

November 18, 2024

Jason McGraw General Shale Brick, Inc. 1845 W. Dartmouth Ave. Denver, CO 80110-1308

Re: Chieftain South Mine - File No. M-1981-148

General Shale Brick, Inc. Surety Increase (SI-1)

M1981148 Chieftain South Mine Surety Increase

Dear Jason McGraw:

On November 18, 2024 the Division of Reclamation, Mining and Safety increased the current Financial Warranty for this permit to \$817,050.00, in accordance with Rule 4.2.1 of the Rules and Regulations. This is an increase of \$419,220.00.

During the review of the Chieftain South Mine, it has come to the Division's attention that the reclamation liability amount has not been updated since 2007. Because the reclamation bond has not been adjusted in some time, the Division has updated the reclamation cost estimate for the Chieftain South Mine to ensure the financial warranty reflects the actual current cost of fulfilling the requirements of the reclamation plan per Rule 4.2.1. The financial warranty increase accounts for the increased cost in the event the state is to perform earthwork and revegetation. The operator has 60 days to post the additional financial warranty from the date of this written notice from the Division per Rule 4.2.1(2).

Please see the September 16, 2024 inspection report for details regarding why this surety increase is required.

On November 18, 2024, the Division ordered amendment of the current Financial Warranty or submittal of a new Financial Warranty reflecting the increase, within 60 days.

Please make arrangements with Sara M. Stevenson-Benn at the Division's Denver office for submittal of the financial warranty. Any other questions regarding completion, execution and/or submittal of financial warranty forms should also be directed to Sara M. Stevenson-Benn by telephone at (303) 866-3567, or by email at Sara.stevenson-benn@state.co.us.

The Permittee for this site may be scheduled for a Formal Board Hearing for possible revocation of



the permit if the amount of any increased Financial Warranty has not been provided by January 17, 2025.

Bond Held:	\$397,830.00
Prior Liability:	\$397,830.00
Change in Liability:	\$419,220.00
Revised Liability:	\$817,050.00
Prior Permit Acreage:	98.52
Change in Permit Acreage:	0.00
Revised Permit Acreage:	98.52
Prior Affected Acreage:	98.52
Change in Affected Acreage:	0.00
Revised Affected Acreage:	98.52

If you have any questions, please contact me by telephone at (720) 793-2988, or by email at Ben.hammar@state.co.us.

Sincerely,

Ben E. Hammar

Environmental Protection Specialist

cc: Jason McGraw

M-GR-04

COST SUMMARY WORK

Та	ask description:					
Site: _	Chieftain South Mine	Permit Action:	2024 Bond Calcu	lation	Permit/Job#	: M1981148
<u>PR</u>	OJECT IDENTIFICATION	<u>ON</u>				
	Task #: 010 Date: 9/20/2024 User: BEH Agency or organization	State: Colorado County: Jefferson name: DRMS		_ A		None M148-010
<u>TA</u>	SK LIST (DIRECT COS					
Task	Description		Form Used	Fleet Size	Task Hours	Cost

TRUCK1

REVEGE

TRUCK1

MOBILIZE

INDIRECT COSTS

Regrading

Revegetating affected area

Equipment Mobilization

Topsoil Spreading

011

012

013

014

OVERHEAD AND PROFIT:

Liability insurance:2.02Total =\$12,541Performance bond:1.05Total =\$6,519Job superintendent:573.08Total =\$45,428

Profit: 10.00 Total = \$62,084 TOTAL O & P = \$126,572

CONTRACT AMOUNT (direct + O & P) = $\sqrt{747,414}$

658.55

63.00

54.60

1.44

777.59

1

1

SUBTOTALS:

