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ANDALEX
RESOURCES, INC.

0001



ANDALEX
RESOURCES, INC.

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COPY

March 11, 2003

Utah Division of Oil, Gas and Mining
Coal Program
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

Incoming
C/007/033

Attn: Priscilla Burton
Re: C007/033, Wildcat Loadout, Revegetation Test Plots Study, 1997

Dear Ms. Burton,

The enclosed report was prepared by Mt. Nebo Scientific, Inc. in 1997. The report covers questions which you raised about methodologies for seeding, mulching and irrigation, as well as success rates.

Please contact either Patrick Collins or me with additional questions. Thank you.

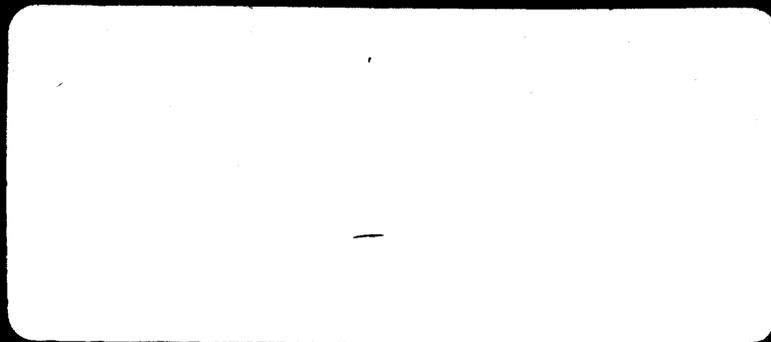
Sincerely,

Michael W. Glasson
Operations Manager

RECEIVED

MAR 13 2003

DIV. OF OIL, GAS & MINING



MT. NEBO SCIENTIFIC, INC.

REVEGETATED TOPSOIL STORAGE PLOTS

INTRODUCTION

Andalex Resources created revegetation test plots on recently-placed topsoil storage piles at the Wildcat Loadout. These plots were located on the west side of the railroad tracks adjacent to an existing topsoil pile. According to measurements in the field each plot was approximately 65 ft by 25 ft (1625 ft²). All the plots were roughened by gouges to the surface. There were four test plots. Two of the plots were irrigated while the remaining two were left to be watered by natural precipitation only. Additionally, the plots were mulched with North American Green Straw, alfalfa, and/or straw with plastic netting applied to hold the straw to the ground. The plots were seeded in the Fall 1994 with the seed mixture shown in Figure 1.

The irrigated plots were designed by the following schedule. The initial profile wetting was to be done with one inch of water. Irrigation was to proceed at a rate of one inch every four days for 4-6 weeks assuming there was no natural precipitation during that period. After these initial treatments, the plots were to be irrigated with one inch of water every 2 weeks until the end of the growing season (approximately mid-September 1995).

Mt. Nebo Scientific, Inc. did not construct the test plots and it was difficult to substantiate treatments during the time of sampling. The summary of the treatments for each plot according to

design plans from the MRP follows below and seemed to match observations of mulch material identified in the field. Plots were numbered 1-4, from north to south in the field.

Plot 1: Non-irrigated, mulched with 3-4 tons/acre of alfalfa mulch incorporated into the surface, seeded with mixture in Figure 1.

Plot 2: Irrigated, covered North American Straw matting, seeded with mixture in Figure 1.

Plot 3: Irrigated, mulched with 1.5 tons/acre of oat or barley straw mulch attached with a biodegradable mesh netting, seeded with mixture in Figure 1.

Plot 4: Non-irrigated, 1 ton/acre alfalfa incorporated in the soil and covered with 1.5 tons/acre oat or barley straw cover with the biodegradable mesh netting, seeded with mixture in Figure 1.

