ANACONDA COPPER COMPANY
P. O. Box 638
Grants, New Mexico 87020

The range condition survey recently completed on Anaconda's Jack Pile uranium mine was made to determine if reclamation work on mined areas will return the land to its former vegetative condition. In order to make this comparison, clipping studies were done on undisturbed areas which had experienced very little grazing pressure. In order to make our comparisons as reliable as possible, the disturbed and undisturbed areas were selected with very similar physiographic, topographic and climatic conditions.
Some problems encountered were introduced grass species seeded for reclamation including weeping lovegrass and crested wheatgrass.
Soils correlation will be difficult because reclaimed areas (dumps) used available material (sandstone) and by mechanical means crushed this parent material for the soil that was used as the planting medium. Results of the clipping data on the undisturbed sites shows:
Site 1 - Mesa top loamy upland site. Ecological condition of this undisturbed site is good. Major species of this area were; Galleta, Blue Grama, Bottlebrush Squirreltail and Three Awns. Also present but in a very small amount was Western Wheatgrass and Spike Muhly. Production was determined at 497 lbs./ac. Suggested initial stocking rates for this area according to the above data is six animal units per section or, 8.5 acres per animal unit month. (Animal unit is equivalent to a mother cow and calf or approximately 1000 lbs.)

This stocking rate is based on areas of similar topography, soils, and production. It is important to note that this capacity was determined considering no problems in access or distribution of livestock. The fact is however, that access to this area is limited and distribution of livestock may be a problem, because of water distribution and location in relation to the grazing area.

The clipping study on the reclamation areas centered on three different stages of revegetation. Site one (1) had been established for one year. Site two (2) had been established for approximately three years and Site three (3) was the oldest area and had been established approximately five years ago. This method of evaluation was used to determine if, for a typical situation, a pattern could be established as to the success of reclamation of the area. Again, similar topographic, climatic and physiographic areas were used. Other results of the clipping study shows that Site one (1) was predominately annual vegetation. There was evidence of success on establishing Western Wheatgrass, Sideoats Grama, Weeping Lovegrass and Fourwing Saltbush. Indian Ricegrass, Blue Grama, and Bottlebrush Squirreltail are all present in small amounts.

Site 2 - Shows an appreciable decrease in the production of annual vegetation. Blue Grama, Alkali Sacaton and Fourwing Saltbush were the dominant forage producers.

Site 3 - Blue Grama, Indian Ricegrass, Sideoats Grama and Three Awn are the major grass species with Fourwing Saltbush also prominent.

The trend would tend to show that initial establishment of a reseeded area would comprise of annual vegetation followed by establishment of introduced grasses such as; Weeping Lovegrass and Crested Wheatgrass. Over a period of time, these would be replaced by native vegetation. This shows to be the case in this instance and would be expected under controlled conditions such as we experienced.

For stocking comparisons, we used Site three (3) as a guide since it was the oldest established area and would tend to give better information. On this basis we determined from production and composition initial suggested stocking rates of 6 animal units per section or 9.0 acres per animal unit month. This would allow us to conclude that revegetation of this area can provide comparable production to undisturbed surrounding areas. The increased shrub composition including Fourwing Saltbush, Snakeweed, and other shrubs should provide increased nesting sites and cover for wildlife such as; quail, doves, songbirds, and rodents. The distance to water should not be a detriment to wildlife.

Ken Walker

KEN WALKER
District Conservationist, SCS

Jerry Reioux - Range Conservationist
Robert Abercrombie - Range Conservationist
Wilbur Lewis - Environmental Division Anaconda Co.

Soil Conservation Service File Code: RANGE

RANGE CONDITION WORKSHEET

Location Ft 1 Mea Top. Range Site Loamy Upland

Pasture (Gordon Mesa) L. R. A. WP-2

Operating Unit _____ Date 6/19/80 By P. Abercrombie

Species	Present Production Occular Est. ___ Double Sampled ___ Pounds Per Acre ✓ Kilograms per Hectare ___	Present	COMPOSITION Allowable 1/	Counted in Condition Rating
		Percent of Total Production		
Grasses Tumble grass	1	.2	.3 -	.3 .2
Galleta	67	13.5	15 5	15 5
W. Wheat	1	.2	.3 10	.3 .3
Blue Grama	94	19	15 20	15 20
Squirreltail	150	30	15 10	15 10
Ring Muhly	20	4	3 -	3
3 awn	105	21	2 5	2 5
Spike Muhly	1	.2	.3 .5	.3 .3
Shrubs, half shrubs, vines & trees				
Snake weed	42	8.5	5 5	5 5
Forbs				
Annuals	16	3.3	3 5	3 3.5
				49.2
Total	air dried wt 497	100	59	

Range Condition (Ecological) 59

Range Trend Up ✓ Down ___ (See reverse)

Plant Density 20 %

Range Condition Class Good

See Natural Potential Plant Community section of Range Site Description. Not to exceed the upper limit of the approximate range in % composition for the individual species.

