


**COLORADO**Division of Reclamation,  
Mining and Safety

Department of Natural Resources

**MINERALS PROGRAM INSPECTION REPORT****PHONE: (303) 866-3567**

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

<b>MINE NAME:</b> Harley Pit #1	<b>MINE/PROSPECTING ID#:</b> M-1986-147	<b>MINERAL:</b> Sand and gravel and material for construc	<b>COUNTY:</b> Logan
<b>INSPECTION TYPE:</b> Monitoring	<b>INSPECTOR(S):</b> Jared L. Ebert	<b>INSP. DATE:</b> December 19, 2016	<b>INSP. TIME:</b> 10:20
<b>OPERATOR:</b> McAtee Construction Company	<b>OPERATOR REPRESENTATIVE:</b> Darren Gebhart	<b>TYPE OF OPERATION:</b> 112c - Construction Regular Operation	

<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> Complete Bond	<b>BOND AMOUNT:</b> \$71,755.00
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None
<b>WEATHER:</b> Clear	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> January 4, 2017

**The following inspection topics were identified as having Problems or Possible Violations. OPERATORS SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF THE PERMIT AND APPLICABLE RULES AND REGULATIONS. If a Possible Violation is indicated, you will be notified under separate cover as to when the Mined Land Reclamation Board will consider possible enforcement action.**

**INSPECTION TOPIC:** Sediment Control

**PROBLEM/POSSIBLE VIOLATION:** Problem: Large erosion gullies and ruts were observed at the northeast corner of the affected area. This is a problem at this time for failure to protect the affected land from erosion pursuant to C.R.S. 34-32.5-116 (4) (j).

**CORRECTIVE ACTIONS:** The operator shall provide photo documentation to the Division verifying erosion gullies and ruts have been repaired, and that the site has have been reconstructed and stabilized to prevent erosion damage by the corrective action date.

**CORRECTIVE ACTION DUE DATE:** 3/31/17

## **OBSERVATIONS**

This was a monitoring inspection of the Harley Pit #1, operated by McAtee Construction Company, DRMS Permit No. M-1986-147. I, Jared Ebert of the Colorado Division of Reclamation, Mining and Safety (Division) conducted the inspection. Mr. Darren Gebhart with McAtee Construction Company accompanied me during the inspection initially but left prior to the conclusion of the inspection. The weather was clear and cold at the time of the inspection.

### **Backfilling and Grading:**

The site consists of an excavated area that has two distinct highwalls. One highwall was found to be about 2,300 feet in length and it is at the southern end of the excavated area. This highwall is about 26 feet high on average. The second highwall is located in the northeast corner of the affected area. This highwall was measured to be about 780 feet long and is about 20 feet in height on average.

The digline of a portion of the southern highwall is located about 35 feet from a barbed wire fence. This portion of the highwall is about 330 feet in length. In accordance with the approved mining plan, the operator is required to mine at a 3:1 slope near the fence line. The digline has not reached the required 10 foot setback from the fence line which corresponds to the permit boundary line at this portion of the site, however, the operator will need to use caution as they proceed to insure they mine at the required 3:1 slope along the fence line.

The Division reviewed the reclamation cost estimate for the site to insure the Division holds an adequate bond to reclaim the affected area. Given the proximity of the excavation to the southeast fence line, there is not enough room to cut and fill the mine slope to the required 3:1 gradient and the Division would have to haul and place material to backfill the slope along the 330 foot section of highwall discussed above. The remaining portion of the highwall and the northeast highwall can be graded by cutting and filling the embankment.

### **Financial Warranty:**

The reclamation cost estimate was last calculated in 2003 when the operator applied for an amendment to the permit (AM2). In accordance with Rule 4.2.1(2), the Division has reviewed the estimated cost to reclaim the site and found that the current bond of \$71,755.00 is an inadequate amount. The Division calculated the cost to reclaim the affected area of 30 acres to be \$117,143.34. Attached for the Operator review, is a copy of the reclamation cost summary. **By January 20, 2017, the Division will issue a Surety Increase (SI) revision; please contact the Division prior to January 20, 2017 to discuss any questions regarding the cost estimate. When the SI is issued, the Operator will then have 60 days to submit the additional financial warranty.**

### **Gen. Compliance With Mine Plan:**

The operation appears to be in general compliance with the approved mine plan.

