SOIL PROFILES OF MOUNDS ON PLUTONIUM-CONTAMINATED AREAS OF THE NEVADA TEST RANGE COMPLEX

Exposure Assessment Division
Environmental Monitoring Systems Laboratory
U.S. ENVIRONMENTAL PROTECTION AGENCY
Las Vegas, NV 89114

January 1980

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by
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January 1980

ABSTRACT

This report describes soil profiles of the surface soils in mounds in two areas located on the Test Range Complex, Nye County, Nevada. Both areas have been the sites of aboveground nuclear safety tests. These areas are contaminated with plutonium and are the object of investigations regarding the movement of plutonium in the environment.

Most of the surface soils in the two plutonium-contaminated sites of the Test Range Complex have gravelly texture and are typically classified as gravelly sandy loam. Most of the land sampled is either floodplain or alluvial fan with deep soils having well-developed profiles and platy or subangular blocky structure.

In the areas sampled, the wind has a dominant influence on the surface texture of the soil. It has moved the fine-textured soils around individual plants or plant clumps, thus leaving the coarse soil particles in low areas between the plants.

All of the soils are alkaline and range in pH from 7 to 9. The color of the surface soil ranges from light gray to very pale brown dry and from brown to dark grayish brown moist. Most of the soils are potentially agricultural if water were available. The soil drainage is well to very well drained.

The vegetation is classified as high desert grass and shrubs. The grass and shrubs are predominately winter fat (Eurotia lanata), fourwing saltbush (Atriplex canescens), shadscale (Atriplex confertifolia), bud sagebrush (Artemisia spinescens), galleta grass (Hilaria jamesii), and Indian ricegrass (Oryzopsis hymenoides).

Domestic livestock prefer the above vegetation to any other that grows on the desert range. Because a large portion of the land sampled could be cultivated for crops or is potentially good winter range, these findings should be considered in any "cleanup" decision.

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I. INTRODUCTION

In the early stages of the Nevada Applied Ecology Group (NAEG) soil sampling program, a plutonium inventory was started for the various areas on the Nevada Test Range Complex in which soil samples had been taken generally in the open spaces between the desert plants.

It was recently established by Tamura (1975) that the plutonium activity in soils at the Test Range Complex is associated with different soil particle sizes of which the coarse silt fraction (53 to 20 micrometers) contained the highest percentage of activity (about 65%). These particle sizes are readily subjected to movement by wind and collect at the base of plants, developing into hummocks around the desert vegetation.

Because it does get windy on the Test Range Complex, fine soil particles can accumulate around the plant by wind action. Essington and Fowler (1976) reported that plutonium had migrated even further down in the soil they sampled in 1973 than it had in soil sampled from the same area 15 years earlier. Therefore, the mounding of plutonium-contaminated soil and the observed ability of plutonium to migrate to deeper layers of the soil with time together pose a situation of greater exposure to the roots and probably a higher uptake of plutonium by the plant.

The information reported by Tamura (1975) and Essington and Fowler (1976) points to the importance and necessity of a soil-mound sampling program.

Before such a program could be implemented, the soil mounds around the plants needed to be characterized and their profiles described. The study reported here was undertaken to describe the soil profiles of the mounds.

Data from the sampling of the soils and descriptions of their physical properties provide guidance to investigators as to those soil characteristics which could have an impact on the movement of plutonium through the soil and on the uptake of plutonium by plants.

In a previous study (Leavitt, 1974), 127 sites were sampled to determine soil type of the Clean Slate 3 area and Area 13 on the Test Range Complex*. This work was done at the request of the NAEG, U.S. Department of Energy (DOE), under the requirements of the National Environmental Policy Act of 1969. One of NAEG's goals is to develop techniques for the cleanup or treatment of actinide-contaminated soils. This mound study is one of several studies needed by the Group to accomplish this goal.

The soil samples were taken from the mounds of Area 13 and the Clean Slate 3 area and were described as to their texture, structure, pH, and permeability. The soil descriptions provide a basis for other researchers to

^{*}Test Range Complex includes the Tonopah Test Range (TTR), Nuclear Rocket Development Station (NRDS), Nevada Test Site (NTS), and Nellis Air Force Range (NAFR).

determine the plutonium activity that is associated with the different soil fractions found in the mounds around native plants.

This report covers three different types of soil and vegetation sampling sites. They are soils and shrubs, soils and grass, and animal mounds or burrows.

II. AREA DESCRIPTIONS

This work covered areas in the south-central and eastern parts of Nye County in southern Nevada (Figure 1). These areas are semiarid with precipitation ranging from 10 to 30 centimeters (4 to 12 inches) (Maxey and Jameson, 1948). All of these areas provide only limited grazing for livestock; however, about three-fourths of the acreage sampled would be classified as potential agricultural land if water were available.

CLEAN SLATE 3 AREA

The Clean Slate 3 area, located in Area 52, was sampled on the Tonopah Test Range. The Clean Slate 3 area, in what is commonly known as Cactus Flat, is a desert grassland site with an elevation of about 1,650 meters (5,400 feet) along the floodplain of Cactus Flat. Most of the soils sampled in this area are of cropland quality. The vegetation there is dominated by galleta grass (Hilaria jamesii) and Indian ricegrass (Oryzopsis hymenoides), which would make this area very good desert range for livestock. The soils and vegetation found here are similar to those in Area 13 of the NTS.

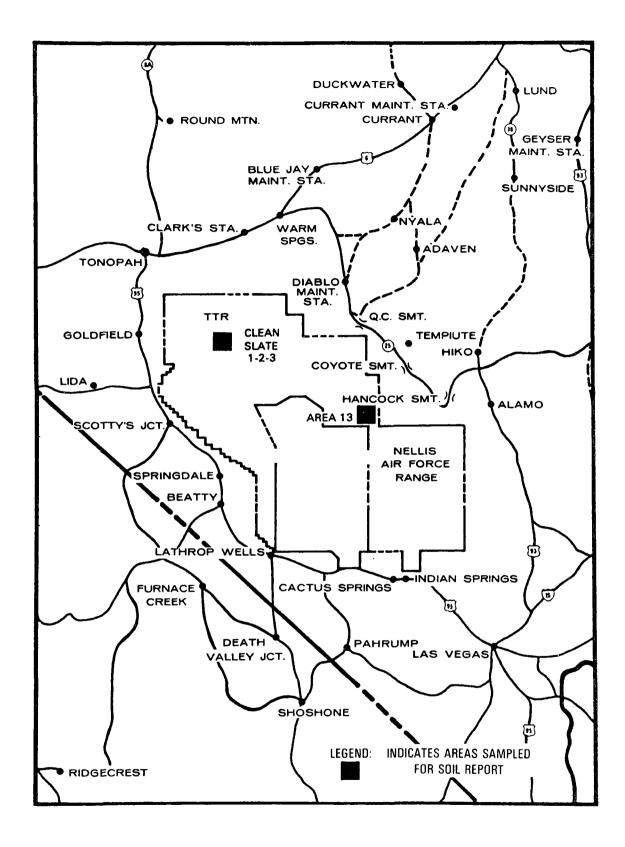
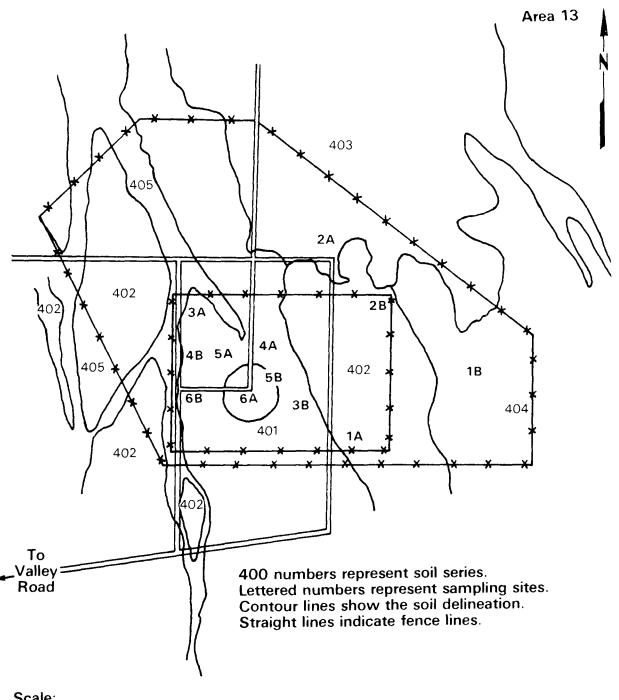


Figure 1. The areas sampled on the Nevada Test Range Complex.

AREA 13

Area 13 is in the northeastern corner of the Test Range Complex. It is in the bottom of a wide alluvial valley about 1,317 meters (4,500 feet) in elevation. It is bounded on the east by the Groom Range and on the west by the Belted Range. Most of its land is classified as potential agricultural cropland. Its soils and vegetation are similar to those in the Clean Slate 3 area of the Tonopah Test Range. The soils are deep and very productive. NAEG investigators have conducted various types of research studies in this area ranging from greenhouse soil and plant experiments to large animal grazing studies (Au et al., 1976, 1977; Smith, 1976). The locations in Area 13 from which soil samples were taken are shown in Figure 2.



Scale:

1" = 1733' 3.1" = 1 Mile

The locations of soil samples taken in Area 13. Figure 2.

III. PROFILE SAMPLING

Soil and vegetation samples were taken at each sampling site by Reynolds Electrical and Engineering Company, Inc. personnel (Essington and Fowler, 1976). The samples were taken at random in a systematic manner according to plot, quadrant, quadrate, mound, and whether the mound had a single plant or a complex of two or more plants. Sketches of the different types of soil mounds sampled are presented in Figure 3. A very shallow pit was dug to a depth of 5 cm at each sampling site, and the soil profile was determined by visual inspection. All characterizations of the soil were performed on site at the time of sampling.

The field sampling procedure was to cut or saw the aboveground vegetation level with the top of the mound without disturbing the mound soil. Each mound was then photographed with a stereo camera at an angle perpendicular to the vertical axis of the mound at a distance just far enough away to include the whole mound and part of the desert pavement surrounding the mound. From three to six radials were selected for profile sampling depending on the uniformity of the mound. Samples were collected by Reynolds Electrical and Engineering Company, Inc. personnel using a technique that prevents cross-contamination of samples (Essington and Fowler, 1976). Briefly, this was accomplished using

a specially constructed scoop which removed a sample $10 \text{ cm} \times 1 \text{ cm}$ and 2--1/2 cm deep. A second 2--1/2--cm deep sample was removed separately following the first so that a profile was obtained to a depth of 5 cm. Samples from each mound were taken as close to the vegetation clump as practical.

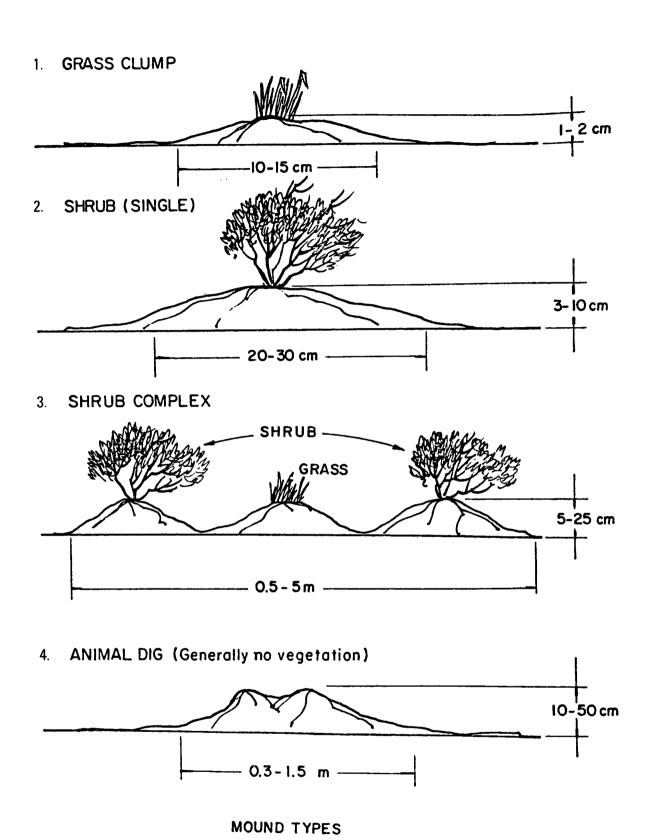
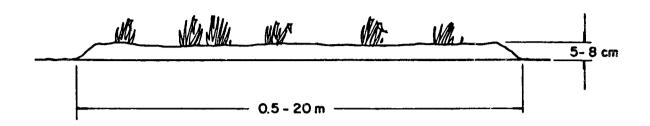


Figure 3. Sketches of the different types of soil mounds.

