



COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY
MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

MINE NAME: Hillyer Pit	MINE/PROSPECTING ID#: M-1982-011	MINERAL: Sand and gravel	COUNTY: San Juan
INSPECTION TYPE: Monitoring	INSPECTOR(S): Wallace H. Erickson	INSP. DATE: September 25, 2012	INSP. TIME: 15:30
OPERATOR: Jo Ann Vota	OPERATOR REPRESENTATIVE: Jo Ann Vota	TYPE OF OPERATION: 110c - Construction Limited Impact	

REASON FOR INSPECTION: Normal I&E Program	BOND CALCULATION TYPE: Complete Bond	BOND AMOUNT: \$4,426.60
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None
WEATHER: Cloudy	INSPECTOR'S SIGNATURE: <i>Wallace H. Erickson</i>	SIGNATURE DATE: October 5, 2012

GENERAL INSPECTION TOPICS

This list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each. No problems or possible violations were noted during the inspection. The mine operation was found to be in full compliance with Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and/or for Hard Rock, Metal and Designated Mining Operations. Any person engaged in any mining operation shall notify the office of any failure or imminent failure, as soon as reasonably practicable after such person has knowledge of such condition or of any impoundment, embankment, or slope that poses a reasonable potential for danger to any persons or property or to the environment; or any environmental protection facility designed to contain or control chemicals or waste which are acid or toxic-forming, as identified in the permit.

(AR) RECORDS-----	NA	(FN) FINANCIAL WARRANTY-----	Y	(RD) ROADS-----	Y
(HB) HYDROLOGIC BALANCE-----	Y	(BG) BACKFILL & GRADING-----	Y	(EX) EXPLOSIVES-----	NA
(PW) PROCESSING WASTE/TAILING----	NA	(SF) PROCESSING FACILITIES-----	NA	(TS) TOPSOIL-----	Y
(MP) GENL MINE PLAN COMPLIANCE-	Y	(FW) FISH & WILDLIFE-----	Y	(RV) REVEGETATION----	Y
(SM) SIGNS AND MARKERS-----	N	(SP) STORM WATER MGT PLAN----	N	(SB) COMPLETE INSP----	Y
(ES) OVERBURDEN/DEV. WASTE-----	Y	(SC) EROSION/SEDIMENTATION---	Y	(RS) RECL PLAN/COMP--	Y
(AT) ACID OR TOXIC MATERIALS-----	Y	(OD) OFF-SITE DAMAGE-----	Y	(ST) STIPULATIONS-----	NA

Y = Inspected and found in compliance / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

OBSERVATIONS

This inspection occurred as part of the Division's routine monitoring of permitted operations. The Hillyer Pit is approved for 7.5 acres affected lands; to extract alluvial materials from the west floodplain of the Animas River; and on-site processing to include screening, crushing and stockpiling. The approved plan indicates the north boundary of the excavation would maintain a 1.5H:1V highwall at 21 foot depth and 300 feet in length. East and west side slopes of the pit would be maintained at 2H:1V, which converge approximately 1,050 feet to the south (triangular shaped permit area). The pit floor would extend approximately 1,050 feet to the south, along the west bank, until the pit floor daylighted with the 2% grade of the river. The plan anticipated the river would enter the pit during high flow and deposit its bedload before returning to the main channel through the south end of the pit. Alluvial materials deposited within the pit area would be harvested annually during low flow season. Reclamation activities included the cessation of extraction sufficient to allow the excavated area to refill, grading, and revegetation. Affected lands were located entirely within the active floodplain or within previously disturbed areas where topsoil was not available for salvage. Therefore, topsoil is not available for reclamation purposes. Affected lands are to be reclaimed to provide a stable river channel and floodplain area. This report is accompanied by an updated reclamation cost estimation totaling \$4,280.56, and four photos.