\$478,068

\$99,230

\$39,638

\$3,906

\$620,842

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

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

Engineering work and/or contract/bid preparation: 4.25 Total = \$31,765

Reclamation management and/or administration: 5.00 \$37,371

CONTINGENCY: 0.00 Total = \$0

TOTAL INDIRECT COST = \$196,208

TOTAL BOND AMOUNT (direct + indirect) = \$817,050

TRUCK/LOADER TEAM WORK

Task description:	Regradi	ng					
Site: Chieftain South	Mine	Perm	it Actio	on: 2024 Bond (Calculation 1	Permit/Job#: M	1981148
PROJECT IDE	NTIFICATION	[
Task #: 011		State:	Colora	ıdo	Ab	breviation: No	ne
Date: 9/20/	/2024	County:	Jeffers	son		Filename: M1	48-011
User: BEH							
Agency o	r organization nar		4S		Shift bas	is: <u>1 per day</u>	
			I	Equipment Descri	ption		
	Truck Loader Tea	m -Truck:	Cat		•		
		-Loader:	CA	Г 950Н			
Support Equipment -Load Area:							
-Dump Area:				D6T XL			
Road Maintenance – Motor Grader: NA							
	-W2	ter Truck:	NA				
Cost Breakdown:	Truck/Lo	ader Team		Support l	Equipment	Maintenar	nce Equipment
	Truck	Loader		Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100		100	NA	100	NA	NA

Cost Di Cakuowii.	Truck/Lo	adei i caiii	Support Equipment		Manifectatice Equipment		
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck	
%Utilization-machine:	100	100	NA	100	NA	NA	
Ownership cost/hour:	\$108.67	\$36.61	NA	\$90.43	NA	NA	
Operating cost/hour:	\$66.26	\$35.43	NA	\$67.29	NA	NA	
%Utilization-riper:	NA	0	NA	NA	NA	NA	
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA	
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA	
Operator cost/hour:	\$24.82	\$56.64	NA	\$40.04	NA	NA	
Unit Subtotals:	\$199.75	\$128.68	NA	\$197.76	NA	NA	
Number of Units:	2	1	0	1	0	0	
Group Subtotals:	Work:	\$528.18	Support:	\$197.76	Maint:	\$0.00	

Total work team cost/hour: \$725.94

MATERIAL QUANTITIES

Initial volume: 252,915 CCY Swell factor: 1.090 Loose volume: __ 275,677 LCY

Source of estimated volume: Division of Reclamation, Mining & Safety Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight: 2,400 Pounds/LCY Description: Clay and gravel - Dry

Rated Payload: 62,000 Pounds Payload Capacity: 25.83 LCY

Truck Travel (Haul & Return) Time:

maintained 3.0

Track Loader Cycle Time Elements (mi Load: NA Wheel and Track Loade Cycle Time Factor Materia Stockpile Truck Ownership Operation Dump Targe Truck Cycle Time: Truck Exchange Ti	rs - Unadjusted l rs l: Mixed mate e: Dumped by o: Common o n: Constant op t: Nominal ta	Maneuver: NA Basic Loader Cycle Tir erial 0.02 truck 0.02 wnership of trucks and peration -0.04 rget 0.00 Net Cycle Tin Adjusted Load	ne Adjustment: er Cycle Time: Time per Truck:	Dump:0.100 maneuver):0 Factor (min.)	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes 0.600 1.480	utes Minu
Cycle Time Elements (mi Load: NA Wheel and Track Loade Cycle Time Factor Materia Stockpile Truck Ownership Operation Dump Targe	rs - Unadjusted l rs l: Mixed mate e: Dumped by b: Common o n: Constant op t: Nominal ta	Maneuver: NA Basic Loader Cycle Tirerial 0.02 truck 0.02 wnership of trucks and peration -0.04 rget 0.00 Net Cycle Tin Adjusted Load Net Load T	ne Adjustment: er Cycle Time: Time per Truck:	maneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040 0.000 -0.040 0.460 1.480	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes	- - - -
Cycle Time Elements (mi Load: NA Wheel and Track Loade Cycle Time Factor Materia Stockpile Truck Ownership Operation Dump Targe	n.): rs - Unadjusted l rs l: Mixed mate e: Dumped by o: Common o n: Constant op	Maneuver: NA Basic Loader Cycle Tir erial 0.02 truck 0.02 wnership of trucks and peration -0.04 rget 0.00 Net Cycle Tin Adjusted Load	l loaders -0.04 ne Adjustment: er Cycle Time:	maneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040 0.000 -0.040 0.460	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	utes
Cycle Time Elements (mi Load: NA Wheel and Track Loade Cycle Time Factor Materia Stockpile Truck Ownership	n.): rs - Unadjusted l rs l: Mixed mate e: Dumped by o: Common o n: Constant op	Maneuver: NA Basic Loader Cycle Tir erial 0.02 truck 0.02 wnership of trucks and peration -0.04 rget 0.00 Net Cycle Tin Adjusted Load	l loaders -0.04 ne Adjustment: er Cycle Time:	maneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040 0.000 -0.040 0.460	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	utes
Cycle Time Elements (mi Load: NA Wheel and Track Loade Cycle Time Factor Materia Stockpile Truck Ownership	n.): rs - Unadjusted l rs l: Mixed mate e: Dumped by o: Common o n: Constant op	Maneuver: NA Basic Loader Cycle Tire rial 0.02 truck 0.02 wnership of trucks and peration -0.04 rget 0.00 Net Cycle Tin	l loaders -0.04	naneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040 0.000 -0.040	Source (Cat HB) minutes	utes
Cycle Time Elements (mi Load: NA Wheel and Track Loade Cycle Time Factor Materia Stockpile Truck Ownership	n.): rs - Unadjusted l rs l: Mixed mate e: Dumped by o: Common o n: Constant op	Maneuver: NA Basic Loader Cycle Tirerial 0.02 truck 0.02 wnership of trucks and peration -0.04		naneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB)	utes
Cycle Time Elements (mi Load: NA Wheel and Track Loade Cycle Time Factor Materia Stockpile Truck Ownershi	rs - Unadjusted l rs l: Mixed mate e: Dumped by o: Common o	Maneuver: NA Basic Loader Cycle Tirerial 0.02 truck 0.02 wnership of trucks and		naneuver): 0 Factor (min.) 0.020 0.020 -0.040	Source (Cat HB) (Cat HB) (Cat HB)	utes
Cycle Time Elements (mi Load: NA Wheel and Track Loade Cycle Time Factor Materia Stockpile	rs - Unadjusted l	Maneuver: NA Basic Loader Cycle Tirerial 0.02 truck 0.02		naneuver): 0 Factor (min.) 0.020 0.020	Source (Cat HB) (Cat HB)	utes
Cycle Time Elements (mi Load: NA Wheel and Track Loade Cycle Time Factor Materia	n.): rs - Unadjusted l rs l: Mixed mate	Maneuver: NA Basic Loader Cycle Tirerial 0.02	me (load, dump, r	naneuver): 0 Factor (min.) 0.020	Source (Cat HB)	utes
Cycle Time Elements (mi Load: NA Wheel and Track Loade Cycle Time Factor	n.): rs - Unadjusted I	Maneuver: NA Basic Loader Cycle Tir	me (load, dump, r	naneuver): 0	.500 minu	utes
Cycle Time Elements (mi Load: NA Wheel and Track Loade	n.): rs - Unadjusted l	Maneuver: NA	me (load, dump, r	naneuver): 0	.500 min	utes
Cycle Time Elements (mi	n.):	Maneuver: NA	me (load dump :	·		utes
Cycle Time Elements (mi	n.):	•		Dump: 0.100)	
		cription:				
Track Loader	s – Material Des	cription:				
	e vs. 300 Conditate within this Ba					
Machine Cycle Tim	<u>.</u>	ion Rating: NA				
Excavators and Front Sho			1			
Loading Tool Cycle Tin	ie: Niimh	per of Loading Tool Pa	sses Required to	Fill Truck·	4 r	oasses
Net Correction:	0.830	0.830				
Job Efficiency:	0.830	0.830	(CAT HE	<u>)</u>		
Altitude Adj:	1.000	1.000	(CAT HE			
A 1.1. 1 A 11	Truck	Loader	Source			
Job Condition Correction		Т	ite Altitude (ft.): 6	<u>5000</u> feet		
Adjusted Capacity		LCY	sanuy ciay (100%)	- 110/0/ 1.030		_
Rated Capacity: Bucket Fill Factor:		LCY (heaped)	sandy clay (100%	1100/ 1 050		=
		1	Bucl	ket Size Class: N	IA .	_
Loading Tool Capacity						
Fi	nal Truck Volun	ne Based on Number of	f Loader Passes:	18.06	LCY	
3	22.10	LCY				
Adjusted Volume:		LCY				
Average Volume:	19.60	LCI				
	17.10 22.10 19.60	LCY LCY				

