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

December 8, 2023

Katie Conrado
Meeker Sand & Gravel, Inc.
P.O. Box 1550
Meeker, CO 81641

RE: Meeker Pit, Permit No. M-1976-038, AM-3 Preliminary Reclamation Cost Estimate-Rev 1

Dear Ms. Conrado:

This reclamation cost update was in response AM-3 submitted on October 10, 2023. As of December 1, 2023 all adequacy items have been sufficiently addressed. Modifications from the original calculation have been made based on response received on December 5, 2023 (denoted in red).

Below is a table summarizing input values that have been updated based on the amended permit (AM-3). This table does not account for price changes resulting from inflation or other RS Means cost changes. Bond calculations are based on a combination of field observations and worst case scenario based on the approved reclamation plan.

General Assumptions:

- Maximum disturbance of 50 acres. Current operation includes commercial area of 11.51 ac, 3.48 ac permanent road, 2.31 ac process ponds permanent, overburden footprint 5.09 ac, topsoil footprint 5.38 ac.
- Minimum of 24" of overburden and average of 9" of topsoil
- Maximum of 1,000 LF of highwall going to a 3H: 1V
- Disk 6", Drill seed, mulch w/ 1.5 ton/ac of straw, weed treatment

Task	Form Used	Description
01a	Truck/ Dozer	Perimeter Boundary Grading North highwall Max 575 LF, 18'H @ Vertical going to 3H: 1V backfill = 10,350 CCY Stockpile located 175LF avg away
01b	Dozer	Highwall Grading to 3H: 1V= 12,263 CCY @ 70' push Max 425 LF, 18'H@ vert going to 3H: 1V cut/fill = 1,913 CCY plus transported vol of 10,350 CCY

01c	Dozer	Grade out recycle ponds 650 CCY w/ 50' push
02a	Truck/ Dozer	Place 24" of overburden over 22.26 ac = 71,826 CCY Assuming graded highwalls do not need more cover Stockpile located Max 600', currently 177' away until in Phase I.
02b	Dozer	Grade transported overburden = 80,804 LCY w/ 50' push Misc. pit floor grading will be smoothed out during this task.
03a	Grader	Decompact soils 12" for 32.73 ac
04a	Truck/ Dozer	Topsoil 9" over 27.35 ac = 33,094 CCY Stockpile located Max 600', currently 192' away until in Phase I.
04b	Dozer	Grade transported topsoil = 40,209 LCY w/ 50' push
05a	Reveg	Reveg 32.73 ac w/ 25% failure rate Disc, Drill seed, apply 3000 lbs. per ac mulch and crimp, weed treatment
10a	Mob	Initial Mobilization
10b	Mob	Secondary Mobilization
Indirect		Add in Division's standard indirect cost approx. 28%

Please feel free to contact me with any further questions. Amy Yeldell at the Division of Reclamation, Mining and Safety, Rm 215, 1001 E 62nd Ave, Denver CO 80216. Direct contact can be made by phone at 303-866-3567 Ext 8183 or via email at amy.yeldell@ state.co.us

Sincerely,

Amy Yeldell

Amy Yeldell
Environmental Protection Specialist

COST SUMMARY WORK

Task description: **Updated based on AM-3**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: ACY State: Colorado Abbreviation: None
Date: 11/29/2023 County: Rio Blanco Filename: M038-ACY
User: ACY

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Transport Highwall Backfill	TRUCK1	2	10.56	$12,248
01b	Re-grade All Highwall to 3H:1V Slopes	DOZER	2	8.55	$7,561
01c	Grading pond slopes	DOZER	2	0.40	$357
02a	Transport Overburden	TRUCK1	2	73.31	$84,998
02b	Grade Transported Overburden	DOZER	2	35.52	$31,421
03a	Decompact Pit Floor	GRADER	1	27.93	$6,151
04a	Transport Topsoil	TRUCK1	2	36.48	$42,296
04b	Grade Transported Overburden	DOZER	2	11.09	$9,808
05a	Reveg Affected Lands	REVEGE	1	50.00	$52,869
10a	Initial Mobilization of Equipment	MOBILIZE	1	2.53	$11,098
10b	Secondary Mobilization of Equipment	MOBILIZE	1	2.53	$771
	SUBTOTALS:			**258.9**	**$259,578**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$5,243
Performance bond:	1.05	Total =	$2,726
Job superintendent:	129.45	Total =	$8,425
Profit:	10.00	Total =	$25,958
		TOTAL O & P =	$42,351
		CONTRACT AMOUNT (direct + O & P) =	$301,929

