
INTEROFFICE MEMORANDUM

TO: ROB ZUBER
FROM: JANET BINNS
SUBJECT: NEW ELK MINE, C1981-012, RN7 RECLAMATION COST ESTIMATE
DATE: NOVEMBER 30, 2018
CC:

I have reviewed and updated New Elk Coal Company's (NECC) Reclamation Cost Estimate (RCE).

The last full RCE conducted was dated August 2, 2016, during the Midterm 7 review. Two revisions have been approved since MT7 that revised the reclamation liability. MR124 was approved May 2, 2017, and adjusted NECC's estimate to concur with the Division's.

In July 2017, the Division approved TR72 that incorporated the NW vent shaft (Golden Eagle vent shaft) into the New Elk permit, and added additional reclamation liability of \$9,698.51. These additional tasks have been incorporated into the RN7 RCE.

The current permitted liability for the New Elk permit as shown in the Division's permit system is \$4,044,696.58.

The Division holds surety in the amount of \$4,133,137.02.

The update RN7 RCE is **\$4,166,596.08**. This value reflects costs updated in July 2018 in the Division's CIRCES estimating program. NECC will need to submit an additional \$33,459.06 to the surety to bring it into agreement with the Division's estimate.

Some unit costs went down, but revegetation costs, and mine sealing costs increased significantly. In 2017 and 2018 the CIRCES program was updated using seed unit costs, and seeding equipment costs obtained by seed supply companies, and R.S. Means equipment cost guide. The Division believes that these unit costs reflect actual costs that would be incurred should the State be in a position to complete reclamation activities at the mine site.

I am attaching a PDF document of the reclamation cost estimate. In addition I am attaching two excel attachments that show, 1) the changes in unit calculation for demolition of powerlines, and conveyors, and explains tasks incorporated into others (combining Demolition tasks into task 695), and 2) a comparison of MT7 task values to RN7 values for each task that illustrates which unit costs increased or decreased.

Please let me know if you have questions.

COST SUMMARY WORKTask description: **Summary of Reclamation and maintenance tasks**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **000**State: **Colorado**Abbreviation: **None**Date: **11/30/2018**County: **Las Animas**Filename: **C012-000**User: **JHB**Agency or organization name: **DRMS****TASK LIST (DIRECT COSTS)**

Task	Description	Form Used	Fleet Size	Task Hours	Cost
601	Backfill and Regrade East Portal Area	DOZER	3	83.38	\$67,020.00
603	Backfill and Regrade Transformer and Rock Dust Cut Slope	TRUCK1	1	48.56	\$46,416.00
606	Push Temporary Coal Stockpiles to Conveyor	DOZER	3	10.19	\$7,574.00
608	Haul Raw Coal Stockpile to Development Waste Pile	SCRAPER1	1	12.59	\$11,400.00
609	Haul Clean Coal Stockpile to Development Waste Pile	SCRAPER1	1	20.43	\$18,312.00
614	Haul and Spread Cover on RDA	SCRAPER1	1	248.08	\$237,315.00
615	Compact Final RDA Surface	COMPACT	1	32.46	\$4,807.00
623	Rip Mine Entry Area Prior to Regrading	RIPPER	3	8.56	\$6,883.00
624	Rip Wedge Area Prior to Regrading	RIPPER	3	0.76	\$617.00
625	Rip Prep Plant Area Prior to Regrading	RIPPER	3	2.57	\$2,070.00
627	Rip West Portal DNR Areas	RIPPER	3	11.94	\$9,604.00
628	Rip East Portal - Only DNR Area	RIPPER	3	16.78	\$13,489.00
639	Finish Grade Refuse Disposal Area	GRADER	1	5.31	\$743.00
643	Regrade Pond 004	DOZER	1	7.81	\$2,093.00
645	Regrade Pond 006	DOZER	1	8.73	\$2,271.00
646	Regrade Pond 007	DOZER	1	17.92	\$4,660.00
647	Regrade Pond 008; Rip and Regrade Spillway	DOZER	1	66.13	\$17,457.00
648	Regrade West Portal Containment Area 1	DOZER	1	5.21	\$1,354.00
651	Regrade temporary Ditches at West Portal	DOZER	1	0.31	\$76.00
661	Replace Cover material on DWDA #2	SCRAPER1	1	2.29	\$2,191.00
662	Replace Topsoil to DWDA #2	SCRAPER1	1	5.40	\$5,167.00
663	Replace Topsoil to Area East of Pond 5	SCRAPER1	1	0.42	\$403.00
664	Replace Topsoil to Pond 005	SCRAPER1	1	0.30	\$281.00
668	Replace Topsoil to Area Under Conveyor	SCRAPER1	1	0.90	\$862.00
669	Replace Topsoil to Raw Coal Storage Stockpile	SCRAPER1	1	1.37	\$1,307.00
670	Replace Topsoil to Small DR Area in Large DNR Area	SCRAPER1	1	0.10	\$97.00
672	Replace Topsoil to Clean Coal Stockpile	SCRAPER1	1	0.93	\$890.00
673	Replace Topsoil to East Extension of River Pumphouse	SCRAPER1	1	0.22	\$210.00
674	Replace Topsoil to Embedded Waste Area	SCRAPER1	1	2.01	\$1,928.00
676	Replace Topsoil to RDA	SCRAPER1	1	122.41	\$117,101.00
677	Replace Topsoil to Four Bench Slopes	SCRAPER1	1	15.69	\$15,136.00
678	Replace Topsoil to RDA Pond	SCRAPER1	1	5.17	\$4,877.00
680	Replace Topsoil to Transformer and Rock Dust Cut Slope	TRUCK1	1	1.40	\$1,321.00

681	Replace Topsoil to Bates Portal Face-Up	SCRAPER1	1	3.01	\$2,877.00
685	Reseed Facilities Area with Rangeland Mix	REVEGE	1	178.00	\$122,437.00
686	Reseed Disturbed Areas with Riparian Habitat	REVEGE	1	21.14	\$15,100.00
687	Reseed RDA	REVEGE	1	95.25	\$38,498.00
688	Reseed DWP with Rangeland Mix	REVEGE	1	11.24	\$7,107.00
689	Plant 6 Shrub Clumps	REVEGE	1	5.60	\$2,353.00
690	Weed Control - Assume 1/4 of Area Three Times	REVEGE	1	102.71	\$19,369.00
695	Demolish and Remove All Structures	DEMOLISH	1	1,009.00	\$1,722,075.46
700	Seal Portals and Vent Shafts	MINESEAL	1	270.00	\$183,255.76
701	Backfill East Portal Face	DOZER	2	1.39	\$744.00
702	Backfill West Portal Face	DOZER	2	1.39	\$722.00
703	Backfill Bates Portal Face	DOZER	2	38.69	\$20,122.00
704	Plug and Seal All Boreholes and Monitoring Wells	BOREHOLE	1	73.00	\$76,205.10
706	Clean Ponds 004, 007, and 008 Twice During Liability Period	TRUCK1	1	121.05	\$87,955.00
733	Regrade Areas from MR-99, MR-107, MR-111, MR-114	DOZER	3	1.43	\$1,065.00
734	Seed Rangeland Seed Mix on MR Areas	REVEGE	1	2.22	\$4,274.00
738	Replace Topsoil on D26 Extension	DOZER	1	0.24	\$58.00
741	Backfill and Regrade DWDA Expansion	DOZER	2	2.68	\$1,437.00
747	Replace Topsoil on Six Drill Pads and Mud Pits	DOZER	1	3.88	\$962.00
750	Demolish and Remove Structures @ C&W area	DEMOLISH	1	24.00	\$67,500.24
751	Rip and Regrade C&W Train Shop Area	DOZER	2	12.74	\$6,825.00
753	Reseed C&W Facilities Area with Rangeland Mix	REVEGE	1	12.00	\$7,553.00
759	Replace Topsoil to Zig Zag Road	EXCAVATE	1	0.47	\$51.00
760	Rip Zig Zag Road and Slurry Line Road	RIPPER	3	0.44	\$359.00
761	Reseed Zig Zag with Rangeland Mix	REVEGE	1	1.60	\$2,049.00
762	Replace Topsoil to West DWDA	SCRAPER1	1	67.00	\$64,558.00
764	Finish Grade West DWDA Area	GRADER	1	8.35	\$1,167.00
765	Reseed West DWDA Expansion Area with Rangeland Mix	REVEGE	1	20.40	\$12,840.00
766	Replace Topsoil on NW vent Fan Area (TR72)	TRUCK1	1	5.95	\$2,000.00
767	Regrade Access Road to NW Vent Shaft (TR72)	DOZER	1	2.33	\$510.00
768	Seed NW Vent Fan and Access Road (TR72)	REVEGE	1	1.55	\$2,127.00
772	Seal Additional Wells	BOREHOLE	1	36.00	\$22,805.23
773	Site Maintenance during the 10 year liability period	SITEMAINT ENANCE	1	400.00	\$34,540.00
774	Import Topsoil for RDA	TRUCK1	1	18.47	\$155,997.00
790	Mobilize/Demobilize Equipment for Initial Reclamation	MOBILIZE	1	5.00	\$12,233.00
791	Mobilize/Demobilize Equipment for Pond Cleaning	MOBILIZE	1	5.00	\$1,755.00
792	Mobilize/Demobilize Equipment for Pond Removal	MOBILIZE	1	5.00	\$1,550.00
793	Mobilize/Demobilize Equipment for Site Maintenance	MOBILIZE	1	3.90	\$4,027.00
<u>SUBTOTALS:</u>				3338.45	\$3,312,994

INDIRECT COSTS**OVERHEAD AND PROFIT:**

Liability insurance: 2.02
Performance bond: 1.05

Total = \$66,922.48
Total = \$34,786.44

Job superintendent:	1,615.87	Total =	<u>\$118,039.30</u>
Profit:	10.00	Total =	<u>\$331,299.40</u>
		TOTAL O & P =	<u>\$551,047.62</u>
		CONTRACT AMOUNT (direct + O & P) =	<u>\$3,864,041.62</u>

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>0.00</u>	Total =	<u>0.00</u>
Engineering work and/or contract/bid preparation:	<u>4.25</u>	Total =	<u>\$164,221.77</u>
Reclamation management and/or administration:	<u>3.58</u>		<u>\$138,332.69</u>

CONTINGENCY:	0.00	Total =	<u>\$0.00</u>
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TOTAL INDIRECT COST =	<u>\$853,602.08</u>
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TOTAL BOND AMOUNT (direct + indirect) =	<u>\$4,166,596.08</u>
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BULLDOZER WORKTask description: **Backfill and Regrade East Portal Area**Site: **New Elk Mine**Permit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 601State: ColoradoAbbreviation: NoneDate: 11/14/2018County: Las AnimasFilename: C07-601User: JHBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$12.36	NA
Ripper op. Cost/Hour:	\$7.88	100
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$267.92Total Fleet Cost/Hour: **\$803.77****MATERIAL QUANTITIES**Initial Volume: 144,850Swell factor: 1.125Loose volume: **162,956 LCY**Source of estimated volume: PAP Exhibit 28Source of estimated swell factor: Operator Estimate**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 1,243.2 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 5 %Average site altitude: 7,500 feetMaterial weight: 2,132 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

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

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5240

Adjusted unit production: 651.44 LCY/hr

Adjusted fleet production: **1954.32 LCY/hr**

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: \$0.411/LCY

Total job time: **83.38 Hours**
Total job cost: **\$67,020**

TRUCK/LOADER TEAM WORKTask description: **Backfill and Regrade Transformer and Rock Dust Cut Slope**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **603**State: **Colorado**Abbreviation: **None**Date: **11/19/2018**County: **Las Animas**Filename: **C012-603**User: **JHB**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 950H
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	100	100	50	50
Ownership cost/hour:	\$18.75	\$26.14	\$110.70	\$110.70	\$60.13	\$25.30
Operating cost/hour:	\$42.43	\$30.84	\$95.46	\$95.46	\$25.43	\$18.30
% Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$0.00	\$40.90	\$41.52	\$41.52	\$28.69	\$21.23
Unit Subtotals:	\$61.17	\$97.89	\$247.68	\$247.68	\$114.26	\$64.83
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$281.40		Support: \$495.36		Maint: \$179.09	

Total work team cost/hour: **\$955.85****MATERIAL QUANTITIES**Initial volume: **17,500**

CCY

Swell factor: **1.125**Loose volume: **19,688**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate**Material Purchase Cost: **\$0.00**Total Cost: **\$0.00****HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: **1**

Pounds/LCY

Description: **User Provided**Rated Payload: **35,400**

Pounds

Payload Capacity: **35,400.00**

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: 9.46 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	4.300	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.730	LCY

Job Condition Corrections:

Site Altitude (ft.): 7500 feet

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

Loading Tool Cycle Time:

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

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA

Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 3/4" to 6" diameter 0.00	0.000	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high 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:		-0.070	minutes
Adjusted Loader Cycle Time:		0.430	minutes
Net Load Time per Truck:		0.530	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.530	Minutes	Adjusted for site altitude:	0.530	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	4.00	3.00	7.00	1568	0.989

Haul Time: **0.989** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	-4.00	3.00	-1.00	2938	0.567

Return Time: **0.567** minutesTotal Truck Cycle Time: **3.486** minutes

Loading Tool unit
 Production 551.07 LCY/Hour Adjusted for job efficiency: 457.39 LCY/Hour
 Truck Unit Production
162.82 LCY/Hour Adjusted for job efficiency: 135.14 LCY/Hour
 Optimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 3 Truck(s)
 Adjusted hourly truck team production: 405.43 LCY/Hour
 Adjusted single truck/loader team production: 405.43 LCY/Hour
 Adjusted multiple truck/loader team production: **405.43** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **48.56** HoursUnit cost: \$2.358 /LCY Total job cost: **\$46,416**

BULLDOZER WORKTask description: **Push Temporary Coal Stockpiles to Conveyor**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **606**State: **Colorado**Abbreviation: **None**Date: **11/14/2018**County: **Las Animas**Filename: **C012-606**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D9T - 9SU**Horsepower: **405**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$110.70</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$95.46</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.52</u>	<u>NA</u>

Total unit Cost/Hour: **\$247.68**Total Fleet Cost/Hour: **\$743.05****MATERIAL QUANTITIES**Initial Volume: **13,250**Swell factor: **1.000**Loose volume: **13,250 LCY**Source of estimated volume: **PAP 2.05-4a Table 18a. Push to conveyor**Source of estimated swell
factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **400 feet**Unadjusted hourly
production: **305.6 LCY/hr**Materials consistency description: **Partly consolidated stockpile 1.1**Average push gradient: **0 %**Average site altitude: **7,000 feet**Material weight: **1,600 lbs/LCY**Weight description: **Coal - Bituminous, Raw****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.900</u>	<u>(AB.AVG.)</u>
Material consistency:	<u>1.100</u>	<u>(CAT HB)</u>
Dozing method:	<u>1.200</u>	<u>(S-BY-S)</u>

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 1.4179

Adjusted unit production: 433.31 LCY/hr

Adjusted fleet production: **1299.93** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)

Unit cost: \$0.572/LCY

Total job time: **10.19** Hours

Total job cost: **\$7,574**

SCRAPER TEAM WORKTask description: **Haul Raw Coal Stockpile to Development Waste Pile**Site: **New Elk Mine**Permit Action: **Permit Revision 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **608**State: **Colorado**Abbreviation: **None**Date: **11/15/2018**County: **Las Animas**Filename: **C012-608**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	45	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$42.96	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	20	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$1.58	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$209.12	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$726.58	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$905.67****MATERIAL QUANTITIES**Initial volume: **5,900**

CCY

Swell factor: **1.185**Loose volume: **6,992**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	1,600 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Coal - Bituminous, Raw	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	33.00 LCY	Adjusted Capacity:	18.85	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	3.00	3.00	6.00	1855	1.43

Haul Time: 1.43 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	-3.00	3.00	0.00	2921	0.95

Return Time: 0.95 minutesTotal Scraper team cycle time: 3.38 minutesAdjusted for job conditions: 277.73 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 555.46 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 555.46 LCY/HourUnadjusted unit production/hour: 334.62 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 12.59 HoursUnit cost: \$1.630 /LCYTotal job cost: \$11,400

SCRAPER TEAM WORKTask description: **Haul Clean Coal Stockpile to Development Waste Pile**Site: **New Elk Mine**Permit Action: **Permit Revision 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **609**State: **Colorado**Abbreviation: **None**Date: **11/15/2018**County: **Las Animas**Filename: **C012-609**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	35	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$33.41	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	20	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$1.58	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$199.57	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work: \$717.03		Support: \$0.00		Maint: \$179.09	

Total work team cost/hour: **\$896.12****MATERIAL QUANTITIES**Initial volume: **7,600**

CCY

Swell factor: **1.185**Loose volume: **9,006**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	1,600 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Coal - Bituminous, Raw	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	33.00 LCY	Adjusted Capacity:	18.85	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3500.00	3.00	3.00	6.00	1855	1.97

Haul Time: 1.97 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3500.00	-3.00	3.00	0.00	2921	1.29

Return Time: 1.29 minutesTotal Scraper team cycle time: 4.26 minutesAdjusted for job conditions: 220.36 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 440.72 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 440.72 LCY/HourUnadjusted unit production/hour: 265.49 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 20.43 HoursUnit cost: \$2.033 /LCYTotal job cost: \$18,312