CIRCES Cost Estimating Software

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2183	0.722

Haul Time: 0.722 minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2936	0.495

Return Time: 0.495 minutes
Total Truck Cycle Time: 4.297 minutes

Loading Tool unit

Production 520.96 LCY/Hour Adjusted for job efficiency: 432.40 LCY/Hour

Truck Unit Production

252.18 LCY/Hour Adjusted for job efficiency: 209.31 LCY/Hour

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

Adjusted hourly truck team production: 418.61 LCY/Hour Adjusted single truck/loader team production: 418.61 LCY/Hour Adjusted multiple truck/loader team production: 418.61 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **658.55** Hours

Unit cost: \$1.734 /LCY Total job cost: **\$478,068**

REVEGETATION WORK

PROJECT IDENTIFICATION Task #: 012	TIDENTIFICATION : 012	e: Chieftain Sou	: Rev	egetating an	ected area				
Task #: 012 State: Colorado Abbreviation: None Date: 9/20/2024 County: Jefferson Filename: M148-0 User: BEH Agency or organization name: DRMS FERTILIZING Materials Description Units / Acre Unit Cost / Unit	State: Colorado Sp/20/2024 County: Jefferson BEH gency or organization name: DRMS Total Fertilizer Materials Abbreviation: None Filename: M148-012 M148-012 None Filename: M148-012 M148-012 Total Fertilizer Materials	·	th Mine	Per	rmit Action:	2024	Bond Calculat	ion Permit/Job	#: <u>M1981148</u>
Date: 9/20/2024 County: Jefferson Filename: M148-0 User: BEH Agency or organization name: DRMS FERTILIZING Materials Units / Acre Unit Cost / Unit	Second	PROJECT IDE	ENTIFICATION OF THE PROPERTY O	<u>ON</u>					
User: BEH Agency or organization name: DRMS FERTILIZING Materials Description Units / Acre Unit Cost / Unit Cost /	gency or organization name: DRMS ZING Units / Acre Unit Cost / Unit Cost / Acre \$ Total Fertilizer Materials	Task #: 01	2	State:	Colorado			Abbreviation:	None
Agency or organization name: DRMS FERTILIZING Materials Description Units / Acre Unit Cost / Unit Cost /	gency or organization name: DRMS ZING Units / Acre Unit Cost / Unit Cost / Acre \$ Total Fertilizer Materials	Date: 9/2	20/2024	County:	Jefferson			Filename:	M148-012
FERTILIZING Materials Description Units / Acre Unit Cost / Unit Cost /	ZING Units / Acre Unit Cost / Unit Cost / Acre \$ Total Fertilizer Materials	User: BI	EH						
FERTILIZING Materials Description Units / Acre Unit Cost / Unit Cost /	ZING Units / Acre Unit Cost / Unit Cost / Acre \$ Total Fertilizer Materials	Agency	or organization	name: DF	RMS				
Materials Description Units / Acre Unit Cost / Unit Cost /	Units / Acre Unit Cost / Unit Cost / Acre \$ Total Fertilizer Materials	2 ,	Z .						·
Materials Description Units / Acre Unit Cost / Unit Cost /	Units / Acre Unit Cost / Unit Cost / Acre \$ Total Fertilizer Materials	FERTILIZING	r						
Description Units / Acre Unit Cost / Unit Cost /	Acre Unit Cost / Unit Cost / Acre \$ Total Fertilizer Materials		-						
Description Acre Unit Cost / Unit Cost /	Acre Unit Cost / Unit Cost / Acre \$ Total Fertilizer Materials	Materials			TI	:4/			
\$ \$	Total Fertilizer Materials	Description					Unit	Cost / Unit	Cost /Acre
	Materials							\$	\$
Total Fertilizer	Materials							Total Fertilizer	
	Cost/Acre \$0.00								
Application		Application							

