



Shakopee Mdewakanton Sioux Community

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May 10, 2010
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The SMSC Biodiesel Project: From French Fries to Shuttles

Prior Lake, Minnesota –An innovative project undertaken by the Shakopee Mdewakanton Sioux Community recycles soybean oil used to fry chicken, french fries, and other foods into biodiesel. After the used oil from the nine SMSC restaurant kitchens is converted into biodiesel, it is used to fuel shuttle buses which transport guests and employees between properties around the Community. The project celebrated its one year anniversary April 29, 2010.

The SMSC Gaming Enterprise Property Maintenance Fleet Services Department oversees the biodiesel project along with the SMSC Department of Land and Natural Resources. Since it became operational it has processed 4,500 gallons of oil into 3,655 gallons of biodiesel; and 16,394 gallons of biodiesel blended with regular diesel fuel was pumped into SMSC vehicles during the first year.

The idea was sparked in 2005 when fuel prices began to rise after Hurricane Katrina. SMSC Chairman Stanley R. Crooks promoted the concept, talking with various staff about his vision for utilizing green technology to operate tribal vehicles. In the fall of October 2007, various SMSC staff began looking at ways to bring the idea to fruition. Although it took time to research the possibilities, by the spring of 2009, the SMSC was ready to begin producing biodiesel.

Today, used oil is gathered from the restaurants using a collection unit designed by Satellite Industries of Plymouth, Minnesota. The collection unit is fitted onto the back of a pickup truck detailed for this project. Oil is collected once a week from restaurants at Mystic Lake Casino Hotel, every other week from Little Six Restaurant, and once a month from the Tipi Restaurant.

After the oil is collected, it's tested to determine its moisture and free fatty acids contents. If the oil passes those tests, 100 gallons is pumped into the BioPro 380 processor at a time. Twenty gallons of methanol (wood alcohol) and small amounts of potassium chloride and sulfuric acid are added to the machine. Very little interaction is needed until vinegar is added late in the process. Forty-eight hours later approximately 95 gallons of biodiesel and 25 gallons of glycerin have been produced. The glycerin is currently drained out and composted at the SMSC Compost Site. Other uses for glycerin are being explored since it can have medical, pharmaceutical, and personal uses.

“The biodiesel project fits in nicely with our priority of taking care of the earth and other ‘green’ SMSC initiatives,” said SMSC Chairman Stanley R. Crooks. “We hope as we settle into the project, we will be

able to use up all the oil and train more staff so that we can better use this unexpected energy resource.”

Not all of the used cooking oil is needed for biodiesel in the winter. The cold weather requires the blending of up to 80% petroleum diesel with the biodiesel. To make use of the excess oil, the SMSC burns it in a boiler in the Public Works Building on Dakota Parkway to generate heat. A similar system burns used motor oil to heat the Fleet Operations Bay in a different part of the same building.

Biodiesel By the Numbers:

- 18,000 gallons of waste cooking oil is produced by the nine SMSC kitchens each year.
- Up to 1,080 gallons of biodiesel is produced each month.
- 26 vehicles, including 5 shuttle buses, run on biodiesel currently.
- The biodiesel facility is 364 square feet.
- Twenty gallons of methanol (wood alcohol) is added to the machine along with smaller amounts of potassium chloride and a small amount of sulfuric acid. Vinegar is also used late in the process.
- 100 gallons of oil are processed with approximately 20 gallons of chemicals at a time which yields approximately 95 gallons of biodiesel and 25 gallons of glycerin in 48 hours.
- It takes 24 hours to produce just the glycerin.
- 16,394 gallons of biodiesel was pumped into vehicles from April 29, 2009, through April 29, 2010.
- A 400 gallon truck-mounted tank is used by staff for collecting waste cooking oil and transporting it to the biodiesel facility.
- Oil is collected once a week from restaurants at Mystic Lake Casino Hotel, every other week from Little Six Restaurant, and once a month from the Tipi Restaurant.
- In the SMSC blend, including the 5% Minnesota state mandate, usage is 20% biodiesel in the winter, and 50/50 in the summer. Plans are to work up to 100% for the shuttle buses.
- Biodiesel is tested to see if it's clean/pure, using 3 ml of the new biodiesel and 27 ml of methanol for what's called the 3/27 test to check for a complete reaction.
- U.S. biodiesel reduces lifecycle carbon emissions by 60-80%, depending on the source, making it the best carbon reduction tool of any liquid fuel commercially available.

About the Shakopee Mdewakanton Sioux Community

The SMSC utilizes its financial resources from gaming and non-gaming enterprises to pay for all of the internal infrastructure of the Tribe, including but not limited to roads, water and sewer systems, emergency services, and essential services to its Tribal members in education, health, and welfare. The Shakopee Mdewakanton Sioux Community has a charitable giving program which comes from a cultural and social tradition to assist those in need.

Over the past 13 years, the SMSC has donated more than \$180.8 million to charitable organizations and Indian Tribes. Since 1996 the SMSC paid more than \$6.6 million for shared local road construction projects and an additional \$5 million for road projects on the reservation.

The Shakopee Mdewakanton Sioux Community, a federally recognized Indian Tribe in Minnesota, is the owner and operator of Mystic Lake Casino Hotel, Little Six Casino, Playworks, Dakota! Sport and Fitness, The Meadows at Mystic Lake, and other enterprises on a reservation south of the Twin Cities.

This press release and other information may be downloaded from the SMSC website at www.shakopeedakota.org.

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