



June 29, 2023

Mark Gardner  
Whitewater Building Materials Corporation  
940 South 10<sup>th</sup> Street  
Grand Junction, CO 81501

**Re: Graff Pit, Permit M-2017-027,  
Updated Reclamation Cost Estimate and Notification of Compliance Requirement**

Dear Mr. Gardner:

Based on my inspection in October 2022 and a review of the files for the Graff Pit, I have updated the Reclamation Cost Estimate (RCE) for this permit. The last estimate was completed in 2017, as part of the initial application, and the estimated total was \$30,996.49. As you are aware, this equals the actual surety for this permit.

Some key changes:

- I added a task for pumping out water in the pit prior to grading.
- I added a task for grading the site.
- I added additional indirect costs for a job supervisor and for administrative costs.
- Revegetation costs decreased due to the use of more economical mulching material.

The details of the new estimate are enclosed. The total is \$38,201. This increase is due to inflation as well as the addition of tasks noted above.

I will add a compliance requirement to this permit stating that additional bond (\$7,205) must be provided by Whitewater Building Materials Corporation prior to the beginning of mining activity at this site.

If you have any questions, please contact me at [Rob.Zuber@state.co.us](mailto:Rob.Zuber@state.co.us) or by calling (720) 601-2276.

Thank you,

Rob Zuber, P.E.  
Environmental Protection Specialist

Enclosure

Cc: Michael Cunningham, DRMS



## COST SUMMARY WORK

Task description: Cost Summary

Site: Graff Pit

Permit Action: 2023 Update

Permit/Job#: M2017027

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 6/28/2023

County: Delta

Filename: M027-000

User: RDZ

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Dewater lower part of lake prior to grading	PUMPING	1	37.72	\$1,932
01b	Grade 37 acres of site	DOZER	2	10.12	\$6,659
02	Place topsoil on 13 acres	GRADER	2	5.00	\$1,533
05	Dryland seeding/mulching of 13 acres	REVEGE	1	7.00	\$17,747
10	Mobilization/Demobilization	MOBILIZE	1	0.34	\$2,747
<b><u>SUBTOTALS:</u></b>				<b>60.18</b>	<b>\$30,618</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$618

Performance bond: 1.05

Total = \$321

Job superintendent: 17.12

Total = \$1,286

Profit: 10.00

Total = \$3,062

TOTAL O & P = \$5,288

CONTRACT AMOUNT (direct + O & P) = \$35,906

#### 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

\$1,795

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$7,583

**TOTAL BOND AMOUNT (direct + indirect) = \$38,201**

## PUMPING WORK

Task description: Dewater lower part of lake prior to grading

Site: Graff Pit

Permit Action: 2023 Update

Permit/Job#: M2017027

### PROJECT IDENTIFICATION

Task #: 01A

State: Colorado

Abbreviation: None

Date: 6/28/2023

County: Delta

Filename: M027-01a

User: RDZ

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Centrifugal pump - 90M, 6 in.	1
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	1
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	1
Labor Unit 1:	Pump operator	1

Horsepower: 65

Shift Basis: 1 per day

Weight: 1.05

(US Tons)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$8.44	NA
Operating Cost/Hour:	\$15.08	100
Operator Cost/Hour:	\$27.68	NA
Total Unit Cost/Hour:	\$51.20	

Total Fleet Cost/Hour: \$51.20

### PUMPING QUANTITIES

Initial Pond Volume:	<u>10.00</u>		Conversion factor:	<u>325850.5800</u>
Final Pond Volume:	<u>3,258,505.80</u>	gallons		
Total Pond Inflow Surface Area:	<u>5,000</u>	Sq. ft.	Unit inflow rate in gph/sq. ft.:	<u>0.0000</u>
Total Pond Inflow Volume per Hour:	<u>0.00</u>	gallons		

Source of estimated volume: 5 acres of lake, 2 feet deep

### PUMPING TIME

Maximum Pump Capacity:	<u>90,000</u>	gph/pump
Estimated Suction Head:	<u>15</u>	feet
Estimated Discharge Head:	<u>1</u>	feet
Total Head:	<u>16</u>	feet
CPB Pump Capacity:	<u>76,800</u>	gph/pump
Site Altitude:	<u>4,800</u>	feet
Adjusted Pumping Capacity:	<u>76,800</u>	gph
Initial Unadjusted Pumping Time:	<u>42.43</u>	hours
Inflow during Initial Pumping:	<u>0</u>	gallons
Net Unadjusted Pumping Time:	<u>42.43</u>	Hours
Altitude Adjustment Factor:	<u>0.9700</u>	(3% rule)
Pump Efficiency Factor:	<u>0.9167</u>	(55 min./hr.)
Total Adjusted Pumping Time:	<u>37.73</u>	hours

### JOB TIME AND COST

Total job time: 37.73 Hours

Unit cost: \$0.000593 /Gallon

Total job cost: \$1,932

**BULLDOZER WORK**Task description: **Grade 37 acres of site**Site: **Graff Pit** Permit Action: **2023 Update** Permit/Job#: **M2017027****PROJECT IDENTIFICATION**

Task #: **01B** State: **Colorado** Abbreviation: **None**  
 Date: **6/28/2023** County: **Delta** Filename: **M027-01b**  
 User: **RDZ**

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:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$146.30	NA
Operating Cost/Hour:	\$141.41	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: **\$329.01**  
 Total Fleet Cost/Hour: **\$658.02**

**MATERIAL QUANTITIES**

Initial Volume: **30,000**  
 Swell factor: **1.000**  
 Loose volume: **30,000 LCY**

