

COST SUMMARY WORK

Task description: Bond Estimate to include Stage 3

Site: Williams/Illinois Gravel Pit

Permit Action: 2019 Bond Estimate

Permit/Job#: M1997039

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 8/28/2019

County: Jackson

Filename: M039-000

User: PSH

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Final Grading - Stage 1 - East Boundary Only	DOZER	1	19.60	\$4,826
002	Replace 8" Topsoil - 14.98 Acres - 110c & Stage 1	DOZER	1	21.11	\$5,197
003	Revegetate 14.98 Acres - 110c & Stage 1	REVEGE	1	80.00	\$19,914
004	Fence 5 Acres in Reclamation	SITEMAINT ENANCE	1	0.00	\$500
005	Mob/Demob	MOBILIZE	1	4.26	\$1,462
006	Replace 8" Topsoil - 5.72 Acres - Stage 2	DOZER	1	8.06	\$1,984
007	Revegetate 5.72 Acres - Stage 2	REVEGE	1	80.00	\$7,604
008	Replace 8" Topsoil - 5.72 Acres - Stage 3	DOZER	1	8.06	\$1,984
009	Revegetate 5.72 Acres - Stage 3	REVEGE	1	80.00	\$7,604
<u>SUBTOTALS:</u>				301.09	\$51,075

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$1,032
Performance bond:	1.05	Total =	\$536
Job superintendent:	150.55	Total =	\$10,446
Profit:	10.00	Total =	\$5,108
		TOTAL O & P =	\$17,122
		CONTRACT AMOUNT (direct + O & P) =	\$68,197

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$0	Total =	\$0
Engineering work and/or contract/bid preparation:	4.25	Total =	\$2,898
Reclamation management and/or administration:	5.00		\$3,410

CONTINGENCY: 0.00 Total = \$0

TOTAL INDIRECT COST = \$23,430

TOTAL BOND AMOUNT (direct + indirect) = \$74,500.00 (Rounded)

BULLDOZER WORKTask description: **Final Grading - Stage 1 - East Boundary Only**Site: **Williams/Illinois Gravel Pit**Permit Action: **2019 Bond Estimate**Permit/Job#: **M1997039****PROJECT IDENTIFICATION**Task #: **001**State: **Colorado**Abbreviation: **None**Date: **8/28/2019**County: **Jackson**Filename: **M039-001**User: **PSH**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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$10.43	NA
Ripper op. Cost/Hour:	\$8.38	100
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: **\$246.17**Total Fleet Cost/Hour: **\$246.17****MATERIAL QUANTITIES**Initial Volume: **8,167**Swell factor: **1.000**Loose volume: **8,167 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **80 feet**Unadjusted hourly production: **984.2 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **-10 %**Average site altitude: **8,450 feet**Material weight: **2,900 lbs/LCY**Weight description: **Sand and gravel - Dry****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4233

Adjusted unit production: 416.61 LCY/hr

Adjusted fleet production: **416.61** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.591/LCY

Total job time: **19.60** Hours

Total job cost: **\$4,826**

BULLDOZER WORKTask description: **Replace 8" Topsoil - 14.98 Acres - 110c & Stage 1**Site: **Williams/Illinois Gravel Pit**Permit Action: **2019 Bond Estimate**Permit/Job#: **M1997039****PROJECT IDENTIFICATION**Task #: **002**State: **Colorado**Abbreviation: **None**Date: **8/28/2019**County: **Jackson**Filename: **M039-002**User: **PSH**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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$10.43	NA
Ripper op. Cost/Hour:	\$8.38	100
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: **\$246.17**Total Fleet Cost/Hour: **\$246.17****MATERIAL QUANTITIES**Initial Volume: **15,950**Swell factor: **1.000**Loose volume: **15,950 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **80 feet**Unadjusted hourly production: **984.2 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **-10 %**Average site altitude: **8,450 feet**Material weight: **1,600 lbs/LCY**Weight description: **Top Soil****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7676

