6.4.1 Exhibit A

Legal Description

The Mooney Hills Pit is currently located 37.225878° 104.289453°. The pit will be accessed through Highway 160 approximately 12 miles east of Trinidad in Las Animas County. The site is approximately 420 acres and is described by the following legal description:

Location: Las Animas County, CO

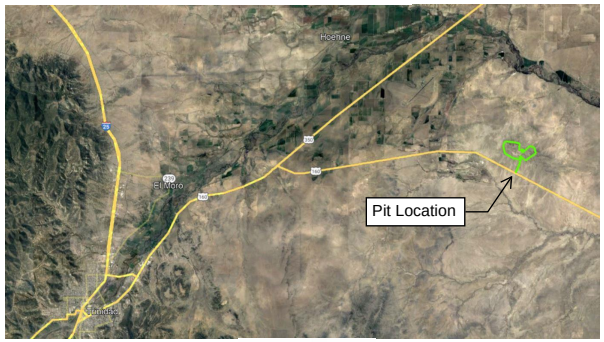
E ½ of SW ¼, and the Entire SE ¼ of S24 T32S R61W, S ½ of SW ¼ of S19 T32S R61W, NE ¼ of NE ¼ and the Entire NE ¼ of S25 T32S R62W, N ½ of NW ¼ of S30 T32S R61W

Entrance: 37.225878° 104.289453°

6.4.2 Exhibit B

Index Map

Mooney 5804 Altura Pit
Legal Description Exhibit A/B



Map By James Higgs
All Rite Paving and Redi Mix 9/22/22

Land Owner:
Cooper Moore

Land Owner:
Cooper Moore

Land Owner:
Cooper Moore

Land Owner:
Cooper Moore

Land Owner:
Cooper Moore

Land Owner:
Cooper Moore

Mooney Hills
5728 ft

MOORE
COOPER
D

5650ft

5700ft

5650ft

5750ft

160

Scale
660'-0"

N

Pit Boundaries (420.0 Acres)

Existing Access Road
37.225878°
-104.289453°

NAD 83 Coordinates

1) 37.225945°-104.289379°
2) 37.229579°-104.287305°
3) 37.229842°-104.287175°
4) 37.230875°-104.286904°
5) 37.225065°-104.271816°
6) 37.223480°-104.269732°
7) 37.224459°-104.268010°
8) 37.225739°-104.267630°
9) 37.227424°-104.270443°
10) 37.232428°-104.271572°
11) 37.238152°-104.288813°
12) 37.238547°-104.292720°
13) 37.238677°-104.294648°
14) 37.237409°-104.295571°
15) 37.236345°-104.295664°
16) 37.233768°-104.294807°
17) 37.232557°-104.292073°
18) 37.231783°-104.290594°
19) 37.231605°-104.289049°
20) 37.230918°-104.287035°
21) 37.229771°-104.287323°
22) 37.225976°-104.289454°

Legal Description

E 1/2 of SW 1/4, and the Entire SE 1/4 of S24 T32S R62W

S 1/2 of SW 1/4 of S19 T32S R61W

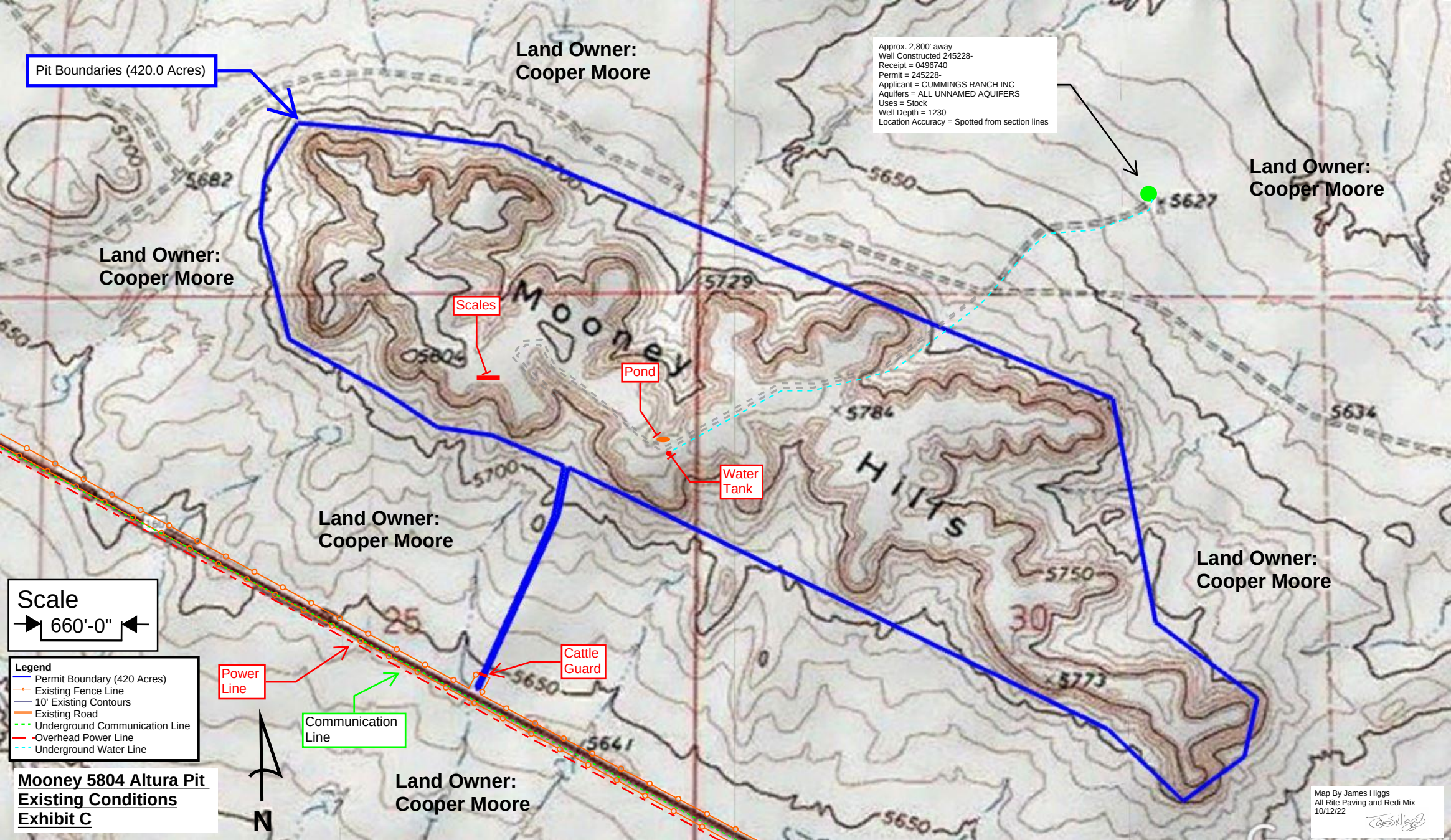
NE 1/4 of NE 1/4 and the Entire NE1/4 of S25 T32S R62W

N1/2, and the N1/2 of the SE 1/4 of S30 T32S R61 W

6.4.3 Exhibit C

Pre-Mining and Mining Plan Map

of Affected Lands


Pit Boundaries (420.0 Acres)
Land Owner:
Cooper Moore
Approx. 2,800' away
Well Constructed 245228-
Receipt = 0496740
Permit = 245228-
Applicant = CUMMINGS RANCH INC
Aquifers = ALL UNNAMED AQUIFERS
Uses = Stock
Well Depth = 1230
Location Accuracy = Spotted from section lines
Land Owner:
Cooper Moore
Land Owner:
Cooper Moore
Scales
Mooney
Pond
Water
Tank
Hills
Land Owner:
Cooper Moore
Land Owner:
Cooper Moore
Scale
660'-0"
Legend
Permit Boundary (420 Acres)
Existing Fence Line
10' Existing Contours
Existing Road
Underground Communication Line
Overhead Power Line
Underground Water Line
Power
Line
Cattle
Guard
Communication
Line
Land Owner:
Cooper Moore
Mooney 5804 Altura Pit
Existing Conditions
Exhibit C
N
Map By James Higgs
All Rite Paving and Redi Mix
10/12/22

6.4.4 Exhibit D

Mining Plan

The Mooney Hills Pit is an existing site of 114.95 acres. This amendment application will add 295.15 acres to the site, as well as incorporate the Mooney Altura Pit M2010-012 at 9.9 acres. The incorporation of the adjacent site will increase efficiency in reporting and reclamation, and the addition of acreage to the entire site will help establish an aggregate source in the area for many years to come. Mining will occur in three phases with Phase 1 being 110 acres, Phase 2 being 100 acres and Phase 3 being the remaining 110 acres. When Phase 1 is completed, All Rite will begin reclamation on that Phase while simultaneously starting mining operations in Phase 2.

The site is made up of Midway clay loam and Midway-Chicosa complex, as well as Manzanst silty clay loam and Manzanola silty clay loam. The target gravel source is located beneath limited topsoil of 0-6 inches and overburden of an additional 4-12 inches. Topsoil and overburden will be saved for reclamation of the mine site. The stratum beneath the deposit is presumed to be sandstone, shale or conglomerate or a combination thereof. The primary commodities are sand and gravel. Incidental materials not used for construction material will be used to reconstruct the pit floor and lessen the pit slopes. A portable asphalt or concrete batch plant may be onsite as projects warrant.

The life of the proposed operation is speculative due to ever changing economic conditions in the construction industry. If economic demands remain low and extraction is limited to 70,000 tons per year, approximately ten acres per year would be mined. At this rate, the life of the mine would extend to approximately 40 years.

Mining will proceed to the north and west of the current processing area. Mining will then continue from the current processing area to the east. Extracted material will be moved to the processing area that is anticipated to be in the south-central portion of the pit, denoted on the map. Earthmoving will be accomplished using bulldozers, front end loaders and/or scrapers depending on the depth of plant growth material and overburden. Aggregate will be processed and sized using a crusher and screens. Per the lease agreement with the landowner, mining will not take place within 20 feet of the water tank or water line.

All plant growth material and topsoil will be salvaged and stockpiled for reclamation use. These stockpiles will be located at the perimeter of the site and posted as reclamation topsoil. Waste rock and overburden will be stockpiled and used to rebuild the pit floor and slopes during reclamation. Overburden perimeter stormwater berms will be constructed as excavation and reclamation progresses. These berms will serve to control erosion and sedimentation from reaching any drainage. The topsoil and overburden berms will be installed around the current affected areas only during active mining and will be used during reclamation

activities as mining progresses. The berms will not impound water that will be held for long periods of time, as the water will percolate through the pit floor rapidly. Berms will be no taller than 10 feet. Water for dust suppression will be purchased from a local source and hauled onsite.

Bulk storage of fuel and small amounts of lubricants will be stored on site and will be house in an earthen berm that will have a capacity of at least 110% of the tanks and containers to be housed.

Mining will develop a gravel pit to a depth of approximately 15-20 feet. No groundwater is expected to be encountered during excavation and mining; therefore, no impact to the hydrologic balance is anticipated. No acid or toxic producing materials will be exposed during mining. No explosives will be used in conjunction with mining or reclamation. All interior haul roads will be temporary and will be reclaimed after the mining has been completed. The current haul road is approximately 25 feet wide.

This is a privately owned site and does not require the State Historic Preservation Office requirements for a cultural or historic study. If the operator encounters any structure of note, the State Historic Preservation Office will be notified.

6.4.5 Exhibit E

Reclamation Plan

Reclamation to rangeland will occur following mining at the site. Slopes will be returned to a 3H:1V slope or flatter when mining has concluded, thus allowing for reclamation to immediately follow mining as the site progresses. Phase 1 will be reclaimed first, and as mining progresses through Phase 2 and 3, reclamation will follow each completed phase.

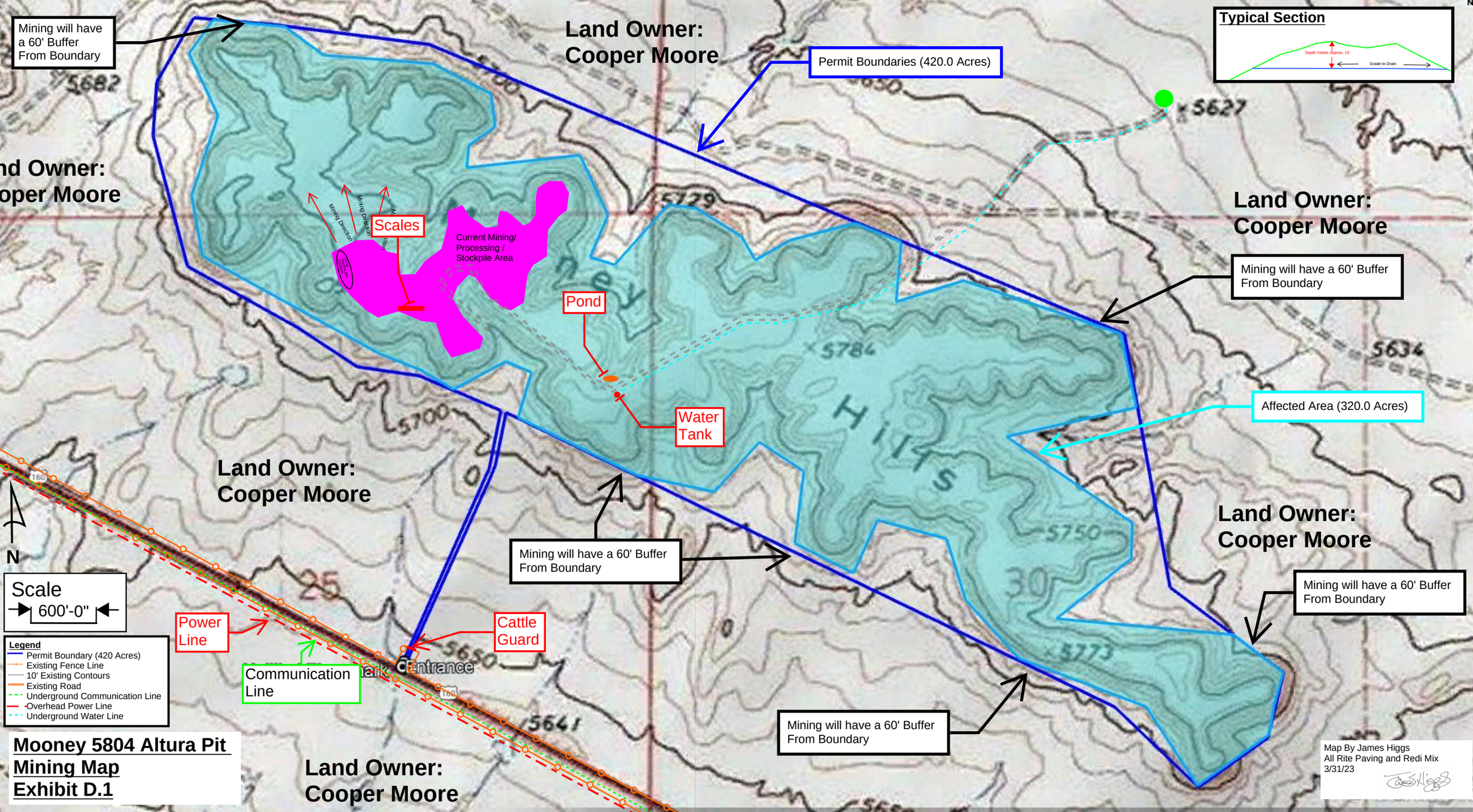
As topsoil, waste rock and overburden are removed from the working face, they will be stockpiled for future reclamation use. Throughout mining, slopes will be maintained at a 3H:1V minimum, except for the active mine face. Waste rock and overburden will be placed on the pit floor as quantity allows. Four inches of topsoil will be replaced on affected surfaces. If necessary, surfaces will be roughened prior to seeding. All materials used for backfilling will be generated from onsite sources. Onsite topsoil will be adequate for reclamation purposes. No importation of materials for reclamation purposes will be necessary. The topsoil and overburden berms will be installed around the current affected areas only during active mining and will be used during reclamation activities as mining progresses. The berms will not impound water that will be held for long periods of time, as the water will percolate through the pit floor rapidly. Berms will be no taller than 10 feet.