FIGURE 1: PLANT SPECIES SEEDED
SHRUBS Rincon fourwing saltbush (<i>Atriplex canescens</i>) Shadscale (<i>Atriplex confertifolia</i>) Forage kochia (<i>Kochia prostrata</i>) Castle Valley Gardner saltbush (<i>Atriplex gardneri</i>) Gordon Creek Wyo. Sagebrush (<i>Artemisia tridentata</i> var. <i>wyomingensis</i>)
GRASSES Critana thickspike wheatgrass (<i>Elymus lanceolatus</i>) Arriba Western wheatgrass (<i>Elymus smithii</i>) Nezpar Indian ricegrass (<i>Stipa hymenoides</i>) Bozoiisky Russian wildrye (<i>Elymus junceus</i>) Fairway crested wheatgrass (<i>Agropyron cristatum</i>)

METHODS

Sampling was conducted on July 30, 1997. Beginning on Plot 1, the plots were sampled from north to south. Transect lines for sampling were randomly placed on the plots to adequately represent the area as a whole. From these transect lines, sample locations were chosen using regular numbers every 5 ft. Random numbers from 0 - 7 meters at right angles to the transect lines were then used to place the quadrats.

Cover estimates were made using ocular methods with meter square quadrats. Species composition was also assessed from the quadrat data. Plant nomenclature follows "A Utah Flora" (Welsh et al. 1993).

Frequency was assessed for each plant species and expressed as the relative proportion of the number of times a given species was present in the quadrats.

Density estimates of woody plant species for the plots were made using a distance method called the point-quarter. In this method, random points were placed on the sample sites and measured into four quarters. The distances to the nearest woody plant species were then recorded in each quarter. The average point-to-individual distance was equal to the square root of the mean area per individual.

Sample adequacy for cover was attempted using formulas from Snedocor and Cochran (1980),

with the goal that 80% of the samples were within 10% of the true mean for the plant communities in the area. The following formula was used:

$$nmin = \left[\frac{1.28 (s)}{\bar{x} (.1)} \right]^2$$

where,

nmin = minimum adequate sample

s = standard deviation

\bar{x} = sample mean

.1 = confidence interval

A color photograph was taken of the sample area and included in this report. All sample means, standard deviations, and raw data were also included in this report. The raw data summarized on spreadsheets have been included in Appendix A of this report.

RESULTS

Plot 1

Plot 1 had a total living cover of 42.50% [Table 1(A)] where shrubs and grasses comprised most of the cover [Table 1(B)]. By far, the most common species for cover and frequency were prostrate Kochia (*Kochia prostrata*) and crested wheatgrass (*Agropyron cristatum*) each having a cover value of 21.25% and 14.17%, respectively [Table 1(C)]. Woody species density was estimated at an surprising 57,514 plants per acre, all of which were prostrate Kochia [Table 1(D)].

Plot 2

Plot 2 had a total living cover of 44.17% [Table 2(A)] where shrubs comprised 19.88% and grasses 69.46% of the living cover [Table 2(B)]. The most common species by cover and frequency was crested wheatgrass with a cover value of 23.33%, followed distantly by prostrate Kochia at 8.75% [Table 2(C)]. Woody species density was estimated at 1,118 plants per acre, all of which were prostrate Kochia [Table 2(D)].

Plot 3

Plot 3 had a total living cover with an even 50.00% [Table 3(A)] where grasses dominated followed by shrubs and forbs which were nearly equally represented [Table 3(B)]. Again, the most common species by cover and frequency was crested wheatgrass with a cover value of 16.67% and prostrate Kochia with of cover of 11.25% [Table 3(C)]. Woody species density was estimated at 3,689 plants per acre again, all of which were prostrate Kochia [Table 3(D)].

