

BOND AMOUNT CALCULATION
New Mexico Mining and Minerals Division
General Information

Tijeras Cement Plant

01/21/20

Applicant	GCC Rio Grande, Inc. PO Box 100 Tijeras, NM 87059-0100	Contact: Samantha Kretz 505/286-6081
Permit Number	BE001RE	
Number of Acres	263.18 acres (est. New Unit disturbance)	
Type of Operation	Cement/Regular/Existing	
Location	Bernalillo County	
Prepared by	Mauro Torres	
Recommended Bond	\$1,202,196	

Describe worst-case reclamation scenario:

Earthmoving

Scrapers transport redbed from locations where exposed to all areas
Local haul by dozers in each New Unit to cover edges and steep areas

Grading

Dozers spread, grade, and shape redbed soil

Revegetation

Reveg all disturbed areas (seeding, monitoring, etc.)

Other

Mobilization is 2% on 1-5% range due to close proximity to
Albuquerque where contractors and equipment are available.

NOT USED

BOND AMOUNT CALCULATION
 New Mexico Mining and Minerals Division
Material Handling Plan Summary Sheet

Tijeras Cement Plant
 Worksheet #3
 01/21/20

Item	Description	Volume (cy)	Origin	Destination	Haul Distance (ft)	Grade	Equipment	
1	Move Redbed	29,983.42	Quarries 3, 5 & 7	Quarry 2	0	10%	CAT 631-G	
2	Move Redbed	-	Quarries 3, 5 & 7	Quarry 3	0	0%	CAT 631-G	
3	Move Redbed	128,700.87	Quarries 3, 5 & 7	Quarry 4	5,000	10%	CAT 631-G	
4	Move Redbed	-	Quarries 3, 5 & 7	Quarry 5	500	0%	CAT 631-G	
5	Move Redbed	96,367.80	Quarries 3, 5 & 7	Quarry 6 - West Cap	7,000	5%	CAT 631-G	
6	Move Redbed	-	Quarries 3, 5 & 7	Quarry 7	500	0%	CAT 631-G	
7	Move Redbed	92,286.36	Quarries 3, 5 & 7	Quarry 8 - East Cap	5,000	5%	CAT 631-G	
8	Move Redbed	240,140.41	Quarries 3, 5 & 7	Quarry 10	3,500	5%	CAT 631-G	
9	Move Redbed	94,664.31	Quarries 3, 5 & 7	Quarry 15	4,000	5%	CAT 631-G	
10	Move Redbed	113,692.46	Quarries 3, 5 & 7	Quarry 17	6,000	5%	CAT 631-G	
11	Move Redbed	31,815.71	Quarries 3, 5 & 7	Quarry 18	7,000	10%	CAT 631-G	
12	Move Redbed	21,552.08	Quarries 3, 5 & 7	Quarry 19	11,000	10%	CAT 631-G	
13	Move Redbed	-	Quarries 3, 5 & 7	Exploration Drill Pads	5,000	10%	CAT 631-G	
		849,203	loose cy	=	679,363	bank cy		
14	Move Redbed	2,998.34	Quarries 3, 5 & 7	Quarry 2	300	10%	CAT D-8T Dozer w/SU Blade	10%
15	Move Redbed	-	Quarries 3, 5 & 7	Quarry 3	300	10%	CAT D-8T Dozer w/SU Blade	10%
16	Move Redbed	12,870.09	Quarries 3, 5 & 7	Quarry 4	300	10%	CAT D-8T Dozer w/SU Blade	10%
17	Move Redbed	-	Quarries 3, 5 & 7	Quarry 5	300	10%	CAT D-8T Dozer w/SU Blade	10%
18	Move Redbed	9,636.78	Quarries 3, 5 & 7	Quarry 6 - West Cap	300	10%	CAT D-8T Dozer w/SU Blade	10%
19	Move Redbed	-	Quarries 3, 5 & 7	Quarry 7	300	10%	CAT D-8T Dozer w/SU Blade	10%
20	Move Redbed	9,228.64	Quarries 3, 5 & 7	Quarry 8 - East Cap	300	10%	CAT D-8T Dozer w/SU Blade	10%
21	Move Redbed	24,014.04	Quarries 3, 5 & 7	Quarry 10	300	10%	CAT D-8T Dozer w/SU Blade	10%
22	Move Redbed	9,466.43	Quarries 3, 5 & 7	Quarry 15	300	10%	CAT D-8T Dozer w/SU Blade	10%
23	Move Redbed	11,369.25	Quarries 3, 5 & 7	Quarry 17	300	10%	CAT D-8T Dozer w/SU Blade	10%
24	Move Redbed	3,181.57	Quarries 3, 5 & 7	Quarry 18	300	10%	CAT D-8T Dozer w/SU Blade	10%
25	Move Redbed	2,155.21	Quarries 3, 5 & 7	Quarry 19	300	10%	CAT D-8T Dozer w/SU Blade	10%
26	Move Redbed	-	Quarries 3, 5 & 7	Exploration Drill Pads	300	10%	CAT D-8T Dozer w/SU Blade	10%