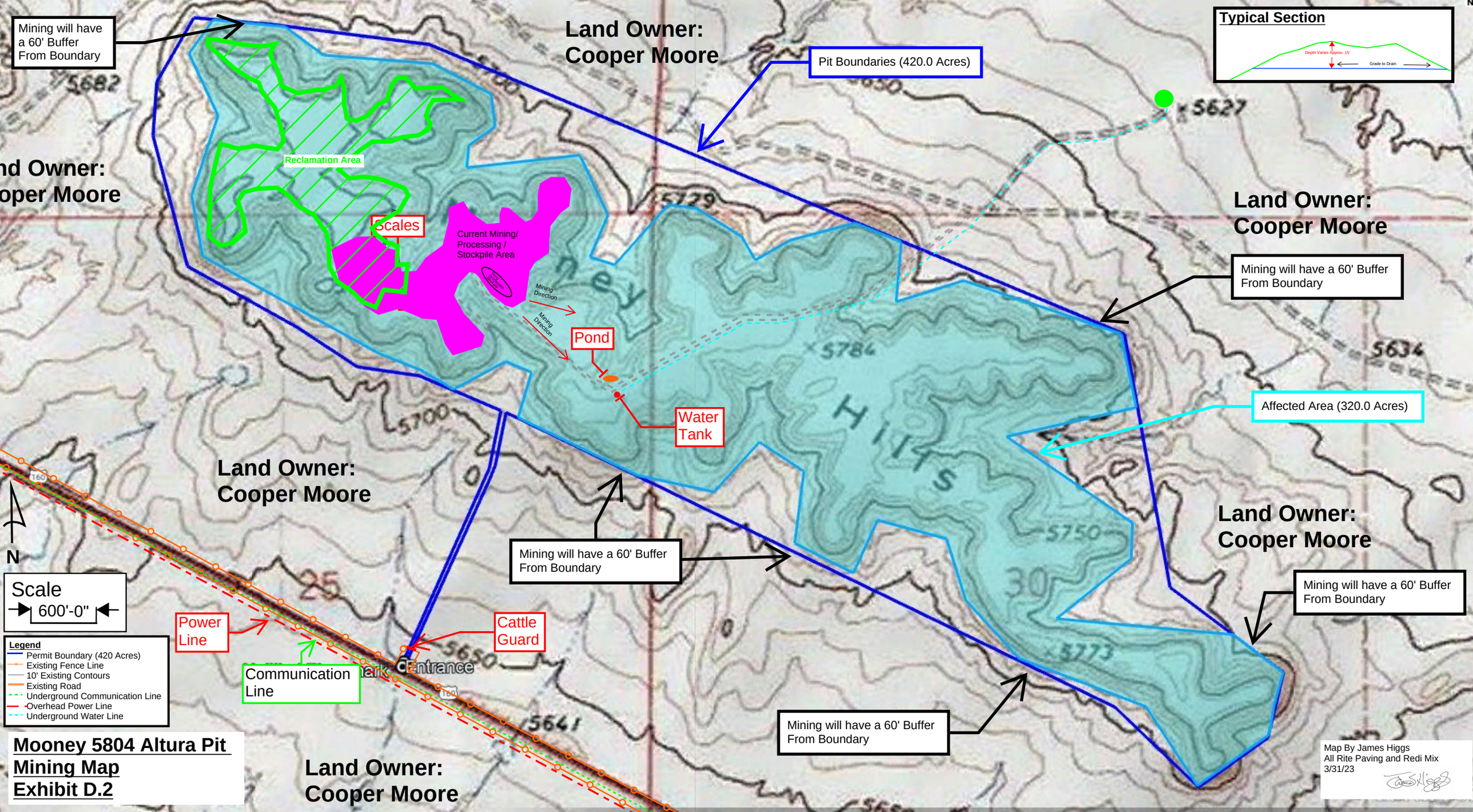
No trees, shrubs, or bushy-type vegetation will be planted. Only the appropriate grasses selected by the NRCS will be used. All Rite Paving and Redi Mix will use the seed mix from the

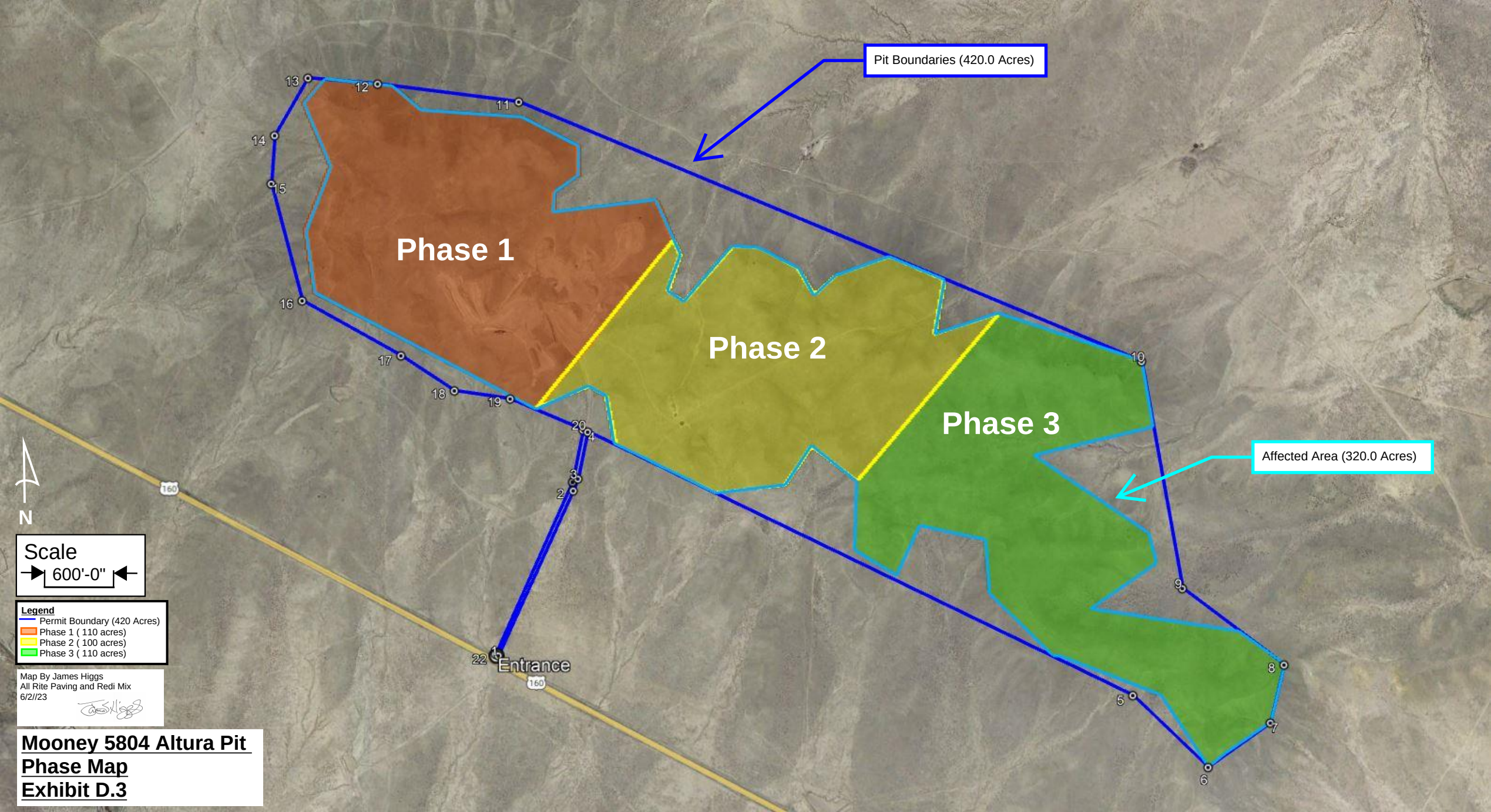
original permit application and is attached for review. The seed will be drilled at ¼" to ½" in depth and wheat straw mulch will be crimped in at a rate of 1000 pounds per acre.

All mining structures, including interior haul roads and stormwater diversion structures, will be reclaimed following all mining operations. All buildings are portable control vans.

Throughout the mining area, salvageable surface material will be removed and stockpiled for use in final reclamation. Upon commencement of reclamation, the area will be monitored for noxious weeds. The original permit for this site contained a weed management program that will be followed, along with any additional guidance from the Las Animas County weed Control Program.


Mining will have a 60' Buffer From Boundary
Land Owner: Cooper Moore
Permit Boundaries (420.0 Acres)
Typical Section
Depth Varies Approx. 15'
Grade to Drain
Land Owner: Cooper Moore
Land Owner: Cooper Moore
Scales
Mining Direction
Current Mining/ Processing / Stockpile Area
Pond
Water Tank
Mining will have a 60' Buffer From Boundary
Affected Area (320.0 Acres)
Land Owner: Cooper Moore
Land Owner: Cooper Moore
Mining will have a 60' Buffer From Boundary
Mining will have a 60' Buffer From Boundary
N
Scale
600'-0"
Power Line
Cattle Guard
Communication Line
Entrance
Legend
Permit Boundary (420 Acres)
Existing Fence Line
10' Existing Contours
Existing Road
Underground Communication Line
Overhead Power Line
Underground Water Line
Mooney 5804 Altura Pit Mining Map Exhibit D.1
Land Owner: Cooper Moore
Mining will have a 60' Buffer From Boundary
Map By James Higgs
All Rite Paving and Redi Mix
3/31/23


Mining will have a 60' Buffer From Boundary
Land Owner: Cooper Moore
Pit Boundaries (420.0 Acres)
Typical Section
Depth Varies Approx. 15'
Grade to Drain
Reclamation Area
Scales
Current Mining/ Processing / Stockpile Area
Mining Direction
Mining Direction
Pond
Water Tank
Land Owner: Cooper Moore
Mining will have a 60' Buffer From Boundary
Affected Area (320.0 Acres)
Land Owner: Cooper Moore
Land Owner: Cooper Moore
Mining will have a 60' Buffer From Boundary
Land Owner: Cooper Moore
Mining will have a 60' Buffer From Boundary
Mining will have a 60' Buffer From Boundary
Power Line
Cattle Guard
Communication Line
Entrance
N
Scale
600'-0"
Legend
Permit Boundary (420 Acres)
Existing Fence Line
10' Existing Contours
Existing Road
Underground Communication Line
Overhead Power Line
Underground Water Line
Mooney 5804 Altura Pit Mining Map
Exhibit D.2
Land Owner: Cooper Moore
Map By James Higgs
All Rite Paving and Redi Mix
3/31/23


Pit Boundaries (420.0 Acres)
Phase 1
Phase 2
Phase 3
Affected Area (320.0 Acres)
Entrance
160
N
Scale
600'-0"
Legend
Permit Boundary (420 Acres)
Phase 1 (110 acres)
Phase 2 (100 acres)
Phase 3 (110 acres)
Map By James Higgs
All Rite Paving and Redi Mix
6/2//23
Mooney 5804 Altura Pit
Phase Map
Exhibit D.3

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Grass Seeding Planned and Applied Worksheet

Grass Seeding PART I - Planned

Cooperator	Jodi Schreiber	Date	1/30/17
Tract/Field No	N/A	Acres	80
Soil Survey Area	Las Animas	Map Unit (s)	CpC and AP
Contract No.	N/A	CIN	N/A
Seeding dates	Nov1-April30	Purpose	Other
Seedbed preparation		Seed rate	Critical Area Planting drilled (40 seeds/sq ft)
Drill type	no-till grass	Acres to be seeded	80.00
Planting depth-Drill spacing (in)	11/2- 8		

Planned fertilizer application (lb/ac)	N	P_2O_5	K_2O

A Nutrient Management Plan is not required for the establishment of vegetative conservation practices.

Planned weed control activities	Description	
	Date(s)	
Planned residue cover or mulch	Type	
	Amount (lb/ac)	
	Application method	

Attach WIN-PST Soil-Pesticide Interaction Risk Report for all chemical suppression activities

Seed Mix Recommendation, † ‡

(PLS = Pure Live Seed)

Common name N=native, I=introduced		Genus, species	Recommended Cultivar	% of seed mix	Total Pounds PLS	Pounds PLS per acre
Grasses, forbs						
Grama, Sideoats	N	*Bouteloua curtipendula*	Buttle, El Reno, Niner	15.0	109.20	1.37
Grama, Blue	N	*Bouteloua gracilis*	Hachita, Alma	30.0	60.00	0.75
Wheatgrass, Western	N	*Pascopyrum smithii*	Arriba, Barton	25.0	320.00	4.00
Bluestem, Little	N	*Schizachyrium scoparium*	Pastura	15.0	80.40	1.01
Green needlegrass	N	*Ephedra viridis*		5.0	38.40	0.48
Prairie clover, purple	N	*Dalea purpurea*		5.0	25.20	0.32
Needleandthread	N	*Hesperostipa comata*		5.0	43.60	0.55
				100.0		
Shrubs (add shrub seed to grass - forb seed mix)						
Winterfat	N	*Krascheninnikovia lanata*			1.60	0.02

		Shrubs	1.60
† Certified Seed is required for all NRCS cost share programs		Grasses, Forbs	676.80
‡ Complete a Tree and Shrub Establishment 612 Job Sheet for bare-root shrub plantings		Total lbs PLS	678.40
	Seed Rate (Pounds PLS per acre)		8.48

Additional Recommendations

Top soil will be saved and put back before planting. Additional top soil may be needed.

Certified Planner _____ **Date** _____

Grass Seeding **PART II - Applied** (Seed tags must be attached)

Cooperator	Jodi Schreiber	Seed rate	Critical Area Planting drilled (40 seeds/sq ft)
Acres seeded		Seeding date	
Seedbed preparation		Suppression date(s)	
Weed control			
Residue cover or mulch type			
Residue/mulch amount (lb/ac)			

Common name	Cultivar	Bulk pounds	Percent Germination	Percent Purity	Percent PLS	Total Pounds PLS	Pounds PLS per acre
Grasses, forbs							
Shrubs							

Bulk Pounds per acre		Grasses, forbs	0.00
		Shrubs	0.00
		Total lbs PLS	0.00

Cost Information

Common name	lbs PLS /ac	lbs PLS/ac 100% seed rate	PLS % of seed rate	Bulk seed cost $	PLS cost $/lb	PLS cost $/ac
Grasses, forbs						
Shrubs						

Grasses, forbs	0.00	**% of seed rate**	0.00			$	-
Shrubs	0.00					$	-
Seed rate (lbs PLS/ac)	0.00	**Total cost of bulk seed**		$ -	**PLS ($/ac)**	$	-
		Max $/ac CRP	$ -		**Max $ CRP**	$	-
		Max $/ac NRCS	$ -		**Max $ NRCS**	$	-

Approved By

U.S. Department of Agriculture
Natural Resources
Conservation Service

CO-ECS-5
180-12-11
July 2004

Grass Seeding: Part I - Planned

Planner:	M. Shull			Date:	1-Dec-09
Producer:	LJ Development				
MLRA:	49-69	Contract/Agreement #:	N/C	Item Num:	N/A
Seeding Operation:	Acres to be seeded:	1			
	Seedbed Prep:	Intensive: more than 3 tillage operations		Cropland:	non-irrigated
	Planting Dates:	Nov. 1 - May 31			
	Planting Depth (in.):	1/4-1/2			
	Drill Type:	N/A			
	Drill Spacing (in.):	N/A			
Fertilizer:	Pounds per acre recommended			(planned and applied requires practice standard 590)	
	Nitrogen (N)	Phosphorus (P)	Potassium (K)		
	based on fertilizer test				
Weed Control:	Dates:	as needed		(planned and applied requires practice standard 595)	
	Description:	mechanical			
Cover:	Amount:	0%			
	Description:	Disturbed			
	Application Method:	Drilling/Broadcast			

Note:
* IF BROADCAST INSTEAD OF Drilling - DOUBLE seeding recommendations
* Seeding rate is PER ACRE. multiply by TOTAL ACRE
* ALL recommendations are is PURE LIVE SEED (PLS) basis

Seed Recommendations: Double Seeding: Broadcast

Species	Variety (table 6: PMTN 59)	PLS Rates Irr/Non-Irr	PLS/Ac to use (100%)	% in mix	Rate (PLS lbs/ac)	Acres to be seeded	Total PLS
Western wheatgrass	Arriba,Barton	16.0 / 8.0	8.0	40%	3.2	1.0	3.2
Blue grama	Hachita,Alma,Lovington	3.0 / 1.5	1.5	20%	0.3	1.0	0.3
Sideoats grama	Butte,Vaughn	9.0 / 4.5	4.5	20%	0.9	1.0	0.9
Alkali sacaton	Salado	1.5 / 1.0	1.0	20%	0.2	1.0	0.2

Double these rates if BROADCASTING SEED

26.92

Totals	15.0	1.0	4.6	1.0	4.6

Notes: Use adapted improved varieties and cultivars in the following order of preference, when available:
1. certified name varieties, 2. named varieties, 3. common seed
PLS = Pure Live Seed
Double drilled seeding rate to obtain broadcast seeding rate.
For critical area seedings use the irrigated rate.

*Harrow or rake area after broadcasting seed to cover as much seed as possible to depth of 0.25 inches.
If seeding takes place in the fall, it is recommended to plant oat cover crop to protect area from wind erosion.