5. DIFFUSE GRASS



6. LARGE ANIMAL DIG (Generally colony of small diggings, no vegetation)

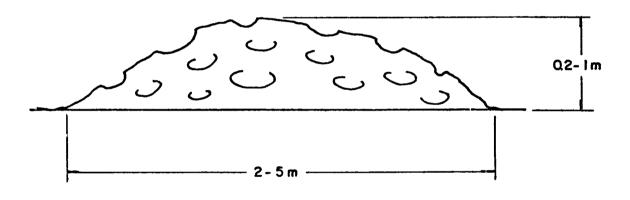


Figure 3. Sketches of the different types of soil mounds. (Continued)

IV. SOIL PROFILE CHARACTERIZATION PROCEDURES

Soil colors were determined by comparing the sample with the Munsell Soil Color Chart (Munsell Color Company, Inc., 1954). The method requires visual matching of the soil sample to an appropriate color chip. The standardized color chips include designators for hue, value, and chroma. Hue is the dominant spectral color. Value refers to the relative lightness of color and is a function of the total amount of reflected light. Chroma, or the saturation, is the relative purity or strength of the spectral color and increases with decreasing grayness. Colors are for air-dried soil unless otherwise noted.

Soil structure, pH, and effervescence were determined by procedures described by the U.S. Soil Conservation Service (1951). Soil texture was determined by rolling the moistened soil sample between the thumb and index finger. Soil structure was determined visually from the aggregability of the primary soil particles into compound particles. Soil pH was determined by placing enough indicator dye solution to cover the soil sample in the spot plate. Cresol red was used between pH 7.2 and 8.8, and thymol blue was used between pH 8.0 and 9.6.

Effervescence was determined by adding a few drops of $0.1\underline{N}$ HCl to the soil as an indication of the occurrence of certain salts in various crystalline

forms. The effervescent reaction was correlated to the relative concentrations of carbonates of calcium, magnesium, and sodium present in the soil.

V. RESULTS AND DISCUSSION

Most of the surface soils in the two plutonium-contaminated sites of the Test Range Complex have gravelly texture and are typically classified as gravelly sandy loam. The majority of land sampled is either floodplain or alluvial fan with deep soils having well-developed profiles and platy or subangular blocky structure.

In the areas sampled, the wind has a dominant influence on the surface texture of the soil. It has moved the fine-textured soils around individual plants or plant clumps, thus leaving the coarse soil particles in low areas between the plants. It was found that the size of the soil mound increased with the size of the plant because of the plant biomass acting as a barrier for the deposition of soil by the wind.

It has been established by Tamura (1975) that the highest plutonium activity in soils at the NTS is associated with the coarse silt particle size fraction (53 to 20 micrometers). This particle size is easily moved by the wind.

In the soil profile mound study, it was generally found that the soil around the brush was finer textured than that found in the animal diggings.

This difference is due to the burrowing and continuous foraging habits of the animals which cause a mixing of the coarse and fine soils resulting in a coarser soil texture found at the animal mounds.

All of the soils are alkaline and range in pH from 7 to 9. The color of the surface soil ranges from light gray to very pale brown dry and from brown to dark grayish brown moist. Most of the soils are potentially agricultural if water were available. The soil drainage is well to very well drained.

The vegetation is classified as high desert grass and shrubs. The grass and shrubs are predominately winter fat (Eurotia lanata), fourwing saltbush (Atriplex canescens), shadscale (Atriplex confertifolia), bud sagebrush (Artemisia spinescens), galleta grass (Hilaria jamesii), and Indian ricegrass (Oryzopsis hymenoides). The scientific and common names of the vegetation occurring in the mound study areas are given in Table 1.

Domestic livestock prefer the above vegetation to any other that grows on the desert range. Because a large portion of the land sampled could be cultivated for crops or is potentially good winter range, these findings should be considered in any "cleanup" decision.

TABLE 1. SCIENTIFIC AND COMMON NAMES OF VEGETATION IN MOUND STUDY AREAS

Scientific Name	Common Name
Artemisia spinescens	Bud sagebrush
Atriplex canescens	Fourwing saltbush
Atriplex confertifolia	Shadscale
Chrysothamnus viscidiflorus (subspecies stenophyllus)	Small rabbitbrush
Eurotia lanata	Winter fat
Hilaria jamesii	Galleta grass
Oryzopsis hymenoides	Indian ricegrass
Lycium andersonii	Wolfberry
Tetradymia glabrata	Horsebrush

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APPENDIX A

ARE 52 TR CLEAN SLATE 3: (1) CLUMP GRASS

Legend:

(1) = Clump grass
L 15609 = Library number
Lab 66033 = Laboratory soil sample number
(5 YR 6/3) = Munsell soil color chart identification
5 YR = Hue designator
6/ = Value designator
/3 = Chroma designator

CLUMP GRASS (1) CLEAN SLATE 3

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52	Indian Ricegra Oryzopsis hy		1 A	1	3	13
	DEPTH		DE	SCRIPTION		
	2.7 to 0 cm L 15609 Lab 66033 O to 5 cm L 15610 Lab 62034	Light reddish broloose dry and moi effervescent; mil Light reddish brown (5% nonplastic; sligh (pH 7.6).	c; slightly ly sandy loa ble, nonstic	m ,		

CLUMP GRASS (1) CLEAN SLATE 3

	SPECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
DEPTH		DE	SCRIPTION			
1.1 to 0 cm L 15612 Lab 62036	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).					
0 to 5 cm L 15613 Lab 62037	dark reddish brow nonsticky, nonpla	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent;				
A second						
	Indian Rice Oryzopsis DEPTH 1.1 to 0 cm L 15612 Lab 62036 0 to 5 cm L 15613	1.1 to 0 cm Reddish brown (5Y dark reddish brown nonsticky, nonpla mildly alkaline (0 to 5 cm Reddish brown (5Y dark reddish brown Lab 62037 nonsticky, nonpla	Indian Ricegrass, Oryzopsis hymenoides 1.1 to 0 cm L 15612 Lab 62036 Reddish brown (5YR 5/3) dry; dark reddish brown (5YR 3/3) nonsticky, nonplastic; slight mildly alkaline (pH 7.6). 0 to 5 cm Reddish brown (5YR 5/3) dry; dark reddish brown (5YR 3/3)	Indian Ricegrass, Oryzopsis hymenoides 1A DEPTH DESCRIPTION 1.1 to 0 cm L 15612 Lab 62036 Reddish brown (5YR 5/3) dry; gravelly sand dark reddish brown (5YR 3/3) moist; soft, nonsticky, nonplastic; slightly effervesce mildly alkaline (pH 7.6). Reddish brown (5YR 5/3) dry; gravelly sand L 15613 Lab 62037 Reddish brown (5YR 5/3) dry; gravelly sand dark reddish brown (5YR 3/3) moist; soft, nonsticky, nonplastic; slightly effervesce	Indian Ricegrass, Oryzopsis hymenoides 1A 1 DESCRIPTION 1.1 to 0 cm L 15612 Lab 62036 O to 5 cm Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6). Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent;	

AREA	s	PECIES	PLOT	THARDAUD	QUADRATE	MOUND NO.	
52	Indian Ricegra	ass, menoides	2 A	1	4	7	
	DEPTH		DE	SCRIPTION			
	2.6 to 0 cm L 15615 Lab 62039	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/2) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).					
	0 to 5 cm L 15616 Lab 62040	losm, reddish bro nonsticky, nonpla	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, reddish brown (5YR 4/3) moist; soft, friable, nonsticky, nonplastic; violently effervescent; moderately alkaline (pH 8.0).				

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Indian Ricegra Oryzopsis h	ass, ymenoides	2 A	1	1	3	
	DEPTH		DE	SCRIPTION			
	3.0 to 0 cm L 15618 Lab 62042	Reddish brown (5Y reddish brown (5Y nonsticky, nonpla moderately alkali	R 3/3) moist stic; slight	; loose dry a ly effervesce	end moist;		
	0 to 5 cm L 15619 Lab 62043	sand, dark reddis dry and moist; no	moderately alkaline (pH 8.0). Light reddish brown (5YR 6/3) dry; gravelly loamy sand, dark reddish brown (5YR 3/3) moist; loose dry and moist; nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52	Indian Ricegra Oryzopsis hy	uss, rmenoides	3 A	2	2	33
	ОЕРТН		DE	SCRIPTION		
	1.9 to 0 cm L 15621 Lab 62045	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).				
	0 to 5 cm L 15622 Lab 62046	Reddish brown (5YR 5/3) dry; gravelly loamy sand, dark reddish brown (5YR 3/3) moist; loose dry and moist; nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).				
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AREA		SPECIES	PLOT	QUADRANT	DUADRATE	MOUND NO
52	Indian Ricegr Oryzopsis h	ass, ymenoides	3A	2	5	96
	DEPTH		DE	SCRIPTION		
	2.2 to 0 cm L 15624 Lab 62048	Light reddish brown (5YR 6/3) dry; gravelly loamy sand, reddish brown (5YR 4/3) moist; loose dry and moist; nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).				
	0 to 5 cm L 15625 Lab 62049	Light reddish bro loam, dark reddis nonsticky, nonpla alkaline (pH 7.6)	wn (5YR 6/3) h brown (5YR stic; slight	3/3) moist;	soft, friab	y le,

AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Indian Riceg Oryzopsis	rass, hymenoides	4A	1	1	7
	DEPTH		DE	SCRIPTION		
	3.0 to 0 cm L 15627 Lab 62051 O to 5 cm L 15628 Lab 62052	Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6). Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/3) moist; soft,				
	F80 07037		friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).			
				•		

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Indian Ricegra Oryzopsis hy	ass, rmenoides	4A	1	5	90	
	DEPTH		DE	SCRIPTION			
	3.2 to 0 cm L 15630 Lab 62054	Light reddish bro loam, reddish bro nonsticky, nonpla alkaline (pH 7.8)	wn (5YR 4/3) stic; slight	moist; soft	, friable,		
	0 to 5 cm L 15631 Lab 62055	dark reddish brow nonsticky, nonpla	Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				
	,						
	i						

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52	Indian Ricegra Oryzopsis hy	ass, rmenoides	18	3	3	25
	DEPTH		DE	SCRIPTION	<u> </u>	<u> </u>
	1.0 to 0 cm L 15633 Lab 62057	Light reddish brown (5YR 6/3) dry; gravelly sand, dark reddish brown (5YR 3/3) moist; loose dry and moist; nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).				
	0 to 5 cm L 15634 Lab 62058	Alkaline (pH 7.6). Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; strongly effervescent; mildly alkaline (pH 7.6).				
						:
1						
		i				

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Indian Ricegrass, Oryzopsis hymenoides		1B	3	5	5 3	
	ОЕРТН	DEPTH DESCRIPTION					
	2.3 to 0 cm L 15636 Lab 62060	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).					
	0 to 5 cm L 15637 Lab 62061	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).					

