VEGETATION MONITORING

COTTONWOOD/WILBERG, DES-BEE-DOVE, DEER CREEK AND COTTONWOOD FAN PORTAL AREAS

1991

ACT/015/019

PACIFICORP ELECTRIC OPERATIONS

VEGETATION MONITORING OF THE

COTTONWOOD/WILBERG, DES-BEE-DOVE,

AND DEER CREEK AREAS

1991

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PACIFICORP ELECTRIC
VEGETATION MONITORING OF THE
COTTONWOOD/WILBERG, DES-BEE-DOVE, & DEER CREEK AREAS

1991

INTRODUCTION

Several areas have been seeded for test plots and interim revegetation on permit areas for Pacificorp Electric (Utah Power & Light, Mining Company). This report addresses vegetation monitoring results for 1991 of these areas. Several of the areas were also sampled in 1990, so comparisons can be made between years. The following is a list of areas monitored and reported within this document.

Cottonwood/Wilberg Area

- Old Fan Road
- 4th East Road
- Storage Yard Slope
- Road/Silo-Pad Slope
- Tipple Area Slopes
- Sediment Pond Banks
- Waste Rock (Old) Cells 1-6
- Waste Rock (Old) Berms 1-3
- Test Plots
- Parking Lot Slope
- Waste Rock (New) Road Slopes
- Waste Rock (New) Topsoil Stockpiles
- Waste Rock (New) Subsoil Stockpiles
- Waste Rock (New) Sediment Banks

Des-Bee-Dove Area

- Beehive Yard Slope
- Deseret Road Berm
- Portal Road Berm
- Bathhouse Road Berm
- Tipple Slope
- Sediment Storage Slope
- Sediment Pond Banks
- Beehive Substation Slope
- Bathhouse Slope
- Material Yard Slope
- Sediment Pond Area

Haul Road Bench
Test Plot
Beehive Road Berm
Haul Road Reference Area
Haul Road Fill Slopes

Deer Creek

Pipeline
Deer Canyon
Refuse Pile and Berm
Rock Slide and Berm
Water Plant Slope
Fan Road Slopes
Waste Rock Access Road Slopes
Phase I Berm
Phase I Diversion
Road Side Areas
Gate Area Slope

Cottonwood Fan Portal Area

Reclaimed Slope
Soil Piles
Reference Area

METHODS

Vegetation monitoring was conducted on revegetated sites and test plots for Pacificorp Electric in the growing season of 1991. Quantitative and/or qualitative data were taken on each site, depending on the monitoring schedule. In other words, quantitative data sampling was not scheduled this year on some sites. Each data sheet will describe the sample parameters specific to that site. The Cottonwood Fan Portal Area and Des-Bee-Dove Haul Road have separate methods and results sections in this document.

QUALITATIVE DATA

Qualitative data were recorded on all sites. A qualitative data sheet for each site is included in this report and provides the following information: site name, general area, sample date, observers, slope, exposure, acreage, animal disturbance, erosion damage, cover, dominant plant species observed, and other pertinent notes.

Site Name

The site name that is given correlates with Pacificorp's maps of the area and can be used for future reference and sampling.

Area

The "Area" on the data sheet is a reference to the general mine or property areas for quick reference and general use.

Date

Sample dates are also provided. All sample dates are within the 1991 growing season and were before frost.

Workers

Lists the names of the individuals who recorded the data.

Exposure

Exposure was recorded on each site. Often the site had several exposures differences. In those cases, "variable" was written for the exposure on the data sheet.

Animal Disturbance

Values were given to the relative use by animal species of each site. The values and a brief explanation are given below.

None -	no animal use was observed.
Slight -	only little animal use was observed by droppings, tracks, or cropped vegetation.
Moderate-	a fair degree of use was observed mostly by the cropped vegetation. Several inches of production still remained available for use by the animals.
Severe -	animal use had taken nearly all of the available current year's production.

Erosion

Erosion of the area was also assessed by qualitative methods. Actual measurements, descriptive notes or values described below were given to each site.

None - no erosion was observed.

Slight - small erosion rills beginning, usually less than 2:1 (2 inches wide by 1 inches deep).

Moderate - erosional rills and gullies from 2:1 to 4:2.

Severe - erosional rills and gullies over to 4:2 were observed.

Cover

Cover differences or notes may be given on the data sheet or references to the quantitative data.

Dominant Plant Species Observed

Plant species that were observed, but not encountered in the quadrats when sampling were listed here. Therefore, for a list of all species on a given site, one should refer to both quantitative and qualitative data sheets.

Notes

Site-specific, pertinent notes about each area were also taken i.e. identification of special considerations, areas of differential growth patterns, etc. Notes on specific methodologies on each site also are described here.

Photographs

Color photographs were taken for each site and are included in this report for documentation.

QUANTITATIVE DATA

Cover and Composition

Cover estimates were made using ocular methods with randomly placed meter square quadrats. Total living cover and cover by species were reported, including all means and standard deviations. Species composition was also assessed from the quadrats. Sample size was determined by the relative size or heterogeneousness of the given site. In other words, if a site was large or had greater diversity in species composition or structure, a greater number of samples were taken. Because these data are presented to observe only trends for revegetation success and soil stabilization, no attempt was made to achieve sample adequacy for each individual site.

RESULTS

Data sheets for qualitative and quantitative (including raw data) sampling are included in this report. This will give the reviewer an overall view of the revegetation success of each area. For results of the above parameters, refer to the site-specific data sheets.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Old Fan Road

AREA: UPL Cottonwood/Wilberg (Interim Reveg. Sites)

DATE: 1991

WORKERS: P. Collins, D. Collins

SLOPE: 13 - 15 deg.

EXPOSURE: Variable

AREA: .8 Acre

ANIMAL USE/DISTURBANCE: Still used by deer.

EROSION: Insignificant, except for on large rock slide.

COVER: 40-45 percent

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamnus nauseosus
Aster chilensis
Linum lewsii
Agropyron spicatum
Elymus salinus

NOTES
1) Area looked very good.
2) No significant change from last year.
3) See 1990 data for more quant. data etc.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: 4TH East Road

AREA: UPL Cottonwood/Wilberg

DATE: 1991

WORKERS: P. Collins, D. Collins

SLOPE: 3 - 5 deg., variable

EXPOSURE: N

AREA: .1 acre

ANIMAL USE/DISTURBANCE: Slight (less than last year)

EROSION: Minimal

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Medicago sativa
Agropyron smithii
Agropyron dasystachyum

(also see quantitative data)

NOTES:
1) For quantitative data, we placed sq. m quadrats regularly.
2) Cover looked good.

D

U P & L 1991 DATA
COTTONWOOD/WILBERG

UP&L-COTTONWOOD/WILBERG
4th East Road
Acreage: .1
Slope: 3-5 var
Exposure: N

Sample Date: Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	Mean	SDev	Freq
SHRUBS											
FORBS											
Melilotus officinalis	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.63	1.65	
Aster chilensis	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.63	1.65	
Medicago sativa	20.00	35.00	15.00	27.00	0.00	30.00	15.00	20.00	20.25	10.15	
GRASSES											
Agropyron smithii	10.00	20.00	0.00	28.00	0.00	35.00	25.00	0.00	14.75	13.20	
Agropyron dasystachyum	10.00	0.00	0.00	0.00	20.00	0.00	0.00	40.00	8.75	13.64	
Agropyon spicatum	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	2.50	6.61	
Elymus cinereus	5.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	1.25	2.17	
COVER											
Total Living Cover	45.00	55.00	40.00	55.00	30.00	65.00	40.00	60.00	48.75	11.11	
Litter	20.00	35.00	40.00	40.00	65.00	25.00	45.00	30.00	37.50	12.99	
Bareground	30.00	5.00	5.00	3.00	2.00	5.00	5.00	5.00	7.50	8.57	
Rock	5.00	5.00	15.00	2.00	3.00	5.00	10.00	5.00	6.25	3.96	
% COMPOSITION											
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Forbs	44.44	63.64	37.50	49.09	33.33	46.15	37.50	33.33	43.12	9.50	
Grasses	55.56	36.36	62.50	50.91	66.67	53.85	62.50	66.67	56.88	9.50	

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Storage Yard Slope

AREA: Cottonwood/Wilberg (1988 Reveg. Area)

DATE: 1991

WORKERS: P. Collins, D. Collins

SLOPE: 30 - 40 deg.

EXPOSURE: N & E

AREA: 1.3 acres

ANIMAL USE/DISTURBANCE: None

EROSION: Some slight erosion. The more extensive erosion has had some repair work.

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:
1) Sampled regularly around area (see field map).
2) One area was almost devoid of vegetation including weeds. Hence 5% cover in one spot (see photo).

UP&L-COTTONWOOD/WILBERG
Storage Yard Slope
Acreage: 1.3
Slope: N & E
Exposure: 30 - 40 deg

Sample Date: 26 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Chrysothamnus nauseosus	25.00	30.00	35.00	15.00	30.00	0.00	0.00	0.00	0.00	0.00
FORBS										
Aster chilensis	0.00	5.00	0.00	0.00	10.00	0.00	15.00	20.00	0.00	25.00
Halogeton glomeratus	5.00	5.00	5.00	0.00	0.00	5.00	0.00	0.00	10.00	0.00
Kochia scoparia	0.00	0.00	0.00	0.00	0.00	0.00	20.00	30.00	40.00	15.00
GRASSES										
Oryzopsis hymenoides	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	30.00	40.00	40.00	35.00	40.00	5.00	35.00	50.00	50.00	40.00
Litter	5.00	5.00	5.00	10.00	5.00	2.00	5.00	10.00	10.00	10.00
Bareground	10.00	40.00	35.00	5.00	10.00	28.00	35.00	10.00	25.00	25.00
Rock	55.00	15.00	20.00	50.00	45.00	65.00	25.00	30.00	15.00	25.00
% COMPOSITION										
Shrubs	83.33	75.00	87.50	42.86	75.00	0.00	0.00	0.00	0.00	0.00
Forbs	16.67	25.00	12.50	0.00	25.00	100.00	100.00	100.00	100.00	100.00
Grasses	0.00	0.00	0.00	57.14	0.00	0.00	0.00	0.00	0.00	0.00

UP&L-COTTONWOOD/WILBERG
Storage Yard Slope
Acreage: 1.3
Slope: N & E
Exposure: 30 - 40 deg
Sample Date: 26 Sept 1991

Mean	SDev	Freq	
			SHRUBS
13.50	14.33		Chrysothamnus nauseosus
			FORBS
7.50	9.01		Aster chilensis
3.00	3.32		Halogeton glomeratus
10.50	14.22		Kochia scoparia
			GRASSES
2.00	6.00		Oryzopsis hymenoides
			COVER
36.50	12.05		Total Living Cover
6.70	2.83		Litter
22.30	11.98		Bareground
34.50	16.95		Rock
			% COMPOSITION
36.37	38.03		Shrubs
57.92	42.59		Forbs
5.71	17.14		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Road/Silo Pad Slope

AREA: Cottonwood/Wilberg (1988 Reveg. Area)

DATE: 1991

WORKERS: P. Collins, D. Collins

SLOPE: 35 deg

EXPOSURE: SE

AREA: 1.4 acres

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Slight

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES: More of area is active as a working area for heavy equipment and loading.

UP&L-COTTONWOOD/WILBERG
Road/Silo Pad Slope
Acreage: 1.4
Slope: 35 deg
Exposure: SE

Sample Date: Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Eriogonum corymbosum	9.00	0.00	10.00	5.00	20.00	0.00	0.00	0.00	15.00	10.00
Chrysothamnus nauseosus	10.00	10.00	2.00	15.00	5.00	25.00	0.00	0.00	15.00	10.00
Atriplex confertifolia	0.00	0.00	8.00	0.00	5.00	0.00	0.00	0.00	0.00	10.00
FORBS										
Aster chilensis	5.00	15.00	15.00	5.00	0.00	5.00	0.00	0.00	0.00	0.00
Grindelia squarrosa	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kochia scoparia	0.00	0.00	0.00	0.00	0.00	0.00	5.00	7.00	0.00	0.00
GRASSES										
Oryzopsis hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	5.00	0.00
COVER										
Total Living Cover	25.00	25.00	35.00	25.00	30.00	30.00	5.00	10.00	35.00	30.00
Litter	5.00	10.00	10.00	5.00	5.00	5.00	3.00	5.00	5.00	5.00
Bareground	25.00	25.00	30.00	15.00	20.00	20.00	2.00	20.00	10.00	10.00
Rock	45.00	40.00	25.00	55.00	45.00	45.00	90.00	65.00	50.00	55.00
% COMPOSITION										
Shrubs	76.00	40.00	57.14	80.00	100.00	83.33	0.00	0.00	85.71	100.00
Forbs	24.00	60.00	42.86	20.00	0.00	16.67	100.00	70.00	0.00	0.00
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00	14.29	0.00

UP&L-COTTONWOOD/WILBERG
Road/Silo Pad Slope
Acreage: 1.4
Slope: 35 deg
Exposure: SE
Sample Date: Sept 1991

Mean	SDev	Freq	
			SHRUBS
6.90	6.74		Eriogonum corymbosum
9.20	7.47		Chrysothamnus nauseosus
2.30	3.69		Atriplex confertifolia
			FORBS
4.50	5.68		Aster chilensis
0.10	0.30		Grindelia squarrosa
1.20	2.44		Kochia scoparia
			GRASSES
0.80	1.66		Oryzopsis hymenoides
			COVER
25.00	9.49		Total Living Cover
5.80	2.18		Litter
17.70	8.04		Bareground
51.50	16.29		Rock
			% COMPOSITION
62.22	35.53		Shrubs
33.35	32.35		Forbs
4.43	9.53		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Tipple Area Slope

AREA: Cottonwood/Wilberg (1988 Reveg. Area)

DATE: 1991

WORKERS: P. Collins, D. Collins

SLOPE: 35 deg.

EXPOSURE: Variable

AREA: .1 acre

ANIMAL USE/DISTURBANCE:

EROSION: Some slight erosion evident, other erosion has been reduced by dumping gravel/rock over slopes.

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES: Constantly changing active area. Therefore unstable for plant growth.

UP&L-COTTONWOOD/WILBERG
Tipple Area Slope
Acreage: .1
Slope: 35 deg
Exposure:

Sample Date: Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Chrysothamnus nauseosus	0.00	35.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
Atriplex confertifolia	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS										
Kochia scoparia	0.00	0.00	30.00	30.00	0.00	10.00	0.00	0.00	0.00	0.00
Aster chilensis	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Oryzopsis hymenoides	0.00	5.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	5.00	40.00	40.00	45.00	5.00	10.00	0.00	0.00	0.00	0.00
Litter	5.00	10.00	25.00	10.00	25.00	2.00	0.00	0.00	0.00	0.00
Bareground	25.00	20.00	25.00	30.00	25.00	28.00	15.00	20.00	5.00	5.00
Rock	65.00	30.00	10.00	15.00	45.00	60.00	85.00	80.00	95.00	95.00
% COMPOSITION										
Shrubs	0.00	87.50	0.00	33.33	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	100.00	0.00	75.00	66.67	0.00	0.00	0.00	0.00	0.00	0.00
Grasses	0.00	12.50	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

UP&L-COTTONWOOD/WILBERG
Tipple Area Slope
Acreage: .1
Slope: 35 deg
Exposure:
Sample Date: Sept 1991

Mean	SDev	Freq	
			SHRUBS
4.00	10.44		Chrysothamnus nauseosus
1.50	4.50		Atriplex confertifolia
			FORBS
7.00	11.87		Kochia scoparia
0.50	1.50		Salsola iberica
			GRASSES
1.50	3.20		Oryzopsis hymenoides
			COVER
14.50	18.09		Total Living Cover
7.70	9.41		Litter
19.80	8.45		Bareground
58.00	30.18		Rock
			% COMPOSITION
12.08	27.03		Shrubs
24.17	37.72		Forbs
3.75	8.00		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Sediment Pond Banks

AREA: UPL Cottonwood/Wilberg (1988 Reveg. Area)

DATE: September 26, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 35 deg.

EXPOSURE: var.

AREA: .9 acre

ANIMAL USE/DISTURBANCE: None

EROSION: Slight to moderate. Being controlled constantly.

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES: Very patchy vegetation growth patterns due to erosion control and fluctuating water levels in pond.

UP&L-COTTONWOOD/WILBERG
Sed Pond Banks
Acreage: .9
Slope: 35 deg
Exposure:

Sample Date: 26 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	5.00	0.00	20.00	0.00	0.00	0.00
Atriplex canescens	0.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00
FORBS										
Aster chilensis	0.00	0.00	0.00	0.00	0.00	0.00	20.00	8.00	0.00	0.00
Grindelia squarrosa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Melilotus officinalis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00	0.00
Salsola iberica	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Kochia scoparia	0.00	0.00	0.00	0.00	7.00	30.00	0.00	0.00	0.00	0.00
Halogeton glomeratus	25.00	0.00	65.00	5.00	0.00	5.00	0.00	7.00	0.00	15.00
Convolvulus arvensis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Machaeranthera canescens	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Oryzopsis hymenoides	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Agropyron dasystachyum	0.00	0.00	0.00	5.00	5.00	0.00	0.00	0.00	15.00	0.00
Agropyron spicatum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
COVER										
Total Living Cover	25.00	0.00	65.00	20.00	25.00	35.00	40.00	15.00	50.00	15.00
Litter	5.00	0.00	5.00	5.00	10.00	10.00	10.00	10.00	40.00	1.00
Bareground	15.00	80.00	10.00	20.00	15.00	25.00	10.00	10.00	5.00	19.00
Rock	55.00	20.00	20.00	55.00	50.00	30.00	40.00	65.00	5.00	65.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	0.00	32.00	0.00	50.00	0.00	0.00	0.00
Forbs	100.00	0.00	100.00	50.00	48.00	100.00	50.00	100.00	60.00	100.00
Grasses	0.00	0.00	0.00	50.00	20.00	0.00	0.00	0.00	40.00	0.00

UP&L-COTTONWOOD/WILBERG
Sed Pond Banks
Acreage: .9
Slope: 35 deg
Exposure:
Sample Date: 26 Sept 1991

11.00	12.00	13.00	14.00	15.00	Mean	SDev	Freq	
								SHRUBS
0.00	0.00	0.00	0.00	0.00	1.67	5.06		Chrysothamnus nauseosus
0.00	0.00	0.00	0.00	0.00	0.20	0.75		Atriplex canescens
								FORBS
0.00	0.00	0.00	0.00	0.00	1.87	5.24		Aster chilensis
0.00	2.00	0.00	0.00	0.00	0.13	0.50		Grindelia squarrosa
30.00	0.00	0.00	0.00	0.00	4.00	10.20		Melilotus officinalis
0.00	5.00	5.00	0.00	0.00	1.00	2.00		Salsola iberica
0.00	3.00	0.00	5.00	25.00	4.67	9.24		Kochia scoparia
0.00	0.00	10.00	0.00	0.00	8.80	16.56		Halogeton glomeratus
0.00	5.00	0.00	0.00	0.00	0.33	1.25		Convolvulus arvensis
0.00	0.00	0.00	0.00	0.00	0.33	1.25		Machaeranthera canescens
								GRASSES
0.00	15.00	0.00	0.00	0.00	1.33	3.86		Oryzopsis hymenoides
15.00	0.00	0.00	0.00	0.00	2.67	5.12		Agropyron dasystachyum
0.00	0.00	0.00	0.00	0.00	0.33	1.25		Agropyron spicatum
								COVER
45.00	30.00	15.00	5.00	25.00	27.33	16.82		Total Living Cover
25.00	5.00	5.00	1.00	5.00	9.13	10.09		Litter
25.00	25.00	20.00	19.00	5.00	20.20	17.28		Bareground
5.00	40.00	60.00	75.00	65.00	43.33	21.96		Rock
								% COMPOSITION
0.00	0.00	0.00	0.00	0.00	5.47	14.32		Shrubs
66.67	50.00	100.00	100.00	100.00	74.98	30.03		Forbs
33.33	50.00	0.00	0.00	0.00	12.89	19.36		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Cell #1

AREA: UPL Cottonwood/Wilberg Waste Rock Area (Interim Reveg)

DATE: 1991

WORKERS: P. Collins, D. Collins

SLOPE: 0-1 deg.

EXPOSURE:

AREA:

ANIMAL USE/DISTURBANCE:

EROSION: None

COVER: 25%-30%

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens

Halogeton glomeratus
Salsola iberica

Agropyron intermedium
Agropyron smithii
Agropyron cristatum
Hilaria jamesii

NOTES:
1) Some patches desirable spp.
2) Others weedy (about 50:50)
3) Good mature ATCA
4) Site was in "good" condition
5) Condition not as good as Cells 2 & 3

QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Cell #2

AREA: UPL Cottonwood/Wilberg Waste Rock Area (Interim Reveg)

DATE: 1991

WORKERS: P. Collins, D. Collins

SLOPE: 0-1 deg.

EXPOSURE:

AREA:

ANIMAL USE/DISTURBANCE: Heavy use by wildlife

EROSION: None

COVER: ~30%

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens

Halogeton glomeratus
Salsola iberica
Melilotus officinalis

Agropyron intermedium
Agropyron smithii
Agropyron cristatum
Hilaria jamesii
Sitanion hystrix

NOTES:
1) Some patches desirable spp.
2) A little more cover & density
3) Condition = good
4) Better condition that Cell 1, but not as good as Cell 3.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Cell #3

AREA: UPL Cottonwood/Wilberg Waste Rock Area (Interim Reveg)

DATE: 1991

WORKERS: P. Collins, D. Collins

SLOPE: 0-1 deg.

EXPOSURE:

AREA:

ANIMAL USE/DISTURBANCE: Heavy use by wildlife

EROSION: None

COVER: ~35%

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens
Atriplex cuneata

Halogeton glomeratus
Salsola iberica
Melilotus officinalis

Agropyron intermedium
Agropyron smithii
Agropyron cristatum
Hilaria jamesii
Stipa comata

NOTES:
1) About 4X more grass cover than other Cell 1 & 2
2) About same density of shrubs as Cells 1 & 2
3) Best condition when compared to Cells 1 & 2

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Cell #4

AREA: UPL Cottonwood/Wilberg Waste Rock Area (Interim Reveg)

DATE: September 27, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 1 - 2 deg

EXPOSURE: E

AREA:

ANIMAL USE/DISTURBANCE: Heavy cattle use/ disturbance one or two years ago.

