

COST SUMMARY WORK

Task description: _____

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C084-000

User: DC1

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	\$265
002	Replace Topsoil from Stockpile BA#1 to Fill 7a	TRUCK1	1	4.84	\$6,914
003	Replace Topsoil from Stockpile SSP#2 to Fill 9a	TRUCK1	1	7.31	\$10,455
004	Replace Topsoil from Stockpile SSP#3 to Fill 8	TRUCK1	1	13.00	\$18,596
005	Replace Topsoil from Stockpile SSP#2 to N-1	TRUCK1	1	8.17	\$11,689
006	Replace Topsoil from Stockpile BA#2 to C-1	TRUCK1	1	12.76	\$18,247
007	Replace Topsoil from Stockpile BA#1 to C-2	TRUCK1	1	7.86	\$11,289
008	Replace Topsoil from Stockpile BA#2 to S-2	TRUCK1	1	3.07	\$4,287
009	Replace Topsoil from Stockpile BA#3 to S-4	TRUCK1	1	3.33	\$5,561
010	Replace Topsoil from Stockpile BA#32to W-2	TRUCK1	1	10.58	\$17,668
011	Replace Topsoil from Stockpile BA#3 to W-3	TRUCK1	1	2.98	\$4,241
012	Replace Topsoil from Stockpile BA#3 to W-5	TRUCK1	1	10.74	\$17,969
013	Replace Topsoil from SA Stockpile to Service Area	DOZER	2	0.23	\$135
014	Replace Live-Handled Topsoil to W-1	DOZER	2	4.33	\$2,449
015	Replace Topsoil from Upslope to W-1	DOZER	2	3.60	\$2,033
016	Replace Live-Handled Topsoil to W-1	DOZER	2	1.72	\$974
017	Replace Topsoil from Upslope Area to W-4	DOZER	2	1.92	\$1,082
018	Replace Live-Handled Topsoil to W-6	DOZER	2	1.54	\$872
019	Replace Topsoil from Upslope Area to W-6	DOZER	2	0.86	\$485
020	Replace Topsoil from Stockpile BA#3 to W-6	TRUCK1	1	1.11	\$1,859
021	Replace Live-Handled Topsoil to N-2	DOZER	2	11.55	\$6,734
022	Replace Topsoil from Upslope Area to N-2	DOZER	2	12.84	\$7,253
023	Replace Live-Handled Topsoil to S-3	DOZER	2	0.98	\$554
024	Replace Topsoil from Upslope to S-3	DOZER	2	0.53	\$298
025	Replace Topsoil from Stockpile BA#3 to S-3	TRUCK1	1	0.67	\$1,126
026	Replace Topsoil from Stockpile SSP#2 to N-1	DOZER	2	4.16	\$2,427
027	Replace Live-Handled Topsoil to E-2	DOZER	2	0.57	\$324
028	Replace Topsoil from Upslope Area to E-2	DOZER	2	0.82	\$466
029	Replace Live-Handled Topsoil to E-3	DOZER	2	1.65	\$932
030	Replace Topsoil from Stockpile BA#3 to E-3	TRUCK1	1	1.27	\$2,112
031	Replace Topsoil from Upslope Area to BA#1	DOZER	2	1.81	\$1,053
032	Replace Topsoil from Upslope Area to BA#2	DOZER	2	1.73	\$976
033	Replace Topsoil from Upslope Area to BA#3	DOZER	2	3.23	\$1,827
034	Remove Topsoil from Knob Above Cut	DOZER	2	15.04	\$8,499
040	Plug and Seal Drill Hole and Monitoring Wells	BOREHOLE	1	27.00	\$31,551
050	Broadcast Seeding Mine Site	REVEGE	1	126.00	\$184,516
051	Hydroseeding Steep Slopes at Mine Site	REVEGE	1	16.00	\$59,204
052	Fertilize Mine Site During Year 2	REVEGE	1	84.00	\$10,177