Plot 4

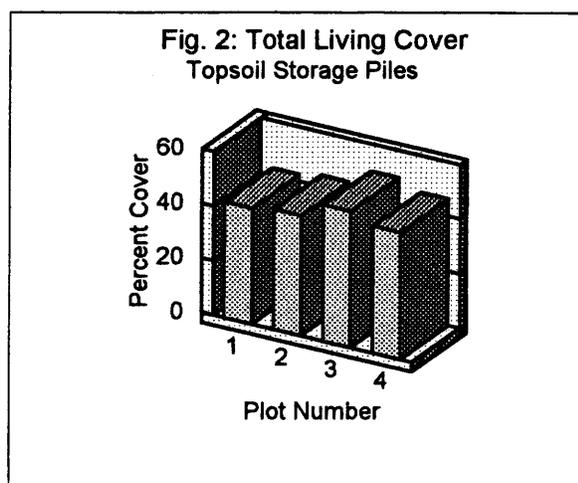
Plot 4 had a total living cover of 46.67% [Table 4(A)] where grasses were 68.84%, shrubs 22.68%, and forbs comprised 8.18% the cover [Table 4(B)]. Once again, the most common species by cover and frequency were crested wheatgrass and prostrate Kochia with cover values of 21.25% and 10.83%, respectively [Table 4(C)]. Woody species density was estimated at

8,775.35 plants per acre, all of which were prostrate Kochia [Table 4 (D)].

DISCUSSION

Cover

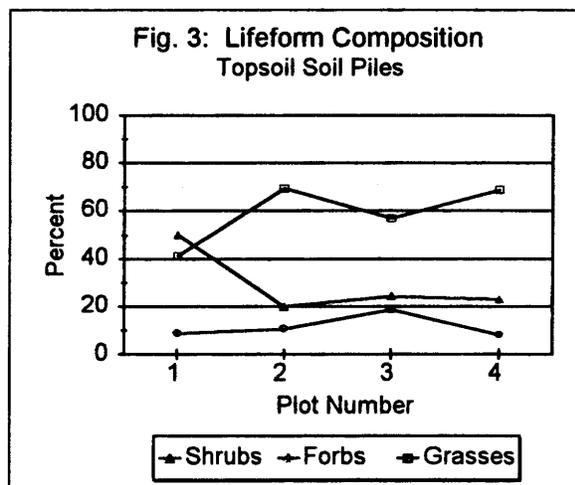
The data suggest that there is probably no significant difference or trends specific to the different treatments for total living cover. All cover values were between 42% and 50%. Figure 2 illustrates this point graphically.



Composition

Lifeform composition, or the percent of total cover contributed by shrubs, forbs and grasses

was also quite similar for each plot. Forb species were all fairly consistent with a relatively low proportion represented in the cover. This is probably a positive trend for overall revegetation potential of the material and no forbs were seeded. The only forb species encountered in the plots were weedy, annual exotics such as summer-cypress (*Kochia scoparia*) and African mustard (*Malcomia africana*). Woody species, however, seemed to be favored in the Plot 1 (non-irrigated, mulched with 3-4 tons/acre of alfalfa incorporated in the soil). This increase in



shrub cover seemed to be at the expense of grass cover. Figure 3 illustrates this point graphically. It is difficult to say for certain whether or not if mulch, the lack of irrigation, or a combination of the two treatments most influenced the patterns in Plot 1.

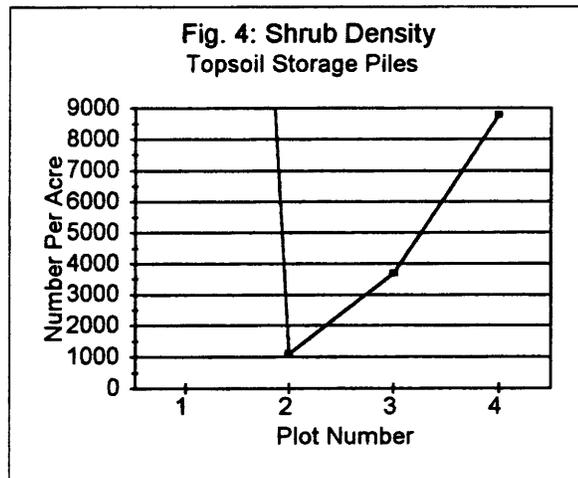
Density

Woody species density between plots were quite variable, but the non-irrigated plots had greater shrub densities by a wide margin (Figure 4). Also interesting to note is that the woody species density was higher in those plots where the mulch was incorporated in the soil (Plots 1 and 4). Again, it is difficult to say which specific treatment caused the variable results i.e. mulch incorporation, type of mulch, irrigation or interactions between all treatments.