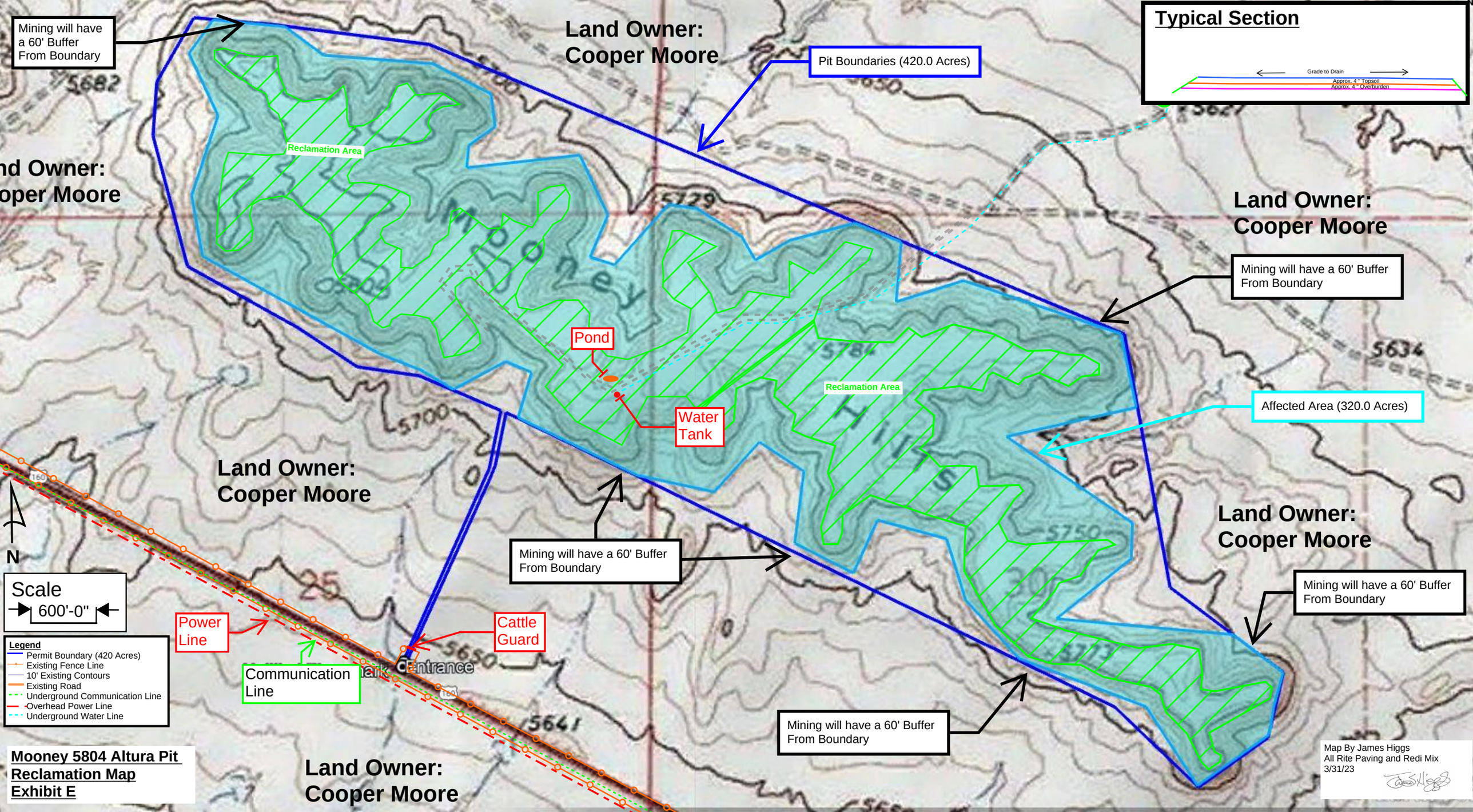
Certified Planner: Levi Montoya Date: 12.1.09

prepared by M. Shull

26.93

6.4.6 Exhibit F

Reclamation Plan Map

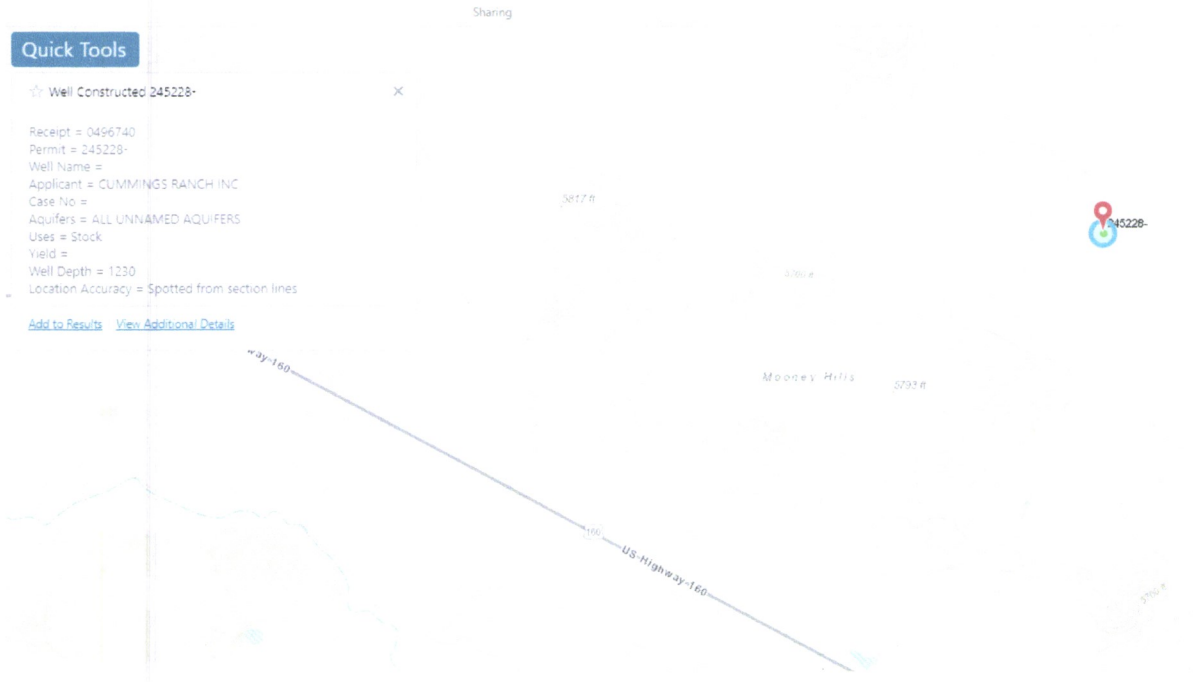

Mining will have a 60' Buffer From Boundary
Land Owner: Cooper Moore
Pit Boundaries (420.0 Acres)
Typical Section
Grade to Drain
Approx. 4 " Topsoil
Approx. 4 " Overburden
Reclamation Area
Mooney
Land Owner: Cooper Moore
Mining will have a 60' Buffer From Boundary
Pond
Water Tank
Reclamation Area
Affected Area (320.0 Acres)
Land Owner: Cooper Moore
Mining will have a 60' Buffer From Boundary
Land Owner: Cooper Moore
Mining will have a 60' Buffer From Boundary
N
Scale
600'-0"
Power Line
Cattle Guard
Communication Line
Entrance
Legend
Permit Boundary (420 Acres)
Existing Fence Line
10' Existing Contours
Existing Road
Underground Communication Line
Overhead Power Line
Underground Water Line
Land Owner: Cooper Moore
Mooney 5804 Altura Pit Reclamation Map Exhibit E
Map By James Higgs
All Rite Paving and Redi Mix
3/31/23

6.4.7 Exhibit G

Water Information

Mining is expected to have no impact on the prevailing hydrologic balance. Groundwater will not be exposed, and stormwater will not leave the site. The site will not discharge stormwater or process water drainage.

According to the Division of Water Resources HydroBase Data Viewer, groundwater near the site is anticipated to be approximately 1230 feet in depth (see below). The mining operation will only mine to a depth of 20 feet.



Runoff occurs as overland flow to natural drainage ravines in the vicinity. Stormwater best management practices such as waddles, straw bales, and perimeter berms will be placed to effectively manage stormwater. Historic flow will be maintained during mining.

Consumptive use of water may occur as dust suppression on the haul road and affected areas. All Rite Paving and Redi Mix will purchase the necessary volume of water from an appropriate supplier and transport to the site for use.

The permittee will complete a stormwater management plan. Diversionary berms and impoundments will be constructed as recommended by the Water Quality Division.

6.4.8 Exhibit H

Wildlife Information

The property is used for grazing. And will be returned to rangeland during reclamation. Colorado Parks and Wildlife was contacted for comment during the original permitting process. The response letter is attached for review. It states that the site should be reclaimed using native grass species and recommends using the NRCS seeding guidelines for reclamation.

Forage and cover for wildlife is very limited due to the arid climate. Small animals, including rabbits, foxes, etc. are found in the surrounding environment. The site is within range for white tail deer, mule deer, pronghorn, prairie dog, various snakes, various lizards, and ring-necked pheasant. Impacts to wildlife will be mitigated through a weed management plan and reseeding all mined areas with a diverse and native rangeland seed mix.

STATE OF COLORADO

Bill Ritter, Jr., Governor
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE
AN EQUAL OPPORTUNITY EMPLOYER

Thomas E. Remington, Director
6060 Broadway
Denver, Colorado 80216
Telephone: (303) 297-1192
wildlife.state.co.us

Pueblo Service Center
600 Reservoir Road
Pueblo, CO 81005

For Wildlife-
For People

January 20, 2010

Joe Gagliano
LJ Development, Inc
256 N Merrill Dr
Pueblo West, CO 81007

Mike Trujillo, Area Wildlife Manager
Colorado Division of Wildlife
600 Pueblo Reservoir Road
Pueblo, CO 81005

Re: Mooney 5804 Altura Pit

Dear Mr Gagliano:

Thank you for the opportunity to comment regarding the proposed gravel pit to be referred to as Mooney 5804 Altura Pit. A representative from the Division of Wildlife has visited the site and has the following comments.

The Division of Wildlife does not foresee significant impacts to wildlife or wildlife habitat in the proposed area. To our knowledge there are no known Threatened or Endangered species within or in close proximity to the project sites. We would suggest that any ground disturbance be reclaimed to native grass species. We recommend using NRCS seeding guidelines when the site is to be reclaimed. Adherence to the reclamation plan provided is optimal and will provide the best benefit to the land once the mining activity is terminated.

Once again, thank you for the opportunity to comment on this issue. Please feel free to contact our office at 719-561-5300, if you have any questions or comments regarding this or any other wildlife matter.

Sincerely,

Michael Trujillo
Area Wildlife Manager
Colorado Division of Wildlife

24.1

6.4.9 Exhibit I

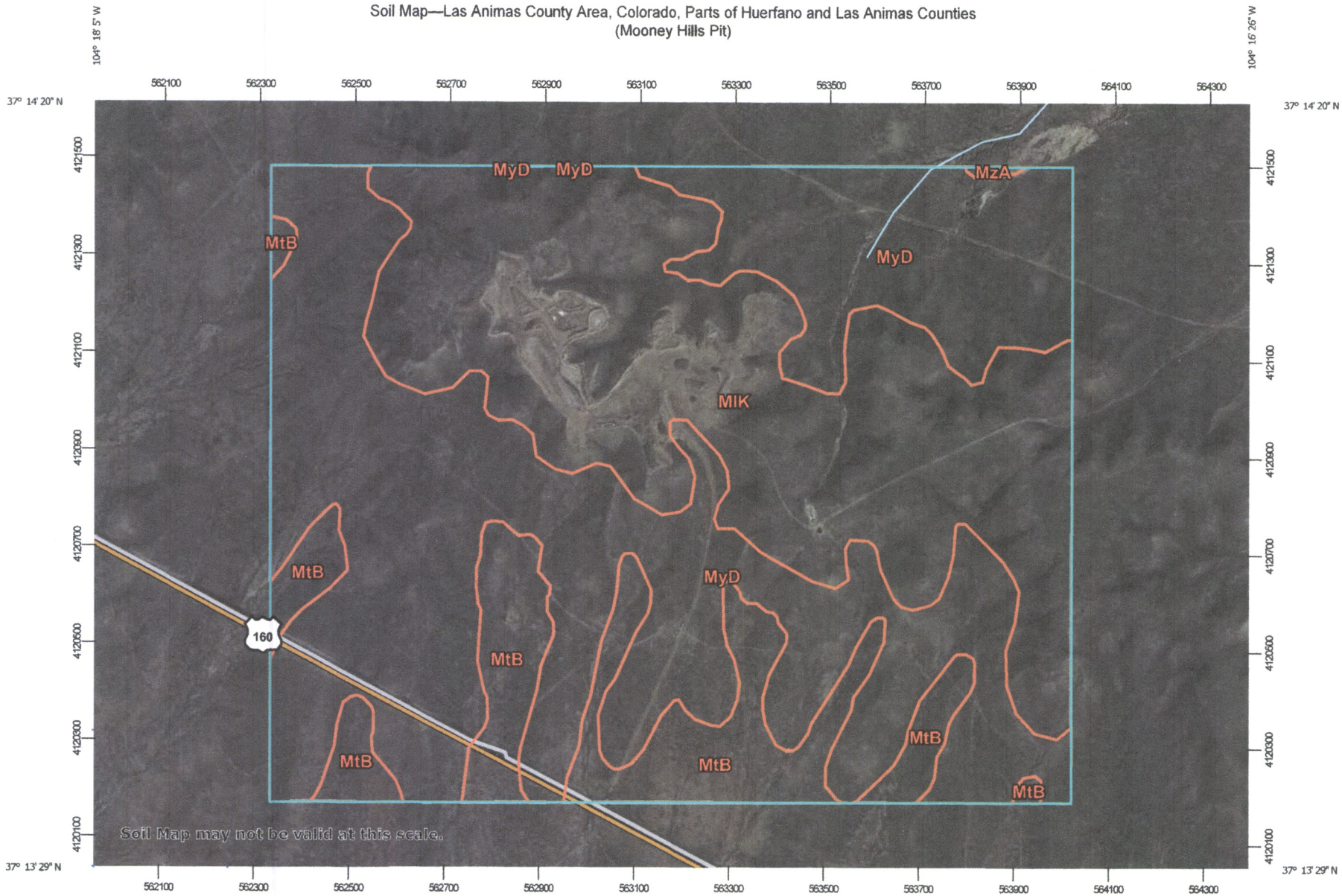
Soils Information

A Custom Soil Resource Report for Las Animas County, specific to this site, is attached for review. The site is made up of Midway clay loam and Midway-Chicosa complex, as well as Manzanst silty clay loam and Manzanola silty clay loam.

The Midway series consists of shallow, well drained soils that formed in residuum and slope alluvium from calcareous platy, clayey shale. Midway soils are on ridge crests, mesas, plains, and hills in shale bedrock uplands. Slopes range from 0 to 40 percent. Mean annual precipitation is about 13 inches and mean annual air temperature is about 50 degrees F.

The Chicosa series consists of very deep, somewhat excessively drained soils that formed in coarse alluvium on terraces, fans and fan remnants. Slopes range from 1 to 25 percent. Mean annual precipitation is about 14 inches and the mean annual temperature is about 50 degrees F.

Soil Map—Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties
(Mooney Hills Pit)



Map Scale: 1:11,100 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties
Survey Area Data: Version 24, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 31, 2020—May 18, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MIK	Midway-Chicosa complex, 5 to 35 percent slopes	193.1	35.2%
MtB	Manzanst silty clay loam, cool, 0 to 3 percent slopes	70.5	12.8%
MyD	Midway clay loam, 3 to 15 percent slopes, gullied	284.8	51.9%
MzA	Manzanola silty clay loam, saline, 0 to 2 percent slopes	0.5	0.1%
Totals for Area of Interest		**548.9**	**100.0%**

Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties

MIK—Midway-Chicosa complex, 5 to 35 percent slopes

Map Unit Setting

National map unit symbol: hw12
Elevation: 5,500 to 6,500 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 120 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Midway and similar soils: 45 percent
Chicosa and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Midway

Setting

Landform: Fan remnants, pediments
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium and residuum weathered from shale

Typical profile

A - 0 to 4 inches: clay loam
AC - 4 to 10 inches: silty clay
C - 10 to 18 inches: silty clay
Cr - 18 to 39 inches: bedrock

Properties and qualities

Slope: 15 to 35 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 15 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 15.0
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R049XB212CO - Shaly Foothill
Forage suitability group: Needs Field Review (G067BW050CO)
Other vegetative classification: Shaly Foothills #212 (049XY212), Needs Field Review (G067BW050CO)
Hydric soil rating: No

Description of Chicosa

Setting

Landform: Fan remnants
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and gravelly alluvium

Typical profile

A - 0 to 6 inches: gravelly loam
Bw - 6 to 20 inches: very gravelly loam
2Bk - 20 to 37 inches: extremely gravelly sandy loam
2C - 37 to 72 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 5 to 25 percent
Depth to restrictive feature: 14 to 30 inches to strongly contrasting textural stratification
Drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R049XY214CO - Gravelly Foothill
Forage suitability group: Loamy, Dry (G067BY019CO)
Other vegetative classification: Loamy, Dry (G067BY019CO)
Hydric soil rating: No

Minor Components

Capulin

Percent of map unit: 10 percent
Landform: Fans
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Other vegetative classification: Loamy Plains #4 (049XY004CO_2), Loamy (G070XW017CO)
Hydric soil rating: No

Baca

Percent of map unit: 5 percent
Landform: Fans
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Other vegetative classification: Loamy Plains #4 (049XY004CO_2), Clayey (G067BW001CO)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties
Survey Area Data: Version 24, Aug 31, 2021

Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties

MyD—Midway clay loam, 3 to 15 percent slopes, gullied

Map Unit Setting

National map unit symbol: 3jpz
Elevation: 4,500 to 6,000 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 50 to 53 degrees F
Frost-free period: 130 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

Midway and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Midway

Setting

Landform: Hills, pediments
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, side slope, rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from shale

Typical profile

A - 0 to 3 inches: clay loam
AC - 3 to 8 inches: silty clay
C - 8 to 14 inches: silty clay
Cr - 14 to 24 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 15 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 15.0

Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R069XY046CO - Shaly Plains LRU's A and B
Forage suitability group: Needs Field Review (G069XW050CO)
Other vegetative classification: Needs Field Review (G069XW050CO), Shaly Plains #46 (069XY046CO_2)
Hydric soil rating: No

Minor Components

Razor

Percent of map unit: 9 percent
Landform: Hills, pediments
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Head slope, side slope, rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R069XY042CO - Clayey Plains LRU's A and B
Other vegetative classification: Clayey, Dry-Saline (G069XW006CO), CLAYEY PLAINS (069AY042CO)
Hydric soil rating: No

Shingle

Percent of map unit: 5 percent
Landform: Hills, pediments
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Head slope, side slope, rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R069XY046CO - Shaly Plains LRU's A and B
Other vegetative classification: Shaly Plains #46 (069XY046CO_2), Needs Field Review (G069XW050CO)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Scarps
Hydric soil rating: No

Data Source Information

Soil Survey Area: Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties
Survey Area Data: Version 24, Aug 31, 2021

6.4.10 Exhibit J

Vegetation Information

The Mooney Pit is characterized by grazing land. Native vegetation includes blue grama, western wheatgrass, sideoats grama, cactus, yucca, and sagebrush.

EXHIBIT "J"

Vegetation Information (from original 2010 permit)

The site is covered with native grasses and sparsely located small brush plants.

Recommendations

There is very shallow topsoil (1 to 6 inches deep) in this area and it should be stockpiled for future reuse when excavation is completed. If possible a layer of 1 to 6 inches of topsoil needs to be evenly spread over the excavated area as a base for any planned revegetation efforts.

Slopes to be seeded should have a maximum slope of 3H:1V.

Mulching may be needed especially on the south and west facing slopes. Seed should be drilled across the slopes and not up and down and should be planted 1/4 to 1/2 inch deep.

