessment also can be completed by intensive interviewing, research, producing a video, hiring a contractor or a combination of different methods. The two surveys described in this manual can be used to gather information to make a general environmental assessment of your village.

Where do environmental assessments fit into environmental planning?

Environmental assessments are generally done in the beginning stages of planning. Step 3, "Define your community's needs using environmental assessment surveys," in the process described below is where environmental assessments fit into the planning process described in this manual.

Environmental Planning

Environmental planning is a process of identifying, assessing and coming up with solutions to environmental issues. The goal of environmental planning is to improve the quality of the environment and the health and welfare of people.

Environmental planning in a community can be approached in a number of different ways. Described in "Village Environmental Planning Steps" on pages 11–26is an approach to planning that uses the two surveys described in Part 2 of the manual. **This manual focuses mainly on Step 3 of the Village Environmental Planning Steps. (See Figure 1.)**

Because communities differ in their issues, values, tradition, and culture, the same approach to environmental planning may not work for every community. Some processes already exist that work well in a community. If your community has an approach to planning that works, then use it!

Talk with people from other villages and find out how they have approached environmental planning in their own community. Many villages in Alaska are doing extensive environmental planning and may be able to provide you with helpful advice and technical expertise. Networking between rural communities about environmental issues will strengthen the local government's ability to achieve its own goals and maximize its use of resources.

What is "community-based environmental planning?" It is planning that is performed by local individuals and groups in the community to address the community's environmental concerns.

Village Environmental Planning Steps

Figure 1. Cycle of steps in village environmental planning.

Village Environmental Planning Steps

Step 1: Put together a planning team

The first step in village environmental planning is to find members of the community who are interested in being part of a planning team. Ask individuals, hold home meetings, or hold community meetings to find out who is concerned about environmental issues and wants to invest their time and energy in environmental planning. In Cordova, the environmental planner used a survey to find community members who were interested in being on a planning team. Over 30 people responded that they would like to be involved in environmental planning in some way.

Getting community leaders involved as well as a variety of people from different interests groups (i.e., water operator, school officials, residents) will give more complete input into the planning process. Remember to include the wisdom of elders and the concerns of youth. Involving children in environmental planning is not only educational, but also better insures that environmental planning will continue with future generations.

Involving children in environmental planning is educational and helps ensure that the planning will continue with future generations.
Photo courtesy Bill Stokes

A planning team is most effective with a team of 5-10 interested people. Selecting one or two individuals to take the lead role as environmental planners in the group can be a very effective approach. Community members to consider on your team include:

Community Leaders:

Village elders
Chief
Mayor
Village council members
Health board members
Regional and village corporation board members
Youth representatives

Other Community Members:

Environmental planner
Water operator
Village sanitarian
Local health aide(s)
AmeriCorps Member
School officials
Lodge owners/other business people
Concerned residents- both youth and adults
Community association members
Emergency response people
Village safety officer
Others?

Courtesy Alaska Native Health Board

Once you identify a team of interested people, present the idea at the next village or traditional council meeting. Ask the council to officially form a "Village Environmental Planning Team." The planning team can decide when and how often to meet.

Step 2: Develop a vision for the future

A vision is a long-term goal or dream:

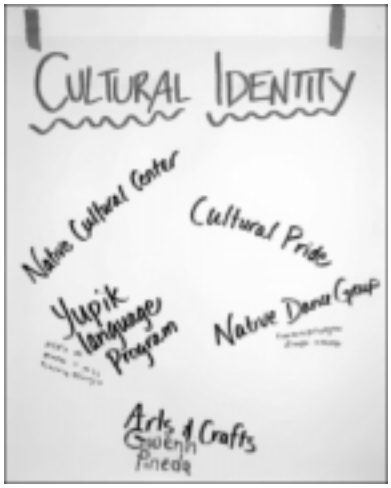
A vision carries a powerful message that is based on the culture and values of the community. Before a community begins environmental planning or any other type of planning, the planning team gathers with community members to develop a vision for the future of the community. **A vision is a dream of what is possible. It is an overall picture of what the community wants to be and how it wants to look in the future.** For example, a community's vision could be that all children in the village are healthy.

> ***"Our leaders were instructed to be men of vision and to make every decision on behalf of the seventh generation to come; to have compassion and love for those generations yet unborn."***
> *Chief Oren Lyons*

Be daring with your vision. You may not be able to achieve everything you set out for, but your vision will give you a focus and direction. Keep in mind that villages grow with time. Vision your community with twice the amount of people, twice the number of homes, twice the 4-wheelers, and twice the fishing boats on the river.

A key element in developing a vision is community involvement. **All community members need to be invited to participate in all stages of the visioning process.** Future projects will have greater support and success if the community is involved. Encourage children, adults and elders to participate throughout the process. Involving all generations will bring a valuable exchange of information and ideas.

There are many other effective ways to get the community involved in visioning other than holding community meetings. For example, the community of Galena communicates their hopes, concerns, fears and priorities to the environmental planners through informal discussions that take place around the village offices, the post office, during river trips, in school classrooms and while just walking around town. The community has chosen to be involved in environmental planning in a way that fits easily into their daily routines.



Accomplishments identified at a community "visioning" meeting in Aniak.
Photo courtesy Bill Stokes.

Steps in developing a vision:

Where did we come from?

illustration by Natalie Garber

Developing a vision begins with thinking about the values and beliefs of your community and determining which beliefs are important to the local way of life. For example, the Koyukon people's way of looking at the world traditionally viewed wasting any part of a plant, animal or other resource as disrespectful. Because of this, waste was not allowed.

Which values, beliefs and ways of looking at the world are important to people living in your community today? Do community members practice these? Using this knowledge keeps valued traditions and lifestyles alive and respected by community members.

Where are we now?

The next step in visioning is to build a picture of the community; identify what works for the community, what does not work, and what items are valued. Later, this picture will help create your vision.

> ***COMMUNITY RELATIONS TIP***
> ***Make sure all concerns that are brought up by the community are addressed. Hard feelings will result if individuals' concerns are not addressed.***

One way to involve the community at this stage is to ask the question: "What environmental issues are of concern to the community?" Ask people to come up with all the environmental issues that are relevant to the village. Make a list of these issues. Make sure to write every person's comment on the list.

Courtesy Alaska Native Health Board

Some examples of concerns that may appear on the list include: too much garbage in the village, dust from the roads, and polluted river water. Later, you can use this list as a guide when developing a survey. You may want to refer to the issues identified on the Village Environmental Planning Survey on pages 38–39 to see if there are any issues listed that members of the community did not mention. These issues may be added to the

list if the community feels they are important. Once you have all of the issues on a list, you may want to group similar issues together to shorten your list if necessary.

The Village of St. Paul used a similar approach to identify the cultural strengths of the community in an effort to do culturally sensitive economic planning. They used a video to document what people saw as cultural strengths. Some of the strengths identified were the importance of women cooking for large groups, and the fishing knowledge and experience of the men. After building on the fishing knowledge of the community, St. Paul developed a successful halibut industry.

Where are we going?

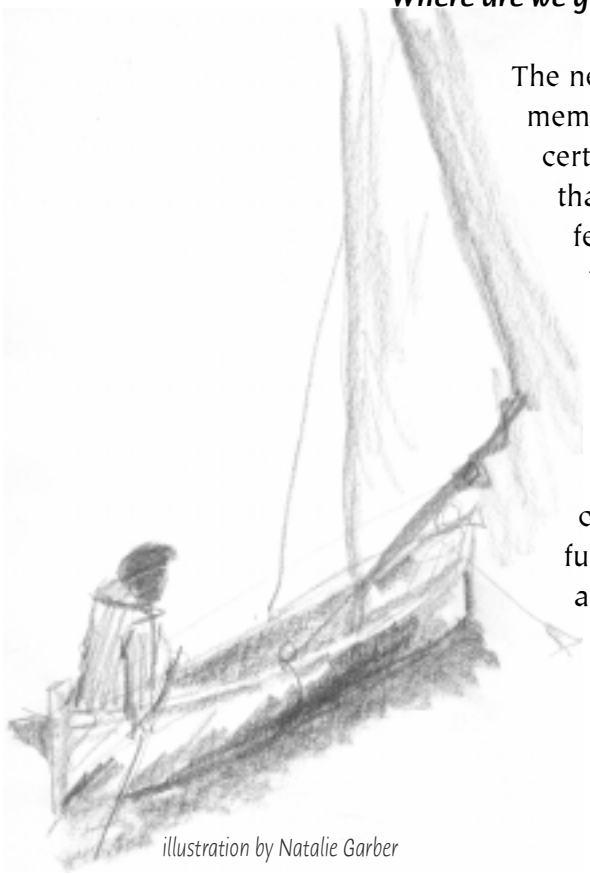


illustration by Natalie Garber

The next step in developing a vision is for community members to look at the direction the community will go if certain practices are not changed. For example, a village that currently benefits from commercial fishing may feel that the future fish population will be harmed if the harvest continues at the same rate.

This is an important step to determine whether the community is headed in a direction that does not harm the people or the environment. In other words, will present actions threaten the community's ability to survive or support itself in the future? If so, the community will need to consider alternative actions.

Where do we want to be?

Once you have looked at the past, where you are now and where you are going, the next step is to decide where you want to be in the future. This is your community's vision. **A vision is made up of a community's hopes and dreams.** It describes a picture of what the people want to see happening in the future. A community's vision is arrived at through community consensus, or agreement, and then written down in a statement. This is called a **vision statement**.

Courtesy Alaska Native Health Board

It is important for the community to aim for a method of decision-making where everyone's input matters. Consensus is only reached when all people agree on a certain issue. We need to hear each voice if we are truly striving for a people-driven, community-based approach to environmental planning.

Use the vision statement to guide your community throughout the process of environmental planning. You will need to re-evaluate the vision over time. Vision statements may change as the community changes.

The Village of Iliamna's vision statement is:

Through individuals working together for a better community, Iliamna will maintain the quality of life where residents and visitors will respect the people, land, resources and culture.

Step 3: Define your community's needs using environmental assessment surveys

This step in community-based environmental planning is the main focus of the surveys in this manual. You will be able to identify some of your community's environmental needs using the environmental assessment surveys included in Part 2.

Once an environmental planning team has been established and has met with other community members to develop a vision, the next step is to identify the needs and desires of the community.

The Village Environmental Planning Survey (VEPS)

After the community has identified the environmental issues during Step 2, "Develop a vision for the future", the next step is to prioritize these issues. Ranking the importance of environmental issues with community input can lead to greater community support and understanding of the planning process. The community decides the best way to prioritize these issues.

One way to prioritize issues is by doing a survey so the entire community has the opportunity to give input. This allows everyone to be involved in the planning process.

The *sample* Village Environmental Planning Survey on pages 38–39 is designed for rural areas of Alaska. This survey is a tool to assist communities in prioritizing their environmental issues. You can use this survey as a model, and add or delete issues from it based on issues specific to your community. However, the best approach is to develop the survey with the help of the community.

Barrow's Village Environmental Planning Survey:

The results of the Village Environmental Planning Survey show how the community ranks different environmental issues in terms of importance. For example, after conducting a Village Environmental Planning Survey in the Native Village of Barrow, the results showed that the community viewed the top 3 most important environmental issues as:

1. *Hazardous materials and toxic waste cleanup in dump sites and other designated areas;*
2. *Raw sewage spills in the village and raw sewage disposed at the lagoon; and*
3. *Barrow landfill (dump site).*

The results of this survey were very important to the Native Village of Barrow. Originally, the North Slope Borough Assembly was considering cutting 1.5 million dollars in Capital Improvements Program funding for the closure of the Barrow landfill. However, because the sewage lagoon, hazardous materials and toxic waste, and the Barrow landfill were the highest priority issues for the Barrow Tribal Membership, the Assembly eventually took action to keep the 1.5 million dollars for the Barrow landfill closure in the budget for the coming fiscal year. A survey can be a powerful tool! See Appendix B for a copy of the Barrow survey results.

Eyak's Village Environmental Planning Survey:

The Village of Eyak has also used the Village Environmental Planning Survey. The top 3 issues identified in the Eyak Environmental Survey are:

1. *Safe drinking water*
2. *Eyak Lake water quality*
3. *Orca Inlet water quality*

Based on the overwhelming majority of tribal members who ranked safe drinking water and the water quality of particular water bodies as the top issues that needed attention, Eyak's Environmental Program has begun planning for an Eyak Tribal Water Quality Program.

For more information on how to develop and use the Village Environmental Planning Survey, refer to pages 29–43 in Part 2 of the manual.

Many villages rank their landfill as a high priority.
Photo courtesy Bill Stokes.

Technical Environmental Survey (TES)

Once you have identified the environmental priorities of community members using the Village Environmental Planning Survey, the next step is to identify some actual environmental issues in your community. Completing the Technical Environmental Survey can help you do this. Using these two surveys together can be an effective way to prioritize and identify environmental issues in your community. The two surveys are also excellent environmental tools for your community.

The Technical Environmental Survey is a series of questions concerning drinking water, wastewater, solid waste, fuel tank farms, and air quality. For example, one question on the survey asks whether there is a place in the village for residents to store used oil. If the answer is 'no,' it indicates a problem. The technical survey may bring out important environmental health issues in your village. By completing all of the questions, you will become more familiar with different environmental issues in your community.

Compare the issues identified in the technical survey with the results of the Village Environmental Planning Survey. For example, in an ideal world, if the community identified drinking water as the most important environmental issue, the technical survey would show that there are few or no problems associated with drinking water. If the surveys don't match, then community education may be necessary. Part 2 of this manual contains a Technical Environmental Survey that YOU can use to do an assessment of some of your village's environmental issues. See Appendix C for a comparison of the issues covered on the two surveys.

Combine the information you gather from the Technical Environmental Survey with information you get from other sources such as different surveys, technical reports, or previous assessments. The more information that you gather about the environmental condition of your community, the more complete picture you will have of the environmental issues affecting your community.

Involving the community:

Once you have completed both surveys, it is important to review the results with the community. Individuals can then see which environmental issues the community identifies as most important (Village Environmental Planning Survey results). The community also will be able to see specific environmental problems identified using the Technical Environmental Survey.

One way that you can present the results of the survey to the community is during a community meeting. The information can also be presented using newsletters, radio announcements or posters. Any approach that effectively brings the information back to the children and adults in the community is useful. Think of a system that would work best in your village for getting the information back to the people and use this approach. The information in Part 2 of the manual can help guide you through explaining the results of the survey to your community. The explanations also can be helpful when preparing an environmental assessment or work plan for your community.

Francis Xavier holds up a plastic bag when talking about littering to a group of students in Emmonak.
Photo courtesy Bill Stokes.


NEWSLETTER

Margaret McCaslin brings environmental news to the community of Selawik in a newsletter

> **COMMUNITY RELATIONS TIP**
> *Be accountable to the community. If you make promises, make sure you fulfill the promises or you will lose your credibility.*

The community may have identified certain issues as lower priority on the Village Environmental Planning Survey, yet the technical survey identified problems associated with those issues. For example, let's say that the community ranked the landfill number 6 in order of priority on the Village Environmental Planning Survey. Let's also say that the Technical Environmental Survey results identified the following serious problems associated with the landfill. For example,

- *No operator for landfill*
- *No fence around the landfill*
- *Uncontrolled access to the landfill*
- *Lead acid batteries and other hazardous materials in the landfill*
- *Large pools of water in the landfill*
- *Animals scavenging at the landfill*
- *No community education programs about solid waste*

People in the community who did not see the landfill as an environmental health problem at first may feel different once they understand the health hazards associated with a poorly managed landfill. Because some serious issues associated with the landfill were identified with the Technical Environmental Survey, the community's viewpoint may change on the issue. In other words, the results of the Technical Environmental Survey can be educational and may alter some of the perceptions identified in the Village Environmental Planning Survey. **Education is a very important part of the planning process.**

A landfill that is out of control.
Photo courtesy Sandy Murley.

Steps 4-7 which follow are descriptions of the remaining steps in environmental planning. These steps are only briefly described, as they are not the main focus of this manual.

Step 4: Identify possible solutions

After the community identifies, prioritizes, and discusses the environmental issues from both surveys, it is time to find solutions. At this step, it is important to determine all possible solutions to the problems identified and the costs to carry them out. Involving your community throughout the entire planning process and educating them on environmental issues will better prepare community members to help find solutions.

Involve community members, both children and adults, as much as possible when identifying solutions. The children in your community are a valuable resource. Connecting the young people to real issues in the community builds a stronger educational experience and benefits the community.

The youth in your community are a valuable resource (high school students in Aniak).
Photo courtesy Suanne Unger.

A simple solution for keeping batteries from polluting the landfill.
Photo courtesy Bill Stokes.

Remember to network with other communities when identifying solutions. There may be villages that found workable solutions to similar environmental problems. Knowing solutions that did not work is helpful as well. Your Regional Health Corporation or Native Association may be able to connect you to villages with similar issues.

Step 5: Put the plan together

Now that you have worked with the community and developed a vision statement, a consensus over perceived environmental issues, a list of environmental problems and needs, and possible solutions, it is time to produce your environmental plan.

Environmental plans are developed to achieve the community's goals or priorities in the area of environmental protection and health. The plan should focus on the highest environmental health priorities identified by the community. You want to solve as many of the urgent problems as possible using the resources available in your village.

Some things to consider when setting priorities for action include:

- *What support is needed?*
- *Which solutions involve short-term projects and which involve long-term projects?*
- *Are any issues beyond the ability of the village to control?*
- *What is the cost?*
- *Which issues are simple to solve?*
- *Are volunteers available to carry out tasks?*

Keep in mind when prioritizing issues that you may be able to address some less urgent issues with limited resources. For example, sanitation presentations at the school are a simple goal to achieve. Consider simple, achievable goals when prioritizing issues. Also, pay special attention to any solutions that can address more than one problem at a time.

Once you have determined the goals or priorities that make up your environmental plan, the next step is to break the goals down into smaller, more manageable steps. For example, if one goal is to begin a recycling program, you can break this down into the following smaller actions:

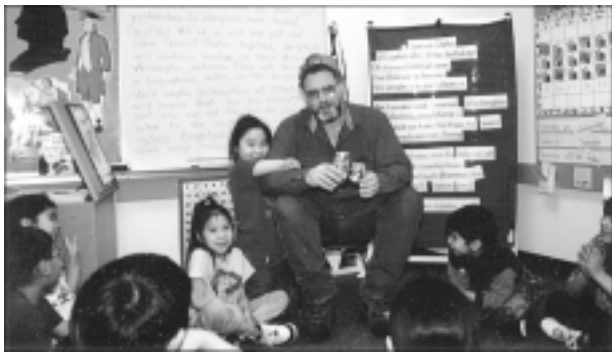
- *Raise awareness of problems with landfill*
- *Begin a solid waste/recycling education program*
- *Set up a system to collect recylables*
- *Put together a recycling committee*
- *Identify volunteers to assist with recycling program*

Each of the above actions can then be broken down further into more specific steps. See Appendix D for a copy of the Environmental Management Workplan for Chenega Bay.

Step 6: Carry out your plan

The next step in the planning process is to put your plan into action. This involves:

- *Developing a timetable for when you would like to accomplish tasks. Consider community members who need to be available for each task. If necessary, plan to carry out tasks when people are not away fishing, hunting or gathering.*
- *Determining the costs to carry out the plans and where funds will come from.*
- *Determining who will be involved in accomplishing each of the tasks (i.e. local government, individuals in community, outside organizations).*



Bill Stokes of ADEC talks about recycling to a first grade class in Wales.

Step 7: Evaluate your plan

After you produce and carry out your plan, it is important to measure how well it worked and make any changes necessary to improve the plan. Develop a good monitoring system that guides workers/volunteers in measuring accomplishments. This way you will know if the actions taken have been successful or effective. Perhaps a community environmental advocacy group could be formed to monitor the progress of the projects. This will motivate the workers as well as provide the necessary checks and balances. An ideal monitoring system uses input from all age groups from both within and outside the community.

Outside consultants can be useful in evaluating a plan. However, in order for your planning efforts to continue and be supported by future generations, it is essential for your community to be involved with designing the evaluation plans. This creates community ownership of the plan.

An environmental plan is constantly changing. Once you have reached the point of evaluating your plan, the whole process begins again. Environmental planning is a continuous cycle. You will need to revisit your vision and the needs of the community over time. The needs of the community will change; however, the community's vision may or may not remain the same.

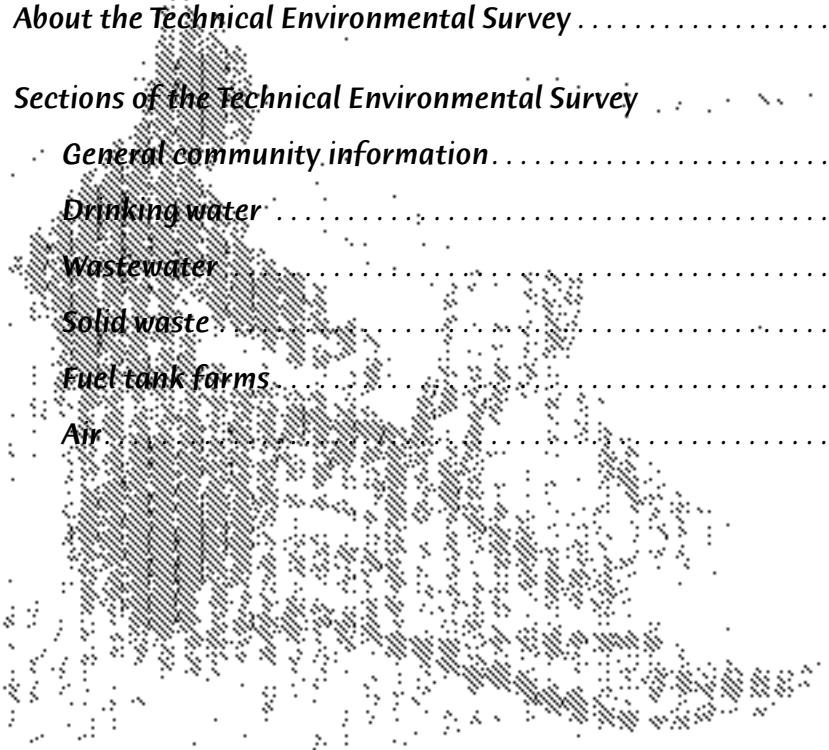
> ***COMMUNITY RELATIONS TIP***
>
> ***Give constant feedback to the community. In order to build the community's trust, they need to be informed of both good and bad developments at every step.***

Part 2:
Environmental Assessment Surveys

Overview of Part 2:

Part 2 of the manual includes the Village Environmental Planning Survey and the Technical Environmental Survey. These surveys are used to identify environmental priorities and issues within the community. This section describes both surveys in detail and includes examples from rural Alaska.

Part 2–Environmental assessment surveys



The Village Environmental Planning Survey

About the Village Environmental Planning Survey:

What is the Village Environmental Planning Survey?

A *survey* is a tool used to gather information. A survey can be a written document or a list of interview questions. There are many ways to gather needed information. The Village **Environmental Planning Survey** is used to identify a community's environmental priorities. The sample survey shown on pages 38–39 is used to build consensus, or agreement, within the community over environmental issues. The survey identifies many issues that are relevant to rural communities in Alaska. Some of these environmental issues may not relate to your community. You may also have environmental issues specific to your community that do not appear on the survey. For this reason, each community will want to design their own survey form to better reflect local issues and concerns.

Example

Village Environmental Planning Survey

	Not important			*Very important*		
A	1	2	3	4	5	Safe drinking water
B	1	2	3	4	5	Abandoned vehicles, boats or other equipment left in and/or around the village

Issues covered on sample Village Environmental Planning Survey:

- *Safe drinking water*
- *Abandoned vehicles, boats, etc.*
- *Beach and/or river bank erosion*
- *Village dump/landfill*
- *Construction materials left by contractors*
- *Abandoned drums*
- *Raw sewage spills/sewage disposal*
- *Annual clean-up*
- *Indoor air pollution*
- *Fuel oil contaminated soils*
- *Air pollution outdoors*
- *Dead animals/fish left around village*
- *Trash left around village*
- *Contaminated subsistence foods*
- *Old military sites*
- *Hazardous or toxic materials*
- *Other issues*

Other environmental issues::

Sarah Weisner identified a serious environmental concern for her village of Shungnak:

"We have villages living upstream from us. They also have dog teams and these dogs do waste along the riverbanks. When the river comes up and washes the beach, everything goes down river and we consume the water, fish, and animals and everything that comes with it. We are also a village upstream from other villages."

Wilfred Ashby from the Village of Noatak is concerned with the impacts of nearby mining and how it may be affecting his village and the surrounding areas used for subsistence.

Explanation of Village Environmental Planning Survey issues:

A brief explanation of each issue on the Village Environmental Planning Survey on pages 38–39 is provided below. It may be useful to use these explanations and pictures when conducting your Village Environmental Planning Survey door-to-door.

Safe drinking water

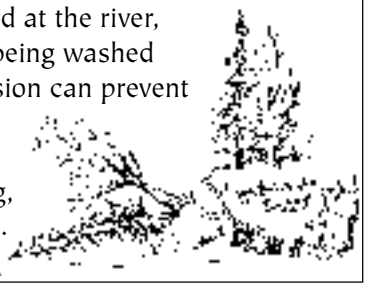
Safe drinking water is water that is safe from disease and contaminants. Untreated or improperly treated water can make people sick, especially children and elders.

Abandoned vehicles, boats or other equipment left in and/or around the village

Materials such as deserted cars, boats, old generators, engines, and snowmobiles left around the village are ugly and contain hazardous materials such as antifreeze and lead-acid batteries. These abandoned materials can pollute the environment and are dangerous to children who often play with them.

Beach and/or river bank erosion

Erosion of the river bank or beach means that soil or sand at the river, lake or ocean-side is being washed away by weather. Erosion can prevent fish from living and reproducing. Erosion also threatens housing, roads and old landfills.

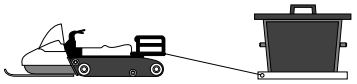


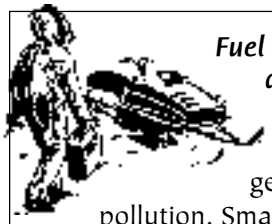
Annual clean-up program

Annual clean-up programs are a way to involve the community in improving the appearance of the village.

Raw sewage spills in the community and improper sewage disposal at the lagoon

In honey bucket communities, sewage spills can lead to the spread of infectious diseases.





Fuel oil contaminated soils in and/or around the village

Fuel from snowmachines, ATVs, cars, fuel tanks and the power plant generator is a potential source of pollution. Small amounts of oil dripping on the ground can add up to a large amount over time. Oil can pollute the drinking water.

Air pollution problems caused by the village electric generator, open burning at the dump, vehicles or smoke from burn barrels in the village

The air that comes out of generators, vehicles and from burn barrels may contain chemicals that are toxic, or poisonous, to your body. Some materials are known to cause cancer.

Abandoned drums in and/or around the village

A 55-gallon abandoned drum may contain hazardous materials that eventually leak into the ground and contaminate the water. Empty drums are ugly and can potentially be harmful to children.

Village dump/landfill

Many landfills in rural areas are uncontrolled and present public health problems. Some landfills contain hazardous materials that could potentially get into the drinking water.

Dead animals and dead fish left in or around the village

Dead animals and fish attract organisms that spread diseases.

Trash left in and/or around the village

Trash left around the village is ugly and can also contribute to the spread of disease.

Old military sites cleanup

Many old military sites have not been cleaned up and materials remain in or near villages. Some of these materials may be hazardous. Not every village has old military sites.

Contaminated subsistence foods

Hazardous materials that are not properly disposed of can potentially poison the subsistence foods your community relies on and make the food unsafe to eat.

Indoor air pollution, such as cigarette/wood stove smoke

Cigarette smoke and wood stove smoke are sources of indoor air pollution and can be hazardous to your health.

Construction materials that are left behind by contractors

Contractors often leave behind materials such as paints, thinners, and plywood that are not used up completely. Some of these materials may be hazardous.

Environmental issues beyond village control, such as ozone depletion, polluted oceans and/or rivers

There are many issues that may affect your village that you have no control over. For example, pollution created in places far away from Alaska contributes to the depletion of the ozone layer. This increases the chances for cancer caused by the sun's radiation.

Hazardous or toxic materials left in dump sites and/or other areas around the village

Hazardous or toxic materials include things such as antifreeze, lead-acid batteries, fuel oil, many household cleaners, old lead paint, paint thinners, gasoline, aerosol cans and asbestos. These materials should not be placed in your landfill because they can potentially get into the ground and contaminate the drinking water.

Other?

Add any other environmental issues that are specific to your community. For example, dust on the roads, polluted water upstream, environmental effects of logging, improper use/disposal of toxic household cleaning products, mining operations, leaking fuel transfer pipes, tourism, etc.

Why do you use the Village Environmental Planning Survey?

The Village Environmental Planning Survey is a powerful tool that can be used to build community consensus. Community-based environmental planning begins by finding out which environmental issues the community sees as the most important issues. The Village Environmental Planning Survey can be used to rank your community's perception of environmental issues. The results show a consensus, or agreement, over village environmental issues.

> ***"While environmental issues often polarize communities dealing with questions of economic development and the health of the environment, this survey gave the Tribe consensus about environmental issues without involving politics."***
>
> *Kate Williams, Eyak Environmental Program Coordinator*

Benefits of doing a Village Environmental Planning Survey:

- *Allows for input from each person in the community*
- *Involves the community in environmental planning*
- *Serves as an educational tool for the community*
- *May help your village get funding*
- *Shows potential funders that the community is involved in environmental planning*
- *Helps people in the village work together*

The Council for Athabascan Tribal Governments is using the results from the Village Environmental Planning Surveys in their region to leverage funding for various projects.

How is the Village Environmental Planning Survey used in planning?

Steps 2 and 3 discussed on pages 14–22 of the manual describe how to use the Village Environmental Planning Survey in the planning process.

The Village Environmental Planning Survey should be developed with the help of your community. Use the sample survey on pages 38–39 as a model, and add or delete issues from it based on input from the community. The Village Environmental Planning Survey provided in this manual can be used as a guide to help write a survey specific to your community's needs. Refer to Appendix A for examples of Village Environmental Planning Surveys developed by different villages in Alaska.

Native Village of Eyak:

The Native Village of Eyak has involved the community in the environmental planning process. Encouraged by the success stories of other villages that had conducted environmental surveys, the Village of Eyak developed a survey adapted to their local issues. The survey was a list of 31 environmental issues that were to be ranked, or prioritized, by tribal members. One hundred and fifty-eight people were surveyed. In a community like Cordova, with such a variable population between the summer and the winter, it was a big success to get such a large response at the end of the fishing season.

Two tribal members were hired as field assistants to conduct the survey door-to-door. It took almost the entire month of September to go through the tribal membership lists and then to survey people. Perhaps most encouraging were the positive comments that were written on the surveys about the need for the village to take an active role in environmental issues. There were 31 people who expressed an interest in serving on the Eyak Environmental Committee.

The results of the survey will be used to narrow workplan objectives and goals under Eyak's environmental program, based on the issues tribal members felt were a top priority. An environmental committee will be formed to provide input to the council and the coordinator regarding environmental issues in the village.

—Kate Williams, Eyak Environmental Program Coordinator

When do you use the Village Environmental Planning Survey?

The Village Environmental Planning Survey is used at the beginning of the planning process to help identify the environmental priorities of the community. Part 1 of the manual describes in further detail when to use the Village Environmental Planning Survey in planning (Steps 2-3 of the Environmental Planning Process).

What other information can be added to the Village Environmental Planning Survey?

You may choose to add items to your survey to get more information. For example, the sample Village Environmental Planning Survey in this manual asks people to rank the importance of different issues. You may also want to find out how satisfied people are with the community's efforts on each of the issues. One way you could find out this information is by using the format below on your survey:

Example

	Importance of issue *Not* *Very*					Satisfaction with the community's efforts *Not* *Very*				
Safe drinking water	1	2	3	4	5	1	2	3	4	5
Abandoned vehicles, boats or other equipment left in and/or around the village	1	2	3	4	5	1	2	3	4	5

When you are developing your survey, remember to keep the survey simple and easy to understand. A complicated survey is difficult to answer and may end up giving you false information. Also, it is important to develop a survey that can be used again in the future to monitor the environmental changes that take place in your village. If you keep the survey the same, you will be able to see the progress your village has made over time.

Village Environmental Planning Survey

ver 2.0

Village of _____

There may be very serious environmental pollution problems in our village. We need your help in ranking the environmental issues listed below.

This ***survey form*** is designed to obtain your input to develop our village environmental plan. Our goal is to make our community an environmentally safe place to live and raise families. Your participation in this survey will greatly assist us in reaching this goal. This survey will help us address serious problems with solid waste, hazardous/toxic pollutants and other environmental issues in our village. Listed below are some environmental health problems or issues that may need to be addressed.

Each environmental issue listed below should be **ranked** as to how important you believe the issue is in our village. **"1"** is the lowest ranking (not important), and **"5"** is the highest (very important).

Circle the value of importance that you would give to each of the issues below. Please respond to each issue.

	Not important				*Very important*	
A	1	2	3	4	5	Safe drinking water.
B	1	2	3	4	5	Abandoned vehicles, boats or other equipment left in and/or around the village.
C	1	2	3	4	5	Beach and/or river bank erosion.
D	1	2	3	4	5	Village dump/landfill.
E	1	2	3	4	5	Construction materials that are left behind by contractors.
F	1	2	3	4	5	Abandoned drums in and/or around the village.
G	1	2	3	4	5	Raw sewage spills in the community and improper sewage disposal at the lagoon.
H	1	2	3	4	5	Annual clean-up program.
I	1	2	3	4	5	Indoor air pollution, such as cigarette/wood stove smoke.
J	1	2	3	4	5	Fuel oil contaminated soils in and/or around the village.

SAMPLE

	Not important			*Very important*		
K	1	2	3	4	5	Air pollution problems caused by the village electric generator, vehicles or smoke from burn barrels in the village.
L	1	2	3	4	5	Dead animals and dead fish left in or around the village.
M	1	2	3	4	5	Trash left in or around the village.
N	1	2	3	4	5	Contaminated subsistence foods
O	1	2	3	4	5	Old military sites cleanup.
P	1	2	3	4	5	Hazardous or toxic materials left in dump sites and/or other areas around the village.
Q	1	2	3	4	5	Other environmental issues beyond village control, such as ozone depletion, polluted oceans and/or rivers
R	1	2	3	4	5	Other?

Please use the space below for comments or if you feel that there are other environmental health issues in our village that you feel need to be addressed.

_____

_____

_____

_____

_____

This survey information is very important to our village. Thank you for taking time to complete it.

OPTIONAL. If you would like to receive a copy of your survey along with the results of the survey, please write your name and address below:

_____(name)

_____(address)

_____

SAMPLE

Conducting the Village Environmental Planning Survey:

Who do you give the survey to?

Ideally, every person in your community should complete a survey. The information that you collect will better represent the village's concerns if more people fill out the survey.

It is importand to involve teachers and students in taking the Village Environmental Planning Survey. It would be interesting to compare the children's perceptions of environmental issues to those of the adults.

What is the best way to survey the community?

Illustration by Natalie Garber

The best way to survey the community is by going door-to-door and to wait while the survey is being filled out. You will get the most responses if you administer the survey this way. This also allows people to ask questions in case there is confusion. The disadvantage to this method, however, is that it can take a lot of time. Other methods, such as mailings or dropping the survey off at a person's house, may take less time but will also yield fewer responses.

You may need to interview people and fill in the survey for them. Do not exclude people from taking the survey if they cannot read or understand the survey. Each person's input is very important. The pictures and explanations of survey questions on pages 31–34 may be helpful when giving the survey.

It's a good idea to get feedback on your survey from a few people before giving the survey to the entire community. This way you can correct any problems and make improvements to your survey.

How do you fill in the Village Environmental Planning Survey?

Each issue on the survey should be ranked with a number between 1 and 5 with the number 1 indicating "not important" and 5 indicating "very important." It is important that a response is given for each issue, otherwise the results will not accurately show the community's views. You will be able to control this better if you give the survey door-to-door. If a person has a question about a certain issue on the survey, you will be there to assist him/her.

Each person should rank the issues on the Village Environmental Planning Survey according to how important each issue is to him/her EVERY DAY or all of the time. For example, you are not trying to determine if people think "safe drinking water" is an important issue only at a certain moment. Rather, you want to know how important they feel "safe drinking water" is *all of the time*.

If the person filling out the survey does not understand one of the statements, make sure you help him/her without giving your opinion about the statement. For example, when you explain the statement "safe drinking water" on the survey, don't change the intent of the statement by the way you ask the question. Do not say, "Safe drinking water is an issue, *isn't it*?" Instead, say "Is safe drinking water an issue with you?"

Encourage people to fill in the section on comments. This is a valuable part of the survey and can reveal important information that is not addressed in the rest of the survey.

Why is there a space for people to put their name and address on the Village Environmental Planning Survey?

At the end of the Village Environmental Planning Survey, there is a section for the person being surveyed to put their name and address. This allows you to return a copy of the survey to that person along with a copy of the survey results for the entire community. Encourage people to fill this information in but let them know that it is optional. Some people may prefer not to put their name on the survey.

It is a good idea to make a list of all the people who have completed the survey just in case some people do not fill in their name and address. Then, you will know who has completed the survey.

Make sure that each person who filled out a survey gets a copy of his or her survey along with the results from the community. Bringing the survey back to each person gives ownership in the whole planning process.

Compiling the results from the Village Environmental Planning Survey:

After all of the surveys are filled out, the next step is to take the answers from the surveys and summarize them to show the results for the entire village. One way you can put together the results is described below.

Using the example of "Safe drinking water" on the sample Village Environmental Planning Survey, we will go through one way to compile the information. For example, let's say that the answers below for "Safe drinking water" came from ten people who filled out the survey:

A	1	2	3	4	**5**	Safe drinking water.
A	1	**2**	3	4	5	Safe drinking water.
A	1	2	**3**	4	5	Safe drinking water.
A	1	2	3	4	**5**	Safe drinking water.
A	1	**2**	3	4	5	Safe drinking water.
A	1	2	3	4	**5**	Safe drinking water.
A	1	2	3	**4**	5	Safe drinking water.
A	**1**	2	3	4	5	Safe drinking water.
A	1	2	3	4	**5**	Safe drinking water.
A	1	2	**3**	4	5	Safe drinking water.