Figure 5 shows the plots in a color photograph taken at the time of sampling.

Conclusions

The plot sizes were relatively small and without replication of treatments. The study was probably designed more to observe general trends and to find out whether or not the material would support native vegetation in adequate quantities for successful final revegetation of the site. In that case all plots performed relatively well and did not have a great amount of weedy plant



species outcompeting the native, more desirable plants.

Other trends appeared to be that irrigated plots seemed to favor grasses and non-irrigated and/or mulch incorporated in the surface of the plots appeared to favor greater establishment of woody plants. Species diversity, at least for grass species was relatively good. Although the introduced plant, crested wheatgrass, did much better than other grasses on the plots, it did not exclude establishment of them. It makes one wonder if the other native grasses would have done better on the plots if crested wheatgrass was excluded from the seed mix, or if overall grass proportions in the cover would have been much less.

Fig. 5: Color photograph of the topsoil storage pile test plot at the Wildcat Loadout



TABLE 1: Summary of: (A) total cover, (B) composition, (C) cover by species, and (D) woody species density for the Revegetated Topsoil Storage Pile at the Wildcat Loadout Area (Plot 1).

A.

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	42.50	8.04	12
Litter	6.67	2.56	12
Bareground	47.08	6.60	12
Rock	3.75	1.79	12

B.

COMPOSITION	PERCENT	STANDARD DEVIATION	SAMPLE SIZE
Shrubs	50.05	12.24	12
Forbs	8.73	8.88	12
Grasses	41.21	12.84	12

C.

COVER BY SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
<u>Trees & Shrubs</u>				
<i>Kochia prostrata</i>	21.25	6.81	12	100.00
<u>Forbs</u>				
<i>Kochia scoparia</i>	1.67	2.36	12	33.33
<i>Malcomia africana</i>	2.08	3.20	12	33.33
<u>Grasses</u>				
<i>Agropyron cristatum</i>	14.17	7.02	12	100.00
<i>Bromus tectorum</i>	1.25	2.98	12	16.67
<i>Elymus junceus</i>	2.08	3.20	12	33.33

D.

WOODY SPECIES DENSITY	NUMBER/ACRE
<i>Kochia prostrata</i>	57514.19
TOTAL	<u>57514.19</u>

TABLE 2: Summary of: (A) total cover, (B) composition, (C) cover by species, and (D) woody species density for the Revegetated Topsoil Storage Pile at the Wildcat Loadout Area (Plot 2).

A.

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	44.17	8.86	12
Litter	9.33	3.68	12
Bareground	42.50	9.01	12
Rock	4.00	1.73	12

B.

COMPOSITION	PERCENT	STANDARD DEVIATION	SAMPLE SIZE
Shrubs	19.88	8.20	12
Forbs	10.66	10.91	12
Grasses	69.46	11.69	12

C.

COVER BY SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
<u>Trees & Shrubs</u>				
<i>Kochia prostrata</i>	8.75	4.15	12	91.67
<u>Forbs</u>				
<i>Kochia scoparia</i>	1.50	2.99	12	25.00
<i>Malcomia africana</i>	2.92	3.80	12	41.67
<u>Grasses</u>				
<i>Agropyron cristatum</i>	23.33	9.20	12	100.00
<i>Bromus tectorum</i>	0.58	1.93	12	8.33
<i>Elymus lanceolatus</i>	2.50	3.82	12	33.33
<i>Elymus junceus</i>	0.42	1.38	12	8.33
<i>Elymus smithii</i>	3.33	4.71	12	41.67
<i>Triticum aestivum</i>	0.83	1.86	12	16.67

A.