CLUMP GRASS (1) CLEAN SLATE 3

AREA	S	SPECIES	PLOT	THARDAND	QUADRATE	MOUND NO	
52	Indian Ricegr Oryzopsis h	ass, ymenoides	2в	1	2	24	
	DEPTH		DE	SCRIPTION			
	0.4 to 0 cm L 15639 Lab 62063	Light reddish bro sand, dark reddis dry and moist; no effervescent; mil	h brown (5YR nsticky, non	3/4) moist; plastic; slig	loose.		
	0 to 5 cm L 15640 Lab 62064	Light reddish bro sandy loam, dark soft, friable, no	effervescent; mildly alkaline (pH 7.6). Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
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CLUMP GRASS (1) CLEAN SLATE 3

AREA	s	SPECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52	Indian Ricegr Oryzopsis h	Indian Ricegrass, Oryzopsis hymenoides		1	2	21
	DEPTH		DE	SCRIPTION		
	2.4 to 0 cm L 15642 Lab 62066	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).				
	L 15643 Lab 62067	nonsticky, nonpla	Light reddish brown (5YR 6/3) dry; sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).			

CLUMP GRASS (1) CLEAN SLATE 3

AREA	s	SPECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Indian Ricegra Oryzopsis h		3в	1	1	4	
	DEPTH		DE	SCRIPTION			
	2.8 to 0 cm L 15645 Lab 62069	dark reddish brow nonsticky, nonpla	Light reddish brown (5YR 6/3) dry; sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).				
	0 to 5 cm L 15646 Lab 62070	dark reddish brow nonsticky, nonpla	Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).				

CLUMP GRASS (1) CLEAN SLATE 3

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Indian Riceg Oryzopsis N		3В	1	4	35
	DEPTH		DE	SCRIPTION		
	1.5 to 0 cm L 15648 Lab 62072 O to 5 cm L 15649 Lab 62073	Reddish brown (stark reddish brown oist; nonsticky mildly alkaline Light reddish brown (5YR nonplastic; slig (pH 7.8).	own (5YR 3/3), nonplastic (pH 7.6). cown (5YR 6/3 3/4) moist;	moist; loos; slightly e dry; fine soft, friabl	e dry and ffervescent; sandy loam, e, nonsticky	

CLUMP GRASS (1) CLEAN SLATE 3

AREA	s	SPECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Indian Ricegr Oryzopsis h		4в	4	4	61	
	DEPTH		DESCRIPTION				
	2.8 to 0 cm L 15651 Lab 62075	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).					
	0 to 5 cm L 15652 Lab 62076	dark reddish brow nonsticky, nonpla	Light reddish brown (5YR 5/3) dry; sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
				•			

CLUMP GRASS (1) CLEAN SLATE 3

AREA	SF	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Indian Ricegrass, Oryzopsis hymenoides		4B	4	2	35
	DEPTH		DE	SCRIPTION		
	i.5 to 0 cm. L 15654 Lab 62078 O to 5 cm L 15655 Lab 62079	Light reddish he sand, reddish he moist; nonstick mildly alkaline Light reddish he sandy loam, dar soft, friable, effervescent; me sand he san	prown (5YR 4, ky, nonplasti e (pH 7.8). prown (5YR 6, rk reddish br nonstick, no	/3) moist; lo ic; slightly /3) dry; grav rown (5YR 3/4 onplastic; sl	ose dry and effervescent elly) mo st; ightly	į

APPENDIX B

AREA 52 TTR CLEAN SLATE 3: (2) SINGLE SHRUB

Legend

(2) = Single shrub L 15561 = Library number Lab 61985 = Laboratory number

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52	Shadscale, Atriplex confertifolia		14	1	5	51
	DEPTH		DE	SCRIPTION		
	0.9 to 0 cm L 15561 Lab 61985	Reddish brown (5Y dark reddish brow moist; nonsticky, mildly alkaline (n (5YR 3/4) n nonplastic;	moist; loose	dry and	
	0 to 5 cm L 15562 Lab 61986	reddish brown (5 nonsticky, nonpla	Reddish brown (5YR 5/3) dry; sandy loam, dark reddish brown (5 YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).			

AREA		SPECIES	PLOT	QUADRANT	QUADRATE	MOUND NO		
52	Shadscale, Atriplex co	onfertifolia	1 A	1	4	32		
	DEPTH		DE	SCRIPTION				
	0.9 to cm L 15564 Lab 61988	reddish brown (5Y nonsticky, nonpla	Reddish brown (5YR 5/3) dry; sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).					
	0 to 5 cm L 15565 Lab 61989	dark reddish brow nonsticky, nonpla	Light reddish brown (5YR 6/3) dry; sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).					

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52	Shadscale, Atriplex con	nfertifolia	2 A	1	1	8
	DEPTH		DE	SCRIPTION		
	3.1 to 0 cm L 15567 Lab 61991	Light reddish bro loam, dark reddis friable, nonstick mildly alkaline (h brown (5YR y, nonplasti	3/4) moist;	soft,	;
	0 to 5 cm L 15568 Lab 61992	Light reddish brown, (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				le
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SINGLE SHRUB (2) CLEAN SLATE 3

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Shadscale, Atriplex con	nfertifolia	2A	1	2	19
	DEPTH		OE	SCRIPTION		
	4.5 to 0 cm L 15570 Lab 61994 O to 5 cm L 15571 Lab 61995	Reddish brown (5) dark reddish brown onsticky, nonplamildly alkaline (Light reddish brown dark reddish onsticky, nonplamildly alkaline (pH 7.8)	YR 5/3) dry; wn (5YR 3/3) astic; slight (pH 7.6). own (5YR 6/3) sh brown (5YR astic; slight	gravelly san moist; soft, ly effervesc dry; gravel 3/4) moist;	friable, ent; ly sandy soft, friab	le,

SINGLE SHRUB (2) CLEAN SLATE 3

AREA	S	SPECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52	Winter Fat, Eurotia lan	ata .	3A	2	1	12
	DEPTH		DE	SCRIPTION		
	1.0 to 0 cm L 15573 Lab 61997 0 to 5 cm L 15574 Lab 61998	Reddish brown (5Y dark reddish brown nonsticky, nonpla mildly alkaline (Light reddish bro loam, dark reddis friable, nonstick moderately alkali	R 5/3) dry; n (5YR 3/4) stic; slight pH 7.6). wn (5YR 6/3) h brown (5YR y, nonplasti	gravelly sand moist; soft, ly effervesce dry; gravel 3/4) moist; c; slightly e	friable, ent; ly sandy soft,	;

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Shadscale, Atriplex con	nfertifolia	3A	2	4	37	
	DEPTH		DE	SCRIPTION		·	
	1.6 to 0 cm L 15576 Lab 62000	loam, dark reddis friable, nonstick	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent;				
	0 to 5 cm L 15577 Lab 62001	loam, dark reddis friable, nonstick	mildly alkaline (pH 7.6). Reddish brown (5YR 5/3) dry; gravelly fine sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				

SINGLE SHRUB (2) CLEAN SLATE 3

AREA		SPECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Shadscale, Atriplex confertifolia		4A	1	4	103	
	DEPTH		DE	SCRIPTION			
	3.0 to 0 cm L 15579 Lab 62003	Reddish brown (5Y dark reddish brow nonsticky, nonpla mildly alkaline (n (5YR 3/3) i stic; slight:	moist; soft,	friable.		
	0 to 5 cm L 15580 Lab 62004	loam, dark reddish	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; strongly effervescent; moderately				
İ							

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Shadscale, Atriplex co	onfertifoli <u>a</u>	4A	1	2	43	
	DEPTH		DE	SCRIPTION			
	0.9 to 0 cm L 15582 Lab 62006	Reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8)					
	0 to 5 cm L 15583 Lab 62007	Light reddish brown (5YR 6/3) dry; loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.2).					
				•			

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
- 52	Bud Sagebrush Artemisia sp		18	3	3	28
	DEPTH		DE	SCRIPTION		
	4.1 to 0 cm L 15585 Lab 62009 O to 5 cm L 15586 Lab 62010	Light reddish bro sandy loam, dark soft, friable, no effervescent; mil Light reddish bro sandy loam, dark soft, friable, no effervescent; mod	reddish brownsticky, nondly alkaline wm (5YR 6/3) reddish brownsticky, non	n (5YR 3/4) n plastic; slig (pH 7.8). dry; gravel; n (5YR 3/4) n plastic; stro	moist; ghtly ly moist; ongly	

SINGLE SHRUB (2) CLEAN SLATE 3

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Winter Fat Eurotia lans	Winter Fat Eurotia lanata		3	4	49	
	DEPTH		DESCRIPTION				
	1.9 to 0 cm L 15588 Lab 62012 L 15589 Lab 62013	Light reddish bro loam, dark reddis friable, nonstick mildly alkaline (wn (5YR 6/3) h brown (5YR y, nonplasti pH 7.8).	dry; gravel:	soft.	;	

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52	Bud Sagebrush, Artemisia spinescens		2В	1	2	26
	DEPTH		DE	SCRIPTION	-	
	1.6 to 0 cm L 15591 Lab 62015	Reddish brown (5Y dark reddish brow nonsticky, nonpla mildly alkaline (m (5YR 3/4) stic; slight	moist; soft,	friable,	
	0 to 5 cm L 15592 Lab 62016	Light recdish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervesent; mildly alkaline (pH 7.6).				

AREA	S	SPECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Bud Sagebrush, Artemisía spinescens		2В	1	3	41	
	DEPTH		DE	SCRIPTION	<u> </u>		
	0.9 to 0 cm L 15594 Lab 62018	reddish brown (5Y	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline				
	0 to 5 cm L 15595 Lab 62019	reddish brown (5Y	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; strongly effervescent; moderately alkaline				

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52	Shadscale, Atriplex co	Shadscale, Atriplex confertiofolia		1	5	67
	DEPTH		DE	SCRIPTION		
	1.8 to 0 cm L 15597 Lab 62021 O to 5 cm L 15598 Lab 62022	Reddish brown (5' dark reddish brown nonsticky, nonple alkaline (pH 7.8' Reddish brown (5' brown (5'YR 3/4) nonplastic; sligi alkaline (pH 8.2')	YR 5/3) dry; wn (5YR 3/3) astic; slight). YR 5/3) dry; moist; soft,	fine sandy l moist; soft, ly effervesc sandy loam, friable, non	friable, ent; mildly dark reddish sticky,	

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Bud Sagebrush, Artemisia spinescens		3в	1	2	27
	DEPTH		DE	SCRIPTION		
	1.8 to 0 cm L 15600 Lab 62024 O to 5 cm L 15601 Lab 62025	Reddish brown (5Y reddish brown (5Y nonsticky, nonpla mildly alkaline (Reddish brown (5Y dark reddish brown nonsticky, nonpla mildly alkaline (TR 5/3) dry; TR 3/3) moist stic; slight pH 7.6). R 5/3) dry; m (5YR 3/3) stic; slight	fine sandy log; soft, frially effervescongravelly sand	ole, ent; dy loam, friable.	

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO		
52	Shadscale, Atriplex confertifolia		4B	4	3	48		
	DEPTH		DE	DESCRIPTION				
	2.0 to 0 cm L 15603 Lab 62027	Reddish brown (5Y reddish brown (5Y nonplastic; sligh (pH 7.8).	R $3/3$) moist	; soft, frial	ole, nonstic	k ky,		
	0 to 5 cm L 15604 Lab 62028	Light reddish bro dark reddish brow nonsticky, nonpla alkaline (pH 8.4)	n (5YR 3/4) : stic; slight	moist; soft,	friable.	ely		

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Winter Fat, Eurotia lanata		4B	4	5	89
	DEPTH		DE	SCRIPTION		
	1.9 to 0 cm L 15606 Lab 62030	Reddish brown (5YR 5/3) dry; fine sandy loæm, dark reddish brown (5YR 3/3) moist; soft, friable, non- sticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.6).				
	0 to 5 cm L 15607 Lab 62031	Reddish brown (5YR 5/3) dry; fine sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.2).				

