

LRC – XII – 44
COMPARATIVE EVALUATION OF PRODUCTIVITY
OF PRIME AND NONPRIME SOILS

CONTRACTOR: North Dakota State University Land Reclamation
Research Center

PRINCIPAL INVESTIGATOR: Gary A. Halvorson
(701) 667-3021

PARTICIPANTS

<u>Sponsor</u>	<u>Cost Share</u>
The Coteau Properties Company	\$10,415
The Falkirk Mining Company	4,994
BNI Coal, Ltd.	2,954
Knife River Coal Mining Company	3,336
NDSU/LLRC	44,603
ND Industrial Commission	<u>21,698</u>
Total	\$88,000

Projects Schedule – 1 Year

Contract Date – 12/12/92
Start Date – 1/1/93
Completes – 12/31/93

Projects Deliverables

Status Report – 5/15/93 ✓
Status Report – 8/30/93 ✓
Final Report – 12/31/93 ✓

OBJECTIVE / STATEMENT OF WORK

The objective of this program is to compare the productivity of prime and nonprime topsoil materials in different topographic positions and to determine whether the separate handling of prime or nonprime topsoil is necessary. Three separate tasks are proposed for this year:

Task 1 Monitor plant yield on the existing sites.

Task 2 Existing sites will be monitored. The soil's moisture content and precipitation will be measured.

Task 3 Compilation of the data obtained in Task 1 and 2.

STATUS

Experimental plots constructed at the Coteau and Falkirk mines were planted with wheat (Stoa) on May 5 and May 10, 1993. The plots were fertilized to attain a goal of 10 bu/ac with nitrogen and phosphorus based on soil test results. The plots were harvested on September 1 and September 2, 1993, respectively. The growing season precipitation at the two sites was 330 mm and 365 mm. The average 30-year growing season precipitation was 175 and 196 respectively. The grain yield data at the Coteau site ranged from 30-54 with an average of 48 bu/ac. The grain

yield data at the Falkirk site ranged from 30-54 with an average of 45 bu/ac. The year 1993 was a favorable year for wheat production at the two sites as precipitation was much higher than the 20-year average. This year's grain yield data reveals that prime and nonprime soils, when placed side by side in areas reshaped to a given topographic configuration have similar productivities. This is the second year of a three-year study. The study is being continued into the third year as project FY94-XV-49.