If you add up all the points for the drinking water statement, the total points equals 35. You can then use this number and compare it with the total points you get for other statements. For example, if you do the same for "Village dump/landfill" and you get a total of 39 points, then you can conclude that the community sees the dump as a higher priority issue than safe drinking water. After adding up the answers for each issue, you can arrange the numbers in order from highest to lowest to show the issues from highest to lowest priority.

For examples of how some communities have compiled their Village Environmental Planning Survey results, see Appendix B.

Your final results might look something like this:

Example

Priority	Position on Survey	Issue	Number of People Responding	Total Points
1	D	Village dump/landfill	10	39
2	N	Contaminated subsistence foods	10	38
3	P	Hazardous/toxic materials left in dump	10	36
4	A	Safe drinking water	10	35
5	C	Beach and/or river erosion	10	34
6	G	Raw sewage spills in the community	10	34
7	K	Air pollution problems…	10	33
8	O	Old military sites cleanup	10	31
9	J	Fuel oil contaminated soils	10	30
10	M	Trash left in or around village	10	30
11	B	Abandoned vehicles, boats…	10	28
12	H	Annual clean-up program	10	27
13	F	Abandoned drums in village	10	26
14	L	Dead animals and fish left around village	10	22
15	Q	Other environ. issues beyond village control	10	20
16	I	Indoor air pollution	10	16
17	E	Construction materials left behind	10	14

TIP FOR GOING THROUGH THE SURVEYS:

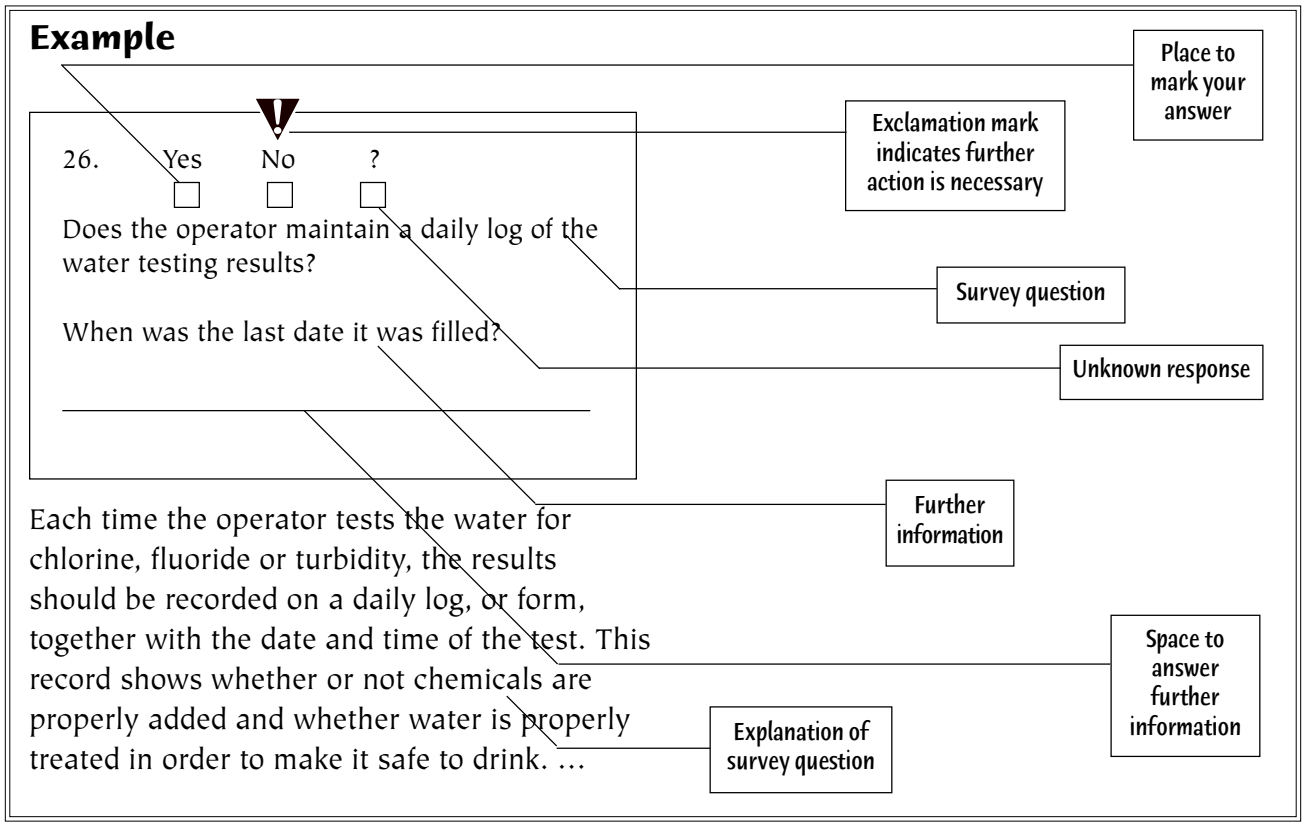
On a piece of paper, make a list of all the issues on the Village Environmental Planning Survey. As you go through each person's survey, write his/her response next to each of the issues. Do this for each survey. When you are done, add up all of the responses to get your total.

The Technical Environmental Survey (TES)

About the Technical Environmental Survey:

What is the Technical Environmental Survey?

The Technical Environmental Survey includes the topics of community information, drinking water, wastewater, solid waste, fuel tank farms and air quality. The survey helps to identify environmental issues relevant to rural Alaskan communities. Most of the questions require a yes/no response and many ask for further information. See pages 47–143 for a copy of the survey and explanations for each survey question. See Appendix I for a copy of the survey without the explanations.



Why do you use the Technical Environmental Survey?

The Technical Environmental Survey is used to identify environmental issues in your community. The identified issues can then be used to help develop a plan to address these environmental issues.

Who fills out the Technical Environmental Survey?

Any interested person in the community can fill out the Technical Environmental Survey. Only one person needs to fill in this survey. The person completing the survey is not

expected to know all of the answers to the questions. The questions require the help from many people in the community.

Each section on the survey has a box at the beginning that identifies who to ask for information. For example, in the "drinking water" section, the person to ask for information is the water treatment plant operator. You may need to set up appointments with the people you need to speak with in order to complete the survey.

The questions on the Technical Environmental Survey are written so most people can pick up the survey and complete it. This manual provides an explanation for each question on the survey in order to assist the person conducting the survey.

How is the Technical Environmental Survey used in environmental planning?

The Technical Environmental Survey is used in environmental planning to help identify environmental issues and needs in your community and to assess the current environmental conditions. The results of the survey can be used to help develop an environmental plan.

When do you use the Technical Environmental Survey?

The Technical Environmental Survey is used in Step 3 of the environmental planning process described in Part 1 of the manual: 'Define your community's needs using environmental assessment surveys.' See pages 18–22 for more details.

How do you fill in the answers on the Technical Environmental Survey?

Most of the questions on the Technical Environmental Survey require a yes/no response. There is also a space to mark if the answer is unknown (?). *However, the response "?" should only be used as a last resort.* The person filling out the survey should make every effort to contact the right person in order to get a response for each question.

Many questions on the survey require more information than just a yes/no response. There is space on the survey form to write in the information. This information should be filled in as completely as possible. Often, these added comments are the most valuable information. See Appendix I for a copy of Technical Environmental Survey you can complete for your village.

How does using the Technical Environmental Survey help you identify environmental problems in your village?

Most of the questions on the Technical Environmental Survey require a yes or no response. If the symbol ▼ appears above one of the responses, this indicates a problem that requires further action. Some problems are more serious than others, but the same symbol is used for all questions. If the question does not have a ▼ above one of the responses, the answer does not necessarily indicate a problem.

Technical Environmental Survey

Ver. 2.0

Village _____ Date _____

Surveyor & Title _____

This survey is a list of questions about environmental issues that may be present in your village. To the best of your ability and knowledge, answer each question that applies to your village. Most of the questions can be answered with a YES, NO or ? (unknown) response. Many questions will ask for a specific answer that involves time or amounts. Some of the questions will require that you contact the village council or the person(s) or operator responsible for a particular facility, such as the water treatment plant. As necessary, search out the answer to each question using the response "?" only as a last resort. Please note that an exclamation mark ❢ is used to show a response that indicates a problem.

General Community Information

Who to ask: city and/or IRA/Traditional Council, school principal

1. Does your village have a ☐ city council, ☐ IRA/Traditional Council or ☐ both?
   Which council is responsible for the sanitation services in your village?
   ☐ city council ☐ IRA/Traditional Council ☐ joint ownership/utility board.

Many villages have more than one governing council. The purpose of this question is to identify the council(s) that is responsible for making decisions about sanitation services in your village. This way concerns can be directed to the correct governing council.

Village council office in Venetie.
Photo courtesy Bill Stokes

The sanitation facilities (i.e. drinking water system, sewage system and the landfill) in your village are owned by one of the village governments. Residents in the community, however, often refer to the water plant or the sewage plant as the "PHS" or the "Village Safe Water Plant." This name can be confusing because some people believe that these organizations own and are responsible for the operation of these facilities. This is not true. The village or Tribal Council owns and is responsible for the safe operation of these facilities. For this reason, it is important to know which village council is responsible for providing sanitation services. If there are operational problems with the facilities, the responsible council can take steps to address the problems.

2. Yes ☐ No ☐ ? ☐

Do the village council(s) regularly collect fees for village services?

If yes, which services? ☐ water ☐ sewer ☐ landfill.

If no, how does the village pay for the services?

_____

_____

_____

_____

Providing safe water, safe sewage disposal and safe landfills for a village require money. A village that does not regularly collect user fees will not be able to hire trained operators to properly operate and maintain the village sanitation facilities. If the village wants to improve sanitation services, it is important that the village councils and residents understand that user fees must be collected to pay for those services.

Having a system in place for regularly collecting user fees can be very helpful when applying to the Village Safe Water Program (at the Department of Environmental Conservation) for funding. The Capital Budget Questionnaire awarded fifty points toward funding for water, sewer or solid waste projects if a village had a system for collecting user fees. Another fifty points were possible if your village had identified Operation and Maintenance Costs/Funding. Your village, therefore, has a greater chance of getting funding for projects if there is a system in place for collecting user fees for village services. See Appendix E for a copy of the Village Safe Water Capital Budget Questionnaire.

The Rural Utility Business Advisor (RUBA) Program, which is part of the Department of Community and Regional Affairs, offers management assistance and financial training related to water and wastewater utilities to cities and villages. The RUBA Program is a helpful resource for questions concerning collecting fees for village services. See the Directory in the back of the manual for contact information.

3. Yes ☐ No ☐ ? ☐

Does your village council(s) receive technical help from environmental/public health programs or agencies?

If yes, whom?

_____

_____

There are many environmental/public health programs and agencies that provide technical assistance to villages in Alaska. If your village council(s) feels that no technical help is being provided to the village, it may be that the resources available are unknown. Being familiar with the programs/agencies and the services they provide can be a useful tool in environmental planning.

For a list of programs/agencies that provide services in rural Alaska, see the Directory in the back of this manual.

4. Yes ☐ No ☐ ? ☐

Are local pollution problems an issue with the village councils?

If yes, what issues?

_____

_____

Pollution refers to contaminating the air, land or water with materials that are harmful to living things. Examples of different pollution problems that may be issues in your village include: littering in and around the village, an overflowing dump, flooding of the sewage lagoon, unsafe water, improper disposal of batteries, waste oil, fuel spills, abandoned drums and vehicles, and toxic smoke from burning plastics.

The village councils have the ability to make decisions that affect the entire community. If pollution problems are an issue with the councils, there is a greater chance of these problems getting attention. It is important that the council representatives are educated on pollution issues so they are better able to make decisions that will protect the health of the community.

illustration by Natalie Garber

5. Yes ☐ No ☐ ? ☐

Does the village school have an environmental education curriculum?

If yes, which grade levels?

_____

The school district should include environmental education in the curriculum at all grade levels. Environmental concepts can be included in the school curriculum in all subject areas. There is no need to have a separate class to cover environmental information because with planning this information can be applied to mathematics, language arts, science, history and other subjects.

Environmental programs that are community-based and centered around local environmental issues can be a very effective way to get information across. They also can benefit the community.

Third grade class in Emmonak saves aluminum cans for recycling.
Photo courtesy Bill Stokes

GALENA, ALASKA

The Village of Galena has established an excellent environmental education program in their schools. A major factor in the success of this program is the good relationships established between various programs early on. The environmental education program is the result of a Memorandum of Agreement between the Louden Tribal Council, the Galena City Schools, and US Fish and Wildlife Service. The Agreement ensures that environmental education is integrated into all the disciplines for all school-age children. By pooling the resources of all these entities, the schools are well on their way to having a first-rate watershed education and stewardship program that will benefit the entire community.

POLLUTION PREVENTION CONCEPTS ARE OFTEN INTEGRATED INTO ENVIRONMENTAL PROGRAMS.

What is pollution prevention?

Pollution prevention means not creating "waste" in the first place. Activities that avoid, eliminate, or reduce waste at its source prevent pollution. For example, using the same canvas bag over and over again at the village store prevents the waste of many plastic bags.

Pollution prevention requires a change in thinking from asking the question "How do I properly dispose of my waste?" to "How can I prevent waste in the first place?"

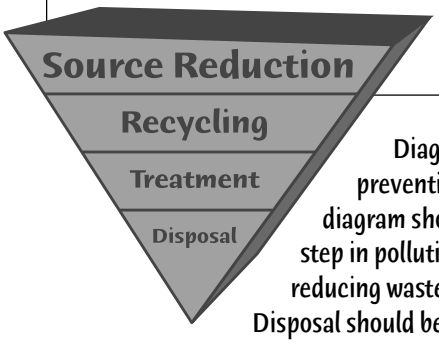


Diagram 1: Pollution prevention pyramid. The diagram shows that the first step in pollution prevention is reducing waste at the source. Disposal should be the last option.

Planting seeds in reused cups.
Photo courtesy Ruth Farrens.

Children in Sand Point make Mexican shakers out of old lightbulbs.
Photo courtesy Ruth Farrens.

Sand Point, Alaska

In Sand Point, AmeriCorps Member Ruth Farrens, focused on working with the school children of the village to teach environmental education.

Some of the projects they worked on included:

- *Reading stories about the environment and coloring pictures of what the stories meant to them.*
- *Planting seeds in reused styrofoam coffee cups and clear plastic juice cups.*
- *Making Mexican shakers out of old light bulbs the children collected, old newspaper and flour paste. The kids painted these and made a dance routine using the shakers.*

One of the rewards of Ruth's work in Sand Point was having a parent tell her that their daughter came home and told the father not to put his pop can in the garbage. Instead, the daughter told him to keep a bag hanging on the door knob in the kitchen for recycling aluminum!

"Teaching the children first was a joy in itself, because they took this teaching home with them and showed their parents, siblings and grandparents what they had learned … Because of going to our children and teaching them, they have done the job of teaching their elders. It's like a chain reaction. You start on one end and it escalates from there."

—Ruth Farrens, AmeriCorps Member, Sand Point

6. Yes ☐ No ☐ ? ☐

Does the community have any environmental programs or groups that meet regularly?

If yes, what are they?

_____

_____

One way to involve the community in environmental issues is to form groups and/or begin programs that focus on environmental issues. Environmental groups can be helpful in accomplishing the environmental/public health goals of the community. A committed group that meets regularly and gains the support of the community will be a benefit to the community. Examples of groups or programs that cover environmental issues include: annual clean-up groups, environmental newsletter committees, environmental work groups, and recycling committees. Sometimes, villages include environmental issues within programs such as spirit camps.

Environmental Focus Groups can help accomplish the environmental goals of the community.
Photo courtesy Dan Lung.

Drinking Water

Who to ask: water treatment plant operator

7. Yes ☐ No ☐ ? ☐

Is your water treatment plant attached to a washeteria, clinic, or other facility?

There are many benefits of having your water treatment plant attached to another facility such as a clinic or washeteria. If the facilities are combined, it is possible to share operation and maintenance costs. For example, by having one heating source for the facilities to share instead of several different sources, the village saves both energy and money. An example of a community that has combined facilities is the village of Chalkyitsik. In Chalkyitsik, the water treatment plant is connected to both the washeteria and clinic. In this case, the clinic has piped water and sewer and shares the heating with the other facilities.

8. Does your water treatment plant get water from a: ☐ well, ☐ spring, ☐ pond, river or stream?

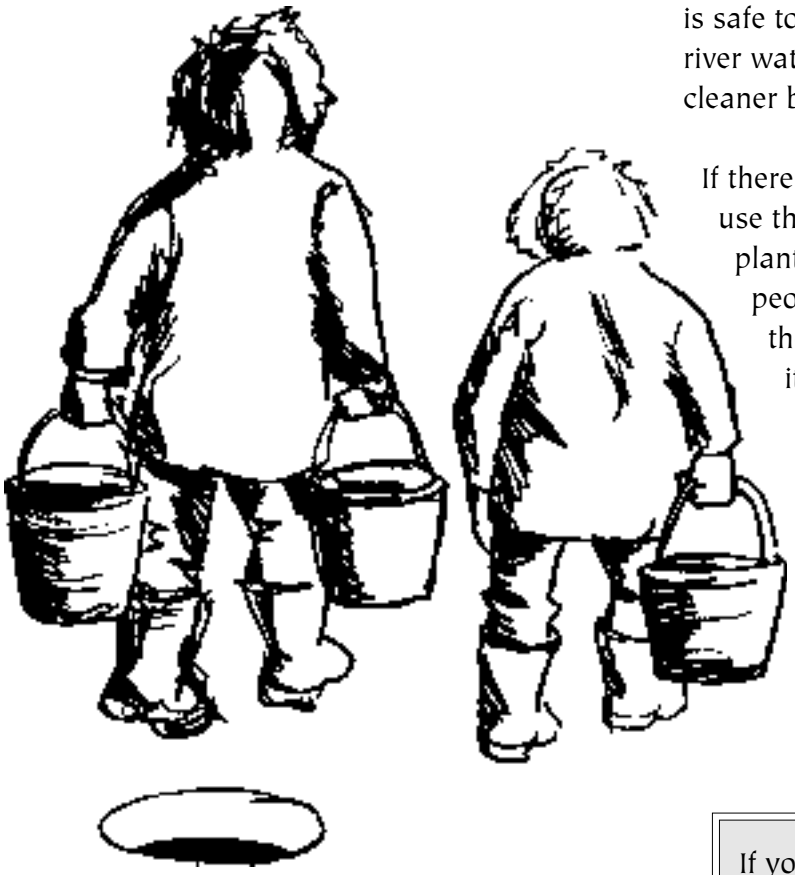
A water treatment plant either gets water from a well, spring, pond, lake, river, or stream. Water that comes out of a well is **groundwater**. Water that comes from ponds, lakes, rivers, and streams is **surface water**. A spring can be either groundwater or surface water.

Surface water system.
Photo courtesy Kurt Egelhofer.

Surface water can become polluted easier than groundwater because it is directly exposed to the pollutants we put into the environment. Consequently, surface water systems require more treatment than groundwater systems. Groundwater systems, however, are not safe from contamination. Pollutants can enter the soil and eventually find their way into the groundwater. Contaminated groundwater can be much more difficult to clean in comparison to contaminated surface water.

9. Yes ☐ No ☐ ? ☐

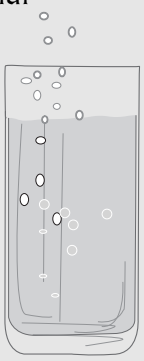
Do most village residents use the water from the water treatment plant?



The purpose of a water treatment plant is to supply safe and good-tasting drinking water. If village residents are not using the water from the water treatment plant, they may be gambling with their health by getting water from another source. For example, in some villages, the treated water is cloudy and yet it is safe to drink. Many people, however, prefer river water or chopped ice that "looks" cleaner but may be unsafe to drink.

If there are people in your village who do not use the water from the water treatment plant, find out the reason(s). Sometimes people will not drink the water because they feel that the added chemicals give it a bad taste. When used properly, added chemicals, such as chlorine, can actually improve the taste of water.

If you don't like the taste of chlorine in your water, you can solve this by leaving the water in a pitcher or jug for 30 minutes or more. When chlorine gas is dissolved in water, it is similar to the gas in soda pop that makes it fizz. After the water sits out for awhile, the chlorine will escape, similar to when a soda loses its fizz and becomes flat. Once the chlorine escapes, you no longer taste it in the water!



10. Yes ☐ No ☐ ? ☐

Do most village residents believe the water from the water treatment plant is safe to drink?

If no, why not and where do they get their drinking water?

_____

_____

It is important that the village residents believe that the water from the water treatment plant is safe to drink. If people do not believe that the water is safe to drink, they are likely to drink water from other sources that may be harmful to their health. Find out why people feel the water is not safe to drink. This can be a useful tool to educate them about safe drinking water. It may even bring out a problem that exists at the water treatment plant that hasn't been discovered.

It may be useful to post the results of water testing each day so community members can see that the water is being treated and is safe to drink.

11. Yes ☐ No ☐ ? ☐

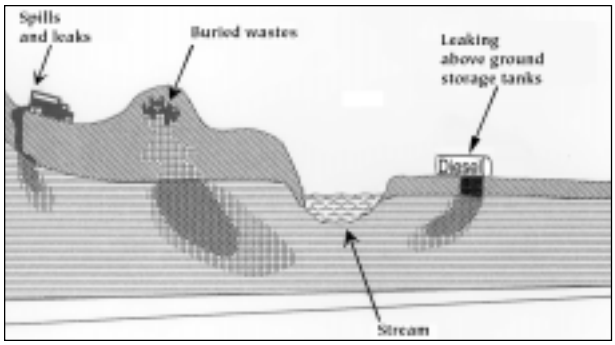
Do the village residents feel that the sewage lagoon, landfill, old military site, or tank farm, has an effect on the drinking water supply?

If yes, how?

_____

_____

If village residents feel that the sewage lagoon, landfill, old military site or tank farm is contaminating the drinking water supply, it is likely that they won't drink the water. Find out why people think the water is not safe to drink, so the problem can be addressed. One way to address this problem is by doing routine water testing for contaminants and informing village residents of the results.



Students in Aniak use a water model to learn how materials from the landfill and sewage lagoon can get into drinking water.
Photo courtesy Suanne Unger.

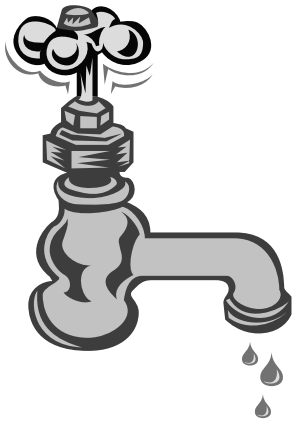
12. Yes ☐ No ☐ ? ☐

Does your village's water treatment plant ever run out of water?

If yes, how often and when?

_____

_____



A community's health improves as the amount of safe water available increases. When safe drinking water is in limited supply, you have a greater chance of catching diseases from poor hygienic habits and sanitation.

Diseases that result from a lack of water tend to be a serious health hazard. When people use very little water, it may be difficult if not impossible to maintain good personal hygiene. Diseases that affect the eyes and skin may result when limited water is available for washing and bathing. Intestinal infections can also spread much easier from one person to another when water is in limited supply.

There are communities in rural Alaska that experience water shortages every year. If water is in short supply, the community may need to consider the following:

- *Investigating the cause of limited water supply. For example, there may be an undetected leak in the system.*
- *Inadequate water supply. New sources of water may need to be found.*
- *Limited storage capacity. The storage capacity of the tank used may be too small to serve the entire community.*
- *Water conservation. Residents may need more information on how to use water safely if treated water is limited in supply or unavailable.*

Piped water system.
Photo courtesy Kurt Egelhofer.

The purpose of questions #13–16 is to see what type of water system(s) is in your village. The reason for identifying the drinking water systems and the number of people in the community using them is that the problems associated with each type of system are different. For example, the potential health problems associated with a piped water system are less than the problems associated with private wells, flush-haul systems and watering points.

13. Yes ☐ No ☐ ? ☐

Does your village have private wells?

If yes, how many?

_____

Private wells are not regulated water sources and do not have to meet State of Alaska drinking water requirements. Consequently, private wells have a greater chance of contamination not being detected. The location of the well is a very important factor. Wells should be located, constructed and maintained to reduce the possibility of contamination. Residents who have wells should annually (or more frequently) check the water quality (i.e. bacteria and nitrate levels) to make sure that the water is safe to drink. Fecal bacteria and nitrates in the water indicate sewage contamination.

14. Yes ☐ No ☐ ? ☐

Does your village have piped water to the houses or other buildings?

If yes, to how many?

_____

Piped water is water that is connected to a water treatment center and piped out to homes and other buildings in the community. In a piped water system where water has been properly treated, there is very little chance of water becoming contaminated before it reaches the user.

15. Yes ☐ No ☐ ? ☐

Does your village have a flush-haul water system?

If yes, to how many houses or other buildings?

_____

A **flush-haul water system** is a system where water is transported from the water treatment plant or water storage tank to the customer. The water is transported with a truck, trailer, or a snow machine. Each customer has his/her own storage tank that is filled. This system is almost as sanitary as a piped water system as far as providing safe drinking water.

16. Yes ☐ No ☐ ? ☐

Does your village use dip buckets to store drinking water?

If yes, how many houses or other buildings use them?

_____

Dip buckets are used in homes of villages with a central watering point. The water treatment plant may have a hose on the outside where you fill your dip bucket. The water contained in a dip bucket is easily contaminated if not handled with great care. The handle, or dipper, used to gather water from the bucket is the main source of contamination. Dip buckets have the greatest potential for contamination of all the drinking water systems mentioned. (See page 64.)

The hose at the village's watering point should not touch the ground. Cleaning the hose at lease once a day with a weak bleach solution will help kill any possible contaminates. The best strategy, however, is to prevent the hose from touching the ground or walls so it does not become contaminated.

Village watering point in Venetie.
Photo courtesy Bill Stokes.

17. Yes ☐ No ☐ ? ☐

Does the water treatment plant have operators?

If yes, how many and who?

_____

Very few people have more control over the health of the community than a water treatment operator. A water treatment plant should have operators who are capable of regularly keeping the water safe to drink. There should be two or more operators that run a water treatment plant in the village. If one operator is sick, on leave, or away from the village, another equally qualified operator should be available to take over the duties.

Some ways to help assure you have capable and qualified operators are to require training, certification, and decent pay. The most important factor, however, is getting the community to understand the important role the operator plays in keeping the community safe. Only when this is understood does the operator gain the respect deserved.

Very few people have more control over the health of the community than the water treatment operator.
Photo courtesy Joe Sarcone.

18. Yes ☐ No ☐ ? ☐

Do the water treatment operators get paid?

If yes, how much and for how many hours a day?

_____

An operator's pay should be high enough so that the position is competitive and encourages a high quality operator to stay with the job. A high turnover of operators for the water treatment plant is usually harmful and may create unsafe drinking water.

The community needs to understand that safe drinking water is not a free service. Getting good compensation for the work of operating the water treatment plant provides an incentive for the operator to do a good job and to stay with the job. It also helps give respect to the operator and provides safe water for the community.

19. Yes ☐ No ☐ ? ☐

Are the water treatment plant operators certified by the State of Alaska?

If yes, when do the certifications expire?

_____

The benefit of having certified/qualified operators is that it gives some indication to your community that the operator is knowledgeable about his/her job and that the drinking water is properly treated.

Another benefit of having certified operators is that it greatly improves your village's chances of getting state funding for sanitation facilities. The points earned for having trained and certified operators can improve the chance of your village receiving grant money. It is worth getting your village's operator(s) certified in order to benefit from this. See Appendix E for a copy of Village Safe Water Capital Budget Questionnaire.

Having a certified water operator is a great benefit to your community.
Photo courtesy Joe Sarcone.

The "operator-in-training" certification is the minimum certification required by the State of Alaska. It is possible to obtain an operator-in-training certification after completing an approved course and taking a test. You can also get this certification if you have three months of experience in a water treatment plant.

It is also very important for operators to keep any certifications current. Skilled operators are in high demand in many communities in Alaska. Keeping a certification current can be advantageous for employment and for maintaining one's skills.

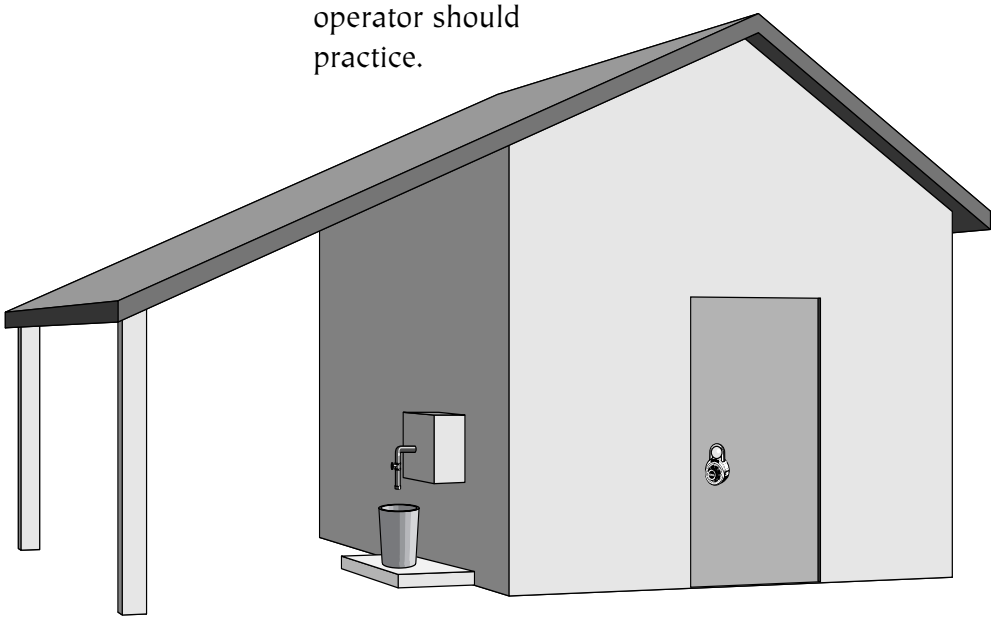
20. Yes ☐ No ☐ ? ☐

Is the water treatment plant locked and secure when the operator is not there?

_____

_____

The water treatment plant should always be locked when the operator is not in the building. If the doors are unlocked, anybody can enter the building and potentially vandalize the equipment and/or make the water unsafe. Also, if someone enters the water plant and ends up getting hurt or harmed by chemicals, the operator may be held responsible for this accident. Keeping the water plant locked is a necessary safety precaution that every operator should practice.



21. Yes ☐ No ☐ ? ☐

If chlorine and/or fluoride are added to the drinking water at the water treatment plant, does the operator have the chlorine and/or fluoride test kits and chemicals to monitor the water quality?

If yes, are there enough chemicals to last several months?

_____

_____

Are the chemicals still effective? (check expiration date)

_____

There are two common tests that the water operator does to monitor the quality of the drinking water: the **chlorine test** and the **fluoride test**. A chlorine test is done every day, whereas a fluoride test is done every time water is being made.

In order to do both of these tests, the operator must have complete test kits with chemicals that have not expired. The chemicals contained in each of the kits have a limited shelf life. *Therefore, you need to check the expiration dates on the test chemicals to make sure that they are still effective.* There should be enough test chemicals on hand to perform the test for several months.

Always check the expiration dates on chemicals to be sure they are still effective.
Photo courtesy Suanne Unger.

TYPES OF WATER MONITORING TESTS REQUIRED FOR SURFACE WATER AND GROUNDWATER SYSTEMS:

	Surface water	*Groundwater*
Type of test(s) required:	Chlorine test *Fluoride test (if added) Turbidity test	Chlorine test (if added) *Fluoride test (if added)

(*Fluoride is not a required chemical for water treatment. However, if fluoride is being added to the water, it must be monitored each time water is being made.)

22. Yes ☐ No ☐ ? ☐

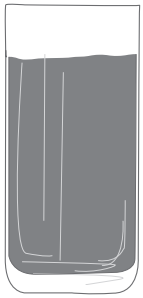
If your water treatment center uses surface water, does your operator measure turbidity?

Is the turbidity meter operational?

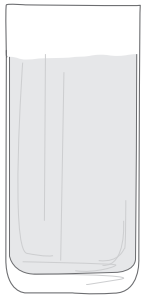
_____

_____

Turbidity is a measure of the cloudiness of the water. Water that is cloudy has a high turbidity and requires more chlorine than water that is clear. If your water has a high turbidity, there is greater risk of the water being unsafe because it will use up the chlorine required to disinfect the water properly. Because the turbidity of surface water changes often, it is very important for the operator to measure turbidity every time water is being made. Check the turbidity meter to make sure that it is operating and has been calibrated for accuracy.



Water with high turbidity is cloudy



Water with low turbidity is clear

23. Yes ☐ No ☐ ? ☐

Does operator take a free chlorine residual test every day?

If no, how often?

_____

What is the chlorine residual today?

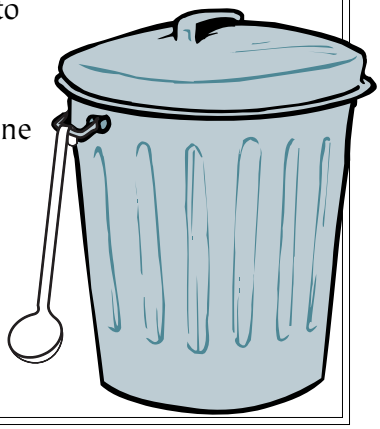
_____

How many days _____, weeks _____, or months _____ of chlorine supply does the operator have on hand for use?

_____

_____

If there are residents in your community who use dip buckets, it is recommended that a chlorine residual of 0.3 mg/l be maintained in the drinking water system. This number is slightly higher than the amount required to produce safe drinking water. A little higher chlorine residual has a greater chance of keeping the containers disinfected and is not harmful.



Chlorine is a chemical that is added to water in order to disinfect, or kill, pathogens (disease-causing organisms) in the water. In order to be effective, the correct amount of chlorine must be added to the drinking water system. If too little chlorine is added to the system, it will not kill all of the pathogens.

Darcy Kameroff from Russian Mission learns to take a chlorine residual at an Environmental Assessment Training in Aniak.
Photo courtesy Suanne Unger.

A chlorine test is an extremely important test that is required in almost all water systems in Alaska. This test should be done every day. In order to find out if the right amount of chlorine is being added to the system, the operator tests for a **free chlorine residual**. A free chlorine residual is the amount of chlorine left over in the water after the chlorine has done its job killing pathogens. Having left over chlorine tells you that there was enough chlorine to get the job done. It is also important that some chlorine remains in the system to provide extra protection against diseases in case pathogens enter into the system.

State regulations require that the operator maintain **at least 0.2 mg/L chlorine residual at the water treatment plant**. This results in only a trace amount of chlorine coming out of the drinking water tap at home. It is a good idea, however, to keep the chlorine residual higher at the water treatment plant so that a 0.2mg/L residual is found in the water at your home or at the watering point.

Melinda Peter of Fort Yukon reads her chlorine residual at an Environmental Assessment Training in Chalkyitsik.
Photo courtesy Suanne Unger.

Numbers that are lower than this (such as 0.1mg/L show that there is not enough chlorine being added to the system. However, if the chlorine residual reaches higher numbers such as 0.6 mg/L, the water may begin to have a bad taste of chlorine. If your water has too much chlorine in it, you can simply leave it in a pitcher or jug for awhile. After a short time, the chlorine from the water will disappear like fizz from a pop into the air and the chlorine taste will be gone.

Chlorine supply:

There should be enough chlorine on hand to treat the water for at least 2–3 months. You do not want to risk running out of chlorine. However, having too much chlorine on hand can be hazardous as well (see page 66).

Tip for fish camp:

If you are going to fish camp or away from a reliable source of safe drinking water, one way you can disinfect your water very easily using household bleach. All you need to take with you is a small container of unscented bleach (enough to contain one or two spoonsful of bleach) and a medicine eyedropper. For every gallon of clear water you have, add 1–2 drops of bleach. If the water is cloudy, add 2–4 drops. After adding the bleach, you need to mix the solution and let it stand for 20–30 minutes before drinking so that the chlorine has time to kill the pathogens (disease-causing organisms). This will kill almost all pathogens. Also, make sure that you pick your drinking water source carefully!

24. Yes ☐ No ☐ ? ☐

Does the operator use HTH (chlorine powder) to disinfect the drinking water?

If no, what form of chlorine is used?

_____

_____

Where is the HTH stored?

_____

_____

CHLORINE CONTAINER SIZE:

For safety reasons, when using HTH, or chlorine powder, it is preferable to purchase it in small containers, such as the 3½ pound to 8 pound size. Smaller containers are easier to use and store and reduce the risk of chlorine exposure to the operator.

Containers of chlorine that are 25-100 pounds are potentially very dangerous and have a greater chance of being a health problem to the operator and the community. Each time the operator opens the chlorine container, he/she is exposed to chlorine gas. Chlorine gas can be hazardous or deadly if inhaled in large enough quantities. For this reason, the operator should always wear a respirator mask when working with chlorine.

The most common method of disinfecting, or treating, water is by adding chlorine. Chlorine for water treatment comes in three forms: gas, liquid and solid. The most common form of chlorine used in rural Alaska is the solid powdered type, calcium hypochlorite which is called **HTH**. HTH contains around 65% chlorine and is dangerous if not handled and stored properly.

Storage:

It is very important to store HTH in a warm and dry place away from other chemicals. If water is added or spilled on HTH, there will be an uncontrolled release of chlorine gas, which is very dangerous. The lid of the container should be tightly sealed at all times to avoid chlorine gas from escaping.

Damaged containers of chlorine (HTH) are dangerous.
Photo courtesy Bill Stokes.