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$500	Total =	$500
Engineering work and/or contract/bid preparation:	0.00	Total =	$0
Reclamation management and/or administration:	5.00		$15,096
CONTINGENCY:	3.00	Total =	$7,787
		TOTAL INDIRECT COST =	$65,735
		TOTAL BOND AMOUNT (direct + indirect) =	**$325,313**

TRUCK/LOADER TEAM WORK

Task description: **Transport Highwall Backfill**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: 01A State: Colorado Abbreviation: None
Date: 12/1/2023 County: Rio Blanco Filename: M038-01a
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 730
-Loader:	CAT 972H
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:	$108.06	$57.78	NA	NA	NA	NA
Operating cost/hour:	$71.88	$56.23	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:	$32.54	$40.71	NA	NA	NA	NA
Unit Subtotals:	$212.48	$154.72	NA	NA	NA	NA
Number of Units:	4	2	0	0	0	0
Group Subtotals:	Work:	$1,159.36	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$1,159.36**

MATERIAL QUANTITIES

Initial volume: 10,350 CCY Swell factor: 1.125
Loose volume: **11,644** LCY

Source of estimated volume: 575 LF, 18'H @ Vertical going to 3H: 1V backfill
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: 2,550 Pounds/LCY
Description: Earth - Dry packed
Rated Payload: 62,000 Pounds
Payload Capacity: 24.31 LCY

Truck Bed (volume) Basis:

Struck Volume:	17.10	LCY
Heaped Volume:	22.10	LCY
Average Volume:	19.60	LCY
Adjusted Volume:	22.10	LCY

Final Truck Volume Based on Number of Loader Passes: **18.48** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	5.600	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	**6.160**	LCY

Job Condition Corrections: Site Altitude (ft.): 6565 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: 3 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): 0.525 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 3/4" to 6" diameter 0.00	0.000	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(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:	-0.040	minutes
	Adjusted Loader Cycle Time:	**0.485**	minutes
	Net Load Time per Truck:	**1.070**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.070	Minutes	Adjusted for site altitude:	1.070	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	175.00	0.00	5.00	5.00	1427	0.245

Haul Time: **0.245** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	175.00	0.00	5.00	5.00	2646	0.226

Return Time: **0.226** minutes
Total Truck Cycle Time: **3.141** minutes

Loading Tool unit Production 663.95 LCY/Hour Adjusted for job efficiency: 551.08 LCY/Hour

Truck Unit Production 353.01 LCY/Hour Adjusted for job efficiency: 293.00 LCY/Hour

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

Adjusted hourly truck team production: 585.99 LCY/Hour
Adjusted single truck/loader team production: 551.08 LCY/Hour
Adjusted multiple truck/loader team production: **1,102.16** LCY/Hour

JOB TIME AND COST

Fleet size: 2 Team(s) Total job time: **10.56** Hours

Unit cost: $1.052 /LCY Total job cost: **$12,248**

BULLDOZER WORK

Task description: **Re-grade All Highwall to 3H:1V Slopes**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: 01B State: Colorado Abbreviation: None
Date: 11/29/2023 County: Rio Blanco Filename: M038-01b
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU
Horsepower: 405
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$238.76	NA
Operating Cost/Hour:	$162.29	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $442.35
Total Fleet Cost/Hour: **$884.70**

MATERIAL QUANTITIES

Initial Volume: 12,263
Swell factor: 1.125
Loose volume: **13,796** LCY

Source of estimated volume: 425 LF 18'H vert to 3H: 1V cutfill + Transported vol grading
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 70 feet
Unadjusted hourly production: 1,633.5 LCY/hr

Materials consistency description: Partly consolidated stockpile 1.1

Average push gradient: 0 %
Average site altitude: 6,565 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(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:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4941

Adjusted unit production: 807.11 LCY/hr

Adjusted fleet production: **1614.22** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: $0.548/LCY

Total job time: **8.55** Hours

Total job cost: **$7,561**

BULLDOZER WORK

Task description: **Grading pond slopes**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: 01C State: Colorado Abbreviation: None
Date: 11/29/2023 County: Rio Blanco Filename: M038-01c
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU
Horsepower: 405
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$238.76	NA
Operating Cost/Hour:	$162.29	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $442.35
Total Fleet Cost/Hour: **$884.70**

