ALASKA SOLID WASTE NEWS

Spring Issue

Spring reminds us of new beginnings.

2013 Rural Community Environmental Job Training Graduates and Keynote Speaker Paul Boskovsky. Congratulations!!

Happy Spring!!! Whether living further South or up in the North, we're all usually happy to welcome the sun to be a bigger part of our lives. Spring is so interesting in Alaska. For the Southeast, and parts of Bristol Bay & Southcentral, we think of Spring as Breakup time, and by mid-Spring are preparing for open water fishing. In much of the rest of the State, breakup doesn't happen till later, but the warmer temperatures still bring a different subsistence season, and a time to prepare for it. And everywhere—in the snow or in the fern forest, nature is renewing and bringing forth new life.

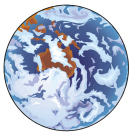
Hmmm, garbage can't much compete with that. But there is still preparation that needs to be done for the season ahead. Backhaul inventories, supply & equipment purchases, contract signings, seasonal cleanup hire, last chance transporting safely and more cheaply via snow/ice are on the list of most of us here. It's just another way that villages need to be ready. If you check out our resource section, you can read about some cool new backhaul planning help, and help for the too many that must address honeybucket issues along with their solid waste challenges. Summer brings thoughts of stocking up on fuel and heavy fuel use for subsistence. Check out Gakona's project in turning plastics to fuel! One day, our fuel will be home-grown, and our communities will see wastes as potential raw material for fuel and for any number of other reuse ideas. Spring is for big, new ideas, vision, and hope. Here's hoping you and yours have a rich and enjoyable Spring, full of new life.

SPRING 2013

Inside

In every issue

Community Environmental Demonstration Projects – the results are in!



The FY12 Community Environmental Demonstration Projects (CEDP) have closed out, and project summaries can be accessed at: http://www.zendergroup.org/cedp.html . The CEDP is also known as the "Alaska Tribal Multi-Media" or "Fred Hansen" Grant, and it is funded by USEPA. ANTHC and Zender Environmental manage the actual sub-grants, which range from $5,000 to $30,000. The projects must last only 1 year, and improve the health and environment in Alaska Tribal communities. In FY12, 9 communities were awarded grants on a variety of environmental topics, including a subsistence lands cleanup project, a watershed assessment and monitoring project related to climate change, and a home fuel tank spill management project. All of these projects and more are described at the link given above, along with the results, lessons learned, and a timeline of the project. Each community presented their projects at AFE this year – you might have seen them there! They all worked hard and ANTHC and Zender are proud of the work they accomplished that will help other communities statewide. You can also view the funded projects for the current FY13 year. These projects include a honeybucket vacuum system demonstration and an antifreeze recycling program. And finally, please check out the article on page 5 here on Gakona's Plastic to Oil project! They were an FY12 grantee. If you would like more information about these grants and this program, please contact Jacqueline Shirley at jshirley@zendergroup.org or 907-952-9973. For more information about any of the projects, you can also email or phone the community contact directly. They have all graciously agreed to share their valuable lessons learned so that others may benefit!

Need Water Quality Training? Make a Quick Call for these Dates in May!!

When it rains, it pours….Three Water Quality Trainings in May

Let's start sampling! Zender Environmental as well as two other entities are holding water quality trainings in May 2013. It is kind of humorous. As many of you know, water quality trainings in Alaska hardly ever happen. But these three entities each obtained funding from different sources at the same time! Each training is listed below along with contact details. Because water quality is so in demand, and trainings happen so rarely, these trainings filled up quickly. But there are still a couple spots, so call quickly if you think you can manage a quick trip!

Zender Environmental Water Quality Training

May 15-17, 2013 in Anchorage at the Campbell Creek Science Center. The training is free but no there are no scholarships available. See our website for more information about the training www.zendergroup.org/sw.html . This training is full, but contact April Reed to be placed on a waitlist. areed@zendergroup.org , 717-4754.

Kuskokiwm River Watershed Council (KRWC) Workshop

May 1-3, 2013 in Bethel at the Kuskokwim Campus. Scholarships are available if you contact them soon. Contact Lucille Kalistook at KRWC at outreach@kuskokwimcouncil.org , 543-1426 . See their website for an application, agenda and more information www.kuskokwimcouncil.org/index.php?option=com_content&view=article&id=83&Itemid=84

Bristol Bay Native Association (BBNA) Water Quality Recertification Class

May 13-17, 2013 at the Bristol Bay Campus in Dillingham**.** Note that this training is only open to communities within the region. Contact Susan Flensburg, sflensburg@bbna.com, 842-6241.