WOODY SPECIES DENSITY	NUMBER/ACRE
<i>Kochia prostrata</i>	1117.61
TOTAL	<u>1117.61</u>

TABLE 3: Summary of: (A) total cover, (B) composition, (C) cover by species, and (D) woody species density for the Revegetated Topsoil Storage Pile at the Wildcat Loadout Area (Plot 3).

A.				
TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	
Living Cover	50.00	10.99	12	
Litter	13.83	5.71	12	
Bareground	35.00	13.07	12	
Rock	1.17	0.37	12	

B.			
COMPOSITION	PERCENT	STANDARD DEVIATION	SAMPLE SIZE
Shrubs	24.47	17.30	12
Forbs	18.60	32.39	12
Grasses	56.94	23.48	12

C.				
COVER BY SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
<u>Trees & Shrubs</u>				
<i>Kochia prostrata</i>	11.25	7.11	12	83.33
<u>Forbs</u>				
<i>Kochia scoparia</i>	9.17	17.66	12	25.00
<i>Malcomia africana</i>	1.67	3.73	12	16.67
<u>Grasses</u>				
<i>Agropyron cristatum</i>	16.67	9.65	12	91.27
<i>Bromus tectorum</i>	1.25	2.98	12	16.67
<i>Elymus lanceolatus</i>	3.33	5.14	12	33.33
<i>Elymus junceus</i>	4.17	5.34	12	41.67
<i>Elymus smithii</i>	2.50	3.82	12	33.33

A.	
WOODY SPECIES DENSITY	NUMBER/ACRE
<i>Kochia prostrata</i>	3688.73
TOTAL	<u>3688.73</u>

TABLE 4: Summary of: (A) total cover, (B) composition, (C) cover by species, and (D) woody species density for the Revegetated Topsoil Storage Pile at the Wildcat Loadout Area (Plot 4).

A.

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	46.67	9.86	12
Litter	11.33	3.45	12
Bareground	38.33	9.43	12
Rock	3.67	1.89	12

B.

COMPOSITION	PERCENT	STANDARD DEVIATION	SAMPLE SIZE
Shrubs	22.98	12.32	12
Forbs	8.18	11.19	12
Grasses	68.84	11.93	12

C.

COVER BY SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
<u>Trees & Shrubs</u>				
<i>Kochia prostrata</i>	10.83	6.07	12	91.67
<u>Forbs</u>				
<i>Kochia scoparia</i>	1.25	2.98	12	16.67
<i>Malcomia africana</i>	2.08	3.80	12	25.00
<u>Grasses</u>				
<i>Agropyron cristatum</i>	21.25	9.82	12	100.00
<i>Bromus tectorum</i>	1.25	2.17	12	25.00
<i>Elymus lanceolatus</i>	3.75	5.82	12	41.67
<i>Elymus junceus</i>	1.67	3.12	12	25.00
<i>Elymus smithii</i>	4.58	3.80	12	66.67

A.

WOODY SPECIES DENSITY	NUMBER/ACRE
<i>Kochia prostrata</i>	8775.35
TOTAL	<u>8775.35</u>

ANDALEX

Wildcat Loadout

PLOT #1

Revegetated Substitute Topsoil

Slope: 0-1 deg

Sample Date: 30 July 199

	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00
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SHRUBS

<i>Kochia prostrata</i>	15.00	20.00	15.00	20.00	15.00	15.00	25.00	25.00	20.00
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FORBS

<i>Kochia scoparia</i>	0.00	5.00	5.00	5.00	0.00	0.00	5.00	0.00	0.00
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<i>Malcomia africana</i>	0.00	10.00	0.00	0.00	0.00	5.00	0.00	0.00	5.00
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GRASSES

<i>Agropyron cristatum</i>	25.00	15.00	15.00	20.00	25.00	5.00	5.00	5.00	10.00
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<i>Bromus tectorum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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<i>Elymus junceus</i>	0.00	0.00	0.00	0.00	0.00	10.00	5.00	5.00	0.00
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COVER