EROSION: None

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:

1) Quantitative Methods: Cover - placed two transects, 200′ long, the placed 10 quadrats on each (n=20)

2) Reg/random placement of quadrats

3) Density Methods - Place sixteen, 6′ x 50′ belt transects and counted density of woody species.

UP&L-COTTONWOOD/WILBERG
Waste Rock Site
Interim Reveg
CELL #4
Acreage: 10 acres
Slope:
Exposure:

Sample Date: 27 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
FORBS										
Kochia scoparia	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00
Melilotus officinalis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sphaeralcea coccinea	0.00	0.00	5.00	0.00	0.00	5.00	0.00	3.00	0.00	0.00
Halogeton glomeratus	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salsola iberica	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
GRASSES										
Agropyron intermedium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agropyron cristatum	18.00	15.00	10.00	35.00	10.00	5.00	35.00	17.00	15.00	35.00
Hilaria jamesii	5.00	0.00	0.00	0.00	0.00	10.00	5.00	5.00	0.00	0.00
Agropyron smithii	0.00	10.00	15.00	0.00	5.00	10.00	0.00	5.00	5.00	5.00
Oryzopsis hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	0.00
Sitanion hystrix	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	25.00	25.00	30.00	35.00	25.00	30.00	40.00	35.00	30.00	40.00
Litter	10.00	10.00	25.00	20.00	10.00	30.00	40.00	15.00	15.00	15.00
Bareground	10.00	15.00	25.00	20.00	10.00	15.00	15.00	20.00	30.00	20.00
Rock	55.00	50.00	20.00	25.00	55.00	25.00	5.00	30.00	25.00	25.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	8.00	0.00	16.67	0.00	40.00	16.67	0.00	8.57	16.67	0.00
Grasses	92.00	100.00	83.33	100.00	60.00	83.33	100.00	91.43	83.33	100.00

11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	15.00	0.00	0.00	0.00	5.00	5.00	0.00	0.00	5.00
0.00	0.00	0.00	0.00	15.00	0.00	5.00	5.00	5.00	0.00
5.00	10.00	20.00	35.00	0.00	15.00	15.00	20.00	15.00	25.00
0.00	0.00	0.00	0.00	10.00	0.00	5.00	0.00	0.00	0.00
5.00	0.00	5.00	0.00	3.00	3.00	0.00	5.00	5.00	0.00
0.00	0.00	0.00	0.00	10.00	0.00	5.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
10.00	25.00	35.00	35.00	40.00	25.00	35.00	35.00	30.00	30.00
5.00	5.00	25.00	20.00	30.00	25.00	30.00	15.00	30.00	15.00
25.00	25.00	30.00	25.00	20.00	25.00	10.00	30.00	30.00	30.00
60.00	45.00	10.00	20.00	10.00	25.00	25.00	20.00	10.00	25.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	60.00	28.57	0.00	5.00	28.00	14.29	0.00	0.00	16.67
100.00	40.00	71.43	100.00	95.00	72.00	85.71	100.00	100.00	83.33

UP&L-COTTONWOOD/WILBERG
Waste Rock Site
Interim Reveg
CELL #4
Acreage: 10 acres
Slope:
Exposure:
Sample Date: 27 Sept 1991

Mean	SDev	Freq	
			SHRUBS
ERR	ERR		
ERR	ERR		
ERR	ERR		
ERR	ERR		
			FORBS
0.50	2.18		Kochia scoparia
0.45	1.20		Melilotus officinalis
0.90	1.84		Sphaeralcea coccinea
0.05	0.22		Halogeton glomeratus
1.80	3.61		Salsola iberica
			GRASSES
1.50	3.57		Agropyron intermedium
17.75	10.28		Agropyron cristatum
2.00	3.32		Hilaria jamesii
4.05	3.97		Agropyron smithii
1.50	2.78		Oryzopsis hymenoides
0.25	1.09		Sitanion hystrix
			COVER
30.75	6.94		Total Living Cover
19.50	9.34		Litter
21.50	6.91		Bareground
28.25	15.83		Rock
			% COMPOSITION
0.00	0.00		Shrubs
12.95	15.69		Forbs
87.05	15.69		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Cell #5

AREA: UPL Cottonwood/Wilberg Waste Rock Area (OLD)

DATE: September 27, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 1 - 2 deg

EXPOSURE: E

AREA:

ANIMAL USE/DISTURBANCE: 1 - 2 years ago there was heavy disturbance by cattle.

EROSION: None

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:
1) Almost all weedy species and cover was homogenous.
2) Cover Methods: Ran 200′ transects for a total of 13 samples
3) Density Methods: Eight 6′ x 50′ belt transects. Counted all woody spp. within them.

UP&L-COTTONWOOD/WILBERG
Waste Rock Site
CELL #5
Acreage:
Slope:
Exposure:

Sample Date: 27 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Atriplex confertifolia	0.00	0.00	0.00	0.00	5.00	5.00	0.00	0.00	5.00	0.00
FORBS										
Bassia hyssopifolia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	10.00
Kochia scoparia	5.00	5.00	5.00	10.00	0.00	10.00	10.00	15.00	0.00	10.00
Halogeton glomeratus	0.00	0.00	5.00	5.00	5.00	0.00	0.00	0.00	25.00	0.00
Salsola iberica	35.00	30.00	30.00	15.00	30.00	25.00	15.00	35.00	0.00	20.00
GRASSES										
Agropyron cristatum	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	40.00	40.00	40.00	30.00	40.00	40.00	25.00	50.00	40.00	40.00
Litter	5.00	10.00	10.00	10.00	25.00	15.00	10.00	5.00	15.00	10.00
Bareground	35.00	30.00	25.00	25.00	25.00	20.00	40.00	10.00	20.00	25.00
Rock	20.00	20.00	25.00	35.00	10.00	25.00	25.00	35.00	25.00	25.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	0.00	12.50	12.50	0.00	0.00	12.50	0.00
Forbs	100.00	0.00	100.00	100.00	87.50	87.50	100.00	100.00	87.50	100.00
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

UP&L-COTTONWOOD/WILBERG
Waste Rock Site
CELL #5
Acreage:
Slope:
Exposure:
Sample Date: 27 Sept 1991

11.00	12.00	13.00	Mean	SDev	Freq	
						SHRUBS
0.00	0.00	0.00	1.15	2.11		Atriplex confertifolia
						FORBS
15.00	5.00	0.00	3.08	5.01		Bassia hyssopifolia
5.00	5.00	5.00	6.54	4.11		Kochia scoparia
5.00	5.00	0.00	3.85	6.55		Halogeton glomeratus
5.00	20.00	30.00	22.31	10.67		Salsola iberica
						GRASSES
0.00	5.00	0.00	0.77	1.80		Agropyron cristatum
						COVER
30.00	40.00	35.00	37.69	6.08		Total Living Cover
15.00	10.00	25.00	12.69	6.08		Litter
30.00	25.00	20.00	25.38	7.20		Bareground
25.00	25.00	20.00	24.23	6.15		Rock
						% COMPOSITION
0.00	0.00	0.00	2.88	5.27		Shrubs
100.00	87.50	100.00	88.46	26.16		Forbs
0.00	12.50	0.00	0.96	3.33		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Cell #6

AREA: UPL Cottonwood/Wilberg Waste Rock Area (OLD)

DATE: September 27, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 1 - 2 deg

EXPOSURE: E

AREA:

ANIMAL USE/DISTURBANCE: 1 - 2 years ago there was heavy disturbance by cattle.

EROSION: None

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:
1) Almost all weedy species and cover was homogenous.
2) Cover Methods: Ran 200′ transects for a total of 13 samples
3) Density Methods: Eight 6′ x 50′ belt transects. Counted all woody spp. within them.

UP&L-COTTONWOOD/WILBERG
Waste Rock Site
CELL #6
Acreage:
Slope: 1-2 deg
Exposure: E

Sample Date: 27 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
FORBS										
Bassia hyssopifolia	25.00	10.00	0.00	5.00	10.00	10.00	5.00	10.00	0.00	10.00
Sisymbrium altissimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salsola iberica	5.00	5.00	10.00	35.00	15.00	10.00	0.00	15.00	25.00	30.00
Kochia scoparia	5.00	5.00	10.00	5.00	10.00	5.00	5.00	10.00	0.00	0.00
Halogeton glomeratus	0.00	5.00	20.00	0.00	5.00	0.00	20.00	0.00	5.00	0.00
GRASSES										
Agropyron cristatum	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	0.00	0.00
COVER										
Total Living Cover	35.00	25.00	40.00	45.00	40.00	25.00	35.00	40.00	30.00	40.00
Litter	15.00	25.00	25.00	20.00	25.00	20.00	25.00	30.00	25.00	25.00
Bareground	30.00	25.00	25.00	20.00	5.00	30.00	15.00	10.00	30.00	15.00
Rock	20.00	25.00	10.00	15.00	30.00	25.00	25.00	20.00	15.00	20.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	100.00	0.00	100.00	100.00	100.00	100.00	85.71	87.50	100.00	100.00
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	14.29	12.50	0.00	0.00

UP&L-COTTONWOOD/WILBERG
Waste Rock Site
CELL #6
Acreage:
Slope: 1-2 deg
Exposure: E
Sample Date: 27 Sept 1991

11.00	12.00	13.00	Mean	SDev	Freq	
						SHRUBS
						FORBS
0.00	0.00	0.00	6.54	6.90		Bassia hyssopifolia
0.00	0.00	5.00	0.38	1.33		Sisymbrium altissimum
35.00	30.00	25.00	18.46	11.67		Salsola iberica
0.00	10.00	0.00	5.00	3.92		Kochia scoparia
0.00	10.00	10.00	5.77	7.03		Halogeton glomeratus
						GRASSES
0.00	0.00	0.00	0.77	1.80		Agropyron cristatum
						COVER
35.00	50.00	40.00	36.92	6.94		Total Living Cover
10.00	25.00	25.00	22.69	5.04		Litter
30.00	10.00	20.00	20.38	8.43		Bareground
25.00	15.00	15.00	20.00	5.55		Rock
						% COMPOSITION
0.00	0.00	0.00	0.00	0.00		Shrubs
100.00	100.00	100.00	90.25	26.49		Forbs
0.00	0.00	0.00	2.06	4.84		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Berm #1

AREA: UPL Cottonwood/Wilberg Waste Rock Area

DATE: September 27, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 20 deg.

EXPOSURE: S

ANIMAL USE/DISTURBANCE: Heavy use by wildlife and earlier by cattle

EROSION: None

COVER: ~25%

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamnus nauseosus

Ephedra viridis
Halogeton glomeratus
Salsola iberica

Agropyron cristatum
A. inerme
A. smithii
Oryzopsis hymenoides

NOTES:
1) Dominated by weedy species, but had a good representation of desirable species too.
2) Condition not as good as Beams 2 & 3.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Berm #2

AREA: UPL Cottonwood/Wilberg Waste Rock Area

DATE: September 27, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 20 deg.

EXPOSURE:

AREA:

ANIMAL USE/DISTURBANCE: Heavy use (same as other Cells and Berms)

EROSION: None

COVER: ~35%

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamnus viscidiflorus
Chrysothamnus nauseosus

Halogeton glomeratus
Salsola iberica

Agropyron cristatum
A. inerme
A. smithii
Hilaria jamesii

NOTES:

1) About 50:50 grass:weeds
2) Good representation of both grass & weeds
3) Good shrub density and maturity
4) Condition: Better than Berm 1, not quite as good as Berm 3

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Berm #3

AREA: UPL Cottonwood/Wilberg Waste Rock Area

DATE: September 27, 1991

WORKERS: P. Collins, D. Collins

SLOPE: About 20 deg.

EXPOSURE: var.

AREA:

ANIMAL USE/DISTURBANCE: Heavy use

EROSION: None

COVER: 35%

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens

Agropyron cristatum
A. inerme
A. smithii
Hilaria jubatum
Oryzopsis hymenoides

NOTES:
1) About 50:50 grass:weeds
2) Good representation of both grass & weeds
3) Good shrub density and maturity
4) Condition: Better than Y 1 & 2

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Test Plots

AREA: UPL Cottonwood/Wilberg

DATE: September 25, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 35 deg.

EXPOSURE: E (S)

ANIMAL USE/DISTURBANCE: Negligible (fenced)

EROSION: Slight on non-irrigated. Moderate on irrigated.

COVER: (see quantitative data)

NOTES:
1) We put five 1 meter sq. quadrats in each treatment (n=5/treatment; n=40/total).
2) The quadrats were regularly placed in the subplots with 2 sides and on near middle. See drawing below.

ROAD

T1* Hydro Mulch	T2* Mulch Blanket	T3* Hay & Netting	T4* No Mulch
T5** Hydro Mulch	T6** Mulch Blanket	T7** Hay & Netting	T8** No Mulch

(See quant. data sheets for results)

* Non-irrigated plots

** Irrigated plots

SITE NAME: Test Plots (continued)

T1-T8 (quad placement)

X X

X

X X

PLANT SPECIES PLANTED

Amalanchier alnifolia
Atriplex canescens
Chrysothamnus nauseosus
Ephedra viridis
Picea pungens
Pseutosuga menziesii

Aster glaucodes
Linum lewsii
Medilotus officinalis
Sphraeralcea coccinea

Agropyron dasystachum
Agropyron intermedium
Agropyron smithii
Agropyron spicatum
Orzopsis hymenoides
Stipa comata

PLANT SPECIES OBSERVED (see quantitative data)

Summary of Quant. Results (see also data sheets)

Plot No.	% Cover	Abs.% Desirable Spp.
T1	21.00	6.00
T2	12.00	0.00
T3	32.00	2.40
T4	6.20	.60
T5	34.00	26.40
T6	33.00	27.00
T7	53.00	14.20
T8	29.00	21.00

*** Clearly the **Irrigated Plots** are doing the best (mulch treatments not significantly different at this time).

UP&L-COTTONWOOD/WILBERG
TEST PLOTS
Test Plot #1 (T1)
Slope: 35 deg
Exposure: SE

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	Mean	SDev	Freq
SHRUBS								
Chrysothamnus nauseosus	0.00	0.00	5.00	5.00	0.00	2.00	2.45	
FORBS								
Aster glaucodes	0.00	15.00	5.00	0.00	0.00	4.00	5.83	
Kochia scoparia	5.00	15.00	15.00	25.00	10.00	14.00	6.63	
Eriogonum sp.	0.00	5.00	0.00	0.00	0.00	1.00	2.00	
GRASSES								
COVER								
Total Living Cover	5.00	35.00	25.00	30.00	10.00	21.00	11.58	
Litter	20.00	25.00	25.00	25.00	10.00	21.00	5.83	
Bareground	60.00	25.00	35.00	30.00	60.00	42.00	15.03	
Rock	15.00	15.00	15.00	15.00	20.00	16.00	2.00	
% COMPOSITION								
Shrubs	0.00	0.00	20.00	16.67	0.00	7.33	9.04	
Forbs	100.00	100.00	80.00	83.33	100.00	92.67	9.04	
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

UP&L-COTTONWOOD/WILBERG
TEST PLOTS
Test Plot #2 (T2)
Slope: 35 deg
Exposure: SE

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	Mean	SDev	Freq
SHRUBS								
FORBS								
Halogeton glomeratus	5.00	5.00	7.00	10.00	0.00	5.40	3.26	
Kochia scoparia	0.00	5.00	8.00	10.00	10.00	6.60	3.77	
GRASSES								
COVER								
Total Living Cover	5.00	10.00	15.00	20.00	10.00	12.00	5.10	
Litter	85.00	80.00	70.00	65.00	65.00	73.00	8.12	
Bareground	5.00	5.00	5.00	10.00	5.00	6.00	2.00	
Rock	5.00	5.00	10.00	5.00	20.00	9.00	5.83	
% COMPOSITION								
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Forbs	100.00	100.00	100.00	100.00	100.00	100.00	0.00	
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

UP&L-COTTONWOOD/WILBERG
TEST PLOTS
Test Plot #3 (T3)
Slope: 35 deg
Exposure: SE

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	Mean	SDev	Freq
SHRUBS								
FORBS								
Halogeton glomeratus	5.00	0.00	0.00	0.00	0.00	1.00	2.00	
Aster glaucodes	0.00	7.00	0.00	0.00	0.00	1.40	2.80	
Kochia scoparia	25.00	28.00	20.00	40.00	35.00	29.60	7.12	
GRASSES								
COVER								
Total Living Cover	30.00	35.00	20.00	40.00	35.00	32.00	6.78	
Litter	25.00	45.00	50.00	25.00	45.00	38.00	10.77	
Bareground	15.00	15.00	25.00	5.00	10.00	14.00	6.63	
Rock	30.00	5.00	5.00	30.00	10.00	16.00	11.58	
% COMPOSITION								
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Forbs	100.00	100.00	100.00	100.00	100.00	100.00	0.00	
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

UP&L-COTTONWOOD/WILBERG
TEST PLOTS
Test Plot #4 (T4)
Slope: 35 deg
Exposure: SE

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	Mean	SDev	Freq
SHRUBS								
FORBS								
Halogeton glomeratus	0.00	0.00	0.00	0.00	5.00	1.00	2.00	
Aster glaucodes	0.00	0.00	3.00	0.00	0.00	0.60	1.20	
Kochia scoparia	5.00	10.00	2.00	1.00	5.00	4.60	3.14	
GRASSES								
COVER								
Total Living Cover	5.00	10.00	5.00	1.00	10.00	6.20	3.43	
Litter	2.00	5.00	5.00	4.00	5.00	4.20	1.17	
Bareground	65.00	45.00	45.00	25.00	30.00	42.00	14.00	
Rock	28.00	40.00	45.00	70.00	55.00	47.60	14.18	
% COMPOSITION								
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Forbs	100.00	100.00	100.00	100.00	100.00	100.00	0.00	
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

UP&L-COTTONWOOD/WILBERG
TEST PLOTS
Test Plot #5 (T5)
Slope: 35 deg
Exposure: SE

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	Mean	SDev	Freq
SHRUBS								
Erigonum corymbosum	0.00	0.00	0.00	0.00	4.00	0.80	1.60	
Chrysothamnus nauseosus	15.00	5.00	0.00	0.00	5.00	5.00	5.48	
Picea pungens	0.00	3.00	0.00	0.00	0.00	0.60	1.20	
FORBS								
Salsola iberica	0.00	5.00	0.00	2.00	0.00	1.40	1.96	
Aster glaucodes	5.00	0.00	25.00	15.00	5.00	10.00	8.94	
Melilotus officinalis	5.00	0.00	0.00	0.00	5.00	2.00	2.45	
Halogeton glomeratus	0.00	0.00	0.00	1.00	0.00	0.20	0.40	
Kochia scoparia	0.00	27.00	0.00	2.00	0.00	5.80	10.63	
Eriogonum sp.	5.00	10.00	5.00	10.00	0.00	6.00	3.74	
Grindelia squarrosa	0.00	0.00	0.00	0.00	1.00	0.20	0.40	
GRASSES								
Agropyron spicatum	0.00	5.00	0.00	0.00	0.00	1.00	2.00	
Agropyron dasystachyum	0.00	0.00	0.00	0.00	5.00	1.00	2.00	
COVER								
Total Living Cover	30.00	55.00	30.00	30.00	25.00	34.00	10.68	
Litter	5.00	35.00	30.00	45.00	25.00	28.00	13.27	
Bareground	30.00	5.00	20.00	20.00	25.00	20.00	8.37	
Rock	35.00	5.00	20.00	5.00	25.00	18.00	11.66	
% COMPOSITION								
Shrubs	50.00	14.55	0.00	0.00	36.00	20.11	19.93	
Forbs	50.00	76.36	100.00	100.00	44.00	74.07	23.81	
Grasses	0.00	9.09	0.00	0.00	20.00	5.82	7.92	

UP&L-COTTONWOOD/WILBERG
TEST PLOTS
Test Plot #6 (T6)
Slope: 35 deg
Exposure: SE

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	Mean	SDev	Freq
SHRUBS								
Chrysothamnus nauseosus	0.00	0.00	0.00	5.00	5.00	2.00	2.45	
FORBS								
Salsola iberica	0.00	0.00	5.00	0.00	0.00	1.00	2.00	
Aster glaucodes	10.00	15.00	5.00	50.00	20.00	20.00	15.81	
Melilotus officinalis	10.00	0.00	5.00	0.00	0.00	3.00	4.00	
Halogeton glomeratus	0.00	5.00	0.00	5.00	0.00	2.00	2.45	
Kochia scoparia	5.00	0.00	5.00	0.00	5.00	3.00	2.45	
						ERR	ERR	
						ERR	ERR	
GRASSES								
Agropyron spicatum	3.00	0.00	5.00	0.00	0.00	1.60	2.06	
Agropyron dasystachyum	2.00	0.00	0.00	0.00	0.00	0.40	0.80	
COVER								
Total Living Cover	30.00	20.00	25.00	60.00	30.00	33.00	14.00	
Litter	55.00	55.00	60.00	25.00	20.00	43.00	16.91	
Bareground	5.00	5.00	5.00	5.00	15.00	7.00	4.00	
Rock	10.00	20.00	10.00	10.00	35.00	17.00	9.80	
% COMPOSITION								
Shrubs	0.00	0.00	0.00	8.33	16.67	5.00	6.67	
Forbs	83.33	100.00	80.00	91.67	83.33	87.67	7.27	
Grasses	16.67	0.00	20.00	0.00	0.00	7.33	9.04	

UP&L-COTTONWOOD/WILBERG
TEST PLOTS
Test Plot #7 (T7)
Slope: 35 deg
Exposure: SE

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	Mean	SDev	Freq
SHRUBS								
FORBS								
Salsola iberica	0.00	0.00	0.00	0.00	5.00	1.00	2.00	
Aster glaucodes	10.00	35.00	0.00	5.00	15.00	13.00	12.08	
Halogeton glomeratus	0.00	40.00	0.00	0.00	35.00	15.00	18.44	
Kochia scoparia	20.00	0.00	39.00	55.00	0.00	22.80	21.66	
GRASSES								
Agropyron spicatum	5.00	0.00	1.00	0.00	0.00	1.20	1.94	
COVER								
Total Living Cover	35.00	75.00	40.00	60.00	55.00	53.00	14.35	
Litter	5.00	5.00	5.00	15.00	20.00	10.00	6.32	
Bareground	10.00	15.00	10.00	10.00	10.00	11.00	2.00	
Rock	50.00	5.00	45.00	15.00	15.00	26.00	18.00	
% COMPOSITION								
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Forbs	85.71	100.00	97.50	100.00	100.00	96.64	5.55	
Grasses	14.29	0.00	2.50	0.00	0.00	3.36	5.55	

UP&L-COTTONWOOD/WILBERG
TEST PLOTS
Test Plot #8 (T8)
Slope: 35 deg
Exposure: SE

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	Mean	SDev	Freq
SHRUBS								
Eriogonum corymbosum	0.00	0.00	0.00	5.00	0.00	1.00	2.00	
Chrysothamnus nauseosus	0.00	5.00	5.00	0.00	0.00	2.00	2.45	
FORBS								
Aster glaucodes	10.00	10.00	10.00	15.00	45.00	18.00	13.64	
Halogeton glomeratus	0.00	10.00	10.00	5.00	0.00	5.00	4.47	
Kochia scoparia	5.00	0.00	0.00	0.00	10.00	3.00	4.00	
GRASSES								
COVER								
Total Living Cover	15.00	25.00	25.00	25.00	55.00	29.00	13.56	
Litter	5.00	5.00	5.00	5.00	5.00	5.00	0.00	
Bareground	15.00	15.00	15.00	15.00	5.00	13.00	4.00	
Rock	65.00	55.00	55.00	55.00	35.00	53.00	9.80	
% COMPOSITION								
Shrubs	0.00	20.00	20.00	20.00	0.00	12.00	9.80	
Forbs	100.00	80.00	80.00	80.00	100.00	88.00	9.80	
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Parking Lot Slope

AREA: Cottonwood/Wilberg (1988 Reveg. Area)

DATE: September 25, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 35 deg

EXPOSURE: SE

ANIMAL USE/DISTURBANCE:

EROSION: None. Gravel had been poured over the slope.

