

## COST SUMMARY WORK

Task description: C-1996-084 Permit Renewal No. 5 Reclamation Cost Estimate

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 6/28/2022

County: Las Animas

Filename: C084-000

User: JLE

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Grade Borrow Area 3	GRADER	1	1.72	\$312
002	Replace Topsoil from Stockpile BA#1 to Fill 7a	TRUCK1	1	4.84	\$7,273
003	Replace Topsoil from Stockpile SSP#2 to Fill 9a	TRUCK1	1	7.31	\$10,998
004	Replace Topsoil from Stockpile SSP#3 to Fill 8	TRUCK1	1	13.00	\$19,562
005	Replace Topsoil from Stockpile SSP#2 to N-1	TRUCK1	1	8.17	\$12,297
006	Replace Topsoil from Stockpile BA#2 to C-1	TRUCK1	1	12.76	\$19,195
007	Replace Topsoil from Stockpile BA#1 to C-2	TRUCK1	1	7.86	\$11,862
008	Replace Topsoil from Stockpile BA#2 to S-2	TRUCK1	1	3.07	\$4,534
009	Replace Topsoil from Stockpile BA#3 to S-4	TRUCK1	1	3.33	\$5,854
010	Replace Topsoil from Stockpile BA#32to W-2	TRUCK1	1	10.58	\$18,599
011	Replace Topsoil from Stockpile BA#3 to W-3	TRUCK1	1	2.98	\$4,466
012	Replace Topsoil from Stockpile BA#3 to W-5	TRUCK1	1	10.74	\$18,916
013	Replace Topsoil from SA Stockpile to Service Area	DOZER	2	0.23	\$157
014	Replace Live-Handled Topsoil to W-1	DOZER	2	4.33	\$2,843
015	Replace Topsoil from Upslope to W-1	DOZER	2	3.60	\$2,361
016	Replace Live-Handled Topsoil to W-1	DOZER	2	1.72	\$1,131
017	Replace Topsoil from Upslope Area to W-4	DOZER	2	1.92	\$1,257
018	Replace Live-Handled Topsoil to W-6	DOZER	2	1.54	\$1,013
019	Replace Topsoil from Upslope Area to W-6	DOZER	2	0.86	\$563
020	Replace Topsoil from Stockpile BA#3 to W-6	TRUCK1	1	1.11	\$1,957
021	Replace Live-Handled Topsoil to N-2	DOZER	2	11.55	\$7,843
022	Replace Topsoil from Upslope Area to N-2	DOZER	2	12.84	\$8,420
023	Replace Live-Handled Topsoil to S-3	DOZER	2	0.98	\$644
024	Replace Topsoil from Upslope to S-3	DOZER	2	0.53	\$346
025	Replace Topsoil from Stockpile BA#3 to S-3	TRUCK1	1	0.67	\$1,186
026	Replace Topsoil from Stockpile SSP#2 to N-1	DOZER	2	4.16	\$2,827
027	Replace Live-Handled Topsoil to E-2	DOZER	2	0.57	\$377
028	Replace Topsoil from Upslope Area to E-2	DOZER	2	0.82	\$541
029	Replace Live-Handled Topsoil to E-3	DOZER	2	1.65	\$1,083
030	Replace Topsoil from Stockpile BA#3 to E-3	TRUCK1	1	1.27	\$2,223
031	Replace Topsoil from Upslope Area to BA#1	DOZER	2	1.81	\$1,227
032	Replace Topsoil from Upslope Area to BA#2	DOZER	2	1.73	\$1,133
033	Replace Topsoil from Upslope Area to BA#3	DOZER	2	3.23	\$2,121
034	Remove Topsoil from Knob Above Cut	DOZER	2	15.04	\$9,867
040	Plug and Seal Drill Hole and Monitoring Wells	BOREHOLE	1	33.30	\$48,161
050	Broadcast Seeding Mine Site	REVEGE	1	126.00	\$191,906
051	Hydroseeding Steep Slopes at Mine Site	REVEGE	1	16.00	\$58,442
052	Fertilize Mine Site During Year 2	REVEGE	1	84.00	\$11,027

053	Fertilize Mine Site During Year 3	REVEGE	1	84.00	\$11,027
054	Broadcast Seed Borrow Area 3	REVEGE	1	4.05	\$6,168
055	Direct Shrub Seeding	REVEGE	1	9.00	\$762
060	Clean Sediment Ponds at Mine Site	TRUCK1	1	122.42	\$82,454
061	Site Maintenance	SITEMAINT ENANCE	1	40.00	\$134,398
070	Mobilize/Demobilize for Initial Reclamation	MOBILIZE	1	4.28	\$21,244
071	Mobilize/Demobilize Equipment for Pond Cleaning	MOBILIZE	1	4.28	\$3,179
072	Mobilize/Demobilize Equipment for Site Maintenance	MOBILIZE	1	4.28	\$29,112
<b><u>SUBTOTALS:</u></b>				<b>690.13</b>	<b>\$782,868</b>

## **INDIRECT COSTS**

### **OVERHEAD AND PROFIT:**

Liability insurance:	2.02	Total =	\$15,814
Performance bond:	1.05	Total =	\$8,220
Job superintendent:	345.07	Total =	\$24,855
Profit:	10.00	Total =	\$78,287
		TOTAL O & P =	\$127,176
		CONTRACT AMOUNT (direct + O & P) =	\$910,044

### **LEGAL - ENGINEERING - PROJECT MANAGEMENT:**

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	6.00	Total =	\$54,603
Reclamation management and/or administration:	4.50		\$40,952
CONTINGENCY: 0.00		Total =	\$0

TOTAL INDIRECT COST = \$223,230

**TOTAL BOND AMOUNT (direct + indirect) = \$1,006,098**

## MOTOR GRADER WORK

Task description: Grade Borrow Area 3

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 5/20/2022

County: Las Animas

Filename: NA

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 14M

Horsepower: 259

Ripper Attachment: Multi-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$85.80	NA
Operating Cost/Hour:	\$60.40	100
Ripper Ownership Cost/Hour:	\$5.52	NA
Ripper Operating Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$28.56	NA
Total Unit Cost/Hour:	\$180.28	
Total Fleet Cost/Hour:	<b>\$180.28</b>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 2.70 acres

Source of estimated acreage: Table 2.05.4-1f

### HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Finish grading (0-2.5 mph) - 1.5</u>	
Selected Blade Angle:	<u>30</u>	degrees
Effective Blade Length:	<u>12.10</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>10.10</u>	feet
Unadjusted Hourly Unit Production:	<u>1.8364</u>	acres/hour

#### Job Condition Correction Factors

Site Altitude: 7100 feet

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

Adjusted Hourly Unit Production: 1.5609 acres/Hour

Adjusted Hourly Fleet Production: **1.5609** acres/Hour

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **1.73** Hours

Unit cost: \$115.50 per acre Total job cost: **\$312**

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile BA#1 to Fill 7a

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 5/20/2022

County: Las Animas

Filename: C084-002

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

#### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$105.00	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$262.12	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work:	\$757.18	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: **\$1,504.18**

### MATERIAL QUANTITIES

Initial volume: 3,440

CCY

Swell factor: 1.125

Loose volume: **3,870**

LCY

Source of estimated volume: Table 2.05.4-1f

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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: 39.38 LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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:		<u>-0.050</u>	minutes
Adjusted Loader Cycle Time:		<b><u>0.550</u></b>	minutes
Net Load Time per Truck:		<b><u>1.750</u></b>	minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	1200.00	-8.00	5.00	-3.00	3512	0.402

Haul Time: **0.402** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1200.00	8.00	5.00	13.00	1362	0.925

Return Time: **0.925** minutes

Total Truck Cycle Time: **4.877** minutes

Loading Tool unit

Production	<u>964.29</u>	LCY/Hour	Adjusted for job efficiency:	<u>800.36</u>	LCY/Hour
Truck Unit Production	<u>484.42</u>	LCY/Hour	Adjusted for job efficiency:	<u>402.07</u>	LCY/Hour

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

Adjusted hourly truck team production:	<u>804.13</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>800.36</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u><b>800.36</b></u>	LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s) Total job time: **4.84** Hours

Unit cost: \$1.879 /LCY Total job cost: **\$7,273**

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile SSP#2 to Fill 9a

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 003

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: C084-003

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

#### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$105.00	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$262.12	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work:	\$757.18	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: **\$1,504.18**