BOND AMOUNT CALCULATION
New Mexico Mining and Minerals Division
Earthwork Quantity Worksheet

Tijeras Cement Plant
Worksheet #4
01/21/20

NOT USED

Description: Spread 20% redbed in steep areas of Quarry 2 after scrapers

Equipment: *CAT D-8T Dozer w/SU Blade - Quarry 2*

Volume	2,998 cy	Time	33 hours
		Productivity	90 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	0.55	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	250 cy/hr	direct drive trans.	1.00

Description: Spread 20% redbed in steep areas of Quarry 4 after scrapers

Equipment: *CAT D-8T Dozer w/SU Blade - Quarry 3*

Volume	0 cy	Time	0 hours
		Productivity	208 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	0.80	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	400 cy/hr	direct drive trans.	1.00

Description: Spread 10% redbed in Quarry 6 after scrapers

Equipment: *CAT D-8T Dozer w/SU Blade - Quarry 4*

Volume	12,870 cy	Time	26 hours
		Productivity	502 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	1.10	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	700 cy/hr	direct drive trans.	1.00

Description: Spread 20% redbed in steep areas of Quarry 8 after scrapers

Equipment: *CAT D-8T Dozer w/SU Blade - Quarry 5*

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Volume	0 cy	Time	0 hours
		Productivity	90 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	0.55	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	250 cy/hr	direct drive trans.	1.00

Description: Spread 20% redbed in steep areas of Quarry 10 after scrapers

Equipment: **CAT D-8T Dozer w/SU Blade - Quarry 6**

Volume	9,637 cy	Time	41 hours
		Productivity	235 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	0.90	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	400 cy/hr	direct drive trans.	1.00

Description: Spread 20% redbed in steep areas of Quarry 15 after scrapers

Equipment: **CAT D-8T Dozer w/SU Blade - Quarry 7**

Volume	0 cy	Time	0 hours
		Productivity	410 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	0.90	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	700 cy/hr	direct drive trans.	1.00

Description: Spread 20% redbed in steep areas of Quarry 17 after scrapers

Equipment: **CAT D-8T Dozer w/SU Blade - Quarry 8**

Volume	9,229 cy	Time	22 hours
		Productivity	410 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	0.90	work hour	50 min/hr

soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	700 cy/hr	direct drive trans.	1.00

Description: Spread 20% redbed in steep areas of Quarry 18 after scrapers

Equipment: *CAT D-8T Dozer w/SU Blade - Quarry 10*

Volume	24,014 cy	Time	59 hours
		Productivity	410 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	0.90	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	700 cy/hr	direct drive trans.	1.00

Description: Spread 20% redbed in steep areas of Quarry 19 after scrapers

Equipment: *CAT D-8T Dozer w/SU Blade - Quarry 15*

Volume	9,466 cy	Time	23 hours
		Productivity	410 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	0.90	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	700 cy/hr	direct drive trans.	1.00

Description: Spread 20% redbed in steep areas of Quarry 18 after scrapers

Equipment: *CAT D-8T Dozer w/SU Blade - Quarry 17*

Volume	11,369 cy	Time	28 hours
		Productivity	410 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	0.90	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	700 cy/hr	direct drive trans.	1.00

Description: Spread 20% redbed in steep areas of Quarry 18 after scrapers

Equipment: *CAT D-8T Dozer w/SU Blade - Quarry 18*

Volume	3,182 cy	Time	8 hours
		Productivity	410 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	0.90	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	700 cy/hr	direct drive trans.	1.00