Chlorine can react violently when mixed with some other chemicals, particularly oil products. Therefore, it is important that chlorine is stored separately and away from other chemicals or only with other materials that are compatible (don't cause dangerous reactions). Chlorine warning signs should be posted in all areas where chlorine is stored.

25. Yes ☐ No ☐ ? ☐

Is fluoride added to the drinking water?

If yes, how often does the operator do a fluoride test?

_____

_____

What is the fluoride level today?

_____

_____

A water treatment system that adds chlorine and fluoride.
Photo courtesy Bill Stokes.

Fluoride is added to drinking water systems to strengthen the growing teeth of children and to reduce dental cavities. It is effective for children up to the age of eight to ten years. If fluoride is used in a drinking water system, it is extremely important that it is added correctly. If it is not added properly, it can be harmful to people. Excess amounts of fluoride can damage teeth and lead to bone disease.

Fluoride is not a required chemical for producing safe drinking water. However, if fluoride is added to the drinking water system, a fluoride test should be done EVERY DAY water is made. The results of the fluoride test should be entered into a log book. If the operator is not monitoring the fluoride level, the water may be unsafe and fluoride use should be stopped. **The fluoride level (residual) should be in the range of 1.1 to 1.7 mg/L**. The operator should never allow the fluoride level to be greater than 4.0 mg/L, nor should the level range above 2.0 mg/L for any length of time.

26. Yes ☐ No ☐ ? ☐

Does the operator maintain a daily log of the water testing results?

When was the last date it was filled in?

_____

Each time the operator tests the water for chlorine, fluoride or turbidity, the results should be recorded on a daily log with the date and time of the test. This record shows whether or not chemicals are properly added and whether water is properly treated in order to make it safe to drink. If the operator is not maintaining a daily log of the water testing results, there is no way to guarantee the operator has been doing his/her job and that the water is safe to drink.

When filling out this survey question (#26), make sure you ask the operator to see the daily log. Write down on the survey the last date that the log was filled in. By looking at the log, you will be able to see if the operator is actually completing the tests every day.

27. Yes ☐ No ☐ ? ☐

Are chlorine warning signs posted on the entrance doors to the water treatment plant?

_____

The entrance to the water treatment plant, or any other area where chlorine is being stored, should have warning signs posted along with a Materials Safety Data Sheet (MSDS) for chlorine. The MSDS for chlorine is an information sheet describing the chemical chlorine and how to safely handle it.

The fire department requires that chlorine warning signs be posted wherever chlorine is stored for the safety of the handler as well as the community. The reason for this is that if water is sprayed on dry powder chlorine (HTH), there will be a release of chlorine gas. Chlorine gas can be dangerous or deadly if inhaled. HTH is a useful chemical for producing safe water, but it must be handled and stored very carefully. Chlorine is one of the most dangerous chemicals in your community and it needs to be used with caution.

28. Yes ☐ No ☐ ? ☐

Is there a chlorine respirator available for the water treatment operator?

Does he/she use the respirator when handling HTH (chlorine)?

_____

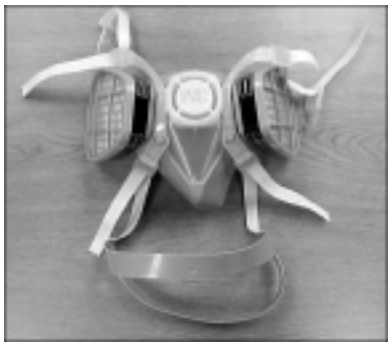
_____

A chlorine respirator is a type of gas mask used by the operator when working with chlorine. The mask should be worn every time chlorine is handled. New chlorine cartridges (yellow cartridges) should always be available for use. Proper use of the mask will prevent the operator from being exposed to immediate hazards from chlorine and will reduce the long-term health effects from the chemical as well.

Inhaling chlorine is harmful to your lungs. It can make you cough and make breathing more difficult. If too much chlorine is inhaled, it can be fatal. Chlorine can also irritate your eyes. If chlorine comes into contact with your eyes, it can cause painful burns which could potentially lead to loss in vision. For these reasons, it is very important to wear a chlorine respirator when handling chlorine.

Tip:

The chlorine respirator should be stored away from the chlorine so that it remains effective. Storing the respirator in a tightly covered container, such as Tupperware, will help prevent chlorine vapors from getting into the cartridges. If you can smell chlorine in the cartridge of the respirator, this indicates that the cartridge is no longer effective.



A chlorine respirator should be used by the operator every time chlorine is being handled.

Photo courtesy Suanne Unger.

29. Yes ☐ No ☐ ? ☐

Are there any pieces of equipment in the washeteria and/or water treatment plant broken or not operating?

If yes, what are they?

_____

Equipment that is broken or not operating in the washeteria and/or water treatment plant should be fixed immediately, particularly if the parts are necessary to supply safe drinking water. For example, if a chlorine pump breaks and there is no replacement pump, chlorine will not be added to the water and the water may be unsafe to drink. If a critical part breaks, the operator may not be able to produce safe drinking water.

30. Yes ☐ No ☐ ? ☐

Does the operator have a critical spare parts inventory?

Are all of the parts there?

_____

Operators must have a critical spare parts inventory showing all of the equipment needed to safely operate the drinking water facility. For important pieces of equipment, such as a water pump and chlorine pump, there should always be two of each on hand. The Remote Maintenance Workers (RMWs) in each region can be helpful in determining what items should be listed as critical spare parts.

31. Yes ☐ No ☐ ? ☐

Is the washeteria and/or water treatment plant clean and orderly?

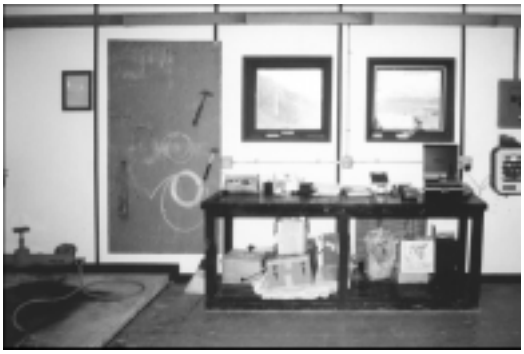
If no, describe:

_____

_____

_____

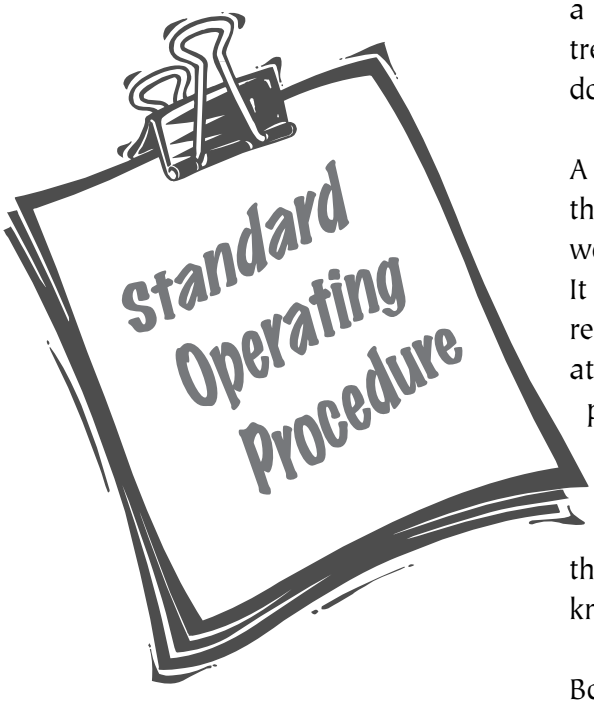
A clean and orderly washeteria and/or water treatment plant is often a positive sign of the quality of the operator's work. A dirty facility may indicate that the safety of the water is questionable. A dirty facility may also be hazardous (i.e. misplaced chemicals and equipment left to stumble over).



A clean water treatment plant is often a good sign of the operator's quality of work.
Photo courtesy Bill Stokes.

32. Yes ☐ No ☐ ? ☐

Does the water treatment plant have a written Standing Operating Procedure (SOP) and master log?



Every water treatment plant should have a *written* **Standard Operating Procedure** (SOP) posted. A Standard Operating Procedure is a document describing all of the actions required to ensure water is properly filtered and disinfected. It is a step-by-step guide to making safe drinking water that is specific to the water treatment plant in your village. Because every water treatment plant operates a little differently, this "cook book of water treatment procedures" is an important document for training new operators.

A **master log** is a record of all the activities that the operator performs during each workday. It is like a diary of events for the day. It is extremely important for your operator to record all of the things that he/she does while at work in the water treatment plant. This log provides an historical account of the water treatment system. It can be useful for finding problems or errors in the water system, for ordering chemical supplies in the future, and for letting other operators know what has happened in their absence.

Both a master log and a Standard Operating Procedure are valuable tools needed to properly operate a water treatment plant. They are also important records to have in the event that a new operator is hired to operate the system. Instead of re-learning the entire water treatment system and repeating past mistakes, the master log and Standard Operating Procedure allow a new operator to transition into the job easier and make safe drinking water. **Years of experience and skill can be preserved by having a Standard Operating Procedure and master log instead of being lost when an operator quits or retires**.

33. Yes ☐ No ☐ ? ☐

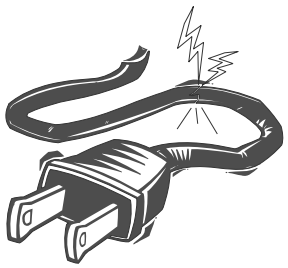
Does the washeteria and/or water treatment plant have safety defects (i.e. such as bare electrical wires, split or cracked chemical containers)?

If yes, what are they?

_____

_____

The washeteria and/or water treatment plant should be inspected periodically to see if there are any safety defects. Examples of some safety defects include bare electrical wires, leaks, and split or cracked chemical containers. These defects should be corrected immediately so they do not present a hazard to the facility or to the people working there. Your Remote Maintenance Worker (RMW) can do an inspection and find any safety defects that may be present.



34. What are your village's main complaints with the washeteria and/or water treatment plant?

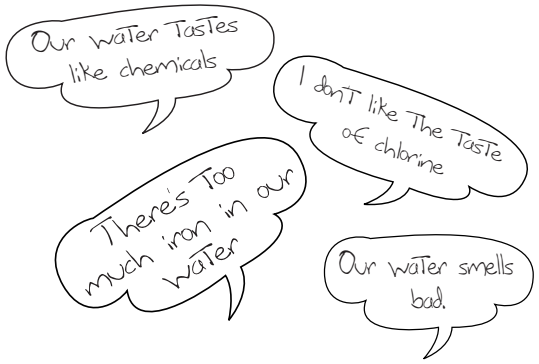
_____

_____

_____

_____

The water at the water treatment plant may be safe to drink, but at the same time have a bad taste or smell. If there are specific complaints regarding the washeteria and/or water treatment plant, these should be brought to the attention of both the operator and the council responsible for maintaining the facility. It is the operator's job to provide safe and good-tasting water to the community.



Wastewater

Who to ask: wastewater operator, health aides, public health nurse

35. Yes ☐ No ☐ ? ☐

Have there ever been outbreaks of sewage-related diseases in your village?

If yes, what diseases and when?

_____

_____

The village health aide or the public health nurse should have a record of any disease outbreaks related to sewage that have occurred in your village.

A sewage-related disease, such as Hepatitis A, is spread when a person comes into contact with fecal material from a contaminated person or object and then transmits the contamination to his/her mouth. If an infected person does not clean his/her hands thoroughly after going to the bathroom, disease may be spread to others either by touching them or when preparing food.

People may be carriers of a disease and not always show signs of sickness. Dogs and other pets may also be carriers of disease. Proper handling of wastewater and good sanitation helps prevent the spread of diseases associated with sewage.

KOTLIK, ALASKA

During the summer of 1990, the Village of Kotlik experienced an outbreak of viral meningitis, an extremely infectious, painful illness that can be fatal when left untreated. Viral meningitis is transmitted by contact with human sewage. It is spread through contaminated food and water, often by people who have germs on their hands, don't wash, then contaminate food or drink consumed by others. Nearly 80 people in the village were stricken with the disease. What was the cause? Two leaky underground bunkers filled with sewage which had been contaminated with the meningitis virus.

In the past, Kotlik's full honeybuckets were dumped into underground bunkers-lidded pits dug into the permafrost and scattered between homes throughout the village. The bunkers got full. Their contents oozed into the muddy summer soil, and the children played in the puddles nearby. The children tracked mud into houses, where babies crawled on floors.

Sewage-related diseases are greatly reduced with good health sanitation education and practices. The village health aide can be used as a resource to educate people on proper sanitation practices.

36. Yes ☐ No ☐ ? ☐

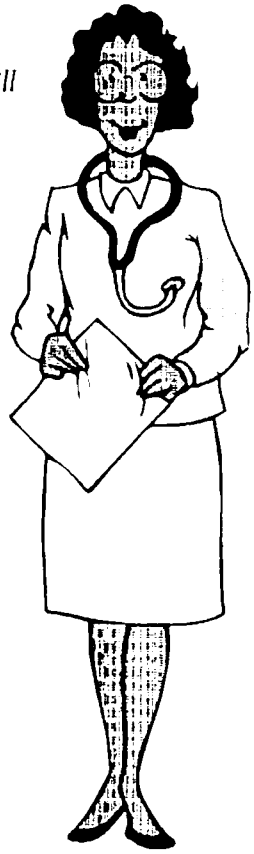
Are health aides told when there is a sewage spill in the village?

_____

_____

Health aides need to be told when there is a sewage spill in the village. There are several reasons why the health aide needs to be informed of sewage spills:

- *The health aide can educate the community and explain the health risks associated with a sewage spill.*
- *The health aide will then know the source of any stomach illnesses that may have been caused by the spill.*



37. Yes ☐ No ☐ ? ☐

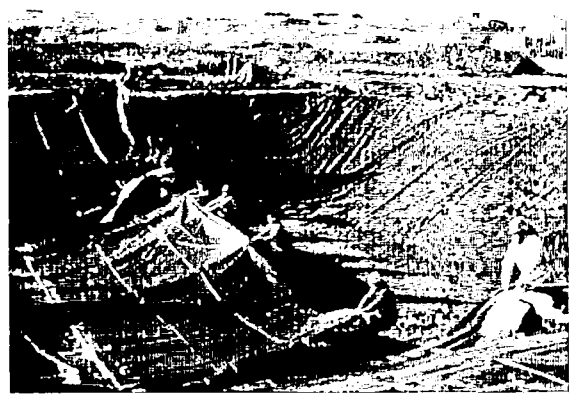
Does the village have a sewage lagoon?

If yes, how far is it from the village?

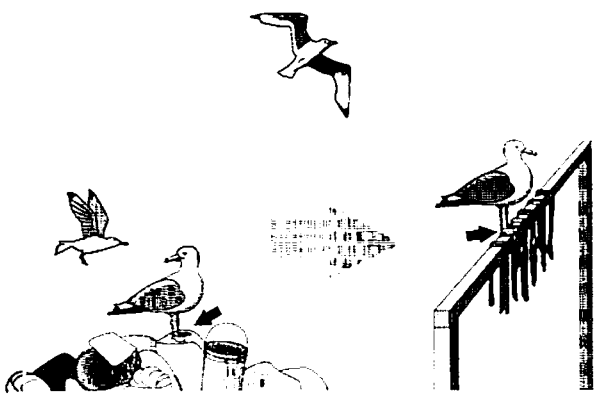
_____

_____

Most villages have a sewage lagoon where sewage is dumped. A properly located sewage lagoon can help reduce some of the potential health problems associated with sewage. The sewage lagoon should be located at a safe distance from the residential section of the village. If the lagoon is too close to the residential section of the village, there is a greater chance of diseases being spread. For example, if a person in the community lives near the sewage lagoon and is drying fish on a rack, the fish can be exposed to disease-carrying flies that visit the sewage lagoon and then land on the fish. On the other hand, in villages where honey buckets are used, the sewage lagoon should not be so far from the village that people are tempted to dump elsewhere.



Building a sewage lagoon with a liner.
Photo courtesy Kurt Egelhofer.



Birds landing in the sewage lagoon may later carry diseases to your drying meat.

Both the distance and direction of the sewage lagoon from the residential section of the village are important factors in determining the location of the sewage lagoon. Prevailing winds can carry unhealthy vapors or smells from the sewage lagoon to the residential area if the lagoon is located improperly.

38. Yes ☐ No ☐ ? ☐

Does the sewage lagoon ever leak or overflow?

If yes, why and when?

_____

_____

Raw sewage from a leaking or overflowing sewage lagoon is a potential source of disease and a public health risk. Some reasons why a sewage lagoon may leak or overflow include:

- *Structural damage. The sides of the lagoon may break down.*
- *Inadequate size. The size of the lagoon may be too small to handle the amount of wastewater.*
- *Flooding. Spring and fall flooding may cause the lagoon to overflow and spread to the residential area.*
- *Poor location. A sewage lagoon that is improperly located may leak or overflow.*

Photo courtesy Kurt Egelhofer

If flooding of the sewage lagoon is continuously a problem in your village, it may be necessary to relocate the lagoon. This is particularly true if overflowing sewage affects the community's water supply.

39. Yes ☐ No ☐ ? ☐

Does your village have a piped sewer?

If yes, to how many houses or other buildings?

_____

40. Yes ☐ No ☐ ? ☐

Does your village have septic tank systems?

If yes, to how many houses?

_____

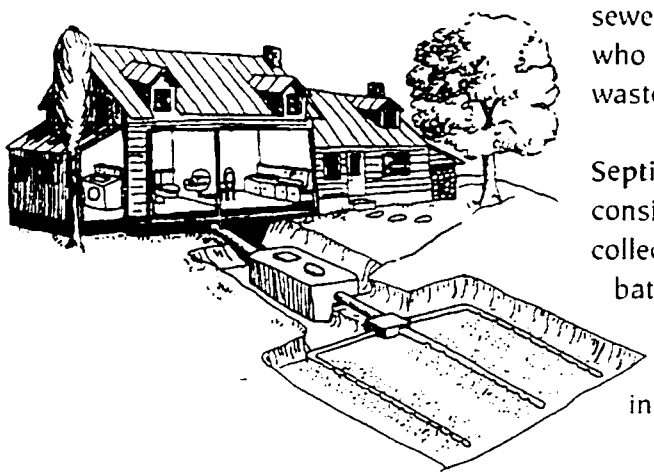
The intent of questions #39-43 is to find out how many different types of sewage collection and disposal systems are in your community and how many homes or other buildings utilize each of the systems. For example, the City of Noorvik is often labeled as a piped sewer community, yet about 30% of the people still use honey buckets. This is important information because the health risks associated with each type of system are different.

Below is a description of the various types of sewage systems and the levels of risk (hazard) associated with each system.

Levels of health risk associated with different sewer services

Piped sewer	Lowest health risk
Septic systems	
Sewage-holding tanks/Flush-haul system	
Honey bucket haul	
Pit toilets	
Honey buckets	Highest health risk

Piped sewer. A piped wastewater system has the least risk of all types of sewer services because no one is exposed to sewage. The number of houses or other buildings on piped sewer is an indication of the number of people who have a very sanitary method of wastewater disposal in your village.



A septic system

Septic systems. A septic system normally consists of a piping system in the home that collects wastewater from your toilet, shower, bathroom fixtures and kitchen sink. This wastewater leaves the home through a pipe that flows into a tank and then into a drain field next to the home.

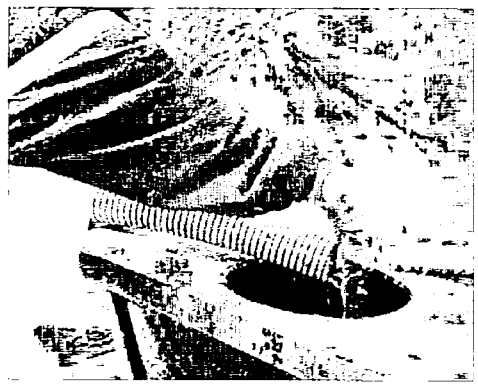
41. Yes ☐ No ☐ ? ☐

Does your village have sewage holding tanks (flush-haul system)?

If yes, to how many houses or other buildings?

_____

Sewage holding tanks (Flush-haul system). After piped water systems, sewage-holding tanks are the most sanitary method of wastewater disposal. The health risks associated with using a sewage holding tank lie mostly with the operator who empties the tanks. The operator is usually the only person in danger of becoming contaminated as she/he must unscrew the valves to empty the tanks.



Flush-haul operators may be exposed to raw sewage when emptying the tank.
photo courtesy Joe Sarcone

42. Yes ☐ No ☐ ? ☐

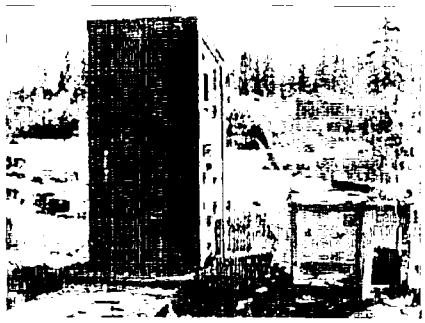
Does your village use privies or outhouses?

If yes, how many houses or other buildings?

_____

Privy/Outhouse. A privy and an outhouse are the same thing, an outdoor toilet. An outhouse is one step better than using a honey bucket because you don't have to transport the sewage.

Outhouses can be a problem because they can potentially pollute the drinking water source in a community. This is why they should be at least 100 feet away from the high water marks of lakes and rivers. The bottom of the hole for an outhouse should be at least 4 feet above groundwater. Try and locate your outhouse as far away from your drinking water source as possible.



Poorly located outhouses can be a problem because they can potentially pollute the drinking water in a community.
Photo courtesy Bill Stokes

Outhouses are home to a variety of bacteria and organisms that carry disease. The flies that gather at the outhouse are the same flies that end up landing on the fish you are drying and on the food in your house. It is a good idea to occasionally cover the waste in your outhouse with lime or baking soda to help reduce the number of flies. Using a toilet seat with a cover in your outhouse will help keep out the flies. The number of flies can also be reduced by covering any openings/vents with screen material.

43. Yes ☐ No ☐ ? ☐

Does your village use honey buckets?

If yes, how many houses or other buildings?

_____

Honey bucket users are at the highest risk for catching sewage-related diseases.
Photo courtesy Jim Patterson.

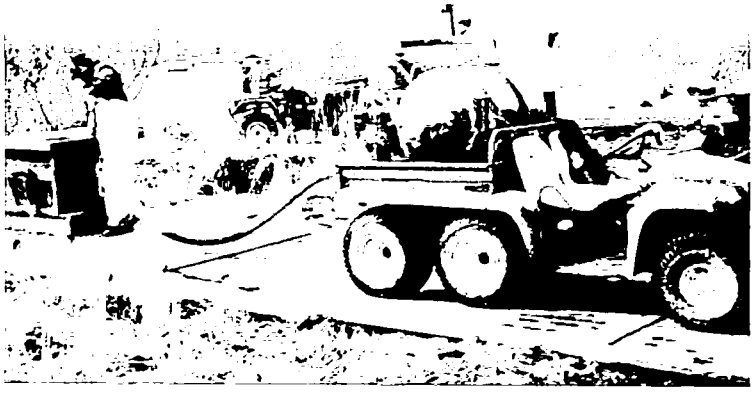
Honey buckets. A honey bucket is a type of toilet that is usually made from a five-gallon plastic bucket lined with a plastic bag. Sometimes a toilet seat is placed on the top of the bucket for seating.

The honey bucket is the wastewater system most likely to spread disease. This is because people using honey buckets must carry the waste from their homes to the disposal site. Honey bucket users have the highest chance of coming into contact with human waste. The number of outhouses or buildings that use honey buckets within the community is an indicator of the number of people who are at a greater risk of catching diseases associated with sewage.

44. Yes ☐ No ☐ ? ☐

Does your village have an operating honey bucket haul or flush-haul system?

If your village uses honey buckets or has sewage holding tanks, there must be an operating sewage removal system to haul the sewage away from the homes and to the sewage lagoon. An operating sewage removal system consists of someone reliable who is employed to haul the sewage from homes and other buildings, and maintain sewage removal equipment in good working order. It also means that the person who is hauling the sewage does the job safely so that no sewage is spilled on the way to the sewage lagoon. A haul system that is not operated correctly means that there is greater risk of sewage related diseases infecting the community.



Operating honey bucket haul system.
Photo courtesy Joe Sarcone

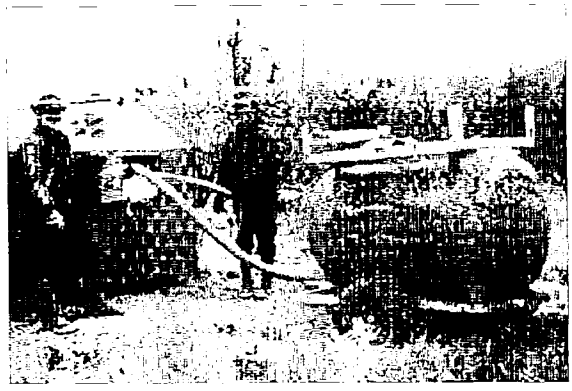
45. Yes ☐ No ☐ ? ☐

Is any of the equipment for the honey bucket haul or flush-haul system broken?

If yes, for how long?

_____

If any of the equipment for hauling sewage is broken or not working properly, removing sewage from the village cannot be done safely. It is important that the haul system is in good operating order and that essential spare parts are available in case there is an emergency. For every day that the haul system is not working, the community is exposed to health risks related to sewage.



It is important that all equipment needed to safely operate the haul system is in good operating order and that essential spare parts are available.
Photo courtesy Joe Sarcone.

Tips for maintaining equipment for sewage haul systems:

Routine maintenance and repairs on sewage haul equipment can prevent an accident from happening. For example, to safely operate a honey bucket hauler:

- *The equipment should be greased and/or inspected on a regular basis.*
- *A damaged container should be repaired immediately to avoid spills.*
- *For a flush-haul system, the tank should be flushed with clean water after each use in order to clean the valves and prevent deterioration of the haul tank.*
- *The tank, valves and pressure pump should be inspected at least once a year.*

Preventative maintenance such as the suggestions mentioned above can help to eliminate some potential breakdowns in your sewage haul system.

46. Yes ☐ No ☐ ? ☐

Is the honey bucket haul or flush-haul system operated safely so that no sewage is spilled on the ground in the village?

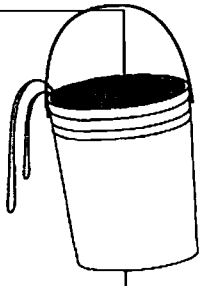
Spills from honey buckets occur during transportation and when the buckets are dumped at the collection site. One of the major problems with these systems is accidental spills. No matter how careful the handler is, there will always be spills. The sewage that is spilled can be washed downstream into another village's water intake. In addition, the spill may be spread around the community by humans, dogs, snowmobiles, ATVs, birds and flies.

Once sewage has been spilled, it is very easy for the sewage to be carried into a home on the shoes of adults and children or paws of dogs. Once the pathogens (disease-causing organisms) are tracked into a home, it is easy for children, who typically play on the floor, to pick up the disease-causing organisms on their hands and transfer them to their mouth. This is one of the primary ways sewage diseases are spread.

In communities that use honey buckets, each individual is responsible for preventing spills. If a spill occurs, the individual responsible must make sure it is cleaned up. The area of the spill needs to be sanitized with chlorine or lime, especially if the spill is in a place where people commonly spend time.

In communities that use honey buckets, each person is responsible for preventing spills.
Illustration by Natalie Gorber

TIPS FOR CLEANING UP SEWAGE SPILLS:



After removing all visible sewage from the ground, a lime and water solution, called "milk of lime," can be poured over the spilled sewage. Milk of lime is made by adding 1 pound of hydrated lime to 1 gallon of water. Larger amounts can be made by mixing a 50 pound bag with 50 gallons of water in a clean 55-gallon drum. Hydrated lime can be purchased in 50 pound bags through commercial distributors in Anchorage and sometimes in the gardening section of department stores.

★*Care should be taken to prevent children from coming into contact with milk of lime. This substance can cause severe skin and eye irritation. When mixing the lime, an apron, goggles and rubber gloves should be worn to avoid contact.*

A safer alternative for cleaning up sewage spills in open areas is to use a weak bleach (water mixed with bleach) solution to pour over the cleaned up spill.

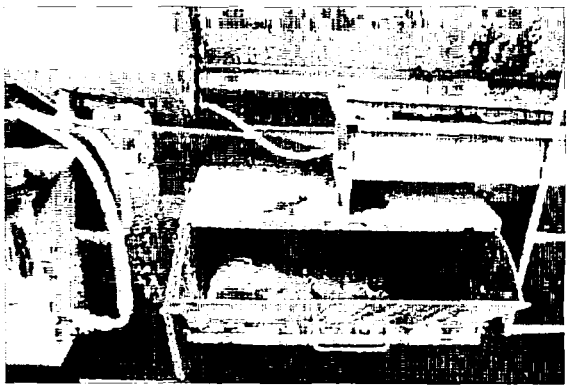
47. Yes ☐ No ☐ ? ☐

Do all village residents properly dispose of their honey buckets?

_____

_____

Honey buckets should be disposed of at a collection site, an outhouse, or at a lagoon. Residents who dump their honey buckets behind their homes or in other places around the village are putting the entire community in danger. Sewage that is dumped in or around the village is a source of disease and feeds disease-causing organisms.



Honey bucket bag collection system.
Photo courtesy Bill Stokes.

The village council should address the issue of assisting elders with sewage disposal. There have been cases where elders have been forced to dump their sewage behind their home in the winter because they were not physically able to dispose of the sewage in an outhouse. Having a program to assist elders could prevent some cases of improper disposal.

Educating people in the community about the dangers involved in improperly disposing of sewage is the most important key to preventing sewage-related problems in your village. When people are aware of how easily sewage-related diseases, such as Hepatitis A, can be spread throughout an entire community, they will begin to think twice before dumping their honey bucket improperly.

48. Yes ☐ No ☐ ? ☐

Do the honey bucket haul or flush-haul operators get paid?

If yes, how much and for how many hours per day?

_____

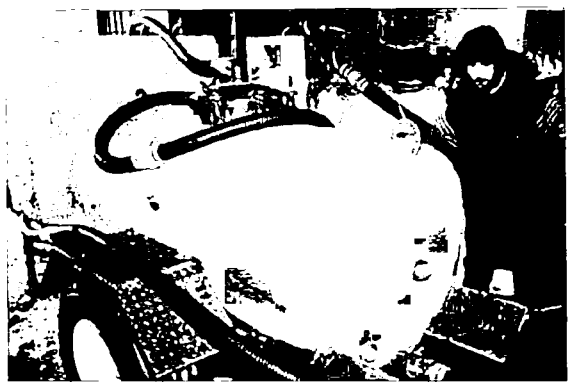


Photo courtesy Bill Stokes.

Honey bucket haul or flush-haul operators have the important job of removing sewage from containers in the community so sewage related diseases do not occur in the village.

The honey bucket haul or flush-haul operator has a tremendous effect on the public health of a community. If the operator(s) is not doing his/her job properly, the entire village is at risk.

An operator's pay should be high enough so that the position is competitive and it encourages the operator to stay with the job. The community needs to understand that safe sewage disposal is not a free service. Getting good compensation for the work of operating the honey bucket haul or flush-haul system gives greater incentive for the operator to do a good job and to stay with the job. It also helps give the respect that the operator truly deserves.

49. Yes ☐ No ☐ ? ☐

Do the honey bucket haul or flush-haul operators have a place to clean up and change out of their work clothes before going home?

If yes, where?

_____

_____

It is very important that the honey bucket haul or flush-haul operators have a place to clean up, change, and store their work clothes before going home. If the operator changes his/her clothes at home, it is almost guaranteed that the operator will carry raw sewage and diseases back to family members and other members of the community. Some communities provide their honey bucket haul operators with a daily token for a shower at the washeteria as part of the compensation for their work. The health of the operator should be a concern for the entire community.

Solid Waste

Who to ask: landfill operator, village store owner, village school principal, power plant operator

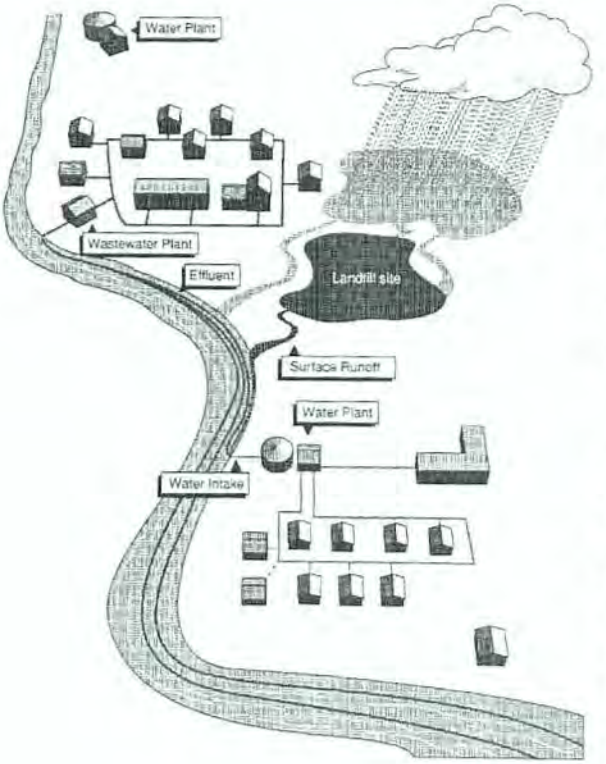
52. How far is the landfill from the airstrip?

_____

As a general guideline, the landfill should be located about one mile from the airport or airstrip. It should be located far enough from the airport or airstrip so birds that typically feed at the landfill do not present a hazard to incoming and outgoing planes. There have been incidents of birds flying into the engine of a plane and causing the plane to crash.

53. How far is the landfill from the village?

_____



Properly located landfills are far enough from housing and school areas so that they are not a safety hazard and sanitation problem or used as a play area by children. However, the landfill should not be so far from the village that people avoid using it or that it becomes too costly or time-intensive to maintain road or boardwalk access.

A poorly managed landfill that is too close to the village is a nuisance because of the odor produced by burning and rotting garbage. Also, flies are attracted to rotting garbage and honey bucket wastes and tend to concentrate at a landfill that is not properly managed. These same flies end up in your home and school and carry diseases with them.

Dogs can also spread disease. If dogs have easy and close access to the landfill, they will bring back diseases on their paws that will then be carried into the village and homes. A properly operated landfill that is located a safe distance from the village is less likely to be a source of disease in the community.

54. Yes ☐ No ☐ ? ☐

Is the landfill accessible all year round?

_____

_____

A maintained road, trail, or boardwalk to the landfill site is needed to provide access year round and to prevent people from dumping outside of the landfill. The easier it is to dispose of garbage safely, the more likely residents will dispose of their garbage properly. If the access road to the landfill is not maintained and it is difficult to reach the landfill, people are more likely to throw their garbage in inappropriate places.

A maintained road, trail or boardwalk to the landfill site is needed to provide access throughout the year.

55. Yes ☐ No ☐ ? ☐

Does the landfill have any type of heavy equipment to compact or cover the solid waste?

If yes, what kind?

_____

Does the equipment work? _____

Heavy equipment is required at the landfill to consolidate, compact and cover the waste with soil or other materials. The solid waste needs to be compacted and covered to improve the sanitation of the landfill. Compacting and covering will also increase the length of time that a landfill can accept waste.

The equipment used to compact or cover the material at the landfill should be maintained so that it stays in working order. If the equipment is damaged or out-of-order it isn't possible to compact and cover the waste properly.

Bulldozer being used to consolidate, compact and cover waste at the landfill.

If possible, the materials in the landfill should be compacted regularly, especially in the summer months when the soil is not frozen. A landfill that is not compacted regularly will fill up much quicker than one that is being compacted. In villages where it is not possible to compact or cover garbage in the landfill adequately, controlled burning of wastes should be considered as a waste treatment method. Burning will reduce the volume of the waste and the amount of blowing litter. It will also reduce the number of flies and animals. If burning is used to manage waste, however, proper burning practices must be followed.

56. Yes ☐ No ☐ ? ☐

Is the trash being covered or buried?

How often?

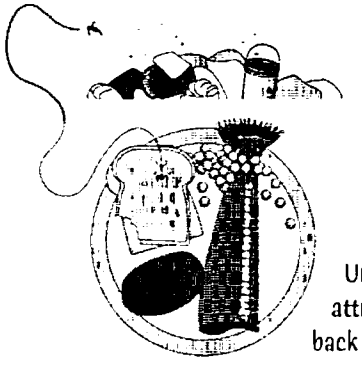
_____

What is the material used to cover the trash?

_____

Solid waste needs to be covered with soil to control disease, fires, odors, blowing litter, and to keep animals away. If you reduce the amount of exposed material in the landfill by covering it, animals like bears, birds, dogs and foxes will not be attracted to the area.

A landfill with covered wastes.



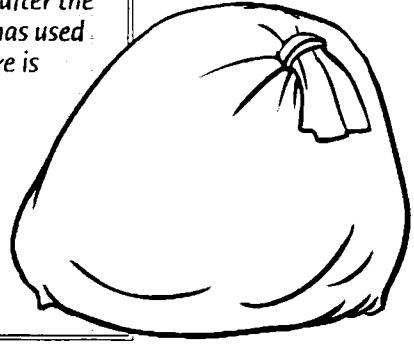
Uncovered trash or sewage attracts flies that carry disease back to your home.

Because of permafrost and lack of soil cover material available in certain areas of rural Alaska, it isn't always possible to adequately cover the waste in the landfill. Ideally, six inches of soil should be used to cover waste in a landfill. Some communities have a permit to use crushed glass, tarps, and other materials instead of soil to cover the garbage in their landfill.

Depending on the size of the landfill and the number of people served by it, soil cover material may need to be added daily, weekly, or monthly.

