C/007/011 Incoming

#5114

HIAWATHA COAL COMPANY

P.O. BOX 1240
HUNTINGTON, UTAH 84528
Phone (801) 857-0399

Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

Re: **Phase III Bond Release, Hiawatha Mine Complex, C/007/011, Task ID #5114.**

Pursuant to the Division's letter dated July 19, 2016, I have enclosed finalized copies of the amended MRP pages, which include revised Plates II-4 delineating the acreage released.

If you have any questions, please call me at (801) 857-0399

Thank You,

Charles Reynolds,
Mine Manager

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APPLICATION FOR COAL PERMIT PROCESSING

Permit Change ☐ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ■ Transfer ☐

Permittee: Hiawatha Coal Company

Mine: Hiawatha Mine Comles **Permit Number:** C/007/011

Title: Phase III Bond Release for Slurry Pond 4, Slurry Pond 5, Associated Borrow Areas, and a Portion of the Preparation Plant Area - Clean Copies

Description, Include reason for application and timing required to implement:

The associated areas were reclaimed and the required vegetation monitoring was done.

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

☒ Yes ☐ No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: 83.1 ☐ increase ■ decrease.
☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
☒ Yes ☐ No 6. Does the application require or include public notice publication?
☐ Yes ☒ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?
☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes ☒ No 15. Does the application require or include soil removal, storage or placement?
☒ Yes ☐ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?
☐ Yes ☒ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
☒ Yes ☐ No 19. Does the application require or include certified designs, maps or calculation?
☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
☒ Yes ☐ No 21. Have reclamation costs for bonding been provided?
☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach one (1) review copy of the application.

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

NJ Finley
Print Name

N J Finley V.P. 8-26-2016
Sign Name, Position, Date

Subscribed and sworn to before me this 26 day of August, 20 16

Elaine Crossley
Notary Public

My commission Expires: 11-21, 20 17

Attest: State of Utah } ss:
County of Salt Lake

Notary Public
ELAINE CROSSLEY
Commission Number 672213
My Commission Expires
November 21, 2017
State of Utah

For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining
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Form DOGM- C1 (Revised 9/17/2013)

APPLICATION FOR COAL PERMIT PROCESSING
Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: Hiawatha Coal Company

Mine: Hiawatha Mine Complex **Permit Number:** C/007/011

Title: Phase III Bond Release for Slurry Pond 4, Slurry Pond 5, Associated Borrow Areas, and a Portion of the Preparation Plant Area

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

			DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED
■ Add	☐ Replace	☐ Remove	Exhibit 8-2 2015 Phase III Bond Release Areas
■ Add	☐ Replace	☐ Remove	Appendix VIII-6 2015 Bond Release Vegetation Studies
☐ Add	■ Replace	☐ Remove	Page 8-III. Added Appendix VIII-6 and Exhibit 8-2
☐ Add	■ Replace	☐ Remove	Exhibit 2-4a and 2-4d. Changed disturbed boundary, added bond release area.
☐ Add	■ Replace	☐ Remove	Page 8-8. Updated bond calculations
☐ Add	☐ Replace	☐ Remove	
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Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.	Received by Oil, Gas & Mining RECEIVED AUG 26 2016 DIV. OF OIL, GAS & MINING

Form DOGM - C2 (Revised March 12, 2002)

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CHAPTER VIII PERMIT APPLICATION REQUIREMENTS: BONDING AND INSURANCE

LIST OF APPENDICES

Appendix VIII-1	**Area-Volume Balance Sheets**
Appendix VIII-2	**Bonding Certificates**
Appendix VIII-3	**Insurance Certificate**
Appendix VIII-4	**Revised Bond Amount, Stipulations and Calculations**
Appendix VIII-5	**2008 Bond Release**
Appendix VIII-6	**2015 Bond Release Vegetation Studies**

LIST OF EXHIBITS

Exhibit 8-1A	**Hiawatha Processing Plant and Waste Disposal Site Phase 1 Bond Release**
Exhibit 8-1D	**North Fork Phase 1 Bond Release 2008**
Exhibit 8-2	**2015 Bond Release Areas**

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Bonding Calculations

Direct Costs		
Subtotal Demolition and Removal	$341,691.00	
Subtotal Backfilling and Grading	$489,751.00	
Subtotal Revegetation	$327,217.00	
Direct Costs	$1,158,659.00	
Indirect Costs		
Mob/Demob	$115,866.00	10.0%
Contingency	$57,933.00	5.0%
Engineering Redesign	$28,966.00	2.5%
Main Office Expense	$78,789.00	6.8%
Project Management Fee	$28,966.00	2.5%
Subtotal Indirect Costs	$310,520.00	26.8%
Total Cost in 2014 Dollars	$1,469,179.00	
Escalation factor		0.019
Number of years		5
Escalation	$144,977.00	
Reclamation Cost Escalated	$1,614,156.00	
Phase I Bond Remaining Dollars	$52,211	
Bond Amount (rounded to nearest $1,000) 2019 Dollars	$1,811,344	
Posted Bond 2008	$2,128,000.00	
Difference Between Cost Estimate and Bond	$316,656.00	
Percent Difference	14.88%	

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Species		Area								
		Ref 1	Ref 2	RA 1	RA 2	RA 4	RA 5	RA 6	RA 7	RA 27
Prickly Phlox	*Linanthus pungens*	0.1			0.01					
Primrose	*Primula parryi*		0.2							
Pussytoes	*Antennaria sp*		0.04							0.22
Scarlet Gilia	*Ipomopsis aggregata*									0.11
Scarlet globemallow	*Sphaeralcea coccinea*	0.2	0.04	0.11	0.08	0.14	0.28	0.09	0.03	
Slender Buckwheat	*Eriogonum microthecum*	0.05	0.08							
Stellaria	*Stellaria sp*		0.08							
Thistle	*Cirsium sp*									0.22
Utah Astragalus	*Astragalus utahensis*								0.03	0.22
White Sweetclover	*Melilotus albus*				0.1	0.02	0.01		0.02	
Woodland Strawberry	*Fragaria vesca*		0.08							0.44
Yarrow	*Achillea millefolium*		0.12							0.44
Yellow salsify	*Tragopogon dubius*				0.03		0.03	0.05	0.02	0.33
Yellow Sweetclover	*Melilotus indicus*				**0.38**	0.2	0.27	0.1	0.31	**4.22**
Yucca	*Yucca sp*									
Grasses										
Alpine Timothy	*Phleum alpinum*									**0.83**
Blue grama	*Bouteloua gracilis*	0.2				0.02				
Bluebunch Wheatgrass	*Pseudoroegneria spicata*		**0.68**	0.1			0.04	0.09	0.25	
Crested Wheatgrass	*Agropyron cristatum*			**1.01**	**0.54**	0.05				
Great Basin Wildrye	*Leymus cinereus*			**0.6**	**0.41**	0.28	**1.52**	**0.62**	**0.49**	
Indian Ricegrass	*Achnatherum hymenoides*	**0.45**		**0.57**	0.12	**0.45**	0.01	0.14	**0.9**	
Intermediate Wheatgrass	*Thinopyrum intermedium*		0.24	0.11	0.06		0.01		0.07	**5.78**
Kentucky Bluegrass	*Poa pratensis*		**0.6**							
Mountain Brome	*Bromus marginatus*		**0.4**							0.06
Needle & Thread Grass	*Hesperostipa comata*	0.1		0.01		0.05	0.05	0.02		
Sandbergs Bluegrass	*Poa secunda*	0.05								
Squirreltail	*Elymus elymoides*			0.01	0.02	0.06			**0.62**	
Wildrye	*Leymus sp*	**1.65**		**0.61**	**5.74**	**3.39**	**7.39**	**5.53**	**4.72**	

Reference Area 1 had 5 species that were at least 3 percent of the relative vegetation cover and had a total of 20 species. There were 3 woody/shrub and 2 cool-season perennial grass species used to compare diversity.

Reference Area 2 had 8 species that were at least 3 percent of the relative vegetation cover and 28 species. There were 4 woody/shrub, 1 forb, and 3 cool-season perennial grass species used to compare diversity. One of the woody/shrub species is quaking aspen, which may be replaced by another species, as described in section 341.250 of the MRP.

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Area RA 1 had 7 species that were at least 3 percent of the relative vegetation cover and had a total of 22 species. There were 3 woody/shrubs and 4 cool-season perennial grasses. This area exceeds the number of species and type of the reference area.

Area RA 2 had 6 species that were at least 3 percent of the relative vegetation cover and had a total of 24 species present. There were 2 woody/shrubs, 1 forb, and 3 cool-season grasses. This area exceeds the requirement of 2 cool-season perennial grasses, but has only 2 of the 3 required woody shrub species.

Area RA 4 had 5 species that were at least 3 percent of the relative vegetation cover and had a total of 21 species present. There were 2 woody/shrubs, 1 forb, and 2 cool-season grasses. This area meets the requirement of 2 cool-season grasses but has only 2 of the 3 required woody shrub species.

Area RA 5 had 3 species that were at least 3 percent of the relative vegetation cover and had a total of 18 species present. There were 1 woody/shrub, and 2 cool-season grasses. This area did not meet the requirement of 3 woody/shrub species, but did meet requirement of having 2 cool-season grasses.

Area RA 6 had 6 species that were at least 3 percent of the relative vegetation cover and had a total of 20 species present. There were 3 woody/shrub, 1 forb, and 2 cool-season grasses. This area met the requirement of 3 woody/shrub and 2 cool-season grass species.

Area RA 7 had 8 species that were at least 3 percent of the relative vegetation cover and had a total of 25 species present. There were 2 woody/shrub, 2 forb, and 4 cool-season grass species. This area exceeds the 2 cool-season grass species requirement, but had only 2 of the required 3 woody/shrub species.

Area RA 27 had 7 species that were at least 3 percent of the relative vegetation cover and had a total of 24 species. There were 1 woody/shrub, 4 forb, and 2 cool-season grass species. This area did not meet the required 4 woody/shrub, 1 forb, and 3 cool-season grass species requirement.

Production

Production was estimated at each of the reclaimed sites by Dean Stacy, Area Range Management Specialist at the Natural Resources Conservation Service. The estimates for the reclamation sites are shown in the following table:

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Table 5: Production Estimates	
Area	Pounds per Acre
Reference Area 1	750
Reference Area 2	300
RA 1	1,330
RA 2	950
RA 4	550
RA 5	750
RA 6	2,300
RA 7	1,100
RA 27	425

Reference Area 1 – Productivity was estimated to have 750 pounds per acre.
Reference Area 2 – Productivity was estimated to have 300 pounds per acre.
RA 1 – Productivity was estimated to have 1,330 pounds per acre. This area exceeded the level of production at Reference Area 1.
RA 2 – Productivity was estimated to have 950 pounds per acre. This area exceeded the level of production at Reference Area 1.
RA 4 – Productivity was estimated to have 550 pounds per acre. This area had less than the production at the reference area.
RA 5 – Productivity was estimated to have 750 pounds per acre. This area exceeded the level of production at Reference Area 1.
RA 6 – Productivity was estimated to have 2,300 pounds per acre. This area exceeded the level of production of Reference Area 1.
RA 7 – Productivity was estimated to have 1,100 pounds per acre. This area exceeded the level of production at Reference Area 1.
RA 27 – Productivity was estimated to have 425 pounds per acre. This area exceeded the level of production at Reference Area 2.

Available Forage

The total available forage has been calculated, shown in Table 6, using the "take half, leave half" method in the following equation:

Total Available Forage = Total Production x (0.5) x Reclamation Area Acres

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Table 6: Total Available Forage			
Reclamation Area	Production Pounds per Acre	Reclamation Acres	Pounds Total Available Forage
RA 1	1,330	9.44	6,277.6
RA 2	950	40.39	19,185.25
RA 4	550	5.28	1,452
RA 5	750	26.37	9,888.75
RA 6	2,300	9.12	10,488
RA 7	1,100	5.51	3,030.5
RA 27	425	0.89	189.13

DISCUSSION

The percent cover for all of the reclamation areas exceed the cover within the reference areas and the estimated production in the reclamation areas exceed the production within the reference areas except for RA 4. The woody plant density was lower in the reclamation areas than in reference areas in all but RA 7. The woody plant density of the reclamation areas averaged 2,819 plants per acre and the reference areas averaged 5,541 plants per acre. Since the post-mining land use identified in the Hiawatha MRP is wildlife habitat and grazing, and only 1,500 to 2,000 plants per acre are sufficient for winter wildlife, the reclamation areas should be considered as having met the success standards for the post-mining land use. After discussion and an onsite inspection of the reclamation areas with DOGM and Utah Division of Wildlife Resources representatives, it was decided that the vegetation growth was sufficient and reclamation would meet success standards if the results from the final year study are approximately the same as this 2013 study (see Appendix 3, DOGM Inspection Report). Similar results from a consecutive year vegetation study would show that the vegetation has established into a long-term, self-perpetuating community.

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REFERENCES

DOGM. 1992. Vegetation Information Guidelines. Utah Division of Oil, Gas, and Mining. Salt Lake City, UT.

Hayter, A. J. 2002. Probability and Statistics for Engineers and Scientists – Second Edition. Wadsworth Group. Pacific Grove, CA.

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APPENDIX 1
PERCENT COVER DATA

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Point ID:	Veg:	Litter:	Rock:	Soil:	Poa secunda	#	Bouteloua gracilis	#	Leymus sp	#	Achnatherum hymenoides	#	Elymus elymoides	#	Hesperostipa comata	#	Eriogonum microthecum	#	Sphaeralcea coccinea	#	Astragalus sp	#	Linanthus pungens	#	Penstemon palmeri	#	Pediocactus	#	Eriogonum ovalifolium	#	Cryptantha sp	#	Opuntia sp	#	Artemisia nova	#	Gutierrezia sarothrae	#	Amelanchier utahensis	#	Ericameria nauseosa	#	Cercocarpus montanus	#	Artemisia tride	#
REF1-01	4	17	13	66	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	3	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF1-02	1	7	6	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
REF1-03	0	12	11	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF1-04	5	8	0	87	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	5	4	0	0	0	0	0	0	0	0	0	0
REF1-05	2	2	1	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
REF1-06	4	9	0	87	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	3	2	1	0	0	0	0	0	0	0	0	0
REF1-07	1	3	28	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF1-08	2	35	4	59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	1	1	1	0	0	0	0	0	0
REF1-09	20	4	0	76	0	0	2	8	12	12	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	7	4	2	3	0	0	0	0	0	0	0	0
REF1-10	19	6	0	75	0	0	0	0	0	0	3	10	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	5	0	0	0	0	0	0	0	0	0	0
REF1-11	26	9	1	64	0	0	0	0	16	63	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0	0	1	3	6	1	0	0
REF1-12	10	3	0	87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	9	3	1	1	0	0	0	0	0	0	0	0
REF1-13	15	1	0	84	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	12	1	0	0	0	0	0	0	0	0	0	0
REF1-14	11	7	0	82	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	8	4	0	0	0	0	0	0	2	1	0	0
REF1-15	1	10	13	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	1	0	0	0	0	0	0	0	0	0	0
REF1-16	5	2	1	92	0	0	0	0	0	0	2	10	0	0	1	3	1	1	1	3	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
REF1-17	13	3	1	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	12	4	0	0	0	0	0	0	1	1	0	0
REF1-18	18	5	0	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	2	0	0	0	0	0	0	0	0	0	0
REF1-19	6	2	0	92	0	0	0	0	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0
REF1-20	1	8	0	91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0	0
Mean	8.2	7.65	3.95	80.2	0.05	0.05	0.2	0.5	1.65	4.3	0.45	1.25	0.05	0.05	0.1	0.2	0.05	0.05	0.2	0.45	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.05	0.2	0.2	0.1	0.1	0.1	0.2	4.8	1.85	0.35	0.4	0.05	0.05	0.05	0.15	0.6	0.2	0.15	0
					Grass	2.5											Forb	1																	Shrub	6										
				Relativ	0.526		2.105		17.37		4.737		0.526		1.053		0.526		2.105		1.053		1.053		1.053		0.526		2.105		1.053		1.053		50.53		3.684		0.526		0.526		6.316		1.579	

8.2	avg
7.818	sd
1.328	t 90
160.3	n

Sampl 20
Degre 19

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Area:	Report Point ID:	Veg:	Litter:	Rock:	Soil:	Leymus sp %	Leymus sp #	Achnatherum hymenoides %	Achnatherum hymenoides #	Agropyron cristatum %	Agropyron cristatum #	Leymus cinereus %	Leymus cinereus #	Hesperostipa comata %	Hesperostipa comata #	Thinopyrum intermedium %	Thinopyrum intermedium #	Pseudoroegneria spicata %	Pseudoroegneria spicata #	Elymus elymoides %	Elymus elymoides #	Opuntia sp %	Opuntia sp #	Sphaeralcea coccinea %	Sphaeralcea coccinea #	Grindelia squarrosa %	Grindelia squarrosa #	Wyethia amplexicaulis %	Wyethia amplexicaulis #	Astragalus Sp %	Astragalus Sp #	Machaeranthera canescens %	Machaeranthera canescens #	Eriogonum ovalifolium %	Eriogonum ovalifolium #	Yucca sp %	Yucca sp#	Amelanchier utahensis%	Amelanchier utahensis#	Krascheninnikovia lanata %	Krascheninnikovia lanata #	Gutierrezia sarothrae %	Gutierrezia sarothrae #	Ericameria nauseosa %	Ericameria nauseosa #	Chrysothamnus viscidiflorus %	Chrysothamnus viscidiflorus #	Artemisia tridentata %	Artemisia #
RA1	1	21	1	12	66	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	10
RA1	2	9	12	13	66	0	0	1	4	0	0	0	0	0	0	0	0	0	0	1	2	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2
RA1	3	5	4	0	91	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	2	1
RA1	4	18	75	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	18	1	0	0	0	0
RA1	5	22	11	0	67	0	0	4	2	8	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	1	0	0	0	0
RA1	6	24	9	2	65	5	2	1	1	17	4	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0
RA1	7	26	67	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	3
RA1	8	3	5	1	91	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1
RA1	9	21	1	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	6
RA1	10	15	9	15	61	0	0	0	0	13	3	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
RA1	11	19	14	0	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	2
RA1	12	14	7	0	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	3
RA1	13	20	78	0	2	4	5	0	0	0	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1	14	31	8	2	59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	1
RA1	15	32	52	0	16	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	2
RA1	16	13	10	9	68	0	0	3	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	3
RA1	17	4	3	0	93	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA1	18	14	3	1	82	10	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0
RA1	19	11	1	2	86	0	0	0	0	10	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA1	20	14	6	4	76	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	12	3
RA1	21	9	2	9	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1
RA1	22	2	9	0	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA1	23	6	1	1	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1
RA1	24	19	75	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	3
RA1	25	15	11	0	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	2
RA1	26	7	13	0	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	1
RA1	27	16	4	0	80	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	10	2
RA1	28	2	3	3	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA1	29	6	19	2	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	5	2
RA1	30	11	11	2	76	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	2	0	0	0	0
RA1	31	2	1	30	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
RA1	32	2	16	2	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA1	33	5	11	0	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	4	3
RA1	34	0	0	4	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1	35	10	8	2	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1
RA1	36	7	36	1	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	4
RA1	37	9	2	30	59	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	6	1
RA1	38	18	23	4	55	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	2
RA1	39	6	8	1	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	5	3
RA1	40	3	12	2	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1
RA1	41	22	13	0	65	6	5	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0
RA1	42	12	15	1	72	4	6	0	0	6	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
RA1	43	4	69	0	27	0	0	0	0	0	0	0	0	0	0	0	0	3	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
RA1	44	23	5	2	70	0	0	0	0	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	4	0	3	0
RA1	45	12	80	3	5	0	0	0	0	0	0	0	0	0	0	8	30	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	1	1
RA1	46	23	74	0	3	0	0	1	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	6	12	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	6	0	0	2	3
RA1	47	13	3	0	84	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	0	0	0	0
RA1	48	3	33	3	61	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0
RA1	49	11	6	78	5	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
RA1	50	14	4	9	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	8
RA1	51	4	2	0	94	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
RA1	52	15	80	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	3
RA1	53	12	5	4	79	0	0	0	0	12	11	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA1	54	12	5	0	83	0	0	0	0	0	0	12	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
RA1	55	26	6	1	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	4	0	0	0	0
RA1	56	16	3	2	79	0	0	0	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	4	0	0	0	0
RA1	57	12	4	9	75	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
RA1	58	20	11	0	69	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	3	0	0	0	0	0	0	0	0
RA1	59	12	7	8	73	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	9	0	0	0	0
RA1	60	10	7	0	83	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	9	7
RA1	61	11	4	1	84	3	81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2
RA1	62	16	4	0	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	12	12	3
RA1	63	28	[illegible]	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	3
RA1	64	11	[illegible]	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	5
RA1	65	[illegible]	11	0	80	2	6	1	2	0	0	0	0	1	4	0	0	0	0	0	0	0	0	1	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0
RA1	66	[illegible]	4	47	40	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	3	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0
RA1	67	[illegible]	35	1	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA1	68	20	7	7	71	0	0	1	2	0	0	1	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	3	1	1
RA1	69	23	4	3	72	0	0	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	1
RA1	70	18	3	2	77	0	0	1	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	17	3
RA1	71	[illegible]	2	26	50	0	0	2	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	19	3
RA1	72	13	5	8	74	0	0	1	5	0	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1
Mean		[illegible]	16.15	6.208333	64.40278	0.611	2.611	0.569	1.097	1.014	0.833	0.597	0.833	0.014	0.056	0.111	0.417	0.097	0.333	0.014	0.028	0.056	0.014	0.111	0.694	0.111	0.194	0.042	0.042	0.028	0.028	0.014	0.028	0.014	0.014	0.167	0.028	0.028	0.014	0.264	0.042	0.042	0.028	2.333	0.903	0.472	0.333	6.972	1.667
						Grass	3.028															Forb	0.542														Shrub	10.11													
					Relative Cc	4.467		4.162		7.411		4.365		0.102		0.812		0.711		0.102		0.406		0.812		0.812		0.305		0.203		0.102		0.102		1.218		0.203		1.929		0.305		17.06		3.452		50.96	

13[illegible]889	avg
7.64[illegible]9	sd
1.294	t.90
56.70286	n
Sample Siz	72
Degrees of	71

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AUG 3 1 [illegible]

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AUG 3 1 20??
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	Point ID	Veg	Litter	Rock	Soil	Achnatherum hymenoides	#	Leymus sp	#	Elymus elymoides	#	Leymus cinereus	#	Bouteloua gracilis	#	Agropyron cristatum	#	Hesperostipa comata	#	Melilotus albus	#	Astragalus cicer	#	Melilotus indicus	#	Penstemon palmeri	#	Ipomoea sp	#	Machaeranthera canescens	#	Medicago sativa	#	Grindelia squarrosa	#	Sphaeralcea coccinea	#	Gutierrezia sarothrae	#	Krascheninnikovia lanata	#	Ericameria nauseosa	#	Artemisia tridentata	#	Ephedra viridis	#
RA4	1	3	2	1	94	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0
RA4	2	12	2	0	86	12	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	3	8	1	0	91	0	0	1	9	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	5	0	0
RA4	4	30	2	0	68	28	23	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA4	5	33	45	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	2	0	0
RA4	6	27	5	1	67	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	17	2	2	0	0
RA4	7	13	2	0	85	0	0	12	60	0	0	1	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	8	7	1	1	91	0	0	4	112	0	0	0	0	0	0	0	0	0	0	1	1	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
RA4	9	2	4	0	94	0	0	2	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA4	10	2	1	9	88	0	0	1	16	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA4	11	20	2	1	77	0	0	8	72	0	0	0	0	0	0	0	0	0	0	0	0	13	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0
RA4	12	5	2	1	92	0	0	2	39	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0
RA4	13	42	12	0	46	0	0	6	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	3	0	0
RA4	14	4	1	0	95	0	0	2	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	1	1	0	0
RA4	15	30	2	1	67	0	0	19	137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	11	1	0	0
RA4	16	2	1	2	95	0	0	3	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
RA4	17	4	14	6	76	0	0	4	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	18	34	2	0	64	0	0	10	88	0	0	0	0	0	0	0	0	0	0	0	0	10	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	4	0	0	0	0
RA4	19	1	1	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	3	0	0	0	0	1	1	0	0	0	0
RA4	20	4	2	1	93	0	0	2	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	25	0	0	0	0	0	0	0	0	0	0
RA4	21	6	2	0	92	0	0	3	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	1	0	0	0	0
RA4	22	4	1	0	95	0	0	1	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	8	0	0	0	0
RA4	23	8	3	0	89	1	3	7	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	24	3	2	0	95	0	0	2	86	0	0	1	3	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA4	25	8	3	11	78	0	0	3	53	0	0	4	33	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
RA4	26	0	0	2	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	27	7	3	0	90	0	0	4	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	0	0	0	0
RA4	28	3	4	0	93	0	0	3	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	29	8	3	0	89	0	0	3	66	0	0	1	8	0	0	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3	1	0	0
RA4	30	7	2	0	91	0	0	6	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0	0
RA4	31	3	3	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	0	0	0	0
RA4	32	22	6	0	72	0	0	20	114	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	33	7	12	12	69	0	0	3	51	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0
RA4	34	9	3	1	87	0	0	8	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA4	35	6	4	1	89	0	0	1	9	0	0	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	2	0	0	0	0	1	1	0	0
RA4	36	12	2	1	85	0	0	12	91	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	37	5	1	0	94	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5	5	0	0
RA4	38	5	2	3	90	0	0	1	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0
RA4	39	13	2	0	85	0	0	7	45	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	1	1	1	0	0
RA4	40	14	2	1	83	6	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	7	0	0
RA4	41	2	1	2	95	0	0	1	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13	0	0	0	0	1	0	0	0	0	0
RA4	42	4	1	1	94	0	0	1	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
RA4	43	15	2	0	83	0	0	12	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0
RA4	44	12	1	1	86	1	2	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4	0	0	0	0
RA4	45	7	3	3	87	0	0	2	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	0	0	0	0
RA4	46	13	1	0	86	0	0	6	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	3	2	0	0
RA4	47	4	2	1	93	0	0	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	2	3	0	0	0	0
RA4	48	16	1	15	68	0	0	6	79	0	0	0	0	0	0	0	0	0	0	0	0	8	32	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
RA4	49	8	3	3	86	0	0	5	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0
RA4	50	5	4	3	88	2	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0
RA4	51	2	1	5	92	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA4	52	11	1	0	88	0	0	1	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	9	1	0	0
RA4	53	2	1	4	93	0	0	2	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	54	6	2	0	92	0	0	5	89	0	0	1	4	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
RA4	55	10	1	3	86	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	2	0	0	0	0
RA4	56	11	1	9	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	14	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	6	0	0	0	0
RA4	57	16	1	6	77	0	0	6	15	0	0	1	3	0	0	0	0	0	0	0	0	2	4	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0
RA4	58	11	4	0	85	0	0	11	45	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12	0	0	0	0	2	3	0	0	0	0
RA4	59	5	2	0	93	0	0	3	33	0	0	2	13	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	0	0
RA4	60	4	5	0	91	0	0	4	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA4	61	3	2	27	68	0	0	2	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0
RA4	62	4	1	0	95	0	0	1	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0
RA4	63	9	2	0	89	0	0	2	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	0
RA4	64	4	4	1	91	0	0	2	20	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
RA4	65	11	2	5	82	0	0	2	37	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	2	3	0	0	0	0	0	0	1	1	0	0	6	2	0	0	0	0
RA4	66	5	1	3	91	0	0	2	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	1
RA4	67	3	7	10	80	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	0	0	0
RA4	68	3	2	1	94	0	0	1	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	1	1	1	0	0	0
RA4	69	4	3	0	93	0	0	3	29	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	70	3	1	6	90	0	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0
RA4	71	2	1	0	97	0	0	1	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	3	0	0
RA4	72	20	1	0	79	0	0	3	57	0	0	0	0	0	0	0	0	0	0	0	0	16	39	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	3	0	0	1	1	0	0	0	0
RA4	73	23	2	0	75	0	0	9	47	0	0	0	0	0	0	0	0	0	0	0	0	6	19	1	2	0	0	8	31	0	0	0	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0
RA4	74	15	4	0	81	0	0	8	72	0	0	5	10	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0
RA4	75	2	3	1	94	0	0	1	8	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INCORPORATED
AUG 3 1 20[illegible]
Div. of Oil, Gas & Mining

	Point ID:	Veg:	Litter:	Rock:	Soil:	Achnatherum hymenoides	#	Leymus sp	#	Elymus elymoides	#	Leymus cinereus	#	Bouteloua gracilis	#	Agropyron cristatum	#	Hesperostipa comata	#	Melilotus albus	#	Astragalus cicer	#	Melilotus indicus	#	Penstemon palmeri	#	Ipomoea sp	#	Machaeranthera canes	#	Medicago sativa	#	Grindelia squarrosa	#	Sphaeralcea coccinea	#	Gutierrezia sarothrae	#	Krascheninnikovia lana	#	Ericameria nauseosa	#	Artemisia tridentata	#	Ephedra viridis	#
RA4	76	10	2	7	81	0	0	3	41	0	0	0	0	0	0	0	0	0	0	0	0	4	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	6	0	0	0	0
RA4	77	5	2	0	93	0	0	2	61	0	0	1	4	0	0	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
RA4	78	8	2	0	90	0	0	5	8	0	0	3	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	79	5	4	0	91	0	0	3	47	0	0	2	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	80	2	1	5	92	0	0	2	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	81	5	2	4	89	0	0	3	37	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
RA4	82	3	1	1	95	0	0	1	39	0	0	0	0	0	0	0	0	0	0	0	0	1	16	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
RA4	83	20	1	0	79	0	0	14	126	0	0	3	8	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	7	0	0	0	0	1	2	0	0
RA4	84	9	0	0	91	0	0	2	35	0	0	0	0	0	0	0	0	0	0	0	0	1	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	0
RA4	85	16	2	7	75	0	0	3	68	0	0	0	0	0	0	0	0	0	0	0	0	13	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA4	86	4	5	1	90	2	11	2	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	87	5	2	0	93	0	0	4	70	0	0	0	0	0	0	0	0	1	3	0	0	1	3	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0
RA4	88	13	1	0	86	0	0	4	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	5	0	0
RA4	89	5	1	40	54	0	0	2	25	0	0	0	0	0	0	0	0	1	1	0	0	2	8	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
RA4	90	11	2	0	87	0	0	2	31	0	0	0	0	0	0	0	0	0	0	0	0	3	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	0	0	0	0
RA4	91	2	1	2	95	0	0	2	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0
RA4	92	6	3	1	90	0	0	6	73	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	93	18	1	0	81	0	0	6	115	0	0	0	0	0	0	0	0	0	0	0	0	1	6	1	2	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	0	0	0	6	1	0	0
RA4	94	4	2	26	68	0	0	2	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	0	0
RA4	95	2	1	0	97	0	0	1	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	1	1	0	0
RA4	96	15	1	0	84	0	0	5	52	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	7	5	0	0	0	0
RA4	97	3	1	22	74	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	2	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA4	98	3	1	15	81	0	0	1	42	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA4	99	2	1	1	96	2	2	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0
RA4	100	6	1	0	93	0	0	5	80	0	0	1	3	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	101	5	1	0	94	0	0	2	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7	0	0
RA4	102	20	5	0	75	0	0	10	89	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	3	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	6	1	0	0	0	0
RA4	103	7	4	6	83	0	0	5	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0
RA4	104	6	1	1	92	0	0	7	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	2	0	0	0	0	2	1	0	0
RA4	105	8	15	0	77	0	0	1	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	9	0	0	0	0
RA4	106	15	2	1	82	0	0	12	69	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
RA4	107	8	4	0	88	0	0	8	84	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4	108	3	2	0	95	0	0	2	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	1	5	0	0
RA4	109	8	3	0	89	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	6	1	0	0
RA4	110	7	1	2	90	0	0	6	93	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
RA4	111	13	6	28	53	0	0	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	3	0	0	0	0
RA4	112	12	11	1	76	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	4	4	0	0
RA4	113	4	1	0	95	0	0	2	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0
RA4	114	7	1	5	87	0	0	3	95	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	3	5	0	0	0	0
RA4	115	10	3	2	85	0	0	1	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	2	0	0	0	0
RA4	116	9	3	5	83	0	0	1	94	0	0	0	0	0	0	0	0	0	0	0	0	8	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0
RA4	117	2	1	5	92	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0
RA4	118	2	1	0	97	0	0	1	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0	0	0	0
RA4	119	6	1	3	90	0	0	2	27	0	0	0	0	0	0	0	0	0	0	0	0	2	15	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0
RA4	120	2	1	0	97	0	0	1	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0
RA4	121	4	2	0	94	0	0	3	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0
RA4	122	6	2	1	91	0	0	2	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	1	1
RA4	123	8	2	6	84	0	0	1	35	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	0	0	0	0
RA4	124	7	2	14	77	0	0	5	100	0	0	0	0	0	0	0	0	0	0	0	0	1	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0
RA4	125	4	1	0	95	1	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	0	0	0
RA4	126	6	1	0	93	0	0	3	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0
RA4	127	2	1	0	97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	23	0	0	0	0
RA4	128	10	3	0	87	0	0	2	69	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0
Average		8.523438	2.8125	2.953125	85.71094	0.445	0.734	3.391	43.3	0.063	0.086	0.281	1.066	0.016	0.031	0.047	0.086	0.047	0.109	0.023	0.031	0.945	2.42	0.203	0.398	0.016	0.016	0.086	0.305	0.07	0.102	0.008	0.008	0.023	0.023	0.141	0.656	0.227	0.359	0.008	0.008	2.031	1.742	1.398	0.586	0.023	0.023
						Grass	4.289													Forbs	1.516																	Shrub	3.688								
					Relative Cc	4.691		35.72		0.658		2.963		0.165		0.494		0.494		0.247		9.959		2.14		0.165		0.905		0.741		0.082		0.247		1.483		2.387		0.082		21.4		14.73		0.247	

8.523438	avg
7.375171	sd
1.29	t.90
124.5931	n

Sample Siz	128
Degrees ol	127

INCORPORATED
AUG 3 1 2017
Div. of Oil, Gas & Mining

| Area | Point ID | Step | Litter | Rock | Soil | Litter# | Litter# | Litter | Litter# | Litter# | Litter#

Point ID:	Veg:	Litter:	Rock:	Soil:	Hesperostipa co	#	Leymus sp	#	Leymus cinereus	#	UNK Grass	#	Pseudoroegneri.	#	Achnatherum hy	#	Astragalus sp	#	Sphaeralcea coc.	#	Machaeranthera	#	Penstemon pale	#	Tragopogon dub	#	Melilotus indicu	#	Eriogonum oval	#	Linum lewisii	#	Brassicaceae sp	#	Ericameria nauseosa	#	Ephedra viridis	#	Gutierrezia saro	#	Picrothamnus d.	#	Atriplex canescens	#	Artemisia tridentata	#
RA6-55	11	1	9	79	0	0	7	43	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	1	2	0	0	0	0
RA6-54	18	3	10	69	0	0	14	98	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0
RA6-01	15	5	4	76	0	0	12	100	0	0	0	0	0	0	0	0	25	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
RA6-10	32	1	9	58	0	0	13	61	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	1	1	8	7	0	0	0	0
RA6-59	22	2	2	74	0	0	16	59	2	6	1	1	0	0	0	0	2	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-58	17	2	15	66	0	0	13	61	1	3	0	0	0	0	0	0	2	5	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA6-57	7	1	4	86	0	0	7	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-47	9	1	3	87	0	0	1	67	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	7	1
RA6-39	7	2	1	90	0	0	5	115	1	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-51	6	3	10	81	0	0	5	47	0	0	0	0	0	0	0	0	1	4	0	0	0	0	1	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-53	13	2	10	75	0	0	3	72	0	0	0	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	9	1
RA6-43	6	2	16	76	0	0	3	26	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-38	7	1	8	84	0	0	6	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-56	6	2	0	92	0	0	3	26	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-52	6	1	0	93	0	0	6	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-29	5	4	14	77	0	0	2	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0
RA6-23	15	3	3	79	0	0	6	36	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	4	1	0	0	0	0	1	1	0	0	0	0
RA6-13	6	4	6	84	0	0	3	44	1	0	0	0	2	3	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-18	2	2	3	93	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0
RA6-30	11	4	2	83	0	0	6	40	5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-17	9	2	0	89	0	0	9	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-20	7	2	21	70	0	0	3	48	0	0	0	0	0	0	0	0	2	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	1	1
RA6-27	10	2	18	70	0	0	6	63	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	2	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	0	0	0	0
RA6-24	13	1	14	72	0	0	5	58	1	1	0	0	1	2	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	3	1	0	0	0	0	0	0
RA6-15	5	2	11	82	0	0	3	32	0	0	0	0	0	0	0	0	1	4	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0
RA6-28	7	2	1	90	0	0	7	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
RA6-12	9	4	8	79	0	0	7	49	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	1	0	0
RA6-22	8	2	0	90	0	0	2	10	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	0	1	1	0	0	0	0
RA6-16	9	2	12	77	0	0	1	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
RA6-11	4	1	14	81	0	0	3	16	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-25	4	1	10	85	0	0	1	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0
RA6-19	7	1	8	84	0	0	3	44	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	3	1
RA6-21	8	2	8	82	0	0	5	38	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	1
RA6-26	6	3	29	62	0	0	2	35	2	5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0
RA6-14	20	1	1	78	0	0	3	25	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	4	1
RA6-31	9	3	26	62	0	0	2	35	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	5	1
RA6-40	18	0	0	82	0	0	16	223	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1
RA6-36	3	1	0	96	0	0	1	14	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
RA6-33	10	1	33	56	0	0	7	34	2	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0
RA6-45	12	1	7	80	0	0	6	86	0	0	0	0	0	0	0	0	4	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
RA6-41	8	1	18	73	0	0	6	108	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
RA6-48	6	1	1	92	0	0	1	55	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	3	0	0	2	1
RA6-34	5	1	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3
RA6-42	5	1	10	82	0	0	5	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-46	5	2	18	75	0	0	4	78	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-50	6	2	12	80	0	0	4	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
RA6-44	7	12	2	79	0	0	6	98	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
RA6-47	12	6	5	77	0	0	4	31	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	3	8	0	0	0	0	0	0
RA6-35	3	0	0	97	0	0	3	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-37	12	4	1	87	0	0	3	46	1	3	0	0	0	0	5	3	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	3	0	0	0	0	0	0	0	0	0	0
RA6-32	6	5	3	86	0	0	6	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-6	7	1	20	72	0	0	4	60	0	0	0	0	0	0	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
RA6-7	9	1	5	85	0	0	8	36	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
RA6-8	20	1	8	71	0	0	12	132	0	0	0	0	0	0	0	0	5	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6	0	0	0	0	0	0
RA6-9	11	3	9	77	1	1	10	120	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	24	0	0	0	0	0	0
RA6-3	15	3	8	74	0	0	7	107	0	0	0	0	0	0	1	0	1	3	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	8	4	0	0	0	0	2	1	0	0	0	0
RA6-4	16	9	25	50	0	0	2	29	6	4	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0	1	0
RA6-5	12	4	21	63	0	0	13	67	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	3	0	0	0	0	0	0
Average	9.724138	2.396552	8.896552	79.01724	0.0172	0.0172	5.534	59.52	0.621	0.897	0.017	0.017	0.086	0.138	0.138	0.069	1.086	1.276	0.086	0.103	0.138	0.172	0.086	0.086	0.052	0.069	0.103	0.121	0.069	0.069	0.017	0.017	0.017	0.034	1.362	0.793	0.017	0.017	0.345	0.966	0.276	0.293	0.034	0.034	0.845	0.293
	9.724138	avg			Grass	6.4138											Forb	1.655																	Shrub	2.879										
	5.52758	sd		Relative Cc	0.1575		50.55		5.669		0.157		0.787		1.26		9.921		0.787		1.26		0.787		0.472		0.945		0.63		0.157		0._57		12.44		0.157		3.15		2.52		0.315		7.717	
	1.3	t.90																																												
	54.60779	n																																												

Sample Siz 58

Degrees of 57

2013 Percent Cover Data
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INCORPORATED
AUG 31 20[illegible]
Div. of Oil, Gas & Mining

Area	Point ID	Veg	Litter	Rock	Soil	Leymus sp	Leymus sp #	Leymus cinereus	Leymus cinereus #	Achnatherum hymenoides	Achnatherum hymenoides #	Elymus elymoides	Elymus elymoides #	Thinopyrum	Thinopyrum #	Pseudoroegneria	Pseudoroegneria #	Medicago sativa	Medicago sativa #	Melilotus indicus	Melilotus indicus #	Tragopogon dubius	Tragopogon dubius #	Grindelia squarrosa	Grindelia squarrosa #	Astragalus cicer	Astragalus cicer #	Sphaeralcea coccinea	Sphaeralcea coccinea #	Wyethia amplexicaulis	Wyethia amplexicaulis #	Melilotus albus	Melilotus albus #	Ipomoea sp	Ipomoea sp #	Taraxacum officinale	Taraxacum officinale #	Machaeranthera	Machaeranthera #	Penstemon palmeri	Penstemon palmeri #	Astragalus utahensis	Astragalus utahensis #	Artemisia tridentata	Artemisia tridentata #	Purshia	Purshia #	Gutierrezia sarothrae	Gutierrezia sarothrae #	Rosa woodsii	Rosa woodsii #	Amelanchier utahensis	Amelanchier utahensis #	Ericameria nauseosa	Ericameria nauseosa #
RA7	45	12	7	12	68	2	14	8	6	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA7	46	7	2	6	85	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	4
RA7	55	12	0	0	88	12	41	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA7	61	5	0	8	87	5	15	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA7	54	4	1	8	87	1	3	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA7	59	9	1	15	75	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	6
RA7	56	11	1	9	79	1	2	0	0	10	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA7	50	13	2	27	58	2	15	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	2
RA7	49	4	1	7	88	4	14	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA7	58	13	1	1	85	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	1
RA7	57	2	15	25	58	2	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	6	0	0	0	0	0	0	0	0	0	0
RA7	51	20	2	12	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	2	0	0	0	0	0	0	0	0	0	0
RA7	43	18	5	11	66	12	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	23	0	0	0	0	0	0	0	0	8	0
RA7	41	17	2	7	74	4	26	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	0	0	0	3	2
RA7	53	13	2	12	73	8	23	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10	0	0	0	0	0	0	0	0	1	1
RA7	44	17	80	1	2	12	92	1	2	0	0	0	0	3	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
RA7	47	23	2	27	48	16	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
RA7	52	18	5	8	69	13	53	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	4	1
RA7	60	15	3	14	68	3	23	0	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	6	12
RA7	48	8	2	13	77	3	28	0	0	0	0	0	0	0	0	1	4	0	0	1	1	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	1	1
RA7	26	5	2	3	90	0	0	0	0	1	2	3	21	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA7	25	10	1	2	87	0	0	0	0	5	1	0	0	0	0	0	0	0	0	3	3	0	0	2	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA7	33	25	1	4	70	1	2	0	0	1	1	1	1	0	0	0	0	21	5	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
RA7	22	7	8	12	73	0	0	0	0	0	0	2	11	0	0	0	0	2	1	2	3	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA7	31	6	8	2	84	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3
RA7	32	16	2	8	74	0	0	0	0	0	0	2	6	0	0	0	0	6	2	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3
RA7	23	6	8	18	68	0	0	0	0	0	0	1	7	0	0	0	0	0	0	2	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1
RA7	30	17	20	5	58	0	0	0	0	12	2	1	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
RA7	28	5	34	8	63	1	1	3	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
RA7	40	15	19	2	64	0	0	0	0	9	18	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
RA7	15	16	4	7	73	0	0	1	10	0	0	1	1	1	1	0	0	8	18	0	0	0	0	3	6	0	0	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1
RA7	36	21	5	7	67	0	0	1	2	0	0	5	14	0	0	0	0	1	5	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	2
RA7	13	13	3	35	49	6	44	2	1	3	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	1
RA7	29	16	14	10	60	10	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	4	1
RA7	27	20	6	1	73	9	59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	2
RA7	24	13	3	6	78	3	21	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0
RA7	21	2	1	15	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA7	39	27	4	21	48	4	26	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	1
RA7	34	7	8	21	64	2	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	4	7
RA7	14	4	3	16	37	1	9	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
RA7	35	6	8	5	81	0	0	0	0	2	11	2	2	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5
RA7	37	22	21	8	49	2	12	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	2	0	0	0	0	0	0	0	0	2	4
RA7	38	8	2	2	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	0	0	0	0	0	2	1
RA7	42	11	2	26	61	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	2	0	0	0	0	0	0	0	0	0	0
RA7	7	26	5	18	51	0	0	0	0	1	1	1	4	0	0	0	0	3	7	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	1	0	0	0	0	0	0	0	0	3	2
RA7	8	25	10	39	26	0	0	0	0	1	1	5	15	0	0	0	0	12	11	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	4
RA7	4	14	3	2	81	0	0	0	0	0	0	3	36	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	1	1	1	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1
RA7	9	41	9	3	47	33	80	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	1	1	9	2
RA7	1	34	6	18	42	27	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
RA7	2	8	15	14	63	5	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	4	1
RA7	3	16	12	10	62	6	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	6	0	0	0	0	0	0	0	0	1	1
RA7	5	16	4	15	65	3	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	2	0	0	0	0	0	0	0	0	12	1
RA7	6	45	12	9	34	16	98	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1
RA7	10	17	70	8	5	10	22	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	5	1	0	0	0	0	0	0	0	0	0	0
RA7	19	22	6	11	61	3	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	1	0	0	0	0	0	0	0	0	2	1
RA7	20	17	2	7	74	8	81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	11	2	0	0	0	0	0	0	0	0	0	0
RA7	16	15	14	10	61	6	26	1	1	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA7	11	15	16	4	65	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	15	4
RA7	12	13	7	16	64	9	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6	2
RA7	17	15	17	18	50	11	88	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA7	18	12	4	8	76	8	42	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	2
Mean		14.59016	8.57377	11.7541	65.08197	4.721	23.69	0.492	0.967	0.902	0.738	0.623	2.311	0.066	0.23	0.246	0.279	0.951	0.934	0.311	0.557	0.016	0.016	0.246	0.459	0.738	0.59	0.033	0.115	0.016	0.016	0.016	0.016	0.016	0.033	0.033	0.049	0.016	0.016	0.016	0.016	0.033	0.082	2.754	1.295	0.148	0.164	0.016	0.016	0.016	0.016	0.016	0.016	3.525	1.672
						Grass	7.049											Forb	2.443																									Shrub	6.475										
					Relative Cc	29.57		3.08		5.647		3.901		0.411		1.54		5.955		1.953		0.103		1.54		4.62		0.205		0.103		0.103		0.103		0.205		0.103		0.103		0.205		17.25		0.924		0.103		0.103		0.103		22.07	

14.59016	avg
8.573947	sd
1.296	t.90
58.00311	n

Sample Siz 61
Degrees of 60

INCORPORATED
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Plot ID	Veg	Litter	Rock	Soil	Pseudoroegneria spicata	Pseudoroegneria spicata #	Bromus [illegible]	Bromus [illegible] #	Poa pratensis	Poa pratensis #	Thinopyrum intermedium	Thinopyrum intermedium #	Antennaria sp	Antennaria sp #
REF2-1	4	94	0	2	1	3	0	0	0	0	0	0	0	0
REF2-2	6	90	0	4	4	12	0	0	0	0	0	0	1	5
REF2-3	12	82	4	2	2	2	1	0	0	0	0	0	0	0
REF2-4	6	86	2	6	0	0	1	2	0	0	0	0	0	0
REF2-5	4	85	1	10	0	0	0	0	0	0	0	0	0	0
REF2-6	6	86	5	3	0	0	4	12	0	0	0	0	0	0
REF2-7	6	89	0	5	0	0	0	0	2	1	0	0	0	0
REF2-8	8	88	1	3	0	0	0	0	0	0	0	0	0	0
REF2-9	11	83	3	3	0	0	0	0	0	0	0	0	0	0
REF2-10	11	59	0	30	0	0	0	0	0	0	0	0	0	0
REF2-11	4	2	2	92	1	16	0	0	0	0	0	0	0	0
REF2-12	13	80	0	7	4	63	0	0	1	1	0	0	0	0
REF2-13	11	61	1	27	0	0	0	0	1	35	0	0	0	0
REF2-14	9	83	4	4	0	0	0	0	3	43	0	0	0	0
REF2-15	6	88	4	2	0	0	0	0	0	0	3	27	0	0
REF2-16	10	40	0	50	0	0	0	0	0	0	2	7	0	0
REF2-17	8	80	2	10	0	0	0	0	4	3	1	3	0	0
REF2-18	6	89	0	5	0	0	0	0	0	0	0	0	0	0
REF2-19	7	85	3	5	1	11	1	4	0	0	0	0	0	0
REF2-20	8	90	0	2	0	0	1	5	1	2	0	0	0	0
REF2-21	6	79	0	15	3	30	0	0	0	0	0	0	0	0
REF2-22	8	86	1	5	0	0	0	0	1	2	0	0	0	0
REF2-23	5	36	0	59	0	0	0	0	0	0	0	0	0	0
REF2-24	6	18	1	75	0	0	0	0	0	0	0	0	0	0
REF2-25	6	79	0	15	2	20	0	0	0	0	0	0	0	0
Avg	7.48	73.52	1.36	17.64	0.68	6.68	0.4	1.06	0.6	3.64	0.24	1.48	0.04	0.2
					Grass	1.92							Forb	1.92
				Relative Co	8.057		4.739		7.109		2.844		0.474	

Plot ID	Chenopodium [illegible]	Chenopodium [illegible] #	Delphinium [illegible]	Delphinium [illegible] #	Wyethia [illegible]	Wyethia [illegible] #	[illegible]	[illegible] #	[illegible]	[illegible] #	[illegible]	Primula parryi	[illegible]	Fragaria vesca #	Achillea millefolium	Achillea millefolium #
REF2-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-3	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-4	2	2	1	1	2	1	0	0	0	0	0	0	0	0	0	0
REF2-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-6	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0
REF2-7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-8	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	0
REF2-9	0	0	0	0	2	1	0	0	2	2	1	5	0	0	0	0
REF2-10	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
REF2-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7
REF2-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
REF2-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
REF2-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-19	0	0	0	0	0	0	0	0	0	0	0	0	1	16	0	0
REF2-20	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0
REF2-21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-22	0	0	0	0	0	0	0	0	0	0	1	17	0	0	0	0
REF2-23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-24	0	0	0	0	1	1	0	0	3	5	0	0	0	0	0	0
REF2-25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avg	0.16	0.24	0.04	0.04	0.2	0.16	0.08	0.04	0.36	0.4	0.2	0.86	0.08	0.8	0.12	0.56
Relative Co	1.896		0.474		2.37		0.948		4.265		2.37		0.948		1.422	