053	Fertilize Mine Site During Year 3	REVEGE	1	84.00	\$10,177
054	Broadcast Seed Borrow Area 3	REVEGE	1	4.05	\$5,931
055	Direct Shrub Seeding	REVEGE	1	9.00	\$762
060	Clean Sediment Ponds at Mine Site	TRUCK1	1	122.42	\$76,567
061	Site Maintenance	SITEMAINT ENANCE	1	40.00	\$112,926
070	Mobilize/Demobilize for Initial Reclamation	MOBILIZE	1	4.28	\$20,319
071	Mobilize/Demobilize Equipment for Pond Cleaning	MOBILIZE	1	4.28	\$3,038
072	Mobilize/Demobilize Equipment for Site Maintenance	MOBILIZE	1	4.28	\$27,538
<u>SUBTOTALS:</u>				683.83	\$714,357

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$14,430
Performance bond:	1.05	Total =	\$7,501
Job superintendent:	341.91	Total =	\$23,725
Profit:	10.00	Total =	\$71,436
		TOTAL O & P =	\$117,092
		CONTRACT AMOUNT (direct + O & P) =	\$831,449

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$0	Total =	\$0
Engineering work and/or contract/bid preparation:	4.25	Total =	\$35,337
Reclamation management and/or administration:	5.00		\$41,572

CONTINGENCY:	0.00	Total =	\$0
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TOTAL INDIRECT COST =	\$194,001
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TOTAL BOND AMOUNT (direct + indirect) =	\$908,358
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MOTOR GRADER WORK

Task description: Grade Borrow Area 3

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: M1996084

User: DC1

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:	\$64.10	NA
Operating Cost/Hour:	\$56.17	100
Ripper Ownership Cost/Hour:	\$4.44	NA
Ripper Operating Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$28.52	NA
Total Unit Cost/Hour:	\$153.22	
Total Fleet Cost/Hour:	\$153.22	

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

Altitude Adj:	<u>1.00</u>	Source (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: \$98.16 per acre Total job cost: **\$265**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1994084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$128.36	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$310.86	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work: \$776.06		Support: \$488.70		Maint: \$165.15	

Total work team cost/hour: **\$1,429.91**

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:	9.844	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:	0.830	0.830	

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:	<u>0.550</u>	minutes
Net Load Time per Truck:	<u>1.750</u>	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	-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 964.29 LCY/Hour Adjusted for job efficiency: 800.36 LCY/Hour

Truck Unit Production 484.42 LCY/Hour Adjusted for job efficiency: 402.07 LCY/Hour

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

Adjusted hourly truck team production: 804.13 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: **4.84** Hours

Unit cost: \$1.787 /LCY Total job cost: **\$6,914**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 003

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1994084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$128.36	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$310.86	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work:	\$776.06	Support:	\$488.70	Maint:	\$165.15

Total work team cost/hour: **\$1,429.91**

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:	9.844	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:	0.830	0.830	

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	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: \$1.877 /LCY

Total job cost: **\$10,455**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 004

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1994084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$128.36	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$310.86	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work:	\$776.06	Support:	\$488.70	Maint:	\$165.15

Total work team cost/hour: **\$1,429.91**

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:	9.844	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:	0.830	0.830	

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

Truck Unit Production 459.63 LCY/Hour Adjusted for job efficiency: 381.49 LCY/Hour

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

Adjusted hourly truck team production: 762.99 LCY/Hour

Adjusted single truck/loader team production: 762.99 LCY/Hour

Adjusted multiple truck/loader team production: 762.99 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 13.00 Hours

Unit cost: \$1.874 /LCY Total job cost: \$18,596

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 005

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$128.36	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$310.86	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work: \$776.06		Support: \$488.70		Maint: \$165.15	

Total work team cost/hour: **\$1,429.91**

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:	9.844	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:	0.830	0.830	

