

STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY

Department of Natural Resources

1313 Sherman St., Room 215

Denver, Colorado 80203

Phone: (303) 866-3567

FAX: (303) 832-8106



February 21, 2014

Glen Williams
Cotter Corporation
P.O. Box 700
Nucla, CO
81424

John W. Hickenlooper
Governor

Mike King
Executive Director

Loretta Piñeda
Director

RE: JD-7 Pit Mine, Permit No. M-1979-094-HR, Amendment (AM-1) Approval

Dear Mr. Williams:

On February 21, 2014 the Division of Reclamation, Mining and Safety (Division) approved the Amendment application (AM-1) submitted to the Division on October 1, 2012, addressing the following:

Incorporate Environmental Protection Plan and affected area from JD-7 Underground Mine (M-1977-308) into permit.

The terms of AM-1 approved by the Division are hereby incorporated into Permit No. M-1979-094-HR. All other conditions and requirements of the permit remain in full force and effect. The conditions of the Division approval are noted below.

1. The approval of the final configurations of the engineered Drainage Design Plan submitted with the Environmental Protection Plan must be completed by no later than April 15, 2014. If the Division is not able to approve the final configurations by April 15, 2014 the operator shall submit the final designs for consideration as a Technical Revision with the appropriate fee of \$1,006.00 within 30 days.
2. Compliance with the enclosed Drainage Design Plan Implementation Schedule is required.

The estimated liability amount of \$1,645,300.00 exceeds the \$1,245,000.00 financial warranty currently held for this site. If you have not already done so, please submit additional bond in the amount of \$400,300.00. The revision will not be final until the bond is approved by the Division. Please note that this bond estimate is based on the existing conditions at the site. Upon reactivation of the mine an additional bond amount, as determined by the Division, will be required prior to expanding the operation.

If you require additional information, or have questions or concerns, please contact me at the DRMS Grand Junction Field Office.

Sincerely,

A blue ink signature of Dustin Crapla, written in a cursive style.

Dustin Crapla
Environmental Protection Specialist
Department of Natural Resources
Division of Reclamation, Mining and Safety
101 South 3rd, Suite 301
Grand Junction, CO 81501
Phone: (970) 243-6299

Cotter Corp.
February 21, 2014
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Enclosure(s):

Drainage Design Plan Implementation Schedule dated February 3, 2014

Reclamation Cost Estimate dated December 5, 2013

Cc:

Russ Means, DRMS

Ed Cotter

DOE

2597 Legacy Way

Grand Junction, CO 81503

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MEMORANDUM

To: Interested Parties

From: Dustin Czapla

Date: February 3, 2014

RE: *Clarification of JD-7 Pit Mine, M-1979-094-HR, Drainage Design Plan Implementation Construction Schedule, Pursuant to submittals within the Environmental Protection Plan under consideration*

Cotter Corporation (N.S.L.)'s ("Cotter") JD-7 Pit Mine ("JD-7") is currently in temporary cessation. Cotter cannot presently resume active mining operations at JD-7 due to an injunction ordered by the United States District Court for the District of Colorado in *Colorado Environmental Coalition vs. Office of Legacy Management*, 819 F. Supp. 2d 1193, 1224-225 (D. Colo. 2011). The injunction generally does not allow mining operations to occur at the JD-7; although, as amended, the injunction allows certain maintenance and reclamation activities to occur. Until lifted or further modified, the injunction prevents construction of any Division-approved structures, including construction of stormwater control structures approved as part of the Drainage Design Plan in the JD-7 Environmental Protection Plan ("AM-1 EPP").

Under these circumstances, the Division submits the following clarifying language regarding the construction schedule for constructing stormwater control structures required by the AM-1 EPP: So long as consistent with the injunction, the existing stormwater management controls are to be inspected and maintained, as necessary, to provide control of stormwater run-off. When the injunction is lifted or modified to allow implementation of AM-1 EPP, Cotter shall commence implementation of those stormwater control structures in the Drainage Design Plan that address JD-7's existing mining disturbances within 90 days following any other approvals required to do the work. AM-1 EPP's stormwater control structures that are designed to address future mining operations must be constructed per the mining plans as the structures become essential and necessary based on future mining disturbances. In no case, however, shall Cotter be allowed to resume mining operations prior to implementing the portion of the Drainage Design Plan, as reviewed and approved by the Division, for those operations, nor prior to the implementation of the EPP's requirements for those operations.

Cotter has informed us that, within 60 days of the Mined Land Reclamation Board's Order or the Division's decision approving the implementation of AM-1 EPP, Cotter will seek any necessary approvals from the Department of Energy to implement those stormwater control structures in the Drainage Design Plan that address JD-7's existing mining disturbances.