Plot ID	[illegible]	[illegible] #	[illegible]	[illegible] #	[illegible]	[illegible] #	[illegible]	[illegible] #	[illegible]	[illegible] #	[illegible] sp	[illegible] sp #	Astragalus sp	Astragalus sp #	Artemisia [illegible]	Artemisia [illegible] #
REF2-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-11	1	8	1	1	1	1	0	0	0	0	0	0	0	0	0	0
REF2-12	0	0	0	0	1	4	1	51	1	1	0	0	1	1	1	1
REF2-13	1	5	0	0	1	3	0	0	0	0	1	4	1	3	0	0
REF2-14	0	0	0	0	0	0	0	0	0	0	1	15	0	0	1	1
REF2-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-17	0	0	0	0	1	4	0	0	0	0	0	0	1	1	0	0
REF2-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-21	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0
REF2-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-25	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0
Avg	0.08	0.32	0.04	0.04	0.24	0.72	0.04	2.04	0.04	0.04	0.08	0.76	0.12	0.2	0.08	0.08
															Shrub	4.6
Relative Co	0.948		0.474		2.844		0.474		0.474		0.948		1.422		0.948	

Plot ID	Mahonia repens	Mahonia repens #	Symphoricarpos [illegible]	Symphoricarpos [illegible] #	Rosa woodsii	Rosa woodsii #	Amelanchier [illegible]	Amelanchier [illegible] #	Populus tremuloides	Populus tremuloides #	[illegible]	[illegible] #	Pseudotsuga menziesii	Pseudotsuga menziesii #
REF2-1	3	10	1	1	1	2	0	0	0	0	0	0	0	0
REF2-2	1	1	0	0	2	1	0	0	0	0	0	0	0	0
REF2-3	3	6	3	3	0	0	0	0	0	0	0	0	0	0
REF2-4	1	4	0	0	0	0	0	0	0	0	0	0	0	0
REF2-5	1	2	0	0	0	0	0	0	3	1	0	0	0	0
REF2-6	1	5	0	0	0	0	0	0	0	0	0	0	0	0
REF2-7	4	16	1	1	0	0	0	0	0	0	0	0	0	0
REF2-8	3	12	0	0	0	0	0	0	2	1	0	0	0	0
REF2-9	4	6	0	0	0	0	0	0	0	0	1	1	0	0
REF2-10	3	12	2	3	2	5	0	0	2	6	0	0	0	0
REF2-11	1	1	0	0	1	1	0	0	0	0	0	0	0	0
REF2-12	1	4	0	0	2	1	0	0	1	0	0	0	0	0
REF2-13	0	0	2	5	1	1	0	0	1	1	0	0	0	0
REF2-14	2	13	2	2	0	6	0	0	0	0	0	0	0	0
REF2-15	3	12	1	2	0	0	0	0	0	0	0	0	0	0
REF2-16	3	17	0	0	0	0	1	1	4	5	0	0	0	0
REF2-17	3	8	1	3	0	0	1	1	0	0	0	0	0	0
REF2-18	3	6	2	6	0	0	0	0	1	3	0	0	0	0
REF2-19	3	17	0	0	0	0	0	0	0	0	0	0	0	0
REF2-20	3	18	1	0	0	0	0	0	0	0	0	0	0	0
REF2-21	1	8	0	0	1	1	0	0	2	3	0	0	0	0
REF2-22	3	15	0	0	0	0	0	0	0	5	0	0	3	2
REF2-23	0	0	0	0	2	2	0	0	1	7	0	0	0	0
REF2-24	0	0	0	0	0	0	0	0	2	5	0	0	0	0
REF2-25	1	8	0	0	1	1	0	0	2	3	0	0	0	0
Avg	2.12	8.04	0.72	1.04	0.52	0.6	0.08	0.08	0.92	1.4	0.04	0.04	0.12	0.08
Relative Co	25.12		8.531		6.161		0.948		10.9		0.474		1.422	

7.48	avg
2.583925	sd
1.318	t.90
20.72943	n

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Plot ID	Veg	Litter	Rock	Soil	Thinopyrum	Thinopyrum #	Bromus marginatus	Bromus marginatus #	Phleum alpinum	Phleum alpinum #	Machaeranthera	Machaeranthera #	Tragopogon dubius	Tragopogon dubius #	Ranunculus sp	Ranunculus sp #
RA27-3	7	2	10	81	3	39	0	0	0	0	1	2	1	2	1	2
RA27-6	9	1	6	84	3	48	0	0	0	0	1	5	1	3	1	18
RA27-5	12	2	15	71	7	71	1	1	0	0	1	2	1	2	0	0
RA27-2	18	2	8	72	10	64	0	0	0	0	1	6	0	0	0	0
RA27-13	21	2	3	74	9	24	0	0	9	59	1	3	0	0	0	0
RA27-7	22	4	10	64	0	0	0	0	0	0	0	0	0	0	0	0
RA27-16	15	1	12	72	2	26	0	0	1	1	0	0	1	3	1	10
RA27-10	18	1	3	78	12	27	0	0	2	3	0	0	0	0	0	0
RA27-12	16	2	4	78	14	47	0	0	0	0	0	0	1	1	0	0
RA27-15	14	2	15	69	2	16	0	0	0	0	0	0	0	0	4	10
RA27-14	22	2	8	68	0	0	0	0	3	39	0	0	0	0	6	23
RA27-17	21	3	25	51	0	0	0	0	0	0	0	0	0	0	0	0
RA27-8	21	1	14	64	11	38	0	0	0	0	1	5	1	3	1	3
RA27-4	20	2	13	65	15	58	0	0	0	0	1	4	0	0	0	0
RA27-1	28	3	14	55	3	7	0	0	0	0	2	6	0	0	0	0
RA27-18	25	2	12	61	3	20	0	0	0	0	2	7	0	0	1	3
RA27-9	15	1	9	75	3	36	0	0	0	0	0	0	0	0	1	2
RA27-11	22	2	13	63	7	38	0	0	0	0	0	0	0	0	6	14
Avg	18.11111	1.944444	10.77778	69.16667	5.7778	31.056	0.0556	0.0556	0.8333	5.6667	0.6667	2.2222	0.3333	0.7778	1.2222	4.7222
					Grass	6.6667					forb	9.6667				
				Relative Cc	31.707		0.3049		4.5732		3.6585		1.8293		6.7073	

Plot ID	Astragalus sp	Astragalus sp #	Melilotus indicus	Melilotus indicus #	Taraxacum officinale	Taraxacum officinale #	Wyethia amplexicaulis	Wyethia amplexicaulis #	Grindelia squarrosa	Grindelia squarrosa #	Achillea millefolium	Achillea millefolium #	Cirsium sp	Cirsium sp #	Penstemon palmeri	Penstemon palmeri #
RA27-3	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA27-6	0	0	2	6	1	5	0	0	0	0	0	0	0	0	0	0
RA27-5	1	1	7	13	1	1	0	0	0	0	0	0	0	0	0	0
RA27-2	0	0	4	23	1	1	1	4	0	0	0	0	0	0	0	0
RA27-13	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0
RA27-7	0	0	9	17	1	2	0	0	1	1	0	0	0	0	0	0
RA27-16	0	0	1	3	1	4	0	0	0	0	1	15	0	0	0	0
RA27-10	0	0	2	4	2	8	0	0	0	0	0	0	0	0	0	0
RA27-12	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0
RA27-15	0	0	4	12	0	0	0	0	0	0	1	2	4	5	0	0
RA27-14	0	0	1	2	2	7	0	0	0	0	5	15	0	0	0	0
RA27-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA27-8	1	1	1	2	0	0	0	0	0	0	0	0	0	0	3	5
RA27-4	0	0	1	1	2	5	0	0	0	0	0	0	0	0	1	1
RA27-1	0	0	20	37	1	3	0	0	0	0	1	2	0	0	0	0
RA27-18	0	0	16	43	2	7	0	0	0	0	0	0	0	0	0	0
RA27-9	0	0	12	34	2	11	0	0	0	0	0	0	0	0	0	0
RA27-11	0	0	1	3	0	0	1	0	0	0	0	0	0	0	0	0
Avg	0.1667	0.2778	4.2222	11.111	1	3.3333	0.1111	0.2222	0.0556	0.0556	0.4444	2.1111	0.2222	0.2778	0.2222	0.3333
Relative Cover	0.9146		23.171		5.4878		0.6098		0.3049		2.439		1.2195		1.2195	

Plot ID	Astragalus utahensis	Astragalus utahensis #	Ipomopsis aggregata	Ipomopsis aggregata #	Antennaria sp	Antennaria sp #	Fragaria vesca	Fragaria vesca #	Populus tremuloides	Populus tremuloides #	Pinus edulis	Pinus edulis #	Ericameria nauseosa	Ericameria nauseosa #	Picea engelmannii	Picea engelmannii #	Rhus trilobata	Rhus trilobata #	Artemisia tridentata	Artemisia #
RA27-3	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
RA27-6	0	0	0	0	2	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0
RA27-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA27-2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
RA27-13	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
RA27-7	0	0	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0	0	0	0
RA27-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0
RA27-10	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
RA27-12	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
RA27-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA27-14	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	1	1	0	0
RA27-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA27-8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA27-4	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA27-1	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA27-18	0	0	0	0	4	18	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA27-9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA27-11	0	0	0	0	0	0	8	21	0	0	0	0	0	0	0	0	0	0	0	0
Avg	0.2222	0.3333	0.1111	0.1111	0.2222	1	0.4444	1.1667	0.0556	0.0556	0.0556	0.1111	1.1111	0.3889	0.5	0	0.0556	0.0556	0.1111	0.0556
									Shrub	1.8889										
Relative Cover	1.2195		0.6098		1.2195		2.439		0.3049		0.3049		6.0976		2.7439		0.3049		0.6098	

18.11111	avg
5.443711	sd
1.333	t.90
16.05315	n

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APPENDIX 2
WOODY PLANT DENSITY DATA

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	Quad No.	Species	Point to Plant (cm)	Average Point	Average Pc ft		ft^2	Plants/Acre
RA1-22	1	Big Sagebrush	61		77.75	2.550853	6.506852	6694.482
	2	Big Sagebrush	125		75.75	2.485236	6.176399	7052.653
	3	Big Sagebrush	46		141	4.625984	21.39973	2035.54
	4	Big Sagebrush	79	77.75	101.5	3.330053	11.08925	3928.128
RA1-21	1	Big Sagebrush	103		157	5.150919	26.53196	1641.793
	2	Big Sagebrush	96		46.75	1.533793	2.35252	18516.31
	3	Big Sagebrush	60		47	1.541995	2.377748	18319.86
	4	Big Sagebrush	44	75.75	100.75	3.305446	10.92598	3986.829
RA1-23	1	Big Sagebrush	116		82	2.690289	7.237654	6018.525
	2	Big Sagebrush	56		81.25	2.665683	7.105863	6130.149
	3	Big Sagebrush	142		19	0.62336	0.388577	112101.3
	4	Big Sagebrush	250	141	73.25	2.403215	5.775444	7542.278
RA1-24	1	Big Sagebrush	54		38.75	1.271326	1.616269	26950.97
	2	Big Sagebrush	105		78.5	2.575459	6.632991	6567.173
	3	Big Sagebrush	97		160.25	5.257546	27.64179	1575.875
	4	Big Sagebrush	150	101.5	69.5	2.280184	5.199238	8378.151
RA1-31	1	Big Sagebrush	106		54	1.771654	3.138756	13878.11
	2	Big Sagebrush	147		74.25	2.436024	5.934211	7340.487
	3	Rubber Rabbitbrush	213		74	2.427822	5.894318	7390.168
	4	Big Sagebrush	162	157	70	2.296588	5.274316	8258.89
RA1-25	1	Big Sagebrush	25		56.5	1.853675	3.43611	12677.13
	2	Big Sagebrush	78		83.75	2.747704	7.549875	5769.632
	3	Big Sagebrush	53		85.5	2.805118	7.868688	5535.866
	4	Big Sagebrush	31	46.75	162	5.314961	28.24881	1542.012
RA1-26	1	Big Sagebrush	39		93.25	3.059383	9.359826	4653.933
	2	Big Sagebrush	79		45.5	1.492782	2.228399	19547.67
	3	Rubber Rabbitbrush	31		48.25	1.583005	2.505906	17382.94
	4	Big Sagebrush	39	47	187.75	6.159777	37.94285	1148.042
RA1-30	1	Rubber Rabbitbrush	79		89	2.919948	8.526094	5109.022
	2	Rubber Rabbitbrush	216		88.5	2.903543	8.430564	5166.914
	3	Rubber Rabbitbrush	73		30.75	1.008858	1.017795	42798.4
	4	Rubber Rabbitbrush	35	100.75	50.75	1.665026	2.772313	15712.51
RA1-27	1	Big Sagebrush	76		155	5.085302	25.8603	1684.435
	2	Big Sagebrush	117		105.25	3.453084	11.92379	3653.201
	3	Rubber Rabbitbrush	86		185.25	6.077756	36.93912	1179.238
	4	Big Sagebrush	49	82	209.25	6.865158	47.13039	924.2444
RA1-27	1	Big Sagebrush	66		120.75	3.961614	15.69439	2775.514
	2	Big Sagebrush	60		87	2.854331	8.147204	5346.619
	3	Big Sagebrush	68		36.5	1.197507	1.434022	30376.1
	4	Big Sagebrush	131	81.25	109.5	3.59252	12.9062	3375.122
RA1-1	1	Big Sagebrush	22		172.75	5.667651	32.12227	1356.069
	2	Big Sagebrush	13		43	1.410761	1.990247	21886.73
	3	Big Sagebrush	22		122.25	4.010827	16.08673	2707.822
	4	Big Sagebrush	19	19	47	1.541995	2.377748	18319.86
RA1-2	1	Big Sagebrush	82		59.75	1.960302	3.842784	11335.53
	2	Big Sagebrush	56		59.25	1.943898	3.778738	11527.66
	3	Big Sagebrush	109		29	0.951444	0.905245	48119.57
	4	Big Sagebrush	46	73.25	56.25	1.845473	3.405769	12790.06
RA1-3	1	Big Sagebrush	32		52.5	1.722441	2.966803	14682.47
	2	Yellow Rabbitbrush	22		51.25	1.681431	2.827209	15407.42
	3	Big Sagebrush	62		83.75	2.747704	7.549875	5769.632
	4	Big Sagebrush	39	38.75	55.5	1.820866	3.315554	13138.08

RA1-4	1	Serviceberry	72		35	1.148294	1.318579	33035.56
	2	Big Sagebrush	108		73.25	2.403215	5.775444	7542.278
	3	Big Sagebrush	53		78	2.559055	6.548764	6651.637
	4	Big Sagebrush	81	78.5	163.25	5.355971	28.68643	1518.488
RA1-5	1	Rubber Rabbitbrush	59		72.25	2.370407	5.618829	7752.505
	2	Rubber Rabbitbrush	198		59.5	1.9521	3.810694	11430.99
	3	Rubber Rabbitbrush	194		38	1.246719	1.554309	28025.32
	4	Budsage	190	160.25	133.25	4.371719	19.11193	2279.205
RA1-6	1	Rubber Rabbitbrush	39		62.75	2.058727	4.238357	10277.57
	2	Rubber Rabbitbrush	51		52	1.706037	2.910562	14966.18
	3	Rubber Rabbitbrush	51		82.75	2.714895	7.370655	5909.922
	4	Rubber Rabbitbrush	137	69.5	58.25	1.911089	3.652262	11926.85
RA1-7	1	Big Sagebrush	43		35.75	1.1729	1.375695	31663.99
	2	Big Sagebrush	24		65.75	2.157152	4.653306	9361.086
	3	Big Sagebrush	103		167.5	5.495407	30.1995	1442.408
	4	Big Sagebrush	46	54	67.25	2.206365	4.868046	8948.149
RA1-8	1	Big Sagebrush	102		48.25	1.583005	2.505906	17382.94
	2	Big Sagebrush	25		246	8.070866	65.13888	668.725
	3	Big Sagebrush	36		73.75	2.41962	5.854559	7440.356
	4	Big Sagebrush	134	74.25	32.25	1.058071	1.119514	38909.74
RA1-14	1	Big Sagebrush	62	avg	85.12847	2.792929	10.23061	4257.812
	2	Big Sagebrush	108	stdev	47.84857	1.569835	12.22954	3561.868
	3	Big Sagebrush	76					
	4	Big Sagebrush	50	74	Plants/Acre	4257.812		
RA1-15	1	Big Sagebrush	92		n	52.90014		
	2	Yellow Rabbitbrush	14					
	3	Big Sagebrush	100					
	4	Big Sagebrush	74	70				
RA1-38	1	Big Sagebrush	31					
	2	Big Sagebrush	28					
	3	Big Sagebrush	127					
	4	Big Sagebrush	40	56.5				
RA1-37	1	Big Sagebrush	52					
	2	Big Sagebrush	63					
	3	Big Sagebrush	133					
	4	Rubber Rabbitbrush	87	83.75				
RA1-32	1	Big Sagebrush	16					
	2	Big Sagebrush	59					
	3	Big Sagebrush	234					
	4	Rubber Rabbitbrush	33	85.5				
RA1-36	1	Big Sagebrush	44					
	2	Big Sagebrush	46					
	3	Big Sagebrush	278					
	4	Big Sagebrush	280	162				
RA1-35	1	Big Sagebrush	63					
	2	Big Sagebrush	61					
	3	Big Sagebrush	142					
	4	Big Sagebrush	107	93.25				
RA1-33	1	Big Sagebrush	56					
	2	Rubber Rabbitbrush	45					
	3	Big Sagebrush	45					
	4	Big Sagebrush	36	45.5				
RA1-29	1	Rubber Rabbitbrush	30					
	2	Rubber Rabbitbrush	50					
	3	Big Sagebrush	18					
	4	Rubber Rabbitbrush	95	48.25				

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RA1-34	1	Big Sagebrush	195	
	2	Big Sagebrush	161	
	3	Big Sagebrush	195	
	4	Big Sagebrush	200	187.75
RA1-39	1	Big Sagebrush	98	
	2	Big Sagebrush	75	
	3	Big Sagebrush	113	
	4	Big Sagebrush	70	89
RA1-40	1	Rubber Rabbitbrush	42	
	2	Rubber Rabbitbrush	100	
	3	Big Sagebrush	134	
	4	Big Sagebrush	78	88.5
RA1-9	1	Big Sagebrush	5	
	2	Big Sagebrush	18	
	3	Big Sagebrush	61	
	4	Big Sagebrush	39	30.75
RA1-71	1	Big Sagebrush	5	
	2	Big Sagebrush	31	
	3	Big Sagebrush	92	
	4	Big Sagebrush	75	50.75
RA1-51	1	Rubber Rabbitbrush	172	
	2	Rubber Rabbitbrush	64	
	3	Rubber Rabbitbrush	230	
	4	Big Sagebrush	154	155
RA1-45	1	Yellow Rabbitbrush	19	
	2	Rubber Rabbitbrush	93	
	3	Big Sagebrush	26	
	4	Yellow Rabbitbrush	283	105.25
RA1-43	1	Serviceberry	176	
	2	Serviceberry	154	
	3	Big Sagebrush	147	
	4	Big Sagebrush	264	185.25
RA1-41	1	Serviceberry	96	
	2	Serviceberry	276	
	3	Big Sagebrush	189	
	4	Juniper	276	209.25
RA1-54	1	Rubber Rabbitbrush	105	
	2	Rubber Rabbitbrush	75	
	3	Rubber Rabbitbrush	138	
	4	Rubber Rabbitbrush	165	120.75
RA1-19	1	Rubber Rabbitbrush	40	
	2	Rubber Rabbitbrush	105	
	3	Rubber Rabbitbrush	146	
	4	Big Sagebrush	57	87
RA1-55	1	Rubber Rabbitbrush	15	
	2	Rubber Rabbitbrush	39	
	3	Rubber Rabbitbrush	57	
	4	Rubber Rabbitbrush	35	36.5
RA1-13	1	Rubber Rabbitbrush	10	
	2	Rubber Rabbitbrush	68	
	3	Rubber Rabbitbrush	142	
	4	Rubber Rabbitbrush	218	109.5
RA1-42	1	Rubber Rabbitbrush	138	
	2	Rubber Rabbitbrush	240	
	3	Rubber Rabbitbrush	172	
	4	Rubber Rabbitbrush	141	172.75
[illegible]	1	Rubber Rabbitbrush	25	
	2	Rubber Rabbitbrush	41	

[illegible]	3	Rubber Rabbitbrush	78	
	4	Rubber Rabbitbrush	28	43
RA1-56	1	Rubber Rabbitbrush	98	
	2	Big Sagebrush	180	
	3	Rubber Rabbitbrush	139	
	4	Rubber Rabbitbrush	72	122.25
RA1-44	1	Rubber Rabbitbrush	10	
	2	Rubber Rabbitbrush	27	
	3	Rubber Rabbitbrush	112	
	4	Rubber Rabbitbrush	39	47
RA1-46	1	Rubber Rabbitbrush	49	
	2	Big Sagebrush	10	
	3	Big Sagebrush	107	
	4	Rubber Rabbitbrush	73	59.75
RA1-49	1	Rubber Rabbitbrush	34	
	2	Rubber Rabbitbrush	26	
	3	Rubber Rabbitbrush	67	
	4	Rubber Rabbitbrush	110	59.25
RA1-50	1	Big Sagebrush	32	
	2	Big Sagebrush	11	
	3	Big Sagebrush	19	
	4	Big Sagebrush	54	29
RA1-20	1	Big Sagebrush	28	
	2	Big Sagebrush	67	
	3	Big Sagebrush	57	
	4	Big Sagebrush	73	56.25
RA1-57	1	Big Sagebrush	28	
	2	Big Sagebrush	50	
	3	Rubber Rabbitbrush	85	
	4	Big Sagebrush	47	52.5
RA1-52	1	Big Sagebrush	0	
	2	Big Sagebrush	55	
	3	Big Sagebrush	83	
	4	Big Sagebrush	67	51.25
RA1-48	1	Rubber Rabbitbrush	21	
	2	Rubber Rabbitbrush	170	
	3	Big Sagebrush	39	
	4	Rubber Rabbitbrush	105	83.75
RA1-53	1	Big Sagebrush	42	
	2	Big Sagebrush	34	
	3	Rubber Rabbitbrush	53	
	4	Rubber Rabbitbrush	93	55.5
RA1-1	1	Big Sagebrush	75	
	2	Rubber Rabbitbrush	12	
	3	Big Sagebrush	25	
	4	Big Sagebrush	28	35
RA1-10	1	Big Sagebrush	65	
	2	Big Sagebrush	26	
	3	Big Sagebrush	106	
	4	Big Sagebrush	96	73.25
RA1-16	1	Big Sagebrush	117	
	2	Big Sagebrush	85	
	3	Big Sagebrush	85	
	4	Big Sagebrush	25	78

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RA1-18	1	Rubber Rabbitbrush	53	
	2	Serviceberry	125	
	3	Rubber Rabbitbrush	280	
	4	Rubber Rabbitbrush	195	163.25
RA1-12	1	Big Sagebrush	63	
	2	Big Sagebrush	123	
	3	Big Sagebrush	42	
	4	Big Sagebrush	61	72.25
RA1-68	1	Yellow Rabbitbrush	51	
	2	Big Sagebrush	56	
	3	Yellow Rabbitbrush	94	
	4	Yellow Rabbitbrush	37	59.5
RA1-62	1	Yellow Rabbitbrush	8	
	2	Big Sagebrush	22	
	3	Yellow Rabbitbrush	80	
	4	Yellow Rabbitbrush	42	38
RA1-17	1	Big Sagebrush	48	
	2	Big Sagebrush	210	
	3	Serviceberry	156	
	4	Big Sagebrush	119	133.25
RA1-58	1	Winterfat	44	
	2	Big Sagebrush	64	
	3	Winterfat	40	
	4	Winterfat	103	62.75
RA1-61	1	Big Sagebrush	10	
	2	Budsage	65	
	3	Big Sagebrush	110	
	4	Big Sagebrush	23	52
RA1-11	1	Big Sagebrush	130	
	2	Big Sagebrush	120	
	3	Big Sagebrush	30	
	4	Big Sagebrush	51	82.75
RA1-63	1	Big Sagebrush	98	
	2	Big Sagebrush	30	
	3	Big Sagebrush	20	
	4	Big Sagebrush	85	58.25
RA1-60	1	Big Sagebrush	21	
	2	Big Sagebrush	2	
	3	Big Sagebrush	22	
	4	Big Sagebrush	98	35.75
RA1-69	1	Big Sagebrush	56	
	2	Big Sagebrush	72	
	3	Big Sagebrush	50	
	4	Big Sagebrush	85	65.75
RA1-67	1	Big Sagebrush	122	
	2	Big Sagebrush	330	
	3	Big Sagebrush	185	
	4	Rubber Rabbitbrush	33	167.5
RA1-70	1	Big Sagebrush	71	
	2	Big Sagebrush	60	
	3	Big Sagebrush	74	
	4	Big Sagebrush	64	67.25
RA1-59	1	Rubber Rabbitbrush	41	
	2	Rubber Rabbitbrush	41	
	3	Rubber Rabbitbrush	60	
	4	Rubber Rabbitbrush	51	48.25

RA1-65	1	Rubber Rabbitbrush	228	
	2	Rubber Rabbitbrush	430	
	3	Rubber Rabbitbrush	218	
	4	Rubber Rabbitbrush	108	246
RA1-66	1	Rubber Rabbitbrush	70	
	2	Rubber Rabbitbrush	153	
	3	Big Sagebrush	12	
	4	Rubber Rabbitbrush	60	73.75
RA1-64	1	Big Sagebrush	12	
	2	Big Sagebrush	37	
	3	Big Sagebrush	29	
	4	Big Sagebrush	51	32.25

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc ft		ft^2	Plants/Acre
RA2-11	1	Big Sagebrush	28		53.5	1.755249	3.0809	14138.72
	2	Rubber Rabbitbrush	96		134.25	4.404528	19.39986	2245.377
	3	Big Sagebrush	73		105	3.444882	11.86721	3670.618
	4	Big Sagebrush	17	53.5	105	3.444882	11.86721	3670.618
RA2-17	1	Big Sagebrush	213		51.5	1.689633	2.854858	15258.2
	2	Big Sagebrush	64		94	3.08399	9.510992	4579.964
	3	Rubber Rabbitbrush	201		167.75	5.503609	30.28971	1438.112
	4	Rubber Rabbitbrush	59	134.25	173	5.675853	32.21531	1352.152
RA2-14	1	Rubber Rabbitbrush	51		81	2.65748	7.062202	6168.048
	2	Rubber Rabbitbrush	186		261.5	8.579397	73.60605	591.7992
	3	Big Sagebrush	97		48.25	1.583005	2.505906	17382.94
	4	Big Sagebrush	86	105	85.75	2.81332	7.914771	5503.634
RA2-13	1	Rubber Rabbitbrush	51		94.25	3.092192	9.56165	4555.699
	2	Big Sagebrush	186		37	1.213911	1.473579	29560.67
	3	Winter Fat	97		100.25	3.289042	10.8178	4026.698
	4	Winter Fat	86	105	74	2.427822	5.894318	7390.168
RA2-12	1	Bud Sage	69		204.5	6.709318	45.01495	967.6786
	2	Rubber Rabbitbrush	62		53	1.738845	3.023583	14406.75
	3	Big Sagebrush	36		110	3.608924	13.02433	3344.509
	4	Big Sagebrush	39	51.5	63.25	2.075131	4.30617	10115.72
RA2-16	1	Big Sagebrush	152		46.75	1.533793	2.35252	18516.31
	2	Ephedra	61		99.25	3.256234	10.60306	4108.249
	3	Rubber Rabbitbrush	101		150.75	4.945866	24.46159	1780.751
	4	Rubber Rabbitbrush	62	94	150.25	4.929462	24.2996	1792.622
RA2-15	1	Rubber Rabbitbrush	190		55	1.804462	3.256083	13378.04
	2	Four-Wing	30		124	4.068242	16.55059	2631.93
	3	Winter Fat	357		276.75	9.079725	82.4414	528.3753
	4	Bud Sage	94	167.75	144.5	4.740814	22.47532	1938.126
RA2-19	1	Rubber Rabbitbrush	111		68.75	2.255578	5.08763	8561.944
	2	Rubber Rabbitbrush	224		289.75	9.506234	90.36848	482.0265
	3	Bud Sage	169		111.25	3.649935	13.32202	3269.774
	4	Rubber Rabbitbrush	188	173	105.75	3.469488	12.03735	3618.737
RA2-20	1	Ephedra	73		117.75	3.863189	14.92423	2918.744
	2	Big Sagebrush	68		77.5	2.542651	6.465074	6737.742
	3	Big Sagebrush	82		116.5	3.822179	14.60905	2981.714
	4	Winter Fat	101	81	76.75	2.518045	6.340549	6870.067
RA2-18	1	Rubber Rabbitbrush	244		574.5	18.84843	355.2632	122.6133
	2	Big Sagebrush	409		134.25	4.404528	19.39986	2245.377
	3	Bud Sage	267		72	2.362205	5.580012	7806.436
	4	Bud Sage	126	261.5	39.5	1.295932	1.679439	25937.23
RA2-31	1	Rubber Rabbitbrush	18		65	2.132546	4.547752	9578.358
	2	Rubber Rabbitbrush	92		129	4.232284	17.91222	2431.859
	3	Rubber Rabbitbrush	59		94.5	3.100394	9.612442	4531.627
	4	Rubber Rabbitbrush	24	48.25	75.75	2.485236	6.176399	7052.653

RA2-104	1	Ephedra	91		161.25	5.290355	27.98785	1556.39
	2	Ephedra	103		110	3.608924	13.02433	3344.509
	3	Rubber Rabbitbrush	88		212.5	6.971785	48.60579	896.1896
	4	Rubber Rabbitbrush	61	85.75	54.5	1.788058	3.197151	13624.63
RA2-83	1	Rubber Rabbitbrush	57		88.25	2.895341	8.383001	5196.23
	2	Rubber Rabbitbrush	55		162.75	5.339567	28.51098	1527.833
	3	Rubber Rabbitbrush	128		213.75	7.012796	49.1793	885.7385
	4	Rubber Rabbitbrush	137	94.25	79.5	2.608268	6.803061	6403
RA2-30	1	Rubber Rabbitbrush	12		84	2.755906	7.595016	5735.34
	2	Rubber Rabbitbrush	41		129.75	4.25689	18.12111	2403.826
	3	Rubber Rabbitbrush	11		81.25	2.665683	7.105863	6130.149
	4	Rubber Rabbitbrush	84	37	101.75	3.338255	11.14394	3908.849
RA2-28	1	Rubber Rabbitbrush	14		214.75	7.045604	49.64053	877.5087
	2	Rubber Rabbitbrush	178		102.25	3.354659	11.25374	3870.714
	3	Rubber Rabbitbrush	84		206.25	6.766733	45.78867	951.3271
	4	Rubber Rabbitbrush	125	100.25	80.25	2.632874	6.932026	6283.877
RA2-41	1	Big Sagebrush	66		59.25	1.943898	3.778738	11527.66
	2	Big Sagebrush	100		82.25	2.698491	7.281853	5981.994
	3	Big Sagebrush	8		66.5	2.181759	4.760071	9151.125
	4	Big Sagebrush	122	74	105.5	3.461286	11.9805	3635.908
RA2-22	1	Rubber Rabbitbrush	285		36.25	1.189305	1.414445	30796.53
	2	Winter Fat	296		127.75	4.191273	17.56677	2479.682
	3	Rubber Rabbitbrush	128		250	8.2021	67.27444	647.497
	4	Rubber Rabbitbrush	109	204.5	218.75	7.176838	51.507	845.7103
RA2-35	1	Rubber Rabbitbrush	46		37.25	1.222113	1.49356	29165.22
	2	Rubber Rabbitbrush	20		28.75	0.943242	0.889705	48960.07
	3	Rubber Rabbitbrush	11		128.5	4.215879	17.77364	2450.821
	4	Bud Sage	135	53	104	3.412074	11.64225	3741.546 x
RA2-55	1	Winter Fat	122		175.25	5.749672	33.05873	1317.655
	2	Rubber Rabbitbrush	91		105.75	3.469488	12.03735	3618.737
	3	Winter Fat	119		118.25	3.879593	15.05124	2894.113
	4	Winter Fat	108	110	75.5	2.477034	6.135698	7099.436
RA2-57	1	Big Sagebrush	170		107.5	3.526903	12.43904	3501.877
	2	Rubber Rabbitbrush	50		114.75	3.764764	14.17345	3073.353
	3	Bud Sage	21		75	2.46063	6.0547	7194.411
	4	Bud Sage	12	63.25	74	2.427822	5.894318	7390.168
RA2-36	1	Rubber Rabbitbrush	84		206.5	6.774935	45.89974	949.025
	2	Big Sagebrush	41		95	3.116798	9.71443	4484.051
	3	Big Sagebrush	28		114.75	3.764764	14.17345	3073.353
	4	Big Sagebrush	34	46.75	207	6.791339	46.12228	944.4459
RA2-53	1	Big Sagebrush	90		150.25	4.929462	24.2996	1792.622
	2	Big Sagebrush	162		141.75	4.650591	21.62799	2014.056
	3	Rubber Rabbitbrush	76		150.25	4.929462	24.2996	1792.622
	4	Rubber Rabbitbrush	69	99.25	31.25	1.025263	1.051163	41439.81
RA2-59	1	Rubber Rabbitbrush	117		140.25	4.601378	21.17268	2057.368
	2	Rubber Rabbitbrush	203		51.25	1.681431	2.827209	15407.42
	3	Ephedra	101		173.75	5.70046	32.49524	1340.504
	4	Big Sagebrush	182	150.75	244.5	8.021654	64.34693	676.9554

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RA2-60	1	Rubber Rabbitbrush	170		74.5	2.444226	5.97424	7291.304
	2	Ephedra	84		81.5	2.673885	7.149659	6092.598
	3	Big Sagebrush	138		37.5	1.230315	1.513675	28777.64
	4	Big Sagebrush	209	150.25	72.75	2.386811	5.696867	7646.308
RA2-38	1	Big Sagebrush	102		51	1.673228	2.799693	15558.85
	2	Winter Fat	18		85.25	2.796916	7.82274	5568.382
	3	Winter Fat	8		35.75	1.1729	1.375695	31663.99
	4	Winter Fat	92	55	87	2.854331	8.147204	5346.619
RA2-46	1	Big Sagebrush	138		78.5	2.575459	6.632991	6567.173
	2	Rubber Rabbitbrush	174		202.5	6.643701	44.13876	986.8876
	3	Rubber Rabbitbrush	168		135.5	4.445538	19.76281	2204.14
	4	Rubber Rabbitbrush	16	124	35.75	1.1729	1.375695	31663.99
RA2-32	1	Four-Wing	245		Average	3.832904	20.58613	2115.988
	2	Four-Wing	36		StDev	2.439714	37.93518	1148.275
	3	Rubber Rabbitbrush	554					
	4	Four-Wing	272	276.75	Plants/Acre	2115.988		
RA2-51	1	Rubber Rabbitbrush	66		n	67.42195		
	2	Rubber Rabbitbrush	232					
	3	Rubber Rabbitbrush	132					
	4	Rubber Rabbitbrush	148	144.5				
RA2-44	1	Rubber Rabbitbrush	41					
	2	Rubber Rabbitbrush	39					
	3	Rubber Rabbitbrush	106					
	4	Rubber Rabbitbrush	89	68.75				
RA2-42	1	Big Sagebrush	75					
	2	Big Sagebrush	30					
	3	Big Sagebrush	296					
	4	Big Sagebrush	758	289.75				
RA2-37	1	Rubber Rabbitbrush	89					
	2	Rubber Rabbitbrush	56					
	3	Rubber Rabbitbrush	109					
	4	Rubber Rabbitbrush	191	111.25				
RA2-39	1	Rubber Rabbitbrush	22					
	2	Rubber Rabbitbrush	41					
	3	Rubber Rabbitbrush	208					
	4	Rubber Rabbitbrush	152	105.75				
RA2-21	1	Rubber Rabbitbrush	135					
	2	Rubber Rabbitbrush	34					
	3	Rubber Rabbitbrush	139					
	4	Rubber Rabbitbrush	163	117.75				
RA2-47	1	Rubber Rabbitbrush	14					
	2	Rubber Rabbitbrush	137					
	3	Rubber Rabbitbrush	53					
	4	Rubber Rabbitbrush	106	77.5				
RA2-29	1	Rubber Rabbitbrush	128					
	2	Winter Fat	19					
	3	Rubber Rabbitbrush	104					
	4	Rubber Rabbitbrush	215	116.5				
RA2-34	1	Rubber Rabbitbrush	43					
	2	Rubber Rabbitbrush	60					
	3	Rubber Rabbitbrush	66					
	4	Rubber Rabbitbrush	138	76.75				
RA2-26	1	Winter Fat	490					
	2	Rubber Rabbitbrush	391					
	3	Rubber Rabbitbrush	1051					
	4	Winter Fat	366	574.5				

RA2-56	1	Winter Fat	88	
	2	Rubber Rabbitbrush	191	
	3	Big Sagebrush	93	
	4	Rubber Rabbitbrush	165	134.25
RA2-24	1	Rubber Rabbitbrush	26	
	2	Rubber Rabbitbrush	74	
	3	Big Sagebrush	144	
	4	Rubber Rabbitbrush	44	72
RA2-40	1	Rubber Rabbitbrush	61	
	2	Rubber Rabbitbrush	63	
	3	Rubber Rabbitbrush	7	
	4	Rubber Rabbitbrush	27	39.5
RA2-25	1	Big Sagebrush	78	
	2	Winter Fat	91	
	3	Big Sagebrush	88	
	4	Big Sagebrush	3	65
RA2-45	1	Rubber Rabbitbrush	99	
	2	Big Sagebrush	204	
	3	Big Sagebrush	96	
	4	Big Sagebrush	117	129
RA2-49	1	Big Sagebrush	108	
	2	Rubber Rabbitbrush	67	
	3	Bud Sage	172	
	4	Rubber Rabbitbrush	31	94.5
RA2-58	1	Big Sagebrush	108	
	2	Big Sagebrush	86	
	3	Big Sagebrush	105	
	4	Rubber Rabbitbrush	4	75.75
RA2-27	1	Winter Fat	126	
	2	Bud Sage	62	
	3	Rubber Rabbitbrush	259	
	4	Bud Sage	198	161.25
RA2-43	1	Rubber Rabbitbrush	126	
	2	Big Sagebrush	97	
	3	Winter Fat	156	
	4	Bud Sage	61	110
RA2-52	1	Bud Sage	143	
	2	Big Sagebrush	115	
	3	Bud Sage	354	
	4	Winter Fat	238	212.5
RA2-50	1	Bud Sage	57	
	2	Bud Sage	65	
	3	Bud Sage	18	
	4	Bud Sage	78	54.5
RA2-23	1	Big Sagebrush	81	
	2	Big Sagebrush	76	
	3	Big Sagebrush	82	
	4	Rubber Rabbitbrush	114	88.25
RA2-33	1	Big Sagebrush	334	
	2	Big Sagebrush	262	
	3	Rubber Rabbitbrush	46	
	4	Big Sagebrush	9	162.75
RA2-66	1	Big Sagebrush	240	
	2	Big Sagebrush	170	
	3	Big Sagebrush	177	
	4	Big Sagebrush	268	213.75
RA2-88	1	Bud Sage	65	
	2	Bud Sage	39	

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RA2-88	3	Big Sagebrush	134	
	4	Winter Fat	80	79.5
RA2-87	1	Big Sagebrush	10	
	2	Big Sagebrush	96	
	3	Big Sagebrush	197	
	4	Rubber Rabbitbrush	33	84
RA2-79	1	Rubber Rabbitbrush	120	
	2	Rubber Rabbitbrush	85	
	3	Rubber Rabbitbrush	209	
	4	Big Sagebrush	105	129.75
RA2-74	1	Big Sagebrush	131	
	2	Rubber Rabbitbrush	36	
	3	Big Sagebrush	9	
	4	Big Sagebrush	149	81.25
RA2-71	1	Rubber Rabbitbrush	45	
	2	Rubber Rabbitbrush	96	
	3	Rubber Rabbitbrush	205	
	4	Rubber Rabbitbrush	61	101.75
RA2-69	1	Big Sagebrush	156	
	2	Rubber Rabbitbrush	154	
	3	Rubber Rabbitbrush	402	
	4	Rubber Rabbitbrush	147	214.75
RA2-70	1	Rubber Rabbitbrush	101	
	2	Winter Fat	45	
	3	Rubber Rabbitbrush	50	
	4	Big Sagebrush	213	102.25
RA2-84	1	Rubber Rabbitbrush	142	
	2	Winter Fat	290	
	3	Four-Wing	259	
	4	Four-Wing	134	206.25
RA2-62	1	Rubber Rabbitbrush	40	
	2	Rubber Rabbitbrush	47	
	3	Four-Wing	90	
	4	Rubber Rabbitbrush	144	80.25
RA2-63	1	Rubber Rabbitbrush	85	
	2	Big Sagebrush	104	
	3	Rubber Rabbitbrush	20	
	4	Big Sagebrush	28	59.25
RA2-67	1	Big Sagebrush	92	
	2	Big Sagebrush	70	
	3	Big Sagebrush	90	
	4	Big Sagebrush	77	82.25
RA2-77	1	Rubber Rabbitbrush	75	
	2	Rubber Rabbitbrush	51	
	3	Big Sagebrush	67	
	4	Big Sagebrush	73	66.5
RA2-90	1	Rubber Rabbitbrush	86	
	2	Rubber Rabbitbrush	215	
	3	Rubber Rabbitbrush	70	
	4	Rubber Rabbitbrush	51	105.5
RA2-85	1	Winter Fat	19	
	2	Winter Fat	60	
	3	Big Sagebrush	53	
	4	Winter Fat	13	36.25
RA2-86	1	Rubber Rabbitbrush	88	
	2	Rubber Rabbitbrush	165	
	3	Rubber Rabbitbrush	165	
	4	Rubber Rabbitbrush	93	127.75

RA2-61	1	Rubber Rabbitbrush	130	
	2	Rubber Rabbitbrush	318	
	3	Big Sagebrush	392	
	4	Rubber Rabbitbrush	160	250
RA2-86	1	Rubber Rabbitbrush	200	
	2	Rubber Rabbitbrush	227	
	3	Rubber Rabbitbrush	248	
	4	Rubber Rabbitbrush	200	218.75
RA2-81	1	Rubber Rabbitbrush	12	
	2	Rubber Rabbitbrush	35	
	3	Rubber Rabbitbrush	52	
	4	Rubber Rabbitbrush	50	37.25
RA2-73	1	Rubber Rabbitbrush	27	
	2	Rubber Rabbitbrush	46	
	3	Rubber Rabbitbrush	20	
	4	Rubber Rabbitbrush	22	28.75
RA2-68	1	Big Sagebrush	118	
	2	Rubber Rabbitbrush	24	
	3	Big Sagebrush	150	
	4	Rubber Rabbitbrush	222	128.5
RA2-82	1	Winter Fat	18	
	2	Big Sagebrush	143	
	3	Winter Fat	152	
	4	Winter Fat	103	104
RA2-91	1	Rubber Rabbitbrush	125	
	2	Rubber Rabbitbrush	403	
	3	Rubber Rabbitbrush	131	
	4	Winter Fat	42	175.25
RA2-99	1	Bud Sage	189	
	2	Winter Fat	76	
	3	Bud Sage	59	
	4	Rubber Rabbitbrush	99	105.75
RA2-78	1	Winter Fat	45	
	2	Winter Fat	45	
	3	Rubber Rabbitbrush	220	
	4	Winter Fat	163	118.25
RA2-65	1	Rubber Rabbitbrush	45	
	2	Rubber Rabbitbrush	71	
	3	Big Sagebrush	49	
	4	Big Sagebrush	137	75.5
RA2-64	1	Rubber Rabbitbrush	29	
	2	Winter Fat	204	
	3	Rubber Rabbitbrush	31	
	4	Winter Fat	166	107.5
RA2-89	1	Big Sagebrush	38	
	2	Ephedra	230	
	3	Big Sagebrush	60	
	4	Big Sagebrush	131	114.75
RA2-4	1	Winter Fat	104	
	2	Winter Fat	53	
	3	Winter Fat	26	
	4	Winter Fat	117	75
RA2-5	1	Big Sagebrush	119	
	2	Big Sagebrush	124	
	3	Big Sagebrush	27	
	4	Big Sagebrush	26	74
RA2-1	1	Big Sagebrush	112	
	2	Rubber Rabbitbrush	197	

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RA2-1	3	Rubber Rabbitbrush	301	
	4	Rubber Rabbitbrush	216	206.5
RA2-8	1	Rubber Rabbitbrush	175	
	2	Rubber Rabbitbrush	27	
	3	Rubber Rabbitbrush	72	
	4	Rubber Rabbitbrush	106	95
RA2-7	1	Big Sagebrush	103	
	2	Rubber Rabbitbrush	141	
	3	Big Sagebrush	112	
	4	Rubber Rabbitbrush	103	114.75
RA2-9	1	Bud Sage	88	
	2	Rubber Rabbitbrush	269	
	3	Bud Sage	366	
	4	Bud Sage	105	207
RA2-6	1	Winter Fat	240	
	2	Rubber Rabbitbrush	29	
	3	Rubber Rabbitbrush	52	
	4	Rubber Rabbitbrush	280	150.25
RA2-3	1	Winter Fat	69	
	2	Big Sagebrush	143	
	3	Winter Fat	178	
	4	Winter Fat	177	141.75
RA2-10	1	Rubber Rabbitbrush	154	
	2	Rubber Rabbitbrush	130	
	3	Rubber Rabbitbrush	213	
	4	Rubber Rabbitbrush	104	150.25
RA2-2	1	Rubber Rabbitbrush	47	
	2	Rubber Rabbitbrush	47	
	3	Rubber Rabbitbrush	1	
	4	Big Sagebrush	30	31.25
RA2-54	1	Big Sagebrush	178	
	2	Big Sagebrush	167	
	3	Big Sagebrush	161	
	4	Rubber Rabbitbrush	55	140.25
RA2-76	1	Big Sagebrush	17	
	2	Big Sagebrush	74	
	3	Big Sagebrush	65	
	4	Big Sagebrush	49	51.25
RA2-97	1	Big Sagebrush	127	
	2	Big Sagebrush	88	
	3	Big Sagebrush	209	
	4	Big Sagebrush	271	173.75
RA2-75	1	Rubber Rabbitbrush	127	
	2	Rubber Rabbitbrush	80	
	3	Rubber Rabbitbrush	555	
	4	Rubber Rabbitbrush	216	244.5
RA2-98	1	Rubber Rabbitbrush	43	
	2	Rubber Rabbitbrush	109	
	3	Rubber Rabbitbrush	100	
	4	Rubber Rabbitbrush	46	74.5
RA2-94	1	Rubber Rabbitbrush	79	
	2	Rubber Rabbitbrush	112	
	3	Big Sagebrush	74	
	4	Winter Fat	61	81.5
RA2-48	1	Rubber Rabbitbrush	42	
	2	Rubber Rabbitbrush	19	
	3	Rubber Rabbitbrush	44	
	4	Ephedra	45	37.5

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RA2-103	1	Rubber Rabbitbrush	110	
	2	Rubber Rabbitbrush	39	
	3	Rubber Rabbitbrush	66	
	4	Rubber Rabbitbrush	76	72.75
RA2-92	1	Big Sagebrush	40	
	2	Big Sagebrush	15	
	3	Rubber Rabbitbrush	96	
	4	Rubber Rabbitbrush	53	51
RA2-80	1	Rubber Rabbitbrush	100	
	2	Rubber Rabbitbrush	125	
	3	Big Sagebrush	19	
	4	Big Sagebrush	97	85.25
RA2-101	1	Rubber Rabbitbrush	29	
	2	Big Sagebrush	32	
	3	Big Sagebrush	43	
	4	Bud Sage	39	35.75
RA2-102	1	Rubber Rabbitbrush	97	
	2	Rubber Rabbitbrush	101	
	3	Big Sagebrush	65	
	4	Rubber Rabbitbrush	85	87
RA2-93	1	Rubber Rabbitbrush	64	
	2	Rubber Rabbitbrush	105	
	3	Rubber Rabbitbrush	51	
	4	Rubber Rabbitbrush	94	78.5
RA2-95	1	Service Berry	45	
	2	Rubber Rabbitbrush	160	
	3	Bud Sage	296	
	4	Rubber Rabbitbrush	309	202.5
RA2-72	1	Bud Sage	140	
	2	Bud Sage	276	
	3	Bud Sage	64	
	4	Bud Sage	62	135.5
RA2-100	1	Big Sagebrush	10	
	2	Big Sagebrush	19	
	3	Big Sagebrush	61	
	4	Big Sagebrush	53	35.75

	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc ft		ft^2	Plants/Acre
RA4-1	1	Rubber Rabbitbrush	56		46.5	1.525591	2.327427	18715.95
	2	Rubber Rabbitbrush	72		83.75	2.747704	7.549875	5769.632
	3	Rubber Rabbitbrush	32		26.75	0.877625	0.770225	56554.89
	4	Rubber Rabbitbrush	26	46.5	89.5	2.936352	8.622162	5052.097
RA4-2	1	Rubber Rabbitbrush	139		64.25	2.10794	4.44341	9803.282
	2	Big Sagebrush	48		16.5	0.541339	0.293047	148644.9
	3	Rubber Rabbitbrush	58		100.25	3.289042	10.8178	4026.698
	4	Rubber Rabbitbrush	90	83.75	120.5	3.953412	15.62947	2787.043
RA4-3	1	Rubber Rabbitbrush	31		67.75	2.222769	4.940702	8816.56
	2	Rubber Rabbitbrush	3		107	3.510499	12.3236	3534.681
	3	Rubber Rabbitbrush	44		51.5	1.689633	2.854858	15258.2
	4	Rubber Rabbitbrush	29	26.75	94.75	3.108596	9.663368	4507.745
RA4-4	1	Rubber Rabbitbrush	134		109	3.576116	12.7886	3406.158
	2	Rubber Rabbitbrush	131		119.5	3.920604	15.37113	2833.883
	3	Rubber Rabbitbrush	40		128.25	4.207677	17.70455	2460.385
	4	Rubber Rabbitbrush	53	89.5	92.5	3.034777	9.209871	4729.708
RA4-5	1	Big Sagebrush	60		62.75	2.058727	4.238357	10277.57
	2	Big Sagebrush	67		256	8.39895	70.54237	617.5012
	3	Big Sagebrush	93		117.25	3.846785	14.79775	2943.69
	4	Big Sagebrush	37	64.25	122	4.002625	16.02101	2718.931
RA4-6	1	Rubber Rabbitbrush	16		118	3.871391	14.98767	2906.389
	2	Rubber Rabbitbrush	6		112	3.674541	13.50225	3226.129
	3	Rubber Rabbitbrush	22		113.25	3.715551	13.80532	3155.305
	4	Rubber Rabbitbrush	22	16.5	103.75	3.403872	11.58634	3759.599
RA4-7	1	Rubber Rabbitbrush	150		191.75	6.291011	39.57682	1100.644
	2	Rubber Rabbitbrush	51		134.75	4.420932	19.54464	2228.744
	3	Rubber Rabbitbrush	54		201.25	6.602691	43.59552	999.1852
	4	Big Sagebrush	146	100.25	112.75	3.699147	13.68369	3183.352
RA4-8	1	Rubber Rabbitbrush	121		82.75	2.714895	7.370655	5909.922
	2	Big Sagebrush	263		34.75	1.140092	1.29981	33512.6
	3	Rubber Rabbitbrush	55		97.25	3.190617	10.18004	4278.963
	4	Rubber Rabbitbrush	43	120.5	61.25	2.009515	4.038149	10787.12
RA4-86	1	Big Sagebrush	57		35.25	1.156496	1.337483	32568.63
	2	Rubber Rabbitbrush	15		123	4.035433	16.28472	2674.9
	3	Rubber Rabbitbrush	125		86.75	2.846129	8.100449	5377.48
	4	Rubber Rabbitbrush	74	67.75	108.5	3.559711	12.67155	3437.623
RA4-16	1	Rubber Rabbitbrush	139		115.5	3.78937	14.35933	3033.568
	2	Rubber Rabbitbrush	82		104.25	3.420276	11.69829	3723.622
	3	Rubber Rabbitbrush	104		167.75	5.503609	30.28971	1438.112
	4	Rubber Rabbitbrush	103	107	91.25	2.993767	8.962638	4860.176
RA4-14	1	Rubber Rabbitbrush	47		77.5	2.542651	6.465074	6737.742
	2	Rubber Rabbitbrush	41		87.75	2.878937	8.288279	5255.615
	3	Rubber Rabbitbrush	31		55.75	1.829068	3.345491	13020.51
	4	Rubber Rabbitbrush	87	51.5	103	3.379265	11.41943	3814.55
RA4-18	1	Rubber Rabbitbrush	17		92.25	3.026575	9.160156	4755.378
	2	Rubber Rabbitbrush	134		166.5	5.462599	29.83998	1459.786
	3	Big Sagebrush	146		70.5	2.312992	5.349933	8142.158
	4	Rubber Rabbitbrush	82	94.75	209.75	6.881562	47.35589	919.8433