### MATERIAL QUANTITIES

Initial volume: 4,950

CCY

Swell factor: 1.125

Loose volume: **5,569**

LCY

Source of estimated volume: Table 2.05.4-1f

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:	122,520	Pounds
Payload Capacity:	48.05	LCY

Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: **39.38** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

**Job Condition Corrections:**

Site Altitude (ft.): 7100 feet

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

**Loading Tool Cycle Time:**

Number of Loading Tool Passes Required to Fill Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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:		-0.050	minutes
Adjusted Loader Cycle Time:		<b>0.550</b>	minutes
Net Load Time per Truck:		<b>1.750</b>	minutes

**Truck Cycle Time:**

Truck Exchange Time: 0.70 Minutes Adjusted for site altitude: 0.700 Minutes

Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	700.00	11.00	5.00	16.00	526	1.345

Haul Time: 1.345 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-11.00	5.00	-6.00	3512	0.254

Return Time: 0.254 minutes

Total Truck Cycle Time: 5.149 minutes

Loading Tool unit

Production 964.29 LCY/Hour

Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production

458.83 LCY/Hour

Adjusted for job efficiency: 380.83 LCY/Hour

Optimal No. of Trucks: 2 Truck(s)

Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 761.65 LCY/Hour

Adjusted single truck/loader team production: 761.65 LCY/Hour

Adjusted multiple truck/loader team production: 761.65 LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)

Total job time: 7.31 Hours

Unit cost: \$1.975 /LCY

Total job cost: \$10,998

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile SSP#3 to Fill 8

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 004

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

#### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$105.00	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$262.12	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work:	\$757.18	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: **\$1,504.18**

### MATERIAL QUANTITIES

Initial volume: 8,820

CCY

Swell factor: 1.125

Loose volume: **9,923**

LCY

Source of estimated volume: Table 2.05.4-1f

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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: **39.38** LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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: -0.050 minutes  
Adjusted Loader Cycle Time: **0.550** minutes  
Net Load Time per Truck: **1.750** minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	400.00	19.00	5.00	24.00	338	1.187

Haul Time: 1.187 minutes

**Return Route:**

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	400.00	-19.00	5.00	-14.00	1377	0.403

Return Time: 0.403 minutes

Total Truck Cycle Time: 5.140 minutes

Loading Tool unit Production	<u>964.29</u>	LCY/Hour	Adjusted for job efficiency:	<u>800.36</u>	LCY/Hour
Truck Unit Production	<u>459.63</u>	LCY/Hour	Adjusted for job efficiency:	<u>381.49</u>	LCY/Hour
Optimal No. of Trucks:	<u>2</u>	Truck(s)	Selected Number of Trucks:	<u>2</u>	Truck(s)
		Adjusted hourly truck team production:	<u>762.99</u>	LCY/Hour	
		Adjusted single truck/loader team production:	<u>762.99</u>	LCY/Hour	
		Adjusted multiple truck/loader team production:	<u>762.99</u>	LCY/Hour	

**JOB TIME AND COST**

Fleet size:	<u>1</u>	Team(s)	Total job time:	<u>13.00</u>	Hours
Unit cost:	<u>\$1.971</u>	/LCY	Total job cost:	<u>\$19,562</u>	

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile SSP#2 to N-1

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 005 State: Colorado Abbreviation: None  
Date: 6/23/2022 County: Las Animas Filename: A  
User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

<u>Cost Breakdown:</u>	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$105.00	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$262.12	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work: \$757.18		Support: \$552.48		Maint: \$194.52	

Total work team cost/hour: **\$1,504.18**

### MATERIAL QUANTITIES

Initial volume: 5,060 CCY Swell factor: 1.125  
Loose volume: **5,693** LCY

Source of estimated volume: Table 2.05.4-1f  
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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: 39.38 LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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: -0.050 minutes  
Adjusted Loader Cycle Time: **0.550** minutes  
Net Load Time per Truck: **1.750** minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	600.00	17.00	5.00	22.00	359	1.676

Haul Time: 1.676 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	-17.00	5.00	-12.00	1920	0.406

Return Time: 0.406 minutes

Total Truck Cycle Time: 5.632 minutes

Loading Tool unit

Production 964.29 LCY/Hour      Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production 419.48 LCY/Hour      Adjusted for job efficiency: 348.17 LCY/Hour

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

Adjusted hourly truck team production: 696.33 LCY/Hour

Adjusted single truck/loader team production: 696.33 LCY/Hour

Adjusted multiple truck/loader team production: 696.33 LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)      Total job time: 8.17 Hours

Unit cost: \$2.160 /LCY      Total job cost: \$12,297

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile BA#2 to C-1

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 006

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

#### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$105.00	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$262.12	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work:	\$757.18	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: \$1,504.18

### MATERIAL QUANTITIES

Initial volume: 7,750

CCY

Swell factor: 1.125

Loose volume: 8,719

LCY

Source of estimated volume: Table 2.05.4-1f

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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: 39.38 LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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: -0.050 minutes  
Adjusted Loader Cycle Time: **0.550** minutes  
Net Load Time per Truck: **1.750** minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	1200.00	8.00	5.00	13.00	678	1.798

Haul Time: 1.798 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1200.00	-8.00	5.00	-3.00	3569	0.392

Return Time: 0.392 minutes

Total Truck Cycle Time: 5.740 minutes

Loading Tool unit

Production 964.29 LCY/Hour      Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production 411.59 LCY/Hour      Adjusted for job efficiency: 341.62 LCY/Hour

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

Adjusted hourly truck team production: 683.23 LCY/Hour

Adjusted single truck/loader team production: 683.23 LCY/Hour

Adjusted multiple truck/loader team production: 683.23 LCY/Hour

**JOB TIME AND COST**

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

Unit cost: \$2.202 /LCY      Total job cost: \$19,195

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile BA#1 to C-2

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 007

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

#### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$110.53	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$267.65	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work:	\$762.71	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: \$1,509.71

### MATERIAL QUANTITIES

Initial volume: 5,590

CCY

Swell factor: 1.125

Loose volume: 6,289

LCY

Source of estimated volume: Table 2.05.4-1f

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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: **39.38** LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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: -0.050 minutes  
Adjusted Loader Cycle Time: **0.550** minutes  
Net Load Time per Truck: **1.750** minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	1000.00	-8.00	5.00	-3.00	3512	0.343

Haul Time: **0.343** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	8.00	5.00	13.00	1362	0.778

Return Time: **0.778** minutes

Total Truck Cycle Time: **4.671** minutes

Loading Tool unit

Production 964.29 LCY/Hour

Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production

505.78 LCY/Hour

Adjusted for job efficiency: 419.80 LCY/Hour

Optimal No. of Trucks: 2 Truck(s)

Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 839.60 LCY/Hour

Adjusted single truck/loader team production: 800.36 LCY/Hour

Adjusted multiple truck/loader team production: **800.36** LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)

Total job time: **7.86** Hours

Unit cost: \$1.886 /LCY

Total job cost: **\$11,862**

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile BA#2 to S-2

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 008

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

#### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	70	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$77.37	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$234.49	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work:	\$729.55	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: \$1,476.55

### MATERIAL QUANTITIES

Initial volume: 970

CCY

Swell factor: 1.125

Loose volume: 1,091

LCY

Source of estimated volume: Table 2.05.4-1f

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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: **39.38** LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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: -0.050 minutes  
Adjusted Loader Cycle Time: **0.550** minutes  
Net Load Time per Truck: **1.750** minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	8100.00	0.00	5.00	5.00	1741	4.837

Haul Time: 4.837 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	8100.00	0.00	5.00	5.00	3405	2.648

Return Time: 2.648 minutes

Total Truck Cycle Time: 11.035 minutes

Loading Tool unit

Production 964.29 LCY/Hour      Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production 214.09 LCY/Hour      Adjusted for job efficiency: 177.70 LCY/Hour

Optimal No. of Trucks: 5 Truck(s)      Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 355.39 LCY/Hour

Adjusted single truck/loader team production: 355.39 LCY/Hour

Adjusted multiple truck/loader team production: 355.39 LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)      Total job time: 3.07 Hours

Unit cost: \$4.155 /LCY      Total job cost: \$4,534

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile BA#3 to S-4

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 009

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

#### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$110.53	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$267.65	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work:	\$1,010.24	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: \$1,757.24

### MATERIAL QUANTITIES

Initial volume: 2,370

CCY

Swell factor: 1.125

Loose volume: 2,666

LCY

Source of estimated volume: Table 2.05.4-1f

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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: **39.38** LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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:		-0.050	minutes
Adjusted Loader Cycle Time:		<b>0.550</b>	minutes
Net Load Time per Truck:		<b>1.750</b>	minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	2200.00	5.00	5.00	10.00	773	2.874