### **Off-site Damage:**

Offsite damage was not observed; however, recent snow cover obscured the ground. The operation appears to be within the approved permit boundary.

### **Roads:**

The access road was graded and maintained.

Reclamation Success:

According to the annual report submitted on November 30, 2016 for the site, the operator has reclaimed a 4.86 acre parcel on the northwest side of the affected area and partially reclaimed a 3.64 acre parcel on the west end of the affected area. The 4.86 acre area was partially vegetated and appeared stable. This area has been graded to blend in with the surrounding area. The 3.64 acre parcel appears to have been recently graded and topsoiled. The slope of this parcel was measure to be about 12% and appeared stable.

Revegetation:

The 4.86 acre reclaimed parcel appeared vegetated and stable.

Sediment Control:

Large erosion gullies and ruts were observed at the northeast corner of the affected area. This issue is cited as a problem at the beginning of the inspection report. This area will need to be graded and stabilized from further erosion.

Signs and Markers:

The mine entrance sign was in place and the permit boundary was marked.

Topsoil:

The topsoil stockpile on site was stable and vegetated.

**PHOTOGRAPHS**



Figure 1. View of the 4.86 acre reclaimed area parcel.



Figure 2. View of 3.64 acre partially reclaimed area.



Figure 3. View from the western end of the south highwall looking east.



Figure 4. View from the center of the south highwall looking northeast.





Figure 5. Stripped area adjacent to south highwall.



Figure 6. View of south highwall from east end looking west.



Figure 7. Erosion gullies at northeast corner of affected area.



Figure 8. View of northeast highwall.



Figure 9. View of south highwall along fence line.



### **GENERAL INSPECTION TOPICS**

The following list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each

(AR) RECORDS----- <u>NA</u>	(FN) FINANCIAL WARRANTY----- <u>Y</u>	(RD) ROADS----- <u>Y</u>
(HB) HYDROLOGIC BALANCE----- <u>Y</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>NA</u>
(PW) PROCESSING WASTE/TAILING---- <u>NA</u>	(SF) PROCESSING FACILITIES----- <u>NA</u>	(TS) TOPSOIL----- <u>Y</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>Y</u>	(FW) FISH & WILDLIFE----- <u>Y</u>	(RV) REVEGETATION---- <u>Y</u>
(SM) SIGNS AND MARKERS----- <u>Y</u>	(SP) STORM WATER MGT PLAN---- <u>NA</u>	(CI) COMPLETE INSP---- <u>NA</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>NA</u>	(SC) EROSION/SEDIMENTATION--- <u>PB</u>	(RS) RECL PLAN/COMP-- <u>Y</u>
(AT) ACID OR TOXIC MATERIALS----- <u>NA</u>	(OD) OFF-SITE DAMAGE----- <u>Y</u>	(ST) STIPULATIONS----- <u>N</u>

Y = Inspected and found in compliance / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

#### **Inspection Contact Address**

Darren Gebhart  
McAtee Construction Company  
P.O. Box 1908  
Sterling, CO 80751

Enclosure: 1.) *CIRCES cost estimate for Harley Pit #1, M-1986-147.*

CC: Darren Gabhart, via e-mail.

## COST SUMMARY WORK

Task description: \_\_\_\_\_

Site: Harley Pit #1

Permit Action: Dec. 2016 Inspection

Permit/Job#: M1986147

### PROJECT IDENTIFICATION

Task #: 000  
Date: 1/3/2017  
User: JLE

State: Colorado  
County: Logan

Abbreviation: None  
Filename: M147-000

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Backfill 330 Feet of Highwall	SCRAPER1	1	17.28	\$19,610.00
002	Cut and fill south highwall	DOZER	2	50.78	\$25,631.00
003	Cut and fill northeast highwall	DOZER	2	9.51	\$4,798.00
004	Spread topsoil over the affected area	SCRAPER1	1	13.54	\$15,760.00
005	Revegetation of the affected area	REVEGE	1	15.00	\$23,377.00
006	Mobilization	MOBILIZE	1	2.65	\$5,911.00
<b><u>SUBTOTALS:</u></b>				<b>108.76</b>	<b>\$95,087</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$1,920.76
Performance bond:	1.05	Total =	\$998.41
Job superintendent:	54.38	Total =	\$4,050.22
Profit:	10.00	Total =	\$9,508.70