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RA4-17	1	Big Sagebrush	146		93.5	3.067585	9.41008	4629.079
	2	Big Sagebrush	158		133.25	4.371719	19.11193	2279.205
	3	Big Sagebrush	43		106	3.47769	12.09433	3601.688
	4	Big Sagebrush	89	109	123.75	4.06004	16.48392	2642.575
RA4-10	1	Rubber Rabbitbrush	90		125	4.10105	16.81861	2589.988
	2	Rubber Rabbitbrush	90		126.75	4.158465	17.29283	2518.963
	3	Big Sagebrush	181		100.75	3.305446	10.92598	3986.829
	4	Rubber Rabbitbrush	117	119.5	154	5.052494	25.52769	1706.382
RA4-12	1	Rubber Rabbitbrush	108		141	4.625984	21.39973	2035.54
	2	Rubber Rabbitbrush	187		184.25	6.044948	36.54139	1192.073
	3	Rubber Rabbitbrush	63		207.25	6.799541	46.23376	942.1687
	4	Big Sagebrush	155	128.25	99	3.248032	10.54971	4129.024
RA4-13	1	Big Sagebrush	58		180.5	5.921916	35.06909	1242.119
	2	Big Sagebrush	100		248.75	8.16109	66.60338	654.0208
	3	Big Sagebrush	54		120	3.937008	15.50003	2810.317
	4	Big Sagebrush	158	92.5	181.25	5.946523	35.36113	1231.861
RA4-110	1	Rubber Rabbitbrush	119		234.5	7.69357	59.19102	735.9225
	2	Rubber Rabbitbrush	48		132	4.330709	18.75504	2322.576
	3	Big Sagebrush	53		85.25	2.796916	7.82274	5568.382
	4	Rubber Rabbitbrush	31	62.75	139.25	4.56857	20.87183	2087.024
RA4-15	1	Big Sagebrush	81		52.5	1.722441	2.966803	14682.47
	2	Rubber Rabbitbrush	354		117	3.838583	14.73472	2956.283
	3	Rubber Rabbitbrush	293		148	4.855643	23.57727	1847.542
	4	Rubber Rabbitbrush	296	256	200.25	6.569882	43.16335	1009.189
RA4-106	1	Rubber Rabbitbrush	0		160.5	5.265748	27.7281	1570.969
	2	Rubber Rabbitbrush	117		116	3.805774	14.48392	3007.473
	3	Rubber Rabbitbrush	144		74.5	2.444226	5.97424	7291.304
	4	Rubber Rabbitbrush	208	117.25	17.75	0.582349	0.33913	128446.1
RA4-61	1	Rubber Rabbitbrush	83		52.25	1.714239	2.938615	14823.31
	2	Rubber Rabbitbrush	127		58	1.902887	3.62098	12029.89
	3	Rubber Rabbitbrush	94		49.25	1.615814	2.610854	16684.2
	4	Rubber Rabbitbrush	184	122	47	1.541995	2.377748	18319.86
RA4-48	1	Rubber Rabbitbrush	82		96.5	3.166011	10.02362	4345.734
	2	Rubber Rabbitbrush	85		124.75	4.092848	16.7514	2600.379
	3	Rubber Rabbitbrush	157		108.5	3.559711	12.67155	3437.623
	4	Rubber Rabbitbrush	148	118	101.5	3.330053	11.08925	3928.128
RA4-89	1	Rubber Rabbitbrush	52		30.5	1.000656	1.001313	43502.89
	2	Rubber Rabbitbrush	36		37.25	1.222113	1.49356	29165.22
	3	Rubber Rabbitbrush	220		33.5	1.099081	1.20798	36060.2
	4	Rubber Rabbitbrush	140	112	116	3.805774	14.48392	3007.473
RA4-36	1	Rubber Rabbitbrush	63		68.5	2.247375	5.050696	8624.554
	2	Big Sagebrush	68		67.5	2.214567	4.904307	8881.989
	3	Rubber Rabbitbrush	173		79.25	2.600066	6.760342	6443.461
	4	Rubber Rabbitbrush	149	113.25	69.5	2.280184	5.199238	8378.151
RA4-64	1	Rubber Rabbitbrush	34		57.75	1.894685	3.589832	12134.27
	2	Big Sagebrush	91		120.5	3.953412	15.62947	2787.043
	3	Big Sagebrush	189		38	1.246719	1.554309	28025.32
	4	Ephedra	101	103.75	32.25	1.058071	1.119514	38909.74

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RA4-73	1	Rubber Rabbitbrush	107		98.5	3.231627	10.44342	4171.049
	2	Big Sagebrush	152		77.5	2.542651	6.465074	6737.742
	3	Big Sagebrush	198		59	1.935696	3.746917	11625.56
	4	Rubber Rabbitbrush	310	191.75	56.75	1.861877	3.466585	12565.68
RA4-35	1	Big Sagebrush	78		102.75	3.371063	11.36407	3833.135
	2	Rubber Rabbitbrush	89		68	2.230971	4.977232	8751.852
	3	Rubber Rabbitbrush	156		108	3.543307	12.55503	3469.527
	4	Big Sagebrush	216	134.75	78.75	2.583662	6.675307	6525.543
RA4-72	1	Rubber Rabbitbrush	124		104	3.412074	11.64225	3741.546
	2	Rubber Rabbitbrush	315		118.75	3.895998	15.1788	2869.793
	3	Rubber Rabbitbrush	80		52	1.706037	2.910562	14966.18
	4	Big Sagebrush	286	201.25	102.5	3.362861	11.30883	3851.856
RA4-75	1	Rubber Rabbitbrush	92		27.5	0.902231	0.814021	53512.15
	2	Big Sagebrush	98		76	2.493438	6.217235	7006.33
	3	Big Sagebrush	151		168	5.511811	30.38006	1433.835
	4	Big Sagebrush	110	112.75	141.5	4.642389	21.55177	2021.18
RA4-104	1	Rubber Rabbitbrush	50		39.75	1.304134	1.700765	25612
	2	Big Sagebrush	81		104	3.412074	11.64225	3741.546
	3	Big Sagebrush	109		31.75	1.041667	1.08507	40144.89
	4	Big Sagebrush	91	82.75	179.75	5.89731	34.77826	1252.506
RA4-88	1	Big Sagebrush	0		531.25	17.42946	303.7862	143.3903
	2	Big Sagebrush	34		147.75	4.847441	23.49769	1853.8
	3	Big Sagebrush	35		97	3.182415	10.12776	4301.048
	4	Big Sagebrush	70	34.75	87.25	2.862533	8.194095	5316.024
RA4-39	1	Rubber Rabbitbrush	23		98.25	3.223425	10.39047	4192.303
	2	Big Sagebrush	190		171.5	5.626641	31.65908	1375.908
	3	Rubber Rabbitbrush	110		225.5	7.398294	54.73476	795.838
	4	Big Sagebrush	66	97.25	202.25	6.635499	44.02985	989.3289
RA4-47	1	Rubber Rabbitbrush	26		424.25	13.91896	193.7376	224.8403
	2	Rubber Rabbitbrush	47		176.25	5.782481	33.43708	1302.745
	3	Rubber Rabbitbrush	108		76.75	2.518045	6.340549	6870.067
	4	Rubber Rabbitbrush	64	61.25	317	10.40026	108.1655	402.7163
RA4-47	1	Rubber Rabbitbrush	32		Average	3.710297	19.17674	2271.501
	2	Rubber Rabbitbrush	33		StDev	2.335175	33.93549	1283.612
	3	Rubber Rabbitbrush	40					
	4	Rubber Rabbitbrush	36	35.25	Plants/Acre	2271.501		
RA4-38	1	Rubber Rabbitbrush	21		n	65.91754		
	2	Big Sagebrush	208					
	3	Rubber Rabbitbrush	101					
	4	Rubber Rabbitbrush	162	123				
RA4-66	1	Rubber Rabbitbrush	35					
	2	Rubber Rabbitbrush	139					
	3	Rubber Rabbitbrush	144					
	4	Rubber Rabbitbrush	29	86.75				
RA4-53	1	Rubber Rabbitbrush	55					
	2	Rubber Rabbitbrush	73					
	3	Rubber Rabbitbrush	152					
	4	Rubber Rabbitbrush	154	108.5				

RA4-81	1	Rubber Rabbitbrush	61	
	2	Rubber Rabbitbrush	50	
	3	Rubber Rabbitbrush	94	
	4	Rubber Rabbitbrush	257	115.5
RA4-68	1	Rubber Rabbitbrush	68	
	2	Rubber Rabbitbrush	95	
	3	Big Sagebrush	147	
	4	Rubber Rabbitbrush	107	104.25
RA4-99	1	Rubber Rabbitbrush	45	
	2	Rubber Rabbitbrush	60	
	3	Rubber Rabbitbrush	251	
	4	Big Sagebrush	315	167.75
RA4-33	1	Big Sagebrush	28	
	2	Big Sagebrush	15	
	3	Rubber Rabbitbrush	154	
	4	Rubber Rabbitbrush	168	91.25
RA4-41	1	Big Sagebrush	24	
	2	Rubber Rabbitbrush	47	
	3	Rubber Rabbitbrush	65	
	4	Big Sagebrush	174	77.5
RA4-94	1	Rubber Rabbitbrush	35	
	2	Rubber Rabbitbrush	84	
	3	Big Sagebrush	122	
	4	Big Sagebrush	110	87.75
RA4-91	1	Rubber Rabbitbrush	15	
	2	Rubber Rabbitbrush	29	
	3	Big Sagebrush	128	
	4	Rubber Rabbitbrush	51	55.75
RA4-50	1	Rubber Rabbitbrush	100	
	2	Four-wing Saltbrush	77	
	3	Rubber Rabbitbrush	181	
	4	Big Sagebrush	54	103
RA4-70	1	Big Sagebrush	65	
	2	Big Sagebrush	49	
	3	Big Sagebrush	90	
	4	Big Sagebrush	165	92.25
RA4-80	1	Rubber Rabbitbrush	182	
	2	Rubber Rabbitbrush	112	
	3	Big Sagebrush	182	
	4	Big Sagebrush	190	166.5
RA4-40	1	Big Sagebrush	27	
	2	Big Sagebrush	40	
	3	Big Sagebrush	95	
	4	Big Sagebrush	120	70.5
RA4-24	1	Four-wing Saltbrush	257	
	2	Rubber Rabbitbrush	87	
	3	Rubber Rabbitbrush	220	
	4	Rubber Rabbitbrush	275	209.75

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RA4-77	1	Rubber Rabbitbrush	100	
	2	Big Sagebrush	82	
	3	Rubber Rabbitbrush	95	
	4	Rubber Rabbitbrush	97	93.5
RA4-9	1	Rubber Rabbitbrush	175	
	2	Big Sagebrush	76	
	3	Rubber Rabbitbrush	165	
	4	Rubber Rabbitbrush	117	133.25
RA4-78	1	Rubber Rabbitbrush	74	
	2	Rubber Rabbitbrush	74	
	3	Rubber Rabbitbrush	131	
	4	Rubber Rabbitbrush	145	106
RA4-63	1	Big Sagebrush	200	
	2	Rubber Rabbitbrush	105	
	3	Rubber Rabbitbrush	89	
	4	Rubber Rabbitbrush	101	123.75
RA4-52	1	Big Sagebrush	75	
	2	Big Sagebrush	125	
	3	Big Sagebrush	210	
	4	Big Sagebrush	90	125
RA4-54	1	Big Sagebrush	200	
	2	Big Sagebrush	74	
	3	Big Sagebrush	50	
	4	Rubber Rabbitbrush	183	126.75
RA4-128	1	Big Sagebrush	40	
	2	Big Sagebrush	45	
	3	Big Sagebrush	229	
	4	Big Sagebrush	89	100.75
RA4-60	1	Rubber Rabbitbrush	240	
	2	Four-wing Saltbrush	130	
	3	Big Sagebrush	227	
	4	Rubber Rabbitbrush	19	154
RA4-28	1	Rubber Rabbitbrush	74	
	2	Four-wing Saltbrush	127	
	3	Rubber Rabbitbrush	165	
	4	Rubber Rabbitbrush	198	141
RA4-57	1	Four-wing Saltbrush	205	
	2	Four-wing Saltbrush	215	
	3	Rubber Rabbitbrush	245	
	4	Rubber Rabbitbrush	72	184.25
RA4-20	1	Four-wing Saltbrush	61	
	2	Four-wing Saltbrush	79	
	3	Rubber Rabbitbrush	244	
	4	Big Sagebrush	445	207.25
RA4-30	1	Rubber Rabbitbrush	54	
	2	Rubber Rabbitbrush	125	
	3	Rubber Rabbitbrush	83	
	4	Rubber Rabbitbrush	134	99

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RA4-21	1	Rubber Rabbitbrush	135	
	2	Rubber Rabbitbrush	418	
	3	Rubber Rabbitbrush	127	
	4	Rubber Rabbitbrush	42	180.5
RA4-23	1	Shadescale	275	
	2	Big Sagebrush	125	
	3	Rubber Rabbitbrush	240	
	4	Big Sagebrush	355	248.75
RA4-32	1	Rubber Rabbitbrush	65	
	2	Rubber Rabbitbrush	100	
	3	Rubber Rabbitbrush	130	
	4	Big Sagebrush	185	120
RA4-59	1	Rubber Rabbitbrush	138	
	2	Rubber Rabbitbrush	160	
	3	Rubber Rabbitbrush	225	
	4	Big Sagebrush	202	181.25
RA4-74	1	Rubber Rabbitbrush	132	
	2	Rubber Rabbitbrush	426	
	3	Rubber Rabbitbrush	245	
	4	Rubber Rabbitbrush	135	234.5
RA4-100	1	Big Sagebrush	201	
	2	Rubber Rabbitbrush	90	
	3	Big Sagebrush	41	
	4	Big Sagebrush	196	132
RA4-46	1	Rubber Rabbitbrush	105	
	2	Rubber Rabbitbrush	31	
	3	Big Sagebrush	115	
	4	Big Sagebrush	90	85.25
RA4-27	1	Rubber Rabbitbrush	205	
	2	Rubber Rabbitbrush	161	
	3	Rubber Rabbitbrush	146	
	4	Winterfat	45	139.25
RA4-22	1	Rubber Rabbitbrush	35	
	2	Rubber Rabbitbrush	37	
	3	Rubber Rabbitbrush	78	
	4	Rubber Rabbitbrush	60	52.5
RA4-45	1	Rubber Rabbitbrush	160	
	2	Rubber Rabbitbrush	188	
	3	Rubber Rabbitbrush	75	
	4	Rubber Rabbitbrush	45	117
RA4-19	1	Rubber Rabbitbrush	111	
	2	Rubber Rabbitbrush	186	
	3	Big Sagebrush	201	
	4	Rubber Rabbitbrush	94	148
RA4-34	1	Rubber Rabbitbrush	310	
	2	Rubber Rabbitbrush	185	
	3	Rubber Rabbitbrush	86	
	4	Rubber Rabbitbrush	220	200.25

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RA4-90	1	Rubber Rabbitbrush	46	
	2	Big Sagebrush	230	
	3	Rubber Rabbitbrush	282	
	4	Rubber Rabbitbrush	84	160.5
RA4-65	1	Rubber Rabbitbrush	85	
	2	Big Sagebrush	250	
	3	Rubber Rabbitbrush	45	
	4	Rubber Rabbitbrush	84	116
RA4-67	1	Rubber Rabbitbrush	76	
	2	Rubber Rabbitbrush	114	
	3	Rubber Rabbitbrush	81	
	4	Rubber Rabbitbrush	27	74.5
RA4-56	1	Rubber Rabbitbrush	3	
	2	Rubber Rabbitbrush	22	
	3	Rubber Rabbitbrush	11	
	4	Rubber Rabbitbrush	35	17.75
RA4-85	1	Rubber Rabbitbrush	26	
	2	Rubber Rabbitbrush	32	
	3	Rubber Rabbitbrush	84	
	4	Rubber Rabbitbrush	67	52.25
RA4-97	1	Rubber Rabbitbrush	26	
	2	Ephedra	68	
	3	Rubber Rabbitbrush	123	
	4	Rubber Rabbitbrush	15	58
RA4-76	1	Rubber Rabbitbrush	2	
	2	Rubber Rabbitbrush	90	
	3	Rubber Rabbitbrush	17	
	4	Rubber Rabbitbrush	88	49.25
RA4-105	1	Rubber Rabbitbrush	12	
	2	Rubber Rabbitbrush	38	
	3	Rubber Rabbitbrush	51	
	4	Big Sagebrush	87	47
RA4-95	1	Rubber Rabbitbrush	9	
	2	Rubber Rabbitbrush	83	
	3	Rubber Rabbitbrush	84	
	4	Big Sagebrush	210	96.5
RA4-42	1	Rubber Rabbitbrush	46	
	2	Rubber Rabbitbrush	24	
	3	Big Sagebrush	225	
	4	Rubber Rabbitbrush	204	124.75
RA4-62	1	Big Sagebrush	102	
	2	Big Sagebrush	131	
	3	Rubber Rabbitbrush	49	
	4	Rubber Rabbitbrush	152	108.5
RA4-55	1	Rubber Rabbitbrush	40	
	2	Rubber Rabbitbrush	53	
	3	Rubber Rabbitbrush	168	
	4	Rubber Rabbitbrush	145	101.5

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RA4-31	1	Big Sagebrush	20	
	2	Rubber Rabbitbrush	36	
	3	Rubber Rabbitbrush	40	
	4	Rubber Rabbitbrush	26	30.5
RA4-71	1	Rubber Rabbitbrush	0	
	2	Big Sagebrush	27	
	3	Rubber Rabbitbrush	48	
	4	Big Sagebrush	74	37.25
RA4-37	1	Big Sagebrush	13	
	2	Big Sagebrush	42	
	3	Big Sagebrush	24	
	4	Big Sagebrush	55	33.5
RA4-108	1	Rubber Rabbitbrush	47	
	2	Big Sagebrush	116	
	3	Big Sagebrush	80	
	4	Rubber Rabbitbrush	221	116
RA4-96	1	Rubber Rabbitbrush	27	
	2	Rubber Rabbitbrush	20	
	3	Rubber Rabbitbrush	93	
	4	Rubber Rabbitbrush	134	68.5
RA4-117	1	Rubber Rabbitbrush	39	
	2	Rubber Rabbitbrush	46	
	3	Rubber Rabbitbrush	66	
	4	Big Sagebrush	119	67.5
RA4-113	1	Rubber Rabbitbrush	12	
	2	Rubber Rabbitbrush	35	
	3	Rubber Rabbitbrush	84	
	4	Rubber Rabbitbrush	186	79.25
RA4-119	1	Rubber Rabbitbrush	56	
	2	Rubber Rabbitbrush	74	
	3	Rubber Rabbitbrush	82	
	4	Rubber Rabbitbrush	66	69.5
RA4-118	1	Rubber Rabbitbrush	47	
	2	Rubber Rabbitbrush	51	
	3	Rubber Rabbitbrush	86	
	4	Rubber Rabbitbrush	47	57.75
RA4-112	1	Big Sagebrush	84	
	2	Big Sagebrush	77	
	3	Big Sagebrush	146	
	4	Rubber Rabbitbrush	175	120.5
RA4-125	1	Rubber Rabbitbrush	24	
	2	Rubber Rabbitbrush	29	
	3	Rubber Rabbitbrush	56	
	4	Rubber Rabbitbrush	43	38
RA4-120	1	Rubber Rabbitbrush	36	
	2	Rubber Rabbitbrush	9	
	3	Big Sagebrush	36	
	4	Rubber Rabbitbrush	48	32.25

RA4-127	1	Big Sagebrush	48	
	2	Rubber Rabbitbrush	41	
	3	Rubber Rabbitbrush	49	
	4	Big Sagebrush	256	98.5
RA4-126	1	Big Sagebrush	9	
	2	Rubber Rabbitbrush	88	
	3	Big Sagebrush	74	
	4	Big Sagebrush	139	77.5
RA4-121	1	Big Sagebrush	80	
	2	Rubber Rabbitbrush	13	
	3	Rubber Rabbitbrush	96	
	4	Rubber Rabbitbrush	47	59
RA4-109	1	Big Sagebrush	61	
	2	Rubber Rabbitbrush	40	
	3	Rubber Rabbitbrush	41	
	4	Big Sagebrush	85	56.75
RA4-110	1	Rubber Rabbitbrush	42	
	2	Rubber Rabbitbrush	129	
	3	Rubber Rabbitbrush	100	
	4	Rubber Rabbitbrush	140	102.75
RA4-123	1	Rubber Rabbitbrush	40	
	2	Rubber Rabbitbrush	80	
	3	Rubber Rabbitbrush	50	
	4	Rubber Rabbitbrush	102	68
RA4-116	1	Rubber Rabbitbrush	69	
	2	Rubber Rabbitbrush	173	
	3	Rubber Rabbitbrush	65	
	4	Rubber Rabbitbrush	125	108
RA4-114	1	Rubber Rabbitbrush	69	
	2	Rubber Rabbitbrush	185	
	3	Rubber Rabbitbrush	35	
	4	Rubber Rabbitbrush	26	78.75
RA4-115	1	Rubber Rabbitbrush	157	
	2	Rubber Rabbitbrush	85	
	3	Big Sagebrush	92	
	4	Rubber Rabbitbrush	82	104
RA4-124	1	Rubber Rabbitbrush	142	
	2	Rubber Rabbitbrush	165	
	3	Rubber Rabbitbrush	93	
	4	Rubber Rabbitbrush	75	118.75
RA4-111	1	Rubber Rabbitbrush	109	
	2	Rubber Rabbitbrush	8	
	3	Rubber Rabbitbrush	71	
	4	Rubber Rabbitbrush	20	52
RA4-122	1	Big Sagebrush	19	
	2	Big Sagebrush	189	
	3	Big Sagebrush	42	
	4	Rubber Rabbitbrush	160	102.5

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RA4-84	1	Rubber Rabbitbrush	30	
	2	Rubber Rabbitbrush	10	
	3	Rubber Rabbitbrush	38	
	4	Rubber Rabbitbrush	32	27.5
RA4-82	1	Rubber Rabbitbrush	32	
	2	Big Sagebrush	110	
	3	Rubber Rabbitbrush	37	
	4	Rubber Rabbitbrush	125	76
RA4-107	1	Big Sagebrush	195	
	2	Big Sagebrush	169	
	3	Rubber Rabbitbrush	139	
	4	Rubber Rabbitbrush	169	168
RA4-98	1	Big Sagebrush	46	
	2	Rubber Rabbitbrush	165	
	3	Rubber Rabbitbrush	143	
	4	Rubber Rabbitbrush	212	141.5
RA4-51	1	Ephedra	53	
	2	Rubber Rabbitbrush	25	
	3	Rubber Rabbitbrush	35	
	4	Rubber Rabbitbrush	46	39.75
RA4-49	1	Rubber Rabbitbrush	110	
	2	Rubber Rabbitbrush	126	
	3	Big Sagebrush	115	
	4	Rubber Rabbitbrush	65	104
RA4-103	1	Rubber Rabbitbrush	50	
	2	Rubber Rabbitbrush	24	
	3	Big Sagebrush	11	
	4	Rubber Rabbitbrush	42	31.75
RA4-57	1	Big Sagebrush	241	
	2	Big Sagebrush	231	
	3	Big Sagebrush	158	
	4	Rubber Rabbitbrush	89	179.75
RA4-41	1	Rubber Rabbitbrush	510	
	2	Rubber Rabbitbrush	155	
	3	Rubber Rabbitbrush	520	
	4	Rubber Rabbitbrush	940	531.25
RA4-87	1	Rubber Rabbitbrush	105	
	2	Big Sagebrush	256	
	3	Rubber Rabbitbrush	135	
	4	Big Sagebrush	95	147.75
RA4-93	1	Rubber Rabbitbrush	105	
	2	Big Sagebrush	3	
	3	Rubber Rabbitbrush	225	
	4	Big Sagebrush	55	97
RA4-101	1	Big Sagebrush	91	
	2	Big Sagebrush	2	
	3	Big Sagebrush	211	
	4	Big Sagebrush	45	87.25

RA4-92	1	Rubber Rabbitbrush	234	
	2	Big Sagebrush	35	
	3	Rubber Rabbitbrush	83	
	4	Rubber Rabbitbrush	41	98.25
RA4-29	1	Rubber Rabbitbrush	82	
	2	Rubber Rabbitbrush	259	
	3	Big Sagebrush	250	
	4	Big Sagebrush	95	171.5
RA4-102	1	Rubber Rabbitbrush	93	
	2	Big Sagebrush	296	
	3	Rubber Rabbitbrush	308	
	4	Big Sagebrush	205	225.5
RA4-79	1	Rubber Rabbitbrush	111	
	2	Rubber Rabbitbrush	132	
	3	Big Sagebrush	305	
	4	Rubber Rabbitbrush	261	202.25
RA4-69	1	Big Sagebrush	485	
	2	Rubber Rabbitbrush	576	
	3	Rubber Rabbitbrush	305	
	4	Big Sagebrush	331	424.25
RA4-25	1	Big Sagebrush	198	
	2	Big Sagebrush	45	
	3	Big Sagebrush	155	
	4	Big Sagebrush	307	176.25
RA4-83	1	Rubber Rabbitbrush	95	
	2	Big Sagebrush	101	
	3	Big Sagebrush	71	
	4	Big Sagebrush	40	76.75
RA4-26	1	Rubber Rabbitbrush	238	
	2	Big Sagebrush	405	
	3	Big Sagebrush	335	
	4	Rubber Rabbitbrush	290	317

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc ft		ft^2	Plants/Acre
RA5-54	1	Ephedra	223		291	9.547244	91.14988	477.8942
	2	Rubber RB	334		130.5	4.281496	18.33121	2376.275
	3	Bud Sage	239		270	8.858268	78.46891	555.1243
	4	Rubber RB	368	291	135.25	4.437336	19.68995	2212.296
RA5-62	1	Bud Sage	74		83	2.723097	7.415258	5874.374
	2	Rubber RB	74		98.5	3.231627	10.44342	4171.049
	3	Bud Sage	73		88.5	2.903543	8.430564	5166.914
	4	Bud Sage	301	130.5	39.75	1.304134	1.700765	25612
RA5-51	1	Rubber RB	202		107.25	3.518701	12.38126	3518.221
	2	Bud Sage	94		94	3.08399	9.510992	4579.964
	3	Bud Sage	394		282	9.251969	85.59893	508.8849
	4	Bud Sage	390	270	124	4.068242	16.55059	2631.93
RA5-52	1	Ephedra	58		146.25	4.798229	23.023	1892.021
	2	Wyo Sage	164		82.5	2.706693	7.326187	5945.794
	3	Wyo Sage	262		140.5	4.60958	21.24823	2050.053
	4	Bud Sage	57	135.25	180.25	5.913714	34.97201	1245.567
RA5-77	1	Bud Sage	129		211.75	6.947179	48.26329	902.5493
	2	Rubber RB	67		171	5.610236	31.47475	1383.966
	3	Bud Sage	67		127.75	4.191273	17.56677	2479.682
	4	Rubber RB	69	83	166	5.446194	29.66103	1468.593
RA5-76	1	Bud Sage	200		227.75	7.472113	55.83247	780.1911
	2	Rubber RB	120		106.25	3.485893	12.15145	3584.758
	3	Bud Sage	10		103.5	3.395669	11.53057	3777.784
	4	Rubber RB	64	98.5	60.25	1.976706	3.907367	11148.17
RA5-72	1	Rubber RB	96		142.75	4.683399	21.93423	1985.937
	2	Rubber RB	51		160.25	5.257546	27.64179	1575.875
	3	Rubber RB	97		90.5	2.96916	8.815912	4941.065
	4	Rubber RB	110	88.5	271.5	8.907481	79.34321	549.0073
RA5-75	1	Rubber RB	20		132	4.330709	18.75504	2322.576
	2	Rubber RB	45		214.5	7.037402	49.52502	879.5554
	3	Ephedra	72		220.25	7.22605	52.2158	834.2303
	4	Rubber RB	22	39.75	111.25	3.649935	13.32202	3269.774
RA5-48	1	Rubber RB	81		161.75	5.306759	28.16169	1546.782
	2	Bud Sage	75		68.75	2.255578	5.08763	8561.944
	3	Rubber RB	125		74.75	2.452428	6.014403	7242.615
	4	Rubber RB	148	107.25	328.75	10.78576	116.3327	374.4435
RA5-21	1	Rubber RB	148		301	9.875328	97.52211	446.6679
	2	Rubber RB	87		186.25	6.110565	37.339	1166.609
	3	Bud Sage	71		308.5	10.12139	102.4426	425.2139
	4	Bud Sage	70	94	174	5.708662	32.58882	1336.655
RA5-2	1	Ephedra	183		182.5	5.987533	35.85055	1215.044
	2	Bud Sage	384		119.75	3.928806	15.43552	2822.063
	3	Bud Sage	395		278.25	9.128937	83.3375	522.6939
	4	Rubber RB	166	282	19	0.62336	0.388577	112101.3
RA5-5	1	Rubber RB	51		111.25	3.649935	13.32202	3269.774
	2	Rubber RB	226		71	2.329396	5.426088	8027.884
	3	Rubber RB	154		118	3.871391	14.98767	2906.389
	4	Rubber RB	65	124	252	8.267717	68.35514	637.26

RA 5 1

RA5-7	1	Bud Sage	196		119.5	3.920604	15.37113	2833.883
	2	Ephedra	235		504.5	16.55184	273.9633	158.9994
	3	Bud Sage	11		147.75	4.847441	23.49769	1853.8
	4	Rubber RB	143	146.25	74.75	2.452428	6.014403	7242.615
RA5-11	1	Bud Sage	109		188.5	6.184383	38.2466	1138.925
	2	Rubber RB	132		214	7.020998	49.29441	883.6702
	3	Wyo Sage	49		119.5	3.920604	15.37113	2833.883
	4	Wyo Sage	40	82.5	237.5	7.791995	60.71519	717.4482
RA5-15	1	Bud Sage	82		267.75	8.784449	77.16655	564.4933
	2	Rubber RB	116		98.25	3.223425	10.39047	4192.303
	3	Bud Sage	284		140	4.593176	21.09727	2064.723
	4	Bud Sage	80	140.5	289.25	9.48983	90.05687	483.6944
RA5-13	1	Wyo Sage	122		197	6.463255	41.77366	1042.762
	2	Rubber RB	156		150.25	4.929462	24.2996	1792.622
	3	Rubber RB	273		184.5	6.05315	36.64062	1188.844
	4	Rubber RB	170	180.25	197	6.463255	41.77366	1042.762
RA5-12	1	Rubber RB	343		124.5	4.084646	16.68433	2610.833
	2	Bud Sage	77		37	1.213911	1.473579	29560.67
	3	CHVI	248		187.5	6.151575	37.84187	1151.106
	4	Bud Sage	179	211.75	333.75	10.9498	119.8982	363.3082
RA5-14	1	Bud Sage	236		189.5	6.217192	38.65347	1126.936
	2	Bud Sage	175		179.25	5.880906	34.58505	1259.504
	3	Wyo Sage	41		71.25	2.337599	5.464367	7971.646
	4	Bud Sage	232	171	149.75	4.913058	24.13814	1804.613
RA5-16	1	Rubber RB	125		218	7.152231	51.15441	851.5395
	2	Bud Sage	161		240.5	7.89042	62.25873	699.6609
	3	Bud Sage	101		26	0.853018	0.72764	59864.74
	4	Rubber RB	124	127.75	104.5	3.428478	11.75446	3705.827
RA5-17	1	Bud Sage	116		112	3.674541	13.50225	3226.129
	2	Rubber RB	289		255	8.366142	69.99233	622.3539
	3	Ephedra	72		177.75	5.831693	34.00864	1280.851
	4	Bud Sage	187	166	Average	5.441315	37.19726	1171.054
RA5-18	1	Bud Sage	154		StDev	2.772482	39.85408	1092.987
	2	Rubber RB	459					
	3	Bud Sage	129		Plants/Acre	1171.054		
	4	Bud Sage	169	227.75				
RA5-19	1	Rubber RB	141					
	2	Rubber RB	61					
	3	Wyo Sage	165					
	4	Rubber RB	58	106.25				
RA5-20	1	Rubber RB	176					
	2	Bud Sage	159					
	3	Rubber RB	42					
	4	Rubber RB	37	103.5				
RA5-39	1	Rubber RB	33					
	2	Rubber RB	56					
	3	Rubber RB	69					
	4	Rubber RB	83	60.25				
RA5-24	1	Rubber RB	33					
	2	Rubber RB	33					
	3	Rubber RB	354					
	4	Rubber RB	151	142.75				

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RA5-33	1	Wyo Sage	111	
	2	Ephedra	72	
	3	Rubber RB	118	
	4	Rubber RB	340	160.25
RA5-25	1	Bud Sage	112	
	2	Rubber RB	40	
	3	Rubber RB	57	
	4	Four Wing	153	90.5
RA5-34	1	Bud Sage	436	
	2	Bud Sage	229	
	3	Rubber RB	246	
	4	Ephedra	175	271.5
RA5-38	1	Rubber RB	90	
	2	Wyo Sage	96	
	3	Wyo Sage	42	
	4	Rubber RB	300	132
RA5-35	1	Bud Sage	202	
	2	Rubber RB	167	
	3	Rubber RB	225	
	4	Rubber RB	264	214.5
RA5-29	1	Rubber RB	170	
	2	Bud Sage	163	
	3	Bud Sage	125	
	4	Wyo Sage	423	220.25
RA5-27	1	Bud Sage	99	
	2	Bud Sage	62	
	3	Bud Sage	135	
	4	Bud Sage	149	111.25
RA5-40	1	Bud Sage	170	
	2	Bud Sage	268	
	3	Rubber RB	93	
	4	Bud Sage	116	161.75
RA5-74	1	Wyo Sage	155	
	2	Wyo Sage	20	
	3	Wyo Sage	55	
	4	Rubber RB	45	68.75
RA5-78	1	Rubber RB	25	
	2	Rubber RB	44	
	3	Rubber RB	175	
	4	Rubber RB	55	74.75
RA5-26	1	Rubber RB	212	
	2	Rubber RB	742	
	3	Rubber RB	190	
	4	Rubber RB	171	328.75
RA5-68	1	Rubber RB	305	
	2	Rubber RB	240	
	3	Rubber RB	389	
	4	Wyo Sage	270	301
RA5-41	1	Bud Sage	287	
	2	Rubber RB	78	
	3	Rubber RB	60	
	4	Rubber RB	320	186.25

RA 5 3

RA5-66	1	Rubber RB	124	
	2	Bud Sage	450	
	3	Bud Sage	178	
	4	Wyo Sage	482	308.5
RA5-70	1	Ephedra	25	
	2	Wyo Sage	340	
	3	Bud Sage	235	
	4	Bud Sage	96	174
RA5-73	1	Wyo Sage	90	
	2	Wyo Sage	132	
	3	Bud Sage	168	
	4	Rubber RB	340	182.5
RA5-79	1	Rubber RB	173	
	2	Wyo Sage	184	
	3	Bud Sage	60	
	4	Bud Sage	62	119.75
RA5-67	1	Wyo Sage	303	
	2	Bud Sage	235	
	3	Rubber RB	387	
	4	Rubber RB	188	278.25
RA5-58	1	Rubber RB	14	
	2	Rubber RB	13	
	3	Rubber RB	17	
	4	Rubber RB	32	19
RA5-44	1	Wyo Sage	28	
	2	Bud Sage	119	
	3	Wyo Sage	173	
	4	Rubber RB	125	111.25
RA5-56	1	Wyo Sage	33	
	2	Rubber RB	51	
	3	Rubber RB	100	
	4	Rubber RB	100	71
RA5-55	1	Rubber RB	60	
	2	Rubber RB	149	
	3	Rubber RB	103	
	4	Rubber RB	160	118
RA5-63	1	Wyo Sage	149	
	2	Wyo Sage	100	
	3	Bud Sage	485	
	4	Rubber RB	274	252
RA5-65	1	Bud Sage	129	
	2	Rubber RB	82	
	3	Bud Sage	79	
	4	Rubber RB	188	119.5
RA5-71	1	Bud Sage	332	
	2	Rubber RB	547	
	3	Rubber RB	660	
	4	Wyo Sage	479	504.5
RA5-69	1	Bud Sage	101	
	2	Rubber RB	266	
	3	Rubber RB	150	
	4	Rubber RB	74	147.75

RA 5 4

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RA5-57	1	Rubber RB	32	
	2	Wyo Sage	57	
	3	Bud Sage	21	
	4	Rubber RB	189	74.75
RA5-49	1	Rubber RB	73	
	2	Bud Sage	409	
	3	Rubber RB	136	
	4	Rubber RB	136	188.5
RA5-60	1	Bud Sage	64	
	2	Rubber RB	248	
	3	Four Wing	375	
	4	Bud Sage	169	214
RA5-46	1	Rubber RB	48	
	2	Bud Sage	45	
	3	Bud Sage	224	
	4	Rubber RB	161	119.5
RA5-50	1	Bud Sage	72	
	2	Bud Sage	78	
	3	Bud Sage	111	
	4	Bud Sage	689	237.5
RA5-59	1	Wyo Sage	230	
	2	Wyo Sage	375	
	3	Ephedra	211	
	4	Rubber RB	255	267.75
RA5-53	1	Wyo Sage	16	
	2	Wyo Sage	35	
	3	Bud Sage	80	
	4	Rubber RB	262	98.25
RA5-61	1	Wyo Sage	91	
	2	Wyo Sage	121	
	3	Wyo Sage	138	
	4	Wyo Sage	210	140
RA5-64	1	Four Wing	230	
	2	Rubber RB	448	
	3	Bud Sage	193	
	4	Ephedra	286	289.25
RA5-47	1	Winter Fat	134	
	2	Bud Sage	137	
	3	Bud Sage	306	
	4	Wyo Sage	211	197
RA5-45	1	Bud Sage	44	
	2	Rubber RB	96	
	3	Rubber RB	309	
	4	Rubber RB	152	150.25
RA5-30	1	Wyo Sage	263	
	2	Ephedra	127	
	3	Bud Sage	160	
	4	Rubber RB	188	184.5
RA5-36	1	Bud Sage	162	
	2	Bud Sage	165	
	3	Bud Sage	311	
	4	Rubber RB	150	197

RA 5 5

RA5-43	1	Rubber RB	138	
	2	Bud Sage	147	
	3	Bud Sage	131	
	4	Bud Sage	82	124.5
RA5-31	1	Bud Sage	10	
	2	Bud Sage	21	
	3	Bud Sage	49	
	4	Rubber RB	68	37
RA5-37	1	Bud Sage	229	
	2	Ephedra	64	
	3	Bud Sage	122	
	4	Bud Sage	335	187.5
RA5-42	1	Rubber RB	300	
	2	Wyo Sage	278	
	3	Bud Sage	419	
	4	Ephedra	338	333.75
RA5-28	1	Rubber RB	87	
	2	Bud Sage	188	
	3	Rubber RB	305	
	4	Rubber RB	178	189.5
RA5-32	1	Rubber RB	112	
	2	Rubber RB	207	
	3	Rubber RB	148	
	4	Rubber RB	250	179.25
RA5-22	1	Rubber RB	80	
	2	Rubber RB	60	
	3	Bud Sage	143	
	4	Rubber RB	2	71.25
RA5-23	1	Rubber RB	200	
	2	Rubber RB	205	
	3	Rubber RB	80	
	4	Rubber RB	114	149.75
RA5-10	1	Four Wing	155	
	2	Four Wing	207	
	3	Four Wing	205	
	4	Bud Sage	305	218
RA5-6	1	Rubber RB	350	
	2	Four Wing	297	
	3	Ephedra	110	
	4	Bud Sage	205	240.5
RA5-8	1	Rubber RB	42	
	2	Rubber RB	18	
	3	Rubber RB	31	
	4	Rubber RB	13	26
RA5-4	1	Rubber RB	104	
	2	Bud Sage	60	
	3	Rubber RB	68	
	4	Bud Sage	186	104.5
RA5-1	1	Wyo Sage	160	
	2	Bud Sage	73	
	3	Rubber RB	185	
	4	Bud Sage	30	112

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RA5-3	1	Rubber RB	86	
	2	Rubber RB	163	
	3	Ephedra	328	
	4	Rubber RB	443	255
RA5-9	1	Bud Sage	262	
	2	Bud Sage	69	
	3	Bud Sage	248	
	4	Bud Sage	132	177.75

RA 5 7

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc ft		ft^2	Plants/Acre
RA6-57	1	Wyo Sage	82		164.75	5.405184	29.21601	1490.963
	2	Rubber RB	216		97	3.182415	10.12776	4301.048
	3	Rubber RB	90		81	2.65748	7.062202	6168.048
	4	Wyo Sage	271	164.75	65.5	2.14895	4.617987	9432.681
RA6-55	1	Bud Sage	81		49.5	1.624016	2.637427	16516.09
	2	Rubber RB	110		238.25	7.816601	61.09926	712.9383
	3	Wyo Sage	101		132.5	4.347113	18.89739	2305.08
	4	Bud Sage	96	97	91.75	3.010171	9.061128	4807.349
RA6-54	1	Rubber RB	120		152	4.986877	24.86894	1751.582
	2	Rubber RB	5		94.5	3.100394	9.612442	4531.627
	3	Bud Sage	107		124.25	4.076444	16.61739	2621.35
	4	Rubber RB	92	81	114.25	3.74836	14.0502	3100.312
RA6-43	1	Rubber RB	85		72.5	2.378609	5.657781	7699.132
	2	Rubber RB	131		126.75	4.158465	17.29283	2518.963
	3	Rubber RB	20		86	2.821522	7.960989	5471.682
	4	Rubber RB	26	65.5	89.75	2.944554	8.670398	5023.991
RA6-38	1	Rubber RB	65		70.75	2.321194	5.387943	8084.718
	2	Rubber RB	70		85.75	2.81332	7.914771	5503.634
	3	Rubber RB	21		92.5	3.034777	9.209871	4729.708
	4	Rubber RB	42	49.5	68.25	2.239173	5.013897	8687.853
RA6-56	1	Wyo Sage	218		128.5	4.215879	17.77364	2450.821
	2	Wyo Sage	200		87	2.854331	8.147204	5346.619
	3	Rubber RB	240		105.25	3.453084	11.92379	3653.201
	4	Wyo Sage	295	238.25	183	6.003937	36.04726	1208.414
RA6-52	1	Bud Sage	95		109.5	3.59252	12.9062	3375.122
	2	Bud Sage	95		280.25	9.194554	84.53983	515.2601
	3	Bud Sage	110		93.5	3.067585	9.41008	4629.079
	4	Bud Sage	230	132.5	132.25	4.338911	18.82615	2313.803
RA6-59	1	Bud Sage	26		123.5	4.051837	16.41739	2653.285
	2	Rubber RB	120		101	3.313648	10.98027	3967.117
	3	Rubber RB	118		55.25	1.812664	3.285751	13257.24
	4	Bud Sage	103	91.75	48	1.574803	2.480005	17564.48
RA6-58	1	Wyo Sage	210		100.25	3.289042	10.8178	4026.698
	2	Wyo Sage	125		87.5	2.870735	8.241119	5285.69
	3	Bud Sage	116		123.5	4.051837	16.41739	2653.285
	4	Wyo Sage	157	152	36.25	1.189305	1.414445	30796.53
RA6-4	1	Rubber RB	45		103	3.379265	11.41943	3814.55
	2	Rubber RB	268		66.75	2.189961	4.795928	9082.705
	3	Wyo Sage	2		109.5	3.59252	12.9062	3375.122
	4	Wyo Sage	63	94.5	38	1.246719	1.554309	28025.32
RA6-5	1	Rubber RB	186		137	4.494751	20.20278	2156.138
	2	Rubber RB	75		132.75	4.355315	18.96877	2296.406
	3	Rubber RB	124		244.5	8.021654	64.34693	676.9554
	4	Rubber RB	112	124.25	610	20.01312	400.5251	108.7572

RA 6 1

RA6-6	1	Wyo Sage	273		80.25	2.632874	6.932026	6283.877
	2	Rubber RB	74		159.5	5.23294	27.38366	1590.73
	3	Rubber RB	25		69.75	2.288386	5.23671	8318.2
	4	Rubber RB	85	114.25	81	2.65748	7.062202	6168.048
RA6-7	1	Rubber RB	62		124.75	4.092848	16.7514	2600.379
	2	Ephedra	103		86.5	2.837927	8.053827	5408.609
	3	Rubber RB	79		81.5	2.673885	7.149659	6092.598
	4	Wyo Sage	46	72.5	84.75	2.780512	7.731246	5634.279
RA6-8	1	Wyo Sage	231		91.5	3.001969	9.011815	4833.654
	2	Wyo Sage	39		50.25	1.648622	2.717955	16026.76
	3	Wyo Sage	120		44	1.44357	2.083893	20903.18
	4	Wyo Sage	117	126.75	138.5	4.543963	20.6476	2109.688
RA6-9	1	Rubber RB	181		109.5	3.59252	12.9062	3375.122
	2	Rubber RB	14		75.75	2.485236	6.176399	7052.653
	3	Rubber RB	53		Avg	3.739592	21.02016	2072.297
	4	Rubber RB	96	86	StDev	2.675638	52.91269	823.243
RA6-10	1	Bud Sage	37					
	2	Bud Sage	26			Plants/Acre	2072.297	
	3	Rubber RB	120			n	85.98374	
	4	Rubber RB	176	89.75	n			
RA6-1	1	Rubber RB	87					
	2	Rubber RB	39					
	3	Wyo Sage	73					
	4	Rubber RB	84	70.75				
RA6-3	1	Rubber RB	67					
	2	Rubber RB	40					
	3	Rubber RB	126					
	4	Rubber RB	110	85.75				
RA6-42	1	Rubber RB	54					
	2	Rubber RB	59					
	3	Rubber RB	120					
	4	Wyo Sage	137	92.5				
RA6-46	1	Rubber RB	56					
	2	Rubber RB	94					
	3	Rubber RB	80					
	4	Rubber RB	43	68.25				
RA6-50	1	Wyo Sage	45					
	2	Wyo Sage	80					
	3	Wyo Sage	194					
	4	Four Wing	195	128.5				
RA6-44	1	Rubber RB	62					
	2	Rubber RB	86					
	3	Rubber RB	91					
	4	Rubber RB	109	87				
RA6-47	1	Rubber RB	34					
	2	Rubber RB	57					
	3	Wyo Sage	123					
	4	Rubber RB	207	105.25				

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RA6-35	1	Rubber RB	140	
	2	Rubber RB	192	
	3	Rubber RB	75	
	4	Wyo Sage	325	183
RA6-37	1	Rubber RB	29	
	2	Rubber RB	93	
	3	Rubber RB	101	
	4	Rubber RB	215	109.5
RA6-32	1	Rubber RB	259	
	2	Rubber RB	538	
	3	Rubber RB	97	
	4	Rubber RB	227	280.25
RA6-31	1	Wyo Sage	65	
	2	Bud Sage	10	
	3	Wyo Sage	92	
	4	Bud Sage	207	93.5
RA6-40	1	Rubber RB	95	
	2	Wyo Sage	46	
	3	Wyo Sage	184	
	4	Wyo Sage	204	132.25
RA6-36	1	Wyo Sage	68	
	2	Wyo Sage	85	
	3	Wyo Sage	136	
	4	Wyo Sage	205	123.5
RA6-33	1	Rubber RB	57	
	2	Wyo Sage	55	
	3	Rubber RB	41	
	4	Bud Sage	251	101
RA6-45	1	Rubber RB	4	
	2	Rubber RB	37	
	3	Rubber RB	79	
	4	Rubber RB	101	55.25
RA6-41	1	Wyo Sage	30	
	2	Rubber RB	34	
	3	Rubber RB	74	
	4	Wyo Sage	54	48
RA6-48	1	Rubber RB	64	
	2	Rubber RB	45	
	3	Wyo Sage	62	
	4	Four Wing	230	100.25
RA6-34	1	Wyo Sage	26	
	2	Wyo Sage	37	
	3	Wyo Sage	133	
	4	Rubber RB	154	87.5
RA6-39	1	Rubber RB	87	
	2	Rubber RB	54	
	3	Ephedra	88	
	4	Rubber RB	265	123.5