Work Sheet

	Galleta	Wildrye	Bluegrass	Sprucetop	Ring muhly	Sideoats	Dropseed	Bouteloua	Mt. muhly	Tumble Lgrass		
1.												
2.	5	1	7	30	20	8	T	1	1			
3.	5		5	20		15	7	2				
4.	8			25		3	2	20				
5.				21		4		15				
6.	1	T	20	5		3	T	11				
7.	6			29		2	1	1		1		
8.	10			12		8	2					
9.	6		25			T	3	14				
10.	6		37	5		2	T	10				
11.	20			3		2		1				
12.												
13.												
14.												
15.												
16.												
17.												
18.												
19.												
20.												
Total	67	1	94	150	20	42	16	105	1	1		
Ave.	6.7	.1	9.4	15.	2.0	4.2	1.6	10.5	.1	.1		

Notes

Scattered
Cholla
Juniper
Rabbit Brush.
Mesa top
Flat to slight
slope.
Plant Density 20

GUIDE FOR DETERMINING TREND
(Sec. 370.1 - National Range Handbook

Long Term Indicators	4	3	2	1	0
Plant Vigor		X			
Reproduction		X			
Composition Changes		X			
Plant Residue	X				
Soil Surface Conditions		X			
Sub-Totals					

RANGE TREND:
Improving (10+) ✓
Declining (-10)

Soil Conservation Service File Code: [illegible]

RANGE CONDITION WORKSHEET

Location LB Dump Range Site Mesa Top (Loamy)

Pasture Dump I, Reclaimed L. R. A. WP-2 (SD-2)

Operating Unit _____ Date _____ By _____

Species	Present Production Occular Est. ___ Double Sampled ___ Pounds Per Acre ✓ Kilograms per Hectare ___	Present	COMPOSITION Allowable 1/	Counted in Condition Rating
		Percent of Total Production		
Grasses Weeping Lovegrass	140	14	15	14
W. Wheat ✓	5	.4	15	.4
Sideoats grama	6	.5	15	.5
Indian rice grass	2	.2	15	.2
Blue Grama	2	.2	10	.2
Squirrel Tail	1	.1	7	.1
Crested Wheat	3	.3	—	—
Shrubs, half shrubs, vines & trees				
Ephedra	190	18.4	10	10
Forbs				
White Clover	70	7		
Russian thistle	250	24.7	-10	10
Kochia	354	34		
Annuals	1	.1		35.4
Total	1028			

Range Condition (Ecological) _____

Range Trend Up ✓ Down _____ (See reverse)

Plant Density 10 % Range Condition Class _____

See Natural Potential Plant Community section of Range Site Description. Not to exceed the upper limit of the approximate range in % composition for the individual species.

	Weeping Love Grass	Clover	Western Wheat	Sideoats	Other Annuals	Indian Ricegrass	Blue Grass	Kochia	Russian Thistle	Yellow Wing	Squirrel Tail	Crested Wheat
1.												
2.	18	70	T	1	1							
3.	51		T				T	69	110			
4.	75		T	T				25	T	T		
5.				T		T		20	T			
6.								15	T			
7.				T				25	T			
8.			T	T	T	T	T	175	108	1		
9.			3	1		T	T	5	20	150	1	
10.				1			T	20	10	37		3
11.			T	1		T		T	T	2		T
12.												
13.												
14.												
15.												
16.												
17.												
18.												
19.												
20.												
Total 144		70	5	6	1	2	2	354	250	190	1	3
Ave 144		7.0	.5	.6	.1	.2	.2	35.4	25.	19.	.1	.3

Reseeded area. seedlings had good start but turned very dry. Will die if no rain soon.

