



Exhibit J Vegetation Information

1.0 Introduction

Vegetation studies were completed within the proposed permit area in April 1997 by Cedar Creek Associates, Inc. The objectives of this field work were to characterize general vegetation types in the permit area and evaluate in more detail vegetation in the proposed disturbed areas. Seven vegetation types were delineated in the project area: Pinyon/Juniper, Shrub/Grassland, Stream Wash, Riparian, Grassland, Pinyon/Juniper Grassland and Grassland/Improved Pasture types. Each vegetation type and field methods are described. The details discussed for each vegetation type varies with the extent it will be disturbed by the mine plan. Map J depicts the boundaries of each type and can be compared with Map I to show the relationship of vegetation types with soil types. Data sheet copies completed in the field are included. Table J-1 presents a species list keyed to vegetation/topographic features to support the field data sheets.

2.0 Survey Methodology

Survey work began with a review and analysis of the project area's topographic map to determine general slope conditions and the potential for vegetation community variability based on topography. Reconnaissance of the project area was conducted and general vegetation community boundaries were identified. Detailed field work followed the reconnaissance evaluation. In each area proposed to be disturbed, one or more 100-foot transects representative of the vegetation types to be impacted were established. Along each transect, percent cover by vegetation, litter and rock was estimated by the line-intercept method. Tree heights were estimated and general observations of each vegetation community surrounding areas were noted. Finally, the local Natural Resources Conservation Service office was visited to obtain aerial photograph copies to complete the vegetation map.

3.0 Results

3.1 Pinyon-Juniper Vegetation Type

This vegetation type occurs primarily in the foot hills to the north of Tallahassee Creek and on the southern portion of the bench. Dominant species include one-seed juniper (*Juniperus monosperma*), pinyon pine (*Pinus edulis*), mountain mahogany (*Cercocarpus montanus*) and blue grama (*Bouteloua gracilis*). Transect numbers 1, 2, and 3 were run in the area proposed to be disturbed by the granite quarry operation. Slopes ranged from 25 to 40 percent on south-southwest aspects. Total plant cover ranged from 2.7 percent in areas with a high percentage of rock outcrop to 14.8 percent in more vegetated areas. Cover afforded by litter and rock ranged from 0 to 87 percent under these same conditions. Bare ground was highly variable ranging from 10.3 to 85.2 percent. Average tree heights were estimated to range from 15 to 20 feet with shrub heights ranging from 1 to 5 feet. The shrub component of this vegetation type was heavily hedged.

Transect number 7 was run in this community at the proposed sandstone quarry site. Dominant community species at transect number 7 paralleled those noted above. Total plant cover was 6.9 percent, cover by litter and rock approximately 74.1 percent, and bare ground equal to 19.0 percent. Average tree heights were 10 to 15 feet and average shrub heights approximately 3.5 feet.

The potential production of native understory vegetation in normal years is typically 300 pounds per acre of air-dry vegetation for this unit within the county (SCS 1995). Given the amount of rock outcrop present on the areas proposed to be disturbed on a site specific basis, the potential production is believed to be a maximum of 100 pounds per acre for this site.

3.2 Shrub/Grassland Vegetation Type

Dominant species within this vegetation type include blue grama, kochia (*Kochia scoparia*), plains prickly pear (*Opuntia polyacantha*), and occasionally one-seed juniper. Transect numbers 4 and 5 were selected to represent this vegetation community in the proposed facility area near the granite quarry. Slopes were less than 2.0 percent and the aspect was south-southwest. Total plant cover ranges from 27.6 to 35.8 percent. Bare ground ranged from 64.2 to 72.4 percent. No ground cover was contributed by litter or rock along either transect. Average shrub height was 2.5 feet with the shrubs heavily hedged. Where trees occurred, their average height was 12 feet.

The potential production of native understory vegetation in normal years is typically 1,100 pounds per acre of air-dry vegetation (SCS 1995). The soil existing on site has a higher percent of coarse fragment (gravel) content than the soil mapped for the area by the SCS. Therefore, the potential production is believed to be approximately 800 pounds per acre for this site.