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

(same as quantitative data)

NOTES: Regular placement of quadrats over entire area. V. Payne told us not to sample this last year.

UP&L-COTTONWOOD/WILBERG
Parking Lot Slope
Acreage:
Slope: 35 deg
Exposure: SE

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	Mean	SDev	Freq
SHRUBS								
FORBS								
Aster chilensis	0.00	25.00	0.00	0.00	0.00	5.00	10.00	
Kochia scoparia	25.00	0.00	5.00	20.00	15.00	13.00	9.27	
GRASSES								
COVER								
Total Living Cover	25.00	25.00	5.00	20.00	15.00	18.00	7.48	
Litter	5.00	5.00	5.00	5.00	3.00	4.60	0.80	
Bareground	10.00	10.00	15.00	55.00	2.00	18.40	18.77	
Rock	60.00	60.00	75.00	20.00	80.00	59.00	21.07	
% COMPOSITION								
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Forbs	100.00	100.00	100.00	100.00	100.00	100.00	0.00	
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Road Slopes

AREA: UPL Cottonwood/Wilberg New Waste Rock Area (1990 Interim)

DATE: September 26, 1991

WORKERS: P. Collins, D. Collins

SLOPE: Variable

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Slight

EROSION: Slight

COVER:

DOMINANT PLANT SPECIES OBSERVED:

Ceratoides lanata
Artemisia tridentata
Atriplex canescens

Melilotus officinalis
Halogeton glomeratus
Salsola iberica
Hedysarum boreale

Elymus cinereus
Agropyron dasystachyum
Oryzopsis hymenoides
Sitanion hystrix
Sporobolus airoides
Poa secunda

NOTES:
1) Again, most common by lifeform were Ce la, Me of, Ag da
2) Very good design to see what will grow best. Good roughen surface along roadside & even some gouges on slopes. Should compliment UPL on design.
3) All areas had good representation of growth.
4) More growth occurred in gouges.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Topsoil Stockpiles

AREA: UPL Cottonwood/Wilberg Waste Rock Area (1990 Interim)

DATE: September 26, 1991

WORKERS: P. Collins, D. Collins

SLOPE: Variable

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Slight

EROSION: Slight

COVER:

DOMINANT PLANT SPECIES OBSERVED:

Ceratoides lanata
Artemisia tridentata
Atriplex canescens

Melilotus officinalis
Halogeton glomeratus
Salsola iberica
Hedysarum boreale

Elymus cinereus
Agropyron dasystachyum
Oryzopsis hymenoides
Sitanion hystrix
Sporobolus airoides
Poa secunda

NOTES:
1) Most common by lifeform were Ce la, Me of, Ag da
2) Very good design to see what will grow best. Good roughen surface along roadside & even some gouges on slopes. Should compliment UPL on design.
3) All areas had good representation of growth.
4) More growth occurred in gouges.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Subsoil Piles

AREA: UPL Cottonwood/Wilberg New Waste Rock Area (1990 Interim)

DATE: September 26, 1991

WORKERS: P. Collins, D. Collins

SLOPE: Variable

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Slight

EROSION: Some on steepest slopes of subsoil piles had some erosion beginning.

DOMINANT PLANT SPECIES OBSERVED:

Ceratoides lanata
Artemisia tridentata
Atriplex canescens

Melilotus officinalis
Halogeton glomeratus
Salsola iberica
Hedysarum boreale

Elymus cinereus
Agropyron dasystachyum
Oryzopsis hymenoides
Sitanion hystrix
Sporobolus airoides
Poa secunda

NOTES:
1) Again, most common by lifeform were Ce la, Me of, Ag da
2) Very good design to see what will grow best. Good roughen surface along roadside & even some gouges on slopes. Should compliment UPL on design.
3) Very little germination on slopes. There was more on the top, but it was still less than the other areas
4) More growth occurred in gouges.
5) Growth in treatments: (least) Straw < Bare < Curlex (most)

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Sediment Pond Banks

AREA: UPL Cottonwood/Wilberg New Waste Rock Area (1990 Interim)

DATE: September 26, 1991

WORKERS: P. Collins, D. Collins

SLOPE: Variable

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER:

DOMINANT PLANT SPECIES OBSERVED:

Ceratoides lanata
Artemisia tridentata
Atriplex canescens

Melilotus officinalis
Halogeton glomeratus
Salsola iberica
Hedysarum boreale

Elymus cinereus
Agropyron dasystachyum
Oryzopsis hymenoides
Sitanion hystrix
Sporobolus airoides
Poa secunda

NOTES:
1) Again, most common by lifeform were Ce la, Me of, Ag da
2) Very good design to see what will grow best. Good roughen surface along roadside & even some gouges on slopes. Should compliment UPL on design.
3) All areas had good representation of growth.
4) More growth occurred in gouges.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Beehive Yard Slope

AREA: UPL Des-Bee-Dove (1988 Reveg. Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 20-50 deg.

EXPOSURE: SE

AREA: 1.6 acres

ANIMAL USE/DISTURBANCE: None observed

EROSION: Contained by upslope ground holding fences and structures.

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:

1) Methods: For cover we placed meter sq. quadrats at regular intervals over the much of the slope with difficulty due to dangerous steep slopes.
2) Fair density of woody species presently established

D

U P & L 1991 DATA
Des-Bee-Dove Area

UP&L-DES BEE DOVE
Beehive Yard Slope
1988 Reveg Area
Acreage: 1.6
Slope: 30 - 50 deg
Exposure: SE

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Ceratoides lanata	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysothamnus nauseosus	15.00	10.00	15.00	10.00	10.00	15.00	5.00	0.00	35.00	10.00
Atriplex confertifolia	5.00	25.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
FORBS										
Halogeton glomeratus	0.00	0.00	0.00	5.00	0.00	0.00	5.00	40.00	0.00	0.00
Penstemon palmeri	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
GRASSES										
Oryzopsis hymenoides	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
Agropyron dasystachyum	0.00	0.00	0.00	0.00	0.00	10.00	5.00	0.00	0.00	0.00
Elymus cinereus	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00
COVER										
Total Living Cover	25.00	35.00	20.00	20.00	10.00	30.00	20.00	40.00	35.00	30.00
Litter	5.00	10.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Bareground	60.00	45.00	20.00	15.00	15.00	5.00	5.00	5.00	5.00	10.00
Rock	10.00	10.00	55.00	60.00	70.00	60.00	70.00	50.00	55.00	55.00
% COMPOSITION										
Shrubs	80.00	100.00	100.00	75.00	100.00	50.00	25.00	0.00	100.00	66.67
Forbs	0.00	0.00	0.00	25.00	0.00	50.00	75.00	100.00	0.00	0.00
Grasses	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.33

UP&L-DES BEE DOVE
Beehive Yard Slope
1988 Reveg Area
Acreage: 1.6
Slope: 30 - 50 deg
Exposure: SE
Sample Date: 3 Oct 1991

Mean	SDev	Freq	
			SHRUBS
0.50	1.50		Ceratoides lanata
12.50	8.73		Chrysothamnus nauseosus
4.50	7.57		Atriplex confertifolia
			FORBS
5.00	11.83		Halogeton glomeratus
0.50	1.50		Penstemon palmeri
			GRASSES
1.50	3.20		Oryzopsis hymenoides
1.50	3.20		Agropyron dasystachyum
0.50	1.50		Elymus cinereus
			COVER
26.50	8.67		Total Living Cover
5.50	1.50		Litter
18.50	18.03		Bareground
49.50	20.67		Rock
			% COMPOSITION
69.67	33.26		Shrubs
25.00	35.36		Forbs
5.33	11.08		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Deseret Road Berm

AREA: UPL Des-Bee-Dove (1988 Reveg. Area)

DATE: October 2, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 6-10 deg.

EXPOSURE: E

AREA: .2 acre

ANIMAL USE/DISTURBANCE: None observed

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:
1) Not much change from last year.
2) Methods: For cover we placed meter sq. quadrats at regular intervals along inside of berm (nearest road).
3) There was still evidence of hydroseeding material
4) Most of the herbaceous spp. were weedy but there was also some woody things.

UP&L-DES BEE DOVE
Desert Road Berm
1988 Reveg Area
Acreage:
Slope: 6-10 deg
Exposure: E

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	Mean	SDev	Freq
SHRUBS											
Atriplex confertifolia	0.00	0.00	20.00	0.00	0.00	0.00	20.00	10.00	6.25	8.57	
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00	1.88	4.96	
FORBS											
Halogetum glomeratus	0.00	0.00	5.00	10.00	30.00	0.00	5.00	0.00	6.25	9.60	
Kochia scoparia	20.00	25.00	0.00	0.00	0.00	25.00	5.00	0.00	9.38	11.02	
GRASSES											
Oryzopsis hymenoides	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	1.88	4.96	
COVER											
Total Living Cover	20.00	25.00	25.00	25.00	30.00	25.00	30.00	25.00	25.63	3.00	
Litter	10.00	5.00	5.00	5.00	5.00	10.00	5.00	2.00	5.88	2.57	
Bareground	50.00	10.00	10.00	5.00	5.00	5.00	10.00	28.00	15.38	14.87	
Rock	20.00	60.00	60.00	65.00	60.00	60.00	55.00	45.00	53.13	13.68	
% COMPOSITION											
Shrubs	0.00	0.00	80.00	0.00	0.00	0.00	66.67	100.00	30.83	40.68	
Forbs	100.00	100.00	20.00	40.00	100.00	100.00	33.33	0.00	61.67	39.83	
Grasses	0.00	0.00	0.00	60.00	0.00	0.00	0.00	0.00	7.50	19.84	

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Portal Road Berm

AREA: UPL Des-Bee-Dove (1988 Reveg. Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 30 deg.

EXPOSURE: SW

AREA: .1 acre

ANIMAL USE/DISTURBANCE: Cattle on road was evident

EROSION: Very little

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:

1) Methods: For cover we placed meter sq. quadrats at regular intervals.
2) There was new disturbance on inside of berm from grading. I took a few samples on inside of berm and a bit more on outside. This may be a little different from last years' sampling.

UP&L-DES BEE DOVE
Portal Road Berm
1988 Reveg Area
Acreage: .1
Slope: 30 deg
Exposure: SW

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	Mean	SDev	Freq
SHRUBS										
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	15.00	15.00	0.00	4.29	6.78	
Atriplex confertifolia	0.00	15.00	20.00	0.00	0.00	10.00	5.00	7.14	7.49	
FORBS										
Halogeton glomeratus	5.00	0.00	0.00	0.00	0.00	0.00	5.00	1.43	2.26	
GRASSES										
Oryzopsis hymenoides	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.71	1.75	
Elymus salinus	0.00	0.00	0.00	15.00	0.00	0.00	0.00	2.14	5.25	
COVER										
Total Living Cover	5.00	15.00	20.00	15.00	20.00	25.00	10.00	15.71	6.23	
Litter	2.00	5.00	5.00	5.00	5.00	5.00	5.00	4.57	1.05	
Bareground	23.00	10.00	20.00	20.00	10.00	10.00	30.00	17.57	7.25	
Rock	70.00	70.00	55.00	60.00	65.00	60.00	55.00	62.14	5.89	
% COMPOSITION										
Shrubs	0.00	100.00	100.00	0.00	75.00	100.00	50.00	60.71	41.95	
Forbs	100.00	0.00	0.00	0.00	0.00	0.00	50.00	21.43	36.42	
Grasses	0.00	0.00	0.00	100.00	25.00	0.00	0.00	17.86	34.63	

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Bathhouse Road Berm

AREA: UPL Des-Bee-Dove (1988 Interim Reveg. Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 30 deg.

EXPOSURE: SW

AREA: .1 acre

ANIMAL USE/DISTURBANCE: Slight

EROSION: None

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:

1) Veg. cover was still quite weedy.

2) Methods: For cover we placed meter sq. quadrats at regular intervals over the entire length of the road berm.

UP&L-DES BEE DOVE
Bathhouse Road Berm
1988 Interim Reveg
Acreage: .1
Slope: 30 deg
Exposure: SW

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	Mean	SDev	Freq
SHRUBS										
Chrysothamnus nauseosus	5.00	10.00	20.00	0.00	0.00	0.00	0.00	5.00	7.07	
								ERR	ERR	
FORBS										
Kochia scoparia	0.00	10.00	0.00	0.00	0.00	20.00	0.00	4.29	7.28	
Halogeton glomeratus	5.00	0.00	0.00	5.00	10.00	0.00	0.00	2.86	3.64	
GRASSES										
Oryzopsis hymenoides	0.00	5.00	10.00	0.00	0.00	0.00	0.00	2.14	3.64	
Agropyron smithii	5.00	0.00	0.00	5.00	5.00	5.00	10.00	4.29	3.19	
Agropyron dasystachyum	15.00	0.00	5.00	5.00	0.00	0.00	0.00	3.57	5.15	
Sitanion hystrix	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.71	1.75	
COVER										
Total Living Cover	30.00	25.00	35.00	20.00	15.00	25.00	10.00	22.86	7.95	
Litter	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	0.00	
Bareground	15.00	55.00	10.00	15.00	20.00	20.00	5.00	20.00	15.12	
Rock	50.00	15.00	50.00	60.00	60.00	50.00	80.00	52.14	18.10	
% COMPOSITION										
Shrubs	16.67	40.00	57.14	0.00	0.00	0.00	0.00	16.26	21.69	
Forbs	16.67	40.00	0.00	25.00	66.67	80.00	0.00	32.62	29.03	
Grasses	66.67	20.00	42.86	75.00	33.33	20.00	100.00	51.12	28.09	

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Tipple Slope

AREA: UPL Des-Bee-Dove (1988 Reveg. Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 40-45 deg.

EXPOSURE: Variable

AREA: .4 acre

ANIMAL USE/DISTURBANCE: None observed

EROSION: Some slight to moderate erosion in some areas. Not very much for such a steep slope.

COVER: Cover was estimated by nonconventional methods as 16.43%. (x ~ 15 - 20%)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:

1) Vegetation cover looked fair in some areas with desirable species, while other areas were quite weedy.
2) No change from last year observed
3) Methods: For cover we had to use the LDS method (Long Distance Scan) because the slope was much too steep to safely place quadrats.
4) Some coal fines around soils

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Sediment Storage Slope

AREA: UPL Des-Bee-Dove (1988 Interim Reveg. Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 3 - 5 deg.

EXPOSURE: S SE

AREA: 4.4 acres

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible on flat. Slight to moderate on slopes.

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:

1) Area was weedy but had some woody spp. beginning to establish.

2) Methods: For cover we placed meter sq. quadrats at placed randomly over entire site.

UP&L-DES BEE DOVE
Sediment Storage Slope
1988 Interim Reveg
Acreage:
Slope: 3 - 5 deg
Exposure: S,SE

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Chrysothamnus nauseosus	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarcobatus vermiculatus	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00
Atriplex gardneri	15.00	15.00	0.00	20.00	0.00	0.00	0.00	5.00	15.00	10.00
FORBS										
Halogeton glomeratus	0.00	10.00	15.00	0.00	10.00	15.00	35.00	25.00	20.00	15.00
Suaeda calceoliformis	10.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Kochia scoparia	0.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
COVER										
Total Living Cover	25.00	35.00	15.00	35.00	25.00	25.00	35.00	30.00	35.00	30.00
Litter	5.00	5.00	5.00	5.00	5.00	4.00	5.00	5.00	5.00	5.00
Bareground	50.00	55.00	75.00	55.00	65.00	70.00	55.00	45.00	55.00	45.00
Rock	20.00	5.00	5.00	5.00	5.00	1.00	5.00	20.00	5.00	20.00
% COMPOSITION										
Shrubs	60.00	42.86	0.00	100.00	0.00	40.00	0.00	16.67	42.86	33.33
Forbs	40.00	57.14	100.00	0.00	100.00	60.00	100.00	83.33	57.14	66.67
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

UP&L-DES BEE DOVE
Sediment Storage Slope
1988 Interim Reveg
Acreage:
Slope: 3 - 5 deg
Exposure: S,SE
Sample Date: 3 Oct 1991

11.00	12.00	13.00	14.00	15.00	16.00	Mean	SDev	Freq	
									SHRUBS
0.00	0.00	0.00	0.00	0.00	0.00	0.94	3.63		Chrysothamnus nauseosus
0.00	0.00	0.00	0.00	0.00	0.00	0.63	2.42		Sarcobatus vermiculatus
10.00	0.00	50.00	9.00	3.00	30.00	11.38	13.04		Atriplex gardneri
									FORBS
10.00	25.00	0.00	1.00	0.00	0.00	11.31	10.62		Halogeton glomeratus
0.00	5.00	0.00	0.00	17.00	0.00	2.94	5.01		Suaeda calceoliformis
0.00	0.00	0.00	0.00	0.00	0.00	0.94	3.63		Kochia scoparia
									GRASSES
									COVER
20.00	30.00	50.00	10.00	20.00	30.00	28.13	9.16		Total Living Cover
5.00	5.00	5.00	3.00	5.00	5.00	4.81	0.53		Litter
70.00	60.00	40.00	80.00	65.00	60.00	59.06	10.93		Bareground
5.00	5.00	5.00	7.00	10.00	5.00	8.00	6.00		Rock
									% COMPOSITION
50.00	0.00	100.00	90.00	15.00	100.00	43.17	36.46		Shrubs
50.00	100.00	0.00	10.00	85.00	0.00	56.83	36.46		Forbs
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Sediment Pond Banks

AREA: UPL Des-Bee-Dove (1988 Interim Reveg Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 30 deg.

EXPOSURE: E & W

AREA: .9 acre

ANIMAL USE/DISTURBANCE: None observed

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:

UP&L-DES BEE DOVE
Sediment Pond Banks
1988 Interim Reveg
Acreage:
Slope: 30 deg
Exposure: E & W

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00
SHRUBS									
Atriplex gardneri	15.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
Chrysothamnus nauseosus	20.00	40.00	45.00	20.00	20.00	25.00	5.00	5.00	5.00
FORBS									
Salsola iberica	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Halogeton glomeratus	0.00	0.00	0.00	0.00	0.00	0.00	20.00	25.00	10.00
Kochia scoparia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
GRASSES									
COVER									
Total Living Cover	35.00	40.00	45.00	20.00	20.00	35.00	25.00	30.00	25.00
Litter	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	10.00
Bareground	35.00	35.00	35.00	50.00	55.00	45.00	60.00	60.00	60.00
Rock	25.00	20.00	15.00	25.00	20.00	15.00	10.00	5.00	5.00
% COMPOSITION									
Shrubs	100.00	100.00	100.00	100.00	100.00	100.00	20.00	16.67	20.00
Forbs	0.00	0.00	0.00	0.00	0.00	0.00	80.00	83.33	80.00
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

UP&L-DES BEE DOVE
Sediment Pond Banks
1988 Interim Reveg
Acreage:
Slope: 30 deg
Exposure: E & W
Sample Date: 3 Oct 1991

Mean	SDev	Freq	
			SHRUBS
2.78	5.33		Atriplex gardneri
20.56	13.83		Chrysothamnus nauseosus
			FORBS
0.56	1.57		Salsola iberica
6.11	9.36		Halogeton glomeratus
0.56	1.57		Kochia scoparia
			GRASSES
			COVER
30.56	8.31		Total Living Cover
5.56	1.57		Litter
48.33	10.54		Bareground
15.56	7.24		Rock
			% COMPOSITION
72.96	38.25		Shrubs
27.04	38.25		Forbs
0.00	0.00		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Beehive Substation Slope

AREA: UPL Des-Bee-Dove (1984 Reveg. Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 35 deg.

EXPOSURE: S

AREA: .1 acre

ANIMAL USE/DISTURBANCE: None observed

EROSION: Some slight erosion beginning

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see also quantitative data)

Atriplex confertifolia

Penstemon palmeri
Halogeton glomeratus
Salsola iberica

Elymus cinereus
Elymus salinus
Agropyron cristatum

NOTES:

1) Good spp. diversity.

2) Methods: For cover we placed meter sq. quadrats at regular intervals over area.

UP&L-DES BEE DOVE
Beehive Sub Sta. Slope
1986 Reveg Area
Acreage: .1
Slope: 35 deg
Exposure: S

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	Mean	SDev	Freq
SHRUBS									
Chrysothamnus nauseosus	0.00	4.00	15.00	20.00	20.00	30.00	14.83	10.17	
Atriplex confertifolia	0.00	5.00	0.00	0.00	0.00	0.00	0.83	1.86	
FORBS									
Salsola iberica	0.00	0.00	5.00	0.00	0.00	0.00	0.83	1.86	
GRASSES									
Agropyron smithii	0.00	1.00	5.00	5.00	10.00	0.00	3.50	3.59	
Agropyron dasystachyum	5.00	0.00	0.00	5.00	0.00	0.00	1.67	2.36	
Agropyron spicatum	10.00	0.00	0.00	0.00	0.00	5.00	2.50	3.82	
COVER									
Total Living Cover	15.00	10.00	25.00	30.00	30.00	35.00	24.17	8.86	
Litter	5.00	5.00	5.00	5.00	10.00	5.00	5.83	1.86	
Bareground	55.00	55.00	40.00	40.00	10.00	15.00	35.83	17.66	
Rock	25.00	30.00	30.00	25.00	50.00	45.00	34.17	9.75	
% COMPOSITION									
Shrubs	0.00	90.00	60.00	66.67	66.67	85.71	61.51	29.54	
Forbs	66.67	0.00	20.00	0.00	0.00	14.29	16.83	23.63	
Grasses	33.33	10.00	20.00	33.33	33.33	0.00	21.67	13.02	

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Bathhouse Slope

AREA: UPL Des-Bee-Dove (1984 Reveg. Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 25 deg.