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$102.41
Total Tilling Cost/Acre	\$102.41

Total Fertilizer Application Cost/Acre

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Little Bluestem - Native	1.00	5.97	\$15.39
Sideoats Grama - Butte	1.00	3.28	\$24.16
Intermediate Wheatgrass - Oahe	4.00	8.54	\$18.58
Pubescent Wheatgrass - Greenleaf	3.50	7.23	\$16.66
Slender Wheatgrass - Native	3.00	10.95	\$21.19
Wheat, Winter - Tam 107	4.00	3.67	\$2.16
Totals Seed Mix	16.50	39.65	\$98.14

Application

\$

\$0.00

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$236.64
-		
	Total Seed Application Cost/Acre	\$236.64

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$492.78	\$985.56
Total Mulch Materials Cost/Acre				\$985.56

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$85.37
	Total Mulch Application Cost/Acre	\$85.37

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:
 63
 Cost /Acre:
 \$1,508.12

 Estimated Failure Rate:
 20%
 Cost /Acre*:
 \$334.78

*Selected Replanting Work Items: SEEDING

Initial Job Cost: \$95,011.56

Reseeding Job Cost: \$4,218.23

Total Job Cost: \$99,230

Job Hours: 63.00

TRUCK/LOADER TEAM WORK

Task description:	Topsoil	Spreading				
Site: Chieftain South M	Aine	Permit Action	on: 2024 Bond (Calculation_	Permit/Job#: <u>N</u>	11981148
PROJECT IDENT	FIFICATION	<u>[</u>				
Task #: 013		State: Colora	ıdo	Ab	breviation: No	one
Date: 9/20/20 User: BEH)24	County: Jeffers	son		Filename: M	148-013
Agency or o	organization nar	ne: DRMS				
HOURLY EQUIP	MENT COST	<u>r</u>		Shift bas	is: <u>1 per day</u>	
		I	Equipment Descri	ption		
Tr	uck Loader Tea					
Cunno	rt Equipment -I		Г 950Н			
Suppo			D6T XL			
Road Ma	intenance –Mot	-	20112			
	-Wa	iter Truck: NA				
Cost Breakdown:	Truck/Lo	ader Team	Support 1	Equipment	Maintena	nce Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	NA	NA
Ownership cost/hour:	\$108.67	\$36.61	NA	\$90.43	NA	NA
Operating cost/hour:	\$66.26	\$35.43	NA	\$67.29	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Operator cost/hour:	\$24.82	\$56.64	NA	\$40.04	NA	NA
Unit Subtotals:	\$199.75	\$128.68	NA	\$197.76	NA	NA
Number of Units:	2	1	0	1	0	0
Group Subtotals:	Work:	\$528.18	Support:	\$197.76	Maint:	\$0.00
Total work team cost	/hour: \$725.9 4	<u> </u>				

MATERIAL QUANTITIES

CCY Initial volume: 20,970 Swell factor: 1.090

Loose volume: 22,857 LCY

> Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell factor: Cat Handbook

> Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight: 2,400 Pounds/LCY Description: Clay and gravel - Dry

