



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

July 11, 2022

Martin Azcarraga
M.A. Concrete Construction, Inc.
2323 River Road
Grand Junction, CO 81505

Re: 32.5 Road Gravel Pit - File No. M-2009-035
M.A. Concrete Construction, Inc.
Surety Increase (SI-1)
Surety Increase based on inflation and site conditions

Dear Martin Azcarraga:

On July 11, 2022 the Division of Reclamation, Mining and Safety increased the current Financial Warranty for this permit to \$88,155.00, in accordance with Rule 4.2.1 of the Rules and Regulations. This is an increase of \$14,067.00.

Please see the November 10, 2021 inspection report for details regarding why this surety increase is required.

The Division ordered amendment of the current Financial Warranty, or submittal of a new Financial Warranty reflecting the increase, within 60 days from the date of this letter (July 11, 2022).

Please make arrangements with Sara M. Stevenson-Benn at the Division's Denver office for submittal of the financial warranty. Any other questions regarding completion, execution and/or submittal of financial warranty forms should also be directed to Sara M. Stevenson-Benn by telephone at (303) 866-3567 (8148), or by email at Sara.stevenson-benn@state.co.us.

The Permittee for this site may be scheduled for a Formal Board Hearing for possible revocation of the permit after September 9, 2022, if the amount of any increased Financial Warranty has not been provided.

Bond Held:	\$74,088.00
Prior Liability:	\$74,088.00
Change in Liability:	\$14,067.00
Revised Liability:	\$88,155.00
Prior Permit Acreage:	34.34



Change in Permit Acreage:	0.00
Revised Permit Acreage:	34.34
Prior Affected Acreage:	30.25
Change in Affected Acreage:	0.00
Revised Affected Acreage:	30.25

If you have any questions, please contact me by telephone at (303) 866-3567 x 8183, or by email at Amy.yeldell@state.co.us.

Sincerely,



Amy C. Yeldell
Environmental Protection Specialist

cc: Martin Azcarraga

M-GR-04

COST SUMMARY WORK

Task description: 2022 Update

Site: 32.5 Road Gravel Pit

Permit Action: SI1

Permit/Job#: M2009035

PROJECT IDENTIFICATION

Task #: ACY

State: Colorado

Abbreviation: None

Date: 7/11/2022

County: Mesa

Filename: M035-ACY

User: ACY

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Construct pond in North Phase	LOADER	1	12.95	\$1,418
02a	Construct pond in South Phase	LOADER	1	20.86	\$2,285
03a	Import Gravel for bank	TRUCK1	1	0.92	\$12,134
03b	Grade imported gravel	DOZER	1	1.51	\$320
04a	Reclaim settling ponds	DOZER	1	66.89	\$14,190
05a	Demo Scale	DEMOLISH	1	16.00	\$2,268
06a	Rip compacted areas	RIPPER	1	12.76	\$2,878
07a	Import Gravel for bank	TRUCK1	1	16.83	\$3,836
07b	Grade transported topsoil	DOZER	1	11.45	\$2,429
08a	Reveg	REVEGE	1	10.00	\$18,718
09a	Initial Mobilization	MOBILIZE	1	2.57	\$3,243
10a	Secondary Mobilization	MOBILIZE	1	2.57	\$1,416
<u>SUBTOTALS:</u>				175.31	\$65,135

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$1,316

Performance bond: 1.05

Total = \$684

Job superintendent: 87.65

Total = \$6,585

Profit: 10.00

Total = \$6,514

TOTAL O & P = \$15,098

CONTRACT AMOUNT (direct + O & P) = \$80,233

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500

Total = \$500

Engineering work and/or contract/bid preparation: 4.25

Total = \$3,410

Reclamation management and/or administration: 5.00

\$4,012

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$23,020

TOTAL BOND AMOUNT (direct + indirect) = \$88,155

WHEEL LOADER – LOAD AND CARRY WORKTask description: Construct pond in North PhaseSite: 32.5 Road Gravel PitPermit Action: SI1Permit/Job#: M2009035**PROJECT IDENTIFICATION**Task #: 01AState: ColoradoAbbreviation: NoneDate: 7/11/2022County: MesaFilename: M035-01aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 938HAttachment 1: ROPS CabHorsepower: 172Shift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$40.85	NA
Operating Cost/Hour:	\$32.69	100
Operator Cost/Hour:	\$35.97	NA
Total Unit Cost/Hour:	\$109.51	
Total Fleet Cost/Hour:	\$109.51	