TIP

Super sacks provide an alternative way to manage solid waste and blowing litter. Super sacks are 4 foot by 4 foot polypropylene bags. The bags are like giant bread bags. They are open at the top and can be tied closed after the bag is filled. The Village of Nightmute has used super sacks to contain waste since there is no soil material available to cover the waste at the landfill. The solid waste is contained in the bag which prevents the garbage from being blown all over the tundra. For information on where to obtain super sacks, see the Directory in the back of the manual.



57. Yes ☐ No ☐ ? ☐

Does the village landfill have an operator?

If yes, who?

_____

How much and for how many hours a day is the operator paid?

_____

Every landfill needs an operator. The main duties of the landfill operator include:

- *monitoring what goes into the landfill*
- *controlling access to the landfill (i.e. locking the gate after hours)*
- *burning of wastes in a burn box or incinerator*
- *making sure that hazardous materials do not go into the landfill*
- *compacting and covering the materials in the landfill*
- *storing hazardous materials, such as lead-acid batteries, prior to shipment*

An operator's pay should be high enough so that the position is competitive and it encourages the operator to stay with the job. The community needs to understand that disposal of solid waste is not a free service. Getting a good compensation for the work of operating the landfill not only gives incentive for the operator to do a good job and to stay with the job, but it also helps give the respect that the operator deserves.

58. Yes ☐ No ☐ ? ☐

Does the village landfill have a fence around it?

If yes, is it in good condition?

_____

A landfill that is enclosed by a maintained fence helps to control access to the area. It is important that the fence is in good condition and has an entry way with a lock so that access can be controlled.

A fence in bad condition surrounding a landfill.
Photo courtesy Bill Stokes.

Benefits of a fenced landfill area:

- *Prevents people from dumping garbage in the landfill when there is no operator available to monitor what types of materials are being placed into the landfill.*
- *Reduces the amount of windblown litter.*
- *Helps to control animals from scavenging.*
- *Reduces the possibility of children playing in the garbage and picking up diseases and hurting themselves. Children playing in the landfill may cut themselves on rusty metal objects and get tetanus, which can be fatal.*

59. Yes ☐ No ☐ ? ☐
Is access to the landfill controlled?

A landfill with controlled access means that:

- *A fence with a locking gate surrounds the landfill area.*
- *Hours of operation are posted and followed.*
- *Scavenging, uncontrolled burning and shooting are not permitted.*
- *Random dumping is not permitted.*

An uncontrolled landfill is an uncontrolled mess.
Photo courtesy Bill Stokes.

A landfill with easy access is an invitation for children to play and to pick up diseases and injure themselves. Dogs that are easily able to enter the landfill can carry back disease into the village and can potentially spread this disease to humans.

A landfill without any site control usually means that garbage is being dumped anywhere it is convenient. One possible solution to a landfill that has no site control or fencing would be to strategically place 55-gallon drums along the front of the landfill to direct people where they should take their wastes. The best solution, however, is to educate people about the importance of properly disposing of their wastes.

60. Yes ☐ No ☐ ? ☐

Is uncontrolled open burning allowed at the landfill?

Burning garbage on the ground is a very ineffective way to reduce waste.
Photo courtesy Bill Stokes.

Controlling an open burn means that:

- *Someone is removing materials that are hazardous or non-combustible from the burn pile.*
- *The fire stays under control. There should be someone on duty to keep the fire controlled while waste is being burned.*
- *Only paper, cardboard, wood, and other clean burning materials are ignited.*

Uncontrolled open burning is burning a pile of garbage on the ground at the landfill. Uncontrolled burns are often seen as the solution to reducing the amount of garbage at the landfill. However, if uncontrolled, open burning is not only ineffective but is also a fire hazard. Forest fires have resulted from uncontrolled burning practices.

Burning garbage on the ground is a very ineffective way to reduce waste. It is ineffective because it usually doesn't significantly reduce the amount of garbage. Most of the energy used in burning the material is used to dry the material out rather than to reduce its volume. Unless the material you are burning is very dry and combustible, you end up with close to the same amount of garbage that you started with. This results in the garbage burning very slowly and producing smoke which is dangerous to breathe.

Open burning can be dangerous if toxic and hazardous materials are not separated from the other trash. Burning material such as plastic is toxic and the black smoke produced is dangerous to breath. Some hazardous materials can cause dangerous explosions if they are in a fire. Toxic and hazardous materials must be removed before garbage is burned.

Smoke and odors from uncontrolled open burning are also nuisances to surrounding property owners and may endanger workers at the landfill and interfere with the operation of the landfill. Many communities are solving the problem of uncontrolled open burning by building a burn box in their community to more safely and efficiently burn wastes.

61. Yes ☐ No ☐ ? ☐

Is there a burn box at the landfill?

If yes, who operates it?

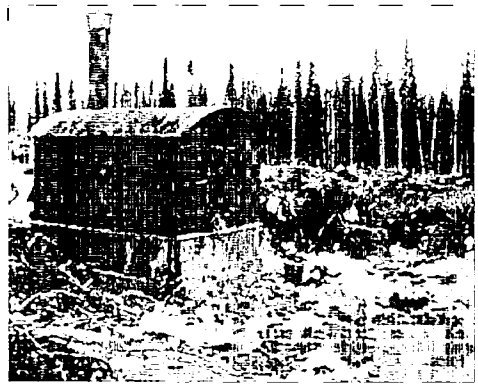
_____

A burn box is a steel box with a door, grates, and an air vent that is used to burn paper, cardboard, and wood products more efficiently. It is very similar to a wood burning stove in its construction. Burn boxes are very efficient at burning waste because the materials get hot quickly and burn faster and more completely than a pile of garbage on the ground. If a burn box is used correctly, it can reduce the volume of waste by about 80%.

It is important that a designated person be responsible for the burn box so that it is properly maintained. Correct use of a burn box requires that someone is in charge of:

- *Removing plastic and hazardous materials before burning.*
- *Watching and controlling the burn.*
- *Removing the ashes from the burn box and putting them in the landfill.*

Burn boxes differ from incinerators because they are less expensive to build and operate and do not require a permit. However, the air emitted from a burn box is usually lower in quality than the air from an incinerator. Because they are a practical and inexpensive solution to managing solid waste, burn boxes are more commonly used than incinerators in rural Alaska.



Burn boxes have been created from simple materials around the village such as scrap iron, old tanks, sheet metal and old truck beds. (Dot Lake burn box)

Photo courtesy Bill Stokes.

Burn boxes can reduce the volume of waste by about 80%.

Photo courtesy Paula Fowler

Burn boxes have been created from simple materials around the village such as scrap iron, old tanks, sheet metal, and old truck beds. The Tanana Chiefs Conference has been very successful at converting old dump truck beds into burn boxes for their villages.

62. Yes ☐ No ☐ ? ☐

Are there other burn boxes in the village (such as the village school or store)?

If yes, who operates them?

_____

_____

If there are several operating burn boxes in your village, the amount of waste going to the landfill will be greatly reduced. The village school and store produce large amounts of waste that end up in the village landfill. If the cardboard and other paper wastes produced by the school and store are reused, recycled, or burned in a burn box, this will eliminate a large amount of material from going to the landfill.

The village school, store and other places in the community that produce significant amounts of waste should be considered when developing a solid waste management plan for your village. One solution for the village to consider is to have these places operate their own burn box. Whatever solution works best in your village to reduce the amount of waste going to the landfill should be used.

63. Yes ☐ No ☐ ? ☐

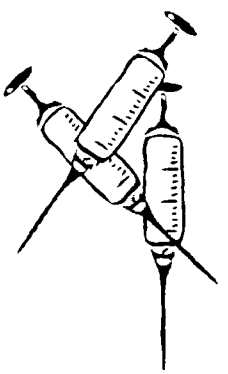
Are the health clinic medical wastes and/or veterinarian wastes disposed of at the landfill?

If no, how and/or where are they disposed?

_____

_____

Medical wastes should not be disposed of in the landfill. Infectious diseases can potentially be spread throughout the village if medical wastes are not disposed of properly. Certain wastes, such as needles, must be safely packaged and sent to the Regional Health Corporation or hospital for incineration and disposal. Other medical wastes, such as used paper products, can often be burned in a burn box in the village. Check with the environmental health specialist at your Regional Health Corporation to find out the correct procedures for disposing of medical wastes in your region.



64. Yes ☐ No ☐ ? ☐

Is there windblown litter around the landfill?

If yes, how much and how far does it go?

_____

_____

Litter that has blown from the landfill into surrounding areas is not just ugly but can be a fire hazard, attract animals that carry disease, and injure animals. For example, near Platinum, Alaska some men saw a seal with a plastic bag wrapped around its neck. The litter surrounding the landfill also interferes with other subsistence activities such as berry picking.

The problem of windblown litter can be eliminated if the landfill area is fenced and if the garbage at the landfill is burned and/or compacted and covered periodically. Windblown litter can also be reduced by decreasing the amount of plastic bags used in the village. Many villages have an annual clean-up day to help control the amount of windblown litter.

NATIVE VILLAGE OF KING COVE:

"I utilized the ALPAR (Alaskans for Litter Prevention and Recycling) Grant this summer for our Youth Litter Patrol. Working with the Mayor and Council members, I set up a budget with details on plans of how our group would work to beautify our city, educate and encourage our community members not to litter and to continue recycling aluminum cans. The city was very willing to promote the program and agreed to fund it throughout the summer. We planted wild flowers at the base of our light poles throughout our town. We utilized ten 55-gallon drums and turned them into colorful trash and can bins. We placed these in areas where litter was found most. There are volunteer city workers who help keep the barrels empty. It has worked out well for our community."

Connie Newton, AmeriCorps Member, King Cove

King Cove Youth Litter Patrol.
Photo courtesy Connie Newton.

65. Yes ☐ No ☐ ? ☐

Is there a lot of plastic in the windblown litter?

If yes, what is the main color?

_____

If you look around the area of your landfill, you might see many white plastic bags littering the nearby bushes and ground. Plastic bags can blow a long distance from the landfill because they fill up with air and float away like a sail. Some people call these bags "landfill snow birds" because of the way they "flock" around a village landfill. Plastic bags that blow away do not disappear, however. When buried, they may take hundreds of years to decompose, or break down. Until then, they blow across the land used for berry picking and hunting. Wild animals have been discovered with plastic stuck in their mouths, thus preventing them from eating.

Seventeen Chiefs from the Gwich'in Nation signed a resolution to ban Styrofoam and plastic bags from their communities. In addition, the resolution also states that the communities will establish fines for littering and polluting and that they will establish a battery collection site at each of their landfills. See Appendix H for a copy of the resolution.

66. Yes ☐ No ☐ ? ☐

Do the village stores recycle the white plastic shopping bags or offer rebates (money back) for reuse of the white plastic bags?

If yes, which store(s)?

_____

_____

Some stores offer a type of rebate or cash back to customers who bring in their own shopping bags. Every time a plastic bag is reused, this reduces the amount of plastic waste going into the environment by 50%!

Plastic shopping bags have been recycled to create beautiful crocheted backpacks, bags, hair clips and other items.
Photo courtesy Suanne Unger.

67. Yes ☐ No ☐ ? ☐

Do the village stores offer paper or canvas bags as an alternative to plastic bags?

If yes, which stores?

_____

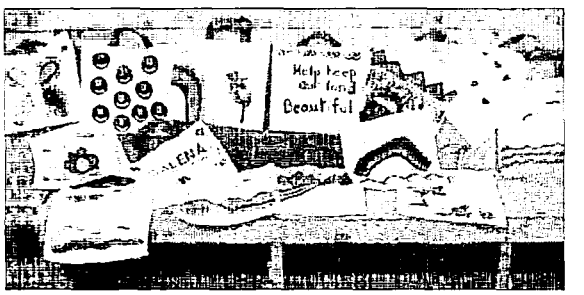
_____

TIPS THAT WORK ...

The Louden Tribal Council passed a resolution to banish plastic retail bags from their village stores in order to prevent excess plastic litter in and around their landfill. They are working with local retail outlets to replace these plastic bags with reusable canvas bags and making paper bags available for a fee.

When Louden Tribal Council wanted to keep white plastic bags out of Galena, they chose to first get the cooperation of the store owners before making a formal resolution. Foresight to involve the store owners from the beginning has made the process much smoother. See Appendix G for a copy of the resolution.

A large amount of the waste found in a landfill comes from white plastic bags provided at the village store. Your village store can help reduce the amount of litter in the village and landfill area by providing alternatives to plastic shopping bags. By using paper or canvas bags or used cardboard boxes, the amount of plastic going to the landfill can be reduced significantly. Canvas bags can be used over and over again and are the best option.



The school children in Galena decorated canvas bags to distribute to each member of the community.

Photo courtesy Bill Stokes.

68. Yes ☐ No ☐ ? ☐

Does the landfill have uncrushed tin cans from the school lunch program?

The school lunch program in the village goes through large numbers of tin cans that end up in the village landfill. These large uncrushed tin cans take up about one-fifth of the landfill volume in some cases. One solution to this problem is to ask the school to remove both ends of the cans so they can be easily crushed. Crushed cans take up less space in the landfill.

Ask the school to crush empty cans so they take up less space in the landfill.
Photo courtesy Bill Stokes.

Another problem with uncrushed cans is that they collect water in the landfill. Water that collects in the landfill has the potential to pass through the garbage and create leachate (garbage juice) that moves into the soil. Leachate can potentially pollute your drinking water (see pages 118–119 for a further explanation of "leachate.")

69. Yes ☐ No ☐ ? ☐

Does the landfill have a lot of aluminum cans?

70. Yes ☐ No ☐ ? ☐

Are aluminum cans being recycled?

If yes, by whom?

_____

_____

There are several good reasons to recycle aluminum cans in your community:

- *Aluminum cans are 100 percent recyclable and are worth money. One case of pop, or 24 cans, equals about a pound of aluminum.*
- *Recycling aluminum can extend the life of the landfill. Because it is expensive to close and open landfills, reducing the volume of waste going into the landfill saves the village money in the long run.*
- *Aluminum cans take hundreds of years to break down in a landfill.*

If there are a lot of aluminum cans in your landfill, set up a recycling program and encourage the entire village to participate. Giving some kind of incentive for recycling may increase your success at getting a recycling program to work. For example, some village schools have used the money from recycling to fund trips for students.

Find out how many cans of pop are purchased by the village store and then calculate how much money could be made off of aluminum cans in one year. Contact a recycling center to find out the current market rate for aluminum. See the Directory in the back of the manual.

Throwing aluminum into your landfill is the same as throwing away money.
Photo courtesy Bill Stokes.

Did you know that it is much cheaper to collect and reuse aluminum than it is to mine for the aluminum? The energy saved by recycling one aluminum can alone is enough to keep a television running for 3 1/2 hours!

CHISTOCHINA VILLAGE:

Chantelle Hobbs' tips for people interested in recycling:

- *Send out monthly flyers with positive environmental messages.*
- *Let people know how the program is going. (For example, how many cans have been collected and how much money has been saved).*
- *Use the money earned from recycling to buy recycling bins or can crushers for people's homes.*
- *Collect used paint from community members and use it for projects such as painting signs and picnic tables with the kids.*
- *Put signs up around your community saying "We are a litter free community" or "Leave only footprints- trash goes in the trashcan".*
- *Take a nature walk with the kids and pick up trash along the way.*
- *Use a local newsletter to spread the good news about recycling.*
- *Make a video with the kids to educate the community about the importance of recycling.*

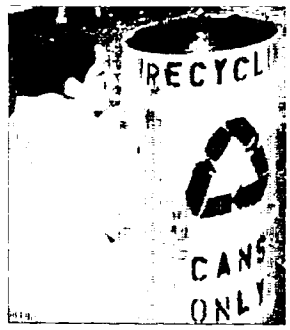
Aluminum cans for recycling.
Photo courtesy Brian Connors.

The Flying Cans Program with Alaskans for Litter Prevention and Recycling (ALPAR) will carry aluminum cans from villages throughout the State (accessible only by air) of Alaska to a recycling center in Anchorage for free. The recycling center will then send the village a check for the value of the aluminum. It's a win-win situation. See the Directory in the back for information on how to contact ALPAR.

CHILKAT INDIAN VILLAGE/NATIVE VILLAGE OF KLUKWAN:

"My name is Shadow Hotch and I serve as an AmeriCorps Member in the village of Klukwan. When I began my AmeriCorps service, I wanted to start a recycling program. I wanted to reduce the waste that was filling our community dump rather rapidly. I found out while taking the students on a village spring clean-up that the children had already started a recycling program and were keeping the cans stored in the school garage and didn't have enough room for the whole village. Soon after, I asked the tribal village council if I could use the old Klukwan Fire Hall and turn it into the Klukwan Recycling Center. After permission was granted, I cleaned up the place and painted it with the help of the kids from the community. We then started to make recycling barrels out of old unused 55 gallon oil barrels that were just laying around and looking ugly. They were put out in front of the houses of those who wished to help in the recycling effort. I would go around and pick up the cans on Tuesdays and Fridays and then take them back to be stored at the Klukwan Recycling Center. A generous volunteer then ships the cans out of the village.

Today, we not only store aluminum cans but also batteries from the dump and local homes. I have gathered glass and used oil to be shipped out of our village to protect the safety of our children. The residents of Klukwan collect cardboard to be shipped out as well. Together as a community we have done these things and I am proud. I know that with the little efforts and goals that we AmeriCorps Members have, we will make the future a little bit brighter for our children."



Shadow Hotch,
AmeriCorps Member, Klukwan

71. Yes ☐ No ☐ ? ☐

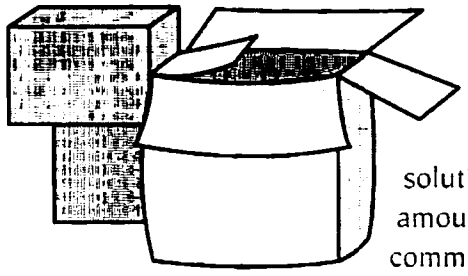
Does the landfill have cardboard or other paper wastes from the village store?

If yes, in general terms, how much?

_____

Cardboard and other paper wastes generated by the village store take up a large amount of space in the landfill. Sometimes, nearly half of the material in the landfill is cardboard or other paper wastes. A large portion of this paper waste comes from the village store.

Cardboard is a valuable resource and can be profitable to recycle, however, transporting cardboard from your village to a recycling center that accepts cardboard may be too expensive. If it is not cost effective for the village store to recycle the cardboard, it could be used for other purposes such as to make logs or to pack lead-acid batteries for shipment. If it is not possible to recycle or reuse most of the cardboard and other paper wastes in your village, the alternative is to burn them. These solutions will significantly reduce the amount of waste in the landfill. The community should work together with the village store to find solutions that will prevent cardboard and other paper wastes from being unnecessarily dumped in the landfill.



KOTZEBUE, ALASKA

Several large businesses and organizations in town collect scrap office paper instead of throwing it away in the trash. Every few weeks, this paper is delivered to local daycare, children's homes, and the local tribal school to be reused. The kids love it and it cuts down on paper to the landfill as well as the cost to each facility for new paper.

72. Yes ☐ No ☐ ? ☐

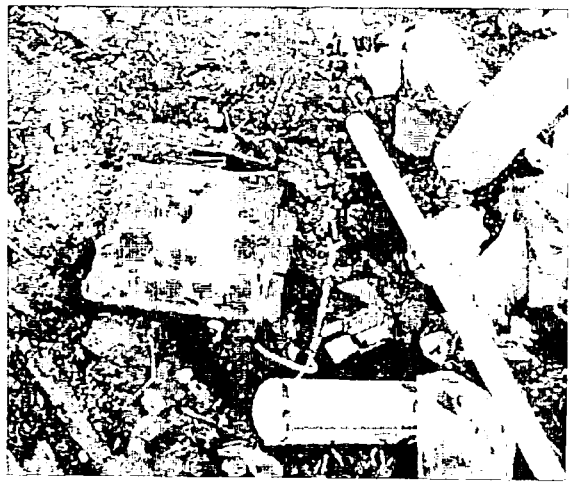
Is there a "No Dumping of Hazardous Materials" warning sign at the landfill entrance?

There should be a warning sign posted at the entry to the landfill that clearly tells the users that disposal of hazardous wastes in the landfill is not allowed. A poster showing drawings of common materials that don't belong in a landfill can be a useful tool in preventing hazardous waste disposal at your landfill.

Some examples of hazardous waste materials include:

- *Antifreeze*
- *Diesel fuel*
- *Kerosene*
- *Battery acid*
- *Disinfectants*
- *Motor oil*
- *Bleach*
- *Gasoline*
- *Oil-based paints*
- *Brake fluid*
- *Insecticides*
- *Paint thinner*
- *Common household cleaners*
- *Solvents*
- *Lead-acid batteries*

Hazardous materials may chemically react to cause fires, explosions and poisonous gas that create a hazard to landfill operators and the surrounding community. Hazardous substances can also seep into the ground and pollute the drinking water.



An old, cracked lead-acid battery found in a landfill.
Photo courtesy Bill Stokes.

73. Yes ☐ No ☐ ? ☐

During the inspection of the landfill, were paint cans, used oil containers, lead-acid batteries or other hazardous materials observed?

If yes, in general terms, what and how many?

_____

_____

Hazardous wastes such as those listed on page 105 can pollute water, soil, and air if improperly disposed of or used incorrectly. Before disposal, these materials should be used up for their intended purpose. Hazardous materials should be separated from other garbage and should not be placed in the landfill.

Many hazardous materials can easily catch fire if mixed with other materials in the landfill. When they mix, there may be an explosion, fire, or toxic smoke that may be colorless. You can determine if a material is hazardous by looking at the label. If you see words such as flammable, corrosive, toxic, combustible, explosive, and volatile you have a hazardous product.

If a central location is established for bringing old hazardous materials, it is very important that materials that are dangerous to mix together are not stored together.

People need to have a place to put their unused hazardous materials when they no longer need them. Bulletin boards are used in some communities for people to advertise unused hazardous materials they are willing to give away or sell. Materials exchange programs can also be set up in the community so that hazardous materials have a greater chance of being used up rather than disposed of improperly. This way people can bring any unused materials to a central place where other people have access to them. If a central location is used to store certain hazardous materials, it is very important that the area is managed properly and that only compatible items are stored together. Otherwise, the areas can turn into a dangerous dumping ground.

Some alternatives for hazardous waste disposal include:

- *Using up all of the material*
- *Exchanging unused materials with other people*
- *Recycling*
- *Shipping to a hazardous waste disposal site*

KAKE, ALASKA

In the Village of Kake, the environmental focus group identified a problem with handling of hazardous waste. Kay Larson said: "It all started with monthly "listening sessions" where we shared observations about conditions in our local environment. Our plan for management of hazardous materials began with awareness of a need, and commitment from the group to find solutions that work. Our goal was simply to make sure that household toxics and other dangerous substances did not enter the waste stream. Our plan was to create alternative methods of collection and disposal."

With input from the Focus Group and support from the City Council, an Indian Health Service grant was developed for the City of Kake to build a household hazardous waste shed. A design for the structure was drafted, research was done on materials, bids were sent out and supplies were ordered (over 100 hours of volunteer time). Due to growing interest in the community, donations were made to pour the cement for the foundation and the cost to ship materials. When work began, students in a Construction Technology class were invited to the site to learn about elements of construction and help with the actual labor. Later, science students and others will be asked to help promote a community-wide education program to encourage full participation in the project. Collection, storage, and shipment will require HAZMAT training and city council involvement.

"Creating positive change to protect our environment is like making "little cuts" to a diamond each day ... How many "jewelers" and how many "cuts" does it take for the environment to sparkle and shine?"

Kay Larson, AmeriCorps Member, Kake

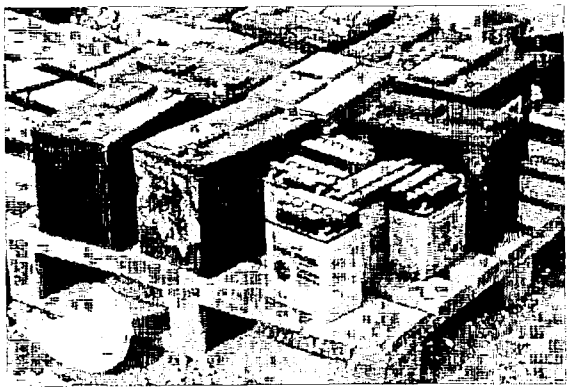
74. Yes ☐ No ☐ ? ☐

Is there a specific place to put lead-acid batteries at the landfill?

If yes, where and how are the batteries contained?

_____

_____



Landfill car battery collection point.
Photo courtesy Bill Stokes.

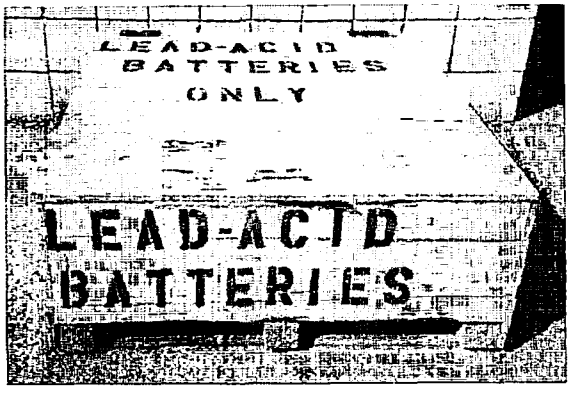


Photo courtesy Sandy Murley.

If there is no place at the landfill to place lead-acid batteries they are probably sitting in the landfill or around the village. Disposing of batteries from cars, 4-wheelers, snowmachines, and boats in a landfill or around the village can be dangerous. Batteries contain sulfuric acid and lead, which can hurt people and wildlife directly or indirectly by contaminating water and soil. Lead contamination alone can cause everything from a headache to central nervous system damage in small children, leading to severe learning disabilities. Sulfuric acid can cause severe burns if it contacts your skin or blindness if it gets in your eyes. The acid will also eat holes in your clothing if it splashes on you.

Used batteries need to be stored in a dry place at the landfill, like a shed, freezer van, or covered fish tote. Cardboard should be placed between the layers of batteries. If batteries are exposed to sun, rain, and cold temperatures they may crack exposing the lead and sulfuric acid inside to the environment.

If the batteries are kept in a covered fish tote, the acid won't leak out onto the ground even if the batteries crack. When a fish tote is used to store batteries, it should be permanently labeled "used lead-acid batteries" so that it will not be used again for holding fish or other purposes.

75. Yes ☐ No ☐ ? ☐

Are lead-acid batteries being recycled?

If yes, by whom?

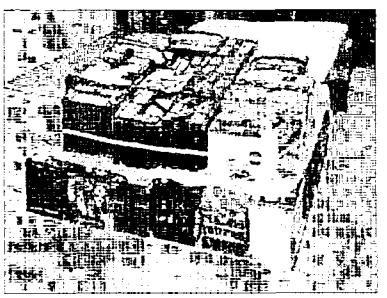
_____

Joe Nevak teaches students in Emmonak about the parts of a car battery.
Photo courtesy Bill Stokes.

It is important to recycle lead-acid batteries because the contents are hazardous and do not belong in the landfill. Getting these hazardous materials out of the community assures that they will not be a potential risk. It is important to remember that it is much less expensive to manage batteries properly than it is to clean up batteries that are disposed of improperly.

The books "Solid Solutions in Rural Alaska" and "Landfills in the Bush" have information on how to prepare batteries for shipping and recycling. See the Resource section at the end of this manual for information on how to obtain a copy of these manuals.

It is illegal to dispose of lead-acid batteries in landfills in Alaska because they are hazardous and can potentially pollute your drinking water. Lead-acid batteries should be collected and sent to recycling centers where the contents can be safely handled and recycled. Both the lead and sulfuric acid found in batteries can be recycled and used again. Even the plastic casing can be recycled. A single lead-acid battery, such as a car battery, contains 11 pounds of sulfuric acid, 18–20 pounds of lead and three pounds of plastic. Battery recyclers value used lead-acid batteries as an important source of lead for new batteries.



Lead-acid batteries getting packed for recycling.
Photo courtesy Sandy Murley.

KOTZEBUE, ALASKA

In Kotzebue, an agreement was made between Maniilaq corporation (non-profit) and the local Native Corporation in order to establish a battery collection program in Kotzebue. KIC (Native Corporation) now accepts both auto and boat batteries through its local NAPA store to be recycled. All residents in Kotzebue are allowed to use this program.

SOLUTION: WHAT ABOUT IMPOSING A LOCAL RULE THAT STORES MUST ACCEPT USED LEAD-ACID BATTERIES WHEN NEW LEAD-ACID BATTERIES ARE PURCHASED?

76. Yes ☐ No ☐ ? ☐

Is there a place at the landfill or in the village for residents to put used oil?

If yes, where?

_____

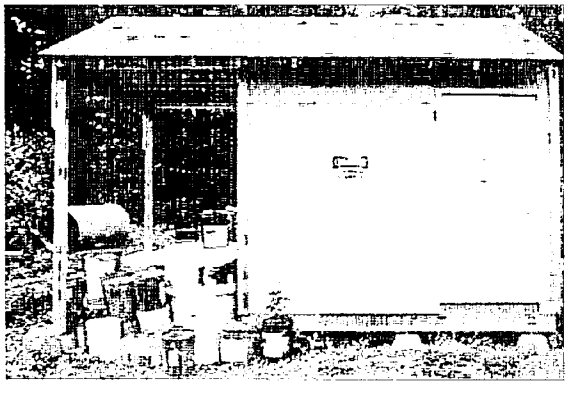
_____

Used oil produced by generators, snowmachines, outboards, cars and other machines is considered a hazardous waste if it is disposed of improperly. It is hazardous because it contains toxic metals and other contaminants. Used oil should be collected at a central location in a container labeled "used oil" for later recycling and/or burning to heat a building. If there is no collection point for used oil in the village, then there are probably many areas throughout the village where used oil is either being stored or disposed of improperly.

The release of only one gallon of used oil (a typical oil change) can make a million gallons of fresh water undrinkable. This is enough water to satisfy 50 people in a year!

Improper storage or disposal of used oil can pollute land and water. When used oil is dumped on the ground, it can reach the groundwater and surface water through rain and snowmelt. Used oil doesn't evaporate or go away. It lasts for a long time in the environment. Because of this, it has great potential to pollute the drinking water source.

Providing a place in your village for residents to bring their used oil can help prevent the problem of improper storage and disposal of used oil. A **used oil collection center** can be established for this purpose. The collection center is a place where residents can drop off their used oil in a drum or tank. A used oil collection center must be registered/ recognized as such by the local government as a place to manage used oil.



Recycling center where used oil is collected.
Photo courtesy Bill Stokes.

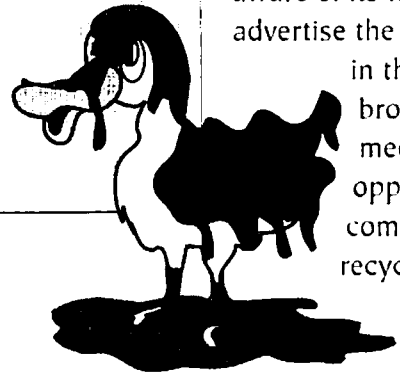
Properly managing a used oil collection center requires the following responsibilities:

- *Displaying a sign showing that used oil is collected there*
- *Providing a container for the used oil that is easily accessible to the public*
- *Making regular visits to the collection site*
- *Making arrangements with the hauler to recycle the used oil if it is not burned on site to heat a building*
- *Preventing people from dumping oil that is mixed with other materials such as paint, gasoline, and antifreeze*
- *Preventing fire hazards*
- *Being prepared to control and respond to a fuel spill*

Once a collection point is made for used oil, it is important that community members are aware of its location. You may need to advertise the collection center over the radio, in the newspaper, on posters, brochures, flyers, or during meetings. You can use this opportunity also to educate the community on the importance of recycling used oil.

Oil that makes its way into waterways such as oceans, rivers and creeks can harm or kill wildlife. For example,

- *Birds that get oil on their feathers return to their nest and coat the eggs with the oil. This ends up suffocating the growing chick inside the egg which is no longer able to get the oxygen required to live.*
- *Oil slicks can cause spawning herring to find new spawning grounds.*



77. Yes ☐ No ☐ ? ☐

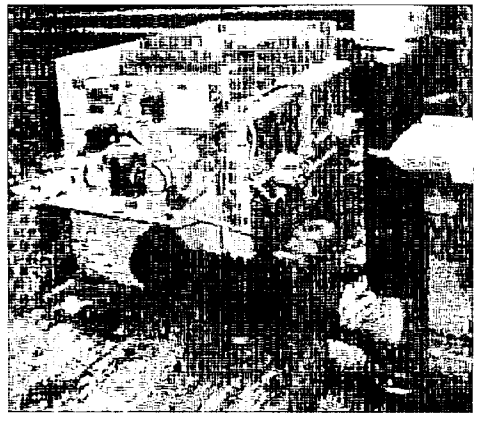
Is used oil being recycled?

If yes, by whom?

_____

_____

Burning used oil to produce heat is the most common way to recycle used oil. The used oil that is collected in your community can be used to operate a used oil burner. Used oil burners convert used oil to heat for buildings. If your community does not have a used oil burner or does not produce enough used oil to make it beneficial to purchase one, find out if a neighboring community has one. Other communities that have used oil collection centers with used oil burners may be willing to accept your used oil, giving you an alternative to purchasing your own burner. For example, the Village of St. Michael has transported their used oil to the Village of Stebbins to burn in their used oil burner.



Used oil burners can be used to heat buildings.

Keeping large amounts of collected used oil in your community can be a potential hazard. If your community does not have the ability to reuse used oil, the collected used oil should be transported by barge or other means to a location where it can be recycled. Used oil should not be transported in quantities greater than 55-gallons without approval from the Environmental Protection Agency. See the Directory in the back of the manual for a list of companies that sell used oil burners.

Keeping large amounts of collected used oil in your community can be a potential hazard.

Photo courtesy Bill Stokes.

Little Jack Horner

Little Jack Horner
Sat in the corner,
Watching his father change oil.
He knew with some pain
If it went down the drain
The fish in the creek it would spoil

Little Jack Horner
Sat in the corner,
He suggested the fireplace instead.
His father said no,
The oil's dangerous so,
It might combust into lead.

Little Jack Horner
Sat in the corner,
The garbage instead we could use!"
Sharp as a beagle
His dad said "Not legal!"
Our garbage service we could lose!"

Little Jack Horner
Sat in the corner,
Couldn't they bury it in dirt?
His father replied:
Soil critters can't hide,
And many of them would be hurt."

Little Jack Horner
Ran out of the corner
Remembering his good friend Michael
Who once had said
From his father's shed
Some substances they did recycle.

(Taken from: Hazardous Waste:
Environmental Education Program,
Alaska Center for the Environment)

78. Yes ☐ No ☐ ? ☐

Is the power plant operator correctly disposing of the used oil produced by the electrical generator?

If yes, how?

_____

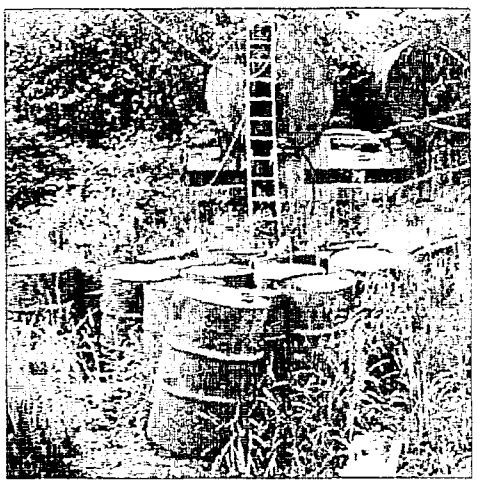
_____

If no, what is happening to the used oil?

_____

_____

The electrical generator is the largest producer of used oil in your community. The used oil produced by the generator should be either burned in a used oil burner on site or transported out of the village to a location where used oil can be recycled or burned.



Drums of used oil at an old generator site.
Photo courtesy Bill Stokes.

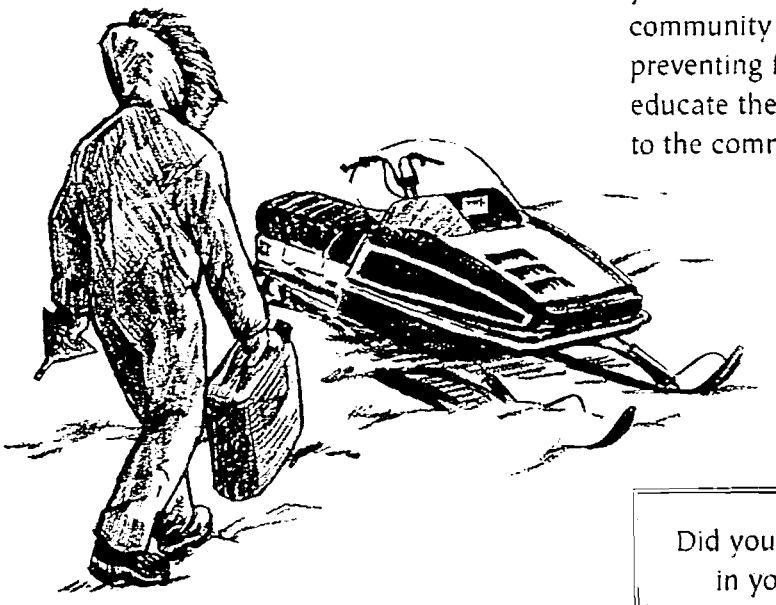
If your community has an electrical generator owned by the Alaska Village Electric Co-op (AVEC), it is the responsibility of AVEC to take care of the used oil properly. Approximately 50 villages in Alaska have electrical generators owned by AVEC.

79. Yes ☐ No ☐ ? ☐

Is there a village awareness of the importance of preventing fuel oil spills at homes?

Fuel spilled by individuals nationwide every year amounts to several times the amount of oil spilled during the Exxon Valdez oil spill in 1989. Even drops of fuel begin to add up over time. In the case of oil, one drop/second adds up to 410 gallons in a year!

Precautions should be taken when changing the oil in a snowmachine, ATV, boat, or any other motorized vehicle so that no oil spills onto the ground. The oil that spills on the ground does not disappear. It eventually ends up in the groundwater or surface water and can contaminate the subsistence foods that your community relies on. If people in the community are not aware of the importance of preventing fuel spills, it is important to educate them on why fuel spills are harmful to the community and the environment.