TOTAL O & P = \$16,478.09

CONTRACT AMOUNT (direct + O & P) = \$111,565.09

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>0.00</u>	Total =	<u>0.00</u>
Engineering work and/or contract/bid preparation:	<u>0.00</u>	Total =	<u>\$0.00</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$5,578.25</u>

CONTINGENCY: 0.00 Total = \$0.00

TOTAL INDIRECT COST = \$22,056.34

**TOTAL BOND AMOUNT (direct + indirect) = \$117,143.34**

## SCRAPER TEAM WORK

Task description: Backfill 330 Feet of Highwall

Site: Harley Pit #1

Permit Action: Dec. 2016 Inspection

Permit/Job#: M1986147

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 1/3/2017

County: Logan

Filename: M147-001

User: JLE

Agency or organization name: DRMS

### HOURLY EQUIPMENT

COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 627G w/push-pull
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 140M
-Water Truck:	NA

#### Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	100	NA
Ownership cost/hour:	\$105.55	\$82.01	NA	\$97.48	\$36.00	NA
Operating cost/hour:	\$146.13	\$79.23	NA	\$103.60	\$40.02	NA
%Utilization-ripper:	NA	50	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$8.40	NA	\$0.00	\$0.00	NA
Ripper op. cost/hour:	NA	\$2.81	NA	\$0.00	\$0.00	NA
Operator cost/hour:	\$34.24	\$38.89	NA	\$38.89	\$35.83	NA
Unit Subtotals:	\$285.92	\$211.34	NA	\$239.97	\$111.85	NA
Number of Units:	2	1	0	1	1	0
Group Subtotals:	Work:	\$783.18	Support:	\$239.97	Maint:	\$111.85

Total work team cost/hour: \$1,135.00

### MATERIAL QUANTITIES

Initial volume: 12,393

CCY

Swell factor: 1.124

Loose volume: 13,925

LCY

Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell factor: Cat Handbook

### HOURLY PRODUCTION

#### Scraper Bowl (volume) Basis:

Material weight:	<u>2,900 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>Sand and gravel - Dry</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>18.21 LCY</u>	Adjusted Capacity:	<u>18.21</u>	LCY

Cycle Time:

Scraper Loading Time: 0.90 Minutes  
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 4080 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:

Road Condition: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	4.00	4.00	2665	0.44

Haul Time: 0.44 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	4.00	4.00	2849	0.31

Return Time: 0.31 minutes

Total Scraper team cycle time: 2.25 minutes  
Adjusted for job conditions: 805.96 LCY/Hour  
Selected Number of Scrapers: 2 Scraper(s)  
Adjusted single scraper team (unit) hourly production: 805.96 LCY/Hour  
Adjusted multiple scraper team (fleet) hourly production: 805.96 LCY/Hour

Unadjusted unit production/hour: 971.03 LCY/Hour  
Optimal Number of Scrapers per push  
dozer: \_\_\_\_\_

**JOB TIME AND COST**

Fleet size: 1 Team(s) Total job time: 17.28 Hours  
Unit cost: \$1.408 /LCY Total job cost: \$19,610

## BULLDOZER WORK

Task description: Cut and fill south highwall

Site: Harley Pit #1

Permit Action: Dec. 2016 Inspection

Permit/Job#: M1986147

### PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 1/3/2017

County: Logan

Filename: M147-002

User: JLE

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Blade Type: Semi-Universal

Attachment: 3-shank ripper

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$97.48	NA
Operating Cost/Hour:	\$103.60	100
Ripper own. Cost/Hour:	\$10.74	NA
Ripper op. Cost/Hour:	\$1.65	25
Operator Cost/Hour:	\$38.89	NA
Total unit Cost/Hour:	\$252.36	
Total Fleet Cost/Hour:	<b>\$504.72</b>	

### MATERIAL QUANTITIES

Initial Volume: 73,984

Swell factor: 1.180

Loose volume: **87,301** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 85 feet