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RA6-49	1	Rubber RB	25	
	2	Rubber RB	24	
	3	Rubber RB	49	
	4	Rubber RB	47	36.25
RA6-51	1	Rubber RB	117	
	2	Rubber RB	106	
	3	Rubber RB	44	
	4	Rubber RB	145	103
RA6-53	1	Rubber RB	68	
	2	Rubber RB	54	
	3	Wyo Sage	51	
	4	Rubber RB	94	66.75
RA6-29	1	Bud Sage	105	
	2	Rubber RB	165	
	3	Rubber RB	105	
	4	Rubber RB	63	109.5
RA6-23	1	Rubber RB	35	
	2	Rubber RB	55	
	3	Bud Sage	41	
	4	Bud Sage	21	38
RA6-13	1	Wyo Sage	131	
	2	Wyo Sage	108	
	3	Rubber RB	79	
	4	Rubber RB	230	137
RA6-18	1	winter Fat	105	
	2	CHVI	131	
	3	Rubber RB	155	
	4	Wyo Sage	140	132.75
RA6-30	1	Rubber RB	234	
	2	Rubber RB	150	
	3	Bud Sage	329	
	4	Wyo Sage	265	244.5
RA6-17	1	Wyo Sage	2005	
	2	Wyo Sage	80	
	3	Wyo Sage	173	
	4	Rubber RB	182	610
RA6-20	1	Wyo Sage	86	
	2	Wyo Sage	130	
	3	Wyo Sage	30	
	4	Wyo Sage	75	80.25
RA6-27	1	Bud Sage	206	
	2	Rubber RB	179	
	3	Rubber RB	146	
	4	Bud Sage	107	159.5
RA6-24	1	Rubber RB	63	
	2	Wyo Sage	62	
	3	Rubber RB	81	
	4	Rubber RB	73	69.75
RA6-15	1	Rubber RB	100	
	2	Rubber RB	64	
	3	Rubber RB	75	
	4	Rubber RB	85	81

RA6-28	1	Four Wing	75	
	2	Rubber RB	132	
	3	Four Wing	222	
	4	Four Wing	70	124.75
RA6-12	1	Four Wing	35	
	2	Rubber RB	191	
	3	Rubber RB	45	
	4	Four Wing	75	86.5
RA6-22	1	Bud Sage	48	
	2	Wyo Sage	80	
	3	Rubber RB	183	
	4	Bud Sage	15	81.5
RA6-16	1	Rubber RB	74	
	2	Rubber RB	47	
	3	Wyo Sage	89	
	4	Wyo Sage	129	84.75
RA6-11	1	Ephedra	152	
	2	Rubber RB	10	
	3	Rubber RB	60	
	4	Rubber RB	144	91.5
RA6-25	1	Rubber RB	55	
	2	Wyo Sage	88	
	3	Wyo Sage	40	
	4	Rubber RB	18	50.25
RA6-19	1	Rubber RB	37	
	2	Rubber RB	44	
	3	Rubber RB	64	
	4	Rubber RB	31	44
RA6-21	1	Rubber RB	180	
	2	Rubber RB	171	
	3	Rubber RB	38	
	4	Wyo Sage	165	138.5
RA6-26	1	Wyo Sage	123	
	2	Rubber RB	210	
	3	Wyo Sage	38	
	4	CHVI	67	109.5
RA6-14	1	Wyo Sage	95	
	2	Rubber RB	65	
	3	Rubber RB	103	
	4	Rubber RB	40	75.75

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	Quad No.	Species	Point to Plant (cm)	Avg cm	Avg cm	Avg ft	ft^2	
RA7-39	1	Rubber Rabbitbrush	49		83.25	2.731299	7.459996	5839.145
	2	Rubber Rabbitbrush	109		71.5	2.345801	5.50278	7915.998
	3	Rubber Rabbitbrush	66		72.5	2.378609	5.657781	7699.132
	4	Rubber Rabbitbrush	109	83.25	75.5	2.477034	6.135698	7099.436
RA7-34	1	Budsage	67		95.75	3.141404	9.868421	4414.08
	2	Rubber Rabbitbrush	45		118	3.871391	14.98767	2906.389
	3	Budsage	78		126.5	4.150263	17.22468	2528.929
	4	Rubber Rabbitbrush	96	71.5	98.5	3.231627	10.44342	4171.049
RA7-14	1	Rubber Rabbitbrush	15		55.25	1.812664	3.285751	13257.24
	2	Rubber Rabbitbrush	62		73.5	2.411417	5.814934	7491.057
	3	Rubber Rabbitbrush	86		53.25	1.747047	3.052174	14271.79
	4	Rubber Rabbitbrush	127	72.5	48	1.574803	2.480005	17564.48
RA7-35	1	Rubber Rabbitbrush	75		70.5	2.312992	5.349933	8142.158
	2	Rubber Rabbitbrush	117		94.25	3.092192	9.56165	4555.699
	3	Rubber Rabbitbrush	31		40	1.312336	1.722226	25292.85
	4	Rubber Rabbitbrush	79	75.5	59	1.935696	3.746917	11625.56
RA7-40	1	Rubber Rabbitbrush	76		44	1.44357	2.083893	20903.18
	2	Rubber Rabbitbrush	100		69	2.26378	5.124698	8500.013
	3	Rubber Rabbitbrush	84		103	3.379265	11.41943	3814.55
	4	Rubber Rabbitbrush	123	95.75	45	1.476378	2.179692	19984.47
RA7-15	1	Rubber Rabbitbrush	54		67.75	2.222769	4.940702	8816.56
	2	Budsage	149		50.5	1.656824	2.745066	15868.47
	3	Rubber Rabbitbrush	102		87.75	2.878937	8.288279	5255.615
	4	Rubber Rabbitbrush	167	118	62.5	2.050525	4.204653	10359.95
RA7-36	1	Rubber Rabbitbrush	87		41.5	1.361549	1.853815	23497.5
	2	Rubber Rabbitbrush	98		57.5	1.886483	3.558818	12240.02
	3	Rubber Rabbitbrush	234		46	1.509186	2.277644	19125.03
	4	Rubber Rabbitbrush	87	126.5	50.75	1.665026	2.772313	15712.51
RA7-13	1	Rubber Rabbitbrush	124		73	2.395013	5.736088	7594.025
	2	Big Sagebrush	37		53.75	1.763452	3.109761	14007.51
	3	Rubber Rabbitbrush	144		61.5	2.017717	4.07118	10699.6
	4	Rubber Rabbitbrush	89	98.5	113	3.707349	13.74444	3169.282
RA7-37	1	Rubber Rabbitbrush	65		128.25	4.207677	17.70455	2460.385
	2	Rubber Rabbitbrush	32		117.5	3.854987	14.86092	2931.177
	3	Rubber Rabbitbrush	34		62	2.034121	4.137647	10527.72
	4	Big Sagebrush	90	55.25	106	3.47769	12.09433	3601.688
RA7-38	1	Rubber Rabbitbrush	40		77.75	2.550853	6.506852	6694.482
	2	Big Sagebrush	42		61.5	2.017717	4.07118	10699.6
	3	Rubber Rabbitbrush	128		57.75	1.894685	3.589832	12134.27
	4	Rubber Rabbitbrush	84	73.5	68.25	2.239173	5.013897	8687.853
RA7-42	1	Rubber Rabbitbrush	71		138.75	4.552166	20.72221	2102.092
	2	Rubber Rabbitbrush	40		36.75	1.205709	1.453733	29964.23
	3	Big Sagebrush	36		32.75	1.074475	1.154497	37730.73
	4	Rubber Rabbitbrush	66	53.25	27	0.885827	0.784689	55512.43
RA7-11	1	Big Sagebrush	51		60.75	1.99311	3.972489	10965.42
	2	Rubber Rabbitbrush	74		83.5	2.739501	7.504868	5804.233
	3	Big Sagebrush	3		65	2.132546	4.547752	9578.358
	4	Big Sagebrush	64	48	38.5	1.263123	1.595481	27302.12

RA 7 1

RA7-12	1	Rubber Rabbitbrush	63		55.25	1.812664	3.285751	13257.24
	2	Big Sagebrush	80		34.5	1.13189	1.281175	34000.05
	3	Rubber Rabbitbrush	71		53.25	1.747047	3.052174	14271.79
	4	Rubber Rabbitbrush	68	70.5	157.25	5.159121	26.61653	1636.577
RA7-17	1	Budsage	191		59	1.935696	3.746917	11625.56
	2	Big Sagebrush	47		100.5	3.297244	10.87182	4006.689
	3	Rubber Rabbitbrush	13		110.25	3.617126	13.0836	3329.359
	4	Budsage	126	94.25	105.75	3.469488	12.03735	3618.737
RA7-18	1	Rubber Rabbitbrush	39		67	2.198163	4.83192	9015.05
	2	Rubber Rabbitbrush	84		107.5	3.526903	12.43904	3501.877
	3	Big Sagebrush	22		94.5	3.100394	9.612442	4531.627
	4	Rubber Rabbitbrush	15	40	82.5	2.706693	7.326187	5945.794
RA7-19	1	Rubber Rabbitbrush	26		46.25	1.517389	2.302468	18918.83
	2	Rubber Rabbitbrush	43		Avg	2.418813	6.731259	6471.3
	3	Rubber Rabbitbrush	94		StDev	0.946193	5.337121	8161.703
	4	Rubber Rabbitbrush	73	59				
RA7-20	1	Big Sagebrush	7			Plants/Acre	6471.3	
	2	Rubber Rabbitbrush	60			n	25.70188	
	3	Rubber Rabbitbrush	44					
	4	Rubber Rabbitbrush	65	44				
RA7-16	1	Rubber Rabbitbrush	23					
	2	Rubber Rabbitbrush	52					
	3	Rubber Rabbitbrush	138					
	4	Rubber Rabbitbrush	63	69				
RA7-7	1	Rubber Rabbitbrush	37					
	2	Rubber Rabbitbrush	90					
	3	Rubber Rabbitbrush	138					
	4	Rubber Rabbitbrush	147	103				
RA7-8	1	Rubber Rabbitbrush	41					
	2	Rubber Rabbitbrush	32					
	3	Rubber Rabbitbrush	37					
	4	Rubber Rabbitbrush	70	45				
RA7-4	1	Rubber Rabbitbrush	40					
	2	Rubber Rabbitbrush	141					
	3	Rubber Rabbitbrush	52					
	4	Rubber Rabbitbrush	38	67.75				
RA7-9	1	Rubber Rabbitbrush	45					
	2	Rubber Rabbitbrush	13					
	3	Rubber Rabbitbrush	122					
	4	Big Sagebrush	22	50.5				
RA7-1	1	Big Sagebrush	123					
	2	Rubber Rabbitbrush	44					
	3	Rubber Rabbitbrush	55					
	4	Big Sagebrush	129	87.75				
RA7-3	1	Big Sagebrush	22					
	2	Budsage	88					
	3	Big Sagebrush	69					
	4	Rubber Rabbitbrush	71	62.5				

RA 7 2

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RA7-2	1	Big Sagebrush	40	
	2	Rubber Rabbitbrush	25	
	3	Big Sagebrush	56	
	4	Rubber Rabbitbrush	45	41.5
RA7-5	1	Rubber Rabbitbrush	38	
	2	Rubber Rabbitbrush	34	
	3	Rubber Rabbitbrush	78	
	4	Rubber Rabbitbrush	80	57.5
RA7-6	1	Rubber Rabbitbrush	70	
	2	Rubber Rabbitbrush	31	
	3	Rubber Rabbitbrush	36	
	4	Rubber Rabbitbrush	47	46
RA7-10	1	Big Sagebrush	59	
	2	Big Sagebrush	17	
	3	Big Sagebrush	73	
	4	Big Sagebrush	54	50.75
RA7-29	1	Big Sagebrush	122	
	2	Big Sagebrush	35	
	3	Big Sagebrush	90	
	4	Big Sagebrush	45	73
RA7-27	1	Rubber Rabbitbrush	40	
	2	Rubber Rabbitbrush	55	
	3	Rubber Rabbitbrush	40	
	4	Rubber Rabbitbrush	80	53.75
RA7-24	1	Rubber Rabbitbrush	18	
	2	Big Sagebrush	80	
	3	Big Sagebrush	48	
	4	Big Sagebrush	100	61.5
RA7-21	1	Rubber Rabbitbrush	125	
	2	Rubber Rabbitbrush	120	
	3	Rubber Rabbitbrush	52	
	4	Rubber Rabbitbrush	155	113
RA7-26	1	Rubber Rabbitbrush	148	
	2	Rubber Rabbitbrush	80	
	3	Rubber Rabbitbrush	85	
	4	Big Sagebrush	200	128.25
RA7-25	1	Rubber Rabbitbrush	135	
	2	Rubber Rabbitbrush	75	
	3	Rubber Rabbitbrush	100	
	4	Rubber Rabbitbrush	160	117.5
RA7-33	1	Rubber Rabbitbrush	55	
	2	Rubber Rabbitbrush	25	
	3	Rubber Rabbitbrush	112	
	4	Rubber Rabbitbrush	56	62
RA7-22	1	Rubber Rabbitbrush	135	
	2	Rubber Rabbitbrush	62	
	3	Rubber Rabbitbrush	105	
	4	Rubber Rabbitbrush	122	106

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RA7-31	1	Rubber Rabbitbrush	108	
	2	Rubber Rabbitbrush	35	
	3	Rubber Rabbitbrush	165	
	4	Rubber Rabbitbrush	3	77.75
RA7-32	1	Rubber Rabbitbrush	70	
	2	Rubber Rabbitbrush	61	
	3	Rubber Rabbitbrush	62	
	4	Rubber Rabbitbrush	53	61.5
RA7-23	1	Rubber Rabbitbrush	88	
	2	Rubber Rabbitbrush	30	
	3	Rubber Rabbitbrush	10	
	4	Rubber Rabbitbrush	103	57.75
RA7-30	1	Rubber Rabbitbrush	85	
	2	Rubber Rabbitbrush	60	
	3	Rubber Rabbitbrush	72	
	4	Rubber Rabbitbrush	56	68.25
RA7-28	1	Big Sagebrush	105	
	2	Big Sagebrush	80	
	3	Rubber Rabbitbrush	240	
	4	Big Sagebrush	130	138.75
RA7-57	1	Big Sagebrush	27	
	2	Big Sagebrush	20	
	3	Big Sagebrush	42	
	4	Rubber Rabbitbrush	58	36.75
RA7-51	1	Big Sagebrush	19	
	2	Big Sagebrush	37	
	3	Big Sagebrush	15	
	4	Big Sagebrush	60	32.75
RA7-43	1	Big Sagebrush	0	
	2	Big Sagebrush	44	
	3	Big Sagebrush	35	
	4	Big Sagebrush	29	27
RA7-41	1	Budsage	31	
	2	Budsage	48	
	3	Budsage	83	
	4	Budsage	81	60.75
RA7-53	1	Big Sagebrush	71	
	2	Big Sagebrush	72	
	3	Big Sagebrush	98	
	4	Big Sagebrush	93	83.5
RA7-44	1	Big Sagebrush	51	
	2	Big Sagebrush	31	
	3	Rubber Rabbitbrush	47	
	4	Rubber Rabbitbrush	131	65
RA7-47	1	Rubber Rabbitbrush	21	
	2	Rubber Rabbitbrush	54	
	3	Rubber Rabbitbrush	42	
	4	Rubber Rabbitbrush	37	38.5
RA7-52	1	Rubber Rabbitbrush	10	
	2	Rubber Rabbitbrush	67	
	3	Budsage	55	
	4	Rubber Rabbitbrush	89	55.25

RA7-60	1	Rubber Rabbitbrush	20	
	2	Rubber Rabbitbrush	39	
	3	Rubber Rabbitbrush	42	
	4	Rubber Rabbitbrush	37	34.5
RA7-48	1	Big Sagebrush	19	
	2	Rubber Rabbitbrush	49	
	3	Big Sagebrush	60	
	4	Rubber Rabbitbrush	85	53.25
RA7-45	1	Rubber Rabbitbrush	174	
	2	Rubber Rabbitbrush	165	
	3	Rubber Rabbitbrush	80	
	4	Rubber Rabbitbrush	210	157.25
RA7-46	1	Rubber Rabbitbrush	102	
	2	Rubber Rabbitbrush	17	
	3	Rubber Rabbitbrush	64	
	4	Rubber Rabbitbrush	53	59
RA7-55	1	Rubber Rabbitbrush	56	
	2	Rubber Rabbitbrush	127	
	3	Rubber Rabbitbrush	85	
	4	Rubber Rabbitbrush	134	100.5
RA7-61	1	Big Sagebrush	116	
	2	Rubber Rabbitbrush	51	
	3	Rubber Rabbitbrush	145	
	4	Rubber Rabbitbrush	129	110.25
RA7-56	1	Rubber Rabbitbrush	120	
	2	Rubber Rabbitbrush	55	
	3	Rubber Rabbitbrush	24	
	4	Rubber Rabbitbrush	224	105.75
RA7-50	1	Rubber Rabbitbrush	30	
	2	Rubber Rabbitbrush	105	
	3	Rubber Rabbitbrush	65	
	4	Rubber Rabbitbrush	68	67
RA7-49	1	Rubber Rabbitbrush	108	
	2	Rubber Rabbitbrush	107	
	3	Rubber Rabbitbrush	57	
	4	Rubber Rabbitbrush	158	107.5
RA7-58	1	Rubber Rabbitbrush	30	
	2	Rubber Rabbitbrush	54	
	3	Rubber Rabbitbrush	105	
	4	Rubber Rabbitbrush	189	94.5
RA7-54	1	Rubber Rabbitbrush	90	
	2	Rubber Rabbitbrush	82	
	3	Rubber Rabbitbrush	90	
	4	Rubber Rabbitbrush	68	82.5
RA7-59	1	Rubber Rabbitbrush	40	
	2	Rubber Rabbitbrush	38	
	3	Rubber Rabbitbrush	50	
	4	Rubber Rabbitbrush	57	46.25

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	Quad No.	Species	Point to Plant (cm)	Avg Point	Avg Point	Avg ft	ft^2	Plants/Acre
RA27-7	1	Rubber Rabbitbrush	75		99.5	3.264436	10.65654	4087.63
	2	Rubber Rabbitbrush	60		88.25	2.895341	8.383001	5196.23
	3	Rubber Rabbitbrush	180		160	5.249344	27.55561	1580.803
	4	Rubber Rabbitbrush	83	99.5	237.25	7.783793	60.58743	718.961
RA27-16	1	Snowberry	145		311.75	10.22802	104.6124	416.3944
	2	Snowberry	50		74.25	2.436024	5.934211	7340.487
	3	Sumac	50		109.5	3.59252	12.9062	3375.122
	4	Spruce	108	88.25	254.25	8.341536	69.58122	626.031
RA27-6	1	Spruce	270		112.25	3.682743	13.5626	3211.775
	2	Juniper	175		129	4.232284	17.91222	2431.859
	3	Sumac	150		130.75	4.289698	18.40151	2367.197
	4	Pinyon	45	160	91.25	2.993767	8.962638	4860.176
RA27-5	1	Rubber Rabbitbrush	195		159.5	5.23294	27.38366	1590.73
	2	Snowberry	225		221	7.250656	52.57202	828.5777
	3	Rubber Rabbitbrush	282		250.25	8.210302	67.40906	646.2039
	4	Rubber Rabbitbrush	247	237.25	124.75	4.092848	16.7514	2600.379
RA27-2	1	Big Sagebrush	385		137.75	4.519357	20.42459	2132.723
	2	Rubber Rabbitbrush	360		152.25	4.995079	24.95081	1745.835
	3	Big Sagebrush	396		Avg	5.182816	31.58595	1379.094
	4	Rubber Rabbitbrush	106	311.75	StDev	2.236576	27.59441	1578.58
RA27-13	1	Rubber Rabbitbrush	93					
	2	Rubber Rabbitbrush	91		Plants/Acre	1379.094		
	3	Big Sagebrush	66		n	33.08996		
	4	Rubber Rabbitbrush	47	74.25				
RA27-3	1	Aspen	60					
	2	Aspen	86					
	3	Spruce	208					
	4	Aspen	84	109.5				
RA27-1	1	Rubber Rabbitbrush	182					
	2	Pinyon	185					
	3	Pinyon	255					
	4	Rubber Rabbitbrush	395	254.25				
RA27-18	1	Big Sagebrush	67					
	2	Rubber Rabbitbrush	184					
	3	Rubber Rabbitbrush	160					
	4	Big Sagebrush	38	112.25				
RA27-9	1	Rubber Rabbitbrush	52					
	2	Rubber Rabbitbrush	185					
	3	Rubber Rabbitbrush	150					
	4	Rubber Rabbitbrush	129	129				
RA27-11	1	Rubber Rabbitbrush	93					
	2	Big Sagebrush	86					
	3	Sumac	198					
	4	Big Sagebrush	146	130.75				
RA27-14	1	Rubber Rabbitbrush	85					
	2	Rubber Rabbitbrush	56					
	3	Big Sagebrush	115					
	4	Big Sagebrush	109	91.25				
RA27-17	1	Pinyon	175					
	2	Rubber Rabbitbrush	120					
	3	Rubber Rabbitbrush	164					
	4	Pinyon	179	159.5				

RA 27 1

RA27-8	1	Rubber Rabbitbrush	186	
	2	Rubber Rabbitbrush	156	
	3	Aspen	206	
	4	Rubber Rabbitbrush	336	221
RA27-4	1	Big Sagebrush	142	
	2	Rubber Rabbitbrush	359	
	3	Rubber Rabbitbrush	246	
	4	Rubber Rabbitbrush	254	250.25
RA27-10	1	Rubber Rabbitbrush	81	
	2	Rubber Rabbitbrush	120	
	3	Rubber Rabbitbrush	168	
	4	Rubber Rabbitbrush	130	124.75
RA27-12	1	Rubber Rabbitbrush	82	
	2	Rubber Rabbitbrush	79	
	3	Rubber Rabbitbrush	100	
	4	Rubber Rabbitbrush	290	137.75
RA27-15	1	Rubber Rabbitbrush	155	
	2	Rubber Rabbitbrush	121	
	3	Big Sagebrush	139	
	4	Pinyon	194	152.25

RA 27 2

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	Quad No.	Species	Point to Plant (cm)	Mean Dist cm	Mean Dist cm	Mean Dist ft	ft^2	Plants/Acre
REF1-1	1	Black Sagebrush	146		139.25	4.5685697	20.87183	2087.024
	2	Black Sagebrush	90		123.5	4.0518374	16.41739	2653.285
	3	Black Sagebrush	167		184.75	6.0613519	36.73999	1185.629
	4	Black Sagebrush	154	139.25	52.75	1.7306431	2.995126	14543.63
REF1-2	1	Black Sagebrush	94		84	2.7559056	7.595016	5735.34
	2	Black Sagebrush	106		22.75	0.7463911	0.5571	78190.68
	3	Black Sagebrush	239		92.5	3.034777	9.209871	4729.708
	4	Black Sagebrush	55	123.5	136.75	4.4865487	20.12912	2164.029
REF1-3	1	Serviceberry	191		5.25	0.1722441	0.029668	1468247
	2	Black Sagebrush	89		59.75	1.9603019	3.842784	11335.53
	3	Serviceberry	172		123	4.0354332	16.28472	2674.9
	4	Serviceberry	287	184.75	73.75	2.4196195	5.854559	7440.356
REF1-4	1	Black Sagebrush	74		64	2.0997376	4.408898	9880.02
	2	Pinyon Pine	72		72	2.3622048	5.580012	7806.436
	3	Black Sagebrush	54		54.5	1.7880578	3.197151	13624.63
	4	Serviceberry	11	52.75	134.25	4.4045277	19.39986	2245.377
REF1-5	1	Black Sagebrush	149		52.25	1.7142389	2.938615	14823.31
	2	Black Sagebrush	38		50	1.64042	2.690978	16187.42
	3	Black Sagebrush	20		91.5	3.0019686	9.011815	4833.654
	4	Black Sagebrush	129	84	59.25	1.9438977	3.778738	11527.66
REF1-6	1	Black Sagebrush	25		AVG	2.748933815	9.576662	4548.558
	2	Black Sagebrush	19		StDev	1.458198125	9.291948	4687.93
	3	Black Sagebrush	8					
	4	Black Sagebrush	39	22.75	Plant/acre		4548.558	
REF1-7	1	Black Sagebrush	194		n	1191.154075		
	2	Black Sagebrush	30					
	3	Black Sagebrush	86					
	4	Black Sagebrush	60	92.5				
REF1-8	1	Black Sagebrush	54					
	2	Juniper	209					
	3	Black Sagebrush	159					
	4	Black Sagebrush	125	136.75				
REF1-9	1	Black Sagebrush	10					
	2	Black Sagebrush	4					
	3	Black Sagebrush	4					
	4	Black Sagebrush	3	5.25				
REF1-10	1	Black Sagebrush	67					
	2	Black Sagebrush	29					
	3	Black Sagebrush	80					
	4	Black Sagebrush	63	59.75				
REF1-11	1	Big Sagebrush	178					
	2	Big Sagebrush	205					
	3	Big Sagebrush	70					
	4	Mountain Mohogany	39	123				

REF 1 1

REF1-12	1	Black Sagebrush	148	
	2	Rubber Rabbitbrush	42	
	3	Big Sagebrush	70	
	4	Big Sagebrush	35	73.75
REF1-13	1	Big Sagebrush	45	
	2	Big Sagebrush	20	
	3	Big Sagebrush	76	
	4	Big Sagebrush	115	64
REF1-14	1	Black Sagebrush	62	
	2	Black Sagebrush	71	
	3	Serviceberry	89	
	4	Black Sagebrush	66	72
REF1-15	1	Mountain Mohogany	15	
	2	Pinyon Pine	18	
	3	Black Sagebrush	28	
	4	Black Sagebrush	157	54.5
REF1-16	1	Big Sagebrush	45	
	2	Big Sagebrush	112	
	3	Big Sagebrush	238	
	4	Big Sagebrush	142	134.25
REF1-17	1	Black Sagebrush	30	
	2	Black Sagebrush	50	
	3	Black Sagebrush	58	
	4	Black Sagebrush	71	52.25
REF1-18	1	Black Sagebrush	48	
	2	Black Sagebrush	32	
	3	Black Sagebrush	45	
	4	Black Sagebrush	75	50
REF1-19	1	Black Sagebrush	64	
	2	Big Sagebrush	156	
	3	Pinyon Pine	66	
	4	Mountain Mohogany	80	91.5
REF1-20	1	Mountain Mohogany	10	
	2	Pinyon Pine	129	
	3	Black Sagebrush	30	
	4	Black Sagebrush	68	59.25

REF 1 2

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	Quad No.	Species	Point to Plant (cm)	Avg Point	Avg Point	Avg ft	ft^2	Plants/Acre
REF2-1	1	Rose woodsii	9		72	2.362205	5.580012	7806.436
	2	Rose woodsii	66		41	1.345144	1.809413	24074.1
	3	Rose woodsii	96		124.75	4.092848	16.7514	2600.379
	4	Rose woodsii	117	72	163.5	5.364173	28.77436	1513.848
REF2-2	1	Rose woodsii	15		155	5.085302	25.8603	1684.435
	2	Rose woodsii	67		99	3.248032	10.54971	4129.024
	3	Rose woodsii	50		62.5	2.050525	4.204653	10359.95
	4	Rose woodsii	32	41	43	1.410761	1.990247	21886.73
REF2-3	1	Juniper	53		88.25	2.895341	8.383001	5196.23
	2	Snowberry	90		54.25	1.779856	3.167886	13750.49
	3	Snowberry	141		57	1.870079	3.497195	12455.7
	4	Doug fir	215	124.75	69.25	2.271982	5.161901	8438.752
REF2-4	1	Aspen	173		49.5	1.624016	2.637427	16516.09
	2	Aspen	194		89.75	2.944554	8.670398	5023.991
	3	Aspen	98		92.25	3.026575	9.160156	4755.378
	4	Snowberry	189	163.5	57.25	1.878281	3.527939	12347.15
REF2-5	1	Snowberry	170		45	1.476378	2.179692	19984.47
	2	Rose woodsii	175		83.5	2.739501	7.504868	5804.233
	3	Aspen	170		123.5	4.051837	16.41739	2653.285
	4	Aspen	105	155	50.75	1.665026	2.772313	15712.51
REF2-6	1	Serviceberry	51		79.25	2.600066	6.760342	6443.461
	2	Doug fir	92		101	3.313648	10.98027	3967.117
	3	Aspen	120		59	1.935696	3.746917	11625.56
	4	Serviceberry	133	99	41.5	1.361549	1.853815	23497.5
REF2-7	1	Snowberry	15		65.25	2.140748	4.582802	9505.101
	2	Aspen	40		Avg	2.581365	7.860976	5541.297
	3	Aspen	84		StDev	1.116883	7.189434	6058.892
	4	Snowberry	111	62.5				
REF2-8	1	Aspen	31		Plants/Acre	5541.297		
	2	Aspen	51		n	32.51978		
	3	Aspen	53					
	4	Aspen	37	43				
REF2-9	1	Aspen	65					
	2	Aspen	79					
	3	Aspen	124					
	4	Sumac	85	88.25				
REF2-10	1	Aspen	45					
	2	Aspen	60					
	3	Aspen	51					
	4	Aspen	61	54.25				
REF2-11	1	Aspen	128					
	2	Aspen	41					
	3	Aspen	23					
	4	Rose woodsii	36	57				

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REF 2 1

REF2-12	1	Rose woodsii	93	
	2	Snowberry	109	
	3	Rose woodsii	45	
	4	Rose woodsii	30	69.25
REF2-13	1	Rose woodsii	118	
	2	Snowberry	10	
	3	Rose woodsii	30	
	4	Snowberry	40	49.5
REF2-14	1	Aspen	187	
	2	Snowberry	62	
	3	Big Sagebrush	75	
	4	Snowberry	35	89.75
REF2-15	1	Aspen	23	
	2	Aspen	116	
	3	Aspen	165	
	4	Aspen	65	92.25
REF2-16	1	Aspen	59	
	2	Aspen	55	
	3	Aspen	70	
	4	Aspen	45	57.25
REF2-17	1	Rose woodsii	52	
	2	Aspen	5	
	3	Aspen	93	
	4	Snowberry	30	45
REF2-18	1	Serviceberry	85	
	2	Serviceberry	179	
	3	Snowberry	30	
	4	Aspen	40	83.5
REF2-19	1	Doug fir	155	
	2	Snowberry	148	
	3	Aspen	52	
	4	Serviceberry	139	123.5
REF2-20	1	Aspen	64	
	2	Snowberry	31	
	3	Snowberry	53	
	4	Aspen	55	50.75
REF2-21	1	Aspen	25	
	2	Snowberry	105	
	3	Serviceberry	130	
	4	Aspen	57	79.25
REF2-25	1	Rose woodsii	78	
	2	Aspen	115	
	3	Snowberry	140	
	4	Rose woodsii	71	101
REF2-22	1	Snowberry	16	
	2	Snowberry	115	
	3	Snowberry	55	
	4	Doug fir	50	59

REF 2 2

REF2-23	1	Rose woodsii	28	
	2	Aspen	33	
	3	Aspen	70	
	4	Aspen	35	41.5
REF2-24	1	Aspen	19	
	2	Aspen	27	
	3	Aspen	178	
	4	Aspen	37	65.25

REF 2 3

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APPENDIX 3
DOGM INSPECTION REPORT

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GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Wildlife Resources
GREGORY J. SHEEHAN
Division Director

September 17, 2014

Mr. Joe Helfrich
Reclamation Specialist III
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114

Subject: Hiawatha Mine Phase III Bond Release – C/007/0011 Hiawatha Coal Company

Dear Mr. Helfrich:

Concerning the above referenced reclamation project at Hiawatha, Utah, it is the opinion of the Utah Division of Wildlife Resources that the existing 1,100 to 6,500 woody plant stems per acre is adequate density to meet reclamation and wildlife needs. The numbers for woody density, vegetation cover, and diversity appear to be representative of similar vegetation stands nearby.

Thank you for consulting us concerning this matter, and for your efforts to improve wildlife habitat as old mining sites are reclaimed. If you have any questions, please call Makeda Hanson, at our Price office (435-630-0805).

Sincerely,

Christopher Wood
Regional Supervisor

CW/mjh

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319 North Carbonville Road, Suite A, Price, UT 84501
telephone (435) 613-3700 • facsimile (435) 613-3704 • *www.wildlife.utah.gov*

MAPS

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RA2

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3814
fax (435) 472-8780
eisec@preciscom.net

Legend

- Survey points
- Area Boundary

Feet
0 250 500

N

Hiawatha Mine
Phase III Bond Release
Reclamation Vegetation Study
Sec. 34 & 35
T15S R8E
Carbon County, UT

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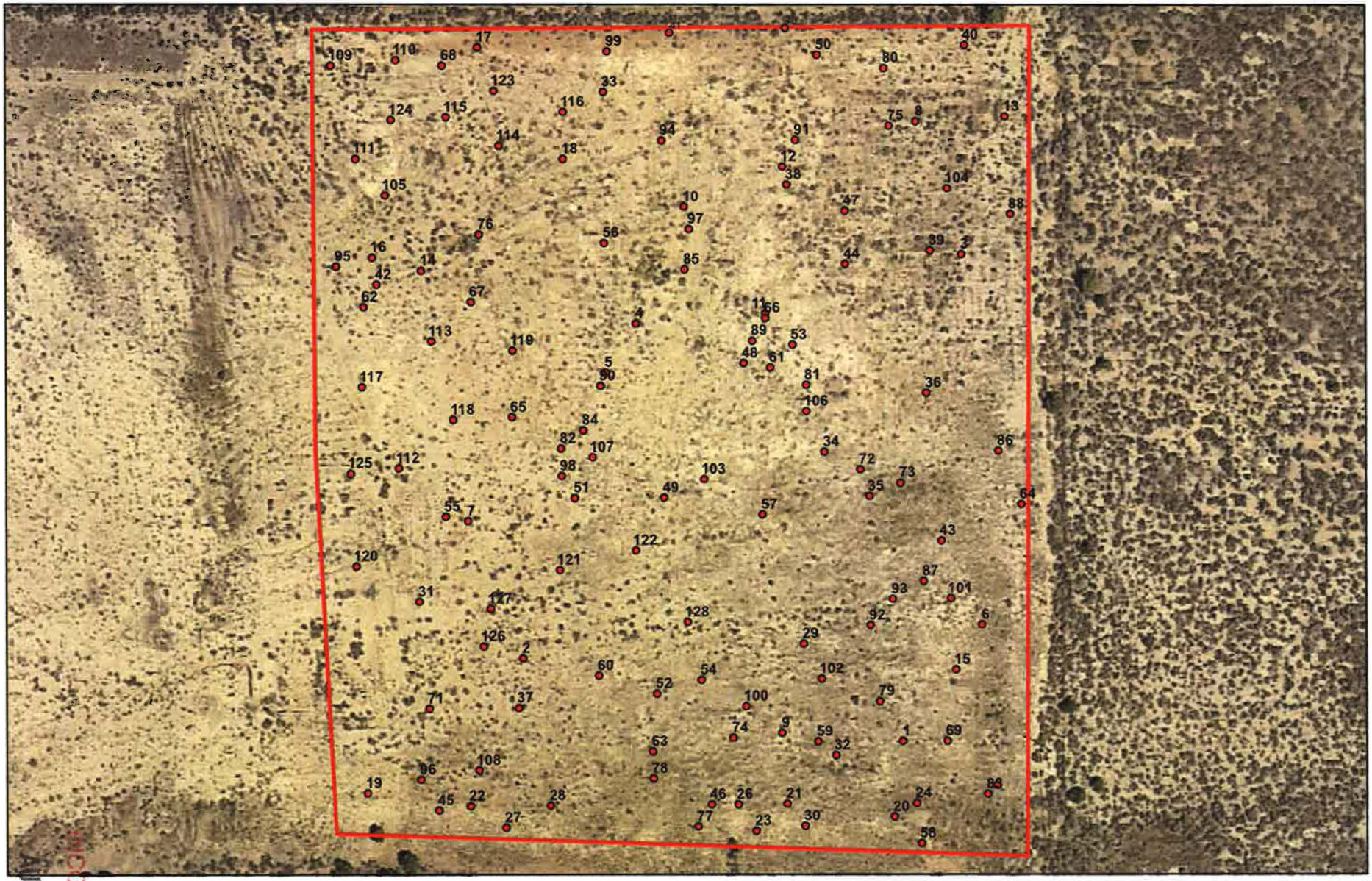

RA4

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3814
fax (435) 472-8780
eisec@preciscom.net

Legend

- Survey points
- Area Boundary

Feet
0 100 200

N

Hiawatha Mine
Phase III Bond Release
Reclamation Vegetation Study
Sec. 35
T15S R8E
Carbon County,UT

RA5 & RA6

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3814
fax (435) 472-8780
eisec@preciscom.net

Legend

- Survey points
- Area Boundary

Feet
0 250 500

N

Hiawatha Mine
Phase III Bond Release
Reclamation Vegetation Study
Sec. 26, 27, 34 & 35
T15S R8E
Carbon County,UT

RA7

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3814
fax (435) 472-8780
eisec@preciscom.net

Legend

- Survey points
- Area Boundary

Feet
0 150 300

N

Hiawatha Mine
Phase III Bond Release
Reclamation Vegetation Study
Sec. 27 & 34
T15S R8E
Carbon County, UT

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Appendix VIII-6

2015 Bond Release Vegetation Studies

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HIAWATHA MINE

PHASE III BOND RELEASE
RECLAMATION VEGETATION STUDY

SEPTEMBER 2013

CONDUCTED BY
EIS Environmental and Engineering Consulting
31 North Main Street * Helper, Utah 84526
Office - (435) 472-3814 * Toll free - (800) 641-2927 * Fax - (435) 472-8780
eisec@preciscom.net

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INTRODUCTION

Field work for the documentation of vegetation condition to meet the requirements of Phase III bond release began in August and continued into September 2013. The vegetation study included 7 reclamation areas and 2 reference areas. Two reference areas were established and described in the mine's Mining and Reclamation Plan (MRP). Since the completion of the MRP, 1 of the reference locations burned in a wildfire. A second reference area remains, however, the majority of vegetation is tall sagebrush with little understory. During an on-site meeting between Utah Division of Oil, Gas, and Mining (DOGM) and mine representatives, the reference area was determined not to have a vegetation community that is desirable for comparison with reclaimed areas. Two new reference areas were chosen during the meeting. One reference area for comparing 6 of the reclamation areas was in a pinion-juniper stand, sagebrush shrubland, and the transition zone between the stand and shrubland and is thought to be representative of the area prior to mining activities. A second reference area for comparing reclamation area RA 27 was the undisturbed area adjacent to RA 27.

Data collection included total vegetation cover, percent cover by species, and woody plant density. Indices for the reference areas and reclamation areas were calculated to determine if the reclamation efforts met the bond release requirements.

MATERIALS AND METHODS

Seven reclamation areas were selected based on timing of reclamation efforts, expected future disturbance, and vegetation establishment. The sites corresponded with reclamation areas in the MRP. Reference Area 2 for comparing reclamation area RA 27 is adjacent undisturbed area on private land. A reference area for comparing the remaining 6 reclamation areas (Reference Area 1) was located private land south of Washboard Wash and southeast of the reclamation areas. The vegetation surveys were conducted according to DOGM Vegetation Information Guidelines (1992) and the MRP Criteria and Tests for Demonstrating Successful Revegetation. Data collected in the reference areas were compared to the reclamation areas to determine similarity.

Percent Cover

Percent cover was measured using quadrat sampling. Random points were generated and uploaded to handheld GPS devices. Once at the point, surveyors would then randomly toss a 1m x 1m square frame. In each sample frame, percent cover by species, density by species, and percent non-living cover were recorded. Non-living cover included rock, soil, and litter. Total vegetation cover added to non-living cover summed to 100 percent. The number of sampling quadrats was determined by the equation in the DOGM Vegetation Information Guidelines (1992). Sample size was determined at a 90 percent confidence level at +/- 10 percent precision as required by DOGM.

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$$N = (t^2s^2)/(p^2x^2)$$

N = The number of samples required for statistical adequacy.
t = Student's T-value for the t_{90} confidence level and for degrees of freedom.
s = Standard deviation.
p = Precision of test (0.1)
x = The mean of the samples.

The following table shows the number of sample plots in each reclamation area and reference area and the required number of sample quadrats.

Table 1: Sample Quadrats		
Survey Area	**Number of Quadrats Sampled**	**Number of Quadrats Required**
Reference Area 1	20	160.3
Reference Area 2	25	20.73
RA 1	72	56.70
RA 2	104	84.23
RA 4	128	124.59
RA 5	79	70.3
RA 6	58	54.61
RA 7	61	58.00
RA 27	18	16.05

The site for Reference Area 1 was selected during the on-site meeting with DOGM and mine representatives. A large standard deviation in cover percentages was anticipated, so the suggested method was to sample and calculate an average cover percentage between habitat types. Since Reference Area 1 included diverse vegetation communities between a pinion-juniper stand and sagebrush shrubland and a large variation in cover percentages, 20 quadrats were sampled instead of the minimum of 10.

Woody Plant Density

Woody plant density was sampled by the point-quarter method. At each random point, 2 perpendicular lines divided the area into four quadrants with the point being the center. In each quadrant, the distance to the base of the nearest shrub was measured. The 4 recorded distances were averaged to use as the individual sample. Woody plant density was measured at each point where percent cover was recorded.

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Reclamation Comparison

An unpaired t-test was used to compare the reclaimed areas to the reference area. Sample means per quadrat for cover were used for the comparison. The null hypothesis for each t-test was that there is no difference between the means for the measured parameter in the reclamation area and reference area. If the test failed to reject the null hypothesis, the standard for success was met.

The null hypothesis was rejected when the calculated t-value exceeds the table t-value for 90 percent confidence and degrees of freedom. When the null hypothesis was rejected and the mean of the reclamation area was greater than or equal to the mean of the reference area, the standard for success was met.

RESULTS

Percent Cover

Absolute cover means for each of the reclamation areas and reference areas is shown in Table 2 and cover data for each sample quadrat is included in Appendix 1. The sum of the percentages of shrub and trees, forbs, and grasses may exceed the total vegetation cover due to overlapping vegetation.

Table 2: Average Absolute Percent Cover

Mean Cover	Area								
	Ref 1	**Ref 2**	**RA 1**	**RA 2**	**RA 4**	**RA 5**	**RA 6**	**RA 7**	**RA 27**
Shrub	6	4.6	10.11	3.769	3.688	1.974	2.879	6.475	1.889
Forb	1	1.92	0.542	0.683	1.516	0.797	1.655	2.443	9.667
Grass	2.5	1.92	3.028	6.885	4.289	9.025	6.414	7.049	6.667
Total	8.2	7.48	13.139	10.183	8.523	11.354	9.724	14.59	18.11

Reference Area 1 – The total vegetative cover was 8.2 and the components were 6 percent shrubs and trees, 1 percent forbs, and 2.5 percent grasses.

Reference Area 2 – The total vegetative cover was 7.48 and the components were 4.6 percent shrubs and trees, 1.92 percent forbs, and 1.92 percent grasses.

RA 1 – The total vegetative cover was 13.139 and the components were 10.11 percent shrubs and trees, 0.542 percent forbs, and 3.028 percent grasses. The critical t-value was 1.667 and the calculated t-value was 5.481, so the null hypothesis was rejected. The mean cover in the reclamation area was greater than the mean cover in Reference Area 1. This area met the success standard.

RA 2 – The total vegetative cover was 10.183 and the components were 3.769 percent shrubs and trees, 0.683 percent forbs, and 6.885 percent grasses. The critical t-value was 1.66 and the calculated t-value was 2.791, so the null hypothesis was rejected. The mean cover in the reclamation area was greater than the mean cover in Reference Area 1. This area met the success standard.

RA 4 – The total vegetative cover was 8.523 and the components were 3.688 percent shrubs and trees, 1.516 percent forbs, and 4.289 percent grasses. The critical t-value was 1.657 and the calculated t-value was 0.496, so the test failed to reject the null hypothesis. The mean cover in

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the reclamation area was equal to mean cover in Reference Area 1. This area met the success standard.

RA 5 – The total vegetative cover was 11.354 and the components were 1.975 percent shrubs and trees, 0.797 percent forbs, and 9.025 percent grasses. The critical t-value was 1.664 and the calculated t-value was 3.799, so the null hypothesis was rejected. The mean cover in the reclamation area was greater than the mean cover in Reference Area 1. This area met the success standard.

RA 6 – The total vegetative cover was 9.724 and the components were 2.879 percent shrubs and trees, 1.655 percent forbs, and 6.414 percent grasses. The critical t-value was 1.672 and the calculated t-value was 2.1, so the null hypothesis was rejected. The mean cover in the reclamation area was greater than the mean cover in Reference Area 1. This area met the success standard.

RA 7 – The total vegetative cover was 14.59 and the components were 6.475 percent shrubs and trees, 2.443 percent forbs, and 7.049 percent grasses. The critical t-value was 1.671 and the calculated t-value was 5.821, so the null hypothesis was rejected. The mean cover in the reclamation area was greater than the mean cover in Reference Area 1. This area met the success standard.

RA 27 – The total vegetative cover was 18.11 and the components were 1.889 percent shrubs and trees, 9.667 percent forbs, and 6.667 percent grasses. The critical t-value was 1.74 and the calculated t-value was 8.286, so the null hypothesis was rejected. The mean cover in the reclamation area was greater than the mean cover in Reference Area 2. This area met the success standard.

Woody Plant Density

Average woody plant density for each area is shown in Table 3 and the individual sample points are included as Appendix 2.

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Table 3: Woody Plant Density	
Area	**Plants/Acre**
Reference Area 1	4548.558
Reference Area 2	5541.297
RA 1	4257.812
RA 2	2115.988
RA 4	2271.501
RA 5	1171.054
RA 6	2072.297
RA 7	6471.3
RA 27	1379.094

Reference Area 1 was dominated by black sagebrush (63.8%) and big sagebrush (17.5%).
Reference Area 2 was dominated by quaking aspen (47%), snowberry (21%), and Woods' rose (19%).
RA 1 was dominated by big sagebrush (62.8%) and rubber rabbitbrush (29.2%).
RA 2 was dominated by rubber rabbitbrush (50%) and big sagebrush (28.1%).
RA 4 was dominated by rubber rabbitbrush (67.2%) and big sagebrush (30.3%).
RA 5 was dominated by rubber rabbitbrush (46.2%) and bud sage (33.2%).
RA 6 was dominated by rubber rabbitbrush (57.8%) and big sagebrush (26.7%).
RA 7 was dominated by rubber rabbitbrush (73.8%) and big sagebrush (21.7%).
RA 27 was dominated by rubber rabbitbrush (56.9%) and big sagebrush (15.3%).

Reclamation area RA 7 had a greater density of woody plants per acre than the reference area. This area met the success standard. Areas RA 1, RA 2, RA 4, RA 5, RA 6, and RA 27 had less woody plants per acre than the appropriate reference area. The lack of woody shrubs is likely a result of having no sagebrush in the seed mix used during reclamation activities.

Species Diversity

Table 4 shows the percent cover by individual species. Species that are greater than 3 percent relative cover are shown in bold.

Table 4: Species Present										
Species		Area								
		Ref 1	Ref 2	RA 1	RA 2	RA 4	RA 5	RA 6	RA 7	RA 27
Shrubs/Woody										
Black Sagebrush	*Artemisia nova*	**4.8**								
Broom Snakeweed	*Gutierrezia sarothrae*	**0.35**		0.04	0.16	0.23	0.05	**0.35**	0.02	
Budsage	*Picrothamnus desertorum*				0.08		0.24	0.28	0.15	
Creeping Barberry/Oregon Grape	*Mahonia repens*		**2.12**							

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Species		Area								
		Ref 1	Ref 2	RA 1	RA 2	RA 4	RA 5	RA 6	RA 7	RA 27
Douglas Fir	*Pseudotsuga menziesii*		0.12							
Ephedra	*Ephedra viridis*				0.06	0.02		0.02		
Four-wing Saltbrush	*Atriplex canescens*				0.01			0.03		
Mountain Mahogany	*Cercocarpus montanus*	**0.6**								
Mountain Snowberry	*Symphoricarpos oreophilus*		**0.72**							
Pinyon Pine	*Pinus edulis*									0.06
Quaking Aspen	*Populus tremuloides*		**0.92**							0.06
Rubber Rabbitbrush	*Ericameria nauseosa*	0.05		**2.33**	**2.01**	**2.03**	**1.57**	**1.36**	**3.53**	**1.11**
Serviceberry	*Amelanchier utahensis*	0.05	0.08	0.03	0.03				0.02	
Spruce	*Picea engelmannii*									0.5
Sumac	*Rhus trilobata*		0.04							0.06
Winterfat	*Krascheninnikovia lanata*			0.26	0.21	0.01				
Woods' Rose	*Rosa woodsii*		**0.52**						0.02	
Wyoming Big Sagebrush	*Artemisia tridentata*	0.15	0.08	**6.97**	**1.21**	**1.4**	0.11	**0.85**	**2.75**	0.11
Yellow Rabbitbrush	*Chrysothamnus viscidiflorus*			**0.47**						
Yucca	*Yucca harrimaniae*			0.17						
Forbs										
Alfalfa	*Medicago sativa*					0.01	0.08		**0.95**	
Astragalus	*Astragalus sp*	0.1	0.12	0.03	0.02		0.1	**1.09**		0.17
Blue Flax	*Linum lewisii*							0.02		
Buttercup sp	*Ranunculus sp*									**1.22**
Cicer Milkvetch	*Astragalus cicer*					**0.95**			**0.74**	
Cryptantha	*Cryptantha sp*	0.1								
Curlycup Gumweed	*Grindelia squarrosa*			0.11	0.03	0.02			0.25	0.06
Cushion Buckwheat	*Eriogonum ovalifolium*	0.2		0.01				0.07		
Dandelion	*Taraxacum officinale*		0.24						0.03	**1**
Desert Parsley	*Lomatium foeniculaceum*		**0.36**							
Drummond's rockcress	*Arabis drummondii*		0.04							
Goosefoot	*Chenopodium fremontii*		0.16							
Hoary Aster	*Machaeranthera canescens*		0.08	0.01	0.01	0.07	0.03	0.14	0.02	**0.67**
Kochia	*Kochia scoparia*				0.01					
Larkspur	*Delphinium occidentale*		0.04							
Morning glory	*Ipomoea sp*					0.09			0.02	
Mulesear	*Wyethia amplexicaulis*		0.2	0.04					0.02	0.11
Mustard	*Brassicaceae sp*							0.02		
Palmer's Penstemon	*Penstemon palmeri*	0.1	0.04		0.03	0.02	0.01	0.09	0.02	0.22
Pediocactus	*Pediocactus*	0.05								
Prickly Pear	*Opuntia sp*	0.1		0.06						

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RA27 & REF2

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Legend

- Survey points
- Area Boundary

Feet
0 60 120

N

Hiawatha Mine
Phase III Bond Release
Reclamation Vegetation Study
Sec. 19
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Carbon County, UT

PHOTOGRAPHS

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PHOTOGRAPHS

RA1 North General Location

Example of a RA1 North Quadrat

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RA1 South General Location

Example of a RA1 South Quadrat

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RA1 West General Location

Example of a RA1 West Quadrat

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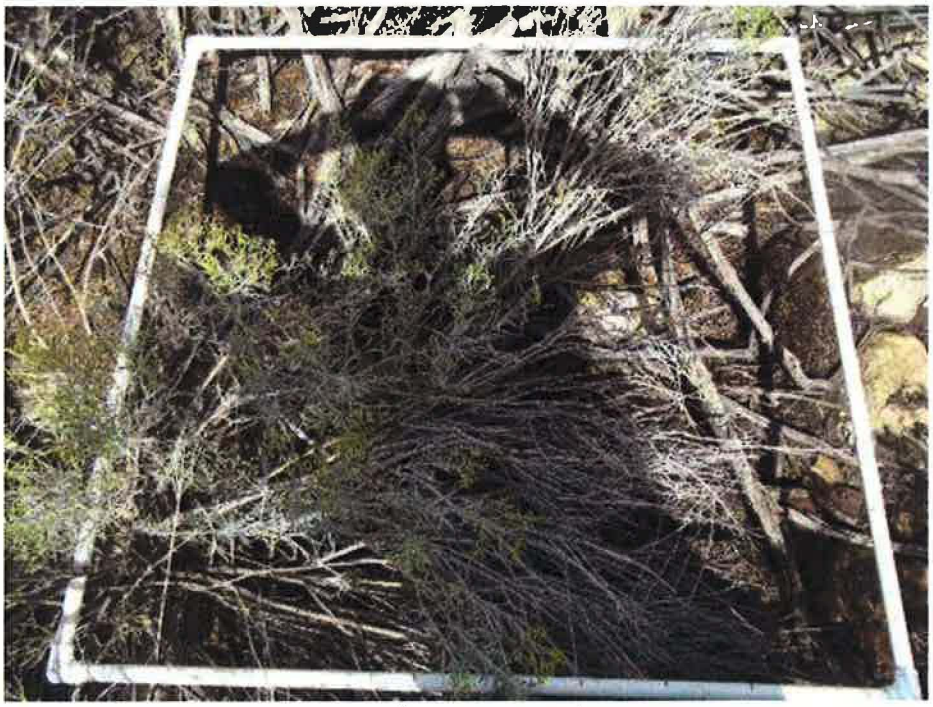
RA1 East General Location



Example of a RA1 East Quadrat

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RA2 General Location

Example of a RA2 Quadrat

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RA4 General Location

Example of a RA4 Quadrat

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RA5 General Location

Example of RA5 Quadrat

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RA6 General Location

Example of RA6 Quadrat

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RA7 General Location

Example of RA7 Quadrat

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RA27 General Location

Example of RA27 Quadrat

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REF1 General Location

Example of REF1 Quadrat

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REF2 General Location

Example of REF2 Quadrat

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HIAWATHA MINE

PHASE III BOND RELEASE
RECLAMATION VEGETATION STUDY

SEPTEMBER 2014

CONDUCTED BY
EIS Environmental and Engineering Consulting
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Office - (435) 472-3814 * Toll free - (800) 641-2927 * Fax - (435) 472-8780
eisec@preciscom.net

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INTRODUCTION

This was the second study to document the vegetation condition in seven reclamation areas associated with the Hiawatha Mine. The first study was completed in September 2013 and this study was conducted in the first half of September 2014. The data collected will be used to determine if the vegetation community meets the requirements of Phase III Bond Release. Two reference areas were selected during an on-site meeting with Utah Division of Oil, Gas, and Mining (DOGM) and mine representatives in 2013. Reference Area 1 was within pinyon-juniper woodland, an adjacent sagebrush shrubland, and the transition zone between them. Reference Area 2 was undisturbed mixed conifer woodland.