3.3 Stream Wash Vegetation Type

The Stream Wash vegetation type occurs primarily along Tallahassee Creek in the floodplain above the main channel. This type is subject to scouring and receives deposits of alluvium during flooding (SCS 1995). As such, the vegetation extant is sparse and is primarily limited to shrub and tree species along with annual weedy forbs. The dominant species include rubber rabbitbrush (*Chrysothamnus nauseosus*), four-wing saltbush (*Atriplex canescens*), leafy spurge (*Euphorbia esula*), and kochia. A few scattered tamarisk (*Tamarix ramosissima*) also occur. Since the proposed disturbance to this vegetation type would be limited to 2 river crossings, no transects were run in this type. The potential production of native understory vegetation was not rated for this type of soil map unit by the SCS. The production potential of this unit is assumed to be negligible.

3.4 Riparian Vegetation Type

The Riparian vegetation type occurs along Tallahassee Creek, primarily as a comparatively large, nearly level floodplain bench above the main channel. The

dominant species include tamarisk, plains cottonwood (*Populus sargentii*), peach-leaf willow (*Salix amygdaloides*), and rubber rabbitbrush. Since this vegetation type is not proposed to be disturbed, no transects were located. The potential production of native understory vegetation was not rated for this type by the SCS. The forage production potential of this unit is assumed to be negligible.

3.5 Grassland Vegetation Type

Dominant species within this vegetation type include blue grama, tree cholla (*Cylindropuntia imbricata*), and kochia where soils are disturbed by livestock. Transect number 8 was selected to represent this vegetation community in the proposed facility area south of Tallahassee Creek. Slopes were nearly level. Total plant cover was 30.7 percent while bare ground was 66.2 percent. Litter and rock contributed 3.2 percent ground cover. The potential production of native understory vegetation in normal years is typically 1,100 pounds per acre of air-dry vegetation (SCS 1995). The soil existing on site has a higher percent of coarse (gravel) fragment content than the soil mapped for the area by the SCS. Therefore the potential production is believed to be approximately 800 pounds per acre for this site.

3.6 Pinyon-Juniper/Grassland Vegetation Type

This vegetation type occurs to the south of Tallahassee Creek. It is similar to the grassland type but contains a pinyon-juniper component and a higher percent of cover by tree cholla. Dominant species include one-seed juniper, blue grama, tree cholla, plains prickly pear, and kochia. The slope is 1 to 2 percent on a southerly aspect. Total plant cover (transect number 9) was 29.0 percent, cover by litter and rock approximately 5.2 percent, and bare ground was 65.8 percent. Average tree heights were 12 feet and shrub heights averaged approximately 2.5 feet. Transect number 6 was run along the disturbed floor of the existing sandstone quarry.

The potential production of native understory vegetation in normal years is typically 1,100 pounds per acre of air-dry vegetation (SCS 1995). Given the amount of rock outcrop present and coarse (gravel) fragments in the soil profile on the areas proposed to be disturbed, the potential production is believed to be a maximum of 425 pounds per acre for this site based on a comparison of cover percentages with the grassland type.

3.7 Grassland/Improved Pasture Vegetation Type

This vegetation type occurs within the permit area south of Tallahassee Creek and to the west of Phase IA in the gravel bar in Phases II and III. The dominant vegetation species in this vegetation type include both native and introduced pasture grasses. Positive identification of vegetation species was not possible due to the early spring time of the field work and the over grazing impact.

TABLE J-1 Vegetation Species in Proposed Permit Area

Communities

Pinyon-Juniper
Shrub/Grassland
Stream Wash
Riparian
Grassland
Pinyon-Juniper/Grassland
Grassland/Improved Pasture

Pinyon/Juniper Slope (Granite Quarry Area)

Dominants

<i>Bouteloua gracilis</i>	blue grama
<i>Cercocarpus montanus</i>	mountain mahogany
<i>Cylindropuntia imbricata</i>	tree cholla
<i>Gutierrezia sarothrae</i>	broom snakeweed
<i>Juniperus monosperma</i>	one-seed juniper
<i>Opuntia polyacantha</i>	plains pricklypear
<i>Pinus edulis</i>	pinyon pine
<i>Yucca glauca</i>	soapweed

