KAW NATION ENVIRONMENTAL DEPARTMENT

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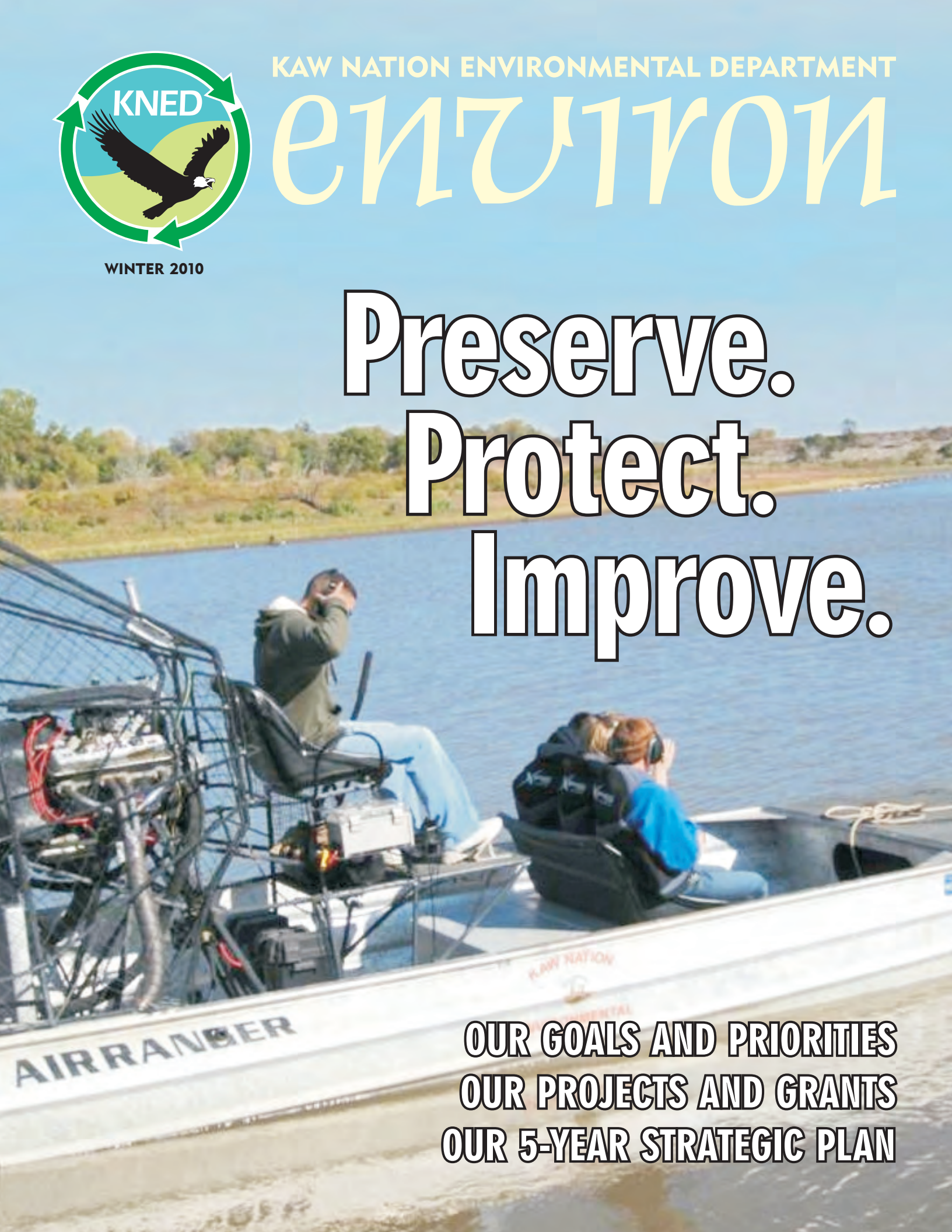
WINTER 2010

Preserve. Protect. Improve.



OUR GOALS AND PRIORITIES
OUR PROJECTS AND GRANTS
OUR 5-YEAR STRATEGIC PLAN

Kaw Nation Environmental Department

who we are

From left, James Elmore, Justin Bush, Skyler Mathews, Dave Hensley, George Fields and Dejene Alemayehu.

Kaw Nation Environment Department (KNED) was established in 1996 by the Kaw Nation to ***Preserve, Protect and Improve*** the quality of our natural resources for the benefit of Kaw Nation and their descendants.

Our office is located at 648 Grandview Drive, at the west end of the Kaw Nation Administration Complex in Kaw City, Oklahoma. We are available to review your concerns or answer any questions you might have Monday through Friday between the hours 9:00 a.m. and 5:00 p.m. You can call our toll free number at 1-866-404-5297 or 580-269-2552, extension 227.

KNED Goals and Priorities

- Represent Tribal interest to public and private entities;
- Develop a communication network inside and outside the Tribe on environmental principles and practices;
- Establish environmental management as a fundamental institutional part of the Tribe;
- Support water rights and the development of enforceable water quality standards;
- Land acquisition and management;
- Facilitate safe drinking water and water quality for members of the public by supporting water treatment plants and distribution;
- Encourage environmental stewardship among nearby schools and Tribal youth;
- Arkansas River Watershed Protection Program;
- Provide the professional capacity for environmental assessments;
- Restore ecologically degraded areas through wetland enhancement;
- Provide education materials to schools within the Kaw Nation service area;
- Strengthening our inspecting capacity and conducting outreach service to elders and youth groups;
- In close cooperation with local municipalities and county commissioners, clearing illegal dump sites that affect the health and welfare of our society.

Kaw Nation Environmental Department
our projects

Over these past several years, KNED has different programs funded by grants, that work towards the protection of air quality, water, wildlife, plants and the health and quality of life of our people. The projects we are presently working on include the following:

Water Quality Monitoring Grant

The Water Quality Monitoring Program was designed to provide continued support for the Tribe's water pollution program.