Haul Time: 2.874 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2200.00	-5.00	5.00	0.00	3569	0.761

Return Time: 0.761 minutes

Total Truck Cycle Time: 7.185 minutes

Loading Tool unit

Production 964.29 LCY/Hour

Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production

328.81 LCY/Hour

Adjusted for job efficiency: 272.91 LCY/Hour

Optimal No. of Trucks: 3 Truck(s)

Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 818.74 LCY/Hour

Adjusted single truck/loader team production: 800.36 LCY/Hour

Adjusted multiple truck/loader team production: 800.36 LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)

Total job time: 3.33 Hours

Unit cost: \$2.196 /LCY

Total job cost: \$5,854

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile BA#32to W-2

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 010

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

#### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$110.53	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$267.65	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work:	\$1,010.24	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: **\$1,757.24**

### MATERIAL QUANTITIES

Initial volume: 7,530

CCY

Swell factor: 1.125

Loose volume: **8,471**

LCY

Source of estimated volume: Table 2.05.4-1f

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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: **39.38** LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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: -0.050 minutes  
Adjusted Loader Cycle Time: **0.550** minutes  
Net Load Time per Truck: **1.750** minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	2200.00	7.00	5.00	12.00	721	3.082

Haul Time: 3.082 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2200.00	-7.00	5.00	-2.00	3569	0.657

Return Time: 0.657 minutes

Total Truck Cycle Time: 7.289 minutes

Loading Tool unit

Production 964.29 LCY/Hour

Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production

324.12 LCY/Hour

Adjusted for job efficiency: 269.02 LCY/Hour

Optimal No. of Trucks: 3 Truck(s)

Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 807.06 LCY/Hour

Adjusted single truck/loader team production: 800.36 LCY/Hour

Adjusted multiple truck/loader team production: 800.36 LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)

Total job time: 10.58 Hours

Unit cost: \$2.196 /LCY

Total job cost: \$18,599

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile BA#3 to W-3

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 011

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

#### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	90	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$99.48	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$256.59	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work:	\$751.65	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: \$1,498.65

### MATERIAL QUANTITIES

Initial volume: 1,830

CCY

Swell factor: 1.125

Loose volume: 2,059

LCY

Source of estimated volume: Table 2.05.4-1f

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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: **39.38** LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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:		<u>-0.050</u>	minutes
Adjusted Loader Cycle Time:		<b><u>0.550</u></b>	minutes
Net Load Time per Truck:		<b><u>1.750</u></b>	minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	1500.00	3.00	5.00	8.00	1023	1.523

Haul Time: 1.523 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	-3.00	5.00	2.00	3569	0.604

Return Time: 0.604 minutes

Total Truck Cycle Time: 5.677 minutes

Loading Tool unit

Production 964.29 LCY/Hour      Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production 416.15 LCY/Hour      Adjusted for job efficiency: 345.41 LCY/Hour

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

Adjusted hourly truck team production: 690.81 LCY/Hour

Adjusted single truck/loader team production: 690.81 LCY/Hour

Adjusted multiple truck/loader team production: 690.81 LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)      Total job time: 2.98 Hours

Unit cost: \$2.169 /LCY      Total job cost: \$4,466

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile BA#3 to W-5

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 012

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

#### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	100	25	35
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$110.53	\$70.71	\$141.41	\$15.10	\$14.69
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$267.65	\$243.76	\$308.72	\$129.46	\$69.26
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work:	\$1,010.24	Support:	\$552.48	Maint:	\$198.72

Total work team cost/hour: **\$1,761.44**

### MATERIAL QUANTITIES

Initial volume: 7,640

CCY

Swell factor: 1.125

Loose volume: **8,595**

LCY

Source of estimated volume: Table 2.05.4-1f

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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: **39.38** LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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: -0.050 minutes  
Adjusted Loader Cycle Time: **0.550** minutes  
Net Load Time per Truck: **1.750** minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	2700.00	4.00	5.00	9.00	977	2.823

Haul Time: 2.823 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2700.00	-4.00	5.00	1.00	3569	0.919

Return Time: 0.919 minutes

Total Truck Cycle Time: 7.292 minutes

Loading Tool unit

Production 964.29 LCY/Hour

Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production

323.99 LCY/Hour

Adjusted for job efficiency: 268.91 LCY/Hour

Optimal No. of Trucks: 3 Truck(s)

Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 806.72 LCY/Hour

Adjusted single truck/loader team production: 800.36 LCY/Hour

Adjusted multiple truck/loader team production: 800.36 LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)

Total job time: 10.74 Hours

Unit cost: \$2.201 /LCY

Total job cost: \$18,916

## BULLDOZER WORK

Task description: Replace Topsoil from SA Stockpile to Service Area

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 013

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	<u>\$126.01</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$141.41</u>	<u>100</u>
Ripper own.		
Cost/Hour:	<u>\$19.26</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$11.48</u>	<u>100</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$339.46</u>	
Total Fleet Cost/Hour:	<u>\$678.92</u>	

### MATERIAL QUANTITIES

Initial Volume: 210

Swell factor: 1.125

Loose volume: 236 LCY

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 75 feet

Unadjusted hourly  
production: 1,514.3 LCY/hr

Materials consistency  
description: Consolidated stockpile 1.0

Average push  
gradient: 0 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3369

Adjusted unit  
production: 510.17 LCY/hr  
Adjusted fleet  
production: **1020.34** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.665/LCY

Total job time: **0.23** Hours  
Total job cost: **\$157**

## BULLDOZER WORK

Task description: Replace Live-Handled Topsoil to W-1

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 014

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own.		
Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA
Total unit Cost/Hour:	\$327.98	
Total Fleet Cost/Hour:	<b>\$655.96</b>	

### MATERIAL QUANTITIES

Initial Volume: 2,740  
Swell factor: 1.125  
Loose volume: **3,083** LCY

Source of estimated volume: Table 2.05.4-1f  
Source of estimated swell factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 125 feet  
Unadjusted hourly production: 1,055.6 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 0 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3369

Adjusted unit  
production: 355.63 LCY/hr

Adjusted fleet  
production: **711.26 LCY/hr**

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.922/LCY

Total job time: **4.33 Hours**  
Total job cost: **\$2,843**

## BULLDOZER WORK

Task description: Replace Topsoil from Upslope to W-1

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 015

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own. Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$327.98

Total Fleet Cost/Hour: \$655.96

### MATERIAL QUANTITIES

Initial Volume: 2,740

Swell factor: 1.250

Loose volume: 3,425 LCY

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 125 feet

Unadjusted hourly  
production: 1,055.6 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: -5 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.900	(AB.AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4508

Adjusted unit production: 475.86 LCY/hr

Adjusted fleet production: **951.72 LCY/hr**

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.689/LCY

Total job time: **3.60 Hours**

Total job cost: **\$2,361**

## BULLDOZER WORK

Task description: Replace Live-Handled Topsoil to W-1

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 016

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own. Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$327.98

Total Fleet Cost/Hour: **\$655.96**

### MATERIAL QUANTITIES

Initial Volume: 1,090

Swell factor: 1.125

Loose volume: **1,226** LCY

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 125 feet  
 Unadjusted hourly  
 production: 1,055.6 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 0 %  
 Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3369

Adjusted unit  
 production: 355.63 LCY/hr  
 Adjusted fleet  
 production: **711.26 LCY/hr**

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
 Unit cost: \$0.922/LCY

Total job time: **1.72 Hours**  
 Total job cost: **\$1,131**

### BULLDOZER WORK

Task description: Replace Topsoil from Upslope Area to W-4

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 017  
Date: 6/23/2022  
User: CJD

State: Colorado  
County: Las Animas

Abbreviation: None  
Filename: A

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:	<u>\$126.01</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$141.41</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$19.26</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$327.98</u>	
Total Fleet Cost/Hour:	<u><b>\$655.96</b></u>	

### MATERIAL QUANTITIES

Initial Volume: 1,090  
Swell factor: 1.250  
Loose volume: **1,363** LCY

Source of estimated volume:	Table 2.05.4-1f
Source of estimated swell factor:	Cat Handbook

### **HOURLY PRODUCTION**

Average push distance:	125 feet
Unadjusted hourly production:	1,055.6 LCY/hr

Materials consistency description:	Consolidated stockpile 1.0
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Average push gradient:	0 %
Average site altitude:	7,100 feet