Seeding should be done between November 1 and April 1 each year to utilize best moisture conditions. No grazing should be allowed the first two years to allow the grasses to become established.

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition

In areas that have similar climate and topography, differences in the kind and amount of rangeland or forest understory vegetation are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

This table shows, for each soil that supports vegetation, the ecological site, plant association, or habitat type; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. An explanation of the column headings in the table follows.

An *ecological site, plant association, or habitat type* is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of the site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site, plant association, or habitat type is typified by an association of species that differs from that of other ecological sites, plant associations, or habitat types in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service (NRCS). Descriptions of plant associations or habitat types are available from local U.S. Forest Service offices.

Total dry-weight production is the amount of vegetation that can be expected to grow annually in a well managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percent of air-dry moisture content.

Characteristic vegetation (the grasses, forbs, shrubs, and understory trees that make up most of the potential natural plant community on each soil) is listed by common name. Under *rangeland composition and forest understory*, the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The percentages are by dry weight for rangeland. Percentages for forest understory are by either dry weight or canopy cover. The amount that can be used as forage depends on the kinds of grazing animals and on the grazing season.

Range management requires knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range similarity index and rangeland trend. Range similarity index is determined by comparing the present plant community with the potential natural plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential community, the higher the range similarity index. Rangeland trend is defined as the direction of change in an existing plant community relative to the potential natural plant community. Further information about the range similarity index and rangeland trend is available in the "National Range and Pasture Handbook," which is available in local offices of NRCS or on the Internet.

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, an area with a range similarity index somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service, National range and pasture handbook.

Report—Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition

26.3

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition– Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties								
Map unit symbol and soil name	**Ecological Site, Plant Association, or Habitat Type**	**Total dry-weight production**			**Characteristic rangeland or forest understory vegetation**	**Composition**		
		Favorable year	**Normal year**	**Unfavorable year**		**Rangeland**	**Forest understory**	**Forest understory**
		Lb/ac	*Lb/ac*	*Lb/ac*		*Pct dry wt*	*Pct dry wt*	*Pct cover*
MIK—Midway-Chicosa complex, 5 to 35 percent slopes								
Midway	Shaly Foothill (R049BY212CO); Shaly Foothills #212 (049XY212)	1,250	850	450	alkali sacaton	20	—	—
					western wheatgrass	20	—	—
					blue grama	15	—	—
					sideoats grama	15	—	—
					fourwing saltbush	10	—	—
					green needlegrass	7	—	—
					winterfat	5	—	—
					little bluestem	3	—	—
					american vetch	2	—	—
Chicosa	Gravelly Foothill (R049XB214CO)	1,000	800	400	little bluestem	20	—	—
					blue grama	15	—	—
					sideoats grama	15	—	—
					needleandthread	10	—	—
					prairie sandreed	7	—	—
					other perennial forbs	5	—	—
					true mountain mahogany	5	—	—
					western wheatgrass	5	—	—
					mountain muhly	3	—	—
					plains muhly	3	—	—
					fringed sagewort	2	—	—
					rocky mountain juniper	2	—	—
					small soapweed	1	—	—

26.4

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition– Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties								
Map unit symbol and soil name	Ecological Site, Plant Association, or Habitat Type	Total dry-weight production			Characteristic rangeland or forest understory vegetation	Composition		
		Favorable year	Normal year	Unfavorable year		Rangeland	Forest understory	Forest understory
		Lb/ac	*Lb/ac*	*Lb/ac*		*Pct dry wt*	*Pct dry wt*	*Pct cover*
MyD—Midway clay loam, 3 to 15 percent slopes, gullied								
Midway	Shaly Plains (R069XY046CO); Shaly Plains #46 (069XY046CO_2)	1,200	800	400	alkali sacaton	20	—	—
					western wheatgrass	20	—	—
					blue grama	15	—	—
					sideoats grama	15	—	—
					fourwing saltbush	10	—	—
					green needlegrass	7	—	—
					winterfat	5	—	—
					little bluestem	3	—	—
					american vetch	2	—	—
MzB—Manzanola silty clay loam, 1 to 4 percent slopes								
Manzanola	Clayey Plains (R069XY042CO); Loamy Plains #6 (069XY006CO_2)	1,200	800	350	blue grama	35	—	—
					western wheatgrass	20	—	—
					galleta	10	—	—
					fourwing saltbush	5	—	—
					sand dropseed	5	—	—
					sideoats grama	5	—	—
					winterfat	5	—	—
					green needlegrass	4	—	—
					american vetch	2	—	—

Data Source Information

Soil Survey Area: Las Animas County Area, Colorado, Parts of Huerfano and Las Animas Counties
Survey Area Data: Version 12, Oct 30, 2009

26.92

EXHIBIT J DRMS 112 c PERMIT

NOXIOUS WEED CONTROL AND MANAGEMENT PLAN

FOR THE

MOONEY 5804 ALTURA PIT
M-2010- _ _ _

February 18, 2010

Construction Materials Rule 3

"Methods of weed control shall be employed for all prohibited noxious weed species, and whenever invasion of a reclaimed area by other weed species seriously threatens the continued development of the desired vegetation. Weed control methods shall also be used whenever the inhabitation of the reclaimed area by weeds threaten further spread of serious weed pests to nearby areas."

The Operator pledges the following:

Therefore the operator commits to adhere to this Noxious Weed Control Plan (NWCP) to use all of the tables and other means that are expressed in this Noxious Weed Control Plan (NWCP) to manage and control all noxious weeds that invade the permit site. The operator will not limits their efforts but rather be a vigilant proponent of noxious weed control and eradication of said noxious weeds.

After the weeds have been treated mechanically, chemically or biologically the operator will return to the infestation with in a month and the following bi-monthly inspections shall resume. The operator will note the date and follow up the following month to see if the control measure was effective. If it was determined that the treatment was not effective, the infestation will be treated again with another method or re-treated with the same method until the infestation is significantly stemmed. The operator will use the methods prescribed in this plan to eliminate the specific noxious weed that has been identified if they are not successful with the first effort they will not stop the endeavor.

The operator will uses the tables and chart to map and keep track of the noxious weed situation included in this Noxious Weed Control Plan. All measure will be used to stop the spread of any noxious weeds on this permitted site.

This is an Integrated Weed Management (IWM) measure as defined by the State of Colorado.

"Integrated weed management (IWM) is the selection and application of a variety of management techniques that, in combination, shape the composition and structure of the plant community to promote ecosystem health and function. The goal of IWM is not specifically the elimination of undesirable species as much as the development and maintenance of a healthy, desirable community of native species; the eradication and/or reduction of invasive plant populations is merely one beneficial result of effective IWM. The use of a combination of techniques makes it possible to alter site availability for weeds and disturbances, control colonization events, and manipulate species performance in order to transform the existing plant community into a healthy native one.

Most successful weed management efforts include a combination of two or more control methods. To develop an effective IWM plan, each site must be individually evaluated to identify techniques that are feasible and the most appropriate for the site. Every technique has positive and negative aspects that determine its appropriateness for specific situations.

Site managers should select and utilize as many appropriate techniques as possible. Reliance on any one particular method frequently results in failure. Remember that most control techniques (mowing, herbicides, hand-pulling, etc.) are effective only during certain periods of the target species' life cycle. Every effort should be made to utilize techniques that suppress targeted weed populations throughout the season while promoting desirable species."**

**This was taken from the following State of Colorado publication:
Please see next page.

NATIVE PLANT REVEGETATION GUIDE FOR COLORADO

Caring for the Land Series
Volume III

October 1998

Colorado Natural Areas Program
Colorado State Parks
Colorado Department of Natural Resources

DATE: February 18, 2010

NAME OF MINE OPERATOR: MULLETT EXCAVATING, LLC

NAME OF MINE: MOONEY 5804 ALTURA PIT
MLRB NUMBER: M-2010- _ _ _

APPROXIMATE SIZE OF PROPERTY: 114.96 - 5 - ACRES

1.0 **Management Goals:** Management goals describe the purpose/use of the property and what you are trying to achieve. Having clear management goals is key to developing a weed management control and management plan. (A management goal may be to restore an area with native vegetation and promote rangeland, or to promote wildlife habitat,)

"Management Goal(s): To achieve the goal of noxious weed control the applicant/operator will commit inspect the permit area starting on the outward side of the boundary to observe if any noxious weeds have a potential for invading the Permit Boundary. Then proceed to closely inspect the entire interior of the Permit Boundary for invasive noxious weeds.

The procedure described above will commence in April of each calendar year and be repeated bi-monthly through October of the calendar year. Each inspection will duly note any noxious weeds and state the location on site (mapped) and the action taken to control the noxious weeds such as chemical, biological or mechanical method where use to stop the spread of the infestation. This procedure will continue for the life of the mine until the Mined Land Reclamation Board has release the Permit and returned the financial warranty to the applicant/ operator.

The aim of this Noxious Weed Control Plan is to formulate and incorporate the plan as part of the RECLAMATION PLAN. This is part of the mine site reclamation during the active mining and the reclamation period. Thus this is the applicants/operators Integrated Weed Management (IWM) guide."*

2.0 **Weed Control Objectives:** Objectives are derived from your management goals. They are formed by inventorying the weeds you have on the mine site, determining how they affect your management goals (For example, does the weed reduce forage? Poison livestock? Or crowd out native species?), and determining the most efficient ways to control those weeds. Sometimes a weed control objective will be to simply contain an infestation so that it does not become a problem, or to keep certain weeds off of the mine site.

* Added to "Management Goal(s)" September 16, 2009
Knowing which weed species occur on your mine site and where they are located is very important in developing control priorities. Weed species vary considerably in threat that they pose to the resource values of the property. In addition, weed species vary greatly in their susceptibility to control measures. Thus, weed species that pose the greatest threat to achieving the management goals for the mine site and which can be most easily controlled are the highest priority for management.

To create weed control objectives for your weed management plan, first search your mine site for weeds (if you have not already done so), then fill out the attached WEED MANAGEMENT TABLE 2.1.

2.1 Weed Management Table (see table 2.1):

1) Search the mine site and fill in columns 1-3 in the table paying particular attention to which weed species are present on the mine site, how large the infestations are, and where on the property they are located.
2) Read the weed species profiles for the species you identified and fill out columns 4-7 in the table. You can purchase the hard copy of the guide from the Colorado State Parks at 1313 Sherman, RM 618, Denver, CO 80203, site document *Creating an Integrated Weed Management Plan: A Handbook for Owners and Managers of Lands with Natural Values. (Hereafter called the Handbook)*
Move on to Section 2.2 to determine the management priority of each weed species.

2.2 **Prioritizing Weed Species:** Determine the management priority of each weed species on the mine site by using the Alien Plants Ranking System outlined in Appendix 6 of the *Handbook*, or by consulting your County Weed Supervisor. Species that have the highest priority for management should receive a "priority check" in the table, and should be controlled first. Use the information in the table about the weeds "life cycle" (emergence and flowering) to coordinate times and methods of control. (For example, several species on your list may be controlled best when cut or pulled after bolting but before seed production. If these species have similar life cycle characteristics they can all be controlled at the same time. Coordinating control methods in this manner will help save time, resources and/or money.)

Once you have prioritized the species that should be controlled, and selected the most efficient time and method to control, you can write your control objectives.

2.3 Weed Control Objectives:

1st Weed Control Objective: _____

_____

_____

2nd Weed Control Objective: _____

_____

_____

3rd Weed Control Objective: _____

_____

_____

3.0 Evaluating Weed Control: After you have created weed control objectives and have begun to control the priority weed species on your mine site, you should evaluate the results of your control methods. This requires follow-up visits to the areas where weeds were controlled and re-assessment of the size and density of an infestation. (For example, compare the size of the infestation after a growing season has elapsed to size before control actions were initiated.) In most cases, the elimination of an infestation will take several years with multiple treatments per year to kill the plants and eliminate the bank of weed seeds in the soil. (See Table 2.1)

4.0 Analyzing the Effectiveness of Weed Management: After you have analyzed the control results (in some cases over the course of several years), you can determine if the weed control objectives helped you achieve your management goal(s). Make sure to consider the cost of control compared to the benefits realized from weed control. If the benefits of control did not outweigh the cost, it might be better to create new objectives or try other control methods. (For example, it may be more cost effective to use containment and prevention techniques to maintain the current level of weed infestations and to prevent an increase in weed populations.) (See Table 4.1)

Footnote: This Noxious Weed Control and Management Plan is based upon the guide as outlined in the Publication prepared by the Office of Colorado State Parks. This document titled, *Creating an Integrated Weed Management Plan: A Handbook for Owners and Managers of Lands with Natural Values*. 349 pages.

DRMS-List of Noxious Weeds

Common Name	Scientific Name	Page to view
Leafy spurge	Euphorbia esula	2
Canada thistle	Cirsium arvense	3
Musk thistle	Carduus nutans	5
Plumeless thistle	Carduus acanthoides	6
Scotch thistle	Onopordum acanthium	7
Perennial Sowthistle	Sonchus arvensis	9
Russian knapweed	Centaurea repens	10
Spotted knapweed	Centaurea maculosa	11
Diffuse knapweed	Ceutaurea diffusa	12
Yellow toadflax	Linaria vulgaris	13
Dalmation toadflax	L. genistifolia dalmatica	15
Perennial peperweed	Lepidium latifolium	16
Hounds tongue	Cynoglossum officinale	17
Hoary cress (White Top)	Cardaria draba	18
Field bindweed	Convolvulus arvensis	19
Saltcedar	Tamarix ramosissima	20
Russian Olive	Elaeagnus angustifolia	21

All the noxious weeds above are of a HIGH PRIORITY with the MLRB, other weeds not found on this list will have to be taken to the county weed supervisor for a priority rating and control plan.

Leafy spurge

Management

Leafy spurge is difficult to manage and can recover from almost any control effort. Therefore, a management scheme that combines control methods over four to five years is recommended. Even after that time, monitor infestations for recurrence and adopt a maintenance program.

Mechanical Control of Leafy Spurge

Vigorous grass growth is an important aspect of leafy spurge control. Over-grazing stresses grasses and makes them much less competitive with weeds, leafy spurge in particular. Irrigation, where applicable, may favor grass growth and make it more competitive with leafy spurge.

Chemical Control of Leafy Spurge

For optimum leafy spurge control, proper timing of herbicide application is imperative. Research from North Dakota State University indicates that Tordon 22K (picloram) 2,4-D, Banvel/Vanquish/Clarity (dicamba) are most effective when applied in spring when true flowers emerge (not just bracts). Fall application to leafy spurge regrowth also is good timing for these herbicides.

Roundup (glyphosate) is most effective when applied sequentially (1.0 quart per acre (A) at one month intervals, coupled with fall grass seeding. Make the first application at the beginning of June and a second application one month later. Occasionally, leafy spurge will recover from these Roundup treatments. An application of 2,4-D (2.0 quart/A) in September can control regrowth. Sow perennial grasses in late fall.

Tordon is the most effective herbicide for leafy spurge control. Treat large, readily accessible areas with 1 quart/A for three to four consecutive years. More remote areas may be treated with 2 quarts/A for two consecutive years or once every other year for three years, depending on leafy spurge recovery after the

first treatment. With either treatment, monitor infestations. Retreat with 1 quart/A of Tordon when shoot control is less than 75 percent.

Tordon may be tank-mixed with 2,4-D to provide adequate control. Apply 1 to 1.5 pints of Tordon with 1 to 1.5 quarts/A of 2,4-D in spring when leafy spurge flowers. When this application is made for three to five consecutive years, leafy spurge shoot control is generally 80 to 90 percent and cattle will feed in the area again.

Banvel/Vanquish/Clarity also is effective against leafy spurge. Apply 2 quarts/A in spring for three consecutive years. Often control is not very good in the first year but improves over the next two years. At that time, a maintenance schedule that uses low rates of Banvel/Vanquish/Clarity + 2,4-D (4 to 8 ounces + 0.5 to 1 quart/A), or Tordon + 2,4-D (1 pint + 1 quart/A) as needed can be used to keep infestations under control. **Note: Avoid using soil-active herbicides such as Tordon or Vanquish/Clarity near windbreak plants or other desirable woody vegetation.** Plant injury or death can occur. Also, do not allow any herbicide to drift onto desirable woody vegetation for the same reasons.

Recently, Plateau (imazapic) was registered to control leafy spurge in noncrop areas. It can be used safely around trees but may temporarily injure cool-season perennial grasses. Apply Plateau at 8 or 12 fl. oz/A in fall, followed by 4 fl. oz/A the following spring at flowering. Add a methylated seed oil at 2 pints/A to the spray solution. A liquid nitrogen fertilizer solution may be added to the spray mixture to increase weed control, but it may increase cool-season perennial grass injury.

Canada thistle

Management

The key principle to Canada thistle control is to stress the plant and force it to use stored root nutrients. Canada thistle can recover from almost any stress, including control attempts, because of root nutrient

stores. Therefore, returning infested land to a productive state occurs only over time. Success requires a sound management plan implemented over several years.

Cultural control of Canada Thistle

Grasses and alfalfa can compete effectively with Canada thistle if their growth is favored by good management. Maintain fertility and, if possible, moisture at optimum levels to favor grass or alfalfa growth. Soil analysis can easily determine fertility needs. Be cautious with nitrogen fertilizers, because excess available soil nitrogen may favor weed growth.

These are essential management steps to ensure optimum desirable plant growth and competition. However, competition alone seldom is effective against Canada thistle.

Chemical Control of Canada Thistle

Read the label, follow directions and use precautions. Research at Colorado State University shows that Tordon 22K (picloram), Curtail (clopyralid plus 2,4-D), Transline (clopyralid), Banvel/Vanquish/Clarity (dicamba), 2,4-D and Telar (chlorsulfuron) are effective against Canada thistle. These herbicides are most effective when combined with cultural and/or mechanical control.