MATERIAL QUANTITIESInitial volume: 1,452

CCY

Swell factor: 1.000Loose volume: 1,452

LCY

Source of estimated volume: 2009 calcSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.483 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 3/4" to 6" diameter 0.00	0.000	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Fragile target 0.05	0.050	(Cat HB)
Net Cycle Time Adjustment:		-0.010	minutes
Adjusted Basic Cycle Time:		0.473	minutes

Rolling Resistance – Road ConditionsHaul: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Return: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0**Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	700	0.00	5.00	5.00	0.6414	(Cat HB)
Return Route:	700	0.00	5.00	5.00	0.5752	(Cat HB)

Total Travel Time: 1.2166 minutes
 Total Cycle Time: 1.6891 minutes

Load Bucket Capacity

Rated Capacity: 3.90 LCY (heaped)
 Bucket Fill Factor: 0.975 Loose material - mixed moist aggregates (95-100%) 0.975
 Adjusted Capacity: 3.80 LCY

Job Condition Correction Factors

Site Altitude: 4620 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.83</u>	(1 shift/day)
Net Correction:	<u>0.83</u>	multiplier

Unadjusted Hourly Unit Production: 135.07 LCY/Hour
 Adjusted Hourly Unit Production: 112.11 LCY/Hour
 Adjusted Hourly Fleet Production: 112.11 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: 12.95 Hours
 Unit cost: \$0.977 /LCY Total job cost: \$1,418

WHEEL LOADER – LOAD AND CARRY WORKTask description: Construct pond in South PhaseSite: 32.5 Road Gravel PitPermit Action: SI1Permit/Job#: M2009035**PROJECT IDENTIFICATION**Task #: 02AState: ColoradoAbbreviation: NoneDate: 7/11/2022County: MesaFilename: M035-02aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 938HAttachment 1: ROPS CabHorsepower: 172Shift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$40.85	NA
Operating Cost/Hour:	\$32.69	100
Operator Cost/Hour:	\$35.97	NA
Total Unit Cost/Hour:	\$109.51	
Total Fleet Cost/Hour:	\$109.51	

MATERIAL QUANTITIESInitial volume: 2,339

CCY

Swell factor: 1.000Loose volume: 2,339

LCY

Source of estimated volume: 2009 calcSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.483 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 3/4" to 6" diameter 0.00	0.000	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Fragile target 0.05	0.050	(Cat HB)
Net Cycle Time Adjustment:		-0.010	minutes
Adjusted Basic Cycle Time:		0.473	minutes

Rolling Resistance – Road ConditionsHaul: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Return: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0**Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	700	0.00	5.00	5.00	0.6414	(Cat HB)
Return Route:	700	0.00	5.00	5.00	0.5752	(Cat HB)

Total Travel Time: 1.2166 minutes
 Total Cycle Time: 1.6891 minutes

Load Bucket Capacity

Rated Capacity: 3.90 LCY (heaped)
 Bucket Fill Factor: 0.975 Loose material - mixed moist aggregates (95-100%) 0.975
 Adjusted Capacity: 3.80 LCY

Job Condition Correction Factors

Site Altitude: 4620 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.83</u>	(1 shift/day)
Net Correction:	<u>0.83</u>	multiplier

Unadjusted Hourly Unit Production: 135.07 LCY/Hour
 Adjusted Hourly Unit Production: 112.11 LCY/Hour
 Adjusted Hourly Fleet Production: 112.11 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: 20.86 Hours
 Unit cost: \$0.977 /LCY Total job cost: \$2,285

TRUCK/LOADER TEAM WORKTask description: **Import Gravel for bank**Site: **32.5 Road Gravel Pit**Permit Action: **S11**Permit/Job#: **M2009035****PROJECT IDENTIFICATION**Task #: **03A**State: **Colorado**Abbreviation: **None**Date: **7/11/2022**County: **Mesa**Filename: **M035-03a**User: **ACY**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