COST SUMMARY WORK

Task description: Review based on existing conditions

Site: JD-7 Pit

Permit Action: 2013-12-05

Permit/Job#: M1979094HR

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 12/5/2013

County: Montrose

Filename: M094-000

User: DMC

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

| Task | Description | Form Used | Fleet Size | Task Hours | Cost |
|--------------------------|---|-----------|------------|---------------|-----------------------|
| 01a | Demo/disposal of structures and facilities | DEMOLISH | 1 | 40.00 | \$163,279.11 |
| 02a | Seal openings | MINESEAL | 1 | 10.00 | \$2,894.54 |
| 03a | Reduce HW slope to 2H:1V | DOZER | 4 | 199.46 | \$255,252.59 |
| 04a | Grade waste rock pile slopes to 4H:1V | DOZER | 4 | 209.88 | \$268,589.07 |
| 05a | Backfill ponds, cap ore pads, finish grade | DOZER | 1 | 0.92 | \$294.38 |
| 06a | Haul growth medium to 2H:1V slopes | TRUCK1 | 2 | 67.70 | \$113,163.49 |
| 06b | Haul growth medium to waste rock pile | SCRAPER1 | 1 | 62.90 | \$72,425.68 |
| 07a | Grade/distribute growth medium on 2H:1V slope | DOZER | 2 | 107.54 | \$68,812.83 |
| 08a | Revegetate 2H:1V slopes | REVEGE | 1 | 50.00 | \$160,098.75 |
| 08b | Revegetate rangeland | REVEGE | 1 | 100.00 | \$228,897.50 |
| 09a | Mobilize reclamation crew and equipment | MOBILIZE | 1 | 3.33 | \$18,959.46 |
| <u>SUBTOTALS:</u> | | | | 851.73 | \$1,352,667.40 |

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02%

Total = \$27,323.88

Performance bond: 1.05%

Total = \$14,203.01

Job superintendent: 565.86 hrs

Total = \$37,012.90

Profit: 10.00%

Total = \$135,266.74

TOTAL O & P = \$213,806.53

CONTRACT AMOUNT (direct + O & P) = \$1,566,473.93

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): 500.00

Total = 500.00

Engineering work and/or contract/bid preparation: 0.00%

Total = \$0.00

Reclamation management and/or administration: 5.00%

\$78,323.70

CONTINGENCY: 0.00

Total = \$0.00

TOTAL INDIRECT COST = \$292,630.23

TOTAL BOND AMOUNT (direct + indirect) = \$1,645,297.63

DEMOLITION WORK

Task description: Demo/disposal of structures and facilities

Site: JD-7 Pit

Permit Action: 2013-12-05

Permit/Job#: M1979094HR

PROJECT IDENTIFICATION

Task #: 01A

State: Colorado

Abbreviation: None

Date: 12/5/2013

County: Montrose

Filename: 09401a

User: DMC

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 94.70 %

| Structure or Item Description | Dimensions | Demolition Menu Selection | Quantity | Unit | Unit Cost | Total Cost |
|-------------------------------|--------------------|--|-----------|------|-----------|-------------|
| Shop (Underground) | 80'L x 40'W x 15'H | Bldg. (SN) demo./off-site disposal in approved landfill - Max. 30 mile haul | 48,000.00 | CF | \$1.14 | \$54,912.00 |
| Foundation | 80' x 40' | Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push | 3,200.00 | SF | \$1.70 | \$5,433.60 |
| Footer | 80' x 40' | Demo. and on-site disposal in excavated pit, 1.0 ft. x 2 ft. - Max. 200 ft. push | 240.00 | LF | \$6.79 | \$1,629.84 |
| Shop (Pit) | 60' x 50' x 28' | Bldg. (SN) demo./off-site disposal in approved landfill - Max. 30 mile haul | 84,000.00 | CF | \$1.14 | \$96,096.00 |
| Foundation | 60' x 50" | Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push | 3,000.00 | SF | \$1.70 | \$5,094.00 |
| Footer | 60' x 50' | Demo. and on-site disposal in excavated pit, 1.0 ft. x 2 ft. - Max. 200 ft. push | 220.00 | LF | \$6.79 | \$1,494.02 |
| Compressor Shed | 15' x 10' x 8' | Bldg. (SN) demo./off-site disposal in approved landfill - Max. 30 mile haul | 1,200.00 | CF | \$1.14 | \$1,372.80 |
| Foundation slab | 15' x 10' | Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push | 150.00 | SF | \$1.70 | \$254.70 |
| Water treatment Shed | 10' x 10' x 8' | Bldg. (SN) demo./off-site disposal in approved landfill - Max. 30 mile haul | 800.00 | CF | \$1.14 | \$915.20 |
| Pond Sludge | 4hr minimum charge | Heavy sludge pickup | 4.00 | HR | \$125.00 | \$500.00 |
| Transport to Canon City | 300 mi | Solid transport, large truck (max. 80 drums, 25 cy, or 18 tons) - Minimum | 300.00 | MI | \$3.85 | \$1,155.00 |
| Venthole concrete pad | 15' x 15' x .5' | Demo. and on-site disposal in existing pit, 6 | 225.00 | SF | \$1.65 | \$371.93 |

| | | | | | | |
|-------------------------------------|-----------------|---|--------|----|---------|------------|
| | | in. thick - Max. 50 ft. push | | | | |
| Misc. debris (from prev. estimates) | 2000 c.f. | Loading and 2 mile haul, no salvage - Machine loading | 74.00 | CY | \$15.43 | \$1,141.82 |
| Haul to Broad Canyon landfill | 22.7 mi x 4 trk | Hauling only, per mile, 12-18 CY truck - 50 mph average speed | 90.80 | MI | \$0.52 | \$47.31 |
| Disposal fee | 74 cy | Broad Canyon landfill | 74.00 | CY | \$8.00 | \$592.00 |
| Fencing around ponds | 700' | Fencing, barbed wire, - 5 strand | 700.00 | LF | \$2.01 | \$1,407.00 |

Job Hours: 40.00Subtotal
(unadjusted): \$172,417.22Total Cost
(adjusted for location): \$163,279.11