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: \$2.053 /LCY Total job cost: **\$11,689**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 006

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$128.36	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$310.86	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work: \$776.06		Support: \$488.70		Maint: \$165.15	

Total work team cost/hour: **\$1,429.91**

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:	9.844	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:	0.830	0.830	

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:	<u>0.550</u>	minutes
Net Load Time per Truck:	<u>1.750</u>	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: \$2.093 /LCY Total job cost: **\$18,247**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 007

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$135.12	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$317.62	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work: \$782.82		Support: \$488.70		Maint: \$165.15	

Total work team cost/hour: **\$1,436.67**

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:	9.844	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:	0.830	0.830	

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:	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: \$1.795 /LCY Total job cost: **\$11,289**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 008

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$94.58	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$277.08	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work: \$742.28		Support: \$488.70		Maint: \$165.15	

Total work team cost/hour: **\$1,396.13**

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:	9.844	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:	0.830	0.830	

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: \$3.928 /LCY

Total job cost: \$4,287

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 009

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$135.12	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$317.62	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work:	\$1,015.42	Support:	\$488.70	Maint:	\$165.15

Total work team cost/hour: **\$1,669.27**

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:	9.844	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:	0.830	0.830	

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	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: \$2.086 /LCY Total job cost: **\$5,561**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 010

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$135.12	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$317.62	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work:	\$1,015.42	Support:	\$488.70	Maint:	\$165.15

Total work team cost/hour: **\$1,669.27**

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:	9.844	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:	0.830	0.830	

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: \$2.086 /LCY

Total job cost: **\$17,668**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 011

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$121.60	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$304.10	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work: \$769.30		Support: \$488.70		Maint: \$165.15	

Total work team cost/hour: **\$1,423.15**

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:	9.844	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:	0.830	0.830	

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	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: \$2.060 /LCY Total job cost: \$4,241

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 012

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$135.12	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$317.62	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$1,015.42		Support: \$488.70		Maint: \$165.15	

Total work team cost/hour: **\$1,669.27**

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:	9.844	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:	0.830	0.830	

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: \$2.086 /LCY

Total job cost: **\$17,926**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 012

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$135.12	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$317.62	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$1,015.42		Support: \$488.70		Maint: \$165.15	

Total work team cost/hour: **\$1,669.27**

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:	9.844	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:	0.830	0.830	

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: \$2.086 /LCY

Total job cost: **\$17,926**

BULLDOZER WORK

Task description: Replace Topsoil from SA Stockpile to Service Area

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 013

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$8.96	100
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$291.46

Total Fleet Cost/Hour: **\$582.92**

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: \$0.571/LCY

Total job time: **0.23** Hours
Total job cost: **\$135**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 014

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$282.50

Total Fleet Cost/Hour: **\$565.00**

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: \$0.794/LCY

Total job time: **4.33** Hours
Total job cost: **\$2,449**

BULLDOZER WORK

Task description: Replace Topsoil from Upslope to W-1

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 015

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$282.50

Total Fleet Cost/Hour: **\$565.00**

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

		Source
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: \$0.594/LCY

Total job time: **3.60** Hours
Total job cost: **\$2,033**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 016

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$282.50

Total Fleet Cost/Hour: **\$565.00**

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: \$0.794/LCY

Total job time: **1.72** Hours
Total job cost: **\$974**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 017

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$282.50

Total Fleet Cost/Hour: \$565.00

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

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: \$0.794/LCY

Total job time: **1.92** Hours
Total job cost: **\$1,082**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 018

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$282.50

Total Fleet Cost/Hour: **\$565.00**

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: \$0.554/LCY

Total job time: **1.54** Hours
Total job cost: **\$872**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 019

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$282.50

Total Fleet Cost/Hour: **\$565.00**

MATERIAL QUANTITIES

Initial Volume: 700

Swell factor: 1.250

Loose volume: **875 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: \$0.554/LCY