CULTURE CORNER

JUGGLING

Nellie Sheldon, right, watches Rosaline Stalker juggle stones one-handed while passing time subsistence fishing at their fish camp, a mile south of Kotzebue. PHOTO BY MICHAEL PENN, Photo source: Thomas, Lori, The Juneau Empire.
http://www.akhistorycourse.org/articles/article.php?artID=355

Juggling was a past-time practiced by many Native cultures not just in Alaska, but throughout the Lower 48 and around the world. Many people just used pebbles for juggling. However, some Inuits made juggling balls out of caribou hide.

Juggling was mostly a solitary activity used to pass the time but a man from Unalakleet, John Aulize, remembers times when the whole village would juggle.

Juggling was also sometimes accompanied by music. These songs were pebble juggling game songs and they were fast and rhythmic to match the pace of the juggling. The book *Yupik Eskimo Songs* has juggling songs from Yupik and Inupiat-speaking villages.

Sources: Kerr, Jim. "Juggling in Alaska as an historic native American pastime". *The Museum of Juggling Information Service.* Juggling Information Service. 4 March 2013. Web. 4 March 2013. *http://www.juggling.org/museum/ethnography/inuit.html*

Bethel Environmental Summit

Mark your calendar! Orutsararmiut Native Council's Natural Resources and Environmental Program is hosting a Regional Environmental Summit next month in Bethel, Alaska on **May 21st- 23rd, 2013**. Topics will include:

- Traditional Ecological Knowledge & Yup'ik Ways of Living
- Brownfields
- Air
- Water
- Solid Waste, Recycling, Backhauling
- Climate Change
- Mining
- …and more!

There is no registration! If you have any questions or need more info please e-mail: *rmaxie@nativecouncil.org*

Water Quality QAPPs: Need Some Guidance?

A QAPP (or Quality Assurance Project Plan) is a document that outlines the correct procedures to follow in collecting data so that the results are reliable, and fit the project needs. A lot of folks are concerned about water quality impacts from their dumpsites. We're asked quite often about QAPP's for water quality projects, and whether there are any sample QAPP's or templates to view. So we developed a page of resources for developing water quality QAPP's, and you can see it at *www.zendergroup.org/water_quality.html* On this page you will find blank template QAPP's, sample QAPP's that have been filled out and approved, and some general resources for developing QAPP's. Check it out! If you have an approved QAPP of your own you'd like to share, we would love to post it. If you are still looking for assistance with your QAPP, give us a call and we will try to help you or find someone else that can. You can contact Simone at 907 277 2111 or *ssebalo@zendergroup.org*

Resource Circle

More Backhaul Tools! Spring is here and you might be thinking about backhaul this summer—either by summer barge or by those extra planes that might come in for projects. With so much other work that needs to be done this season, planning for backhaul can be challenging. We have new resources that might help. The first is a **step-by-step Backhaul Setup guide** that links you to specific resources for each step. It's at: *http://www.zendergroup.org/docs/backhaul_steps.pdf*

We also have an **Inventory Form** that you can use to

determine the amounts of materials you have now to be backhauled. There is a checkbox for whether the material is prepared, the preparation steps are listed. Because you might have some material at different locations and at different preparation status, you can modify the form to best suit your setup. For example, you can add a row for your batteries already in totes, the discarded batteries lying at the boat launch, and the batteries you plan to collect from homes. The form is at : *http://www.zendergroup.org/docs/backhaul_inv.docx*

3rd, we've got a programmed spreadsheet to use for ongoing generation of materials for **future backhaul planning**. For example, if you plan to backhaul next year, you'll need to add a whole year's worth of materials to your inventory. How much is that? This form will calculate the numbers for you. Check it out at *http://www.zendergroup.org/docs/avg_annual_generation_future_backhaul.xls*