SAFEGUARDING UNDERGROUND OPENINGS

Task description: Seal openings

Site: JD-7 Pit

Permit Action: 2013-12-05

Permit/Job#: M1979094HR

PROJECT IDENTIFICATION

Task #: 02A

State: Colorado

Abbreviation: None

Date: 12/5/2013

County: Montrose

Filename: 09402a

User: DMC

Agency or organization name: DRMS

UNIT COSTS

| Opening Description | Dimensions | Closure Method | Quantity | Unit | Unit Cost | Total Cost |
|---------------------|-------------------------|--|----------|------|-----------|------------|
| Portal | 12' x 10' x 50' | Adit closure - backfilling (per cu. yd.) | 222.00 | CY | \$1.61 | \$357.42 |
| Venthole | 7' diam x 142' depth | Shaft closure - backfilling, >= 100 cu. yd. (per cu. yd.) | 202.00 | CY | \$12.56 | \$2,537.12 |

Job Hours: 10.00

Total Cost: \$2,894.54

BULLDOZER WORKTask description: Reduce HW slope to 2H:1VSite: JD-7 PitPermit Action: 2013-12-05Permit/Job#: M1979094HRPROJECT IDENTIFICATIONTask #: 03AState: ColoradoAbbreviation: NoneDate: 12/5/2013County: MontroseFilename: 09403aUser: DMCAgency or organization name: DRMSHOURLY EQUIPMENT COSTBasic Machine: Cat D10T - 10UHorsepower: 574Blade Type: UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)Cost Breakdown:

| | | <u>Utilization %</u> |
|-----------------------|----------|----------------------|
| Ownership Cost/Hour: | \$99.15 | NA |
| Operating Cost/Hour: | \$183.36 | 100 |
| Ripper op. Cost/Hour: | \$0.00 | 0 |
| Operator Cost/Hour: | \$37.41 | NA |

Total unit Cost/Hour: \$319.93Total Fleet Cost/Hour: \$1,279.71MATERIAL QUANTITIESInitial Volume: 385,208Swell factor: 1.000Loose volume: 385,208 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookHOURLY PRODUCTIONAverage push distance: 200 feetUnadjusted hourly production: 1,034.3 LCY/hrMaterials consistency description: Rock, avg. ripped or blasted 0.7Average push gradient: -30 %Average site altitude: 6,000 feetMaterial weight: 3,300 lbs/LCYWeight description: Decomposed rock - 75% Rock, 25% EarthJob Condition Correction Factor

| | | <u>Source</u> |
|-----------------------|-------|---------------|
| Operator Skill: | 0.750 | (AVG.) |
| Material consistency: | 0.700 | (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: | 1.601 | (CAT HB) |
| Altitude: | 1.000 | (CAT HB) |
| Material Weight: | 0.697 | (CAT HB) |
| Blade type: | 1.000 | (PAT) |