SCRAPER TEAM WORKTask description: **Haul and Spread Cover on RDA**Site: **New Elk Mine**Permit Action: **Permit Revision 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **614**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-614**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$260.05	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$777.51	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$956.60****MATERIAL QUANTITIES**Initial volume: **146,813**

CCY

Swell factor: **1.125**Loose volume: **165,165**

LCY

Source of estimated volume: **Map 11, page 2.05-21, Exhibit 28**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	2,055 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	User Provided	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	25.69 LCY	Adjusted Capacity:	18.85	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	18.00	3.00	21.00	537	1.31

Haul Time: 1.31 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-18.00	3.00	-15.00	1749	0.51

Return Time: 0.51 minutesTotal Scraper team cycle time: 2.82 minutesAdjusted for job conditions: 332.88 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 665.77 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 665.77 LCY/HourUnadjusted unit production/hour: 401.06 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 248.08 HoursUnit cost: \$1.437 /LCYTotal job cost: \$237,315

COMPACTION WORKTask description: **Compact Final RDA Surface**Site: **New Elk Mine** Permit Action: **Permit Renewal 07** Permit/Job#: **C1981012****PROJECT IDENTIFICATION**

Task #: **615** State: **Colorado** Abbreviation: **None**
 Date: **11/19/2018** County: **Las Animas** Filename: **C012-615**
 User: **JHB**

Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**

Basic Machine: **CAT 815F** Horsepower: **240**
 Compactor Type: **Soil - tamping foot** Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$56.28	NA
Operating Cost/Hour:	\$65.66	100
Operator Cost/Hour:	\$26.14	NA
Total Unit Cost/Hour:	\$148.08	
Total Fleet Cost/Hour:	\$148.08	

MATERIAL QUANTITIES

Loose volume: **26,250** LCY Shrinkage factor: **0.870**
 Compacted volume: **22,838** CCY
 Source of estimated volume: **8.13 acre RDA surface X 2 ft. lift**
 Source of estimated shrinkage factor: **Cat Handbook**

HOURLY PRODUCTIONUnadjusted hourly production = $(W \times S \times L \times C) / P$

Compacted width per pass (W): **6.50** feet
 Average Compactor Speed (S): **4.00** mph
 Compacted thickness of each lift (L): **8.00** inches
 Conversion Constant (C): **16.3** (5,280ft./12in./27cu.ft.)
 Required number of machine passes (P): **4** passes
 Unadjusted Hourly Unit Production: **847.60** CCY/hour

Job Condition Correction FactorsSite Altitude: **7,500** feet

Altitude Adj:	1.00	Source
Job Efficiency:	0.83	(CAT HB)
Net Correction:	0.8300	(1 shift/day)
		multiplier

Adjusted Hourly Unit Production: **703.51** CCY/Hour
 Adjusted Hourly Fleet Production: **703.51** CCY/Hour

JOB TIME AND COST

Fleet size: **1** Compactor(s) Total job time: **32.46** Hours
 Unit cost: **\$0.210** per CCY Total job cost: **\$4,807**

BULLDOZER RIPPING WORKTask description: **Rip Mine Entry Area Prior to Regrading**Site: **New Elk Mine** Permit Action: **Permit Renewal 07** Permit/Job#: **C1981012****PROJECT IDENTIFICATION**

Task #: 623 State: Colorado Abbreviation: None
 Date: 11/19/2018 County: Las Animas Filename: C012-623
 User: JHB

Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: Cat D9T - 9SU Horsepower: 405
 Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$110.70</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$95.46</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$12.36</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$7.88</u>	<u>100</u>
Operator Cost/Hour:	<u>\$41.52</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$267.92</u>	
Total Fleet Cost/Hour:	<u>\$803.77</u>	

MATERIAL QUANTITIESSelected estimating method: Area**Alternate Methods:**

Seismic: NA Bank Volume: NA BCY NA
 Area: 17.86 acres Rip Depth (ft): 2.00 Volume: 57,628 BCY or CCY

Source of estimated quantity: Map 11**HOURLY PRODUCTION****Seismic:**Seismic Velocity: NA feet/second**Area:**

Average Ripping Depth: 4.05 mph
 Average Ripping Width: 7.67 degrees
 Average Ripping Length: 200.00 feet
 Average Dozer Speed: 88.00 feet
 Average Maneuver Time: 0.25 feet
 Production per unit area: 0.838 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.838 Acres/hr
 Site Altitude: 7,500 feet
 Altitude Adj: 1.00 (CAT HB)
 Job Efficiency: 0.83 (1 shift/day)
 Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.70 Acres/hr
 Adjusted Hourly Fleet Production: **2.09** Acres/hr

JOB TIME AND COST

Fleet size: 3 Grader(s) Total job time: **8.56** Hours

Unit cost: \$385.397 Per acre

Total job cost: \$6,883

BULLDOZER RIPPING WORKTask description: **Rip Wedge Area Prior to Regrading**Site: **New Elk Mine** Permit Action: **Permit Renewal 07** Permit/Job#: **C1981012****PROJECT IDENTIFICATION**

Task #: 624 State: Colorado Abbreviation: None
 Date: 11/19/2018 County: Las Animas Filename: C012-624
 User: JHB

Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: Cat D9T - 9SU Horsepower: 405
 Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$110.70</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$95.46</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$12.36</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$7.88</u>	<u>100</u>
Operator Cost/Hour:	<u>\$41.52</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$267.92</u>	
Total Fleet Cost/Hour:	<u>\$803.77</u>	

MATERIAL QUANTITIESSelected estimating method: Area**Alternate Methods:**

Seismic: NA Bank Volume: NA BCY NA
 Area: 1.60 acres Rip Depth (ft): 2.00 Volume: 5,163 BCY or CCY

Source of estimated quantity: Map 11**HOURLY PRODUCTION****Seismic:**Seismic Velocity: NA feet/second**Area:**

Average Ripping Depth: 4.05 mph
 Average Ripping Width: 7.67 degrees
 Average Ripping Length: 200.00 feet
 Average Dozer Speed: 88.00 feet
 Average Maneuver Time: 0.25 feet
 Production per unit area: 0.838 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.838 Acres/hr
 Site Altitude: 7,500 feet
 Altitude Adj: 1.00 (CAT HB)
 Job Efficiency: 0.83 (1 shift/day)
 Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.70 Acres/hr
 Adjusted Hourly Fleet Production: **2.09** Acres/hr

JOB TIME AND COST

Fleet size: 3 Grader(s) Total job time: **0.77** Hours

Unit cost: \$385.397 Per acre

Total job cost: **\$617**

BULLDOZER RIPPING WORKTask description: **Rip Prep Plant Area Prior to Regrading**Site: New Elk Mine Permit Action: Permit Renewal 07 Permit/Job#: C1981012**PROJECT IDENTIFICATION**

Task #: 625 State: Colorado Abbreviation: None
 Date: 11/19/2018 County: Las Animas Filename: C012-625
 User: JHB

Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: Cat D9T - 9SU Horsepower: 405
 Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$110.70</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$95.46</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$12.36</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$7.88</u>	<u>100</u>
Operator Cost/Hour:	<u>\$41.52</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$267.92</u>	
Total Fleet Cost/Hour:	<u>\$803.77</u>	

MATERIAL QUANTITIESSelected estimating method: Area**Alternate Methods:**

Seismic: NA Bank Volume: NA BCY NA
 Area: 5.37 acres Rip Depth (ft): 2.00 Volume: 17,327 BCY or CCY

Source of estimated quantity: Map 11**HOURLY PRODUCTION****Seismic:**Seismic Velocity: NA feet/second**Area:**

Average Ripping Depth: 4.05 mph
 Average Ripping Width: 7.67 degrees
 Average Ripping Length: 200.00 feet
 Average Dozer Speed: 88.00 feet
 Average Maneuver Time: 0.25 feet
 Production per unit area: 0.838 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.838 Acres/hr
 Site Altitude: 7,500 feet
 Altitude Adj: 1.00 (CAT HB)
 Job Efficiency: 0.83 (1 shift/day)
 Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.70 Acres/hr
 Adjusted Hourly Fleet Production: **2.09** Acres/hr

JOB TIME AND COST

Fleet size: 3 Grader(s) Total job time: **2.57** Hours

Unit cost: \$385.397 Per acre

Total job cost: \$2,070

BULLDOZER RIPPING WORKTask description: **Rip West Portal DNR Areas**Site: **New Elk Mine** Permit Action: **Permit Renewal 07** Permit/Job#: **C1981012****PROJECT IDENTIFICATION**

Task #: **627** State: **Colorado** Abbreviation: **None**
 Date: **11/19/2018** County: **Las Animas** Filename: **C012-627**
 User: **JHB**

Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**

Basic Machine: **Cat D9T - 9SU** Horsepower: **405**
 Ripper Attachment: **3-Shank Ripper** Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper Ownership Cost/Hour:	\$12.36	NA
Ripper Operating Cost/Hour:	\$7.88	100
Operator Cost/Hour:	\$41.52	NA
Total Unit Cost/Hour:	\$267.92	
Total Fleet Cost/Hour:	\$803.77	

MATERIAL QUANTITIESSelected estimating method: **Area****Alternate Methods:**

Seismic: **NA** Bank Volume: **NA** BCY **NA**
 Area: **24.92** acres Rip Depth (ft): **1.50** Volume: **60,306** BCY or CCY

Source of estimated quantity: **Map 16 (substract out DWDA#3 area Map12)****HOURLY PRODUCTION****Seismic:**Seismic Velocity: **NA** feet/second**Area:**

Average Ripping Depth: **4.05** mph
 Average Ripping Width: **7.67** degrees
 Average Ripping Length: **200.00** feet
 Average Dozer Speed: **88.00** feet
 Average Maneuver Time: **0.25** feet
 Production per unit area: **0.838** acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: **0.838** Acres/hr
 Site Altitude: **7,500** feet
 Altitude Adj: **1.00** (CAT HB)
 Job Efficiency: **0.83** (1 shift/day)
 Net Correction: **0.83** multiplier

Adjusted Hourly Unit Production: **0.70** Acres/hr
 Adjusted Hourly Fleet Production: **2.09** Acres/hr

JOB TIME AND COST

Fleet size: **3** Grader(s) Total job time: **11.95** Hours

Unit cost: \$385.397 Per acre

Total job cost: **\$9,604**

BULLDOZER RIPPING WORKTask description: **Rip East Portal - Only DNR Area**Site: **New Elk Mine** Permit Action: **Permit Renewal 07** Permit/Job#: **C1981012****PROJECT IDENTIFICATION**

Task #: **628** State: **Colorado** Abbreviation: **None**
 Date: **11/19/2018** County: **Las Animas** Filename: **C012-628**
 User: **JHB**

Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**

Basic Machine: **Cat D9T - 9SU** Horsepower: **405**
 Ripper Attachment: **3-Shank Ripper** Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper Ownership Cost/Hour:	\$12.36	NA
Ripper Operating Cost/Hour:	\$7.88	100
Operator Cost/Hour:	\$41.52	NA
Total Unit Cost/Hour:	\$267.92	
Total Fleet Cost/Hour:	\$803.77	

MATERIAL QUANTITIESSelected estimating method: **Area****Alternate Methods:**

Seismic: **NA** Bank Volume: **NA** BCY **NA**
 Area: **35.00** acres Rip Depth (ft): **2.00** Volume: **112,933** BCY or CCY

Source of estimated quantity: **Map 11****HOURLY PRODUCTION****Seismic:**Seismic Velocity: **NA** feet/second**Area:**

Average Ripping Depth: **4.05** mph
 Average Ripping Width: **7.67** degrees
 Average Ripping Length: **200.00** feet
 Average Dozer Speed: **88.00** feet
 Average Maneuver Time: **0.25** feet
 Production per unit area: **0.838** acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: **0.838** Acres/hr
 Site Altitude: **7,500** feet
 Altitude Adj: **1.00** (CAT HB)
 Job Efficiency: **0.83** (1 shift/day)
 Net Correction: **0.83** multiplier

Adjusted Hourly Unit Production: **0.70** Acres/hr
 Adjusted Hourly Fleet Production: **2.09** Acres/hr

JOB TIME AND COST

Fleet size: **3** Grader(s) Total job time: **16.78** Hours

Unit cost: \$385.397 Per acre

Total job cost: \$13,489

MOTOR GRADER WORKTask description: **Finish Grade Refuse Disposal Area**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**

Task #: 639 State: Colorado Abbreviation: None
 Date: 11/20/2018 County: Las Animas Filename: C012-639
 User: JHB

Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: CAT 14M Horsepower: 259
 Ripper Attachment: Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$60.13	NA
Operating Cost/Hour:	\$50.87	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$28.69	NA
Total Unit Cost/Hour:	\$139.69	
Total Fleet Cost/Hour:	\$139.69	

MATERIAL QUANTITIESTotal Area to be graded or ripped: 8.30 acresSource of estimated acreage: Map 11**HOURLY PRODUCTION**

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

Job Condition Correction FactorsSite Altitude: 7500 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 COSTFleet size: 1 Grader(s) Total job time: **5.32** HoursUnit cost: \$89.49 per acre Total job cost: **\$743**

BULLDOZER WORKTask description: Regrade Pond 004Site: New Elk MinePermit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 643State: ColoradoAbbreviation: NoneDate: 11/15/2018County: Las AnimasFilename: C012-643User: JHBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: Cat D9T - 9SU
 Horsepower: 405
 Blade Type: Semi-Universal
 Attachment: 3-shank ripper
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$110.70</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$95.46</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$12.36</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$7.88</u>	<u>100</u>
Operator Cost/Hour:	<u>\$41.52</u>	<u>NA</u>

Total unit Cost/Hour: \$267.92Total Fleet Cost/Hour: \$267.92**MATERIAL QUANTITIES**

Initial Volume: 3,840
 Swell factor: 1.125
 Loose volume: 4,320 LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Cat Handbook**HOURLY PRODUCTION**

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

Materials consistency description: Compacted fill or embankment 0.9Average push gradient: 5 %Average site altitude: 7,500 feetMaterial weight: 2,132 lbs/LCYWeight description: User Provided

<u>Job Condition Correction Factor</u>		<u>Source</u>
Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5240

Adjusted unit production: 553.13 LCY/hr
Adjusted fleet production: **553.13** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.484/LCY

Total job time: **7.81** Hours
Total job cost: **\$2,093**

BULLDOZER WORKTask description: **Regrade Pond 006**Site: **New Elk Mine**Permit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 645State: ColoradoAbbreviation: NoneDate: 11/15/2018County: Las AnimasFilename: C012-645User: JHBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$12.36	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$260.05Total Fleet Cost/Hour: **\$260.05****MATERIAL QUANTITIES**Initial Volume: 6,160Swell factor: 1.125Loose volume: **6,930 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Operator Estimate**HOURLY PRODUCTION**Average push distance: 75 feetUnadjusted hourly
production: 1,514.3 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 5 %Average site altitude: 7,500 feetMaterial weight: 2,132 lbs/LCYWeight description: User ProvidedJob Condition Correction FactorSource

Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5240

Adjusted unit production: 793.49 LCY/hr
Adjusted fleet production: **793.49** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.328/LCY

Total job time: **8.73** Hours
Total job cost: **\$2,271**

BULLDOZER WORKTask description: **Regrade Pond 007**Site: **New Elk Mine**Permit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 646State: ColoradoAbbreviation: NoneDate: 11/15/2018County: Las AnimasFilename: C012-646User: JHBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$12.36	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$260.05Total Fleet Cost/Hour: **\$260.05****MATERIAL QUANTITIES**Initial Volume: 9,120Swell factor: 1.125Loose volume: **10,260 LCY**Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell

factor:

Cat Handbook**HOURLY PRODUCTION**Average push distance: 150 feet

Unadjusted hourly

production:

910.5 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 5 %Average site altitude: 7,500 feetMaterial weight: 2,132 lbs/LCYWeight description: User Provided

<u>Job Condition Correction Factor</u>		<u>Source</u>
Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(S-BY-S)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:		0.6288

Adjusted unit production: 572.52 LCY/hr
Adjusted fleet production: **572.52** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.454/LCY

Total job time: **17.92** Hours
Total job cost: **\$4,660**

BULLDOZER WORKTask description: **Regrade Pond 008; Rip and Regrade Spillway**Site: **New Elk Mine**Permit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 647State: ColoradoAbbreviation: NoneDate: 11/15/2018County: Las AnimasFilename: C012-647User: JHBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$12.36	NA
Ripper op. Cost/Hour:	\$3.94	50
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$263.98Total Fleet Cost/Hour: **\$263.98****MATERIAL QUANTITIES**Initial Volume: 28,300Swell factor: 1.125Loose volume: **31,838 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Operator Estimate**HOURLY PRODUCTION**Average push distance: 125 feetUnadjusted hourly
production: 1,055.6 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 10 %Average site altitude: 7,500 feetMaterial weight: 2,132 lbs/LCYWeight description: User ProvidedJob Condition Correction FactorSource

Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4561

Adjusted unit production: 481.46 LCY/hr
Adjusted fleet production: **481.46** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.548/LCY

Total job time: **66.13** Hours
Total job cost: **\$17,457**

BULLDOZER WORKTask description: **Regrade West Portal Containment Area 1**Site: **New Elk Mine**Permit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 648State: ColoradoAbbreviation: NoneDate: 11/15/2018County: Las AnimasFilename: C012-648User: JHBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$12.36	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$260.05Total Fleet Cost/Hour: **\$260.05****MATERIAL QUANTITIES**Initial Volume: 3,340Swell factor: 1.125Loose volume: **3,758 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Operator Estimate**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly
production: 1,243.2 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 0 %Average site altitude: 7,500 feetMaterial weight: 2,132 lbs/LCYWeight description: User ProvidedJob Condition Correction FactorSource

Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5803

Adjusted unit production: 721.43 LCY/hr
Adjusted fleet production: **721.43** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.360/LCY

Total job time: **5.21** Hours
Total job cost: **\$1,354**

BULLDOZER WORKTask description: **Regrade temporary Ditches at West Portal**Site: **New Elk Mine**Permit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 651State: ColoradoAbbreviation: NoneDate: 11/15/2018County: Las AnimasFilename: C012-651User: JHBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$247.68Total Fleet Cost/Hour: **\$247.68****MATERIAL QUANTITIES**Initial Volume: 217Swell factor: 1.125Loose volume: **244 LCY**Source of estimated volume: 1300 ft. D29 & D29BSource of estimated swell
factor: Operator Estimate**HOURLY PRODUCTION**Average push distance: 75 feetUnadjusted hourly
production: 1,514.3 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 5 %Average site altitude: 7,500 feetMaterial weight: 2,132 lbs/LCYWeight description: User ProvidedJob Condition Correction FactorSource

Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5240

Adjusted unit production: 793.49 LCY/hr
Adjusted fleet production: **793.49** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.312/LCY

Total job time: **0.31** Hours
Total job cost: **\$76**

SCRAPER TEAM WORKTask description: **Replace Cover material on DWDA #2**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **661**State: **Colorado**Abbreviation: **None**Date: **11/20/2018**County: **Las Animas**Filename: **C012-661**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$260.05	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$777.51	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$956.60****MATERIAL QUANTITIES**Initial volume: **1,613**

CCY

Swell factor: **1.125**Loose volume: **1,815**

LCY

Source of estimated volume: **Map 11, PAP cover requirement.**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,132 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>24.77 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lr. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1600.00	3.00	3.00	6.00	1855	0.96

Haul Time: 0.96 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-10.00	3.00	-7.00	2938	0.41

Return Time: 0.41 minutesTotal Scraper team cycle time: 2.37 minutesAdjusted for job conditions: 396.09 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 792.18 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 792.18 LCY/HourUnadjusted unit production/hour: 477.22 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 2.29 HoursUnit cost: \$1.208 /LCYTotal job cost: \$2,191

SCRAPER TEAM WORKTask description: **Replace Topsoil to DWDA #2**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **662**State: **Colorado**Abbreviation: **None**Date: **11/20/2018**County: **Las Animas**Filename: **C012-662**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$260.05	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$777.51	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$956.60****MATERIAL QUANTITIES**Initial volume: **3,900**

CCY

Swell factor: **1.000**Loose volume: **3,900**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1600.00	3.00	3.00	6.00	1855	0.96

Haul Time: 0.96 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1600.00	-3.00	3.00	0.00	2921	0.64

Return Time: 0.64 minutesTotal Scraper team cycle time: 2.60 minutesAdjusted for job conditions: 361.05 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 722.10 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 722.10 LCY/HourUnadjusted unit production/hour: 435.00 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 5.40 HoursUnit cost: \$1.325 /LCYTotal job cost: \$5,167

SCRAPER TEAM WORKTask description: **Replace Topsoil to Area East of Pond 5**Site: **New Elk Mine**Permit Action: **Permit Revision 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **663**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-663**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$260.05	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$777.51	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$956.60****MATERIAL QUANTITIES**Initial volume: **425**

CCY

Swell factor: **1.000**Loose volume: **425**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	5.00	3.00	8.00	1381	0.56

Haul Time: 0.56 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-5.00	3.00	-2.00	2938	0.30

Return Time: 0.30 minutesTotal Scraper team cycle time: 1.86 minutesAdjusted for job conditions: 504.69 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,009.39 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,009.39 LCY/HourUnadjusted unit production/hour: 608.06 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 0.42 HoursUnit cost: \$0.948 /LCYTotal job cost: \$403

SCRAPER TEAM WORKTask description: **Replace Topsoil to Pond 005**Site: **New Elk Mine**Permit Action: **Permit Revision 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **664**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-664**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

	Equipment Description
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$247.68	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$765.14	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$944.23****MATERIAL QUANTITIES**Initial volume: **300**

CCY

Swell factor: **1.000**Loose volume: **300**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	5.00	3.00	8.00	1381	0.56

Haul Time: 0.56 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-5.00	3.00	-2.00	2938	0.30

Return Time: 0.30 minutesTotal Scraper team cycle time: 1.86 minutesAdjusted for job conditions: 504.69 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,009.39 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,009.39 LCY/HourUnadjusted unit production/hour: 608.06 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 0.30 HoursUnit cost: \$0.935 /LCYTotal job cost: \$281

SCRAPER TEAM WORKTask description: **Replace Topsoil to Area Under Conveyor**Site: **New Elk Mine**Permit Action: **Permit Revision 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **668**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-668**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	20	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$1.58	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$261.62	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$779.08	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$958.17****MATERIAL QUANTITIES**Initial volume: **1,300**

CCY

Swell factor: **1.000**Loose volume: **1,300**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	200.00	5.00	3.00	8.00	1381	0.20

Haul Time: 0.20 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	200.00	-5.00	3.00	-2.00	2938	0.10

Return Time: 0.10 minutesTotal Scraper team cycle time: 1.30 minutesAdjusted for job conditions: 722.10 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,444.20 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,444.20 LCY/HourUnadjusted unit production/hour: 870.00 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 0.90 HoursUnit cost: \$0.663 /LCYTotal job cost: \$862

SCRAPER TEAM WORKTask description: **Replace Topsoil to Raw Coal Storage Stockpile**Site: **New Elk Mine**Permit Action: **Permit Revision 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **669**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-669**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$260.05	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$777.51	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$956.60****MATERIAL QUANTITIES**Initial volume: **1,060**

CCY

Swell factor: **1.000**Loose volume: **1,060**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:

Scraper Loading Time: 0.40 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1600.00	0.00	3.00	3.00	2824	0.75

Haul Time: 0.75 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1600.00	0.00	3.00	3.00	2874	0.67

Return Time: 0.67 minutes

Total Scraper team cycle time: 2.42 minutes
 Adjusted for job conditions: 387.90 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 775.81 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 775.81 LCY/Hour

Unadjusted unit production/hour: 467.36 LCY/Hour
 Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 1.37 HoursUnit cost: \$1.233 /LCY Total job cost: \$1,307

SCRAPER TEAM WORKTask description: **Replace Topsoil to Small DR Area in Large DNR Area**Site: **New Elk Mine**Permit Action: **Permit Revision 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **670**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-670**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$260.05	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$777.51	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$956.60****MATERIAL QUANTITIES**Initial volume: **70**

CCY

Swell factor: **1.000**Loose volume: **70**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	0.00	3.00	3.00	2824	0.90

Haul Time: 0.90 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	0.00	3.00	3.00	2874	0.81

Return Time: 0.81 minutesTotal Scraper team cycle time: 2.71 minutesAdjusted for job conditions: 346.39 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 692.79 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 692.79 LCY/HourUnadjusted unit production/hour: 417.34 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 0.10 HoursUnit cost: \$1.381 /LCYTotal job cost: \$97

SCRAPER TEAM WORKTask description: **Replace Topsoil to Clean Coal Stockpile**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **672**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-672**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$260.05	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$777.51	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$956.60****MATERIAL QUANTITIES**Initial volume: **600**

CCY

Swell factor: **1.000**Loose volume: **600**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2300.00	0.00	3.00	3.00	2824	1.00

Haul Time: 1.00 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2300.00	0.00	3.00	3.00	2874	0.91

Return Time: 0.91 minutesTotal Scraper team cycle time: 2.91 minutesAdjusted for job conditions: 322.59 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 645.18 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 645.18 LCY/HourUnadjusted unit production/hour: 388.66 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 0.93 HoursUnit cost: \$1.483 /LCYTotal job cost: \$890

SCRAPER TEAM WORKTask description: **Replace Topsoil to East Extension of River Pumphouse**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **673**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-673**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$260.05	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$777.51	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$956.60****MATERIAL QUANTITIES**Initial volume: **180**

CCY

Swell factor: **1.000**Loose volume: **180**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:

Scraper Loading Time: 0.40 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1100.00	5.00	3.00	8.00	1381	0.85

Haul Time: 0.85 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1100.00	-5.00	3.00	-2.00	2938	0.44

Return Time: 0.44 minutes

Total Scraper team cycle time: 2.29 minutes
 Adjusted for job conditions: 409.93 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 819.85 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 819.85 LCY/Hour

Unadjusted unit production/hour: 493.89 LCY/Hour
 Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 0.22 HoursUnit cost: \$1.167 /LCY Total job cost: \$210

SCRAPER TEAM WORKTask description: **Replace Topsoil to Embedded Waste Area**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **674**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-674**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$260.05	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$777.51	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$956.60****MATERIAL QUANTITIES**Initial volume: **1,950**

CCY

Swell factor: **1.000**Loose volume: **1,950**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	0.00	3.00	3.00	2824	0.51

Haul Time: 0.51 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	0.00	3.00	3.00	2874	0.43

Return Time: 0.43 minutesTotal Scraper team cycle time: 1.94 minutesAdjusted for job conditions: 483.88 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 967.76 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 967.76 LCY/HourUnadjusted unit production/hour: 582.99 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 2.01 HoursUnit cost: \$0.988 /LCYTotal job cost: \$1,928

SCRAPER TEAM WORKTask description: **Replace Topsoil to RDA**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **676**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-676**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$260.05	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$777.51	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$956.60****MATERIAL QUANTITIES**Initial volume: **27,824**

CCY

Swell factor: **1.000**Loose volume: **27,824**

LCY

Source of estimated volume: **Map 11 sheet 3; Permit page 2.05-38**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	-3.00	3.00	0.00	2921	0.30
2	650.00	2.00	3.00	5.00	2218	3.08
3	2200.00	7.00	3.00	10.00	1068	1.81
4	600.00	8.00	3.00	11.00	1018	0.59

Haul Time: 5.78 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	-8.00	3.00	-5.00	2938	0.27
2	2200.00	-7.00	3.00	-4.00	2938	0.80
3	650.00	-2.00	3.00	1.00	2913	0.22
4	500.00	3.00	3.00	6.00	2736	0.19

Return Time: 1.48 minutesTotal Scraper team cycle time: 8.26 minutesAdjusted for job conditions: 113.65 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 227.30 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 227.30 LCY/HourUnadjusted unit production/hour: 136.92 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 122.41 HoursUnit cost: \$4.209 /LCYTotal job cost: \$117,101

SCRAPER TEAM WORKTask description: **Replace Topsoil to Four Bench Slopes**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **677**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-677**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	100	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$7.88	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$267.92	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$785.38	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$964.47****MATERIAL QUANTITIES**Initial volume: **3,580**

CCY

Swell factor: **1.000**Loose volume: **3,580**

LCY

Source of estimated volume: **PAP map 11 sheet 3; 5.5 acres**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	-3.00	3.00	0.00	2921	0.30
2	650.00	2.00	3.00	5.00	2218	3.08
3	2200.00	7.00	3.00	10.00	1068	1.81
4	450.00	-15.00	3.00	-12.00	1749	0.36

Haul Time: 5.55 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	450.00	15.00	3.00	18.00	990	0.47
2	2200.00	-7.00	3.00	-4.00	2938	0.80
3	650.00	-2.00	3.00	1.00	2913	0.22
4	500.00	3.00	3.00	6.00	2736	0.19

Return Time: 1.68 minutesTotal Scraper team cycle time: 8.23 minutesAdjusted for job conditions: 114.06 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 228.12 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 228.12 LCY/HourUnadjusted unit production/hour: 137.42 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 15.69 HoursUnit cost: \$4.228 /LCYTotal job cost: \$15,136

SCRAPER TEAM WORKTask description: **Replace Topsoil to RDA Pond**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **678**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-678**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$247.68	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$765.14	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$944.23****MATERIAL QUANTITIES**Initial volume: **1,975**

CCY

Swell factor: **1.000**Loose volume: **1,975**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:

Scraper Loading Time: 0.40 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	10.00	3.00	13.00	834	3.01

Haul Time: 3.01 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	-10.00	3.00	-7.00	2938	0.90

Return Time: 0.90 minutes

Total Scraper team cycle time: 4.91 minutes
 Adjusted for job conditions: 191.19 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 382.37 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 382.37 LCY/Hour

Unadjusted unit production/hour: 230.35 LCY/Hour
 Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 5.17 HoursUnit cost: \$2.469 /LCY Total job cost: \$4,877

TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil to Transformer and Rock Dust Cut Slope**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **680**State: **Colorado**Abbreviation: **None**Date: **11/19/2018**County: **Las Animas**Filename: **C012-680**User: **JHB**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 950H
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	65	100	100	50	50
Ownership cost/hour:	\$18.75	\$26.14	\$110.70	\$110.70	\$60.13	\$25.30
Operating cost/hour:	\$42.43	\$20.05	\$95.46	\$95.46	\$25.43	\$18.30
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$0.00	\$40.90	\$41.52	\$41.52	\$28.69	\$21.23
Unit Subtotals:	\$61.17	\$87.09	\$247.68	\$247.68	\$114.26	\$64.83
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$270.60		Support: \$495.36		Maint: \$179.09	

Total work team cost/hour: **\$945.05****MATERIAL QUANTITIES**Initial volume: **400**

CCY

Swell factor: **1.000**Loose volume: **400**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate**Material Purchase Cost: **\$0.00**Total Cost: **\$0.00****HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: **2,055**

Pounds/LCY

Description: **User Provided**Rated Payload: **35,400**

Pounds

Payload Capacity: **17.23**

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: 9.46 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	4.300	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.730	LCY

Job Condition Corrections:

Site Altitude (ft.): 7500 feet

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

Net Correction: **0.830**

Loading Tool Cycle Time:

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

Excavators and Front Shovels:

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

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 3/4" to 6" diameter 0.00	0.000	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high 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: -0.070 minutes
 Adjusted Loader Cycle Time: **0.430** minutes
 Net Load Time per Truck: **0.530** minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.530	Minutes	Adjusted for site altitude:	0.530	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3000.00	4.00	3.00	7.00	1568	1.946

Haul Time: **1.946** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3000.00	-4.00	3.00	-1.00	2938	1.064

Return Time: **1.064** minutesTotal Truck Cycle Time: **4.940** minutes

Loading Tool unit

Production 551.07 LCY/Hour Adjusted for job efficiency: 457.39 LCY/Hour
Truck Unit Production 114.90 LCY/Hour Adjusted for job efficiency: 95.37 LCY/Hour

Optimal No. of Trucks: 5 Truck(s) Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 286.10 LCY/Hour
Adjusted single truck/loader team production: 286.10 LCY/Hour
Adjusted multiple truck/loader team production: **286.10** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **1.40** Hours

Unit cost: \$3.303 /LCY Total job cost: **\$1,321**

SCRAPER TEAM WORKTask description: **Replace Topsoil to Bates Portal Face-Up**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **681**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-681**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$102.39	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$125.30	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$12.36	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$258.73	\$260.05	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$777.51	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$956.60****MATERIAL QUANTITIES**Initial volume: **1,150**

CCY

Swell factor: **1.000**Loose volume: **1,150**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.40 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7500 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	10.00	3.00	13.00	834	3.01

Haul Time: 3.01 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	-10.00	3.00	-7.00	2938	0.90

Return Time: 0.90 minutesTotal Scraper team cycle time: 4.91 minutesAdjusted for job conditions: 191.19 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 382.37 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 382.37 LCY/HourUnadjusted unit production/hour: 230.35 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 3.01 HoursUnit cost: \$2.502 /LCYTotal job cost: \$2,877

REVEGETATION WORKTask description: **Reseed Facilities Area with Rangeland Mix**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **685**State: **Colorado**Abbreviation: **None**Date: **11/19/2018**County: **Las Animas**Filename: **C012-685**User: **JHB**Agency or organization name: **DRMS****FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	30.00	pound	\$0.34	\$10.20
			Total Fertilizer Materials Cost/Acre	\$10.20

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$34.72
Total Fertilizer Application Cost/Acre	\$34.72

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Buffalograss - Bison	0.50	0.48	\$5.90
Blue Grama - Hachita	0.67	10.94	\$11.16
Little Bluestem - Cimarron	1.20	7.16	\$17.62
Sideoats Grama - Butte	2.50	8.21	\$24.75
Milk Vetch, Cicer - Monarch	0.33	1.10	\$2.77
Streambank Wheatgrass - Sodar	1.50	4.89	\$9.35
Sainfoin - Remont	1.67	0.73	\$5.41
Thickspike Wheatgrass - Critana	0.50	1.77	\$2.94
Western Wheatgrass - Arriba	2.00	5.05	\$16.56
Rabbitbrush, Rubber	0.15	2.23	\$9.88
Rose, Wood's	0.25	0.00	\$5.25
Daisy or Sunflower, Maximillians	0.11	0.62	\$6.18

Flax, Lewis Blue	0.11	0.73	\$1.86
Spike Muhly	0.33	12.12	\$3.25
Penstemon, Rocky Mountain	0.11	1.72	\$3.32
Totals Seed Mix	11.93	57.76	\$126.18

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$576.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Total Mulch Application Cost/Acre	\$161.56