APPENDIX C

AREA 52 TTR CLEAN SLATE 3: (3) SHRUB COMPLEX

Legend:

(3) = Complex of two or more shrubs on the mound

L 15465 = Library number

Lab 61937 = Laboratory soil sample number

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Shadscale, Atriplex confertifolia Bud Sagebrush, Artemisia spinescens Winter Fat, Eurotia lanata		18	3	2	36
	DEPTH		DE	SCRIPTION		
	3.5 to 0 cm L 15465 Lab 61937	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				
	O to 5 cm L 15466 Lab 61938	Light reddish bro loam, dark reddis friable, nonstick vescent; mildly a	sh brown (5YR cy, nonplasti	t 3/3) moist; .c; slightly	soft,	
				•		

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Shadscale, Atriplex confertifolia		18	3	5	120
	DEPTH		DE	SCRIPTION		
	4.0 to 0 cm L 15468 Lab 61940	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/2) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				
	O to 5 cm L 15469 Lab 61941	Light reddish br sandy loam, dark moist; soft, fri slightly efferve	c reddish bro Lable, nonsti	wn (5YR 3/3) cky, nonplas	tic;	

AREA	sı	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Bud Sagebrus Artemisia Shadscale, Atriplex co Indian Ricego	onfertifolia rass,	3в	1	4	82
	DEPTH		DE	SCRIPTION		
	4.5 to 0 cm L 15477 Lab 61949	Reddish brown (5YR 5/3) dry; sandy loam, dark reddish brown (5YR 3/3 moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
	0 to 5 cm L 15478 Lab 61950	Light reddish b sandy loam, dar soft, friable, effervescent; m	k reddish bro nonsticky, n	own (5YR 3/3) onplastic; sl	moist; lightly	

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Bud Sagebrush, Artemisia spinescens Shadscale, Atriplex confertifolia Winter Fat, Eurotia lanata		2В	1	1	25
	DEPTH		DE	SCRIPTION		
	4.0 to 0 cm L 15471 Lab 61943	Reddish brown (5YR 5/3) dry; fine sandy loam, dark reddish brown (5YR 3/2) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
	0 to 5 cm L 15472 Lab 61944	Reddish brown (5 sandy loam, dark moist; soft, fri slightly efferve (pH 8.4).	k reddish bro iable, nonsti	own (5YR 3/3) cky, nonplas	tic;	

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Winter Fat, Eurotia lanata		28	1	1	15
	DEPTH		DE	SCRIPTION		
	2.5 to 0 cm L 15474 Lab 61946	Light reddish brown (5YR 6/3) dry; sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.2).				
	0 to 5 cm L 15475 Lab 61947	Light reddish b dark reddish bro friable, nonsti- effervescent; m	own (5YR 3/3) cky, nonplast	moist; soft	,	
				•		

SHRUB COMPLEX (3) CLEAN SLATE 3

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Bud Sagebrush, Artemisia spinescens Shadscale, Atriplex confertifolia		3B	1	3	57
	ОЕРТН		DE	SCRIPTION		
	2.1 to 0 cm L 15480 Lab 61952	Reddish brown (5YR 5/3) dry; fine sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
	0 to 5 cm L 15481 Lab 61953	Light reddish by loam, dark redding moist; soft, frislightly efferved (pH 8.2).	ish brown (5) Lable, nonsti	(R 3/4) icky, nonplas	tíc;	

AREA	SI	PECIES	PLOT	QUADRANT	STARGAUD	MOUND NO.
52	Bud Sagebrush, Artemisia spinescens Shadscale, Atriplex confertifolia		4B	4	4	57
	DEPTH		DE	SCRIPTION		
	3.8 to 0 cm L 15483 Lab 61955 O to 5 cm L 15484 Lab 61956	Reddish brown (5YR 5/3) dry; fine sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0). Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
				•		

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.	
52	Winter fat, Eurotia la Indian Riceg		4B	4	2	33	
	DEPTH		DE	SCRIPTION			
	1.5 to 0 cm L 15486 Lab 61958	reddish brown (Reddish brown (5YR 5/3) dry; fine sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
	0 to 5 cm L 15487 Lab 61959	Reddish brown (reddish brown (nonsticky, nonp alkaline (pH 8.	5YR 3/3) mois lastic; slig	st; soft, fri	able,	ately	

AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Bud Sagebrush, <u>Artemísia</u> spinescens		1A	1	1	16
	DEPTH		DE	SCRIPTION		
	7.7 to 0 cm L 15489 Lab 61961	Reddish brown (5YR 5/3) dry; fine sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
	0 to 5 cm L 15490 Lab 61962	Reddish brown (loam, dark redd soft, friable, slightly efferv alkaline (pH 8.	ish brown (5 nonsticky, n escent; mode	YR 3/3) moist onplastic;	::	

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Bud Sagebrush, Artemisia spinescens		1A	1	5	83
	DEPTH		DE	SCRIPTION		
	3.5 to 0 cm L 15492 Lab 61964	Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
	0 to 5 cm L 15493 Lab 61965	Light reddish by sandy loam, darl moist; soft, from slightly efferved (pH 8.0).	k reddish bro iable, nonsti	own (5YR 3/3) cky, nonplas	tic;	

AREA	sı	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Shadscale, Atriplex confertifolia Winter Fat, Eurotia lanata Bud Sagebrush, Artemisia spinscens		2A	ì	2	32
	DEPTH		DE	SCRIPTION		
	3.1 to 0 cm L 15495 Lab 61967	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; strongly effervescent; moderately alkaline (pH 8.4).				
	0 to 5 cm L 15496 Lab 61968	Light reddish b gravelly sandy (5YR 3/4) moist nonplastic; vio moderately alka	loam, dark ro ; soft, frial lently effer	eddish brown ble, nonstick vescent;	у,	
				•		

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Shadscale, Atriplex confertifolia Indian Ricegrass, Oryzopsis hymenoides Bud Sagebrush Artemisia spinescens		2A	1	1	4
	DEPTH		DE	SCRIPTION		
	1.9 to 0 cm L 15498 Lab 61970	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
	0 to 5 cm L 15499 Lab 61971	Reddish brown (! loam, dark redd: soft, friable, sightly efferved (pH 8.0).	ish brown (5) nonsticky, no	PR 3/3) moist onplastic;	;	

SHRUB COMPLEX (3) CLEAN SLATE 3

AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.	
52	Shadscale, Atriplex confertifolia Winter Fat, Eurotia lanata		3A	2	1	9	
	DEPTH	DESCRIPTION					
	1.4 to 0 cm L 15501 Lab 61973	Reddish brown (loam, dark redd soft, friable, effervescent; m	ish brown (5) nonsticky, no	YR 3/3) moist onplastic; sl	ightly		
	0 to 5 cm L 15502 Lab 61974	Reddish brown (loam, dark redd soft; friable, slightly efferv (pH 8.2).	ish brown (5) nonsticky, no	YR 3/3) moist onplastic;	•		

SHRUB COMPLEX (3) CLEAN SLATE 3

AREA	SF	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Bud Sagebrusl Artemisia s Winter Fat, Eurotia lar Shadscale Atriplex co	spinescens	3A	2	3	52
	DEPTH	DESCRIPTION				
	1.3 to 0 cm L 15504 Lab 61976	Reddish brown (loam, dark redd soft; friable, s slightly efferve (pH 8.0).	ish brown (5) nonsticky, no	YR 3/3) moist onplastic;	•	
	0 to 5 cm L 15505 Lab 61977	Light reddish be fine sandy loam moist; soft, freshightly efferve (pH 8.2).	, dark reddi: iable, nonst:	sh brown (5YF icky, nonplas	1 3/4) stic;	

SHRUB COMPLEX (3) CLEAN SLATE 3

AREA	Si	PECIES	PLOT	QUADRANT	STARGAUD	MOUND NO.
52	Shadscale, Atriplex co	onfertifoli <u>a</u>	4.4	1	l	1
	DEPTH	DESCRIPTION				
	2.0 to 0 cm L 15507 Lab 61979	Light reddish b gravelly sandy (5YR 3/4) moist nonplastic; slig alkaline (pH 8.0	loam, dark re ; soft, frial ghtly efferve	eddish brown ole, nonstick		
	O to 5 cm L 15508 Lab 61980	Light reddish b gravelly sandy: (5YR 3/4) moist nonplastic; sli moderately alka	loam, dark re ; soft, frial ghtly efferve	eddish brown ole, nonstick escent;	xy,	

SHRUB COMPLEX (3) CLEAN SLATE

Shadscale, Atriplex confertifolia Winter Fat, Eurotia lanata DESCRIPTION 1.9 to 0 cm L 15510 Lab 61982 Oto 5 cm L 15511 Lab 61983 Light reddish brown (5YR 6/3) dry; fine sandy noist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0). Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.2).	AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
1.9 to 0 cm L 15510 Lab 61982 O to 5 cm L 15511 Lab 61983 Reddish brown (5YR 5/3) dry; fine sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0). Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/4) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline	52	Atriplex c Winter Fat,		4A	1	4	66
L 15510 Lab 61982 loam, dark reddish brown (5YR 3/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0). Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/4) Lab 61983 moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline		DEPTH	DESCRIPTION				
L 15511 sandy loam, dark reddish brown (5YR 3/4) Lab 61983 moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline		L 15510	loam, dark reddi soft, friable, r slightly efferve	ish brown (5% nonsticky, no	TR 3/3) moist onplastic;		
		L 15511	sandy loam, dark moist; soft, fri slightly efferve	c reddish bro iable, nonsti	wn (5YR 3/4) .cky, nonplas	tic;	

APPENDIX D

AREA 52 TTR CLEAN SLATE 3: (4) Animal Mounds

Legend:

(4) = Animal mound number L 15078 = Library number

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52			1B	3	3	1
	DEPTH		DE	SCRIPTION		
	1.1 to 0 cm L 15078	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 5/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				
	0 to 5 cm L 15079	Very pale brown (10YR 7/3) dry; gravelly sandy loam, grayish brown (10YR 5/2) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				
	:					

ANIMAL MOUND (4) CLEAN SLATE 3

AREA	Si	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52			2В	1	4	1
	ОЕРТН	DESCRIPTION				
	5.0 to 0 cm L 15081	Very pale brown (10YR 5/3) mois slightly efferv	t; soft, fri	able, nonstic	ky, nonplas	tic;
	0 to 5 cm L 15082	Very pale brown (10YR 7/3) dry; sandy loam, brown (10YR 5/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
! !						

AREA	s	PECIES	PLOT	QUADRANT	QUACRATE	MOUND NO
52			2В	1	5	2
	DEPTH		DE	SCRIPTION		
	4.3 to 0 cm L 15084	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
	0 to 5 cm L 15085	Light gray (10YI moist; soft, fri effervescent; mo	iable, nonsti	lcky, nonplas	tic; slightl	6/3) .y

T	ATTAL HOUR (4) OBERT SERIE 3					
AREA	Si	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52			3В	1	l	1
	DEPTH		DE	SCRIPTION		
	4.4 to 0 cm L 15087	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				
	0 to 5 cm L 15088	Light reddish b dark reddish gr sticky, nonplas (pH 7.8).	ay (5YR 4/2)	moist; soft	, friable, n	on-

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52			3B	1	5	2
	DEPTH	DESCRIPTION				
	3.2 to 0 cm L 15090	Pink (5YR 7/3) dry; sandy loam, reddish brown (5YR 4/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				
	0 to 5 cm L 15091	Reddish brown (5) reddish gray (5) nonplastic; slig (pH 8.0).	(R 4/2) moist	; soft, fria	ble, nonstic	rk ky,

	ANIMAL MOUND (4) CLEAN SLATE 3					
AREA	Si	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52			48	4	4	1
	DEPTH	DESCRIPTION				
	2.7 to 0 cm L 15093	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; soft, friable, nonsticky, nonplastic; strongly effervescent; moderately alkaline (pH 8.0).				
	0 to 5 cm L 15094	Pink (5YR 7/3) dry; gravelly sandy loam, reddish brown (5YR 4/3) moist; soft, friable, nonsticky, nonplastic; strongly effervescent; moderately alkaline (pH 8.0).				

ANIMAL MOUND (4) CLEAN SLATE 3

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52			4B	4	4	3	
	DEPTH	DESCRIPTION					
	2.8 to 0 cm L 15096	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; soft, friable, nonsticky, nonplastic; strongly effervescent; mildly alkaline (pH 7.8).					
	0 to 5 cm L 15097	Pink (5YR 7/3) dry; gravelly sandy loam, reddish brown (5YR 4/3) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).					

AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52			1 A	1	1	1
	DEPTH	DESCRIPTION				
	6.6 to 0 cm L 15099	Pink (5YR 7/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				
	0 to 5 cm L 15100	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; strongly effervescent; mildly alkaline (pH 7.8).				
		-				

ANIMAL MOUND (4) CLEAN SLATE 3

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52			1A	1	2	2
	DEPTH		DE	SCRIPTION		
	4.0 to 0 cm L 15102	Pink (5YR 7/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; violently effervescent; mildly alkaline (pH 7.8).				
	0 to 5 cm L 15103	Pinkish gray (5YR 7/2) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic, violently effervescent; middly alkaline (pH 7.8).				
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				•		

ANIMAL MOUND (4) CLEAN SLATE 3

AREA	Sf	PECIES	PLOT	QUADRANT	DUADRATE	MOUND NO	
52			2 A	1	4	1	
	DEPTH		DESCRIPTION				
	2.2 to 0 cm L 15105	Reddish brown (5YR 5/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/2) moist; soft, friable, non-sticky, nonplastic; strongly effervescent; mildly alkaline (pH 7.8).					
	0 to 5 cm L 15106	Light reddish b dark reddish br sticky, nonplas (pH 7.8).	own (5YR 3/2) moist; sof	t, friable,	non-	

	ANIMAL MOUND (4) CLEAN STATE 3							
AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO		
52			2 A	I	5	2		
	DEPTH		DE	SCRIPTION				
	3.3 to 0 cm L 15108	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; violently effervescent; moderately alkaline (pH 8.0).						
	0 to 5 cm L 15109	Light reddish b dark reddish gr nonplastic; str (pH 8.0).	ay (5YR 4/2)	moist; soft,	friable, no	nsticky,		

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52			3 A	2	4	3
	DEPTH		DE	SCRIPTION		
	3.7 to 0 cm L 15112	Pink (5YR 7/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; strongly effervescent; moderately alkaline (pH 8.2).				
	0 to 5 cm L 15113	Pinkish gray (5YR 7/2) dry; fine sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; strongly effervescent; moderately alkaline (pH 8.2).				

ANIFAL MOUND (4) CLEAN STATE 3								
AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO		
52			3A	2	5	5		
	DEPTH		DE	SCRIPTION				
	5.3 to 0 cm L 15114	Pinkish gray (5YR 7/2) dry; fine sandy loam, reddish brown (5YR 4/3) moist; soft, friable, nonsticky, nonplastic violently effervescent; moderately alkaline (pH 8.4).						
	0 to 5 cm L 15115	Pinkish gray (5YR 7/2) dry; sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; violently effervescent; moderately alkaline (pH 8.4).						

AREA	sı	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO		
52			4A	1	1	1		
	DEPTH		DE	DESCRIPTION				
	3.0 to 0 cm L 15117	Pinkish gray (5YR 7/2) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, non-sticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.2).						
	O to 5 cm L 15118	Pinkish gray (5' (5YR 4/2) moist slightly efferv	; soft, fria	ble, nonstick	cy, nonplast:	ic;		

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	моина но
52			4A	1	5	3
	DEPTH		DE	SCRIPTION		
	4.9 to 0 cm L 15120	Pinkish gray (5YR 7/2) dry; fine sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.2).				
	0 to 5 cm L 15121	Pinkish gray (5YR 7/2) dry; fine sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.2).				

APPENDIX E

AREA 52 TTR CLEAN SLATE 3:
(5) DIFFUSED GRASS, GALLETA GRASS (HILARIA JAMESII)

Legend:

(5) = Diffused grass L 15162 = Library number lst 0 to 5 cm is for 5 cm under the mound 2nd 0 to 5 cm is for 5 cm in base area between mounds

 ${\rm A}_1$ horizon. - This is a surface mineral soil horizon, usually dark in color, which has a relatively high content of organic matter mixed with mineral matter.

A2 horizon. - This surface or subsurface horizon, usually lighter in color than the underlying horizon, has lost clay minerals, iron, or aluminum, or all three, with the resultant concentration of the more resistant minerals. It is a horizon of eluviation - of leaching of materials out in solution and suspension.

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Galleta Grass, Hilaria jame	1A 1		3	4	
Horizon	DEPTH		DE	SCRIPTION		
Aı	5.3 to 0 cm L 15162	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.6).				
A ₁	0 to 5 cm L 15166	Pink (SYR 7/3) dry; very fine sandy loam, reddish brown (SYR 4/3) moist; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.2).				
Aı	0 to 5 cm L 15170	Light reddish brownonsticky, nonplasticky, selferves	m (5YR 3/2) istic, few fi	moist; soft, ne interstit	friable, ial pores;	

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO
52	Galleta Grass, Hilaria jamesii		1A	1	4	5
Horizon	DEPTH		DE	SCRIPTION		
Al	3.0 to 0 cm L 15173	Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/2) moist; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.6).				
A ₁	0 to 5 cm L 15177	Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/2) moist; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.6).				
Al	O to 5 cm L 15181	Light reddish br reddish brown (5 nonplastic; few effervescent; mi	own (5YR 6/3 YR 3/2) mois fine interst) dry; sandy t; soft, fri- itial pores;	able, nonsti	cky,

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO
52	Galleta Grass, Hilaria jamesii		2A	1	4	2
Horizon	DEPTH		DE	SCRIPTION		
A ₁	1.6 to 0 cm L 15185	Light reddish brown (5YR 6/3) dry; very fine sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, non-sticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				n-
A ₁	0 to 5 cm L 15189	Light reddish brown (5YR 6/3) dry; sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, non-sticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 7.8).				
Aı	0 to 5 cm L 15193	Light reddish br dark reddish gra sticky, nonplast effervescent; mi	y (5YR 4/2) : ic; few fine	moist; soft, interstitial	friable, nor	n-

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Galleta Grass, <u>Hilaria jamesii</u>		2A	1	1	1
Horizon	DEPTH		DE	SCRIPTION		
Al	1.5 to 0 cm L 15198	Light reddish brown (5YR 6/3) dry; very fine sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, non-plastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.6).				y, non-
A 1	0 to 5 cm L 15201	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, non-plastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.8).				
A ₁	0 to 5 cm L 15205	Light reddish bro reddish gray (5Y) plastic; few fine moderately alkal:	R 4/2) moist; e interstitia	soft, friab al pores; sli	le, nonstick	y, non-

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO
52	Calleta Grass, Hilaria jamesii		3A	2	5	7
Horízon	DEPTH		DESCRIPTION			
Al	.9 to 0 cm L 15211	Light reddish brown (5YR 6/3) dry, gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft to loose, friable to loose, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8).				
Al	0 to 5 cm L 15215	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, non-plastic; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	0 to 5 cm L 15219	Light reddish br reddish gray (5Y plastic; slightl	R 4/2) moist	; soft, friab	le, nonstick	ty, non-

AREA	Si	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Galleta Grass, Hilaria jame		3A	2	2	3	
Horizon	DEPTH		DE	SCRIPTION			
A ₁	1.0 to 0 cm L 15222	reddish gray (5Y	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, non-plastic; slightly effervescent; mildly alkaline (pH 7.8).				
A ₁	0 to 5 cm L 15226	Light reddish br reddish gray (5Y plastic; slightl	own (5YR 6/3 R 4/2) moist) dry; sandy ; soft, frial	loam, dark	ev non-	
A ₁	O to 5 cm L 15230	Light reddish br reddish brown (5 plastic; slightl	YR 3/2) mois	t: soft. fria	ble nonsti	cky, non- pH 8.0).	

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Galleta Grass, Hilaria jawe		<u>sii</u> 4A 1			1	
Horizon	DEPTH		DE	SCRIPTION			
A ₁	l.0 to 0 cm L 15233	reddish brown (Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/2) moist; soft, friable, nonsticky, no plastic; slightly effervescent; mildly alkaline (pH 7.8).				
A ₁	0 to 5 cm L 15237	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, non-plastic; slightly effervescent; moderately alkaline (pH 8.0).					
Al	О to 5 cm L 15241	Light reddish br gravelly loamy s to loose, loose, moderately alkal	own (5YR 6/3 and, reddish nonsticky,) dry; gravel brown (5YR & nonplastic; s	ly sandy loa //3) moist;	am to soft	

Galleta Grass, Hilaria jamesii	AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
Al 1.0 to 0 cm L 15247 Light reddish brown (5YR 6/3) dry; gravelly sandy loam to gravelly loamy sand, reddish brown (5YR 4/3) moist; soft to loose, loose, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8). Al 0 to 5 cm L 15251 Light reddish brown (5YR 6/3) dry; gravelly sandy loam to gravelly loamy sand, dark reddish brown (5YR 3/2) to very dark grayish brown (10YR 3/2) moist; soft to loose, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0). Al 0 to 5 cm L light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 3/2) moist; soft, friable, nonsticky, non-	52			4 A	1	5	2	
gravelly loamy sand, reddish brown (5YR 4/3) moist; soft to loose, loose, nonsticky, nonplastic; slightly effervescent; mildly alkaline (pH 7.8). Al	Horizon	DEPTH		ĎE	SCRIPTION			
gravelly loamy sand, dark reddish brown (5YR 3/2) to very dark grayish brown (10YR 3/2) moist; soft to loose, loose, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0). Al	A ₁		gravelly loamy s to loose, loose,	gravelly loamy sand, reddish brown (5YR 4/3) moist; soft to loose, loose, nonsticky, nonplastic; slightly effervescent;				
L 15255 reddish gray (5YR 3/2) moist; soft, friable, nonsticky, non-	Al		gravelly loamy s dark grayish bro nonsticky, nonpl	Light reddish brown (5YR 6/3) dry; gravelly sandy loam to gravelly loamy sand, dark reddish brown (5YR 3/2) to very dark grayish brown (10YR 3/2) moist; soft to loose, loose, nonsticky, nonplastic; slightly effervescent; moderately				
	Aı		Light reddish br reddish gray (5Y	own (5YR 6/3 R 3/2) moist	; soft, frial	ole, nonstich	ky, non-	

DIFFUSED GRASS (5) CLEAN SLAT 3

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52	Galleta Grass, Hilaria jame		18	3	5	9
Horizon	DEPTH		DE	SCRIPTION		
Al	0.8 to 0 cm L 15258	Light reddish br to gravelly loam soft to loose, l vescent; moderat	y sand, dark oose, nonsti	reddish brow cky, nonplast	vn (5YR 3/2)	moist;
Al	0 to 5 cm L 15260	Light reddish br dark reddish bro (10YR 4/2) moist slightly efferve	wn (5YR 3/3) ; soft, fria	to dark gray ble, nonstick	vish brown cy, nonplast:	
Al	O to 5 cm L 15262	Light reddish br to gravelly loam soft to loose, le vescent; moderat	y sand, dark oose, nonsti	reddish gray cky, nonplast	(5YR 4/2) r	moist;

AREA	SF	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Galleta Grass, Hilaria jame		18	3	4	3	
Horizon	DEPTH		DE	SCRIPTION			
A ₁	0.1 to 0 cm L 15264	reddish brown (5	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/2) moist; soft, friable, nonsticky, nonplastic; slightly effervescent; mildly alkaline				
A ₁	0 to 5 cm L 15268	Light reddish br reddish gray (5Y nonplastic; slig (pH 8.0).	\mathbb{R} 4/2) moist	; soft, frial	ole, nonstic	kv.	
Al	0 to 5 cm L 15272	Light reddish br dark reddish gra nonsticky, nonpl alkaline (pH 7.8	y (5YR 4/2) astic; sligh	moist; soft,	friable,	•	

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Galleta Grass, Hilaria jamesii		2В	1	1	1	
Horizon	DEPTH		ΟE	SCRIPTION			
A ₁	1.0 to 0 cm L 15276	dark reddish gra	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.8).				
Aı	O to 5 cm L 15277	Light reddish br dark reddish gra nonsticky, nonpl slightly efferve	y (5YR 4/2) : astic; few f	moist; soft, ine interstit	friable, ial pores;	am,	