Other Species

<i>Aristida sp.</i>	three-awn
<i>Astragalus sp.</i>	vetch
<i>Bouteloua curtipendula</i>	side-oats grama
<i>Chrysothamnus nauseosus</i>	rubber rabbitbrush
<i>Echinocereus triglochidiatus</i>	claret-cup hedghog
<i>Eriogonum sp.</i>	sulfur flower
<i>Schizachyrium scoparium</i>	little bluestem

Drainage Bottom

<i>Artemisia frigida</i>	fringed sagebrush
<i>Bromus tectorum</i>	cheatgrass
<i>Grindelia squarrosa</i>	curly-cup gumweed
<i>Heterotheca villosa</i>	hairy golden aster
<i>Ribes aureum</i>	golden currant
<i>Ribes cereum</i>	wax currant
<i>Symphoricarpos occidentalis</i>	western snowberry
<i>Verbascum thapsus</i>	mullein

Tallahassee Creek (Sandy Wash Area)

Dominants (Primarily Floodplain Above Main Channel)

<i>Atriplex canescens</i>	four-winged saltbush
<i>Chrysothamnus nauseosus</i>	rubber rabbitbrush
<i>Cirsium sp.</i>	thistle
<i>Euphorbia esula</i>	leafy spurge (common along cut bank)
<i>Glycyrrhiza lepidota</i>	wild licorice
<i>Kochia scoparia</i>	kochia
<i>Salsola iberica</i>	Russian thistle
<i>Solanum rostratum</i>	buffalobur
<i>Tamarix ramosissima</i>	tamarisk (most as isolated individuals)
<i>Verbascum thapsus</i>	mullein

Large Floodplain Bench Above Main Channel (Designated "Riparian")

<i>Chrysothamnus nauseosus</i>	rubber rabbitbrush
<i>Opuntia polyacantha</i>	plains pricklypear
<i>Populus sargentii</i>	plains cottonwood (most 3-6" dbh; few 10-12" dbh)
<i>Salix amygdaloides</i>	peach-leaf willow (some mature specimens, 12-18" dbh)
<i>Salsola iberica</i>	Russian thistle
<i>Tamarix ramosissima</i>	tamarisk (some in dense thickets)
<i>Taraxacum officinale</i>	dandelion
<i>Trifolium sp.</i>	clover
<i>Urtica gracilis</i>	nettle

Stream Crossing Area for Granite Quarry

Vegetation cover very sparse, a few scattered annual weeds and

<i>Tamarix ramosissima</i>	tamarisk
<i>Verbascum thapsus</i>	mullein

Small Quarry Area (Sandstone)

Upland Ledge

Vegetation similar to PJ in big quarry area

Drainage Bottom Through Quarry

(rock outcrop on both sides and numerous boulders in bottom)

<i>Artemisia frigida</i>	fringed sagebrush (few)
<i>Artemisia ludoviciana</i>	Lousiana sagewort (few)
<i>Atriplex canescens</i>	four-winged saltbush (dom)
<i>Bouteloua gracilis</i>	blue grama (dom)
<i>Bromus tectorum</i>	cheatgrass (dom)
<i>Cylindropuntia imbricata</i>	tree cholla (dom)
<i>Eriogonum sp.</i>	sulfur flower (few)
<i>Gutierrezia sarothrae</i>	broom snakeweed
<i>Heterotheca villosa</i>	hairy golden aster (dom)
<i>Juniperus monosperma</i>	one-seed juniper (few)
<i>Kochia scoparia</i>	kochia (dominant herbaceous species)
<i>Opuntia polyacantha</i>	plains pricklypear (few)
<i>Pinus edulis</i>	pinyon pine (few, in upper portion only)
<i>Ptelea trifoliata</i>	hop tree (1)
<i>Rhus trilobata</i>	skunkbush sumac (few)
<i>Ribes aureum</i>	golden currant (few)
<i>Salsola iberica</i>	Russian thistle (few)
<i>Symphoricarpos occidentalis</i>	western snowberry (few)