	Equipment Description
Truck Loader Team -Truck:	Generic 8-10 cy, 6x4
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:**Truck/Loader Team****Support Equipment****Maintenance Equipment**

	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	NA	NA
Ownership cost/hour:	\$15.43	\$40.85	NA	NA	NA	NA
Operating cost/hour:	\$43.77	\$32.69	NA	NA	NA	NA
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$0.00	\$35.97	NA	NA	NA	NA
Unit Subtotals:	\$59.20	\$109.51	NA	NA	NA	NA
Number of Units:	2	1	0	0	0	0
Group Subtotals:	Work: \$227.91		Support: \$0.00		Maint: \$0.00	

Total work team cost/hour: **\$227.91****MATERIAL QUANTITIES**Initial volume: **250**

CCY

Swell factor: **1.060**Loose volume: **265**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook**Material Purchase Cost: **\$45.00**Total Cost: **\$11,925.00****HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: **3,400**

Pounds/LCY

Description: **Gravel - Wet (1/4"-2" diam.)**Rated Payload: **27,280**

Pounds

Payload Capacity: **8.02**

LCY

Truck Bed (volume) Basis:

Struck Volume:	8.00	LCY
Heaped Volume:	10.00	LCY
Average Volume:	9.00	LCY
Adjusted Volume:	8.02	LCY

Final Truck Volume Based on Number of Loader Passes: **6.83** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	3.413	LCY

Job Condition Corrections:

Site Altitude (ft.): 4620 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Loading Tool Cycle Time: Number of Loading Tool Passes Required to Fill Truck: 2 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
 Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 6" and over diameter 0.03	0.030	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.030	minutes
Adjusted Loader Cycle Time:		0.453	minutes
Net Load Time per Truck:		0.553	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.553	Minutes	Adjusted for site altitude:	0.553	Minutes
Truck Maneuver and Dump Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes

Truck Travel (Haul & Return) Time:
penetration 5.0

Road Condition: Rutted dirt, little maintenance, no water, 2" tire

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	5.00	5.00	2218	0.295

Haul Time: **0.295** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	5.00	5.00	2814	0.206

Return Time: **0.206** minutesTotal Truck Cycle Time: **2.354** minutes

Loading Tool unit

Production 389.07 LCY/Hour Adjusted for job efficiency: 322.93 LCY/HourTruck Unit Production 174.00 LCY/Hour Adjusted for job efficiency: 144.42 LCY/HourOptimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)Adjusted hourly truck team production: 288.83 LCY/HourAdjusted single truck/loader team production: 288.83 LCY/HourAdjusted multiple truck/loader team production: **288.83** LCY/Hour**JOB TIME AND COST**Fleet size: 1 Team(s) Total job time: **0.92** HoursUnit cost: \$0.789 /LCY Total job cost: **\$12,134**

BULLDOZER WORKTask description: Grade imported gravelSite: 32.5 Road Gravel PitPermit Action: S11Permit/Job#: M2009035**PROJECT IDENTIFICATION**Task #: 03BState: ColoradoAbbreviation: NoneDate: 7/11/2022County: MesaFilename: M035-03bUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D7R DS XR Series IIHorsepower: 240Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$92.78	NA
Operating Cost/Hour:	\$79.33	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$40.04	NA

Total unit Cost/Hour: \$212.15Total Fleet Cost/Hour: \$212.15**MATERIAL QUANTITIES**Initial Volume: 250Swell factor: 1.000Loose volume: 250 LCYSource of estimated volume: Operator inputSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 200 feetUnadjusted hourly production: 410.8 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 4,620 feetMaterial weight: 3,400 lbs/LCYWeight description: Gravel - Wet (1/4" - 2" diam.)**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.676	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4040

Adjusted unit production: 165.96 LCY/hr

Adjusted fleet production: **165.96** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.278/LCY

