



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

September 18, 2019

Tom Brubaker
VALCO, Inc.
9121 Sunshine Meadow Pl
Parker, CO 80134

**Re: Rocky Ford East Pit, Permit No. M-1977-560, Technical Revision No. 3 (TR-03),
Adequacy Review No. 2**

Mr. Brubaker:

The Division of Reclamation, Mining and Safety (Division) has completed its adequacy review of your response submitted on September 11, 2019 for Technical Revision No. 3 (TR-03). The Division has calculated a reclamation bond (see enclosed bond estimate) for the site based on the revisions to the reclamation plan proposed in TR-03.

Please review the enclosed estimate and submit any comments at your earliest convenience. If the Division receives no comments from you by the TR-03 decision date of **September 26, 2019**, and no extension has been requested by that time, TR-03 will be approved and a notice of surety increase will be issued to you in the amount of \$601,800.00.

If you have any questions, you may contact me by telephone at (303) 866-3567, ext. 8129, or by email at amy.eschberger@state.co.us.

Sincerely,

Amy Eschberger
Environmental Protection Specialist

Encl: Division's bond estimate

Cc: Michael Cunningham, DRMS



COST SUMMARY WORK

Task description: Cost Summary

Site: Rocky Ford East Pit

Permit Action: TR-3 bond estimate

Permit/Job#: M1977560

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 9/16/2019

County: Otero

Filename: M560-000

User: AME

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Backfill C & D pits 2 ft above water table	SCRAPER1	1	357.46	\$350,869
002	Rip 50 acres stockpiling/processing areas	RIPPER	2	36.38	\$17,913
003	Replace 6 in topsoil on 74 acres	SCRAPER1	1	71.54	\$70,225
004	Revegetate 74 acres	REVEGE	1	74.00	\$99,716
005	Mobilization/Demobilization	MOBILIZE	1	10.00	\$20,285
006	Dewater C & D pits	NA	1	504.00	\$60,000
<u>SUBTOTALS:</u>				1053.38	\$619,008

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$12,504

Performance bond: 1.05

Total = \$6,500

Job superintendent: 400.00

Total = \$27,756

Profit: 10.00

Total = \$61,901

TOTAL O & P = \$108,660

CONTRACT AMOUNT (direct + O & P) = \$727,668

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500

Total = \$500

Engineering work and/or contract/bid preparation: 4.25

Total = \$30,926

Reclamation management and/or administration: 5.00

\$36,383

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$176,470

TOTAL BOND AMOUNT (direct + indirect) = \$795,478

SCRAPER TEAM WORKTask description: **Backfill C & D pits 2 feet above water table**Site: **Rocky Ford East Pit**Permit Action: TR-3 bond estimatePermit/Job#: M1977560**PROJECT IDENTIFICATION**Task #: 001State: ColoradoAbbreviation: NoneDate: 9/16/2019County: OteroFilename: M560-001User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	NA
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	100	NA	100	100
Ownership cost/hour:	\$112.52	NA	\$103.86	NA	\$64.10	\$9.27
Operating cost/hour:	\$145.82	NA	\$82.26	NA	\$56.17	\$17.75
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$30.86	NA	\$41.24	NA	\$28.52	\$0.00
Unit Subtotals:	\$289.20	NA	\$227.36	NA	\$148.79	\$27.01
Number of Units:	2	0	1	0	1	1
Group Subtotals:	Work:	\$578.40	Support:	\$227.36	Maint:	\$175.80

Total work team cost/hour: **\$981.56****MATERIAL QUANTITIES**Initial volume: 291,000

CCY

Swell factor: 1.125Loose volume: **327,375**

LCY

Source of estimated volume: TR-3 adequacy response 9/11/19Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,650 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>Decomposed rock - 25% Rock, 75% Earth</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>19.92 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.50 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 4130 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	1.00	3.00	4.00	2665	0.55

Haul Time: 0.55 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	850.00	-1.00	3.00	2.00	2905	0.40

Return Time: 0.40 minutesTotal Scraper team cycle time: 2.05 minutesAdjusted for job conditions: 457.92 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 915.83 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 915.83 LCY/HourUnadjusted unit production/hour: 551.71 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 357.46 HoursUnit cost: \$1.072 /LCYTotal job cost: \$350,869

BULLDOZER RIPPING WORK

Task description: Rip 50 acres stockpiling/processing areas

Site: Rocky Ford East Pit Permit Action: TR-3 bond estimate Permit/Job#: M1977560

PROJECT IDENTIFICATION

Task #: 002 State: Colorado Abbreviation: None
Date: 9/16/2019 County: Otero Filename: M560-002
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU Horsepower: 310
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper Ownership Cost/Hour:	\$10.43	NA
Ripper Operating Cost/Hour:	\$8.38	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$246.17	
Total Fleet Cost/Hour:	\$492.33	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 50.00 acres Rip Depth (ft): 1.50 Volume: 121,000 BCY or CCY

Source of estimated quantity: TR-3 adequacy response

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 2.56 feet/pass
Average Ripping Width: 7.08 feet/pass
Average Ripping Length: 600.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 0.828 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.828 Acres/hr
Site Altitude: 4,130 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.69 Acres/hr
Adjusted Hourly Fleet Production: 1.37 Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: 36.38 Hours