Observations made during the inspection indicate mining activities may have commenced, many years ago, but never completed the extent of excavation contemplated in the permit application. Evidence of excavation activity appeared limited to an area along the west bank of the Animas River, approximately 300 feet in length and commencing approximately 150 feet south of the north permit boundary. The river appears to have entered the excavation area and deposited sufficient bedload to fill whatever excavation may have existed, and returns to its original channel at the downstream end of the excavated area. The excavation activity appears to have exposed a layer of cemented conglomerate (ferricrete) along portions of the west bank. The ferricrete is resistant to erosion and appears to define a stable west bank throughout the excavated area. Evidence of active erosion of the river banks was limited to a short stretch of near-vertical river bank, approximately 20 feet long and 3 feet high, along the west bank and immediately upstream of the excavation area. The west bank erosion appears to have resulted from realignment of the low-flow channel through the pit area and has potential to continue until the river attains a new and more stable configuration. Vegetative cover for affected lands ranged from sparse to well established. Due to the rocky nature of the soils and exposed ferricrete, affected lands appeared stable even for areas void of vegetative cover. Evidence of public use of the land included numerous fire rings and vehicle tracks.

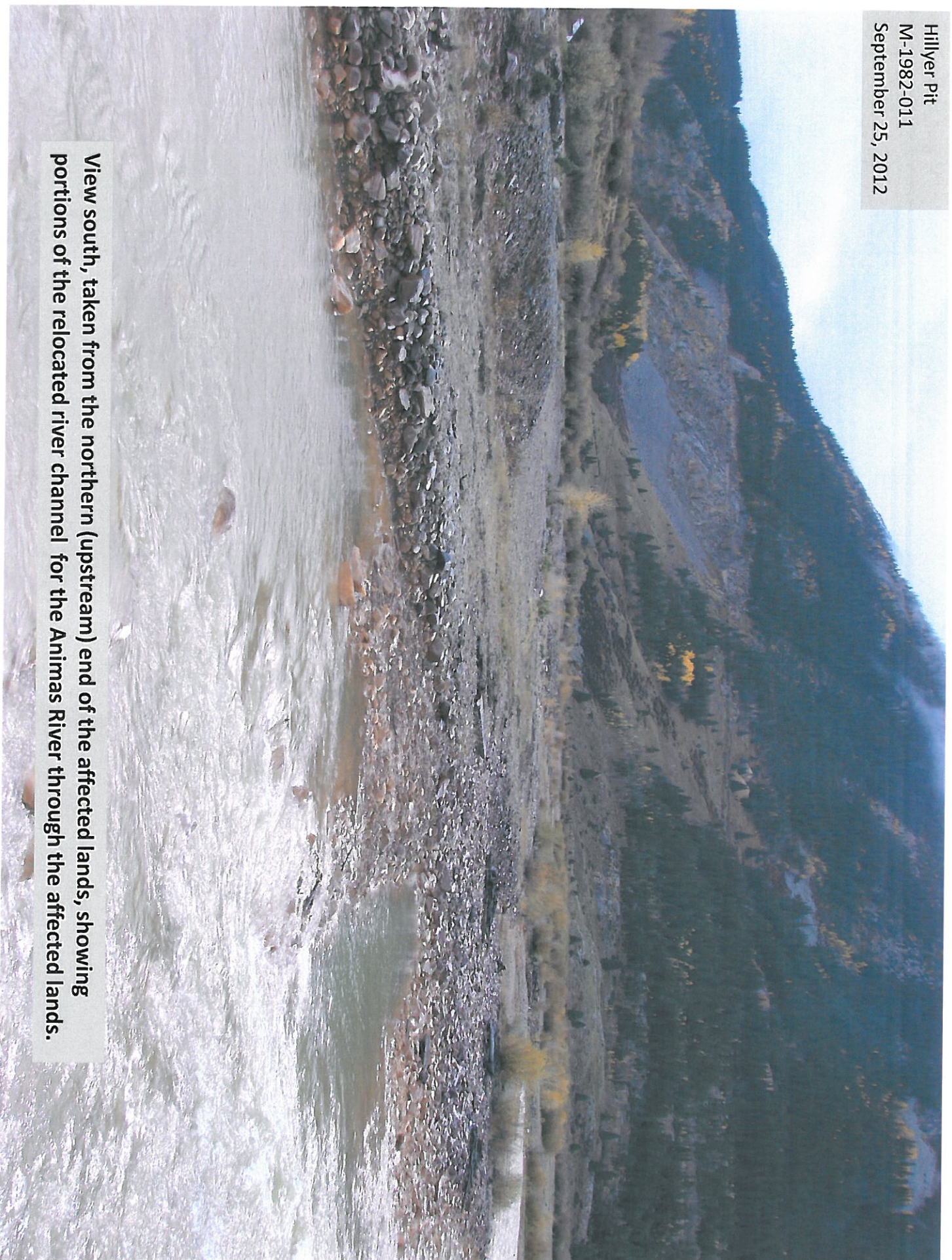
The Division previously held \$5,000 financial warranty to ensure completion of reclamation. However, the value of the bond has been declining since or about December 2008, and is now valued at \$4,426.60, per a recent bank statement received by the Division. The Division has reviewed the current cost of reclamation totaling \$4,280.56. Please find enclosed eight pages of summary and task sheets utilized by the Division to calculate the current cost of reclamation. Therefore, the existing \$4,426.60 financial warranty appears sufficient to ensure the completion of reclamation.