EXPOSURE: Variable

AREA: 2.3 acre

ANIMAL USE/DISTURBANCE: Moderate rabbit and slight cattle near bottom.

EROSION: Some minor erosion over 10% of the surface area that was 6" wide and 4" deep.

COVER: ~ 30 %

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamnus nauseosus

Kochia scoparia

Agropyron cristatum
Elymus salinus
Oryzopsis hymenoides
Agropyron smithii
Agropyron dasystachyum

NOTES:

1) Vegetative cover still looked good & diverse.

2) Methods: For cover we placed meter sq. quadrats at regular intervals at different elevations an at right angles on the slope to attempt to adequately represent it.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Materials Yard Slope

AREA: UPL Des-Bee-Dove (1984 Reveg. Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 20-25 deg.

EXPOSURE: SE

AREA: 1.1 acre

ANIMAL USE/DISTURBANCE: None observed

EROSION: Some erosion has been repaired by erosion control mats and seems to be doing an adequate job. Other minor erosional areas have begun that were 1" wide by 1" deep.

COVER: ~ 30-35%

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamnus nauseosus

Aster chilensis
Hedysarum boreale

Oryzopsis hymenoides
Agropyron smithii
Agropyron dasystachyum
Elymus salinus

NOTES:
1) Area looked very good with only a few weedy spp.
2) Not much change from last year.
3) Methods: For cover we placed meter sq. quadrats at random location over the entire slope.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Sediment Pond Area

AREA: UPL Des-Bee-Dove (1985 Reveg. Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 0-10 deg.

EXPOSURE: S

AREA: .7 acre

ANIMAL USE/DISTURBANCE:

EROSION: None

COVER: ~ 30 - 35%

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens
Atriplex confertifolia
Chrysothamnus nauseosus
Chrysothamnus viscidiflorus
Sarcobatus vermiculatus
Atriplex cuneata

Halogeton glomeratus
Salsola iberica
Machaeranthera canescens
Melilotus officinalis

Sitanion hystrix
Elymus cinereus
Elymus salinus
Oryzopsis hymenoides
Agropyron spicatus

NOTES: Area looks very good. High diversity species and weeds.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Haul Road Bench

AREA: UPL Des-Bee-Dove (1986 Reveg. Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 3 - 5 deg.

EXPOSURE: SW

ANIMAL USE/DISTURBANCE: Slight

EROSION: Slight on bench

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

WOODY PLANT DENSITY: (1990)

	Individuals/Acre
Atriplex cuneata	1,074.42
Atriplex canescens	422.09
Atriplex confertifolia	38.37
Total	1,534.88

Statistics: x = 60.93; s = 18.86; n = 20; nmin = 15.70

NOTES:

1) Methods: For cover we placed meter sq. quadrats at regular intervals over a 400 ft transect line. Random locations were picked with random numbers at right angles to the transect lines. For density we use the quarter method. Woody plant density was recorded using the point quarter method (Cottom and Curtis 1956).

UP&L-DES BEE DOVE
Haul Road Bench
1986 Reveg Area
Acreage:
Slope: 5 deg
Exposure: SW

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Atriplex cuneata	5.00	0.00	5.00	0.00	15.00	30.00	0.00	0.00	0.00	5.00
Atriplex canescens	5.00	0.00	5.00	0.00	5.00	0.00	0.00	0.00	30.00	5.00
FORBS										
Halogeton glomeratus	0.00	20.00	15.00	35.00	0.00	10.00	20.00	10.00	0.00	20.00
GRASSES										
Elymus cinereus	20.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	10.00	0.00
Oryzopsis hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00	0.00
Poa sandbergii	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
COVER										
Total Living Cover	30.00	20.00	25.00	35.00	25.00	40.00	20.00	35.00	40.00	30.00
Litter	5.00	5.00	10.00	5.00	5.00	10.00	10.00	10.00	10.00	5.00
Bareground	30.00	55.00	10.00	50.00	65.00	45.00	45.00	30.00	30.00	45.00
Rock	35.00	20.00	55.00	10.00	5.00	5.00	25.00	25.00	20.00	20.00
% COMPOSITION										
Shrubs	33.33	0.00	40.00	0.00	80.00	75.00	0.00	0.00	75.00	33.33
Forbs	0.00	100.00	60.00	100.00	0.00	25.00	100.00	28.57	0.00	66.67
Grasses	66.67	0.00	0.00	0.00	20.00	0.00	0.00	71.43	25.00	0.00

UP&L-DES BEE DOVE
Haul Road Bench
1986 Reveg Area
Acreage:
Slope: 5 deg
Exposure: SW
Sample Date: 3 Oct 1991

Mean	SDev	Freq	
			SHRUBS
6.00	9.17		Atriplex cuneata
5.00	8.66		Atriplex canescens
			FORBS
13.00	10.77		Halogeton glomeratus
			GRASSES
3.50	6.34		Elymus cinereus
2.00	6.00		Oryzopsis hymenoides
0.50	1.50		Poa sandbergii
			COVER
30.00	7.07		Total Living Cover
7.50	2.50		Litter
40.50	14.91		Bareground
22.00	14.18		Rock
			% COMPOSITION
33.67	31.84		Shrubs
48.02	40.53		Forbs
18.31	26.87		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Test Plot

AREA: UPL Des-Bee-Dove

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 26 deg.

EXPOSURE: S

AREA: .6 acre

ANIMAL USE/DISTURBANCE: None observed within fence.

EROSION: Listed from slight to moderate: Plot 3 - Plot 4 - Plot 2 - Plot 1.

COVER: (see quantitative data)

PLANT SPECIES PLANTED	PLANT SPECIES OBSERVED
Atriplex canescens Atriplex corrugata Atriplex confertifolia Ceratoides lanata Kochia prostrata	(see quantitative data, plus the following spp. in Plot # 3) Agropyon dasystachyum Agropyron smithii Orysopsis hymenoides
Linum lewsii Medilotus officinalis Sphraeralcea coccinea	Atriplex gardneri
Agropyron dasystachum Agropyron smithii Elymus cinereus Orzopsis hymenoides Sporobolus airoides	

NOTES:
1) Atriplex cuneata germinated, but may not survive, possible because of the drought conditions and dry exposure.
2) Woody species density was low (see raw data sheet)
3) Methods: Placed meter sq. quadrats on 150 ft transect lines (north to south) in each plot. Then random nos. between 1 & 60.

UP&L-DES BEE DOVE
TEST PLOT
Test Plot #1
Acreage:
Slope: 26 deg
Exposure: S

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Atriplex canescens	0.00	0.00	0.00	0.00	0.00	5.00	2.00	0.00	5.00	1.00
FORBS										
Halogeton glomeratus	30.00	20.00	30.00	25.00	15.00	20.00	3.00	10.00	5.00	5.00
Salsola iberica	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Kochia scoparia	0.00	0.00	5.00	5.00	0.00	0.00	10.00	0.00	20.00	0.00
Bassia hyssopifolia	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
Iva axillaris	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
Suaeda fruticosa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.00
GRASSES										
Oryzopsis hymenoides	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	30.00	25.00	35.00	35.00	20.00	30.00	15.00	10.00	35.00	35.00
Litter	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	10.00	10.00
Bareground	55.00	69.00	59.00	55.00	70.00	60.00	75.00	80.00	45.00	50.00
Rock	10.00	1.00	1.00	5.00	5.00	5.00	5.00	5.00	10.00	5.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	0.00	0.00	16.67	13.33	0.00	14.29	2.86
Forbs	100.00	100.00	100.00	100.00	100.00	66.67	86.67	100.00	85.71	97.14
Grasses	0.00	0.00	0.00	0.00	0.00	16.67	0.00	0.00	0.00	0.00

UP&L-DES BEE DOVE
TEST PLOT
Test Plot #1
Acreage:
Slope: 26 deg
Exposure: S
Sample Date: 3 Oct 1991

Mean	SDev	Freq	
			SHRUBS
1.30	1.95		Atriplex canescens
			FORBS
16.30	9.76		Halogeton glomeratus
0.50	1.50		Salsola iberica
4.00	6.24		Kochia scoparia
1.00	2.00		Bassia hyssopifolia
0.50	1.50		Iva axillaris
2.90	8.70		Suaeda fruticosa
			GRASSES
0.50	1.50		Oryzopsis hymenoides
			COVER
27.00	8.72		Total Living Cover
6.00	2.00		Litter
61.80	10.72		Bareground
5.20	2.86		Rock
			% COMPOSITION
4.71	6.67		Shrubs
93.62	10.46		Forbs
1.67	5.00		Grasses

UP&L-DES BEE DOVE
TEST PLOT
Test Plot #2
Acreage:
Slope: 26 deg
Exposure: S

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Atriplex canescens	0.00	5.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Ceratoides lanata	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
FORBS										
Halogeton glomeratus	5.00	20.00	5.00	5.00	5.00	0.00	0.00	20.00	20.00	15.00
Salsola iberica	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kochia scoparia	30.00	5.00	5.00	5.00	0.00	20.00	35.00	5.00	0.00	0.00
Bassia hyssopifolia	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
COVER										
Total Living Cover	35.00	35.00	15.00	15.00	5.00	25.00	35.00	25.00	20.00	15.00
Litter	5.00	10.00	5.00	5.00	1.00	5.00	5.00	4.00	5.00	5.00
Bareground	58.00	50.00	75.00	79.00	90.00	65.00	55.00	70.00	70.00	75.00
Rock	2.00	5.00	5.00	1.00	4.00	5.00	5.00	1.00	5.00	5.00
% COMPOSITION										
Shrubs	0.00	14.29	0.00	33.33	0.00	20.00	0.00	0.00	0.00	0.00
Forbs	100.00	85.71	100.00	66.67	100.00	80.00	100.00	100.00	100.00	100.00
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

UP&L-DES BEE DOVE
TEST PLOT
Test Plot #2
Acreage:
Slope: 26 deg
Exposure: S
Sample Date: 3 Oct 1991

Mean	SDev	Freq	
			SHRUBS
1.00	2.00		Atriplex canescens
0.50	1.50		Ceratoides lanata
			FORBS
9.50	7.89		Halogeton glomeratus
0.50	1.50		Salsola iberica
10.50	12.34		Kochia scoparia
0.50	1.50		Bassia hyssopifolia
			GRASSES
			COVER
22.50	9.81		Total Living Cover
5.00	2.05		Litter
68.70	11.44		Bareground
3.80	1.66		Rock
			% COMPOSITION
6.76	11.22		Shrubs
93.24	11.22		Forbs
0.00	0.00		Grasses

UP&L-DES BEE DOVE
TEST PLOT
Test Plot #3
Acreage:
Slope: 26 deg
Exposure: S

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
FORBS										
Halogeton glomeratus	5.00	1.00	5.00	2.00	1.00	2.00	5.00	1.00	10.00	15.00
Kochia scoparia	0.00	0.00	0.00	1.00	0.00	3.00	0.00	0.00	15.00	0.00
GRASSES										
Oryzopsis hymenoides	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	5.00	1.00	5.00	3.00	1.00	10.00	5.00	1.00	25.00	15.00
Litter	2.00	1.00	1.00	1.00	1.00	3.00	5.00	1.00	5.00	3.00
Bareground	80.00	97.00	90.00	94.00	97.00	85.00	89.00	97.00	69.00	80.00
Rock	13.00	1.00	4.00	2.00	1.00	2.00	1.00	1.00	1.00	2.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	100.00	100.00	100.00	100.00	100.00	50.00	100.00	100.00	100.00	100.00
Grasses	0.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00

UP&L-DES BEE DOVE
TEST PLOT
Test Plot #3
Acreage:
Slope: 26 deg
Exposure: S
Sample Date: 3 Oct 1991

Mean	SDev	Freq	
			SHRUBS
			FORBS
4.70	4.36		Halogeton glomeratus
1.90	4.46		Kochia scoparia
			GRASSES
0.50	1.50		Oryzopsis hymenoides
			COVER
7.10	7.30		Total Living Cover
2.30	1.55		Litter
87.80	8.84		Bareground
2.80	3.52		Rock
			% COMPOSITION
0.00	0.00		Shrubs
95.00	15.00		Forbs
5.00	15.00		Grasses

UP&L-DES BEE DOVE
TEST PLOT
Test Plot #4
Acreage:
Slope: 26 deg
Exposure: S

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Atriplex gardneri	0.00	0.00	0.00	0.00	1.00	0.00	2.00	0.00	1.00	0.00
FORBS										
Halogeton glomeratus	15.00	1.00	5.00	1.00	0.00	0.00	1.00	10.00	0.00	3.00
Kochia scoparia	0.00	0.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00
GRASSES										
COVER										
Total Living Cover	15.00	1.00	5.00	1.00	1.00	20.00	3.00	10.00	1.00	3.00
Litter	5.00	10.00	1.00	1.00	1.00	5.00	1.00	5.00	1.00	2.00
Bareground	70.00	88.00	89.00	94.00	90.00	65.00	87.00	75.00	80.00	94.00
Rock	10.00	1.00	5.00	4.00	8.00	10.00	9.00	10.00	18.00	1.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	0.00	100.00	0.00	66.67	0.00	100.00	0.00
Forbs	100.00	100.00	100.00	100.00	0.00	100.00	33.33	100.00	0.00	100.00
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

UP&L-DES BEE DOVE
TEST PLOT
Test Plot #4
Acreage:
Slope: 26 deg
Exposure: S
Sample Date: 3 Oct 1991

Mean	SDev	Freq	
			SHRUBS
0.40	0.66		Atriplex gardneri
			FORBS
3.60	4.82		Halogeton glomeratus
2.00	6.00		Kochia scoparia
			GRASSES
			COVER
6.00	6.42		Total Living Cover
3.20	2.86		Litter
83.20	9.66		Bareground
7.60	4.84		Rock
			% COMPOSITION
26.67	41.63		Shrubs
73.33	41.63		Forbs
0.00	0.00		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Beehive Road Berm

AREA: UPL Des-Bee-Dove (1988 Reveg. Area)

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE:

EXPOSURE:

ANIMAL USE/DISTURBANCE: Minimal

EROSION: Minimal

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:

UP&L-DES BEE DOVE
Beehive Road Berm
1988 Reveg Area
Acreage: .1
Slope:
Exposure:

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	Mean	SDev	Freq
SHRUBS										
Chrysothamnus nauseosus	0.00	0.00	0.00	10.00	15.00	5.00	0.00	4.29	5.62	
Atriplex confertifolia	0.00	0.00	20.00	0.00	0.00	0.00	0.00	2.86	7.00	
Eriogonum corymbosum	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.71	1.75	
FORBS										
Halogeton glomeratus	20.00	10.00	5.00	5.00	5.00	5.00	5.00	7.86	5.25	
								ERR	ERR	
GRASSES										
Elymus salinus	0.00	0.00	0.00	15.00	0.00	0.00	0.00	2.14	5.25	
Agropyron dasystachyum	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.71	1.75	
Sitanion hystrix	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.71	1.75	
COVER										
Total Living Cover	20.00	10.00	25.00	30.00	25.00	20.00	5.00	19.29	8.21	
Litter	2.00	5.00	5.00	5.00	5.00	5.00	1.00	4.00	1.60	
Bareground	8.00	45.00	5.00	10.00	30.00	25.00	4.00	18.14	14.40	
Rock	70.00	40.00	65.00	55.00	40.00	50.00	90.00	58.57	16.63	
% COMPOSITION										
Shrubs	0.00	0.00	80.00	33.33	80.00	25.00	0.00	31.19	33.22	
Forbs	100.00	100.00	20.00	16.67	20.00	25.00	100.00	54.52	39.45	
Grasses	0.00	0.00	0.00	50.00	0.00	50.00	0.00	14.29	22.59	

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Haul Road Reference Area

AREA: UPL Des-Bee-Dove

DATE: October 3, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 2 - 3 deg.

EXPOSURE: SE

ANIMAL USE/DISTURBANCE:

EROSION: Minimal

COVER: (see quantitative data sheets)

DOMINANT PLANT SPECIES OBSERVED:

NOTES:

1) .6 miles for Wilberg turnoff. Wrote "Reference Area" on perimeter sign.
2) Lots of bird use
3) Good mature PJ Forest
4) Quantatitative Methods: Cover & composition was taken by using meter square quadrats. Density of woody species employed the point-quarter distance methods. Sample adequacy was achieved insuring mean values were within 10% of the true mean 80% of the time.

UP&L-DES BEE DOVE
HAUL ROAD REF AREA
Ref PJ
Acreage:
Slope: 2 - 5 deg
Exposure: SE

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Artemisia nova	10.00	5.00	4.00	25.00	15.00	10.00	10.00	3.00	20.00	2.00
Juniperus osteosperma	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pinus edulis	15.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
FORBS										
Euphorbia fendleri	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eriogonum bicolor	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Penstemon pachyphyllus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Opuntia polyacantha	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.00	0.00
GRASSES										
COVER										
Total Living Cover	25.00	5.00	20.00	25.00	15.00	10.00	10.00	10.00	20.00	5.00
Litter	20.00	40.00	65.00	10.00	5.00	80.00	30.00	5.00	25.00	25.00
Bareground	45.00	30.00	10.00	64.00	75.00	5.00	45.00	70.00	30.00	60.00
Rock	10.00	25.00	5.00	1.00	5.00	5.00	15.00	15.00	25.00	10.00
% COMPOSITION										
Shrubs	100.00	100.00	95.00	100.00	100.00	100.00	100.00	30.00	100.00	100.00
Forbs	0.00	0.00	5.00	0.00	0.00	0.00	0.00	70.00	0.00	0.00
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00
10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	25.00	0.00	0.00	0.00	15.00	15.00	0.00
0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.00	5.00	5.00	25.00	5.00	25.00	5.00	15.00	15.00	5.00
75.00	10.00	5.00	65.00	25.00	65.00	25.00	25.00	75.00	5.00
5.00	50.00	60.00	5.00	35.00	5.00	5.00	30.00	5.00	5.00
5.00	35.00	30.00	5.00	35.00	5.00	65.00	30.00	5.00	85.00
100.00	0.00	0.00	100.00	0.00	100.00	0.00	100.00	100.00	0.00
0.00	100.00	100.00	0.00	100.00	0.00	100.00	0.00	0.00	100.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

UP&L-DES BEE DOVE
HAUL ROAD REF AREA
Ref PJ
Acreage:
Slope: 2 - 5 deg
Exposure: SE
Sample Date: 3 Oct 1991

Mean	SDev	Freq	
			SHRUBS
5.70	7.26		Artemisia nova
1.25	5.45		Juniperus osteosperma
4.65	7.51		Pinus edulis
			FORBS
0.25	1.09		Euphorbia fendleri
0.55	1.50		Eriogonum bicolor
0.50	1.50		Penstemon pachyphyllus
0.35	1.53		Opuntia polyacantha
			GRASSES
			COVER
13.25	7.63		Total Living Cover
34.00	26.01		Litter
31.95	24.65		Bareground
20.80	21.36		Rock
			% COMPOSITION
71.25	43.81		Shrubs
28.75	43.81		Forbs
0.00	0.00		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Haul Road Fill Slopes

AREA: UPL Des-Bee-Dove

DATE: October 3 & 11, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 30 - 50 deg.

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Slight

EROSION: Minimum to Severe, depending on location. Worse was usually on the east-facing slopes.

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see also quantitative data)

NOTES: 1) Methods:
There were 3 areas, each with east and west facing slopes. We sampled all of them and combined the data for averages. But one can look at raw data (included) and note where cover and slope differences are.

For density, we measured the slope only, but the flatter areas had about 50% more density.

Because of the exposure and cover differences between them, the standard deviation was high.

2) East exposure generally had more weeds, erosion and less shrubs that the West.