Objectives of this program will be to continue the sampling of waters to evaluate the surface water quality on tribal lands and for the purpose of determining water quality impairments over time to develop Tribal Water Standards.

Obtaining water quality data will help to determine if:

1. **The needs regarding the quality of water occurring on the nation's jurisdictional area are being met.**
2. **To note any changes in the quality and or condition of the nation's water and to help understand and define the function and health of our streams and lakes ecosystem.**

KNED also works closely with the Oklahoma Department of Wildlife Conservation, the Oklahoma Department of Environmental Quality and Oklahoma State University to assess the water quality from a biological perspective by studying fish tissue and performing macro-invertebrate studies.

KNED is monitoring the water quality of Kaw Lake, the Arkansas River, Little Beaver, Big Beaver, and Bear Creek. Water sampling is done monthly by taking physical parameter readings, such as temperature, pH, dissolved oxygen, turbidity, and salinity. The chemical data we collect include; nutrients, metals, and pesticides. Quarterly reports are finalized and submitted to the United States Environmental Protection Agency.

Environmental Exchange Grant

United States Environmental Protection Agency requires all water quality data that is collected, using U.S. EPA Funds to be submitted electronically, where in the past, this was done via hard copy.

This particular grant has also allowed us to employee Environmental IT Technician, George Fields. George has built a data base which allows us to use the water quality data collected, create the data flow and transfer this information electronically to the United States Environmental Protection Agency.

A brief history of the Wetland Grant

In 2003, an inter-agency idea was proposed to enhance a small wetland site located within the Kaw Wildlife Management Area. The 40-acre site was named the Beaver Creek Wetland and the U.S. Natural Resources Conservation Commission (NRCS) was contacted to assist with the design of the enhancement. The Beaver Creek Wetland is located near the site of the historic Beaver Creek Nightclub in eastern Kay County. The legal description of the site is E ¼ Sec. 3 T24N R5E.

In 2005, with financial assistance from the U.S. Fish and Wildlife Foundation (five stars), KNED oversaw the construction of trails, parking, and picnic tables at the site in order to create an outdoor classroom. By 2005 NRCS had designed a wetland dike and two ponds for the site and provided financial assistance to help KNED with the construction costs. In the fall of 2006 construction began on the wetland dike and the adjacent ponds. Bird houses and an observation tower were installed at the wetland site also.

These construction projects were completed in late 2007. The wetland project currently has approximately 20 acres of seasonal surface water replacing the 1¾ acres originally located at the site. There is a walking tour trail, picnic area, observation tower, and a water control structure which is used to manage the level of water with the wetland site. This wetland area can serve as a demonstration site for North Central Oklahoma.

Kaw Nation Youth Group

Wetland Grant

Definition of a wetland varies, but the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency use this official definition:

> **"Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include bogs, marshes, and swamps."**

Wetlands are much more than just weeds and water, they also provide:

- Balance of the (natural) ecosystem
- Shelter and protection for aquatic animals

The overall goal of the project is to enhance, restore, and effectively sustain the wetland, and to identify, record, and continually monitor the plants and animals in this watershed. This site is an outdoor classroom where Kaw Nation Environmental Department can conduct classes on the environment.

Air Quality Grant

Sooner Power Plant

The Air Quality Index is a rating system devised by the United States Environmental Protection Agency to score the level of air pollution present.

Air quality affects all communities in a multitude of ways. Air pollution can harm the environment, damage property, diminish agricultural production, and reduce visibility. As a community, economies and our ecosystem, clean air is vital to the overall tribal health and welfare and contributes to the aesthetic beauty and quality of life enjoyed by everyone .

Why should you be concerned about air pollution?

Air pollution can make you sick. It can cause burning of the eyes, and nose, and itchy, irritated throat, as well as trouble breathing. Some chemicals found in polluted air cause cancer, birth defects, brain, nerve damage and long-term injury to the lungs and breathing passages. Some air pollutants are so dangerous that accidental releases can cause serious injury or even death.

Traffic data collection

What is ozone?

Ground-level ozone is commonly referred to as smog. Smog is formed when a mixture of air pollutants are "baked" in the hot, summer sun. These pollutants are releases from cars and factors.

When people think about ozone, they usually picture a thick layer of smog over Los Angeles. They may not think that your area may also have a smog problem, however ozone problems affects the outlying suburban and rural areas as well.

What are the health effects of ozone?

The health effects of ozone are that it affects your respiratory system, causing coughing and wheezing, shortness of breath and chest pain.

Ozone Alert Tips

- Watch your local weather forecaster for high ozone days.
- Limit your time outdoors.
- Contact your doctor if you are experiencing any symptoms.
- Ask how you can help reduce emissions that cause ozone pollution.
- Postpone mowing your lawn.
- Fill your car's gas tank in the evening.
- Carpool, bus, walk or bike to work.

Who is at risk?

These health effects are of concern to everyone who works, plays or spends time outdoors, even the healthiest people. However, the effects are most dangerous for people with asthma, children, and the elderly.

Asthmatics. Ozone can aggravate asthma, causing more asthma attacks, increased use of medication, more medical treatment, and more visits to hospital emergency clinics.

Children. Asthma is one of the leading causes of childhood hospital admission. In addition, children are more susceptible to the effects of ozone because:

- Pound for pound, children breathe more air (and ozone) than adults.
- Children spend more time outdoors than adults.
- Children's respiratory systems are still developing.

Elderly. Ozone presents an increased risk to the elderly because it can aggravate pre-existing respiratory diseases and is associated with increased hospital admissions.

The elderly experience reduced sensitivity to the symptoms of ozone; therefore, early warning signs of the harmful effects of ozone may not be present.