Inspection Contact Address

Jo Ann Vota
315 N. Sunburst Ln
Durango, CO 81301

Enclosure: Reclamation cost estimate totaling \$4,280.56; and
4 photos.
ec w/enclosure: Kara Hellige, US Army Corps of Engineers;
Russ Means, DRMS GJFO

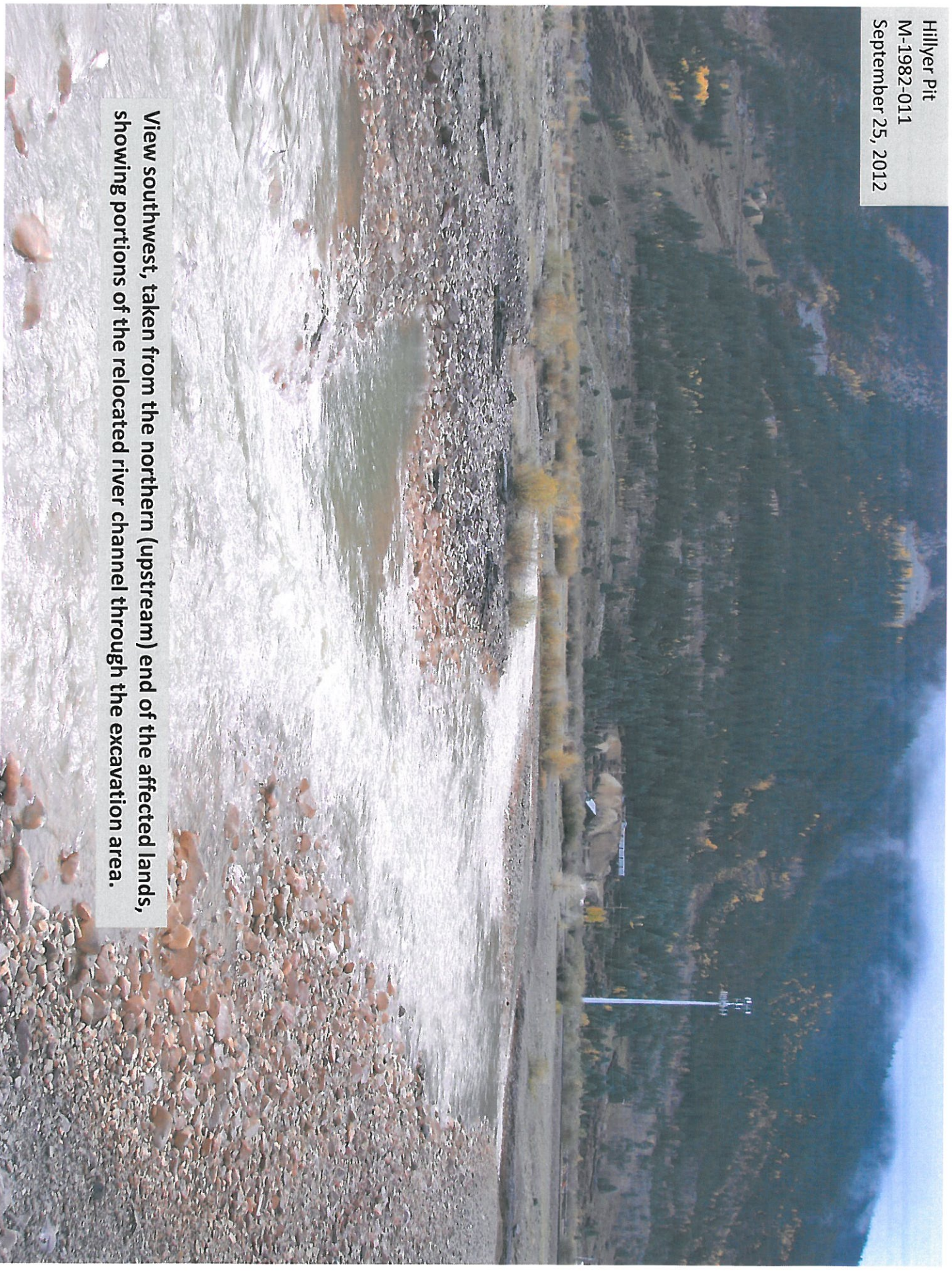
Hillier Pit
M-1982-011
September 25, 2012