Source of estimated volume: **37 acres X 6 inches = 30,000 CY (rounded).**  
 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: **Partly consolidated stockpile 1.1**

Average push gradient: **-5 %**  
 Average site altitude: **4,800 feet**

Material weight: **2,100 lbs/LCY**Weight description: **Earth - Loam****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7023

Adjusted unit production: 1,482.20 LCY/hr

Adjusted fleet production: **2964.4** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.222/LCY

Total job time: **10.12** Hours

Total job cost: **\$6,659**

## MOTOR GRADER WORK

Task description: Place topsoil on 13 acres

Site: Graff Pit

Permit Action: 2023 Update

Permit/Job#: M2017027

### PROJECT IDENTIFICATION

Task #: 02

State: Colorado

Abbreviation: None

Date: 6/28/2023

County: Delta

Filename: M027-02

User: RDZ

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 120M

Horsepower: 138

Ripper Attachment: \_\_\_\_\_

Shift Basis: 2 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$73.33</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$51.09</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$0.00</u>	
Operator Cost/Hour:	<u>\$28.71</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$153.13</u>	
Total Fleet Cost/Hour:	<u>\$306.26</u>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 13.00 acres

Source of estimated acreage: Permit application

### HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	<u>mph</u>
Selected Application:	<u>Finish grading</u>	<u>(0-2.5 mph) - 1.5</u>
Selected Blade Angle:	<u>30</u>	<u>degrees</u>
Effective Blade Length:	<u>10.40</u>	<u>feet</u>
Width of blade overlap per pass:	<u>2.00</u>	<u>feet</u>
Net grading or ripping width per pass:	<u>8.40</u>	<u>feet</u>
Unadjusted Hourly Unit Production:	<u>1.5273</u>	<u>acres/hour</u>

#### Job Condition Correction Factors

Site Altitude: 4800 feet

		Source
Altitude Adj:	<u>1.00</u>	<u>(CAT HB)</u>
Job Efficiency:	<u>0.85</u>	<u>(2sh/d, fav.)</u>
Net Correction:	<u>0.8500</u>	<u>multiplier</u>

Adjusted Hourly Unit Production: 1.2982 acres/Hour

Adjusted Hourly Fleet Production: 2.5964 acres/Hour

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: 5.01 Hours

Unit cost: \$117.96 per acre Total job cost: \$1,533

**REVEGETATION WORK**Task description: Dryland seeding/mulching of 13 acresSite: Graff PitPermit Action: 2023 UpdatePermit/Job#: M2017027**PROJECT IDENTIFICATION**Task #: 05State: ColoradoAbbreviation: NoneDate: 6/28/2023County: DeltaFilename: M027-05User: RDZAgency or organization name: DRMS**FERTILIZING****Materials**

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

**Application**

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

**TILLING**

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

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Crested Wheatgrass - Fairway	1.50	6.89	\$6.04
White Sweet Clover	1.50	8.95	\$6.19
Streambank Wheatgrass - Sodar	3.00	9.78	\$17.10
Thickspike Wheatgrass - Critana	3.00	10.61	\$20.63
Saltbush, Four Wing	0.25	0.34	\$3.13
Sumac, Skunkbrush	0.25	0.12	\$5.25
Rabbitbrush, Douglas	0.25	3.73	\$3.63
<b>Totals Seed Mix</b>	<b>9.75</b>	<b>40.42</b>	<b>\$61.95</b>

**Application**

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$3.04	\$3.04
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	\$421.36	\$421.36
<b>Total Mulch Materials Cost/Acre</b>				<b>\$424.40</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$73.00
Power mulcher (MEANS 32 91 13.16 0350)	\$141.57
<b>Total Mulch Application Cost/Acre</b>	<b>\$214.57</b>

**NURSERY STOCK PLANTING**

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

**JOB TIME AND COST**

No. of Acres: 13  
 Estimated Failure Rate: 30%  
 \*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Cost /Acre: \$1,050.10

Cost /Acre\*: \$1,050.10

Initial Job Cost: **\$13,651.30**  
 Reseeding Job Cost: **\$4,095.39**  
 Total Job Cost: **\$17,747**  
 Job Hours: **7.00**



**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mobilization/Demobilization**Site: **Graff Pit**Permit Action: **2023 Update**Permit/Job#: **M2017027****PROJECT IDENTIFICATION**

Task #: **10** State: **Colorado** Abbreviation: **None**  
 Date: **6/28/2023** County: **Delta** Filename: **M027-10**  
 User: **RDZ**

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:	\$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 D9T - 9SU	65.36	\$165.36	\$136.92	2	\$604.56	\$273.84	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.25	\$68.22	1	\$74.47	\$68.22	\$250.00
CAT 120M	15.53	\$73.33	\$68.22	2	\$283.10	\$136.44	\$500.00
Subtotals:					<b>\$962.13</b>	<b>\$478.50</b>	<b>\$1,250.00</b>

**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Subtotals:			<b>\$0.00</b>	<b>\$0.00</b>

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: DELTA  
 Total one-way travel distance: 3.00 miles  
 Average Travel Speed: 35.00 mph

Total Non-Roadable Mob/Demob Cost \* \$2,746.97  
 \* two round trips with haul rig:  
 Total Roadable Mob/Demob Cost \*\* \$0.00  
 \*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.09	0.09
Return Time (Hours):	0.09	0.09
Loading Time (Hours):	0.00	NA
Unloading Time (Hours):	0.00	NA
Subtotals:	0.17	0.17

**JOB TIME AND COST**

Total job time: 0.34 Hours

Total job cost: \$2,747