

# Wood Stoves (non-Catalytic, EPA certified)

## Tsiigehtchic EPA Wood Stove Change-out for Elders

### System Overview:

In February 2010, AEA partnered with the Tsiigehtchic Charter Community for a pilot project to replace old inefficient wood stoves with efficient, modern wood stoves. Seven elders were selected by the community to be the beneficiaries of the project. The aim was to spread awareness of clean burning, efficient wood stoves certified by the United States Environmental Protection Agency (EPA), which are available for sale throughout the NWT.

Feedback from two users of the new wood stoves speaks to the project's success:

"I really like the stove. I get up in the morning and my stove is still burning, my house is warm and I am burning less wood."

"Man, this is the best stove I ever had in my house. I have been sitting in different parts of my house just to see how the stove is heating my house and my whole house is warm everywhere. Thank you very much for including me in this project."



Figure 1 – Blaze King (EPA certified)

This project would not have been the success it was without the dedication of Tsiigehtchic's Economic Development Officer, Ethel Blake.

### Technical Overview:

EPA stoves have specially designed fireboxes, which funnels combustion air to allow for the most complete burn of cord wood. The incredible aspect of EPA wood stoves is that they are able to burn smoke. Burning smoke for additional space heating and minimal air pollution can be accomplished by either using a catalytic combustor or baffle plate. The stoves used in this project are non-catalytic stove and therefore use a baffle plate, which becomes very hot inside the firebox during stove use. The stove funnels air directly below the baffle plate, where it mixes with smoke and ignites when the gasses touch the baffle plate. This 'secondary combustion' allows for the fuel (wood) to be burned more completely, thus more heat is radiated from the stove than a conventional stove, which is not capable of secondary combustion. Since more energy (heat) is used from wood in an EPA stove than a conventional stove, less wood is required to maintain the same household temperatures. An EPA stove may only require 50% as much wood as a conventional stove.