Total job time: **0.86** Hours
Total job cost: **\$485**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 022

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$282.50

Total Fleet Cost/Hour: \$565.00

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: \$0.921/LCY

Total job time: **12.84 Hours**
Total job cost: **\$7,253**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 021

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$8.96	100
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$291.46

Total Fleet Cost/Hour: **\$582.92**

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: \$0.950/LCY

Total job time: **11.55** Hours
Total job cost: **\$6,734**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 023

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$282.50

Total Fleet Cost/Hour: **\$565.00**

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: \$0.554/LCY

Total job time: **0.98** Hours
Total job cost: **\$554**

BULLDOZER WORK

Task description: Replace Topsoil from Upslope to S-3

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 024

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$282.50

Total Fleet Cost/Hour: **\$565.00**

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: \$0.497/LCY

Total job time: **0.53** Hours
Total job cost: **\$298**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 025

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$135.12	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$317.62	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work:	\$1,015.42	Support:	\$488.70	Maint:	\$165.15

Total work team cost/hour: **\$1,669.27**

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:	9.844	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:	0.830	0.830	

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:	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	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: \$2.086 /LCY Total job cost: **\$1,126**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 020

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$135.12	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$317.62	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$1,015.42		Support: \$488.70		Maint: \$165.15	

Total work team cost/hour: **\$1,669.27**

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:	9.844	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:	0.830	0.830	

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: \$2.361 /LCY Total job cost: \$1,859

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 026

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$8.96	100
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$291.46

Total Fleet Cost/Hour: **\$582.92**

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: \$0.696/LCY

Total job time: **4.16 Hours**
Total job cost: **\$2,427**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 027

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$282.50

Total Fleet Cost/Hour: **\$565.00**

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

		Source
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: \$0.385/LCY

Total job time: **0.57** Hours
Total job cost: **\$324**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 028

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$282.50

Total Fleet Cost/Hour: \$565.00

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: \$0.497/LCY

Total job time: **0.82** Hours
Total job cost: **\$466**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 029

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$282.50	
Total Fleet Cost/Hour:	\$565.00	

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: \$0.921/LCY

Total job time: **1.65** Hours
Total job cost: **\$932**

TRUCK/LOADER TEAM WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 030

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$105.90	\$141.85	\$121.49	\$121.49	\$64.10	\$27.40
Operating cost/hour:	\$93.41	\$135.12	\$52.92	\$105.84	\$14.04	\$10.00
%Utilization-riper:	NA	0	50	0	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$13.94	\$13.94	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$4.48	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.29	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$232.60	\$317.62	\$220.13	\$268.57	\$106.66	\$58.49
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work:	\$1,015.42	Support:	\$488.70	Maint:	\$165.15

Total work team cost/hour: **\$1,669.27**

MATERIAL QUANTITIES

Initial volume: 900

CCY

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

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:	9.844	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:	0.830	0.830	

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:	0.70	Minutes	Adjusted for site altitude:	0.700	Minutes
Truck Load Time:	1.750	Minutes	Adjusted for site altitude:	1.750	Minutes
Truck Maneuver and Dump Time:	1.10	Minutes	Adjusted for site altitude:	1.100	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: \$2.086 /LCY

Total job cost: **\$2,112**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 031

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$8.96	100
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$291.46	
Total Fleet Cost/Hour:	\$582.92	

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

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

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.780/LCY

Total job time: **1.81** Hours

Total job cost: **\$1,053**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 032

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$282.50	
Total Fleet Cost/Hour:	\$565.00	

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: \$0.605/LCY

Total job time: **1.73** Hours

Total job cost: **\$976**

BULLDOZER WORK

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

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 033

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$282.50	
Total Fleet Cost/Hour:	\$565.00	