Data collection included total vegetation cover, percent cover by species, and woody plant density. Indices for the reference areas and reclamation areas were calculated to determine if the reclamation efforts met the bond release requirements.

MATERIALS AND METHODS

The reclamation areas were the same areas studied during the 2013 survey and corresponded with reclamation areas in the Mining and Reclamation Plan (MRP). Reference Area 1 was used to compare 6 of the reclamation areas and was located on private land south of Washboard Wash and southeast of the reclamation areas. Reference Area 2 was used to compare vegetation in reclamation area RA 27 and was adjacent to the reclamation area. The vegetation surveys were conducted according to DOGM Vegetation Information Guidelines (1992) and the MRP Criteria and Tests for Demonstrating Successful Revegetation. Data collected in the reference areas were compared to the reclamation areas to determine similarity.

Percent cover

Percent cover was measured using quadrat sampling. Random points were generated and uploaded to handheld GPS devices. Once at the point, surveyors would then randomly toss a 1m x 1m square frame. In each sample frame, percent cover by species, density by species, and percent non-living cover were recorded. Non-living cover included rock, soil, and litter. Total vegetation cover added to non-living cover summed to 100 percent. The number of sampling quadrats was determined by the equation in the DOGM Vegetation Information Guidelines (1992). Sample size was determined at a 90 percent confidence level at +/- 10 percent precision as required by DOGM.

$$N = (t^2s^2)/(p^2x^2)$$

N = The number of samples required for statistical adequacy.
t = Student's T-value for the t_{90} confidence level and for degrees of freedom.
s = Standard deviation.
p = Precision of test (0.1)

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x = The mean of the samples.
The following table shows the number of sample plots in each reclamation area and reference area and the required number of sample quadrats.

Table 1: Sample Quadrats		
Survey Area	**Number of Quadrats Sampled**	**Number of Quadrats Required**
Reference Area 1	20	81.12
Reference Area 2	20	17.007
RA 1	58	54.626
RA 2	50	48.894
RA 4	60	53.901
RA 5	40	24.143
RA 6	40	35.744
RA 7	45	43.187
RA 27	20	17.165

A large standard deviation in cover percentages was anticipated in Reference Area 1, so the suggested method was to sample and calculate an average cover percentage between habitat types. Since Reference Area 1 included diverse vegetation communities between a pinion-juniper stand and sagebrush shrubland and a large variation in cover percentages, 20 quadrats were sampled instead of the minimum of 10.

Reclamation Comparison

An unpaired t-test was used to compare the reclaimed areas to the reference area. Sample means per quadrat for cover were used for the comparison. The null hypothesis for each t-test was that there is no difference between the means for the measured parameter in the reclamation area and reference area. If the test failed to reject the null hypothesis, the standard for success was met. The null hypothesis was rejected when the calculated t-value exceeds the table t-value for 90 percent confidence and degrees of freedom. When the null hypothesis was rejected, the mean of the reclamation area equals the mean of the reference area and the standard for success was met.

Woody Plant Density

Woody plant density was sampled by the point-quarter method. At each random point, 2 perpendicular lines divided the area into four quadrants with the point being the center. In each quadrant, the distance to the base of the nearest woody plant or shrub was measured. The 4 recorded distances were averaged to use as the individual sample. Woody plant density was measured at each point where percent cover was recorded. The following equation was used to calculate woody plant density:

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$$A_j = \left(\frac{\Sigma Y_i}{4}\right)^2 \qquad D = 43{,}560 \div \frac{\Sigma A_j}{n}$$

Y_i = Distance from point to nearest plant in the ith quarter
A_j = Mean area/plant at the jth point
n = Sample size (number of point sampled)
D = Plants/acre

Species Diversity

Species diversity was determined by the method listed in Section 341.250 of the MRP. The number of species contributing greater than 3 percent relative cover in the reference areas will designate the number of species, the life forms, and the seasonality to be established in the reclaimed area. The MRP also states that trees in the reclamation areas will not likely be large enough to match the importance of trees in the reference areas. Therefore, other life forms can be substituted for trees.

RESULTS

Percent Cover

Absolute cover means for each of the reclamation areas and reference areas is shown in Table 2 and cover data for each sample quadrat is included in Appendix 1. Results from the 2013 study are shown in italics for comparison. The sum of the percentages of shrub and trees, forbs, and grasses may exceed the total vegetation cover due to overlapping vegetation.

Table 2: Average Absolute Percent Cover

Mean Cover	Area								
	Ref 1	**Ref 2**	**RA 1**	**RA 2**	**RA 4**	**RA 5**	**RA 6**	**RA 7**	**RA 27**
Shrub	7.3 *6*	8 *4.6*	11.24 *10.11*	1.18 *3.769*	3.633 *3.688*	2.6 *1.974*	3.725 *2.879*	6.8 *6.475*	3.15 *1.889*
Forb	0.75 *1*	5.05 *1.92*	0.086 *0.542*	0.9 *0.683*	0.6 *1.516*	0.4 *0.797*	0.75 *1.655*	1.311 *2.443*	13.1 *9.667*
Grass	0.85 *2.5*	1.35 *1.92*	1.621 *3.028*	7.96 *6.885*	3.933 *4.289*	13.45 *9.025*	7.925 *6.414*	6.511 *7.049*	7.5 *6.667*
Total	7.85 *8.2*	12.85 *7.48*	12.345 *13.139*	10.18 *10.183*	7.183 *8.523*	14.7 *11.354*	10.975 *9.724*	13.067 *14.59*	20.55 *18.11*

*Results from 2013 study shown in italics for comparison.

Reference Area 1 – Total vegetative cover was 7.85 percent. Vegetation cover included 7.3 percent shrubs, 0.75 percent forbs, and 0.85 percent grasses.

Reference Area 2 – Total vegetative cover was 12.85 percent. Vegetation cover included 8 percent shrubs, 5.05 percent forbs, and 1.35 percent grasses.

Reclamation Area 1 – Total vegetative cover was 12.345 percent. Vegetation cover included 11.24 percent shrubs, 0.086 percent forbs, and 1.621 percent grasses. The critical t-value was 1.729 and the calculated t-value was 5.481, therefore the null hypothesis was rejected. The mean

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cover in the reclamation area was greater than the mean cover in Reference Area 1. This area met the reclamation success standard.

Reclamation Area 2 – Total vegetative cover was 10.18 percent. Vegetation cover included 1.18 percent shrubs, 0.9 percent forbs, and 7.96 percent grasses. The critical t-value was 1.667 and the calculated t-value was 4.862, therefore the null hypothesis was rejected. The mean cover in the reclamation area was greater than the mean cover in Reference Area 1. This area met the reclamation success standard.

Reclamation Area 4 – Total vegetative cover was 7.183 percent. Vegetation cover included 3.633 percent shrubs, 0.6 percent forbs, and 3.933 percent grasses. The critical t-value was 1.671 and the calculated t-value was 1.269, and therefore the test failed to reject the null hypothesis. The mean cover in the reclamation area was equal to the mean cover in Reference Area 1. This area met the reclamation success standard.

Reclamation Area 5 – Total vegetative cover was 14.7 percent. Vegetation cover included 2.6 percent shrubs, 0.4 percent forbs, and 13.45 percent grasses. The critical t-value was 1.685 and the calculated t-value was 7.815, therefore the null hypothesis was rejected. The mean cover in the reclamation area was greater than the mean cover in Reference Area 1. This area met the reclamation success standard.

Reclamation Area 6 – Total vegetative cover was 10.975 percent. Vegetation cover included 3.725 percent shrubs, 0.75 percent forbs, and 7.925 percent grasses. The critical t-value was 1.685 and the calculated was t-value 3.925, therefore the null hypothesis was rejected. The mean cover in the reclamation area was greater than the mean cover in Reference Area 1. This area met the reclamation success standard.

Reclamation Area 7 – Total vegetative cover was 13.067 percent. Vegetation cover included 6.8 percent shrubs, 1.311 percent forbs, and 6.511 percent grasses. The critical t-value was 1.680 and the calculated t-value was 5.302, therefore the null hypothesis was rejected. The mean cover in the reclamation area was greater than the mean cover in Reference Area 1. This area met the reclamation success standard.

Reclamation Area 27– Total vegetative cover was 20.55 percent. Vegetation cover included 3.15 percent shrubs, 13.1 percent forbs, and 7.5 percent grasses. The critical t-value was 1.729 and the calculated t-value was 5.371, therefore the null hypothesis was rejected. The mean cover in the reclamation area was greater than the mean cover in Reference Area 2. This area met the reclamation success standard.

Woody Plant Density

Average woody plant density for each area is shown in Table 3 and the individual sample points are included as Appendix 2. Results from the 2013 study are included in italics for comparison.

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Table 3: Woody Plant Density	
Area	**Plants/Acre**
Reference Area 1	4326.287 *4548.558*
Reference Area 2	2890.424 *5541.297*
RA 1	3334.808 *4257.812*
RA 2	1436.823 *2115.988*
RA 4	2887.902 *2271.501*
RA 5	1121.02 *1171.054*
RA 6	3136.586 *2072.297*
RA 7	6467.92 *6471.30*
RA 27	1009.391 *1379.094*

*Results from 2013 are included in italics for comparison.

Reference Area 1 had 4326.287 plants per acre and was dominated by black sagebrush (50%), big sagebrush (13.75%), and pinyon pine (11.25%).

Reference Area 2 had 2890.424 plants per acre and was dominated by quaking aspen (50%), Douglas fir (13.75%), and mountain snowberry (11.25%).

Reclamation Area 1 had 3334.808 plants per acre and was dominated by big sagebrush (64.66%) and rubber rabbitbrush (23.28%).

Reclamation Area 2 had 1436.823 plants per acre and was dominated by rubber rabbitbrush (38%), big sagebrush (23%), winterfat (14%), and broom snakeweed (11.5%).

Reclamation Area 4 had 2887.902 plants per acre and was dominated by rubber rabbitbrush (49.58%), big sagebrush (27.92%), and broom snakeweed (16.67%).

Reclamation Area 5 had 1121.02 plants per acre and was dominated by fringed sage (46.25%), rubber rabbitbrush (34.38%), and big sagebrush (11.875%).

Reclamation Area 6 had 3136.586 plants per acre and was dominated by rubber rabbitbrush (47.5%), big sagebrush (21.88%), broom snakeweed (13.75%), and fringed sage (11.88%).

Reclamation Area 7 had 6467.92 plants per acre and was dominated by rubber rabbitbrush (70.56%) and big sagebrush (21.11%).

Reclamation Area 27 had 1009.391 plants per acre and was dominated by rubber rabbitbrush (50%), mountain snowberry (16.25%), and big sagebrush (12.5%).

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Reclamation Area 7 had more woody plants per acre than Reference Area 1. This area met the success standard. Reclamation Areas 1, 2, 4, 5, and 6 had fewer plants per acre than Reference Area 1. Reclamation Area 27 had fewer plants per acre than Reference Area 2. Woody density decreased in all reclamation areas and reference areas except Reclamation Areas 4 and 6.

Species Diversity

Table 4 shows the percent cover by individual species. Species that were greater than 3 percent relative cover are shown in bold.

Table 4: Species Present

Species		Area								
		REF 1	REF 2	RA 1	RA 2	RA 4	RA 5	RA 6	RA 7	RA 27
Grass										
Indian Ricegrass	*Achnatherum hymenoides*	0.1		**0.586**	0.14	0.167		**0.6**	**1.067**	
Crested Wheatgrass	*Agropyron cristatum*			0.207	**0.48**		0.125			
Blue Grama	*Bouteloua gracilis*	0.05								
Mountain Brome	*Bromus marginatus*		0.25		0.02					**5.45**
Orchardgrass	*Dactylis glomerata*								0.044	
Squirreltail	*Elymus elymoides*	0.05			0.1				0.333	
Needle and Thread	*Hesperostipa comata*				0.02					
Basin Wildrye	*Leymus cinereus*			0.086	0.24	0.15	0.4	0.225	0.2	
Western Wheatgrass	*Pascopyrum smithii*			0.103	**5.84**	**3.6**	**11.8**	**6.775**	**4**	**1.95**
Kentucky Bluegrass	*Poa pratensis*		0.15		0.02					0.1
Sandberg Bluegrass	*Poa secunda*		**0.95**							
Russian Wildrye	*Psathyrostachys juncea*			0.224	0.04					
Bluebunch Wheatgrass	*Pseudoroegneria spicata*	**0.65**		**0.414**	**1.06**	0.017	**1.125**	0.325	**0.867**	
Forb										
Pussytoes	*Antennaria sp.*		0.2							0.15
Cicer Milkvetch	*Astragalus cicer*					**0.367**	0.15	**0.45**	0.178	
Utah Milkvetch	*Astragalus utahensis*		0.05							0.25
Thickstem Wild Cabbage	*Caulanthus crassicaulis*	0.05								
Goosefoot	*Chenopodium sp.*		**0.55**							
Thistle	*Cirsium sp.*									0.2
Cryptanth	*Cryptantha sp.*	0.05						0.025		
Fleabane	*Erigeron*		**1.55**				0.025		0.022	**1.4**
Cushion Buckwheat	*Eriogonum ovalifolium*					0.017				
Buckwheat	*Eriogonum sp.*	**0.3**								
Woodland Strawberry	*Fragaria vesca*		0.3							0.2
Curlycup Gumweed	*Grindelia squarrosa*								0.2	
Sunflower	*Helianthus sp.*									0.1
Morning Glory	*Ipomoea sp*								0.022	
Scarlet Gilia	*Ipomopsis aggregata*									0.05
Prickly Phlox	*Linanthus pungens*	0.1								
Desertparsley	*Lomatium sp.*		0.25							
Hoary Tansyaster	*Machaeranthera canescens*		0.05		**0.86**			0.025		0.55
Common Mallow	*Malva neglecta*						0.025	0.025		
Alfalfa	*Medicago sativa*								**0.733**	
Yellow Sweetclover	*Melilotus indicus*			0.017	0.02	0.033				**6.2**
Palmer's Penstemon	*Penstemon palmeri*	0.05		0.017		0.017	0.025	0.125	0.089	
Phacelia	*Phacelia sp.*		0.15							**0.8**

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Table 4: Species Present

Species		Area								
		REF 1	REF 2	RA 1	RA 2	RA 4	RA 5	RA 6	RA 7	RA 27
Sharpleaf Twinpod	*Physaria acutifolia*							0.025		
Knotweed	*Polygonum sp.*		0.05							
Buttercup	*Ranunculus sp.*		0.15							**0.8**
Scarlet Globemallow	*Sphaeralcea coccinea*	0.15		0.052	0.02	0.167	0.15	0.075	0.067	
Starwort	*Stellaria sp.*		0.05							0.15
Common Dandelion	*Taraxacum officinale*		**1.35**							1.9
Yellow Salsify	*Tragopogon dubius*						0.025			
Violet	*Viola sp.*		0.1							0.15
Mules-ears	*Wyethia amplexicaulis*		0.05							0.2
Spanish Bayonet	*Yucca harrimaniae*	0.05								
	Unk 3193		0.1							
	Unk 3194		0.1							
Shrub										
Serviceberry	*Amelanchier alnifolia*	**0.85**	0.25	**1.483**					0.022	0.1
Fringed Sagebrush	*Artemisia frigida*				**0.32**		**0.575**	0.2	0.089	
Black Sagebrush	*Artemisia nova*	**1.9**								
Big Sagebrush	*Artemisia tridentata*	**1.3**		**8.672**	0.02	**2.25**	**0.7**	**1.975**	**2.178**	0.7
Fourwing Saltbush	*Atriplex canescens*					0.033		0.025		
Alderleaf Mountain Mahogany	*Cercocarpus montanus*								0.044	
Yellow Rabbitbrush	*Chrysothamnus viscidiflorus*			0.017			**0.5**	0.025		**0.95**
Mormon Tea	*Ephedra viridis*				**0.36**		0.075	0.025		
Rubber Rabbitbrush	*Ericameria nauseosa*			**0.759**	**0.4**	**0.917**	**0.7**	**1.225**	**4.467**	**0.8**
Slender Buckwheat	*Eriogonum microthecum*			0.034						
Broom Snakeweed	*Gutierrezia sarothrae*	0.05		0.052	0.02	**0.433**	0.05	0.25		
Utah Juniper	*Juniperus osteosperma*	0.85								
Rocky Mountain Juniper	*Juniperus scopulorum*			0.138						
Winterfat	*Krascheninnikovia lanata*				0.06					
Creeping Barberry	*Mahonia repens*		**2.4**							
Prickly Pear	*Opuntia sp*	0.1		0.034						
Oregon Boxleaf	*Paxistima myrsinites*		0.35							
Engelmann Spruce	*Picea engelmannii*		**1**							
Twoneedle Pinyon	*Pinus edulis*	2.25		0.052						
Quaking Aspen	*Populus tremuloides*		**1.2**							
Chokecherry	*Prunus virginiana*		0.05							0.35
Douglas-fir	*Pseudotsuga menziesii*		**1.4**							
Skunkbrush Sumac	*Rhus trilobata*		0.05							0.05
Woods' Rose	*Rosa woodsii*		0.35							
Mountain Snowberry	*Symphoricarpos oreophilus*		**0.95**							0.2

Reference Area 1 had 5 species with relative cover greater than 3 percent and a total of 18 species. There were 1 cool-season perennial grass species, 1 forb species, and 3 woody/shrub species. In 2013, there were 3 woody/shrub and 2 cool-season perennial grass species used to compare diversity.

Reference Area 2 had 9 species with relative cover greater than 3 percent and a total of 29 species. There were 1 cool-season perennial grass species, 3 forb species, and 5 woody/shrub species. Three of the woody/shrub species are trees and may be substituted with another species

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during comparison, as stated in Section 341.250 of the MRP. In 2013, there were 4 woody/shrub, 1 forb, and 3 cool-season perennial grass species used to compare diversity.

Reclamation Area 1 had 5 species with relative cover greater than 3 percent and a total of 18 species. There were 2 cool-season perennial grass species and 3 woody/shrub species. This area meets or exceeds the grass and woody/shrub requirement, but lacks a forb species. In 2013, there were 3 woody/shrubs and 4 cool-season perennial grasses.

Reclamation Area 2 had 7 species with relative cover greater than 3 percent and a total of 19 species. There were 3 cool-season perennial grass species, 1 forb species, and 3 woody/shrub species. This area meets or exceeds the grass, forb, and woody/shrub requirement. In 2013, there were 2 woody/shrubs, 1 forb, and 3 cool-season grasses.

Reclamation Area 4 had 5 species with relative cover greater than 3 percent and a total of 13 species. There were 1 cool-season perennial grass species, 1 forb species, and 3 woody/shrub species. This area meets or exceeds the grass, forb, and woody/shrub requirement. In 2013, there were 2 woody/shrubs, 1 forb, and 2 cool-season grasses.

Reclamation Area 5 had 6 species with relative cover greater than 3 percent and a total of 16 species. There were 2 cool-season perennial grass species and 4 woody/shrub species. This area meets or exceeds the grass and woody/shrub requirement, but lacks a forb species. In 2013, there were 1 woody/shrub, and 2 cool-season grasses.

Reclamation Area 6 had 5 species with relative cover greater than 3 percent and a total of 18 species. There were 2 cool-season perennial grass species, 1 forb species, and 2 woody/shrub species. This area meets or exceeds the grass and forb requirement, but lacks a shrub species. In 2013, there were 3 woody/shrub, 1 forb, and 2 cool-season grasses.

Reclamation Area 7 had 6 species with relative cover greater than 3 percent and a total of 18 species. There were 3 cool-season perennial grass species, 1 forb species, and 2 woody/shrub species. This area meets or exceeds the grass and forb requirement, but lacks a shrub species. In 2013, there were 2 woody/shrub, 2 forb, and 4 cool-season grass species.

Reclamation Area 27 had 8 species with relative cover greater than 3 percent and a total of 25 species. There were 2 cool-season perennial grass species, 4 forb species, and 2 woody/shrub species. This area exceeds the grass and forb species, but lacks an additional species with greater than 3 percent relative cover. Three of the 5 woody/shrub species in Reference Area 2 may be replaced with other species, however Reclamation Area 27 has only 8 species with greater than 3 percent relative cover. In 2013, there were 1 woody/shrub, 4 forb, and 2 cool-season grass species.

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Production

Production estimates for Reference Area 2 and Reclamation Area 27 were conducted by Dean Stacy, MLRA Ecological Site Specialist, Natural Resources Conservation Service. The

production estimate for the remaining reference area and reclamation areas were conducted by Brandon Steinberg, Rangeland Management Specialist, Natural Resources Conservation Service. The estimates for the reclamation sites are shown in Table 5.

Table 5: Production Estimates	
Area	**Pounds/Acre**
Reference Area 1	1069 *750*
Reference Area 2	300 *300*
RA 1	766 *1330*
RA 2	914 *950*
RA 4	476 *550*
RA 5	1073 *750*
RA 6	1306 *2300*
RA 7	1017 *1100*
RA 27	350 *425*

*Production estimates from 2013 are included in italics for comparison.

Reference Area 1 – Productivity was estimated at 1069 pounds per acre.

Reference Area 2 – Productivity was estimated at 300 pounds per acre.

Reclamation Area 1 – Productivity was estimated at 766 pounds per acre and was less than the production at Reference Area 1.

Reclamation Area 2 – Productivity was estimated at 914 pounds per acre and was less than the production at Reference Area 1.

Reclamation Area 4 – Productivity was estimated at 476 pounds per acre and was less than the production at Reference Area 1.

Reclamation Area 5 – Productivity was estimated at 1073 pounds per acre and was greater than the production at Reference Area 1.

Reclamation Area 6 – Productivity was estimated at 1306 pounds per acre and was greater than the production at Reference Area 1.

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Reclamation Area 7 – Productivity was estimated at 1017 pounds per acre and was less than the production at Reference Area 1.

Reclamation Area 27 – Productivity was estimated at 350 pounds per acre and was greater than the production at Reference Area 2.

Available Forage

The total available forage has been calculated, shown in Table 6, using the "take half, leave half" method in the following equation:

Total Available Forage = Total Production x (0.5) x Reclamation Area Acres

Table 6: Total Available Forage

Reclamation Area	Acres	lbs/Acre	Total Available Forage (lbs)
RA 1	9.44	766	3615.52 *6277.6*
RA 2	40.39	914	18458.23 *19185.25*
RA 4	5.28	476	1256.64 *1452*
RA 5	26.37	1073	14147.51 *9888.75*
RA 6	9.12	1306	5955.36 *10488*
RA 7	5.51	1017	2801.835 *3030.5*
RA 27	0.89	350	155.75 *189.13*

**Total available forage from 2013 are included in italics for comparison.*

DISCUSSION

The percent cover for all reclamation areas exceeded the percent cover in the appropriate reference area and met the success standard. The percent cover in this 2014 study remained similar to the percent cover found in 2013.

The woody plant density was lower in the reclamation areas than in reference areas in all but RA 7. The same result was found in the 2013 study. The woody plant density in the reclamation areas averaged 2770.63 plants per acre and density in the reference areas 3608.35 plants per acre. Since the post-mining land use identified in the Hiawatha MRP is wildlife habitat and grazing, and only 1,500 to 2,000 plants per acre are sufficient for winter wildlife, the reclamation areas should be considered as having met the success standards for the post-mining land use.

Reclamation Areas 2 and 4 met the life form requirements for species diversity. In 2013, Reclamation Areas 2 and 6 met the species diversity success standard.

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Reclamation Areas 5, 6, and 27 had greater production than the reference area. Reclamation Areas 1, 2, 4, and 7 had lower production than Reference Area 1. In 2013, all reclamation areas

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except Reclamation Area 4 had greater production values than the reference area. Had production in Reference Area 1 been estimated near the 2013 estimate, production in all reclamation areas except Reclamation Area 4 would have been greater than the reference area.

Attach are an Inspection Report from DOGM and a letter of approval from the DWR stating the reclaimed areas in question should meet the standards for revegetation success (Appendices 3 and 4).

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REFERENCES

DOGM. 1992. Vegetation Information Guidelines. Utah Division of Oil, Gas, and Mining. Salt Lake City, UT.

Hayter, A. J. 2002. Probability and Statistics for Engineers and Scientists – Second Edition. Wadsworth Group. Pacific Grove, CA.

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APPENDIX 1
PERCENT COVER DATA

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Point ID:	Veg:	Litter:	Rock:	Soil:	Achnatherum hymenoides	Achnatherum hymenoides #	Bouteloua gracilis	Bouteloua gracilis #	Elymus elymoides	Elymus elymoides #	Pseudoroegneria spicata	Pseudoroegneria spicata #	Caulanthus crassicaulis	Caulanthus crassicaulis #	Cryptantha sp.	Cryptantha sp. #	Eriogonum sp.	Eriogonum sp. #	Linanthus pungens	Linanthus pungens #	Penstemon palmeri	Penstemon palmeri #	Sphaeralcea coccinea	Sphaeralcea coccinea #	Yucca harrimaniae	Yucca harrimaniae #	Amelanchier alnifolia	Amelanchier alnifolia #	Artemisia nova	Artemisia nova #	Artemisia tridentata	Artemisia tridentata #	Gutierrezia sarothrae	Gutierrezia sarothrae #	Juniperus osteosperma	Juniperus osteosperma #	Opuntia sp.	Opuntia sp. #	Pinus edulis	Pinus edulis #
REF1-1	9	5	3	83	0	0	0	0	0	0	2	18	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	8	1	0	0	0	0	0	0	0	0
REF1-2	12	30	2	56	0	0	0	0	0	0	2	13	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0
REF1-3	2	10	2	86	0	0	0	0	0	0	2	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF1-4	3	16	1	80	0	0	1	1	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0
REF1-5	13	30	0	57	0	0	0	0	0	0	6	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0
REF1-6	4	94	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	1
REF1-7	2	5	20	73	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
REF1-8	8	85	2	5	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
REF1-9	20	20	10	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	20	0
REF1-10	8	5	1	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0	0	0	0	1	1	0	0
REF1-11	10	20	2	68	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	10	3	0	0	0	0	0	0	0	0	0	0
REF1-12	3	15	5	77	0	0	0	0	0	0	1	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
REF1-13	3	15	25	57	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0
REF1-14	3	13	25	59	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	2	4	0	0	0	0	0	0	0	0	0	0
REF1-15	16	25	1	58	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0
REF1-16	13	20	5	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0
REF1-17	12	60	8	20	0	0	0	0	0	0	0	0	1	2	0	0	1	2	0	0	1	1	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	1	1
REF1-18	4	30	5	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	1	0	0	0	0	0	0	0	0	0	0
REF1-19	2	20	20	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	1	0	0
REF1-20	10	15	2	73	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	6	2	1	1	0	0	0	0	0	0
Mean	7.85	26.65	7.05	58.45	0.1		0.05		0.05		0.65		0.05		0.05		0.3		0.1		0.05		0.15		0.05		0.85		1.9		1.3		0.05		0.85		0.1		2.25		8.9
					Grass	0.85						Forb	0.75														Shrub	7.3												
				Relative Co	1.124		0.562		0.562		7.303		0.562		0.562		3.371		1.124		0.562		1.685		0.562		9.551		21.35		14.61		0.562		9.551		1.124		25.28	

7.85	avg
5.32398	sd
1.328	t.90
81.1202	n

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Point ID:	Veg:	Litter:	Rock:	Soil:	Achnatherum hymenoides	Achnatherum hymenoides #	Agropyron cristatum	Agropyron cristatum #	Leymus cinereus	Leymus cinereus #	Pascopyrum smithii	Pascopyrum smithii #	Psathyrostachys juncea	Psathyrostachys juncea #	Pseudoroegneria spicata	Pseudoroegneria spicata #	Melilotus indicus	Melilotus indicus #	Penstemon palmeri	Penstemon palmeri #	Sphaeralcea coccinea	Sphaeralcea coccinea #	Amelanchier utahensis	Amelanchier utahensis #	Artemisia tridentata	Artemisia tridentata #	Chrysothamnus viscidiflorus	Chrysothamnus viscidiflorus #	Ericameria nauseosa	Ericameria nauseosa #	Eriogonum microthecum	Eriogonum microthecum #	Gutierrezia sarothrae	Gutierrezia sarothrae #	Juniperus scopulorum	Juniperus scopulorum #	Opuntia sp	Opuntia sp #	Pinus edulis	Pinus edulis #
RA1-1	6	20	18	56	0	0	2	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-2	15	40	30	15	11	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0
RA1-3	18	30	1	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0
RA1-4	9	15	25	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-5	20	30	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	0
RA1-6	6	35	10	49	0	0	0	0	0	0	0	0	6	13	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
RA1-7	6	74	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-8	8	9	1	82	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-9	22	10	2	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-10	10	5	7	78	0	0	0	0	0	0	1	12	0	0	0	0	0	0	0	0	0	0	0	0	9	4	0	0	1	1	0	0	0	0	0	0	0	0	0	0
RA1-11	13	10	0	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-12	14	15	2	69	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-13	7	3	4	86	0	0	0	0	0	0	0	0	0	3	15	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0
RA1-14	13	15	6	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
RA1-15	15	30	0	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-16	14	7	8	71	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-17	9	85	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-18	4	40	0	56	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	1	0	0	0	0	0	0	0	0	0	0
RA1-19	13	10	0	77	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-20	7	15	14	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
RA1-21	8	2	2	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-22	14	20	2	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-23	32	58	0	10	0	0	0	0	0	0	2	3	0	0	2	1	0	0	0	0	0	0	0	0	27	3	0	0	2	1	0	0	0	0	0	0	0	0	0	0
RA1-24	5	2	2	91	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
RA1-25	12	73	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-26	13	48	4	35	0	0	0	0	0	0	2	32	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	10	1	0	0	0	0	0	0	0	0	0	0
RA1-27	11	40	12	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-28	7	3	0	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-29	26	69	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-30	12	55	3	30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-31	9	27	21	43	0	0	0	0	5	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-32	3	27	9	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0
RA1-33	26	64	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-34	6	2	4	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-35	18	65	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-36	6	5	12	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-37	17	66	7	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-38	5	20	2	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-39	25	18	20	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-40	23	12	2	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-41	7	30	61	2	0	0	0	0	0	0	0	0	0	7	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-42	14	5	3	78	0	0	8	9	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0
RA1-43	27	58	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
RA1-44	4	40	8	48	2	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
RA1-45	9	10	32	49	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0
RA1-46	4	75	5	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-47	14	26	10	50	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0
RA1-51	23	18	0	59	0	0	0	0	0	0	0	0	0	0	3	7	0	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-58	6	10	0	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0	0	0	1	1	0	0	0	0	0	0
RA1-59	7	13	10	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-60	5	20	3	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-61	14	20	25	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-62	19	15	2	64	0	0	0	0	0	0	0	0	0	2	6	0	0	0	0	0	0	0	0	0	17	2	0	0	3	2	0	0	0	0	0	0	0	0	0	0
RA1-63	22	30	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-64	8	3	3	86	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0	0	2	2	0	0	0	0	0	0	0	0	0	0
RA1-65	7	11	3	79	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	21	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA1-71	15	40	30	15	11	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	1	1	0	0	1	1	0	0
RA1-72	4	7	21	68	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	12.3448	27.6724	6.13793	51.3448	0.586		0.207		0.086		0.103		0.224		0.414		0.017		0.017		0.052		1.483		8.672		0.017		0.759		0.034		0.052		0.138		0.034		0.052		12.95
	12.3448	avg			Grass	1.621											Forb:	0.086					Shrub	11.24																
	7.04011	sd			Relative Co	4.527		1.598		0.666		0.799		1.731		3.196		0.133		0.133		0.399		11.45		66.98		0.133		5.859		0.266		0.399		1.065		0.266		0.399	
	1.296	t.90																																						
	54.626	ni																																						

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Point ID:	Veg:	Liter:	Rock:	Soil:	Achnatherum hymenoides	Achnatherum hymenoides #	Agropyron cristatum	Agropyron cristatum #	Bromus marginatus	Bromus marginatus #	Elymus elymoides	Elymus elymoides #	Hesperostipa comata	Hesperostipa comata #	Leymus cinereus	Leymus cinereus #	Pascopyrum smithii	Pascopyrum smithii #	Poa pratensis	Poa pratensis #	Psathyrostachys juncea	Psathyrostachys juncea #	Pseudoroegneria spicata	Pseudoroegneria spicata #	Machaeranthera canescens	Machaeranthera canescens #	Melilotus indicus	Melilotus indicus #	Sphaeralcea coccinea	Sphaeralcea coccinea #	Artemisia frigida	Artemisia frigida #	Artemisia tridentata	Artemisia tridentata #	Ephedra viridis	Ephedra viridis #	Ericameria nauseosa	Ericameria nauseosa #	Gutierrezia sarothrae	Gutierrezia sarothrae #	Krascheninnikovia lanata	Krascheninnikovia lanata #
RA2-1	9	2	0	89	0	0	0	0	0	0	0	0	0	0	0	0	9	109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-2	7	7	2	84	0	0	0	0	0	0	0	0	0	0	0	0	5	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	2	0	0	0	0
RA2-3	5	13	18	64	0	0	0	0	0	0	0	0	0	0	0	0	3	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
RA2-4	13	2	0	85	0	0	0	0	0	0	0	0	0	5	2	3	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	1	2	3	5	0	0
RA2-5	18	2	1	79	0	0	0	0	0	0	0	0	0	0	0	12	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	0	0	1	0	2	3	0	0
RA2-6	14	15	1	70	0	0	0	0	0	0	0	0	0	0	0	13	89	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-7	5	10	1	84	0	0	0	0	0	0	0	0	0	0	0	4	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
RA2-8	15	3	0	82	0	0	0	0	0	0	0	0	0	0	0	15	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0
RA2-9	11	11	1	77	0	0	2	1	0	0	0	0	0	2	1	8	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-10	8	5	1	86	0	0	0	0	0	0	2	1	0	0	0	2	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0
RA2-11	16	8	2	74	0	0	0	0	0	0	0	0	0	0	0	16	68	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-12	8	15	2	75	0	0	0	0	0	0	0	0	0	0	0	6	62	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
RA2-13	7	30	2	61	0	0	0	0	0	0	0	0	0	0	0	4	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0
RA2-14	8	5	2	85	0	0	0	0	0	0	0	0	0	0	0	3	37	0	0	0	0	0	0	0	0	0	0	5	36	0	0	1	1	0	0	0	0	0	1	1	0	0
RA2-15	24	2	1	73	0	0	0	0	0	0	0	0	0	0	0	4	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	1	0	0	0	0
RA2-16	16	5	11	68	0	0	0	0	0	0	0	0	0	0	0	6	50	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1	0	0	2	0	0	0	0	0	0	0
RA2-17	22	3	10	65	0	0	0	0	0	0	0	0	0	0	0	6	39	0	0	0	0	16	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0
RA2-18	7	15	1	77	0	0	0	0	0	0	0	0	0	0	0	7	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-19	12	18	0	70	0	0	4	3	0	0	0	0	0	0	0	2	18	0	0	0	0	6	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
RA2-20	7	1	4	88	0	0	0	0	0	0	0	0	0	0	0	1	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
RA2-21	7	5	1	87	0	0	3	32	0	0	0	0	0	0	0	2	27	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0
RA2-22	5	1	2	92	0	0	0	0	0	0	0	0	0	0	0	5	52	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
RA2-23	7	25	1	67	0	0	0	0	0	0	0	0	0	0	0	6	56	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0
RA2-24	5	1	1	93	0	0	0	0	0	0	0	0	0	0	0	4	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
RA2-25	8	5	2	85	0	0	0	0	0	0	0	0	0	0	0	8	62	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-26	21	10	0	69	0	0	0	0	0	0	0	0	0	0	0	21	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-27	22	10	1	67	0	0	0	0	0	0	0	0	0	0	0	18	118	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	2	1
RA2-28	6	15	9	70	0	0	0	0	0	0	0	0	0	0	0	2	26	0	0	0	0	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-29	3	10	1	86	0	0	0	0	0	0	0	0	0	0	0	3	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-30	10	3	2	85	4	1	0	0	0	0	0	0	1	2	0	0	2	22	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-31	11	10	1	78	0	0	0	0	0	0	0	0	0	0	0	5	61	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
RA2-32	4	2	1	93	0	0	2	27	0	0	0	0	0	0	0	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-33	19	10	2	69	0	0	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	0	1	3	0	0	19	1	0	0	0	0	0	0	0	0	0
RA2-34	5	10	1	84	0	0	0	0	0	0	0	0	0	0	0	5	87	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-35	4	3	2	91	0	0	0	0	0	0	0	0	0	0	0	4	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA2-36	16	30	2	52	0	0	0	0	0	0	0	0	0	0	0	2	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	3	0	0	1	2	0	0	0	0	0
RA2-37	7	6	1	86	0	0	0	0	0	0	0	0	0	1	0	2	17	0	0	0	0	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-38	8	15	16	61	0	0	8	61	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0
RA2-39	6	2	1	91	0	0	1	1	0	0	0	0	0	0	0	5	27	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
RA2-40	8	5	1	86	0	0	0	0	0	0	0	0	0	0	0	5	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0
RA2-41	5	2	2	91	0	0	0	0	0	0	0	0	0	0	0	1	6	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-42	5	30	1	64	0	0	2	10	0	0	0	0	0	0	0	3	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-43	17	5	0	78	0	0	0	0	0	0	0	0	0	0	0	17	142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-44	9	15	2	74	0	0	0	0	0	0	0	0	0	0	0	6	22	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0
RA2-45	6	17	3	74	0	0	0	0	0	0	0	0	0	0	0	6	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-46	6	3	3	88	0	0	1	5	1	2	0	0	0	0	0	5	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-47	15	5	2	78	3	3	0	0	0	0	3	8	0	0	0	2	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	1	2	0	0	0
RA2-48	6	3	2	89	0	0	0	0	0	0	0	0	0	0	0	3	23	0	0	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA2-49	14	8	3	75	0	0	1	3	0	0	0	0	0	4	1	5	31	0	0	0	0	3	2	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0
RA2-50	12	10	2	76	0	0	0	0	0	0	0	0	0	0	0	12	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	10.18	8.96	2.56	78.3	0.14		0.48		0.02		0.1		0.02		0.24		5.84		0.02		0.04		1.06		0.86		0.02		0.02		0.32		0.02		0.36		0.4		0.02		0.06		10.04
					Grass	7.96																			Forb	0.9					Shrub	1.18										
				Relative C	1.394		4.781		0.199		0.996		0.199		2.39		58.17		0.199		0.398		10.56		8.566		0.199		0.199		3.187		0.199		3.586		3.984		0.199		0.598	

10.18	avg
5.4798	sd
1.299	t.90
48.8935	n

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Point ID:	Veg:	Litter:	Rock:	Soil:	Achnatherum hymenoides	Achnatherum hymenoides #	Leymus cinereus	Leymus cinereus #	Pascopyrum smithii	Pascopyrum smithii #	Pseudoroegneria spicata	Pseudoroegneria spicata #	Astragalus cicer	Astragalus cicer #	Eriogonum ovalifolium	Eriogonum ovalifolium #	Melilotus indicus	Melilotus indicus #	Penstemon palmeri	Penstemon palmeri #	Sphaeralcea coccinea	Sphaeralcea coccinea #	Artemisia tridentata	Artemisia tridentata #	Atriplex canescens	Atriplex canescens #	Ericameria nauseosa	Ericameria nauseosa #	Gutierrezia sarothrae	Gutierrezia sarothrae #
RA4-1	10	1	0	89	0	0	2	7	9	72	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0
RA4-2	7	1	0	92	0	0	0	0	1	21	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	0
RA4-3	9	1	0	90	0	0	0	0	1	12	0	0	0	0	0	0	0	0	0	0	0	0	9	3	0	0	0	0	0	0
RA4-4	21	1	4	74	0	0	0	0	1	7	0	0	1	3	0	0	0	0	0	0	0	0	21	2	0	0	0	0	0	0
RA4-5	8	1	1	90	0	0	0	0	6	76	0	0	1	3	0	0	0	0	0	0	1	1	0	0	0	0	2	2	0	0
RA4-6	17	5	1	77	0	0	0	0	12	106	0	0	0	0	0	0	1	4	0	0	0	0	3	1	0	0	0	0	4	7
RA4-7	7	1	1	91	6	1	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9	0	0
RA4-8	1	1	1	97	0	0	0	0	1	10	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
RA4-9	2	1	1	96	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0
RA4-10	6	1	30	63	0	0	0	0	4	37	0	0	2	19	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
RA4-11	9	1	27	63	0	0	0	0	7	56	0	0	3	13	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
RA4-12	4	1	1	94	0	0	0	0	3	57	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0
RA4-13	3	1	1	95	0	0	0	0	1	35	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0
RA4-14	2	3	1	94	0	0	0	0	2	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0
RA4-15	7	2	0	91	0	0	3	26	4	36	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
RA4-16	4	2	2	92	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10	0	0	0	0	0	0
RA4-17	3	2	40	55	0	0	0	0	3	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
RA4-18	7	1	2	90	0	0	0	0	4	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	1	1
RA4-19	8	1	0	91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	6	1	0	0	2	1	0	0
RA4-20	6	2	0	92	0	0	0	0	6	63	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	0	0	0
RA4-21	3	3	1	93	0	0	0	0	2	69	0	0	0	0	0	0	0	0	0	0	1	13	0	0	0	0	0	0	0	0
RA4-22	5	1	1		0	0	0	0	3	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0
RA4-23	3	2	1	94	0	0	0	0	2	42	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	1	0	0	0
RA4-24	3	2	1	94	0	0	0	0	2	37	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	0	0	0
RA4-25	7	2	1	90	0	0	2	3	3	31	0	0	0	0	0	0	0	0	0	0	1	7	2	3	0	0	0	0	1	1
RA4-26	4	2	1	93	0	0	0	0	2	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0
RA4-27	4	3	0	93	0	0	0	0	3	38	1	1	0	0	0	0	0	0	0	0	1	11	0	0	0	0	0	0	0	0
RA4-28	3	2	0	95	0	0	0	0	3	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
RA4-29	6	5	1	88	0	0	0	0	5	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0
RA4-30	7	3	0	90	0	0	0	0	6	56	0	0	0	0	0	0	0	0	0	0	1	11	0	0	0	0	1	1	0	0
RA4-31	13	1	1	85	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	13	4	0	0	0	0	0	0
RA4-32	4	1	0	94	0	0	0	0	4	53	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
RA4-33	4	35	3	58	0	0	0	0	4	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4-34	10	2	15	73	0	0	0	0	2	103	0	0	2	11	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	13
RA4-35	13	2	0	85	0	0	2	5	10	156	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	11
RA4-36	11	1	0	88	0	0	0	0	7	71	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	2	7	2	2
RA4-37	13	1	1	85	0	0	0	0	1	8	0	0	0	0	0	0	0	0	0	0	0	0	13	3	0	0	0	0	0	0
RA4-38	3	1	2	94	0	0	0	0	3	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4-39	5	1	1	93	1	4	0	0	2	33	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	1	2
RA4-40	8	1	0	91	0	0	0	0	6	43	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0
RA4-41	9	1	0	93	0	0	0	0	6	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA4-42	6	1	0	93	0	0	0	0	2	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0
RA4-43	2	1	1	83	0	0	0	0	7	112	0	0	3	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	16
RA4-44	7	1	1	90	1	1	0	0	1	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0
RA4-45	8	1	1	91	0	0	0	0	2	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	0	0
RA4-46	2	1	1	90	0	0	0	0	7	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA4-47	2	30	58		0	0	0	0	7	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0
RA4-48	2	1	91		0	0	0	0	5	78	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0
RA4-49	0	5	60		0	0	0	0	1	18	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0

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Point ID:	Veg:	Litter:	Rock:	Soil:	Achnatherum hymenoides	Achnatherum hymenoides #	Leymus cinereus	Leymus cinereus #	Pascopyrum smithii	Pascopyrum smithii #	Pseudoroegneria spicata	Pseudoroegneria spicata #	Astragalus cicer	Astragalus cicer #	Eriogonum ovalifolium	Eriogonum ovalifolium #	Melilotus indicus	Melilotus indicus #	Penstemon palmeri	Penstemon palmeri #	Sphaeralcea coccinea	Sphaeralcea coccinea #	Artemisia tridentata	Artemisia tridentata #	Atriplex canescens	Atriplex canescens #	Ericameria nauseosa	Ericameria nauseosa #	Gutierrezia sarothrae	Gutierrezia sarothrae#
RA4-50	6	1	3	90	2	1	0	0	2	39	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	2	1	1
RA4-51	3	1	10	86	0	0	0	0	3	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
RA4-52	3	10	0	87	0	0	0	0	2	18	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	2	1	5	0	0
RA4-53	7	2	10	81	0	0	0	0	6	87	0	0	1	8	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0
RA4-54	8	3	0	89	0	0	0	0	6	48	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
RA4-55	13	15	1	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	1	0	0	1	15	1	2
RA4-56	4	2	10	84	0	0	0	0	1	57	0	0	2	14	0	0	0	0	0	0	0	0	0	0	0	0	1	5	1	5
RA4-57	9	1	1	89	0	0	0	0	9	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
RA4-58	7	2	3	88	0	0	0	0	3	98	0	0	4	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12
RA4-59	10	20	0	70	0	0	0	0	5	67	0	0	0	0	0	0	0	0	0	0	0	0	4	7	0	0	2	9	0	0
RA4-60	14	2	1	83	0	0	0	0	1	12	0	0	0	0	0	0	0	0	0	0	0	0	14	1	0	0	0	0	0	0
Mean	7.183333	3.233333	3.7	85.74576	0.167		0.15		3.6		0.017		0.367		0.017		0.033		0.017		0.167		2.25		0.033		0.917		0.433		8.167
					Grass	3.933							Forb:	0.6									Shrub:	3.633						
				Relative Co	2.041		1.837		44.08		0.204		4.49		0.204		0.408		0.204		2.041		27.55		0.408		11.22		5.306	