Did you know that when you change oil in your ATV or vehicle, the plastic container that you throw away has 1–2 ounces of oil in it? Approximately eleven Exxon Valdez tankers are thrown into local dumps in the United States every year!

80. Yes ☐ No ☐ ? ☐

Do the village "gas stations" have something to put the gas cans in while they are being filled?

Many fuel spills happen when people are filling up gas containers.
Photo courtesy Bill Stokes.

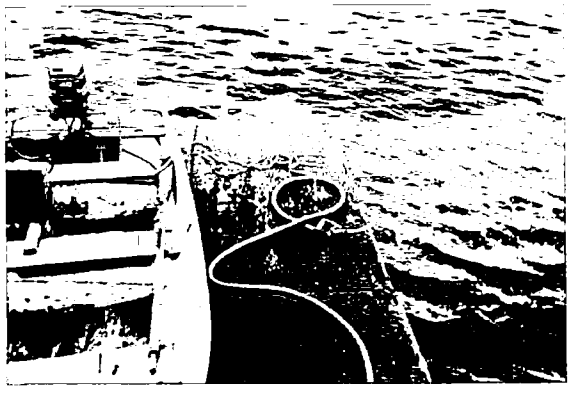


Photo courtesy Scott Lytle

Many fuel spills happen when people are filling up jerry cans or gas cans and do not use anything to collect fuel that spills in the process. This can be avoided by having something such as a tin drum to place the gas can in when filling it up with gas. Any fuel that spills will then be collected in the drum instead of going into the ground. Fuel that goes into the ground may reach the groundwater or surface water where you get drinking water.

Fuel spills can be prevented by placing a jerry can on a tin drum so that any spilled fuel will be collected.
Photo courtesy Bill Stokes.

81. Yes ☐ No ☐ ? ☐

Is there a community salvage area at the landfill or at some other location in the village?

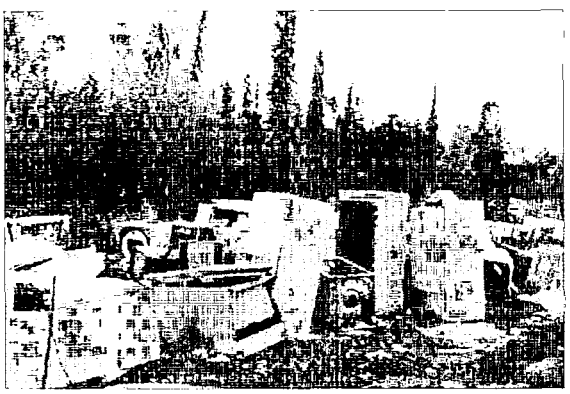
If yes, where?

_____

_____

A salvage area is a designated area where people can get rid of items that can be used by others rather than throwing them in the landfill. A salvage area can be a shed, small building or another area. The salvage area should be separate from the landfill and should not create a health or safety hazard. If your community doesn't have a building for a salvage area, you could have a monthly salvage day where people meet at the community hall to exchange or give away old items.

Clothing, furniture, equipment and paint are examples of valuable items that can be reused. Old refrigerators, snowmachines and ATVs can also be separated out from other trash so that people can use the parts.



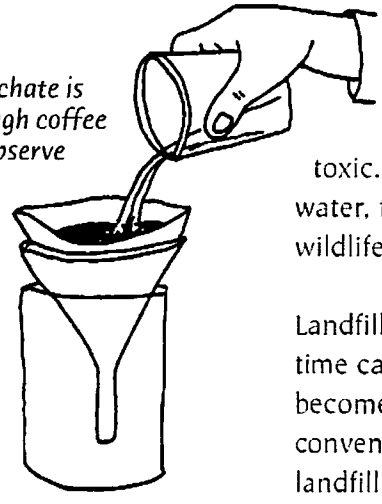
Old refrigerators can be separated from other garbage at the landfill so that people can use the old parts.
Photo courtesy Bill Stokes.

82. Yes ☐ No ☐ ? ☐

Is there water in the landfill most of the time? Or, is the landfill in a tundra pond?

_____

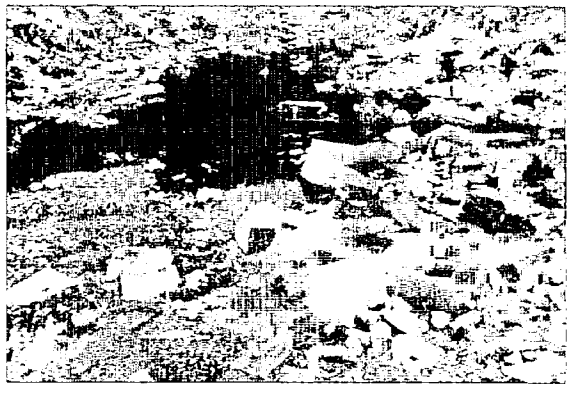
If your landfill has water in it most of the time, it could pollute the drinking water in your community. For example, when it rains water falls on the garbage in the landfill. The water then passes through the garbage, like water passing through the filter on a coffee machine, and produces a liquid called **leachate** that enters into the soil. The leachate keeps moving down through the soil until it reaches the groundwater. From there, the leachate can eventually flow until it reaches a well, spring, creek, or river. When hazardous materials are placed in the landfill, the leachate becomes toxic. This may result in unsafe drinking water, the spread of disease, and may harm wildlife.



One way to show how leachate is formed is to pour water through coffee or tea in a coffee filter and observe the color liquid formed.

Landfills that have water in them most of the time can also be a problem because access becomes more difficult and garbage is less convenient to dump. Also, the area of the landfill gets spread out further when there is excess water.

If your landfill contains water most of the time, actions should be taken to minimize the amount of water that settles in the area. One way to control this problem is to continuously place soil cover on the dump and to design a system that allows rainwater and snowmelt to better run-off.



If your landfill has water in it most of the time, it could potentially pollute the drinking water in your community.

Photo courtesy Bill Stokes.

83. Yes ☐ No ☐ ? ☐

Is the landfill producing leachate, or runoff, that stains the ground downstream of the landfill?

Sometimes there are stains or colored liquids that may be found in the soil in and/or around the landfill. This liquid is called **leachate** and is produced when rain or melted snow passes through the wastes in the landfill. Leachate transports a variety of chemicals into the soil and eventually into the groundwater. Since leachate often contains toxic chemicals, leachate that gets into the groundwater or surface water becomes a potential threat to the environment and to public health.

Leachate flowing from a landfill.
Photo courtesy Bill Stokes.

The amount of leachate produced by a landfill is related to the amount of rainfall and snowmelt in and/or around the landfill. In landfills with high amounts of rain and/or snow, the amount of leachate is generally greater. If your landfill is producing a lot of leachates, there is a good chance contaminants are leaving your landfill. This problem can be reduced by designing a system to drain water and snowmelt from the landfill so the water does not have time to pool up and pass through the garbage. Leachate can be reduced from closed landfills by covering the area with a 2 foot soil layer and planting vegetation on the surface.

84. Yes ☐ No ☐ ? ☐

Are there animals eating the garbage at the landfill?

If yes, what kinds of animals?

_____

_____

Animals are problems at many open garbage landfills. Examples of animals that frequent the landfill and cause problems include:

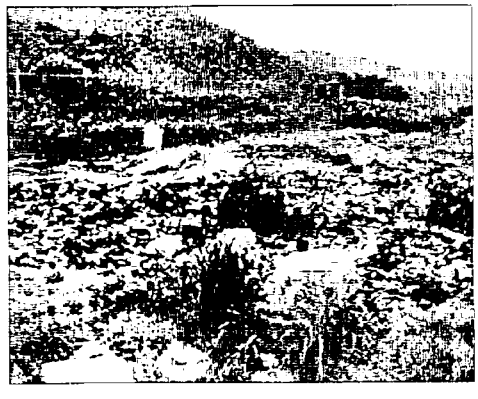
Bears. Bears are attracted to landfills and can be aggressive and dangerous.

Foxes. Foxes that eat from the dump can carry rabies. Dogs that come into contact with the foxes can become infected.

Dogs. Dogs that visit the landfill can bring back diseases to homes.

Birds. Birds feeding in landfills that are located near airports may collide with airplanes causing them to crash. Birds also can transport diseases back to the village and contaminate subsistence foods.

Rodents & flies. Rodents and flies transport diseases.



Dogs that frequent the landfill can bring back diseases to homes.
Photo courtesy Bill Stokes.

Animals should be discouraged from foraging in your landfill because of all of the problems they bring. If the landfill is covered with soil periodically and wastes are burned, the number of animals attracted to the landfill will be reduced.

85. Yes ☐ No ☐ ? ☐

Are there other landfills (including old ones) in and/or around the village?

If yes, who operated them and where are they?

_____

Are any still in use?

_____

It is important to know where all the active and old landfills are located in the village and what types of materials are contained in them. Some landfills may contain hazardous materials that must be removed to protect the environment.

The location of old landfills is important information to have available for future land developments. Permanent markers should be placed at the boundaries of the landfills to help future property owners when locating buildings or facilities near the site.

Closed landfills must be covered with vegetation to prevent erosion caused by rain. Without vegetation, the final soil cover may get washed away, exposing wastes that could be a health hazard, nuisance, or be carried into surface waters.

86. Yes ☐ No ☐ ? ☐

Does the village landfill have a DEC Class III Landfill Permit?

A Class III municipal solid waste landfill is small, rural and remote. On average, less than five tons of solid waste are dumped into a Class III landfill daily. Most of the landfills in Alaskan villages are Class III. Obtaining a Class III permit for your landfill is one of the best ways to improve the sanitation and safety of your landfill.

The steps required to obtain a Class III permit involve a series of questions to make you aware of what it takes to design and operate a safe landfill. For example, one of the requirements for holding a Class III permit is to develop an operating plan for the landfill. The operating plan includes information such as how to handle hazardous wastes and dispose of them properly.

It is useful to go through the application for a Class III Landfill Permit if only to see what is required to design and safely operate a landfill.

See Appendix F for a copy of the form used by the Department of Environmental Conservation to inspect Class III Landfills (Class III Landfill Field Inspection Form).

87. Yes ☐ No ☐ ? ☐

Does the village have an annual clean-up program?

If yes, are the recyclables separated from the other trash?

_____

NATIVE VILLAGE OF VENETIE:

Pamela Sam, the Environmental Technician for Venetie, coordinated a Recycling Workshop for a clean-up project at the dump: "First of all, I planned the workshop with my Administrator and talked with the Council Members about having the workshop. Then, I posted notices saying when, where, and the time. The local councils donated refreshments for the workshop. During the first days of the workshop, there weren't many people, but as we went on a lot of people and students started attending. I began the presentation with recycling, and throughout the week I presented more on hazardous materials, littering, the dumpsite, and oil and gas spills in and around the community. The workshop lasted a week and when we were done, the students and other community members were pleased with the issues we covered and realized how important these issues are to ourselves and to the environment."

"I would like to add that this project brought us together, to help make a difference for our community and also make our environment much nicer to look at and to live in. If you have any questions, please feel free to contact me."

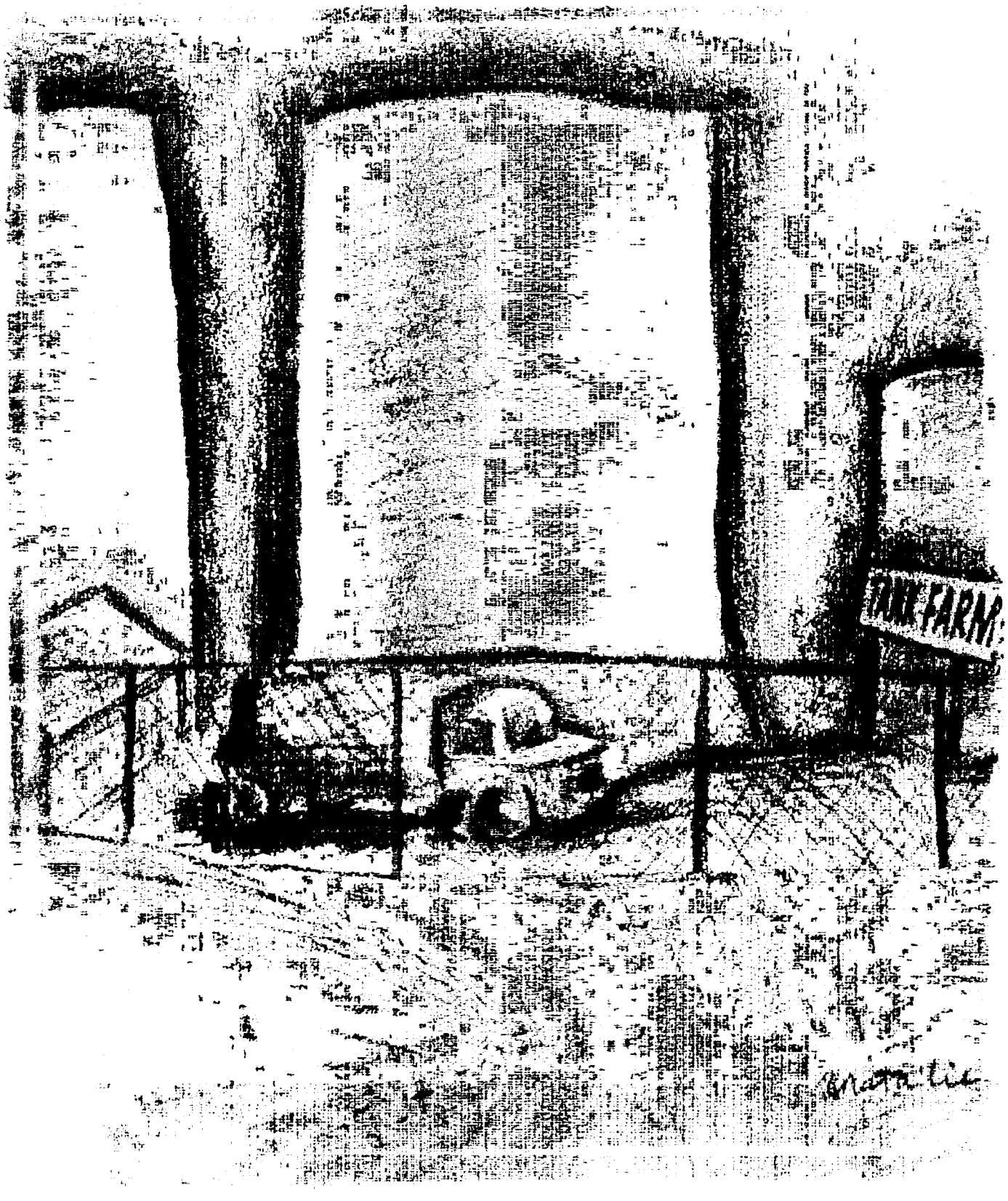
Pamela Sam, Environmental Technician Venetie, (907) 849-8165

Pamela Sam talks with Bill Stokes at an Environmental Assessment Training in Chalkyitsik.
Photo courtesy Suanne Unger

Many villages have clean-up programs where the community gathers annually or more often and cleans up the village. Village clean-ups are one positive way to involve the entire community in improving the environmental health conditions and the beauty of the village. A village clean-up can also be a useful time to educate the community on the importance of keeping the village litter-free year-round.

Litter cleanup in Klukwan.
Photo courtesy Dan Lung.

During a village clean-up, it is very important to identify recyclable materials such as aluminum and batteries and separate them from the other trash so that they can be recycled. Hazardous materials, such as batteries and old drums of material, should be identified and tagged until someone is able to remove them with the proper clothing and equipment. A village clean-up is also an excellent opportunity to provide training in solid waste management for members of the village.



Fuel Tank Farms

Fuel Tank Farms

Who to ask: tank farm owners/operators

88. How many tank farms are there in the village and who owns them?

_____

_____

_____

The questions in the remainder of this section should be answered for EVERY tank farm in your village. By going through all of these questions, you will have a better idea of:

- *Where all the tank farms in the village are located*
- *Who owns them*
- *Whether the tank farm owners are operating their tank farms in a safe manner that will prevent fuel spills from occurring*

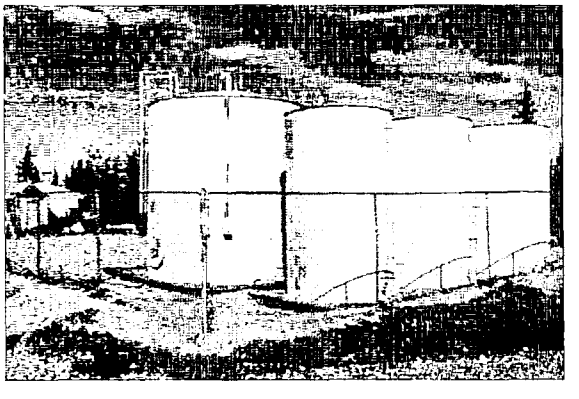
Tank farm owners must be able to safely operate their tank farm. This means that the tank farm owner is:

- *Preventing spills from occurring*
- *Monitoring the fuel with an inventory*
- *Preparing for spill clean-up*

These points are described in more detail in the following explanations.

A tank farm is an area where large tanks containing bulk fuel are stored. All different types of fuel used by people in the village are stored at tank farms such as diesel, oil and unleaded gasoline. There may be several tank farms in your village with different owners such as the city, village council, regional corporation, and the school.

It is beneficial to the community and the tank farm owners to have cooperation among the different tank farms in the village. Tank farm owners can benefit from sharing resources and assisting each other with management plans and spill materials.



Fuel tank farm.
Photo courtesy Bill Stokes.

89. Which tank farms have secondary containment and which do not?

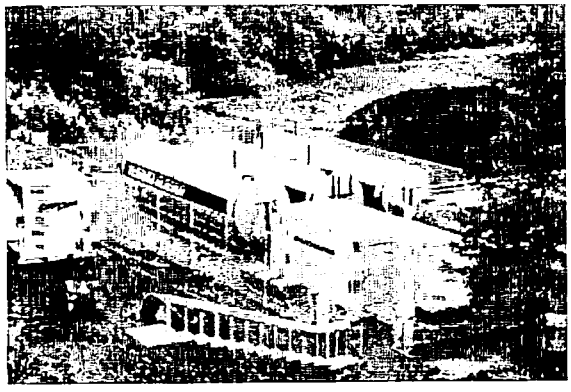
_____

_____

_____

Secondary containment is a way to contain fuel that has spilled or leaked at a tank farm so that it can be cleaned up. The purpose of secondary containment is to prevent fuel from flowing onto the land or in the water if there is a spill from one of the tanks.

To be effective, the containment area must be large enough to hold the contents of the largest tank with at least one additional foot of height for rain or snow. The containment area should be lined with material to prevent fuel from leaking through the walls or seeping into the ground. If there is a liner, check for tears, cracks, and unsealed seams around the pipes going through the liner.



An upgraded tank farm with secondary containment.
Photo courtesy Bill Stokes.

If there is no secondary containment or the containment area is inadequate, it is important to look at the area and determine where the fuel would go if a major spill occurs. Knowing where the fuel will flow will allow you to react quicker during a spill. You may want to consider creating a diversion pond to collect the fuel in the event of a major spill. This would channel the fuel into one area and make clean-up easier.

Most tank farms in rural Alaska have no secondary containment and therefore present a potential hazard of fuel contaminating the water source. Giving thought to the path the fuel would take in the event of a spill is a step towards planning and prevention.

90. Yes ☐ No ☐ ? ☐

Do any of the tank farm owners have a written plan to follow in case there is a fuel spill?

Who does and does not?

_____

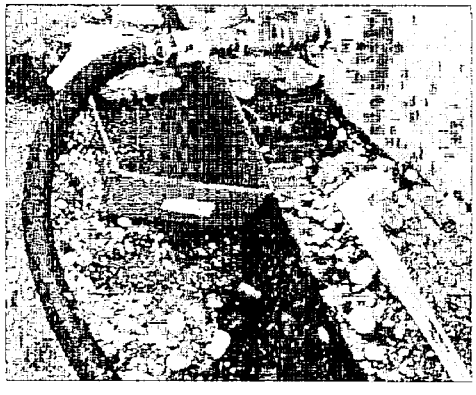
_____

Each tank farmer owner should have a written plan to follow for managing his/her tank farm. Ask to see the plan. The purpose of the plan is to describe the procedures for preventing fuel spills and for cleaning up fuel in the event of a fuel spill. The advantage of having a plan and practicing it means that fuel spills will be better prevented and clean-up of fuel spills will happen faster and be cheaper to carry out. If a fuel spill is not cleaned up, the fuel may eventually reach the surface or ground water and the water will become contaminated.

It is important that the tank farm operator practices the written plan before a spill occurs. By practicing the plan ahead of time, you can make sure the equipment for the spill works, the materials needed are available, and that the plan works.

There are several different types of plans that are required from different agencies depending on the size and location of the tanks. Examples of plans include, but are not limited to:

- *Spill Prevention Control and Countermeasures Plan (SPCC)*
- *United States Coast Guard Operations Manual*
- *Contingency Plan*



Tank farms with active or ongoing leaks of any size should be repaired immediately. Even small leaks turn into large fuel spills over time.

Photo courtesy Bill Stokes.

91. Yes ☐ No ☐ ? ☐

Do any of the tank farms have active or ongoing leaks of any size?

If yes, which ones?

_____

_____

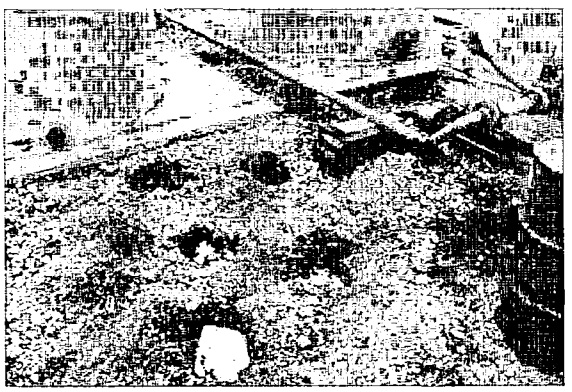
Is the leak from a tank or a pipe?

_____

Tank farms with active or ongoing leaks of any size should be repaired immediately. Pipes that are covered with snow in the winter and then driven over by ATVs and snowmachines are especially vulnerable to breaking and leaking. The fuel that leaks from the tank or pipe enters into the environment and can be a health hazard.

Storage tanks should be inspected regularly for signs of leaks, rust, or corrosion along the tank bottoms, seams, gaskets, bolts or rivets and at fittings and valves. Regular inspections and repairs reduce the risk of fuel spills.

Fuel spills are an expensive cost to the operator and community if not cleaned up immediately. Even small leaks from pipes can turn into large fuel spills over time. One pint of oil can pollute more drinking water than 15 people drink in a lifetime!



Active fuel spill at a tank farm.
Photo courtesy Bill Stokes.

Spilled fuel can also affect humans and wildlife in a variety of ways:

- *Animals in contact with oil can become sick, weaken and die.*
- *Small amounts of oil on a bird's feather can kill the bird.*
- *Oil spilled in water can kill fish and other aquatic wildlife. Fish will not return to a contaminated area for many years.*
- *People eating poisoned animals or drinking contaminated water can become sick. Contact with oil can also cause long term health problems.*

One pint of oil can pollute more drinking water than 15 people drink in a lifetime!

92. Yes ☐ No ☐ ? ☐

Do all of the tank farms have fuel spill clean up materials on hand?

If yes, which ones and in general terms, how much?

_____

_____

_____

All tank farms should have materials available to contain and clean up fuel spills safely and efficiently. There should be enough clean up materials on hand to clean up a spill and dispose of the materials used for cleanup. If a tank farm owner does not have the necessary materials to clean up a fuel spill, he/she is putting the entire community at risk.

An absorbent boom is used to soak up oil and prevent its movement.

Some of the materials that should be available in the event of a spill include:

- *A stockpile of about 10 bales of sorbent pads-to soak up the fuel*
- *A sorbent wringer-allows you to reuse sorbent pads*
- *55 gallon storage drums for storing used sorbent pads*
- *An absorbent boom—used to soak up oil and prevent its movement*
- *Personal protective gear such as disposable respirators, gloves, rubber boots, rain gear, eye protection and hard hats*
- *Burner for used sorbent materials*

93. Yes ☐ No ☐ ? ☐

Were there any tank farm fuel spills of more than 55 gallons in the last five years?

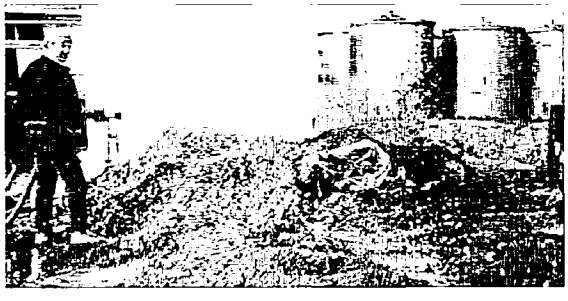
If yes, which ones and what was the cause of the spill?

_____

_____

Many times fuel spills in the village go unnoticed or people are not aware that they have occurred. Knowing which tank farms have had significant spills in the last five years and the cause of the spill may reveal a repeated problem with a tank or pipe. These spills need to be identified for clean-up and any damaged tanks or pipes must be repaired.

A fuel spill of 55 gallons or more is costly to the environment and to the owner who purchases the fuel. Oil spills in excess of 55 gallons must be reported immediately to the nearest Department of Environmental Conservation Area Response Team. Emergency contact numbers should be written on a sign at each tank farm in the village.



Treating contaminated soil.
Photo courtesy Sarah Weisner.

94. Yes ☐ No ☐ ? ☐

Have the pipeline(s) used to fill the tank farms from the barge or aircraft been tested for leaks?

If yes, when?

_____

The pipelines used to fill the tanks at the tank farm need to be tested periodically for leaks. Barge operators are required to pressure check fuel lines before filling the tanks. The owner of the tank farm is responsible for making sure that the pipelines are tested and are not leaking. If the pipelines are underground, there is no way to detect a leak unless a pressure test is performed. If the pipeline is above the ground, leaks can be detected just by looking on the ground for spilled fuel. It is important to do these tests periodically to make sure that a fuel leak is not contaminating the ground. Any fuel leaking into the ground has the potential to make it into the water and contaminate the drinking water supply.

95. Yes ☐ No ☐ ? ☐

Do all of the tanks have labels on them identifying what is inside?

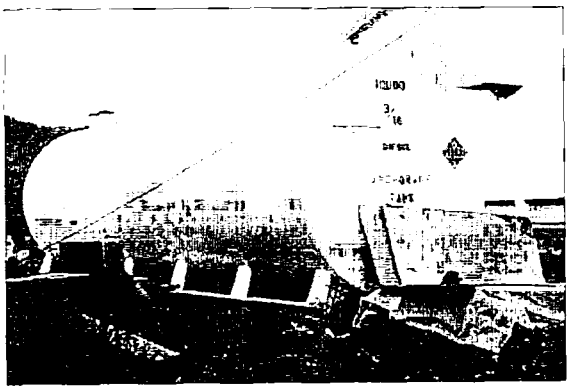
If no, which tanks need labels?

_____

_____

_____

All of the tank farms should have tanks with a clear and visible label that identifies the contents inside. A properly labeled tank will eliminate any confusion about what the tanks contain. There have been incidents in rural Alaska where a tank has been refilled with the wrong fuel. In one village along the Yukon River, diesel fuel was mixed with fuel used in snowmachines and vehicles. Mixing different fuels is a costly mistake, which could endanger your life. This problem can easily be prevented with clear labeling on the tanks.



All of the tank farms should have tanks with clear and visible labels identifying the contents inside.
Photo courtesy Bill Stokes.

A clearly labeled tank is also important in the event of a fuel spill. If there is a fuel spill, you need to know immediately which type of fuel you are dealing with in order to know how to react.

96. Yes ☐ No ☐ ? ☐

Do all of the tank farms have signs on them with the telephone numbers of people to contact in case of a fuel spill?

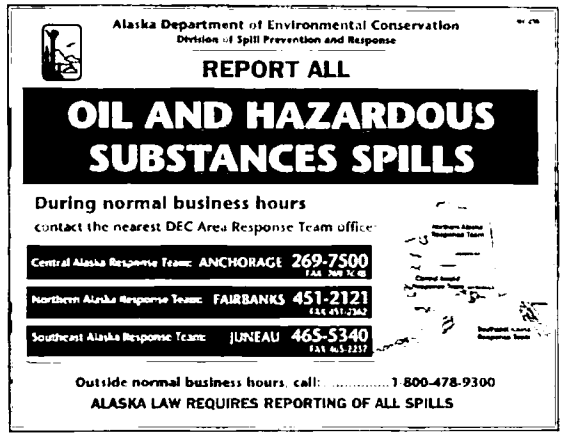
If no, which tank farms need signs?

_____

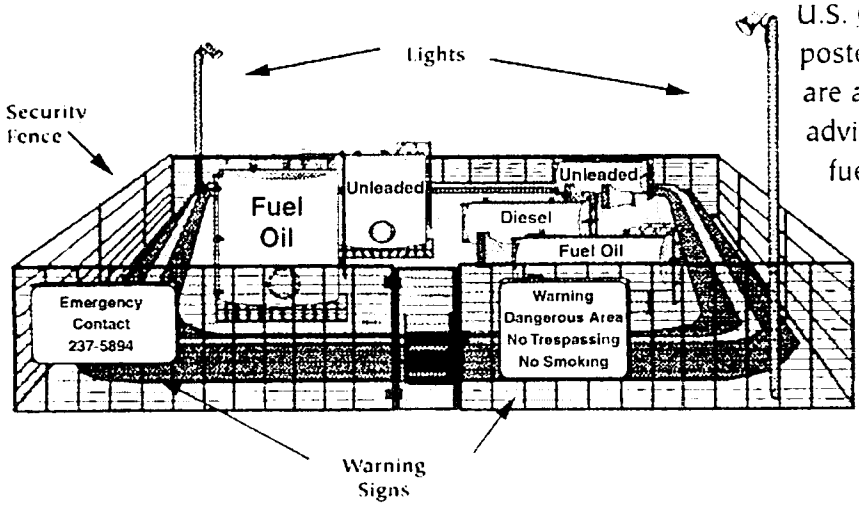
_____

_____

Emergency contact signs should be posted either on the fence surrounding the tank farm or on the tanks themselves if no fence exists. The signs should include the name and telephone number of people or agencies to call in the event of a fuel spill. It is very important to have this information available to any person in the event of an emergency. This enables someone who observes a spill to do something about it.



The name and telephone number of the most recent owner of the tank farm should be written on the sign. This person should be contacted immediately if a fuel spill is detected at his/her tank farm. The contact number for the correct office at the State and U.S. Coast Guard should be posted as well. These agencies are able to provide technical advice on how to deal with the fuel spill as well as assistance with clean up if the spill is too big for the village to handle. See the Directory in the back for contact information.



97. Yes ☐ No ☐ ? ☐

Have there been fuel spills in the past that have not been cleaned up that are of concern to village residents?

If yes, where?

_____

_____

_____

Fuel that was spilled in the past and not cleaned up will remain in the environment. These areas are a potential threat to the health of the community and should be identified and prioritized for clean-up. In one village, an oil spill occurred around an abandoned BIA school. The local officials spent five years failing to determine who had the responsibility to clean it up. In the meantime, the site sat as an environmental time bomb. In another village, a fuel tank broke and no one reported it because the fuel sank into the ground and seemed to "disappear." Months later, the fuel moved underground from the spill area to the village's drinking water well.

Fuel spill at an old tank farm.
Photo courtesy Bill Stokes.

Air

Air

Who to ask: village residents

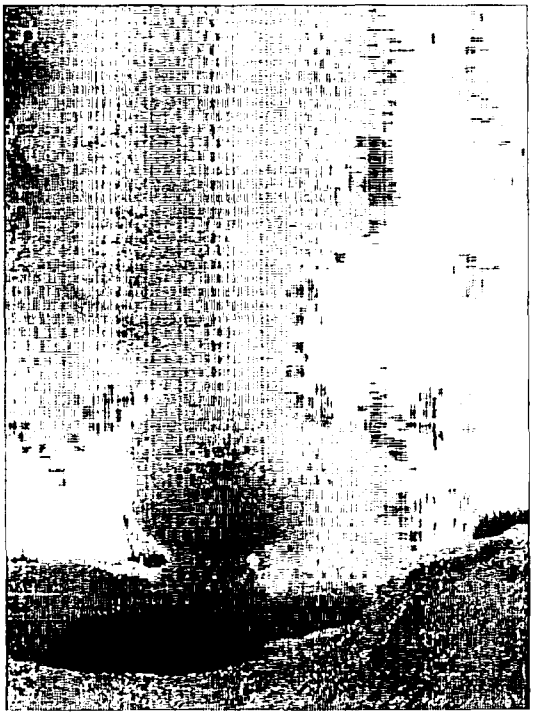
98. Yes ☐ No ☐ ? ☐

Can smoke from the burning garbage at the landfill be smelled in the village?

Smoke from burning garbage at the landfill is unhealthy to breathe. Inhaling smoke from burning garbage can have many different health effects on individuals:

- *Short-term effects include: wheezing, watery eyes, "cold" symptoms, pneumonia, and bronchitis.*
- *Long-term effects include: allergies, sinus infections, asthma, emphysema, heart disease and cancer.*

Children are at greater risk for getting sick from inhaling smoke because their lungs are still forming and they take in 50% more air per body weight than adults do. Respiratory problems are the leading cause of chronic illness in children today. Other individuals who are at greater risk from smoke pollution include the elders and people with asthma and heart or respiratory disease.



Smoke from burning garbage at the landfill is unhealthy to breathe.
Photo courtesy Bill Stokes.

Before a large amount of garbage is burned at the landfill, a test burn should be done to see where the smoke will go. It should go straight up for about 200 feet and be transported away from the village and residences in order to prevent the smoke from being inhaled by people in the village. If the smoke goes toward the village school or houses, you should wait until the weather changes and there is a better time to burn.

Alternatives to the open burning of garbage include recycling, composting, burying, and incineration.

99. Yes ☐ No ☐ ? ☐
Do village residents use burn barrels?

A burn barrel is usually a 55-gallon steel drum that individuals or families use to burn garbage. Burn barrels are one way to reduce the amount of paper/wood products that end up in the landfill. Although burn barrels are convenient and reduce the amount of times that you need to go to the dump, they are harmful if used improperly.

Illustration by Natalie Garber

Hazardous wastes and plastics should be removed from other wastes placed in a burn barrel. The smoke produced from burning plastic is dangerous to breath. When plastic is burned at home in a burn barrel, you are exposing your family and the rest of the village to toxic substances. Hazardous wastes that are not separated from other garbage may cause a dangerous explosion in the burn barrel and produce toxic fumes as well.

A burn barrel can be built so that it burns hotter and produces less smoke. This type of barrel will more effectively burn garbage and be safer to use.

100. Yes ☐ No ☐ ? ☐

Is burning plastic the main odor smelled when garbage is burned?

Plastic becomes very toxic when burned and can be harmful to both your body and to the environment. Plastic items should be separated from other garbage that is going to be burned. Reducing the amount of plastic used can help prevent plastic from getting into the waste stream in the first place.

101. Yes ☐ No ☐ ? ☐

Do village residents consider cigarette smoke and wood stove smoke as sources of indoor air pollution?

Cigarette smoke and wood stove smoke are serious sources of indoor air pollution. Cigarette smoke, in particular, is one of the most widespread and harmful indoor air pollutants. The smoke is a mixture of irritating gases and cancer-causing tar particles. It is a known cause of lung cancer and respiratory illness, and has been linked to heart disease. In Alaska, tobacco related lung cancer is the fastest growing form of cancer among the Native population. Children can also become very sick by inhaling the smoke of others.

Find out the answer to this question by asking a number of people in your community if they think cigarette smoke and wood stove smoke are sources of indoor air pollution. If responses show that most people do not consider these as sources of pollution, this will indicate that educational programs are necessary on these issues.

102. Yes ☐ No ☐ ? ☐

Do village residents use wood stoves to heat their homes?

If yes, how many houses?

_____

The smoke produced by wood stoves is a source of indoor air pollution. Smoke from wood stoves is particularly a problem in rural Alaska where many homes have been "weatherized" (highly insulated) and there is little circulation of air. Residents who rely on wood stoves as a source of heat in their homes are at risk for many of the respiratory problems related to inhaling smoke and carbon monoxide. Using only dry wood and not allowing the fire to smolder will reduce the amount of smoke produced and be less of a health hazard. Also, plastics should not be burned in wood stoves. The fumes from burning plastic are poisonous to breath.

For a more thorough self-assessment of indoor air quality issues, you can contact the tribal indoor air quality project called "Our Sacred Breath."

For more information on this program, contact Nancy Rae at (360) 598-3311 ext. 218, or fax (360) 598-6295, or email nancyrae <dnr@suquamish.nsn.us>

PART 3
Appendices, Resources and Directory

Appendix A:

Examples of modified Village Environmental Planning Survey Forms

Central Peninsula Environmental Planning Survey

ADEC ver 1.0

There may be very serious problems with environmental pollution in our town. We need your help in ranking, or prioritizing, the environmental problems listed below.

This *survey form* is designed to obtain your opinion and input, to develop our towns environmental protection plan. This survey will help us address serious problems with solid waste, hazardous\toxic pollutants and other environmental problems in our town. Outlined below are environmental health problems or environmental issues that need to be addressed. **Each environmental issue** listed below needs to be **ranked** as to how important you believe that issue is. **"1"** is the lowest ranking or priority, and **"5"** is the highest ranking or priority.