"Two Thumbs Up" Get out the popcorn for AVCP's "Getting the Waste Out" video! This video shows step-by-step packaging for e-wastes, batteries, ballasts, lights, and other mercury products. It gives compelling health risk facts, to educate your community about what you are doing and why! The film was funded by AVCP, developed by us, filmed at Total Reclaim, and features some footage and stills by Doug Huntman – a cooperative effort all around. Access it at: *http://www.zendergroup.org/backhaul_videos.html*

It's never too early to start the planning process if you're thinking of shipping materials out. The sooner you start, the more time you have to put all the pieces in place. For more backhaul information, see our **general backhaul webpage** that lists all our backhaul resources. *http://www.zendergroup.org/backhaul.html*

And speaking of being prepared for backhaul…. for those handling wastes such as batteries, used oil, and fluorescent lights, and those involved in the preparation of materials for backhaul, **HAZWOPER training** teaches how to identify potentially hazardous situations and respond to spills. If you want to hold HAZWOPER in your community or attend a training, check out our updated HAZWOPER document that lists vendors, estimated costs, and other resources: *http://www.zendergroup.org/docs/HAZWOPER.pdf*

Not just for the museum anymore… Are you looking for where to purchase **honeybucket hoppers** and related equipment and supplies? If so, this document is for you! This document lists where to purchase hoppers and other equipment, how to estimate costs, and find funding sources: *http://www.zendergroup.org/docs/hb.pdf* . If you have homes on honeybucket, you can minimize your community's health risks with best practices and the right supplies. If you need assistance applying for funding for honeybucket equipment, or have questions about honeybucket waste management, contact Simone at 907-277-2111 or *ssebalo@zendergroup.org*

Upcoming Solid Waste Training Dates

Integrated Solid Waste Planning, August 7-9, 2013 in Anchorage. Attendees are guided through a plan template, using a computer laptop. You develop a plan during class, learn advanced MS Word and Excel skills, and have an opportunity to discuss SWM problems with other villages.

Sustainable Solid Waste Management Course, September 11-13, 2013 in Anchorage. You'll hear from several speakers on different waste topics at a more in-depth level. You'll visit Schnitzer Steel and Total Reclaim to learn about backhauling metal scrap, e-wastes, batteries, and lights. The Gustavus Landfill Operator will speak in-depth about operating a small village landfill with composting, baling, and recycling programs. See *http://zendergroup.org/docs/newsletter_jan2011_lowres.pdf* to learn more about Gustavus. Other topics covered include tribal ordinances, equipment, hazardous wastes, funding, and collection.

Go to *http://zendergroup.org/sw.html* to sign up, or contact April: *areed@zendergroup.org* , 717-4754.

Village Spotlight: Gakona

For our next several spotlights, we highlight some villages that recently completed Community Environmental Demonstration Projects (CEDP). In this way, we can visit intersting villages *and* describe some innovative solid waste efforts. In this issue, we stop by the Native Village of Gakona(NVG) with a population of 236, and location at the confluence of the Copper and Gakona Rivers in the Ahtna region of Alaska. Gakona means Rabbit River. The village lies at mile 4.8 on the Tok Cutoff just east of the Richardson Highway. Ahtna Athabascans have lived in the Copper River basin for 5,000 to 7,000 years. Gakona served as a wood and fishcamp and later became a permanent village.

Gakona IGAP Program:

NVG first received funding for their EPA/IGAP program in 2004 and this grant enabled NVG to begin building its capacity to manage an environmental program. From 2005 to 2007, strong community education and recycling campaigns helped to encourage environmental awareness. By 2008, the NVG recycling program was accepting aluminum cans, newspaper, office paper, PETE plastic bottles, HDPE plastic jugs, household batteries, compact fluorescent light bulbs, lead acid batteries, and electronics. Even a cloth diaper program was implemented to further reduce waste entering the landfill.

To expand recycling efforts, NVG decided to demonstrate how they could further recycle the plastic bottles they received into a useful product…no *not* pencil holders folk☺, but crude oil which can be further refined into gasoline, diesel and kerosene! What magic invention does this? A "plastics-to-oil"conversion machine developed in Japan. Plastics are placed into a vat that is electrically heated to 800 degrees, turning most of it to a gas. The gas is routed through water, which instantly cools it and turns it into fuel. To fund the purchase of this machine, Erin Smith Emmons, NVG's IGAP Coordinator, submitted a proposal to Zender and ANTHC to compete for the CEDP grant. NVG was successful was awarded $24,500 in 2012 to demonstrate the use and lessons learned of this innovative machine for an Alaska Tribal community.