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
52	Galleta Grass Hilaría jame		2В	1	2	2
Horizon	DEPTH		DE	SCRIPTION		
Α1	2.0 to 0 cm L 15278	Light reddish br dark readish gra nonsticky, nonpl slightly efferve	ay (5YR 4/2) Lastic; few f	moist; soft, ine intersti	friable, tial pores:	
Al	0 to 5 cm L 15282	Light reddish br dark reddish gra nonsticky, nonpl slightly efferve	ıy (5YR 4/2) .astic; few f	moist; soft, ine intersti	friable, tial pores:	am,
A ₁	O to 5 cm L 15286	Light reddish br dark reddish gra nonsticky, nonpi slightly efferve	y (5YR 4/2): astic; few f	moist; soft, ine interstit	friable, :ial pores:	am,

AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Galetta Grass, Hilaria jame		3в	1	1	4	
Horizon	DEPTH		DE	SCRIPTION			
A ₁	1.0 to 0 cm L 15290	Light reddish bro dark reddish bro sticky, nonplast effervescent; mi	wn (5YR 3/2) ic; few fine	moist; soft, interstitial	friable, no	on~	
Aı	0 to 5 cm L 15291	dark reddish gra sticky, nonplast	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, non-sticky, nonplastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.8).				
Aı	0 to 5 cm L 15292	Light reddish br dark reddish gra sticky, ronplast effervescent; mi	y (5YR 4/2) r ic; few fine	moist; soft, interstitial	friable, nor	1-	

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Galleta Grass, Hilaria jame		3в	1	2	6	
Horizon	DEPTH		DE	SCRIPTION			
Aı	1.5 to 0 cm L 15293	dark reddish bro sticky, nonplast	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, non-sticky, nonplastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.8).				
A ₁	0 to 5 cm L 15295	Light reddish brown (5YR 6/3) dry; gravelly sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, non-sticky, nonplastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.8).					
Aı	0 to 5 cm L 15297	Light reddish br dark reddish gra sticky, nonplast effervescent; mi	y (5YR 4/2) i ic; few fine	moist; soft, interstitial	friable, nor	n-	

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
52	Galleta Grass, Hilaria jamesii		4B	4	1	1	
Horizon	DEPTH		DE	SCRIPTION			
A ₁	2.0 to 0 cm L 15300	dark reddish bro sticky, nonplast	Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish brown (5YR 3/3) moist; soft, friable, non-sticky, nonplastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.8).				
Aı	0 to 5 cm L 15304	brown (5 YR 3/3) plastic; few fin	Reddish brown (5YR 5/3) dry; fine sandy loam, dark reddish brown (5 YR 3/3) moist; soft, friable, nonsticky, non-plastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.8).				
A ₁	0 to 5 cm L 15308	Light reddish br dark reddish gra sticky, nonplast effervescent; mi	own (5YR 6/3 y (5YR 4/2) ic; few fine	moist; soft, interstitial	friable, no	n-	

DIFFUSED GRASS (5) CLEAN SLATE 3

AREA	Si	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
52	Galleta Grass, Hilaria jamesii		4B	4	1	2
Horizon	DEPTH		DE	SCRIPTION		
A ₁	3.5 to 0 cm L 15311	Reddish brown (5YR 5/3) dry; fine sandy loam, dark reddish brown (5YR 3/2) moist; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; mildly alkaline.				
A ₁	0 to 5 cm L 15315	Light reddish brown (5YR 6/3) dry; fine sandy loam, dark reddish gray (5YR 4/2) moist; soft, friable, non-sticky, nonplastic; few fine interstitial pores; slightly effervescent; mildly alkaline (pH 7.8).				
Aı	0 to 5 cm L 15319	Light reddish br reddish gray (5Y sticky, nonplast effervescent; mi	own (5YR 6/3 R 4/2) moist ic; few fine) dry; sandy ; soft, friab interstitial	le, non-	ghtly

APPENDIX F

AREA 13: (2) FOR SINGLE SHRUB

Legend:

(2) = Single shrub on the mound L 15697 = Library number Lab 62247 = Laboratory soil sample number Soil profile #402 is taken from Area 13 Soil Survey Map

It should be pointed out that some of the soil horizons in this Appendix F were assigned no numbers by Reynolds Electrical and Engineering Co. personnel when the work was done in the field.

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
13	Winter Fat, Eurotia lanata		1A	3	4	6
Horizon	DEPTH	DESCRIPTION				
A ₁	1.4 to 0 cm L 15697 Lab 62247	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, non-plastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₂	2.5 to 5 cm	Very pale brown (10YR 4/3) moist; friable, nonstick vesicular pores; alkaline (pH 8.4)	; strong coar ky, nonplasti strongly eff	se platy str c; many fine	ucture; soft and medium	,

AREA	Si	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.	
13	Winter Fat, Eurotía lan	ata	1 A	3	1	1	
Horizon	DEPTH		DE	SCRIPTION			
A ₁	2.3 to 0 cm L 15700 Lab 62250	(10YR4/3) moist; single grain str few fine interst	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₁	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
A ₂	2.5 to 5.0 cm	Very pale brown (10YR 4/3) moist friable, nonstict vesicular pores; (pH 8.4).	; strong coar ky, nonplasti	rse platy str ic; many fine	ucture; soft and medium		

AREA	SF	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
13	Winter Fat, Eurotia lanata		2A	3	4	16
Horizon	DEPTH		DE	SCRIPTION		
A ₁	2.9 to 0 cm L 15703 Lab 62253	Pale brown (10YR 6/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₁	0 to 2.5 cm	Pale brown (10YR 6/3) dry; sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft to loose, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₁	2.5 to 5.0 cm	Pale brown (10YR 6/3) dry; sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.2).				

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
13	Winter Fat, Eurotia lanata		2A	3	1	5
Horizon	DEPTH		DE	SCRIPTION		
A ₁	l to 0 cm L 15706 Lab 62256	Pale brown (10YR 6/3) dry; fine sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; common fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₁	0 to 2.5 cm	Pale brown (10YR 6/3) dry; sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky, nonplastic; common fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	2.5 to 5.0 cm					

AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
13	Winterfat, Eurotia lanata		3A	1	3	4
Horizon	DEPTH		DE	SCRIPTION		
Al	2.3 to 0 cm L 15709 Lab 62259	Brown (10YR 5/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Al	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₂	2.5 to 5.0 cm	Very pale brown (moist; strong coa nonplastic; many effervescent; mod	arse platy st fine and med	ructure; sof	t, friable, r pores; sl:	nonsticky,

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
13	Shadscale, Atriplex confertifolia		3A	1	5	10
Horizon	DEPTH		DE	SCRIPTION		
AI	1.8 to 0 cm L 15712 Lab 62262	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₁	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A	2.5 to 5.0 cm	Pale brown (10YR 6 weak fine subangul soft, friable, nor pores; slightly ef	lar blocky br isticky, none	eaking to si lastic: few	ngle grain s fine interst	tructure;

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO	
13	Winter Fat, Eurotia lanata		4 <u>A</u>	1	2	7	
Horizon	DEPTH		DE	SCRIPTION			
A ₁	3.1 to 0 cm L 15715 Lab 62265	structure; soft,	Brown (10YR 5/3) dry; fine sandy loam, dark grayish brown (1CYR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8 0)				
A 2	0 to 2.5 cm	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; moderate medium platy; soft, friable, nonsticky, nonplastic; many fine and medium vesicular pores; slightly effervescent; moderately alkaline (pH 8.0).					
A2	2.5 to 5.0 cm	Pale brown (10YR strong coarse pla nonplastic; many effervescent; mod	ity structure fine and med	; soft, frial	ble, monstic	less	

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
1 3	Shadscale, Atriplex cor	nfertifolia	4.A	1	5	20
Hori z on	DEPTH		DE	SCRIPTION		
A ₁	2.8 to 0 cm L 15718 Lab 62268	brown (10YR 4/2) structure; soft, fine interstitial	Brown (10YR 5/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).			
A ₂	0 to 2.5 cm	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, friable, nonsticky, nonplastic; many fine and medium vesicular pores; slightly effervescent; moderately alkaline (pH 8.0).				
A 2	2.5 to 5.0 cm	Pale brown (10YR strong coarse pla nonplastic; many effervescent; mod	ty structure fine and med	; soft, frial	ole, nonstict pores; str	αv,

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
13	Winter Fat, Eurotia lanata		5A	2	2	16	
Horizon	DEPTH		DE	SCRIPTION	/	<u> </u>	
Aı	1.4 to 0 cm L 15721 Lab 62271	Pale brown (10YR 6/3) dry; gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
Al	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.2).					
A ₁	2.5 to 5.0 cm	moist; weak fine structure; soft, interstitial pore	Pale brown (10YR 6/3) dry; sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitual pores; strongly effervescent; moderately alkaline (pH 8.2).				

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO
13	Winter Fat, Eurotia lana	inter Fat, Eurotia lanata		2	4	25
Horizon	DEPTH		DE	SCRIPTION		
A ₁	1.5 to 0 cm L 15724 Lab 62274	Brown (10YR 5/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstital pores; slightly effervescent; moderately alkaline (pH 8.0).				
Al	0 to 2.5 cm	Brown (10 R 5/3) dry; fine sandy loam, brown (10 R 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Al	2.5 to 5.0 cm	Brown (10YR 5/3) of moist; weak fine s nonsticky, nonplan effervescent; mode	dry; fine sar subangular bl stic; few fir	ndy loam, bro locky structu ne interstiti	own (10YR 4/3 are; soft, fr	ishle

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO.
13	Winter Fat, Eurotia lanata		6A	1	1	1
Horizon	DEPTH		DE	SCRIPTION		
A ₁	2.0 to 0 cm L 15727 Lab 62277	Brown (10YR 5/3) dry; gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₂	0 to 2.5 cm	Very pale brown (10YR 7/3) dry; loam, brown (10YR 4/3) moist; strong coarse platy structure; soft, friable, nonsticky, nonplastic; many fine and medium vesicular pores; violently effervescent; moderately alkaline (pH 8.2).				
A ₂	2.5 to 5.0 cm	Very pale brown (moist; strong cosnonsticky, nonplapores; violently (pH 8.2).	erse platy st stic; many f	ructure; softine and media	t, friable, um vesicular	

SHRUB SINGLE (2)

AREA	SF	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
13	Winter Fat, Eurotia lanata		6A	1	3	21
Horízon	DEPTH		DE	SCRIPTION		
Al	3.0 to 0 cm 1 15730 Lab 62280	Brown (10YR 5/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				ļ
A ₂	0 to 2.5 cm	Very pale brown (10YR 7/3) dry; sandy loam, brown (10YR 4/3) moist; moderate coarse platy structure; soft friable, nonsticky, nonplastic; common fine and medium vesicular pores; violently effervescent; moderately alkaline (pH 8.2).				
A ₂	2.5 to 5.0 cm	Very pale brown (10YR 4/3) moist friable, nonstic vesicular pores; alkaline (pH 8.2	; moderate c ky, nonplast violently e	oarse platy : ic; common fi	structure; so	oft

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO.
13	Bud Sagebrush, Artemisia sp		18	3	1	4
Horizon	DEPTH		DE	SCRIPTION		
A ₁	2.5 to 0 cm L 15733 Lab 62283	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure, soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₁	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.2).				
A ₂	2.5 to 5.0 cm	Very pale brown ((10YR 4/3) moist; soft, friable, no medium venicular moderately alkali	moderate med nsticky, non pores; strong	lium platy st plastic; many	ructure; fine and	

AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
13	Bud Sagebrush, Artemisia spinescens		18	3	2	6
Horizon	DEPTH		DE	SCRIPTION		
Al	3.7 to 0 cm L 15736 Lab 62286	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.2).				
A ₂	2.5 to 5.0 cm	Very pale brown (10YR 4/3) moist; structure; soft, fine and medium we moderately alkali	moderate me friable, non esicular por	dium subangu sticky, nonp es; strongly	lar blocky lastic; many	
		ļ	<u>-</u>			