Rated Payload: 62,000 **Pounds** Payload Capacity: _ 25.83 LCY

Truck Bed (volume) Basi Struck Volume:	17.10	LCY					
Heaped Volume:		LCY					
Average Volume:		LCY					
Adjusted Volume:		LCY					
110,0000 10101101							
F	inal Truck Vol	ume Based	d on Number of	f Loader Passes:	18.06	LCY	
Loading Tool Capacity							
D 4 1 C 34	4.20	0 1	CV (1 1)	Buck	tet Size Class: N	[A	_
Rated Capacity			LCY (heaped)	andr. alar. (1000/	1100/) 1.050		_
Bucket Fill Factor			Vioist ioam or s LCY	andy clay (100%	- 110%) 1.050		=
Adjusted Capacity	: 4.51	3 1	LCY				
Job Condition Correction	ons:		Si	te Altitude (ft.): 6	<u>000</u> 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 Tir	mos N.	1 £ T .	1: T1 D-	D: 14- 1	7:11 T1	4	
Loading Tool Cycle Tir		mber of Lo	oading Tool Pa	sses Required to l	Fill Truck:	4 1	passes
Excavators and Front Sh	ovels:		-	sses Required to l	Fill Truck:	4]	passes
Excavators and Front Sh Machine Cycle Tim	ovels:	dition Rati	ng: NA	sses Required to l	Fill Truck:		passes
Excavators and Front Sh Machine Cycle Tin Selected Val	ovels: ne vs. Job Con	dition Rati Basic Rati	ng: NA NA NA	sses Required to l		4	passes
Excavators and Front Sh Machine Cycle Tin Selected Val	ovels: ne vs. Job Con- ue within this rs – Material D	dition Rati Basic Rati	ng: NA NA NA			4	passes
Excavators and Front Sh Machine Cycle Tin Selected Val Track Loader	ovels: ne vs. Job Con- ue within this rs – Material D	dition Rati Basic Rati	ng: NA ng: NA				passes
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA	ovels: ne vs. Job Conue within this rs – Material Din.):	dition Rati Basic Rati Description Maneuv	ng: NA ng: NA :	· 	Dump: 0.100)	
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA Wheel and Track Loader	ovels: ne vs. Job Conue within this s – Material D in.): ers - Unadjuste	dition Rati Basic Rati Description Maneuv	ng: NA ng: NA :	· 	Dump: 0.100)	
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA Wheel and Track Loader Cycle Time Factor	ovels: ne vs. Job Con- ue within this rs – Material D in.): ers - Unadjuste	dition Rati Basic Rati Description Maneuv d Basic Lo	ng: NA ng: NA : ver: NA pader Cycle Tir	· 	Dump: 0.100 naneuver): 0 Factor (min.)) .500 min Source	
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA Wheel and Track Loader Cycle Time Factor Materia	ovels: ne vs. Job Con- ue within this rs – Material D in.): ers - Unadjuste rs al: Mixed m	dition Rati Basic Rati Description Maneuv d Basic Lo	ng: NA ng: NA : ver: NA pader Cycle Tir	· 	Dump: 0.100 naneuver): 0 Factor (min.) 0.020	.500 min Source (Cat HB)	
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m. Load: NA Wheel and Track Loader Cycle Time Factor Materia	ovels: ne vs. Job Con- ue within this rs – Material E in.): ers - Unadjuste rs al: Mixed m e: Dumped	dition Rati Basic Rati Description Maneuv ed Basic Lo naterial 0.0 by truck 0	ng: NA ng: NA : ver: NA pader Cycle Tir 2 1.02	me (load, dump, n	Dump: 0.100 naneuver): 0 Factor (min.) 0.020 0.020	.500 min Source (Cat HB) (Cat HB)	
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA Wheel and Track Loader Cycle Time Factor Materia Stockpil Truck Ownershi	ovels: ne vs. Job Con- ue within this rs – Material D in.): ers - Unadjuste rs al: Mixed m e: Dumped p: Common	dition Rati Basic Rati Description Maneuv d Basic Lo naterial 0.0 by truck 0 n ownershi	ng: NA ng: NA : NA ver: NA pader Cycle Tir 2 1.02 p of trucks and	me (load, dump, n	Dump: 0.100 naneuver): 0 Factor (min.) 0.020 0.020 -0.040	.500 min Source (Cat HB) (Cat HB) (Cat HB)	
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA Wheel and Track Loader Cycle Time Factor Materia Stockpil Truck Ownershi	ovels: ne vs. Job Con- ue within this rs – Material D in.): ers - Unadjuste rs al: Mixed m e: Dumped p: Commor n: Constant	dition Rati Basic Rati Description Maneuv d Basic Lo Daterial 0.0 by truck 0 n ownershi operation	ng: NA ng: NA : ver: NA pader Cycle Tir 2 0.02 p of trucks and -0.04	me (load, dump, n	Dump: 0.100 naneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040	.500 min Source (Cat HB) (Cat HB) (Cat HB) (Cat HB)	