Plastic-to-oil machine

What are some of the reasons NVG was awarded? Getting plastic out of the waste stream is a common issue of concern for rural communities throughout Alaska because it often gets burned and can emit toxic fumes into the community. Backhauling plastic is not cost-effective because it does not generate revenue, is difficult to handle, and shipping costs are high. Educating the community in why and how to keep plastic out of household trash is also a common challenge. This project links plastics recycling with the production of a valued commodity – fuel – which in villages ranges from about $5 to $10/gallon or more.

Overview of the Project:

NVG used CEDP grant monies to purchase a Blest Be-H machine for $15,500. This model fits on a desk and is only for small-scale oil conversion. There are bigger machines that cost around $200,000 too, but you need way more plastic than villages generate. It works for plastic types #2, #4, #5, and #6 (and not for #1, #3, and #7). NVG then piloted the machine use for their plastics recycling. NVG's hope was to help increase community participation in their recycling program by grabbing folks' undivided interest in getting "free fuel"! Increased plastics recycling reduces the amount of non-biodegradable waste entering the landfill, and reduces the toxicity of smoke if wastes are burned. And as we all know, right now, it is pretty impossible for villages to recycle any plastics except for #1 and #2. The machine expanded Gakona's program to recycling #4, #5, and #6 too, without even the need to send the plastic to Anchorage!

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Erin traveled to neighboring villages to demonstrate the machine. Throughout the project, Gakona tracked the cost-effectiveness of using the machine—i.e. how much electricity is used to produce a gallon of oil, how much plastic it took, and how many labor hours it took for operation and maintenance, etc. They also tracked pounds of plastic collected and the number of households that participated. The projectalso included community education efforts on separating the plastic into the appropriate categories and general participation in the program. Some of the results and lessons learned are included at the end of this article.

Demonstration in Chickaloon

Sharing the Technology with other Tribes and Communities: The NVG said that one of the most enjoyable aspects of the project was traveling to other communities to demonstrate the operation of the conversion machine and share their knowledge about the technology. What follows are summaries and photos from some of their demonstrations.

Chickaloon: The conversion machine was taken to Chickaloon and demonstrated during an Elder's Luncheon. Erin presented information about the project, the importance of plastic recycling, and largescale visions and possibilities of the oil machine process. There was a very enthusiastic crowd of 45 people. Many topics were covered inside, and then the discussion moved outside where the machine was located on the porch.

Gakona: In Gakona, a demonstration of the machine was given at a community dinner. The dinner began at 5 p.m. However, the oil machine processing was started hours earlier so tribal members could see the final result. After the dinner, communication about the project and the technology began. Current community recycling efforts were discussed as well the amounts that were being recycled within the village. Later, tribal members were eager to talk about the oil machine and find out about how the other demonstrations had gone. Several tribal members joined in to extract the oil. Some of it was lit on fire to show how flammable the product is. People gathered around the machine and discussed many topics related to recycling and processing oil for several hours.

Kluti-Kaah: A presentation at an Elders luncheon at the Kluti-Kaah community hall was also given. Set-up for the oil machine was performed early in the morning and the machine began processing by 8:30 a.m. Throughout lunch, Erin briefly talked with Elders and tribal members about the importance of recycling plastics, and she discussed Kluti-Kaah's current recycling situation and efforts. Erin also explained the oil machine process and the importance of reducing our carbon footprint through plastic recycling.

Kenny Lake Fair: Another oil machine demonstration was held on August 11, 2012 at the Kenny Lake Fair. It was a great opportunity to have the people in the Kenny Lake region and beyond see the oil machine. Again, setup at the booth began early in the morning to get the machine started so that people could view the machine in action. Many people from the Copper River Basin participated in this event. Viewers were able to see the plastics being loaded and then throughout the day, see the oil that was being produced.