7.183333	avg
4.06928	sd
1.296	t.90
53.90054	n

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Point ID:	Veg:	Litter:	Rock:	Soil:	Agropyron cristatum	Agropyron cristatum #	Leymus cinereus	Leymus cinereus #	Pascopyrum smithii	Pascopyrum smithii #	Pseudoroegneria spicata	Pseudoroegneria spicata #	Astragalus cicer	Astragalus cicer #	Erigeron	Erigeron #	Malva neglecta	Malva neglecta #	Penstemon palmeri	Penstemon palmeri #	Sphaeralcea coccinea	Sphaeralcea coccinea #	Tragopogon dubius	Tragopogon dubius #	Artemisia frigida	Artemisia frigida #	Artemisia tridentata	Artemisia tridentata #	Chrysothamnus viscidiflorus	Chrysothamnus viscidiflorus #	Ephedra viridis	Ephedra viridis #	Ericameria nauseosa	Ericameria nauseosa #	Gutierrezia sarothrae	Gutierrezia sarothrae #	
RA5-1	15	20	7	58	0	0	4	2	11	85	2	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
RA5-2	25	15	3	57	0	0	0	0	7	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	20	0	0	0	0	0	0	0	
RA5-3	15	5	2	78	0	0	0	0	12	45	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	
RA5-4	13	3	0	84	0	0	0	0	13	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-5	6	18	0	76	0	0	0	0	6	46	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-6	17	15	20	48	0	0	0	0	15	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	1	1	0	0	
RA5-7	8	2	2	88	0	0	0	0	8	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	
RA5-8	13	48	4	35	0	0	0	0	11	54	2	3	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	
RA5-9	22	5	5	68	0	0	2	1	17	37	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	2	1	0	0	
RA5-10	21	11	8	60	0	0	0	0	20	78	0	0	0	1	0	0	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
RA5-11	15	21	9	55	0	0	0	0	15	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-12	18	28	20	34	0	0	0	0	2	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	3	0	0	0	0	1	1	0	0	
RA5-13	14	8	25	53	0	0	0	0	12	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	
RA5-14	16	40	2	42	0	0	0	0	16	106	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-15	10	15	42	33	0	0	4	1	2	12	1	5	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	
RA5-16	1	15	13	71	2	1	0	0	14	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	
RA5-17	22	18	19	41	0	0	0	0	18	29	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	
RA5-18	13	5	6	76	0	0	0	0	13	43	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	
RA5-19	13	10	7	70	0	0	0	0	8	43	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-20	13	15	27	45	3	12	0	0	0	0	10	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
RA5-21	21	5	8	66	0	0	3	1	15	61	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	1	1	0	0	
RA5-22	12	20	25	43	0	0	0	0	8	9	4	6	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-23	14	10	6	70	0	0	0	0	13	72	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-24	26	15	21	38	0	0	0	0	17	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	4	1	0	0	0	0	0	0	0	0	
RA5-25	28	51	3	18	0	0	1	3	27	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	
RA5-26	13	5	15	67	0	0	0	0	13	81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-27	12	5	23	60	0	0	0	0	10	67	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	
RA5-28	9	80	8	3	0	0	0	0	9	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-29	17	2	11	70	0	0	0	0	16	39	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	
RA5-30	11	3	0	86	0	0	0	0	11	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-31	13	10	3	74	0	0	0	0	6	36	7	9	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-32	14	5	10	71	0	0	0	0	14	68	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-33	16	3	8	73	0	0	1	1	15	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	
RA5-34	13	3	0	84	0	0	1	0	10	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	
RA5-35	10	8	12	70	0	0	0	0	10	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	
RA5-36	7	5	0	88	0	0	0	0	7	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	
RA5-37	23	27	18	32	0	0	0	0	15	53	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	8	1	1	1	
RA5-38	12	16	10	62	0	0	0	0	12	67	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	
RA5-39	14	10	11	65	0	0	0	0	14	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RA5-40	13	10	7	70	0	0	0	0	10	71	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	
Mean	14.7	15.25	10.5	59.55	0.125		0.4		11.8		1.125		0.15		0.025		0.025		0.025		0.15		0.025		0.575		0.7		0.5		0.075		0.7		0.05		16.45
	14.7	avg			Grass	13.45							Forb	0.4											Shrub	2.6											
	5.543303	sd		Relative C	0.76		2.432		71.73		6.839		0.912		0.152		0.152		0.152		0.912		0.152		3.495		4.255		3.04		0.456		4.255		0.304		
	1.303	t.90																																			
	24.14301	n																																			

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Point ID:	Veg:	Litter:	Rock:	Soil:	Achnatherum hymenoides	Achnatherum hymenoides #	Leymus cinereus	Leymus cinereus #	Pascopyrum smithii	Pascopyrum smithii #	Pseudoroegneria spicata	Pseudoroegneria spicata #	Astragalus cicer	Astragalus cicer #	Cryptantha sp.	Cryptantha sp. #	Machaeranthera canescens	Machaeranthera canescens #	Malvia neglecta	Malvia neglecta #	Penstemon palmeri	Penstemon palmeri #	Physaria acutifolia	Physaria acutifolia #	Sphaeralcea coccinea	Sphaeralcea coccinea #	Artemisia frigida	Artemisia frigida #	Artemisia tridentata	Artemisia tridentata #	Atriplex canescens	Atriplex canescens #	Chrysothamnus viscidiflorus	Chrysothamnus viscidiflorus #	Ephedra viridis	Ephedra viridis #	Ericameria nauseosa	Ericameria nauseosa #	Gutierrezia sarothrae	Gutierrezia sarothrae #
RA6-1	22	30	3	45	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	1	0	0	0	0	0	0	0	0	0	0
RA6-2	8	5	54	33	1	3	0	0	7	46	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-3	24	10	3	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	24	1	0	0	0	0	0	0	0	0	0	0
RA6-4	5	8	2	85	3	3	0	0	2	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	0	0
RA6-5	19	5	1	75	0	0	0	0	3	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	1	0	0	0	0	0	0	0	0	1	2
RA6-6	13	20	45	22	0	0	0	0	10	34	1	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0
RA6-7	13	1	1	85	0	0	0	0	12	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
RA6-8	9	10	6	75	0	0	0	0	9	66	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-9	7	5	25	63	4	3	1	1	1	22	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
RA6-10	6	10	15	69	0	0	0	0	4	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	2	0	0	0	0	0	0	1	1	0	0
RA6-11	16	15	10	59	0	0	1	1	15	122	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-12	9	12	15	64	3	5	0	0	5	38	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-13	14	6	2	78	1	0	0	0	14	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-14	20	25	5	50	0	0	0	0	16	37	0	0	2	3	0	0	0	0	0	0	0	0	0	0	2	8	0	0	0	0	0	0	0	0	0	0	2	1	0	0
RA6-15	6	5	50	39	0	0	1	0	3	37	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0
RA6-16	9	3	35	53	0	0	0	0	9	63	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
RA6-17	15	20	0	65	0	0	0	0	1	3	0	0	0	0	1	4	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	15	2	0	0
RA6-18	8	6	1	85	0	0	0	0	7	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
RA6-19	6	25	20	49	0	0	0	0	5	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0
RA6-20	10	15	40	35	0	0	0	0	7	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	0	0	0	0	0	0	1	2	0	0
RA6-21	11	5	33	51	0	0	0	0	5	49	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0
RA6-22	15	10	65	10	0	0	0	0	11	42	2	3	1	3	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	0	0	0	0	0	0	0	0	0	0
RA6-23	6	10	44	40	0	0	0	0	6	58	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-24	11	3	10	76	0	0	0	0	9	51	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA6-25	5	15	7	73	0	0	0	0	4	43	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
RA6-26	5	8	0	87	1	1	0	0	2	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3	2	0	0
RA6-27	13	12	45	30	0	0	0	0	12	44	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
RA6-28	4	3	1	92	0	0	0	0	4	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0
RA6-29	14	21	20	45	0	0	1	4	11	56	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-30	9	7	1	83	0	0	2	4	8	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-31	14	40	15	31	0	0	1	2	13	63	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
RA6-32	9	35	36	20	0	0	0	0	1	9	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6	4	5
RA6-33	16	5	0	79	0	0	2	1	9	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3	1	0	0
RA6-34	12	20	48	20	0	0	0	0	12	54	1	3	1	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA6-35	5	23	8	64	0	0	0	0	3	24	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
RA6-36	7	6	2	85	0	0	0	0	1	6	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0	0	0	0	0	0	0	0
RA6-37	8	5	0	87	0	0	0	0	8	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
RA6-38	8	18	1	73	7	5	0	0	2	17	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
RA6-39	18	2	3	77	1	1	0	0	10	71	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	7	2	0	0
RA6-40	10	8	0	82	0	0	0	0	10	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	10.975	12.3	16.8	59.925	0.6		0.225		6.775		0.325		0.45		0.025		0.025		0.025		0.125		0.025		0.075		0.2		1.975		0.025		0.025		0.025		1.225		0.25		12.4
					Grass	7.925							Forb	0.75													Shrub	3.725												
				Relative C	4.839		1.815		54.64		2.621		3.629		0.202		0.202		0.202		1.008		0.202		0.605		1.613		15.93		0.202		0.202		0.202		9.879		2.016	

10.975	avg
5.03571	sd
1.303	t.90
35.7438	n

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Point ID:	Veg:	Litter:	Rock:	Soil:	Achnatherum hymenoides	Achnatherum hymenoides #	Dactylis glomerata	Dactylis glomerata #	Elymus elymoides	Elymus elymoides #	Leymus cinereus	Leymus cinereus #	Pascopyrum smithii	Pascopyrum smithii #	Pseudoroegneria spicata	Pseudoroegneria spicata #	Astragalus cicer	Astragalus cicer #	Erigeron	Erigeron #	Grindelia squarrosa	Grindelia squarrosa #	Ipomoea sp	Ipomoea sp. #	Medicago sativa	Medicago sativa #	Penstemon palmeri	Penstemon palmeri #	Sphaeralcea coccinea	Sphaeralcea coccinea #	Amelanchier alnifolia	Amelanchier alnifolia #	Artemisia frigida	Artemisia frigida #	Artemisia tridentata	Artemisia tridentata #	Cercocarpus montanus	Cercocarpus montanus #	Ericameria nauseosa	Ericameria nauseosa #
RA7-1	27	52	18	3	0	0	0	0	0	0	0	0	1	6	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	8	0	0	0	0
RA7-2	7	66	16	21	0	0	0	0	0	0	0	0	5	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1
RA7-3	9	5	10	76	0	0	0	0	0	0	0	0	2	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	10	0	0	2	1
RA7-4	10	5	1	84	5	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	3	1	4	0	0	0	0	0	0	0	0	0	0	0	0	4	2
RA7-5	11	45	9	35	0	0	0	0	0	0	0	0	10	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	3
RA7-6	10	20	17	53	0	0	0	0	0	0	0	0	8	91	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	1
RA7-7	14	25	15	46	0	0	0	0	2	7	0	0	1	4	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	13	0	0	0	0	0
RA7-8	19	5	7	69	1	1	0	0	1	2	7	4	3	12	0	0	0	0	0	0	0	0	0	0	7	11	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA7-9	19	74	5	2	0	0	0	0	0	0	0	0	19	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA7-10	3	60	32	5	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
RA7-11	20	59	6	15	0	0	0	0	0	0	0	0	8	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	2
RA7-12	23	54	3	20	0	0	0	0	0	0	0	0	3	19	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	2
RA7-13	4	8	11	77	0	0	0	0	0	0	0	0	2	15	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
RA7-14	20	42	3	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	4
RA7-15	9	5	1	85	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	25	0	0	0	0	0	0	0	0	4	1
RA7-16	17	41	12	30	0	0	0	0	0	0	0	0	15	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
RA7-17	21	49	20	10	0	0	0	0	0	0	0	0	13	49	3	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3
RA7-18	9	21	7	63	0	0	0	0	0	0	0	0	2	12	3	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	4	1	0	0	1	1
RA7-19	15	12	7	66	1	0	0	0	0	0	0	0	5	42	3	3	3	3	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4	3
RA7-20	10	16	22	52	0	0	0	0	0	0	0	0	4	56	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	5	7	0	0	1	1
RA7-21	5	3	8	84	3	6	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
RA7-22	4	3	27	66	2	8	0	0	0	0	2	1	1	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RA7-23	21	13	27	39	5	12	0	0	2	3	0	0	2	28	0	0	0	0	0	0	0	0	0	0	11	14	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA7-24	10	10	9	71	0	0	0	0	0	0	0	0	3	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	1	1	3	1
RA7-25	25	5	6	64	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	2
RA7-26	13	20	9	58	3	4	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	9	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0
RA7-27	15	77	6	2	0	0	0	0	0	0	0	0	7	26	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	7	2
RA7-28	15	60	12	13	0	0	0	0	0	0	0	0	6	57	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	7	4
RA7-29	7	10	6	77	0	0	0	0	0	0	0	0	7	54	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
RA7-30	12	79	4	5	1	1	0	0	0	0	0	0	1	5	8	7	0	0	0	0	2	3	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
RA7-31	4	5	6	85	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
RA7-32	20	15	11	54	4	14	0	0	0	0	0	0	2	17	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	14	2
RA7-33	4	3	13	80	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	2	2
RA7-34	17	80	3	0	0	0	0	0	0	0	0	0	2	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	2
RA7-35	6	3	9	82	3	1	0	0	0	0	0	0	1	9	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8
RA7-36	13	5	40	42	3	6	0	0	4	5	0	0	2	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	7
RA7-37	18	15	12	55	0	0	0	0	0	0	0	0	7	38	6	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3
RA7-38	7	7	11	75	0	0	0	0	0	0	0	0	1	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	1	1
RA7-39	15	81	2	2	0	0	0	0	0	0	0	0	3	20	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	12	3
RA7-40	4	5	6	85	0	0	0	0	0	0	0	0	0	0	2	6	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
RA7-41	15	25	6	54	0	0	0	0	0	0	0	0	13	82	2	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
RA7-42	16	41	40	3	0	0	0	0	0	0	0	0	14	63	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	2	0	0	0	0
RA7-43	9	83	3	5	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0
RA7-44	27	67	1	5	0	0	0	0	0	0	0	0	3	14	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	1	0	0	9	2
RA7-45	9	5	33	53	3	4	2	1	3	3	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	7	0	0	0	0	0	0	0	0	0	0
Mean	13.0667	30.7556	11.8222	44.5778	1.067		0.044		0.333		0.2		4		0.867		0.178		0.022		0.2		0.022		0.733		0.089		0.067		0.022		0.089		2.178		0.044		4.467		14.62
	13.0667	avg			Grass	6.511											Forb	1.311															Shrub	6.8						
	6.60028	sd																																						
	1.301	t.90			Relative C		7.295		0.304		2.28		1.368		27.36		5.927		1.216		0.152		1.368		0.152		5.015		0.608		0.456		0.152		0.608		14.89		0.304		30.55	
	43.1866	n																																						

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Point ID	Veg	Litter	Rock	Soil	Bromus marginatus	Bromus marginatus #	Poa pratensis	Poa pratensis #	Poa secunda	Poa secunda #	Antennaria sp.	Antennaria sp. #	Astragalus utahensis	Astragalus utahensis #
REF2-1	14	30	3	53	0	0	1	3	0	0	0	0	0	0
REF2-2	13	72	0	15	0	0	0	0	1	7	0	0	0	0
REF2-3	14	30	3	53	0	0	2	2	0	0	0	0	0	0
REF2-4	9	76	0	15	0	0	0	0	0	0	0	0	0	0
REF2-5	12	63	0	25	0	0	0	0	0	0	0	0	0	0
REF2-6	14	81	0	5	0	0	0	0	0	0	0	0	0	0
REF2-7	11	40	4	25	1	1	0	0	6	39	4	26	0	0
REF2-8	10	37	0	27	0	0	0	0	3	38	0	0	0	0
REF2-9	21	75	2	2	0	0	0	0	0	0	0	0	0	0
REF2-10	19	10	1	70	1	1	0	0	2	13	0	0	0	0
REF2-11	13	15	7	65	1	1	0	0	2	10	0	0	0	0
REF2-12	9	69	2	20	0	0	0	0	1	1	0	0	0	0
REF2-13	11	15	2	72	0	0	0	0	0	0	0	0	0	0
REF2-14	5	10	1	84	0	0	0	0	1	2	0	0	0	0
REF2-15	11	59	5	25	0	0	0	0	0	0	0	0	0	0
REF2-16	12	76	7	5	0	0	0	0	0	0	0	0	1	1
REF2-17	15	10	0	75	0	0	0	0	2	16	0	0	0	0
REF2-18	8	87	0	5	1	1	0	0	1	3	0	0	0	0
REF2-19	19	76	0	5	1	1	0	0	0	0	0	0	0	0
REF2-20	17	59	21	3	0	0	0	0	0	0	0	0	0	0
Mean	12.85	49.5	2.9	32.45	0.25		0.15		0.95		0.2		0.05	
					Grass	1.35					Forb	5.05		
				Relative C	1.736		1.042		6.597		1.389		0.347	

Point ID	Chenopodium sp.	Chenopodium sp. #	Erigeron	Erigeron #	Fragaria vesca	Fragaria vesca #	Lomatium sp.	Lomatium sp. #	Machaeranthera canescens	Machaeranthera canescens #	Phacelia sp.	Phacelia sp. #	Polygonum sp.	Polygonum sp. #	Ranunculus sp.	Ranunculus sp. #	Stellaria sp.	Stellaria sp. #	Taraxacum officinale	Taraxacum officinale #	Viola sp.	Viola sp. #
REF2-1	0	0	2	19	0	0	0	0	0	0	1	1	0	0	0	0	1	4	1	3	0	0
REF2-2	0	0	1	6	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0
REF2-3	2	21	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	2	0	0
REF2-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0
REF2-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-7	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-8	0	0	4	55	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0
REF2-9	4	30	5	40	0	0	1	2	0	0	0	0	0	0	0	0	0	0	2	3	0	0
REF2-10	1	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	8	9	0	0
REF2-11	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
REF2-12	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0
REF2-13	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0
REF2-14	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0
REF2-15	0	0	2	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF2-16	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
REF2-17	0	0	0	0	3	4	1	3	0	0	0	0	0	0	1	2	0	0	2	2	0	0
REF2-18	0	0	1	3	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	3	0	0
REF2-19	0	0	0	0	2	5	2	6	0	0	0	0	0	0	0	0	0	0	3	5	0	0
REF2-20	0	0	14	61	1	5	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0
Mean	0.55		1.55		0.3		0.25		0.05		0.15		0.05		0.15		0.05		1.35		0.1	
Relative C	3.819		10.76		2.083		1.736		0.347		1.042		0.347		1.042		0.347		9.375		0.694	

Point ID	Unk 3193	Unk 3193 #	Unk 3194	Unk 3194 #	Wyethia amplexicaulis	Wyethia amplexicaulis #	Amelanchier alnifolia	Amelanchier alnifolia #	Mahonia repens	Mahonia repens #	Paxistima myrsinites	Paxistima myrsinites #	Picea engelmannii	Picea engelmannii #	Populus tremuloides	Populus tremuloides #	Prunus virginiana	Prunus virginiana #	Pseudotsuga menziesii	Pseudotsuga menziesii #	Rhus trilobata	Rhus trilobata #	Rosa woodsii	Rosa woodsii #	Symphoricarpos oreophilus	Symphoricarpos oreophilus #	
REF2-1	0	0	0	0	0	0	3	[illegible]	2	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	2	13	
REF2-2	0	0	0	0	0	0	0	[illegible]	4	12	0	0	0	0	0	0	0	0	0	0	0	0	1	1	7	3	
REF2-3	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	
REF2-4	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0	0	7	5	0	0	0	0	0	0	0	0	1	1	
REF2-5	0	0	0	0	0	0	0	[illegible]	2	7	1	2	9	0	0	0	0	0	0	0	0	0	0	0	1	2	
REF2-6	0	0	0	0	0	0	0	[illegible]	3	21	1	1	11	0	0	0	0	0	0	0	0	0	1	1	0	0	
REF2-7	0	0	0	0	0	0	0	[illegible]	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
REF2-8	0	0	0	0	0	0	0	[illegible]	2	12	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
REF2-9	0	0	0	0	1	1	0	[illegible]	2	6	0	0	0	0	5	1	0	0	0	0	0	0	1	1	2	4	
REF2-10	0	0	0	0	0	0	0	[illegible]	5	16	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	
REF2-11	0	0	0	0	0	0	0	[illegible]	3	12	1	3	0	0	3	6	0	0	0	0	0	0	1	1	1	2	
REF2-12	0	0	0	0	0	0	2	[illegible]	4	19	1	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
REF2-13	0	0	0	0	0	0	0	[illegible]	6	11	1	2	0	0	1	2	0	0	0	0	0	0	1	1	0	0	
REF2-14	0	0	0	0	0	0	0	[illegible]	3	8	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	2	
REF2-15	0	0	0	0	0	0	0	[illegible]	0	0	1	3	0	0	0	0	0	0	10	1	1	1	0	0	0	0	
REF2-16	0	0	0	0	0	0	0	[illegible]	3	27	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	
REF2-17	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0	0	1	1	0	0	5	0	0	0	1	2	1	0	
REF2-18	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	
REF2-19	2	2	2	1	0	0	0	[illegible]	6	19	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	
REF2-20	0	0	0	0	0	0	0	[illegible]	2	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
Mean	0.1		0.1		0.05		0.25		2.4		0.35		1		1.2		0.05		1.4		0.05		0.35		0.95		14.4
							Shrub	8																			
Relative C	0.694		0.694		0.347		1.736		16.67		2.431		6.944		8.333		0.347		9.722		0.347		2.431		6.597		

12.85	avg
3.990449	sd
1.328	±.90
17.00722	n

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Point ID:	Veg	Litter	Rock	Soil	Bromus madritensis	Bromus madritensis #	Pascopyrum (elymus) smithii	Pascopyrum smithii #	Poa pratensis	Poa pratensis #	Achnatherum sp.	Achnatherum sp. #	Astragalus utahensis	Astragalus utahensis #	Calochortus	Calochortus #	Elymus	Elymus #	Fendlera rotundifolia	Fendlera rotundifolia #	Helianthus sp.	Helianthus sp. #	Ipomopsis aggregata	Ipomopsis aggregata #	Machaeranthera canescens	Machaeranthera canescens #	Melilotus officinalis	Melilotus officinalis #	Phacelia sp.	Phacelia sp. #	Rubus idaeus sp.	Rubus idaeus sp. #	Sphaeralcea sp.	Sphaeralcea sp. #	Taraxacum officinale	Taraxacum officinale #	Viola sp.	Viola sp. #	Wyethia amplexicaulis	Wyethia amplexicaulis #	Amelanchier alnifolia	Amelanchier alnifolia #	Artemisia bigelovii	Artemisia bigelovii #	Artemisia tridentata	Artemisia tridentata #	Chrysothamnus viscidiflorus	Chrysothamnus viscidiflorus #	Eriogonum nauseosum	Eriogonum nauseosum #	Fragaria vesca	Fragaria vesca #	Prunus virginiana	Prunus virginiana #	Rosa woodsii	Rosa woodsii #	Symphoricarpos oreophilus	Symphoricarpos oreophilus #	
RA27-1	28	2	8	62	3	37	0	0	0	0	0	0	1	1	0	0	1	6	0	0	0	0	0	0	0	0	18	23	0	0	1	1	0	0	2	4	0	0	0	0	0	0	10	1	0	0	1	1	0	0	1	1	0	0		
RA27-2	21	2	20	57	5	31	0	0	0	0	0	0	0	0	1	1	2	14	0	0	0	0	0	0	1	2	13	27	1	3	1	3	0	0	4	17	0	0	0	0	0	0	3	1	0	0	1	2	0	0	0	0	0	0		
RA27-3	26	4	12	58	2	31	1	4	0	0	0	0	0	0	0	0	3	18	0	0	0	0	0	0	1	2	21	34	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0		
RA27-4	26	2	5	67	2	23	2	18	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	1	1	12	16	0	0	0	0	0	0	2	15	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	0		
RA27-5	18	2	2	78	1	3	2	58	0	0	0	0	0	0	0	0	2	7	0	0	0	0	0	0	0	0	1	2	12	56	1	4	0	0	2	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3		
RA27-6	21	2	37	40	5	33	0	0	0	0	2	24	0	0	0	0	3	13	0	0	0	0	0	0	1	3	0	0	3	18	2	9	0	0	5	31	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1		
RA27-7	33	2	3	62	0	0	29	367	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0	0	1	4	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
RA27-8	16	1	16	67	6	40	2	21	0	0	0	0	0	0	0	0	0	0	2	7	0	0	0	0	0	0	3	3	0	0	2	4	0	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
RA27-9	12	2	15	71	3	19	1	14	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	2	3	4	0	0	0	0	0	0	2	5	0	0	1	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0		
RA27-10	22	2	30	46	0	0	0	0	0	0	0	0	0	0	1	1	1	5	0	0	2	3	0	0	0	0	4	32	0	0	1	3	0	0	0	0	1	1	0	0	0	0	0	0	4	1	0	0	2	2	0	0	0	0		
RA27-11	32	2	3	63	23	219	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	5	11	0	0	1	1	0	0	5	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
RA27-12	16	3	4	77	3	2	2	25	0	0	0	0	3	7	0	0	1	4	2	8	0	0	0	0	1	3	2	18	0	0	1	3	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
RA27-13	16	7	8	69	4	45	0	0	0	0	0	0	1	1	0	0	1	4	0	0	0	0	0	0	0	0	11	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	6	0	0	0	0		
RA27-14	10	2	18	70	5	36	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	0	2	3	0	0	0	0	0	0	1	2	0	0	0	0	1	1	0	0	0	0	0	0	1	3	0	0	0	0		
RA27-15	11	1	9	79	3	21	0	0	2	23	0	0	0	0	0	0	4	22	0	0	0	0	0	0	1	3	0	0	0	0	1	4	1	31	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
RA27-16	24	2	3	71	4	29	0	0	0	0	0	0	0	0	0	0	2	13	0	0	0	0	0	0	0	0	16	46	0	0	0	0	1	4	1	3	0	0	0	0	0	0	0	0	4	7	0	0	0	0	0	0	0	0		
RA27-17	20	2	8	70	17	81	0	0	0	0	1	2	0	0	1	2	2	5	0	0	0	0	0	0	1	1	1	1	0	0	1	1	0	0	3	8	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0		
RA27-18	19	10	4	67	5	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0	0	1	2	0	0	0	0	0	0	14	2	0	0	0	0	0	0		
RA27-19	23	2	12	63	5	15	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	2	7	12	28	0	0	1	1	1	8	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
RA27-20	17	3	13	67	13	27	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0		
Mean	20.55	2.75	11.5	65.2	5.45		1.95		0.1		0.15		0.25		0.2		1.4		0.2		0.1		0.05		0.55		6.2		0.8		0.8		0.15		1.9		0.15		0.2		0.1		0.7		0.95		0.8		0.35		0.05		0.2		23.75
	20.55	avg			Grass	7.5					Forb	13.1																													Shrub	3.15																	
	6.411133	std			Relative C	22.95		8.211		0.421		0.632		1.053		0.842		5.895		0.842		0.421		0.211		2.316		26.11		3.368		3.368		0.632		8		0.632		0.842		0.421		2.947		4		3.368		1.474		0.211		0.842		
	1.328	t.90																																																								
	17.16493	n																																																								

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APPENDIX 2
WOODY PLANT DENSITY DATA

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc ft		ft²	Plants/Acre
REF1-1	1	Big Sagebrush	81		121.5	3.986221	15.88995	2741.355
	2	Broom Snakeweed	175		42.25	1.386155	1.921425	22670.67
	3	Broom Snakeweed	189		111	3.641732	13.26221	3284.519
	4	Big Sagebrush	41	121.5	55.75	1.829068	3.345491	13020.51
REF1-2	1	Big Sagebrush	9		47.75	1.566601	2.454239	17748.88
	2	Big Sagebrush	13		146.75	4.814633	23.18069	1879.15
	3	Broom Snakeweed	78		63.75	2.091536	4.374521	9957.662
	4	Big Sagebrush	69	42.25	161.75	5.306759	28.16169	1546.782
REF1-3	1	Big Sagebrush	69		72.75	2.386811	5.696867	7646.308
	2	Serviceberry	120		69.25	2.271982	5.161901	8438.752
	3	Serviceberry	128		55.75	1.829068	3.345491	13020.51
	4	Big Sagebrush	127	111	122.5	4.019029	16.15259	2696.78
REF1-4	1	Serviceberry	22		67.75	2.222769	4.940702	8816.56
	2	Black Sagebrush	28		63.75	2.091536	4.374521	9957.662
	3	Black Sagebrush	69		138.5	4.543963	20.6476	2109.688
	4	Black Sagebrush	104	55.75	70	2.296588	5.274316	8258.89
REF1-5	1	Black Sagebrush	36		119	3.9042	15.24277	2857.747
	2	Black Sagebrush	37		92	3.018373	9.110574	4781.257
	3	Black Sagebrush	44		129.5	4.248688	18.05135	2413.116
	4	Black Sagebrush	74	47.75	27	0.885827	0.784689	55512.43
REF1-6	1	Pinyon	80					
	2	Pinyon	57		Average	2.917077	10.06868	4326.287
	3	Pinyon	184		StDev	1.281177	8.085003	5387.753
	4	Serviceberry	266	146.75				
REF1-7	1	Black Sagebrush	34		Plants/Acre	4326.287		
	2	Broom Snakeweed	48					
	3	Black Sagebrush	49					
	4	Broom Snakeweed	124	63.75				
REF1-8	1	Pinyon	128					
	2	Pinyon	116					
	3	Serviceberry	127					
	4	Black Sagebrush	276	161.75				
REF1-9	1	Black Sagebrush	59					
	2	Black Sagebrush	70					
	3	Black Sagebrush	84					
	4	Black Sagebrush	78	72.75				
REF1-10	1	Black Sagebrush	74					
	2	Black Sagebrush	49					
	3	Black Sagebrush	28					
	4	Black Sagebrush	126	69.25				
REF1-11	1	Black Sagebrush	8					
	2	Black Sagebrush	59					
	3	Black Sagebrush	88					
	4	Black Sagebrush	68	55.75				
REF1-12	1	Black Sagebrush	129					
	2	Black Sagebrush	78					
	3	Black Sagebrush	119					
	4	Serviceberry	164	122.5				
REF1-13	1	Black Sagebrush	50					
	2	Winterfat	36					
	3	Black Sagebrush	91					
	4	Black Sagebrush	94	67.75				
REF1-14	1	Black Sagebrush	36					
	2	Serviceberry	144					
	3	Serviceberry	39					
	4	Black Sagebrush	36	63.75				
REF1-15	1	Pinyon	173					
	2	Black Sagebrush	109					
	3	Black Sagebrush	124					
	4	Pinyon	148	138.5				
REF1-16	1	Black Sagebrush	54					
	2	Black Sagebrush	37					
	3	Black Sagebrush	64					
	4	Utah Juniper	125	70				
REF1-17	1	Utah Juniper	231					
	2	Pinyon	104					
	3	Serviceberry	90					
	4	Serviceberry	51	119				
REF1-18	1	Black Sagebrush	64					
	2	Black Sagebrush	104					
	3	Black Sagebrush	101					
	4	Serviceberry	99	92				
REF1-19	1	Serviceberry	49					
	2	Black Sagebrush	75					
	3	Pinyon	265					
	4	Black Sagebrush	129	129.5				
REF1-20	1	Big Sagebrush	13					
	2	Big Sagebrush	37					
	3	Big Sagebrush	19					
	4	Big Sagebrush	39	27				

REF 1

Row Labels	Count of Species	Count	Percent
Big Sagebrush	11	11	13.75
Black Sagebrush	40	40	50
Broom Snakeweed	5	5	6.25
Pinyon	9	9	11.25
Serviceberry	12	12	15
Utah Juniper	2	2	2.5
Winterfat	1	1	1.25
Grand Total	**80**	80	100

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc ft		ft^2	Plants/Acre
RA1-1	1	Big Sagebrush	19		55.5	1.820866	3.315554	13138.08
	2	Big Sagebrush	44		70	2.296588	5.274316	8258.89
	3	Big Sagebrush	65		40.75	1.336942	1.787415	24370.39
	4	Big Sagebrush	94	55.5	129.75	4.25689	18.12111	2403.826
RA1-2	1	Big Sagebrush	42		121.5	3.986221	15.88995	2741.355
	2	Big Sagebrush	101		164.75	5.405184	29.21601	1490.963
	3	Big Sagebrush	56		123.5	4.051837	16.41739	2653.285
	4	Big Sagebrush	81	70	98.25	3.223425	10.39047	4192.303
RA1-3	1	Yellow Rabbitbrush	21		32	1.049869	1.102224	39520.08
	2	Yellow Rabbitbrush	41		51.5	1.689633	2.854858	15258.2
	3	Yellow Rabbitbrush	54		84.75	2.780512	7.731246	5634.279
	4	Big Sagebrush	47	40.75	40	1.312336	1.722226	25292.85
RA1-4	1	Big Sagebrush	125		95.5	3.133202	9.816956	4437.221
	2	Rubber Rabbitbrush	124		103.75	3.403872	11.58634	3759.599
	3	Big Sagebrush	166		85.75	2.81332	7.914771	5503.634
	4	Rubber Rabbitbrush	104	129.75	65.75	2.157152	4.653306	9361.086
RA1-5	1	Rubber Rabbitbrush	33		71	2.329396	5.426088	8027.884
	2	Broom Snakeweed	146		127.75	4.191273	17.56677	2479.682
	3	Rubber Rabbitbrush	169		176	5.774278	33.34229	1306.449
	4	Pinyon Pine	138	121.5	84.5	2.77231	7.685702	5667.667
RA1-6	1	Rubber Rabbitbrush	205		206.5	6.774935	45.89974	949.025
	2	Rubber Rabbitbrush	196		118.25	3.879593	15.05124	2894.113
	3	Rubber Rabbitbrush	92		78	2.559055	6.548764	6651.637
	4	Rubber Rabbitbrush	166	164.75	70.5	2.312992	5.349933	8142.158
RA1-7	1	Big Sagebrush	173		100.75	3.305446	10.92598	3986.829
	2	Big Sagebrush	32		148.25	4.863845	23.65699	1841.316
	3	Big Sagebrush	57		132.25	4.338911	18.82615	2313.803
	4	Big Sagebrush	232	123.5	115.25	3.781168	14.29723	3046.744
RA1-8	1	Big Sagebrush	78		158.75	5.208334	27.12674	1605.796
	2	Big Sagebrush	79		57.75	1.894685	3.589832	12134.27
	3	Big Sagebrush	111		64.75	2.124344	4.512837	9652.465
	4	Big Sagebrush	125	98.25	78.25	2.567257	6.59081	6609.203
RA1-9	1	Big Sagebrush	14		114	3.740158	13.98878	3113.924
	2	Big Sagebrush	19		102	3.346457	11.19877	3889.712
	3	Big Sagebrush	39		101.25	3.321851	11.03469	3947.551
	4	Big Sagebrush	56	32	63.25	2.075131	4.30617	10115.72
RA1-10	1	Rubber Rabbitbrush	34		108.5	3.559711	12.67155	3437.623
	2	Big Sagebrush	85		58.5	1.919291	3.683679	11825.13
	3	Big Sagebrush	56		98.5	3.231627	10.44342	4171.049
	4	Big Sagebrush	31	51.5	101.75	3.338255	11.14394	3908.849
RA1-11	1	Big Sagebrush	102		231	7.57874	57.43731	758.3921
	2	Big Sagebrush	74		105.75	3.469488	12.03735	3618.737
	3	Big Sagebrush	58		206.75	6.783137	46.01094	946.7313
	4	Big Sagebrush	105	84.75	124.25	4.076444	16.61739	2621.35
RA1-12	1	Big Sagebrush	28		126.5	4.150263	17.22468	2528.929
	2	Big Sagebrush	31		94.75	3.108596	9.663368	4507.745
	3	Big Sagebrush	40		114	3.740158	13.98878	3113.924
	4	Big Sagebrush	61	40	225.25	7.390092	54.61346	797.6056
RA1-13	1	Rubber Rabbitbrush	44		82	2.690289	7.237654	6018.525
	2	Rubber Rabbitbrush	132		101.5	3.330053	11.08925	3928.128
	3	Rubber Rabbitbrush	62		52	1.706037	2.910562	14966.18
	4	Rubber Rabbitbrush	144	95.5	106.25	3.485893	12.15145	3584.758
RA1-14	1	Rubber Rabbitbrush	68		34.25	1.123688	1.262674	34498.21
	2	Big Sagebrush	32		35.75	1.1729	1.375695	31663.99
	3	Big Sagebrush	164		37.75	1.238517	1.533925	28397.75
	4	Big Sagebrush	151	103.75	93.5	3.067585	9.41008	4629.079
RA1-15	1	Big Sagebrush	84		72.5	2.378609	5.657781	7699.132
	2	Big Sagebrush	78		66.25	2.173557	4.724348	9220.32
	3	Big Sagebrush	74					
	4	Big Sagebrush	107	85.75	Average	3.286072	13.06222	3334.808
RA1-16	1	Big Sagebrush	54		StDev	1.517785	12.60982	3454.45
	2	Rubber Rabbitbrush	68					
	3	Big Sagebrush	64		Plants/Acre	3334.808		
	4	Big Sagebrush	77	65.75				
RA1-17	1	Big Sagebrush	17					
	2	Big Sagebrush	92					
	3	Big Sagebrush	72					
	4	Big Sagebrush	103	71				
RA1-18	1	Yellow Rabbitbrush	67					
	2	Rubber Rabbitbrush	149					
	3	Rubber Rabbitbrush	194					
	4	Rubber Rabbitbrush	101	127.75				
RA1-19	1	Rubber Rabbitbrush	13					
	2	Rubber Rabbitbrush	71					
	3	Rubber Rabbitbrush	394					
	4	Rubber Rabbitbrush	226	176				
RA1-20	1	Big Sagebrush	49					
	2	Big Sagebrush	66					
	3	Big Sagebrush	129					
	4	Big Sagebrush	94	84.5				
RA1-21	1	Big Sagebrush	368					
	2	Big Sagebrush	27					
	3	Big Sagebrush	202					
	4	Big Sagebrush	229	206.5				
RA1-22	1	Big Sagebrush	101					
	2	Big Sagebrush	130					

RA 1

Row Labels	Count of Species	Count	Percent
Big Sagebrush	150	150	64.65517
Broom Snakeweed	8	8	3.448276
Juniper	1	1	0.431034
Pinyon Pine	3	3	1.293103
Rubber Rabbitbrush	54	54	23.27586
Serviceberry	7	7	3.017241
Yellow Rabbitbrush	9	9	3.87931
Grand Total	**232**	232	100

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	3	Big Sagebrush	67	
	4	Big Sagebrush	175	118.25
RA1-23	1	Big Sagebrush	54	
	2	Rubber Rabbitbrush	34	
	3	Big Sagebrush	134	
	4	Big Sagebrush	90	78
RA1-24	1	Broom Snakeweed	19	
	2	Broom Snakeweed	57	
	3	Broom Snakeweed	78	
	4	Broom Snakeweed	128	70.5
RA1-25	1	Big Sagebrush	73	
	2	Big Sagebrush	132	
	3	Big Sagebrush	125	
	4	Rubber Rabbitbrush	73	100.75
RA1-26	1	Rubber Rabbitbrush	92	
	2	Rubber Rabbitbrush	189	
	3	Rubber Rabbitbrush	169	
	4	Rubber Rabbitbrush	143	148.25
RA1-27	1	Big Sagebrush	267	
	2	Big Sagebrush	105	
	3	Big Sagebrush	35	
	4	Rubber Rabbitbrush	122	132.25
RA1-28	1	Big Sagebrush	124	
	2	Big Sagebrush	53	
	3	Big Sagebrush	92	
	4	Big Sagebrush	192	115.25
RA1-29	1	Big Sagebrush	20	
	2	Big Sagebrush	248	
	3	Big Sagebrush	96	
	4	Big Sagebrush	271	158.75
RA1-30	1	Big Sagebrush	16	
	2	Big Sagebrush	88	
	3	Big Sagebrush	57	
	4	Big Sagebrush	70	57.75
RA1-31	1	Rubber Rabbitbrush	185	
	2	Rubber Rabbitbrush	28	
	3	Rubber Rabbitbrush	8	
	4	Rubber Rabbitbrush	38	64.75
RA1-32	1	Rubber Rabbitbrush	23	
	2	Big Sagebrush	55	
	3	Rubber Rabbitbrush	114	
	4	Rubber Rabbitbrush	121	78.25
RA1-33	1	Big Sagebrush	38	
	2	Big Sagebrush	128	
	3	Big Sagebrush	93	
	4	Big Sagebrush	197	114
RA1-34	1	Big Sagebrush	69	
	2	Big Sagebrush	47	
	3	Big Sagebrush	155	
	4	Big Sagebrush	137	102
RA1-35	1	Big Sagebrush	65	
	2	Big Sagebrush	95	
	3	Big Sagebrush	92	
	4	Big Sagebrush	153	101.25
RA1-36	1	Big Sagebrush	128	
	2	Big Sagebrush	24	
	3	Big Sagebrush	67	
	4	Big Sagebrush	34	63.25
RA1-37	1	Big Sagebrush	184	
	2	Big Sagebrush	51	
	3	Big Sagebrush	143	
	4	Big Sagebrush	56	108.5
RA1-38	1	Big Sagebrush	69	
	2	Big Sagebrush	10	
	3	Big Sagebrush	100	
	4	Big Sagebrush	55	58.5
RA1-39	1	Big Sagebrush	62	
	2	Big Sagebrush	132	
	3	Big Sagebrush	118	
	4	Big Sagebrush	82	98.5
RA1-40	1	Big Sagebrush	61	
	2	Big Sagebrush	75	
	3	Big Sagebrush	125	
	4	Rubber Rabbitbrush	146	101.75
RA1-41	1	Serviceberry	142	
	2	Serviceberry	184	
	3	Serviceberry	304	
	4	Serviceberry	294	231
RA1-42	1	Rubber Rabbitbrush	84	
	2	Rubber Rabbitbrush	143	
	3	Rubber Rabbitbrush	82	
	4	Rubber Rabbitbrush	114	105.75
RA1-43	1	Pinyon Pine	39	
	2	Pinyon Pine	162	
	3	Serviceberry	314	
	4	Serviceberry	312	206.75
	1	Rubber Rabbitbrush	141	

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RA1-44	2	Rubber Rabbitbrush	84	
	3	Rubber Rabbitbrush	138	
	4	Big Sagebrush	134	124.25
RA1-45	1	Yellow Rabbitbrush	34	
	2	Utah Juniper	51	
	3	Yellow Rabbitbrush	162	
	4	Yellow Rabbitbrush	259	126.5
RA1-46	1	Rubber Rabbitbrush	88	
	2	Rubber Rabbitbrush	89	
	3	Rubber Rabbitbrush	89	
	4	Rubber Rabbitbrush	113	94.75
RA1-47	1	Rubber Rabbitbrush	29	
	2	Rubber Rabbitbrush	55	
	3	Rubber Rabbitbrush	154	
	4	Rubber Rabbitbrush	218	114
RA1-51	1	Serviceberry	137	
	2	Big Sagebrush	371	
	3	Rubber Rabbitbrush	185	
	4	Rubber Rabbitbrush	208	225.25
RA1-58	1	Big Sagebrush	23	
	2	Big Sagebrush	41	
	3	Big Sagebrush	170	
	4	Broom Snakeweed	94	82
RA1-59	1	Big Sagebrush	57	
	2	Big Sagebrush	169	
	3	Big Sagebrush	59	
	4	Big Sagebrush	121	101.5
RA1-60	1	Big Sagebrush	39	
	2	Big Sagebrush	34	
	3	Yellow Rabbitbrush	74	
	4	Big Sagebrush	61	52
RA1-61	1	Big Sagebrush	58	
	2	Big Sagebrush	124	
	3	Big Sagebrush	119	
	4	Big Sagebrush	124	106.25
RA1-62	1	Big Sagebrush	38	
	2	Big Sagebrush	8	
	3	Yellow Rabbitbrush	39	
	4	Big Sagebrush	52	34.25
RA1-63	1	Big Sagebrush	46	
	2	Big Sagebrush	27	
	3	Big Sagebrush	38	
	4	Big Sagebrush	32	35.75
RA1-64	1	Big Sagebrush	26	
	2	Big Sagebrush	7	
	3	Big Sagebrush	8	
	4	Big Sagebrush	110	37.75
RA1-65	1	Broom Snakeweed	50	
	2	Broom Snakeweed	72	
	3	Big Sagebrush	104	
	4	Big Sagebrush	148	93.5
RA1-71	1	Big Sagebrush	38	
	2	Big Sagebrush	74	
	3	Big Sagebrush	99	
	4	Big Sagebrush	79	72.5
RA1-72	1	Big Sagebrush	46	
	2	Big Sagebrush	61	
	3	Big Sagebrush	77	
	4	Big Sagebrush	81	66.25

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc ft		ft^2	Plants/Acre
RA2-1	1	Broom Snakeweed	252		197.25	6.471457	41.87975	1040.121
	2	Rubber Rabbitbrush	212		78	2.559055	6.548764	6651.637
	3	Winterfat	110		273	8.956693	80.22235	542.9908
	4	Big Sagebrush	215	197.25	53.5	1.755249	3.0809	14138.72
RA2-2	1	Big Sagebrush	8		57.75	1.894685	3.589832	12134.27
	2	Big Sagebrush	20		221.75	7.275263	52.92945	822.9823
	3	Winterfat	245		228.75	7.504922	56.32385	773.3847
	4	Big Sagebrush	39	78	161.75	5.306759	28.16169	1546.782
RA2-3	1	Rubber Rabbitbrush	144		278.5	9.137139	83.48732	521.7559
	2	Four-wing Saltbush	319		133	4.363517	19.04028	2287.781
	3	Broom Snakeweed	298		122.25	4.010827	16.08673	2707.822
	4	Winterfat	331	273	79.75	2.61647	6.845915	6362.919
RA2-4	1	Big Sagebrush	71		170.75	5.602034	31.38279	1388.022
	2	Rubber Rabbitbrush	14		101.25	3.321851	11.03469	3947.551
	3	Rubber Rabbitbrush	51		172.75	5.667651	32.12227	1356.069
	4	Fringed Sage	78	53.5	78	2.559055	6.548764	6651.637
RA2-5	1	Winterfat	83		56	1.83727	3.375563	12904.52
	2	Broom Snakeweed	40		159.25	5.224738	27.29788	1595.728
	3	Big Sagebrush	32		69.66667	2.285652	5.224204	8338.112
	4	Big Sagebrush	76	57.75	96.5	3.166011	10.02362	4345.734
RA2-6	1	Rubber Rabbitbrush	323		98.25	3.223425	10.39047	4192.303
	2	Rubber Rabbitbrush	186		98.75	3.23983	10.4965	4149.957
	3	Rubber Rabbitbrush	234		156.25	5.126313	26.27908	1657.592
	4	Rubber Rabbitbrush	144	221.75	74.25	2.436024	5.934211	7340.487
RA2-7	1	Rubber Rabbitbrush	107		105.75	3.469488	12.03735	3618.737
	2	Broom Snakeweed	263		523.75	17.1834	295.2692	147.5264
	3	Rubber Rabbitbrush	278		76.5	2.509843	6.29931	6915.043
	4	Rubber Rabbitbrush	267	228.75	198.75	6.52067	42.51913	1024.48
RA2-8	1	Winterfat	268		134.75	4.420932	19.54464	2228.744
	2	Broom Snakeweed	48		55.75	1.829068	3.345491	13020.51
	3	Broom Snakeweed	69		151.75	4.978675	24.7872	1757.359
	4	Rubber Rabbitbrush	262	161.75	286.75	9.407809	88.50686	492.1652
RA2-9	1	Rubber Rabbitbrush	304		113.75	3.731956	13.92749	3127.627
	2	Fringed Sage	288		72.25	2.370407	5.618829	7752.505
	3	Fringed Sage	365		115.25	3.781168	14.29723	3046.744
	4	Fringed Sage	157	278.5	128.5	4.215879	17.77364	2450.821
RA2-10	1	Rubber Rabbitbrush	105		77.75	2.550853	6.506852	6694.482
	2	Rubber Rabbitbrush	118		125.25	4.109252	16.88595	2579.659
	3	Rubber Rabbitbrush	89		127	4.166667	17.36111	2509.056
	4	Rubber Rabbitbrush	220	133	108.5	3.559711	12.67155	3437.623
RA2-11	1	Big Sagebrush	131		97.25	3.190617	10.18004	4278.963
	2	Fringed Sage	111		465.25	15.26411	232.993	186.9584
	3	Broom Snakeweed	45		115.75	3.797572	14.42156	3020.479
	4	Rubber Rabbitbrush	202	122.25	89.75	2.944554	8.670398	5023.991
RA2-12	1	Rubber Rabbitbrush	117		147.75	4.847441	23.49769	1853.8
	2	Big Sagebrush	50		96.5	3.166011	10.02362	4345.734
	3	Fringed Sage	48		38.75	1.271326	1.616269	26950.97
	4	Fringed Sage	104	79.75	111.5	3.658137	13.38196	3255.128
RA2-13	1	Big Sagebrush	198		117.25	3.846785	14.79775	2943.69
	2	Big Sagebrush	184		99.25	3.256234	10.60306	4108.249
	3	Big Sagebrush	123					
	4	Winterfat	178	170.75	Average	4.591809	30.31688	1436.823
RA2-14	1	Broom Snakeweed	36		StDev	3.069297	52.70345	826.5113
	2	Broom Snakeweed	124					
	3	Broom Snakeweed	50		Plants/Acre	1436.823		
	4	Broom Snakeweed	195	101.25				
RA2-15	1	Rubber Rabbitbrush	105					
	2	Four-wing Saltbush	108					
	3	Winterfat	340					
	4	Four-wing Saltbush	138	172.75				
RA2-16	1	Big Sagebrush	76					
	2	Rubber Rabbitbrush	88					
	3	Big Sagebrush	70					
	4	Big Sagebrush	78	78				
RA2-17	1	Broom Snakeweed	60					
	2	Broom Snakeweed	13					
	3	Broom Snakeweed	71					
	4	Big Sagebrush	80	56				
RA2-18	1	Winterfat	120					
	2	Winterfat	169					
	3	Winterfat	180					
	4	Fringed Sage	168	159.25				
RA2-19	1	Rubber Rabbitbrush	92					
	2	Rubber Rabbitbrush	72					
	3	Fringed Sage	45					
	4	Rubber Rabbitbrush		69.66667				
RA2-20	1	Mormon Tea	99					
	2	Winterfat	189					
	3	Big Sagebrush	61					
	4	Big Sagebrush	37	96.5				
RA2-21	1	Broom Snakeweed	79					
	2	Rubber Rabbitbrush	121					
	3	Fringed Sage	158					
	4	Rubber Rabbitbrush	35	98.25				
RA2-22	1	Fringed Sage	108					
	2	Broom Snakeweed	36					

Row Labels	Count of Species	Count	Percent
Big Sagebrush	46	46	23
Broom Snakeweed	23	23	11.5
Four-wing Saltbush	5	5	2.5
Fringed Sage	19	19	9.5
Mormon Tea	3	3	1.5
Rubber Rabbitbrush	76	76	38
Winterfat	28	28	14
Grand Total	**200**	200	100