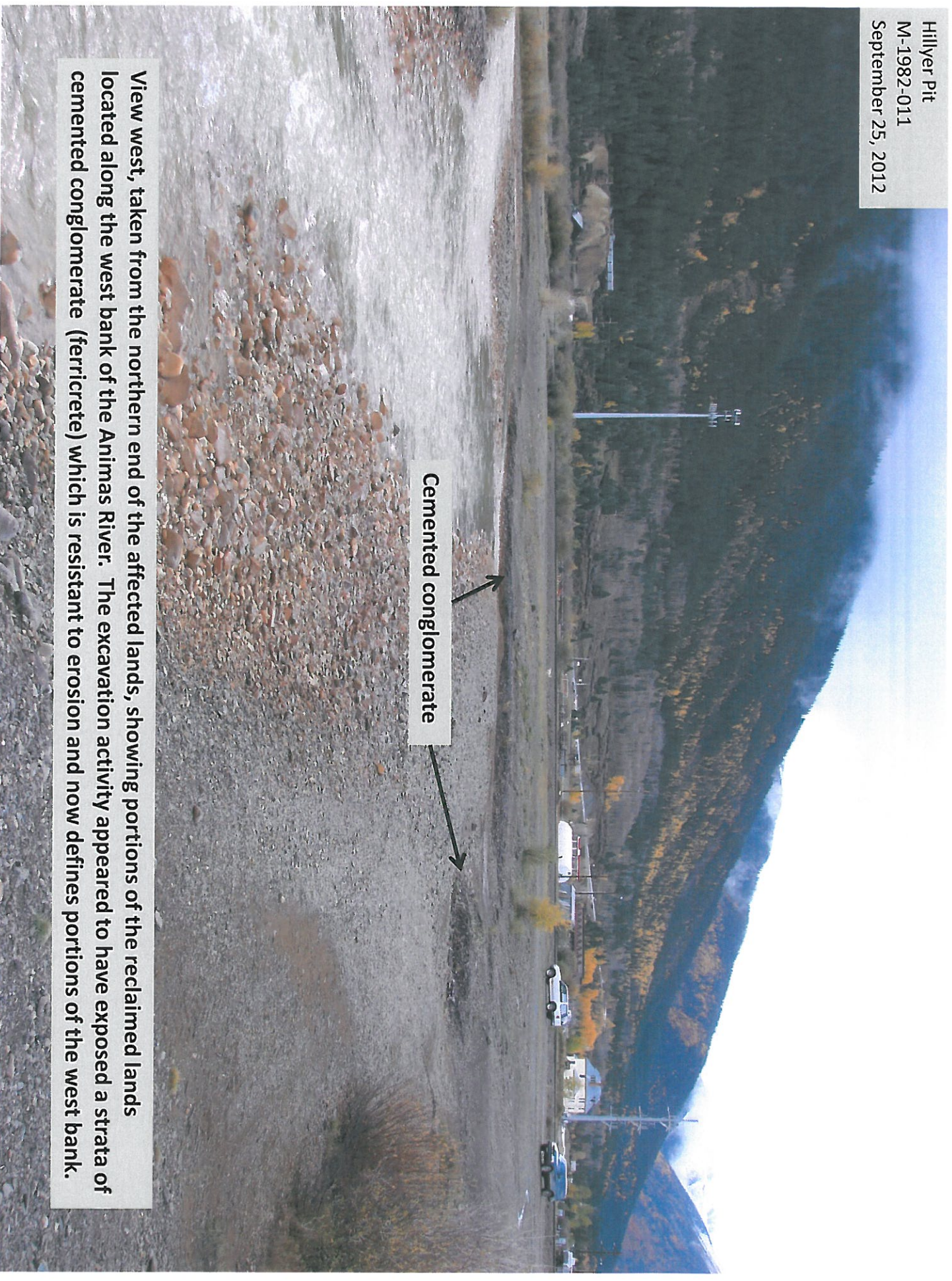
View south, taken from the northern (upstream) end of the affected lands, showing portions of the relocated river channel for the Animas River through the affected lands.