Material weight:	2,550 lbs/LCY
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Weight description:	Earth - Dry packed
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### **Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction:	0.3369
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Adjusted unit production:	355.63 LCY/hr
Adjusted fleet production:	<b>711.26 LCY/hr</b>

### **JOB TIME AND COST**

Fleet size:	2 Dozer(s)
Unit cost:	\$0.922/LCY

Total job time:	<b>1.92 Hours</b>
Total job cost:	<b>\$1,257</b>

### BULLDOZER WORK

Task description: Replace Live-Handled Topsoil to W-6

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 018

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own. Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA
Total unit Cost/Hour:	\$327.98	
Total Fleet Cost/Hour:	<b>\$655.96</b>	

## **MATERIAL QUANTITIES**

Initial Volume: 1,400  
Swell factor: 1.125  
Loose volume: **1,575 LCY**

Source of estimated volume: Table 2.05.4-1f  
Source of estimated swell factor: Cat Handbook

## **HOURLY PRODUCTION**

Average push distance: 75 feet  
Unadjusted hourly production: 1,514.3 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 0 %  
Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

### **Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3369

Adjusted unit production: 510.17 LCY/hr  
Adjusted fleet production: **1020.34 LCY/hr**

## **JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.643/LCY

Total job time: **1.54 Hours**  
Total job cost: **\$1,013**

### BULLDOZER WORK

Task description: Replace Topsoil from Upslope Area to W-6

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 019

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own.		
Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0

Operator Cost/Hour:	\$41.30	NA
Total unit Cost/Hour:	\$327.98	
Total Fleet Cost/Hour:	<b>\$655.96</b>	

### **MATERIAL QUANTITIES**

Initial Volume:	700
Swell factor:	1.250
Loose volume:	<b>875 LCY</b>
Source of estimated volume:	Table 2.05.4-1f
Source of estimated swell factor:	Cat Handbook

### **HOURLY PRODUCTION**

Average push distance:	75 feet
Unadjusted hourly production:	1,514.3 LCY/hr
Materials consistency description:	Consolidated stockpile 1.0
Average push gradient:	0 %
Average site altitude:	7,100 feet
Material weight:	2,550 lbs/LCY
Weight description:	Earth - Dry packed

### **Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3369

Adjusted unit production:	510.17 LCY/hr
Adjusted fleet production:	<b>1020.34 LCY/hr</b>

### **JOB TIME AND COST**

Fleet size:	2 Dozer(s)
Unit cost:	\$0.643/LCY
Total job time:	<b>0.86 Hours</b>
Total job cost:	<b>\$563</b>

### TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile BA#3 to W-6

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 020

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

<b><u>Cost Breakdown:</u></b>	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$110.53	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$267.65	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work:	\$1,010.24	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: **\$1,757.24**

### **MATERIAL QUANTITIES**

Initial volume: 700 CCY      Swell factor: 1.125  
Loose volume: 788 LCY

Source of estimated volume: Table 2.05.4-1f  
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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: **39.38** LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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: -0.050 minutes  
Adjusted Loader Cycle Time: **0.550** minutes  
Net Load Time per Truck: **1.750** minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	3600.00	3.00	5.00	8.00	1023	3.576

Haul Time: 3.576 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3600.00	-3.00	5.00	2.00	3569	1.193

Return Time: 1.193 minutes

Total Truck Cycle Time: 8.319 minutes

Loading Tool unit

Production 964.29 LCY/Hour

Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production

283.99 LCY/Hour

Adjusted for job efficiency: 235.71 LCY/Hour

Optimal No. of Trucks: 3 Truck(s)

Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 707.13 LCY/Hour

Adjusted single truck/loader team production: 707.13 LCY/Hour

Adjusted multiple truck/loader team production: 707.13 LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)

Total job time: 1.11 Hours

Unit cost: \$2.485 /LCY

Total job cost: \$1,957

## BULLDOZER WORK

Task description: Replace Live-Handled Topsoil to N-2

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 021

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	<u>\$126.01</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$141.41</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$19.26</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$11.48</u>	<u>100</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$339.46</u>	
Total Fleet Cost/Hour:	<u>\$678.92</u>	

### MATERIAL QUANTITIES

Initial Volume: 6,300

Swell factor: 1.125

Loose volume: 7,088 LCY

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 150 feet

Unadjusted hourly  
production: 910.5 LCY/hr

Materials consistency  
description: Consolidated stockpile 1.0

Average push  
gradient: 0 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3369

Adjusted unit  
production: 306.75 LCY/hr  
Adjusted fleet  
production: **613.5** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$1.107/LCY

Total job time: **11.55** Hours  
Total job cost: **\$7,843**

## BULLDOZER WORK

Task description: Replace Topsoil from Upslope Area to N-2

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 022

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own.		
Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$327.98

Total Fleet Cost/Hour: **\$655.96**

### MATERIAL QUANTITIES

Initial Volume: 6,300

Swell factor: 1.250

Loose volume: **7,875** LCY

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 150 feet

Unadjusted hourly production: 910.5 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 0 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3369

Adjusted unit  
production: 306.75 LCY/hr  
Adjusted fleet  
production: **613.5** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$1.069/LCY

Total job time: **12.84** Hours  
Total job cost: **\$8,420**

## BULLDOZER WORK

Task description: Replace Live-Handled Topsoil to S-3

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 023

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own. Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA
Total unit Cost/Hour:	\$327.98	
Total Fleet Cost/Hour:	<b>\$655.96</b>	

### MATERIAL QUANTITIES

Initial Volume: 890

Swell factor: 1.125

Loose volume: **1,001** LCY

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 75 feet

Unadjusted hourly  
production: 1,514.3 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 0 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3369

Adjusted unit production: 510.17 LCY/hr

Adjusted fleet production: **1020.34** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.643/LCY

Total job time: **0.98** Hours

Total job cost: **\$644**

### BULLDOZER WORK

Task description: Replace Topsoil from Upslope to S-3

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 024

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own. Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$327.98

Total Fleet Cost/Hour: **\$655.96**

### MATERIAL QUANTITIES

Initial Volume: 480

Swell factor: 1.250

Loose volume: **600** LCY

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 75 feet  
 Unadjusted hourly  
 production: 1,514.3 LCY/hr

Materials consistency  
 description: Consolidated stockpile 1.0

Average push  
 gradient: -5 %  
 Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3756

Adjusted unit  
 production: 568.77 LCY/hr  
 Adjusted fleet  
 production: **1137.54 LCY/hr**

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
 Unit cost: \$0.577/LCY

Total job time: **0.53 Hours**  
 Total job cost: **\$346**

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile BA#3 to S-3

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 025

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$110.53	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$267.65	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work:	\$1,010.24	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: \$1,757.24

### MATERIAL QUANTITIES

Initial volume: 480

CCY

Swell factor: 1.125

Loose volume: 540 LCY

Source of estimated volume:	Table 2.05.4-1f
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:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: 39.38 LCY

#### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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:		<u>-0.050</u>	minutes
Adjusted Loader Cycle Time:		<b><u>0.550</u></b>	minutes
Net Load Time per Truck:		<b><u>1.750</u></b>	minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	2400.00	4.00	5.00	9.00	977	2.516

Haul Time: **2.516** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2400.00	-4.00	5.00	1.00	3569	0.835

Return Time: **0.835** minutes

Total Truck Cycle Time: **6.901** minutes

Loading Tool unit

Production 964.29 LCY/Hour      Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production

342.34 LCY/Hour      Adjusted for job efficiency: 284.14 LCY/Hour

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

Adjusted hourly truck team production: 852.43 LCY/Hour

Adjusted single truck/loader team production: 800.36 LCY/Hour

Adjusted multiple truck/loader team production: **800.36** LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)      Total job time: **0.67** Hours

Unit cost: \$2.196 /LCY      Total job cost: **\$1,186**

## BULLDOZER WORK

Task description: Replace Topsoil from Stockpile SSP#2 to N-1

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 026

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	<u>\$126.01</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$141.41</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$19.26</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$11.48</u>	<u>100</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$339.46</u>	
Total Fleet Cost/Hour:	<u>\$678.92</u>	

### MATERIAL QUANTITIES

Initial Volume: 3,100

Swell factor: 1.125

Loose volume: 3,488 LCY

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 100 feet

Unadjusted hourly  
production: 1,243.2 LCY/hr

Materials consistency  
description: Consolidated stockpile 1.0

Average push  
gradient: 0 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3369

Adjusted unit  
production: 418.83 LCY/hr  
Adjusted fleet  
production: **837.66 LCY/hr**