Description: Spread 20% redbed in steep areas of Quarry 18 after scrapers

Equipment: **CAT D-8T Dozer w/SU Blade - Quarry 19**

Volume	2,155 cy	Time	5 hours
		Productivity	410 cy/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	0.90	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
normal production	700 cy/hr	direct drive trans.	1.00

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Productivity and Hours Required for Dozer Use---Grading

Tijeras Cement Plant
 Worksheet #6
 01/21/20

Description: Grade, shape, and compact Plant Area

Equipment: D8R w/ SU blade - Plant Area

Area	0 ac	Time	0 hours
		Productivity	2.24 ac/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	1.10	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
effective blade width	12.9 feet	direct drive trans.	1.00
speed	2 miles/hr		

Description: Grade, shape, and compact Disposal Area

Equipment: D8R w/ SU blade - Disposal Area

Area	0 ac	Time	0 hours
		Productivity	2.24 ac/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	1.10	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
effective blade width	12.9 feet	direct drive trans.	1.00
speed	2 miles/hr		

Description: Grade, shape, and compact Quarry Area, including exploration drill pads

Equipment: D8R w/ SU blade - Exploration Drill Pads

Area	0.0 ac	Time	0.0 hours
		Productivity	2.24 ac/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	1.10	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
effective blade width	12.9 feet	direct drive trans.	1.00
speed	2 miles/hr		

Description: Grade, shape, and compact Haul & Access Roads

Equipment: D8R w/ SU blade - Haul & Access Roads

Area	0 ac	Time	0 hours
		Productivity	2.24 ac/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	1.10	work hour	50 min/hr
soil weight correction	2648 lb/cy	visibility	1.00
prod. method/blade	1.00	elevation	1.00
effective blade width	12.9 feet	direct drive trans.	1.00
speed	2 miles/hr		

Description: Spread and track-in rock, all Sections
(except Plant)

Equipment: D8R w/ SU blade - rock, all Sections
(except Plant)

Area	263 ac	Time	120 hours
		Productivity	2.20 ac/hr-dozer
PERFORMANCE FACTORS			
material	1.20	operator	0.75
grade	1.10	work hour	50 min/hr
soil weight correction	2700 lb/cy	elevation	1.00
prod. method/blade	1.00	elevation	1.00
effective blade width	12.9 feet	direct drive trans.	1.00
speed	2 miles/hr		

BOND AMOUNT CALCULATION
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**Productivity and Hours Required for
 Ripper-Equipped Dozer Use**

Tijeras Cement Plant
 Worksheet #7
 01/21/20

Description: Rip redbed for scraper transport

Equipment: D8R w/ multi-shank ripper

	Area Volume	0 ac 300 cy	Time Productivity	0 hours 4.25 ac/hr-dozer
PERFORMANCE FACTORS				
ripping length		1,000 ft	turn time	0.25 min/pass
ripper penetration		30.7 in	work hour	50 min/hr
pocket spacing		43.0 in		
no. of pockets		3		

BOND AMOUNT CALCULATION
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Productivity and Hours Required for Loader Use

Tijeras Cement Plant
Worksheet #8
01/21/20

NOT USED

BOND AMOUNT CALCULATION
New Mexico Mining and Minerals Division
Productivity and Hours Required for Truck Use

Tijeras Cement Plant
Worksheet #9
01/21/20

NOT USED

BOND AMOUNT CALCULATION
New Mexico Mining and Minerals Division

Tijeras Cement Plant
Worksheet #10

Productivity for Hydraulic Excavator Use (Backhoe or Power Shovel) 01/21/20

NOT USED

Description: Spread redbed in Quarry 1

Equipment: **CAT 631-G - Quarry 2**

Volume	29,983 cy	Time	60 hours
		Productivity	500 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	31 cy	loaded trip time	1.00 min
grade (loaded)	10 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	500 ft	return trip time	0.30 min
work hour	50 min		

Description: Spread redbed in West Cap

Equipment: **CAT 631-G - Quarry 3**

Volume	0 cy	Time	0 hours
		Productivity	500 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	31 cy	loaded trip time	1.00 min
grade (loaded)	10 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	500 ft	return trip time	0.30 min
work hour	50 min		

Description: Haul from West Cap and spread redbed in Quarry 2

Equipment: **CAT 631-G - Quarry 4**

Volume	128,701 cy	Time	698 hours
		Productivity	184 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	31 cy	loaded trip time	4.75 min
grade (loaded)	10 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	2,500 ft	return trip time	1.00 min
work hour	50 min		