Hillyer Pit
M-1982-011
September 25, 2012

View southwest, taken from the northern (upstream) end of the affected lands, showing portions of the relocated river channel through the excavation area.

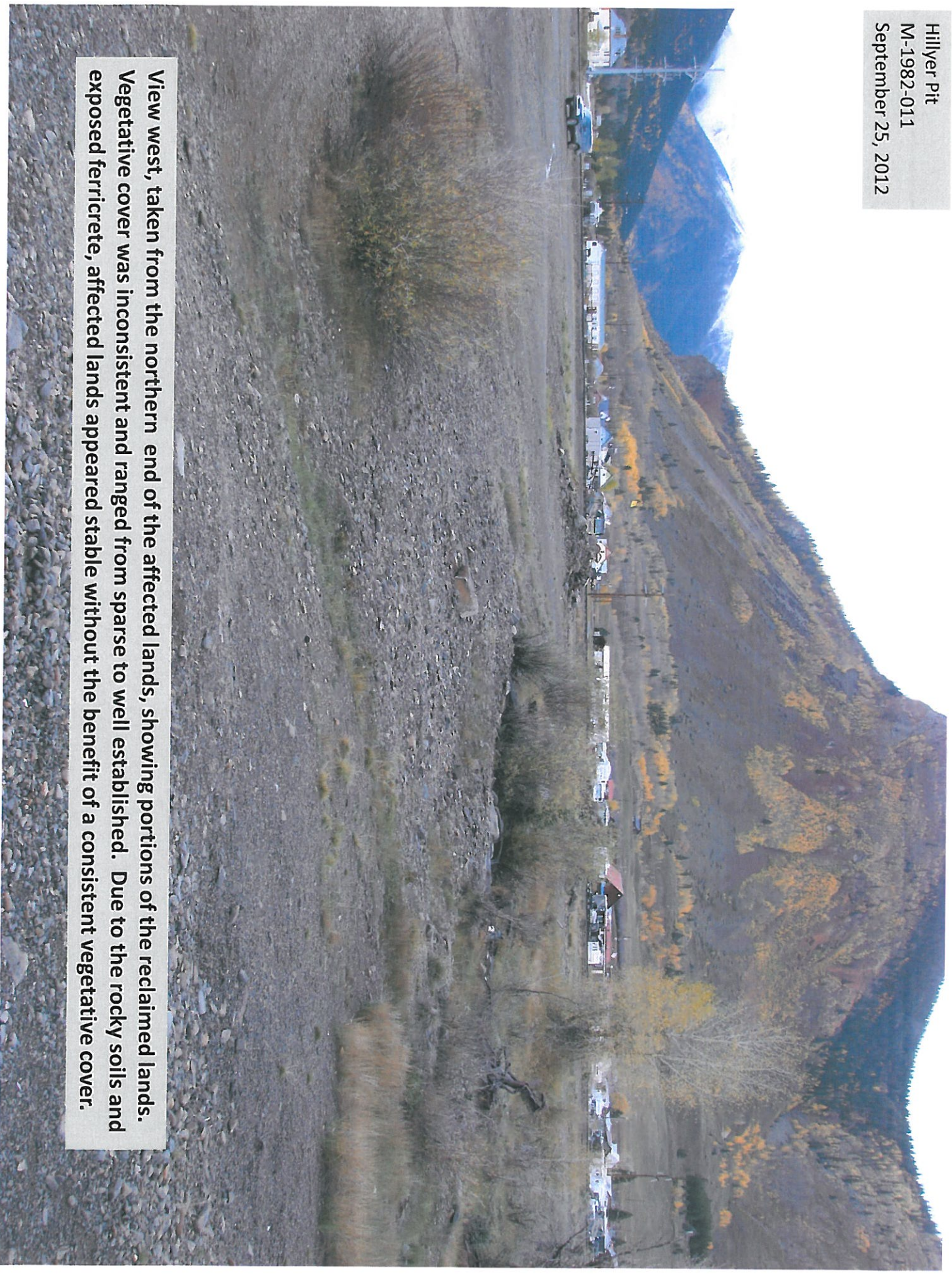


Hillyer Pit
M-1982-011
September 25, 2012



View west, taken from the northern end of the affected lands, showing portions of the reclaimed lands located along the west bank of the Animas River. The excavation activity appeared to have exposed a strata of cemented conglomerate (ferricrete) which is resistant to erosion and now defines portions of the west bank.

Hillyer Pit
M-1982-011
September 25, 2012



View west, taken from the northern end of the affected lands, showing portions of the reclaimed lands. Vegetative cover was inconsistent and ranged from sparse to well established. Due to the rocky soils and exposed ferricrete, affected lands appeared stable without the benefit of a consistent vegetative cover.

COST SUMMARY WORK

Task description: Summary of reclamation tasks and costs

Site: Hillyer Pit Permit Action: Routine bond update Permit/Job#: M1982011

PROJECT IDENTIFICATION

Task #: 005 State: Colorado Abbreviation: None
Date: 10/5/2012 County: San Juan Filename: M011-005
User: WHE

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Grade west bank erosion area	EXCAVATE	1	0.90	\$66.00
002	Redistribute 36 cy earthen materials with backhoe	LOADER	1	0.30	\$26.00
003	Transplant 250 willow	REVEGE	1	0.00	\$1,507.50
004	Haul reclamation equipment to and from job site	MOBILIZE	1	6.00	\$1,272.16
<u>SUBTOTALS:</u>				7.2	\$ \$2,871.66

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$58.01
Performance bond:	1.05	Total =	\$30.15
Job superintendent:	3.60	Total =	\$213.48
Profit:	10.00	Total =	\$287.17

TOTAL O & P = \$588.81

CONTRACT AMOUNT (direct + O & P) = \$3,460.47

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>500.00</u>	Total =	<u>500.00</u>