	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO.
13	Small Rabbitbrush, Chrysothamnus viscidiflorus		2В	1	3	13
Horizon	DEPTH		DE	SCRIPTION		
1 1	5 to 0 cm L 15739 Lab 62289	Pale brown (10YR 6/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	O to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine incerstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A2	2.5 to 5.0 cm	Very pale brown (10YR 4/3) moist; soft, friable, no medium vesicular moderately alkali	strong coar nsticky, non pores; stron	se platy str plastic; man gly efferves	ucture; y fine and	

AREA	SF	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
13		Small Rabbitbrush, Chrysothamnus viscidiflorus		1	5	39
Horizon	DEPTH ,		DE	SCRIPTION		
Al	2.3 to 0 cm L 15742 Lab 62292	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitual pores; slightly effervescent; moderately alkaline (pH 8.0).				
Al	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A2	2.5 to 5.0 cm	Very pale brown moist; moderate on nonsticky, nonplayones; strongly of ph 8.4).	coarse platy astic; many	structure; s fine and medi	oft, friable um vesicula	e,

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO
13	Winter Fat, Eurotia lanata		3B	4	1	2
Hor1zon	DEPTH		DE	SCRIPTION		
Al	1.8 to 0 cm L 15796 Lab 62343	Pale brown (10YR 6/3) dry; fine sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; common fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				non
A ₂	0 to 2.5 cm	Very pale brown (10YR 7/3) dry; loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, friable, nonsticky, nonplastic; many fine and medium vesicular pores; slightly effervescent; moderately alkaline (pH 8.2).				
A ₂	2.5 to 5.0 cm	Very pale brown (10YR 7/3) dry; loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, friable, nonsticky, nonplastic; many fine and medium vesicular pores; strongly effervescent; moderately alkaline (pH 8.2).				
				,		

AREA	SF	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
13	Winter Fat Eurotia lanata		3в	4	1	4
Horizon	DEPTH		DE	SCRIPTION		
A ₁	3.6 to 0 cm L 15799 Lab 62346	Pale brown (10YR 6/3) dry; fine sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; common fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				mon
A ₂	0 to 2.5 cm	Very pale brown (10YR 7/3) dry; loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, friable, nonsticky, nonplastic; many fine and medium vesicular pores; slightly effervescent; moderately alkaline (pH 8.2).				
A ₂	2.5 to 5.0 cm	Very pale brown (10YR 4/2) moist friable, nonstic vesicular pores; alkaline (pH 8.2	; moderate m ky, nonplast slightly ef	edium platy s ic; many fine	structure; so	oft,

	SHRUD SINGLE (2)							
AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO		
13	Winter Fat, Eurotia lanata		4B	2	1	7		
Horizon	DEPTH		DE	SCRIPTION				
A ₁	3.8 to 0 cm L 15802 Lab 62349	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; very weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).						
Aı	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; very weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).						
A2	2.5 to 5.0 cm		(10YR 7/3) di ; weak medium ky, nonplasti strongly efi	ry; loam, bro n platy struction many fine	own ture; soft,			

SHRUB SINGLE (2)

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
13	Fourwing Salt Atriplex ca	•	4B	2	4	47
Horizon	DEPTH		DE	SCRIPTION		
Al	5 to 0 cm L 15805 Lab 62352	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; very weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
Al	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 5/3) moist; very weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				.c;
A2	2.5 to 5.0 cm		6/3) dry; sa ; very weak fonsticky, non strongly eff	endy loam, br ine platy st	own ructure; fine	

AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
13	Fourwing Saltbush, Atriplex canescens		58	2	2	4
Horizon	DEPTH		DE	SCRIPTION		
A ₁	5.7 to 0 cm L 15808 Lab 62355	Pale brown (10YR 6/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₁	0 to 2.5 cm.	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A2	2.5 to 5.0 cm	Very pale brown brown (10YR 4/3) soft, friable, n fine vesicular p alkaline (pH 8.4	moist; stro onsticky, no ores; strong	ng coarse pla nplastic; mar	ity structure ny medium and	1

AREA	s	PECIE S	PLOT	QUADRANT	QUADRATE	MOUND NO
13	Shadscale, Atriplex confertifolia		5в	2	4	8
Horizon	DEPTH		DE	SCRIPTION		
A ₁	2.2 to 0 cm L 15811 Lab 62358	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky treaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitual pores; slightly effervescent; moderately alkaline (pH 8.0).				ure;
A ₂	2.5 to 5.0 cm	Very pale brown brown (10YR 4/3) soft, friable, no fine vesicular postular postular (pH 8.4)	moist; stror onsticky, non ores; strongl	ng coarse pla nplastic: man	ty structure v medium and	1

AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.	
13	Winter Fat, Eurotia lanata		6B	3	2	13	
Horizon	DEPTH		DE	SCRIPTION			
A ₁	2.6 to 0 cm L 15814 Lab 62361	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).					
A ₁	0 to 2.5 cm	brown (10YR 4/3) soft, friable, n stitial pores; s	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine platy structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A2	2.5 to 5.0 cm	Very pale brown (10YR 4/3) moist friable, nonstic vesicular pores; alkaline (pH 8.4	; strong coar ky, nonplast: strongly ef:	rse platy str ic; many fine	ucture; soft and medium	- •	

AREA	SPECIES		PLOT	THARDAUD	QUADRATE	MOUND NO.
13	Fourwing Saltb Atriplex can	•	6B	3	3	29
Horizon	DEPTH		DE	SCRIPTION		
Al	3 to 0 cm L 15817 Lab 62364	Pale brown (10YR 6/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
Al	0 to 2.5 cm	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₂	2.5 to 5.0 cm	Very pale brown ((10YR 4/3) moist; friable, nonstick vesicular pores; alkaline (pH 8.4)	strong coar y, nonplasti strongly eff	se platy stru c; many fine	acture; soft and medium	

APPENDIX G

AREA 13: (3) FOR SHRUB COMPLEX

Legend:

(3) = Complex of two or more shrubs on the mound

L 15745 = Library number

Lab 62295 = Laboratory soil sample number

Soil Profile number 402 is taken from Area 13 Soil Survey Map

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO.	
13	Winter Fat, Eurotia lanata Small Rabbitbrush, Chrysothamnus viscidiflorus		l A	3	1	1	
Horizon	DEPTH		DE	SCRIPTION			
Aı	4.6 to 0 cm L 15745 Lab 62295	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
Aı	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
A ₂	2.5 to 5 cm	brown (10YR 4/3); soft, friable, no medium vesicular;	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; strong medium platy structure; soft, friable, nonsticky, nonplastic; many fine and medium vesicular pores; strongly effervescent; moderately alkaline (pH 8.4).				
						<u>-</u>	

SHRUB COMPLEX (3)

AREA	EA SPECIES PLOT QUADRANT QUADRATE M								
			7 60,	GOADIIAIII	doabilate	MOUND NO			
13	Shadscale, Atriplex cor Bud Sagebrush, Artemisia s		3В	4	2	31			
Horizon	DEPTH		DE	SCRIPTION					
Aj	4.2 to 0 cm L 15820 Lab 62367	brown (1(YR 3/3) structure; soft, fine interstitia	Pale brown (10YR 6/3) dry; fine sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; common fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).						
A ₂	0 to 2.5 cm	(10YR 4/3) moist soft, friable, n medium vesícular	Very pale brown (10YR 7/3) dry; loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, friable, nonsticky, nonplastic; many fine and medium vesicular pores; slightly effervescent; moderately alkaline (pH 8.2).						
A 2	2.5 to 5.0 cm	Very pale brown (10YR 4/3) moist soft, friable, n medium vesicular moderately alkal	; moderate m onsticky, no pores; slig	edium platy s nplastic; man htly efferves	structure; ny fine and				

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.	
13	Winter Fat, Eurotia lana Shadscale, Atriplex cor Bud Sagebrush, Artemisia sp	nfertifolia;	3B	4	3	37	
Horizon	DEPTH		DE	SCRIPTION			
Aı	8.2 to 0 cm L 15823 Lab 62370	dark brown (10YR blocky structure; plastic; common f	Pale brown (10YR 6/3) dry; fine sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, non-plastic; common fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₂	0 to 2.5 cm	Very pale brown (IOYR 7/3) dry; loam, brown (10YR 4/3) moist; weak medium platy structure; soft, friable, nonsticky, nonplastic; common fine and medium vesicular pores; slightly effervescent; moderately alkaline (pH 8.0).					
A2	2.5 to 5.0 cm	Very pale brown ((10YR 4/3) moist; friable, nonstick vesicular pores; alkaline (pH 8.4)	weak medium y, nonplasti strongly eff	platy struct; common fir	ture; soft, ne and mediu	m	

SHRUB COMPLEX (3)

AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
13	Shadscale, Atriplex con Winter Fat, Eurotia lana Bud Sagebrush, Artemisia sp	ta	48	2	1	13	
Horizon	DEPTH		DE	SCRIPTION			
Aı	5 to 0 cm L 15826 Lab 62373	grayish orown (10 blocky breaking t friable, nonstick	Pale brown (10YR 6/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular block? breaking to single grain structure; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
Al	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; many fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
A2	2.5 to 5.0 cm	Very pale brown (brown (10YR 4/3) friable, nonstick vesícular pores; alkaline (pH 8.4)	moist; weak ky, nonplasti strongly eff	fine platy s ic; many fine	tructure; so	ft,	

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO	
13	Winter Fat, Eurotia lanata; Bud Sagebrush, Artemisia spinescens Fourwing Saltbrush, Atriplex canescens		4B	2	. 5	58	
Horizon	DEPTH		DE	SCRIPTION			
Al	5.2 to 0 cm L 15829 Lab 62376	dark grayish brow subangular blocky soft, friable, no	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; very weak subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.0).				
Al	0 to 2.5 cm	grayish brown (10 blocky breaking t friable, nonstick	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; very weak subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; many fine interstitial pores; slightly effervescent; moderately alkaline				
A ₂	2.5 to 5.0 cm	(10YR 4/3) moist; friable, nonstick vesicular pores;	Very pale brown (10YR 7/3) dry; loam, brown (10YR 4/3) moist; weak medium platy structure; soft friable, nonsticky, nonplastic; many fine and medium vesicular pores; strongly effervescent; moderately alkaline (pH 8.4).				
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AREA	SI	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.	
13	Winter Fat, Eurotia lanata		5в	2	2	17	
Horizon	DEPTH		DE	SCRIPTION			
Aı	7.2 to 0 cm L 15832 Lab 62379	Pale brown (10YR 6/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
Aı	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent;					
A 2	2.5 to 5.0 cm	brown (10YR 4/3) soft, friable, no fine vesicular po	brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few				

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.	
13	Winter Fat, Eurotia lanata		5В	2	5	48	
Horizon	DEPTH		DE	SCRIPTION			
A ₁	7.6 to 0 cm L 15835 Lab 62382	dark grayish brow subangular blocky nonsticky, nonpla	Brown (10YR 5/3) dry; fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	0 to 2.5 cm	brown (10YR 4/3) structure; soft, fine interstitial	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₂	2.5 to 5.0 cm	brown (10YR 4/3) soft, friable, non fine vesicular por	erately alkaline (pH 8.0). Wery pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; strong coarse platy structure; soft, friable, nonsticky, nonplastic; many medium and fine vesicular pores; strongly effervescent; moderately alkaline (pH 8.4).				