Total Living Cover	40.00	50.00	35.00	45.00	40.00	35.00	40.00	35.00	35.00
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Litter	8.00	5.00	5.00	4.00	4.00	10.00	5.00	10.00	10.00
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Bareground	50.00	40.00	55.00	50.00	55.00	50.00	50.00	50.00	50.00
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Rock	2.00	5.00	5.00	1.00	1.00	5.00	5.00	5.00	5.00
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% COMPOSITION

Shrubs	37.50	40.00	42.86	44.44	37.50	42.86	62.50	71.43	57.14
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Forbs	0.00	30.00	14.29	11.11	0.00	14.29	12.50	0.00	14.29
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Grasses	62.50	30.00	42.86	44.44	62.50	42.86	25.00	28.57	28.57
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ANDALEX
 Wildcat Loadout
 PLOT #1
 Revegetated Substitute Topsoil
 Slope: 0-1 deg
 Sample Date: 30 July 1997

10.00	11.00	12.00	Mean	SDev	Freq	
<hr/>						SHRUBS
20.00	40.00	25.00	21.25	6.81	100.00	Kochia prostrata
<hr/>						FORBS
0.00	0.00	0.00	1.67	2.36	33.33	Kochia scoparia
0.00	0.00	5.00	2.08	3.20	33.33	Malcomia africana
<hr/>						GRASSES
10.00	15.00	20.00	14.17	7.02	100.00	Agropyron cristatum
5.00	0.00	10.00	1.25	2.98	16.67	Bromus tectorum
5.00	0.00	0.00	2.08	3.20	33.33	Elymus junceus
<hr/>						COVER
40.00	55.00	60.00	42.50	8.04		Total Living Cover
10.00	5.00	4.00	6.67	2.56		Litter
45.00	35.00	35.00	47.08	6.60		Bareground
5.00	5.00	1.00	3.75	1.79		Rock
<hr/>						% COMPOSITION
50.00	72.73	41.67	50.05	12.24		Shrubs
0.00	0.00	8.33	8.73	8.88		Forbs
50.00	27.27	50.00	41.21	12.84		Grasses
<hr/>						

ANDALEX

Wildcat Loadout

PLOT #2

Revegetated Substitute Topsoil

Slope: 0-1 deg

Sample Date: 30 July 199

	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00
SHRUBS									
<i>Kochia prostrata</i>	5.00	5.00	15.00	10.00	10.00	15.00	10.00	10.00	10.00
FORBS									
<i>Kochia scoparia</i>	5.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Malcolmia africana</i>	0.00	0.00	0.00	0.00	5.00	0.00	10.00	5.00	10.00
GRASSES									
<i>Agropyron cristatum</i>	15.00	10.00	30.00	20.00	35.00	35.00	15.00	20.00	15.00
<i>Bromus tectorum</i>	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Elymus junceus</i>	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Elymus lanceolatus</i>	0.00	5.00	0.00	5.00	0.00	0.00	10.00	0.00	0.00
<i>Elymus smithii</i>	5.00	0.00	5.00	5.00	0.00	15.00	0.00	0.00	0.00
<i>Triticum aestivum</i>	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER									
Total Living Cover	35.00	35.00	50.00	40.00	50.00	65.00	45.00	35.00	35.00
Litter	5.00	9.00	9.00	5.00	10.00	5.00	15.00	10.00	14.00
Bareground	55.00	55.00	40.00	50.00	35.00	25.00	35.00	50.00	50.00
Rock	5.00	1.00	1.00	5.00	5.00	5.00	5.00	5.00	1.00
% COMPOSITION									
Shrubs	14.29	14.29	30.00	25.00	20.00	23.08	22.22	28.57	28.57
Forbs	14.29	8.57	0.00	0.00	10.00	0.00	22.22	14.29	28.57
Grasses	71.43	77.14	70.00	75.00	70.00	76.92	55.56	57.14	42.86

ANDALEX
 Wildcat Loadout
 PLOT #2
 Revegetated Substitute Topsoil
 Slope: 0-1 deg
 Sample Date: 30 July 1997