Engineering work and/or contract/bid preparation:	<u>4.25</u>	Total =	<u>\$147.07</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$173.02</u>

CONTINGENCY: 0.00 Total = \$0.00

TOTAL INDIRECT COST = \$1,408.90

TOTAL BOND AMOUNT (direct + indirect) = \$4,280.56

HYDRAULIC EXCAVATOR WORK (Backhoe) CAT 446D

Task description: Grade west bank erosion area

Site: Hillyer Pit Permit Action: Routine bond update Permit/Job#: M1982011

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 10/5/2012 County: San Juan Filename: M011-001
User: WHE

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat 307D 7'-3" Stick Horsepower: 56
Attachment 1: ROPS Cab Weight (MT): 7.23
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$15.06</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$18.88</u>	<u>100</u>
Operator Cost/Hour:	<u>\$38.67</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$72.62</u>	
Total Fleet Cost/Hour:	<u>\$72.62</u>	

MATERIAL QUANTITIES

Initial volume: 36 CCY Swell factor: 1.000
Loose volume: 36 LCY

Source of estimated volume: ((12' x 4') / 2) x 40'L / 27 = 35.6 cy
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

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

Basic Job Condition Description: AVERAGE
Secondary Job Condition within Basic Description: AVERAGE
Cycle Time Value: 0.242 minutes

Load Bucket Capacity

Rated Capacity: 0.20 LCY (heaped) Bucket Size Class: Small
Bucket Fill Factor: 1.100 Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity: 0.22 LCY

Job Condition Correction Factors

Site Altitude: 9000 feet

Altitude Adj: 0.87 Source
Job Efficiency: 0.83 (CAT HB)
Net Correction: 0.72 (1 shift/day)
multiplier

Unadjusted Hourly Unit Production: 54.55 LCY/Hour
Adjusted Hourly Unit Production: 39.39 LCY/Hour
Adjusted Hourly Fleet Production: 39.39 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 0.90 Hours
Unit cost: \$1.844 /LCY Total job cost: \$66.00