AQI, the Air Quality Index

The Air Pollution rating scale goes from 0 to 500, and the higher the number, the worse the air pollution. This rating system is used by United States Environmental Protection Agency and local governments to rate the air quality of specific areas. Tulsa and Oklahoma City are both continually rated.

These ratings can be found at **airnow.gov** and from local weather programs.

KNED will use this Air Quality Grant to conduct an emission inventory for a 50-mile area around Kaw City, Oklahoma; we will be collecting health care data from the Kanza Health Care Clinic and other health care providers in this area. The criteria of the emissions data gathered are air pollutants, ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead. From this data, we will then prepare a final report, detailing the current levels of air pollution and the health effects of the air pollution. This data can hopefully be used to determine the health risk to local Tribal members of the Kaw Nation.

KNED is currently using the Tribal Emissions Inventory Software Solution (TEISS) that was developed by a group of Native American Tribes, and the U.S. EPA, which provides a method of analyzing air emissions data. This Air Quality Grant has allowed us to hire a temporary employee, James Elmore to enter the data into TEISS. Presently, we have two staff members trained on this program.

Air Quality Index	Level of Health	Color
When the AQI is in this range...	...air quality conditions are...	...as symbolized by this color
0 to 50	Good	Green
51 to 100	Moderate	Yellow
101 to 150	Unhealthy for sensitive groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very unhealthy	Purple
301 to 500	Hazardous	Maroon

General Assistance Grant or (GAP)

This grant is a part of a continuing effort to protect the Tribes land from environmental degradation, and is funded by the Tribal General Assistance Grant through the United States Environmental Protection Agency.

Dumpsite cleanup, before and after.

Solid Waste Reduction – GAP Grant

KNED has implemented a Solid Waste Reduction Program in coordination with other local and state entities to help reduce the volume of solid waste in our service area. The goal of this program is to reduce the overall impact of solid wastes into our environment and to assure the long term preservation of our environment.

Across the country, many individuals, communities, and businesses have found creative ways to reduce and manage their trash through a coordinated mix of practices that includes source reduction.

Simply put, source reduction is waste prevention. It includes many actions that reduce the overall amount or toxicity of waste created. Source reduction can conserve resources, reduce pollution, and help cut waste disposal and handling costs. Source reduction also avoids the costs of recycling, composting, land filling, and combustion.

Source reduction is one of the basic solutions to garbage problems; less waste means less of a waste problem. Source reduction actually prevents the generation of waste in the first place, it comes before other management options that deal with trash after it is already generated. After source reduction, recycling and composting are the preferred waste management options because they reduce the amount of waste going to landfills and conserve resources.

Since the beginning of this program, we have cleaned about 30 sites in our service area of Kay County, Oklahoma. Anti-litter signs have been placed at the former dump sites, in an attempt to ward off potential violators. Anti-litter signs and trash cans have been placed along Highway 11 with permission from the Oklahoma Department of Transportation, and we have contracted for road side cleanup as well. Trash cans have also been placed at our Council Grove, Kansas, property.

The GAP grant also helps to maintain our technology infrastructure. Meaning it purchases computer, software, and etc. GAP also pays for capacity building training such as the Council's Summit and Environmental Health Conferences.

Environmental Outreach – GAP Grant

The Environmental Outreach Program is an initiative to broaden the knowledge and awareness of the tribal community as to improving and maintaining the health of their environment. By working with the local schools and through outreach to the neighboring communities, we are providing educational materials, field trips, and classroom presentations to achieve this goal. These programs are all funded by GAP.

- Placement of Kaw Nation signs at the borders of the Kaw Nation's Historical reservation and major roads were also installed with the help of GAP;
- Educational booths at the Kaw Nation Powwow and Kaw Eagle Watch were funded by GAP;
- KNED, along with the help of GAP, supports area schools by giving funds for environmental teaching materials. As part of our Outreach Program, field trips are planned to help educate local students from within our local service area. Trips were taken to Oklahoma Aquarium;
- This GAP grant has been approved until 2012.

KNED continues to work with Bill Bettenberg of Homer Law in Washington, D.C., to have the Kaw Nation's Braman property converted to gaming trust.

BIA Compact Summary

Bureau of Indian Affairs (BIA) provides Native American Tribes with funds for governmental functions. A portion of these funds are used to support the Kaw Nation Environmental Department (KNED). The funds are used to assist in the running of the day-to-day functions of the KNED. KNED uses the BIA funds to carry out the necessary environmental functions of a Native American Nation. One major function is to ensure that all environmental laws of the United States are followed. The National Environmental Policy Act (NEPA) is one such act that requires environmental consideration to be documented in any federal project, or federally funded project. The BIA funds pay for the tribal services KNED offers including mold inspections, radon tests, and lead based paint tests.

Tax-free bonds

Kaw Nation has been approved for a tax exempt bond program from the Internal Revenue Service as part of the federal economic stimulus efforts enacted under the American Recovery and Reinvestment Act of 2009 (ARRA). These funds are for the improvement of economic development and infrastructure projects.

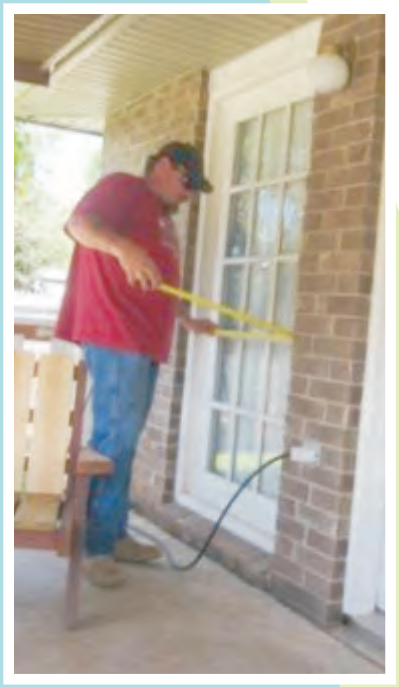
"We are extremely excited," said Kaw Nation Chairman Guy Munroe. "We have had this project in mind for a long time. When completed the project will benefit Kay County and surrounding communities."