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: \$0.504/LCY

Total job time: **3.23** Hours

Total job cost: **\$1,827**

BULLDOZER WORK

Task description: Remove Topsoil from Knob Above Cut

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 034

State: Colorado

Abbreviation: None

Date: 2/12/2020

County: Las Animas

Filename: C1996084

User: DC1

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:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$282.50	
Total Fleet Cost/Hour:	\$565.00	

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:	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: 147.49 LCY/hr

Adjusted fleet
production: **294.98** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$1.915/LCY

Total job time: **25.07** Hours

Total job cost: **\$14,164**

BOREHOLE SEALING WORK

Task description: Plug and Seal Drill Hole and Monitoring Wells

Site: Lorencito Canyon Mine Permit Action: MT5 Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task 040 State: Colorado Abbreviation: None
#: _____
Date: 2/12/2020 County: Las Animas Filename: C1996084
User: DC1
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	\$13.40	\$57.62
Borehole Plug	PVC plug - 8 in. diameter borehole	8"	NA	1.00	EA	\$80.77	\$80.77
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	1.00	EA	\$378.69	\$378.69
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	1.00	EA	\$27.02	\$27.02
Plug and Seal 6" Holes (9)	Portland cement grout (Bag, material cost only...94 lb. bag)	6"	209	20.00	bag	\$13.40	\$268.00
Borehole Plug	PVC plug - 6 in. diameter borehole	6"	NA	9.00	EA	\$58.97	\$530.70
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	9.00	EA	\$32.00	\$288.00
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	9.00	EA	\$378.69	\$3,408.21
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	9.00	EA	\$27.02	\$243.18
Seal All 4" Holes (17)	Portland cement grout (Bag, material cost only...94 lb. bag)	4"	4231	184.00	bag	\$13.40	\$2,465.60
Borehole Plug	PVC plug - 4 in. diameter borehole	4"	NA	17.00	EA	\$32.62	\$554.53
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	17.00	EA	\$32.00	\$544.00
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	17.00	EA	\$378.69	\$6,437.73
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	17.00	EA	\$27.02	\$459.34

Plug and Seal 8" Holes (1)	Portland cement grout (Bag, material cost only...94 lb. bag)	8"	25	4.30	bag	\$13.40	\$57.62
Borehole Plug	PVC plug - 8 in. diameter borehole	8"	NA	1.00	EA	\$80.77	\$80.77
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	1.00	EA	\$378.69	\$378.69
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	1.00	EA	\$27.02	\$27.02
Plug and Seal 6" Holes (9)	Portland cement grout (Bag, material cost only...94 lb. bag)	6"	209	20.00	bag	\$13.40	\$268.00
Borehole Plug	PVC plug - 6 in. diameter borehole	6"	NA	9.00	EA	\$58.97	\$530.70
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	9.00	EA	\$32.00	\$288.00
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	9.00	EA	\$378.69	\$3,408.21
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	9.00	EA	\$27.02	\$243.18
Seal All 4" Holes (17)	Portland cement grout (Bag, material cost only...94 lb. bag)	4"	4231	184.00	bag	\$13.40	\$2,465.60
Borehole Plug	PVC plug - 4 in. diameter borehole	4"	NA	17.00	EA	\$32.62	\$554.53
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	17.00	EA	\$32.00	\$544.00
Drill Rig and Labor	SCHRAMM T145EX	NA	NA	17.00	EA	\$378.69	\$6,437.73
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	17.00	EA	\$27.02	\$459.34

Job Hours: 27.00

Total Cost: \$31,551.00

REVEGETATION WORK

Task description: Broadcast Seeding Mine Site

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 050

State: Colorado

Abbreviation: None

Date: 2/13/2020

County: Las Animas

Filename: C19960084

User: DC1

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	\$0.34	\$85.00
			Total Fertilizer Materials Cost/Acre	\$85.00

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
Total Tilling Cost/Acre	\$101.93

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
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
Totals Seed Mix	19.74	97.44	\$218.11