Elders Luncheon in Kluti-Kaah

Project Results and Lessons Learned:
The project was a great success and Gakona learned valuable information about the viability of the machine in a small village. The technology was demonstrated in 9 villages and throughout the project they converted approximately 54.5 pounds of recyclable plastics into 33 pints of oil, or 1 gallon of fuel for every 13.2 pounds of plastic. They determined that the machine uses an average of 1 kw/hr of power and the processing time to convert a full load of about 2 pounds of plastic is 3 ½ to 5 ½ hrs. So one gallon of fuel cost about $4.15 to $6.54 to make in terms of electricity usage (depending on time per load), with a PCE subsidized power rate of $0.18/kwh. If your cost is closer to $0.24/kWh, 1 gallon would cost at least

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$5.50. Once the plastic is loaded and the machine is started, the operator doesn't need to do much, but wait until the process is finished, so they can work on other tasks.

NVG's plastics recycling increased by more than 4 ½ times during the project due to people's interest! Other material recycling also increased similarly. NVG did need to spend time separating out plastics, as well as redoing their plastics program to make it easier for folks to drop-off.

From a strict cost standpoint, the $15,500 in machine costs (plus the extra labor) isn't likely to be recouped. However, some learned best practices could be used to maximize the plastics dropped off, and to minimize the labor and machine runtime needed. In fact, Chena Hot Springs uses the same model and has mentioned a cost that is about a third less than that of NVG's (even taking into account their cheaper electricity). So it is possible this machine could "pay off" for your village in the future, considering the environmental and community benefits.

NVG had some valuable lessons learned from the project that included:

- Plan and budget for spare parts and shipping.
- Be very careful during transport of machine.
- People truly appreciate recycling efforts.
- It's important to make the recycling program as "user friendly "as possible.
- When the temperature drops, recycling participation drops.

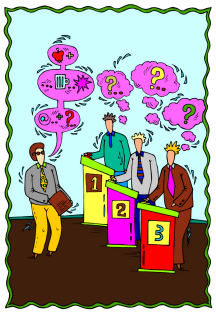
A big drawback for this small model size is even if you ran the machine 24 hours a day (and had an operator "night owl"), you can only process 8-12 pounds of plastic per day – less than one gallon of fuel. But a village of 400 generates enough plastic for about 4 - 8 gallons of fuel each day. A larger machine is needed to get better efficiency. For final words on the project, we leave you with a quote from NVG's Project Coordinator who managed the project:

"Overall, if educating and outreach is the goal then the Be-H machine (the model used for this project) will do that task to perfection. But if mass production of plastic into usable oil on a very large scale is the goal, one will need to consider the larger model machines like the NVG-200 or the NVG-1000. It was very enlightening to operate this machine and see plastic waste transform into a valuable resource that our planet is hurting the most from. The economic benefits of this technology are great and I hope one day these machines will be accessible in every major city!" – Erin Smith Emmons

If you would like to talk to the Native Village of Gakona about the specifics of their project or if you have any questions, give them a call! They would be more than happy to share their information. Contact Erin Smith Emmons at Tel: 907-822-5777, *gakonaepa@gmail.com* . For information on this project or other Community Environmental Demonstration Projects visit *http://zendergroup.org/cedp.html*

Education Corner

This is Jeopardy! Are you looking for a fun tool to help educate your community about solid waste? How about playing a game of solid waste jeopardy! You may have seen this game played before at the Alaska Forum or another training or workshop. But you can play it at home at a community meeting, school talk, or a council or environmental committee meeting! You can use a pre-programmed powerpoint file that we have on our website at *www.zendergroup.org/jeopardy.html* , or you can make up your own categories, questions, and answers!



This is a fun way to teach people about important solid waste topics and you might even be able to get that community discussion going about that topic you've been trying forever to have folks pay attention to ☺. On the website listed above, you'll find a main game file – this is a powerpoint file. When you "start" the presentation, you'll see that you can automatically click on an answer and it will bring up the question. There is also an instructions file on the site that we advise reading. It explains in detail how to use the file and how to play the game. There is even a music file on the page for playing the Jeopardy soundtrack for final Jeopardy! The game is pretty easy to use but if you have any questions about it, feel free to contact Simone at: *ssebalo@zendergroup.org*