The proposed projects for the Kaw Nation include rebuilding the water infrastructure at Chilocco. If the water infrastructure provides excess water it could be used for surrounding communities such as Braman.

ANA Grant

KNED has received grants from the Administration for Native Americans (ANA) from the Department of Health and Human Services.

KNED was awarded an Administation for Native Americans Grant (ANA) to write a 5-year Strategic Plan for the department. This Strategic Plan will consist of taking the 10 grants currently in place and breaking them down into specific goals and objectives. From there KNED will pursue and achieve those goals over the next 5 years.



Energy Efficiency and Conservation Block Grant (EECBG)

Kaw Nation Environmental Department will develop a comprehensive Five-Year Energy Efficiency and Conservation Energy Strategy Plan. The Tribe will contract with a qualified Energy Efficiency and Conservation Consultant to assist in development of this strategy. Standard bidding practices will be followed to locate the Consultant. Included in the strategy will be a prioritized list of Tribal government, commercial (enterprises) and residential buildings that will undergo energy audits. Upon finishing the document, it will be presented to the Kaw Nation Executive Council for their review and approval. Once approved, the document will be submitted to the U.S. Department of Energy for review.

As prioritized in the Kaw Nation Five-Year Energy Efficiency and Conservation Strategy Plan developed in Activity 1, and in close cooperation with the Kaw Nation Environmental and Maintenance Departments, the implementation of energy audits for designated Tribal government, commercial (enterprises) and residential buildings will begin. The Consultant described in Activity 1 will initiate the audits.

As part of this activity, two to three Kaw Nation employees and volunteer Tribal members will be trained in energy auditing and retrofits to sustain the program after the EECBG grant has phased out.

Kaw Nation is proposing implementation of Activity 5 as follows:

1. **The Energy Efficiency Retrofit Program for the Tribal government, commercial (enterprises) and residential buildings as prioritized in the Kaw Nation Comprehensive Five-Year Energy Efficiency and Conservation Strategy Plan developed in Activity 1 will begin.**
2. **Energy Star appliances, lighting, heating, cooling and ventilating equipment will be installed as per the Consultant's recommendations.**

services we offer to our tribal members

KNED will help Tribal members with any questions they have concerning radon, mold, lead and water testing. Below you will find information concerning these topic.

Radon Testing

Radon is a cancer-causing natural radioactive gas that you can't see, smell or taste. It comes from the natural decay of uranium that is found in nearly all soils. Its presence in your home can pose a danger to your family's health. Radon is estimated to claim about 20,000 lives annually. The Surgeon General has warned that radon is the second leading cause of lung cancer in the United States. Only smoking causes more lung cancer deaths. If you smoke and your home has high radon levels, your risk of lung cancer is especially high. It is important to know that this threat is completely preventable.

How does Radon get into your home?

Any home may have a radon problem. This means new and old homes, well-sealed and drafty homes, and homes with or without basements.

- Cracks in solid floors
- Cracks in walls
- Gaps around service pipes
- Construction joints
- Gaps in suspended floors
- Cavities inside walls

Radon from soil gas is the main cause of radon problems. Sometimes radon enters the home through well water. In a small number of homes, the building materials can give off radon, too. However, building material rarely cause radon problems by themselves.

How to test your home. Testing is easy and should only take a few minutes of your time. The amount of radon in the air is measured in "picocuries per liter of air," or "pCi/L." Sometimes test results are expressed in Working Levels (WL) rather than picocuries per liter (pCi/L). There are many kinds of low-cost "do it yourself" radon test kits you can get through the mail and in hardware stores and other retail outlets. If you prefer, (or if you are buying or selling a home), you can hire a trained contractor to do the testing for you. EPA recommends that you contact your state radon office for a list of these testers. You can also contact one or both of the known private radon proficiency programs for lists of privately certified radon professionals in your area. For more links and information, visit **www.radon.com/pubs/citguide.html-howdoes**. The Kaw Nation Environmental Department can provide this sevice to tribal members.

What your test results mean. The average indoor radon level is estimated to be about 1.3 pCi/L, and about 0.4 pCi/L of radon is normally found in the outside air. The U.S. Congress has set a long-term goal that indoor radon levels be no more than outdoor levels. While this goal is not yet technologically achievable in all cases, most homes today can be reduced to 2 pCi/L or below.

Sometimes short-term tests are less definitive about whether or not your home is above 4 pCi/L. This can happen when your results are close to 4 pCi/L. For example, if the average of your two short-term test results is 4.1 pCi/L, there is about a 50% chance that your year-round average is somewhat below 4 pCi/L pose some risk, and you can reduce your risk of lung cancer by lowing your radon level.

If your living patterns change and you begin occupying a lower level of your home (such as a basement) you should retest your home on that level. Even if your test results is below 4 pCi/L, you may want to test again sometime in the future.

Remember that Radon can be detected with a simple test and fixed through well-established venting techniques.

Mold Testing

Molds are part of the natural environment. Outdoors, molds play a part in nature by breaking down dead organic matter such as fallen leaves and dead trees, but indoors, mold growth should be avoided. Mold may begin growing indoors when mold spores land on surfaces that are wet. There are many types of mold, and none of them will grow without water or moisture.

Mold testing. The key to mold control is moisture control. If mold is a problem in your home, you should clean up the mold promptly and fix the water problem. It is important to dry water-damaged areas and items within 24-48 hours to prevent mold growth.

Mold can cause allergic reactions, asthma, and other respiratory problems.

Health problem. Molds are usually not a problem indoors, unless mold spores land on a wet or damp spot and begin growing. Molds have the potential to cause health problems. Molds produce allergens (substances that can cause allergic reactions), irritants, and in some cases, potentially toxic substances (mycotoxins).