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

Application

Description	Cost /Acre
--------------------	-------------------

Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$95.83
Total Mulch Application Cost/Acre	\$166.00

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres:	84	Cost /Acre:	\$1,464.41
Estimated Failure Rate:	50%	Cost /Acre*:	\$1,464.41
*Selected Replanting Work Items:	FERTILIZING,TILLING,SEEDING,MU LCHING		

Initial Job Cost:	\$123,010.44
Reseeding Job Cost:	\$61,505.22
Total Job Cost:	\$184,516
Job Hours:	126.00

REVEGETATION WORK

Task description: Hydroseeding Steep Slopes at Mine Site

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 051

State: Colorado

Abbreviation: None

Date: 2/13/2020

County: Las Animas

Filename: C1996084

User: DC1

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	\$0.34	\$85.00
			Total Fertilizer Materials Cost/Acre	\$85.00

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
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
Totals Seed Mix	19.74	97.44	\$218.11

Application

Description	Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)	\$947.43
Total Seed Application Cost/Acre	\$947.43

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hydromulch tackifier, >15 ac. {Materials Only}	1.00	ACRE	\$453.02	\$453.02
Hydromulch, 1 ton/ac. rate {Materials Only}	1.00	ACRE	\$453.02	\$453.02
Total Mulch Materials Cost/Acre				\$906.05

Application

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Description	Cost /Acre
NA-mulch application incl. with hydroseeding	\$0.00
Total Mulch Application Cost/Acre	\$0.00

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres:	18	Cost /Acre:	\$2,192.74
Estimated Failure Rate:	50%	Cost /Acre*:	\$2,192.74
*Selected Replanting Work Items:	FERTILIZING,SEEDING,MULCHING		

Initial Job Cost:	\$39,469.32
Reseeding Job Cost:	\$19,734.66
Total Job Cost:	\$59,204
Job Hours:	16.00

REVEGETATION WORK

Task description: Fertilize Mine Site During Year 2

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 052

State: Colorado

Abbreviation: None

Date: 2/13/2020

County: Las Animas

Filename: C1996084

User: DC1

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	\$0.34	\$85.00
			Total Fertilizer Materials Cost/Acre	\$85.00

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

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

Application

Description	Cost /Acre
	\$
Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS**Materials**

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

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$

Totals Nursery Stock Cost / Acre	\$0.00

JOB TIME AND COST

No. of Acres:	84	Cost /Acre:	\$121.15
Estimated Failure Rate:	0%	Cost /Acre*:	\$121.15
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$10,176.60
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$10,177
Job Hours:	84.00

REVEGETATION WORK

Task description: Fertilize Mine Site During Year 3

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 053

State: Colorado

Abbreviation: None

Date: 2/13/2020

County: Las Animas

Filename: C1996084

User: DC1

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	\$0.34	\$85.00
			Total Fertilizer Materials Cost/Acre	\$85.00

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

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

Application

Description	Cost /Acre
	\$
Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS**Materials**

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

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$

Totals Nursery Stock Cost / Acre	\$0.00

JOB TIME AND COST

No. of Acres:	84	Cost /Acre:	\$121.15
Estimated Failure Rate:	0%	Cost /Acre*:	\$121.15
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$10,176.60
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$10,177
Job Hours:	84.00

REVEGETATION WORK

Task description: Broadcast Seed Borrow Area 3

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 054

State: Colorado

Abbreviation: None

Date: 2/13/2020

County: Las Animas

Filename: C1996084

User: DC1

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	\$0.34	\$85.00
			Total Fertilizer Materials Cost/Acre	\$85.00

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
Total Tilling Cost/Acre	\$101.93

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
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
Totals Seed Mix	19.74	97.44	\$218.11

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

Application

Description	Cost /Acre
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Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$95.83
Total Mulch Application Cost/Acre	\$166.00