Alluvial Fan Below Small Quarry (heavily grazed)

Dominants

<i>Chrysothamnus nauseosus</i>	rubber rabbitbrush (most heavily hedged, 3-4' tall)
<i>Kochia scoparia</i>	kochia (~ 50% cover by kochia seedlings)
<i>Opuntia polyacantha</i>	plains pricklypear

Creek Area in Vicinity of Small Quarry Crossing

Floodplain Above Active Channel

<i>Chrysothamnus nauseosus</i>	rubber rabbitbrush
<i>Opuntia polyacantha</i>	plains pricklypear
<i>Populus sargentii</i>	plains cottonwood (scattered few mature 3-4' dbh)
<i>Salix amygdaloides</i>	peach-leaf willow (scattered few mature 3-4' dbh)

Cutbank of Active Channel

Mostly weedy annuals similar to other crossing area

Grassland in Plant Area

Dominants

<i>Bouteloua gracilis</i>	blue grama
<i>Cylindropuntia imbricata</i>	tree cholla
<i>Kochia scoparia</i>	kochia (dom. herbaceous where soils disturbed by stock)
<i>Opuntia polyacantha</i>	plains pricklypear
<i>Yucca glauca</i>	soapweed

Other Species

<i>Aristida sp.</i>	three-awn
<i>Artemisia ludoviciana</i>	Lousiana sagewort
<i>Bouteloua curtipendula</i>	side-oats grama
<i>Chaenactis douglasii</i>	Douglas chaenactis
<i>Chrysothamnus nauseosus</i>	rubber rabbitbrush (few present - heavily hedged)
<i>Lupinus argentea</i>	silver lupine

LINE-INTERCEPT DATA

Project Parkdale Date 4/21/97 Field Analyst(s) M. Phelan QA Check
 Location Large Quarry (granite) Vegetation Type or Site P5 Slope w/ little RW Control Area ☐ Study Area ☐
 Transect No. 1 Orientation NNE (25°) Slope (%) 25° Aspect SSW Transect Length 100 ft

	Species	Species Code	Intercept (Distance) feet																				Total Dist.	÷	% Cover	Ht.									
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20													
1	<i>Bouteloua gracilis</i>	BOGR	1.0	2.4	0.6																										4.0	100	4.0%	—	
2	<i>Juniperus monosperma</i>	JUMO	8.0																													8.0	"	8.0%	15-20'
3	<i>Gutierrezia serotina</i>	GUSA	0.2	0.1																												0.3	"	0.3%	1.0'
4	<i>Verbascum thapsus</i>	VETH	0.2																													0.2	"	0.2%	—
5	<i>Chrysothamnus nauseosus</i>	CHNA	1.5																													1.5	"	1.5%	25'
6	<i>Cylindropuntia integrifolia</i>	CYIM	0.8																													0.8	"	0.8%	2-3'
7																																			
8																																			
9																																			
0																																			
1																																			
2																																			
3																																			
4																																			
5																																			
6																																			

Notes: Soils

Wildlife

Pinon + juniper average 15-20' height
 CEMO + CHNA heavily hedged

Total Plant Cover	14.8	100	14.8%
Litter and Rock	0		0%
Total Cover	14.8		14.8%
Bare ground	85.2		85.2%

LINE-INTERCEPT DATA

Project Parkdale Date 4/21/97 Field Analyst(s) M. P. Helan QA Check
 Location large Quarry (granite) Vegetation Type or Site PJ Slope w/less RD Control Area ☐ Study Area ☐
 Transect No. 2 Orientation NNW (325°) Slope (%) 30° Aspect SSW Transect Length 100'