Inhaling or touching mold or mold spores may cause allergic reactions in sensitive individuals. Allergic responses include hay fever-type symptoms, such as sneezing, runny nose, red eyes, and skin rash (dermatitis). Allergic reactions to mold are common. They can be immediate or delayed. Mold can cause asthma attacks in people with asthma who are allergic to mold. In addition, mold exposure can irritate the eyes, skin, nose, throat, and lungs of both mold-allergic and non-allergic people. Symptoms other than the allergic and irritant types are not commonly reported as a result of inhaling mold.

How do I get rid of mold?

Getting rid of mold. It is impossible to get rid of all mold and mold spores indoors; some mold spores will be found floating through the air and in house dust. The mold spores will not grow if moisture is not present. Indoor mold growth can and should be prevented or controlled by controlling the moisture indoors. If there is mold growth in your home, you must clean up the mold. The water problem needs to be fixed or the mold will come back.

Who should do the cleanup? Who should do the cleanup depends on a number of factors. One consideration is the size of the mold problem. If the moldy area is less than about 10 square feet (less than roughly a 3-foot-by-3-foot patch), in most cases, you can handle the job yourself.

- **If you have health concerns, consult a health professional before starting cleanup.**
- **If there has been a lot of water damage, and/or mold growth covers more than 10 square feet, consult the U.S. Environmental Protection Agency guide. It is available free by calling the EPA Indoor Air Quality Information Clearinghouse at 800-438-4318, or on the Internet at www.epa.gov/mold.**
- **If you suspect that the heating/ventilation/air conditioning (HVAC) system may be contaminated with mold (it is part of an identified moisture problem, for instance, or there is mold near the intake to the system), do not run the HVAC system if you know or suspect that it is contaminated with mold — it could spread mold throught the building.**
- **If the water and/or mold damage was caused by sewage or other contaminated water, then call in a professional who has experience cleaning and fixing buildings damaged by contaminated water.**

Remember to avoid breathing in mold or mold spores and to wear gloves and goggles.

Water Quality Testing

Another service provided for tribal members is water testing. KNED will test your tap or well water for various chemicals, as well as microbes including E. coli and fecal coliform.

What is E.coli and where does it come from? E.coli is a type of fecal coliform bacteria commonly found in the intestines of animals and humans. E.coli is short for Escherichia coli. The presence of E. coli in water is a strong indication of recent sewage or animal waste contamination. Sewage may contain many types of disease causing organisms.

What are fecal coliforms? Fecal coliforms are bacteria that are associated with human or animal wastes. They usually live in human or animal intestinal tracts, and their presence in drinking water is a strong indication of recent sewage or animal waste contamination.

How does E. coli or other fecal coliforms get in the water? During rainfalls, snow melts, or other types of precipitation, E. coli may be washed into creeks, rivers, streams, lakes, or groundwater. When these waters are used as sources of drinking water and the water is not treated or inadequately treated, E. coli may end up in the drinking water.

What are the health effects of E. coli O157:H7? O157:H7 is one of hundreds of strains of the bacterium E. coli. Although most strains are harmless and live in the intestines of healthy humans and animals, this strain produces a powerful toxin and can cause severe illness. Infection often causes severe bloody diarrhea and abdominal cramps; sometimes the infection causes non-bloody diarrhea. Frequently, no fever is present. It should be noted that these symptoms are common to a variety of diseases, and may be caused by sources other than contaminated drinking water.

How long does it take for these symptoms of infection to occur? Symptoms usually appear within 2 to 4 days, but can take up to 8 days. Most people recover without antibiotics or other specific treatment in 5 to 10 days. There is no evidence that antibiotics improve the course of the disease, and it is thought that treatment with some antibiotics may precipitate kidney complications. Also, antidiarrheal agents such as Imodium® should be avoided. However, in some persons, particularly children under 5 and the elderly, the infection can cause a complication call Hemolytic Uremic Syndrome in which the red blood cells are destroyed and the kidneys fail.

What should I do if I have any of the above symptoms? Consult with your physician. Infection with E. coli O157:H7 is diagnosed by detecting the bacterium in the stool. One-third of the laboratories that perform stool culture do not test for E. coli, so it is important to request that the stool specimen be tested on Sorbitol-MacConkey agar for this organism. All persons who suddenly have diarrhea with blood should get their stool tested for E. coli 157:H7.

Are there groups of people who are at greater risk of getting infected? Yes. Children under the age of 5, the elderly, and immune comprised people are at greater risk of severe illness.

How will I know if my water is safe? If you receive your water from a public water system, then your water provider is required by law to notify you if your water is not safe. If you are interested in obtaining information about your drinking water, consult the water quality report that you should receive annually from your local water provider, or call your local water provider directly. You can also consult with KNED or the Oklahoma Department of Environmental Quality.

How is water treated to protect me from fecal coliforms? The water can be treated using chlorine, UV light, or ozone, all of which act to kill or inactivate fecal coliforms. Systems using surface water sources are required to disinfect to ensure that all bacterial contamination is inactivated. Systems using ground water sources are not required to disinfect, although many of them do.

If I have a private well, how can I have it tested for E.coli? Contact the Kaw Nation Environmental Department (KNED) for E. coli testing.

If my well is contaminated with E.coli, what can I do to protect myself? If your well tests positive for E.coli, do not drink the water unless you boil it for at least one minute at a rolling boil, longer if you live in high altitudes. Monitor your water periodically after disinfection to make certain that the problem does not recur. If the contamination is a recurring problem, you should investigate the feasibility of drilling a new well or install a point-of-entry disinfection unit, which can use chlorine, UV light, or ozone to disinfect.