GUIDE FOR DETERMINING TREND
(Sec. 370.1 - National Range Handbook

Long Term Indicators	4	3	2	1	0
Plant Vigor			X		
Reproduction		X		X	
Composition Changes		X			
Plant Residue	X				
Soil Surface Conditions		X			
Sub-Totals					

RANGE TREND:
Improving (10+) 13
Declining (-10)

U. S. Department of Agriculture
Soil Conservation Service

NM-RANGE-26 (Rev. 4/7
File Code: RANGE-18

RANGE CONDITION WORKSHEET

Location 2A Flat Range Site Clayey Upland
Feature [illegible] L. R. A. WP-2
Operating Unit Jack Pike Date 6/17/80 By R. [illegible]

Species	Present Production Occular Est. ___ Double Sampled ✓ Pounds Per Acre ✓ Kilograms per Hectare ___	Present	COMPOSITION Allowable 1/	Counted in Condition Rating
		Percent of Total Production		
Grasses				
[illegible]	62	16	3	3
[illegible]	102	2[illegible]	15	15
[illegible]	18	4.9	5	4.9
[illegible]	80	21	20	20
[illegible]	7	—	5	—
[illegible]	10	2.6	3	2.6
Shrubs, half shrubs, vines & trees				
[illegible] weed	107	28	5	5
Forbs				
[illegible]	5	.5	10	.5
Total	384	100		

Range Condition (Ecological) 56

Range Trend Up ✓ Down ___ (See reverse)

Plant Density 15 % Range Condition Class Good

1/ [illegible] Potential Plant Community section of Range Site Description. Not to [illegible] the upper limit of the approximate range in % composition for the individual [illegible]

Work Sheet

Note:

	Bare	Gallery	Sand Sagebrush	Snakeweed	Alkali Sacaton	Indian Rice Grass	Annual Forbs	Ring Milk				
1.												
2.	17	22	12	1		T						
3.	7	18	1	2	80							
4.	T	4	T	25								
5.	5	10		15			T					
6.	5	5	2	30			1					
7.	5	15	2	1			T	10				
8.	7			5			T					
9.	10	20	T	4			2					
10.	8	2		12								
11.		6		12			T					
12.												
13.												
14.												
15.												
16.												
17.												
18.												
19.												
20.												
Total 62		102	18	107	80	T	5	10				
Ave. 62		10.2	1.8	10.7	8.0		.5	1.0				

Needle & Thread scattered.

Fringed sage scattered but hedged close.

Winter fat.

GUIDE FOR DETERMINING TREND
(Sec. 370.1 - National Range Handbook

Long Term Indicators	4	3	2	1	0
Plant Vigor		X			
Reproduction		X			
Composition Changes		X			
Plant Residue			X		
Soil Surface Conditions		X			
Sub-Totals					

RANGE TREND:
Improving (10+) 14
Declining (-10)

S. Dep...
...Conservation Service

File Code: RANGE-18

RANGE CONDITION WORKSHEET (plains)

...ation 2B Rolleyville Range Site Loamy Upland

...ture Dump J Richmond L. R. A. WP-2

...erating Unit _____ Date 6/15/80 By R. Chuckwalla

...cies	Present Production Occular Est. Double Sampled ✓ Pounds Per Acre ✓ Kilograms per Hectare	Present	COMPOSITION Allowable 1/	Counted in Condition Rating
		Percent of Total Production		
Spiked tail	T	–	5	T
...asses Blue Grama	78	35	15	15
Indian Rice	11	5	5	5
Crested wheat	12	5	–	–
Sand Dropseed	11	5	5	5
Alkali Sacaton	83	35	15	15
Weeping Lime grass	10	4	–	–
Sideoats	T	T	–	–
Sedge	T	T	–	
...rubs, half shrubs, vines & trees				
4 wing	18	8	5	5
Snake weed	T	T	5	T
...rbs				
Annuals	4	3	15	3
...tal	228	3	65	

Range Condition (Ecological) 49

...nge Trend Up _____ Down _____ (See reverse)

...ant Density 5 % Range Condition Class _____

See Natural Potential Plant Community section of Range Site Description. Not to exceed the upper limit of the approximate range in % composition for the individual species.