UP&L-DES BEE DOVE
HAUL ROAD FILL SLOPES
Acreage:
Slope: 30 - 50 deg
Exposure: variable

MIDDLE = 1 thru 20

East 1 thru 10

Sample Date: 3 Oct 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Chrysothamnus nauseosus	5.00	0.00	0.00	0.00	35.00	50.00	13.00	0.00	20.00	25.00
FORBS										
Salsola iberica	3.00	45.00	30.00	25.00	0.00	0.00	0.00	15.00	10.00	0.00
Halogeton glomeratus	2.00	0.00	0.00	0.00	0.00	0.00	2.00	10.00	0.00	0.00
Machaeranthera grindelioi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Melilotus officinalis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medicago sativa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Agropyron dasystachyum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oryzopsis hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hordeum jubatum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	10.00	45.00	30.00	25.00	35.00	50.00	15.00	25.00	30.00	25.00
Litter	5.00	10.00	30.00	5.00	5.00	10.00	5.00	5.00	10.00	5.00
Bareground	50.00	15.00	10.00	20.00	35.00	20.00	10.00	25.00	25.00	25.00
Rock	35.00	30.00	30.00	50.00	25.00	20.00	70.00	45.00	35.00	45.00
% COMPOSITION										
Shrubs	50.00	0.00	0.00	0.00	100.00	100.00	86.67	0.00	66.67	100.00
Forbs	50.00	100.00	100.00	100.00	0.00	0.00	13.33	100.00	33.33	0.00
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

MIDDLE (con'd)

West 11 thru 20

11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00
25.00	35.00	25.00	35.00	10.00	10.00	20.00	5.00	23.00	20.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.00	35.00	25.00	35.00	10.00	10.00	20.00	10.00	25.00	20.00
10.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
10.00	10.00	25.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
55.00	50.00	45.00	55.00	80.00	80.00	70.00	80.00	65.00	70.00
100.00	100.00	100.00	100.00	100.00	100.00	100.00	50.00	92.00	100.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	8.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SOUTH = 21 thru 32

East 21 thru 26 West 27 thru 32

21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00
0.00	15.00	20.00	8.00	50.00	10.00	28.00	25.00	18.00	25.00	30.00	5.00
10.00	0.00	10.00	7.00	0.00	10.00	0.00	0.00	2.00	5.00	0.00	0.00
20.00	5.00	5.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.00	20.00	35.00	15.00	50.00	20.00	30.00	30.00	20.00	30.00	40.00	20.00
5.00	5.00	10.00	5.00	5.00	5.00	5.00	5.00	10.00	5.00	5.00	5.00
35.00	10.00	5.00	5.00	5.00	5.00	10.00	35.00	25.00	25.00	20.00	20.00
30.00	65.00	50.00	75.00	40.00	70.00	55.00	30.00	45.00	40.00	35.00	55.00
0.00	75.00	57.14	53.33	100.00	50.00	93.33	83.33	90.00	83.33	75.00	25.00
100.00	25.00	42.86	46.67	0.00	50.00	6.67	16.67	10.00	16.67	25.00	75.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NORTH = 33 thru 42

East 33 thru 37 West 38 thru 42

33.00	34.00	35.00	36.00	37.00	38.00	39.00	40.00	41.00	42.00
7.00	0.00	20.00	10.00	5.00	20.00	20.00	20.00	25.00	5.00
28.00	10.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	25.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	10.00	5.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
35.00	15.00	25.00	20.00	10.00	30.00	25.00	20.00	35.00	35.00
5.00	5.00	5.00	5.00	2.00	5.00	5.00	5.00	5.00	5.00
30.00	10.00	30.00	65.00	65.00	5.00	10.00	5.00	5.00	5.00
30.00	70.00	40.00	10.00	23.00	60.00	60.00	70.00	55.00	55.00
20.00	0.00	80.00	50.00	50.00	66.67	80.00	100.00	71.43	14.29
80.00	100.00	20.00	50.00	0.00	0.00	0.00	0.00	28.57	71.43
0.00	0.00	0.00	0.00	50.00	33.33	20.00	0.00	0.00	14.29

UP&L-DES BEE DOVE
HAUL ROAD FILL SLOPES
Acreage:
Slope: 30 - 50 deg
Exposure: variable
Sample Date: 3 Oct 1991

Mean	SDev	Freq	
			SHRUBS
17.19	12.71		Chrysothamnus nauseosus
			FORBS
5.29	9.79		Salsola iberica
1.21	3.54		Halogeton glomeratus
0.48	1.47		Machaeranthera grindelioides
1.19	4.34		Melilotus officinalis
0.12	0.76		Medicago sativa
			GRASSES
0.12	0.76		Agropyron dasystachyum
0.36	1.69		Oryzopsis hymenoides
0.12	0.76		Hordeum jubatum
			COVER
26.07	10.15		Total Living Cover
6.24	4.14		Litter
17.74	15.40		Bareground
49.95	17.90		Rock
			% COMPOSITION
65.79	35.44		Shrubs
31.41	35.93		Forbs
2.80	9.62		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Pipeline

AREA: UPL Deer Creek (1986 Reveg. Area)

DATE: September 24, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 5 - 30 deg.

EXPOSURE: Variable

AREA: 3.5 acre

ANIMAL USE/DISTURBANCE: Moderate

EROSION: Slight

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Pinus edulis
Juniperus osteosperma
Rhus trilobata
Populus angustifolia
Artemisia tridentata
Eriogonum corymbosum
Aster foliaceus

* (plus spp. listed in the quantitative data)

NOTES:
1) Area looked good with only a few weed spp.
2) Methods: For cover we placed meter sq. quadrats at regular intervals over the entire length of the pipeline (every 500 ft.). We avoided area that were disturbed by constant use.

1991 DATA
UP&L DEER CREEK

UP&L-DEER CREEK
Pipeline
1986 Reveg Site
Acreage: 3.5 acres
Slope: 5 - 30 deg
Exposure: variable

Sample Date: 24 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Chrysothamnus nauseosus	20.00	15.00	5.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00
Pinus edulis	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS										
Artemisia ludoviciana	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00
Kochia scoparia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00	0.00
Aster chilensis	0.00	10.00	0.00	0.00	15.00	0.00	0.00	5.00	0.00	10.00
Melilotus officinalis	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Castilleja sp.	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salsola iberica	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
Halogeton glomeratus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	5.00
GRASSES										
Elymus cinereus	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
Agropyron smithii	0.00	0.00	0.00	40.00	0.00	20.00	0.00	10.00	0.00	0.00
Agropyron dasystachyum	0.00	10.00	15.00	0.00	0.00	0.00	20.00	5.00	0.00	0.00
Oryzopsis hymenoides	0.00	0.00	30.00	0.00	40.00	0.00	10.00	10.00	10.00	0.00
Elymus salinus	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	50.00	45.00	50.00	40.00	70.00	30.00	35.00	30.00	35.00	15.00
Litter	5.00	10.00	10.00	15.00	5.00	5.00	5.00	5.00	5.00	5.00
Bareground	5.00	5.00	20.00	15.00	5.00	5.00	5.00	5.00	5.00	5.00
Rock	40.00	40.00	20.00	30.00	20.00	60.00	55.00	60.00	55.00	75.00
% COMPOSITION										
Shrubs	60.00	33.33	10.00	0.00	21.43	0.00	0.00	0.00	0.00	0.00
Forbs	0.00	44.44	0.00	0.00	21.43	16.67	14.29	16.67	71.43	100.00
Grasses	40.00	22.22	90.00	100.00	57.14	83.33	85.71	83.33	28.57	0.00

UP&L-DEER CREEK
Pipeline
1986 Reveg Site
Acreage: 3.5 acres
Slope: 5 - 30 deg
Exposure: variable
Sample Date: 24 Sept 1991

11.00	12.00	13.00	Mean	SDev	Freq	
						SHRUBS
0.00	0.00	0.00	4.23	7.03		Chrysothamnus nauseosus
0.00	0.00	0.00	0.77	2.66		Pinus edulis
						FORBS
0.00	0.00	0.00	0.38	1.33		Artemisia ludoviciana
0.00	0.00	0.00	1.15	4.00		Kochia scoparia
35.00	10.00	10.00	7.31	9.53		Aster chilensis
0.00	10.00	0.00	1.15	2.88		Melilotus officinalis
0.00	0.00	0.00	0.38	1.33		Castilleja sp.
0.00	0.00	0.00	0.38	1.33		Salsola iberica
0.00	0.00	0.00	1.15	2.88		Halogeton glomeratus
						GRASSES
0.00	5.00	0.00	0.77	1.80		Elymus cinereus
0.00	10.00	15.00	7.31	11.54		Agropyron smithii
0.00	0.00	25.00	5.77	8.51		Agropyron dasystachyum
0.00	0.00	0.00	7.69	12.50		Oryzopsis hymenoides
0.00	0.00	0.00	1.54	5.33		Elymus salinus
						COVER
35.00	35.00	50.00	40.00	12.86		Total Living Cover
5.00	10.00	15.00	7.69	3.73		Litter
5.00	15.00	5.00	7.69	5.04		Bareground
55.00	40.00	30.00	44.62	16.23		Rock
						% COMPOSITION
0.00	0.00	0.00	9.60	17.70		Shrubs
100.00	57.14	20.00	35.54	34.57		Forbs
0.00	42.86	80.00	54.86	33.54		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Deer Canyon

AREA: UPL Deer Creek (1986 Reveg. Area)

DATE: September 24, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 15-20 deg.

EXPOSURE: E

AREA: .1 acre

ANIMAL USE/DISTURBANCE: Heavy

EROSION: None

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

Plus: Artemisia tridentata

NOTES:
1) The cut slopes have some erosion.
2) Fill slopes look good.

UP&L-DEER CREEK
Deer Canyon
1986 Reveg Area
Acreage: .1
Slope: 15 - 20 deg
Exposure:

Sample Date: 24 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	Mean	SDev	Freq
SHRUBS									
Chrysothamnus nauseosus	0.00	10.00	0.00	0.00	0.00	0.00	1.67	3.73	
Chrysothamnus viscidiflor	5.00	0.00	0.00	0.00	0.00	0.00	0.83	1.86	
FORBS									
Aster chilensis	5.00	10.00	0.00	15.00	5.00	0.00	5.83	5.34	
Medicago sativa	5.00	0.00	5.00	0.00	0.00	0.00	1.67	2.36	
Penstemon palmeri	0.00	0.00	5.00	0.00	3.00	0.00	1.33	1.97	
Artemisia ludoviciana	5.00	0.00	0.00	0.00	0.00	0.00	0.83	1.86	
Melilotus officinalis	0.00	0.00	0.00	5.00	2.00	0.00	1.17	1.86	
GRASSES									
Elymus cinereus	0.00	0.00	10.00	0.00	15.00	0.00	4.17	6.07	
Agropyron spicatum	0.00	0.00	0.00	0.00	0.00	5.00	0.83	1.86	
Agropyron smithii	0.00	10.00	20.00	15.00	45.00	15.00	17.50	13.77	
Agropyron dasystachyum	15.00	10.00	0.00	15.00	0.00	5.00	7.50	6.29	
Oryzopsis hymenoides	0.00	0.00	10.00	0.00	0.00	15.00	4.17	6.07	
Hordeum jubatum	0.00	0.00	0.00	0.00	0.00	5.00	0.83	1.86	
COVER									
Total Living Cover	35.00	40.00	50.00	50.00	70.00	45.00	48.33	11.06	
Litter	15.00	15.00	15.00	25.00	5.00	5.00	13.33	6.87	
Bareground	25.00	10.00	20.00	12.00	5.00	10.00	13.67	6.75	
Rock	25.00	35.00	15.00	13.00	20.00	40.00	24.67	9.94	
% COMPOSITION									
Shrubs	14.29	25.00	0.00	0.00	0.00	0.00	6.55	9.76	
Forbs	42.86	25.00	20.00	40.00	14.29	0.00	23.69	14.71	
Grasses	42.86	50.00	80.00	60.00	85.71	100.00	69.76	20.34	

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Refuse Pile & Berm

AREA: UPL Deer Creek (1988 Reveg. Area)

DATE: September 24, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 27 deg.

EXPOSURE: NE 300 deg.

AREA: 4.0 acres

ANIMAL USE/DISTURBANCE: None observed

EROSION: Slight to Moderate

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

plus *Bromus carinatus*

NOTES:
1) Dominated by weeds, probably should reseed.
2) A variable site. 50% of it had waste rock exposed.

UP&L-DEER CREEK
Refuse Pile & Berm
1988 Reveg Area
Acreage: 4.0 acres
Slope: 27 deg
Exposure: NE (300 deg)

Sample Date: 24 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Eriogonum corymbosum	0.00	0.00	0.00	5.00	5.00	0.00	0.00	10.00	15.00	0.00
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00
Chrysothamnus viscidiflor	0.00	0.00	0.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00
FORBS										
Aster chilensis	0.00	0.00	0.00	0.00	5.00	15.00	0.00	0.00	0.00	0.00
Medilotus officinalis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salsola iberica	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
Kochia scoparia	25.00	20.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	10.00
Halogeton glomeratus	0.00	15.00	25.00	0.00	0.00	10.00	10.00	15.00	0.00	10.00
Iva axillaris	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Elymus cinereus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agropyron spicatum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agropyron dasystachyum	0.00	0.00	10.00	20.00	5.00	0.00	20.00	0.00	0.00	0.00
COVER										
Total Living Cover	25.00	35.00	35.00	35.00	35.00	25.00	35.00	25.00	15.00	30.00
Litter	10.00	5.00	15.00	10.00	10.00	10.00	5.00	10.00	5.00	5.00
Bareground	15.00	10.00	5.00	15.00	30.00	20.00	5.00	10.00	5.00	5.00
Rock	50.00	50.00	45.00	40.00	25.00	45.00	55.00	55.00	75.00	60.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	42.86	42.86	0.00	14.29	40.00	100.00	0.00
Forbs	100.00	100.00	71.43	0.00	42.86	100.00	28.57	60.00	0.00	100.00
Grasses	0.00	0.00	28.57	57.14	14.29	0.00	57.14	0.00	0.00	0.00

UP&L-DEER CREEK
Refuse Pile & Berm
1988 Reveg Area
Acreage: 4.0 acres
Slope: 27 deg
Exposure: NE (300 deg)
Sample Date: 24 Sept 1991

11.00	12.00	Mean	SDev	Freq	
					SHRUBS
0.00	0.00	2.92	4.77		Eriogonum corymbosum
0.00	0.00	0.42	1.38		Chrysothamnus nauseosus
0.00	0.00	1.67	3.73		Chrysothamnus viscidiflorus
					FORBS
0.00	0.00	1.67	4.25		Aster chilensis
10.00	0.00	0.83	2.76		Medilotus officinalis
0.00	0.00	0.83	2.76		Salsola iberica
0.00	0.00	5.42	8.53		Kochia scoparia
0.00	25.00	9.17	9.09		Halogeton glomeratus
25.00	0.00	2.08	6.91		Iva axillaris
					GRASSES
5.00	0.00	0.42	1.38		Elymus cinereus
10.00	0.00	0.83	2.76		Agropyron spicatum
0.00	5.00	5.00	7.36		Agropyron dasystachyum
					COVER
50.00	30.00	31.25	8.20		Total Living Cover
20.00	5.00	9.17	4.49		Litter
10.00	5.00	11.25	7.40		Bareground
20.00	60.00	48.33	14.48		Rock
					% COMPOSITION
0.00	0.00	20.00	29.83		Shrubs
70.00	83.33	63.02	35.99		Forbs
30.00	16.67	16.98	20.95		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Rock Slide and Berm

AREA: UPL Deer Creek

DATE: September 24, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 53+ deg.

EXPOSURE:

AREA: .5 acre

ANIMAL USE/DISTURBANCE: None observed

EROSION: Nearly 50% of this area had erosional rills that were 2" - 6" deep and approx. 4" wide. Had mud slide problems

COVER: Cover was estimated by nonconventional methods because of steep and dangerous slopes. It was estimated at about 5%.

DOMINANT PLANT SPECIES OBSERVED:
Chrysothamnus nauseosus
Aster chilensis
Halogeton glomeratus
Elymus salinus
Agropyron smithii
Elymus cinereus
Agropyron dasystachum

NOTES: 1) Methods: As mentioned above, for cover, (because of dangerously steep slopes) we had to make estimations by viewing from a distance.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Water Plant Slope

AREA: UPL Deer Creek (1988 Reveg. Area)

DATE: September 24, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 38 deg.

EXPOSURE: NE, 320

AREA: .1 acre

ANIMAL USE/DISTURBANCE: None observed

EROSION: Slight, not a problem, slope holding well.

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:
Artemisia tridentata
Melilotus officianalis
Eriogonum corybosum
Agropyron cristatum

plus spp. encountered sampling (see the quantitative data sheet).

NOTES:

1) A lot of gravel on slopes
2) Methods: For cover we placed meter sq. quadrats at regular intervals over the area.

UP&L-DEER CREEK
Water Plant Slope
1988 Reveg Area
Acreage: .1
Slope: 38 deg
Exposure: NE (320 deg)

Sample Date: 24 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	Mean	SDev	Freq
SHRUBS									
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	0.00	10.00	1.67	3.73	
FORBS									
Aster chilensis	35.00	30.00	25.00	0.00	10.00	20.00	20.00	11.90	
Machaeranthera grindelioi	0.00	0.00	0.00	5.00	0.00	0.00	0.83	1.86	
GRASSES									
Elymus cinereus	0.00	10.00	0.00	0.00	0.00	0.00	1.67	3.73	
Agropyron spicatum	0.00	0.00	0.00	10.00	0.00	0.00	1.67	3.73	
Agropyron smithii	0.00	0.00	0.00	0.00	10.00	0.00	1.67	3.73	
Agropyron dasystachyum	0.00	0.00	0.00	5.00	0.00	0.00	0.83	1.86	
Drysopsis hymenoides	0.00	0.00	10.00	0.00	15.00	0.00	4.17	6.07	
COVER									
Total Living Cover	35.00	40.00	35.00	20.00	35.00	30.00	32.50	6.29	
Litter	5.00	10.00	5.00	5.00	20.00	5.00	8.33	5.53	
Bareground	5.00	5.00	5.00	10.00	25.00	40.00	15.00	13.23	
Rock	55.00	45.00	55.00	65.00	20.00	25.00	44.17	16.44	
% COMPOSITION									
Shrubs	0.00	0.00	0.00	0.00	0.00	33.33	5.56	12.42	
Forbs	100.00	75.00	71.43	25.00	28.57	66.67	61.11	26.47	
Grasses	0.00	25.00	28.57	75.00	71.43	0.00	33.33	30.28	

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Fan Road Slopes

AREA: UPL Deer Creek (1989 Reveg. Area)

DATE: September 24, 1991

WORKERS: P. Collins, D. Collins

SLOPE: Variable

EXPOSURE: Variable

AREA: 1.1 acres

ANIMAL USE/DISTURBANCE: Potguts were observed

EROSION: Slight, in only about 5% of the area.

COVER: (qualitative data only recorded)

DOMINANT PLANT SPECIES OBSERVED:

Aster chilensis
Halogeton glomeratus
Salsola iberica

Agropyron smithii
Elymus salinus
Agropyron dasystachum

NOTES: There were a lot of localized patch of vegetation that were weed dominated.

UP&L-DEER CREEK
Fan Road Slopes
1989 Reveg Area
Acreage: 1.1
Slope:
Exposure:

Sample Date: 24 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00
FORBS										
Salsola iberica	0.00	10.00	10.00	0.00	15.00	60.00	0.00	15.00	0.00	0.00
Aster chilensis	5.00	5.00	0.00	3.00	5.00	0.00	10.00	5.00	0.00	35.00
Melilotus officinalis	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Halogeton glomeratus	10.00	10.00	35.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Elymus cinereus	2.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00	5.00	0.00
Agropyron smithii	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
Hordeum jubatum	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
Oryzopsis hymenoides	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
Agropyron cristatum	0.00	0.00	0.00	10.00	0.00	0.00	5.00	0.00	0.00	0.00
Agropyron dasystachyum	3.00	5.00	0.00	0.00	15.00	0.00	0.00	15.00	5.00	0.00
Agropyron spicatum	0.00	5.00	5.00	7.00	5.00	0.00	10.00	15.00	15.00	0.00
COVER										
Total Living Cover	25.00	40.00	50.00	25.00	50.00	60.00	35.00	50.00	30.00	50.00
Litter	15.00	10.00	5.00	10.00	25.00	5.00	5.00	5.00	5.00	40.00
Bareground	30.00	10.00	5.00	25.00	5.00	5.00	40.00	25.00	25.00	5.00
Rock	30.00	40.00	40.00	40.00	20.00	30.00	20.00	20.00	40.00	5.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00
Forbs	60.00	62.50	90.00	32.00	40.00	100.00	28.57	40.00	0.00	70.00
Grasses	40.00	37.50	10.00	68.00	60.00	0.00	71.43	60.00	100.00	0.00

UP&L-DEER CREEK
Fan Road Slopes
1989 Reveg Area
Acreage: 1.1
Slope:
Exposure:
Sample Date: 24 Sept 1991

Mean	SDev	Freq	
			SHRUBS
1.50	4.50		Chrysothamnus nauseosus
			FORBS
11.00	17.44		Salsola iberica
6.80	9.86		Aster chilensis
0.50	1.50		Melilotus officinalis
5.50	10.59		Halogeton glomeratus
			GRASSES
1.70	2.24		Elymus cinereus
1.00	3.00		Agropyron smithii
0.50	1.50		Hordeum jubatum
1.00	2.00		Oryzopsis hymenoides
1.50	3.20		Agropyron cristatum
4.30	5.69		Agropyron dasystachyum
6.20	5.38		Agropyron spicatum
			COVER
41.50	11.63		Total Living Cover
12.50	11.01		Litter
17.50	12.30		Bareground
28.50	11.41		Rock
			% COMPOSITION
3.00	9.00		Shrubs
52.31	28.61		Forbs
44.69	31.71		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Access Road Slopes

AREA: UPL Deer Creek Waste Rock Site (1989 Interim Reveg. Area)

DATE: September 25, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 20 - 25 deg.

EXPOSURE: Variable

AREA: Part of 5 acres

ANIMAL USE/DISTURBANCE: Slight

EROSION: Erosion continues here, nearly same as last year, but some of the gullies have been filled and controlled. This control has worked well.

COVER: (see qualitative data)

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamnus nauseosus

Atriplex cuneata
Sarcobatus vermiculatus
Ceratoides lanata

Sisymbrium altissimum
Salsola iberica
Halogeton glomeratus
Machaeranthera canescens
Kochia scoparia
Melilotus officinalis

Agropyron riparian
Agropyron dasystachum
Stipa hymenoides
Elymus cinereus
Sitanion hystrix

NOTES: 1) Method: Regularly sampled at 100′ intervals alternating from cut to fill slopes.

DEER CREEK-WASTE ROCK SITE
Access Road Slope
1989 Interim Reveg Area
Acreage: part of 5 acres
Slope: 20 - 25 deg
Exposure:

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Chrysothamnus nauseosus	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ceratoides lanata	0.00	0.00	0.00	0.00	0.00	10.00	0.00	7.00	0.00	0.00
Artemisia tridentata	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
FORBS										
Penstemon eatonii	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kochia scoparia	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salsola iberica	20.00	25.00	50.00	2.00	30.00	5.00	20.00	5.00	35.00	5.00
Halogeton glomeratus	0.00	0.00	0.00	3.00	0.00	5.00	20.00	0.00	0.00	10.00
Aster tanacetifolius	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
GRASSES										
Agropyron dasystachyum	0.00	10.00	0.00	0.00	0.00	15.00	10.00	18.00	0.00	0.00
Oryzopsis hymenoides	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sitanion hystrix	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	35.00	40.00	60.00	5.00	30.00	50.00	50.00	30.00	35.00	15.00
Litter	5.00	5.00	15.00	1.00	2.00	5.00	5.00	10.00	10.00	2.00
Bareground	10.00	50.00	10.00	90.00	50.00	30.00	20.00	25.00	45.00	45.00
Rock	50.00	5.00	15.00	4.00	18.00	15.00	25.00	35.00	10.00	38.00
% COMPOSITION										
Shrubs	14.29	12.50	0.00	0.00	0.00	30.00	0.00	23.33	0.00	0.00
Forbs	57.14	62.50	100.00	100.00	100.00	30.00	80.00	16.67	100.00	100.00
Grasses	28.57	25.00	0.00	0.00	0.00	40.00	20.00	60.00	0.00	0.00

DEER CREEK-WASTE ROCK SITE
Access Road Slope
1989 Interim Reveg Area
Acreage: part of 5 acres
Slope: 20 - 25 deg
Exposure:
Sample Date: 25 Sept 1991

11.00	12.00	Mean	SDev	Freq	
					SHRUBS
0.00	0.00	0.83	1.86		Chrysothamnus nauseosus
0.00	0.00	1.42	3.23		Ceratoides lanata
0.00	0.00	0.42	1.38		Artemisia tridentata
					FORBS
0.00	10.00	0.83	2.76		Penstemon eatonii
0.00	0.00	0.83	2.76		Kochia scoparia
15.00	20.00	19.33	13.75		Salsola iberica
20.00	5.00	5.25	7.24		Halogeton glomeratus
0.00	0.00	0.42	1.38		Aster tanacetifolius
					GRASSES
0.00	5.00	4.83	6.41		Agropyron dasystachyum
0.00	0.00	0.83	2.76		Oryzopsis hymenoides
0.00	0.00	0.42	1.38		Sitanion hystrix
					COVER
35.00	40.00	35.42	14.36		Total Living Cover
5.00	10.00	6.25	3.98		Litter
35.00	10.00	35.00	22.17		Bareground
25.00	40.00	23.33	14.14		Rock
					% COMPOSITION
0.00	0.00	6.68	10.29		Shrubs
100.00	87.50	77.82	28.49		Forbs
0.00	12.50	15.51	18.96		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Phase I Berm

AREA: UPL Deer Creek Waste Rock Site (1989 Final Reveg. Area)

DATE: September 25, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 0 - 20 deg.