Banvel/Vanquish/Clarity, and 2,4-D may be used on pastures, rangeland and non-crop areas. Tordon, Curtail, Telar and Transline may be applied on noncrop areas only. Colorado State University data indicates that Banvel/Vanquish/Clarity or Telar are effective when combined with 2,4-D as a split-season application.

Apply 2,4-D, 2 quarts per acre (A), in spring when Canada thistle is 10 to 15 inches tall, in pre-bud to early bud growth stages. Re-treat in fall with Banvel/Vanquish/Clarity (2 quarts/A) or Telar (1 ounce/A) to re-growth. Use a surfactant (0.25 percent to 0.5 percent v/v) with Telar for adequate control. Banvel/Vanquish/Clarity also may be applied in early spring at 2 quarts/A when Canada thistle is in the rosette stage. Tordon (1 quart/A) or Tordon plus 2,4-D (1 quart + 1 quart/A) is effective whenever Canada thistle is actively growing. Fall applications are especially effective.

Curtail and Transline are effective when applied in spring after all Canada thistle plants have emerged. Apply Curtail (2 to 3 quarts/A) when the oldest Canada thistle plants are entering the bud growth stage and the youngest are in the rosette to bolting growth stages. Apply Transline (2/3 to 1 pt/A) when Canada thistle is in the rosette to bud growth stages. Transline at 1 pt/A also is effective when applied in fall.

Recent research at Colorado State University shows that the performance of Curtail to control Canada thistle can be improved when preceded by two or three mowings. When Canada thistle infestations occur in situations where root growth would be restricted, such as habitats with high water tables, begin mowing when it is 12 to 15 inches tall. Repeat mowings at about one month intervals. Apply Curtail at 2 to 3 quarts/A in October or about one month after the third mowing. Follow this regimen for two consecutive years.

Mechanical control of Canada Thistle

Mowing hay meadows can be an effective tool if combined with herbicide treatments. Mowing alone is not effective unless conducted at one-month intervals over several growing seasons. Always combine mowing with cultural and chemical control. Mowing at hay cutting stimulates new Canada thistle shoots to develop from its root system.

In irrigated grass hay meadows, fall herbicide treatments that follow mowing can be an effective management system because more Canada thistle foliage is present after cutting to intercept herbicide. Additionally, root nutrient stores decrease after mowing because the plant draws on them to develop new shoots.

If a Canada thistle infestation exists in a field that will be rotated to alfalfa, control the weed before seeding alfalfa. Alfalfa is an effective competitor only after it is established. It will not adequately establish in a well-developed Canada thistle infestation. A Canada thistle management system can start with crop or grass competition combined with herbicides, with the field rotated to alfalfa when the management plan ends.

Musk thistle

Management

Cultural control of Musk Thistle

Maintaining pastures and rangeland in good condition is a primary factor for musk thistle management. To favor pasture and rangeland grass growth, do not overgraze. Fertilize only when necessary and according to soil testing recommendations. To successfully manage musk thistle, prevent seed formation.

Mechanical control of Musk Thistle

Musk thistle will not tolerate tillage and can be removed easily by severing its root below ground with a shovel or hoe. Mowing can effectively reduce seed output if plants are cut when the terminal head is in the late-flowering stage. Gather and burn mowed debris to destroy any seed that has developed.

Chemical Control of Musk Thistle

Several herbicides are registered in pasture, rangeland and noncrop areas to control musk thistle. Tordon 22K (picloram), Curtail (clopyralid +2,4-D), Banvel/Vanquish/Clarity (dicamba), 2,4-D, or Banvel/Vanquish/Clarity plus 2,4-D are commonly used. Apply these herbicides in spring or fall to musk thistle rosettes.

Apply Tordon at 0.5 to 1 pint per acre (A), Curtail at 2 quarts/A, Banvel/Vanquish/Clarity at 0.5 to 2 quarts/A, 2,4-D at 1.5 to 2 quarts/A, or Banvel/Vanquish/Clarity plus 2,4-D at 0.5 plus 1 quart/A. Cool temperatures (below 50 degrees F), particularly in fall, may adversely affect 2,4-D control of musk thistle; therefore, use 2,4-D in spring. Tordon is largely unaffected by cool temperatures. Banvel/Vanquish/Clarity can be adversely affected but less than 2,4-D. Banvel/Vanquish/Clarity plus 2,4-D works well in spring or fall. Apply any of these herbicides before musk thistle bolts or seed production still will occur.

Ally-Escort (metsulfuron) or Telar (chlorsulfuron) also can be used. Use Telar in noncrop areas only and Ally-Escort in pastures, rangeland or noncrop areas. Research from Colorado State University and the University of Nebraska shows that Telar or Ally-Escort prevents or dramatically reduces viable seed formation when applied in spring, up to early flower growth stages. The latest time to apply these herbicides is when developed terminal flowers have opened up to the size of a dime.

Apply Telar at 1 ounce/A or Ally-Escort at 0.5 ounce/A. Add a good agricultural surfactant at 0.25 percent v/v2 to Ally-Escort or Telar treatments or control is inadequate.

Plumeless thistle

Management

Cultural control of Plumeless Thistle

Maintaining pastures and rangeland in good condition is a primary factor for Plumeless thistle management. To favor pasture and rangeland grass growth, do not overgraze. Fertilize only when necessary and according to soil testing recommendations. To successfully manage Plumeless thistle, prevent seed formation.

Mechanical control of Plumeless Thistle

Plumeless thistle will not tolerate tillage and can be removed easily by severing its root below ground with a shovel or hoe. Mowing can effectively reduce seed output if plants are cut when the terminal head is in the late-flowering stage. Gather and burn mowed debris to destroy any seed that has developed.

Chemical Control of Plumeless Thistle

Several herbicides are registered in pasture, rangeland and noncrop areas to control Plumeless thistle. Tordon 22K (picloram), Curtail (clopyralid +2,4-D), Banvel/Vanquish/Clarity (dicamba), 2,4-D, or Banvel/Vanquish/Clarity plus 2,4-D are commonly used. Apply these herbicides in spring or fall to Plumeless thistle rosettes.

Apply Tordon at 0.5 to 1 pint per acre (A), Curtail at 2 quarts/A, Banvel/Vanquish/Clarity at 0.5 to 2 quarts/A, 2,4-D at 1.5 to 2 quarts/A, or Banvel/Vanquish/Clarity plus 2,4-D at 0.5 plus 1 quart/A. Cool temperatures (below 50 degrees F), particularly in fall, may adversely affect 2,4-D control of Plumeless thistle; therefore, use 2,4-D in spring. Tordon is largely unaffected by cool temperatures. Banvel/Vanquish/Clarity can be adversely affected but less than 2,4-D. Banvel/Vanquish/Clarity plus 2,4-D works well in spring or fall. Apply any of these herbicides before Plumeless thistle bolts or seed production still will occur.

Ally-Escort (metsulfuron) or Telar (chlorsulfuron) also can be used. Use Telar in noncrop areas only and Ally-Escort in pastures, rangeland or noncrop areas. Research from Colorado State University and the University of Nebraska shows that Telar or Ally-Escort prevents or dramatically reduces viable seed formation when applied in spring, up to early flower growth stages. The latest time to apply these herbicides is when developed terminal flowers have opened up to the size of a dime.

Apply Telar at 1 ounce/A or Ally-Escort at 0.5 ounce/A. Add a good agricultural surfactant at 0.25 percent v/v2 to Ally-Escort or Telar treatments or control is inadequate.

Scotch thistle

Management

Cultural control of Scotch Thistle

Maintaining pastures and rangeland in good condition is a primary factor for scotch thistle management. To favor pasture and rangeland grass growth, do not overgraze. Fertilize only when necessary and according to soil testing recommendations. To successfully manage Scotch thistle, prevent seed formation.

Mechanical control of Scotch Thistle

Scotch thistle will not tolerate tillage and can be removed easily by severing its root below ground with a shovel or hoe. Mowing can effectively reduce seed output if plants are cut when the terminal head is in the late-flowering stage. Gather and burn mowed debris to destroy any seed that has developed.

Chemical Control of Scotch Thistle

Several herbicides are registered in pasture, rangeland and noncrop areas to control Scotch thistle. Tordon 22K (picloram), Curtail (clopyralid +2,4-D), Banvel/Vanquish/Clarity (dicamba), 2,4-D, or Banvel/Vanquish/Clarity plus 2,4-D are commonly used. Apply these herbicides in spring or fall to Scotch thistle rosettes.

Apply Tordon at 0.5 to 1 pint per acre (A), Curtail at 2 quarts/A, Banvel/Vanquish/Clarity at 0.5 to 2 quarts/A, 2,4-D at 1.5 to 2 quarts/A, or Banvel/Vanquish/Clarity plus 2,4-D at 0.5 plus 1 quart/A. Cool temperatures (below 50 degrees F), particularly in fall, may adversely affect 2,4-D control of scotch thistle; therefore, use 2,4-D in spring. Tordon is largely unaffected by cool temperatures. Banvel/Vanquish/Clarity can be adversely affected but less than 2,4-D. Banvel/Vanquish/Clarity plus 2,4-D works well in spring or fall. Apply any of these herbicides before scotch thistle bolts or seed production still will occur.

Ally-Escort (metsulfuron) or Telar (chlorsulfuron) also can be used. Use Telar in noncrop areas only and Ally-Escort in pastures, rangeland or noncrop areas. Research from Colorado State University and the University of Nebraska shows that Telar or Ally-Escort prevents or dramatically reduces viable seed formation when applied in spring, up to early flower growth stages. The latest time to apply these herbicides is when developed terminal flowers have opened up to the size of a dime.

Apply Telar at 1 ounce/A or Ally-Escort at 0.5 ounce/A. Add a good agricultural surfactant at 0.25 percent v/v2 to Ally-Escort or Telar treatments or control is inadequate.

Perennial Sowthistle

MANAGEMENT

Perennial Sowthistle are highly competitive, persistent, and can rapidly colonize new sites by vegetative reproduction. Perennial Sowthistle seldom flowers in the first year. With true roots this plant creeps underground and comes up meters away. Flowers open two to three hours after sunrise and close around noon. Seeds are dispersed around ten days after first opening. With no dormancy period a seed form the previous year will germinate next spring. If seed in water for more than three months it will decompose. Perennial Sowthistle also produces seeds. Perennial Sowthistle thrives on non-compacted, fine , rich slightly alkaline to neutral soils. Tolerates some salinity.

Mechanical Control of

By tilling below 30 cm or leaving them on the surface to dessicate may reduce infestations. The optimal timing for cultivation to reduce root energy reserves is when plants is just emerging form the ground. Repeated cultivation will be necessary for most infestations.

Chemical Control of Plumeless Thistle

Auxin type herbicides such as 2,4-d, dicamba, MCPA, and clopyralid have been effective with repeated applications when plants are in the seedling or early bud stages. Glyphosate may also be applied as effective spot treatment.

Russian knapweed

Management

Like other creeping perennials, the key to Russian knapweed control is to stress the weed and cause it to expend nutrient stores in its root system. An integrated management plan should be developed that places continual stress on the weed. Currently, the best management plan includes cultural control combined with mechanical and/or chemical control techniques. A single control strategy, such as mowing or a herbicide, usually is not sufficient.

Russian knapweed typically invades degraded areas, dominating the plant community and desirable plants (e.g. perennial grasses). Seeding competitive, perennial grass species (cultural control) after Russian knapweed has been stressed by other control measures (set-up treatments) is essential. Set-up treatments may include chemical or mechanical methods.

Cooperative research between Colorado State University and the University of Wyoming showed that chemical set-up treatments were superior to mowing. Curtail (clopyralid + 2,4-D), Escort (metsulfuron), and Roundup (glyphosate) were used to suppress Russian knapweed. Then perennial grasses were sown in late fall as a dormant seeding. Tillage is necessary to overcome the residual allelopathic effects of Russian knapweed. Curtail (3 quarts per acre) (A) or Escort (1 ounce/A) were applied at the bud-growth stage. Roundup was applied twice at 1 quart/A, first at the bud-growth stage and again about 8 weeks later. Curtail controlled Russian knapweed best, but Roundup failed to control it.

None of the herbicides injured seeded grasses. Grasses established similarly among herbicide suppression treatments, even though Russian knapweed control varied. However, where Escort or Roundup was used to suppress Russian knapweed, additional herbicide treatments would be necessary to achieve acceptable control.

While two mowings, eight weeks apart (first at bud-growth stage), suppressed Russian knapweed during that year, the weed recovered vigorously the subsequent season. Perennial grasses established in the mowing treatments but much less than in herbicide treatments. Two mowings per year for several years may control Russian knapweed better, but further research is needed to test this hypothesis. Currently, no biological control is available for this weed.

Chemical Control of Russian Knapweed

In most circumstances, an herbicide alone will not effectively manage Russian knapweed. However, there may be situations where desirable plants within a Russian knapweed infestation may compete effectively with the weed if it is stressed with a single weed management technique. When integrating chemical and cultural control, avoid using herbicide rates that injure grasses because effective competition will be reduced.

Russian knapweed is controlled with Tordon 22K (picloram) at 1 to 2 quarts/A. Tordon may be broadcast sprayed up to 1 quart/A or spot sprayed at rates up to 2 quarts/A. Tordon plus 2,4-D (1 to 1.5 pints + 1 quart/A) also will control Russian knapweed. If low rates of Tordon or Tordon plus 2,4-D are used, application for two consecutive years may be necessary to achieve adequate control. Apply Tordon any time the weed is actively growing.

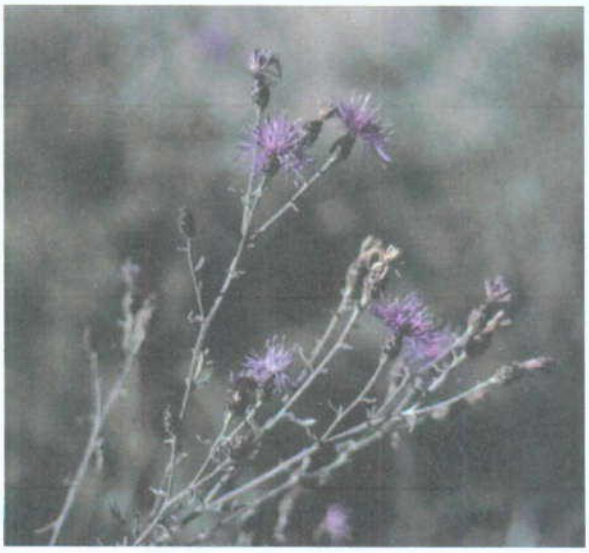
For Telar (chlorsulfuron), a noncrop herbicide that controls Russian knapweed, application timing is critical. Apply (1 ounce/A) when Russian knapweed is in the bloom to postbloom stage. Earlier applications do not control the weed effectively. Fall is a good time to apply Telar, but it may injure smooth brome or other brome species. Always add a good agricultural surfactant at 0.25 to 0.5 percent v/v to the spray solution. Escort (metsulfuron) is labeled for pasture and rangeland use. Apply it at 0.75 to 1 ounce/A with a good agricultural surfactant. Optimum timing for Escort is similar to Telar.

Mechanical Control of Russian Knapweed

Russian knapweed tends to form monocultures and usually eliminates other plants. Therefore, sowing desirable plant species is necessary after the weed is controlled. Smooth brome will compete with Russian knapweed. Research shows that streambank wheatgrass, thickspike wheatgrass, crested wheatgrass and Russian wildrye established after Russian knapweed was suppressed with herbicides. Sod-forming perennial grasses, like streambank or thickspike wheatgrasses, help prevent reinvasion better than bunch grasses like crested wheatgrass.

If the Russian knapweed stand is not too old and grasses are still present, stimulating grass growth by irrigation (where possible) should increase grass competition with knapweed and keep the weed under continual stress.

Spotted knapweed



Management

Diffuse and spotted knapweed can be managed similarly. They are readily controlled with herbicides. However, the weeds will reinvade unless cultural techniques are used.

Chemical Control of Spotted Knapweed

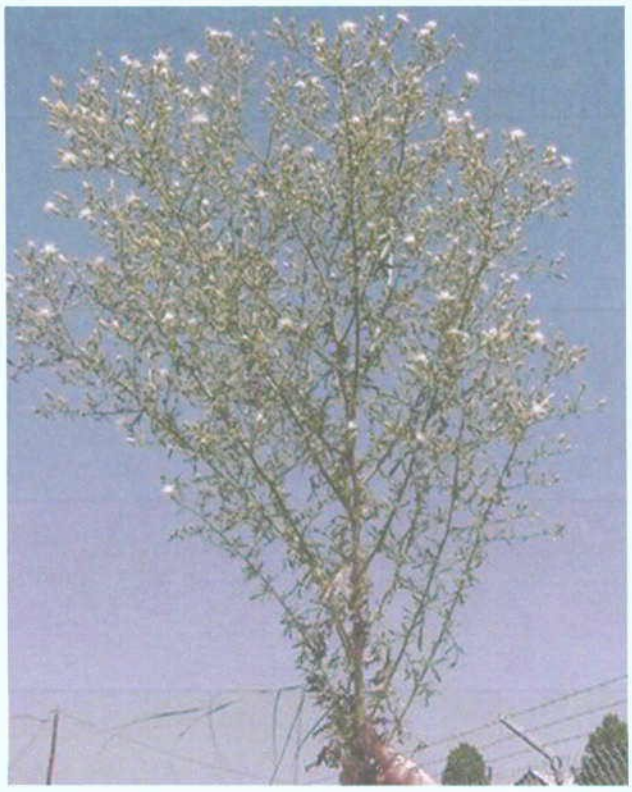
Research conducted at Colorado State University indicates that Tordon 22K (picloram) at 1 to 2 pt/A, Transline (clopyralid) at 0.67 to 1 pt/A, Curtail (clopyralid + 2,4-D) at 4 to 6 pt/A, or Banvel/Vanquish/Clarity (dicamba) at 1 to 2 pt/A control diffuse knapweed. Tank mixes of Banvel/Vanquish/Clarity plus 2,4-D at 1 pt + 2 pt/A or Banvel/Vanquish/Clarity plus Tordon 22K at 1 to 2 pt + 0.5 to 1 pt/A or Tordon plus 2,4-D at 0.75 pt + 2 pt/A all control diffuse knapweed. These tank-mixes may save money and reduce grass injury resulting from higher use rates of a single herbicide.

