

COST SUMMARY WORK

Task description: Reclaim Thomeczek Pit

Site: Thomeczek Pit

Permit Action: M1995007

Permit/Job#: M1995007

PROJECT IDENTIFICATION

Task #: 999

State: Colorado

Abbreviation: None

Date: 2/27/2013

County: Bent

Filename: M007-999

User: TOD

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Grade shoreline to 3H:1V	DOZER	1	10.20	\$1,340.80
002	Spread stockpile around shoreline	SCRAPER1	1	14.24	\$10,527.40
003	Rough grade entire site	GRADER	1	1.13	\$159.00
004	Finish grade entire site	GRADER	1	1.38	\$260.00
009	Revegetate 3 acres	REVEGE	1	12.00	\$3,407.99
010	Mobilization / demobilization	MOBILIZE	1	3.71	\$3,598.83
<u>SUBTOTALS:</u>				42.66	\$19,294.02

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02%

Total = \$389.74

Performance bond: 1.05%

Total = \$202.59

Job superintendent: 21.33 hrs

Total = \$1,395.20

Profit: 10.00%

Total = \$1,929.40

TOTAL O & P = \$3,916.93

CONTRACT AMOUNT (direct + O & P) = \$23,210.95

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): 0.00

Total = 0.00

Engineering work and/or contract/bid preparation: 4.25%

Total = \$986.47

Reclamation management and/or administration: 5.00%

\$1,160.55

CONTINGENCY: 0.00

Total = \$0.00

TOTAL INDIRECT COST = \$6,063.94

TOTAL BOND AMOUNT (direct + indirect) = \$25,357.96

BULLDOZER WORKTask description: Grade shoreline to 3H:1VSite: Thomeczek PitPermit Action: M1995007Permit/Job#: M1995007**PROJECT IDENTIFICATION**Task #: 001State: ColoradoAbbreviation: NoneDate: 2/27/2013County: BentFilename: M007-001User: TODAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D6THorsepower: 185Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$33.12	NA
Operating Cost/Hour:	\$57.97	100
Ripper op. Cost/Hour:	\$2.89	100
Operator Cost/Hour:	\$37.41	NA
Total unit Cost/Hour:	\$131.40	
Total Fleet Cost/Hour:	\$131.40	

MATERIAL QUANTITIESInitial Volume: 1,889Swell factor: 1.250Loose volume: 2,361 LCYSource of estimated volume: Perimeter: 1700ft height: 5ft slope 3H:1VSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 444.6 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: -5 %Average site altitude: 3,915 feetMaterial weight: 2,650 lbs/LCYWeight description: Decomposed rock - 25% Rock, 75% Earth**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(SLOT)

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5205

Adjusted unit production: 231.41 LCY/hr

Adjusted fleet production: 231.41 LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.568/LCY

Total job time: 10.20 Hours

Total job cost: \$1,340.80

SCRAPER TEAM WORKTask description: Spread stockpile around shorelineSite: Thomeczek PitPermit Action: M1995007Permit/Job#: M1995007**PROJECT IDENTIFICATION**Task #: 002State: ColoradoAbbreviation: NoneDate: 2/27/2013County: BentFilename: M007-002User: TODAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	Cat D6T
Support Equipment -Load Area:	NA
-Dump Area:	Cat D6T
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

<u>Cost Breakdown:</u>	<u>Scraper Work Team</u>		<u>Support Equipment</u>		<u>Maintenance Equipment</u>	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	25	NA	75	NA	NA
Ownership cost/hour:	\$63.31	\$30.43	NA	\$30.43	NA	NA
Operating cost/hour:	\$179.56	\$14.49	NA	\$43.48	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Operator cost/hour:	\$30.02	\$37.41	NA	\$37.41	NA	NA
Unit Subtotals:	\$272.89	\$82.33	NA	\$111.32	NA	NA
Number of Units:	2	1	0	1	0	0
Group Subtotals:	Work:	\$628.11	Support:	\$111.32	Maint:	\$0.00

Total work team cost/hour: **\$739.43****MATERIAL QUANTITIES**Initial volume: 11,111

CCY

Swell factor: 1.215Loose volume: 13,500

LCY

Source of estimated volume: DRMS field inspection approximation of 13,500 cubic yardsSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>Top Soil</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>33.00 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:

Scraper Loading Time:

0.50 Minutes

Maneuver and Spread Time:

0.60 MinutesJob Condition Correction:

Site Altitude: 3915 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	850.00	0.00	3.00	3.00	2824	0.47

Haul Time: 0.47 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	850.00	0.00	3.00	3.00	2874	0.41

Return Time: 0.41 minutesTotal Scraper team cycle time: 1.98 minutesAdjusted for job conditions: 474.11 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 948.21 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 948.21 LCY/HourUnadjusted unit production/hour: 571.21 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 14.24 HoursUnit cost: \$0.780 /LCYTotal job cost: \$10,527.40

MOTOR GRADER WORK

Task description: Rough grade entire site

Site: Thomeczek Pit

Permit Action: M1995007

Permit/Job#: M1995007

PROJECT IDENTIFICATION

Task #: 003

State: Colorado

Abbreviation: None

Date: 2/27/2013

County: Bent

Filename: M007-003

User: TOD

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 14M
Ripper Attachment: Multi-Shank Ripper