Calendar of Events and Deadlines

DATE	EVENT/TRAINING	LOCATION	MORE INFO
May 1-3, 2013	KRWC Water Quality Training	Bethel, AK	To register email outreach@kuskokwimcouncil.org
May 13-17, 2013	BBNA Water Quality Training	Dillingham, AK	Contact Sue Flensburg at sflensburg@bbna.com
May 15-17, 2013	Zender Group Water Quality Training	Anchorage, AK	www.zendergroup.org/sw.html
May 21-23, 2013	ONC Natural Resources & Environmental Program: YK Delta Regional Environmental Summit	Bethel, AK	Contact Rhea Maxie at rmaxie@nativecouncil.org
June 4-7, 2013	ITEP Introduction to Tribal Air Quality: Level 1	Flagstaff, AZ	http://www4.nau.edu/itep/air/training_aq.asp
June 11-13 & Aug 20-22 2013	7 Generations Training	Hoonah, AK Anchorage AK	http://www.anthc.org/chs/ces/hve/7-generations.cfm
June 19-20, 2013	GAP Oversight for Council Members Training	Anchorage, AK	Contact Adrienne Fleek at Fleek.Adrienne@epamail.epa.gov
August 7-9, 2013	Integrated Solid Waste Management Plan (ISWMP) Training	Anchorage, AK	www.zendergroup.org/sw.html
August 19-22, 2013	2013 Tribal Lands Resources Forum	Pueblo of Santa Ana's Tamaya Resort, NM	http://www4.nau.edu/itep/conferences/confr_tlf.asp
September 11-13, 2013	Zender Group Sustainable Solid Waste Management Training	Anchorage, AK	www.zendergroup.org/sw.html

For more details of the events/trainings listed here, and for additional trainings, events, and funding announcements, go to: http://www.zendergroup.org/calendar.html

FUNDING ANNOUNCEMENTS & DEADLINES

Rasmuson Foundation
Deadline: *Accepted throughout the year.*
http://www.rasmuson.org/index.php

Alaska Community Foundation Capacity Building for Community Organizations Grant Program
Deadline: *Accepted throughout the year.*
http://www.alaskacf.org/GrantOpportunities/TypesofGrants/tabid/177/Default.aspx

ANA Environmental Regulatory Enhancement Grant
Deadline: *June 6, 2013*
http://www.acf.hhs.gov/grants/open/foa/view/HHS-2011-ACF-ANA-NR-0142

Abandoned Mine Land Reclamation Program
Deadline: *September 30, 2013*
http://www07.grants.gov/search/search.do?&mode=VIEW&oppId=176854

Not-for-Profit Acid Mine Drainage Reclamation
Deadline: *September 30, 2013*
http://www07.grants.gov/search/search.do?&mode=VIEW&oppId=176873

USEPA Targeted Brownfield Assessments
Deadline: Year-round.
http://yosemite.epa.gov/r10/cleanup.nsf/7780249be8f251538825650f0070bd8b/005df9235f56290e882567990080b48f?OpenDocument

"Prescription Drug Take Back" Day

We worry a lot about garbage contaminating our rivers, but often forget about the very harmful chemicals in our medicines. In studies on urban city rivers, *fish were found affected from medicine disposal.* You can safely discard unused and expired prescription and "over-the-counter" medicines at many locations. Going to Anchorage? Visit these sites on April 27th between 10am and 2pm. **Fred Meyer** at Debarr & Muldoon, or at Abbott & Lake Otis. Or visit **Carrs** at Sears Mall or Aurora Village, or **Providence Medical Arts Pharmacy** (3300 Providence Drive). *Collecting from the community?* **We recommend keeping a log & packing and sealing the box of medicines with at least one other Council-approved person present**. Then take a picture of the secured box as you drop it off.

Need more time? *Dispose of unused or expired medicines year-round* at the Anchorage Police Department, Building Lobby, 4501 Elmore Road, Monday to Friday, 8am to 8pm or UAA Police Department, Eugene Short Hall, 2601 Providence Drive, 24 hours a day, 7 days a week. For more information, call "211"or visit: *www.deadiversion.usdoj.gov/drug_disposal/index.html*

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The mission of Zender Environmental Health and Research Group, a non-profit 501(c)3 organization, is to assist underserved communities in developing programmatic capacity and community resiliency in environmental health issues. Visit us on the web at

ZENDER ENVIRONMENTAL HEALTH AND RESEARCH GROUP

308 G St #312
Anchorage, AK, 99501
Tel: (907) 277-2111
Fax:(877) 335-6780