Description: Spread redbed in Quarry 2

Equipment: **CAT 631-G - Quarry 5**

Volume	0 cy	Time	0 hours
		Productivity	529 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	34 cy	loaded trip time	1.00 min
grade (loaded)	10 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	500 ft	return trip time	0.30 min
work hour	50 min		

Description: Spread redbed in Quarry 4

Equipment: *CAT 631-G - Quarry 6*

Volume	96,368 cy	Time	182 hours
		Productivity	529 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	34 cy	loaded trip time	1.00 min
grade (loaded)	10 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	500 ft	return trip time	0.30 min
work hour	50 min		

Description: Spread redbed in Quarry 6

Equipment: *CAT 631-G - Quarry 7*

Volume	0 cy	Time	0 hours
		Productivity	573 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	34 cy	loaded trip time	0.60 min
grade (loaded)	0 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	1,200 ft	return trip time	0.50 min
work hour	50 min		

Description: Spread redbed in Quarry 8

Equipment: *CAT 631-G - Quarry 8*

Volume	92,286 cy	Time	161 hours
		Productivity	573 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	34 cy	loaded trip time	0.60 min
grade (loaded)	0 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	1,200 ft	return trip time	0.50 min
work hour	50 min		

Description: Spread redbed in Quarry 10

Equipment: *CAT 631-G - Quarry 10*

Volume	240,140 cy	Time	419 hours
		Productivity	573 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	34 cy	loaded trip time	0.60 min
grade (loaded)	0 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	1,200 ft	return trip time	0.50 min
work hour	50 min		

Description: Spread redbed in Quarry 15

Equipment: *CAT 631-G - Quarry 15*

Volume	94,664 cy	Time	165 hours
		Productivity	573 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	34 cy	loaded trip time	0.60 min
grade (loaded)	0 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	1,200 ft	return trip time	0.50 min
work hour	50 min		

Description: Spread redbed in Quarry 17

Equipment: *CAT 631-G - Quarry 17*

Volume	113,692 cy	Time	198 hours
		Productivity	573 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	34 cy	loaded trip time	0.60 min
grade (loaded)	0 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	1,200 ft	return trip time	0.50 min
work hour	50 min		

Description: Spread redbed in Quarry 18

Equipment: *CAT 631-G - Quarry 18*

Volume	31,816 cy	Time	56 hours
		Productivity	573 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min

heaped capacity	34 cy	loaded trip time	0.60 min
grade (loaded)	0 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	1,200 ft	return trip time	0.50 min
work hour	50 min		

Description: Spread redbed in Quarry 19

Equipment: *CAT 631-G - Quarry 19*

Volume	21,552 cy	Time	38 hours
		Productivity	573 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	34 cy	loaded trip time	0.60 min
grade (loaded)	0 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	1,200 ft	return trip time	0.50 min
work hour	50 min		

Description: Spread redbed in Quarry 19

Equipment: *CAT 631-G - Quarry 20*

Volume	0 cy	Time	0 hours
		Productivity	573 cy/hr-scraper
PERFORMANCE FACTORS			
struck capacity	21 cy	load time	0.60 min
heaped capacity	34 cy	loaded trip time	0.60 min
grade (loaded)	0 %	manuever and	0.70 min
rolling resistance	3 %	spread time	
haul distance	1,200 ft	return trip time	0.50 min
work hour	50 min		

BOND AMOUNT CALCULATION
New Mexico Mining and Minerals Division
Productivity and Hours Required for Motorgrader Use---Grading