Horsepower: 259
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$41.37	NA
Operating Cost/Hour:	\$67.74	100
Ripper Operating Cost/Hour:	\$3.30	100
Operator Cost/Hour:	\$27.55	NA
Total Unit Cost/Hour:	\$139.95	
Total Fleet Cost/Hour:	\$139.95	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 3.00 acres

Source of estimated acreage: Perimeter: 1700ft distance from pond: 75ft

HOURLY PRODUCTION

Average Grader Speed: 3.25 mph
Selected Application: Heavy blading (0-6 mph) - 3.25
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: 3.1121 acres/hour

Job Condition Correction Factors

Site Altitude: 3915 feet

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

Adjusted Hourly Unit Production: 2.6453 acres/Hour
Adjusted Hourly Fleet Production: 2.6453 acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 1.13 Hours

Unit cost: \$52.91 per acre Total job cost: \$159.00

MOTOR GRADER WORK

Task description: Finish grade entire site

Site: Thomeczek Pit

Permit Action: M1995007

Permit/Job#: M1995007

PROJECT IDENTIFICATION

Task #: 004

State: Colorado

Abbreviation: None

Date: 2/27/2013

County: Bent

Filename: M007-004

User: TOD

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 16M
Ripper Attachment: Multi-Shank Ripper

Horsepower: 297

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$66.45	NA
Operating Cost/Hour:	\$90.35	100
Ripper Operating Cost/Hour:	\$3.30	100
Operator Cost/Hour:	\$27.55	NA
Total Unit Cost/Hour:	\$187.65	
Total Fleet Cost/Hour:	\$187.65	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 3.00 acres

Source of estimated acreage: Perimeter: 1700ft distance from pond: 75ft

HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Finish grading (0-2.5 mph) - 1.5</u>	
Selected Blade Angle:	<u>0</u>	degrees
Effective Blade Length:	<u>16.00</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>14.00</u>	feet
Unadjusted Hourly Unit Production:	<u>2.5455</u>	acres/hour

Job Condition Correction Factors

Site Altitude: 3915 feet

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

Adjusted Hourly Unit Production: 2.1636 acres/Hour

Adjusted Hourly Fleet Production: 2.1636 acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 1.39 Hours

Unit cost: \$86.73 per acre Total job cost: \$260.00

REVEGETATION WORKTask description: Revegeatate 3 acresSite: Thomeczek PitPermit Action: M1995007Permit/Job#: M1995007**PROJECT IDENTIFICATION**Task #: 009State: ColoradoAbbreviation: NoneDate: 2/13/2013County: BentFilename: M007-009User: TODAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	200.00	pound	\$0.33	\$65.40
			Total Fertilizer Materials Cost/Acre	\$65.40

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$52.71
Total Fertilizer Application Cost/Acre	\$52.71

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$98.01
Weed control spraying (MEANS 31 31 16.13 3100)	\$145.20
Total Tilling Cost/Acre	\$243.21

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	1.00	39.03	\$22.81
Blue Grama - Native	0.50	8.16	\$5.18
Sand Dropseed	0.30	35.81	\$2.09
Tall Wheatgrass - Jose	11.00	19.95	\$24.75
Totals Seed Mix	12.80	102.95	\$54.83

Application

Description	Cost /Acre
Drill seeding (DRMS Cost Data)	\$88.20

Total Seed Application Cost/Acre	\$88.20
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MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$265.00	\$530.00
Total Mulch Materials Cost/Acre				\$530.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$65.89
Total Mulch Application Cost/Acre	\$65.89

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:	3	Cost /Acre:	\$1,100.24
Estimated Failure Rate:	25%	Cost /Acre*:	\$143.03
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$3,300.72		
Reseeding Job Cost:	\$107.27		
Total Job Cost:	\$3,407.99		
Job Hours:	12.00		

EQUIPMENT MOBILIZATION/DEMobilIZATIONTask description: **Mobilization / demobilization**Site: **Thomeczek Pit**Permit Action: **M1995007**Permit/Job#: **M1995007****PROJECT IDENTIFICATION**Task #: **010**State: **Colorado**Abbreviation: **None**Date: **2/27/2013**County: **Bent**Filename: **M007-010**User: **TOD**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 D6T	23.25	\$30.43	\$88.67	1	\$119.10	\$88.67	\$250.00
CAT 14M	23.57	\$41.37	\$88.67	1	\$130.04	\$88.67	\$250.00
Cat 627G	41.80	\$63.31	\$117.55	2	\$361.72	\$235.10	\$250.00

Subtotals: **\$610.86** **\$412.44** **\$750.00****ROADABLE EQUIPMENT:**

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

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>LAS ANIMAS</u>	
Total one-way travel distance:	<u>15.00</u>	miles
Average Travel Speed:	<u>35.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$3,598.83</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):	0.43	0.43
Return Time (Hours):	0.43	0.43
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.86	0.86

JOB TIME AND COST

Total job time:	<u>3.71</u>	Hours
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Total job cost:	<u>\$3,598.83</u>
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