	Species	Species Code	Intercept (Distance)																				Total Dist.	÷	% Cover	Ht.
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
1	<u>Pinus edulis</u>	PIED	2.5																				2.5	100	2.5%	15'
2	<u>Juniperus monosperma</u>	Jumo	1.5	2.5																			4.0	"	4.0%	15-20'
3	<u>Cylindropuntia imbricata</u>	CYIM	0.3																				0.3	"	0.3%	2-3'
4	<u>Bouteloua gracilis</u>	BOGR	0.2																				0.2	"	0.2%	—
5	<u>Gutierrezia sarothrae</u>	GUSA	0.1	0.3	0.6	0.3																	1.3	"	1.3%	1.0
6	<u>Aristida sp</u>	ARsp	0.3	0.2																			0.5	"	0.5%	—
7	<u>Echinocereus triglochidiatus</u>	ECTR	0.1																				0.1	"	0.1%	0.5'
8	<u>Eriogonum speciosum</u>	ERsp	0.1																				0.1	"	0.1%	—
9	<u>rock</u>	—	1.0	16.0	5.5	1.5																	24.0	"	24%	—
10	<u>Cercocarpus montanus</u>	CEMO	0.5																				0.5	"	0.5%	3.0'
11	<u>Bouteloua curtipendula</u>	BOCU	0.5																				0.5	"	0.5%	—
12	—	—																								
13	—	—																								
14	—	—																								
15	—	—																								
16	—	—																								

Notes: Soils
Wildlife

pinon + juniper averaged 15-20' in height
CEMO heavily hedged

Total Plant Cover	10.0	100	10%
Litter and Rock	24.0	"	24%
Total Cover	34.0	"	34%
Bare ground	66.0	"	66.0%

LINE-INTERCEPT DATA

Project Parkdale Date 4/21/97 Field Analyst(s) M. P. Hulan QA Check _____
Location Large Quarry (granite) Vegetation Type or Site PJ / Rock Outcrop Control Area ☐ Study Area ☐
Transect No. 3 Orientation WNW (290°) Slope (%) 35-40° Aspect SSW Transect Length 100'

[illegible]

otes: Soils

Wildlife

Wildlife
Pinyon + juniper trees averaged 15-20' in height
CEMO averaged 2-3' in height + heavily hedged

Total Plant Cover	2.7	2.7%
Litter and Rock	87.0	87.0%
Total Cover	89.7	89.7%
Bare ground	10.3	10.3%

LINE-INTERCEPT DATA

Project Parkdale Date 4/21/97 Field Analyst(s) M. Phelan QA Check
 Location Alluvial fan W of large Quarry Vegetation Type or Site Shrub/Grassland Control Area ☐ Study Area ☐
 Transect No. 4 Orientation W (260°) Slope (°) ~5° Aspect SSW Transect Length 100'

Species	Species Code	Intercept (Distance)																				Total Dist.	÷	% Cover	Ht.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
1 <u>Bouteloua curtipendula</u>	<u>BOGR</u>	22.0	1.5																			23.5	100	23.5%	—
2 <u>Cylindropuntia imbricata</u>	<u>CYIM</u>	0.8																				0.8		0.8%	2.3'
3 <u>Gutierrezia sarothrae</u>	<u>GUSA</u>	0.2																				0.2		0.2%	1.0'
4 <u>Juniperus monosperma</u>	<u>JUMD</u>	4.0																				4.0		4.0%	12'
5 <u>Atriplex canescens</u>	<u>ATCA</u>	1.5																				1.5		1.5%	2.3'
6 <u>Opuntia polyacantha</u>	<u>OPPO</u>	1.0	0.5	0.3	1.0	0.3	0.4															4.0		4.0%	1.0'
7 <u>Kochia scoparia</u>	<u>KOSC</u>	1.0	0.5	0.3																		1.8		1.8%	—
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									

Notes: Soils
Wildlife

Kosc seedlings numerous in areas w/ soils disturbed by livestock

ATCA heavily hedged

Individual JUMD infrequent, scattered throughout this type (10-15' in height)

Total Plant Cover	35.8	100	35.8%
Litter and Rock	0	—	0
Total Cover	35.8	100	35.8%
Bare ground	64.2	100	64.2%