MATERIAL QUANTITIES

Initial Volume: 650
Swell factor: 1.060
Loose volume: **689** LCY

Source of estimated volume: Exhibit L
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
Unadjusted hourly production: 2,110.5 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 0 %
Average site altitude: 6,565 feet

Material weight: 2,550 lbs/LCY

Weight description: Gravel - Dry

Job Condition Correction Factor		Source
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:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4043

Adjusted unit production: 853.28 LCY/hr
Adjusted fleet production: **1706.56** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.518/LCY

Total job time: **0.40** Hours
Total job cost: **$357**

TRUCK/LOADER TEAM WORK

Task description: **Transport Overburden**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: 02A State: Colorado Abbreviation: None
Date: 12/7/2023 4:03:02 PM County: Rio Blanco Filename: M038-02a
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 730
-Loader:	CAT 972H
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:	$108.06	$57.78	NA	NA	NA	NA
Operating cost/hour:	$71.88	$56.23	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:	$32.54	$40.71	NA	NA	NA	NA
Unit Subtotals:	$212.48	$154.72	NA	NA	NA	NA
Number of Units:	4	2	0	0	0	0
Group Subtotals:	Work:	$1,159.36	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$1,159.36**

MATERIAL QUANTITIES

Initial volume: 71,826 CCY Swell factor: 1.125
Loose volume: **80,804** LCY

Source of estimated volume: 24” over 22.26 ac - Bond response
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: 2,550 Pounds/LCY
Description: Earth - Dry packed
Rated Payload: 62,000 Pounds

Payload Capacity: 24.31 LCY

Truck Bed (volume) Basis:

Struck Volume:	17.10	LCY
Heaped Volume:	22.10	LCY
Average Volume:	19.60	LCY
Adjusted Volume:	22.10	LCY

Final Truck Volume Based on Number of Loader Passes: **18.48** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	5.600	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	**6.160**	LCY

Job Condition Corrections: Site Altitude (ft.): 6565 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: 3 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): 0.525 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 3/4" to 6" diameter 0.00	0.000	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(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:	-0.040	minutes
	Adjusted Loader Cycle Time:	**0.485**	minutes
	Net Load Time per Truck:	**1.070**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.070	Minutes	Adjusted for site altitude:	1.070	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	177.00	0.00	5.00	5.00	1427	0.247

Haul Time: **0.247** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	177.00	0.00	5.00	5.00	2646	0.226

Return Time: **0.226** minutes
Total Truck Cycle Time: **3.143** minutes

Loading Tool unit Production 663.95 LCY/Hour Adjusted for job efficiency: 551.08 LCY/Hour

Truck Unit Production 352.78 LCY/Hour Adjusted for job efficiency: 292.81 LCY/Hour

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

Adjusted hourly truck team production: 585.62 LCY/Hour
Adjusted single truck/loader team production: 551.08 LCY/Hour
Adjusted multiple truck/loader team production: **1,102.16** LCY/Hour

JOB TIME AND COST

Fleet size: 2 Team(s) Total job time: **73.31** Hours

Unit cost: $1.052 /LCY Total job cost: **$84,998**

BULLDOZER WORK

Task description: **Grade Transported Overburden**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: 02B State: Colorado Abbreviation: None
Date: 12/1/2023 County: Rio Blanco Filename: M038-02b
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU
Horsepower: 405
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$238.76	NA
Operating Cost/Hour:	$162.29	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $442.35
Total Fleet Cost/Hour: **$884.70**

MATERIAL QUANTITIES

Initial Volume: 80,804
Swell factor: 1.000
Loose volume: **80,804** LCY

Source of estimated volume: Transported vol grading- Rev Bond calc
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
Unadjusted hourly production: 2,110.5 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 0 %
Average site altitude: 6,565 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor		Source
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:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5390

Adjusted unit production: 1,137.56 LCY/hr
Adjusted fleet production: **2275.12** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.389/LCY

Total job time: **35.52** Hours
Total job cost: **$31,421**

MOTOR GRADER WORK

Task description: **Decompact Pit Floor**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: 03A State: Colorado Abbreviation: None
Date: 12/1/2023 County: Rio Blanco Filename: M038-03a
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 160M Horsepower: 213
Ripper Attachment: Multi-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$102.08	NA
Operating Cost/Hour:	$79.65	100
Ripper Ownership Cost/Hour:	$5.83	NA
Ripper Operating Cost/Hour:	$4.02	100
Operator Cost/Hour:	$28.56	NA
Total Unit Cost/Hour:	$220.14	
Total Fleet Cost/Hour:	**$220.14**	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 32.73 acres