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:	97.26	Cost /Acre:	\$1,140.66
Estimated Failure Rate:	33%	Cost /Acre*:	\$358.18
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost: **\$110,940.59**
 Reseeding Job Cost: **\$11,496.07**
 Total Job Cost: **\$122,437**
 Job Hours: **178.00**

REVEGETATION WORKTask description: **Reseed Disturbed Areas with Riparian Habitat**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **686**State: **Colorado**Abbreviation: **None**Date: **11/19/2018**County: **Las Animas**Filename: **C012-686**User: **JHB**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
Buffalograss - Bison	1.00	0.96	\$11.79
Blue Grama - Hachita	1.34	21.87	\$22.32
Little Bluestem - Cimarron	2.40	14.33	\$35.23
Sideoats Grama - Butte	5.00	16.41	\$49.50
Milk Vetch, Cicer - Monarch	0.66	2.20	\$5.54
Streambank Wheatgrass - Sodar	3.00	9.78	\$18.69
Sainfoin - Remont	3.34	1.46	\$10.82
Thickspike Wheatgrass - Critana	1.00	3.54	\$5.87
Western Wheatgrass - Arriba	4.00	10.10	\$33.12
Rabbitbrush, Rubber	0.30	4.47	\$19.75

Rose, Wood's	0.50	0.00	\$10.50
Daisy or Sunflower, Maximillians	0.22	1.25	\$12.36
Flax, Lewis Blue	0.22	1.46	\$3.72
Spike Muhly	0.66	24.24	\$6.51
Penstemon, Rocky Mountain	0.22	3.45	\$6.65
Totals Seed Mix	23.86	115.51	\$252.37

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	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$576.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Total Mulch Application Cost/Acre	\$161.56

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:	10.57	Cost /Acre:	\$1,257.15
Estimated Failure Rate:	33%	Cost /Acre*:	\$519.59
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost: **\$13,288.08**
 Reseeding Job Cost: **\$1,812.38**
 Total Job Cost: **\$15,100**
 Job Hours: **21.14**

REVEGETATION WORKTask description: **Reseed RDA**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **687**State: **Colorado**Abbreviation: **None**Date: **11/19/2018**County: **Las Animas**Filename: **CO012-687**User: **JHB**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
Buffalograss - Bison	0.50	0.48	\$5.90
Blue Grama - Hachita	0.67	10.94	\$11.16
Little Bluestem - Cimarron	1.20	7.16	\$17.62
Sideoats Grama - Butte	2.50	8.21	\$24.75
Milk Vetch, Cicer - Monarch	0.33	1.10	\$2.77
Streambank Wheatgrass - Sodar	1.50	4.89	\$9.35
Sainfoin - Remont	1.67	0.73	\$5.41
Thickspike Wheatgrass - Critana	0.50	1.77	\$2.94
Western Wheatgrass - Arriba	2.00	5.05	\$16.56
Rabbitbrush, Rubber	0.15	2.23	\$9.88

Rose, Wood's	0.20	0.00	\$4.20
Daisy or Sunflower, Maximillians	0.11	0.62	\$6.18
Flax, Lewis Blue	0.11	0.73	\$1.86
Spike Muhly	0.33	12.12	\$3.25
Penstemon, Rocky Mountain	0.11	1.72	\$3.32
Totals Seed Mix	11.88	57.76	\$125.13

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$576.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Total Mulch Application Cost/Acre	\$161.56

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:	31.75	Cost /Acre:	\$1,094.69
Estimated Failure Rate:	33%	Cost /Acre*:	\$357.13
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost: **\$34,756.41**
 Reseeding Job Cost: **\$3,741.83**
 Total Job Cost: **\$38,498**
 Job Hours: **95.25**

REVEGETATION WORKTask description: **Reseed DWP with Rangeland Mix**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **688**State: **Colorado**Abbreviation: **None**Date: **11/20/2018**County: **Las Animas**Filename: **C012-688**User: **JHB**Agency or organization name: **DRMS****FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	30.00	pound	\$0.34	\$10.20
			Total Fertilizer Materials Cost/Acre	\$10.20

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$34.72
Total Fertilizer Application Cost/Acre	\$34.72

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Buffalograss - Bison	0.50	0.48	\$5.90
Blue Grama - Hachita	0.67	10.94	\$11.16
Little Bluestem - Cimarron	1.20	7.16	\$17.62
Sideoats Grama - Butte	2.50	8.21	\$24.75
Smooth Brome - Manchar	1.00	3.33	\$4.36
Milk Vetch, Cicer - Monarch	0.33	1.10	\$2.77
Streambank Wheatgrass - Sodar	1.50	4.89	\$9.35
Sainfoin - Remont	1.67	0.73	\$5.41
Thickspike Wheatgrass - Critana	0.50	1.77	\$2.94
Western Wheatgrass - Arriba	2.00	5.05	\$16.56
Rabbitbrush, Rubber	0.15	2.23	\$9.88
Rose, Wood's	0.25	0.00	\$5.25

Daisy or Sunflower, Maximillians	0.11	0.62	\$6.18
Flax, Lewis Blue	0.11	0.73	\$1.86
Spike Muhly	0.33	12.12	\$3.25
Penstemon, Rocky Mountain	0.11	1.72	\$3.32
Totals Seed Mix	12.93	61.08	\$130.54

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$576.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Total Mulch Application Cost/Acre	\$161.56

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:	5.62	Cost /Acre:	\$1,145.02
Estimated Failure Rate:	33%	Cost /Acre*:	\$362.54
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost: **\$6,435.01**
 Reseeding Job Cost: **\$672.37**
 Total Job Cost: **\$7,107**
 Job Hours: **11.24**

REVEGETATION WORKTask description: **Plant 6 Shrub Clumps**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **689**State: **Colorado**Abbreviation: **None**Date: **11/20/2018**County: **Las Animas**Filename: **C012-689**User: **JHB**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
			\$
Totals Seed Mix	0.00	0.00	\$0.00

Application

Description	Cost /Acre
	\$

Total Seed Application Cost/Acre	\$0.00
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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
Juniper, Utah	74	Tubling, 10 cu. in. container {(MEANS)}	\$2.38	\$2.40	\$176.12
Pine, Pinyon	74	Tubling, 10 cu. in. container {(MEANS)}	\$2.38	\$2.40	\$176.12
Pine, Ponderosa	74	Tubling, 10 cu. in. container {(MEANS)}	\$1.98	\$2.40	\$146.52
Mahogany, Mountain	74	Tubling, 10 cu. in. container {(MEANS)}	\$2.00	\$2.40	\$148.00
Snowberry, Western	74	Tubling, 10 cu. in. container {(MEANS)}	\$2.00	\$2.40	\$148.00
Sumac, Skunkbrush	74	Tubling, 10 cu. in. container {(MEANS)}	\$4.40	\$2.40	\$325.60
Totals Nursery Stock Cost / Acre					\$1,120.36

JOB TIME AND COST

No. of Acres:	1.4	Cost /Acre:	\$1,120.36
Estimated Failure Rate:	50%	Cost /Acre*:	\$1,120.36
*Selected Replanting Work Items:	NURSERY		

Initial Job Cost: **\$1,568.50**
 Reseeding Job Cost: **\$784.25**
 Total Job Cost: **\$2,353**
 Job Hours: **5.60**

REVEGETATION WORKTask description: Weed Control - Assume 1/4 of Area Three TimesSite: New Elk MinePermit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 690State: ColoradoAbbreviation: NoneDate: 11/20/2018County: Las AnimasFilename: C012-690User: JHBAgency 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
			\$
Totals Seed Mix	0.00	0.00	\$0.00

Application

Description	Cost /Acre
	\$

Total Seed Application Cost/Acre	\$0.00
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MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
	1.00		\$0.00	\$0.00
Herbicide - Glyphosate (Journey)@ 1.0 pt/ac	1.00	ACRE	\$4.26	\$4.26
Total Mulch Materials Cost/Acre				\$4.26

Application

Description	Cost /Acre
Weed spray, hand, non-aquatic area, nox. [DMG]	\$184.32
Total Mulch Application Cost/Acre	\$184.32

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:	102.71	Cost /Acre:	\$188.58
Estimated Failure Rate:	0%	Cost /Acre*:	\$0.00
*Selected Replanting Work Items:	NONE		

Initial Job Cost:	\$19,369.05
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$19,369
Job Hours:	102.71

DEMOLITION WORKTask description: **Demolish and Remove All Structures**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **695**State: **Colorado**Abbreviation: **None**Date: **11/26/2018**County: **Las Animas**Filename: **C012-695**User: **JHB**Agency or organization name: **DRMS****UNIT COSTS****Location adjustment: 94.00 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Pump House at North River Stockpile	25'X20'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	5,000.00	CF	\$0.19	\$940.00
-Pad	25'X20'X6'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	250.00	SF	\$0.83	\$207.25
-Footers	1'X2'X88	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	88.00	LF	\$3.49	\$307.12
East Portal Fan	30'X14'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	4,200.00	CF	\$0.19	\$789.60
-Pad	20'X10'X12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	200.00	SF	\$1.66	\$331.80
-Steel Duct Work	18'X18'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,240.00	CF	\$0.19	\$609.12
-Fan and Related Structures	10,000lbs	USER PROVIDED ITEM	10,000.00	LBS	\$0.25	\$2,500.00
Oil House	33'X32'X16'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft.	16,896.00	CF	\$0.19	\$3,176.45

		haul				
-Pad	33'X32'X4"	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	1,056.00	SF	\$0.55	\$583.97
Hoist House	54'X42'X24'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	54,432.00	CF	\$0.19	\$10,233.22
-Pad	51'X42'X24"	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	159.00	CY	\$122.50	\$19,477.50
-Hoist Unit and Controls	18,000lbs	USER PROVIDED ITEM	18,000.00	LBS	\$0.25	\$4,500.00
Hoist House 2	20'X40'X20'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	16,000.00	CF	\$0.19	\$3,008.00
-Sheave	30 Tons	USER PROVIDED ITEM	30.00	TON	\$24.34	\$730.20
-Pad	50'X30'X5.4"	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	300.00	CY	\$122.50	\$36,750.00
Industrial Building - Segment 1	246'X50'X23'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	282,900.00	CF	\$0.19	\$53,185.20
Industrial Building - Segment 2	246'X49'X38'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	458,052.00	CF	\$0.19	\$86,113.78
Industrial Building - Segment 3	246'X40.5'X21'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	209,223.00	CF	\$0.19	\$39,333.92
-Pad	246'X139.5'X6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	34,317.00	SF	\$0.83	\$28,448.79
Transfer Building	42'X22'X31.5'	Bldg. (SN) demo./on-site	29,106.00	CF	\$0.19	\$5,471.93

		disposal in existing pit or cut - Max. 10,000 ft. haul				
Breaker Building	65'X45'X65'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	190,125.00	CF	\$0.19	\$35,743.50
-Pad	65'X45'X24"	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	217.00	CY	\$122.50	\$26,582.50
Slope Conveyor Drive House Building	50' x 37.5' x 15'h	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	28,125.00	CF	\$0.21	\$5,850.00
-Drive and Internal Equipment	3,706 CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,706.00	CF	\$0.19	\$696.73
-Foundation	45'X37'X5'	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	308.00	CY	\$122.50	\$37,730.00
-Slope Belt	1,000'L X 6'w x6'h	Conveyor, demolition, on-site disposal, existing pit, 10,000 ft. haul	36,000.00	CF	\$0.21	\$7,560.00
-Transfer Belt	1,000'L x 6'wx6'h	Conveyor, demolition, on-site disposal, existing pit, 10,000 ft. haul	36,000.00	CF	\$0.21	\$7,560.00
-Drive Belt	1000'Lx6'wx6'h	Conveyor, demolition, on-site disposal, existing pit, 10,000 ft. haul	36,000.00	CF	\$0.21	\$7,560.00
-Retaining Wall	40'X6'X2'	Wall, concrete, demolition only, average reinforcing - 24 in. thick	240.00	SF	\$3.74	\$897.60
Breaker Building Rock Box	14'X24'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,360.00	CF	\$0.19	\$631.68
-Pad	20 CY	Pavement,	20.00	CY	\$122.50	\$2,450.00

		concrete, demolition only, 7 in. to 24 in. thick - Reinforced				
-Retaining Wall	3.5'X12"X80 LF	Demo. and on- site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	280.00	SF	\$3.08	\$862.40
Sewage Plant Building	20'X20'X12'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	4,800.00	CF	\$0.19	\$902.40
-Pad	40 CY	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	40.00	CY	\$122.50	\$4,900.00
-32,000 Gallon Sludge Tank	32,000 G	Comprehensive storage tank removal, non- leaking - 9,000 to 12,000 gal. tank	1.00	EA	\$7,608.95	\$7,608.95
-Pump Sudge From Tank	32,000 G	Remove sludge, water, and rem. product from tank - 9,000 to 12,000 gal.	1.00	EA	\$377.00	\$377.00
Water Pipe Vaults (fig.2a)	16' x 10' x 8'	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	134.80	CY	\$122.50	\$16,513.00
-400,000 Gallon Water Tank	20'X43' Diameter	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	29,029.00	CF	\$0.19	\$5,457.45
-Pad	2'X44'	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	113.00	CY	\$122.50	\$13,842.50
-25,000 Gallon Water Tank	21'X11' Diameter	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,995.00	CF	\$0.19	\$375.06
-Pad	2'X12'	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	8.00	CY	\$122.50	\$980.00
Water Tank	21.5'X24'	Bldg. (SN) demo./on-site	8,714.00	CF	\$0.19	\$1,638.23

		disposal in existing pit or cut - Max. 10,000 ft. haul				
-Footers	67.5 LF (5)	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	338.00	LF	\$3.49	\$1,179.62
Emergency Escape Hoist	20'X20'X20'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	8,000.00	CF	\$0.19	\$1,504.00
Prep Plant	78'X65'X82'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	415,740.00	CF	\$0.19	\$78,159.12
-Pad	78'X65'X24"	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	376.00	CY	\$122.50	\$46,060.00
-Footers	2'X3'	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	283.00	LF	\$10.46	\$2,960.18
Thickener Tank	100'DX12'	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	3,770.00	SF	\$1.66	\$6,254.43
-Pad	100'DX12"	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	290.80	CY	\$122.50	\$35,623.00
Coal Silos (2)	70'X183'X3' (Each)	Explosive demolition, large projects - Concrete structures	1,408,600.00	CF	\$0.28	\$394,408.00
-Pad (2)	70'X24" (Each)	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	570.00	CY	\$122.50	\$69,825.00
-Footers	2'X3'X220 LF	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	440.00	LF	\$10.46	\$4,602.40
River Crossing Bridge (metal foot bridge)	30' x 4'w x 3'h	Bridge Demolition - Steel	120.00	SF	\$8.60	\$1,032.00

Slope Rail Track	1,325 LF	Railroad track - Ties and track	1,325.00	LF	\$9.19	\$12,176.75
-Fencing	500 LF	Fencing, chain link, including posts and fabric - 8 ft. to 10 ft. high	500.00	LF	\$3.06	\$1,530.00
-Retaining Wall	3.5'X12"X150LF	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	525.00	SF	\$3.08	\$1,617.00
Rock Dust Bin	5,000 CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	5,000.00	CF	\$0.19	\$940.00
-Pad	12'X12'X1'th	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	5.33	CY	\$122.50	\$652.93
-Compressor Building	20'X20'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	4,000.00	CF	\$0.19	\$752.00
-Equipment Removal	20'X20'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,000.00	CF	\$0.19	\$376.00
-Pad	20'X20'X2'	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	27.00	CY	\$122.50	\$3,307.50
Refuse Substation	32'X17.5'X6'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,360.00	CF	\$0.19	\$631.68
-Remove Transformer	NA	NON-PCB Transformer Removal	1.00	EA	\$2,082.20	\$2,082.20
Plant Substation	32'X17.5'X6'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,360.00	CF	\$0.19	\$631.68
-Remove Transformer	NA	NON-PCB Transformer Removal	1.00	EA	\$2,082.20	\$2,082.20
East Portal Substation	32'X17.5'X6'	Bldg. (SN) demo./on-site	3,360.00	CF	\$0.19	\$631.68

		disposal in existing pit or cut - Max. 10,000 ft. haul				
-Remove Transformer	NA	NON-PCB Transformer Removal	1.00	EA	\$2,082.20	\$2,082.20
Thickener Substation	15'DX12'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,120.00	CF	\$0.19	\$398.56
-Pad	15'DX12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	176.70	SF	\$1.66	\$293.15
-Remove Transformer	NA	NON-PCB Transformer Removal	1.00	EA	\$2,082.20	\$2,082.20
Electric House	9'X9'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	810.00	CF	\$0.19	\$152.28
-Concrete Portion	7'X7'X5'	Bldg. (SC) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	245.00	CF	\$0.24	\$59.54
Electric Power Upgrade Equip. Removal	96 CY	USER PROVIDED ITEM	96.00	CY	\$24.34	\$2,336.64
Bates Portal Access Rd Retaining Walls	12"X8'X 285LF	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	285.00	SF	\$3.08	\$877.80
-Footer	6'X12"	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft. - Max. 200 ft. push	285.00	LF	\$10.75	\$3,063.75
Bates Portal Ditch 26 Retaining Wall	50 CY	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	50.00	CY	\$122.50	\$6,125.00
Bates Portal Conveyor Drive Bldg.	24'X42'X30'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	30,240.00	CF	\$0.19	\$5,685.12
-Pad	24'X42'X2'	Pavement, concrete,	74.00	CY	\$122.50	\$9,065.00