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres:	2.7	Cost /Acre:	\$1,464.41
Estimated Failure Rate:	50%	Cost /Acre*:	\$1,464.41
*Selected Replanting Work Items:	FERTILIZING,TILLING,SEEDING,MU LCHING		

Initial Job Cost:	\$3,953.91
Reseeding Job Cost:	\$1,976.95
Total Job Cost:	\$5,931
Job Hours:	4.05

REVEGETATION WORK

Task description: Direct Shrub Seeding

Site: Lorencito Canyon Mine Permit Action: MT5 Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 055 State: Colorado Abbreviation: None
Date: 2/13/2020 County: Las Animas Filename: C1996084
User: DC1

Agency or organization name: DRMS

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

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
Totals Seed Mix	5.50	3.95	\$112.90

Application

Description	Cost /Acre
	\$
Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS**Materials**

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

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

NURSERY STOCK PLANTING

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

JOB TIME AND COST

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

Initial Job Cost:	\$508.05
Reseeding Job Cost:	\$254.03
Total Job Cost:	\$762
Job Hours:	9.00

TRUCK/LOADER TEAM WORK

Task description: Clean Sediment Ponds at Mine Site

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 060

State: Colorado

Abbreviation: None

Date: 2/13/2020

County: Las Animas

Filename: C1996084

User: DC1

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

Cost Breakdown:

	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:	\$19.51	\$46.78	NA	\$103.86	NA	NA
Operating cost/hour:	\$46.51	\$49.99	NA	\$82.26	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	\$37.27	NA	\$41.24	NA	NA
Unit Subtotals:	\$66.02	\$134.03	NA	\$227.36	NA	NA
Number of Units:	4	1	0	1	0	0
Group Subtotals:	Work: \$398.11		Support: \$227.36		Maint: \$0.00	

Total work team cost/hour: \$625.47

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:	1.978	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:	0.830	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill Truck: 6 passes

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:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	2.115	Minutes	Adjusted for site altitude:	2.115	Minutes

Truck Maneuver and Dump Time:

0.90

Minutes

Adjusted for site altitude:

0.900

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	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 <u>272.24</u> LCY/Hour Truck Unit Production <u>71.64</u> LCY/Hour	Adjusted for job efficiency: <u>225.96</u> LCY/Hour Adjusted for job efficiency: <u>59.46</u> LCY/Hour
Optimal No. of Trucks: <u>4</u> Truck(s)	Selected Number of Trucks: <u>4</u> Truck(s)
Adjusted hourly truck team production: <u>237.85</u> LCY/Hour Adjusted single truck/loader team production: <u>225.96</u> LCY/Hour Adjusted multiple truck/loader team production: <u>225.96</u> LCY/Hour	

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 122.42 Hours

Unit cost: \$2.768 /LCY Total job cost: \$76,567

SITE MAINTENANCE

Task description: Site Maintenance

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 061

State: Colorado

Abbreviation: None

Date: 2/13/2020

County: Las Animas

Filename: C1996084

User: DC1

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	\$90.65	\$36,260.00
Road and Ditch Maintenance	24.00	CAT 14M	240.00	EA	\$148.79	\$35,709.60
Miscellaneous Maintenance	40.00	Cat 315D L 8'-6" Stick	400.00	EA	\$102.39	\$40,956.00

Job Hours: 40.00

Total Cost: \$112,925.60

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilize/Demobilize for Initial Reclamation

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 070

State: Colorado

Abbreviation: None

Date: 2/13/2020

County: Las Animas

Filename: C1996084

User: DC1

Agency or organization name: DRMS

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day

Cost Data Source: CRG Data

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

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

Cost Breakdown:

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$17.20	\$29.63	\$38.69
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$67.39	\$123.81	\$141.54