10.00	11.00	12.00	Mean	SDev	Freq	
<hr/>						SHRUBS
0.00	10.00	5.00	8.75	4.15	91.67	Kochia prostrata
 						FORBS
10.00	0.00	0.00	1.50	2.99	25.00	Kochia scoparia
5.00	0.00	0.00	2.92	3.80	41.67	Malcolmia africana
 						GRASSES
20.00	40.00	25.00	23.33	9.20	100.00	Agropyron cristatum
0.00	0.00	0.00	0.58	1.93	8.33	Bromus tectorum
0.00	0.00	0.00	0.42	1.38	8.33	Elymus junceus
0.00	0.00	10.00	2.50	3.82	33.33	Elymus lanceolatus
10.00	0.00	0.00	3.33	4.71	41.67	Elymus smithii
5.00	0.00	0.00	0.83	1.86	16.67	Triticum aestivum
<hr/>						COVER
50.00	50.00	40.00	44.17	8.86		Total Living Cover
10.00	5.00	15.00	9.33	3.68		Litter
35.00	40.00	40.00	42.50	9.01		Bareground
5.00	5.00	5.00	4.00	1.73		Rock
<hr/>						% COMPOSITION
0.00	20.00	12.50	19.88	8.20		Shrubs
30.00	0.00	0.00	10.66	10.91		Forbs
70.00	80.00	87.50	69.46	11.69		Grasses

ANDALEX

Wildcat Loadout

PLOT #3

Revegetated Substitute Topsoil

Slope: 0-1 deg

Sample Date: 30 July 199

	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00
SHRUBS									
<i>Kochia prostrata</i>	5.00	20.00	15.00	10.00	5.00	20.00	10.00	15.00	0.00
FORBS									
<i>Kochia scoparia</i>	0.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00	45.00
<i>Malcomia africana</i>	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	10.00
GRASSES									
<i>Agropyron cristatum</i>	20.00	15.00	35.00	30.00	15.00	5.00	20.00	10.00	10.00
<i>Bromus tectorum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00
<i>Elymus junceus</i>	15.00	0.00	10.00	0.00	10.00	0.00	10.00	0.00	0.00
<i>Elymus lanceolatus</i>	0.00	5.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00
<i>Elymus smithii</i>	0.00	0.00	0.00	0.00	0.00	10.00	0.00	10.00	0.00
COVER									
Total Living Cover	40.00	40.00	70.00	40.00	45.00	35.00	50.00	45.00	65.00
Litter	14.00	9.00	9.00	13.00	19.00	4.00	19.00	19.00	18.00
Bareground	45.00	50.00	20.00	45.00	35.00	60.00	30.00	35.00	15.00
Rock	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	2.00
% COMPOSITION									
Shrubs	12.50	50.00	21.43	25.00	11.11	57.14	20.00	33.33	0.00
Forbs	0.00	0.00	14.29	0.00	33.33	0.00	0.00	0.00	84.62
Grasses	87.50	50.00	64.29	75.00	55.56	42.86	80.00	66.67	15.38

ANDALEX
 Wildcat Loadout
 PLOT #3
 Revegetated Substitute Topsoil
 Slope: 0-1 deg
 Sample Date: 30 July 1997

10.00	11.00	12.00	Mean	SDev	Freq	
<hr/>						SHRUBS
20.00	0.00	15.00	11.25	7.11	83.33	Kochia prostrata
<hr/>						FORBS
0.00	50.00	0.00	9.17	17.66	25.00	Kochia scoparia
0.00	0.00	0.00	1.67	3.73	16.67	Malcomia africana
<hr/>						GRASSES
15.00	0.00	25.00	16.67	9.65	91.67	Agropyron cristatum
0.00	0.00	5.00	1.25	2.98	16.67	Bromus tectorum
0.00	5.00	0.00	4.17	5.34	41.67	Elymus junceus
10.00	0.00	15.00	3.33	5.14	33.33	Elymus lanceolatus
5.00	0.00	5.00	2.50	3.82	33.33	Elymus smithii
<hr/>						COVER
50.00	55.00	65.00	50.00	10.99		Total Living Cover
9.00	24.00	9.00	13.83	5.71		Litter
40.00	20.00	25.00	35.00	13.07		Bareground
1.00	1.00	1.00	1.17	0.37		Rock
<hr/>						% COMPOSITION
40.00	0.00	23.08	24.47	17.30		Shrubs
0.00	90.91	0.00	18.60	32.39		Forbs
60.00	9.09	76.92	56.94	23.48		Grasses