		demolition only, 7 in. to 24 in. thick - Reinforced				
Bates Portal Conveyor Transfer Bldg.	18'X18'X30'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	9,720.00	CF	\$0.19	\$1,827.36
-Pad	18'X18'X2'	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	24.00	CY	\$122.50	\$2,940.00
Bates Portal Vent Fan	20'X20'X14'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,520.00	CF	\$0.19	\$285.76
-Concrete Portion	20'X10'X6"	Demo. and on- site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	200.00	SF	\$0.83	\$165.80
-Fan Removal	5,000 lbs	USER PROVIDED ITEM	5,000.00	LBS	\$0.25	\$1,250.00
-Fan Motor	5,000 lbs	USER PROVIDED ITEM	5,000.00	LBS	\$0.25	\$1,250.00
West Portal Fan	20'X20'X14'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,520.00	CF	\$0.19	\$285.76
-Concrete Portion	22.4'X22.4'X6"	Demo. and on- site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	501.00	SF	\$0.83	\$415.33
-Fan Removal	3,500 lbs	USER PROVIDED ITEM	3,500.00	LBS	\$0.25	\$875.00
-Fan Motor	4,000 lbs	USER PROVIDED ITEM	4,000.00	LBS	\$0.25	\$1,000.00
West Portal Fan Transformer	8,000 lbs	NON-PCB Transformer Removal	1.00	EA	\$2,082.20	\$2,082.20
- Pad	15'X12'X1'	Demo. and on- site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	180.00	SF	\$1.66	\$298.62
Acid Tank	10'DX12'	Comprehensive storage tank removal, non-	1.00	EA	\$5,286.80	\$5,286.80

		leaking - 6,000 to 8,000 gal. tank				
Fuel Containment Sumps (2)	17'X10'X3'X8"	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	1,004.00	SF	\$1.11	\$1,110.42
-Petroleum Contaminated Soil Removal	10 cy	Dispose of contaminated soil at approved landfill - Minimum	10.00	CY	\$160.00	\$1,600.00
Antifreeze Tank Sump	39'X11'X4'X8"	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	829.00	SF	\$1.11	\$916.87
Stacking Tube - Raw Coal	9'DX59'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,753.00	CF	\$0.19	\$705.56
Water Pumphouse Tank	20'DX15'X8"	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	950.00	CF	\$0.19	\$178.60
Scale House	6'X4'X8'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	192.00	CF	\$0.19	\$36.10
-Scale	12'X30'X4'	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	360.00	SF	\$1.66	\$597.24
Powerline Removal	19580 LF	Utility Poles, Wood 20' to 0' high (each pole)	50.00	EA	\$214.50	\$10,725.00
Sewage Treatment Tank - Buried	8.5'X5.5'X96'	Comprehensive storage tank removal, non-leaking - 9,000 to 12,000 gal. tank	1.00	EA	\$7,608.95	\$7,608.95
Slope Belt Conveyor	75 LF X 8'	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	1.22	EA	\$2,825.00	\$3,446.50
Transfer Belt Conveyor	8'X85 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	1.38	EA	\$2,825.00	\$3,898.50
Tube Belt Conveyor	8'X582 LF	Conveyor, Horizontal Belt 24" Belt, 61.5'	9.50	EA	\$2,825.00	\$26,837.50

		Length				
Raw Coal to Transfer Bldg	6'X374 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	6.00	EA	\$2,825.00	\$16,950.00
Raw Coal Reclaim to Prep Plant	6'X296 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	4.80	EA	\$2,825.00	\$13,560.00
Clean Coal Reclaim to Transfer Bldg.	6'X497 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	8.00	EA	\$2,825.00	\$22,600.00
Clean Coal from Prep Plant	6'X230 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	3.74	EA	\$2,825.00	\$10,565.50
Refuse Belt-Overland	6'X1,050 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	17.00	EA	\$2,825.00	\$48,025.00
Refuse Belt - Elevated	6'X406 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	6.60	EA	\$2,825.00	\$18,645.00
Truck Dump	6'X170 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	1.10	EA	\$2,825.00	\$3,107.50
Silo Loadout	8'X200 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	3.25	EA	\$2,825.00	\$9,181.25
Transfer to Loadout	8'X114 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	1.85	EA	\$2,825.00	\$5,226.25
Raw Coal Reclaim Tunnel	12'D CMP*253'	Pipe, corrugated metal (CMP) - 144 in. diameter pipe	253.00	LF	\$49.49	\$12,519.71
Clean Coal Reclaim Tunnel	12'D CMP*275'	Pipe, corrugated metal (CMP) - 144 in. diameter pipe	275.00	LF	\$49.49	\$13,608.38
Culvert #1	21"	Pipe, corrugated metal (CMP) - 21 in. diameter pipe	25.00	LF	\$4.35	\$108.65
Culvert #5	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	38.00	LF	\$2.81	\$106.78
Culvert #6	60"	Pipe, corrugated metal (CMP) - 60 in. diameter pipe	17.00	LF	\$14.31	\$243.27
Culvert #7	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	75.00	LF	\$2.81	\$210.75
Culvert #11	12"	Pipe, corrugated metal (CMP) - 12	75.00	LF	\$2.81	\$210.75

		in. diameter pipe				
Culvert #12	21"	Pipe, corrugated metal (CMP) - 21 in. diameter pipe	775.00	LF	\$4.35	\$3,368.15
Culvert #13	21"	Pipe, corrugated metal (CMP) - 21 in. diameter pipe	50.00	LF	\$4.35	\$217.30
Culvert #17	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	69.00	LF	\$7.53	\$519.71
Culvert #19	33"	Pipe, corrugated metal (CMP) - 30 in. diameter pipe	38.00	LF	\$6.29	\$239.06
Culvert #21	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	50.00	LF	\$7.53	\$376.60
Culvert #22	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	19.00	LF	\$2.81	\$53.39
Culvert #24	60"	Pipe, corrugated metal (CMP) - 60 in. diameter pipe	160.00	LF	\$14.31	\$2,289.60
Culvert #25	60"	Pipe, corrugated metal (CMP) - 60 in. diameter pipe	140.00	LF	\$14.31	\$2,003.40
Culvert #26	42"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	13.00	LF	\$7.53	\$97.92
Culvert #28	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	31.00	LF	\$2.81	\$87.11
Culvert #29	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	38.00	LF	\$2.81	\$106.78
Culvert #31	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	50.00	LF	\$3.78	\$189.05
Culvert #32	33"	Pipe, corrugated metal (CMP) - 30 in. diameter pipe	44.00	LF	\$6.29	\$276.80
Culvert #33	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	125.00	LF	\$2.81	\$351.25
Culvert #34	15"	Pipe, corrugated metal (CMP) - 15 in. diameter pipe	31.00	LF	\$3.28	\$101.74
Culvert #35	6"	Pipe, corrugated metal (CMP) - 8 in. diameter pipe	19.00	LF	\$2.14	\$40.60
Culvert #36	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	31.00	LF	\$2.81	\$87.11
Culvert #37	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	50.00	LF	\$7.53	\$376.60
Culvert #41	48"	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	19.00	LF	\$10.75	\$204.33
Culvert #46	12"	Pipe, corrugated	19.00	LF	\$2.81	\$53.39

		metal (CMP) - 12 in. diameter pipe				
Culvert #47	15"	Pipe, corrugated metal (CMP) - 15 in. diameter pipe	13.00	LF	\$3.28	\$42.67
Culvert #48	42"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	313.00	LF	\$7.53	\$2,357.52
Culvert #50	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	25.00	LF	\$3.78	\$94.53
Culvert #52	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	50.00	LF	\$7.53	\$376.60
Culvert #53	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	60.00	LF	\$4.88	\$292.74
Culvert #54	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	50.00	LF	\$7.53	\$376.60
Culvert #55	8"	Pipe, corrugated metal (CMP) - 8 in. diameter pipe	25.00	LF	\$2.14	\$53.43
Culvert #59	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	28.00	LF	\$3.78	\$105.87
Culvert #60	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	31.00	LF	\$4.88	\$151.25
Culvert #61	8"	Pipe, corrugated metal (CMP) - 8 in. diameter pipe	25.00	LF	\$2.14	\$53.43
Culvert #62	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	13.00	LF	\$2.81	\$36.53
Culvert #64	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	50.00	LF	\$4.88	\$243.95
Culvert #65	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	19.00	LF	\$2.81	\$53.39
Culvert #66	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	18.00	LF	\$3.78	\$68.06
Culvert #67	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	22.00	LF	\$3.78	\$83.18
Culvert #68	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	48.00	LF	\$3.78	\$181.49
Culvert #69	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	80.00	LF	\$3.78	\$302.48
Bates Portal Conveyor to Breaker Bldg.	8'X970 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	15.80	EA	\$2,825.00	\$44,635.00
Jansen Loadout Truck Scale	15'X40'	Demo. and on-site disposal in	600.00	SF	\$1.66	\$995.40

		existing pit, 12 in. thick - Max. 10,000 ft. haul				
Jansen Coal Conveyor	2,740 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	44.50	EA	\$2,825.00	\$125,712.50
-Footers	45cy	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	45.00	CY	\$122.50	\$5,512.50
-Transfer Points	10'X10'X10' (3)	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,000.00	CF	\$0.21	\$624.00
-Footers	3'X2'	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	120.00	LF	\$10.46	\$1,255.20
Jansen Loadout Bin	38'X35'X40'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	53,200.00	CF	\$0.21	\$11,065.60
Jansen Feed Hopper	20'X15'X16'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	4,920.00	CF	\$0.21	\$1,023.36
Two Radial stackers @ RDA (p. 2.05-27)	2(150' l)	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	4.90	EA	\$2,825.00	\$13,842.50
RDA portable belt (p. 2.05-27)	500'Lx6'x8'	Conveyor, demolition, off-site disposal in approved landfill, 30 mile haul	24,000.00	CF	\$0.66	\$15,840.00
remove piping @ slurry wells	50 ft.	Pipe, steel, welded connections - 10 in. diameter pipe	50.00	LF	\$6.33	\$316.50
remove HPDE slurry line (MR 104)	9000 ft. l	Pipe, steel, welded connections - 10 in. diameter pipe	9,000.00	LF	\$6.33	\$56,970.00
Culvert #C75	42"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	60.00	LF	\$7.53	\$451.92
Culvert #C76	42"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	40.00	LF	\$7.53	\$301.28
Culvert #C14A	36"	Pipe, corrugated	70.00	LF	\$7.53	\$527.24

		metal (CMP) - 36 in. diameter pipe				
Culvert #C70	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	68.00	LF	\$3.78	\$257.11
Culvert #C71	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	54.00	LF	\$3.78	\$204.17
Culvert #C72	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	120.00	LF	\$4.88	\$585.48
Culvert #C73	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	190.00	LF	\$4.88	\$927.01
Culvert #C74	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	40.00	LF	\$4.88	\$195.16
Culvert #C16A	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	45.00	LF	\$4.88	\$219.56
Culvert #C16B	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	220.00	LF	\$4.88	\$1,073.38
Culvert #C12A	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	160.00	LF	\$7.53	\$1,205.12
Culvert #C17A	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	20.00	LF	\$7.53	\$150.64
Culvert #C17B	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	75.00	LF	\$7.53	\$564.90
Culvert #C28	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	46.00	LF	\$4.88	\$224.43
Culvert #C28A	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	60.00	LF	\$4.88	\$292.74
Culvert #C29	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	34.00	LF	\$4.88	\$165.89
Bathhouse (TR61)	62'l x 21'w x 12'h	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	15,624.00	CF	\$0.19	\$2,937.31
-bathhouse pad (TR61)	62'l x 21'w x 0.5'th	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,302.00	SF	\$0.83	\$1,079.36
Belt feeder (MR101)	35' x 12' x 6'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,520.00	CF	\$0.19	\$473.76
36" Belt	36" x 500 lf	Conveyor,	8.10	EA	\$2,825.00	\$22,882.50

(MR101)		Horizontal Belt 24" Belt, 61.5' Length				
Elevating belt (MR101)	36" x 100 lf	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	1.62	EA	\$2,825.00	\$4,576.50
Office shop (MR105)	100'l x 50'w x 18'h	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	90,000.00	CF	\$0.21	\$18,720.00
-Office shop floor (MR105)	100'l x 50'w x 0.5'th	Demo. and on- site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	5,000.00	SF	\$0.83	\$4,145.00
Pump house (MR105)	12'x 12'x 10'h	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,440.00	CF	\$0.19	\$270.72
-pump house floor	12'x12'x 0.5'th	Demo. and on- site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	144.00	SF	\$0.83	\$119.38
Radial stacker pads (MR97)	3'x 3'x 1'	Demo. and on- site disposal in existing pit, 12 in. thick - Max. 200 ft. push	9.00	SF	\$1.63	\$14.63
200 foot conveyor extension (MR97)	200 lf	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	3.25	EA	\$2,825.00	\$9,181.25
Conveyor tube (MR97)	80'l x 10' dia	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	6,282.00	CF	\$0.19	\$1,181.02
Disposal of Powerline crossarms, cable, et.al.	19580 LF	Disposal of utility pole cross arms and hardware surplus material	19,580.00	LF	\$0.01	\$195.80
Fan and Duct (MR113)	(50'x12'x12')2	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	14,400.00	CF	\$0.21	\$2,995.20
8 Footers (MR113)	14'x 2'x6'	Demo. and on- site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	112.00	LF	\$10.46	\$1,171.52

42" temp belt conveyor (MR113)	115'x3.5'x6'	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	1.87	EA	\$2,825.00	\$5,282.75
42" Silo #1 conveyor (MR113)	165'x3.5'x3'	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	2.68	EA	\$2,825.00	\$7,571.00
42" Silo #2 conveyor (MR113)	56'x3.5'x3'	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	0.91	EA	\$2,825.00	\$2,570.75
Retaining Wall North Elev. (MR113)	12"th. x 790'L	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	790.00	SF	\$3.08	\$2,433.20
Retaining Wall East Elev. (MR113)	12"thx 360'L	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	360.00	SF	\$3.08	\$1,108.80
footer (MR113)	12"x?	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	110.00	LF	\$10.46	\$1,150.60
Truck Loadout (MR113)	9'x18'x22'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,564.00	CF	\$0.19	\$670.03
4 footers (MR113)	2'x4'x4'	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	16.00	LF	\$10.46	\$167.36
Silo Belt Transfer structure (MR113)	25'x 15'x 22' (MR113)	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	8,250.00	CF	\$0.21	\$1,716.00
4 footers (MR113)	2'x 4' x4' (MR113)	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	16.00	LF	\$10.46	\$167.36
35 Ton Coal Blending Bins (MR113)	30'x 12'x 22'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	7,920.00	CF	\$0.21	\$1,647.36
6 Footers (MR113)	2'x 4'x 4'	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max.	24.00	LF	\$10.46	\$251.04

		10,000 ft. haul				
Culvert C23	30" X 50'L	Pipe, corrugated metal (CMP) - 30 in. diameter pipe	50.00	LF	\$6.29	\$314.55
Culvert C82	30" X 25'L	Pipe, corrugated metal (CMP) - 30 in. diameter pipe	25.00	LF	\$6.29	\$157.28
Culvert C83	18" x 20'L	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	20.00	LF	\$3.78	\$75.62
Culvert C84	18" X20'L	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	20.00	LF	\$3.78	\$75.62
Culvert C85	36" X 65'L	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	65.00	LF	\$7.53	\$489.58

	Subtotal	Total Cost
Job Hours: <u>1,009.00</u>	(unadjusted): <u>\$1,831,995.17</u>	(adjusted for location): <u>\$1,722,075.46</u>

SAFEGUARDING UNDERGROUND OPENINGSTask description: **Seal Portals and Vent Shafts**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **700**State: **Colorado**Abbreviation: **None**Date: **11/20/2018**County: **Las Animas**Filename: **C012-700**User: **JHB**Agency or organization name: **DRMS****UNIT COSTS**

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Seal East Portal	12'X10'	Adit closure - bulkhead seal, >= 36 sq. ft. (per sq. ft.)	120.00	SF	\$136.51	\$16,381.20
Backfill East Portal	12'X10'X50'	Adit closure - backfilling (per cu. yd.)	222.00	CY	\$10.75	\$2,386.50
Drain Pipe	100 LF	PVC drain pipe, 6 in. diameter (per ln. ft. incl. mat. & labor)	100.00	LF	\$10.90	\$1,090.00
Seal West Portals (2)	15'X10'	Adit closure - bulkhead seal, >= 36 sq. ft. (per sq. ft.)	300.00	SF	\$136.51	\$40,953.00
Backfill West Portals (2)	600 CY	Adit closure - backfilling (per cu. yd.)	600.00	CY	\$10.75	\$6,450.00
Drain Pipes	100 LF (2)	PVC drain pipe, 6 in. diameter (per ln. ft. incl. mat. & labor)	200.00	LF	\$10.90	\$2,180.00
Seal Bates Portals (3)	14'X18'	Adit closure - bulkhead seal, >= 36 sq. ft. (per sq. ft.)	756.00	SF	\$136.51	\$103,201.56
Backfill Bates Portals (3)	14'X18'X50'	Adit closure - backfilling (per cu. yd.)	466.00	CY	\$10.75	\$5,009.50
Drain Pipes (3)	100 LF (3)	PVC drain pipe, 6 in. diameter (per ln. ft. incl. mat. & labor)	300.00	LF	\$10.90	\$3,270.00
East Portal Fan Shaft Concrete Cap	16' D	Shaft closure - concrete cap, poured-in-place (per Cubic Feet)	200.00	CF	\$3.89	\$778.00
Apache Canyon East Shaft Concrete Cap	16" D	Shaft closure - concrete cap, poured-in-place (per Cubic Feet)	200.00	CF	\$3.89	\$778.00
Apache Canyon West Shaft Concrete Cap	16" D	Shaft closure - concrete cap, poured-in-place (per Cubic Feet)	200.00	CF	\$3.89	\$778.00