WHEEL LOADER – LOAD AND CARRY WORKTask description: Redistribute 36 cy earthen materials with backhoeSite: Hillyer Pit Permit Action: Routine bond update Permit/Job#: M1982011**PROJECT IDENTIFICATION**

Task #: 002 State: Colorado Abbreviation: None
 Date: 10/5/2012 County: San Juan Filename: M011-002
 User: WHE

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

Basic Machine: CAT 446D Horsepower: 101
 Attachment 1: ROPS Cab Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$17.87	NA
Operating Cost/Hour:	\$29.61	100
Operator Cost/Hour:	\$38.49	NA
Total Unit Cost/Hour:	\$85.97	
Total Fleet Cost/Hour:	\$85.97	

MATERIAL QUANTITIES

Initial volume: 36 CCY Swell factor: 1.000
 Loose volume: 36 LCY

Source of estimated volume: See task 1 for calculation of material quantity
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTIONLoader Cycle Time: Unadjusted Basic 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:	No adjustment - factor not applicable 0.00	0.000	(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:		0.000	minutes
Adjusted Basic Cycle Time:		0.475	minutes

Rolling Resistance – Road Conditions

Haul: Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0
 Return: Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	100	-5.00	8.00	3.00	0.0564	(Cat HB)
Return Route:	100	5.00	8.00	13.00	0.1388	(Cat HB)

Total Travel Time: 0.1952 minutes
Total Cycle Time: 0.6702 minutes

Load Bucket Capacity

Rated Capacity: 1.50 LCY (heaped)
Bucket Fill Factor: 1.100 Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity: 1.65 LCY

Job Condition Correction Factors

Site Altitude: 9000 feet

Altitude Adj:	<u>0.95</u>	Source
Job Efficiency:	<u>0.83</u>	(CAT HB)
Net Correction:	<u>0.79</u>	(1 shift/day)
		multiplier

Unadjusted Hourly Unit Production: 147.72 LCY/Hour
Adjusted Hourly Unit Production: 116.48 LCY/Hour
Adjusted Hourly Fleet Production: 116.48 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: 0.31 Hours
Unit cost: \$0.738 /LCY Total job cost: \$26.00

REVEGETATION WORKTask description: Transplant 250 willowSite: Hillyer PitPermit Action: Routine bond updatePermit/Job#: M1982011PROJECT IDENTIFICATIONTask #: 003State: ColoradoAbbreviation: NoneDate: 10/5/2012County: San JuanFilename: M011-003User: WHEAgency or organization name: DRMSFERTILIZING**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
Willow, Sandbar	250	Bare root seedling, 11-16 inch ht. (MEANS)	\$4.02	\$2.40	\$1,005.00
Totals Nursery Stock Cost / Acre					\$1,005.00

JOB TIME AND COST

No. of Acres: 1 Cost /Acre: \$1,005.00
 Estimated Failure Rate: 50% Cost /Acre*: \$1,005.00
 *Selected Replanting Work Items: NURSERY

Initial Job Cost: \$1,005.00
 Reseeding Job Cost: \$502.50
 Total Job Cost: \$1,507.50
 Job Hours: 0.00

EQUIPMENT MOBILIZATION/DEMobilIZATIONTask description: Haul reclamation equipment to and from job siteSite: Hillyer PitPermit Action: Routine bond updatePermit/Job#: M1982011PROJECT IDENTIFICATIONTask #: 004State: ColoradoAbbreviation: NoneDate: 10/5/2012County: San JuanFilename: M011-004User: WHEAgency or organization name: DRMSEQUIPMENT TRANSPORT RIG COSTShift 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 446D	9.80	\$17.87	\$88.67	1	\$106.54	\$88.67	\$250.00

Subtotals: **\$106.54** **\$88.67** **\$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	\$84.33	1	\$84.33	\$84.33

Subtotals: **\$84.33** **\$84.33**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>SILVERTON AREA</u>	
Total one-way travel distance:	<u>10.00</u>	miles
Average Travel Speed:	<u>10.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$1,103.50</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$168.66</u>
** 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):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	3.00	2.00

JOB TIME AND COST

Total job time: 6.00 Hours

Total job cost: \$1,272.16