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	\$121.49	\$141.54	4	\$1,052.12	\$566.16	\$1,000.00
Cat 773F	49.74	\$105.90	\$123.81	4	\$918.84	\$495.24	\$1,000.00
Cat 336D L 10'- 6" Stick	32.23	\$55.49	\$123.81	1	\$179.30	\$123.81	\$250.00
CAT 14M	23.57	\$64.10	\$67.39	1	\$131.49	\$67.39	\$250.00
Water Tanker, 5,000 Gal.	15.00	\$27.40	\$67.39	1	\$94.79	\$67.39	\$250.00
CAT 990H high lift	83.34	\$141.85	\$141.54	1	\$283.39	\$141.54	\$250.00
SCHRAMM T145EX	0.00	\$173.39	\$67.39	1	\$240.78	\$67.39	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$18.15	\$67.39	1	\$85.54	\$67.39	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$9.74	\$67.39	1	\$77.13	\$67.39	\$250.00
Hydroseeder with Tractor	28.00	\$23.59	\$123.81	1	\$147.40	\$123.81	\$250.00

Subtotals: **\$3,210.78** **\$1,787.51** **\$4,000.00**

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	\$42.46	1	\$42.46	\$42.46
Lube Truck, 6x4, 250 HP	\$50.41	1	\$50.41	\$50.41
Flatbed Truck, 6x4, 45K GVW	\$48.50	1	\$48.50	\$48.50
Light Duty Pickup, 4x4, 1 T. Crew	\$20.93	1	\$20.93	\$20.93

Subtotals:	\$162.30	\$162.30
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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 *	<u>\$20,133.89</u>
* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$185.49</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>\$20,319</u>
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EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilize/Demobilize Equipment for Pond Cleaning

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 071

State: Colorado

Abbreviation: None

Date: 2/13/2020

County: Las Animas

Filename: C1996084

User: DC1

Agency or organization name: DRMS

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day

Cost Data Source: CRG Data

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

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

Cost Breakdown:

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$17.20	\$29.63	\$38.69
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$67.39	\$123.81	\$141.54

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	\$103.86	\$123.81	1	\$227.67	\$123.81	\$250.00
Cat 324D L 9'-8" Stick	27.33	\$46.78	\$123.81	1	\$170.59	\$123.81	\$250.00

Subtotals: **\$398.26** **\$247.62** **\$500.00**

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	\$97.89	4	\$391.56	\$391.56
Flatbed Truck, 6x4, 45K GVW	\$48.50	1	\$48.50	\$48.50

Subtotals:

\$440.06	\$440.06
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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 *	<u>\$2,534.67</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$502.93</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>\$3,038</u>
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EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilize/Demobilize Equipment for Site Maintenance

Site: Lorencito Canyon Mine

Permit Action: MT5

Permit/Job#: C1996084

PROJECT IDENTIFICATION

Task #: 072
Date: 2/13/2020
User: DC1

State: Colorado
County: Las Animas

Abbreviation: None
Filename: C1996084

Agency or organization name: DRMS

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day
Cost Data Source: CRG Data

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

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

Cost Breakdown:

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$17.20	\$29.63	\$38.69
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$67.39	\$123.81	\$141.54

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	\$24.76	\$67.39	10	\$921.50	\$673.90	\$2,500.00
Cat 315D L 8'-6" Stick	19.05	\$32.62	\$67.39	10	\$1,000.10	\$673.90	\$2,500.00
CAT 14M	23.57	\$64.10	\$67.39	10	\$1,314.90	\$673.90	\$2,500.00

Subtotals:

\$3,236.50	\$2,021.70	\$7,500.00
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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	\$48.50	1	\$48.50	\$48.50

Subtotals:	\$48.50	\$48.50
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EQUIPMENT HAUL DISTANCE and Time

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

Total Non-Roadable Mob/Demob Cost *	\$27,482.37
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	\$55.43
** one round trip, no haul rig:	

Transportation Cycle Time:

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

JOB TIME AND COST

Total job time:	4.29	Hours
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Total job cost:	\$27,538
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