Job Hours: 270.00**Total Cost: \$183,255.76**

BULLDOZER WORKTask description: **Backfill East Portal Face**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **701**State: **Colorado**Abbreviation: **None**Date: **11/15/2018**County: **Las Animas**Filename: **C012-701**User: **JHB**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:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$12.36	NA
Ripper op. Cost/Hour:	\$7.88	100
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: **\$267.92**Total Fleet Cost/Hour: **\$535.85****MATERIAL QUANTITIES**Initial Volume: **1,400**Swell factor: **1.125**Loose volume: **1,575 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell
factor: **Operator Estimate****HOURLY PRODUCTION**Average push distance: **100 feet**Unadjusted hourly
production: **1,243.2 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **10 %**Average site altitude: **7,500 feet**Material weight: **2,132 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor****Source**

Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4561

Adjusted unit production: 567.02 LCY/hr

Adjusted fleet production: **1134.04** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.473/LCY

Total job time: **1.39** Hours

Total job cost: **\$744**

BULLDOZER WORKTask description: **Backfill West Portal Face**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **702**State: **Colorado**Abbreviation: **None**Date: **11/15/2018**County: **Las Animas**Filename: **C012-702**User: **JHB**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:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$12.36	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: **\$260.05**Total Fleet Cost/Hour: **\$520.09****MATERIAL QUANTITIES**Initial Volume: **1,400**Swell factor: **1.125**Loose volume: **1,575 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell
factor: **Operator Estimate****HOURLY PRODUCTION**Average push distance: **100 feet**Unadjusted hourly
production: **1,243.2 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **10 %**Average site altitude: **7,500 feet**Material weight: **2,132 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor****Source**

Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4561

Adjusted unit production: 567.02 LCY/hr

Adjusted fleet production: **1134.04** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.459/LCY

Total job time: **1.39** Hours

Total job cost: **\$722**

BULLDOZER WORKTask description: **Backfill Bates Portal Face**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **703**State: **Colorado**Abbreviation: **None**Date: **11/15/2018**County: **Las Animas**Filename: **C012-703**User: **JHB**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:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$12.36	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: **\$260.05**Total Fleet Cost/Hour: **\$520.09****MATERIAL QUANTITIES**Initial Volume: **39,000**Swell factor: **1.125**Loose volume: **43,875 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell
factor: **Operator Estimate****HOURLY PRODUCTION**Average push distance: **100 feet**Unadjusted hourly
production: **1,243.2 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **10 %**Average site altitude: **7,500 feet**Material weight: **2,132 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor****Source**

Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4561

Adjusted unit production: 567.02 LCY/hr
Adjusted fleet production: **1134.04** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: \$0.459/LCY

Total job time: **38.69** Hours
Total job cost: **\$20,122**

BOREHOLE SEALING WORKTask description: **Plug and Seal All Boreholes and Monitoring Wells**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **704**State: **Colorado**Abbreviation: **None**Date: **11/29/2018**County: **Las Animas**Filename: **C012-704**User: **JHB**Agency or organization name: **DRMS****UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
MW1 - MW10 Fill w/Cement	Portland cement grout (Bag, material cost only...94 lb. bag)	4"	150	7.00	bag	\$13.80	\$96.60
-Plug	PVC plug - 4 in. diameter borehole	4"	NA	10.00	EA	\$31.98	\$319.80
-Cut Casings at Surface	Exposed casing removal - Calculate Circumference in Linear Feet	4"	NA	4.00	LF	\$1.83	\$7.32
-Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	10.00	EA	\$3.67	\$36.70
-Drill Rig Time	SCHRAMM T450WS	NA	NA	20.00	EA	\$232.72	\$4,654.40
-Water Truck Time	Water Tanker, 2,500 Gal.	NA	NA	20.00	EA	\$24.48	\$489.60
PAW1 - PAW4; PAW8,9 Fill w/Cement	Portland cement grout (Bag, material cost only...94 lb. bag)	4"	137 LF	6.00	bag	\$13.80	\$82.80
-Plug	PVC plug - 4 in. diameter borehole	4"	NA	6.00	EA	\$31.98	\$191.88
-Cut Casings at Surface	Exposed casing removal - Calculate Circumference in Linear Feet	NA	NA	4.00	LF	\$1.83	\$7.32
-Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	6.00	EA	\$3.67	\$22.02
-Drill Rig Time	SCHRAMM T450WS	NA	NA	12.00	EA	\$232.72	\$2,792.64
-Water Truck Time	Water Tanker, 2,500 Gal.	NA	NA	12.00	EA	\$24.48	\$293.76
NEW2 - NEW4 Fill w/Cement	Portland cement grout (Bag, material cost only...94 lb. bag)	4"	1210 LF	53.00	bag	\$13.80	\$731.40
-Plug	PVC plug - 4 in.	4"	NA	3.00	EA	\$31.98	\$95.94

	diameter borehole						
-Cut Casings at Surface	Exposed casing removal - Calculate Circumference in Linear Feet	4"	NA	4.00	LF	\$1.83	\$7.32
-Borehole Markers	Borehole location/identification marker (EA, material cost only)	NA	NA	3.00	EA	\$3.67	\$11.01
-Drill Rig Time	SCHRAMM T450WS	NA	NA	18.00	EA	\$232.72	\$4,188.96
-Water Truck Time	Water Tanker, 2,500 Gal.	NA	NA	18.00	EA	\$24.48	\$440.64
RW1 & SW1 - SW6 Fill w/Cement	Portland cement grout (Bag, material cost only...94 lb. bag)	4"	161 LF	7.00	bag	\$13.80	\$96.60
-Plug	PVC plug - 4 in. diameter borehole	4"	NA	7.00	EA	\$31.98	\$223.86
-Cut Casing at Surface	Exposed casing removal - Calculate Circumference in Linear Feet	4"	NA	4.00	LF	\$1.83	\$7.32
-Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	7.00	EA	\$3.67	\$25.69
-Drill Rig Time	SCHRAMM T450WS	NA	NA	14.00	EA	\$232.72	\$3,258.08
-Water Truck Time	Water Tanker, 2,500 Gal.	NA	NA	14.00	EA	\$24.48	\$342.72
Dewatering Holes Fill w/Cement	Portland cement grout (Bag, material cost only...94 lb. bag)	4"	450	19.00	bag	\$13.80	\$262.20
-Plug	PVC plug - 4 in. diameter borehole	4"	NA	2.00	EA	\$31.98	\$63.96
-Cut Casing at Surface	Exposed casing removal - Calculate Circumference in Linear Feet	4"	NA	4.00	LF	\$1.83	\$7.32
-Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	2.00	EA	\$3.67	\$7.34
-Drill Rig Time	SCHRAMM T450WS	NA	NA	10.00	EA	\$232.72	\$2,327.20
-Water Truck Time	Water Tanker, 2,500 Gal.	NA	NA	10.00	EA	\$24.48	\$244.80
Seal 3 Slurry wells (MR95)	Portland cement grout (Bag, material cost only...94 lb. bag)	9"	1350	298.00	bag	\$13.80	\$4,112.40
-Drill rig and labor	Atlas Capco DM45/HP - 9.0"	NA	NA	12.00	EA	\$244.31	\$2,931.72
-Water Truck time	Water Tanker, 2,500 Gal.	na	na	12.00	EA	\$24.48	\$293.76
-slurry well plugs	PVC plug - 8 in. diameter borehole	9"	NA	3.00	EA	\$79.19	\$237.57
-slurry hole markers	Borehole location/identification	NA	NA	3.00	EA	\$3.67	\$11.01

	marker (EA, material cost only)						
Seal NE-16-11 (MR96)	Portland cement grout (Bag, material cost only...94 lb. bag)	9"	392	86.00	bag	\$13.80	\$1,186.80
-plug	PVC plug - 8 in. diameter borehole	9"	NA	1.00	EA	\$79.19	\$79.19
-marker	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$3.67	\$3.67
-Rig and labor	Altas Capco DM25SP - 6-3/4"	NA	NA	4.00	EA	\$212.49	\$849.96
-water truck time	Water Tanker, 2,500 Gal.	NA	NA	4.00	EA	\$24.48	\$97.92
Plug 6 "exploration" wells (MR114)	Portland cement grout (Bag, material cost only...94 lb. bag)	6"	2270	223.00	bag	\$13.80	\$3,077.40
-plugs	PVC plug - 6 in. diameter borehole	6"	NA	6.00	EA	\$57.81	\$346.86
-drill rig and labor	Altas Capco DM25SP - 6-3/4"	NA	NA	36.00	EA	\$212.49	\$7,649.64
-water truck time	Water Tanker, 2,500 Gal.	NA	NA	36.00	EA	\$24.48	\$881.28
Seal NE01-12, NE17-12, NE18-12 (MR107)	Portland cement grout (Bag, material cost only...94 lb. bag)	6"	2500	245.00	bag	\$13.80	\$3,381.00
-plug	PVC plug - 6 in. diameter borehole	6"	NA	3.00	EA	\$57.81	\$173.43
-Mark holes	Borehole location/identification marker (EA, material cost only)	NA	NA	3.00	EA	\$3.67	\$11.01
-Rig and Labor	Altas Capco DM25SP - 6-3/4"	NA	NA	6.00	EA	\$212.49	\$1,274.94
-water truck time	Water Tanker, 2,500 Gal.	NA	NA	8.00	EA	\$24.48	\$195.84
Seal 2 alluvial wells (MR116)	Portland cement grout (Bag, material cost only...94 lb. bag)	4"	60	2.62	bag	\$13.80	\$36.16
-marker	Borehole location/identification marker (EA, material cost only)	NA	NA	2.00	EA	\$3.67	\$7.34
-labor	General laborer - Colorado (total incl. fringes, empl. burden)	na	na	2.00	HR	\$23.53	\$47.06
Plug and Seal NE-05-11 (4wells) and 08-11(4 wells)	Portland cement grout (Bag, material cost only...94 lb. bag)	9"	5200	1,148.00	bag	\$13.80	\$15,842.40
-marker	Borehole location/identification marker (EA, material cost only)	NA	NA	8.00	EA	\$3.67	\$29.36

-cut casing	Exposed casing removal - Calculate Circumference in Linear Feet	9"	72	8.00	LF	\$1.83	\$14.64
-rig and labor	Atlas Capco DM45/HP - 9.0"	NA	NA	45.00	EA	\$244.31	\$10,993.95
-water tanker	Water Tanker, 2,500 Gal.	NA	NA	45.00	EA	\$24.48	\$1,101.60

Job Hours: 73.00

Total Cost: \$76,205.00

TRUCK/LOADER TEAM WORKTask description: Clean Ponds 004, 007, and 008 Twice During Liability PeriodSite: New Elk MinePermit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 706State: ColoradoAbbreviation: NoneDate: 11/19/2018County: Las AnimasFilename: C012-706User: JHBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Generic 8-10 cy, 6x4
-Loader:	Cat 336D L 10'-6" Stick
Support Equipment -Load Area:	NA
-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	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	75	NA	100	50	50
Ownership cost/hour:	\$15.87	\$50.81	NA	\$110.70	\$60.13	\$25.30
Operating cost/hour:	\$40.15	\$43.15	NA	\$95.46	\$25.43	\$18.30
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$0.00	\$37.79	NA	\$41.52	\$28.69	\$21.23
Unit Subtotals:	\$56.02	\$131.75	NA	\$247.68	\$114.26	\$64.83
Number of Units:	3	1	0	1	1	1
Group Subtotals:	Work: \$299.81		Support: \$247.68		Maint: \$179.09	

Total work team cost/hour: \$726.58**MATERIAL QUANTITIES**Initial volume: 19,095

CCY

Swell factor: 1.000Loose volume: 19,095

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:**

Truck Payload (weight) Basis:

Material weight: 2,700

Pounds/LCY

Description: Earth - Wet excavatedRated Payload: 27,280

Pounds

Payload Capacity: 10.10

LCY

Truck Bed (volume) Basis:

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

Final Truck Volume Based on Number of Loader Passes: 8.81 LCY

Loading Tool Capacity

Bucket Size Class: Medium

Rated Capacity:	2.260	LCY (heaped)
Bucket Fill Factor:	0.975	Loose material - mixed moist aggregates (95-100%) 0.975
Adjusted Capacity:	2.204	LCY

Job Condition Corrections:

Site Altitude (ft.): 7500 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: BELOW AVERAGE
 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:		0.390	minutes
Net Load Time per Truck:		1.270	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	1.270	Minutes	Adjusted for site altitude:	1.270	Minutes
Truck Maneuver and Dump Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes

Truck Travel (Haul & Return) Time:
penetration 4.0

Road Condition: Rutted dirt, little maintenance, no water, 1" tire

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	5.00	4.00	9.00	1249	4.024

Haul Time: **4.024** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	-5.00	4.00	-1.00	2938	1.754

Return Time: **1.754** minutesTotal Truck Cycle Time: **8.348** minutes

Loading Tool unit
 Production 298.78 LCY/Hour Adjusted for job efficiency: 247.99 LCY/Hour
 Truck Unit Production
63.35 LCY/Hour Adjusted for job efficiency: 52.58 LCY/Hour
 Optimal No. of Trucks: 5 Truck(s) Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 157.74 LCY/Hour
 Adjusted single truck/loader team production: 157.74 LCY/Hour
 Adjusted multiple truck/loader team production: **157.74** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **121.05** HoursUnit cost: \$4.606 /LCY Total job cost: **\$87,955**

BULLDOZER WORKTask description: **Regrade Areas from MR-99, MR-107, MR-111, MR-114**Site: **New Elk Mine**Permit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 733State: ColoradoAbbreviation: NoneDate: 11/15/2018County: Las AnimasFilename: C012-733User: JHBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**

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

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$110.70</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$95.46</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.52</u>	<u>NA</u>

Total unit Cost/Hour: \$247.68Total Fleet Cost/Hour: **\$743.05****MATERIAL QUANTITIES**

Initial Volume: 5,536
 Swell factor: 1.125
 Loose volume: **6,228 LCY**

Source of estimated volume: Exhibit 28- p. 232 assume 4" "topsoil material"Source of estimated swell Operator Estimate

factor: _____

HOURLY PRODUCTION

Average push distance: 60 feet
 Unadjusted hourly
 production: 1,872.0 LCY/hr

Materials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 7,400 feetMaterial weight: 2,132 lbs/LCYWeight description: User Provided**Job Condition Correction Factor****Source**

Operator Skill:	0.900	(AB.AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7738

Adjusted unit production: 1,448.55 LCY/hr

Adjusted fleet production: **4345.65** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: \$0.171/LCY

Total job time: **1.43** Hours
Total job cost: **\$1,065**

REVEGETATION WORKTask description: Seed Rangeland Seed Mix on MR AreasSite: New Elk MinePermit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 734State: ColoradoAbbreviation: NoneDate: 11/20/2018County: Las AnimasFilename: C012-734User: JHBAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	30.00	pound	\$0.34	\$10.20
			Total Fertilizer Materials Cost/Acre	\$10.20

Application

Description	Cost /Acre
Hand spread (MEANS 32 01 90.13 0100)	\$579.35
Total Fertilizer Application Cost/Acre	\$579.35

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Buffalograss - Bison	1.00	0.96	\$11.79
Blue Grama - Hachita	1.34	21.87	\$22.32
Little Bluestem - Cimarron	2.40	14.33	\$35.23
Sideoats Grama - Butte	5.00	16.41	\$49.50
Milk Vetch, Cicer - Monarch	0.66	2.20	\$5.54
Streambank Wheatgrass - Sodar	3.00	9.78	\$18.69
Sainfoin - Remont	3.34	1.46	\$10.82
Thickspike Wheatgrass - Critana	1.00	3.54	\$5.87
Western Wheatgrass - Arriba	4.00	10.10	\$33.12
Rabbitbrush, Rubber	0.30	4.47	\$19.75
Rose, Wood's	0.50	0.00	\$10.50
Daisy or Sunflower, Maximillians	0.22	1.25	\$12.36

Flax, Lewis Blue	0.22	1.46	\$3.72
Spike Muhly	0.66	24.24	\$6.51
Penstemon, Rocky Mountain	0.22	3.45	\$6.65
Totals Seed Mix	23.86	115.51	\$252.37

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	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$576.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Total Mulch Application Cost/Acre	\$68.78

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:	2.22	Cost /Acre:	\$1,753.92
Estimated Failure Rate:	33%	Cost /Acre*:	\$519.59
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost: **\$3,893.70**
 Reseeding Job Cost: **\$380.65**
 Total Job Cost: **\$4,274**
 Job Hours: **2.22**