Adjusted unit production: 755.47 LCY/hr

Adjusted fleet production: **755.47** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.326/LCY

Total job time: **21.11** Hours

Total job cost: **\$5,197**

REVEGETATION WORKTask description: Revegetate 14.98 Acres - 110c & Stage 1Site: Williams/Illinois Gravel PitPermit Action: 2019 Bond EstimatePermit/Job#: M1997039**PROJECT IDENTIFICATION**Task #: 003
Date: 8/28/2019
User: PSHState: Colorado
County: JacksonAbbreviation: None
Filename: M039-003Agency 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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
Weed control spraying (MEANS 31 31 16.13 3100)	\$193.60
Total Tilling Cost/Acre	\$295.53

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	5.00	16.30	\$58.63
Mountain Brome - Bromar	10.00	16.07	\$38.00
Bottlebrush Squirreltail	2.50	11.02	\$40.56
Sandberg Bluegrass - VNS	5.00	106.18	\$42.00
Rocky Mountain Fescue	5.00	80.35	\$36.25
Slender Wheatgrass - Native	10.00	36.50	\$46.25
Streambank Wheatgrass - Sodar	5.00	16.30	\$28.50
Thickspike Wheatgrass - Critana	5.00	17.68	\$34.38
Prairie Junegrass	2.50	132.89	\$65.00

Totals Seed Mix	50.00	433.28	\$389.56
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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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
Weed spray, hand, non-aquatic area, nox. [DMG]	\$180.00
Total Mulch Application Cost/Acre	\$180.00

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:	14.98	Cost /Acre:	\$1,132.31
Estimated Failure Rate:	30%	Cost /Acre*:	\$656.78
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$16,962.00		
Reseeding Job Cost:	\$2,951.57		
Total Job Cost:	\$19,914		
Job Hours:	80.00		

SITE MAINTENANCE

Task description: **Fence 5 Acres in Reclamation**

Site: **Williams/Illinois Gravel Pit**

Permit Action: **2019 Bond Estimate**

Permit/Job#: **M1997039**

PROJECT IDENTIFICATION

Task #: **004**

State: **Colorado**

Abbreviation: **None**

Date: **8/28/2019**

County: **Jackson**

Filename: **M039-004**

User: **PSH**

Agency or organization name: **DRMS**

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Electric Fence - 5 Acres @ \$100/Acre	0.00	USER PROVIDED ITEM	5.00		\$100.00	\$500.00

Job Hours: **0.00**

Total Cost: **\$500.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mob/Demob**Site: **Williams/Illinois Gravel Pit**Permit Action: 2019 Bond EstimatePermit/Job#: M1997039**PROJECT IDENTIFICATION**Task #: 005
Date: 8/28/2019
User: PSHState: Colorado
County: JacksonAbbreviation: None
Filename: M039-005Agency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**Shift basis: 1 per day
Cost Data Source: CRG DataTruck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT
TRAILER (25T, 50T, AND 100T)**Cost Breakdown:**

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

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D8T - 8SU	53.08	\$114.29	\$141.54	1	\$255.83	\$141.54	\$250.00
Subtotals:					\$255.83	\$141.54	\$250.00

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:	WALDEN	
Total one-way travel distance:	17.00	miles
Average Travel Speed:	30.00	mph

Total Non-Roadable Mob/Demob Cost *	\$1,462.01
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	\$0.00
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.57	0.57
Return Time (Hours):	0.57	0.57
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	2.13	1.13

JOB TIME AND COST

Total job time:	4.27	Hours
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Total job cost:	\$1,462
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BULLDOZER WORKTask description: **Replace 8" Topsoil - 5.72 Acres - Stage 2**Site: **Williams/Illinois Gravel Pit**Permit Action: 2019 Bond EstimatePermit/Job#: M1997039**PROJECT IDENTIFICATION**Task #: 006State: ColoradoAbbreviation: NoneDate: 8/28/2019County: JacksonFilename: M039-006User: PSHAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$10.43	NA
Ripper op. Cost/Hour:	\$8.38	100
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$246.17Total Fleet Cost/Hour: **\$246.17****MATERIAL QUANTITIES**Initial Volume: 6,090Swell factor: 1.000Loose volume: **6,090 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 984.2 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: -10 %Average site altitude: 8,450 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7676