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA Wheel and Track Loader Cycle Time Factor Materia Stockpil Truck Ownershi	ovels: ne vs. Job Con- ue within this rs – Material D in.): ers - Unadjuste rs al: Mixed m e: Dumped p: Commor n: Constant	dition Rati Basic Rati Description Maneuv d Basic Lo naterial 0.0 by truck 0 n ownershi	ng: NA ng: NA : ver: NA pader Cycle Tir 2 0.02 p of trucks and -0.04 0	me (load, dump, n	Dump: 0.100 naneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040 0.000	.500 min Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA Wheel and Track Loader Cycle Time Factor Materia Stockpil Truck Ownershi	ovels: ne vs. Job Con- ue within this rs – Material D in.): ers - Unadjuste rs al: Mixed m e: Dumped p: Commor n: Constant	dition Rati Basic Rati Description Maneuv d Basic Lo atterial 0.0 by truck 0 n ownershi operation target 0.00	ng: NA ng: NA NA i. NA ver: NA pader Cycle Tir 2 0.02 p of trucks and -0.04 0 Net Cycle Tir	ne (load, dump, n	Dump: 0.100 naneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040 0.000 -0.040	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes	
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA Wheel and Track Loader Cycle Time Factor Materia Stockpil Truck Ownershi	ovels: ne vs. Job Con- ue within this rs – Material D in.): ers - Unadjuste rs al: Mixed m e: Dumped p: Commor n: Constant	dition Rati Basic Rati Description Maneuv d Basic Lo atterial 0.0 by truck 0 n ownershi operation target 0.00	ng: NA ng: NA : ver: NA bader Cycle Tir 2 0.02 p of trucks and -0.04 0 Net Cycle Tin Adjusted Load	me (load, dump, n	Dump: 0.100 naneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040 0.000	.500 min Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA Wheel and Track Loader Cycle Time Factor Materia Stockpil Truck Ownershi	ovels: ne vs. Job Con- ue within this rs – Material D in.): ers - Unadjuste rs al: Mixed m e: Dumped p: Commor n: Constant	dition Rati Basic Rati Description Maneuv d Basic Lo atterial 0.0 by truck 0 n ownershi operation target 0.00	ng: NA ng: NA : ver: NA bader Cycle Tir 2 0.02 p of trucks and -0.04 0 Net Cycle Tin Adjusted Load	ne (load, dump, no loaders -0.04	Dump: 0.100 naneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040 0.000 -0.040 0.460	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA Wheel and Track Loader Cycle Time Factor Materia Stockpil Truck Ownershi Operatio Dump Targe	ovels: ne vs. Job Con- ue within this rs – Material D in.): ers - Unadjuste rs al: Mixed m e: Dumped p: Common n: Constant et: Nominal	dition Rati Basic Rati Description Maneuved Basic Lonaterial 0.00 by truck 0 n ownershic operation target 0.00	ng: NA ng: NA : ver: NA bader Cycle Tir 2 0.02 p of trucks and -0.04 0 Net Cycle Tin Adjusted Load	ne (load, dump, no loaders -0.04 loaders -0.	Dump: 0.100 naneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040 0.000 -0.040 0.460	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	utes — — —
Excavators and Front Sh Machine Cycle Tim Selected Val Track Loader Cycle Time Elements (m: Load: NA Wheel and Track Loader Cycle Time Factor Materia Stockpil Truck Ownershi Operation Dump Targer	ovels: ne vs. Job Con- ue within this rs – Material D in.): ers - Unadjuste rs al: Mixed m e: Dumped p: Commor n: Constant et: Nominal	dition Rati Basic Rati Description Maneuv d Basic Lo atterial 0.0 by truck 0 n ownershi operation target 0.00	ng: NA ng: NA : ver: NA pader Cycle Tir 2 0.02 p of trucks and -0.04 0 Net Cycle Tin Adjusted Load Net Load T	ne (load, dump, no loaders -0.04 loaders -0.	Dump: 0.100 naneuver): 0 Factor (min.) 0.020 0.020 -0.040 -0.040 0.000 -0.040 0.460 1.480	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes	