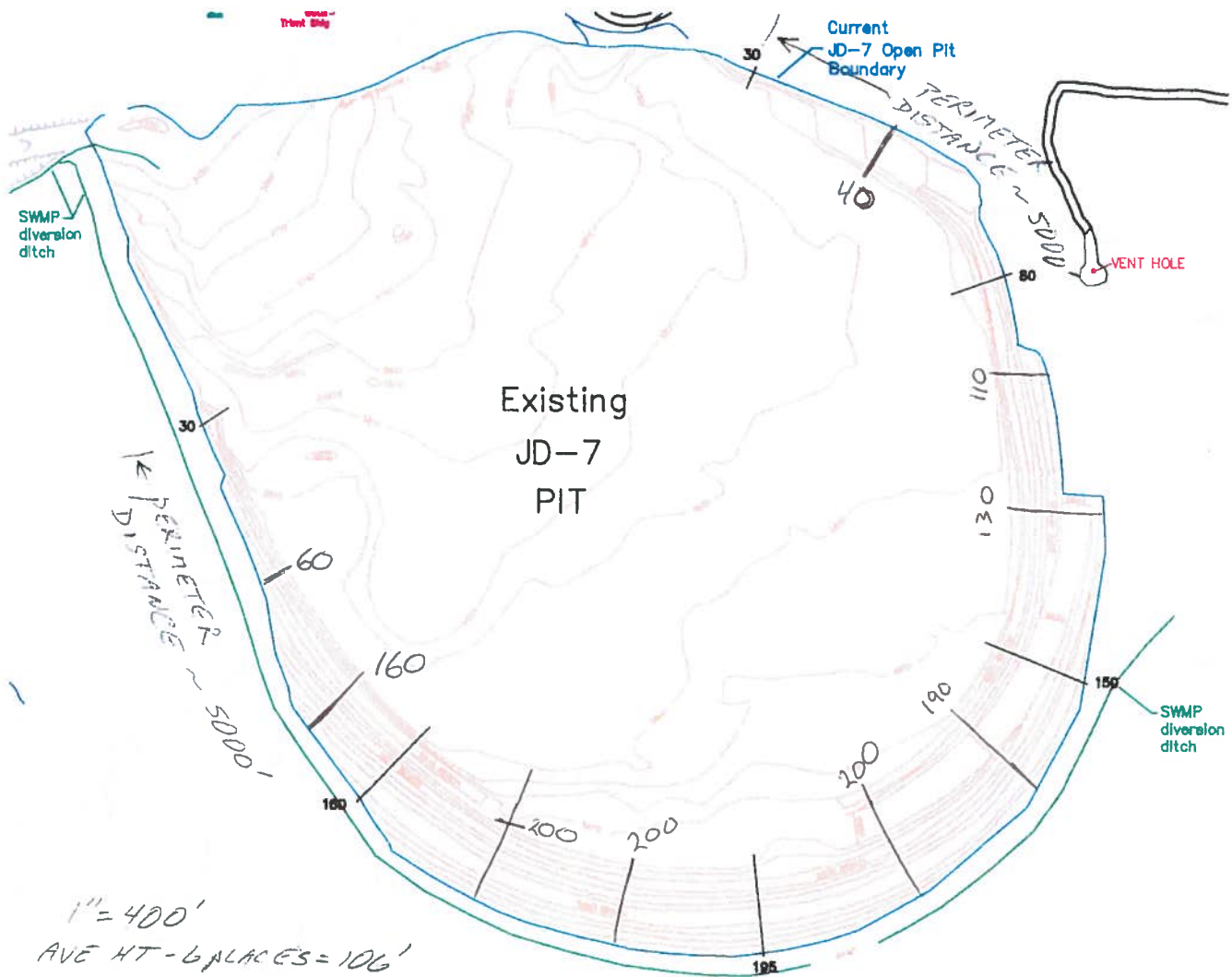
Net correction: 0.4668

Adjusted unit production: 482.81 LCY/hr
 Adjusted fleet production: 1931.24 LCY/hr

JOB TIME AND COST



Fleet size: 4 Dozer(s)
 Unit cost: \$0.663/LCY

Total job time: 199.46 Hours
 Total job cost: \$255,252.59

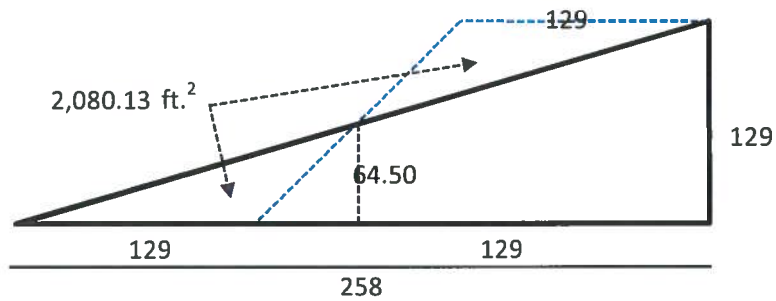


$$AVG = 129'$$

Highwall reduction - cut and fill

| | | |
|---|------------|------|
| Highwall Height (ft.) | 129.0 | |
| Length of Highwall (lft.) | 5000 | |
|  Initial Slope | 1.0 | H:1V |
|  Desired Slope | 2 | H:1V |
| Volume of material to be moved (ft. ³) | 10,400,625 | |
| Volume of material to be moved (yd. ³) | 385,208 | |

All dimensions measured in feet
Drawing not to scale



BULLDOZER WORKTask description: **Grade waste rock pile slopes to 4H:1V**Site: **JD-7 Pit**Permit Action: **2013-12-05**Permit/Job#: **M1979094HR****PROJECT IDENTIFICATION**Task #: **04A**State: **Colorado**Abbreviation: **None**Date: **12/5/2013**County: **Montrose**Filename: **09404a**User: **DMC**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10U**Horsepower: **574**Blade Type: **Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

| | | <u>Utilization %</u> |
|-----------------------|----------|----------------------|
| Ownership Cost/Hour: | \$99.15 | NA |
| Operating Cost/Hour: | \$183.36 | 100 |
| Ripper op. Cost/Hour: | \$0.00 | 0 |
| Operator Cost/Hour: | \$37.41 | NA |

Total unit Cost/Hour: **\$319.93**Total Fleet Cost/Hour: **\$1,279.71****MATERIAL QUANTITIES**Initial Volume: **296,296**Swell factor: **1.000**Loose volume: **296,296 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **400 feet**Unadjusted hourly production: **508.1 LCY/hr**Materials consistency description: **Partly consolidated stockpile 1.1**Average push gradient: **-25 %**Average site altitude: **6,000 feet**Material weight: **3,300 lbs/LCY**Weight description: **Decomposed rock - 75% Rock, 25% Earth****Job Condition Correction Factor**

| | | <u>Source</u> |
|-----------------------|-------|---------------|
| Operator Skill: | 0.750 | (AVG.) |
| Material consistency: | 1.100 | (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: | 1.516 | (CAT HB) |
| Altitude: | 1.000 | (CAT HB) |
| Material Weight: | 0.697 | (CAT HB) |
| Blade type: | 1.000 | (PAT) |

Net correction: 0.6946

Adjusted unit production: 352.93 LCY/hr

Adjusted fleet production: 1411.72 LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.906/LCY

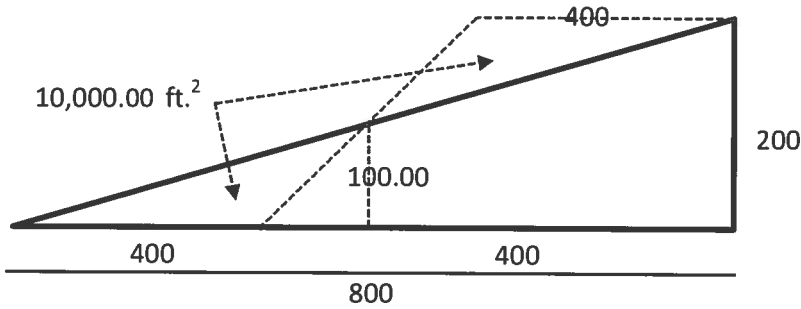
Total job time: 209.88 Hours

Total job cost: \$268,589.07

Highwall reduction - cut and fill

| | |
|--|-----------|
| Highwall Height (ft.) | 200.0 |
| Length of Highwall (lft.) | 600 |
| Initial Slope | 2.0 H:1V |
| Desired Slope | 4 H:1V |
| Volume of material to be moved (ft. ³) | 6,000,000 |
| Volume of material to be moved (yd. ³) | 222,222 |