The Center for Disease Control and Prevention suggests other actions that you may take to prevent E. coli infection, including:

- **Avoid swallowing lake or pool water while swimming.**
- **Thoroughly cook ground beef and beef products.**
- **Make sure that persons with diarrhea wash their hands carefully with soap after bowel movements to reduce the risk of spreading infections, and that persons wash hands after changing soild diapers.**
- **Avoid spreading harmful bacteria in your kitchen. Keep raw meat separate from ready-to-eat foods. Wash hands, counters, and utensils with hot soapy water after they touch raw meat.**
- **Drink only pasteurized milk, juice, or cider.**
- **Wash fruits and vegetables thoroughly, especially those that will not be cooked.**
- **If you are served an undercooked hamburger or other ground beef products in a restaurant, send it back for further cooking.**

For more information regarding preventative measures you can visit the CDC or the U.S. Department of Agriculture's website.

Safe Drinking Water Act

In June of 1986, amendments to the Safe Drinking Water Act signed by President Reagan required the use of lead-free pipe, solder and flux in the installation or repair of plumbing systems connected to public water systems. The law gave states until 1988 to enforce the new limitations. Prior to that time, most solder contained about 50 percent lead.

According to the EPA, chances of having lead in your drinking water are likely to be high if:

- your home has faucets or fittings made of brass which contains some lead;
- your home or water system has lead pipes;
- your home has copper pipes with lead solder;
- the home is less than 5 years old;
- you have naturally soft water; or
- water often sits in the pipes for several hours.

To minimize lead in drinking water you should ***flush your pipes.*** Don't use water that has been sitting in your pipes over six hours Use only water thoroughly flushed from the cold water tap. Flush until the water becomes as cold as it will get. This can take up to 2 minutes or longer.

Lead Testing

Lead is a powerful neurotoxin that interferes with the development and functioning of almost all body organs, particularly the kidneys, red blood cells, and central nervous system.

In young children, lead retards the development of the central nervous system and brain. High levels of lead exposure can result in coma, convulsions, and death. At low levels, lead can cause reduced IQ, reading and learning disabilities, attention deficit disorder and behavioral problems. As a result, childhood lead poisoning is associated with lower educational achievement, higher rates of high school drop-out and increased behavioral problems. In the long run, children who are lead poisoned may be less likely to become positive contributors to our communities and our economy.

Childhood lead poisoning is the number one environmental health risk facing children in industrialized countries today. In the United States, more than 3 million children age 6 and younger — that's one out of every six children — already has toxic levels of lead in their bodies.

How do you determine if you have lead in your home? Ninety percent of pre-1940 buildings have lead. Eighty percent of pre-1960 and, 62 percent of pre-1978 buildings have lead.

The best way to find out if your home potential lead paint hazards is to have a risk assessment performed by a Kaw Nation Environmental Department or a certified inspector.

There are chemical filled applicators that the user rubs on an area to check for lead. If lead is present the applicator tip changes color. These kits are relatively inexpensive, provide quick results, and are widely available at retail hardware and home improvement stores.

There are a number of different products on the market, and procedures for their use vary. Most contain a chemical (either rhodizonate or sodium sulfide) that changes color in the presence of lead.

Professional testing for lead in paint is recommended. To receive a list of laboratories that have passed proficiency testing for analysis of lead in paint, soil, and/or dust samples, call 1-800-424-LEAD or fax 202-659-1192 to request a lab list by fax. When you call or fax, please specify that you are requesting the NLLAP/ELPAT List of Laboratories.

The federal government — HUD's Lead Hazard Reduction Office — also sponsors The Lead Listing, a list of certified lead inspectors. For more information visit HUD's web site at **www.hud.gov/lea/leahome.**

What you should know about lead poisoning

- **Lead paint was banned in U.S. residential paint in 1978. It was banned in France and many other countries prior to 1920.**
- **Three-quarters of the nation's housing contains lead paint.**
- **Lead poisoning is a serious disease.**
- **Children under 6 are most at risk.**
- **Children from every region, race and socioeconomic level are at risk.**
- **Lead poisoning causes learning and developmental disabilities.**
- **There are usually no symptoms.**
- **Even children who appear healthy can have dangerous levels of lead in their blood.**
- **Lead poisoning is preventable.**
- **Most lead poisoning happens at home.**
- **The primary cause is tiny particles of lead dust from deteriorated paint or from painted surfaces disturbed during remodeling, repair or renovation.**
- **Lead dust is invisible, so tiny in fact that it passes through most masks and filters.**
- **Lead poisoning affects adults as well as kids.**

Sources: Environmental Protection Agency, U.S. Department of Housing and Urban Development, Centers for Disease Control, National Conference of State Legislators, Alliance to End Childhood Lead Poisoning

Kaw Nation 5-Year Strategic Planning Model

Goal 1: Water Quality Monitoring

Since the Clean Water Act, governments, citizens and tribes have worked together to make dramatic progress in improving the quality of surface and drinking water (EPA). Cleaner, safer water has renewed interests in swimming, boating and fishing in most bodies of water. However, despite numerous actions of improving water quality there is still a very serious risk of polluted and contaminated drinking water.

Higher populations demand more water which can lead to low-quality water being supplied. Communities should be pro-active in the effort to improve their water systems and to help eliminate contamination and pollution risks so they can have safe drinking water.

We received our first Water Quality Monitoring grant in 1996, to monitor rivers, creeks, and lakes in the Kaw Nation service area. Since then we have developed in-depth water quality information that is used on each body of water. The grant also allows us to analyze water from each site in many different parameters to ensure the water is safe for all uses.

The Kaw Nation Environmental Department is dedicated to monitoring bodies of water in Kay County to ensure that its tribal members and all residents in the county have safe water.

Goal 2: Air Quality

Air pollution can come from numerous sources: cars, factories, semis, power plants, drycleaners, and even dust and wildfires. Air pollution can cause health threats such as difficulty breathing, respiratory problems, reproductive problems, and even cancer. Air pollution can also affect the environment by reducing visibility; damaging forests and buildings; acidifying lakes, ponds, and streams; stimulating the growth of toxic algae and toxins in fish *(EPA, 2006)*.