<u>Truck Travel (Haul & Return) Time:</u> Road Condition: <u>Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0</u>

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2183	0.722

Haul Time: **0.722** minutes Return Route: Grade (%) Roll. Res Total Res Travel Haul Distance Velocity Seg# Time (Ft) (%)(%) (fpm) (min) 1000.00 0.00 3.00 3.00 2936 0.495

Return Time: 0.495 minutes
Total Truck Cycle Time: 4.297 minutes

Loading Tool unit

Production 520.96 LCY/Hour Adjusted for job efficiency: 432.40 LCY/Hour Truck Unit Production 252.18 LCY/Hour Adjusted for job efficiency: 209.31 LCY/Hour

Optimal No. of Trucks: _____ 2 ___ Truck(s) Selected Number of Trucks: ____ 2 ___ Truck(s)

Adjusted hourly truck team production: 418.61 LCY/Hour Adjusted single truck/loader team production: 418.61 LCY/Hour Adjusted multiple truck/loader team production: 418.61 LCY/Hour

JOB TIME AND COST

 Fleet size:
 1
 Team(s)
 Total job time:
 54.60
 Hours

 Unit cost:
 \$1.734
 /LCY
 Total job cost:
 \$39,638

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:	Equipment Mobilization		
Site: Chieftain South Mine	Permit Action:	2024 Bond Calculation Permit/J	ob#: M1981148
PROJECT IDENTIFICA	ATION		
Task #: 014 Date: 9/20/2024 User: BEH Agency or organiza		Abbreviation Filename	
		Shift basis: Cost Data Source:	1 per day CRG Data
Truck Tractor D	Description: GENERIC ON	-HIGHWAY TRUCK TRACTOR, 6X4 400 HP (2ND HALF, 2006)	, DIESEL POWERED,
Truck Trailer D	Description: GENERIC	FOLDING GOOSENECK, DROP DE TRAILER (25T, 50T, AND 1007	•
Cost Breakdown:			

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$10.44	\$22.18	\$23.94
Operating Cost/Hour:	\$26.48	\$54.55	\$55.65
Operator Cost/Hour:	\$22.52	\$22.52	\$22.52
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$59.44	\$122.78	\$125.64

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/uni	Fleet Size	Haul Trip Cost/hr/	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Description	(TONS)	Cost/III/ unit	t	Size	fleet		
Cat D6T XL	23.25	\$90.43	\$59.44	1	\$149.87	\$59.44	\$250.00
Cat 730	25.19	\$108.67	\$59.44	2	\$336.22	\$118.88	\$750.00
Drill/Broadcast	25.00	\$41.02	\$59.44	1	\$100.46	\$59.44	\$250.00
Seeder with							
Tractor							
CAT 950H	20.13	\$36.61	\$59.44	1	\$96.05	\$59.44	\$250.00

Subtotals: \$682.60 \$297.20 \$1,500.00

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	\$24.60	1	\$24.60	\$24.60

Subtotals:	\$24.60	\$24.60

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:

Total one-way travel distance:

Average Travel Speed:

LAKEWOOD

miles

45.00

mph

<u>Transportation Cycle Time:</u>

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	0.11	0.11
Return Time (Hours):	0.11	0.11
Loading Time (Hours):	0.25	NA
Unloading Time (Hours):	0.25	NA
Subtotals:	0.72	0.22

JOB TIME AND COST

Total job time:	1.44	Hours
Total job cost:	\$3,906	