Source of estimated acreage: Revised Bond calc

HOURLY PRODUCTION

Average Grader Speed: 1.50 mph
Selected Application: Ripping (0-3 mph) - 1.50
Selected Blade Angle: -1 degrees
Effective Blade Length: 0.00 feet
Width of blade overlap per pass: 2.00 feet
Net grading or ripping width per pass: 7.58 feet
Unadjusted Hourly Unit Production: 1.3782 acres/hour

Job Condition Correction Factors Site Altitude: 6565 feet

		Source
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.85	(1sh/d, mod.)
Net Correction:	0.8500	multiplier

Adjusted Hourly Unit Production: 1.1715 acres/Hour
Adjusted Hourly Fleet Production: **1.1715** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **27.94** Hours

Unit cost: $187.92 per acre Total job cost: **$6,151**

TRUCK/LOADER TEAM WORK

Task description: **Transport Topsoil**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: 04A State: Colorado Abbreviation: None
Date: 12/7/2023 4:06:30 PM County: Rio Blanco Filename: M038-04a
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 730
-Loader:	CAT 972H
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:	$108.06	$57.78	NA	NA	NA	NA
Operating cost/hour:	$71.88	$56.23	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:	$32.54	$40.71	NA	NA	NA	NA
Unit Subtotals:	$212.48	$154.72	NA	NA	NA	NA
Number of Units:	4	2	0	0	0	0
Group Subtotals:	Work:	$1,159.36	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$1,159.36**

MATERIAL QUANTITIES

Initial volume: 33,094 CCY Swell factor: 1.215
Loose volume: **40,209** LCY

Source of estimated volume: 9” over 27.35 ac -Rev Bond Calc
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: 1,600 Pounds/LCY
Description: Top Soil
Rated Payload: 62,000 Pounds

Payload Capacity: 38.75 LCY

Truck Bed (volume) Basis:

Struck Volume:	17.10	LCY
Heaped Volume:	22.10	LCY
Average Volume:	19.60	LCY
Adjusted Volume:	22.10	LCY

Final Truck Volume Based on Number of Loader Passes: **18.48** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	5.600	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	**6.160**	LCY

Job Condition Corrections: Site Altitude (ft.): 6565 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: 3 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): 0.525 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 3/4" to 6" diameter 0.00	0.000	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(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:	-0.040	minutes
	Adjusted Loader Cycle Time:	**0.485**	minutes
	Net Load Time per Truck:	**1.070**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.070	Minutes	Adjusted for site altitude:	1.070	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	192.00	0.00	5.00	5.00	1427	0.257

Haul Time: **0.257** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	192.00	0.00	5.00	5.00	2646	0.232

Return Time: **0.232** minutes
Total Truck Cycle Time: **3.159** minutes

Loading Tool unit Production 663.95 LCY/Hour Adjusted for job efficiency: 551.08 LCY/Hour

Truck Unit Production 351.00 LCY/Hour Adjusted for job efficiency: 291.33 LCY/Hour

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

Adjusted hourly truck team production: 582.66 LCY/Hour
Adjusted single truck/loader team production: 551.08 LCY/Hour
Adjusted multiple truck/loader team production: **1,102.16** LCY/Hour

JOB TIME AND COST

Fleet size: 2 Team(s) Total job time: **36.48** Hours

Unit cost: $1.052 /LCY Total job cost: **$42,296**

BULLDOZER WORK

Task description: **Grade Transported Overburden**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: 04B State: Colorado Abbreviation: None
Date: 12/1/2023 County: Rio Blanco Filename: M038-04b
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU
Horsepower: 405
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$238.76	NA
Operating Cost/Hour:	$162.29	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $442.35
Total Fleet Cost/Hour: **$884.70**

MATERIAL QUANTITIES

Initial Volume: 40,209
Swell factor: 1.000
Loose volume: **40,209** LCY

Source of estimated volume: Transported vol grading- Rev bond calc
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
Unadjusted hourly production: 2,110.5 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 0 %
Average site altitude: 6,565 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor		Source
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:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit production: 1,813.55 LCY/hr
Adjusted fleet production: **3627.1** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.244/LCY

Total job time: **11.09** Hours
Total job cost: **$9,808**

REVEGETATION WORK

Task description: **Reveg Affected Lands**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: 05A State: Colorado Abbreviation: None
Date: 12/1/2023 County: Rio Blanco Filename: M038-05a
User: ACY

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			$	$
			Total Fertilizer Materials Cost/Acre	**$0.00**