BULLDOZER WORKTask description: **Replace Topsoil on D26 Extension**Site: **New Elk Mine**Permit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 738State: ColoradoAbbreviation: NoneDate: 11/15/2018County: Las AnimasFilename: C012-738User: JHBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$247.68Total Fleet Cost/Hour: **\$247.68****MATERIAL QUANTITIES**Initial Volume: 264Swell factor: 1.250Loose volume: **330 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Operator Estimate**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 2,110.5 LCY/hrMaterials consistency description: Partly consolidated stockpile 1.1Average push gradient: 5 %Average site altitude: 7,500 feetMaterial weight: 2,055 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.900	(AB.AVG.)
Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.119	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6642

Adjusted unit production: 1,401.79 LCY/hr
Adjusted fleet production: **1401.79** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.177/LCY

Total job time: **0.24** Hours
Total job cost: **\$58**

BULLDOZER WORKTask description: **Backfill and Regrade DWDA Expansion**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **741**State: **Colorado**Abbreviation: **None**Date: **11/15/2018**County: **Las Animas**Filename: **C012-741**User: **JHB**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:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$12.36	NA
Ripper op. Cost/Hour:	\$7.88	100
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: **\$267.92**Total Fleet Cost/Hour: **\$535.85****MATERIAL QUANTITIES**Initial Volume: **1,936**Swell factor: **1.125**Loose volume: **2,178 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION**Average push distance: **200 feet**Unadjusted hourly production: **700.0 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **7,500 feet**Material weight: **2,132 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor****Source**

Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5803

Adjusted unit production: 406.21 LCY/hr
Adjusted fleet production: **812.42** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: \$0.660/LCY

Total job time: **2.68** Hours
Total job cost: **\$1,437**

BULLDOZER WORKTask description: **Replace Topsoil on Six Drill Pads and Mud Pits**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **747**State: **Colorado**Abbreviation: **None**Date: **11/15/2018**County: **Las Animas**Filename: **C012-747**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D9T - 9SU**Horsepower: **405**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: **\$247.68**Total Fleet Cost/Hour: **\$247.68****MATERIAL QUANTITIES**Initial Volume: **2,200**Swell factor: **1.125**Loose volume: **2,475 LCY**Source of estimated volume: **Division Estimate**Source of estimated swell factor: **Operator Estimate****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: **7,600 feet**Material weight: **2,055 lbs/LCY**Weight description: **User Provided****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:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.119	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6038

Adjusted unit production: 637.37 LCY/hr
Adjusted fleet production: **637.37** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.389/LCY

Total job time: **3.88** Hours
Total job cost: **\$962**

DEMOLITION WORKTask description: **Demolish and Remove Structures @ C&W area**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **750**
Date: **11/28/2018**
User: **JHB**State: **Colorado**
County: **Las Animas**Abbreviation: **None**
Filename: **C012-750**Agency or organization name: **DRMS****UNIT COSTS****Location adjustment: 94.00 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
C&W Train Shop	110 X 70 X 30	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	231,000.00	CF	\$0.19	\$43,428.00
C&W Train Shop Office	70 X 24 X 12	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	20,160.00	CF	\$0.19	\$3,790.08
C&W Train Shop Slab	134 X 70	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	9,380.00	SF	\$0.83	\$7,776.02
10 Stall Garage	100 X 24 X 20	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	48,000.00	CF	\$0.19	\$9,024.00
10 Stall Garage Slab	100 X 24	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	2,400.00	SF	\$0.83	\$1,989.60
10 Stall Garage Apron	100 X 10	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,000.00	SF	\$0.83	\$829.00
Train Sand Loading Building	30 X 16 X 20	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	9,600.00	CF	\$0.19	\$1,804.80
Train Sand Loading Slab	30 X 16	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	480.00	SF	\$0.83	\$397.92
Train Sand Loading Apron	35 X 5.7	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	200.00	SF	\$0.83	\$165.80
Car Department	40 X 15 X 12	Bldg. (SN)	7,200.00	CF	\$0.19	\$1,353.60

Office		demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul				
Car Dept. Office Slab	56 X 20	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,120.00	SF	\$0.83	\$928.48
Car Dept. Office Sidewalk	50 X 3.5	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	175.00	SF	\$0.83	\$145.08
Fire Hose Building	8 X 8 X 8	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	512.00	CF	\$0.19	\$96.26
Fire Hose Building Slab	8 X 8	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	64.00	SF	\$0.83	\$53.06
Fire Hose Propane Tank	16 X 3	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	144.00	CF	\$0.19	\$27.07

Job Hours: 24.00
Subtotal (unadjusted): \$71,808.77
Total Cost (adjusted for location): \$67,500.24

BULLDOZER WORKTask description: **Rip and Regrade C&W Train Shop Area**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **751**State: **Colorado**Abbreviation: **None**Date: **11/15/2018**County: **Las Animas**Filename: **C012-751**User: **JHB**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:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$12.36	NA
Ripper op. Cost/Hour:	\$7.88	100
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: **\$267.92**Total Fleet Cost/Hour: **\$535.85****MATERIAL QUANTITIES**

Initial Volume: **14,520**
 Swell factor: **1.125**
 Loose volume: **16,335 LCY**

Source of estimated volume: **Map 11, Map 15**Source of estimated swell **Operator Estimate**

factor:

HOURLY PRODUCTION

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

Materials consistency description: **Dry, non-cohesive 0.8**Average push gradient: **0 %**Average site altitude: **7,500 feet**Material weight: **2,132 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor****Source**

Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.800	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.079	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5158

Adjusted unit production: 641.24 LCY/hr

Adjusted fleet production: **1282.48** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.418/LCY

Total job time: **12.74** Hours

Total job cost: **\$6,825**

REVEGETATION WORKTask description: **Reseed C&W Facilities Area with Rangeland Mix**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **753**State: **Colorado**Abbreviation: **None**Date: **11/20/2018**County: **Las Animas**Filename: **C012-753**User: **JHB**Agency or organization name: **DRMS****FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	30.00	pound	\$0.34	\$10.20
			Total Fertilizer Materials Cost/Acre	\$10.20

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$34.72
Total Fertilizer Application Cost/Acre	\$34.72

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Buffalograss - Bison	0.50	0.48	\$5.90
Blue Grama - Hachita	0.67	10.94	\$11.16
Little Bluestem - Cimarron	1.20	7.16	\$17.62
Sideoats Grama - Butte	2.50	8.21	\$24.75
Milk Vetch, Cicer - Monarch	0.33	1.10	\$2.77
Streambank Wheatgrass - Sodar	1.50	4.89	\$9.35
Sainfoin - Remont	1.67	0.73	\$5.41
Thickspike Wheatgrass - Critana	0.50	1.77	\$2.94
Western Wheatgrass - Arriba	2.00	5.05	\$16.56
Rabbitbrush, Rubber	0.15	2.23	\$9.88
Rose, Wood's	0.25	0.00	\$5.25
Daisy or Sunflower, Maximillians	0.11	0.62	\$6.18

Flax, Lewis Blue	0.11	0.73	\$1.86
Spike Muhly	0.33	12.12	\$3.25
Penstemon, Rocky Mountain	0.11	1.72	\$3.32
Totals Seed Mix	11.93	57.76	\$126.18

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$576.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Total Mulch Application Cost/Acre	\$161.56

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres:	6	Cost /Acre:	\$1,140.66
Estimated Failure Rate:	33%	Cost /Acre*:	\$358.18
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$6,843.96
Reseeding Job Cost:	\$709.20
Total Job Cost:	\$7,553
Job Hours:	12.00

HYDRAULIC EXCAVATOR WORKTask description: **Replace Topsoil to Zig Zag Road**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**

Task #: 759 State: Colorado Abbreviation: None
 Date: 11/20/2018 County: Las Animas Filename: C012-759
 User: JHB

Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: Cat 320D L 9'-6" Stick Horsepower: 148
 Attachment 1: ROPS Cab Weight (MT): 21.55
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$33.90	NA
Operating Cost/Hour:	\$36.00	100
Operator Cost/Hour:	\$37.79	NA
Total Unit Cost/Hour:	\$107.69	
Total Fleet Cost/Hour:	\$107.69	

MATERIAL QUANTITIES

Initial volume: 108 CCY Swell factor: 1.000
 Loose volume: 108 LCY

Source of estimated volume: 0.2 ac. X assume 4" topsoil
 Source of estimated swell factor: Operator Estimate

HOURLY PRODUCTION**Excavator Cycle Time (load bucket, swing loaded, dump bucket, swing empty):**

Basic Job Condition Description: BELOW AVERAGE
 Secondary Job Condition within Basic Description: AVERAGE
 Cycle Time Value: 0.323 minutes

Load Bucket Capacity

Rated Capacity: 1.54 LCY (heaped) Bucket Size Class: Medium
 Bucket Fill Factor: 1.100 Other - rock/dirt mixtures (100-120%) 1.100
 Adjusted Capacity: 1.69 LCY

Job Condition Correction FactorsSite Altitude: 7700 feet

Altitude Adj: 0.87 Source
 Job Efficiency: 0.83 (CAT HB)
 Net Correction: 0.72 multiplier

Unadjusted Hourly Unit Production: 314.67 LCY/Hour
 Adjusted Hourly Unit Production: 227.23 LCY/Hour
 Adjusted Hourly Fleet Production: 227.23 LCY/Hour

JOB TIME AND COSTFleet size: 1 Excavator Total job time: 0.47 HoursUnit cost: \$0.474 /LCY Total job cost: \$51

BULLDOZER RIPPING WORKTask description: **Rip Zig Zag Road and Slurry Line Road**Site: **New Elk Mine** Permit Action: **Permit Renewal 07** Permit/Job#: **C1981012****PROJECT IDENTIFICATION**

Task #: 760 State: Colorado Abbreviation: None
 Date: 11/19/2018 County: Las Animas Filename: C012-760
 User: JHB

Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: Cat D9T - 9SU Horsepower: 405
 Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$110.70</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$95.46</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$12.36</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$7.88</u>	<u>100</u>
Operator Cost/Hour:	<u>\$41.52</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$267.92</u>	
Total Fleet Cost/Hour:	<u>\$803.77</u>	

MATERIAL QUANTITIESSelected estimating method: Area**Alternate Methods:**

Seismic: NA Bank Volume: NA BCY NA
 Area: 0.80 acres Rip Depth (ft): 1.00 Volume: 1,291 BCY or CCY

Source of estimated quantity: PAP Page 2.05-7c, Map 12, Map 11-sheet 1**HOURLY PRODUCTION****Seismic:**Seismic Velocity: NA feet/second**Area:**

Average Ripping Depth: 2.63 mph
 Average Ripping Width: 7.67 degrees
 Average Ripping Length: 75.00 feet
 Average Dozer Speed: 88.00 feet
 Average Maneuver Time: 0.25 feet
 Production per unit area: 0.719 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.719 Acres/hr
 Site Altitude: 7,700 feet
 Altitude Adj: 1.00 (CAT HB)
 Job Efficiency: 0.83 (1 shift/day)
 Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.60 Acres/hr
 Adjusted Hourly Fleet Production: **1.79** Acres/hr

JOB TIME AND COST

Fleet size: 3 Grader(s) Total job time: **0.45** Hours

Unit cost:	<u>\$449.051</u>	Per acre	Total job cost:	<u>\$359</u>
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REVEGETATION WORKTask description: **Reseed Zig Zag with Rangeland Mix**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **761**State: **Colorado**Abbreviation: **None**Date: **11/20/2018**County: **Las Animas**Filename: **C012-761**User: **JHB**Agency or organization name: **DRMS****FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	30.00	pound	\$0.34	\$10.20
			Total Fertilizer Materials Cost/Acre	\$10.20

Application

Description	Cost /Acre
NA-fertilizer application incl. with hydroseeding	\$0.00
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
Buffalograss - Bison	1.00	0.96	\$11.79
Blue Grama - Hachita	1.34	21.87	\$22.32
Little Bluestem - Cimarron	2.40	14.33	\$35.23
Sideoats Grama - Butte	5.00	16.41	\$49.50
Milk Vetch, Cicer - Monarch	0.66	2.20	\$5.54
Streambank Wheatgrass - Sodar	3.00	9.78	\$18.69
Sainfoin - Remont	3.34	1.46	\$10.82
Thickspike Wheatgrass - Critana	1.00	3.54	\$5.87
Western Wheatgrass - Arriba	4.00	10.10	\$33.12
Rabbitbrush, Rubber	0.30	4.47	\$19.75
Rose, Wood's	0.50	0.00	\$10.50

Daisy or Sunflower, Maximillians	0.22	1.25	\$12.36
Flax, Lewis Blue	0.22	1.46	\$3.72
Spike Muhly	0.66	24.24	\$6.51
Penstemon, Rocky Mountain	0.22	3.45	\$6.65
Totals Seed Mix	23.86	115.51	\$252.37

Application

Description	Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)	\$919.12
Total Seed Application Cost/Acre	\$919.12

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hydromulch, 1 ton/ac. rate {Materials Only}	2.00	ACRE	\$496.58	\$993.16
Total Mulch Materials Cost/Acre				\$993.16

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:	0.8	Cost /Acre:	\$2,174.85
Estimated Failure Rate:	33%	Cost /Acre*:	\$1,171.49
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$1,739.88
Reseeding Job Cost:	\$309.27
Total Job Cost:	\$2,049
Job Hours:	1.60

SCRAPER TEAM WORKTask description: **Replace Topsoil to West DWDA**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **762**State: **Colorado**Abbreviation: **None**Date: **11/16/2018**County: **Las Animas**Filename: **C012-762**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

	Equipment Description
-Scraper:	Cat 627G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$108.96	\$110.70	NA	NA	\$60.13	\$25.30
Operating cost/hour:	\$128.41	\$95.46	NA	NA	\$25.43	\$18.30
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.05	\$41.52	NA	NA	\$28.69	\$21.23
Unit Subtotals:	\$268.41	\$247.68	NA	NA	\$114.26	\$64.83
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$784.50	Support:	\$0.00	Maint:	\$179.09

Total work team cost/hour: **\$963.59****MATERIAL QUANTITIES**Initial volume: **39,912**

CCY

Swell factor: **1.125**Loose volume: **44,901**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Operator Estimate****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,055 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>User Provided</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>25.69 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.90 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 7600 feet

	Scraper	Push Dozer	Source
Altitude Adj:	0.960	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.797	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	5.00	3.00	8.00	1381	0.78

Haul Time: 0.78 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-5.00	3.00	-2.00	2938	0.41

Return Time: 0.41 minutesTotal Scraper team cycle time: 2.69 minutesAdjusted for job conditions: 670.19 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 670.19 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 670.19 LCY/HourUnadjusted unit production/hour: 840.89 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 67.00 HoursUnit cost: \$1.438 /LCYTotal job cost: \$64,558

MOTOR GRADER WORKTask description: **Finish Grade West DWDA Area**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **764**State: **Colorado**Abbreviation: **None**Date: **11/20/2018**County: **Las Animas**Filename: **C012-764**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **CAT 14M**Horsepower: **259**

Ripper Attachment:

Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$60.13	NA
Operating Cost/Hour:	\$50.87	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$28.69	NA
Total Unit Cost/Hour:	\$139.69	
Total Fleet Cost/Hour:	\$139.69	

MATERIAL QUANTITIESTotal Area to be graded or ripped: **10.20** acresSource of estimated acreage: **NECC****HOURLY PRODUCTION**

Average Grader Speed:	1.50	mph
Selected Application:	Finish grading (0-2.5 mph) - 1.5	
Selected Blade Angle:	45	degrees
Effective Blade Length:	9.90	feet
Width of blade overlap per pass:	2.00	feet
Net grading or ripping width per pass:	7.90	feet
Unadjusted Hourly Unit Production:	1.4364	acres/hour

Job Condition Correction FactorsSite Altitude: **7680** feet

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

Adjusted Hourly Unit Production: **1.2209** acres/HourAdjusted Hourly Fleet Production: **1.2209** acres/Hour**JOB TIME AND COST**Fleet size: **1**

Grader(s)

Total job time:

8.35

Hours

Unit cost: \$114.41 per acre

Total job cost: **\$1,167**

REVEGETATION WORKTask description: **Reseed West DWDA Expansion Area with Rangeland Mix**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **765**State: **Colorado**Abbreviation: **None**Date: **11/20/2018**County: **Las Animas**Filename: **C012-765**User: **JHB**Agency or organization name: **DRMS****FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	30.00	pound	\$0.34	\$10.20
			Total Fertilizer Materials Cost/Acre	\$10.20

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$34.72
Total Fertilizer Application Cost/Acre	\$34.72

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Buffalograss - Bison	0.50	0.48	\$5.90
Blue Grama - Hachita	0.67	10.94	\$11.16
Little Bluestem - Cimarron	1.20	7.16	\$17.62
Sideoats Grama - Butte	2.50	8.21	\$24.75
Milk Vetch, Cicer - Monarch	0.33	1.10	\$2.77
Streambank Wheatgrass - Sodar	1.50	4.89	\$9.35
Sainfoin - Remont	1.67	0.73	\$5.41
Thickspike Wheatgrass - Critana	0.50	1.77	\$2.94
Western Wheatgrass - Arriba	2.00	5.05	\$16.56
Rabbitbrush, Rubber	0.15	2.23	\$9.88
Rose, Wood's	0.25	0.00	\$5.25
Daisy or Sunflower, Maximillians	0.11	0.62	\$6.18

Flax, Lewis Blue	0.11	0.73	\$1.86
Spike Muhly	0.33	12.12	\$3.25
Penstemon, Rocky Mountain	0.11	1.72	\$3.32
Totals Seed Mix	11.93	57.76	\$126.18

