

FY99-XXXI-86
DEMONSTRATION OF NORTH DAKOTA LIGNITE BOTTOM ASH
IN ROAD CONSTRUCTION

CONTRACTOR: En-Rock

PRINCIPAL INVESTIGATOR: Andrew Stewart
701-277-0089(O)
612-974-3954(O)
701-277-1603(fax)
awstewart@aol.com

PARTICIPANTS

<u>Sponsor</u>	<u>Cost Share</u>
Cooperative Power Association (Great River Energy)	\$30,000
En-Rock	\$7,516
ND Industrial Commission	<u>\$32,000</u>
Total Project Costs	\$69,516

Project Schedule - 40 Months
Contract Date – 8/10/98
Start Date – 8/10/98
Completion Date – 12/15/2001

Project Deliverables
Status Report – 3/31/99 ✓
Final Report – 12/15/01 ✓✓

OBJECTIVE / STATEMENT OF WORK

The objective of this project is to demonstrate the use of coal combustion byproducts (CCBs) from the Coal Creek Station (CCS) in road construction. The specific objective of this project is to incorporate CCS bottom ash in the road base in construction of a road in Mapleton, North Dakota and Washburn, North Dakota. The performance of the bottom ash road base will be compared to conventional construction materials at the same site.

STATUS

The road base was constructed in the fall of 1998. A section of road base was constructed using CCS bottom ash while the remaining road base was constructed using gravel. Conventional construction techniques were used. A road in Washburn, North Dakota was surfaced with asphalt and road performance and construction criteria monitored.

Conventional construction criteria including sieve test, compaction tests and density measurements were completed. In addition, performance parameters were monitored and included hydraulic conductivity, strength and density. Core and other samples were collected and the road base performance monitored for three years. The bottom ash road base material has a superior ability to shed water after rain and snow events. Core sample taken in the summer of 2001 gave the following results: stability 720 lbs, flow 0.165 inches and specific gravity 2.36. The bottom ash road base yields data typical for standard gravel road base asphalt surface. The developers continue to provide promotional activities and materials. The limiting factor for use of CCS materials is the transportation cost and availability or distance to construction sites.