Spotted knapweed and diffuse knapweed generally occupy the same areas in Colorado, so the same herbicide treatments can be applied. Weed scientists at Montana State University indicate that 1 pt/A of Tordon (0.25 lb) controls spotted knapweed for two to three years, but the weed will reinvade the area unless other management techniques are used.

Mechanical Control of Spotted Knapweed

If desirable grass competition is evident in diffuse or spotted knapweed stands, judicious herbicide application that does not injure grasses may allow them to compete effectively with the weeds. Irrigation (where possible) may help stimulate grass competition in these cases. However, infested rangeland or pastures often are degraded, allowing knapweed invasion, and herbicides alone will not restore the land to a productive state. Seeding suitable perennial grasses is necessary to prevent weed reinvasion.

Diffuse knapweed



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Chemical Control of Diffused knapweed

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Mechanical Control of Diffused Knapweed

If desirable grass competition is evident in diffuse or spotted knapweed stands, judicious herbicide application that does not injure grasses may allow them to compete effectively with the weeds. Irrigation (where possible) may help stimulate grass competition in these cases. However, infested rangeland or pastures often are degraded, allowing knapweed invasion, and herbicides alone will not restore the land to a productive state. Seeding suitable perennial grasses is necessary to prevent weed reinvasion.

Yellow toadflax

MANAGEMENT

Figure 2: DALMATION TOADFLAX [*Linaria dalmatica* (L.) Mill. = *Linaria genistifolia* ssp. *dalmatica* (L.) Maire & Petitmengin]. Noxious. This differs from yellow toadflax principally in being larger and having differently shaped leaves. Clumps of stems are 3 to 4 feet tall. Waxy leaves are broad, ovate, sometimes heart shaped and upper leaves clasp the stem (an important difference). Seeds are irregular in shape, angular, somewhat flattened, thin-edged, strongly netted, tan-gray and 1/24 to 1/16 inch across. It is not as common, but is more aggressive than yellow toadflax. It is reported in various parts of the state from 5,000 to 6,500 feet.

All toadflax species are very difficult to control and management plans should integrate as many strategies as possible to increase potential for success. Assess the condition and composition of the existing plant community in an infested area then determine the approximate composition of the desired plant community needed to achieve land management goals and objectives. Create a management plan that combines various control strategies to foster development of the desired plant community.

Chemical Control of Yellow Toadflax

Yellow toadflax appears to be more difficult to manage than Dalmatian toadflax. In Colorado, control from Tordon applied at flowering has been most consistent and typically, 4 pt/A is recommended. Yellow toadflax usually recovers from a single application. For example, Tordon applied at 4 or 8 pt/A controlled 13 percent and 69 percent of yellow toadflax three years after treatments were applied. Other research conducted in Colorado suggests that yellow toadflax control may be improved if Tordon is applied over three consecutive years, but control varied with location. In one experiment conducted at high altitude (Camp Hale; elevation approximately 10,000 feet), 4 pt/A of Tordon applied at flowering for three consecutive years decreased shoot density to zero. However, the same treatment applied for three years at two other locations (White River drainage, elevation approximately 8,500 feet) controlled 69 percent and 35 percent of yellow toadflax. Telar also may be used to control yellow toadflax in non-crop areas. In an experiment conducted in Middle Park near Parshall, Telar at 1.25 ounce/A applied during flowering or in fall controlled 84 percent of yellow toadflax one year later.

Escort, 2,4-D amine, Banvel, and Paramount controlled from 5 percent to 24 percent of yellow toadflax one year after single treatments were applied at flowering. Plateau showed some potential to control yellow toadflax in another Colorado experiment where 8 fluid ounces per acre applied once in fall controlled 59 percent of yellow toadflax one year later. While this level of control is unsatisfactory, sequential treatments may increase control but experiments must be conducted to test this hypothesis.

Mechanical and Chemical Control of Yellow Toadflax

Mowing combined with spraying Tordon did not improve control in an experiment conducted near Hesperus, Colorado. Yellow toadflax was mowed three times per year then treated with Tordon at 4 pt/A in fall for two consecutive years and compared to Tordon applied at 4 pt/A at flowering also for two consecutive years. Yellow toadflax control was the same (85 percent) whether Tordon treatments were combined with mowing or not.

Dalmation toadflax

MANAGEMENT

Figure 2: DALMATION TOADFLAX [*Linaria dalmatica* (L.) Mill. = *Linaria genistifolia* ssp. *dalmatica* (L.) Maire & Petitmengin]. Noxious. This differs from yellow toadflax principally in being larger and having differently shaped leaves. Clumps of stems are 3 to 4 feet tall. Waxy leaves are broad, ovate, sometimes heart shaped and upper leaves clasp the stem (an important difference). Seeds are irregular in shape, angular, somewhat flattened, thin-edged, strongly netted, tan-gray and 1/24 to 1/16 inch across. It is not as common, but is more aggressive than yellow toadflax. It is reported in various parts of the state from 5,000 to 6,500 feet.

All toadflax species are very difficult to control and management plans should integrate as many strategies as possible to increase potential for success. Assess the condition and composition of the existing plant community in an infested area then determine the approximate composition of the desired plant community needed to achieve land management goals and objectives. Create a management plan that combines various control strategies to foster development of the desired plant community.

Chemical and Cultural Management of Dalmatian Toadflax

Dalmatian toadflax may be controlled with Tordon 22K at 2 pt/A sprayed at flowering or in fall. In Colorado, rates of 2, 4, and 8 pt/A of Tordon were compared and control longevity was greatest from the 2 pt rate, apparently because competition from crested wheatgrass was maintained. Researchers in Wyoming treated Dalmatian toadflax in early September, 1994, with Tordon at 2 pt/A, then seeded the following year in April or August with 'Hycrest' crested wheatgrass, 'Luna' pubescent wheatgrass, 'Critana' thickspike wheatgrass, 'Bozoisky' Russian wildrye, or 'Sodar' streambank wheatgrass. The combination of spraying and seeding competitive grasses controlled Dalmatian toadflax better than spraying alone. Three years after treatments were started, control of Dalmatian toadflax ranged from 61 percent to 86 percent where grasses were seeded in April and from 76 percent to 95 percent from the August seeding, compared to no control from spraying alone.

Perennial peperweed

Management

Perennial pepperweed is most often found in open, unshaded areas on disturbed, and often saline soils. It is most common in seasonally wet areas from 5,500 to 9,000 feet. Areas along the South Platte River, in the San Luis Valley are, and communities of the Piceance Basin of Colorado are susceptible to Perennial pepperweed. Best management is to treat as soon as found.

Mechanical Control of Perennial Pepperweed

Periodic mowing and spring burning have reduced perennial pepperweed density in Utah (FEIS 1996) Herbicides:

Chemical Control of Perennial Pepperweed

Metsulfuron at the rate of 0.45 oz. ai/acre is the most effective herbicide treatment. Dicamba at 1 lb. ai/acre, glyphosate at 1.5 lb. ai/acre or glyphosate +2,4D at 54 fl. oz. Product/acre will control perennial pepperweed. Other herbicides that proved to be effective include chlorsulfuron and imazapyr.

Houndstongue

MANAGEMENT

Houndstongue contains toxic alkaloids that stop liver cells from reproducing. Therefore, houndstongue reduces livestock and wildlife forage and grazing animals should be kept away. Animals may live six or more months after eating a lethal dose of houndstongue. Houndstongue is an early sucessional species on recently disturbed sites. Houndstongue is common on gravelly, alkaline soils. Maintaining a healthy population of native perennials is the best way to prevent the establishment and spread of houndstongue.

Mechanical Control of Houndstongue

Mowing second year plants during flowering but before seed maturation reduces seed production and may kill the plant.

Chemical Control of Houndstongue

Picloram at 0.25-0.5 lb., 2,4-D, or dicamba at 1.0 lb., or metsulfuron at 0.6 oz. ai/acre applied in spring provides control of houndstongue. Spring treatments with pocloram, dicamba, or metsulfuron are more effective than fall treatments. Chlorsufuron applied 0.5 lb. ai/ac gave complete control when applied any time beginning with the rosette stage until the bolted plant had attained 10 inches in height.

Hoary cress (White Top)

MANAGEMENT

Hoary cress is typically found on generally open, unshaded, disturbed ground. Goary cress grows well on alkaline soils that are wet in late spring and generally does better in areas with moderate amounts of rainfall. It is widespread in fields, waste places, meadows, pastures, croplands, and along roadsides. Hoary cress is commonly found with saltcedar, antelope bitterush, bluebunch wheatgrass, big sagebrush, and Wyoming big sagebrush. Hoary cress flowers from May to June, are self-incompatible, and are pollinated by insects. Hoary cress will set seed by mid-summer. If conditions are favorable, a second crop of seeds can be produced in the fall. Hoary cress spreads by creeping roots and by seeding.

Mechanical Control of Hoary cress

Mowing 2-3 times a ear for several years may slow the spread and reduce seed production of hoary cress. Mowing may increase the effectiveness of subsequent herbicide application. Mowing should be conducted during the bud stage and repeated when the plants re-bud. The effectiveness of a mowing program can be increased by planting perennial grasses as competitors.

Burn Control of Hoary cress

Is not recommended since Hoary cress has a rapid growth rate when compared to non noxious weeds.

Chemical Control of Hoary cress

Hoary cress is most commonly controlled with herbicides. However, multiple applications are usually needed to provide lasting control. The best time to apply herbicides is in May or June before flowering. The non-crop herbicides metsulfuron and chlorsulfuron are the most effective herbicides as long as the plants still have green tissue. It is important to use a non-ionic surfactant with the herbicide. 2.4D +

dicamba is very effective when applied during the early pre-bud stage (late May through early June) Glyphosate at 1.5 lb. ai/acre applied during the flower stage will provide good control of hoary cress. Picloram does not control Hoary cress.

Field bindweed

MANAGEMENT

Establishment of selected, aggressive grasses can be an effective cultural control of field bindweed. Contact your local Colorado State University Extension office or Natural Resources Conservation Service office for seed mix recommendations. Good grazing management will stimulate grass growth and keep pastures healthy. Healthy pastures may be more resistant to field bindweed invasion. Bare spots caused by overgrazing are prime habitat for weed infestations.

Mechanical and Control of Field Bindweed

Cutting, mowing, or pulling has a negligible effect unless the plants are cut below the surface in the early seedling stage. Well-established populations have a large seed bank in the soil that can remain viable for over 40 years.

Chemical Control of Field Bindweed

The following are recommendations for herbicides that can be applied to range and pasturelands. Optimum results occur when the plants have recently received moisture and are actively growing

Herbicide	Rate	Application Timing/Comments
Clarity + 2,4-D Amine	1 qt./acre for each product or 1 oz/gal water for each product	Spring- at or just after full-bloom and/or fall. DO NOT apply when outside temperatures will exceed 85 degrees. DO NOT apply near or under trees or where soils have rapid permeability or where water level

		is high. Add non-ionic surfactant @ 0.32 oz/gal water or 1 qt/100 gal water.
*Tordon 22K + 2,4-D Amine *this is a Restricted Use Pesticide*	1 qt./acre for each product or 1oz/gal water for each product	Spring- at or just after full-bloom and/or fall. DO NOT apply when outside temperatures will exceed 85 degrees. DO NOT apply near or under trees or where soils have rapid permeability or where water level is high. Add non-ionic surfactant @ 0.32 oz/gal water or 1 qt/100 gal water.
*Roundup Ultra *Non-selective herbicide. Will kill all vegetation.*	4 –5 qts./acre or 4 –5 oz/gal water	Apply at full-bloom and/or fall. Add a non-ionic surfactant @ 0.32oz/gal water or 1 qt/100 gal water. Use caution when applying near grasses or other desirable vegetation. Roundup will possibly kill surrounding vegetation.

Saltcedar

MANAGEMENT

After managing saltcedar infestations, other vegetation must be established to prevent re-invasion. Competitive grasses and planted cottonwood cuttings have proven to be effective at reducing the chances of re-invasion. Contact your local Colorado State University Extension office or Natural Resources Conservation Service office for proper seed mix recommendations.

Mechanical and Chemical Control of Saltcedar

A bulldozer or prescribed fire can be used to open up large stands of saltcedar. These methods must be followed up with an herbicide treatment of the resprouts when they are 1 to 2 meters tall.

Chemical Control of Saltcedar

For large stands of saltcedar that would essentially be monotypic, foliar applications of the herbicide Arsenal or Arsenal plus Roundup are effective. Late summer/early fall are optimum treatment times. This is recommended for areas that have little to no desirable shrubs and trees. In areas where woody native plants are present and their continued existence is desired, it may be necessary to cut and treat saltcedar stumps with an herbicide. This is referred to as the cut-stump method. Cuts should be made within 2 inches of the grounds surface, immediately followed by an herbicide application to the perimeters of the cut stems. The products Arsenal and Garlon are effective but must be applied within one minute after cutting because wound healing occurs very quickly and decreases herbicide penetration.

Russian Olive

MANAGEMENT

Russian olive tolerates a wide rang of soil and moisture conditions, from sand to heavy clay, and can withstand flooding and silting. It grows best in deep sandy or loamy soils with only slight salt and alkali content. Russian olive can withstand temperatures ranging from –50 degrees F to 115 degrees F. It is also shade tolerant, which means it can grow under larger trees. Russian olive reproduces by seed, which is usually produced after trees are four to five years old. It generally flowers from May through June. The fruits mature from August to October and remain on the tree throughout the winter or until the crop is consumed. Seeds are ingested with the fruit by birds and small animals and dispersed in their droppings. Russian olive is a rapid growth rate tree with growth up to six feet a year. Control methods vary with tree size, habitat, and use of the area. Removal should be undertaken before seeds are fully developed to prevent further spread of seeds. Control is difficult once trees mature, so early detection and control are important.

Mechanical Control of Russian Olive

Russian olives with small diameters can be pulled out with a weed wrench when soils are moist. In certain situations larger trees can be removed using a tractor/chain. Any remaining exposed roots should be cut off below ground level and buried. Grinding and cutting are not effective controls by themselves. The tree may resprout below the cut area or along root line.

Chemical Control of Russian Olive

Most translocating herbicides (e.g., glyphosate) are effective at label strength when applied during the growing season. Some dormant-season herbicides (e.g., imazipyr as Chopper RTU®) are labeled for Russian olive control. Foliar spraying has been successful, as has injecting herbicide capsules around base of trunk. When injecting herbicides into the tree, monitoring should occur to ensure that the entire tree is affected. When cutting the stump should be as close to the ground as possible and treated with 5 –10 cc of glyphosate (Roundup®) applied at full strength. Non-immediately needed trees should be debarked at the bass and a herbicide should be sprayed on the area. Brushing on herbicide is the most effective application for Russian olive.

References:

"Weeds of the West" 9th Edition, 2000 Published by The western Society of Weed Science in cooperation with the Western United States Land Grand Universities Cooperative Extension Services, printed by Grand Teton Lithography, Jackson, Wyoming.

"Creating an Integrated Weed Management Plan-A Handbook for Owners and Managers of Lands with Natural Values" Caring for the Land Series Volume IV March 2000, written and distributed by Colorado Natural Areas Program in conjunctions with Colorado State Parks in conjunctions with Colorado Department of Natural Resources.

Idaho "ONE PLAN" that can be viewed at http://oneplan.org/Crop/noxWeeds.htm

University of California Cooperative Extension, Weed RIC that can be viewed at http://grounps.ucanr.org/WeedRIC.htm

California Invasive Plant Council "CAL-IPC" that can viewed at http://group.ucanr.org/ceppc.htm

California Department of Food and Agriculture, Division of Plant Health and Pest Prevention Services that can be viewed at http://cdfa.ca.gov/phpps/ipc/weedinfo.htm

Colorado State University Adams County Cooperative Extension, Adams County Weed & Pest control that can be found at http://www.colostate.edu/Depts/CoopExt/Adams/weeds.htm

6.4.11 Exhibit K

Climate

Climate data was pulled from the U.S Climate Data website for the Trinidad, Colorado area.

	Jan	Feb	Mar	Apr	May	Jun
Average high in °F	47	50	58	65	75	84
Average low in °F	17	20	27	34	44	53
Av. precipitation in inch	0.40	0.49	0.89	1.13	1.61	1.41
Av. snowfall in inch	4	5	7	5	1	0

	Jul	Aug	Sep	Oct	Nov	Dec
Average high in °F	89	86	80	68	56	46
Average low in °F	58	57	49	37	25	17
Av. precipitation in inch	2.30	2.23	1.24	0.90	0.70	0.54
Av. snowfall in inch	0	0	1	4	8	5

6.4.12 Exhibit L

Reclamation Costs

Reclamation cost estimates were calculated on a per acre basis and applied to maximum active mining area of 320 acres.

Direct Tasks	Unit	Quantity	Cost	Total Cost
Placing Topsoil/Fines				
Bull Dozer	Hours	0.33	$145.00	$47.85
Loader	Hours	0.33	$145.00	$47.85
Seeding				
Broadcasting	Hours	0.33	$300.00	$99.00
Seed Mix	Acre	1	$350.00	$350.00
Mulch	Acre	1	$187.50	$187.50
Tracking seed/mulch				
Dozer	Hours	0.33	$154.00	$50.82
Area Reclaimed	Acre	320		$250,550.00
Mobilization Fee	Hours	1	$100	$100
Indirect Tasks				
Liability Insurance			0.0155	$2,573.00
Performance Bond			0.015	$2,490.00
Profit			0.1	$16,000.00
Job Superintendent	Hours	20	$88.00	$1,760.00
Miscellaneous Indirect			0.0925	$14,800.00
Total Bond				$274,953.00

6.4.13 Exhibit M

Other Permits and Licenses

- All Rite Paving and Redi Mix has a Las Animas County Special Use Permit.
- Air Permit Emissions Notice (APEN) - Colorado Department of Public Health and Environment's Air Pollution Control Division
- Stormwater Discharge Permit – Colorado Department of Public Health and Environment's Water Quality Control Division

6.4.14 Exhibit N

Source of Legal Right to Enter

Attached is the lease between All Rite Rock Paving and Redi Mix and Cooper Moore.