Adjusted unit production: 755.47 LCY/hr

Adjusted fleet production: **755.47** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.326/LCY

Total job time: **8.06** Hours

Total job cost: **\$1,984**

REVEGETATION WORKTask description: Revegetate 5.72 Acres - Stage 2Site: Williams/Illinois Gravel PitPermit Action: 2019 Bond EstimatePermit/Job#: M1997039**PROJECT IDENTIFICATION**Task #: 007
Date: 8/28/2019
User: PSHState: Colorado
County: JacksonAbbreviation: None
Filename: M039-007Agency 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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
Weed control spraying (MEANS 31 31 16.13 3100)	\$193.60
Total Tilling Cost/Acre	\$295.53

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	5.00	16.30	\$58.63
Mountain Brome - Bromar	10.00	16.07	\$38.00
Bottlebrush Squirreltail	2.50	11.02	\$40.56
Sandberg Bluegrass - VNS	5.00	106.18	\$42.00
Rocky Mountain Fescue	5.00	80.35	\$36.25
Slender Wheatgrass - Native	10.00	36.50	\$46.25
Streambank Wheatgrass - Sodar	5.00	16.30	\$28.50
Thickspike Wheatgrass - Critana	5.00	17.68	\$34.38
Prairie Junegrass	2.50	132.89	\$65.00

Totals Seed Mix	50.00	433.28	\$389.56
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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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
Weed spray, hand, non-aquatic area, nox. [DMG]	\$180.00
Total Mulch Application Cost/Acre	\$180.00

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:	5.72	Cost /Acre:	\$1,132.31
Estimated Failure Rate:	30%	Cost /Acre*:	\$656.78
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$6,476.81		
Reseeding Job Cost:	\$1,127.03		
Total Job Cost:	\$7,604		
Job Hours:	80.00		

REVEGETATION WORKTask description: Revegetate 5.72 Acres - Stage 3Site: Williams/Illinois Gravel PitPermit Action: 2019 Bond EstimatePermit/Job#: M1997039**PROJECT IDENTIFICATION**Task #: 009
Date: 8/28/2019
User: PSHState: Colorado
County: JacksonAbbreviation: None
Filename: M039-009Agency 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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
Weed control spraying (MEANS 31 31 16.13 3100)	\$193.60
Total Tilling Cost/Acre	\$295.53

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	5.00	16.30	\$58.63
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Totals Seed Mix	50.00	433.28	\$389.56
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MULCHING and MISCELLANEOUS**Materials**

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Description	Cost /Acre
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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:	5.72	Cost /Acre:	\$1,132.31
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Job Hours:	80.00		

BULLDOZER WORKTask description: **Replace 8" Topsoil - 5.72 Acres - Stage 3**Site: **Williams/Illinois Gravel Pit**Permit Action: **2019 Bond Estimate**Permit/Job#: **M1997039****PROJECT IDENTIFICATION**Task #: **008**State: **Colorado**Abbreviation: **None**Date: **8/28/2019**County: **Jackson**Filename: **M039-008**User: **PSH**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:	\$103.86	NA
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Total unit Cost/Hour: **\$246.17**Total Fleet Cost/Hour: **\$246.17****MATERIAL QUANTITIES**Initial Volume: **6,090**Swell factor: **1.000**Loose volume: **6,090 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **80 feet**Unadjusted hourly production: **984.2 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **-10 %**Average site altitude: **8,450 feet**Material weight: **1,600 lbs/LCY**Weight description: **Top Soil****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7676

Adjusted unit production: 755.47 LCY/hr

Adjusted fleet production: **755.47** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.326/LCY

Total job time: **8.06** Hours

Total job cost: **\$1,984**