During the 1970s, the U.S. EPA began developing air quality protocols for big industries that emitted potentially harmful chemicals into the air. Since the development of the protocols the levels of pollutions have steadily decreased, harmful pollutants are still being released into the atmosphere. Air pollution from power plants and petroleum plants can travel great distances and pose threats to communities' miles away.

In 2009, the U.S. EPA awarded us an air quality grant to run emissions tests for road and non-road, Sooner Power Plant, and ConocoPhillips. We are enthusiastic about working in close cooperation with the U.S. EPA to improve the quality of our air, and educating the public on the potential effects of air pollution.

Goal 3: Restore and Protect the Beaver Creek Wetland

Wetlands provide many functions: groundwater discharge, carbon sequestration, habitat, stopovers for migrating bird species, flooding prevention, and pollution filtering. Wetlands are very important to many different species as well as to humans.

The **Beaver Creek Wetland** is a historical wetland and is recognized by two wetlands from the National Wetlands Inventory as **PEM1F,** Palustrine Emergent Persistent Semi-permanently Flooded, and **PUBFh,** Palustrine Unconsolidated Bottom Semi-permanently Flooded Diked/Impounded.

In 2004, we were awarded a grant from the United States Environmental Protection Agency to restore and protect the Beaver Creek Wetland. After receiving the grant, the Oklahoma Department of Wildlife agreed to let us lease the 40 acres the wetland is sitting on. Prior to our receiving the grant, the Beaver Creek Wetland had problems, such as oil contamination, degradation and erosion.

Since 2004, we have set and achieved many goals to restore and protect this wetland. We have worked closely with the U.S. Fish and Wildlife Service to enroll the wetland into the "Outdoor Classroom" program. We are committed to further restoration and protection of the wetland for many years to come.

Goal 4: Energy

Since the Industrial Revolution, the world's demand for fossil fuels is following exponential growth. Fossil fuels are the leading source of power for the entire world. Some experts believe that we are at peak oil production which will soon be followed by coal and natural gas. Not only are the world's sources of power reaching peak levels, they are one of the leading sources of pollution as well. Recently many "green" sources of power have been discovered — such as solar, geothermal, wind, and bio-fuels.

Kaw Nation is drastically trying to adopt "green" power sources as well as practice sustainable energy use. In 2005, the Kaw Nation started planning and negotiating for development of a wind farm on their Chilocco land. We are currently collecting data and are in the planning stages of that development. Recently we have started pursuing solar power for some of our facilities in Newkirk, Oklahoma.

Ultimately, the hope of Kaw Nation would be to have the ability to run the majority of its facilities off green energy.

Goal 5: General Assistance Program/Solid Waste

Solid waste has become a major problem across the United States. "Dumpsites" are appearing in ditches, creeks, rivers and along roads. Many problems arise from the illegal dumping of solid waste such as groundwater contamination, creek pollution, river pollution and soil pollution. Hazardous chemicals that are dumped can leech into the soil or water systems and can contaminate drinking water and harm wildlife. Aquatic species that reside in contaminated water bodies can pose serious threats to human health if consumed.

In 2004, the Kaw Nation Environmental Department was awarded a General Assistance Program grant from the United States Environmental Protection Agency to clean up dumpsites and conduct Underground Storage Tank (UST) inspections. Since the grant was awarded, we have cleaned up numerous dumpsites of not only solid wastes but hazardous chemicals as well. We have also worked in close cooperation with Inter Tribal Environmental Council to conduct quarterly UST inspections at the Kaw Nation's gas station facilities located in Ponca City and Braman.

We are dedicated to the removal of other dumpsites located in and around Kay County which will help to reduce pollution risks to humans and wildlife.

Goal 6: Environmental Exchange Network

Over the past 30 years, all data that had been physically written has now been recorded electronically onto a data base. Data bases and exchange networks allow different agencies, tribes and states to store and exchange data amongst each other.

These exchange networks allow agencies to securely and efficiently share data. This new technology is allowing agencies and states to access high quality data; the network allows agencies, tribes, and states to save time, money, and resources.

In 2008, we were awarded an Exchange Network grant through the U.S. EPA. The grant allowed us to develop a data base for the water quality data, as well as create an application to manage the data in all aspects. This has allowed us to organize and share data with the U.S. EPA to help them make better decisions regarding our water.

Goal 7: Public Outreach

Environment changes are increasingly fast and the public must be educated on issues to provide support in order for lawmakers to make decisions. Public outreach is an essential tool to raise public awareness concerning environmental issues, and to educate the public about different aspects of the environment.

The Kaw Nation Environmental Department strives to keep the public aware of environmental issues through seminars, workshops, meetings and publications.

Inter-tribal and council meetings are held to educate the tribe on what environmental issues are approaching. We host "outdoor classrooms" for children from local schools that teach them about different aspects of our environment. Each grant possesses a slightly different public outreach sector, which allows us to educate the public in a variety of areas but with methods as well.

We are dedicated to enhance our public outreach program in the future. This will enable us to reach more people and educate them on environmental issues.

Goal 8: Food Safety

Food safety has become increasingly important over the last 20 years. There are many new and dangerous food-borne diseases due to a peak in world food trade. Everyone who works with food has a responsibility to safeguard the health of consumers.

The Center for Disease Control estimates 76 million people are diagnosed with a food-borne illness each year. Many steps are involved in food safety — packaging, storing, cooking, heating and temperature. If just one of these steps is conducted in an ill manner, a food-borne disease could arise. Food centers should have regular inspections to ensure that the correct steps are being followed.