GRAVEL LEASE RENEWAL

This Gravel Lease Renewal dated this 7th of July, 2022 (hereafter referred to as the "Lease Renewal"), by and between Cooper Moore (Lessor), whose address is PO Box 1804, Raton, NM and All Rite Paving & Redi Mix, Inc., a Colorado Corporation (the "Company"), whose address is PO Box 165, Canon City, CO 81215.

Renewal Agreement

The term of this lease renewal shall commence on the 5/17/2024 and shall expire 10 years from that date. The royalty rate will increase to [redacted] for July 2022, and a royalty rate review will occur by 5/17/2027. All other terms and conditions contained in the original lease shall apply during the 10-year extension.

The extension will include the additional acreage as depicted and described in the attached map. The water tank and water lines will be included in the amendment to the Division of Reclamation, Mining and Safety permit. However, mining will not take place within 20 feet of the water tank. The water lines will remain in place on the south side of the tank and mining will not take place within 20 feet of those lines. The water line that proceeds to the northeast of the tank will be moved when mining has been completed up to it on the west side. The replacement of such line will take place with the Lessor's guidance and water service will be down no longer than 1 day during the replacement of the line, so that mining may progress easterly past the line.

IN WITNESS WHEREOF, this Gravel Lease Renewal has been duly executed as of the date first written above.

Mooney Hills Pit

BY: _____

Cooper Moore, Owner

ALL RITE PAVING AND REDI MIX, INC.

BY: _____

John P. Ary, President

RECEIVED AUG 0 1 2022

6.4.15 Exhibit O

Owner of Record of Affected Land

Surface Area and Substance to be Mined

Attached are the Las Animas County Assessor's Property Cards for this property.

Property Record Card

Las Animas Assessor

MOORE COOPER D
P O BOX 1804
RATON, NM 87740

Account: R0003529
Tax Area: 39W - DISTRICT 39W
Acres: 3040.000

Parcel: 10786530
Situs Address:
47735 HWY 160
TRINIDAD, 81082

Value Summary

Value By:	Market	Override
Land (1)	$104,588	N/A
Land (2)	$70,489	N/A
Total	**$175,077**	**$175,077**

Legal Description

24-32-62 ALL-CONT-640.0 ACRS M/L 25-32-62 ALL-CONT-640.0 ACRS M/L 33-32-62 E2-E2W2-CONT-480.0 ACRS M/L 34-32-62 ALL-CONT-640.0 ACRS M/L 35-32-62 ALL-CONT-640.0 ACRS M/L

Sale Data

Doc. #	Sale Date	Deed Type	Validity	Verified	Sale Price	Ratio	Adj. Price	Ratio	Time Adj. Price	Ratio
724497	04/18/2014	WD	QI	N	$3,250,000	5.39	$3,250,000	5.39	$3,250,000	5.39
1047000128	03/25/2005	WJ	QI	N	$2,600,000	6.73	$2,600,000	6.73	$2,600,000	6.73

Land Occurrence 1

Property Code	4117 - IRRIGATED LAND-AGRICULTURAL	Measure By	Acre
Acres	200	SQFT	8712000

Land Occurrence 2

Property Code	4147 - GRAZING LAND-AGRICULTURAL	Measure By	Acre
Acres	2840	SQFT	123710400

Abstract Summary

Code	Classification	Actual Value	Taxable	Actual	Taxable

Property Record Card

Las Animas Assessor

MOORE COOPER D
P O BOX 1804
RATON, NM 87740

Account: R0003531
Tax Area: 39Y - DISTRICT 39Y
Acres: 3289.200

Parcel: 10786540
Situs Address:
00000

Value Summary

Value By:	Market	Override
Land (1)	$37,365	N/A
Total	**$37,365**	**$37,365**

Legal Description

19-32-61 E2-E2W2-LTS-1-2-3-4-CONT-600.89 ACRS M/L 29-32-61 ALL-CONT-640.0 ACRS ML 30-32-61 E2-E2W2-LTS-1-2-3-4-CONT -593.40 ACRS M/L 31-32-61 E2-E2NW-LTS-1-2-3-CONT-496.62 ACRS ML 32-32-61 ALL-CONT-638.29 ACRS ML 33-32-61 S2NW-SW4-W2SE-CONT-320.0 ACRS M/L

Sale Data

Doc. #	Sale Date	Deed Type	Validity	Verified	Sale Price	Ratio	Adj. Price	Ratio	Time Adj. Price	Ratio
724497	04/18/2014	WD	QI	N	$3,250,000	1.15	$3,250,000	1.15	$3,250,000	1.15
1047000128	03/25/2005	WJ	QI	N	$2,600,000	1.44	$2,600,000	1.44	$2,600,000	1.44

Land Occurrence 1

Property Code	4147 - GRAZING LAND-AGRICULTURAL	Measure By	Acre
Acres	3289.2	SQFT	143277552

Abstract Summary

Code	Classification	Actual Value	Taxable Value	Actual Override	Taxable Override
4147	GRAZING LAND-AGRICULTURAL	$37,365	$9,860	NA	NA
Total		**$37,365**	**$9,860**	**NA**	**NA**

Transfer Documents

Account Number	Parcel Number	Book Page	Recording Date	Reception Number
R0003531	10786540	B: 1047 P: 128	03/25/2005	1047-000128

6.4.16 Exhibit P

Municipalities Within Two Miles

There are no towns within two miles of the proposed mining operation.

6.4.17 Exhibit Q

Proof of Mailing Notices to Board of County Commissioners and Soil Conservation District

December 26th, 2022

Las Animas County Commissioners
200 East 1st Street
Trinidad, CO 81082

RE: Mooney Hills Pit

Enclosed is a notice of an amendment application for a Construction Materials (112c) Reclamation Permit with the Colorado Mined Land Reclamation Board for the operation known as the Mooney Hills Pit operated by All Rite Paving and Redi Mix, Inc. The Colorado Division of Reclamation, Mining and Safety requires evidence that you received this notice. I ask that you please sign and date the box below and return via mail or email.

If additional information is necessary to complete this request, please feel free to contact me directly.

Sincerely,

Jodi Schreiber CAC Admin on behalf of LACBoCC
1/12/2023

Jodi Schreiber
Mobile 719-529-0916
jodi@arycorp.com

The notice was received on the following date: _____

BY: _____

NOTICE OF FILING APPLICATION

FOR COLORADO MINED LAND RECLAMATION PERMIT

FOR **REGULAR (112) CONSTRUCTION MATERIALS EXTRACTION OPERATION**

NOTICE TO THE BOARD OF COUNTY COMMISSIONERS

Las Animas COUNTY

All Rite Paving & Redi-mix (the "Applicant/Operator") has applied for a Regular (112) reclamation permit from the Colorado Mined Land Reclamation Board (the "Board") to conduct the extraction of construction materials operations in Las Animas County. The attached information is being provided to notify you of the location and nature of the proposed operation. The entire application is on file with the Division of Reclamation, Mining, and Safety (the "Division") and the local county clerk and recorder.

The applicant/operator proposes to reclaim the affected land to Rangeland use. Pursuant to Section 34-32.5-116(4)(m), C.R.S., the Board may confer with the local Board of County Commissioners before approving of the post-mining land use. Accordingly, the Board would appreciate your comments on the proposed operation. Please note that, in order to preserve your right to a hearing before the Board on this application, you must submit written comments on the application within twenty (20) days of the date of last publication of notice pursuant to Section 34-32.5-112(10), C.R.S.

If you would like to discuss the proposed post-mining land use, or any other issue regarding this application, please contact the Division of Reclamation, Mining, and Safety, 1313 Sherman Street, Room 215, Denver, Colorado 80203, (303) 866-3567.

NOTE TO APPLICANT/OPERATOR: You must attach a copy of the application form to this notice. If this is a notice of a change to a previously filed application you must either attach a copy of the changes, or attach a complete and accurate description of the change.

December 26th, 2022

Las Animas County Conservation District
3590 E. Main Street
Trinidad, CO 81082

RE: Mooney Hills Pit

Enclosed is a notice of an amendment application for a Construction Materials (112c) Reclamation Permit with the Colorado Mined Land Reclamation Board for the operation known as the Mooney Hills Pit operated by All Rite Paving and Redi Mix, Inc. The Colorado Division of Reclamation, Mining and Safety requires evidence that you received this notice. I ask that you please sign and date the box below and return via mail or email.

If additional information is necessary to complete this request, please feel free to contact me directly.

Sincerely,

Jodi Schreiber

Mobile 719-529-0916
jodi@arycorp.com

The notice was received on the following date: 1/19/23

BY: Lalise Hubucher

NOTICE OF FILING APPLICATION

FOR COLORADO MINED LAND RECLAMATION PERMIT

FOR **REGULAR (112) CONSTRUCTION MATERIALS EXTRACTION OPERATION**

NOTICE TO THE BOARD OF SUPERVISORS

OF THE LOCAL CONSERVATION DISTRICT

Las Animas County DISTRICT

All Rite Paving & Redi-mix (the "Applicant/Operator") has applied for a Regular (112) reclamation permit from the Colorado Mined Land Reclamation Board (the "Board") to conduct the extraction of construction materials operations in Las Animas County. The attached information is being provided to notify you of the location and nature of the proposed operation. The entire application is on file with the Division of Reclamation, Mining, and Safety (the "Division") and the local county clerk and recorder.

The applicant/operator proposes to reclaim the affected land to Rangeland use. Pursuant to Section 34-32.5-116(4)(m), C.R.S., the Board may confer with the local Conservation Districts before approving of the post-mining land use. Accordingly, the Board would appreciate your comments on the proposed operation. Please note that, in order to preserve your right to a hearing before the Board on this application, you must submit written comments on the application within twenty (20) days of the date of last publication of notice pursuant to Section 34-32.5-112(10), C.R.S.

If you would like to discuss the proposed post-mining land use, or any other issue regarding this application, please contact the Division of Reclamation, Mining, and Safety, 1313 Sherman Street, Room 215, Denver, Colorado 80203, (303) 866-3567.

NOTE TO APPLICANT/OPERATOR: You must attach a copy of the application form to this notice. If this is a notice of a change to a previously filed application you must either attach a copy of the changes, or attach a complete and accurate description of the change.

6.4.18 Exhibit R

Proof of Filing with County Clerk and Recorder

December 26th, 2022

Las Animas County Clerk
200 East 1st Street
Room 205
Trinidad, CO 81082

RE: Mooney Hills Pit

Enclosed is a notice of an amendment application for a Construction Materials (112c) Reclamation Permit with the Colorado Mined Land Reclamation Board for the operation known as the Mooney Hills Pit operated by All Rite Paving and Redi Mix, Inc. The Colorado Division of Reclamation, Mining and Safety requires evidence that you received this notice along with a copy of the application for public viewing. The application should be retained for 60 days and then can be destroyed. I ask that you please sign and date the box below and return via mail or email.

If additional information is necessary to complete this request, please feel free to contact me directly.

Sincerely,

Jodi Schreiber
Mobile 719-529-0916
Jodi@arycorp.com

The notice was received on the following date: 1-19-23

BY: Susana Cha

6.4.14 Exhibit S

Permanent Man-made Structures

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Region 2 – Access
P.O. Box 536
Pueblo, Colorado 81002
Phone (719) 546-5403
Fax (719) 546-5414

RECEIVED 1-21-10

January 18, 2010

Permit No. 208067

Warren McDonald
16403 County Road 41.7
Weston, CO 81091

Dear Warren:

This is to notify you that the Colorado Department of Transportation has inspected the access on State Highway 160 at approximately milepost 357.3. The access permit for this access was issued to construct a new access to State Highway 160. The access has been installed in accordance with the terms and conditions listed on the access permit therefore it is acceptable to CDOT.

It is the responsibility of the property owner and Permittee to ensure that the use of the access to the property is not in violation of the Code, permit terms and conditions or the Act. The terms and conditions of any permit are binding upon all assigns, successors-in-interest, heirs and occupants. If, in the future, any significant changes are made or will be made in the use of the property, which will affect access operation, traffic volume and or vehicle type, the Permittee or property owner shall contact the Department to determine if a new access permit and modifications to the access are required.

Please be aware that if any construction element fails within two years from the date of this letter, due to improper construction or material specifications, the Permittee shall be responsible for all repairs.

If you have any questions, please contact me in Pueblo at (719) 546-5758.

Sincerely,

Todd Ansbun
Region 2, Access
Construction Coordinator/Inspector

XC: Karami
Hu/Sword/file

1/19/10 1/19/10

COLORADO DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ACCESS PERMIT

CDOT Permit No. 208067

State Highway No/Mile/Side: 60 C / 357.300 / L

Permit fee	Date of issuance	Region/Section/Patrol	Local Jurisdiction
$100.00	9/15/2008	2 / 04 / Stacey/Van Metre	Las Animas County

The Permittee(s): Applicant: Ref No.: 3328

Warren McDonald

15403 County Road 41.7
Weston, CO 81091
719-868-2530

is hereby granted permission to have an access to the state highway at the location noted below. The access shall be constructed, maintained and used in accordance with this permit, including the State Highway Access Code and any attachments, terms, conditions and exhibits. This permit may be revoked by the issuing authority if at any time the permitted access and its use violate any parts of this permit. The issuing authority, the Department and their duly appointed agents and employees shall be held harmless against any action for personal injury or property damage sustained by reason of the exercise of the permit.

Location: 3 miles east from the intersection of SH 160and 350

Access to Provide Service to: (Land Use Code:) Gravel Pit (Size or Count) 10 (Units) ACRES

Additional Information:
See Attached

SEP 2008
Colorado Dept of Transportation
Region 2
Traffic Section

PAID
9-10-08 CK #5072
$100.00

MUNICIPALITY OR COUNTY APPROVAL
Required only when the appropriate local authority retains issuing authority.

Signature	Print Name	Title	Date

Upon the signing of this permit the permittee agrees to the terms and conditions and referenced attachments contained herein. All construction shall be completed in an expeditious and safe manner and shall be finished within 45 days from initiation. The permitted access shall be completed in accordance with the terms and conditions of the permit prior to being used.

The permittee shall notify Todd Ausbum with the Colorado Department of Transportation in Pueblo, Colorado at (719) 546-5708, at least 48 hours prior to commencing construction within the State Highway right-of-way.

The person signing as the permittee must be the owner or legal representative of the property served by the purported access and have full authority to accept the permit and its terms and conditions.

Permittee Signature: Warren McDonald Print Name: Warren McDonald Title: [illegible] Date: 8/25/08

This permit is not valid until signed by a duly authorized representative of the Department.
COLORADO DEPARTMENT OF TRANSPORTATION

Signature	Print Name	Title	Date (of issue)
Valerie Sword	Valerie Sword	Access Mgr	9/10/08

Copy Distribution: Required: 1.Region 2.Applicant 3.Staff Access Section 4.Central Files. Make copies as necessary for: Local Authority Inspector

Previous editions are obsolete and may not be used

An example Structure Agreement which meets the requirements of the Statutes is shown below.
****

Structure Agreement

This letter has been provided to you as the owner of a structure on or within two hundred (200) feet of a proposed mine site. The State of Colorado, Division of Reclamation, Mining and Safety ("Division") requires that where a mining operation will adversely affect the stability of any significant, valuable and permanent man-made structure located within two hundred (200) feet of the affected land, the Applicant shall either:

a) Provide a notarized agreement between the Applicant and the Person(s) having an interest in the structure, that the Applicant is to provide compensation for any damage to the structure; or

b) Where such an agreement cannot be reached, the Applicant shall provide an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation; or

c) Where such structure is a utility, the Applicant may supply a notarized letter, on utility letterhead, from the owner(s) of the utility that the mining and reclamation activities, as proposed, will have "no negative effect" on their utility. (*Construction Materials Rule 6.3.12 and Rule 6.4.19 & Hard Rock/Metal Mining Rule 6.3.12 and Rule 6.4.20)*

The Colorado Mined Land Reclamation Board ("Board") has determined that this form, if properly executed, represents an agreement that complies with Construction Materials Rule 6.3.12(a), Rule 6.4.19(a), and C.R.S. § 34-32.5-115(4)(e) and with Hard Rock/Metal Mining Rule 6.3.12(a), Rule 6.4.20(a), and C.R.S. § 34-32-115(4)(d). This form is for the sole purpose of ensuring compliance with the Rules and Regulations and shall not make the Board or Division a necessary party to any private civil lawsuit to enforce the terms of the agreement or create any enforcement obligations in the Board or the Division.

The following structures are located on or within 200 feet of the proposed affected area:

1. Electric Line _____
2. _____
3. _____
4. _____
5. _____

(Please list additional structures on a separate page)

CERTIFICATION

The Applicant, All Rite Paving & Redi-Mix (print applicant/company name), by John Paul Ary (print representative's name), as President (print representative's title), does hereby certify that San Isabel Electric Assoc. (structure owner) shall be compensated for any damage from the proposed mining operation to the above listed structure(s) located on or within 200 feet of the proposed affected area described within Exhibit A, of the Reclamation Permit Application for Mooney Altura Pit (operation name), File Number M-2010-012.