U. S. Department of Agriculture
Soil Conservation Service

NM-RANGE-26 (Rev. 4/7
File Code: RANGE-18

RANGE CONDITION WORKSHEET

Location 3 Dump Range Site approximates shallow

Pasture [illegible] Reclaimed L. R. A. _____

Operating Unit _____ Date _____ By _____

Species	Present Production Occular Est. ___ Double Sampled ___ Pounds Per Acre ✓ Kilograms per Hectare ___	Present	COMPOSITION Allowable 1/	Counted in Condition Ratin
		Percent of Total Production		
Sideoats	50	21	15	15
Grasses Big Blue Stem	10	14	10	14
Blue Grama	31	13	15	13
Alkali Sacaton	T	—	—	
Indian rice	28	12	10	10
Western Wheat	1	8		
Sand Dropseed	19	8	5	5
Sedge [illegible]	2	1	10	1
[illegible]	62	28	—	
Ring mully	3	1	5	1
Shrubs, half shrubs, vines & trees				
4 wing	18	8	5	5
Forbs				
Kochia	4	2		
Russian Thistle	3	1	3	
Annuals	1	5		
				54
Total	232	100		

Range Trend Up ✓ Down _____ (See reverse)

Range Condition (Ecological) GOOD

Plant Density 12 %

Range Condition Class Good

1/ See Natural Potential Plant Community section of Range Site Description. Not to exceed the upper limit of the approximate range in % composition for the individual species.

In planting mix. Big bluestem substituted for little bluestem

NM-RANGE-26 (BACK)

Work Sheet

	Big Bluestem	Tall Oat Grass	Blue Grama	Little Bluestem	Rocky Mtn. Bee Plant	Tall Dropseed	Sideoats Grama	Cutleaf Fleabane	Rubber Rabbitbrush	Western Wheatgrass	Cheatgrass	Sand Dropseed	Bare Ground	Squirrel Tail	Muhly Grass
1.															
2.	10	30	T	T	T	T	T	T	T						
3.			28		T	T	10		T	T	10				
4.					1	T			T						
5.					1	26			T		2	2			
6.			T		T				T		2	1			
7.							1				T		15	1	
8.							20	T				T	20	1	3
9.					T		10		T		3		2		
10.							1					15	25		
11.		10	2			1	T	T		1	1				
12.															
13.															
14.	Canopy Cover														
15.		9 ft / 50 ft													
16.		17 / 50 ft													
17.		11 / 50 ft													
18.		13 / 50 ft													
19.															
20.															
Total 10		50	31	T	4	28	43	1	3	1	18	19	62	2	3
Ave. 1.1		5.0	3.1	T	.4	2.8	4.3	.1	.3	.1	1.8	1.9	6.2	.2	.3

Notes

Small chamisa very good stand. Also spp. Smooth Brome Little Bluestem

GUIDE FOR DETERMINING TREND (Sec. 370.1 - National Range Handbook

Long Term Indicators	4	3	2	1	0
Plant Vigor		X			
Reproduction		X			
Composition Changes	X				
Plant Residue		X			
Soil Surface Conditions		X			
Sub-Totals					

RANGE TREND:
Improving (10+) 16
Declining (-10)

Work Sheet

	Blue Grass	Indian Rice	Crested Wheat	Sand Dropseed	Bryant Forbs	Alkali Sacaton	Yucca	Snake weed	Wooly Loveglass	Squirrel Tail	Bromus	Side oats
1.												
2.	4	2	1	1	T							
3.	15	3.	T	T	T	15	1	T	1			
4.	10	T	1		T	45	10		1			
5.	5	T	1		T	1						
6.	6	1	T	T	T		T					
7.	10		2	1	T		T					
8.	9	T	3	T			4		8			
9.	7	1	2	8	T	2	2					
10.	7		T		T					1		
11.	5	3	1			20					T	T
12.												
13.												
14.												
15.												
16.												
17.												
18.												
19.												
20.												
Total 78	11	12	11	4	83	18	T	10	1	T	T	
Ave. 28	1.1	1.2	1.1	.4	8.3	1.8	T	1	.1			

Notes

Grass scattered looks sick or dying in some spots

GUIDE FOR DETERMINING TREND
(Sec. 370.1 - National Range Handbook

Long Term Indicators	4	3	2	1	0
Plant Vigor		X			
Reproduction	X	X			
Composition Changes	X	X			
Plant Residue			X		
Soil Surface Conditions		X			
Sub-Totals					

RANGE TREND:
Improving (10+) 14
Declining (-10)

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