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[illegible]	3	Fringed Sage	43	
	4	Big Sagebrush	208	98.75
RA2-23	1	Big Sagebrush	172	
	2	Big Sagebrush	124	
	3	Big Sagebrush	229	
	4	Big Sagebrush	100	156.25
RA2-24	1	Rubber Rabbitbrush	132	
	2	Rubber Rabbitbrush	54	
	3	Rubber Rabbitbrush	86	
	4	Rubber Rabbitbrush	25	74.25
RA2-25	1	Broom Snakeweed	177	
	2	Broom Snakeweed	42	
	3	Big Sagebrush	75	
	4	Big Sagebrush	129	105.75
RA2-26	1	Rubber Rabbitbrush	255	
	2	Winterfat	478	
	3	Rubber Rabbitbrush	649	
	4	Rubber Rabbitbrush	713	523.75
RA2-27	1	Winterfat	74	
	2	Winterfat	27	
	3	Winterfat	111	
	4	Winterfat	94	76.5
RA2-28	1	Rubber Rabbitbrush	352	
	2	Rubber Rabbitbrush	185	
	3	Rubber Rabbitbrush	112	
	4	Rubber Rabbitbrush	146	198.75
RA2-29	1	Broom Snakeweed	83	
	2	Broom Snakeweed	139	
	3	Rubber Rabbitbrush	102	
	4	Rubber Rabbitbrush	215	134.75
RA2-30	1	Rubber Rabbitbrush	16	
	2	Rubber Rabbitbrush	83	
	3	Rubber Rabbitbrush	74	
	4	Rubber Rabbitbrush	50	55.75
RA2-31	1	Rubber Rabbitbrush	88	
	2	Rubber Rabbitbrush	305	
	3	Winterfat	117	
	4	Rubber Rabbitbrush	97	151.75
RA2-32	1	Fringed Sage	407	
	2	Winterfat	184	
	3	Rubber Rabbitbrush	363	
	4	Winterfat	193	286.75
RA2-33	1	Big Sagebrush	109	
	2	Big Sagebrush	102	
	3	Big Sagebrush	155	
	4	Big Sagebrush	89	113.75
RA2-34	1	Rubber Rabbitbrush	37	
	2	Rubber Rabbitbrush	128	
	3	Rubber Rabbitbrush	104	
	4	Rubber Rabbitbrush	20	72.25
RA2-35	1	Fringed Sage	197	
	2	Rubber Rabbitbrush	152	
	3	Fringed Sage	47	
	4	Mormon Tea	65	115.25
RA2-36	1	Big Sagebrush	60	
	2	Big Sagebrush	165	
	3	Rubber Rabbitbrush	209	
	4	Big Sagebrush	80	128.5
RA2-37	1	Rubber Rabbitbrush	64	
	2	Rubber Rabbitbrush	63	
	3	Rubber Rabbitbrush	49	
	4	Rubber Rabbitbrush	135	77.75
RA2-38	1	Big Sagebrush	15	
	2	Big Sagebrush	44	
	3	Big Sagebrush	252	
	4	Winterfat	190	125.25
RA2-39	1	Fringed Sage	89	
	2	Rubber Rabbitbrush	164	
	3	Rubber Rabbitbrush	100	
	4	Rubber Rabbitbrush	155	127
RA2-40	1	Big Sagebrush	118	
	2	Rubber Rabbitbrush	207	
	3	Rubber Rabbitbrush	64	
	4	Rubber Rabbitbrush	45	108.5
RA2-41	1	Rubber Rabbitbrush	35	
	2	Rubber Rabbitbrush	98	
	3	Rubber Rabbitbrush	84	
	4	Winterfat	172	97.25
RA2-42	1	Big Sagebrush	570	
	2	Four-wing Saltbush	580	
	3	Rubber Rabbitbrush	202	
	4	Winterfat	509	465.25
RA2-43	1	Fringed Sage	89	
	2	Rubber Rabbitbrush	84	
	3	Rubber Rabbitbrush	69	
	4	Fringed Sage	221	115.75
	1	Rubber Rabbitbrush	96	

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RA2-44	2	Rubber Rabbitbrush	94	
	3	Rubber Rabbitbrush	74	
	4	Rubber Rabbitbrush	95	89.75
RA2-45	1	Broom Snakeweed	133	
	2	Big Sagebrush	166	
	3	Winterfat	135	
	4	Big Sagebrush	157	147.75
RA2-46	1	Big Sagebrush	68	
	2	Big Sagebrush	110	
	3	Big Sagebrush	84	
	4	Big Sagebrush	124	96.5
RA2-47	1	Rubber Rabbitbrush	12	
	2	Broom Snakeweed	21	
	3	Rubber Rabbitbrush	37	
	4	Rubber Rabbitbrush	85	38.75
RA2-48	1	Four-wing Saltbush	44	
	2	Big Sagebrush	59	
	3	Mormon Tea	169	
	4	Big Sagebrush	174	111.5
RA2-49	1	Fringed Sage	12	
	2	Big Sagebrush	175	
	3	Broom Snakeweed	94	
	4	Winterfat	188	117.25
RA2-50	1	Winterfat	169	
	2	Winterfat	34	
	3	Winterfat	25	
	4	Winterfat	169	99.25

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc ft		ft^2	Plants/Acre
RA4-1	1	Big Sagebrush	351		225.75	7.406496	54.85619	794.0763
	2	Broom Snakeweed	168		109.25	3.584318	12.84733	3390.587
	3	Four-wing Saltbush	155		43	1.410761	1.990247	21886.73
	4	Four-wing Saltbush	229	225.75	114.25	3.74836	14.0502	3100.312
RA4-2	1	Big Sagebrush	130		145.75	4.781824	22.86584	1905.025
	2	Big Sagebrush	145		55.5	1.820866	3.315554	13138.08
	3	Rubber Rabbitbrush	148		36.5	1.197507	1.434022	30376.1
	4	Big Sagebrush	14	109.25	53.75	1.763452	3.109761	14007.51
RA4-3	1	Big Sagebrush	55		98	3.215223	10.33766	4213.719
	2	Broom Snakeweed	32		73.5	2.411417	5.814934	7491.057
	3	Broom Snakeweed	30		172.75	5.667651	32.12227	1356.069
	4	Broom Snakeweed	55	43	91.75	3.010171	9.061128	4807.349
RA4-4	1	Big Sagebrush	82		88.25	2.895341	8.383001	5196.23
	2	Rubber Rabbitbrush	155		74.5	2.444226	5.97424	7291.304
	3	Rubber Rabbitbrush	141		61	2.001312	4.005251	10875.72
	4	Big Sagebrush	79	114.25	171	5.610236	31.47475	1383.966
RA4-5	1	Rubber Rabbitbrush	130		104.25	3.420276	11.69829	3723.622
	2	Rubber Rabbitbrush	56		87.5	2.870735	8.241119	5285.69
	3	Rubber Rabbitbrush	227		99.5	3.264436	10.65654	4087.63
	4	Rubber Rabbitbrush	170	145.75	158.75	5.208334	27.12674	1605.796
RA4-6	1	Big Sagebrush	29		192	6.299213	39.68008	1097.78
	2	Big Sagebrush	55		91.5	3.001969	9.011815	4833.654
	3	Broom Snakeweed	128		256.5	8.415355	70.81819	615.0962
	4	Big Sagebrush	10	55.5	141.75	4.650591	21.62799	2014.056
RA4-7	1	Rubber Rabbitbrush	20		127.25	4.174869	17.42953	2499.207
	2	Rubber Rabbitbrush	19		119.75	3.928806	15.43552	2822.063
	3	Rubber Rabbitbrush	88		118.75	3.895998	15.1788	2869.793
	4	Rubber Rabbitbrush	19	36.5	110.75	3.63353	13.20254	3299.365
RA4-8	1	Big Sagebrush	82		122.25	4.010827	16.08673	2707.822
	2	Rubber Rabbitbrush	56		194.25	6.373032	40.61553	1072.496
	3	Rubber Rabbitbrush	56		146.75	4.814633	23.18069	1879.15
	4	Big Sagebrush	21	53.75	116.25	3.813977	14.54642	2994.552
RA4-9	1	Rubber Rabbitbrush	46		181.75	5.962927	35.55649	1225.093
	2	Rubber Rabbitbrush	43		39	1.279528	1.637191	26606.55
	3	Big Sagebrush	95		71.5	2.345801	5.50278	7915.998
	4	Big Sagebrush	208	98	60.25	1.976706	3.907367	11148.17
RA4-10	1	Rubber Rabbitbrush	151		64.75	2.124344	4.512837	9652.465
	2	Rubber Rabbitbrush	31		129.5	4.248688	18.05135	2413.116
	3	Big Sagebrush	58		79	2.591864	6.717757	6484.307
	4	Rubber Rabbitbrush	54	73.5	39	1.279528	1.637191	26606.55
RA4-11	1	Rubber Rabbitbrush	246		117.75	3.863189	14.92423	2918.744
	2	Rubber Rabbitbrush	52		119.25	3.912402	15.30689	2845.778
	3	Rubber Rabbitbrush	118		32.5	1.066273	1.136938	38313.43
	4	Rubber Rabbitbrush	275	172.75	120.5	3.953412	15.62947	2787.043
RA4-12	1	Rubber Rabbitbrush	135		116.25	3.813977	14.54642	2994.552
	2	Rubber Rabbitbrush	17		93.5	3.067585	9.41008	4629.079
	3	Big Sagebrush	171		54.25	1.779856	3.167886	13750.49
	4	Rubber Rabbitbrush	44	91.75	187.25	6.143373	37.74103	1154.182
RA4-13	1	Big Sagebrush	76		160	5.249344	27.55561	1580.803
	2	Big Sagebrush	133		90.5	2.96916	8.815912	4941.065
	3	Big Sagebrush	64		119	3.9042	15.24277	2857.747
	4	Big Sagebrush	80	88.25	124.25	4.076444	16.61739	2621.35
RA4-14	1	Rubber Rabbitbrush	37		90.25	2.960958	8.767273	4968.478
	2	Rubber Rabbitbrush	50		136.25	4.470145	19.98219	2179.941
	3	Rubber Rabbitbrush	59		39.5	1.295932	1.679439	25937.23
	4	Rubber Rabbitbrush	152	74.5	96.5	3.166011	10.02362	4345.734
RA4-15	1	Big Sagebrush	45		90.25	2.960958	8.767273	4968.478
	2	Rubber Rabbitbrush	74		93.75	3.075788	9.460469	4604.423
	3	Big Sagebrush	52		19	0.62336	0.388577	112101.3
	4	Big Sagebrush	73	61	106.25	3.485893	12.15145	3584.758
RA4-16	1	Big Sagebrush	225					
	2	Big Sagebrush	107		Average	3.53989	15.08361	2887.902
	3	Big Sagebrush	211		StDev	1.61123	13.54051	3217.014
	4	Big Sagebrush	141	171				
RA4-17	1	Rubber Rabbitbrush	119		Plants/Acre	2887.902		
	2	Rubber Rabbitbrush	134					
	3	Rubber Rabbitbrush	137					
	4	Rubber Rabbitbrush	27	104.25				
RA4-18	1	Rubber Rabbitbrush	104					
	2	Broom Snakeweed	71					
	3	Broom Snakeweed	154					
	4	Broom Snakeweed	21	87.5				
RA4-19	1	Big Sagebrush	41					
	2	Big Sagebrush	79					
	3	Big Sagebrush	74					
	4	Big Sagebrush	204	99.5				
RA4-20	1	Big Sagebrush	239					
	2	Broom Snakeweed	149					
	3	Four-wing Saltbush	75					
	4	Four-wing Saltbush	172	158.75				
RA4-21	1	Rubber Rabbitbrush	122					
	2	Rubber Rabbitbrush	246					
	3	Rubber Rabbitbrush	299					
	4	Rubber Rabbitbrush	101	192				
RA4-22	1	Rubber Rabbitbrush	96					
	2	Rubber Rabbitbrush	27					

Row Labels	Count of Species	Count	Percent
Big Sagebrush	67	67	27.91667
Broom Snakeweed	40	40	16.66667
Four-wing Saltbush	11	11	4.583333
Mormon Tea	1	1	0.416667
Rubber Rabbitbrush	119	119	49.58333
Winterfat	2	2	0.833333
Grand Total	**240**	240	100

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[illegible]	3	Rubber Rabbitbrush	19	
	4	Rubber Rabbitbrush	224	91.5
RA4-23	1	Rubber Rabbitbrush	138	
	2	Rubber Rabbitbrush	154	
	3	Four-wing Saltbush	224	
	4	Big Sagebrush	510	256.5
RA4-24	1	Big Sagebrush	202	
	2	Big Sagebrush	105	
	3	Four-wing Saltbush	73	
	4	Rubber Rabbitbrush	187	141.75
RA4-25	1	Broom Snakeweed	128	
	2	Big Sagebrush	47	
	3	Big Sagebrush	152	
	4	Big Sagebrush	182	127.25
RA4-26	1	Rubber Rabbitbrush	77	
	2	Rubber Rabbitbrush	51	
	3	Rubber Rabbitbrush	228	
	4	Rubber Rabbitbrush	123	119.75
RA4-27	1	Winterfat	202	
	2	Rubber Rabbitbrush	116	
	3	Rubber Rabbitbrush	76	
	4	Rubber Rabbitbrush	81	118.75
RA4-28	1	Big Sagebrush	123	
	2	Winterfat	129	
	3	Rubber Rabbitbrush	120	
	4	Rubber Rabbitbrush	71	110.75
RA4-29	1	Rubber Rabbitbrush	109	
	2	Rubber Rabbitbrush	46	
	3	Big Sagebrush	138	
	4	Big Sagebrush	196	122.25
RA4-30	1	Rubber Rabbitbrush	57	
	2	Rubber Rabbitbrush	275	
	3	Rubber Rabbitbrush	240	
	4	Rubber Rabbitbrush	205	194.25
RA4-31	1	Rubber Rabbitbrush	64	
	2	Big Sagebrush	138	
	3	Big Sagebrush	289	
	4	Big Sagebrush	96	146.75
RA4-32	1	Big Sagebrush	73	
	2	Rubber Rabbitbrush	89	
	3	Broom Snakeweed	99	
	4	Rubber Rabbitbrush	204	116.25
RA4-33	1	Big Sagebrush	66	
	2	Big Sagebrush	143	
	3	Broom Snakeweed	294	
	4	Rubber Rabbitbrush	224	181.75
RA4-34	1	Rubber Rabbitbrush	56	
	2	Big Sagebrush	58	
	3	Broom Snakeweed	17	
	4	Rubber Rabbitbrush	25	39
RA4-35	1	Broom Snakeweed	39	
	2	Broom Snakeweed	71	
	3	Broom Snakeweed	105	
	4	Broom Snakeweed	71	71.5
RA4-36	1	Rubber Rabbitbrush	11	
	2	Broom Snakeweed	115	
	3	Rubber Rabbitbrush	43	
	4	Broom Snakeweed	72	60.25
RA4-37	1	Rubber Rabbitbrush	37	
	2	Big Sagebrush	94	
	3	Big Sagebrush	81	
	4	Broom Snakeweed	47	64.75
RA4-38	1	Rubber Rabbitbrush	56	
	2	Rubber Rabbitbrush	159	
	3	Broom Snakeweed	182	
	4	Big Sagebrush	121	129.5
RA4-39	1	Broom Snakeweed	13	
	2	Big Sagebrush	88	
	3	Broom Snakeweed	124	
	4	Broom Snakeweed	91	79
RA4-40	1	Big Sagebrush	10	
	2	Big Sagebrush	65	
	3	Big Sagebrush	77	
	4	Big Sagebrush	4	39
RA4-41	1	Broom Snakeweed	83	
	2	Rubber Rabbitbrush	85	
	3	Rubber Rabbitbrush	105	
	4	Rubber Rabbitbrush	198	117.75
RA4-42	1	Rubber Rabbitbrush	139	
	2	Rubber Rabbitbrush	44	
	3	Big Sagebrush	160	
	4	Rubber Rabbitbrush	134	119.25
RA4-43	1	Broom Snakeweed	26	
	2	Broom Snakeweed	31	
	3	Broom Snakeweed	19	
	4	Broom Snakeweed	54	32.5
	1	Rubber Rabbitbrush	61	

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RA4-44	2	Broom Snakeweed	106	
	3	Rubber Rabbitbrush	51	
	4	Rubber Rabbitbrush	264	120.5
RA4-45	1	Rubber Rabbitbrush	119	
	2	Rubber Rabbitbrush	154	
	3	Rubber Rabbitbrush	97	
	4	Rubber Rabbitbrush	95	116.25
RA4-46	1	Rubber Rabbitbrush	71	
	2	Four-wing Saltbush	61	
	3	Four-wing Saltbush	82	
	4	Four-wing Saltbush	160	93.5
RA4-47	1	Broom Snakeweed	49	
	2	Broom Snakeweed	63	
	3	Rubber Rabbitbrush	69	
	4	Rubber Rabbitbrush	36	54.25
RA4-48	1	Broom Snakeweed	262	
	2	Rubber Rabbitbrush	91	
	3	Rubber Rabbitbrush	279	
	4	Rubber Rabbitbrush	117	187.25
RA4-49	1	Big Sagebrush	89	
	2	Big Sagebrush	181	
	3	Mormon Tea	141	
	4	Four-wing Saltbush	229	160
RA4-50	1	Rubber Rabbitbrush	74	
	2	Rubber Rabbitbrush	93	
	3	Rubber Rabbitbrush	88	
	4	Broom Snakeweed	107	90.5
RA4-51	1	Rubber Rabbitbrush	29	
	2	Rubber Rabbitbrush	97	
	3	Rubber Rabbitbrush	170	
	4	Big Sagebrush	180	119
RA4-52	1	Big Sagebrush	77	
	2	Big Sagebrush	236	
	3	Big Sagebrush	73	
	4	Rubber Rabbitbrush	111	124.25
RA4-53	1	Rubber Rabbitbrush	189	
	2	Rubber Rabbitbrush	124	
	3	Rubber Rabbitbrush	38	
	4	Rubber Rabbitbrush	10	90.25
RA4-54	1	Rubber Rabbitbrush	146	
	2	Rubber Rabbitbrush	156	
	3	Big Sagebrush	92	
	4	Big Sagebrush	151	136.25
RA4-55	1	Rubber Rabbitbrush	11	
	2	Rubber Rabbitbrush	19	
	3	Rubber Rabbitbrush	69	
	4	Rubber Rabbitbrush	59	39.5
RA4-56	1	Rubber Rabbitbrush	69	
	2	Broom Snakeweed	71	
	3	Broom Snakeweed	122	
	4	Rubber Rabbitbrush	124	96.5
RA4-57	1	Rubber Rabbitbrush	72	
	2	Broom Snakeweed	172	
	3	Broom Snakeweed	41	
	4	Rubber Rabbitbrush	76	90.25
RA4-58	1	Rubber Rabbitbrush	104	
	2	Four-wing Saltbush	78	
	3	Broom Snakeweed	58	
	4	Broom Snakeweed	135	93.75
RA4-59	1	Rubber Rabbitbrush	8	
	2	Rubber Rabbitbrush	27	
	3	Rubber Rabbitbrush	12	
	4	Rubber Rabbitbrush	29	19
RA4-60	1	Big Sagebrush	131	
	2	Rubber Rabbitbrush	97	
	3	Big Sagebrush	130	
	4	Rubber Rabbitbrush	67	106.25

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc ft		ft^2	Plants/Acre
RA5-1	1	Broom Snakeweed	82		80	2.624672	6.888903	6323.213
	2	Broom Snakeweed	62		157.5	5.167323	26.70123	1631.386
	3	Fringed Sage	102		88	2.887139	8.335573	5225.796
	4	Broom Snakeweed	74	80	246	8.070866	65.13888	668.725
RA5-2	1	Rubber Rabbitbrush	224		342.25	11.22867	126.0831	345.4863
	2	Fringed Sage	173		111.75	3.666339	13.44204	3240.58
	3	Fringed Sage	156		86.25	2.829725	8.007341	5440.008
	4	Rubber Rabbitbrush	77	157.5	135	4.429134	19.61723	2220.497
RA5-3	1	Rubber Rabbitbrush	111		109.75	3.600722	12.9652	3359.764
	2	Rubber Rabbitbrush	52		154	5.052494	25.52769	1706.382
	3	Rubber Rabbitbrush	93		155	5.085302	25.8603	1684.435
	4	Rubber Rabbitbrush	96	88	55.5	1.820866	3.315554	13138.08
RA5-4	1	Big Sagebrush	104		265.5	8.71063	75.87508	574.1015
	2	Fringed Sage	362		184.75	6.061352	36.73999	1185.629
	3	Big Sagebrush	440		198	6.496063	42.19884	1032.256
	4	Rubber Rabbitbrush	78	246	273	8.956693	80.22235	542.9908
RA5-5	1	Rubber Rabbitbrush	156		190	6.233596	38.85772	1121.013
	2	Fringed Sage	690		216.75	7.111221	50.56946	861.3895
	3	Fringed Sage	353		292.5	9.596457	92.09199	473.0053
	4	Rubber Rabbitbrush	170	342.25	82.25	2.698491	7.281853	5981.994
RA5-6	1	Rubber Rabbitbrush	126		286.5	9.399607	88.3526	493.0245
	2	Fringed Sage	97		107.25	3.518701	12.38126	3518.221
	3	Rubber Rabbitbrush	96		228.5	7.496719	56.2008	775.0779
	4	Fringed Sage	128	111.75	199.25	6.537074	42.73333	1019.345
RA5-7	1	Fringed Sage	49		152.25	4.995079	24.95081	1745.835
	2	Ephedra	47		154	5.052494	25.52769	1706.382
	3	Fringed Sage	183		138.25	4.535761	20.57313	2117.325
	4	Rubber Rabbitbrush	66	86.25	115.75	3.797572	14.42156	3020.479
RA5-8	1	Fringed Sage	18		116.25	3.813977	14.54642	2994.552
	2	Fringed Sage	199		325.5	10.67913	114.0439	381.9582
	3	Fringed Sage	86		237.75	7.800197	60.84307	715.9401
	4	Fringed Sage	237	135	207.75	6.815945	46.45711	937.6391
RA5-9	1	Fringed Sage	96		116.5	3.822179	14.60905	2981.714
	2	Broom Snakeweed	197		127.25	4.174869	17.42953	2499.207
	3	Fringed Sage	52		108.5	3.559711	12.67155	3437.623
	4	Rubber Rabbitbrush	94	109.75	154.25	5.060696	25.61064	1700.856
RA5-10	1	Fringed Sage	159		110.5	3.625328	13.143	3314.311
	2	Fringed Sage	172		97.25	3.190617	10.18004	4278.963
	3	Fringed Sage	128		380	12.46719	155.4309	280.2532
	4	Fringed Sage	157	154	131	4.2979	18.47195	2358.17
RA5-11	1	Big Sagebrush	174					
	2	Fringed Sage	156		Average	5.674213	38.85747	1121.02
	3	Fringed Sage	119		StDev	2.613726	36.04296	1208.558
	4	Fringed Sage	171	155				
RA5-12	1	Rubber Rabbitbrush	17		Plants/Acre	1121.02		
	2	Rubber Rabbitbrush	33					
	3	Big Sagebrush	88					
	4	Big Sagebrush	84	55.5				
RA5-13	1	Fringed Sage	12					
	2	Fringed Sage	580					
	3	Fringed Sage	342					
	4	Rubber Rabbitbrush	128	265.5				
RA5-14	1	Fringed Sage	9					
	2	Fringed Sage	269					
	3	Broom Snakeweed	311					
	4	Fringed Sage	150	184.75				
RA5-15	1	Rubber Rabbitbrush	110					
	2	Rubber Rabbitbrush	279					
	3	Rubber Rabbitbrush	264					
	4	Rubber Rabbitbrush	139	198				
RA5-16	1	Fringed Sage	27					
	2	Fringed Sage	458					
	3	Big Sagebrush	211					
	4	Rubber Rabbitbrush	396	273				
RA5-17	1	Fringed Sage	234					
	2	Ephedra	76					
	3	Rubber Rabbitbrush	271					
	4	Fringed Sage	179	190				
RA5-18	1	Fringed Sage	8					
	2	Ephedra	544					
	3	Fringed Sage	196					
	4	Fringed Sage	119	216.75				
RA5-19	1	Fringed Sage	77					
	2	Fringed Sage	338					
	3	Rubber Rabbitbrush	526					
	4	Fringed Sage	229	292.5				
RA5-20	1	Big Sagebrush	58					
	2	Big Sagebrush	146					
	3	Rubber Rabbitbrush	16					
	4	Big Sagebrush	109	82.25				
RA5-21	1	Rubber Rabbitbrush	234					
	2	Rubber Rabbitbrush	452					
	3	Rubber Rabbitbrush	364					
	4	Rubber Rabbitbrush	96	286.5				
RA5-22	1	Rubber Rabbitbrush	57					
	2	Rubber Rabbitbrush	97					

Row Labels	Count of Species	Count	Percent
Big Sagebrush	19	19	11.875
Broom Snakeweed	6	6	3.75
Ephedra	6	6	3.75
Fringed Sage	74	74	46.25
Rubber Rabbitbrush	55	55	34.375
Grand Total	**160**	160	100

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	3	Rubber Rabbitbrush	144	
	4	Rubber Rabbitbrush	131	107.25
RA5-23	1	Fringed Sage	224	
	2	Rubber Rabbitbrush	61	
	3	Fringed Sage	128	
	4	Rubber Rabbitbrush	501	228.5
RA5-24	1	Big Sagebrush	14	
	2	Fringed Sage	178	
	3	Fringed Sage	307	
	4	Broom Snakeweed	298	199.25
RA5-25	1	Rubber Rabbitbrush	72	
	2	Rubber Rabbitbrush	241	
	3	Fringed Sage	109	
	4	Fringed Sage	187	152.25
RA5-26	1	Fringed Sage	157	
	2	Fringed Sage	181	
	3	Fringed Sage	64	
	4	Rubber Rabbitbrush	214	154
RA5-27	1	Ephedra	97	
	2	Rubber Rabbitbrush	88	
	3	Rubber Rabbitbrush	79	
	4	Fringed Sage	289	138.25
RA5-28	1	Fringed Sage	39	
	2	Fringed Sage	25	
	3	Big Sagebrush	98	
	4	Big Sagebrush	301	115.75
RA5-29	1	Rubber Rabbitbrush	104	
	2	Fringed Sage	134	
	3	Fringed Sage	98	
	4	Fringed Sage	129	116.25
RA5-30	1	Fringed Sage	289	
	2	Fringed Sage	349	
	3	Fringed Sage	219	
	4	Fringed Sage	445	325.5
RA5-31	1	Fringed Sage	127	
	2	Fringed Sage	270	
	3	Rubber Rabbitbrush	205	
	4	Fringed Sage	349	237.75
RA5-32	1	Fringed Sage	174	
	2	Rubber Rabbitbrush	299	
	3	Fringed Sage	184	
	4	Rubber Rabbitbrush	174	207.75
RA5-33	1	Fringed Sage	84	
	2	Rubber Rabbitbrush	111	
	3	Fringed Sage	101	
	4	Fringed Sage	170	116.5
RA5-34	1	Rubber Rabbitbrush	79	
	2	Rubber Rabbitbrush	138	
	3	Rubber Rabbitbrush	151	
	4	Rubber Rabbitbrush	141	127.25
RA5-35	1	Big Sagebrush	122	
	2	Rubber Rabbitbrush	65	
	3	Rubber Rabbitbrush	158	
	4	Rubber Rabbitbrush	89	108.5
RA5-36	1	Big Sagebrush	252	
	2	Big Sagebrush	158	
	3	Fringed Sage	110	
	4	Big Sagebrush	97	154.25
RA5-37	1	Ephedra	64	
	2	Ephedra	99	
	3	Fringed Sage	102	
	4	Fringed Sage	177	110.5
RA5-38	1	Fringed Sage	99	
	2	Rubber Rabbitbrush	56	
	3	Big Sagebrush	73	
	4	Fringed Sage	161	97.25
RA5-39	1	Big Sagebrush	426	
	2	Fringed Sage	574	
	3	Big Sagebrush	388	
	4	Rubber Rabbitbrush	132	380
RA5-40	1	Fringed Sage	74	
	2	Fringed Sage	88	
	3	Rubber Rabbitbrush	172	
	4	Rubber Rabbitbrush	190	131

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc ft	ft²	Plants/Acre
RA6-1	1	Big Sagebrush	50	68.5	2.247375	5.050696	8624.554
	2	Big Sagebrush	18	243.5	7.988845	63.82165	682.527
	3	Big Sagebrush	103	52.25	1.714239	2.938615	14823.31
	4	Big Sagebrush	103	85.25	2.796916	7.82274	5568.382
RA6-2	1	Big Sagebrush	287	78.75	2.583662	6.675307	6525.543
	2	Big Sagebrush	168	68.75	2.255578	5.08763	8561.944
	3	Rubber Rabbitbrush	207	90.5	2.96916	8.815912	4941.065
	4	Rubber Rabbitbrush	312	129.75	4.25689	18.12111	2403.826
RA6-3	1	Big Sagebrush	30	125.5	4.117454	16.95343	2569.392
	2	Rubber Rabbitbrush	40	152.75	5.011483	25.11496	1734.424
	3	Rubber Rabbitbrush	73	175.75	5.766076	33.24764	1310.168
	4	Big Sagebrush	66	165.75	5.437992	29.57176	1473.027
RA6-4	1	Rubber Rabbitbrush	36	145.75	4.781824	22.86584	1905.025
	2	Rubber Rabbitbrush	182	94	3.08399	9.510992	4579.964
	3	Rubber Rabbitbrush	102	80.5	2.641076	6.975283	6244.907
	4	Rubber Rabbitbrush	21	116.5	3.822179	14.60905	2981.714
RA6-5	1	Big Sagebrush	62	85.25	2.796916	7.82274	5568.382
	2	Big Sagebrush	61	66	2.165354	4.68876	9290.303
	3	Broom Snakeweed	123	82.25	2.698491	7.281853	5981.994
	4	Broom Snakeweed	69	33.75	1.107284	1.226077	35527.96
RA6-6	1	Rubber Rabbitbrush	72	62	2.034121	4.137647	10527.72
	2	Rubber Rabbitbrush	79	73	2.395013	5.736088	7594.025
	3	Rubber Rabbitbrush	72	109.5	3.59252	12.9062	3375.122
	4	Ephedra	52	85.5	2.805118	7.868688	5535.866
RA6-7	1	Fringed Sage	80	109	3.576116	12.7886	3406.158
	2	Fringed Sage	36	124	4.068242	16.55059	2631.93
	3	Fringed Sage	66	127.25	4.174869	17.42953	2499.207
	4	Fringed Sage	180	94	3.08399	9.510992	4579.964
RA6-8	1	Fringed Sage	130	111.5	3.658137	13.38196	3255.128
	2	Rubber Rabbitbrush	217	188.25	6.176181	38.14522	1141.952
	3	Fringed Sage	65	111.25	3.649935	13.32202	3269.774
	4	Rubber Rabbitbrush	107	66.5	2.181759	4.760071	9151.125
RA6-9	1	Fourwing Saltbush	190	117.25	3.846785	14.79775	2943.69
	2	Big Sagebrush	220	107	3.510499	12.3236	3534.681
	3	Yellow Rabbitbrush	61	100.5	3.297244	10.87182	4006.689
	4	Big Sagebrush	31	130.75	4.289698	18.40151	2367.197
RA6-10	1	Rubber Rabbitbrush	67	123.5	4.051837	16.41739	2653.285
	2	Rubber Rabbitbrush	168	49	1.607612	2.584415	16854.88
	3	Rubber Rabbitbrush	82	129	4.232284	17.91222	2431.859
	4	Rubber Rabbitbrush	294	83.25	2.731299	7.459996	5839.145
RA6-11	1	Rubber Rabbitbrush	227				
	2	Rubber Rabbitbrush	143	Average	3.480151	13.88771	3136.586
	3	Rubber Rabbitbrush	224	St Dev	1.349742	11.62046	3748.559
	4	Rubber Rabbitbrush	109	175.75			
RA6-12	1	Rubber Rabbitbrush	182	Plants/Acre	3136.586		
	2	Rubber Rabbitbrush	198				
	3	Fourwing Saltbush	49				
	4	Broom Snakeweed	234	165.75			
RA6-13	1	Rubber Rabbitbrush	190				
	2	Rubber Rabbitbrush	205				
	3	Big Sagebrush	20				
	4	Broom Snakeweed	168	145.75			
RA6-14	1	Rubber Rabbitbrush	67				
	2	Fringed Sage	103				
	3	Rubber Rabbitbrush	57				
	4	Big Sagebrush	149	94			
RA6-15	1	Rubber Rabbitbrush	69				
	2	Rubber Rabbitbrush	83				
	3	Rubber Rabbitbrush	68				
	4	Fringed Sage	102	80.5			
RA6-16	1	Rubber Rabbitbrush	141				
	2	Rubber Rabbitbrush	120				
	3	Rubber Rabbitbrush	99				
	4	Rubber Rabbitbrush	106	116.5			
RA6-17	1	Rubber Rabbitbrush	79				
	2	Broom Snakeweed	72				
	3	Broom Snakeweed	120				
	4	Broom Snakeweed	70	85.25			
RA6-18	1	Broom Snakeweed	40				
	2	Fringed Sage	43				
	3	Broom Snakeweed	38				
	4	Big Sagebrush	143	66			
RA6-19	1	Rubber Rabbitbrush	34				
	2	Rubber Rabbitbrush	97				
	3	Rubber Rabbitbrush	149				
	4	Rubber Rabbitbrush	49	82.25			
RA6-20	1	Fringed Sage	32				
	2	Fringed Sage	46				
	3	Broom Snakeweed	30				
	4	Fringed Sage	27	33.75			
RA6-21	1	Rubber Rabbitbrush	31				
	2	Rubber Rabbitbrush	30				
	3	Rubber Rabbitbrush	48				
	4	Rubber Rabbitbrush	139	62			
RA6-22	1	Fringed Sage	9				
	2	Big Sagebrush	85				

Row Labels	Count of Species	Count	Percent
Big Sagebrush	35	35	21.875
Broom Snakeweed	22	22	13.75
Ephedra	1	1	0.625
Fourwing Saltbush	6	6	3.75
Fringed Sage	19	19	11.875
Rubber Rabbitbrush	76	76	47.5
Yellow Rabbitbrush	1	1	0.625
Grand Total	**160**	160	100

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[illegible]	3	Rubber Rabbitbrush	102	
	4	Rubber Rabbitbrush	96	73
RA6-23	1	Rubber Rabbitbrush	143	
	2	Rubber Rabbitbrush	143	
	3	Rubber Rabbitbrush	64	
	4	Rubber Rabbitbrush	88	109.5
RA6-24	1	Broom Snakeweed	25	
	2	Rubber Rabbitbrush	128	
	3	Big Sagebrush	82	
	4	Rubber Rabbitbrush	107	85.5
RA6-25	1	Rubber Rabbitbrush	94	
	2	Rubber Rabbitbrush	61	
	3	Rubber Rabbitbrush	146	
	4	Rubber Rabbitbrush	135	109
RA6-26	1	Big Sagebrush	29	
	2	Big Sagebrush	161	
	3	Rubber Rabbitbrush	98	
	4	Big Sagebrush	208	124
RA6-27	1	Rubber Rabbitbrush	94	
	2	Rubber Rabbitbrush	125	
	3	Broom Snakeweed	129	
	4	Fringed Sage	161	127.25
RA6-28	1	Fourwing Saltbush	33	
	2	Big Sagebrush	155	
	3	Fourwing Saltbush	136	
	4	Fourwing Saltbush	52	94
RA6-29	1	Fringed Sage	183	
	2	Fourwing Saltbush	90	
	3	Broom Snakeweed	72	
	4	Rubber Rabbitbrush	101	111.5
RA6-30	1	Rubber Rabbitbrush	147	
	2	Broom Snakeweed	159	
	3	Rubber Rabbitbrush	109	
	4	Fringed Sage	338	188.25
RA6-31	1	Big Sagebrush	53	
	2	Big Sagebrush	228	
	3	Big Sagebrush	42	
	4	Big Sagebrush	122	111.25
RA6-32	1	Rubber Rabbitbrush	42	
	2	Broom Snakeweed	38	
	3	Broom Snakeweed	110	
	4	Rubber Rabbitbrush	76	66.5
RA6-33	1	Big Sagebrush	58	
	2	Big Sagebrush	146	
	3	Broom Snakeweed	150	
	4	Big Sagebrush	115	117.25
RA6-34	1	Rubber Rabbitbrush	134	
	2	Big Sagebrush	72	
	3	Rubber Rabbitbrush	126	
	4	Big Sagebrush	96	107
RA6-35	1	Broom Snakeweed	81	
	2	Rubber Rabbitbrush	109	
	3	Broom Snakeweed	18	
	4	Broom Snakeweed	194	100.5
RA6-36	1	Big Sagebrush	47	
	2	Big Sagebrush	56	
	3	Rubber Rabbitbrush	174	
	4	Big Sagebrush	246	130.75
RA6-37	1	Rubber Rabbitbrush	89	
	2	Rubber Rabbitbrush	144	
	3	Broom Snakeweed	167	
	4	Rubber Rabbitbrush	94	123.5
RA6-38	1	Rubber Rabbitbrush	78	
	2	Rubber Rabbitbrush	12	
	3	Rubber Rabbitbrush	37	
	4	Rubber Rabbitbrush	69	49
RA6-39	1	Rubber Rabbitbrush	33	
	2	Rubber Rabbitbrush	145	
	3	Broom Snakeweed	147	
	4	Big Sagebrush	191	129
RA6-40	1	Fringed Sage	124	
	2	Fringed Sage	59	
	3	Fringed Sage	83	
	4	Big Sagebrush	67	83.25

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc	ft	ft^2	Plants/Acre
RA7-1	1	Big Sagebrush	60		61.5	2.017717	4.07118	10699.6
	2	Big Sagebrush	43		99.5	3.264436	10.65654	4087.63
	3	Rubber Rabbitbrush	82		36.75	1.205709	1.453733	29964.23
	4	Fringed Sage	61	61.5	54.5	1.788058	3.197151	13624.63
RA7-2	1	Rubber Rabbitbrush	49		46.25	1.517389	2.302468	18918.83
	2	Rubber Rabbitbrush	149		57	1.870079	3.497195	12455.7
	3	Rubber Rabbitbrush	130		81.25	2.665683	7.105863	6130.149
	4	Big Sagebrush	70	99.5	38	1.246719	1.554309	28025.32
RA7-3	1	Big Sagebrush	34		72.75	2.386811	5.696867	7646.308
	2	Big Sagebrush	22		89	2.919948	8.526094	5109.022
	3	Big Sagebrush	24		82.5	2.706693	7.326187	5945.794
	4	Big Sagebrush	67	36.75	46	1.509186	2.277644	19125.03
RA7-4	1	Rubber Rabbitbrush	11		113	3.707349	13.74444	3169.282
	2	Rubber Rabbitbrush	118		88.5	2.903543	8.430564	5166.914
	3	Rubber Rabbitbrush	50		101	3.313648	10.98027	3967.117
	4	Rubber Rabbitbrush	39	54.5	89.5	2.936352	8.622162	5052.097
RA7-5	1	Rubber Rabbitbrush	42		92.75	3.042979	9.259722	4704.245
	2	Fringed Sage	29		55.5	1.820866	3.315554	13138.08
	3	Rubber Rabbitbrush	30		40.25	1.320538	1.743821	24979.63
	4	Rubber Rabbitbrush	84	46.25	46.5	1.525591	2.327427	18715.95
RA7-6	1	Big Sagebrush	44		102.25	3.354659	11.25374	3870.714
	2	Rubber Rabbitbrush	36		128.25	4.207677	17.70455	2460.385
	3	Fringed Sage	50		60.25	1.976706	3.907367	11148.17
	4	Big Sagebrush	98	57	71.25	2.337599	5.464367	7971.646
RA7-7	1	Rubber Rabbitbrush	39		65.75	2.157152	4.653306	9361.086
	2	Broom Snakeweed	59		145	4.757218	22.63112	1924.783
	3	Big Sagebrush	97		59.5	1.9521	3.810694	11430.99
	4	Big Sagebrush	130	81.25	85	2.788714	7.776926	5601.185
RA7-8	1	Rubber Rabbitbrush	19		58.75	1.927494	3.715231	11724.71
	2	Rubber Rabbitbrush	5		60.25	1.976706	3.907367	11148.17
	3	Rubber Rabbitbrush	14		118	3.871391	14.98767	2906.389
	4	Rubber Rabbitbrush	114	38	31	1.01706	1.034412	42110.89
RA7-9	1	Rubber Rabbitbrush	28		107.5	3.526903	12.43904	3501.877
	2	Rubber Rabbitbrush	56		57	1.870079	3.497195	12455.7
	3	Rubber Rabbitbrush	81		51.75	1.697835	2.882643	15111.13
	4	Rubber Rabbitbrush	126	72.75	54.75	1.79626	3.22655	13500.49
RA7-10	1	Rubber Rabbitbrush	74		104.5	3.428478	11.75446	3705.827
	2	Rubber Rabbitbrush	44		38.25	1.254921	1.574827	27660.17
	3	Big Sagebrush	101		53	1.738845	3.023583	14406.75
	4	Rubber Rabbitbrush	137	89	130	4.265092	18.19101	2394.589
RA7-11	1	Rubber Rabbitbrush	78		105.5	3.461286	11.9805	3635.908
	2	Rubber Rabbitbrush	122		59	1.935696	3.746917	11625.56
	3	Rubber Rabbitbrush	71		64.25	2.10794	4.44341	9803.282
	4	Rubber Rabbitbrush	59	82.5	48	1.574803	2.480005	17564.48
RA7-12	1	Rubber Rabbitbrush	13		80	2.624672	6.888903	6323.213
	2	Rubber Rabbitbrush	38					
	3	Rubber Rabbitbrush	35		Average	2.428368	6.734777	6467.92
	4	Rubber Rabbitbrush	98	46	StDev	0.925659	5.094684	8550.088
RA7-13	1	Rubber Rabbitbrush	63					
	2	Rubber Rabbitbrush	125		Plants/Acre	6467.92		
	3	Big Sagebrush	135					
	4	Rubber Rabbitbrush	129	113				
RA7-14	1	Rubber Rabbitbrush	76					
	2	Rubber Rabbitbrush	58					
	3	Rubber Rabbitbrush	164					
	4	Rubber Rabbitbrush	56	88.5				
RA7-15	1	Rubber Rabbitbrush	42					
	2	Rubber Rabbitbrush	187					
	3	Big Sagebrush	91					
	4	Rubber Rabbitbrush	84	101				
RA7-16	1	Rubber Rabbitbrush	69					
	2	Rubber Rabbitbrush	61					
	3	Rubber Rabbitbrush	102					
	4	Rubber Rabbitbrush	126	89.5				
RA7-17	1	Big Sagebrush	84					
	2	Rubber Rabbitbrush	56					
	3	Big Sagebrush	105					
	4	Rubber Rabbitbrush	126	92.75				
RA7-18	1	Big Sagebrush	12					
	2	Rubber Rabbitbrush	88					
	3	Big Sagebrush	38					
	4	Big Sagebrush	84	55.5				
RA7-19	1	Rubber Rabbitbrush	37					
	2	Rubber Rabbitbrush	59					
	3	Rubber Rabbitbrush	30					
	4	Rubber Rabbitbrush	35	40.25				
RA7-20	1	Rubber Rabbitbrush	4					
	2	Rubber Rabbitbrush	28					
	3	Rubber Rabbitbrush	75					
	4	Fringed Sage	79	46.5				
RA7-21	1	Rubber Rabbitbrush	144					
	2	Rubber Rabbitbrush	103					
	3	Rubber Rabbitbrush	65					
	4	Rubber Rabbitbrush	97	102.25				
RA7-22	1	Rubber Rabbitbrush	29					
	2	Rubber Rabbitbrush	121					

Row Labels	Count of Species	Count	Percent
Big Sagebrush	38	38	21.11111
Broom Snakeweed	1	1	0.555556
Fringed Sage	13	13	7.222222
Mountain Mahogany	1	1	0.555556
Rubber Rabbitbrush	127	127	70.55556
Grand Total	**180**	180	100

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	3	Rubber Rabbitbrush	226	
	4	Rubber Rabbitbrush	137	128.25
RA7-23	1	Rubber Rabbitbrush	11	
	2	Rubber Rabbitbrush	31	
	3	Rubber Rabbitbrush	114	
	4	Rubber Rabbitbrush	85	60.25
RA7-24	1	Big Sagebrush	69	
	2	Rubber Rabbitbrush	54	
	3	Fringed Sage	84	
	4	Rubber Rabbitbrush	78	71.25
RA7-25	1	Rubber Rabbitbrush	33	
	2	Rubber Rabbitbrush	32	
	3	Rubber Rabbitbrush	89	
	4	Rubber Rabbitbrush	109	65.75
RA7-26	1	Rubber Rabbitbrush	118	
	2	Mountain Mahogany	27	
	3	Rubber Rabbitbrush	307	
	4	Rubber Rabbitbrush	128	145
RA7-27	1	Rubber Rabbitbrush	38	
	2	Rubber Rabbitbrush	76	
	3	Rubber Rabbitbrush	49	
	4	Big Sagebrush	75	59.5
RA7-28	1	Rubber Rabbitbrush	60	
	2	Rubber Rabbitbrush	84	
	3	Rubber Rabbitbrush	72	
	4	Rubber Rabbitbrush	124	85
RA7-29	1	Fringed Sage	60	
	2	Fringed Sage	37	
	3	Big Sagebrush	43	
	4	Big Sagebrush	95	58.75
RA7-30	1	Rubber Rabbitbrush	16	
	2	Rubber Rabbitbrush	23	
	3	Rubber Rabbitbrush	96	
	4	Rubber Rabbitbrush	106	60.25
RA7-31	1	Rubber Rabbitbrush	111	
	2	Rubber Rabbitbrush	68	
	3	Rubber Rabbitbrush	176	
	4	Rubber Rabbitbrush	117	118
RA7-32	1	Rubber Rabbitbrush	20	
	2	Rubber Rabbitbrush	29	
	3	Rubber Rabbitbrush	28	
	4	Rubber Rabbitbrush	47	31
RA7-33	1	Rubber Rabbitbrush	41	
	2	Rubber Rabbitbrush	86	
	3	Rubber Rabbitbrush	208	
	4	Rubber Rabbitbrush	95	107.5
RA7-34	1	Rubber Rabbitbrush	21	
	2	Rubber Rabbitbrush	42	
	3	Rubber Rabbitbrush	89	
	4	Rubber Rabbitbrush	76	57
RA7-35	1	Rubber Rabbitbrush	52	
	2	Rubber Rabbitbrush	50	
	3	Rubber Rabbitbrush	61	
	4	Rubber Rabbitbrush	44	51.75
RA7-36	1	Rubber Rabbitbrush	13	
	2	Rubber Rabbitbrush	26	
	3	Rubber Rabbitbrush	136	
	4	Rubber Rabbitbrush	44	54.75
RA7-37	1	Fringed Sage	104	
	2	Rubber Rabbitbrush	155	
	3	Rubber Rabbitbrush	52	
	4	Rubber Rabbitbrush	107	104.5
RA7-38	1	Big Sagebrush	55	
	2	Big Sagebrush	5	
	3	Rubber Rabbitbrush	69	
	4	Rubber Rabbitbrush	24	38.25
RA7-39	1	Rubber Rabbitbrush	6	
	2	Rubber Rabbitbrush	53	
	3	Big Sagebrush	89	
	4	Big Sagebrush	64	53
RA7-40	1	Rubber Rabbitbrush	61	
	2	Rubber Rabbitbrush	94	
	3	Rubber Rabbitbrush	165	
	4	Rubber Rabbitbrush	200	130
RA7-41	1	Fringed Sage	17	
	2	Fringed Sage	93	
	3	Big Sagebrush	160	
	4	Big Sagebrush	152	105.5
RA7-42	1	Fringed Sage	11	
	2	Fringed Sage	44	
	3	Fringed Sage	57	
	4	Big Sagebrush	124	59
RA7-43	1	Big Sagebrush	48	
	2	Big Sagebrush	63	
	3	Big Sagebrush	65	
	4	Big Sagebrush	81	64.25
	1	Big Sagebrush	4	

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RA7-44	2	Big Sagebrush	59	
	3	Big Sagebrush	53	
	4	Big Sagebrush	76	48
RA7-45	1	Rubber Rabbitbrush	21	
	2	Rubber Rabbitbrush	79	
	3	Rubber Rabbitbrush	66	
	4	Rubber Rabbitbrush	154	80

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc ft		ft^2	Plants/Acre
REF2-1	1	Serviceberry	79		71	2.329396	5.426088	8027.884
	2	Serviceberry	103		59.25	1.943898	3.778738	11527.66
	3	Quaking Aspen	77		100.75	3.305446	10.92598	3986.829
	4	Quaking Aspen	25	71	101	3.313648	10.98027	3967.117
REF2-2	1	Mountain Snowberr	25		134	4.396326	19.32768	2253.763
	2	Mountain Snowberr	70		93.75	3.075788	9.460469	4604.423
	3	Mountain Snowberr	90		91	2.985564	8.913595	4886.917
	4	Mountain Snowberr	52	59.25	118	3.871391	14.98767	2906.389
REF2-3	1	Douglas Fir	147		88.25	2.895341	8.383001	5196.23
	2	Serviceberry	54		108.25	3.551509	12.61322	3453.52
	3	Quaking Aspen	55		109	3.576116	12.7886	3406.158
	4	Mountain Snowberr	147	100.75	100	3.28084	10.76391	4046.856
REF2-4	1	Serviceberry	147		57.25	1.878281	3.527939	12347.15
	2	Quaking Aspen	48		219.5	7.201444	51.86079	839.9409
	3	Mountain Snowberr	67		140.75	4.617782	21.32391	2042.777
	4	Quaking Aspen	142	101	153.75	5.044292	25.44488	1711.936
REF2-5	1	Engelmann Spruce	155		85.5	2.805118	7.868688	5535.866
	2	Quaking Aspen	102		144.25	4.732612	22.39761	1944.85
	3	Engelmann Spruce	111		185.75	6.09416	37.13879	1172.898
	4	Quaking Aspen	168	134	57	1.870079	3.497195	12455.7
REF2-6	1	Woods' Rose	30					
	2	Woods' Rose	145		Average	3.638452	15.07045	2890.424
	3	Engelmann Spruce	110		StDev	1.388722	12.08837	3603.465
	4	Juniper sp.	90	93.75				
REF2-7	1	Douglas Fir	56		Plants/Acre	2890.424		
	2	Douglas Fir	45					
	3	Serviceberry	93					
	4	Quaking Aspen	170	91				
REF2-8	1	Quaking Aspen	153					
	2	Quaking Aspen	129					
	3	Douglas Fir	141					
	4	Quaking Aspen	49	118				
REF2-9	1	Quaking Aspen	38					
	2	Quaking Aspen	71					
	3	Quaking Aspen	107					
	4	Quaking Aspen	137	88.25				
REF2-10	1	Quaking Aspen	72					
	2	Quaking Aspen	130					
	3	Quaking Aspen	159					
	4	Quaking Aspen	72	108.25				
REF2-11	1	Quaking Aspen	96					
	2	Quaking Aspen	118					
	3	Quaking Aspen	131					
	4	Quaking Aspen	91	109				
REF2-12	1	Serviceberry	96					
	2	Quaking Aspen	121					
	3	Quaking Aspen	80					
	4	Quaking Aspen	103	100				
REF2-13	1	Quaking Aspen	16					
	2	Quaking Aspen	50					
	3	Quaking Aspen	42					
	4	Woods' Rose	121	57.25				
REF2-14	1	Engelmann Spruce	166					
	2	Engelmann Spruce	258					
	3	Engelmann Spruce	267					
	4	Quaking Aspen	187	219.5				
REF2-15	1	Douglas Fir	73					
	2	Douglas Fir	26					
	3	Douglas Fir	180					
	4	Juniper sp.	284	140.75				
REF2-16	1	Douglas Fir	146					
	2	Douglas Fir	165					
	3	Douglas Fir	186					
	4	Juniper sp.	118	153.75				
REF2-17	1	Douglas Fir	45					
	2	Quaking Aspen	119					
	3	Mountain Snowberr	40					
	4	Mountain Snowberr	138	85.5				
REF2-18	1	Mountain Snowberr	156					
	2	Woods' Rose	269					
	3	Quaking Aspen	34					
	4	Quaking Aspen	118	144.25				
REF2-19	1	Quaking Aspen	108					
	2	Quaking Aspen	133					
	3	Woods' Rose	233					
	4	Quaking Aspen	269	185.75				
REF2-20	1	Quaking Aspen	97					
	2	Quaking Aspen	11					
	3	Quaking Aspen	91					
	4	Quaking Aspen	29	57				

Row Labels	Count of Species	Count	Percent
Douglas Fir	11	11	13.75
Engelmann Spruce	6	6	7.5
Juniper sp.	3	3	3.75
Mountain Snowberry	9	9	11.25
Quaking Aspen	40	40	50
Serviceberry	6	6	7.5
Woods' Rose	5	5	6.25
Grand Total	**80**	80	100

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	Quad No.	Species	Point to Plant (cm)	Average Pc	Average Pc	ft	ft^2	Plants/Acre
RA27-1	1	Big Sagebrush	58		153	5.019685	25.19724	1728.761
	2	Rubber Rabbitbrush	200		127	4.166667	17.36111	2509.056
	3	Rubber Rabbitbrush	215		150.25	4.929462	24.2996	1792.622
	4	Rubber Rabbitbrush	139	153	226.75	7.439305	55.34325	787.0878
RA27-2	1	Big Sagebrush	99		171.75	5.634843	31.75145	1371.906
	2	Douglas Fir	111		81	2.65748	7.062202	6168.048
	3	Rubber Rabbitbrush	172		229.25	7.521326	56.57034	770.0148
	4	Big Sagebrush	126	127	103.25	3.387467	11.47493	3796.1
RA27-3	1	Rubber Rabbitbrush	90		100.5	3.297244	10.87182	4006.689
	2	Rubber Rabbitbrush	101		191.5	6.282809	39.47368	1103.52
	3	Douglas Fir	236		152	4.986877	24.86894	1751.582
	4	Juniper sp.	174	150.25	108	3.543307	12.55503	3469.527
RA27-4	1	Rubber Rabbitbrush	100		191.75	6.291011	39.57682	1100.644
	2	Big Sagebrush	105		275.75	9.046916	81.84669	532.2145
	3	Rubber Rabbitbrush	377		250	8.2021	67.27444	647.497
	4	Quaking Aspen	325	226.75	257	8.431759	71.09456	612.7051
RA27-5	1	Mountain Snowberr	48		172.5	5.659449	32.02936	1360.002
	2	Quaking Aspen	129		79.25	2.600066	6.760342	6443.461
	3	Mountain Snowberr	97		443	14.53412	211.2407	206.2103
	4	Mountain Snowberr	413	171.75	184	6.036746	36.4423	1195.314
RA27-6	1	Big Sagebrush	83					
	2	Mountain Snowberr	79		Average	5.983432	43.15474	1009.391
	3	Mountain Snowberr	67		StDev	2.782139	45.33683	960.8083
	4	Mountain Snowberr	95	81				
RA27-7	1	Mountain Snowberr	108		Plants/Acre	1009.391		
	2	Mountain Snowberr	231					
	3	Douglas Fir	373					
	4	Mountain Snowberr	205	229.25				
RA27-8	1	Big Sagebrush	120					
	2	Mountain Snowberr	23					
	3	Douglas Fir	122					
	4	Rubber Rabbitbrush	148	103.25				
RA27-9	1	Rubber Rabbitbrush	17					
	2	Rubber Rabbitbrush	86					
	3	Rubber Rabbitbrush	144					
	4	Rubber Rabbitbrush	155	100.5				
RA27-10	1	Rubber Rabbitbrush	54					
	2	Mountain Snowberr	151					
	3	Rubber Rabbitbrush	208					
	4	Rubber Rabbitbrush	353	191.5				
RA27-11	1	Rubber Rabbitbrush	155					
	2	Rubber Rabbitbrush	67					
	3	Quaking Aspen	141					
	4	Rubber Rabbitbrush	245	152				
RA27-12	1	Chokecherry	57					
	2	Rubber Rabbitbrush	112					
	3	Rubber Rabbitbrush	115					
	4	Serviceberry	148	108				
RA27-13	1	Rubber Rabbitbrush	117					
	2	Rubber Rabbitbrush	165					
	3	Rubber Rabbitbrush	336					
	4	Rubber Rabbitbrush	149	191.75				
RA27-14	1	Big Sagebrush	475					
	2	Ponderosa Pine	345					
	3	Quaking Aspen	162					
	4	Douglas Fir	121	275.75				
RA27-15	1	Rubber Rabbitbrush	102					
	2	Big Sagebrush	256					
	3	Rubber Rabbitbrush	212					
	4	Rubber Rabbitbrush	430	250				
RA27-16	1	Rubber Rabbitbrush	96					
	2	Rubber Rabbitbrush	141					
	3	Rubber Rabbitbrush	398					
	4	Mountain Snowberr	393	257				
RA27-17	1	Rubber Rabbitbrush	151					
	2	Rubber Rabbitbrush	112					
	3	Rubber Rabbitbrush	121					
	4	Rubber Rabbitbrush	306	172.5				
RA27-18	1	Rubber Rabbitbrush	57					
	2	Rubber Rabbitbrush	76					
	3	Rubber Rabbitbrush	97					
	4	Rubber Rabbitbrush	87	79.25				
RA27-19	1	Big Sagebrush	348					
	2	Big Sagebrush	569					
	3	Mountain Snowberr	483					
	4	Rubber Rabbitbrush	372	443				
RA27-20	1	Woods' Rose	164					
	2	Woods' Rose	181					
	3	Chokecherry	284					
	4	Chokecherry	107	184				

Row Labels	Count of Species	Count	Percent
Big Sagebrush	10	10	12.5
Chokecherry	3	3	3.75
Douglas Fir	5	5	6.25
Juniper sp.	1	1	1.25
Mountain Snowberry	13	13	16.25
Ponderosa Pine	1	1	1.25
Quaking Aspen	4	4	5
Rubber Rabbitbrush	40	40	50
Serviceberry	1	1	1.25
Woods' Rose	2	2	2.5
Grand Total	**80**	80	100

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APPENDIX 3
DOGM INSPECTION REPORT

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Div. of Oil, Gas & Mining

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

Inspection Report

Permit Number:	C0070011
Inspection Type:	PARTIAL
Inspection Date:	Tuesday, November 19, 2013
Start Date/Time:	11/19/2013 9:45:00 AM
End Date/Time:	11/19/2013 1:00:00 PM
Last Inspection:	

Inspector: Joe Helfrich,

Weather: sunny 55

InspectionID Report Number: 3687

Accepted by: jhelfric
12/3/2013

Representatives Present During the Inspection:	
Landowner	Charles Reynolds
Landowner	Mel Coonrod
DWR	Nicole Nielson

Permitee: **HIAWATHA COAL CO INC**
Operator: **HIAWATHA COAL CO INC**
Site: **HIAWATHA MINE**
Address: **PO BOX 1240, HUNTINGTON UT 84528**
County: **CARBON**
Permit Type: **PERMANENT COAL PROGRAM**
Permit Status: **ACTIVE**

Current Acreages

12,177.00	Total Permitted
290.00	Total Disturbed
95.90	Phase I
	Phase II
	Phase III

Mineral Ownership

- [x] Federal
- [x] State
- [ ] County
- [x] Fee
- [ ] Other

Types of Operations

- [x] Underground
- [ ] Surface
- [ ] Loadout
- [ ] Processing
- [ ] Reprocessing

Report summary and status for pending enforcement actions, permit conditions, Division Orders, and amendments:

The purpose of this site visit was to provide those in attendance an opportunity to visit the vegetative communities in the areas that will be eligible for final bond release in 2014. Other attendees not included in the representatives section of this report were Matt Serfustini, Mindi Lundberg and Michael Coonrod. The group met at Environmental Industrial Services, (EIS's), office in Helper to discus the draft data generated by the recent vegetation survey.