1. ( ) **Hazardous materials and toxic waste cleanup in dump sites and other areas.**
2. ( ) **Abandoned vehicles, boats and equipment in and around our community.**
3. ( ) **Erosion and trash left on our beaches, rivers, and lakes (glass, cans, fish nets).**
4. ( ) **Maintenance and protection of cities landfill (dumpsites).**
5. ( ) **Construction materials on project sites that are left behind by contractors.**
6. ( ) **Sanitation and pollution by canneries, docks, construction sites, fisherman, etc.**
7. ( ) **Pollution in the community by businesses, independents, government.**
8. ( ) **More clean-up and green-up projects (beautification, plant-a-tree, etc.)**
9. ( ) **Indoor air pollution, such as carbon monoxide or secondhand cigarette smoke.**
10. ( ) **Fuel\oil contaminated soils in or around our community.**
11. ( ) **Air pollution problems; caused by generators, heavy equipment, refinery plants, boats, woodstoves\incinerators or vehicles in our community.**
12. ( ) **Animal\fish carcasses left in or around our community (beaches, rivers, lakes).**
13. ( ) **Trash left in or around our community.**
14. ( ) **Environmental pollution contaminating subsistence foods and wildlife habitats.**
15. ( ) **Improper use\disposal of toxic household cleaning products (bleach, ammonia)**
16. ( ) **Lack of a city recycling program\recycling pick-up services to homes\businesses.**
17. ( ) **Lack of education for our community on environmental needs and solutions.**
18. ( ) **Other environmental issues beyond city control, such as ozone depletion.**

Please use the space below for comments or if you feel that there are other environmental health issues you feel that need to be addressed.

This survey information is *very* important to us and we thank-you for taking time to fill out this survey. Our goal is to make your community an environmentally safe place to live and raise families and your participation in this survey will greatly assist us in accomplishing that goal.

If you have any questions regarding this survey or any concerns please feel free to call:
AmeriCorps Member: Rebekah Smith based at Kenaitze Indian Tribe 283-4321.

Signed by:_____ Date:_____

Yakutat Tlingit Tribe
508 Max Italio Dr.
Yakutat Alaska, 99689
(907-784-3238 Fax (907)-784-3595

Yakutat Environmental Planning Survey
Yakutat Tlingit Tribe

There may be very serious environmental problems in our community of Yakutat. We need your help in ranking, or prioritizing, the environmental problems and solutions listed below.

This survey instrument is designed, to obtain your opinion and input, to help develop our community environmental protection plan. This survey will help us address serious problems with solid waste, hazardous/toxic pollutants and other environmental issues that need to be addressed.

Each environmental issue listed below needs to be ranked as to how important you believe the issue is. "1" is the lowest ranking or priority, and "10" is the highest ranking or priority. If you feel that the statement is not a environmental issue enter "0"

Each potential problem and possible solution needs to have a value marked (1-10 or 0) in the space provided

Determining Potential Problems

1.(____) Hazardous materials and toxic waste dumping in Yakutat Landfill.

2.(____) Residual hazardous materials and toxic waste due to DOD (Department of Defense) activity during WWII.

3.(____) Environmental pollution contaminating subsistence foods.

4.(____) Fish waste released into Monti Bay due to Seafood processing.

5.(____) Raw sewage, petroleum and fish waste released in the Boat Harbor area from local and visiting boats.

6.(____) Raw sewage disposal in and/or around the community of Yakutat.

7.(____) Petroleum products released in local waters from local, visiting or passing vessels.

8.(____) Fuel oil contaminated soils in and/or around the community.

9.(____) Abandoned drums or toxic waste in and/or around the community of Yakutat.

10.(____) Abandoned vehicles, boats and equipment in and/or around the community of Yakutat.

11.(____) Trash left in and/or around the community.

12.(____) The environmental issues surrounding Logging near Icy-bay native allotments.

13.(____) The environmental effects that past Logging projects had on the Yakutat area.

14.(___) The possible environmental effects that future Logging might have on the Yakutat area.

15.(____) The possible effects that the growing tourism industry well have on the Yakutat area.

16.(____) The effects that fresh-water sport fishing has on fish habitat and key spawning areas.

17.(____) The effects salt-water sport fishing has on local fish population.

18.(____) The effects that jet boats have when in use on our smaller rivers such as the Situk River.

19(____) Erosion to the Situk River banks due to local and visiting traffic.

20.(____) Conflicts on the Situk River Between sport and commercial fishermen.

21.(____) The low water level in ophir creek causing depletion of salmon population.

22.(____) The use of off-road vehicles in sensitive areas such as the Situk & Ahrnklin flats.

23.(____) The declining wildlife population in Yakutat and surrounding areas.

24.(____) The depletion and destruction of wildlife habitat through industry and private property development.

25.(____) The increased and increasing population of the sea otter in Yakutat area.

26.(____) Lack of information about wildlife population for making subsistence and commercial decisions.

27.(____) Lack of information and education to promote environmental awareness among the Community.

Determining Possible Solutions

28.(____) The placement of strict regulations on Yakutat community landfill.

29.(____) The placement of an officer to enforce regulations at Yakutat Community Landfill.

30.(____) The gathering of subsistence foods so tissue samples could be taken.

31.(____) The placement of regulations on local and visiting boats to reduce the amount of waste released in local waters.

32.(____) The placement of strict city regulation to reduce the amount of abandoned hazardous materials in and/or around the community of Yakutat..

33.(____) To educate and gather local opinion on the subject of past and future logging issues.

34.(____) To educate and gather local opinion on setting regulation to help preserve the Situk River.

35.(____) To further our education and our support on programs such as the Salmon Enhancement program.

36.(____) Set more stringent regulations on off-road vehicles in delicate areas.

37.(____) Increase our knowledge and education on local population of specific species.

38.(____) Increase environmental awareness by developing a local and school wide environmental curriculum.

Please use the space below for comments or other environmental health issues you feel that need to be addressed. If you want to add to a existing statement please refer to the statement number #.

We thank you for taking the time to fill out this survey. This survey information is very important to the community of Yakutat. Our goal is to make our community an environmentally safe place to live and raise families. Your participation in this survey will greatly assist us in accomplishing that goal.

If you have any questions regarding this survey or would like to address any concerns of your own please feel free to call Richard Porter at Yakutat Tlingit Tribe (907)-784-3238.

Signature_____ Date_____

NATIVE VILLAGE OF BARROW
INUPIAT TRADITIONAL GOVERNMENT

Native Village of Barrow
Environmental Assessment Plan Survey

There are very serious problems with environmental pollution in the Village of Barrow. We need your help in ranking, or prioritizing , the environmental problems listed below.

This survey form is designed to obtain your opinion and input to develop an environmental protection plan .This survey will help us address serious problems with solid waste, hazardous / toxic pollutants and other environmental problems in the Native Village of Barrow service area. Outlined below are visible environmental health problems or environmental issues that need to be addressed.

Each environmental issue listed below needs to be ranked as to how important you believe the issue is. "1" is the lowest ranking or priority, and "5" is the highest ranking or priority.
Each issue needs to have a value marked in the box as to how important you think the issue is.

1.(___) HAZARDOUS MATERIALS AND TOXIC WASTE CLEANUP IN DUMP SITES AND OTHER DESIGNATED AREAS.

2.(___) ABANDONED VEHICLES AND EQUIPMENT IN AND AROUND THE CITY OF BARROW.

3.(___) BEACH EROSION / ABANDONED BOATS

4.(___) BARROW LANDFILL (DUMP SITE)

5.(___) COMMERICAL CONSTRUCTION MATERIALS ON PROJECT SITES THAT ARE LEFT BEHIND BY PRIVATE CONTRACTORS.

6.(___) ABANDONED DRUMS IN THE OLD VILLAGE DUMP SITES

7.(___) RAW SEWAGE SPILLS IN THE VILLAGE AND RAW SEWAGE DISPOSED AT THE LAGOON (LOCATED NEXT TO THE DUMP SITE)

8.(___) PIQNIQ CAMP AREA ANNUAL CLEANUP (SUMMER CAMP SITE)

P.O. Box 1139 • Barrow, Alaska 99723 • (907) 852-4411 • Fax (907) 852-8844

9.(____) MILITARY SITES CLEANUP (NARL & DEWLINE SITES)

10.(____) NATURAL GAS DISTRIBUTION LINES LEFT IN TUNDRA BY NARL FROM THE OLD GAS WELL SITE.

11.(____) AIR POLLUTION , DUST AND EMISSION PROBLEMS CAUSED BY HEAVY EQUIPMENT AND CARS IN BARROW SERVICE AREA.

12.(____) ANIMAL CARCASSES LEFT IN PIQNIQ CAMP SITE AND NIQSIIRUAK AREA THAT NEED TO BE REMOVED TO HELP REDUCE OR MINIMIZE AIRBORNE DISEASE IN A CAMPING AND BOAT DOCKING AREAS.

13.(____) SUBSISTENCE BUTCHERING SITES CLEANUP ESPECIALLY DURING THE FALL WHALING TO PREVENT POLAR BEARS FROM GATHERING IN THE SITES.

Please use the space below for comments or if you feel that there are other environmental health issues you feel that needs to be addressed.

This survey information is very important to us and we thank you for taking time to fill out this survey. Our goal is to make the Native Village of Barrow an environmentally safe place to live and raise families.
Funding for this survey had been made possible through the United States Department of Environmental Agency and Technical assistance through the State of Alaska Department of Environmental Conservation.

If you have any questions regarding the survey or any concerns please feel free to call **Bill Tegoseak at his office (852-4411.**

Prepared by Wildlife dept
approved by DEC ofc 1997.

Signed by_____
Date _____

Appendix B:

Samples of compiled Village Environmental Planning Survey results

Village Environmental Planning Survey
Birch Creek
Result Narrative
August 1998

A total of 12 environmental planning surveys were submitted to CATG. Of the twelve surveys, nine ranked all 17 questions as #5 (highest priority). The top five priorities carry equal weight of 5. The top five priorities are as follows:

1. Safe Drinking Water
2. Village dump/Landfill
3. Raw sewage spills in the community and improper sewage disposal at the lagoon.
4. Annual clean-up program.
5. Fuel oil contaminated soils in and/or around the village.

Additional comments included the following:
Wood stove safety/cleaning - 2
Check all personal housing for warm comfort and insulating to keep out the cold air.
Everybody should clean up after themselves when camping out along river or lakes.
Would appreciate receiving grant funding. - 5

Recommendations:

1. We are looking at an EPA nonpoint source pollution grant for looking at Birch Creek. This is a two year grant program which can be utilized for improved stream habitats from erosion and sediment controls, stream restoration, improved vegetation. We will be looking at what can be done to enhance the water quality at Birch Creek.
2. Work with the community to re-survey within 6 months as several surveys were submitted with all 17 questions being weighted as 5 (highest priority). Work with village technician and the community to explain what we are trying to achieve with the submitted information.
3. Scheduled meeting with Delma Bohn on 9/29 or 9/30 for looking at environmental concerns in the village. Prioritize drinking water, landfill, raw sewage, and contaminated soils. Will discuss current clean-up program and look at future requirements.
4. Look at ways to utilize smart ash burner (i.e. landfill, clean-up program).

Village Environmental Planning Survey

Village: Birch Creek

Date Submitted to CATG: Aug-98 Total Surveys: 12

Question	Priority Ranking 1	2	3	4	5	Rank	Total Responses		Weighted Totals	Total Weight	
1	0	0	0	0	12	1	12		60	5	Safe drinking water
2	1	0	1	0	10	13	12		54	4.5	Abandoned vehicles/boats/equip.
3	0	0	0	1	11	6	12		59	4.916667	River bank erosion
4	0	0	0	0	12	2	12		60	5	Village dump/landfill
5	1	1	0	0	10	16	12		53	4.416667	Construction materials left
6	1	0	1	0	10	14	12		54	4.5	Abandoned drums
7	0	0	0	0	12	3	12		60	5	Raw sewage spills
8	0	0	0	0	12	4	12		60	5	Annual clean-up program
9	0	0	1	0	11	7	12		58	4.833333	Indoor air pollution
10	0	0	0	0	12	5	12		60	5	Fuel oil contaminated soils
11	0	0	1	0	11	8	12		58	4.833333	Air pollution problems
12	1	0	1	0	10	15	12		54	4.5	Dead animals/fish in village
13	1	0	0	0	11	11	12		56	4.666667	Trash left in or around village
14	0	1	0	0	11	9	12		57	4.75	Contaminated subsistence foods
15	2	0	0	0	10	17	12		52	4.333333	Old military sites
16	0	1	0	1	10	12	12		56	4.666667	Hazardous/toxic materials
17	0	1	0	0	11	10	12		57	4.75	Other issues
18											Other

Residents Requesting Survey Results

Name		Address	City	State	Zip
Lawrence	James	Box KBC	Fort Yukon	AK	99740-8999
Louis	James	Box KBC	Fort Yukon	AK	99740-8999
Eddie	James Sr	Box KBC	Fort Yukon	AK	99740-8999
Delma	Bohn	Box KBC	Fort Yukon	AK	99740-8999
Alvin R.	Johnson	Box KBC	Fort Yukon	AK	99740-8999

Village Environmental Planning Survey
Native Village of Fort Yukon
Result Narrative
August 1998

A total of 207 environmental planning surveys were submitted to the Native Village of Fort Yukon (NVFY). The results were tabulated by NVFY and submitted to CATG. Upon receipt of the tabulated results some # of response discrepancies were noted, i.e. responses ranging from 153 to 207 for each question. A joint group of Vicki NVFY, John Alexander NVFY/Americorps, and Tricia Waggoner, CATG re-tabulated the results. The top five priorities are as follows:

1. Safe Drinking Water
2. Hazardous or toxic materials left in dump sites and/or other areas around the village.
3. Raw sewage spills in the community and improper sewage disposal at the lagoon.
4. Village dump/Landfill
5. Trash left in or around the village.

Additional comments included the following:

1. Dusty Roads
2. Disposal of plastic material - long-term environmental effects (plastic vs. Paper)
3. Raw sewage on ground - need ordinance
4. Leaking UST's
5. Exhaust from Generators
6. Litter Recycling
7. Fluoride in drinking water
8. Litter at dump - batteries, diesel fuel
9. Noise pollution
10. Trash at camps along the river
11. Drums/barrels around village
12. Loose dogs in the community (three dog limit)
13. Demolition of old buildings Outhouses
14. Move the dump
15. Removal of holding tanks Overflowing tanks
16. Dead animals in community
17. Community education on environmental issues
18. Cancer research projects
19. Greywater disposal
20. Trash burning
21. Grave site near H2O house

Recommendations:

1. Work with NVFY and City of Fort Yukon for the development of a new well. The current well is located within the populated center of Fort Yukon. A possibility exists of trading land between NVFY and the City (the boat landing) for placement of a new well. The current problem exists in that the municipal government is not eligible for tribal funding. The City and NVFY need to work out an agreement regarding the water situation.
2. CATG is assisting NVFY on the RAB board. NVFY has also received funding from EPA for conducting site assessments around Fort Yukon. CATG is providing technical assistance on this grant.
3. CATG is working cooperatively with NVFY and City on the siting of the new landfill and closure of the current sub-standard landfill.
4. CATG is assisting NVFY on developing a comprehensive land use plan and tribal codes and ordinances.

Village Environmental Planning Survey

Village:

Date Submitted to CATG:

Question	Priority Ranking 1	2	3	4	5	Rank	Total Responses		Weighted Totals	Total Weight	
1	0	1	6	4	173	1	184		901	4.896739	Safe drinking water
2	13	13	56	33	85	16	200		764	3.82	Abandoned vehicles/boats/equip.
3	20	15	29	34	104	15	202		793	3.925743	River bank erosion
4	7	3	8	19	164	4	201		933	4.641791	Village dump/landfill
5	28	22	37	33	70	17	190		665	3.5	Construction materials left
6	7	6	32	32	124	10	201		863	4.293532	Abandoned drums
7	7	4	8	14	169	3	202		940	4.653465	Raw sewage spills
8	3	5	20	25	149	6	202		918	4.544554	Annual clean-up program
9	14	14	34	29	111	14	202		815	4.034653	Indoor air pollution
10	7	5	29	24	137	9	202		885	4.381188	Fuel oil contaminated soils
11	7	8	33	32	122	12	202		860	4.257426	Air pollution problems
12	15	7	22	28	128	13	200		847	4.235	Dead animals/fish in village
13	1	2	15	33	151	5	202		937	4.638614	Trash left in or around village
14	15	8	19	24	136	11	202		864	4.277228	Contaminated subsistence foods
15	5	8	13	28	138	7	192		862	4.489583	Old military sites
16	3	3	5	23	173	2	207		981	4.73913	Hazardous/toxic materials
17	2	5	16	25	105	8	153		685	4.477124	Other issues
18											Other

Comments:	Responses
Dusting Roads	14
Disposal of plastic material - longterm environmental (plastic vs. paper)	2
Raw sewage on ground - need ordinance	3
Leaking UST's	1
Exhaust from Generators	3
Litter	5
Recycling	4
Flouride in drinking water	1
Litter at dump - batteries, diesel fuel,	5
Noise pollution	2
Trash at camps along the river	3
Drums/barrels around village	1
Loose dogs in the community (three dog limit)	2
Demolition of old buildings / Outhouses	4
Move the dump	1
Removal of holding tanks / Overflowing tanks	2
Dead animals in community	2
Community education on environmental issues	2
Cancer research projects	1
Graywater disposal	2
Trash burning	1
grave site near H2O house	1

NEW STUYAHOK

Priority	Quest #	Issue	# of Surveys	Total Points
# 1	7	RAW SEWAGE SPILLS in the Community	50	248
# 2	4	VILLAGE DUMP/ LANDFILL	50	247
# 3	1	Safe Drinking Water	50	246
# 4	13	Trash left in the Village	50	243
# 5	10	Fuel Oil Contaminated Soil Spills	50	240
# 6	6	Abandoned drums in and / or around the village	50	235
# 6	16	Hazardous or Toxic Materials left in the Dump	50	235
# 7	8	Annual Clean-up	50	217
# 8	12	Dead Animals/Fish	50	212
# 9	14	Contaminated Subsistence Foods	50	210
# 10	5	Construction Materials left behind by Contractors	50	203
# 11	2	Abandoned Vehicles,Boats & Equip left in Village	50	201
# 12	3	Beach and/or river bank erosion	50	170
# 13	11	Air Pollution caused by village electric generator	50	167
# 14	9	Indoor Air Pollution	50	154
# 15	17	Other Environmental issues beyond Village Control	50	153
# 16	15	Old Military Sites Clean-up	50	45
# 17	18	Other ?	50	

VILLAGE ENVIRONMENTAL PLANNING SURVEY (VEPS) TIPS FOR ARCTIC VILLAGE RESULTS

AUGUST 30, 1998

BY S. JAMES
EPA TECH.
FOR ARCTIC VILLAGE (NVVTG)

Village Environmental Survey Results
For Arctic Village August 30, 1998

Priorities	Ques. No	Issue's	No. Of Survey	Survey Results Total Points	Total Points Possible	Survey %
1	1	Safe Drinking Water	53	265	265	100%
2	4	Village Dump	53	265	265	100%
3	7	Raw Sewage Spill	53	259	265	98%
4	10	Fuel Oil Contamination Soils	53	255	265	96%
5	8	Annual Clean Up	53	252	265	95%
6	16	Hazardous or toxic material left in the village	53	252	265	95%
7	17	Other Envir.Issues beyond village control	53	246	265	93%
8	13	Trash left around Village	53	244	265	92%
9	5	Construction material left behind by contractors	53	224	265	84%
10	~~19~~	Indoor air pollution	53	220	265	83%
11	14	Contamination of subsistence food	53	218	265	82%
12	11	Air Pollution	53	216	265	81%
13	2	Abandoned Vehicles	53	201	265	76%
14	3	Beach or river bank erosion	53	196	265	74%
15	15	Old Military Site	53	190	265	72%
16	18	Others 21 Comments (Attached) 1. Please use the space below for comments of if you feel that there are other Environmental health issues that you feel need to be addressed. 24 comments (attached)2. 33 people wants a copy of the survey.	53	90	265	33%

1. Native food vs. Western which ones are good for you.
2. Learn about what are safe and cheaper used in your house environment.
3. Environmental safety enforcement program for our community.
4. Outside toilet need improvement.
5. Our school is too old to needs improvement or new school.
6. Establish ordinance to control unnecessary waste to dump site also toxic chemical use, batteries recycle materials out of our dump site.
7. I feel that the rural environmental health issue is a extremely important issue and that many of the rural village's have substance equipment for keeping the village clean & need tremendous help in getting the village cleaned up & keeping it that way.
8. Our world is very important so we have to take care of our environment.
9. Honey bucket needs to go, villages needs running water & flushing toilets.
10. Water area or drinking water swimming area water during the summer for safe water for all that.
11. I think we should really worry about the dump behind the airport.
12. Dump site, lagoon, trash around the village.
13. No. 2, 4, 5, 6, 7, is a must, needs to clear the problems
14. Need to clean up the airport old equipment's
15. I feel that we need to pay more attention to our drinking water.
16. If items that can be recycled, they should be collected and sent out to be recycled it would be very helpful here. Trash and raw sewage seem to be the biggest problem here.
17. Oil spills, lagoon & dump site needs to be worked on right away to avoid any further contamination.
18. Although we have tried to keep our area clean & in natural state, we still have sickness that people are dying of and we need to pin point the cause of the death that are occurring in the Yukon Flats area.
19. Mostly the safe water need to be recorded for safety reasons, and the dump site needs to be removed the lade and river is very important the future for our subsistence fish & game.
20. Too much pollution in this poor planet.

Pric ·f · 18. (attachment)

1. Trash left in Campsite
2. Loose dogs could carry rabies
3. Recycling and get into alternative energy
4. Village lagoon leaking under the piles
5. Save food and less movies and T.V. watching
6. Clean up old site dump, building eet...
7. Burn mountain, military site needs to be removed!
8. Test the water at the creek where they go swimming
9. Powerline poles need replacement
10. Fix up the dumpsite
11. Be open for anything important
12. We need flush toilets or new outhouse's
13. Clean up the dump & move it
14. Oil spill and lagoon needs attention as soon as possible
15. Needs more programs, more grants & Money
16. Burned Mountain
17. Recycling and need to get solar system
18. Clean yards & all for a prettier Village
19. Build new outdoor toilet large ones
20. Tribal enforcement for clean environment
21. Pollution from Diesel around our village.

Native Village of Barrow: Environmental Survey Initial Data Analysis

1. HAZARDOUS MATERIALS AND TOXIC WASTE CLEANUP IN DUMP SITES AND OTHER DESIGNATED AREAS

742	5 Highest Priorityy	83%
63	4	7%
41	3	5%
19	2	2%
28	1 Lowest Priority	3%

Total Respondants	893

2. ABANDONED VEHICLES AND EQUIPMENT IN AND AROUND THE CITY OF BARROW

473	5 Highest Priorityy	55%
119	4	14%
152	3	18%
64	2	7%
47	1 Lowest Priority	5%

Total Respondants	855

3. BEACH EROSION/ABANDONED BOATS

370	5 Highest Priorityy	43%
123	4	14%
157	3	18%
72	2	8%
134	1 Lowest Priority	16%

Total Respondants	856

4. BARROW LANDFILL (DUMP SITE)

624	5 Highest Priorityy	72%
91	4	11%
79	3	9%
39	2	5%
30	1 Lowest Priority	3%

Total Respondants	863

5. COMMERCIAL CONSTRUCTION MATERIALS ON PROJECT SITES THAT ARE LEFT BEHIND BY PRIVATE CONTRACTORS

442	5 Highest Priorityy	52%
153	4	18%
133	3	16%
52	2	6%
65	1 Lowest Priority	8%

Total Respondants	845

6. ABANDONED DRUMS IN THE OLD VILLAGE

541	5 Highest Prioritiy	63%
139	4	16%
89	3	10%
38	2	4%
49	1 Lowest Priority	6%

Total Respondants	856

7. RAW SEWAGE SPILLS IN THE VILLAGE AND RAW SEWAGE DESPOSED AT THE LAGOON (LOCATED NEXT TO THE DUMP SITE)

721	5 Highest Prioritiy	84%
69	4	8%
28	3	3%
16	2	2%
27	1 Lowest Priority	3%

Total Respondants	861

8. PIQNIQ CAMP AREA ANNUAL CLEANUP (SUMMER CAMP SITE)

451	5 Highest Prioritiy	53%
146	4	17%
130	3	15%
61	2	7%
70	1 Lowest Priority	8%

Total Respondants	858

9. MILITARY SITES CLEANUP (NARL & DEWLINE SITES)

484	5 Highest Prioritiy	56%
140	4	16%
114	3	13%
62	2	7%
57	1 Lowest Priority	7%

Total Respondants	857

10. NATURAL GAS DISTRIBUTION LINES LEFT IN TUNDRA BY NARL FROM THE OLD GAS WELL SITE

495	5 Highest Prioritiy	60%
137	4	17%
113	3	14%
43	2	5%
33	1 Lowest Priority	4%

Total Respondants	821

11. AIR POLLUTION DUST AND EMISSION PROBLEMS CAUSED BY HEAVY EQUIPMENT AND CARS IN BARROW SERVICES AREA

504	5 Highest Prioritiy	59%
114	4	13%
121	3	14%
57	2	7%
60	1 Lowest Priority	7%

Total Respondants	856

12. ANIMAL CARCASSES LEFT IN PIQNIQ CAMP SITE AND NIQSIIRUAK AREA THAT NEED TO BE REMOVED TO HELP REDUCE OR MINIMIZE AIRBORNE DISEASE IN A CAMPING AND BOAT DOCKING AREAS

478	5 Highest Prioritiy	56%
142	4	17%
105	3	12%
48	2	6%
80	1 Lowest Priority	9%

Total Respondants	853

13. SUBSISTENCE BUTCHERING SITES CLEANUP ESPECIALLY DURING THE FALL WHALING TO PREVENT POLAR BEARS FROM GATHERING IN THE SITES

508	5 Highest Prioritiy	60%
112	4	13%
88	3	10%
51	2	6%
92	1 Lowest Priority	11%

Total Respondants	851

Appendix C:

Comparison of surveys: Village Environmental Planning Survey and Technical Environmental Survey

Appendix C:

Some issues covered on the sample Village Environmental Planning Survey (VEPS) are not included in the Village Environmental Survey (VES). Below is a table showing how the issues on the two surveys compare.

Issues on Village Environmental Planning Survey (VEPS)	Section covered in Village Environmental Survey (VES)
Safe drinking water.	DRINKING WATER
Abandoned vehicles, boats or other equipment left in and/or around the village	Not covered on VES
Beach and/or river bank erosion	Not covered on VES
Village dump/landfill	SOLID WASTE
Construction materials that are left behind by contractors	Not covered on VES
Abandoned drums in and/or around the village	Not covered on VES
Raw sewage spills in the community and improper sewage disposal at the lagoon	WASTEWATER
Annual clean-up program	SOLID WASTE
Indoor air pollution, such as cigarette/wood stove smoke	AIR
Fuel oil contaminated soils in and/or around the village	TANK FARMS/SOLID WASTE
Air pollution problems caused by the village electric generator, vehicles or smoke from burn barrels in the village	AIR
Dead animals and dead fish left in or around the village	SOLID WASTE
Trash left in or around the village	SOLID WASTE
Contaminated subsistence foods	Not covered on VES
Old military sites cleanup	Not covered on VES
Hazardous or toxic materials left in dump sites and/or other areas around the village	SOLID WASTE
Other environmental issues beyond village control, such as ozone depletion, polluted oceans and/or rivers	Not covered on VES

Appendix D:

Environmental Management Workplan for Chenega Bay

ENVIRONMENTAL MANAGEMENT WORKPLAN

FOR

CHENEGA BAY, ALASKA.

Compiled by

Pete Kompkoff, Tribal Administrator
Chenega Bay IRA Council
Box 8003
Chenega Bay, Alaska 99574
907-573-5132

This Environmental Management Work Plan is a product of collaborative effort on the Part of the Chenega IRA Council, Chugachmiut, Alaska Department of Environmental Conservation (ADEC) and the United States Environmental protection Agency (EPA).

The Chenega Bay Council is a member of the Nunagpet/Chugachmiut Environmental Protection Consortium (CEPC). In October of 1995 the CEPC, ADEC and EPA signed a Memorandum of Agreement (MOA). That MOA, among other things, established a partnership and the means for the three parties to work together in addressing environmental issues and problems in our village. In the summer of 1995 ADEC completed a survey of our village and developed a list of recommendations for mitigating problems associated with our drinking water, solid waste landfill, hazardous materials, contaminated sights and waste water system.

That information, along with environmental information that has been gained over the past 5 years in our working with the Chugachmiut Environmental Health Program has/or will be compiled into this workplan. This workplan is a set of strategies for mitigating technical problems and matters of compliance. The workplan is done in a simple, easy to use format. Problems are identified by category, i.e. *water*, along with specific problem that needs a remedy, the challenges to achievement, who is responsible for carrying out the strategy and in what time frame, i.e. *short, medium or long term*. The workplan offers an easy "check list" method of accomplishing desired results. Additional projects can be added at any time with ease. Hopefully, this simple, easy to use method can be adopted by other villages throughout Alaska so they too may improve their environments.

Community: Chenega Bay

Category (Project)	Challenges	Who	Short-Term 6 mos.	Mid-Term 1 year	Long-Term 1 year+
Water Treatment	Project Completed				
• Repair and/or replace the stairs to the raw water intake, as they are an extreme safety hazard.	Project completed	Tom Sherman, Sean Wilson, Darrell Totemoff & Richard Kompkoff	Monitor & make repairs as needed.	Continue to monitor status.	Somewhere in future a new system needs to be installed.
• Implement a critical parts inventory that includes spare chlorine addition pumps.	Additional pumps are not on hand.	Darrell Totemoff hired to oversee water treatment center.	Additional schooling required to certify operator.	Replace floor & paint interior of water treatment building.	Install new system of using rock salt to system.
• Insure that the water treatment building always has electricity and a reliable heat source.	Water treatment center always has electricity & a Monitor heater has been purchased for the building.	Darrell Totemoff	Monitor heater will be installed for proper heating.	Same as above	Keep daily monitoring.
• Repair and/or replace the turbidity meter to insure proper treatment of the drinking water.	Turbidity meter replaced	Darrell Totemoff	Daily check on chlorine system.	Daily check on chlorine system.	Keep the system ongoing.
• Implement a CDRC (chlorine detention rate curve) standard operating procedure, while making water, to insure that finished water always has a chlorine residual.	No rate curve established to date however w/ the data recorded cholorine detention rate curve can be determined.	Darrell Totemoff	Same as above.	Same as above	Same as above
• Implement a SOP (standard operating procedure to make an exact chlorine stock solution.	SOP developed & implemented.	Darrell Totemoff	Daily tests	Daily tests	Daily tests with monthly water samples.
• Install a mixer on the chlorine vat to protect operator from chlorine gas.	With this I am confused, please advise me of the type of mixer.	Bill Stokes or Brad Ray			
• Repair and/or replace the floor of the water treatment building.	I have authorization to open the water room grant & order necessary materials for the water room. Suggestions from anyone are welcome	IRA Council	Repair floor & paint inside of the water room building.	Project should be complete.	Proper maintenance.
• Encourage water treatment operator to become a State of	We sent two people up for the training . and only one	Reschedule Richard	Send two others for	Find other interested	Make sure waterroom is

Community: Chenega Bay

Projects completed	**Challenges**	**Who**	**Short-Term** 6 mos.	**Mid-Term** 1 year	**Long-Term** 1 year+
Alaska Certified Operator.	attended and Richard Kompkoff failed the test.	Kompkoff and Derrell Totemoff for certification	certification.	people to attend training	trained

Community: Chenega Bay

Projects completed	Challenges	Who	Short-Term 6 mos.	Mid-Term 1 year	Long-Term 1 year+
• Procure grant funding sources to upgrade water treatment system to insure safety of drinking water.	A $25,000.00 grant has been granted to Chenega Bay IRA Council	The Grant was in place by previous council	Get materials list for repair of floor, Paint for the pipes and safety equipment for operator.	Project should be complete with heating system installed and new flooring plus stopping the leak in our watertank.	Monitor ne system.
• Incorporate a master log to reflect all water treatment plant activities.	I requested the waterroom operator to present a log and graph of chlorine in daily water system.	Darrell Totemoff	Implement procedure developed	Continued monitoring	Same
• Develop a written SOP for all water treatment plant operations.	Standard of Procedures already exists and in use.	Darrell Totemoff	Make sure SOP is followed	Continued monitoring	Same
• Purchase HTH in 6 pound, or smaller, containers to reduce the potential of a serious HAZMAT incident.	Already in practice	Administrator	Waterroom operator notified When supplies are getting low.	Follow plan	Same
• Complete all water quality monitoring to insure safety of drinking water.	Water quality monitoring in progress	IRA Council/Darrell Totemoff	Look at last six months of monitoring	Continued monitoring	Same
• Complete all drinking water monitoring waivers to reduce costs of water quality monitoring.	Monitoring wavers are being questioned	Administrator	wavers should be achieved	follow up on wavers.	Continue follow-up
• Complete a Total Coliform Rule site sampling plan to insure correct sampling procedures for taking the water bacti samples.	Total Coliform Rule still followed by waterroom operator	Darrell Totemoff	Monitor rule	Review	Continue Review
• Insure that there is a chlorine residual in drinking water when bacti samples are taken.	Chlorine residual in drinking water reviewed on a daily basis	Darrell Totemoff	Monitor Chlorine	Continued monitoring	Same
• Insure that all monthly water	Samples taken on a regular basis	IRA Administrator	Review forms	Make sure	Same

Community: Chenega Bay

Projects completed	Challenges	Who	Short-Term 6 mos.	Mid-Term 1 year	Long-Term 1 year+
quality monitoring forms are correctly/completely filled out and sent in on time.	and being sent in.		before they are sent in.	consistency exists	
• Hazardous waste building roof put on.	This project was not complete	Tom Sherman & Sean Wilson	Project complete in one day	Monitor condition of roof	Same as above
• Oyster Project	This project was given back to The Chenega Bay IRA Council one month ago	Mary F. Kompkoff Supervisor Verna Ward, Vern Ward, Larry Evanoff, Roni Vo, Larry Sherman, Jay Wilson, & Steve Ward Maintenance replacing chain	On going project	On Going send large spats to Tatitlek	Check on condition o building
• Public Safety Garage	Metal building here & ready to start foundation and building	Tom Sherman, Jay Wilson, Richard Kompkoff, operator Steve Liferman, Administrator overseeing projet until Mickey returns	Should be complete	none	Check on condition o building
• Recreational Center	Building location needs to be decided and building needs to be ordered	Administrator	Should be complete	none	

•

Community: Chenega Bay

Category (Project)	Challenges	Who	Short-Term 6 mos.	Mid-Term 1 year	Long-Term 1 year+
Solid Waste • Use empty fuel oil drums to create a lane to the working face of the landfill to promote proper disposal of solid waste.	will we be able to get everyone to dump garbage in proper place. Once the drums are in place this will mark area were garbage should go beyond	Tom Sherman, Jarrad Wilson	Drums will be in place by 4/30/97	Richard Kompkoff will make reports to the council on a weekly basis to show progress on the solid waste site	The Solid waste cite will be maintained 3 days a week year round
• Develop a source separation policy to insure hazardous materials are not discarded in the landfill.	The Prince William Sound Economic Development Council has granted Chenega with a 10X40 hazardous waste shed that will have 500 gallon waste oil tank a portable bilge vacuuming device to pump oily bilge's on boats. The unit will be located down by the ferry dock.	Pete Kompkoff will oversee project. Included with the facility will be an incinerator to burn waste oil	Haz Mat trailer will be here by July 1997	With this facility we will be able to keep the oily sheen from appearing in our harbor	
• Divert the water tank overflow away from the head of the landfill to reduce the generation of landfill leachates.	A covert will need to be installed across the existing road to divert the water away from the solid waste cite.	Tom Sherman will be in charge of the operation	Project will begin by 5/2/97	We will monitor the effects of diverting the water.	Tests holes will be dug to check for leachates.
• Develop a schedule to periodically place cover material over the exposed solid	Our landfill operator will maintain and add fill as	Richard Kompkoff has been the	Fill will be added on	Fill will be added once a month to	Moines to cover landfill operator and

Community: _____

Category (Project)	Challenges	Who	Short-Term 6 mos.	Mid-Term 1 year	Long-Term 1 year+
waste.	needed.	operator since November 1996 .	4/29/97	maintain clean appearance	laborers will be applied for by the admin.
• Investigate the process to make this solid waste site a permitted facility.	I would recommend the the landfill remain at its present location. With everyone burning all paper and cardboard boxes and saving all aluminum cans and eliminating all batteries and other hazards from our landfill. I believe it will be maintainable.	The IRA council members should be responsible.	Monitor landfill on daily basis	After a year from this date 4/29/97 see the changes	Put up fencing around solid waste cite.

Community: Chenega Bay

Category (Project)	Challenges	Who	Short-Term 6 mos.	Mid-Term 1 year	Long-Term 1 year+
Hazardous Materials • Place spilled latex paint in another container for reuse or thinly spread the waste latex paint on the waste sheet rock in the same building. After the paint has completely dried, it can be disposed of in the landfill.	Hazardous Waste collection . A collection was done last year. Paint and Batteries were collected and ready to transport by the Veronica K to Whittier or Valdez	Donald P. Kompkoff Sr. Don is responsible for removing the Paint and Batteries.		Another Collection Household Hazardous waste will be collected again, along with old paint and batteries	Yearly Collection Should have a yearly event to collect hazardous waste

Community: Chenega Bay

Category (Project)	Challenges	Who	Short-Term 6 mos.	Mid-Term 1 year	Long-Term 1 year+
Pollution Prevention	Making sure the new incinerator will burn the waste oil properly	The IRA council will decide.	Hazmat building	Record all activities	Success or failure
• Develop a means to recycle or properly dispose of all waste oil generated by the village.	With the new incinerator being delivered to Chenega this summer we will find out how well it works.	Council will make decision who will monitor this project. This will create a new job position.	Should be in place	A log of activities will be kept to monitor the amount of oil and oily waste collected.	After the first years operation we will determine is the project is a viable one.
• Develop a permanent lead acid battery recycling program.	This project was started in 1996. A structure was completed and now has batteries collected in it. When the other batteries are delivered to Whittier or Valdez those in the shed will be	Tom Sherman , Dan Cross and Deryl Totemoff completed the building.	Building and program in place.	Maintain Facility	Recycle Batteries

Community: _____

Category (Project)	Challenges	Who	Short-Term 6 mos.	Mid-Term 1 year	Long-Term 1 year+
	disposed as well.				
• Encourage and assist the village school students in developing an aluminum recycling program.	The community started assisting the students in October of 1996. The program helped with the students trip to Montana	Chenega school students	Continued efforts to keep recycling program on going.	Purchase bailer and crusher for aluminum cans and cardboard boxes.	