Kaw Nation has six eateries — Woodridge Market, Kanza Travel Plaza, Southwind Cafe, Roost, Southwind Bar and Title VI. Our department inspects these facilities regularly to ensure that food is being properly handled. Kaw Nation eateries have to comply with state health codes. We take these inspections very seriously. If any of these codes are broken, the managers of these facilities are notified and changes are made.

Goal 9: Inspections and Enforcement

The Kaw Nation has many different types of facilities. To keep each facility running safely, inspections must be conducted. The safety and health of Kaw Tribal members and all participants that frequent these facilities is one of our top priorities. We also inspect the underground storage tanks (UST) at the gas station facilities, the three food serving centers and tribal homes.

Another one of our goals is to inspect the swimming pool at the Kanza Wellness Center in Newkirk. We work in close relationship with many different departments and agencies to conduct these inspections. Since each facility requires different inspections, our department has employees certified to inspect each facility.

Kaw Nation Environmental Department

our staff

Dejene Alemayehu, Ph.D.

KNED Director

dejene@kawnation.com

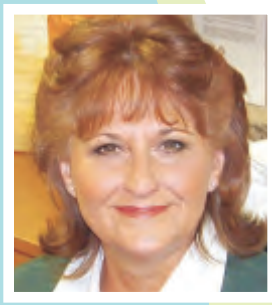
Dr. Dejene Alemayehu has been with the Kaw Nation since 2000. He has a Bachelor's Degree in Plant Science from Alemaya University in Diredawa, Ethiopia, in 1982; a Master's Degree in Agronomy from Oklahoma State University in 1995; and a Ph.D. in Environmental Science from OSU in 2000. During his time with Kaw Nation, he has expanded the role of the Environmental Department to cover programs to help protect the environment and to help tribal members.

Dave Hensley

Environmental Scientist

dhensley@kawnation.com

Dave Hensley started with the Kaw Nation in January, 2008. Dave has an Associate's Degree in Chemistry from Tulsa Community College in 1999; a Bachelor's Degree in Chemistry from Northeastern State University, Tahlequah, Oklahoma, in 2003; and a Master of Environmental Science from the University of Oklahoma in 2007. During his time with Kaw Nation, Dave has been involved in most of the programs and assisting Dr. Alemayehu with analyzing the data that has been collected.



Renée Vickery

KNED Administrative Secretary

rvickery@kawnation.com

Renée Vickery started with the Kaw Nation in July, 2006. Renée has a Bachelor of Science degree from Oklahoma State University, Stillwater, Oklahoma, in 1993. Since Renée has a teaching degree, she helps with outreaches to the surrounding schools in this area. She is the KNED Administrative Secretary and assists the Kaw Nation Environmental Director, Dr. Dejene Alemayehu, in all secretarial duties. In addition, Renée is the Kaw Nation's Certified Food Inspector for all of Kaw Nation's eateries.

Skyler Mathews

Water Tech

smathews@kawnation.com

Skyler Mathews started with the Kaw Nation as an intern in the summer of 2004. He did another internship the following year, and then was hired on as the Water Tech in September, 2005. Skyler has certificates of training for Ground-Water Sampling, Water Laboratory, Watershed Assessment, Global Positioning Systems and Underground Storage Tank Systems. He is a member of the Oklahoma Army National Guard and a Kaw Tribal member.

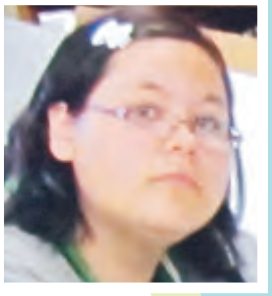
Justin Bush
ANA Coordinator
jbush@kawnation.com

Justin Bush started with the Kaw Nation in February, 2010, as the ANA Coordinator. He has a Bachelor's Degree in Natural Resource Ecology and Management with a Wildlife Option. Justin is currently working on a five-year strategic plan for the Environmental Department. He also assists with water sampling and wetland activities.

George Fields
EPA IT Tech
gfields@kawnation.com

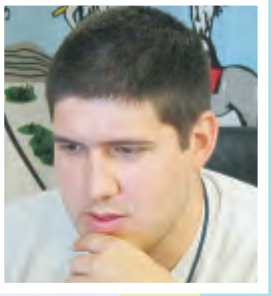
George started with the Kaw Nation in December, 2008, and is a Kaw Tribal member. George received his Bachelor of Science in Computer Information Systems in June of 2010 from DeVry University. He is currently working on the Environmental Exchange Network Project. George submits water quality data to the United States Environmental Protection Agency through the Internet using Web services. He also assists with the water sampling and wetland activities.

Gena Bryan
Summer intern



Gena graduated from Shidler High School in 2010; she served KNED as a 2010 summer intern. She is planning on attending Pioneer Vo-Tech for child care with the plan of owning her own day care someday. Gena is also a Kaw Tribal member.

Chad Chrisco
Summer intern



Chad served KNED as a 2010 summer intern. Chad is a member of the Kaw Tribe, and part of the U.S. Army Reserve. He plans to attend Washburn University in Topeka, Kansas. He will be studying Criminal Justice and Sociology, hoping to one day become a member of the FBI. His recent job as a member of the Horton Agency BIA has sparked a new-found interest in the subject of forestry, and he plans to include that in his collegiate studies as well.

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from the Kaw Nation chairman/ceo

GUY MUNROE

Dear friends:

Over the past 14 years, Kaw Nation's Environmental Department has pledged to focus on core issues of protecting our natural resources. The staff has promised that all efforts will be followed to ***Preserve, Protect and Improve*** the quality of our natural resources for the benefit of Kaw Nation and their descendants.

Dr. Dejene and his staff have done an "outstanding job," and we are very proud of their accomplishments and their continued efforts. We hope readers will enjoy this educational magazine and visit our web site at **www.kawnation.com** for additional environmental news.

Our land and its natural resources must be protected — we cannot survive without it. Let us all commit to supporting and protecting our environment.

— Guy Munroe
Chairman/CEO