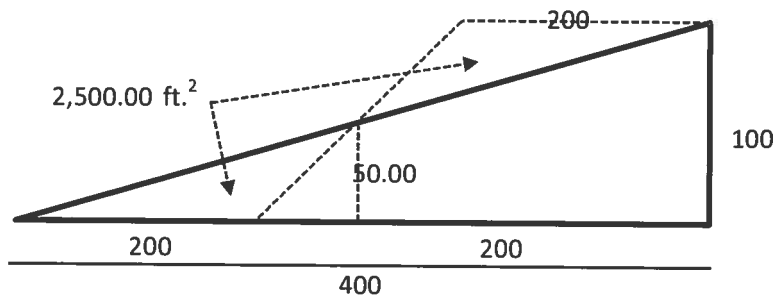
All dimensions measured in feet
Drawing not to scale



Highwall reduction - cut and fill

| | |
|--|-----------|
| Highwall Height (ft.) | 100.0 |
| Length of Highwall (lft.) | 800 |
| Initial Slope | 2.0 H:1V |
| Desired Slope | 4 H:1V |
| Volume of material to be moved (ft. ³) | 2,000,000 |
| Volume of material to be moved (yd. ³) | 74,074 |

All dimensions measured in feet
Drawing not to scale



BULLDOZER WORKTask description: **Backfill ponds, cap ore pads, finish grade**Site: **JD-7 Pit**Permit Action: **2013-12-05**Permit/Job#: **M1979094HR****PROJECT IDENTIFICATION**Task #: **05A**State: **Colorado**Abbreviation: **None**Date: **12/5/2013**County: **Montrose**Filename: **09405a**User: **DMC**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10U**Horsepower: **574**Blade Type: **Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

| | | Utilization % |
|-----------------------|----------|----------------------|
| Ownership Cost/Hour: | \$99.15 | NA |
| Operating Cost/Hour: | \$183.36 | 100 |
| Ripper op. Cost/Hour: | \$0.00 | 0 |
| Operator Cost/Hour: | \$37.41 | NA |

Total unit Cost/Hour: **\$319.93**Total Fleet Cost/Hour: **\$319.93****MATERIAL QUANTITIES**Initial Volume: **1,000**Swell factor: **1.000**Loose volume: **1,000 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: **3,057.9 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **6,000 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: | 1.000 | (CAT HB) |
| Altitude: | 1.000 | (CAT HB) |
| Material Weight: | 0.793 | (CAT HB) |
| Blade type: | 1.000 | (PAT) |

Net correction: 0.3554

Adjusted unit production: 1,086.78 LCY/hr

Adjusted fleet production: **1086.78 LCY/hr**

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.294/LCY

Total job time: **0.92 Hours**

Total job cost: **\$294.38**

TRUCK/LOADER TEAM WORKTask description: Haul growth medium to 2H:1V slopesSite: JD-7 PitPermit Action: 2013-12-05Permit/Job#: M1979094HRPROJECT IDENTIFICATIONTask #: 06AState: ColoradoAbbreviation: NoneDate: 12/5/2013County: MontroseFilename: 09406aUser: DMCAgency or organization name: DRMSHOURLY EQUIPMENT COSTShift basis: 1 per day

| | | Equipment Description |
|---------------------------------|--|-----------------------|
| Truck Loader Team -Truck: | | Cat 773F |
| -Loader: | | CAT 992K high lift |
| 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 | 100 | NA | NA | NA | NA |
| Ownership cost/hour: | \$60.64 | \$175.54 | NA | NA | NA | NA |
| Operating cost/hour: | \$119.47 | \$212.88 | NA | NA | NA | NA |
| Ripper op. cost/hour: | NA | \$0.00 | NA | NA | NA | NA |
| Operator cost/hour: | \$25.66 | \$35.82 | NA | NA | NA | NA |
| Unit Subtotals: | \$205.77 | \$424.23 | NA | NA | NA | NA |
| Number of Units: | 4 | 2 | 0 | 0 | 0 | 0 |
| Group Subtotals: | Work: \$1,671.54 | | Support: | \$0.00 | Maint: | \$0.00 |

Total work team cost/hour: \$1,671.54MATERIAL QUANTITIESInitial volume: 80,667

CCY

Swell factor: 1.000Loose volume: 80,667

LCY

Source of estimated volume: 50 ac. x 12"Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00HOURLY PRODUCTIONTruck Capacity:Truck Payload (weight) Basis:Material weight: 1,600 Pounds/LCYDescription: Top SoilRated Payload: 122,520 PoundsPayload Capacity: 76.58 LCY

Truck Bed (volume) Basis:

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

Final Truck Volume Based on Number of Loader Passes: 46.80 LCY

Loading Tool Capacity

Bucket Size Class: NA

| | | |
|---------------------|---------------|---|
| Rated Capacity: | 16.000 | LCY (heaped) |
| Bucket Fill Factor: | 0.975 | Loose material - mixed moist aggregates (95-100%) 0.975 |
| Adjusted Capacity: | 15.600 | LCY |

Job Condition Corrections:

Site Altitude (ft.): 6000 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): 0.625 minutes

| Cycle Time Factors | | Factor (min.) | Source |
|-----------------------------|---|---------------|----------|
| Material: | Mixed material 0.02 | 0.020 | (Cat HB) |
| Stockpile: | Conveyor or dozer piled 10 ft. high and up 0.00 | 0.000 | (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: | | -0.060 | minutes |
| Adjusted Loader Cycle Time: | | 0.565 | minutes |
| Net Load Time per Truck: | | 1.230 | minutes |

Truck Cycle Time:

| | | | | | |
|-------------------------------|-------|---------|-----------------------------|-------|---------|
| Truck Exchange Time: | 0.70 | Minutes | Adjusted for site altitude: | 0.700 | Minutes |
| Truck Load Time: | 1.230 | Minutes | Adjusted for site altitude: | 1.230 | Minutes |
| Truck Maneuver and Dump Time: | 1.10 | Minutes | Adjusted for site altitude: | 1.100 | Minutes |

Truck Travel (Haul & Return) Time:
penetration 5.0

Road Condition: Rutted dirt, little maintenance, no water, 2" tire

Haul Route:

| Seg # | Haul Distance (Ft) | Grade (%) | Roll. Res (%) | Total Res (%) | Velocity (fpm) | Travel Time (min) |
|-------|-----------------------|-----------|------------------|------------------|-------------------|-------------------------|
| 1 | 5000.00 | 0.00 | 5.00 | 5.00 | 1741 | 3.057 |

Haul Time: 3.057 minutes

Return Route:

| Seg # | Haul Distance (Ft) | Grade (%) | Roll. Res (%) | Total Res (%) | Velocity (fpm) | Travel Time (min) |
|-------|-----------------------|-----------|------------------|------------------|-------------------|-------------------------|
| 1 | 5000.00 | 0.00 | 5.00 | 5.00 | 3405 | 1.737 |

Return Time: 1.737 minutesTotal Truck Cycle Time: 7.824 minutes

Loading Tool unit

Production 1,454.92 LCY/Hour Adjusted for job efficiency: 1,207.59 LCY/Hour
Truck Unit Production 358.90 LCY/Hour Adjusted for job efficiency: 297.88 LCY/Hour

Optimal No. of Trucks: 4 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 595.77 LCY/Hour
Adjusted single truck/loader team production: 595.77 LCY/Hour
Adjusted multiple truck/loader team production: 1,191.53 LCY/Hour

JOB TIME AND COSTFleet size: 2 Team(s) Total job time: 67.70 HoursUnit cost: \$1.403 /LCY Total job cost: \$113,163.49

SCRAPER TEAM WORKTask description: Haul growth medium to waste rock pileSite: JD-7 PitPermit Action: 2013-12-05Permit/Job#: M1979094HR**PROJECT IDENTIFICATION**Task #: 06BState: ColoradoAbbreviation: NoneDate: 12/5/2013County: MontroseFilename: 09406bUser: DMCAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

| Equipment Description | |
|---------------------------------|----------|
| -Scraper: | Cat 651E |
| -Dozer: | NA |
| Support Equipment -Load Area: | NA |
| -Dump Area: | NA |
| Road Maintenance -Motor Grader: | NA |
| -Water Truck: | NA |

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

| | Scraper | Dozer | Load Area | Dump Area | Motor Grader | Water Truck |
|-----------------------|------------------|-------|-----------|-----------|--------------|-------------|
| %Utilization-machine: | 100 | NA | NA | NA | NA | NA |
| Ownership cost/hour: | \$72.17 | NA | NA | NA | NA | NA |
| Operating cost/hour: | \$185.67 | NA | NA | NA | NA | NA |
| Ripper op. cost/hour: | NA | NA | NA | NA | NA | NA |
| Operator cost/hour: | \$30.02 | NA | NA | NA | NA | NA |
| Unit Subtotals: | \$287.86 | NA | NA | NA | NA | NA |
| Number of Units: | 4 | 0 | 0 | 0 | 0 | 0 |
| Group Subtotals: | Work: \$1,151.44 | | Support: | \$0.00 | Maint: | \$0.00 |

Total work team cost/hour: \$1,151.44**MATERIAL QUANTITIES**Initial volume: 100,027

CCY

Swell factor: 1.000Loose volume: 100,027

LCY

Source of estimated volume: 62 ac. x 12"Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 1,600 lbs/LCY
 Material description: Top Soil
 Rated Payload: 104,000 pounds
 Payload Capacity: 65.00 LCY

Struck Volume: 32.00 LCY
 Heaped Volume: 44.00 LCY
 Average Volume: 38.00 LCY
 Adjusted Capacity: 38.00 LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6000 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

| Seg # | Haul Distance (Ft) | Grade (%) | Roll. Res (%) | Total Res (%) | Velocity (fpm) | Travel Time (min) |
|-------|--------------------|-----------|---------------|---------------|----------------|-------------------|
| 1 | 2500.00 | 0.00 | 5.00 | 5.00 | 1391 | 1.89 |

Haul Time: 1.89 minutesReturn Route:

| Seg # | Haul Distance (Ft) | Grade (%) | Roll. Res (%) | Total Res (%) | Velocity (fpm) | Travel Time (min) |
|-------|--------------------|-----------|---------------|---------------|----------------|-------------------|
| 1 | 2500.00 | 0.00 | 5.00 | 5.00 | 2501 | 1.27 |