Community: Chenega Bay

Category (Project)	Challenges	Who	Short-Term 6 mos.	Mid-Term 1 year	Long-Term 1 year+
Contaminated Sites • Take immediate action to identify and stop all fuel oil and gasoline leaks.	No more fuel oil and gasoline leaks exist to my knowledge	All community members should report any fuel leaks to the council office.	Make sure no leaks exist.	Same	SameRemoved
• Identify all contaminated sites generated by fuel oil spills and tank farm activities.	Removed Four 10,000 gallon tanks from old tank farm. The plan is to store the 6000 gallon tanks near the Hazardous waste shed.. Then dig up contaminated soil were the tanks were and replace with clean material. Old Generator cite also need to cleaned up in the same manner.	The council Administrator.	Develop a remediation plan with ADEC's assistance	Follow remediation plan and begin clean up	none

Community: Chenega Bay, Alaska_

Category (Project)	**Challenges**	**Who**	**Short-Term** 6 mos.	**Mid-Term** 1 year	**Long-Term** 1 year+
• With ADEC assistance, develop a remediation plan (QAPP) that allows all the tank farm owners to remediate their contaminated sites themselves.	Contact ADEC office and find out who in that department would assist us to remediate our own contaminated soil.	The Council Administrator	Implement plan	Should be done.	none
• To prevent further fuel oil contamination of the soil, require a small containment area at the fuel dispensing station to set all Jerry jugs into while filling.	With the new dispensing units established by Alaska Power Systems furthur fuel contamination should be eliminated	IRA Council	Follow plan	Same	

Appendix E:

Village Safe Water Capital Budget Questionnaire

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

VILLAGE SAFE WATER PROGRAM

SFY 2000 CAPITAL BUDGET QUESTIONNAIRE

GENERAL INFORMATION

1. Date: _____
2. Your Name: _____
3. Phone Number: _____
4. Community Contact: _____

5. Title: _____

6. Municipality Represented: _____
   Election District: _____
7. Address: _____
8. City: _____ 9. Zip: _____

GENERAL PROJECT INFORMATION

10. Project Title _____
11. Project Type: Water ___ Sewer ___ Solid Waste ___
12. Description of Project: Specify exactly what this project will build.
    DO NOT INDICATE "SEE ATTACHMENT"

_____

_____

_____

_____

_____

_____

_____

_____

1. Why project is needed: If a health and/or pollution hazard exists that the project will correct, describe it, and include a letter or report from a health authority confirming the pollution or health hazard does exist. What would be the consequences of not doing this project? DO NOT INDICATE ASEE ATTACHMENT@

   (300 Points-Public Health and 200 Points-Pollution).

_____

_____

_____

_____

_____

_____

_____

SPECIFIC PROJECT INFORMATION

14. Please estimate the existing population that will benefit from this project. _____

15. Please describe the planning status of this project by checking one of the following statements:

Y___ N ___ A. Engineering plans and specifications have been prepared. (100 points)

Y__ N ___ B. A feasibility study which addresses the need for this project has been prepared . (50 points)

Y___ N ___ C. Comprehensive study or master plan which addresses the need for this project has been prepared. (25 points)

16. Federal Funds. Yes__ No__

Please list the source and amount of confirmed **FEDERAL** funding available for project: (100 points)

Source: _____ Amount: $_____ Year: ____

Source: _____ Amount: $_____ Year: ____

17. How much do you estimate the total project costs will be? _____

18. Considering other available funds, how much will your grant request to ADEC be for this project?
    $ _____

19. Does your community have a:

a. Trained Water, Wastewater Operator, or Utility Manager ___ Yes ___ No (75 Points)

Name of Operator: _____

Date of Training: _____

Location of Training: _____

Training Sponsor: _____

b. 1. State Certified Water or Wastewater Operator ___ Yes ___ No (150 points)

Name of Primary Operator: _____

2. State Certified Water or Wastewater Backup Operator (100 points)

Name of Backup Operator: _____

c. Rules, Fee Schedules or Utility Ordinances (50 Points) ___ Yes ___ No

Date Adopted: (Attach) _____

d. Please check the item that best describes the effect this project will have on annual operation and maintenance (O & M) costs.

____ The annual operation and maintenance costs have not been estimated.

____ The annual costs have been estimated as $ _____

and the source of funding will be _____

(50 points)

e. Are monthly bacteria and turbidity monitoring samples submitted to the State? (75 points) Yes _____ No _____

f. Resolution signed by council quorum **attached** identifying project as number one community priority. (50 points) Yes _____ No _____

Please attach a CLEAN copy of Resolution on White paper!

20. Your project may be composed of more than one segment or phase. If so, please complete the following statements and explain:

a. At least one phase of the project has already been constructed and this phase is needed to make the project functional. Explain the relationship of this phase to the whole project. (150 points)

_____

_____

b. Excluding temporary construction jobs, describe how this project will promote economic development, such as fish processing or tourism. BE SPECIFIC. (100 points)

_____

_____

_____

_____

_____

c. Explain the benefits of constructing this project in conjunction with other projects and funding sources such as ISTEA roads and power generators. (50 points)

_____

_____

_____

_____

_____

d. Will this request result in facilities which will serve both the village and school. (150 points)

____ Y ____ N

21. Project costs funded by ***THIS*** grant request are:

Administration	$ _____
Engineering and Inspection	$ _____
Construction	$ _____
Equipment	$ _____
Other	$ _____
Total	$ _____

22. Cost Estimated by:

Name	_____
Agency	_____
Telephone Number	_____
Date of Estimate	_____

G:\vsw\forms\cipfy00.doc

Appendix F:
Class III Landfill Field Inspection Form

CLASS III LANDFILL FIELD INSPECTION FORM

Date of inspection

NAME OF LANDFILL _____ *file no.* nnn.15.nnn

PERMIT NUMBER: _____ *facility ID* nnnn

LOCATION.

LANDOWNER _____

LATITUDE/LONGITUDE _____

WEATHER/WIND CONDITIONS DURING INSPECTION, PRIOR WEEK

_____

LANDFILL CONTACT PERSON _____

MAILING ADDRESS

_____

CITY/STATE/ZIP CODE _____

PHONE NUMBER: Fax number: _____

LEAD INSPECTOR _____ Phone number _____

2ND INSPECTOR _____ Phone number _____

AIRPORT DISTANCE _____

General Notes— operating conditions, types of waste observed, community solid waste issues, etc.

Provide a sketch of the facility, showing roads, gates, buildings or workshops, open disposal cells, closed cells, recycle/salvage areas, and septage/sludge or asbestos disposal areas, if applicable. Also, direction(s) of nearest surface water, prevailing winds.

STANDARDS	*possible points*	*SCORE*	*COMMENTS*
1. PERMIT:			18 AAC 60.200
Current permit or approved plan	10		
Expired or no permit/plan approved	0		
2. LIMITED ACCESS:			60.220
Well controlled, fences and gates	5		
Access limited, not fully controlled	3		
Inadequate effort to control access	1		
No effort to control access	0		
3. ACCESS ROADS:			60.220
All weather, good shape	5		
Moderate conditions, alternatives	3		
Good weather only, no alternatives	1		
Roads non-existent, not maintained	0		
4. SCAVENGING:			60.220
Site access limited, not allowed	2		
Access not limited, not allowed	1		
Scavenging not controlled	0		
5. BURNING WASTES:			60.355
Burn boxes or cages used, attendant present; or no burning allowed	5		
Controlled burning in designated area, attendant present	3		
Burning controlled, no attendant	1		
Burning uncontrolled, no attendant	0		
6. DEPTH TO HIGH GROUNDWATER:			60.217
Base of landfill area more than 2 ft above natural ground surface or more than 10 ft from highest groundwater	10		
Less than 10 ft	0		
7. PLACEMENT IN SURFACE WATER:			60.225
No contact with water	15		
Intermittent contact (storms/breakup)	10		
Frequent contact	3		
Wastes placed in surface water	0		
9. ANIMAL/VECTOR CONTROL:			60.230
Fencing with locked gate, waste covered or incinerated, no odors	5		
Fencing inadequate, waste covered, animals rarely attracted, or incineration incomplete	3		
Fencing inadequate, wastes uncovered, animal problems	0		

STANDARDS *possible points*	*SCORE*	*COMMENTS*
10. PROCEDURES TO EXCLUDE HAZARDOUS WASTES: Sign in place at entrance, lists types of wastes and PCBs prohibited 5 No sign present, no visible regulated waste present at site 3 Regulated hazardous waste present 0		60.240
11. POLLUTED SOILS: Soils not accepted unless they meet a clean up level allowed by regulation 5 Polluted soils accepted that do not meet clean up levels 0	-NA-	60.025
12. SETBACK DISTANCES: Minimum 50-ft setback between property boundary and waste unless permitted 5 Setback distance not maintained, waste at edge of property. 0		60.233
13. WELLHEAD PROTECTION DISTANCE: Minimum 500-ft setback from drinking water well 15 Less than 500-ft setback 0	-NA-	60.040
14. MEDICAL WASTES: Shipped to approved facility or sterilized, decontaminated or incinerated before disposal 5 Infectious wastes present, uncontrolled 0	-NA-	60.030
15. DISPOSAL OF VEHICLES OR EQUIPMENT: Drained of all fluids and batteries removed, doesn't attract disease vectors, not a visual nuisance 5 Batteries, fluids, or petroleum products remain in vehicle at time of disposal, does attract disease vectors, is a nuisance 0		60.035
16. LITTER: Litter controlled, site cleaned up regularly 5 Blowing litter contained by fencing, but messy 3 No fences or containment, but some effort at clean up 1 No effort at litter control 0		60.345

STANDARDS	*possible points*	*SCORE*	*COMMENTS*
17. COMPACTING REFUSE:			64.010
When refuse in <2-ft increments	5		
Somewhat or partially compacted (when greater than 2-ft layers)	3		
No compaction	0		
18. SIZE OF WORKING FACE:			60.345
Size meets requirements of permit or approved plan or as small as practicable	5		
Size exceeds permit or plan, but waste still in one designated area	3		
More than one trench or designated area open	1		
Dumping uncontrolled	0		
19. OPERATIONAL COVER:			60.345
Minimum 6" depth, frequency adequate	5		
Minimum 6" depth, frequency inadequate	3		
Inadequate frequency and depth	1		
No cover applied	0		
20. NUISANCE CONTROL (ODORS, DUST, NOISE, ETC.):			60.233
Not necessary or applied as needed	5		
Occasionally applied, not effective	3		
Needed but not applied	0		
21. INTERMEDIATE COVER (FORMERLY USED AREAS):		-NA-	60.243
Minimum of 12 inches, properly graded	5		
improperly graded	3		
Inadequate or no cover	0		
22. FINAL COVER (CLOSED AREAS):		-NA-	60.390
Compacted, minimum 2-ft depth	5		
Uncompacted or inadequate depth	3		
No final cover	0		
23. FINAL SURFACE GRADING (CLOSED AREAS):		-NA-	60.390
Proper grading without visible erosion or ponding of surface water	5		
Ponding or erosion present, grading inadequate,	3		
Not graded or serious ponding or erosion	0		

STANDARDS *possible points*	*SCORE*	*COMMENTS*
24. SITE CLOSURE: Site revegetated, permanent markers established, ADEC notified 5 Site not revegetated, no markers, or ADEC not notified 0	-NA-	60.390
25. LANDS RECORD OFFICE CLOSURE NOTICE FILED: Yes 5 No 0	-NA-	60.396
26. SEWAGE SLUDGE DISPOSAL (IF APPLICABLE): Single separate cell or trench, smaller than 4 ft wide and 12 ft deep 5 AND Separate cell(s) limed and immediately covered (6 inches of soil) 5 AND Separated from groundwater by 6 or more feet 5 (5 to15 total points) Separate cell or cells, lime, no cover 3 Separate cell or cells, not disinfected, no cover 2 Not in separate cells, access uncontrolled 0	-NA-	60.365
28. ASBESTOS DISPOSAL (IF APPLICABLE) Done as required in permit conditions, records kept, waste adequately covered 10 Asbestos inadequately covered and/or records not kept 5 Asbestos disposed without a permit 0	-NA-	60.450
29. IN CASE OF DUMP FIRES, IS THERE A FIRE-FIGHTING PROCEDURE AND EQUIPMENT? Excellent effort, equipment on-hand 3 Moderate effort 2 Minimal protection 1 Open burning on working face 0		
30. RECYCLING EFFORTS Active community program in place 2 Limited effort or not maintained 1 No effort at recycling 0		

29. RECORD KEEPING REQUIREMENTS		SCORE	COMMENTS
Permit application	3		60.235
Copy of permit or solid waste management plan	3		60.235
Operating plans for the site	3		60.235
Closure plan	3		60.210
Site visual inspection records or other monitoring data (e.g. water quality, gas monitoring)	3		60.235
Staff training records (e.g. landfill operations, safety)	3		60.235
Records showing how facility meets the Class III requirements	3		60.300
Airport distance, floodplain, and other location restriction documentation	3		60.380
As-built drawings of the landfill design and use	3		60.235
Site closure records and notices, if applicable	3	-NA-	60.390,396

Any individual records not present will be awarded a zero score.
The facility owner must keep records of each item listed above in an easily accessible area, such as the city or tribal office.

TOTAL POINTS POSSIBLE	TOTAL SCORE	COMPLIANCE RATING
		%

This year the facility rated a xx% compliance with the sanitation and safety standards for Class III landfills in Alaska (xx out of 1xx possible points.

Ratings below 80% are generally regarded as unsatisfactory. (Had the record keeping requirements been met, the facility would rate xx% compliance with standards for safe and sanitary solid waste management.)

Appendix G:

Louden Tribal Council Resolution to Ban Plastic Bags

Louden Tribal Council
Resolution 98-27

Banishment
Of
Plastic Retail Bags

WHEREAS, Louden Tribal Council is the federally recognized Tribal governing body for the Tribal members of the village of Galena: and,

WHEREAS, the Louden Tribal Council recognizes that a need exists to reduce the amount of material going into our landfill and prevent litter from being blown out of the landfill: and.

WHEREAS, we recognize that the appropriate method of doing this is by reduction of the waste stream and not allowing plastic retail bags from entering the waste stream: and.

WHEREAS, the Tribe sees an opportunity to work with the City of Galena and the local retail outlets to replace (through IGAP and other funds) these public nuisances with reusable canvas bags and making available for a fee biodegradable paper bags through the retailers: and.

WHEREAS, we recognize that the authority for this action lies in our ownership of our landfill and our community: and.

NOW THEREFORE BE IT RESOLVED, that the Louden Tribal Council hereby authorizes the Chief or his designee to work with the City, retailers, Tribal members and general public to banish white plastic bags from our community as soon as an alternative reusable replacement can be made available (targeting November of 1998), and

BE IT FURTHER RESOLVED, that the Louden Tribal Council Chief or designee is hereby authorized to allocate funds from the IGAP project as an environmental education initiative to purchase reusable canvas bags for the community.

Certification

We hereby certify that this resolution was duly passed and approved by the Louden Tribal Council on this 9th day of July, 1998 by a vote of __ yes, __ no, __ abstain.

Peter Captain Sr., First Chief

Lilly Evans, Secretary / Treasure

Appendix H:
Gwich'in Resolution

RESOLUTION

WHEREAS: The Gwich'in Nation proposes designation of the watershed of the Yukon River Basin as a "Watershed Protection Area";

WHEREAS: The Gwich'in Nation, having been placed in the Yukon Flats within the Yukon River Watershed, by our Creator, do hereby agree to initiate and continue protection and clean up of the Yukon River for the protection of our and future generations for the protection of our way of life, by ensuring that the Yukon River continues to flow with healthy, clean water for generations to come.

WHEREAS: The Yukon River Watershed provides food and drinking water to many communities throughout the Yukon Territory and Alaska;

WHEREAS: All the Gwich'in People who live and depend on the Yukon River Watershed have a common interest in maintaining the integrity of the Yukon River Watershed;

WHEREAS: If the Yukon River Watershed is not effectively managed and protected the consequences would be severe in both the Yukon Territory and Alaska.

THEREFORE BE IT RESOLVED; That the entire Gwich'in Nation agrees to implement the following changes in each village. As the indigenous/aboriginal Gwich'in Nation with inherent rights to self-determination and self-governance we agree to: 1) To eliminate the use of Styrofoam cups and plates and actively seek and utilize alternative green products instead, 2) To encourage all schools to teach our children about the need to protect the Watershed, 3) To create a battery collection site at each landfill and implement a plan for their proper reuse or disposal, 4) To establish fines for polluting and littering, 5) To ban the use of plastic bags in all places of business and stores.

BE IT FURTHER RESOLVED; That the entire Gwich'in Nation agrees to implement the following changes in each village and to hold community meetings to discuss other ways to protect and enhance the Yukon River Watershed. We will discuss issues including; the need to use outboards engines that minimize pollution, how to eliminate household chemicals, the need to encourage stores to supply bulk packaging to reduce waste, composting possibilities, encourage all people to re-use bags and reusable containers, and explore energy alternatives (such as: solar, wind and hydro-electic possibilities).

Moved By: _____ Seconded By: _____

Passed by consensus, this 25th day of June 1998 in Fort Yukon, Alaska.

Appendix I:
Technical Environmental Survey–Survey Form

Technical Environmental Survey

Ver. 2.0

Village _____ Date _____

Surveyor & Title _____

This survey is a list of questions about environmental issues that may be present in your village. To the best of your ability and knowledge, answer each question that applies to your village. Most of the questions can be answered with a YES, NO or ? (unknown) response. Many questions will ask for a specific answer that involves time or amounts. Some of the questions will require that you contact the village council or the person(s) or operator responsible for a particular facility, such as the water treatment plant. As necessary, search out the answer to each question using the response "?" only as a last resort. Please note that an exclamation mark ❢ is used to show a response that indicates a problem.

General Community Information

Who to ask: city and/or IRA/Traditional Council, school principal

1. Does your village have a ☐ city council, ☐ IRA/Traditional Council or ☐ both?
   Which council is responsible for the sanitation services in your village?
   ☐ city council ☐ IRA/Traditional Council ☐ joint ownership/utility board.

2. Yes ☐ No ☐ ? ☐ Do the village council(s) regularly collect fees for village services?
   If yes, which services? ☐ water ☐ sewer ☐ landfill.
   If yes, how does the village pay for the services? _____
   _____

3. Yes ☐ No ☐ ? ☐ Does your village council(s) receive technical help from environmental/public health programs or agencies?
   If yes, whom? _____

4. Yes ☐ No ☐ ? ☐ Are local pollution problems an issue with the village councils?
   If yes, what issues? _____
   _____

5. Yes ☐ No ☐ ? ☐ Does the village school have an environmental education curriculum?

If yes, which grade levels? _____

6. Yes ☐ No ☐ ? ☐ Does the community have any environmental programs or groups that meet regularly?

If yes, what are they? _____

_____

Drinking Water

Who to ask: water treatment plant operator

7. Yes ☐ No ☐ ? ☐ Is your water treatment plant attached to a washeteria, clinic, or other facility?

8. Does your water treatment plant get water from a:
☐ well, ☐ spring, ☐ pond, river or stream?

9. Yes ☐ No ☐ ? ☐ Do most village residents use the water from the water treatment plant?

10. Yes ☐ No ☐ ? ☐ Do most village residents believe the water from the water treatment plant is safe to drink?

If no, why not and where do they get their drinking water? _____

_____

11. Yes ☐ No ☐ ? ☐ Do the village residents feel that the sewage lagoon, landfill, old military site, or tank farm, has an effect on the drinking water supply?

If yes, how? _____

_____

12. Yes ☐ No ☐ ? ☐ Does your village's water treatment plant ever run out of water?

If yes, how often and when? _____

_____

13. Yes ☐ No ☐ ? ☐ Does your village have private wells?

If yes, how many? _____

14. Yes ☐ No ☐ ? ☐ Does your village have piped water to the houses or other buildings?

If yes, to how many? _____

15. Yes ☐ No ☐ ? ☐ Does your village have a flush-haul water system?

If yes, to how many houses or other buildings? _____

16. Yes ☐ No ☐ ? ☐ Does your village use dip buckets to store drinking water?

If yes, how many houses or other buildings use them? _____

17. Yes ☐ No ☐ ? ☐ Does the water treatment plant have operators?

If yes, how many and who? _____

_____

18. Yes ☐ No ☐ ? ☐ Do the water treatment operators get paid?

If yes, how much and for how many hours a day? _____

_____

19. Yes ☐ No ☐ ? ☐ Are the water treatment plant operators certified by the State of Alaska?

If yes, when do the certifications expire? _____

20. Yes ☐ No ☐ ? ☐ Is the water treatment plant locked and secure when the operator is not there?

_____

21. Yes ☐ No ☐ ? ☐ If chlorine and/or fluoride are added to the drinking water at the water treatment plant, does the operator have the chlorine and/or fluoride test kits and chemicals to monitor the water quality?

If yes, are there enough chemicals to last several months? _____

Are the chemicals still effective? (check expiration date) _____

28. Yes ☐ No ☐ ? ☐ Is there a chlorine respirator available for the water treatment operator?

Does he/she use the respirator when handling HTH (chlorine)?

_____

29. Yes ☐ No ☐ ? ☐ Are there any pieces of equipment in the washeteria and/or water treatment plant broken or not operating?

If yes, what are they? _____

30. Yes ☐ No ☐ ? ☐ Does the operator have a critical spare parts inventory?

Are all of the parts there? _____

31. Yes ☐ No ☐ ? ☐ Is the washeteria and/or water treatment plant clean and orderly?

If no, describe: _____

_____

32. Yes ☐ No ☐ ? ☐ Does the water treatment plant have a written Standing Operating Procedure (SOP) and master log?

33. Yes ☐ No ☐ ? ☐ Does the washeteria and/or water treatment plant have safety defects (i.e. such as bare electrical wires, split or cracked chemical containers)?

If yes, what are they? _____

34. What are your village's main complaints with the washeteria and/or water treatment plant?

_____

_____

Wastewater

Who to ask: wastewater operator, health aides, public health nurse

35. Yes ☐ No ☐ ? ☐ Have there ever been outbreaks of sewage-related diseases in your village?

If yes, what diseases and when? _____

_____

36. Yes ☐ No ☐ ? ☐ Are health aides told when there is a sewage spill in the village?

_____

37. Yes ☐ No ☐ ? ☐ Does the village have a sewage lagoon?

If yes, how far is it from the village? _____

38. Yes ☐ No ☐ ? ☐ Does the sewage lagoon ever leak or overflow?

If yes, why and when? _____

_____

39. Yes ☐ No ☐ ? ☐ Does your village have a piped sewer?

If yes, to how many houses or other buildings? _____

40. Yes ☐ No ☐ ? ☐ Does your village have septic tank systems?

If yes, to how many houses? _____

41. Yes ☐ No ☐ ? ☐ Does your village have sewage holding tanks (flush-haul system)?

If yes, to how many houses or other buildings? _____

42. Yes ☐ No ☐ ? ☐ Does your village use privies or outhouses?

If yes, how many houses or other buildings? _____

43. Yes ☐ No ☐ ? ☐ Does your village use honey buckets?

If yes, how many houses or other buildings? _____

44. Yes ☐ No ☐ ? ☐ Does your village have an operating honey bucket haul or flush-haul system?

45. Yes ☐ No ☐ ? ☐ Is any of the equipment for the honey bucket haul or flush-haul system broken?

If yes, for how long? _____

46. Yes ☐ No ☐ ? ☐ Is the honey bucket haul or flush-haul system operated safely so that no sewage is spilled on the ground in the village?

47. Yes ☐ No ☐ ? ☐ Do all village residents properly dispose of their honey buckets?

48. Yes ☐ No ☐ ? ☐ Do the honey bucket haul or flush-haul operators get paid?

If yes, how much and for how many hours per day? _____

49. Yes ☐ No ☐ ? ☐ Do the honey bucket haul or flush-haul operators have a place to clean up and change out of their work clothes before going home?

If yes, where? _____

_____

50. Yes ☐ No ☐ ? ☐ Does the village school actively promote safe sanitation methods and/or have a sanitation curriculum?

If yes, what grades? _____

51. Yes ☐ No ☐ ? ☐ Do the health aides assist the village school with sanitation presentations?

_____

Solid Waste

Who to ask: landfill operator, village store owner, village school principal, power plant operator

52. How far is the landfill from the airstrip?

_____

53. How far is the landfill from the village?

_____

54. Yes ☐ No ☐ ? ☐ Is the landfill accessible all year round?

_____

55. Yes ☐ No ☐ ? ☐ Does the landfill have any type of heavy equipment to compact or cover the solid waste?

If yes, what kind? _____

Does the equipment work? _____

56. Yes ☐ No ☐ ? ☐ Is the trash being covered or buried?

How often? _____

What is the material used to cover the trash? _____

_____

57. Yes ☐ No ☐ ? ☐ Does the village landfill have an operator?

If yes, who? _____

How much and for how many hours a day is the operator paid?

_____

58. Yes ☐ No ☐ ? ☐ Does the village landfill have a fence around it?

If yes, is it in good condition? _____

59. Yes ☐ No ☐ ? ☐ Is access to the landfill controlled?

60. Yes ☐ No ☐ ? ☐ Is uncontrolled open burning allowed at the landfill?

61. Yes ☐ No ☐ ? ☐ Is there a burn box at the landfill?

If yes, who operates it? _____

62. Yes ☐ No ☐ ? ☐ Are there other burn boxes in the village (such as the village school or store)?

If yes, who operates them? _____

63. Yes ☐ No ☐ ? ☐ Are the health clinic medical wastes and/or veterinarian wastes disposed of at the landfill?

If no, how and/or where are they disposed? _____

64. Yes ☐ No ☐ ? ☐ Is there windblown litter around the landfill?

If yes, how much and how far does it go? _____

_____

65. Yes ☐ No ☐ ? ☐ Is there a lot of plastic in the windblown litter?

If yes, what is the main color? _____

66. Yes ☐ No ☐ ? ☐ Do the village stores recycle the white plastic shopping bags or offer rebates (money back) for reuse of the white plastic bags?

If yes, which store(s)? _____

_____

67. Yes ☐ No ☐ ? ☐ Do the village stores offer paper or canvas bags as an alternative to plastic bags?

If yes, which stores? _____

_____

68. Yes ☐ No ☐ ? ☐ Does the landfill have uncrushed tin cans from the school lunch program?

69. Yes ☐ No ☐ ? ☐ Does the landfill have a lot of aluminum cans?

70. Yes ☐ No ☐ ? ☐ Are aluminum cans being recycled?

If yes, by whom? _____

71. Yes ☐ No ☐ ? ☐ Does the landfill have cardboard or other paper wastes from the village store?

If yes, in general terms, how much? _____

72. Yes ☐ No ☐ ? ☐ Is there a "No Dumping of Hazardous Materials" warning sign at the landfill entrance?

73. Yes ☐ No ☐ ? ☐ During the inspection of the landfill, were paint cans, used oil containers, lead-acid batteries or other hazardous materials observed?

If yes, in general terms, what and how many? _____

_____

74. Yes ☐ No ☐ ? ☐ Is there a specific place to put lead-acid batteries at the landfill?

If yes, where and how are the batteries contained? _____

_____

75. Yes ☐ No ☐ ? ☐ Are lead-acid batteries being recycled?

If yes, by whom? _____

76. Yes ☐ No ☐ ? ☐ Is there a place at the landfill or in the village for residents to put used oil?

If yes, where? _____

_____

77. Yes ☐ No ☐ ? ☐ Is used oil being recycled?

If yes, by whom? _____

_____

78. Yes ☐ No ☐ ? ☐ Is the power plant operator correctly disposing of the used oil produced by the electrical generator?

If yes, how? _____

_____

If no, what is happening to the used oil? _____

_____

79. Yes ☐ No ☐ ? ☐ Is there a village awareness of the importance of preventing fuel oil spills at homes?

80. Yes ☐ No ☐ ? ☐ Do the village "gas stations" have something to put the gas cans in while they are being filled?

81. Yes ☐ No ☐ ? ☐ Is there a community salvage area at the landfill or at some other location in the village?

If yes, where? _____

_____

82. Yes ☐ No ☐ ? ☐ Is there water in the landfill most of the time? Or, is the landfill in a tundra pond?

_____

83. Yes ☐ No ☐ ? ☐ Is the landfill producing leachate, or runoff, that stains the ground downstream of the landfill?

84. Yes ☐ No ☐ ? ☐ Are there animals eating the garbage at the landfill?

If yes, what kinds of animals? _____

_____

85. Yes ☐ No ☐ ? ☐ Are there other landfills (including old ones) in and/or around the village?

If yes, who operated them and where are they?

_____

Are any still in use? _____

86. Yes ☐ No ☐ ? ☐ Does the village landfill have a DEC Class III Landfill Permit?

87. Yes ☐ No ☐ ? ☐ Does the village have an annual clean-up program?

If yes, are the recyclables separated from the other trash? _____

88. How many tank farms are there in the village and who owns them?

_____

_____

89. Which tank farms have secondary containment and which do not?

_____

_____

Fuel Tank Farms

Who to ask: tank farm owners/operators

90. Yes ☐ No ☐ ? ☐ Do any of the tank farm owners have a written plan to follow in case there is a fuel spill?

Who does and does not? _____

_____

91. Yes ☐ No ☐ ? ☐ Do any of the tank farms have active or ongoing leaks of any size?

If yes, which ones? _____

_____

Is the leak from a tank or a pipe? _____

92. Yes ☐ No ☐ ? ☐ Do all of the tank farms have fuel spill clean up materials on hand?

If yes, which ones and in general terms, how much?

_____

_____

93. Yes ☐ No ☐ ? ☐ Were there any tank farm fuel spills of more than 55 gallons in the last five years?

If yes, which ones and what was the cause of the spill?

_____

_____

94. Yes ☐ No ☐ ? ☐ Have the pipeline(s) used to fill the tank farms from the barge or aircraft been tested for leaks?

If yes, when? _____

95. Yes ☐ No ☐ ? ☐ Do all of the tanks have labels on them identifying what is inside?

If no, which tanks need labels? _____

_____

96. Yes ☐ No ☐ ? ☐ Do all of the tank farms have signs on them with the telephone numbers of people to contact in case of a fuel spill?

If no, which tank farms need signs? _____

_____

97. Yes ☐ No ☐ ? ☐ Have there been fuel spills in the past that have not been cleaned up that are of concern to village residents?

If yes, where? _____

_____

Air

Who to ask: village residents

98. Yes ☐ No ☐ ? ☐ Can smoke from the burning garbage at the landfill be smelled in the village?

99. Yes ☐ No ☐ ? ☐ Do village residents use burn barrels?

100. Yes ☐ No ☐ ? ☐ Is burning plastic the main odor smelled when garbage is burned?

101. Yes ☐ No ☐ ? ☐ Do village residents consider cigarette smoke and wood stove smoke as sources of indoor air pollution?

102. Yes ☐ No ☐ ? ☐ Do village residents use wood stoves to heat their homes?

If yes, how many houses? _____

Grants, Funding and Other Resources

Grants, Funding and Other Resources:

Below is a brief listing of grants/funds available to Tribes in Alaska for environmental projects or programs. To find the most up-to-date information on both private and governmental environmental grant opportunities, search the following websites on the internet:

http://fdscenter.org/ The Foundation Center Online-directory of private foundations
http://www.epa.gov/ The Environmental Protection Agency
http://www.fundsnetservices.com /alaska.htm Grantmakes in Alaska

Helpful Grant Writing Websites

Website: http://www.grantscape.com/omaha/grants/services/101.html

Grant seeking 101 is a site that offers basic grant finding and writing information. It also explains the grant writing proposal process and provides tips for personalizing applications, writing well, pacing and finishing the project, and accepting the award or dealing with rejection.

Website: http://fdcenter.org/onlib/prop.html

A Proposal Writing Short Course is an introductory online course designed to help you improve your skills. The two-part proposal writing course is free and offers a good overview of the process.

Air Pollution Control Grants

Office of Air Quality
EPA Region 10
1200 6th Avenue OAQ-107
Seattle, WA. 98101
Tele: (206) 553-1059
Fax: (206) 553-0110
Email: austin.marybell@epamail.epa.gov

If you would like to add an air quality component to your environmental program, grant funds may be available. Although a formal application is needed before an award of funds can be made, most of the steps in determining what funds can be provided to support work by the Tribe or corsortia are done through a one-to-one exchange of information.

Alaska Conservation Foundation

750 W. 2nd Ave., Suite 104
Anchorage, AK 99501-2167
Tele: (907) 276-1917
Fax: (907) 274-4145
Email: acfinfo@akcf.org

Alaska Conservation Foundation (ACF) makes grants available and receives funds to protect the integrity of Alaska's ecosystems and to promote sustainable livelihoods among Alaska's communities and peoples. ACF makes grants available throughout the year.

Alaska Solid Waste Management Demonstration Grant's Project

Rural Alaskan Sanitation Coalition
Alaska Native Health Board
4201 Tudor Centre Dr., Suite 105
Anchorage, AK 99508
Tele: (907) 562-6006
Fax: (907) 563-2001
Email: Tlong@anhb.org

Grants awards from $2,000-$10,000 available to Tribes for projects that prevent and/or address locally defined solid waste concerns and problems.

Alaskans for Litter Prevention and Recycling (ALPAR) Flying Cans Program

ALPAR Youth Litter Patrol Grants
PO Box 200393
Anchorage, AK 99520
Tele: (907) 274-3266
Fax: (907) 274-8023

ALPAR offers grants from $350 and up to fund Youth Litter Patrols in the community. The community must show that it is involved with other litter prevention and clean-up activities to receive this grant. Applications are due March 1. Limited to one grant per community.

The Brainerd Foundation

1601 Second Avenue, Suite 610
Seattle, WA 98101
Tele: (206) 448-0676
Fax: (206) 448-7222
Email: info@brainerd.org

The Brainerd Foundation supports grassroots-oriented projects that motivate citizens to get involved in efforts to protect the environment. The majority of the foundation's grants are awarded within one of three program areas: endangered ecosystems, toxic pollution, and communication strategies.

Community Water Quality Grants (Grant 319)

Department of Environmental Conservation
Division of Air & Water Quality
410 Willoughby Ave., Suite 105
Juneau, AK 99801-1795
Tele: (907) 465-4158
Fax: (907) 465-5274
Email: sdyer@envircon.state.ak.us

Community Water Quality Grants are made available each year to support community-based projects to prevent nonpoint sources of pollution and to restore degradation of water quality and aquatic habitat. There is no limit for the amount of request. There is a 40% non-federal match requirement. Applications are due in March.

Department of Agriculture (USDA):

Rural Development
800 W. Evergreen, Suite 201
Palmer, AK 99645
Tele: (907) 745-2176
Fax: (907) 745-5398
Email: jlevarney@rdmail.rural.usda.gov

The USDA Rural Development has a water and waste disposal program to aid communities with water and waste disposal assistance. This funding requires a match with funds from state or local sources. These funds can be used to construct, enlarge, or upgrade water and waste disposal systems, including solid waste disposal.

Environmental Education Grants Program

Public Information Center (EXA-124)
U.S. Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101
Toll Free: (800) 424-4372
Website: http://epa.gov/enviroed

To provide financial support for projects which design, demonstrate or disseminate environmental education practices, methods or techniques. Grants are awarded up to $25,000 regionally and $25,000-$250,000 nationally. Applications are due in February.

Environmental Justice Grants

Joyce Kelly
Environmental Protection Agency
1200 Sixth Avenue (MD-142)
Seattle, WA 98101
Toll Free: (800) 962-6215
Tele: (206) 553-4029
Fax: (206) 553-8338

To provide financial assistance to eligible community groups, and federally recognized Tribal governments that are working on or plan to carry out projects to address environmental justice issues. Grants are awarded up to $20,000. Applications are due in March.

Environmental Management Services

Bureau of Indian Affairs
Office of Trust Responsibilities
Division of Environmental and Cultural Resources Management
Mailstop 4516 MIB
1849 C Street NW
Washington, D.C. 20240
Tele: (202) 208-5696

Financial and technical assistance available to strengthen environmental and natural resource programs. Funds, coordination, and technical assistance are provided by the central office staff for hazardous waste management and hazardous substance remediation, including emergency situations that have the porential to adversely affect trust resources and human health and safety in Indian Country.

Indian General Assistance Program (IGAP)

Jean Gamache, Tribal Coordinator
Environmental Protection Agency-Tribal Program
222 West 7th Avenue, #19
Anchorage, AK 99513-7588
Toll Free: (800) 781-0983
Tele: (907) 271-6558
Fax: (907) 271-3424
Email: gamache.jean@epamail.epa.gov

Grants available to Tribes for planning, developing and establishing capability to implement environmental protection programs, including solid and hazardous waste programs. Grant awards begin at $75,000. Applications are *due in February.*

Lead Program Development Grants

Toll Free: (800) 424-4372
Tele: (206) 553-8282
Fax: (206) 553-8509

The purpose of the grant is to help Tribes and States develop and carry out authorized (EPA-approved) programs for the training of individuals engaged in lead-based paint activities, the accreditation of training programs for these individuals, and the certification of contractors engaged in lead-based paint activities. Awards may be made to Tribes for up to $50,000.

Pollution Prevention Incentive Grants

US Environmental Protection Agency Region 10
1200 Sixth Avenue 01-085
Seattle, WA 98101-9797
Tele: (206) 553-4072
Fax: (206) 553-8338
Email: gangmark.carolyn@epa.gov

The Pollution Prevention Incentives Grants Program promotes the establishment and expansion of the State-based pollution prevention programs by building Tribal pollution prevention capacities or testing innovative pollution prevention approaches and methodologies. Grant awards up to $50,000 available. Deadline for applications is February/ March.