Total job time: **1.51** Hours

Total job cost: **\$320**

BULLDOZER WORKTask description: **Reclaim settling ponds**Site: **32.5 Road Gravel Pit**Permit Action: **SII**Permit/Job#: **M2009035****PROJECT IDENTIFICATION**Task #: **04A**State: **Colorado**Abbreviation: **None**Date: **7/11/2022**County: **Mesa**Filename: **M035-04a**User: **ACY**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D7R DS XR Series II**Horsepower: **240**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$92.78	NA
Operating Cost/Hour:	\$79.33	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$40.04	NA

Total unit Cost/Hour: **\$212.15**Total Fleet Cost/Hour: **\$212.15****MATERIAL QUANTITIES**Initial Volume: **10,000**Swell factor: **1.090**Loose volume: **10,900 LCY**Source of estimated volume: **Exhibit L and 2009 calc**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **200 feet**Unadjusted hourly production: **410.8 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **4,620 feet**Material weight: **2,600 lbs/LCY**Weight description: **Clay and gravel - Wet****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.885	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3967

Adjusted unit production: 162.96 LCY/hr

Adjusted fleet production: **162.96** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.302/LCY

Total job time: **66.89** Hours

Total job cost: **\$14,190**

DEMOLITION WORK

Task description: Demo Scale

Site: 32.5 Road Gravel Pit

Permit Action: SI1

Permit/Job#: M2009035

PROJECT IDENTIFICATION

Task #: 05A

State: Colorado

Abbreviation: None

Date: 7/11/2022

County: Mesa

Filename: M035-05a

User: ACY

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 90.70 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Scale	50' x50'	USER PROVIDED ITEM	2,500.00	SF	\$1.00	\$2,500.00

Job Hours: 16.00

Subtotal
(unadjusted): \$2,500.00

Total Cost
(adjusted for
location): \$2,267.50

BULLDOZER RIPPING WORK

Task description: Rip compacted areas

Site: 32.5 Road Gravel Pit Permit Action: SI1 Permit/Job#: M2009035

PROJECT IDENTIFICATION

Task #: 06A State: Colorado Abbreviation: None
Date: 7/11/2022 County: Mesa Filename: M035-06a
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D7R DS Series II LGP Horsepower: 240
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$92.78	NA
Operating Cost/Hour:	\$79.33	100
Ripper Ownership Cost/Hour:	\$8.37	NA
Ripper Operating Cost/Hour:	\$4.99	100
Operator Cost/Hour:	\$40.04	NA
Total Unit Cost/Hour:	\$225.51	
Total Fleet Cost/Hour:	\$225.51	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 6.84 acres Rip Depth (ft): 2.00 Volume: 22,070 BCY or CCY

Source of estimated quantity: Rec Plan and 2009 calc

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 1.00 feet/pass
Average Ripping Width: 6.50 feet/pass
Average Ripping Length: 100.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 0.646 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.646 Acres/hr
Site Altitude: 4,620 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.54 Acres/hr
Adjusted Hourly Fleet Production: **0.54** Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **12.76** Hours

Unit cost: \$420.715 Per acre Total job cost: **\$2,878**

TRUCK/LOADER TEAM WORKTask description: **Import Gravel for bank**Site: **32.5 Road Gravel Pit**Permit Action: **S11**Permit/Job#: **M2009035****PROJECT IDENTIFICATION**Task #: **07A**State: **Colorado**Abbreviation: **None**Date: **7/11/2022**County: **Mesa**Filename: **M035-07a**User: **ACY**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

	Equipment Description
Truck Loader Team -Truck:	Generic 8-10 cy, 6x4
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:**Truck/Loader Team****Support Equipment****Maintenance Equipment**

	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	NA	NA
Ownership cost/hour:	\$15.43	\$40.85	NA	NA	NA	NA
Operating cost/hour:	\$43.77	\$32.69	NA	NA	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$0.00	\$35.97	NA	NA	NA	NA
Unit Subtotals:	\$59.20	\$109.51	NA	NA	NA	NA
Number of Units:	2	1	0	0	0	0
Group Subtotals:	Work: \$227.91		Support: \$0.00		Maint: \$0.00	