Unadjusted hourly  
production: 1,405.9 LCY/hr

Materials consistency  
description: Compacted fill or embankment 0.9

Average push  
gradient: -30 %

Average site altitude: 4,080 feet

Material weight: 4,050 lbs/LCY

Weight description: Sand and clay - Compacted



Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(S-BY-S)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.601	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.568	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6114

Adjusted unit  
production: 859.57 LCY/hr

Adjusted fleet  
production: **1719.14** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.294/LCY

Total job time: **50.78** Hours

Total job cost: **\$25,631**

## BULLDOZER WORK

Task description: Cut and fill northeast highwall

Site: Harley Pit #1

Permit Action: Dec. 2016 Inspection

Permit/Job#: M1986147

### PROJECT IDENTIFICATION

Task #: 003

State: Colorado

Abbreviation: None

Date: 1/3/2017

County: Logan

Filename: M147-003

User: JLE

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Blade Type: Semi-Universal

Attachment: 3-shank ripper

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$97.48	NA
Operating Cost/Hour:	\$103.60	100
Ripper own. Cost/Hour:	\$10.74	NA
Ripper op. Cost/Hour:	\$1.65	25
Operator Cost/Hour:	\$38.89	NA
Total unit Cost/Hour:	\$252.36	
Total Fleet Cost/Hour:	<b>\$504.72</b>	

### MATERIAL QUANTITIES

Initial Volume: 17,267

Swell factor: 1.180

Loose volume: 20,375 LCY

Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 65 feet

Unadjusted hourly  
production: 1,752.8 LCY/hr

Materials consistency  
description: Compacted fill or embankment 0.9

Average push  
gradient: -30 %

Average site altitude: 4,080 feet

Material weight: 4,050 lbs/LCY

Weight description: Sand and clay - Compacted

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(S-BY-S)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.601	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.568	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6114

Adjusted unit  
production: 1,071.66 LCY/hr

Adjusted fleet  
production: **2143.32** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.235/LCY

Total job time: **9.51** Hours

Total job cost: **\$4,798**

## SCRAPER TEAM WORK

Task description: Spread topsoil over the affected area

Site: Harley Pit #1

Permit Action: Dec. 2016 Inspection

Permit/Job#: M1986147

### PROJECT IDENTIFICATION

Task #: 004

State: Colorado

Abbreviation: None

Date: 1/3/2017

County: Logan

Filename: M147-004

User: JLE

Agency or organization name: DRMS

### HOURLY EQUIPMENT

COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 627G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 140M
-Water Truck:	NA

#### Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	100	NA
Ownership cost/hour:	\$105.55	\$97.48	NA	\$97.48	\$36.00	NA
Operating cost/hour:	\$146.13	\$103.60	NA	\$103.60	\$40.02	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	NA
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	NA
Operator cost/hour:	\$34.24	\$38.89	NA	\$38.89	\$35.83	NA
Unit Subtotals:	\$285.92	\$239.97	NA	\$239.97	\$111.85	NA
Number of Units:	2	1	0	1	1	0
Group Subtotals:	Work:	\$811.81	Support:	\$239.97	Maint:	\$111.85

Total work team cost/hour: \$1,163.63

### MATERIAL QUANTITIES

Initial volume: 11,664

CCY

Swell factor: 1.000

Loose volume: 11,664

LCY

Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell factor: Cat Handbook

### HOURLY PRODUCTION

#### Scraper Bowl (volume) Basis:

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>33.00 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:

Scraper Loading Time: 0.90 Minutes  
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 4080 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:

Road Condition: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	4.00	4.00	2665	0.37

Haul Time: 0.37 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	4.00	4.00	2849	0.31

Return Time: 0.31 minutes

Total Scraper team cycle time: 2.18 minutes  
Adjusted for job conditions: 861.22 LCY/Hour  
Selected Number of Scrapers: 2 Scraper(s)  
Adjusted single scraper team (unit) hourly production: 861.22 LCY/Hour  
Adjusted multiple scraper team (fleet) hourly production: 861.22 LCY/Hour

Unadjusted unit production/hour: 1,037.61 LCY/Hour  
Optimal Number of Scrapers per push  
dozer: \_\_\_\_\_

**JOB TIME AND COST**

Fleet size: 1 Team(s) Total job time: 13.54 Hours  
Unit cost: \$1.351 /LCY Total job cost: \$15,760