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Inspector's Signature Joe Helfrich,
Inspector ID Number: 1

Date Tuesday, November 19, 2013

Note: This inspection report does not constitute an official notice of compliance with the regulatory program of the Division of Oil, Gas and Mining.

1594 West North Temple, Suite 210, PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7458 • www.ogm.utah.gov

UTAH DNR OIL, GAS & MINING

Permit Number: C0070011
Inspection Type: PARTIAL
Inspection Date: Tuesday, November 19, 2013

Inspection Continuation Sheet

REVIEW OF PERMIT, PERFORMANCE STANDARDS PERMIT CONDITION REQUIREMENTS

1. *Substantiate the elements on this inspection by checking the appropriate performance standard.*
   a. *For COMPLETE inspections provide narrative justification for any elements not fully inspected unless element is not appropriate to the site, in which case check Not Applicable.*
   b. *For PARTIAL inspections check only the elements evaluated.*
2. *Document any noncompliance situation by reference the NOV issued at the appropriate performance standard listed below.*
3. *Reference any narratives written in conjunction with this inspection at the appropriate performace standard listed below.*
4. *Provide a brief status report for all pending enforcement actions, permit conditions, Divison Orders, and amendments.*

	Evaluated	Not Applicable	Comment	Enforcement
1. Permits, Change, Transfer, Renewal, Sale	☐	☐	☐	☐
2. Signs and Markers	☑	☐	☐	☐
3. Topsoil	☐	☐	☐	☐
4.a Hydrologic Balance: Diversions	☐	☐	☐	☐
4.b Hydrologic Balance: Sediment Ponds and Impoundments	☐	☐	☐	☐
4.c Hydrologic Balance: Other Sediment Control Measures	☑	☐	☐	☐
4.d Hydrologic Balance: Water Monitoring	☐	☐	☐	☐
4.e Hydrologic Balance: Effluent Limitations	☐	☐	☐	☐
5. Explosives	☐	☐	☐	☐
6. Disposal of Excess Spoil, Fills, Benches	☐	☐	☐	☐
7. Coal Mine Waste, Refuse Piles, Impoundments	☐	☐	☐	☐
8. Noncoal Waste	☐	☐	☐	☐
9. Protection of Fish, Wildlife and Related Environmental Issues	☐	☐	☐	☐
10. Slides and Other Damage	☐	☐	☐	☐
11. Contemporaneous Reclamation	☐	☐	☐	☐
12. Backfilling And Grading	☐	☐	☐	☐
13. Revegetation	☑	☐	☑	☐
14. Subsidence Control	☐	☐	☐	☐
15. Cessation of Operations	☐	☐	☐	☐
16.a Roads: Construction, Maintenance, Surfacing	☐	☐	☐	☐
16.b Roads: Drainage Controls	☐	☐	☐	☐
17. Other Transportation Facilities	☐	☐	☐	☐
18. Support Facilities, Utility Installations	☐	☐	☐	☐
19. AVS Check	☐	☐	☐	☐
20. Air Quality Permit	☐	☐	☐	☐
21. Bonding and Insurance	☐	☐	☐	☐
22. Other	☐	☐	☐	☐

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13. Revegetation

Representatives from Environmental Industrial services (EIS) had collected vegetative data for year 9 of the liability period in August of 2013. The post mining landuse for the reclaimed areas is for grazing and wildlife. Sections R645-301-356.201 and .230 of the coal regulations require consultation with agencies responsible for the administration of forestry and wildlife programs in determining an appropriate success standard in accordance with the Vegetation Information Guidelines. Nicole Nielson, (Wildlife Habitat Restoration Bio;ogist for DWR), is currently consulting with the Division staff In order to meet that obligation. The draft summary data for woody species density for the reclaimed areas averaged 2891 stems per acre compared to 5044 for the reference areas. Typically a woody species density of 1500-2000 stems per acre is deemed adequate to support mule deer on their winter range. The percent cover for the reclaimed areas averaged 152.3% of the % cover noted in the reference areas, (7.84). Production on the reclaimed areas averaged 1057 pounds per acre compared to 587 pounds per acre for the reference areas or 153 %. If the data from the final year of vegetative surveying is approximately the same as the 2013 data the permittee should be able to meet an average standard of 1500-2000 stems per acre for woody species density for the wildlife component of the postmining landuse. The grazing component should also be factored in in determining an appropriate standard of success. Effective management of grazing can compliment the wildlife if done appropriately. The number of AUM's, cattle and estimated time of grazing on a per annum basis would be helpful information to the Division and DWR in determining an appropriate success standard for the reclaimed areas.

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APPENDIX 4
DWR APPROVAL LETTER

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GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Division of Wildlife Resources
GREGORY J. SHEEHAN
Division Director

September 17, 2014

Mr. Joe Helfrich
Reclamation Specialist III
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114

Subject: Hiawatha Mine Phase III Bond Release – C/007/0011 Hiawatha Coal Company

Dear Mr. Helfrich:

Concerning the above referenced reclamation project at Hiawatha, Utah, it is the opinion of the Utah Division of Wildlife Resources that the existing 1,100 to 6,500 woody plant stems per acre is adequate density to meet reclamation and wildlife needs. The numbers for woody density, vegetation cover, and diversity appear to be representative of similar vegetation stands nearby.

Thank you for consulting us concerning this matter, and for your efforts to improve wildlife habitat as old mining sites are reclaimed. If you have any questions, please call Makeda Hanson, at our Price office (435-630-0805).

Sincerely,

Christopher Wood
Regional Supervisor

CW/mjh

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Div. of Oil, Gas & Mining

319 North Carbonville Road, Suite A, Price, UT 84501
telephone (435) 613-3700 • facsimile (435) 613-3704 • *www.wildlife.utah.gov*

MAPS

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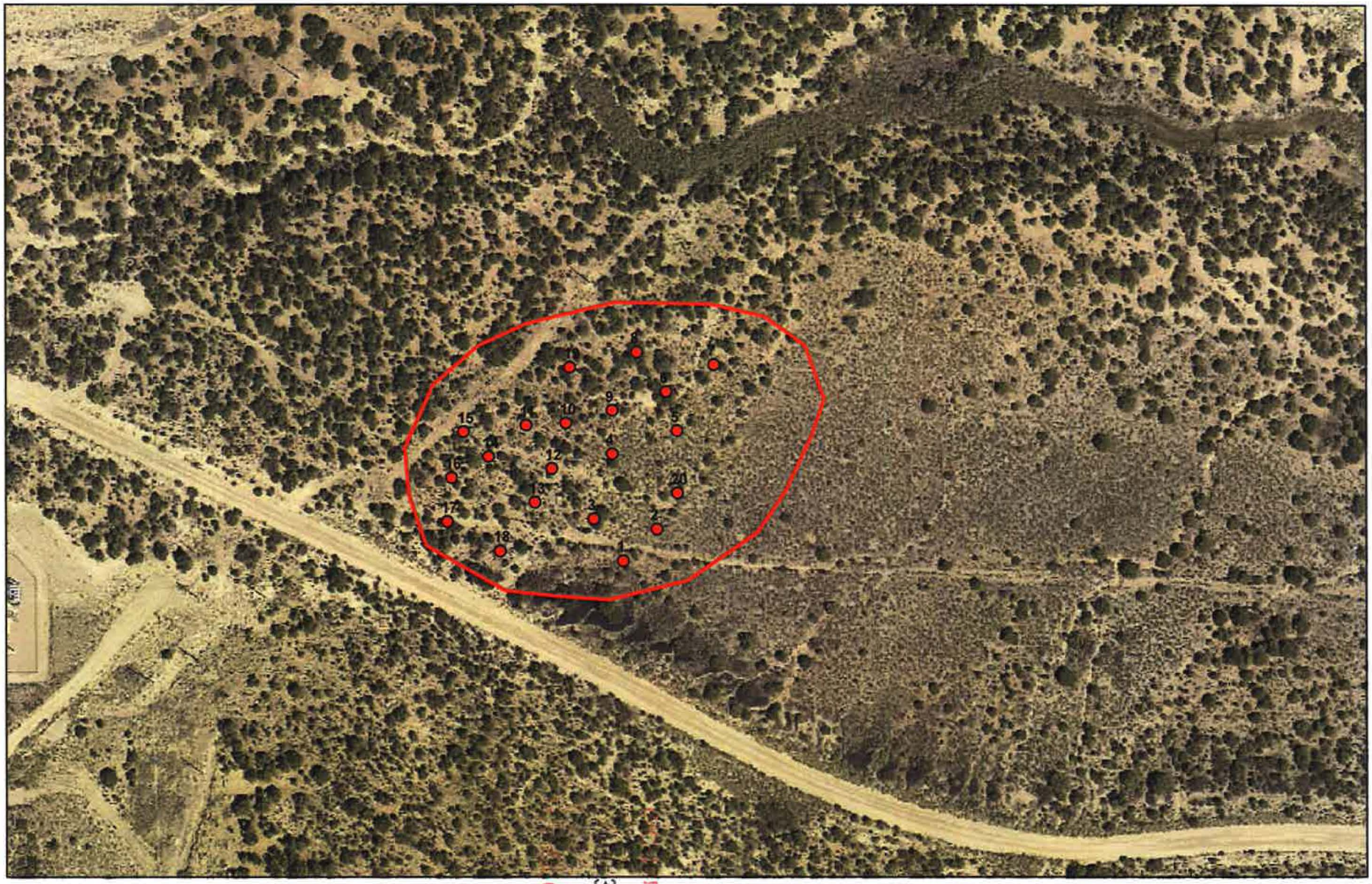
Div. of Oil, Gas & Mining



Reference Area 1

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3814
fax (435) 472-8780
eisec@preciscom.net

Legend

- Survey points
- Area Boundary

Feet
0 140 280

N

Hiawatha Mine
Phase III Bond Release
Reclamation Vegetation Study
Sec. 35
T15S R8E
Carbon County,UT

Gas & Mining
31 2011
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Hiawatha Mine Phase III Bond Release Reclamation Vegetation Study
Sec. 26, 34 & 35, T15S R8E, Carbon County,UT

AUG 3 1 20

RA1

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3814
fax (435) 472-8780
eisec@preciscom.net

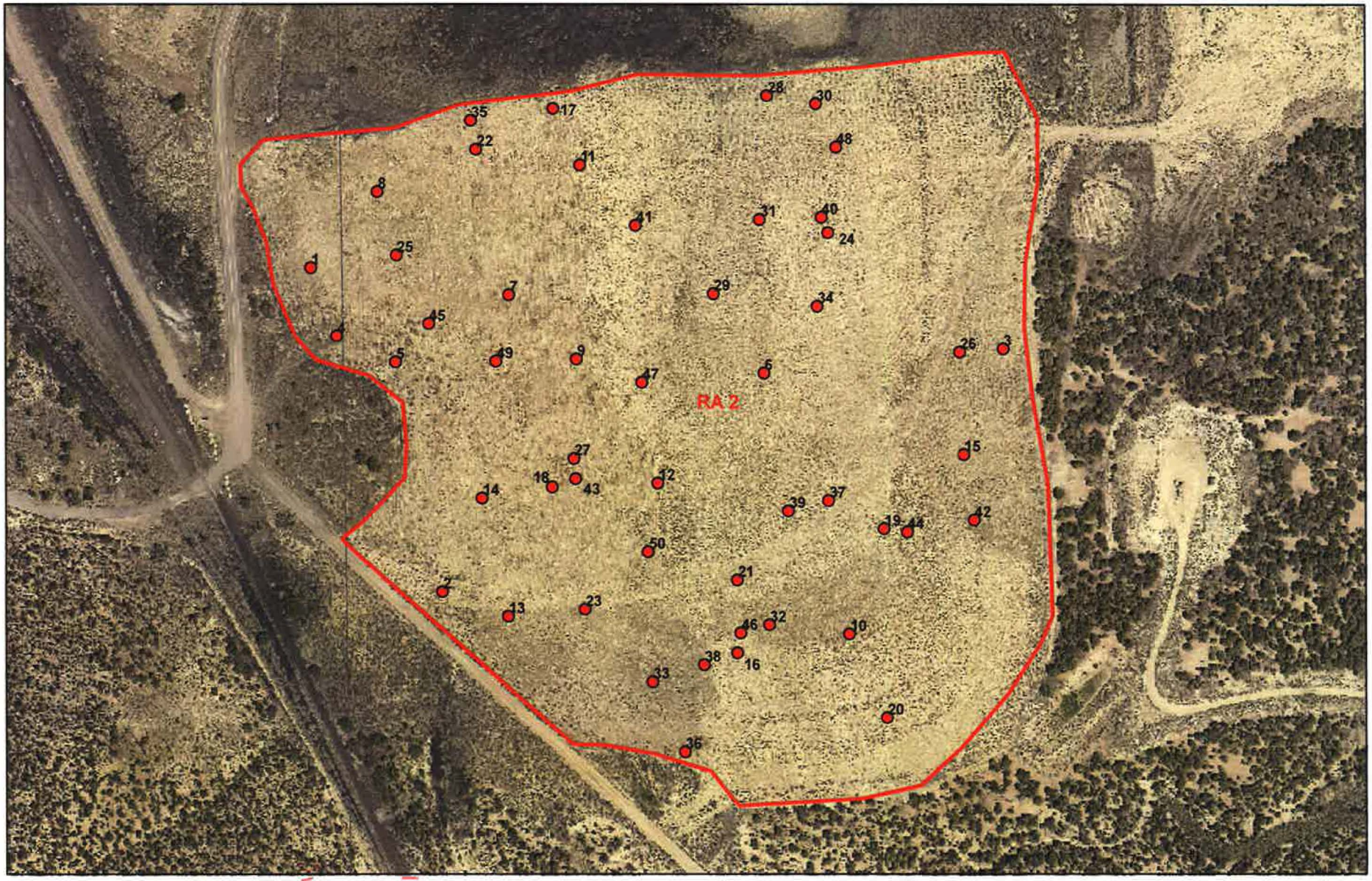
Legend

- Survey points
- Area Boundary

Feet
0 300 600

N

Div. of Oil, Gas & Mining



RA2

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3814
fax (435) 472-8786
eisec@precisicom.net

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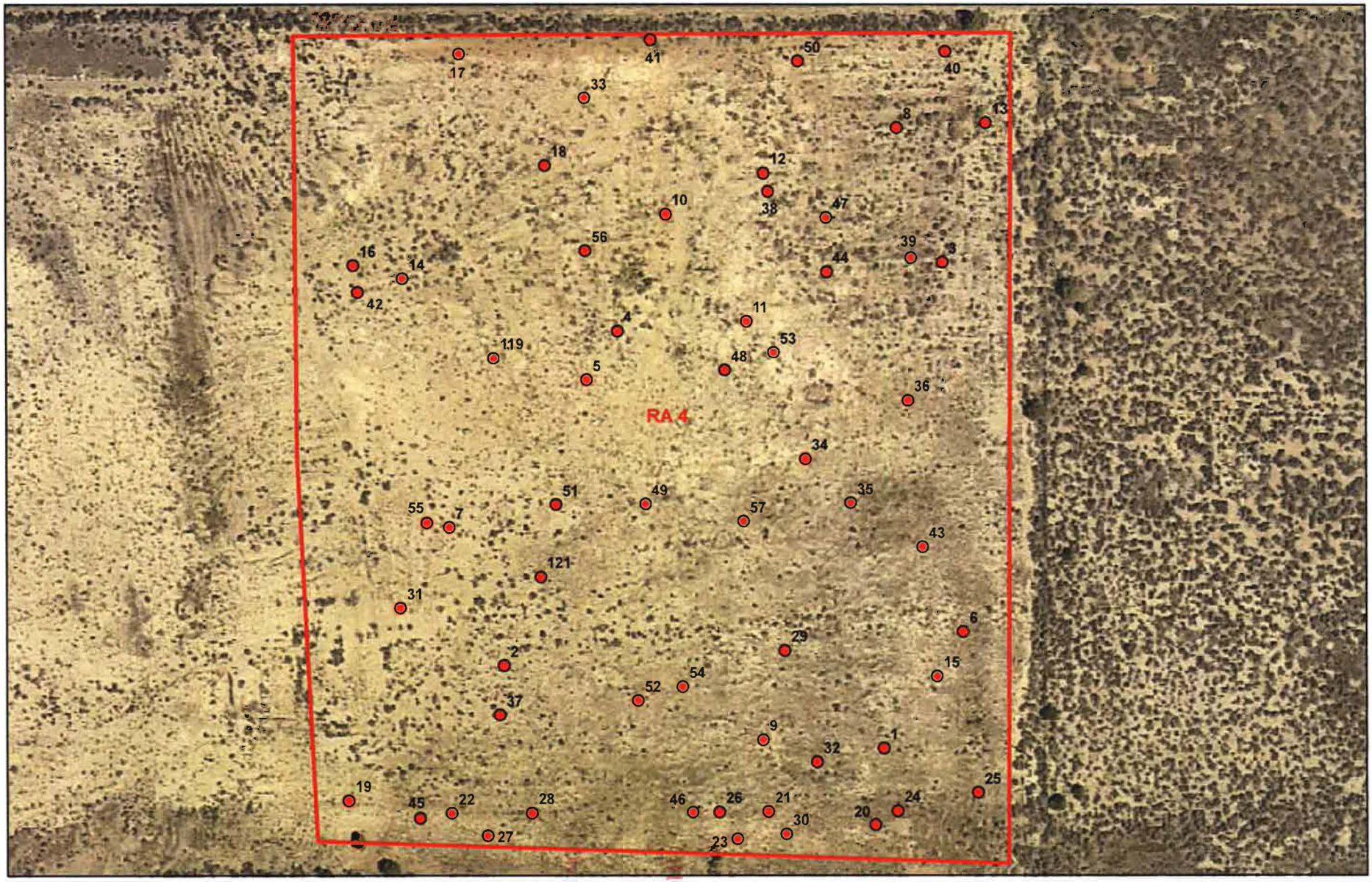
Legend

- Survey points
- Area Boundary

Feet
0 250 500

N

Hiawatha Mine
Phase III Bond Release
Reclamation Vegetation Study
Sec. 34 & 35
T15S R8E
Carbon County,UT



RA4

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3814
fax (435) 472-8780
eisec@precisecom.net

Legend

- Survey points
- Area Boundary

Feet: 0, 100, 200

N

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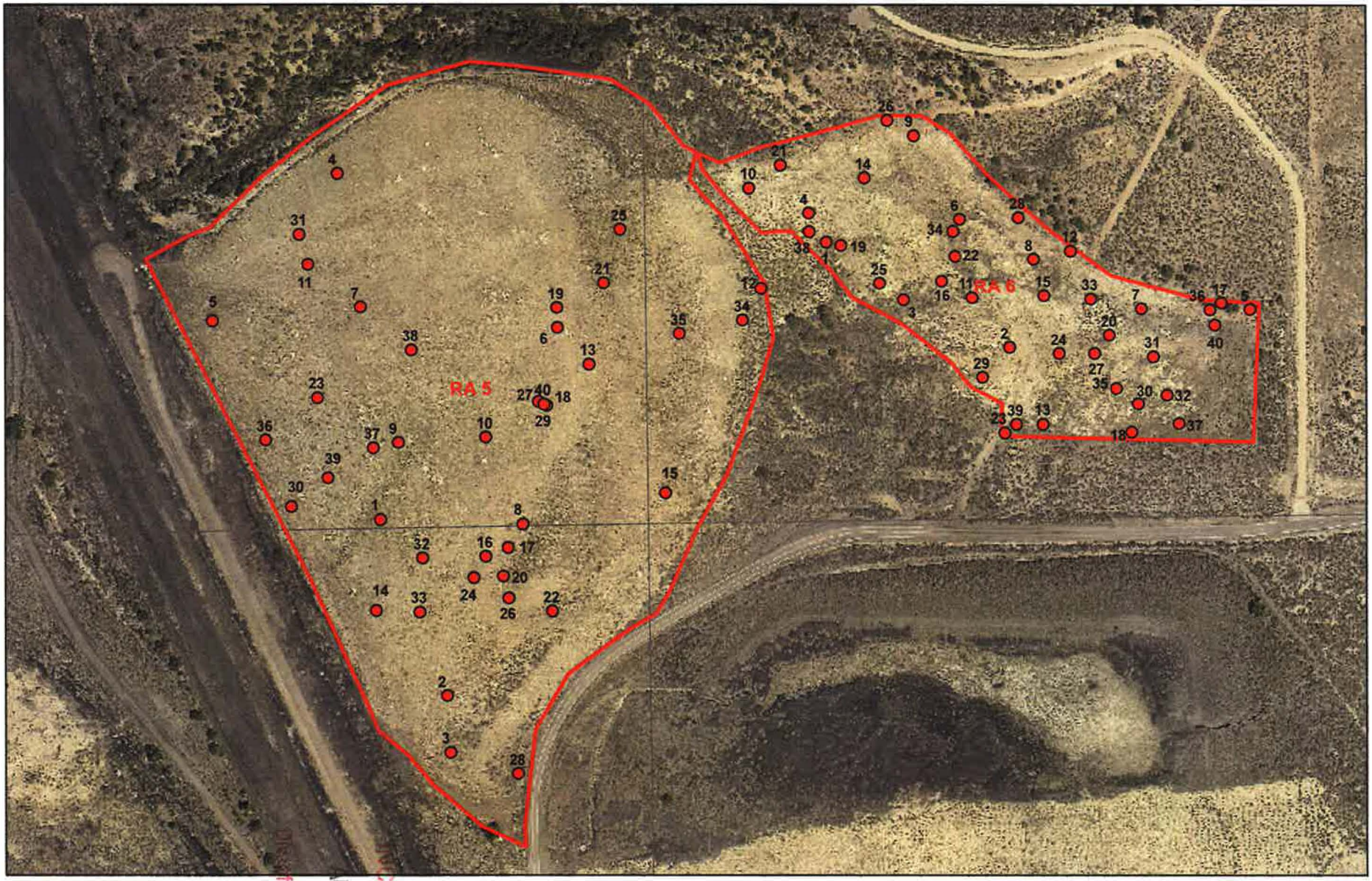
Hiawatha Mine
Phase III Bond Release
Reclamation Vegetation Study
Sec. 35
T15S R8E
Carbon County,UT



RA5&6

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3514
Fax (435) 472-8780
eisec@preciscom.net

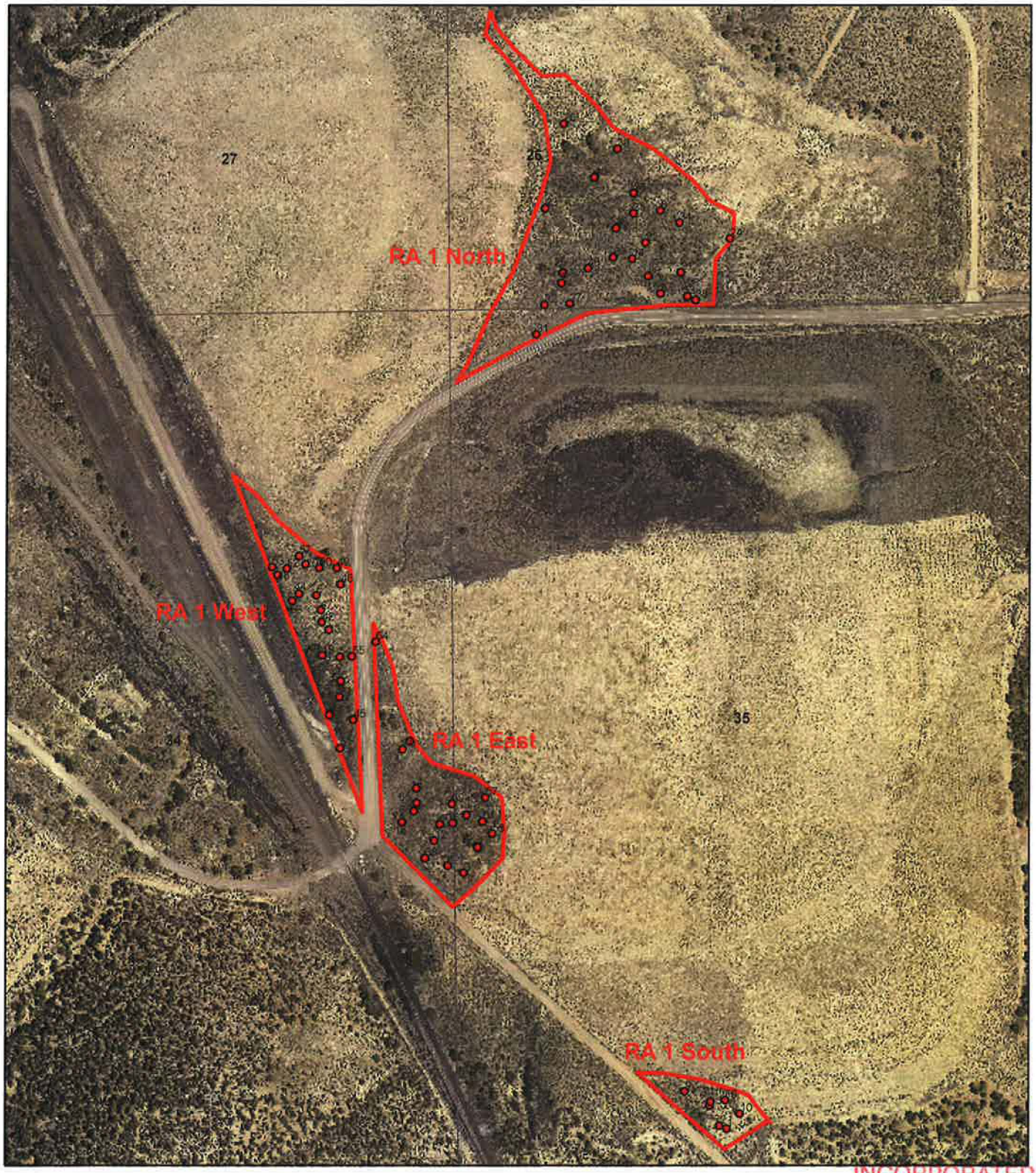
Legend

- Survey points
- Area Boundary

Feet
0 250 500

N

Hiawatha Mine
Phase III Bond Release
Reclamation Vegetation Study
Sec. 26, 27, 34 & 35
T15S R8E
Carbon County,UT



Hiawatha Mine Phase III Bond Release Reclamation Vegetation Study
Sec. 26, 34 & 35, T15S R8E, Carbon County,UT

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Div. of Oil, Gas & Mining

RA1

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3814
fax (435) 472-8780
eisec@preciscom.net

Legend

- Survey points
- Area Boundary

Feet
0 330 660

N

RA7

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3814
fax (435) 472-8760
elsec@preciscom.net

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Legend

- Survey points
- Area Boundary

Feet
0 150 300

N

Hiawatha Mine
Phase III Bond Release
Reclamation Vegetation Study
Sec. 27 & 34
T15S R8E
Carbon County,UT

RA 27 & Reference 2

Environmental Industrial Services
Environmental Engineering & Consulting
31 North Main Street
Helper, Utah 84526
(435) 472-3814
fax (435) 472-8760
eisec@preciscom.net

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AUG 1 2
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Legend

- Survey points
- Area Boundary

Feet
0 60 120

N

Hiawatha Mine
Phase III Bond Release
Reclamation Vegetation Study
Sec. 19
T15S R8E
Carbon County,UT

PHOTOGRAPHS

INCORPORATED
AUG 3 1 20
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REF 1 Photographs

INCORPORATED

AUG 3 1 20

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RA1 North Photographs

INCORPORATED

AUG 3 1 20

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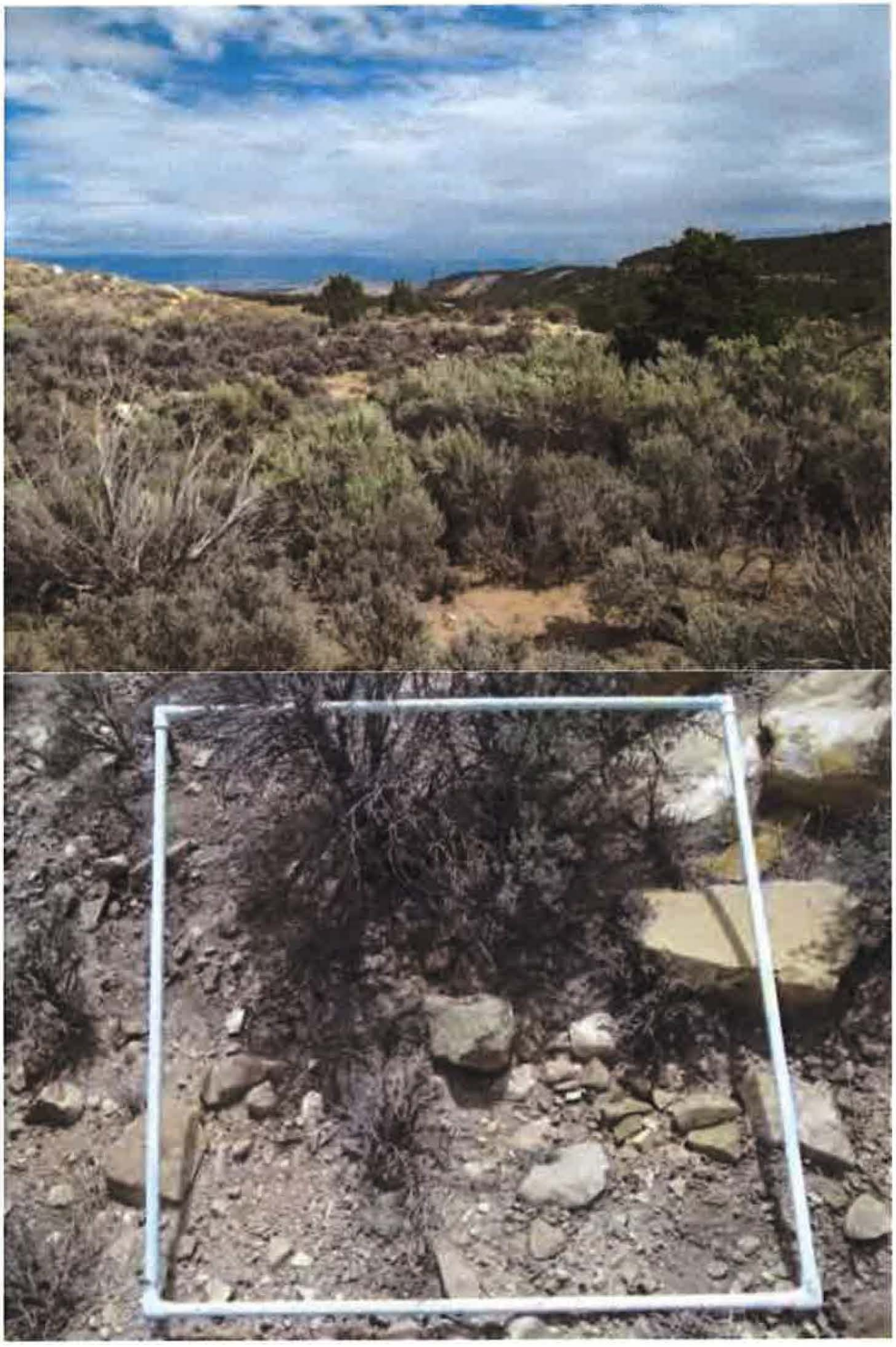
RA1 South Photographs



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AUG 3 1 20

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RA1 East Photographs

INCORPORATED

AUG 3 1 20

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RA1 West Photographs

INCORPORATED

AUG 3 1 20[illegible]

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RA2 Photographs

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AUG 3 1 2014

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RA4 Photographs

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AUG 3 1 20
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RA5 Photographs

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RA6 Photographs

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RA7 Photographs

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RA27 Photos (Hillside)

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REF 2 Photos (surrounding Aspen/Doug fir habitat)

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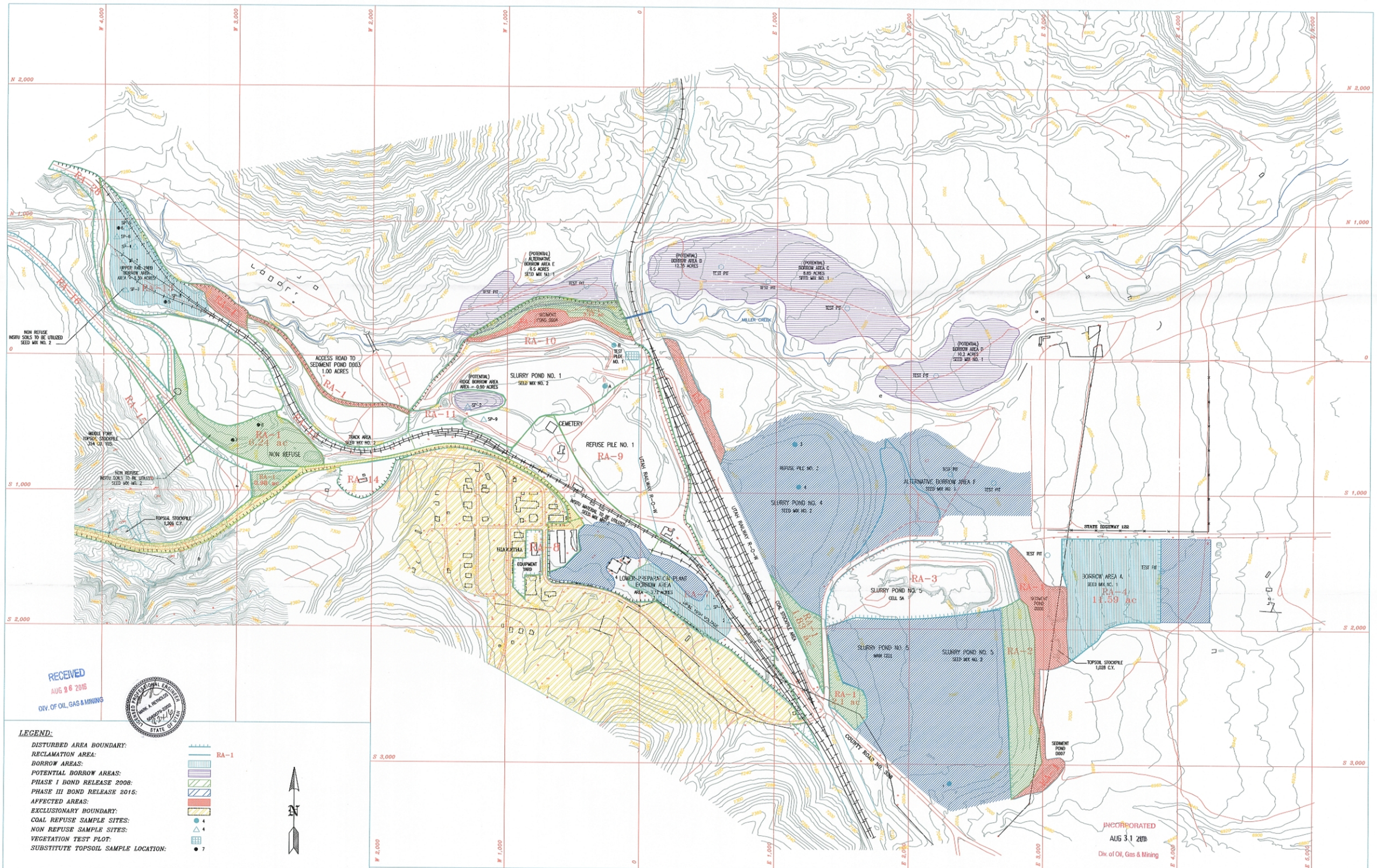


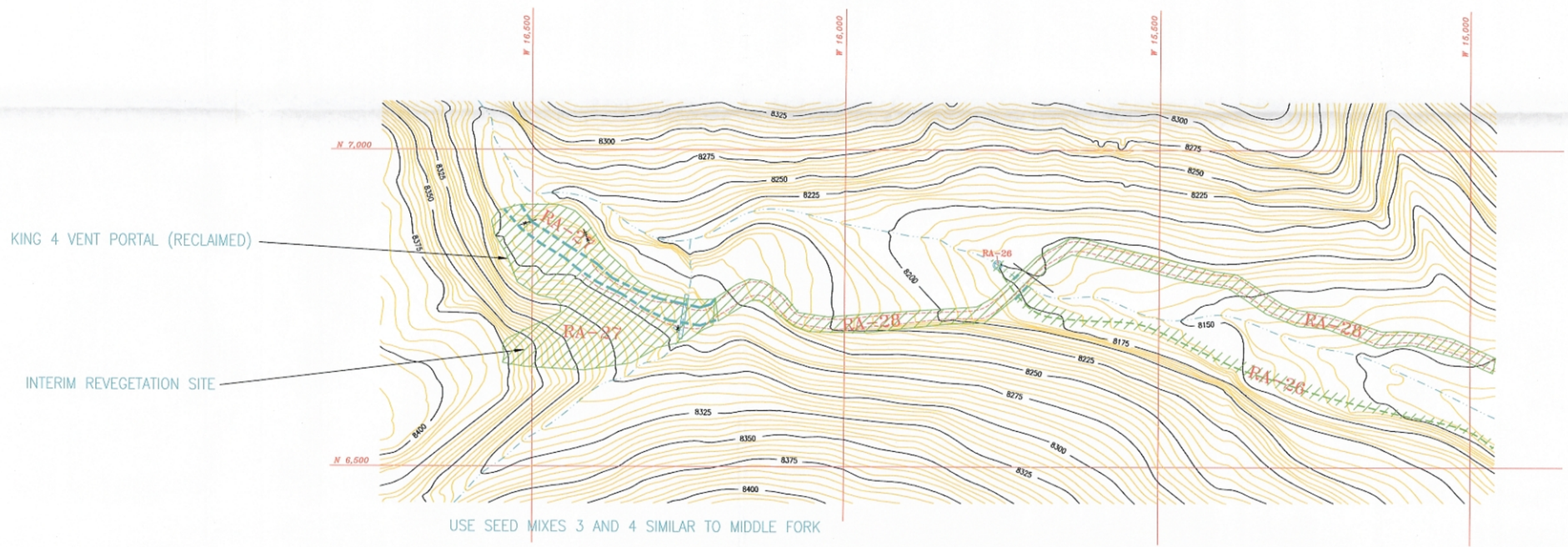
REVISION DATE:		
AUG 1998		
JAN 26 1999		
JUL 03 2008		
May 18 2013		

HIAWATHA COAL COMPANY
HIAWATHA, UTAH

HIAWATHA PROCESSING PLANT AND WASTE DISPOSAL SITES

RECLAMATION SOILS INFORMATION

EXHIBIT II-4A



LEGEND:

- *DISTURBED AREA BOUNDARY:*
- *RECLAMATION AREA:* RA-1
- *BORROW AREAS:*
- *POTENTIAL BORROW AREAS:*
- *PHASE I & III BOND RELEASE (2008, 2015):*
- *AFFECTED AREAS:*

N

50' 0' 100' 200'

NOTE: THERE IS NO DISTURBED ACREAGE ON THIS MAP. ALL DISTURBED AREAS WERE REMOVED DURING THE 2015 PHASE III BOND RELEASE

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LICENSED PROFESSIONAL ENGINEER
MARK A. REYNOLDS
5040079-2202
STATE OF UTAH

REVISION DATE:		
AUG 1998		
JUN 2008		
AUG 2016	PHASE III BOND RELEASE	

HIAWATHA COAL COMPANY HIAWATHA, UTAH	NORTH FORK	RECLAMATION SOILS INFORMATION	EXHIBIT II-4D

HIAWATHA COAL CO.

HIAWATHA, UTAH

2015 PHASE III BOND RELEASE AREAS

SCALE:	DRAWN BY:	DATE:
1" = 1500'	M. REYNOLDS	12/21/15

HIAWATHA MINE | **PLATE 8-2**

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2015 Bond Release Area

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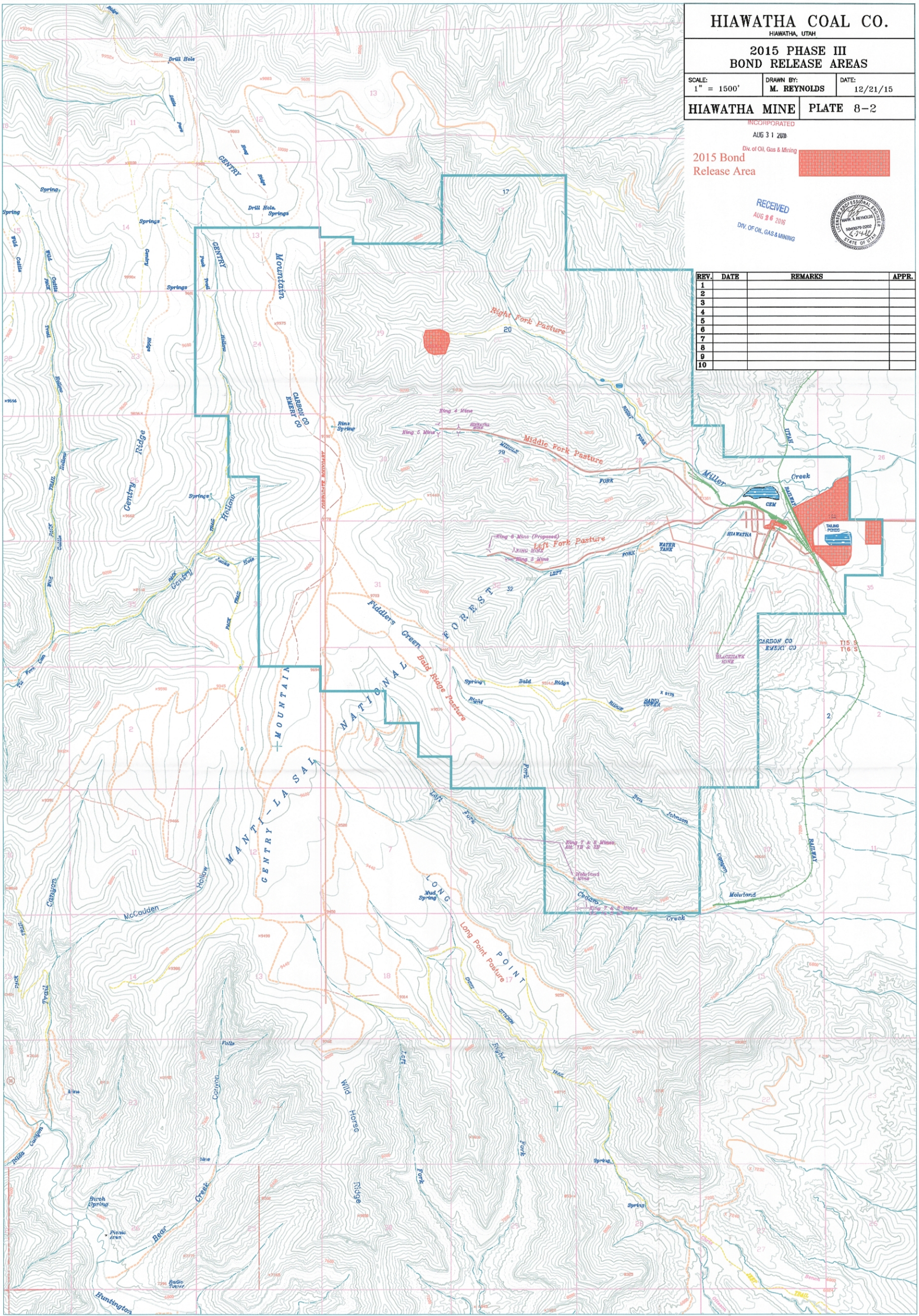
LICENSED PROFESSIONAL ENGINEER
MARK A. REYNOLDS
5049079-2202
STATE OF UTAH

REV.	DATE	REMARKS	APPR.
1			
2			
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9			
10