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.811/LCY

Total job time: **4.16 Hours**  
Total job cost: **\$2,827**

## BULLDOZER WORK

Task description: Replace Live-Handled Topsoil to E-2

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 027

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own.		
Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA
Total unit Cost/Hour:	\$327.98	
Total Fleet Cost/Hour:	<b>\$655.96</b>	

### MATERIAL QUANTITIES

Initial Volume: 750  
Swell factor: 1.125  
Loose volume: **844 LCY**

Source of estimated volume: Table 2.05.4-1f  
Source of estimated swell factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 75 feet  
Unadjusted hourly production: 1,514.3 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 0 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.900	(AB.AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4851

Adjusted unit  
production: 734.59 LCY/hr  
Adjusted fleet  
production: **1469.18** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.446/LCY

Total job time: **0.57** Hours  
Total job cost: **\$377**

## BULLDOZER WORK

Task description: Replace Topsoil from Upslope Area to E-2

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 028

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own. Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA
Total unit Cost/Hour:	\$327.98	
Total Fleet Cost/Hour:	<b>\$655.96</b>	

### MATERIAL QUANTITIES

Initial Volume: 750

Swell factor: 1.250

Loose volume: 938 LCY

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 75 feet

Unadjusted hourly  
production: 1,514.3 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: -5 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3756

Adjusted unit production: 568.77 LCY/hr

Adjusted fleet production: **1137.54** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.577/LCY

Total job time: **0.82** Hours

Total job cost: **\$541**

## BULLDOZER WORK

Task description: Replace Live-Handled Topsoil to E-3

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 029

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own. Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$327.98

Total Fleet Cost/Hour: **\$655.96**

### MATERIAL QUANTITIES

Initial Volume: 900

Swell factor: 1.125

Loose volume: **1,013** LCY

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 150 feet  
Unadjusted hourly production: 910.5 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 0 %  
Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3369

Adjusted unit production: 306.75 LCY/hr  
Adjusted fleet production: 613.5 LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$1.069/LCY

Total job time: 1.65 Hours  
Total job cost: \$1,083

## TRUCK/LOADER TEAM WORK

Task description: Replace Topsoil from Stockpile BA#3 to E-3

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 030  
Date: 6/23/2022  
User: CJD

State: Colorado  
County: Las Animas

Abbreviation: None  
Filename: A

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 773F
-Loader:	CAT 990H high lift
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

### Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	100	25	25
Ownership cost/hour:	\$122.05	\$116.41	\$126.01	\$126.01	\$85.80	\$33.45
Operating cost/hour:	\$92.14	\$110.53	\$70.71	\$141.41	\$15.10	\$10.49
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$19.26	\$19.26	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$5.74	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.34	\$40.71	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$247.53	\$267.65	\$243.76	\$308.72	\$129.46	\$65.06
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work:	\$1,010.24	Support:	\$552.48	Maint:	\$194.52

Total work team cost/hour: **\$1,757.24**

**MATERIAL QUANTITIES**

Initial volume:	<u>900</u>	CCY	Swell factor:	<u>1.125</u>
Loose volume:	<u><b>1,013</b></u>	LCY		

Source of estimated volume:	<u>Table 2.05.4-1f</u>
Source of estimated swell factor:	<u>Cat Handbook</u>
Material Purchase Cost:	<u>\$0.00</u>
Total Cost:	<u>\$0.00</u>

## HOURLY PRODUCTION

### Truck Capacity:

#### Truck Payload (weight) Basis:

Material weight:	2,550	Pounds/LCY
Description:	Earth - Dry packed	
Rated Payload:	122,520	Pounds
Payload Capacity:	48.05	LCY

#### Truck Bed (volume) Basis:

Struck Volume:	35.00	LCY
Heaped Volume:	46.50	LCY
Average Volume:	40.75	LCY
Adjusted Volume:	46.50	LCY

Final Truck Volume Based on Number of Loader Passes: 39.38 LCY

### Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	11.250	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1" and over (85 - 90%) 0.875
Adjusted Capacity:	<b>9.844</b>	LCY

### Job Condition Corrections:

Site Altitude (ft.): 7100 feet

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

### Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill  
Truck: 4 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): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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: -0.050 minutes  
Adjusted Loader Cycle Time: **0.550** minutes  
Net Load Time per Truck: **1.750** minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.70</u>	Minutes	Adjusted for site altitude:	<u>0.700</u>	Minutes
Truck Load Time:	<u>1.750</u>	Minutes	Adjusted for site altitude:	<u>1.750</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.10</u>	Minutes	Adjusted for site altitude:	<u>1.100</u>	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	2800.00	-5.00	5.00	0.00	3569	1.108

Haul Time: 1.108 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2800.00	5.00	5.00	10.00	1819	1.621

Return Time: 1.621 minutes

Total Truck Cycle Time: 6.279 minutes

Loading Tool unit

Production 964.29 LCY/Hour

Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production

376.25 LCY/Hour

Adjusted for job efficiency: 312.29 LCY/Hour

Optimal No. of Trucks: 3 Truck(s)

Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 936.87 LCY/Hour

Adjusted single truck/loader team production: 800.36 LCY/Hour

Adjusted multiple truck/loader team production: 800.36 LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)

Total job time: 1.27 Hours

Unit cost: \$2.196 /LCY

Total job cost: \$2,223

## BULLDOZER WORK

Task description: Replace Topsoil from Upslope Area to BA#1

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 031

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own. Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$11.48	100
Operator Cost/Hour:	\$41.30	NA
Total unit Cost/Hour:	\$339.46	
Total Fleet Cost/Hour:	<b>\$678.92</b>	

### MATERIAL QUANTITIES

Initial Volume: 1,080

Swell factor: 1.250

Loose volume: **1,350 LCY**

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 100 feet

Unadjusted hourly  
production: 1,243.2 LCY/hr

Materials consistency  
description: Consolidated stockpile 1.0

Average push  
gradient: -5 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	0.800	(POOR)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3005

Adjusted unit  
production: 373.58 LCY/hr

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Adjusted fleet  
production: **747.16** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)

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Unit cost: \$0.909/LCY

Total job time: **1.81** Hours

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Total job cost: **\$1,227**

## BULLDOZER WORK

Task description: Replace Topsoil from Upslope Area to BA#2

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 032

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own. Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA
Total unit Cost/Hour:	\$327.98	
Total Fleet Cost/Hour:	<b>\$655.96</b>	

### MATERIAL QUANTITIES

Initial Volume: 1,290

Swell factor: 1.250

Loose volume: **1,613 LCY**

Source of estimated volume: Table 2.05.4-1f

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 100 feet

Unadjusted hourly  
production: 1,243.2 LCY/hr

Materials consistency  
description: Consolidated stockpile 1.0

Average push  
gradient: -5 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3756

Adjusted unit  
production: 466.95 LCY/hr  
Adjusted fleet  
production: **933.9** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.702/LCY

Total job time: **1.73** Hours  
Total job cost: **\$1,133**

## BULLDOZER WORK

Task description: Replace Topsoil from Upslope Area to BA#3

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 033  
Date: 6/23/2022  
User: CJD

State: Colorado  
County: Las Animas

Abbreviation: None  
Filename: A

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:	<u>\$126.01</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$141.41</u>	<u>100</u>
Ripper own.		
Cost/Hour:	<u>\$19.26</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$327.98</u>	
Total Fleet Cost/Hour:	<u><b>\$655.96</b></u>	

### MATERIAL QUANTITIES

Initial Volume: 2,900  
Swell factor: 1.250  
Loose volume: **3,625** LCY

Source of estimated volume: Table 2.05.4-1f  
Source of estimated swell factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 100 feet  
Unadjusted hourly production: 1,243.2 LCY/hr

Materials consistency  
description:

Consolidated stockpile 1.0

Average push  
gradient: -5 %

Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.900	(AB.AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4508

Adjusted unit  
production: 560.43 LCY/hr

Adjusted fleet  
production: **1120.86** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.585/LCY

Total job time: **3.23** Hours

Total job cost: **\$2,121**

## BULLDOZER WORK

Task description: Remove Topsoil from Knob Above Cut

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 034

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$126.01	NA
Operating Cost/Hour:	\$141.41	100
Ripper own. Cost/Hour:	\$19.26	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA
Total unit Cost/Hour:	\$327.98	
Total Fleet Cost/Hour:	<b>\$655.96</b>	