LINE-INTERCEPT DATA

Project Parkdale Date 4/21/97 Field Analyst(s) m. Phelan QA Check
 Location Alluvial fan W. of Long Quarry Vegetation Type or Site Shrub / Grassland Control Area ☐ Study Area ☐
 Transect No. 5 Orientation SSE (150°) Slope (%) 2.5° Aspect SSW Transect Length 100'

Species	Species Code	Intercept (Distance)																				Total Dist.	#	% Cover	Ht.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
1 <i>Bouteloua gracilis</i>	BOGR	15.0	3.5	3.0																		21.5	100	21.5%	-
2 <i>Chrysothamnus nauseosus</i>	CHNA	1.0																				1.0	"	1.0%	2-3'
3 <i>Atriplex canescens</i>	ATCA	0.3																				0.3	"	0.3%	2-3'
4 <i>Opuntia polyacantha</i>	OPPO	0.5	0.3	0.8	0.1	0.4																2.1	"	2.1%	1-1.5'
5 <i>Cylindropuntia intricata</i>	CYIM	0.3																				0.3	"	0.3%	2-3'
6 <i>Kochia scoparia</i>	KOSC	0.7	1.0	0.7																		2.4	"	2.4%	-
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									

Notes: Soils
Wildlife

(see notes for Transect 4)

CHNA also heavily hedged

Total Plant Cover	27.6	100	27.6%
Litter and Rock	0		0
Total Cover	27.6	100	27.6%
Bare ground	72.4	100	72.4%

LINE-INTERCEPT DATA

Project Parkdale Date 4/21/97 Field Analyst(s) M. Phelan QA Check _____
 Location Drainage Bottom
Small Quarry (limbong) Vegetation Type or Site Disturbed / PS Control Area ☐ Study Area ☐
 Transect No. 6 Orientation NNE (50°) Slope (#) 5-10° Aspect SSW Transect Length 100'

[illegible]

Notes: Soils

Wildlife

Dense stands of Kosc seedlings present at more disturbed sites.
CHNA & ATCA heavily hedged

Total Plant Cover	23.3	100	23.3%
Litter and Rock	19.0	"	19.0%
Total Cover	42.3	"	42.3%
Bare ground	57.7	"	57.7%

LINE-INTERCEPT DATA

Project Parkdale Date 4/21/97 Field Analyst(s) M. Phelan QA Check
 Location Upper ledge in small quarry (containing) Vegetation Type or Site PS Control Area ☐ Study Area ☐
 Transect No. 7 Orientation SSW (220°) Slope (°) 35-40° Aspect SSW Transect Length 100'

Species	Species Code	Intercept (Distance)																				Total Dist.	#	% Cover	Ht.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
1 <u>Pinus edulis</u>	<u>PIED</u>	1.0	0.4																			1.4	100	1.4%	12.0
2 <u>Juniperus monosperma</u>	<u>JUMD</u>	0.5																				0.5	100	0.5%	10.0
3 <u>Gutierrezia sarothrae</u>	<u>GUSA</u>	0.3	0.3	0.2	0.1	0.2																1.1	"	1.1%	1.0'
4 <u>Bouteloua gracilis</u>	<u>BOGR</u>	0.4	0.1	0.2	0.4	0.4	0.1															1.6	"	1.6%	—
5 <u>Cercocarpus montanus</u>	<u>CEMO</u>	0.7																				0.7	"	0.7%	3.5'
6 <u>Bouteloua curtipendula</u>	<u>BOCU</u>	0.4																				0.4	"	0.4%	—
7 <u>Soil</u>	<u>Soil</u>	3.0	1.0	2.0	3.0	4.0	2.0	4.0														19.0	"	19.0%	—
8 <u>Opuntia polyacantha</u>	<u>OPPO</u>	0.5																				0.5	"	0.5%	1.0
9 <u>Echinocereus triglochidiatus</u>	<u>ECTR</u>	0.1																				0.1	"	0.1%	0.5"
0 <u>Cylindropuntia imbricata</u>	<u>CYIM</u>	0.3																				0.3	"	0.3%	1.5'
1 <u>Aristida species</u>	<u>ARIS</u>	0.3																				0.3	"	0.3%	—
2																									
3																									
4																									
5																									
6																									