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.	
13	Winter Fat, Eurotia lanata Fourwing Saltbush, Atriplex canescens		6В	3	1	4	
Horizon	DEPTH		OE	SCRIPTION			
Aı	2.9 to 0 cm L 15838 Lab 62385	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
Ai	0 to 2.5 cm	brown (10'.R 4/3) friable, nonstick	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10''R 4/3) moist; weak fine platy structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A2	2.5 to 5.0 cm	Very pale brown (10YR 4/3) moist; soft, friable, no medium vesicular moderately alkali	strong coar nsticky, non pores; stron	se platy str plastic; man gly efferves	ucture; y fine and		

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO
13	Shadscale, Atriplex cor Winter Fat, Eurotia lana Bud Sagebrush, Artemisia sp	at a	6B	3	2	17
Horizon	DEPTH		DE	SCRIPTION		
Aı	9.8 to 0 cm L 15841 Lab 62388	Pale brown (10YR 6/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; common fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A	0 to 2.5 cm	Light gray (10YR 7/2) dry; fine sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; common fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				•
A ₂	2.5 to 5.0 cm	•	10YR 7/3) dr weak fine s nsticky, non s; slightly	ubangular blo plastic; com	ocky structumon fine	re;

AREA	sı	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
13	Winter Fat, Eurotia lanata Small Rabbitbrush, Chrysothamnus viscidiflorus		1A	3	1	29
Horizon	DEPTH		DE	SCRIPTION		
AI	4.3 to 0 cm L 15748 Lab 62298	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₂	2.5 to 5.0 cm					3
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AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
13	Horsebrush, Tetradymia glabrata Winter Fat, Eurotia lanata		2A	3	1	7
Horizon	DEPTH		DE	SCRIPTION		
Aı	5.4 to 0 cm L 15751 Lab 62301	Pale brown (10YR 6/3) dry; fine sandy loam, dark grayish brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; many fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	0 to 2.5 cm	Pale brown (10YR 6/3) dry; sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	2.5 to 5.0 cm	-	6/3) dry; sam m subangular stic; few fin	blocky struc ne interstiti	ture; soft, al pores; si	friable,

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO.
13	Winter Fat, Eurotia lana	ta	2A	3	4	41
Horizon	DEPTH		DE	SCRIPTION		
A ₁	4.4 to 0 cm L 15754 Lab 62304	Pale brown (10YR 6/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	2.5 to 5.0 cm	Pale brown (10YR (10YR 4/3) moist; structure; soft, fine interstitial alkaline (pH 8.2)	weak medium friable, non pores; stro	subangular 'sticky, nonp	blocky lastic; few	ately

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.
13	Wolfberry, Lycium ander Fourwing Saltb Atriplex can Winter Fat, Eurotia lana	ush, escens	3A	1	4	99
Horizon	DEPTH		DE	SCRIPTION		
A ₁	6.3 to 0 cm L 15757 Lab 62307	Brown (10YR 5/3) dry; fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₁	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A	2.5 to 5.0 cm	Pale brown (10YR grayish brown (10' blocky breaking to nonsticky, nonplasightly efferveso	YR 4/2) mois o single gra stic; few fir	t; weak fine in structure; ne interstiti	subangular soft, friab al pores;	ole,

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
13	Fourwing Saltbush, Atriplex canescens		3A	1	3	83	
Horizon	DEPTH		DE	SCRIPTION '			
A ₁	7.2 to 0 cm L 15760 Lab 62310	grayish brown (10 blocky breaking to nonsticky, nonpla	Pale brown (10YR 6/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Al	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable; nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
A ₁	2.5 to 5.0 cm		6/3) dry; fi weak fine s cture; soft, interstitia	ne sandy loam ubangular blo friable, nom l pores; slig	n, brown ocky breakin nsticky, non		

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.	
13	Winter Fat, Eurotia lanata Shadscale, Atriplex confertifolia		4A	1	3	33	
Horizon	DEPTH		DE	SCRIPTION			
A ₁	6.4 to 0 cm L 15763 Lab 62313	grayish blown (10 angular blocky st nonplastic; few f	Brown (10YR 5/3) dry; fine sandy loam, dark grayish blown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₂	0 to 2.5 cm	brown (10YR 4/3) soft, friable, no medium vesicular	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, friable, nonsticky, nonplastic; many fine and medium vesicular pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₂	2.5 to 5.0 cm	Pale brown (10YR moist; strong cos nonsticky, nonpla pores; strongly e (pH 8.2).	erse platy st stic; many f	ructure; softine and media	t, friable, um vesicular		

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO.
13	Winter Fat, Eurotia lanata		4A	1	1	10
Horizon	DEPTH		DE	SCRIPTION		
A ₁	7.6 to 0 cm L 15766 Lab 62316	Brown (10YR 5/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				÷;
A ₂	C to 2.5 cm	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, friable, nonsticky, nonplastic; many fine and medium vesicular pores; slightly effervescent; moderately alkaline (pH 8.0).				
A2	2.5 to 5.0 cm	Pale brown (10YR (strong coarse plainonplastic; many seffervescent; mode	ty structure: fine and medi	; soft, friab um vesicular	le, nonstick	·v

AREA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.	
13	Fourwing Saltb Atriplex can Bud Sagebrush, Artemisia sp Winter Fat, Eurotia lana	inescens	5 A	2	5	49	
Horizon	DEPTH	DESCRIPTION					
A ₁	5.0 to 0 cm L 15769 Lab 62319	grayish brown (10 blocky structure; few fine intersti	Brown (10YR 5/3) dry; very fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aı	0 to 2.5 cm	Brown (10YR 5/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
Aı	2.5 to 5.0 cm	Brown (10YR 5/3) dry; fine sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
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AREA	SF	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
13	Fourwing Saltbush, Atriplex canescens Bud Sagebrush, Artemisia spinescens		5A	2	2	22	
Horizon	DEPTH		DE	SCRIPTION			
Aı	4.5 to 0 cm L 15772 Lab 62322	very dark grayis subangula: block soft, friable, no	Pale brown (10YR 6/3) dry; gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₁	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine sub-angular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
Aı	2.5 to 5.0 cm	subangular block nonplastic; few	Pale brown (10YR 6/3) dry; fine sandy loam, weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.2).				
		The state of the s					

AREA	S	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO
13	Winter Fat, Eurotia lana	ata	6 A	I	4	52
Horizon	DEPTH		DE	SCRIPTION		
A ₁	3.0 to 0 cm L 15775 Lab 62325	Brown (10YR 5/3) dry; fine sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
A ₂	0 to 2.5 cm	(10YR 4/3) moist; soft, fríable, no medium vesicular	Very pale brown (10YR 7/3) dry; sandy loam, brown (10YR 4/5) moist; moderate coarse platy structure; soft, friable, nonsticky, nonplastic; few fine and medium vesicular pores; violently effervescent; moderately alkaline (pH 8.2).			
A ₂	2.5 to 5.0 cm	Very pale brown (10YR 4/3) moist; soft, friable, no medium vesicular moderately alkali	moderate co onsticky, non pores; viole	arse platy s plastic; few ntly efferve	tructure; fine and	

AREA	Sf	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO	
13	Snadscale, Atriplex confertifolia Winter Fat anata Eurotia lanata Bud Sagebrush, Artemisia spinescens Fourwing Saltbush, Atriplex canescens		6A	1	2	17	
Horizon	DEPTH		DE	SCRIPTION			
A ₁	7.5 to 0 cm L 15778 Lab 62328	Brown (10YR 5/3) dry; gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
A ₂	0 to 2.5 cm	moist; moderate u soft, friable, no	Brown (10YR 5/3) dry; sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.2).				
A2	2.5 to 5.0 cm	Brown (10YR 5/3) moist; moderate m soft, friable, no pores; strongly 6 (pH 8.2).	nedium subang onsticky, non	ular blocky plastic; few	structure; fine inters	titial	

ARÈA	s	PECIES	PLOT	QUADRANT	QUADRATE	MOUND NO.	
13	Shadscale, Atriplex cor	nfertifolia	l B	3	1	6	
Horizon	DEPTH		DE	SCRIPTION			
Al	3.2 to 0 cm L 15781 Lab 62331	dark grayish brow subangular blocky nonplastic; few f	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).				
Aj	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.2).					
A2	2.5 to 5.0 cm	Very pale brown (moist; moderate m friable, nonstick vesicular pores; alkaline (pH 8.2)	edium subang y, nonplasti strongly eff	ular blocky c; many fine	structure; s and medium		

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO.	
13	Winter Fat, Eurotia lanata		1B	3	3	22	
Horizon	DEPTH	DESCRIPTION					
A ₁	3.5 to 0 cm L 15784 Lab 62334	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
AI	0 to 2.5 cm	Pale brown (10YR 6/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few interstitial pores; slightly effervescent; moderately alkaline (pH 8.2).					
A ₂	2.5 to 5.0 cm	Very pale brown ((10YR 4/3) moist; structure, soft, many fine and med effervescent; mod	moderate me friable, non lium vesicula	dium subangu sticky, nonp r pores; str	lar blocky lastic; ongly		

AREA	SPECIES		PLOT	QUADRANT	DIARDAUD	MOUND NO.	
13	Bud Sagebrush, Artemisia spinescens Small Rabbitbrush, Chrysothamnus viscidiflorus		2В	1	1	16	
Horizon	DEPTH	DESCRIPTION					
A ₁	4.2 to 0 cm L 15787 Lab 62337	Pale brown (10YR 6/3) dry; gravelly sandy loam, dark grayish brown (10YR 4/2) moist; very weak fine subangular blocky breaking to single grain structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
A ₁	0 to 2.5 cm	Very pale brown (10YR 7/3) dry; gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
A ₂	2.5 to 5.0 cm	Very pale brown ((10YR 4/3) moist; soft, friable, no and medium vesicu moderately alkali	strong coar nsticky, non lar pores; s	se platy stru plastic; many	octure; , fine		
				_			

AREA	SPECIES		PLOT	QUADRANT	QUADRATE	MOUND NO.	
£ 1	Shadscale, Atriplex confertifolia Small Rabbitbrush, Chrysothamus viscidiflorus		2в	1	2	40	
Horizon	DEPTH	DESCRIPTION					
A	8 to 0 cm L 15790 Lab 62340	Brown (10YR 5/3) dry; fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
Aı	0 to 2.5 cm	Pale brown (10YR 6/3) dry; fine sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky, nonplastic; common fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.0).					
A ₂	2.5 to 5.0 cm	Very pale brown ((10YR 4/3) moist; structure; soft, common fine inter moderately alkali	weak medium friable, non stitial pore	subangular b sticky, nonpl s; slightly e	olocky astic;	;	

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- 117 Auda F. Morrow, CETO, NTS, Mercury, NV
- 118 Billy Moore, DOE/NV, Las Vegas, NV.
- 119 Leo Bustad, Director, Veterinary Medicine, Washington State University, Pullman, WA
- 120 Vincent Schultz, Washington State University, Pullman, WA
- 121 Arthur Wallace, University of California, Los Angeles, CA
- 122 Wesley E. Niles, University of Nevada, Las Vegas, NV
- 123 Library, University of Nevada, Las Vegas, NV
- 124 Verle R. Bohman, University of Nevada, Reno, NV
- 125 Lloyd P. Smith, President, Desert Research Institute, University of Nevada, Reno, NV
- 126 Paul R. Fenske, Desert Research Institute, University of Nevada, Reno, NV

- 127 F. L. Miller, Desert Research Institute, University of Nevada, Las Vegas, NV
- 128 Thomas P. O'Farrell, EG&G, Boulder City, NV
- 129 W. A. Rhoads, EG&G, S-B, Goleta, CA
- 130 William S. Twenhofel, U.S. Geological Survey, Denver, CO
- Manager, Desert National Wildlife Range, U.S. Fish and Wildlife Service, Las Vegas, NV
- 132 Supervisor, Region III, Nevada Fish and Game Department, Las Vegas, NV
- Paul Lyons, Nevada Wildlife Research, Division of Archives, Capitol Building Annex, Carson City, NV
- 134 L. L. Skolil, San Diego State University, San Diego, CA
- 135 162 Technical Information Center, ERDA, Oak Ridge, TN (for public availability)
 - 163 J. J. Davis, USNRC, Silver Spring, MD
 - 164 E. H. Essington, LASL, Los Alamos, NM
 - 165 E. B. Fowler, LASL, Los Alamos, NM
 - 166 E. M. Romney, UCLA, Los Angeles, CA
 - 167 R. O. Gilbert, BNL, Richland, WA
 - 168 L. Leventhal, LFE-EAL, Richmond, CA
 - 169 W. G. Bradley, UNLV, Las Vegas, NV
 - 170 Library, Brigham Young University, Provo, Utah