Sustainable Development Challenge Grants

Anne Dalrymple
U.S. Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101
Tele: (206) 553-0199
Website: http://epa.gov/ecocommunity

Grants to provide communities funding for establishing partnerships to encourage environmentally and economically sustainable business practices. These grants are intended to encourage communities/Tribes to recognize and build upon the fundamental connection between environmental protection, economic prosperity and community well-being. Grants awards range up to $200,000. Applications are due November.

National Science Foundation

4201 Wilson Blvd.
Arlington, VA 22230
Tele: (703) 306-1234

The National Science Foundation has many research programs that support research on the environment. EPA/National Science Foundation offer grants in environmental statistics.

Tribal Indian Set-Aside Grant Program for Clean Water Act

Indian Health Service Program
Ken Evans, Director
3925 Tudor Centre Dr.,
Anchorage, AK 99508-5997
Tele: (907) 729-3500
Fax: (907) 271-4734

This grant program provides grants for planning, design and construction of wastewater treatment facilities. No matching funds are required. Up to 100% of eligible project costs can be funded. Grants are currently available only through a priority ranking system.

Tribal/State Wetland Protection Development Grants

Anchorage Operations Office
222 West 7th Ave., #19
Anchorage, AK 99513-7588
Toll Free: (800) 781-0983
Fax: (907) 271-3411

Funding available to develop and implement comprehensive wetland protection programs through the development of wetland conservation programs; to develop watershed protection approach demonstration projects; and to assess and monitor the ecological integrity of wetlands on reservations or in cooperation with other governmental entities on a broader scale. Tribes and local governments are eligible for funding. Grant amounts range from $25,000-$250,000. Applications are usually due in January.

Village Safe Water

Alaska Department of Environmental Conservation
410 Willoughby Avenue, Suite 105
Juneau, AK 99801-1795
Tele: (907) 465-5137
Fax: (907) 465-5177
Email: GCapito@envircon.state.ak.us

This program provides grants of up to 100% of project costs for sanitation facilities, haul systems, a safe water source at a central location, a place to dispose of human wastes, and in some cases, laundry, sauna and shower facilities. This program also develops proposals and secures federal funding for planning, design and construction of wastewater treatment facilities and landfills in Alaska rural and Native villages.

Wilburforce Foundation

3601 Fremont Avenue North, Suite 304
Seattle, WA 98103-8753
Tele: (206) 632-2325
Fax: (206) 632-2326
Email: grants@wilburforce.org

The Wilburforce Foundation awards grants in the areas of environment and population stabilization to nonprofit organizations in Alaska.

Resources

Agencies that provide free environmental information:

State of Alaska
Department of Environmental Conservation
Compliance Assistance Office
555 Cordova Street
Anchorage, Alaska 99501-2617
Toll Free: (800) 510-2332
Fax: (907) 269-7600

Distributes fact sheets, brochures and pamphlets on a variety of topics including: recycling, used oil, open burning, hazardous wastes, drinking water, wastewater, etc.

U.S. Environmental Protection Agency, Region 10
Public Environmental Resource Center
1200 6th Ave. EXA-124
Seattle, WA 98101
Toll Free: (800) 424-4372
Fax: (206) 553-0149
Email: epa-seattle@epa.gov

Distributes environmental publications, videos and posters free of charge. Contact them to get a list of publications and audio-visuals available. The Environmental Education Clearinghouse at the Environmental Protection Agency offers a service to assist educators with searching for environmental publications according to subject area.

Aboveground Storage Tank Operator Handbook, November 1998. Available from the Department of Environmental Conservation/ Spill Prevention & Response Division. To order, call (907) 465-5237.

Alaska Materials Exchange, Quarterly Issues. Available from the Department of Environmental Conservation, Pollution Prevention Program. To order, call (800) 510-2332. Catalog listing materials available and materials wanted by organizations. This is a free catalog designed to help Alaskan organizations reuse materials and find alternatives to throwing valuable materials into Alaska's landfills.

Changing Wastes in Changing Times: Solid Waste and Natural Resource Issues in Rural Alaska—A Teacher's Guide 1994. Available from the Alaska Health Project. To order, call (907) 276-2864. Curriculum guide for teachers in rural areas of Alaska.

Contaminated Sites in Alaska, January 1997. Available from Alaska Department of Environmental Conservation, Contaminated Sites Remediation Program. To order, call (907) 465-5390. An eight-page color brochure highlighting this program.

Down With Dumps (Part 1): Making a Better Community Landfill in Rural Alaska (15 minutes) and *(Part 2): Rural Landfills: Design and Operations* (34 minutes). 1998. Videos available from the Department of Environmental Conservation, Solid Waste Program Offices in Anchorage, Fairbanks and Juneau. To order, call (907) 269-7653 in Anchorage, (907) 451-2108 in Fairbanks or (907) 465-5350 in Juneau.

Environmental Grantmaking Foundations: 1998 Directory on CD. Available from Resources for Global Sustainability. To order, call (800) 724-1857.

Environmental Heroes of the North. Available from RuralCAP RAVEN AmeriCorps Program (formerly known as EPA AmeriCorps). To order, call (800) 478-7227. 11 minute video describing the work of AmeriCorps members in the RurAL CAP program. AmeriCorps members are Alaska Natives who work with their villages to implement environmental protection measures.

Environmental Planning for Small Communities: A Guide for Local Decision-Makers EPA625-R-94-009, September 1994. Available from the Environmental Protection Agency. To order, call (800) 424-9346. Presents ideas and approaches to creating and implementing community environmental plans.

Good Earth and Good Earth Workbook, January 1991. Available from Alaska Health Project. To order, call (907) 276-2864. Two-volume publication concerning hazardous and solid waste in Alaska Native villages.

A Guide to Community Visioning: Hands on Information for Local Communities, 1993. Available from Oregon Visions Project. To order, call (503) 625-5522. Describes the Oregon Model of visioning. Provides suggestions for designing and implementing an effective visioning process.

Household Hazardous Waste: Steps to Safe Management (EPA530-F-92-026), April 1993. Available from the Environmental Protection Agency. To order, call (800) 424-9346 or download <www.epa.gov/epaoswer/osw/non-hw.htm#household> Describes steps that people can take to reduce the amount of household hazardous waste they generate and describes safe methods of storing, handling and disposing of hazardous wastes.

The Inside Story: A Guide to Indoor Air Quality, April 1995. This illustrated booklet covers all major sources of indoor air pollution such as radon, household chemicals, biological contaminants, carbon monoxide, formaldehyde, pesticides, asbestos, and lead. EPA Document #402-K-93-007. To order, call: (800) 438-4318.

Introduction to Alaska Small Wastewater Systems, Alaska Department of Environmental Conservation, 1994. Available from ACR Publications. To order, call (800) 433-8150.

Introduction to Alaska Small Water Systems, Alaska Department of Environmental Conservation, 1995. Available from ACR Publications. To order, call (800) 433-8150.

Landfills in the Bush: A Guide to Opening, Maintaining, and Closing Remote Solid Waste Sites, August, 1996. Available from the Association of Village Council Presidents, Inc. To order, call (800) 478-3521, ext. 7385. Provides information specific to Alaska Villages about landfills.

A Plain English Guide to Water and Wastewater Regulations, September 1998. Available from the Alaska Department of Environmental Conservation, Division of Environmental Health, Drinking Water and Wastewater Program. To order call (907) 269-7517 or you can download it from the State's website at http://www.state.ak.us/dec/www.state.ak.us/dec/deh/water/plainguide.pdf

Preparing Successful Grant Proposals (EPA530-F-97-020), December 1997. Available from the Environmental Protection Agency. To order, call (800) 424-9346 or download <http://www.epa.gov/tribalmsw/finance.htm>. Describes procedures that Tribes can follow when applying for solid waste management grants.

A Resource Guide of Solid Waste Educational Materials (EPA530-B-97-004). December 1997. Available from the Environmental Protection Agency. To order, call (800) 424-9346. Lists nearly 50 solid waste-related educational materials developed for K-12th grade students.

Secondhand Smoke: What You Can Do as Parents, Decisionmakers, and Building Occupants (EPA402-F-93-004). July 1993. Available from Indoor Air Quality Information. To order, call (800) 438-4318 or Email: iaqinfo@aol.com. Defines secondhand smoke and describes health risks from exposure to secondhand smoke. This leaflet provides steps to take to reduce the health risks of passive smoking in the home, in the workplace, in restaurants and bars, and other indoor places.

Solid Solutions in Rural Alaska. December 1996. Available from the Environmental Protection Agency Tribal Program in Anchorage. To order call (907) 271-6323. Assists individuals, communities and schools in reducing solid waste. Highlights a number of solutions that have succeeded in Alaska Native villages.

Solid Waste Funding: Guide to Federal Assistance (EPA530-F-97-027). January 1998. Available from the Environmental Protection Agency. To order, call (800) 424-9346 or download <http://www.epa.gov/tribalmsw/finance.htm> Describes a variety of funding sources for solid waste research and management programs.

Taking Charge—Sanitation Strategies for Rural Communities (A Resource for Effective Local Planning), 1998. Available from University of Alaska-Sitka. To order, call John Carnegie (800) 478-6653 or (907) 774-7755. The guide focuses on wastewater facilities but the principles of community planning will be useful for solid waste management planning.

Trash Management Guide, 1992. Available from the Alaska Health Project. To order, call: (907) 276-2864. A guide for completing a solid waste management plan for small, rural villages in Alaska.

Village Water Resource Curriculum: Grades K–12. Available from the Alaska Cooperative Extension, University of Alaska Fairbanks. To order, call (907) 452-1530.

Your Toxic Trash, 1993. Available from KERA-TV in Dallas, Texas. 27 minute video describing household hazardous wastes and information about proper disposal. To order, call (214) 740-9238.

Yukon River Inter-Tribal Watershed Summit. 1998. Available from the Yukon River Inter-Tribal Watershed Council. To order, call (907) 258-3337. Video (43 minutes) documenting the first meeting of the Yukon River Inter-Tribal Watershed Council in Galena.

Directory

Directory

Toll-free and emergency numbers:

Air Quality:	(800) 770-8818
Alaska Division of Emergency Services:	(800) 478-2337
Anchorage Poison Center:	(800) 478-3193
Consumer Product Safety Commission:	(800) 638-2772
Department of Environmental Conservation: General Assistance/Rural Issues:	(800) 510-2332
Hazardous waste:	(800) 550-7272
Indoor Air Quality Information Clearinghouse:	(800) 438-4318
Information Exchange HAZMAT:	(800) 752-6367
Marine Toxins Reporting:	(800) 731-1312
National Lead Information Center:	(800) 532-3394
Northern Alaska Drinking Water Information:	(800) 770-2137
Hazardous materials regulations:	(800) 550-7272
Radon:	(800) 767-7236
Spill Reporting after hours:	(800) 478-9300
Underground Storage Tanks:	(800) 478-4974
Wetlands information:	(800) 832-7828
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Regional Health Corporations/ Native Associations:

- *Provide a range of expertise and materials on environmental/ environmental health and other issues. Some regional corporations have their own environmental education programs.*
- *Many have Remote Maintenance Workers (RMWs) and sanitarians who service villages in the region.*

Aleutian Pribilof Islands Association, Inc.
201 East 3rd Avenue
Anchorage, AK 99501
Tele: (907) 276-2700
Fax: (907) 279-4351

Association of Village Council Presidents
PO Box 219
Bethel, AK 99559
Tele: (800) 478-3521
Fax: (907) 543-2623

Bristol Bay Area Health Corporation
PO Box 130
Dillingham, AK 99576
Toll free: (800) 478-5201
Tele: (907) 842-5201
Fax: (907) 842-9409

Bristol Bay Native Association
PO Box 310
Dillingham, AK 99576
Toll free: (800) 478-5257
Fax: (907) 842-5932

Chugachmiut
4201 Tudor Center Dr., Suite 201
Anchorage, AK 99508
Tele: (907) 562-4155
Fax: (907) 563-2891

Copper River Native Association
PO Box H
Copper Center, AK 99573
Tele: (907) 822-5241
Fax: (907) 822-5247

Kodiak Area Native Association
3449 Rezanof Dr., East
Kodiak, AK 99615
Toll Free: (800) 478-5721
Tele: (907) 486-9800
Fax: (907) 486-9898

Maniilaq Association
PO Box 256
Kotzebue, AK 99752
Toll Free: (800) 478-3312
Tele: (907) 442-3311
Fax: (907) 442-7678

Metlakatla Indian Community
Annette Island Service Unit
PO Box 439
Metlakatla, AK 99926
Tele: (907) 886-6601
Fax: (907) 886-6976

North Slope Borough Health Dept.
PO Box 69
Barrow, AK 99723
Toll Free: (800) 478-6606 or (907) 852-0260
Fax: (907) 852-0268

Norton Sound Health Corporation
PO Box 966
Nome, AK 99762
Tele: (907) 443-3311
Fax: (907) 443-3139

Southcentral Foundation
670 W. Fireweed Lane, Suite 123
Anchorage, AK 99503
Toll Free: (800) 478-3343 or (907) 276-3343
Fax: (907) 265-5925

Southeast Alaska Regional Health Consortium
3245 Hospital Drive
Juneau, AK 99801
Toll Free: (800) 478-3245 or (907) 463-4000
Fax: (907) 463-4075

Tanana Chiefs Conference, Inc.
Office of Environmental Health,
1867 Airport Way, Suite 215
Fairbanks, AK 99701
Toll Free: (800) 478-6822 or (907) 452-8251
Fax: (907) 459-3989

Yukon-Kuskokwim Health Corp.
PO Box 287
Bethel, AK 99559
Toll Free: (800) 478-3321 or (907) 543-6000
Fax: (907) 543-6366

U.S. Environmental Protection Agency (EPA)

Website: http:www.epa.gov/epahome/search.html

In Alaska...
U.S. Environmental Protection Agency
Anchorage Operations Office*
222 West 7th Ave., #19
Anchorage, AK 99513-7588
Toll Free: (800) 781-0983
Fax: (907) 271-3424

*Offices in Kenai and Juneau as well

In Seattle...
U.S. EPA Region 10 Office
1200 Sixth Avenue
Seattle, WA 98101-9797
Toll Free: (800) 424-4372
Fax: (206) 553-0149
Website: http://www.epa.gov/r10earth

EPA Anchorage Programs Include:
- Office of Air Quality
- Tribal Program
- Sustainable Communities
- Ecology
- Water, Ecosystems & Wetlands (Wetlands, Underground Tanks Water Quality, Oil & Gas)
- Hazardous Waste (transportation, treatment, storage & disposal)
- Emergency Response and Spill Prevention
- Superfund (hazardous sites)
- Rural Sanitation

Alaska Department of Environmental Conservation (ADEC)

Website: http://www.state.ak.us/dec/home.htm

Anchorage Office
555 Cordova St.
Anchorage, AK 99501-2617
Toll Free: (800) 510-2332
Fax: (907) 269-7600

Juneau Office
410 Willoughby Ave., Suite 105
Juneau, AK 99801-1795
Tele: (907) 465-5355
Fax: (907) 465-5362

Fairbanks Office
610 University Avenue
Fairbanks, AK 99709-3643
Tele: (907) 451-2360
Fax: (907) 451-2188

Other ADEC regional offices include:

Bethel:	(907) 543-3215
King Salmon:	(907) 246-6636
Cordova:	(907) 424-5585
Dutch Harbor:	(907) 581-1681
Kodiak:	(907) 486-3350
Palmer:	(907) 745-3236
Wasilla:	(907) 376-5038
Valdez:	(907) 835-4698
Ketchikan:	(907) 225-6200
Sitka:	(907) 747-8614
Tok:	(907) 883-4381
Kenai/Soldotna:	(907) 262-5210

ADEC Programs Include:
- Community Assistance and Information
- Compliance Assistance
- Rural Issues Program
- Watershed Development
- Water Quality Protection
- Village Safe Water
- Drinking Water & Wastewater
- Air Quality Maintenance & Improvement
- Governor's Council on Rural Sanitation
- Facility Operations Assistance
- Municipal Grants
- Solid Waste Management
- Seafood Processing and Development
- Animal Industries
- Environmental Sanitation & Food Safety
- Laboratory & Pesticide Services
- Contaminated Sites
- Storage Tank Program
- Spill Prevention & Emergency Response

Community Information

Alaska Department of Community and Regional Affairs

Municipal and Regional Assistance Division
333 W. 4th Ave., Suite 220
Anchorage, AK 99501-2341
Tele: (907) 269-4500
Fax: (907) 269-4539

Assists with planning for land use, solid waste, and other community issues. Rural Utility Business Advisor (RUBA) Program provides management assistance and financial training related to wastewater utilities to cities and villages.

Alaska Ombudsman

Toll Free: (800) 478-4970 (Anchorage & Juneau)
Toll Free: (800) 478-3257 (Fairbanks)

If you are having a problem with an Alaska state agency, or you think a state agency is violating the law, a call to the ombudsman can open an investigation.

Drinking Water

Toll-free numbers:

Northern Alaska Drinking Water Info.	(800) 770-2137
Drinking Water and Wastewater Program at ADEC	(800) 510-2332
Rural Issues Program at Dept. of Environmental Conservation	(800) 510-2332

Alaska Department of Environmental Conservation*

Division of Environmental Health/Drinking Water and Wastewater
(see p. 12 for contact information)
Website: http://www.state.ak.us./local/akpages/ENV.CONSERV/deh/water/home.htm

The Drinking Water Program is responsible for ensuring that water supplied for public consumption meets minimum health standards.

Alaska Health Project

218 E. 4th Ave.
Anchorage, AK 99501
Tele: (907) 276-2864
Fax: (907) 279-3089

Mission is to provide information and advocacy on occupational and environmental health issues. Issues: toxics, water pollution, waste disposal, wildlife, pesticides, recycling, worker safety, community organizing, waste reduction activities.

Environmental Protection Agency

Drinking Water and Groundwater Protection Program (see p. 11 for contact information)
Website: http://www.epa.gov/epahome/media.htm#water

Alaska Native Health Board

Rural Sanitation Program
4201 Tudor Centre Dr., Suite 105
Anchorage, AK 99508
Toll Free: (800) 478-2426
Tele: (907) 562-6006
Fax: (907) 563-2001

Full time Mission: To promote the spiritual, physical, mental, social, and cultural well-being and pride of Native people, and to assist Alaska Natives is pursuing health careers.

Rural Alaska Sanitation Coalition

4201 Tudor Centre Dr., Suite 105
Anchorage, AK 99508
Tele: (907) 562-6006
Fax: (907) 563-2001
Email: rasc@anhb.org

The Rural Alaska Sanitation Coalition is a statewide coalition committed to bringing about positive long term change in the substandard water, sewer, solid waste, and related environmental health conditions existing in Alaska villages.

Solid Waste

Toll free numbers

Hazardous Waste:	(800) 550-7272
Rural Issues Program at Dept. of Environmental Conservation	(800) 510-2332

Alaska Community Action on Toxics

135 Christensen Drive, Suite 100
Anchorage, Alaska 99501
Tele: (907) 222-7714
Fax: (907) 222-7715
Website: http://www.akaction.net

The mission of Alaska Community Action on Toxics (ACAT) is to protect human health and the environment from the toxic effects of contaminants. They work to ensure responsible cleanup of contaminated sites and empower community involvement in cleanup decisions. They strive to stop the production, proliferation, and release of toxic chemicals.

Alaska Department of Community and Regional Affairs

333 W. 4th Ave., Suite 220
Anchorage, AK 99501-2341
Tele: (907) 563-1073

Municipal and Regional Assistance Division can assist with planning for land use, solid waste, and other community issues.

Alaska Department of Environmental Conservation

Solid Waste Management Program
Website: http://www.state.ak.us/local/akpages/ENV.CONSERV/deh/solidwaste/home.htm
(see p. 12 for contact information)

The Solid Waste Management Program's mission includes working with all communities towards improving environmental management of Alaska's landfills.

Alaska Health Project

218 E. 4th Ave.
Anchorage, AK 99501
Tele: (907) 276-2864
Fax: (907) 279-3089

Mission is to provide information and advocacy on occupational and environmental health issues. Issues: toxics, water pollution, waste disposal, wildlife, pesticides, recycling, worker safety, community organizing, waste reduction activities.

Alaska Native Health Board

Rural Sanitation Program
4201 Tudor Centre Dr., Suite 105
Anchorage, AK 99508
Tele: (907) 562-6006
Fax: (907) 563-2001

Full time Mission: To promote the spiritual, physical, mental, social, and cultural well-being and pride of Native people, and to assist Alaska Natives in pursuing health careers.

Center for Health, Environment & Justice

(Formerly known as Citizens Clearinghouse for Hazardous Wastes, Inc.)
P.O. Box 6806
Falls Church, VA 22040
Tele: (703) 237-2249
Fax: (703) 237-8389

Provides organizing and technical assistance about hazardous wastes and exchanges information between hundreds of community groups around the country. Publishes a newsletter and about 130 guidebooks.

Environmental Protection Agency

Hazardous Waste Program
Solid Waste Program
Tribal Program
(see p. 11 for contact information)

Rural Alaska Community Action Program, Inc. (RurAL CAP)

RAVEN AmeriCorps Program (formerly known as EPA AmeriCorps Program)
P.O. Box 200908
Anchorage, AK 99520
Toll free: (800) 478-7227
Tele: (907) 279-2511
Fax: (907) 278-2309

Goal is to improve solid waste management, sanitation, energy conservation and environmental awareness in Native villages throughout Alaska. Each year, twenty-five rural Alaskans are selected to serve their home communities through education and direct service activities. Contact them to see how you can become a member.

Rural Alaska Sanitation Coalition

4201 Tudor Centre Dr., Suite 105
Anchorage, AK 99508
Tele: (907) 562-6006
Fax: (907) 563-2001
Email: rasc@anhb.org

The Rural Alaska Sanitation Coalition is a statewide coalition committed to bringing about positive long term change in the substandard water, sewer, solid waste, and related environmental health conditions existing in Alaska villages.

Tank Farms

Toll Free Numbers:

Underground Storage Tanks:	(800) 478-4974
Spill Reporting:	(800) 478-9300
Rural Issues Program at Dept. of Environmental Conservation	(800) 510-2332

Alaska Department of Environmental Conservation

Storage Tank Program
Division of Spill Prevention and Response
(see p. 12 for contact information)

The Storage Tank Program's mission is to prevent and clean up spills from fuel storage tank systems, and provide technical and financial assistance to tank farm owners and operators for tank upgrades, closures and site cleanups.

Air Quality

Toll Free Numbers:

ADEC Air Quality:	(800) 770-8818
Indoor Air Clearinghouse:	(800) 438-4318
Cigarette Smoke Hotlines/ Center for Disease Control:	(800) 232-1311
Indoor Air Quality Information:	(800) 438-4318
Rural Issues Program at Dept. of Environmental Conservation	(800) 510-2332

Alaska Department of Environmental Conservation

Air Quality Maintenance/Air Quality Improvement
(see p. 12 for contact information)

The program mission of the Air Quality Maintenance Program is to regulate the air pollution emitted from industrial facilities to protect the Alaska public and environment from the detrimental effects of air pollution. The program mission of the Air Quality Improvement Program is to protect public health and the environment by working to achieve ambient air quality standards throughout Alaska.

American Lung Association of Alaska

1057 West Fireweed Lane., Suite 210
Anchorage, AK 99503-1736
Tele: (907) 276-5864
Fax: (907) 263-2090
Website: http://www.lungusa.org

American Lung Association of Alaska offers a wide variety of lung health services to people of Alaska. They have many materials available on indoor air pollution. Visit their website to access this information.

Environmental Protection Agency

Air Quality Program
Website: http://www.epa.gov/oar/oaqps/
(see p. 11 for contact information)

Our Sacred Breath

Tribal Indoor Air Quality Project
P.O. Box 498
Suquamish, WA 98392
Tele: (360) 598-3311 ext. 218
Fax: (360) 598-6295
Email: dnr@suquamish.nsn.us

Provides training and materials to Tribes for assessing indoor air quality issues.

Recycling

ABS Alaska Battery Recycling

2128 Van Horn Road
Fairbanks, AK 99701
Tele: (907) 452-2002
Fax: (907) 451-1949

Recycles lead-acid batteries.

Alaskans for Litter Prevention and Recycling (ALPAR) Flying Cans Program

PO Box 200393
Anchorage, AK 99520
Tele: (907) 274-3266
Fax: (907) 274-8023

The Flying Cans Program with Alaskans for Litter Prevention and Recycling (ALPAR) will carry aluminum cans from villages throughout Alaska (accessible only by air) to a recycling center in Anchorage for free. The recycling center will then send the village a check for the value of the aluminum.

Allied Batteries, Seattle

105 S. Brandon
Seattle, WA 98108
Tele: (206) 762-5522
Fax: (206) 762-0713

Will pick up lead-acid batteries from Port of Seattle at no charge.

Anchorage Recycling Center

6161 Rosewood
Anchorage, AK 99507
Tele: (907) 562-2267
Fax: (907) 565-4459

Recycles aluminum cans.

Battery Specialists of Alaska

1939 East 5th Ave.
Anchorage, AK 99501
Tele: (907) 276-5251
Fax: (907) 279-9834

Recycles lead-acid batteries.

Dyno Battery, Seattle

4248 23rd Ave., West
Seattle, WA 98119-1266
Tele: (206) 283-7450
Fax: (206) 283-7498

Will pick up lead-acid batteries from Port of Seattle at no charge.

Exide Batteries

8100 Petersburg
Anchorage, AK 99507
Tele: (907) 344-1390
Fax: (907) 344-8997

Recycles lead-acid batteries.

Used Oil Burner Vendors

Craig Taylor Equipment Company

HC-34 Box 2133
Wasilla, AK 99654
Toll free: (800) 973-2603
Fax: (907) 373-6723

Gleason Research, Inc.

P.O. Box 771171
Eagle River, AK 99577
Tele: (907) 694-2299
Fax: (907) 694-8535

NuEra Technologies

P.O. Box 112332
Anchorage, AK 99511-2332
Toll Free: (800) 347-9575
Tele: (907) 345-6411
Fax: (253) 639-3622

Super Sack Suppliers

Supersacks are large plastic bags used by some rural communities to contain solid waste. In areas where there is no soil material available to cover wastes at the landfill, using supersacks can help reduce the problem of windblown litter.

New:

Helios Containers Systems, Inc.
251 Covington Dr.
Bloomingdale, IL 60108
Toll free: (800) 336-3422
Fax: (630) 529-8695

Cost: For size 35' X 35' X 52' bag, $19–$22 each for full open top, discharge spout style bottom; $5 more for full open bottom style.
Shipping weight: Approximately 8 pounds each.

Reconditioned:

The Bag Connection, Inc.
459 9 Street
Dundee, OR 97115
Toll free: (800) 622-2448
Fax: (503) 538-0418

Cost: $13–$15 each.
Shipped in bundles of 50.

Alaskan Environmental/ Environmental Health Organizations

Alaska Center for the Environment

519 West 8th Ave., #201
Anchorage, AK 99501
Tele: (907) 274-3621
Fax: (907) 274-8733
Email: akcenter@alaska.net

ACE is a non-profit environmental advocacy and education organization dedicated to the conservation of Alaska's natural resources. Since 1971, it has worked to promote sound environmental policy & programs in the southcentral Alaska area and statewide. ACE is at the forefront on environmental education and land use, forestry, recycling, transportation, & quality-of-life issues. < http://www.akvoice.org/ >

Alaska Conservation Foundation

750 W. 2nd Ave., Suite 104
Anchorage, Alaska 99501-2167
Tele: (907) 276-1917
Fax: (907) 274-4155
Email: acfinfo@akcf.org

Receives funds and makes grants to protect the integrity of Alaska's ecosystems and to promote sustainable livelihoods among Alaska's communities and peoples.

Alaska Conservation Voice

(Alaska Environmental Lobby)
419 Sixth St., Suite #321 and Suite #323
P.O. Box 22151
Juneau, AK 99802-2151
Tele: (907) 463-3366
Fax: (907) 463-3312
Email: kirsten@akvoice.org

Alaska Conservation Voice is an organization dedicated to protecting Alaska's environment through public education and advocacy in the state legislature, the U.S. Congress, and other policy forums. Issues: forestry, mining, oil & hazardous substances, roads, land management, and other environmental issues

Alaska Health Project

218 E. 4th Ave.
Anchorage, AK 99501
Tele: (907) 276-2864
Fax: (907) 279-3089

Mission is to provide information and advocacy on occupational and environmental health issues. Issues: toxics, water pollution, waste disposal, wildlife, pesticides, recycling, worker safety, community organizing, waste reduction activities.

Alaska Indigenous Council on the Environment

P.O. Box 100454
Anchorage, AK 99510

Alaska Native Health Board

Rural Sanitation Program
4201 Tudor Centre Dr., Suite 105
Anchorage, AK 99508
Toll free: (800) 478-2426
Tele: (907) 562-6006
Fax: (907) 563-2001

Mission: To promote the spiritual, physical, mental, social, and cultural well-being and pride of Native people, and to assist Alaska Natives is pursuing health careers. Issues: toxics, water pollution, waste disposal, facility siting, community organizing, HIV/AIDS prevention activities.

Alaska Native Science Commission

University of Alaska-Anchorage
3211 Providence Drive
Anchorage, AK 99508
Tele: (907) 786-7702
Fax: (907) 786-7739
Email: ayansc@uaa.alaska.edu

Mission: To endorse and support scientific research that enhances and perpetuates Alaska Native cultures, and ensures the protection of indigenous cultures and intellectual property. They provide information, referral and networking services for researchers seeking active partners in the Native community.

Alaska Women's Environmental Network

750 W. Second Ave., #200
Anchorage, AK 99501-2168
Tele: (907) 258-4810
Fax: (907) 258-4811
Email: levensaler@nwf.org

The Alaska Women's Environmental Network is a program of the National Wildlife Federation-Alaska office. It creates networking opportunities and training programs to promote women's leadership in Alaska's conservation efforts and to create strategic alliances to more effectively achieve protection of Alaska's rich natural heritage.

Alaska Inter-Tribal Council

431 W. 7th Ave., Suite 201
Anchorage, AK 99501
Toll Free: (888) 560-AITC
Tele: (907) 563-9334
Fax: (907) 563-9337
Private non-profit Alaska Native organization. One of the most prominent goals of AITC includes development of initiatives which build the capacity of Alaska Tribal Governments to conduct programs in the areas of environmental health and natural resource management.

Arctic Network

P.O. Box 102252
Anchorage, AK 99510-2252
Tele: (907) 272-2452
Fax: (907) 272-2453
Email: arcnet@alaska.net

Arctic Network works with local communities and national conservation interests to promote habitat protection and healthy ecosystems to conserve biological diversity while insuring continued subsistence uses of renewable wild resources. Their geographic focus is from the Aleutian Chain north, with an emphasis on the Bering Sea and Chukchi seas. Global warming and contaminants in the food chain are among the pollution issues they address.

Gwich'in Steering Committee

P.O. Box 202768
Anchorage, AK 99520
Tele: (907) 258-6814
Fax: (907) 258-4550
Email: gwichin@alaska.net

The Gwich'in Steering Committee is a coalition of American and Canadian Gwich'in Athabascan Indian villages working to prevent oil drilling in the coastal plain of the Arctic National Wildlife Refuge-the calving grounds of the Porcupine Caribou, upon which the Gwich'in way of life depends. Issues: oil development activities: organizing, cultural preservation & education.

Inuit Circumpolar Conference

1577 C Street, Suite 100A
Anchorage, AK 99503
Tele: (907) 274-9058
Fax: (907) 274-3861

The focus of this group is centered around the environmental issues of sustainable development, long range transport of pollutants, and climate change; all of which have potentially serious implications for the Inuit homeland and population.

Louden Tribal Council

PO Box 244
Galena, AK 99741
Tele: (907) 656-1711
Email: info@loudentribe.org

With support from the Environmental Protection Agency, Louden Tribal Council is implementing a variety of environmental programs that are intended to serve as models for other Tribes and rural communities. They are also working with others to build a strong network of Tribes that can together deal with special issues facing the Yukon watershed.

Northern Alaska Environmental Center

218 Driveway Street
Fairbanks, Alaska 99701-2895
Tel: (907) 452-2806
Fax: (907) 452-3100
Email: naec@mosquitonet.com
Website: http://www.mosquito.net/~naec

Mission: To preserve wilderness and natural habitats in interior and northern Alaska; improve the quality of the region's natural and human environment; promote conservation and sustainable use of the region's natural resources; and empower citizens to take an active role in protecting the environment.

Rural Alaska Community Action Program, Inc. (RurAL CAP)

RAVEN AmeriCorps Program (formerly known as EPA AmeriCorps Program)
P.O. Box 200908
Anchorage, AK 99520
Toll free: (800) 478-7227
Tele: (907) 279-2511
Fax: (907) 278-2309

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Rural Alaska Sanitation Coalition

4201 Tudor Centre Dr., Suite 105
Anchorage, AK 99508
Tele: (907) 562-6006
Fax: (907) 563-2001
Email: rasc@anhb.org

The Rural Alaska Sanitation Coalition is a statewide coalition committed to bringing about positive long term change in the substandard water, sewer, solid waste, and related environmental health conditions existing in Alaska villages.

Sovereignty Network Alaska Rights Consultants Tribal Organization

HC 04, P.O. Box 9880
Palmer, AK 99645
Tele: (907) 745-0505

Mission: To provide information to traditional Alaskan native villages, and to aid in informed decision making to better the community. Issues: toxics, energy, air pollution, water pollution, waste disposal, wildlife, environmental justice, community organizing, sovereignty rights, subsistence rights, protection of traditional native lands, reassertion of traditional governments. Activities: lobbying, research, organizing, education, direct action.
<http://www.conservenow.org/trustees_for_alaska.html>

Trustees for Alaska

725 Christensen Drive, #4
Anchorage , AK 99501-2101
Tele: (907) 276-4244
Fax: (907) 276-7110
Email: ecolaw@trustees.org

Trustees for Alaska is an Alaska-based nonprofit environmental and natural resources law firm. Since 1974, it has represented conservation groups, Native communities and fishers in cases concerning public lands, marine species protection, logging, mining, oil and gas lease sales, state land disposal, air and water quality, hazardous wastes and related issues.

Yukon River Inter-Tribal Watershed Council

308 G Street, Suite 223
Anchorage, AK 99501
Tele: (907) 258-3337
Fax: (907) 258-3339

An organization of Indigenous Tribes/First Nations from the headwaters to the mouth of the Yukon River. Mission is to clean up and preserve the Yukon River for the protection of our own and future generations of our Tribes/First Nations and for the continuation of our traditional Native way of life.

Other Organizations:

Americans for Indian Opportunity (AIO)

Ambassador's Program
681 Juniper Hill Road
Bernalillo, New Mexico 87004
Tele: (503) 867-0278
Fax: (503) 867-0441

Leadership program for American Indians and Alaska Natives between the ages of 25-35. Up to sixteen participants are selected nationwide each year. The Ambassador's Program is the only leadership initiative in the United States encouraging participants to weave their respective traditional Tribal values into contemporary reality. The program provides a creative combination of mentorship, personal reflection, dialogue with national decision-makers, community involvement, communications training and discovery process into Tribal values.

American Indian Science and Engineering Society (AISES)

1630 30th St.
Boulder, CO
Tele: (303) 939-0023
Local Chapter of AISES:
University of Alaska, Fairbanks: (907) 474-6450
University of Alaska, Anchorage: (907) 786-4000

American Indian Science and Engineering Society (AISES) is a non-profit organization which seeks to increase the number of American Indian scientists and engineers in the nation and to develop technologically informed leaders in the Indian community. AISES provides teacher training and student college scholarships. Students interested in pursuing a college education in environmental or other sciences should be aware of this resource.

Centre for Indigenous Environmental Resources

310 Johnston Terminal, 25 Forks Market Road
Winnipeg, Manitoba
CANADA R3C 438
Tele: (204) 956-0660
Fax: (204) 956-1895
Email: earth@cier.mb.ca

The Centre for Indigenous Environmental Resources was created for the express purpose of establishing and implementing environmental capacity-building initiatives for First Nations.

Four World International Institute for Human and Community Development

1224 Lakemount Boulevard
Lethbridge, Alberta CANADA T1K 3I K
Tele: (403) 320-7144
Fax: (403) 329-8383
Email: ien@igc.apc.org
Website: http://nucleus.com/4worlds

Based on the principals and strategies of elders, Four Worlds has initiated a wide variety of projects, programs and prototype models, first in support of Tribal community healing and development, and later in other communities and nations around the world. Some of these initiatives have included youth development, women's development, school curriculum design and development, community governance training, community healing, community development training, and an Elderhealth program.

Indigenous Environmental Network

P.O. Box 485
Bemidji, MN 56601
Email: ien@igc.apc.org

The Indigenous Environmental Network is an alliance of indigenous peoples protecting the sacredness of Mother Earth and building sustainable communities.

KIVU Nature Inc.

47 Okanagan Dr.
Nepean, Ontario
CANADA K2H 7E9
Tele: (613) 828-6701
Fax: (613) 828-1632
Email: aemery@istar.ca

Mission is to bring people of all nations and origins to a greater understanding and appreciation of the natural world. KIVU Nature Inc. has taken a lead role in developing guidelines on how to use indigenous traditional knowledge in environmental projects and assessments.

Native American Fish & Wildlife Society

750 Burbank St.,
Broomfield, CO 80020
Tele: (303) 466-1725
Fax: (303) 466-5414
Website: http://www.nafws.org/

The Society is a non-profit membership organization. It exists for the protection, preservation and enhancement of Native American fish & wildlife resources. The Society's purposes are charitable, educational, scientific and cultural.

Planet Peace

P.O. Box 487
Ashland, OR 97520
Website: http://www.planet-peace.org/

Planet Peace is run by Indigenous community organizers and activists dedicated to the world-wide distribution of information regarding Indigenous and environmental grassroots initiatives from around the globe. It is our mission to convey, inform, educate and promote those principles which are dedicated to the protection and preservation of our cultures, traditional customs and ceremonies.