EXPOSURE: Variable

AREA: 4 acres

ANIMAL USE/DISTURBANCE: None observed

EROSION: Slightly, beginning around berm

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens
Ceratoides lanata
Medicago sativa

Agropyron dasystachum
Sitanion hystrix
(see also quantitative data)

NOTES:
1) Top of seeded berm had been driven on quite a bit.
2) Methods: Sampled regularly every 150'. Sampled on top of berm about 5 times.

UP&L-DEER CREEK
Phase I Berm
1989 Final Reveg
Acreage: 4
Slope: 20 deg
Exposure:

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Atriplex canescens	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
Ceratoides lanata	0.00	0.00	0.00	0.00	0.00	7.00	0.00	0.00	0.00	0.00
Eriogonum corymbosum	0.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS										
Medicago sativa	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00
Salsola iberica	0.00	0.00	0.00	15.00	0.00	0.00	5.00	0.00	50.00	0.00
Halogeton glomeratus	30.00	30.00	25.00	17.00	25.00	20.00	45.00	20.00	0.00	5.00
GRASSES										
Agropyron dasystachyum	0.00	0.00	0.00	0.00	5.00	8.00	5.00	0.00	0.00	0.00
COVER										
Total Living Cover	30.00	30.00	25.00	35.00	30.00	50.00	55.00	20.00	50.00	5.00
Litter	3.00	2.00	2.00	10.00	5.00	5.00	4.00	5.00	5.00	1.00
Bareground	65.00	65.00	70.00	54.00	60.00	40.00	40.00	70.00	25.00	90.00
Rock	2.00	3.00	3.00	1.00	5.00	5.00	1.00	5.00	20.00	4.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	8.57	0.00	24.00	0.00	0.00	0.00	0.00
Forbs	100.00	100.00	100.00	91.43	83.33	60.00	90.91	100.00	100.00	100.00
Grasses	0.00	0.00	0.00	0.00	16.67	16.00	9.09	0.00	0.00	0.00

UP&L-DEER CREEK
Phase I Berm
1989 Final Reveg
Acreage: 4
Slope: 20 deg
Exposure:
Sample Date: 25 Sept 1991

11.00	12.00	13.00	Mean	SDev	Freq	
						SHRUBS
0.00	0.00	0.00	0.38	1.33		Atriplex canescens
0.00	0.00	0.00	0.54	1.87		Ceratoides lanata
0.00	0.00	0.00	0.23	0.80		Eriogonum corymbosum
						FORBS
0.00	0.00	0.00	0.77	2.66		Medicago sativa
35.00	0.00	0.00	8.08	15.51		Salsola iberica
0.00	10.00	45.00	20.92	14.20		Halogeton glomeratus
						GRASSES
5.00	0.00	5.00	2.15	2.82		Agropyron dasystachyum
						COVER
40.00	10.00	50.00	33.08	15.13		Total Living Cover
10.00	1.00	5.00	4.46	2.79		Litter
45.00	85.00	40.00	57.62	18.37		Bareground
5.00	4.00	5.00	4.85	4.61		Rock
						% COMPOSITION
0.00	0.00	0.00	2.51	6.61		Shrubs
87.50	100.00	90.00	92.55	10.99		Forbs
12.50	0.00	10.00	4.94	6.53		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Phase I Diversion

AREA: UPL Deer Creek Waste Rock Site (1989 Final Reveg. Area)

DATE: September 25, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 5 deg.

EXPOSURE: Variable

AREA: Part if 5 acres

ANIMAL USE/DISTURBANCE: Slight

EROSION: Slight

COVER: (see qualitative data)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens
Atriplex cuneata
Atriplex corrugata
Chrysothamunus nauseosus

Salsola iberica
Halogeton glomeratus
Machaeranthera canescens
Melilotus officinalis

Plus: (quantitative data)

NOTES: 1) Methods: Cover - Regular placement every 30′
Density - used 6′ X 25′ belt transects.

UP&L-DEER CREEK
Phase I Diversion
1989 Final Reveg
Acreage: Part of 5 acres
Slope: 5 deg
Exposure:

Sample Date: 25 Sept 1991	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
SHRUBS										
Atriplex canescens	20.00	5.00	5.00	5.00	0.00	5.00	0.00	0.00	0.00	10.00
Atriplex confertifolia	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atriplex corrugata	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00
Atriplex cuneata	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00	0.00
FORBS										
Salsola iberica	0.00	5.00	5.00	10.00	0.00	5.00	0.00	5.00	5.00	0.00
Halogeton glomeratus	15.00	35.00	5.00	30.00	10.00	15.00	20.00	0.00	5.00	5.00
GRASSES										
Agropyron dasystachyum	0.00	0.00	5.00	0.00	0.00	0.00	0.00	20.00	5.00	5.00
Oryzopsis hymenoides	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Elymus cinereus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
COVER										
Total Living Cover	35.00	45.00	50.00	50.00	10.00	25.00	20.00	50.00	25.00	20.00
Litter	5.00	5.00	5.00	5.00	3.00	2.00	5.00	5.00	5.00	3.00
Bareground	59.00	45.00	40.00	25.00	75.00	70.00	70.00	40.00	65.00	75.00
Rock	1.00	5.00	5.00	20.00	12.00	3.00	5.00	5.00	5.00	2.00
% COMPOSITION										
Shrubs	57.14	11.11	70.00	10.00	0.00	20.00	0.00	40.00	40.00	50.00
Forbs	42.86	88.89	20.00	80.00	100.00	80.00	100.00	10.00	40.00	25.00
Grasses	0.00	0.00	10.00	10.00	0.00	0.00	0.00	50.00	20.00	25.00

UP&L-DEER CREEK
Phase I Diversion
1989 Final Reveg
Acreage: Part of 5 acres
Slope: 5 deg
Exposure:
Sample Date: 25 Sept 1991

11.00	12.00	13.00	Mean	SDev	Freq	
						SHRUBS
0.00	10.00	5.00	5.00	5.55		Atriplex canescens
0.00	0.00	0.00	1.92	6.66		Atriplex confertifolia
0.00	0.00	0.00	1.15	2.88		Atriplex corrugata
10.00	0.00	0.00	2.31	5.76		Atriplex cuneata
						FORBS
0.00	5.00	0.00	3.08	3.12		Salsola iberica
3.00	30.00	20.00	14.85	11.07		Halogeton glomeratus
						GRASSES
0.00	5.00	10.00	3.85	5.60		Agropyron dasystachyum
2.00	0.00	0.00	0.54	1.39		Oryzopsis hymenoides
0.00	0.00	0.00	0.38	1.33		Elymus cinereus
						COVER
15.00	50.00	35.00	33.08	14.22		Total Living Cover
3.00	5.00	5.00	4.31	1.07		Litter
80.00	40.00	40.00	55.69	17.29		Bareground
2.00	5.00	20.00	6.92	6.13		Rock
						% COMPOSITION
66.67	20.00	14.29	30.71	23.66		Shrubs
20.00	70.00	57.14	56.45	30.88		Forbs
13.33	10.00	28.57	12.84	14.35		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Roadside Area

AREA: UPL Deer Creek (1990 Reveg. Area)

DATE: September 24, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 5 deg.

EXPOSURE: NE

AREA:

ANIMAL USE/DISTURBANCE: Slight

EROSION: Minimal

COVER: ~ 35%

DOMINANT PLANT SPECIES OBSERVED:

Kochia scoparia
Helianthus annus
Grindelia squarrosa
Halogeton glomeratus

Hordeum jubatum
Elymus cinereus
Agropyron spicatum
Agropyron dasystachyum

NOTES:
1) Had matting cover
2) Had good representation of weedy and desirable spp.

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Gate Area Slope

AREA: UPL Deer Creek (1990 Reveg. Area)

DATE: September 24, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 15 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Slight

EROSION: Slight

COVER: ~ 40%

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamus nauseosus

Kochia scoparia*
Halogeton glomeratus
Aster chilensis*

Elymus cinereus
Oryzopsis hymenoides*
Agropyron dasystachyum
Agropyron smithii

* dominates by lifeform

NOTES: 1) Had about equal representation of annuals and desirable species.

COLOR PHOTOGRAPHS OF THE REVEGETATION MONITORING SITES FOR PACIFICORP ELECTRIC OPERATIONS (SEPT. 1991)

Cottonwood/Wilberg - Old Fan Road

Cottonwood/Wilberg - 4th East Road

Cottonwood/Wilberg - Storage Yard Slope

Cottonwood/Wilberg - Road/Silo Pad Slope

Cottonwood/Wilberg - Tipple Area Slopes

Cottonwood/Wilberg - Sediment Pond Banks

Cottonwood/Wilberg - Waste Rock
Cell #1 - Foreground, Cell #6 - Background

Cottonwood/Wilberg - Waste Rock
Cell #2 - Foreground, Cell #5 Background

COLOR PHOTOGRAPHS OF THE REVEGETATION MONITORING SITES FOR PACIFICORP ELECTRIC OPERATIONS (SEPT. 1991)

Cottonwood/Wilberg - Waste Rock
Berm #1

Cottonwood/Wilberg - Waste Rock
Berm #2 - Foreground, Cell #3 - Background

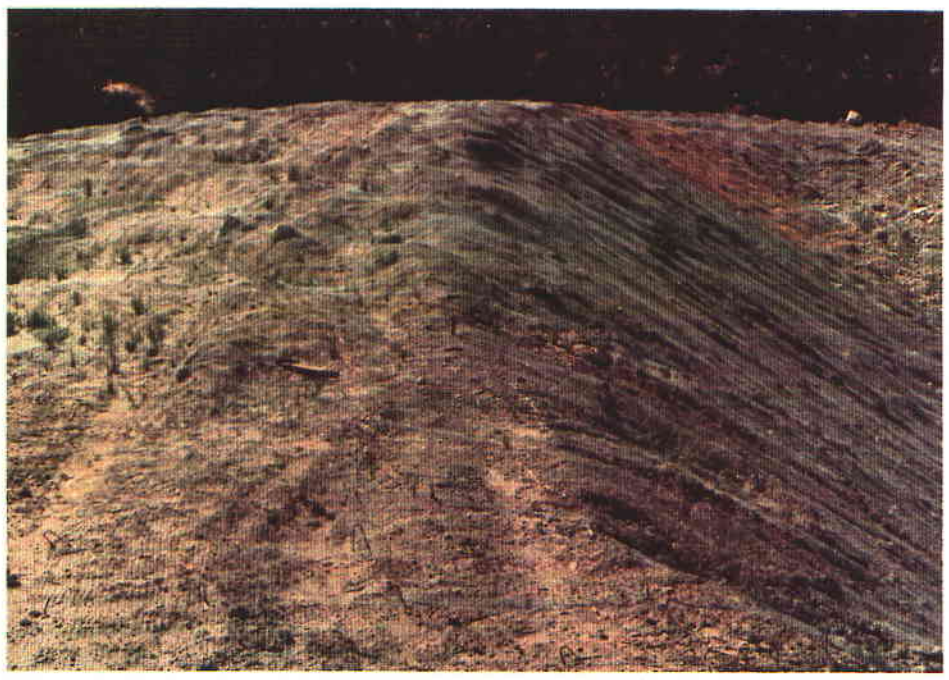
Cottonwood/Wilberg - Waste Rock
Berm #3, Cell #4 (Right Side)

Cottonwood/Wilberg - Test Plots

Cottonwood/Wilberg - Parking Lot Slope

Cottonwood/Wilberg - New Waste Rock - Road Slopes

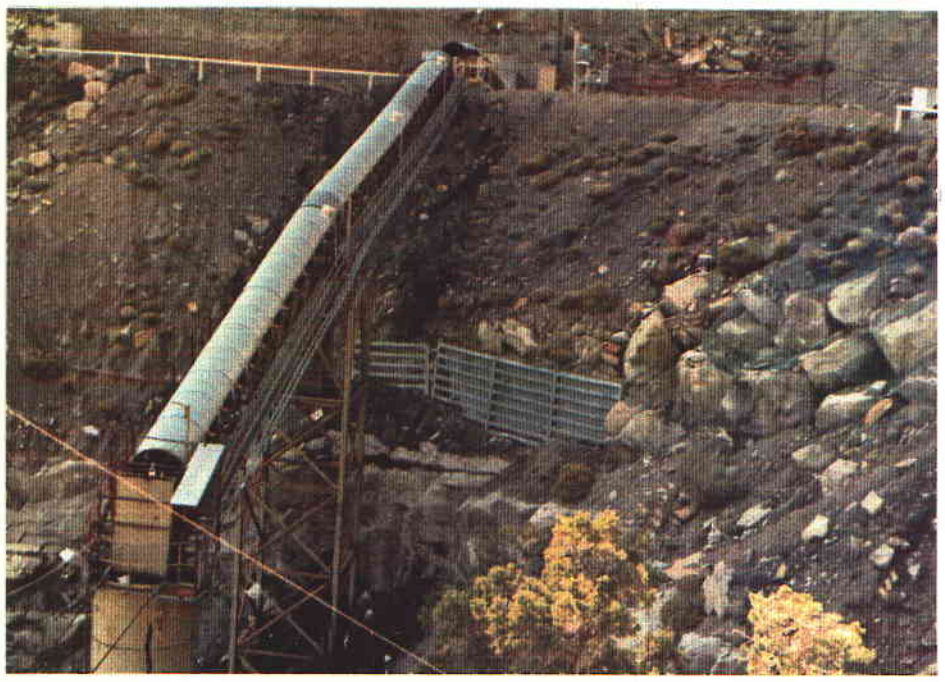
Cottonwood/Wilberg - New Waste Rock - Topsoil Stockpiles



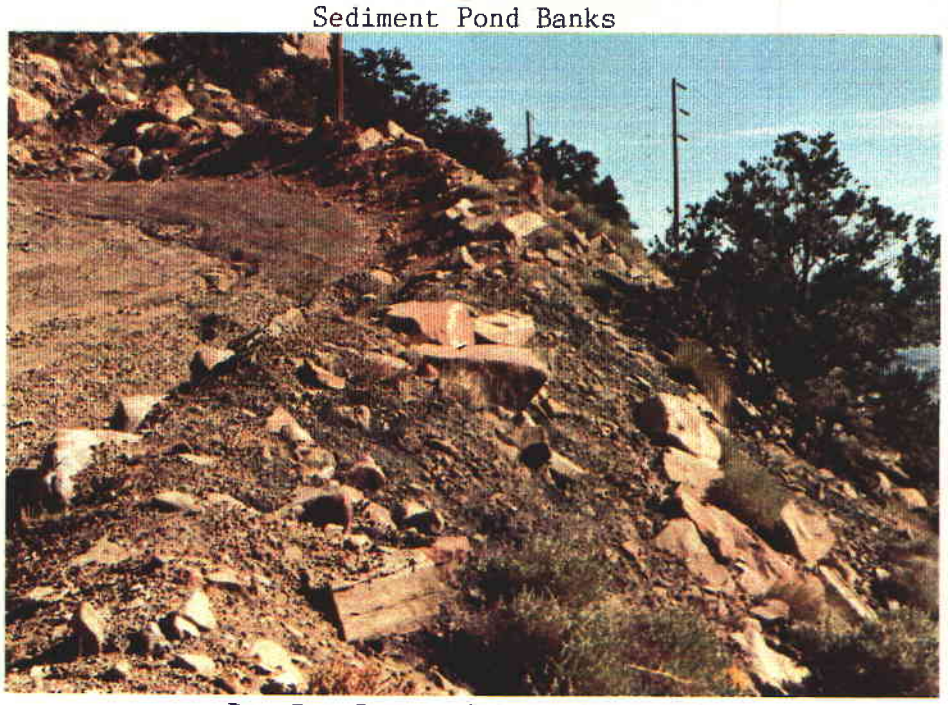
Cottonwood/Wilberg - New Waste Rock - Subsoil Stockpiles

COLOR PHOTOGRAPHS OF THE REVEGETATION MONITORING SITES FOR PACIFICORP ELECTRIC OPERATIONS (SEPT/OCT 1991)

Cottonwood/Wilberg - New Waste Rock
Sediment Pond Banks



Des-Bee-Dove - Beehive Yard Slope



Des-Bee-Dove - Desert Road Berm

Des-Bee-Dove - Portle Road Berm

Des-Bee-Dove - Bathhouse Road Berm

Des-Bee-Dove - Tipple Slope

Des-Bee-Dove - Sediment Storage Slope

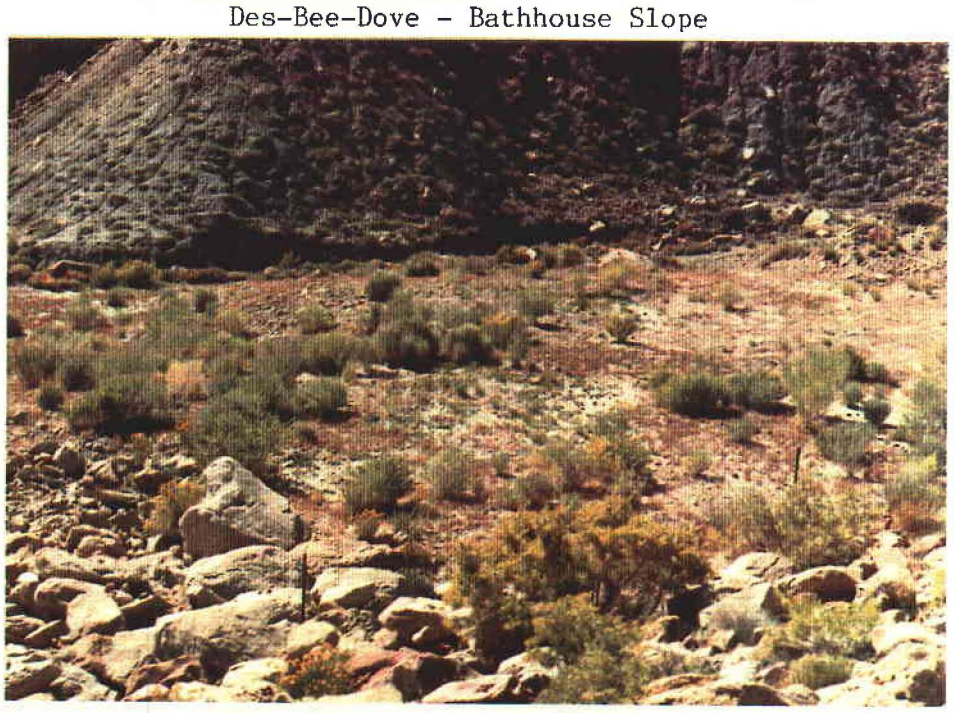
Des-Bee-Dove - Sediment Pond Banks
Foreground and Background

COLOR PHOTOGRAPHS OF THE REVEGETATION MONITORING SITES FOR PACIFICORP ELECTRIC OPERATIONS (OCT. 1991)