Application

Description	Cost /Acre
	$
Total Fertilizer Application Cost/Acre	**$0.00**

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$112.82
Total Tilling Cost/Acre	**$112.82**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Big Bluegrass - Sherman	1.50	30.99	$12.71
Indian Ricegrass - Paloma	1.05	3.40	$11.68
Orchardgrass - Paiute	1.50	18.60	$6.11
Mountain Brome - Bromar	1.50	2.41	$5.70
Russian Wildrye - Vinal	2.25	9.04	$13.91
Triticale	3.00	1.72	$2.25
Sweetvetch, Utah or Northern	0.30	0.14	$22.50
Sagebrush, Mountain or Big	0.30	15.84	$5.93
Prairie Junegrass	0.75	39.87	$19.50
Alfalfa - Travois (Yellow Alfalfa)	0.75	3.62	$1.91

Bluebunch Wheatgrass - Goldar	2.10	6.75	$9.66
Totals Seed Mix	15.00	132.36	**$111.86**

Application

Description	**Cost /Acre**
Drill Seeding (DRMS Survey Cost)	$232.00
Total Seed Application Cost/Acre	**$232.00**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	$4.01	$4.01
Straw, delivered {MEANS 31 25 14.16 1200}	1.50	TON	$429.79	$644.68
Total Mulch Materials Cost/Acre				**$648.69**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$74.46
Weed spray, truck, non-aquatic area, nox. [DMG]	$62.72
Total Mulch Application Cost/Acre	**$137.18**

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: 32.73 Cost /Acre: $1,242.55
Estimated Failure Rate: 30% Cost /Acre*: $1,242.55
*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **$40,668.66**
Reseeding Job Cost: **$12,200.60**
Total Job Cost: **$52,869**
Job Hours: **50.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Initial Mobilization of Equipment**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: 10A State: Colorado Abbreviation: None
Date: 12/1/2023 County: Rio Blanco Filename: M038-10a
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:	$20.26	$36.04	$47.05
Operating Cost/Hour:	$39.51	$76.08	$82.85
Operator Cost/Hour:	$22.52	$22.52	$22.52
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$82.29	$158.17	$175.95

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 730	25.19	$108.06	$82.29	4	$761.40	$329.16	$1,000.00
CAT 160M	17.53	$107.91	$82.29	1	$190.20	$82.29	$500.00
CAT 972H	28.00	$57.78	$158.17	2	$431.90	$316.34	$500.00
Cat D9T - 9SU	60.01	$238.76	$175.95	2	$829.42	$351.90	$500.00
Drill/Broadcast Seeder with Tractor	25.00	$6.73	$82.29	1	$89.02	$82.29	$250.00
Subtotals:					**$2,301.94**	**$1,161.98**	**$2,750.00**

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	$91.58	1	$91.58	$91.58
Light Duty Pickup, 4x4, 3/4 T.	$43.51	4	$174.04	$174.04
Subtotals:			**$265.62**	**$265.62**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	MEEKER	
Total one-way travel distance:	4.00	miles
Average Travel Speed:	30.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$11,027.59	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$70.83	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.13	0.13
Return Time (Hours):	0.13	0.13
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.27	0.27

JOB TIME AND COST

Total job time:	**2.53**	Hours
Total job cost:	**$11,098**	

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Secondary Mobilization of Equipment**

Site: **Meeker Pit** Permit Action: AM-3 Permit/Job#: M1976038

PROJECT IDENTIFICATION

Task #: 10B State: Colorado Abbreviation: None
Date: 12/1/2023 County: Rio Blanco Filename: M038-10b
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:	$20.26	$36.04	$47.05
Operating Cost/Hour:	$39.51	$76.08	$82.85
Operator Cost/Hour:	$22.52	$22.52	$22.52
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$82.29	$158.17	$175.95

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	$6.73	$82.29	1	$89.02	$82.29	$250.00
Subtotals:					**$89.02**	**$82.29**	**$250.00**

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	$91.58	1	$91.58	$91.58
Light Duty Pickup, 4x4, 3/4 T.	$43.51	2	$87.02	$87.02
Subtotals:			**$178.60**	**$178.60**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	MEEKER	
Total one-way travel distance:	4.00	miles
Average Travel Speed:	30.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$723.72	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$47.63	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.13	0.13
Return Time (Hours):	0.13	0.13
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.27	0.27

JOB TIME AND COST

Total job time:	**2.53**	Hours
Total job cost:	**$771**	