### MATERIAL QUANTITIES

Initial Volume: 5,916

Swell factor: 1.250

Loose volume: **7,395** LCY

Source of estimated volume: Operator Estimate

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 300 feet  
 Unadjusted hourly  
 production: 437.8 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 0 %  
 Average site altitude: 7,100 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5615

Adjusted unit  
 production: 245.82 LCY/hr  
 Adjusted fleet  
 production: **491.64 LCY/hr**

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
 Unit cost: \$1.334/LCY

Total job time: **15.04 Hours**  
 Total job cost: **\$9,867**

## BOREHOLE SEALING WORK

Task description: Plug and Seal Drill Hole and Monitoring Wells

Site: Lorencito Canyon Mine Permit Action: RN5 Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 040 State: Colorado Abbreviation: None  
Date: 6/23/2022 County: Las Animas Filename: A  
User: JLE

Agency or organization name: DRMS

### UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Plug and Seal 8" Holes (1)	Portland cement grout ( Bag, material cost only...94 lb. bag)	8"	25	4.30	bag	\$19.95	\$85.79
Borehole Plug	PVC plug - 8 in. diameter borehole	8"	NA	1.00	EA	\$84.15	\$84.15
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$37.50	\$37.50
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	1.00	EA	\$486.70	\$486.70
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	1.00	EA	\$29.70	\$29.70
Plug and Seal 6" Holes (9)	Portland cement grout ( Bag, material cost only...94 lb. bag)	6"	209	20.00	bag	\$19.95	\$399.00
Borehole Plug	PVC plug - 6 in. diameter borehole	6"	NA	9.00	EA	\$61.43	\$552.87
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	9.00	EA	\$37.50	\$337.50
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	9.00	EA	\$486.70	\$4,380.30

Water Truck	Water Tanker, 2,500 Gal.	NA	NA	9.00	EA	\$29.70	\$267.30
Seal All 4" Holes (17)	Portland cement grout ( Bag, material cost only...94 lb. bag)	4"	4231	184.00	bag	\$19.95	\$3,670.80
Borehole Plug	PVC plug - 4 in. diameter borehole	4"	NA	17.00	EA	\$33.98	\$577.66
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	17.00	EA	\$37.50	\$637.50
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	17.00	EA	\$486.70	\$8,273.90
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	17.00	EA	\$29.70	\$504.90
Plug and Seal 8" Holes (1)	Portland cement grout ( Bag, material cost only...94 lb. bag)	8"	25	4.30	bag	\$19.95	\$85.79
Borehole Plug	PVC plug - 8 in. diameter borehole	8"	NA	1.00	EA	\$84.15	\$84.15
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$37.50	\$37.50
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	1.00	EA	\$486.70	\$486.70
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	1.00	EA	\$29.70	\$29.70
Plug and Seal 6" Holes (9)	Portland cement grout ( Bag, material cost only...94 lb. bag)	6"	209	20.00	bag	\$19.95	\$399.00
Borehole Plug	PVC plug - 6 in. diameter borehole	6"	NA	9.00	EA	\$61.43	\$552.87
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	9.00	EA	\$37.50	\$337.50
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	9.00	EA	\$486.70	\$4,380.30
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	9.00	EA	\$29.70	\$267.30
Seal All 4" Holes (17)	Portland cement grout ( Bag, material cost only...94 lb. bag)	4"	4231	184.00	bag	\$19.95	\$3,670.80
Borehole Plug	PVC plug - 4 in. diameter borehole	4"	NA	17.00	EA	\$33.98	\$577.66
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	17.00	EA	\$37.50	\$637.50
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	17.00	EA	\$486.70	\$8,273.90
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	17.00	EA	\$29.70	\$504.90
TR21 Corehole - Seal	Portland cement grout ( Bag, material cost only...94 lb. bag)	5	610	103.00	bag	\$19.95	\$2,054.85

TR 21 Borehole Plug	PVC plug - 6 in. diameter borehole	5	610	1.00	EA	\$61.43	\$61.43
TR21 Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$37.50	\$37.50
TR21 Drill Rig	SCHRAMM T145EX	NA	NA	6.30	EA	\$592.00	\$3,729.60
TR21 Water Truck	Water Tanker, 5,000 Gal.	NA	NA	6.30	EA	\$96.53	\$608.14
TR21 Pad regrade	Cat D9T - 9SU	NA	NA	3.00	EA	\$339.46	\$1,018.38

**Job Hours:** 33.30

**Total Cost:** \$48,161.00

### REVEGETATION WORK

Task description: Broadcast Seeding Mine Site

Site: Lorencito Canyon Mine Permit Action: RN5 Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 050 State: Colorado Abbreviation: None  
Date: 6/23/2022 County: Las Animas Filename: A  
User: CJD

Agency or organization name: DRMS

### FERTILIZING

#### **Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	250.00	pound	\$0.37	\$92.50
				<b>\$92.50</b>

			<b>Total Fertilizer Materials Cost/Acre</b>	
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**Application**

<b>Description</b>	<b>Cost /Acre</b>
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$38.77
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$38.77</b>

**TILLING**

<b>Description</b>	<b>Cost /Acre</b>
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$114.56
<b>Total Tilling Cost/Acre</b>	<b>\$114.56</b>

**SEEDING**

<b>Seed Mix</b>	<b>Rate – PLS LBS / Acre</b>	<b>Seeds per SQ. FT</b>	<b>Cost /Acre</b>
Switchgrass - Blackwell	0.96	8.57	\$11.04
Blue Grama - Native	0.40	6.53	\$5.49
Little Bluestem - Native	0.56	3.34	\$7.60
Sideoats Grama - Butte	0.64	2.10	\$5.76
Orchardgrass - Shawnee	1.50	18.60	\$4.65
Alfalfa - Ranger (inoculated)	1.60	7.71	\$4.08
Sheep Fescue - Covar	0.48	7.49	\$2.93
Milk Vetch, Cicer - Monarch	1.50	4.99	\$12.30
Mahogany, Mountain	1.20	1.63	\$44.17
Western Wheatgrass - Arriba	6.00	15.15	\$39.00
Needlegrass, Green - Lodorm	2.00	8.31	\$23.55
Saltbush, Four Wing	0.80	1.10	\$10.00
Winter Fat	1.60	4.08	\$32.80
Penstemon, Rocky Mountain	0.50	7.84	\$14.75
<b>Totals Seed Mix</b>	<b>19.74</b>	<b>97.44</b>	<b>\$218.11</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Broadcast seeding [DMG]	\$267.22
<b>Total Seed Application Cost/Acre</b>	<b>\$267.22</b>

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

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$307.02	\$614.04
<b>Total Mulch Materials Cost/Acre</b>				<b>\$614.04</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
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Crimping, with tractor {DMG survey data}	\$71.57
Power mulcher (MEANS 32 91 13.16 0350)	\$106.29
<b>Total Mulch Application Cost/Acre</b>	<b>\$177.86</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:	84	Cost /Acre:	\$1,523.06
Estimated Failure Rate:	50%	Cost /Acre*:	\$1,523.06
*Selected Replanting Work Items:	FERTILIZING,TILLING,SEEDING,MU LCHING		

Initial Job Cost:	<b>\$127,937.04</b>
Reseeding Job Cost:	<b>\$63,968.52</b>
Total Job Cost:	<b>\$191,906</b>
Job Hours:	<b>126.00</b>

## REVEGETATION WORK

Task description: Hydroseeding Steep Slopes at Mine Site

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 051

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### FERTILIZING

#### **Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
10-34-0, 18-46-0, 5-10-5	250.00	pound	\$0.37	\$92.50
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$92.50</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$38.77
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$38.77</b>

**TILLING**

<b>Description</b>	<b>Cost /Acre</b>
	\$
<b>Total Tilling Cost/Acre</b>	<b>\$0.00</b>

**SEEDING**

<b>Seed Mix</b>	<b>Rate – PLS LBS / Acre</b>	<b>Seeds per SQ. FT</b>	<b>Cost /Acre</b>
Switchgrass - Blackwell	0.96	8.57	\$11.04
Blue Grama - Native	0.40	6.53	\$5.49
Little Bluestem - Native	0.56	3.34	\$7.60
Sideoats Grama - Butte	0.64	2.10	\$5.76
Orchardgrass - Shawnee	1.50	18.60	\$4.65
Alfalfa - Ranger (inoculated)	1.60	7.71	\$4.08
Sheep Fescue - Covar	0.48	7.49	\$2.93
Milk Vetch, Cicer - Monarch	1.50	4.99	\$12.30
Mahogany, Mountain	1.20	1.63	\$44.17
Western Wheatgrass - Arriba	6.00	15.15	\$39.00
Needlegrass, Green - Lodorm	2.00	8.31	\$23.55
Saltbush, Four Wing	0.80	1.10	\$10.00
Winter Fat	1.60	4.08	\$32.80
Penstemon, Rocky Mountain	0.50	7.84	\$14.75
<b>Totals Seed Mix</b>	19.74	97.44	<b>\$218.11</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Hydro seeding (MEANS 32 92 19.14 0200)	\$965.73
<b>Total Seed Application Cost/Acre</b>	<b>\$965.73</b>