ANDALEX

Wildcat Loadout

PLOT #4

Revegetated Substitute Topsoil

Slope: 0-1 deg

Sample Date: 30 July 199

	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00
SHRUBS									
<i>Kochia prostrata</i>	15.00	10.00	5.00	15.00	10.00	0.00	20.00	20.00	15.00
FORBS									
<i>Kochia scoparia</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Malcomia africana</i>	0.00	0.00	10.00	10.00	0.00	5.00	0.00	0.00	0.00
GRASSES									
<i>Agropyron cristatum</i>	15.00	25.00	15.00	15.00	40.00	20.00	40.00	20.00	15.00
<i>Bromus tectorum</i>	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
<i>Elymus junceus</i>	5.00	0.00	0.00	0.00	0.00	5.00	10.00	0.00	0.00
<i>Elymus lanceolatus</i>	0.00	0.00	5.00	10.00	0.00	0.00	0.00	0.00	5.00
<i>Elymus smithii</i>	5.00	10.00	5.00	0.00	0.00	10.00	0.00	5.00	5.00
COVER									
Total Living Cover	40.00	45.00	40.00	55.00	50.00	40.00	70.00	45.00	40.00
Litter	15.00	14.00	10.00	14.00	10.00	10.00	10.00	10.00	9.00
Bareground	40.00	40.00	45.00	30.00	35.00	45.00	15.00	40.00	50.00
Rock	5.00	1.00	5.00	1.00	5.00	5.00	5.00	5.00	1.00
% COMPOSITION									
Shrubs	37.50	22.22	12.50	27.27	20.00	0.00	28.57	44.44	37.50
Forbs	0.00	0.00	25.00	18.18	0.00	12.50	0.00	0.00	0.00
Grasses	62.50	77.78	62.50	54.55	80.00	87.50	71.43	55.56	62.50

ANDALEX
 Wildcat Loadout
 PLOT #4
 Revegetated Substitute Topsoil
 Slope: 0-1 deg
 Sample Date: 30 July 1997

10.00	11.00	12.00	Mean	SDev	Freq	
<hr/>						SHRUBS
10.00	5.00	5.00	10.83	6.07	91.67	Kochia prostrata
<hr/>						FORBS
0.00	5.00	10.00	1.25	2.98	16.67	Kochia scoparia
0.00	0.00	0.00	2.08	3.80	25.00	Malcomia africana
<hr/>						GRASSES
20.00	25.00	5.00	21.25	9.82	100.00	Agropyron cristatum
5.00	0.00	5.00	1.25	2.17	25.00	Bromus tectorum
0.00	0.00	0.00	1.67	3.12	25.00	Elymus junceus
5.00	20.00	0.00	3.75	5.82	41.67	Elymus lanceolatus
10.00	0.00	5.00	4.58	3.80	66.67	Elymus smithii
<hr/>						COVER
50.00	55.00	30.00	46.67	9.86		Total Living Cover
5.00	10.00	19.00	11.33	3.45		Litter
40.00	30.00	50.00	38.33	9.43		Bareground
5.00	5.00	1.00	3.67	1.89		Rock
<hr/>						% COMPOSITION
20.00	9.09	16.67	22.98	12.32		Shrubs
0.00	9.09	33.33	8.18	11.19		Forbs
80.00	81.82	50.00	68.84	11.93		Grasses