Return Time: 1.27 minutesTotal Scraper team cycle time: 4.76 minutesAdjusted for job conditions: 397.56 LCY/HourSelected Number of Scrapers: 4 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,590.25 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,590.25 LCY/HourUnadjusted unit production/hour: 478.99 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 62.90 HoursUnit cost: \$0.724 /LCYTotal job cost: \$72,425.68

BULLDOZER WORKTask description: Grade/distribute growth medium on 2H:1V slopeSite: JD-7 PitPermit Action: 2013-12-05Permit/Job#: M1979094HR**PROJECT IDENTIFICATION**Task #: 07AState: ColoradoAbbreviation: NoneDate: 12/5/2013County: MontroseFilename: 09407aUser: DMCAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10UHorsepower: 574Blade Type: UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

| | | <u>Utilization %</u> |
|-----------------------|----------|----------------------|
| Ownership Cost/Hour: | \$99.15 | NA |
| Operating Cost/Hour: | \$183.36 | 100 |
| Ripper op. Cost/Hour: | \$0.00 | 0 |
| Operator Cost/Hour: | \$37.41 | NA |

Total unit Cost/Hour: \$319.93Total Fleet Cost/Hour: \$639.85**MATERIAL QUANTITIES**Initial Volume: 80,667Swell factor: 1.000Loose volume: 80,667 LCYSource of estimated volume: 50 ac. x 12"Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 200 feetUnadjusted hourly production: 1,034.3 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 25 %Average site altitude: 6,000 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

| | | <u>Source</u> |
|-----------------------|-------|---------------|
| Operator Skill: | 0.750 | (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: | 0.422 | (CAT HB) |
| Altitude: | 1.000 | (CAT HB) |
| Material Weight: | 1.438 | (CAT HB) |
| Blade type: | 1.000 | (PAT) |

Net correction: 0.3626

Adjusted unit production: 375.04 LCY/hr

Adjusted fleet production: **750.08 LCY/hr**

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.853/LCY

Total job time: **107.54 Hours**

Total job cost: **\$68,812.83**

REVEGETATION WORKTask description: Revegetate 2H:1V slopesSite: JD-7 PitPermit Action: 2013-12-05Permit/Job#: M1979094HR**PROJECT IDENTIFICATION**Task #: 08AState: ColoradoAbbreviation: NoneDate: 12/5/2013County: MontroseFilename: 09408aUser: DMCAgency 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 |
|--|-----------------|
| Weed control spraying (MEANS 31 31 16.13 3100) | \$145.20 |
| Total Tilling Cost/Acre | \$145.20 |

SEEDING

| Seed Mix | Rate – PLS LBS / Acre | Seeds per SQ. FT | Cost /Acre |
|----------------------------------|--------------------------------|------------------------|-----------------|
| Blue Grama - Hachita | 4.00 | 65.29 | \$42.60 |
| Indian Ricegrass - Paloma | 8.00 | 25.90 | \$69.68 |
| Galleta | 4.00 | 14.60 | \$100.80 |
| Slender Wheatgrass - Native | 4.00 | 14.60 | \$9.00 |
| Western Wheatgrass - Arriba | 8.00 | 20.20 | \$29.44 |
| Needle and Thread | 2.00 | 5.28 | \$93.98 |
| Needlegrass, Green - Lodorm | 4.00 | 16.62 | \$21.56 |
| Flax, Lewis Blue | 2.00 | 13.27 | \$33.04 |
| Saltbush, Four Wing | 6.00 | 8.26 | \$64.38 |
| Globemallow, Scarlet (or copper) | 0.60 | 6.79 | \$84.28 |
| Winter Fat | 2.00 | 5.10 | \$65.38 |
| Penstemon, Palmer | 1.00 | 22.11 | \$30.99 |
| Totals Seed Mix | 45.60 | 218.02 | \$645.13 |

Application

| Description | Cost /Acre |
|---|-----------------|
| Hydro seeding (MEANS 32 92 19.14 0200) | \$847.24 |
| Total Seed Application Cost/Acre | \$847.24 |

MULCHING and MISCELLANEOUS**Materials**

| Description | Units / Acre | Unit | Cost / Unit | Cost /Acre |
|---|-----------------|------|-------------|----------------|
| Hydromulch, 1 ton/ac. rate {Materials Only} | 0.50 | ACRE | \$153.53 | \$76.77 |
| Total Mulch Materials Cost/Acre | | | | \$76.77 |

Application

| Description | Cost /Acre |
|--|-----------------|
| Hydromulching (MEANS 32 92 19.14 0200) | \$847.24 |
| Total Mulch Application Cost/Acre | \$847.24 |

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: 50 Cost /Acre: \$2,561.58
 Estimated Failure Rate: 25% Cost /Acre*: \$2,561.58
 *Selected Replanting Work Items: TILLING, SEEDING, MULCHING

Initial Job Cost: \$128,079.00
 Reseeding Job Cost: \$32,019.75
 Total Job Cost: \$160,098.75
 Job Hours: 50.00

REVEGETATION WORKTask description: Revegetate rangelandSite: JD-7 PitPermit Action: 2013-12-05Permit/Job#: M1979094HR**PROJECT IDENTIFICATION**Task #: 08BState: ColoradoAbbreviation: NoneDate: 12/5/2013County: MontroseFilename: 09408bUser: DMCAgency 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 |
|---|-----------------|
| Subsoil scarification, (MEANS 32 91 13.23 3100) | \$173.37 |
| Weed control spraying (MEANS 31 31 16.13 3100) | \$145.20 |
| Total Tilling Cost/Acre | \$318.57 |