Notes: Soils

Wildlife

PIED + Jumo - 10-15' tall

CEMO heavily hedged

Total Plant Cover	6.9	6.9%
Litter and Rock	74.1	74.1%
Total Cover	81.0	81.0%
Bare ground	19.0	19.0%

LINE-INTERCEPT DATA

Project Parkdale Date 4/22/97 Field Analyst(s) M. Shulan QA Check _____
 Location Plant Area Vegetation Type or Site Grassland Control Area ☐ Study Area ☐
 Transect No. 8 Orientation SSW (225°) Slope (%) 0° Aspect N/A Transect Length 100'

	Species	Species Code	Intercept (Distance)																				Total Dist.	÷	% Cover	Ht.
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
1	<i>Bouteloua gracilis</i>	BUGR	4.2	0.9	0.4	0.5																	24.0	100	24%	—
2	<i>Cylindropuntia imbricata</i>	CYIM	2.0	1.0	1.0																		4.0	"	4%	2-3'
3	<i>Opuntia polyacantha</i>	OPPD	0.5	0.2																			0.7	"	0.7%	0.5-1'
4	<i>Misc. Scrub</i>	N/A	0.2	0.1																			0.3	"	0.3%	—
5	<i>Artemisia ludoviciana</i>	ARLU	0.2																				0.2	"	0.2%	—
6	<i>Koeleria cristata</i>	KOCR	0.3	0.2	0.6	0.3																	1.4	"	1.4%	—
7	rock	ROCK	0.3	0.3	0.2	0.3	0.2	0.6	0.3	0.3													3.2	"	3.2%	—
8																										
9																										
0																										
1																										
2																										
3																										
4																										
5																										
6																										

Notes: Soils
Wildlife

Total Plant Cover	30.6	100	30.6%
Litter and Rock	3.2	"	3.2%
Total Cover	33.8	"	33.8%
Bare ground	66.2	"	66.2%

BUGR cover as high as 30-40% in some areas
where rock cover is minimal.

The few CHNA present in this Veg Type heavily hedged

LINE-INTERCEPT DATA

Project Parkdale Date 4/22/97 Field Analyst(s) M. Phelan QA Check
 Location Plant Area Vegetation Type or Site PS / Grassland Control Area ☐ Study Area ☐
 Transect No. 9 Orientation WSW (290°) Slope (°) 1-2° Aspect S Transect Length 100

	Species	Species Code	Intercept (Distance)																				Total Dist.	+	% Cover	Ht.				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20								
1	<u>Bouteloua gracilis</u>	BOGR	1.0	0.6	1.0	2.4	3.8																9.6	100	9.6%	-				
2	<u>Cylindropuntia imbricata</u>	CYIM	1.0	0.5	0.4																		1.9	"	1.9%	3-4'				
3	<u>Juniperus monosperma</u>	JUMO	6.6																				6.6	"	6.6%	12'				
4	<u>Opuntia polyacantha</u>	OPPO	0.6	0.3	1.0	1.9																	3.8	"	3.8%	1.0'				
5	<u>Chrysothamnus nauseosus</u>	CHNA	1.0	0.6																			1.6	"	1.6%	2.5'				
6	<u>Koeberlinia scoparia</u>	KOSC	3.6	1.0																			4.6	"	4.6%	-				
7	<u>rock</u>	rock	0.2	3.0	1.5	0.5																	5.2	"	5.2%	-				
8	<u>Koeberlinia cristata</u>	KOCR	0.5	0.1	0.3																		0.9	"	0.9%	-				
9																														
10																														
11																														
12																														
13																														
14																														
15																														
16																														

Notes: Soils

Wildlife

Piñon + Juniper Trees averaging 10-15' in height

Total Plant Cover	29.0	100	29.0%
Litter and Rock	5.2		5.2%
Total Cover	34.2		34.2%
Bare ground	65.8		65.8%

BOGR cover as high as 30-40% in some areas where coarse fragments on surface W. Area similar to grassland bench but 10-20% total cover by PS. 100%