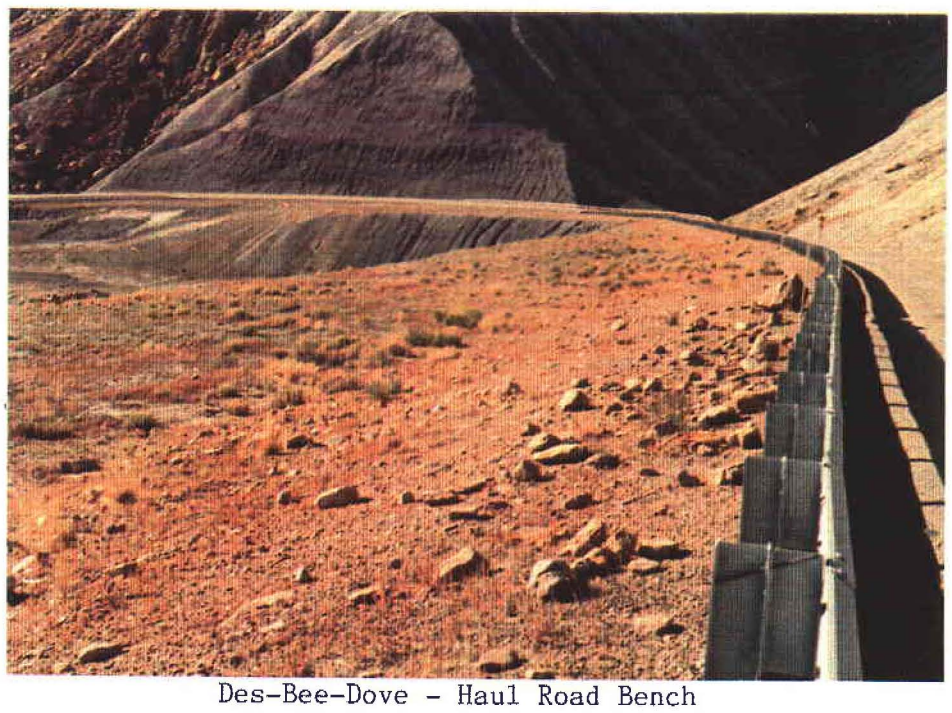
Des-Bee-Dove - Beehive Substation

Des-Bee-Dove - Bathhouse Slope

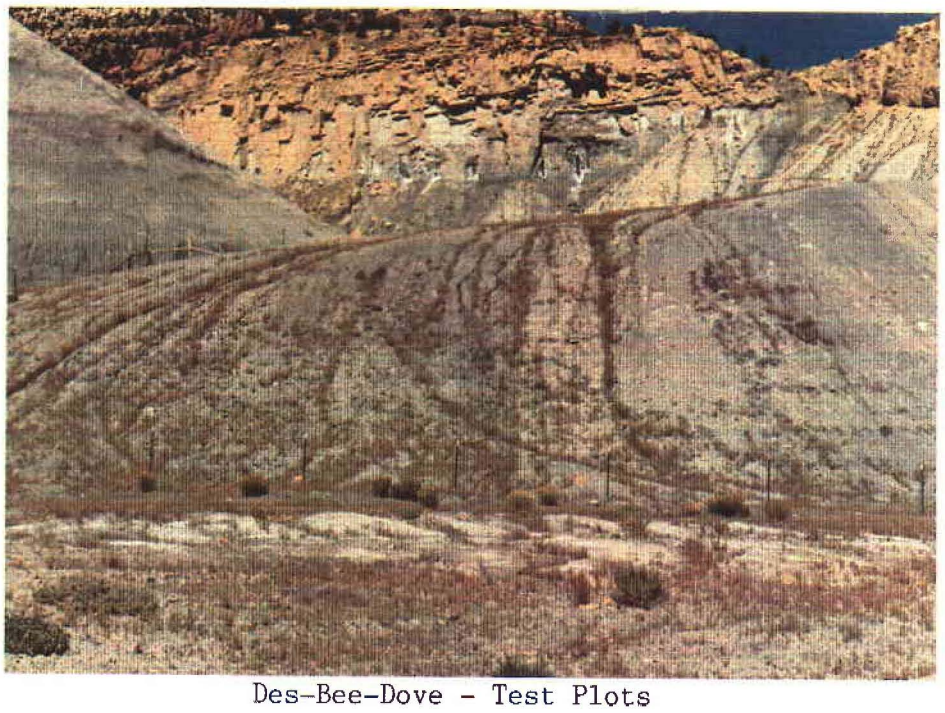
Des-Bee-Dove - Material Yard Slope



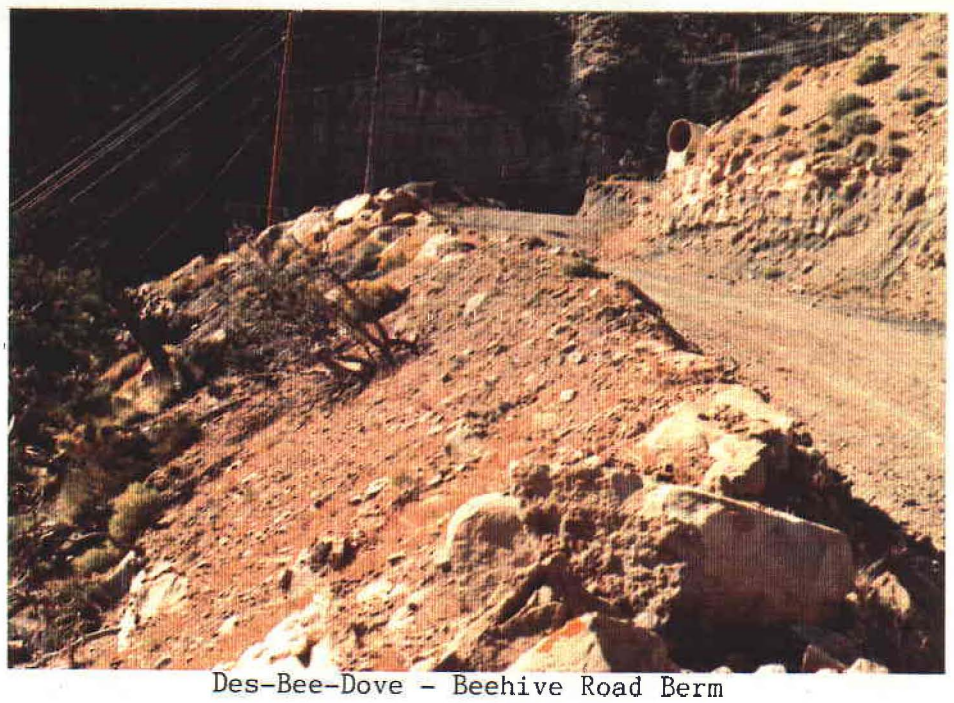
Des-Bee-Dove - Sediment Pond Area



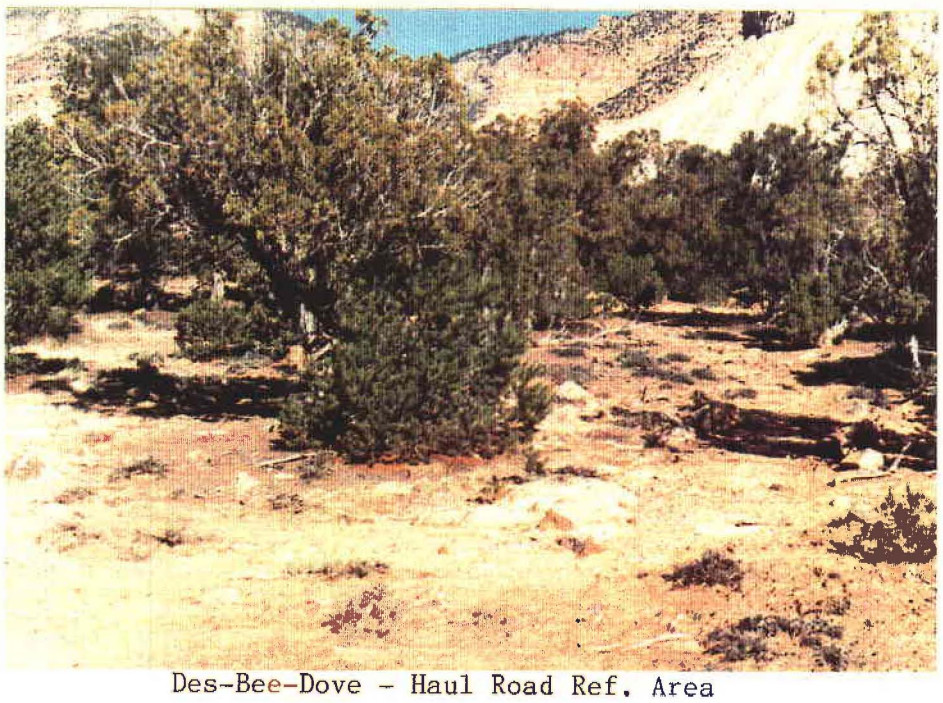
Des-Bee-Dove - Haul Road Bench



Des-Bee-Dove - Test Plots



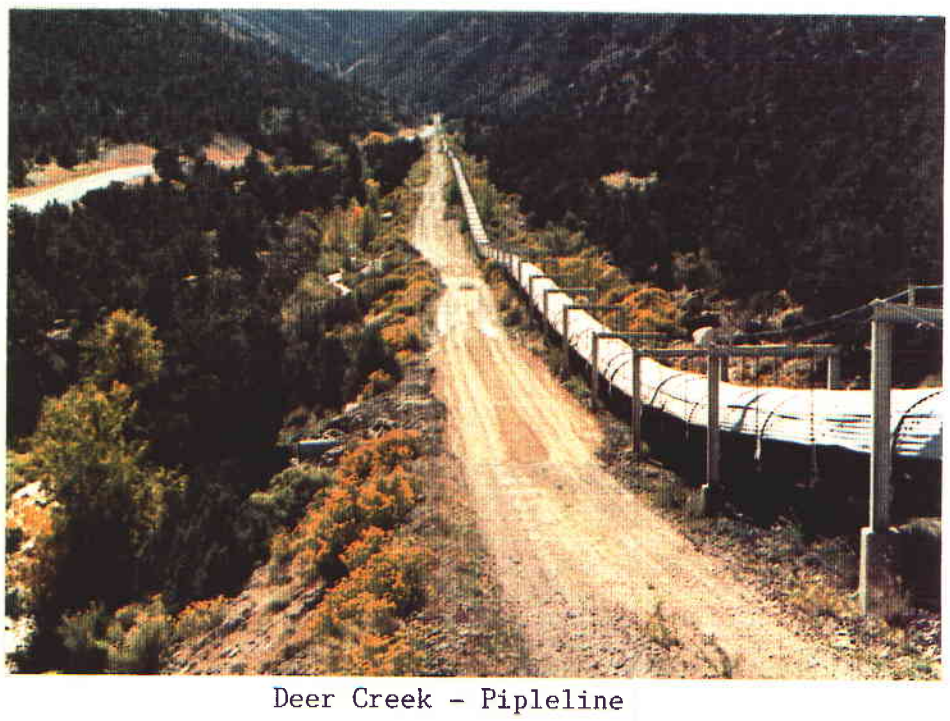
Des-Bee-Dove - Beehive Road Berm



Des-Bee-Dove - Haul Road Ref. Area

COLOR PHOTOGRAPHS OF THE REVEGETATION MONITORING SITES FOR PACIFICORP ELECTRIC OPERATIONS (SEPT/OCT 1991)

Des-Bee-Dove - Haul Road Fill Slopes (East Side)



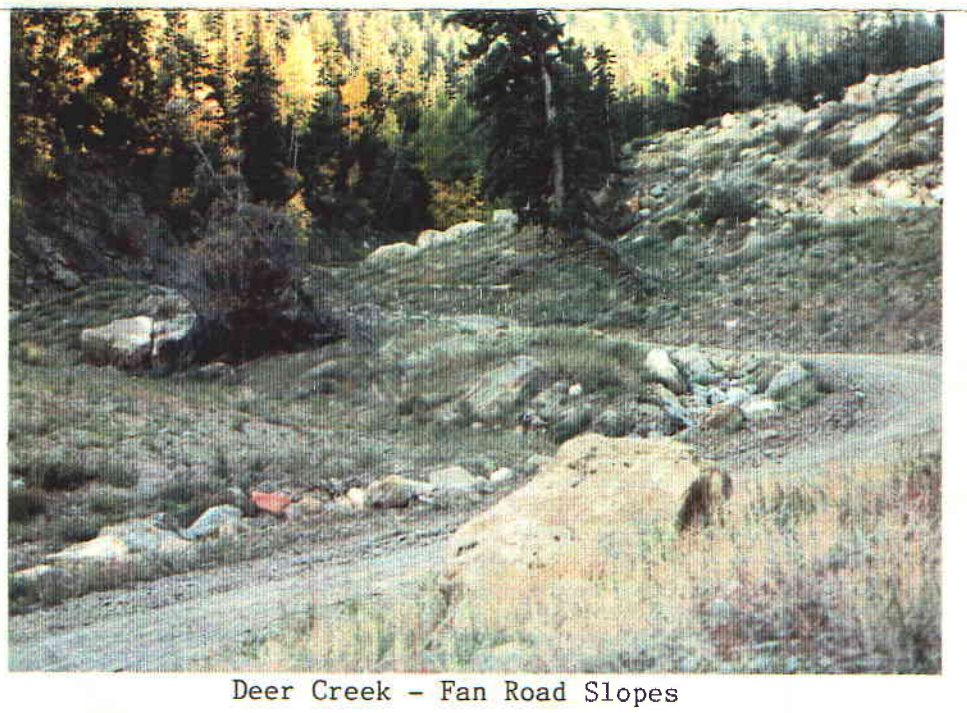
Deer Creek - Pipleline

Deer Creek - Deer Canyon

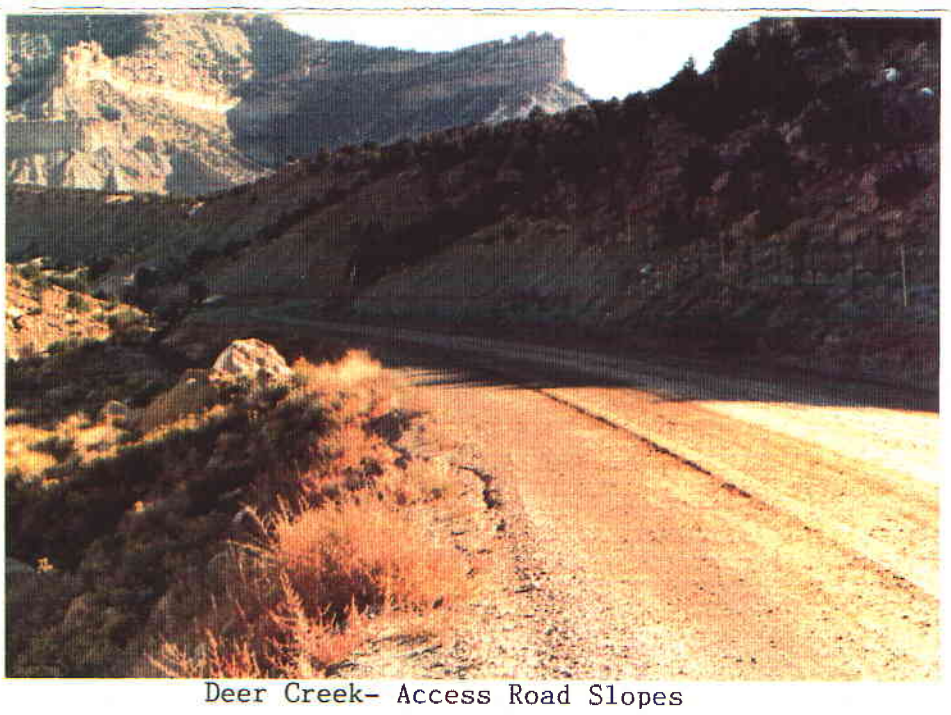
Deer Creek - Refuse Pile and Berm

Deer Creek - Rock Slide and Berm

Deer Creek - Water Plant Slope

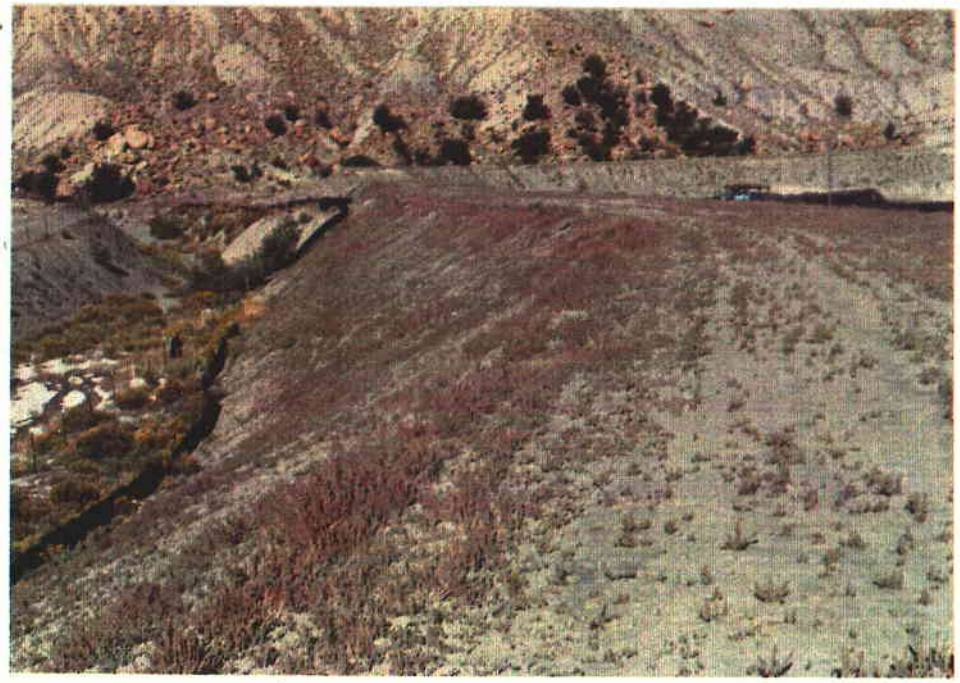


Deer Creek - Fan Road Slopes



Deer Creek- Access Road Slopes

COLOR PHOTOGRAPHS OF THE REVEGETATION MONITORING SITES FOR PACIFICCORP ELECTRIC OPERATIONS (SEPT. 1991)



Deer Creek - Phase I Berm

Deer Creek - Phase I Diversion

Deer Creek - Road Side Area

Deer Creek - Gate Slope Area

REVEGETATION MONITORING OF THE COTTONWOOD FAN PORTAL AREA FOR PACIFICORP ELECTRIC OPERATIONS

1991

Prepared by

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PACIFICORP ELECTRIC OPERATIONS
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Report: Patrick D. Collins, Ph.D.

Fieldwork: Patrick D. Collins
Dean Collins

Report Date: March 1992

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REVEGETATION MONITORING OF THE COTTONWOOD FAN PORTAL AREA FOR PACIFICORP ELECTRIC OPERATIONS

1991

SCOPE

The following document contains the third consecutive year of quantitative data in an area controlled by Pacificorp Electric Operations called the COTTONWOOD FAN PORTAL AREA. The purpose of this report is to compare an area that has been reclaimed, to another area that was undisturbed. The undisturbed community had been chosen previously as a reference area, or an area to be used as a the standard for reclamation success. Qualitative and quantitative data is also supplied for topsoil and subsoil piles in the area. Studies were performed in accordance with the guidelines supplied by the State of Utah, Division of Oil, Gas and Mining (DOGM).

Within the INTRODUCTION of the report, a General Site Description section is provided to give a brief descriptive overview of the area. A METHODS section is included in this report to provide the reviewers with all methodologies and standards used to obtain the data. The RESULTS section outlines the sampling results of the revegetated plant community and reference area.

INTRODUCTION

General Site Description

The Cottonwood Fan Portal Area is located in Cottonwood Canyon, approximately 12 miles northwest of Orangeville, Utah. As described in previous year's reports, the reclaimed area studied was initially disturbed by previous mining and other activities. Its native vegetation was dominated by pinyon pine (*Pinus edulis*) and Utah juniper trees (*Juniperus osterosperma*), with salina wildrye (*Elymus salinus*) as the dominant understory species. Elevation of the study site ranged between 7,100 ft and 7,400 ft above sea level. Slopes of the study area were approximately 35 degrees.

Reference Area

As mentioned above, a reference area to be used as a standard for success at the time of final reclamation had previously been selected. The reference area is presently dominated by the same plant species as listed above. This area was chosen earlier to comply with guidelines provided by DOGM and was predicted to have similar slope, soils,

exposure, species composition, precipitation, elevation and other environmental variables.

Soil Piles

Soil piles were also seeded in this area. Qualitative and quantitative data are supplied in this report.

METHODS

Quantitative and qualitative data were taken for the above vegetation types. Sampling was accomplished in September, 1991. This was the third consecutive year of sampling.

Cover and Composition

Bi-directional random/regular placement of sampling plots were designed to provide unbiased accuracy of the data compiled. This was accomplished by establishing transect lines randomly placed on the areas to be sampled. These transect lines were placed over the entire study area to adequately represent the area as a whole. Regular points on the transect lines were then marked. From these marks, the sample points were determined by random distance numbers at right angles to

the transect lines.

Cover estimates were made using ocular methods with meter square quadrats. Species composition and relative frequencies were also assessed from the quadrats. Additional information recorded on data sheets were: estimated precipitation, slope, exposure, grazing use, animal disturbance and other appropriate notes. Plant nomenclature follows Welsh et al. (1987).

Woody Species Density

Density of woody plant species were recorded using the point quarter distance method (Cottom and Curtis 1956). 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.

Productivity

Total annual biomass was estimated by clipping, drying and weighing current annual productivity. Relative occular estimates were also made placing four quadrats near the "clipped" quadrat to increase accuracy of the productivity estimates. In other words, one quadrat

was placed. From this sample, four more quadrat estimates were made relative to the first quadrat. Biomass from the first quadrat was clipped and weighed. Each of these sample locations were counted as one (n=1) for minimum adequate sample formulas.

Sample Adequacy and Group Comparison Tests

Sampling adequacy for cover, production, and woody species density was achieved using formulas from Snedocor and Cochran (1980), with a target confidence of 80% of the samples being within 10% of the true mean for the shrub communities of the area. Student's t-tests were also employed to compare the proposed disturbance and reference areas of all sites for cover and woody plant species density. All sample means, standard deviations, and sample sizes were included in this report to enable the reviewers to apply further statistical tests if desired.

RESULTS

THE RECLAIMED SLOPES

The vegetative cover of the reclaimed slopes was estimated as 37.50% (Table 1). Trees and shrubs made up 21.16%, grasses 70.94%, and forbs 7.90% of the living cover (Table 1). The dominate shrub (by

cover) of this area was big sagebrush (*Artemisia tridentata*) and four-winged saltbush (*Atriplex canescens*). The dominate grass species, Gt. Basin wildrye (*Elymus cinereus*), was estimated as 17.13% (Table 2). Most frequent species observed in the quadrats were Gt. Basin wildrye, Salina wildrye (*Elymus salinus*), and crested wheatgrass (*Agropyron cristatum*).

Woody plant species density was estimated at 716.42 individuals per acre (Table 3) by the point quarter sampling method. Total annual dry weight production was measured at 1479.00 lbs. per acre (Table 4).

THE REFERENCE AREA

The living cover for the reference area that was used as a standard for reclamation success was estimated as 28.75% (understory). Refer to Table 5 for cover calculations. Grasses also dominated the reference area. They comprised 68.13% of the cover, whereas, woody species were 29.32% and forbs were 2.55% (Table 5). The two dominant plant species (by cover and frequency) were Salina wildrye (*Elymus salinus*) and pinyon pine (*Pinus edulis*), estimated at 15.40% and 5.35%, respectively (Table 6). Woody plant species density was estimated at 624 individuals per acre (Table 7). Annual production was measured as 1155.78 lbs./acre (Table 8).

STATISTICAL COMPARISONS

Student's t-tests were employed to statistically compare the cover and density of the reclaimed slopes with the reference area. These tests suggested significant differences between the two areas for cover (see Table 9), but the differences were positive showing an increase in cover and productivity for the reclaimed slope. Annual productivity and density of woody species were not significantly different statistically (Table 9).

The cover data represents understory cover only. When overstory cover was factored into the statistical equation (as was done in 1989 statistical comparisons), there was no significant difference between the sites ($t = -0.126$). Refer to Table 9 for a statistical summary of comparisons between the reclaimed slopes and the reference area.

TABLE 1: Total cover and composition summary for the Reclaimed Slopes of the Cottonwood Fan Portal Area. The table shows the mean percent cover and composition with standard deviations and sample sizes.

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZES
Total Living Cover*	37.50	13.18	40
Litter	13.50	6.14	40
Bareground	16.00	10.91	40
Rock	33.00	13.55	40
COMPOSITION			
Trees/Shrubs	21.16	30.29	40
Forbs	7.90	18.79	40
Grasses	70.94	34.29	40

* Sample size was 40 (n=40) and insured that 80% accuracy within 10% of the true mean.