SEEDING

| Seed Mix | Rate – PLS LBS / Acre | Seeds per SQ. FT | Cost /Acre |
|----------------------------------|--------------------------------|------------------------|------------|
| Blue Grama - Hachita | 2.00 | 32.64 | \$21.30 |
| Indian Ricegrass - Paloma | 4.00 | 12.95 | \$34.84 |
| Galleta | 2.00 | 7.30 | \$50.40 |
| Slender Wheatgrass - Native | 2.00 | 7.30 | \$4.50 |
| Western Wheatgrass - Arriba | 4.00 | 10.10 | \$14.72 |
| Needle and Thread | 1.00 | 2.64 | \$46.99 |
| Needlegrass, Green - Lodorm | 2.00 | 8.31 | \$10.78 |
| Flax, Lewis Blue | 1.00 | 6.63 | \$16.52 |
| Saltbush, Four Wing | 3.00 | 4.13 | \$32.19 |
| Globemallow, Scarlet (or copper) | 0.30 | 3.40 | \$42.14 |
| Winter Fat | 1.00 | 2.55 | \$32.69 |
| Penstemon, Palmer | 0.50 | 11.06 | \$15.50 |

| | | | |
|------------------------|-------|--------|-----------------|
| Totals Seed Mix | 22.80 | 109.01 | \$322.57 |
|------------------------|-------|--------|-----------------|

Application

| Description | Cost /Acre |
|---|-------------------|
| Tractor spreader (MEANS 32 92 19.14 0100) | \$507.47 |
| Total Seed Application Cost/Acre | \$507.47 |

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 |
| Power mulcher (MEANS 32 91 13.16 0250) | \$86.68 |
| Total Mulch Application Cost/Acre | \$152.57 |

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: | 100 | Cost /Acre: | \$1,831.18 |
| Estimated Failure Rate: | 25% | Cost /Acre*: | \$1,831.18 |
| *Selected Replanting Work Items: | TILLING, SEEDING, MULCHING | | |
| Initial Job Cost: | \$183,118.00 | | |
| Reseeding Job Cost: | \$45,779.50 | | |
| Total Job Cost: | \$228,897.50 | | |
| Job Hours: | 100.00 | | |

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: Mobilize reclamation crew and equipmentSite: JD-7 PitPermit Action: 2013-12-05Permit/Job#: M1979094HR**PROJECT IDENTIFICATION**Task #: 09AState: ColoradoAbbreviation: NoneDate: 12/5/2013County: MontroseFilename: 09409aUser: DMCAgency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**Shift basis: 1 per dayCost 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: | \$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 D10T - 10U | 85.14 | \$99.15 | \$125.45 | 4 | \$898.41 | \$501.80 | \$1,000.00 |
| CAT 992K high lift | 107.88 | \$175.54 | \$125.45 | 2 | \$601.98 | \$250.90 | \$500.00 |
| Cat 773F | 49.74 | \$60.64 | \$117.55 | 4 | \$712.75 | \$470.20 | \$1,000.00 |
| Drill/Broadcast Seeder with Tractor | 25.00 | \$39.59 | \$88.67 | 1 | \$128.26 | \$88.67 | \$250.00 |
| Power Mulcher (Reinco M90) | 6.00 | \$7.03 | \$88.67 | 1 | \$95.70 | \$88.67 | \$250.00 |
| Hydroseeder with Tractor | 28.00 | \$65.89 | \$117.55 | 1 | \$183.44 | \$117.55 | \$250.00 |
| Cat 651E | 67.38 | \$72.17 | \$125.45 | 4 | \$790.48 | \$501.80 | \$1,000.00 |

Subtotals: **\$3,411.02** **\$2,019.59** **\$4,250.00****ROADABLE EQUIPMENT:**

| Machine Description | Total Cost/hr/ unit | Fleet Size | Haul Trip Cost/hr/ fleet | Return Trip Cost/hr/ fleet |
|-----------------------------------|---------------------|------------|-----------------------------|-------------------------------|
| Light Duty Pickup, 4x4, 1 T. Crew | \$25.51 | 1 | \$25.51 | \$25.51 |

Subtotals: **\$25.51** **\$25.51**

EQUIPMENT HAUL DISTANCE and Time

| | | |
|--|----------|-------|
| Nearest Major City or Town within project area region: | NATURITA | |
| Total one-way travel distance: | 15.00 | miles |
| Average Travel Speed: | 45.00 | mph |

| | |
|-------------------------------------|-------------|
| Total Non-Roadable Mob/Demob Cost * | \$18,942.45 |
| * two round trips with haul rig: | |
| Total Roadable Mob/Demob Cost ** | \$17.01 |
| ** one round trip, no haul rig: | |

Transportation Cycle Time:

| | Non-Roadable Equipment | Roadable Equipment |
|-------------------------|---------------------------|-----------------------|
| Haul Time (Hours): | 0.33 | 0.33 |
| Return Time (Hours): | 0.33 | 0.33 |
| Loading Time (Hours): | 0.50 | NA |
| Unloading Time (Hours): | 0.50 | NA |
| Subtotals: | 1.67 | 0.67 |

JOB TIME AND COST

| | | |
|-----------------|------|-------|
| Total job time: | 3.33 | Hours |
|-----------------|------|-------|

| | |
|-----------------|-------------|
| Total job cost: | \$18,959.46 |
|-----------------|-------------|