Total work team cost/hour: **\$227.91****MATERIAL QUANTITIES**Initial volume: **4,800**

CCY

Swell factor: **1.115**Loose volume: **5,352**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook**Material Purchase Cost: **\$0.00**Total Cost: **\$0.00****HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: **2,100**

Pounds/LCY

Description: **Earth - Loam**Rated Payload: **27,280**

Pounds

Payload Capacity: **12.99**

LCY

Truck Bed (volume) Basis:

Struck Volume:	8.00	LCY
Heaped Volume:	10.00	LCY
Average Volume:	9.00	LCY
Adjusted Volume:	10.00	LCY

Final Truck Volume Based on Number of Loader Passes: 8.19 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	4.095	LCY

Job Condition Corrections:

Site Altitude (ft.): 4620 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Loading Tool Cycle Time: Number of Loading Tool Passes Required to Fill Truck: 2 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
 Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.060	minutes
Adjusted Loader Cycle Time:		0.423	minutes
Net Load Time per Truck:		0.523	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.523	Minutes	Adjusted for site altitude:	0.523	Minutes
Truck Maneuver and Dump Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes

Truck Travel (Haul & Return) Time:
penetration 5.0

Road Condition: Rutted dirt, little maintenance, no water, 2" tire

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	0.00	5.00	5.00	2218	0.430

Haul Time: **0.430** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	0.00	5.00	5.00	2814	0.313

Return Time: **0.313** minutesTotal Truck Cycle Time: **2.566** minutes

Loading Tool unit

Production 480.59 LCY/Hour Adjusted for job efficiency: 398.89 LCY/Hour
Truck Unit Production 191.54 LCY/Hour Adjusted for job efficiency: 158.98 LCY/Hour

Optimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 317.96 LCY/Hour
Adjusted single truck/loader team production: 317.96 LCY/Hour
Adjusted multiple truck/loader team production: **317.96** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **16.83** HoursUnit cost: \$0.717 /LCY Total job cost: **\$3,836**

BULLDOZER WORKTask description: Grade transported topsoilSite: 32.5 Road Gravel PitPermit Action: S11Permit/Job#: M2009035**PROJECT IDENTIFICATION**Task #: 07BState: ColoradoAbbreviation: NoneDate: 7/11/2022County: MesaFilename: M035-07bUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D7R DS XR Series IIHorsepower: 240Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$92.78	NA
Operating Cost/Hour:	\$79.33	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$40.04	NA

Total unit Cost/Hour: \$212.15Total Fleet Cost/Hour: \$212.15**MATERIAL QUANTITIES**Initial Volume: 5,352Swell factor: 1.000Loose volume: 5,352 LCYSource of estimated volume: Transported volumeSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 714.3 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 4,620 feetMaterial weight: 2,100 lbs/LCYWeight description: Earth - Loam**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6544

Adjusted unit production: 467.44 LCY/hr

Adjusted fleet production: **467.44** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.454/LCY

Total job time: **11.45** Hours

Total job cost: **\$2,429**

REVEGETATION WORKTask description: RevegSite: 32.5 Road Gravel PitPermit Action: SI1Permit/Job#: M2009035**PROJECT IDENTIFICATION**Task #: 08AState: ColoradoAbbreviation: NoneDate: 7/11/2022County: MesaFilename: M035-08aUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	200.00	pound	\$0.38	\$76.00
			Total Fertilizer Materials Cost/Acre	\$76.00

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$39.64
Total Fertilizer Application Cost/Acre	\$39.64

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.18
Total Tilling Cost/Acre	\$117.18

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	1.00	39.03	\$28.48
Galleta	2.00	7.30	\$44.70
Tall Wheatgrass - Jose	4.00	7.25	\$13.50
Western Wheatgrass - Barton	3.50	8.84	\$24.50
Totals Seed Mix	10.50	62.42	\$111.18

Application

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

	Total Seed Application Cost/Acre	\$232.00
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MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$421.36	\$842.72
Herbicide - Curtail @ 4.0 pt/ac	1.00	ACRE	\$7.94	\$7.94
Total Mulch Materials Cost/Acre				\$850.66