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

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Hydromulch tackifier, >15 ac. {Materials Only}	1.00	ACRE	\$424.71	\$424.71
Hydromulch, 1 ton/ac. rate {Materials Only}	1.00	ACRE	\$424.71	\$424.71
<b>Total Mulch Materials Cost/Acre</b>				<b>\$849.42</b>

**Application**

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<b>Description</b>	<b>Cost /Acre</b>
NA-mulch application incl. with hydroseeding	\$0.00
<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:	18	Cost /Acre:	\$2,164.53
Estimated Failure Rate:	50%	Cost /Acre*:	\$2,164.53
*Selected Replanting Work Items:	FERTILIZING,SEEDING,MULCHING		

Initial Job Cost:	<b>\$38,961.54</b>
Reseeding Job Cost:	<b>\$19,480.77</b>
Total Job Cost:	<b>\$58,442</b>
Job Hours:	<b>16.00</b>

## REVEGETATION WORK

Task description: Fertilize Mine Site During Year 2

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 052

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### FERTILIZING

#### **Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
10-34-0, 18-46-0, 5-10-5	250.00	pound	\$0.37	\$92.50
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$92.50</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$38.77
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$38.77</b>

**TILLING**

Description	Cost /Acre
	\$
<b>Total Tilling Cost/Acre</b>	<b>\$0.00</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			\$
<b>Totals Seed Mix</b>	0.00	0.00	<b>\$0.00</b>

**Application**

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

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

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

**Application**

Description	Cost /Acre
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</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:	84	Cost /Acre:	\$131.27
Estimated Failure Rate:	0%	Cost /Acre*:	\$131.27
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	<b>\$11,026.68</b>
Reseeding Job Cost:	<b>\$0.00</b>
Total Job Cost:	<b>\$11,027</b>
Job Hours:	<b>84.00</b>

## REVEGETATION WORK

Task description: Fertilize Mine Site During Year 3

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 053

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### FERTILIZING

#### **Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	250.00	pound	\$0.37	\$92.50
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$92.50</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$38.77
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$38.77</b>

**TILLING**

Description	Cost /Acre
	\$
<b>Total Tilling Cost/Acre</b>	<b>\$0.00</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			\$
<b>Totals Seed Mix</b>	0.00	0.00	<b>\$0.00</b>

**Application**

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

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

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

**Application**

Description	Cost /Acre
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</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:	84	Cost /Acre:	\$131.27
Estimated Failure Rate:	0%	Cost /Acre*:	\$131.27
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	<b>\$11,026.68</b>
Reseeding Job Cost:	<b>\$0.00</b>
Total Job Cost:	<b>\$11,027</b>
Job Hours:	<b>84.00</b>

## REVEGETATION WORK

Task description: Broadcast Seed Borrow Area 3

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 054

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### FERTILIZING

#### **Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	250.00	pound	\$0.37	\$92.50
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$92.50</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$38.77
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$38.77</b>

**TILLING**

<b>Description</b>	<b>Cost /Acre</b>
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$114.56
<b>Total Tilling Cost/Acre</b>	<b>\$114.56</b>

**SEEDING**

<b>Seed Mix</b>	<b>Rate – PLS LBS / Acre</b>	<b>Seeds per SQ. FT</b>	<b>Cost /Acre</b>
Switchgrass - Blackwell	0.96	8.57	\$11.04
Blue Grama - Native	0.40	6.53	\$5.49
Little Bluestem - Native	0.56	3.34	\$7.60
Sideoats Grama - Butte	0.64	2.10	\$5.76
Orchardgrass - Shawnee	1.50	18.60	\$4.65
Alfalfa - Ranger (inoculated)	1.60	7.71	\$4.08
Sheep Fescue - Covar	0.48	7.49	\$2.93
Milk Vetch, Cicer - Monarch	1.50	4.99	\$12.30
Mahogany, Mountain	1.20	1.63	\$44.17
Western Wheatgrass - Arriba	6.00	15.15	\$39.00
Needlegrass, Green - Lodorm	2.00	8.31	\$23.55
Saltbush, Four Wing	0.80	1.10	\$10.00
Winter Fat	1.60	4.08	\$32.80
Penstemon, Rocky Mountain	0.50	7.84	\$14.75
<b>Totals Seed Mix</b>	<b>19.74</b>	<b>97.44</b>	<b>\$218.11</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Broadcast seeding [DMG]	\$267.22
<b>Total Seed Application Cost/Acre</b>	<b>\$267.22</b>

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

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$307.02	\$614.04
<b>Total Mulch Materials Cost/Acre</b>				<b>\$614.04</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
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Crimping, with tractor {DMG survey data}	\$71.57
Power mulcher (MEANS 32 91 13.16 0350)	\$106.29
<b>Total Mulch Application Cost/Acre</b>	<b>\$177.86</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:	2.7	Cost /Acre:	\$1,523.06
Estimated Failure Rate:	50%	Cost /Acre*:	\$1,523.06
*Selected Replanting Work Items:	FERTILIZING,TILLING,SEEDING,MU LCHING		

Initial Job Cost:	<b>\$4,112.26</b>
Reseeding Job Cost:	<b>\$2,056.13</b>
Total Job Cost:	<b>\$6,168</b>
Job Hours:	<b>4.05</b>

## REVEGETATION WORK

Task description: Direct Shrub Seeding

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 055

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency 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
	\$
<b>Total Tilling Cost/Acre</b>	<b>\$0.00</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bitterbrush, Antelope	0.50	0.15	\$9.75
Mahogany, Mountain	0.50	0.68	\$18.40
Rose, Wood's	2.00	0.00	\$41.00
Saltbush, Four Wing	1.00	1.38	\$12.50
Sumac, Skunkbrush	1.00	0.47	\$21.00
Winter Fat	0.50	1.27	\$10.25
<b>Totals Seed Mix</b>	<b>5.50</b>	<b>3.95</b>	<b>\$112.90</b>

**Application**

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

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

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

**Application**

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

## NURSERY STOCK PLANTING

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

## JOB TIME AND COST

No. of Acres:	4.5	Cost /Acre:	\$112.90
Estimated Failure Rate:	50%	Cost /Acre*:	\$112.90
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	<b>\$508.05</b>
Reseeding Job Cost:	<b>\$254.03</b>
Total Job Cost:	<b>\$762</b>
Job Hours:	<b>9.00</b>

## TRUCK/LOADER TEAM WORK

Task description: Clean Sediment Ponds at Mine Site

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 060

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Shift basis: 1 per day

		Equipment Description
Truck Loader Team -Truck:		Generic 10-12 cy, 6x4
-Loader:		Cat 324D L 9'-8" Stick
Support Equipment -Load Area:		NA
-Dump Area:		Cat D8T - 8SU
Road Maintenance -Motor Grader:		NA
-Water Truck:		NA

<u>Cost Breakdown:</u>	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	NA	NA
Ownership cost/hour:	\$22.87	\$72.52	NA	\$97.46	NA	NA
Operating cost/hour:	\$44.28	\$58.73	NA	\$97.63	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Operator cost/hour:	\$0.00	\$37.32	NA	\$41.30	NA	NA
Unit Subtotals:	\$67.15	\$168.57	NA	\$236.39	NA	NA
Number of Units:	4	1	0	1	0	0
Group Subtotals:	Work: \$437.17		Support: \$236.39		Maint: \$0.00	

Total work team cost/hour: \$673.56

### MATERIAL QUANTITIES

Initial volume: 21,780

CCY

Swell factor: 1.270

Loose volume: 27,661

LCY

Source of estimated volume: Operator Estimate

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:	2,700	Pounds/LCY
Description:	Earth - Wet excavated	
Rated Payload:	35,400	Pounds
Payload Capacity:	13.11	LCY

#### **Truck Bed (volume) Basis:**

Struck Volume:	10.00	LCY
Heaped Volume:	12.00	LCY
Average Volume:	11.00	LCY
Adjusted Volume:	12.00	LCY