This form has been approved by the Colorado Mined Land Reclamation Board pursuant to its authority under the Colorado Land Reclamation Act for the Extraction of Construction Materials and the Colorado Mined Land Reclamation Act for Hard Rock, Metal, and Designated Mining Operations. Any alteration or modification to this form shall result in voiding this form.

NOTARY FOR PERMIT APPLICANT

ACKNOWLEGED BY:

Applicant All Rite Paving & Redi Mix Representative Name [signature]

Date 12/6/2022 Title President

STATE OF Colorado)
) ss.
COUNTY OF Pueblo)

The foregoing was acknowledged before me this 6th day of December, 2022 by John P Ary as President of All Rite Paving & Redi Mix

[signature] My Commission Expires: 10/6/26
Notary Public

JODI D SCHREIBER
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20064001792
MY COMMISSION EXPIRES OCTOBER 6, 2026

NOTARY FOR STRUCTURE OWNER

ACKNOWLEGED BY:

Structure Owner San Isabel Electric Association Name Royce Anderson

Date November 30, 2022 Title ROW and Safety Manager

STATE OF Colorado)
) ss.
COUNTY OF Pueblo)

The foregoing was acknowledged before me this 30 day of November, 2022 by Royce Anderson as Row + Safety man. of San Isabel Electric Assoc.

Peggy L Nielsen My Commission Expires: June 30, 2026
Notary Public

PEGGY L NIELSEN
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20024021040
MY COMMISSION EXPIRES JUNE 30, 2026

An example Structure Agreement which meets the requirements of the Statutes is shown below.
****

Structure Agreement

This letter has been provided to you as the owner of a structure on or within two hundred (200) feet of a proposed mine site. The State of Colorado, Division of Reclamation, Mining and Safety ("Division") requires that where a mining operation will adversely affect the stability of any significant, valuable and permanent man-made structure located within two hundred (200) feet of the affected land, the Applicant shall either:

a) Provide a notarized agreement between the Applicant and the Person(s) having an interest in the structure, that the Applicant is to provide compensation for any damage to the structure; or

b) Where such an agreement cannot be reached, the Applicant shall provide an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation; or

c) Where such structure is a utility, the Applicant may supply a notarized letter, on utility letterhead, from the owner(s) of the utility that the mining and reclamation activities, as proposed, will have "no negative effect" on their utility. (*Construction Materials Rule 6.3.12 and Rule 6.4.19 & Hard Rock/Metal Mining Rule 6.3.12 and Rule 6.4.20)*

The Colorado Mined Land Reclamation Board ("Board") has determined that this form, if properly executed, represents an agreement that complies with Construction Materials Rule 6.3.12(a), Rule 6.4.19(a), and C.R.S. § 34-32.5-115(4)(e) and with Hard Rock/Metal Mining Rule 6.3.12(a), Rule 6.4.20(a), and C.R.S. § 34-32-115(4)(d). This form is for the sole purpose of ensuring compliance with the Rules and Regulations and shall not make the Board or Division a necessary party to any private civil lawsuit to enforce the terms of the agreement or create any enforcement obligations in the Board or the Division.

The following structures are located on or within 200 feet of the proposed affected area:

1. Fiber Optic Line _____
2. _____
3. _____
4. _____
5. _____

(*Please list additional structures on a separate page*)

CERTIFICATION

The Applicant, All Rite Paving & Redi-Mix (print applicant/company name), by John Paul Ary (print representative's name), as President (print representative's title), does hereby certify that Zayo Fiber Optics (structure owner) shall be compensated for any damage from the proposed mining operation to the above listed structure(s) located on or within 200 feet of the proposed affected area described within Exhibit A, of the Reclamation Permit Application for Mooney Altura Pit (operation name), File Number M-2010-012.

This form has been approved by the Colorado Mined Land Reclamation Board pursuant to its authority under the Colorado Land Reclamation Act for the Extraction of Construction Materials and the Colorado Mined Land Reclamation Act for Hard Rock, Metal, and Designated Mining Operations. Any alteration or modification to this form shall result in voiding this form.

NOTARY FOR PERMIT APPLICANT

ACKNOWLEGED BY:

Applicant _____ Representative Name John P. Ary

Date 12/27/2022 Title President

STATE OF Colorado)
) ss.
COUNTY OF Fremont)

The foregoing was acknowledged before me this 27th day of December, 2022 by John P. Ary as President of All Rite Paving & Redi-Mix, Inc.

_____ My Commission Expires: 10/6/26
Notary Public

JODI D SCHREIBER
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20064001792
MY COMMISSION EXPIRES OCTOBER 6, 2026

NOTARY FOR STRUCTURE OWNER

ACKNOWLEDGED BY:

Structure Owner: _____ Name: David Urbach

Date: 12.08.2022 Title: Director, Underlying Rights

STATE OF Colorado)
) ss
COUNTY OF Denver)

The foregoing was acknowledged before me this 8 day of December, 2022 by David Urbach as Director, ULR of EayoGroup

Gillian Leytham Notary Commission Expires: 5/7/24
Notary Public

GILLIAN N. LEYTHAM
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20204016074
MY COMMISSION EXPIRES ON MAY 7, 2024

An example Structure Agreement which meets the requirements of the Statutes is shown below.
****

Structure Agreement

This letter has been provided to you as the owner of a structure on or within two hundred (200) feet of a proposed mine site. The State of Colorado, Division of Reclamation, Mining and Safety ("Division") requires that where a mining operation will adversely affect the stability of any significant, valuable and permanent man-made structure located within two hundred (200) feet of the affected land, the Applicant shall either:

a) Provide a notarized agreement between the Applicant and the Person(s) having an interest in the structure, that the Applicant is to provide compensation for any damage to the structure; or

b) Where such an agreement cannot be reached, the Applicant shall provide an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation; or

c) Where such structure is a utility, the Applicant may supply a notarized letter, on utility letterhead, from the owner(s) of the utility that the mining and reclamation activities, as proposed, will have "no negative effect" on their utility. (*Construction Materials Rule 6.3.12 and Rule 6.4.19 & Hard Rock/Metal Mining Rule 6.3.12 and Rule 6.4.20)*

The Colorado Mined Land Reclamation Board ("Board") has determined that this form, if properly executed, represents an agreement that complies with Construction Materials Rule 6.3.12(a), Rule 6.4.19(a), and C.R.S. § 34-32.5-115(4)(e) and with Hard Rock/Metal Mining Rule 6.3.12(a), Rule 6.4.20(a), and C.R.S. § 34-32-115(4)(d). This form is for the sole purpose of ensuring compliance with the Rules and Regulations and shall not make the Board or Division a necessary party to any private civil lawsuit to enforce the terms of the agreement or create any enforcement obligations in the Board or the Division.

The following structures are located on or within 200 feet of the proposed affected area:

1. Electric Line
2. Plesae see three page attachments for seven power poles within Mooney
3. Hills Gravel Pit footprint.
4. _____
5. _____

(*Please list additional structures on a separate page*)

CERTIFICATION

The Applicant, All Rite Paving & Redi-Mix (print applicant/company name), by John Paul Ary (print representative's name), as President (print representative's title), does hereby certify that San Isabel Electric Assoc. (structure owner) shall be compensated for any damage from the proposed mining operation to the above listed structure(s) located on or within 200 feet of the proposed affected area described within Exhibit A, of the Reclamation Permit Application for Mooney Altura Pit (operation name), File Number M-2010-012.

This form has been approved by the Colorado Mined Land Reclamation Board pursuant to its authority under the Colorado Land Reclamation Act for the Extraction of Construction Materials and the Colorado Mined Land Reclamation Act for Hard Rock, Metal, and Designated Mining Operations. Any alteration or modification to this form shall result in voiding this form.

NOTARY FOR PERMIT APPLICANT

ACKNOWLEGED BY:

Applicant All Rite Paving & Redi Mix Representative Name _____

Date 12/6/2022 Title President

STATE OF Colorado)
) ss.
COUNTY OF Pueblo)

The foregoing was acknowledged before me this 6th day of December, 2022 by John P Ary as President of All Rite Paving & Redi Mix

_____ My Commission Expires: 10/6/26
Notary Public

JODI D SCHREIBER
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20064001792
MY COMMISSION EXPIRES OCTOBER 6, 2026

NOTARY FOR STRUCTURE OWNER

ACKNOWLEGED BY:

Structure Owner San Isabel Electric Association Name Royce Anderson

Date November 30, 2022 Title ROW and Safety Manager

STATE OF Colorado)
) ss.
COUNTY OF Pueblo)

The foregoing was acknowledged before me this 30 day of November, 2022 by Royce Anderson as Row + Safety man. of San Isabel Electric Assoc.

Peggy L Nielsen My Commission Expires: June 30, 2026
Notary Public

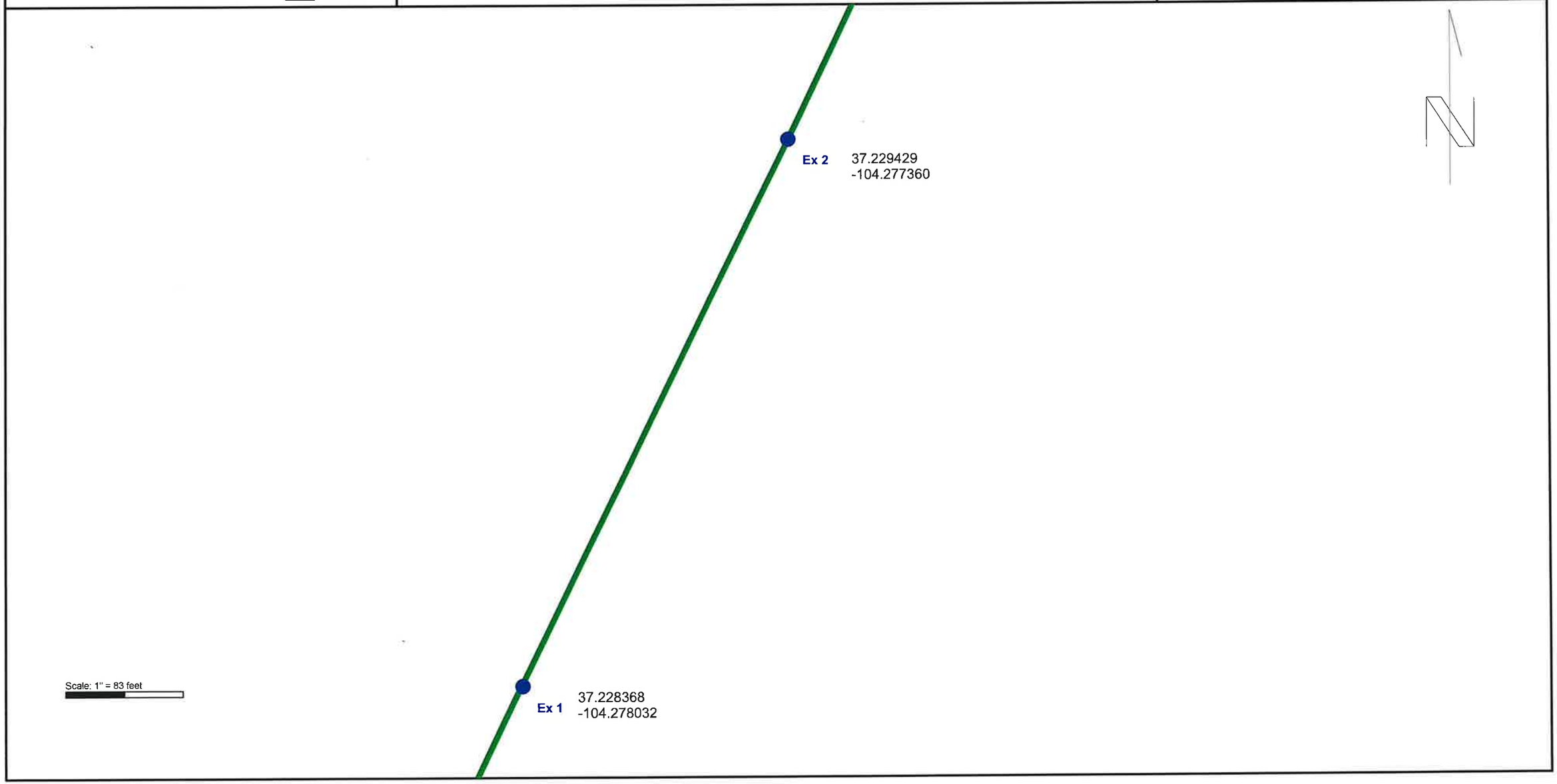
PEGGY L NIELSEN
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20024021040
MY COMMISSION EXPIRES JUNE 30, 2026

AREA: Trinidad
TWP: 32 RNG: 61 SEC: 30
LAT: 37.228368 GRID:
LONG: -104.277360
FAULT CURRENT 786 AMPS

STAKING SHEET
SAN ISABEL ELECTRIC ASSOCIATION INC.
Colorado 25

DESCRIPTION:

WORKORDER #:
MAP LOCATION:
CONSUMER NAME: MOONEY HILLS
SERVICE ADDRESS: MOONEY HILLS
SERVICE LOCATION NO:
SHEET #: 2 of 4

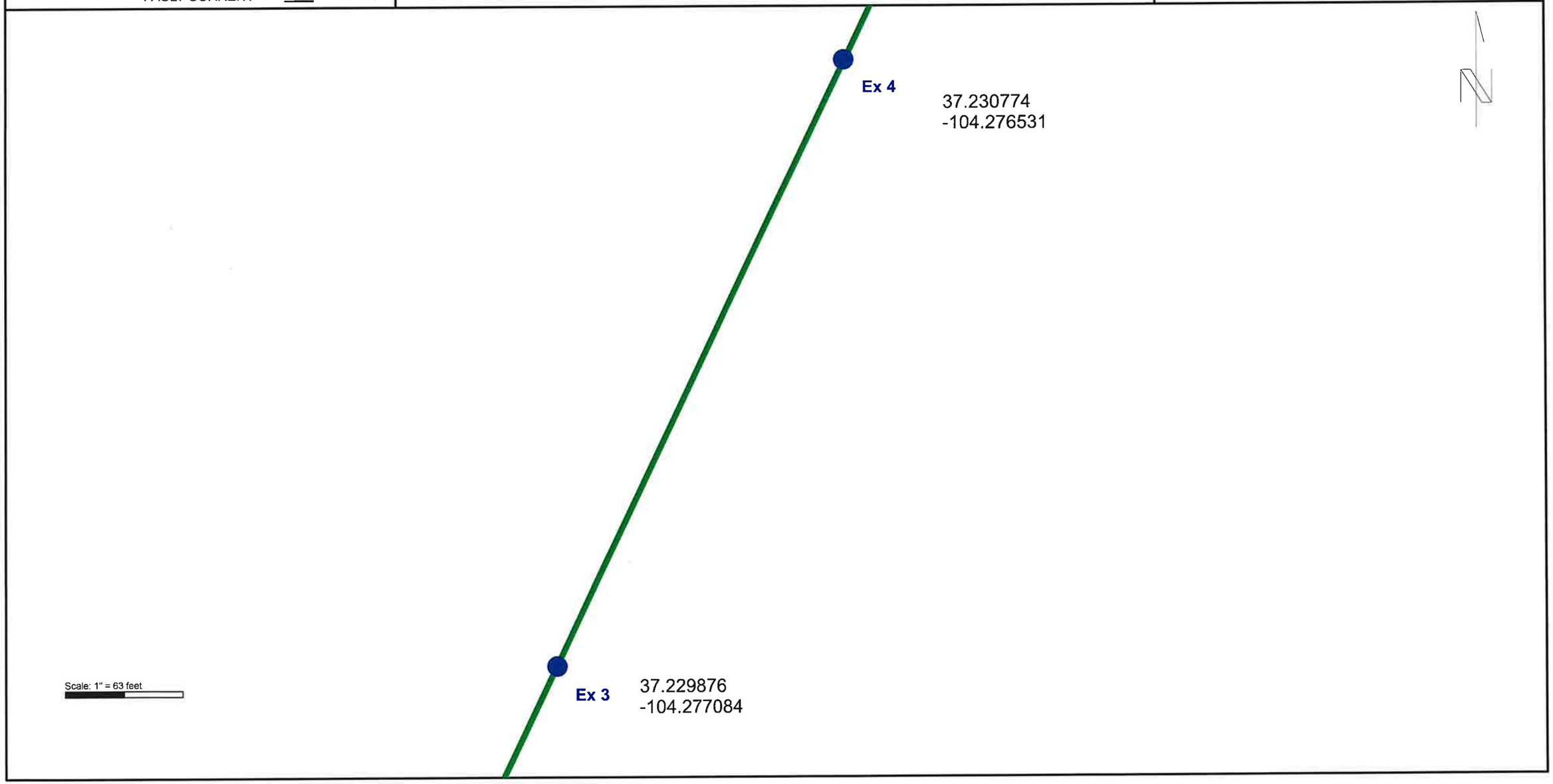


AREA: Trinidad
TWP: 32 RNG: 61 SEC: 30
LAT: 37.228368 GRID:
LONG: -104.277360
FAULT CURRENT 786 AMPS

STAKING SHEET
SAN ISABEL ELECTRIC ASSOCIATION INC.
Colorado 25

DESCRIPTION:

WORKORDER #: dennis
MAP LOCATION:
CONSUMER NAME: MOONEY HILLS
SERVICE ADDRESS: MOONEY HILLS
SERVICE LOCATION NO: SHEET #: 3 of 4



AREA: Trinidad
TWP: 32 RNG: 61 SEC: 30
LAT: 37.228368 GRID:
LONG: -104.277360
FAULT CURRENT 786 AMPS

STAKING SHEET
SAN ISABEL ELECTRIC ASSOCIATION INC.
Colorado 25

DESCRIPTION:

WORKORDER #: dennis
MAP LOCATION:
CONSUMER NAME: MOONEY HILLS
SERVICE ADDRESS: MOONEY HILLS
SERVICE LOCATION NO:
SHEET #: 4 of 4