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$576.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Total Mulch Application Cost/Acre	\$161.56

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:	10.2	Cost /Acre:	\$1,140.66
Estimated Failure Rate:	33%	Cost /Acre*:	\$358.18
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost: **\$11,634.73**
 Reseeding Job Cost: **\$1,205.63**
 Total Job Cost: **\$12,840**
 Job Hours: **20.40**

TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil on NW vent Fan Area (TR72)**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **766**State: **Colorado**Abbreviation: **None**Date: **11/30/2018**County: **Las Animas**Filename: **C012-766**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

	Equipment Description
Truck Loader Team -Truck:	Generic 8-10 cy, 6x4
-Loader:	CAT 928Hz
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	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	45	NA	100	NA	NA
Ownership cost/hour:	\$15.87	\$19.87	NA	\$93.62	NA	NA
Operating cost/hour:	\$40.15	\$10.78	NA	\$73.35	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	\$40.90	NA	\$41.52	NA	NA
Unit Subtotals:	\$56.02	\$71.56	NA	\$208.49	NA	NA
Number of Units:	1	1	0	1	0	0
Group Subtotals:	Work: \$127.58		Support: \$208.49		Maint: \$0.00	

Total work team cost/hour: **\$336.07****MATERIAL QUANTITIES**Initial volume: **694**

CCY

Swell factor: **1.215**Loose volume: **843**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook**Material Purchase Cost: **\$0.00**Total Cost: **\$0.00****HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: **1,600**

Pounds/LCY

Description: **Top Soil**Rated Payload: **27,280**

Pounds

Payload Capacity: **17.05**

LCY

Truck Bed (volume) Basis:

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

Final Truck Volume Based on Number of Loader Passes: 9.90 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.000	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	3.300	LCY

Job Condition Corrections:

Site Altitude (ft.): 7350 feet

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

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill Truck: 3 passes

Excavators and Front Shovels:

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

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.475 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.040	minutes
Adjusted Loader Cycle Time:		0.435	minutes
Net Load Time per Truck:		0.970	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.970	Minutes	Adjusted for site altitude:	0.970	Minutes
Truck Maneuver and Dump Time:	0.80	Minutes	Adjusted for site altitude:	0.800	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	500.00	8.00	5.00	13.00	834	0.607
2	250.00	6.00	5.00	11.00	1018	0.247

Haul Time: **0.854** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	250.00	-6.00	5.00	-1.00	2938	0.127
2	500.00	-8.00	5.00	-3.00	2938	0.228

Return Time: **0.355** minutesTotal Truck Cycle Time: **3.479** minutes

Loading Tool unit

Production 404.08 LCY/Hour Adjusted for job efficiency: 335.39 LCY/Hour

Truck Unit Production 170.74 LCY/Hour Adjusted for job efficiency: 141.71 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 1 Truck(s)

Adjusted hourly truck team production: 141.71 LCY/Hour
Adjusted single truck/loader team production: 141.71 LCY/Hour
Adjusted multiple truck/loader team production: **141.71** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **5.95** Hours

Unit cost: \$2.371 /LCY Total job cost: **\$2,000**

BULLDOZER WORKTask description: **Regrade Access Road to NW Vent Shaft (TR72)**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **767**State: **Colorado**Abbreviation: **None**Date: **11/30/2018**County: **Las Animas**Filename: **C012-767**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**

Basic Machine: **Cat D8T - 8SU**
 Horsepower: **310**
 Blade Type: **Semi-Universal**
 Attachment: **3-shank ripper**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper own. Cost/Hour:	\$8.93	NA
Ripper op. Cost/Hour:	\$1.17	15
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: **\$218.59**Total Fleet Cost/Hour: **\$218.59****MATERIAL QUANTITIES**

Initial Volume: **1,111**
 Swell factor: **1.165**
 Loose volume: **1,294 LCY**

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell
factor: **Cat Handbook****HOURLY PRODUCTION**

Average push distance: **50 feet**
 Unadjusted hourly
 production: **1,400.0 LCY/hr**

Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **-5 %**Average site altitude: **7,300 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% Earth****Job Condition Correction Factor****Source**

Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3963

Adjusted unit production: 554.82 LCY/hr

Adjusted fleet production: **554.82** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.394/LCY

Total job time: **2.33** Hours

Total job cost: **\$510**

REVEGETATION WORKTask description: Seed NW Vent Fan and Access Road (TR72)Site: New Elk MinePermit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 768State: ColoradoAbbreviation: NoneDate: 11/30/2018County: Las AnimasFilename: C012-768User: JHBAgency 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
Blue Grama - Native	0.67	10.94	\$9.95
Buffalograss - Native/Plains	0.50	0.48	\$6.06
Little Bluestem - Native	1.20	7.16	\$19.36
Sideoats Grama - Vaughn	2.50	8.21	\$25.60
Smooth Brome - Lincoln	1.00	3.33	\$4.36
Kleingrass - Select 75	0.33	3.77	\$3.27
Milk Vetch, Cicer - Monarch	0.33	1.10	\$2.77
Streambank Wheatgrass - Sodar	1.50	4.89	\$9.35
Sainfoin - Remont	1.67	0.73	\$5.41
Thickspike Wheatgrass - Critana	0.50	1.77	\$2.94

Western Wheatgrass - Native	2.00	5.05	\$14.34
Totals Seed Mix	12.20	47.42	\$103.40

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$576.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Total Mulch Application Cost/Acre	\$68.78

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:	1.55	Cost /Acre:	\$980.18
Estimated Failure Rate:	40%	Cost /Acre*:	\$980.18
*Selected Replanting Work Items:	SEEDING,MULCHING		

Initial Job Cost:	\$1,519.28
Reseeding Job Cost:	\$607.71
Total Job Cost:	\$2,127
Job Hours:	1.55

BOREHOLE SEALING WORKTask description: Seal Additional WellsSite: New Elk MinePermit Action: Permit Renewal 07Permit/Job#: C1981012**PROJECT IDENTIFICATION**Task #: 772State: ColoradoAbbreviation: NoneDate: 11/20/2018County: Las AnimasFilename: C012-772User: JHBAgency or organization name: DRMS**UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Seal SF2	Portland cement grout (Bag, material cost only...94 lb. bag)	7.625	700.6	122.28	bag	\$13.80	\$1,687.46
Plug Hole	PVC plug - 8 in. diameter borehole	8	NA	1.00	EA	\$79.19	\$79.19
Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$3.67	\$3.67
Cut Casing	Exposed casing removal - Calculate Circumference in Linear Feet	7.625	NA	1.00	LF	\$1.83	\$1.83
Seal NM20	Portland cement grout (Bag, material cost only...94 lb. bag)	7.625	507	88.48	bag	\$13.80	\$1,221.02
Plug Hole	PVC plug - 8 in. diameter borehole	8	NA	1.00	EA	\$79.19	\$79.19
Cut Casing	Exposed casing removal - Calculate Circumference in Linear Feet	7.625	NA	1.00	LF	\$1.83	\$1.83
Mark Hole	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$3.67	\$3.67
Seal NM21	Portland cement grout (Bag, material cost only...94 lb. bag)	7.625	1244.5	217.21	bag	\$13.80	\$2,997.50
Plug Hole	PVC plug - 8 in. diameter borehole	8	NA	1.00	EA	\$79.19	\$79.19
Cut Casing	Exposed casing removal - Calculate Circumference in Linear Feet	7.625	NA	1.00	LF	\$1.83	\$1.83
Mark Hole	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$3.67	\$3.67
Seal NM22	Portland cement grout (7.625	562.7	98.21	bag	\$13.80	\$1,355.30

	Bag, material cost only...94 lb. bag)						
Plug Hole	PVC plug - 8 in. diameter borehole	8	NA	1.00	EA	\$79.19	\$79.19
Cut Casing	Exposed casing removal - Calculate Circumference in Linear Feet	7.625	NA	1.00	LF	\$1.83	\$1.83
Mark Hole	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$3.67	\$3.67
Seal NM23	Portland cement grout (Bag, material cost only...94 lb. bag)	7.625	1388.91	242.41	bag	\$13.80	\$3,345.26
Plug Hole	PVC plug - 8 in. diameter borehole	8	NA	1.00	EA	\$79.19	\$79.19
Cut Casing	Exposed casing removal - Calculate Circumference in Linear Feet	7.625	NA	1.00	LF	\$1.83	\$1.83
Mark Hole	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$3.67	\$3.67
Drill Rig	Atlas Capco DM45/HP - 9.0"	7.625	NA	36.00	EA	\$244.31	\$8,795.16
Flatbed Equipment Truck	Flatbed Truck, 4x2, 15K GVW	NA	NA	36.00	EA	\$20.88	\$751.68
Water Truck	Water Tanker, 5,000 Gal.	NA	NA	36.00	EA	\$61.90	\$2,228.40

Job Hours: 36.00Total Cost: \$22,805.00

SITE MAINTENANCETask description: Site Maintenance during the 10 year liability periodSite: New Elk MinePermit Action: Permit Renewal 07Permit/Job#: C1981012PROJECT IDENTIFICATIONTask #: 773State: ColoradoAbbreviation: NoneDate: 11/28/2018County: Las AnimasFilename: C012-773User: JHBAgency or organization name: DRMSUNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Rill and gully repair	400.00	Cat D3K LGP - 3P	400.00	EA	\$86.35	\$34,540.00

Job Hours: 400.00Total Cost: \$34,540.00

TRUCK/LOADER TEAM WORKTask description: **Import Topsoil for RDA**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **774**State: **Colorado**Abbreviation: **None**Date: **11/19/2018**County: **Las Animas**Filename: **C012-774**User: **JHB**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

	Equipment Description
Truck Loader Team -Truck:	Generic 15-18 cy, 6x4
-Loader:	CAT 988H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	0	NA	NA	NA	NA
Ownership cost/hour:	\$27.28	\$87.28	NA	NA	NA	NA
Operating cost/hour:	\$50.67	\$0.00	NA	NA	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$30.37	\$40.90	NA	NA	NA	NA
Unit Subtotals:	\$108.31	\$128.18	NA	NA	NA	NA
Number of Units:	4	1	0	0	0	0
Group Subtotals:	Work: \$561.42		Support: \$0.00		Maint: \$0.00	

Total work team cost/hour: **\$561.42****MATERIAL QUANTITIES**Initial volume: **14,563**

CCY

Swell factor: **1.000**Loose volume: **14,563**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook**Material Purchase Cost: **\$10.00**Total Cost: **\$145,630.00****HOURLY PRODUCTION****Truck Capacity:**

Truck Payload (weight) Basis:

Material weight: **1,600**

Pounds/LCY

Description: **Top Soil**Rated Payload: **63,980**

Pounds

Payload Capacity: **39.99**

LCY

Truck Bed (volume) Basis:

Struck Volume:	15.00	LCY
Heaped Volume:	18.00	LCY
Average Volume:	16.50	LCY
Adjusted Volume:	18.00	LCY

Final Truck Volume Based on Number of Loader Passes: 9.66 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	9.200	LCY (heaped)
Bucket Fill Factor:	1.050	Other - moist loam (100-110%) 1.050
Adjusted Capacity:	9.660	LCY

Job Condition Corrections:

Site Altitude (ft.): 5000 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: 1 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): 0.575 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -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:		-0.090	minutes
Adjusted Loader Cycle Time:		0.485	minutes
Net Load Time per Truck:		0.100	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.100	Minutes	Adjusted for site altitude:	0.100	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	10.00	3.00	13.00	710	0.714

Haul Time: **0.714** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	-10.00	3.00	-7.00	2972	0.226

Return Time: **0.226** minutesTotal Truck Cycle Time: **2.440** minutes

Loading Tool unit
 Production 966.00 LCY/Hour Adjusted for job efficiency: 801.78 LCY/Hour
 Truck Unit Production 237.54 LCY/Hour Adjusted for job efficiency: 197.16 LCY/Hour

Optimal No. of Trucks: 4 Truck(s) Selected Number of Trucks: 4 Truck(s)

Adjusted hourly truck team production: 788.64 LCY/Hour
 Adjusted single truck/loader team production: 788.64 LCY/Hour
 Adjusted multiple truck/loader team production: **788.64** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **18.47** HoursUnit cost: \$0.712 /LCY Total job cost: **\$155,997**

EQUIPMENT MOBILIZATION/DEMobilIZATIONTask description: **Mobilize/Demobilize Equipment for Initial Reclamation**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **790**State: **Colorado**Abbreviation: **None**Date: **11/29/2018**County: **Las Animas**Filename: **C012-790**User: **JHB**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:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

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	\$110.70	\$125.45	3	\$708.45	\$376.35	\$750.00
CAT 14M	23.57	\$60.13	\$88.67	1	\$148.80	\$88.67	\$250.00
Cat 627G	41.80	\$102.39	\$117.55	2	\$439.88	\$235.10	\$500.00
Water Tanker, 5,000 Gal.	15.00	\$25.30	\$88.67	1	\$113.97	\$88.67	\$250.00
Atlas Capco DM45/HP - 9.0"	0.00	\$101.20	\$88.67	1	\$189.87	\$88.67	\$250.00
CAT 950H	20.13	\$26.14	\$88.67	1	\$114.81	\$88.67	\$250.00

Subtotals: **\$1,715.78 \$966.13 \$2,250.00****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	\$90.91	3	\$272.73	\$272.73
Fuel Tanker, 4x2, 170 HP	\$24.48	1	\$24.48	\$24.48
Lube Truck, 4x2, 190 HP	\$29.35	1	\$29.35	\$29.35

Subtotals: **\$326.56 \$326.56**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	TRINIDAD	
Total one-way travel distance:	40.00	miles
Average Travel Speed:	40.00	mph

Total Non-Roadable Mob/Demob Cost *	\$11,579.60
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	\$653.12
'** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	1.00	1.00
Return Time (Hours):	1.00	1.00
Loading Time (Hours):	0.25	NA
Unloading Time (Hours):	0.25	NA
Subtotals:	2.50	2.00

JOB TIME AND COST

Total job time:	5.00	Hours
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Total job cost:	\$12,233
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EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilize/Demobilize Equipment for Pond Cleaning**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **791**State: **Colorado**Abbreviation: **None**Date: **11/29/2018**County: **Las Animas**Filename: **C012-791**User: **JHB**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:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

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 336D L 10'-6" Stick	32.23	\$50.81	\$117.55	1	\$168.36	\$117.55	\$250.00

Subtotals: **\$168.36** **\$117.55** **\$250.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Generic 8-10 cy, 6x4	\$85.75	3	\$257.25	\$257.25

Subtotals: **\$257.25** **\$257.25**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	TRINIDAD	
Total one-way travel distance:	40.00	miles
Average Travel Speed:	40.00	mph
Total Non-Roadable Mob/Demob Cost *	\$1,240.18	
'* two round trips with haul rig:		
Total Roadable Mob/Demob Cost **	\$514.50	
'** one round trip, no haul rig:		

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	1.00	1.00
Return Time (Hours):	1.00	1.00
Loading Time (Hours):	0.25	NA
Unloading Time (Hours):	0.25	NA
Subtotals:	2.50	2.00

JOB TIME AND COST

Total job time:	5.00	Hours
Total job cost:	\$1,755	

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilize/Demobilize Equipment for Pond Removal**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **792**State: **Colorado**Abbreviation: **None**Date: **11/29/2018**County: **Las Animas**Filename: **C012-792**User: **JHB**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:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

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	\$110.70	\$125.45	1	\$236.15	\$125.45	\$250.00
Subtotals:					\$236.15	\$125.45	\$250.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 6x4, 45K GVW	\$45.37	1	\$45.37	\$45.37
Subtotals:			\$45.37	\$45.37

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	TRINIDAD	
Total one-way travel distance:	40.00	miles
Average Travel Speed:	40.00	mph

Total Non-Roadable Mob/Demob Cost *	\$1,459.35
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	\$90.74
'** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	1.00	1.00
Return Time (Hours):	1.00	1.00
Loading Time (Hours):	0.25	NA
Unloading Time (Hours):	0.25	NA
Subtotals:	2.50	2.00

JOB TIME AND COST

Total job time:	5.00	Hours
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Total job cost:	\$1,550
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EQUIPMENT MOBILIZATION/DEMobilIZATIONTask description: **Mobilize/Demobilize Equipment for Site Maintenance**Site: **New Elk Mine**Permit Action: **Permit Renewal 07**Permit/Job#: **C1981012****PROJECT IDENTIFICATION**Task #: **793**State: **Colorado**Abbreviation: **None**Date: **11/29/2018**County: **Las Animas**Filename: **C012-793**User: **JHB**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:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

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	\$22.85	\$88.67	10	\$1,115.20	\$886.70	\$0.00
Subtotals:					\$1,115.20	\$886.70	\$0.00

ROADABLE EQUIPMENT:

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

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>TRINIDAD</u>	
Total one-way travel distance:	<u>40.00</u>	miles
Average Travel Speed:	<u>55.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$4,027.05</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$0.00</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.73</u>	<u>0.73</u>
Return Time (Hours):	<u>0.73</u>	<u>0.73</u>
Loading Time (Hours):	<u>0.25</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.25</u>	<u>NA</u>
Subtotals:	<u>1.95</u>	<u>1.45</u>

JOB TIME AND COST

Total job time:	<u>3.91</u>	Hours
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Total job cost:	<u>\$4,027</u>
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