Final Truck Volume Based on Number of Loader Passes: **11.87** LCY

### **Loading Tool Capacity**

Bucket Size Class: Medium

Rated Capacity:	2.260	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1/2" to 3/4" (85 - 90%) 0.875
Adjusted Capacity:	<b>1.978</b>	LCY

### **Job Condition Corrections:**

Site Altitude (ft.): 7100 feet

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

### **Loading Tool Cycle Time:**

Number of Loading Tool Passes Required to Fill 6 passes

Truck: \_\_\_\_\_

#### **Excavators and Front Shovels:**

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)

Net Cycle Time Adjustment: NA minutes  
Adjusted Loader Cycle Time: **0.403** minutes  
Net Load Time per Truck: **2.115** minutes

### **Truck Cycle Time:**

Truck Exchange Time:	<u>0.50</u>	Minutes	Adjusted for site altitude:	<u>0.500</u>	Minutes
Truck Load Time:	<u>2.115</u>	Minutes	Adjusted for site altitude:	<u>2.115</u>	Minutes
Truck Maneuver and Dump Time:	<u>0.90</u>	Minutes	Adjusted for site altitude:	<u>0.900</u>	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	5000.00	5.00	5.00	10.00	1068	4.695

Haul Time: **4.695** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	-5.00	5.00	0.00	2938	1.727

Return Time: **1.727** minutes

Total Truck Cycle Time: **9.937** minutes

Loading Tool unit

Production 272.24 LCY/Hour

Adjusted for job efficiency: 225.96 LCY/Hour

Truck Unit Production

71.64 LCY/Hour

Adjusted for job efficiency: 59.46 LCY/Hour

Optimal No. of Trucks: 4 Truck(s)

Selected Number of Trucks: 4 Truck(s)

Adjusted hourly truck team production: 237.85 LCY/Hour

Adjusted single truck/loader team production: 225.96 LCY/Hour

Adjusted multiple truck/loader team production: **225.96** LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s)

Total job time: **122.42** Hours

Unit cost: \$2.981 /LCY

Total job cost: **\$82,454**

## SITE MAINTENANCE

Task description: Site Maintenance

Site: Lorencito Canyon Mine Permit Action: RN5 Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 061 State: Colorado Abbreviation: None  
Date: 6/23/2022 County: Las Animas Filename: A  
User: CJD

Agency or organization name: DRMS

### UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Miscellaneous Maintenance	40.00	Cat D3K LGP - 3P	400.00	EA	\$101.29	\$40,516.00
Road and Ditch Maintenance	24.00	CAT 14M	240.00	EA	\$174.76	\$41,942.40
Miscellaneous Maintenance	40.00	Cat 315D L 8'-6" Stick	400.00	EA	\$129.85	\$51,940.00

Job Hours: 40.00

Total Cost: \$134,398.40

## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilize/Demobilize for Initial Reclamation

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 070

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$21.28	\$37.94	\$47.67
Operating Cost/Hour:	\$26.55	\$50.48	\$56.21
Operator Cost/Hour:	\$20.54	\$20.54	\$20.54
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$68.37	\$132.49	\$147.95

### 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 D9T - 9SU	60.01	\$126.01	\$147.95	4	\$1,095.84	\$591.80	\$1,000.00
Cat 773F	49.74	\$122.05	\$132.49	4	\$1,018.16	\$529.96	\$1,000.00

Cat 336D L 10'-6" Stick	32.23	\$83.42	\$132.49	1	\$215.91	\$132.49	\$250.00
CAT 14M	23.57	\$85.80	\$68.37	1	\$154.17	\$68.37	\$250.00
Water Tanker, 5,000 Gal.	15.00	\$33.45	\$68.37	1	\$101.82	\$68.37	\$250.00
CAT 990H high lift	83.34	\$116.41	\$147.95	1	\$264.36	\$147.95	\$250.00
SCHRAMM T145EX	0.00	\$247.95	\$68.37	1	\$316.32	\$68.37	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$7.98	\$68.37	1	\$76.35	\$68.37	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$14.98	\$68.37	1	\$83.35	\$68.37	\$250.00
Hydroseeder with Tractor	28.00	\$13.97	\$132.49	1	\$146.46	\$132.49	\$250.00

Subtotals:	<b>\$3,472.74</b>	<b>\$1,876.54</b>	<b>\$4,000.00</b>
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**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Fuel Tanker, 6x4, 210 HP	\$46.35	1	\$46.35	\$46.35
Lube Truck, 6x4, 250 HP	\$46.35	1	\$46.35	\$46.35
Flatbed Truck, 6x4, 45K GVW	\$49.15	1	\$49.15	\$49.15
Light Duty Pickup, 4x4, 1 T. Crew	\$20.51	1	\$20.51	\$20.51

Subtotals:

**\$162.36****\$162.36**

### **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>TRINIDAD</u>	
Total one-way travel distance:	<u>20.00</u>	miles
Average Travel Speed:	<u>35.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$21,058.94</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$185.55</u>
** one round trip, no haul rig:	

### **Transportation Cycle Time:**

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.57</u>	<u>0.57</u>
Return Time (Hours):	<u>0.57</u>	<u>0.57</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>2.14</u>	<u>1.14</u>

### **JOB TIME AND COST**

Total job time:	<u>4.29</u>	Hours
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Total job cost:	<u>\$21,244</u>
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## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilize/Demobilize Equipment for Pond Cleaning

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 071

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$21.28	\$37.94	\$47.67
Operating Cost/Hour:	\$26.55	\$50.48	\$56.21
Operator Cost/Hour:	\$20.54	\$20.54	\$20.54
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$68.37	\$132.49	\$147.95

### 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 D8T - 8SU	47.71	\$97.46	\$132.49	1	\$229.95	\$132.49	\$250.00
Cat 324D L 9'-8" Stick	27.33	\$72.52	\$132.49	1	\$205.01	\$132.49	\$250.00

Subtotals: 

<b>\$434.96</b>	<b>\$264.98</b>	<b>\$500.00</b>
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**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Generic 10-12 cy, 6x4	\$99.06	4	\$396.24	\$396.24
Flatbed Truck, 6x4, 45K GVW	\$49.15	1	\$49.15	\$49.15

Subtotals: 

<b>\$445.39</b>	<b>\$445.39</b>
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### **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>TRINIDAD</u>	
Total one-way travel distance:	<u>20.00</u>	miles
Average Travel Speed:	<u>35.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	
'* two round trips with haul rig:	<u>\$2,669.85</u>
Total Roadable Mob/Demob Cost **	
** one round trip, no haul rig:	<u>\$509.02</u>

### **Transportation Cycle Time:**

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.57</u>	<u>0.57</u>
Return Time (Hours):	<u>0.57</u>	<u>0.57</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>2.14</u>	<u>1.14</u>

### **JOB TIME AND COST**

Total job time:	<u>4.29</u>	Hours
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Total job cost:	<u>\$3,179</u>
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## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilize/Demobilize Equipment for Site Maintenance

Site: Lorencito Canyon Mine

Permit Action: RN5

Permit/Job#: C1996084

### PROJECT IDENTIFICATION

Task #: 072

State: Colorado

Abbreviation: None

Date: 6/23/2022

County: Las Animas

Filename: A

User: CJD

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:	\$21.28	\$37.94	\$47.67
Operating Cost/Hour:	\$26.55	\$50.48	\$56.21
Operator Cost/Hour:	\$20.54	\$20.54	\$20.54
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$68.37	\$132.49	\$147.95

### 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 D3K LGP - 3P	9.20	\$30.26	\$68.37	10	\$986.30	\$683.70	\$2,500.00
Cat 315D L 8'-6" Stick	19.05	\$51.47	\$68.37	10	\$1,198.40	\$683.70	\$2,500.00
CAT 14M	23.57	\$85.80	\$68.37	10	\$1,541.70	\$683.70	\$2,500.00

Subtotals: **\$3,726.40** **\$2,051.10** **\$7,500.00**

**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 6x4, 45K GVW	\$49.15	1	\$49.15	\$49.15
Subtotals:			<b>\$49.15</b>	<b>\$49.15</b>

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>TRINIDAD</u>	
Total one-way travel distance:	<u>20.00</u>	miles
Average Travel Speed:	<u>35.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$29,055.66</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$56.17</u>
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.57</u>	<u>0.57</u>
Return Time (Hours):	<u>0.57</u>	<u>0.57</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>2.14</u>	<u>1.14</u>

**JOB TIME AND COST**

Total job time: 4.29 Hours

Total job cost: \$29,112