Unit cost: \$358.275 Per acre Total job cost: \$17,913

SCRAPER TEAM WORKTask description: Replace 6 in topsoil on 74 acresSite: Rocky Ford East PitPermit Action: TR-3 bond estimatePermit/Job#: M1977560**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 9/16/2019County: OteroFilename: M560-003User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 627G
-Dozer:	NA
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	100	NA	100	100
Ownership cost/hour:	\$112.52	NA	\$103.86	NA	\$64.10	\$9.27
Operating cost/hour:	\$145.82	NA	\$82.26	NA	\$56.17	\$17.75
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$30.86	NA	\$41.24	NA	\$28.52	\$0.00
Unit Subtotals:	\$289.20	NA	\$227.36	NA	\$148.79	\$27.01
Number of Units:	2	0	1	0	1	1
Group Subtotals:	Work:	\$578.40	Support:	\$227.36	Maint:	\$175.80

Total work team cost/hour: **\$981.56****MATERIAL QUANTITIES**Initial volume: 56,694

CCY

Swell factor: 1.215Loose volume: **68,883**

LCY

Source of estimated volume: TR-3 (6 in depth x 74 acres)Source 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 Minutes

Job Condition Correction:

Site Altitude: 4130 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	800.00	1.00	3.00	4.00	2665	0.47

Haul Time: 0.47 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	-1.00	3.00	2.00	2905	0.38

Return Time: 0.38 minutes

Total Scraper team cycle time: 1.95 minutes
 Adjusted for job conditions: 481.40 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 962.80 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 962.80 LCY/Hour

Unadjusted unit production/hour: 580.00 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 71.54 HoursUnit cost: \$1.019 /LCY Total job cost: \$70,225

REVEGETATION WORKTask description: Revegetate 74 acresSite: Rocky Ford East PitPermit Action: TR-3 bond estimatePermit/Job#: M1977560PROJECT IDENTIFICATIONTask #: 004State: ColoradoAbbreviation: NoneDate: 9/16/2019County: OteroFilename: M560-004User: AMEAgency or organization name: DRMSFERTILIZING**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	121.00	pound	\$0.34	\$40.54
Triple superphosphate, 0-46-0	87.00	pound	\$0.43	\$36.98
			Total Fertilizer Materials Cost/Acre	\$77.51

Application

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

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Hachita	0.40	6.53	\$6.39
Alkali Sacaton	0.20	7.81	\$5.70
Sideoats Grama - Butte	2.70	8.86	\$24.30
Western Wheatgrass - Arriba	3.20	8.08	\$20.80
Totals Seed Mix	6.50	31.28	\$57.19

Application

Description	Cost /Acre
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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	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Weed spray, truck, aquatic area, annuals [DMG]	\$27.30
Weed spray, truck, aquatic area, nox. [DMG]	\$68.50
Total Mulch Application Cost/Acre	\$165.97

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: 74 Cost /Acre: \$1,260.75
 Estimated Failure Rate: 30% Cost /Acre*: \$289.19
 *Selected Replanting Work Items: SEEDING

Initial Job Cost: **\$93,295.50**
 Reseeding Job Cost: **\$6,420.02**
 Total Job Cost: **\$99,716**
 Job Hours: **74.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilization/Demobilization**Site: **Rocky Ford East Pit**Permit Action: **TR-3 bond estimate**Permit/Job#: **M1977560****PROJECT IDENTIFICATION**

Task #: **005** State: **Colorado** Abbreviation: **None**
 Date: **9/16/2019** County: **Otero** Filename: **M560-005**
 User: **AME**

Agency or organization name: **DRMS****EQUIPMENT TRANSPORT RIG COST**

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

Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED, 400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER (25T, 50T, AND 100T)****Cost Breakdown:**

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

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D8T - 8SU	53.08	\$114.29	\$141.54	2	\$511.66	\$283.08	\$500.00
Cat D8T - 8SU	47.71	\$103.86	\$123.81	2	\$455.34	\$247.62	\$500.00
CAT 14M	23.57	\$64.10	\$67.39	1	\$131.49	\$67.39	\$250.00
Cat 627G	41.80	\$112.52	\$123.81	2	\$472.66	\$247.62	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$18.15	\$67.39	1	\$85.54	\$67.39	\$250.00
Subtotals:					\$1,656.69	\$913.10	\$2,000.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 2,500 Gal.	\$27.02	1	\$27.02	\$27.02
Light Duty Pickup, 4x4, 3/4 T.	\$12.96	1	\$12.96	\$12.96
Subtotals:			\$39.98	\$39.98

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	LA JUNTA	
Total one-way travel distance:	9.00	miles
Average Travel Speed:	45.00	mph

Total Non-Roadable Mob/Demob Cost *	\$20,269.46
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	\$15.99
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.20	0.20
Return Time (Hours):	0.20	0.20
Loading Time (Hours):	2.30	NA
Unloading Time (Hours):	2.30	NA
Subtotals:	5.00	0.40

JOB TIME AND COST

Total job time:	10.00	Hours
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Total job cost:	\$20,285
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