## REVEGETATION WORK

Task description: Revegetation of the affected area

Site: Harley Pit #1

Permit Action: Dec. 2016 Inspection

Permit/Job#: M1986147

### PROJECT IDENTIFICATION

Task #: 005

State: Colorado

Abbreviation: None

Date: 1/3/2017

County: Logan

Filename: M147-005

User: JLE

Agency or organization name: DRMS

### FERTILIZING

#### **Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, 43.56 tons/ac. (MEANS 32 91 13.23 4400)	0.07	acre	\$3,944.60	\$276.12
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$276.12</b>

#### **Application**

Description	Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)	\$60.55
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$60.55</b>

### TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$88.76
<b>Total Tilling Cost/Acre</b>	<b>\$88.76</b>

### SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indiangrass - Cheyenne	1.00	3.05	\$9.21
Switchgrass - Blackwell	0.90	8.04	\$4.88
Blue Grama - Lovington	0.60	9.79	\$6.53
Sideoats Grama - Vaughn	2.70	8.86	\$30.40
Western Wheatgrass - Arriba	3.20	8.08	\$11.81
<b>Totals Seed Mix</b>	<b>8.40</b>	<b>37.82</b>	<b>\$62.83</b>

#### **Application**

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00

<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>
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### **MULCHING and MISCELLANEOUS**

#### **Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
			\$	\$
<b>Total Mulch Materials Cost/Acre</b>				<b>\$0.00</b>

#### **Application**

<b>Description</b>	<b>Cost /Acre</b>
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</b>

### **NURSERY STOCK PLANTING**

<b>Common Name</b>	<b>No / Acre</b>	<b>Type and Size</b>	<b>Planting Cost</b>	<b>Fertilizer Pellet Cost</b>	<b>Cost /Acre</b>
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

### **JOB TIME AND COST**

No. of Acres:	30	Cost /Acre:	\$720.26
Estimated Failure Rate:	20%	Cost /Acre*:	\$294.83
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	<b>\$21,607.80</b>
Reseeding Job Cost:	<b>\$1,768.98</b>
Total Job Cost:	<b>\$23,377</b>
Job Hours:	<b>15.00</b>

## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilization**

Site: **Harley Pit #1**

Permit Action: **Dec. 2016 Inspection**

Permit/Job#: **M1986147**

### PROJECT IDENTIFICATION

Task #: **006**

State: **Colorado**

Abbreviation: **None**

Date: **1/3/2017**

County: **Logan**

Filename: **M147-006**

User: **JLE**

Agency or organization name: **DRMS**

### EQUIPMENT TRANSPORT RIG COST

Shift basis: **1 per day**

Cost Data Source: **CRG Data**

Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,  
400 HP (2ND HALF, 2006)**

Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT  
TRAILER (25T, 50T, AND 100T)**

#### Cost Breakdown:

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

### NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D9T - 9SU	60.01	\$97.48	\$125.45	2	\$445.86	\$250.90	\$500.00
Cat 627G w/push-pull	43.48	\$105.55	\$117.55	2	\$446.20	\$235.10	\$500.00
CAT 140M	16.68	\$36.00	\$88.67	1	\$124.67	\$88.67	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$30.65	\$88.67	1	\$119.32	\$88.67	\$250.00

Subtotals: **\$1,136.05** **\$663.34** **\$1,500.00**

### ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$33.81	1	\$33.81	\$33.81
Fuel Tanker, 4x2, 170 HP	\$56.19	1	\$56.19	\$56.19
Lube Truck, 4x2, 170 HP	\$61.93	1	\$61.93	\$61.93

Subtotals: **\$151.93** **\$151.93**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: STERLING  
 Total one-way travel distance: 9.00 miles  
 Average Travel Speed: 55.00 mph

Total Non-Roadable Mob/Demob Cost \*  
 \*\* two round trips with haul rig: \$5,860.99  
 Total Roadable Mob/Demob Cost \*\*  
 \*\* one round trip, no haul rig: \$49.72

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.16	0.16
Return Time (Hours):	0.16	0.16
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.33	0.33

**JOB TIME AND COST**

Total job time: 2.65 Hours

Total job cost: \$5,911