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$73.00
Power mulcher (MEANS 32 91 13.16 0350)	\$141.57
Weed spray, hand, aquatic area, nox. [DMG]	\$183.16
Total Mulch Application Cost/Acre	\$397.73

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres:	6.84	Cost /Acre:	\$1,824.39
Estimated Failure Rate:	50%	Cost /Acre*:	\$1,824.39
*Selected Replanting Work Items:	FERTILIZING,TILLING,SEEDING,MU LCHING		
Initial Job Cost:	\$12,478.83		
Reseeding Job Cost:	\$6,239.41		
Total Job Cost:	\$18,718		
Job Hours:	10.00		

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Initial Mobilization**Site: **32.5 Road Gravel Pit**Permit Action: **SI1**Permit/Job#: **M2009035****PROJECT IDENTIFICATION**Task #: **09A**State: **Colorado**Abbreviation: **None**Date: **7/11/2022**County: **Mesa**Filename: **M035-09a**User: **ACY**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:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$15.25	\$23.06	\$37.58
Operating Cost/Hour:	\$25.26	\$30.83	\$51.41
Operator Cost/Hour:	\$27.71	\$27.71	\$27.71
Helper Cost/Hour:	\$0.00	\$20.22	\$20.22
Total Unit Cost/Hour:	\$68.22	\$101.82	\$136.92

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 938H	16.34	\$40.85	\$68.22	1	\$109.07	\$68.22	\$250.00
Cat D7R DS Series II LGP	38.49	\$101.15	\$101.82	1	\$202.97	\$101.82	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.25	\$68.22	1	\$74.47	\$68.22	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$14.79	\$68.22	1	\$83.01	\$68.22	\$250.00

Subtotals: **\$469.52** **\$306.48** **\$1,000.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 4x2, 30K GVW	\$60.57	1	\$60.57	\$60.57
Water Tanker, 2,500 Gal.	\$58.83	1	\$58.83	\$58.83
Generic 8-10 cy, 6x4	\$84.02	2	\$168.04	\$168.04

Subtotals: **\$287.44** **\$287.44**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>GRAND JUNCTION</u>	
Total one-way travel distance:	<u>5.00</u>	miles
Average Travel Speed:	<u>35.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$3,160.75</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$82.13</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.14</u>	<u>0.14</u>
Return Time (Hours):	<u>0.14</u>	<u>0.14</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.29</u>	<u>0.29</u>

JOB TIME AND COST

Total job time:	<u>2.57</u>	Hours
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Total job cost:	<u>\$3,243</u>
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EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: Secondary MobilizationSite: 32.5 Road Gravel PitPermit Action: SI1Permit/Job#: M2009035**PROJECT IDENTIFICATION**Task #: 10AState: ColoradoAbbreviation: NoneDate: 7/11/2022County: MesaFilename: M035-10aUser: ACYAgency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**Shift basis: 1 per dayCost Data Source: CRG DataTruck 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:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$15.25	\$23.06	\$37.58
Operating Cost/Hour:	\$25.26	\$30.83	\$51.41
Operator Cost/Hour:	\$27.71	\$27.71	\$27.71
Helper Cost/Hour:	\$0.00	\$20.22	\$20.22
Total Unit Cost/Hour:	\$68.22	\$101.82	\$136.92

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
Drill/Broadcast Seeder with Tractor	25.00	\$6.25	\$68.22	1	\$74.47	\$68.22	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$14.79	\$68.22	1	\$83.01	\$68.22	\$250.00
Subtotals:					\$157.48	\$136.44	\$500.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 4x2, 30K GVW	\$60.57	1	\$60.57	\$60.57
Subtotals:			\$60.57	\$60.57

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>GRAND JUNCTION</u>	
Total one-way travel distance:	<u>5.00</u>	miles
Average Travel Speed:	<u>35.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$1,398.94</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$17.31</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.14</u>	<u>0.14</u>
Return Time (Hours):	<u>0.14</u>	<u>0.14</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.29</u>	<u>0.29</u>

JOB TIME AND COST

Total job time:	<u>2.57</u>	Hours
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Total job cost:	<u>\$1,416</u>
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