TABLE 2: Species cover and frequency summary for the Reclaimed Slopes of the Cottonwood Fan Portal Area. The table shows the mean percent cover, standard deviation, sample size and relative frequency by species.

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Artemisia nova	0.38	2.34	40	2.50
Artemisia tridentata	2.50	6.42	40	15.00
Atriplex canescens	3.25	11.16	40	12.50
Atriplex confertifolia	1.13	4.11	40	7.50
Chrysothamnus nauseosus	0.25	1.56	40	2.50
Chysothamnus viscidiflorus	0.63	2.29	40	7.50
Ephedra viridis	0.13	0.78	40	2.50
FORBS				
Aster foliaceus	2.63	7.74	40	15.00
Halogeton glomeratus	0.25	1.09	40	5.00
GRASSES				
Agropyron dasystachyum	0.13	0.78	40	2.50
Agropyron cristatum	6.58	8.48	40	62.50
Elymus salinus	2.50	3.49	40	32.50
Elymus junceus	0.50	3.12	40	2.50
Elymus cinereus	17.13	16.65	40	72.50

TABLE 3: Woody species densities of the Reclaimed Slopes of the Cottonwood Fan Portal Area.

	NUMBER/ACRE*
Artemisia tridentata	286.57
Artemisia nova	8.96
Atriplex confertifolia	165.67
Atriplex canescens	147.76
Chrysothamnus viscidiflorus	35.82
Chrysothamnus nauseosus	67.16
Pinus edulis	4.48
TOTAL	716.42

* Sample size was 40 (n=40) and insured that 80% accuracy within 10% of the true mean.

TABLE 4: Dry weight annual production for the Reclaimed Slopes of the Cottonwood Fan Portal Area.

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE* SIZE
Herbaceous	788.40	792.03	20
Woody Spp.	690.60	1921.40	20
TOTAL PRODUCTION	1479.00	2132.37	20

TABLE 5: Total cover and composition summary for the Reference Area for the Reclaimed Slopes of the Cottonwood Fan Portal Area. The table shows the mean percent cover and composition with standard deviations and sample sizes.

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZES
Total Living Cover*	28.75	9.86	20
Litter	22.75	15.20	20
Bareground	14.25	9.26	20
Rock	34.25	16.15	20
COMPOSITION			
Trees/Shrubs	29.32	36.57	20
Forbs	2.55	5.56	20
Grasses	68.13	35.17	20

* Sample size was 20 (n=20) and insured that 80% accuracy within 10% of the true mean.

TABLE 6: Species cover and frequency summary for the Reference Area for the Reclaimed Slopes of the Cottonwood Fan Portal Area. The table shows the mean percent cover, standard deviation, sample size and relative frequency by species.

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Amelanchier utahensis	3.25	10.16	20	15.00
Chrysothamuns viscidiflorus	0.20	0.68	20	10.00
Ephedra viridis	0.15	0.65	20	5.00
Eriogonum corymbosum	0.65	2.83	20	5.00
Pinus edulis	5.35	10.72	20	25.00
FORBS				
Aster glaucodes	0.35	1.15	20	10.00
Machaeranthera canescens	0.25	1.09	20	5.00
Penstemon sp.	0.10	0.44	20	5.00
GRASSES				
Elymus salinus	15.40	10.20	20	85.00
Orysopsis hymenoides	3.00	5.57	20	30.00

TABLE 7: Woody species densities of the Reference Area for the Reclaimed Slopes of the Cottonwood Fan Portal Area.

	NUMBER/ACRE*
Amelanchier utahensis	38.97
Atriplex confertifolia	7.79
Cercocarpos montanus	38.97
Chrysothamnus nauseosus	109.12
Ephedra viridis	124.71
Eriogonum corymbosum	15.59
Juniperus osteosperma	31.18
Pinus edulis	241.63
Pseudotsuga menziesii	7.79
Symphoricarpos oreophilus	7.79
TOTAL	623.56

* Sample size was 40 (n=40) and insured that 80% accuracy within 10% of the true mean.

TABLE 8: Dry weight annual production for the Reference Area for the Reclaimed Slopes of the Cottonwood Fan Portal Area.

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE SIZE
Herbaceous	271.87	380.94	20
Woody Spp.	883.91	2227.91	20
TOTAL PRODUCTION	1155.78	2181.05	20

TABLE 9: Statistical summary sheet for the Revegetated Slopes and Reference Area of the Cottonwood Fan Portal Area.

RECLAIMED SLOPES			
Total Living Cover**	x= 37.50	s= 13.18	n= 40
Density	x= 90.66*	s= 23.47	n= 40
Productivity	x= 1479.00	s= 2132.37	n= 20
Aspect	West		
Slope	35 deg.		

REFERENCE AREA			
Total Living Cover	x= 28.75	s= 9.86	n= 40
Density	x= 97.80	s= 22.82	n= 20
Productivity	x= 1155.78***	s= 2181.05	n= 20
Aspect	West		
Slope	35 deg.		

STATISTICAL ANALYSES

COVER:
Student's t-value = 2.621
Degrees of freedom = 58
Significance level = <.01

DENSITY
Student's t-value = -1.121
Degrees of freedom = 58
Significance level = N.S.

PRODUCTIVITY
Student's t-value = 0.474
Degrees of freedom = 38
Significance level = N.S.

x = sample mean, s = sample standard deviation,
n = sample size, N.S. = nonsignificant,
* average distance in inches at each sample location.
** represents understory cover only.
*** represents lbs./acre

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Reclaimed Slopes

AREA: Cottonwood Fan Portal

DATE: September 26, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 35 deg.

EXPOSURE: West

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES: Slope looks very good for diversity, cover and production.

1991 DATA

U.P.& L. FAN PORTAL AREA
Reclaimed Slopes
Cottonwood Fan Portal Area
Sample Date: 26 Sept 1991
Exposure: West
Slope: 35 deg.

	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
TREES & SHRUBS										
Artemisia tridentata	0.00	0.00	0.00	0.00	0.00	0.00	25.00	15.00	0.00	0.00
Atriplex canescens	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atriplex confertifolia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysothamnus nauseosus	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ephedra viridis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
Artemisia nova	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysothamnus viscidiflor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HERBS										
Halogeton glomeratus	0.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aster foliaceus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Elymus junceus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Elymus cinerus	45.00	15.00	0.00	20.00	30.00	20.00	15.00	0.00	15.00	40.00
Elymus salinus	0.00	5.00	0.00	0.00	5.00	0.00	0.00	15.00	10.00	0.00
Agropyron cristatum	0.00	0.00	0.00	15.00	10.00	10.00	10.00	0.00	5.00	5.00
Agropyron dasystachyum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	45.00	25.00	15.00	35.00	45.00	30.00	50.00	30.00	35.00	45.00
Litter	15.00	5.00	15.00	15.00	10.00	15.00	15.00	15.00	15.00	20.00
Bareground	15.00	35.00	25.00	10.00	5.00	10.00	20.00	25.00	15.00	5.00
Rock	25.00	35.00	45.00	40.00	40.00	45.00	15.00	30.00	35.00	30.00
% COMPOSITION										
Shrubs	0.00	0.00	66.67	0.00	0.00	0.00	50.00	50.00	14.29	0.00
Herbs	0.00	20.00	33.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grasses	100.00	80.00	0.00	100.00	100.00	100.00	50.00	50.00	85.71	100.00

11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00
25.00	15.00	0.00	0.00	10.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00
0.00	25.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	15.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00
0.00	5.00	35.00	5.00	10.00	5.00	20.00	30.00	5.00	0.00	0.00	40.00
2.00	0.00	0.00	5.00	5.00	0.00	5.00	5.00	5.00	0.00	5.00	5.00
3.00	5.00	0.00	5.00	0.00	15.00	5.00	5.00	0.00	10.00	0.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.00	50.00	35.00	20.00	35.00	20.00	40.00	40.00	25.00	25.00	25.00	50.00
10.00	25.00	10.00	15.00	10.00	10.00	15.00	25.00	15.00	20.00	10.00	5.00
25.00	15.00	25.00	5.00	20.00	55.00	35.00	25.00	20.00	20.00	5.00	5.00
35.00	10.00	30.00	60.00	35.00	15.00	10.00	10.00	40.00	35.00	60.00	40.00
83.33	80.00	0.00	0.00	57.14	0.00	25.00	0.00	60.00	60.00	0.00	0.00
0.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16.67	20.00	100.00	75.00	42.86	100.00	75.00	100.00	40.00	40.00	100.00	100.00

23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	10.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	10.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.00	0.00	0.00	35.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	25.00	25.00	30.00	5.00	25.00	15.00	20.00	0.00	0.00	0.00	75.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	5.00	0.00	0.00	30.00	5.00	0.00	5.00	35.00	30.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35.00	40.00	25.00	65.00	35.00	35.00	35.00	35.00	35.00	30.00	75.00	75.00
10.00	5.00	10.00	10.00	15.00	25.00	25.00	5.00	5.00	5.00	5.00	10.00
10.00	10.00	30.00	10.00	5.00	5.00	10.00	5.00	20.00	20.00	5.00	5.00
45.00	45.00	35.00	15.00	45.00	35.00	30.00	55.00	40.00	45.00	15.00	10.00
28.57	25.00	0.00	0.00	0.00	14.29	57.14	0.00	0.00	0.00	100.00	0.00
57.14	0.00	0.00	53.85	0.00	0.00	0.00	28.57	0.00	0.00	0.00	0.00
14.29	75.00	100.00	46.15	100.00	85.71	42.86	71.43	100.00	100.00	0.00	100.00

U.P.& L. FAN PORTAL AREA
Reclaimed Slopes
Cottonwood Fan Portal Area
Sample Date: 26 Sept 1991
Exposure: West
Slope: 35 deg.

35.00	36.00	37.00	38.00	39.00	40.00	Mean	SDev	Freq	
									TREES & SHRUBS
0.00	0.00	0.00	0.00	0.00	0.00	2.50	6.42	15.00	Artemisia tridentata
0.00	15.00	0.00	0.00	0.00	0.00	3.25	11.16	12.50	Atriplex canescens
0.00	15.00	0.00	0.00	0.00	0.00	1.13	4.11	7.50	Atriplex confertifolia
0.00	0.00	0.00	0.00	0.00	0.00	0.25	1.56	2.50	Chrysothamnus nauseosus
0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.78	2.50	Ephedra viridis
0.00	0.00	0.00	0.00	0.00	0.00	0.38	2.34	2.50	Artemisia nova
0.00	0.00	0.00	0.00	0.00	0.00	0.63	2.29	7.50	Chrysothamnus viscidiflorus
									FORBS
0.00	0.00	0.00	0.00	0.00	0.00	0.25	1.09	5.00	Halogeton glomeratus
0.00	5.00	0.00	0.00	0.00	30.00	2.63	7.74	15.00	Aster foliaceus
									GRASSES
0.00	0.00	0.00	0.00	0.00	0.00	0.50	3.12	2.50	Elymus junceus
35.00	0.00	10.00	35.00	30.00	0.00	17.13	16.65	72.50	Elymus cinerus
0.00	0.00	0.00	0.00	10.00	0.00	2.05	3.49	32.50	Elymus salinus
15.00	0.00	10.00	10.00	0.00	5.00	6.58	8.48	62.50	Agropyron cristatum
0.00	5.00	0.00	0.00	0.00	0.00	0.13	0.78	2.50	Agropyron dasystachyum
									COVER
50.00	40.00	20.00	45.00	40.00	35.00	37.50	13.18		Total Living Cover
20.00	10.00	20.00	10.00	25.00	15.00	13.50	6.14		Litter
10.00	10.00	10.00	25.00	5.00	25.00	16.00	10.91		Bareground
20.00	40.00	50.00	20.00	30.00	25.00	33.00	13.55		Rock
									% COMPOSITION
0.00	75.00	0.00	0.00	0.00	0.00	21.16	30.29		Shrubs
0.00	12.50	0.00	0.00	0.00	85.71	7.90	18.79		Forbs
100.00	12.50	100.00	100.00	100.00	14.29	70.94	34.29		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Soil Piles

AREA: Cottonwood Fan Portal

DATE: September 26, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 35 deg.

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Moderate

EROSION: Slight

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES: Slope looks very good and is holding well.

U.P.& L. FAN PORTAL AREA
Soil Piles
Cottonwood Fan Portal Area
Sample Date: 26 Sept 1991
Exposure:
Slope: 35 deg.

	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
TREES & SHRUBS										
Artemsia tridentata	0.00	0.00	0.00	5.00	0.00	0.00	15.00	0.00	0.00	0.00
Atriplex confertifolia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysothamnus viscidiflor	0.00	0.00	0.00	0.00	0.00	5.00	0.00	10.00	0.00	10.00
Atriplex canescens	0.00	0.00	30.00	0.00	40.00	10.00	0.00	0.00	0.00	0.00
Brickellia microphylla	0.00	0.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00
Medicago sativa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS										
Aster foliaceus	0.00	0.00	0.00	0.00	25.00	10.00	0.00	15.00	25.00	0.00
Valogeton glomeratus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Agropyron cristatum	10.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
Elymus cinereus	15.00	35.00	5.00	0.00	5.00	5.00	0.00	0.00	0.00	10.00
COVER										
Total Living Cover	25.00	35.00	40.00	45.00	70.00	30.00	15.00	25.00	25.00	30.00
Litter	10.00	5.00	25.00	10.00	10.00	20.00	5.00	10.00	10.00	5.00
Bareground	10.00	10.00	25.00	35.00	10.00	10.00	40.00	30.00	45.00	25.00
Rock	55.00	50.00	10.00	10.00	10.00	40.00	40.00	35.00	20.00	40.00
% COMPOSITION										
Shrubs	0.00	0.00	75.00	100.00	57.14	50.00	100.00	40.00	0.00	33.33
Forbs	0.00	0.00	0.00	0.00	35.71	33.33	0.00	60.00	100.00	0.00
Grasses	100.00	100.00	25.00	0.00	7.14	16.67	0.00	0.00	0.00	66.67

U.P.& L. FAN PORTAL AREA
Soil Piles
Cottonwood Fan Portal Area
Sample Date: 26 Sept 1991
Exposure:
Slope: 35 deg.

11.00	12.00	13.00	14.00	15.00	16.00	17.00	Mean	SDev	Freq	
										TREES & SHRUBS
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18	3.65		Artemsia tridentata
0.00	20.00	0.00	0.00	0.00	0.00	0.00	1.18	4.71		Atriplex confertifolia
5.00	0.00	0.00	0.00	0.00	10.00	0.00	2.35	3.88		Chrysothamnus viscidiflorus
0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.71	11.44		Atriplex canescens
0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	9.41		Brickellia microphylla
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.29	1.18		Medicago sativa
										FORBS
0.00	5.00	0.00	0.00	0.00	0.00	0.00	4.71	8.48		Aster foliaceus
0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.29	1.18		Halogeton glomeratus
										GRASSES
10.00	0.00	10.00	15.00	5.00	10.00	10.00	5.00	5.14		Agropyron cristatum
20.00	15.00	40.00	10.00	20.00	20.00	25.00	13.24	11.87		Elymus cinereus
										COVER
35.00	40.00	50.00	25.00	30.00	40.00	40.00	35.29	12.18		Total Living Cover
10.00	10.00	20.00	10.00	10.00	10.00	10.00	11.18	5.29		Litter
15.00	10.00	15.00	15.00	25.00	25.00	25.00	21.76	10.84		Bareground
40.00	40.00	15.00	50.00	35.00	25.00	25.00	31.76	14.34		Rock
										% COMPOSITION
14.29	50.00	0.00	0.00	0.00	25.00	12.50	32.78	33.71		Shrubs
0.00	12.50	0.00	0.00	16.67	0.00	0.00	15.19	27.11		Forbs
85.71	37.50	100.00	100.00	83.33	75.00	87.50	52.03	40.84		Grasses

PACIFICORP ELECTRIC
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
1991

SITE NAME: Reference Area

AREA: Cottonwood Fan Portal

DATE: September 26, 1991

WORKERS: P. Collins, D. Collins

SLOPE: 35 deg.

EXPOSURE: West

ANIMAL USE/DISTURBANCE: Moderate

EROSION: Moderate (undisturbed slope though)

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES: Used clipped/reference method - we estimated 4 plots around a central plot. The central plot was clipped and weighed. This counted as a sample for statistical analyses.

U.P.& L. FAN PORTAL AREA
REF. AREA for Reveg. Slopes
Cottonwood Fan Portal Area
Sample Date: 27 Sept 1991
Exposure: West
Slope: 35 deg.

	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
TREES & SHRUBS										
Pinus edulis	0.00	20.00	25.00	10.00	0.00	0.00	40.00	0.00	0.00	0.00
Amelanchier utahensis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00
Eriogonum corymbosum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ephedra viridis	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysothamnus viscidiflor	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS										
Macharenthera canescens	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Penstemon sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aster glaucodes	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Elymus salinus	20.00	20.00	5.00	10.00	20.00	20.00	10.00	20.00	35.00	0.00
Oryzopsis hymenoides	0.00	0.00	5.00	0.00	5.00	0.00	0.00	0.00	0.00	5.00
COVER										
Total Living Cover	30.00	40.00	35.00	20.00	25.00	20.00	50.00	20.00	35.00	20.00
Litter	15.00	25.00	35.00	55.00	20.00	20.00	5.00	40.00	5.00	5.00
Bareground	20.00	5.00	5.00	5.00	20.00	5.00	30.00	20.00	5.00	20.00
Rock	35.00	30.00	25.00	20.00	35.00	55.00	15.00	20.00	55.00	55.00
% COMPOSITION										
Shrubs	26.67	50.00	71.43	50.00	0.00	0.00	80.00	0.00	0.00	75.00
Forbs	6.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grasses	66.67	50.00	28.57	50.00	100.00	100.00	20.00	100.00	100.00	25.00

11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00
12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	45.00	0.00	0.00	0.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
0.00	30.00	10.00	0.00	35.00	20.00	15.00	10.00	10.00	18.00
0.00	0.00	0.00	0.00	0.00	20.00	0.00	15.00	10.00	0.00
25.00	35.00	15.00	45.00	35.00	40.00	15.00	25.00	25.00	20.00
35.00	25.00	10.00	10.00	40.00	10.00	30.00	15.00	5.00	50.00
5.00	20.00	15.00	20.00	5.00	5.00	35.00	20.00	5.00	20.00
35.00	20.00	60.00	25.00	20.00	45.00	20.00	40.00	65.00	10.00
100.00	0.00	33.33	100.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	14.29	0.00	0.00	0.00	0.00	0.00	0.00	20.00	10.00
0.00	85.71	66.67	0.00	100.00	100.00	100.00	100.00	80.00	90.00

U.P.& L. FAN PORTAL AREA
REF. AREA for Reveg. Slopes
Cottonwood Fan Portal Area
Sample Date: 27 Sept 1991
Exposure: West
Slope: 35 deg.

Mean	SDev	Freq	
			TREES & SHRUBS
5.35	10.72	25.00	Pinus edulis
3.25	10.16	15.00	Amelanchier utahensis
0.65	2.83	5.00	Eriogonum corymbosum
0.15	0.65	5.00	Ephedra viridis
0.25	1.09	5.00	Chrysothamnus viscidiflorus
			FORBS
0.25	1.09	5.00	Macharenthera canescens
0.10	0.44	5.00	Penstemon sp.
0.35	1.15	10.00	Aster glaucodes
			GRASSES
15.40	10.20	85.00	Elymus salinus
3.00	5.57	30.00	Oryzopsis hymenoides
			COVER
28.75	9.86		Total Living Cover
22.75	15.20		Litter
14.25	9.26		Bareground
34.25	16.15		Rock
			% COMPOSITION
29.32	36.57		Shrubs
2.55	5.56		Forbs
68.13	35.17		Grasses

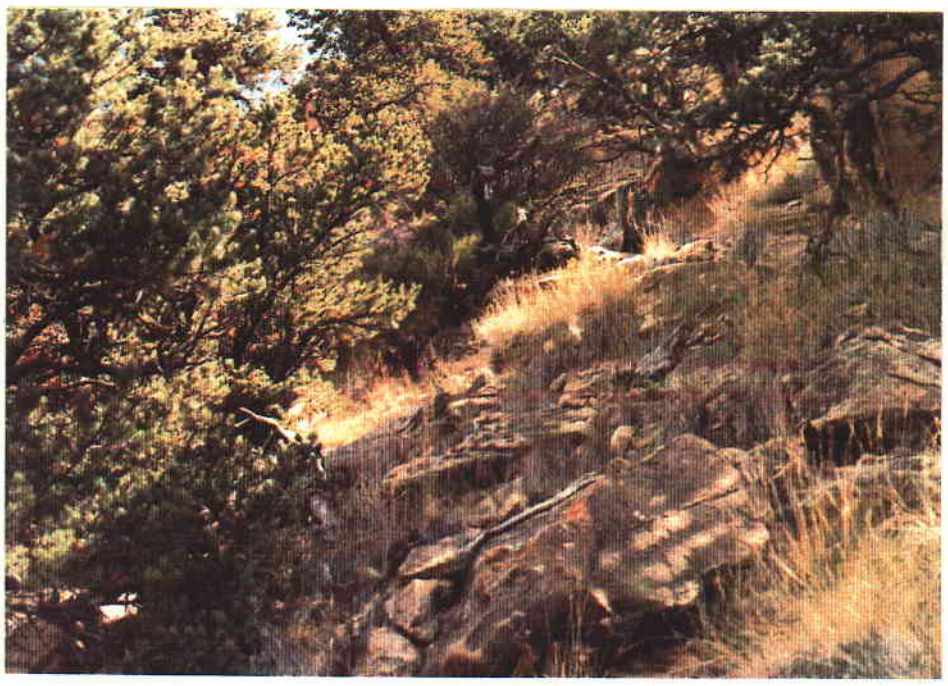
COLOR PHOTOGRAPHS OF THE REVEGETATION MONITORING SITES FOR PACIFICORP ELECTRIC OPERATIONS (SEPT. 1991)

Cottonwood Fan Portal - Reclaimed Slope (a)

Cottonwood Fan Portal - Reclaimed Slope (b)

Cottonwood Fan Portal - Soil Piles (Rt=Topsoil; Lt=Subsoil) (a)

Cottonwood Fan Portal - Soil Piles (Subsoil) (b)



Cottonwood Fan Portal - Reference Area (a)

Cottonwood Fan Portal - Reference Area (b)