Tijeras Cement Plant
Worksheet #12
01/21/20

NOT USED

Total Cost \$446,857

Equipment Type	Owning and Operating Cost (\$/hr)	Labor Cost (\$/hr)	Time Req'd (hrs)	Total Cost (\$)	Total Production	Prod. Unit	Unit Cost (\$/unit)
Dozers-Earthmoving							
CAT D-8T Dozer w/SU Blade - Quarry 2	131.43	35.00	33	5,571		2,998 cy	1.86
CAT D-8T Dozer w/SU Blade - Quarry 3	131.43	35.00	0	0		0 cy	#DIV/0!
CAT D-8T Dozer w/SU Blade - Quarry 4	131.43	35.00	26	4,270		12,870 cy	0.33
CAT D-8T Dozer w/SU Blade - Quarry 5	131.43	35.00	0	0		0 cy	#DIV/0!
CAT D-8T Dozer w/SU Blade - Quarry 6	131.43	35.00	41	6,839		9,637 cy	0.71
CAT D-8T Dozer w/SU Blade - Quarry 7	131.43	35.00	0	0		0 cy	#DIV/0!
CAT D-8T Dozer w/SU Blade - Quarry 8	131.43	35.00	22	3,742		9,229 cy	0.41
CAT D-8T Dozer w/SU Blade - Quarry 10	131.43	35.00	59	9,738		24,014 cy	0.41
CAT D-8T Dozer w/SU Blade - Quarry 15	131.43	35.00	23	3,839		9,466 cy	0.41
CAT D-8T Dozer w/SU Blade - Quarry 17	131.43	35.00	28	4,611		11,369 cy	0.41
CAT D-8T Dozer w/SU Blade - Quarry 18	131.43	35.00	8	1,290		3,182 cy	0.41
CAT D-8T Dozer w/SU Blade - Quarry 19	131.43	35.00	5	874		2,155 cy	0.41
Dozers-Grading							
D8R w/ SU blade - Plant Area	131.43	35.00	0	0		0 ac	#DIV/0!
D8R w/ SU blade - Disposal Area	131.43	35.00	0	0		0 ac	#DIV/0!
D8R w/ SU blade - Exploration Drill Pads	131.43	35.00	0	0		0 ac	#DIV/0!
D8R w/ SU blade - Haul & Access Roads	131.43	35.00	0	0		0 ac	#DIV/0!
D8R w/ SU blade - rock, all Sections	131.43	35.00	120	19,904		263 ac	75.63
Rippers							
D8R w/ multi-shank ripper	106.67	35.00	0	0		0 ac	#DIV/0!
D8R w/ multi-shank ripper	106.67	35.00	0	10		0 ac	133.34
Loaders							
	0	106.67	35.00	0	0	0 cy	#DIV/0!
Trucks							
	0	95.87	35.00	0	0	0 cy	#DIV/0!
Scrapers							
CAT 631-G - Quarry 2	160.31	35.00	60	11,712		29,983 cy	0.39
CAT 631-G - Quarry 3	160.31	35.00	0	0		0 cy	#DIV/0!
CAT 631-G - Quarry 4	160.31	35.00	698	136,318		128,701 cy	1.06
CAT 631-G - Quarry 5	160.31	35.00	0	0		0 cy	#DIV/0!
CAT 631-G - Quarry 6	160.31	35.00	182	35,590		96,368 cy	0.37
CAT 631-G - Quarry 7	160.31	35.00	0	0		0 cy	#DIV/0!
CAT 631-G - Quarry 8	160.31	35.00	161	31,461		92,286 cy	0.34
CAT 631-G - Quarry 10	160.31	35.00	419	81,865		240,140 cy	0.34
CAT 631-G - Quarry 15	160.31	35.00	165	32,272		94,664 cy	0.34
CAT 631-G - Quarry 17	160.31	35.00	198	38,758		113,692 cy	0.34
CAT 631-G - Quarry 18	160.31	35.00	56	10,846		31,816 cy	0.34
CAT 631-G - Quarry 19	160.31	35.00	38	7,347		21,552 cy	0.34
			2,283	\$446,857			
Total Labor Cost				\$79,896			

Data Source:

Cost Reference Construction Equipment Ownership and Operating Expense Schedule Region VI, US Army Corps of Engineers No. 2016
 2019 GCC Operator Labor hourly plus 40% benefits

BOND AMOUNT CALCULATION
 New Mexico Mining and Minerals Division
Revegetation Costs

Tijeras Cement Plant
 Worksheet #14
 01/21/20

Description:

Apply seed mix to areas and chain and plow.

Location Adjust.	Albuq.	101.7%
Total Cost		\$142,518

Area	Area (acres)	Unit Cost (\$/acre)	Subtotal Cost (\$)
Quarry 2	9.98	540	5,384
Quarry 4	2.15	540	1,160
Quarry 6	29.87	540	16,115
Quarry 8	30.44	540	16,423
Quarry 10	74.71	540	40,307
Quarry 15	43.58	540	23,512
Quarry 17	35.20	540	18,991
Quarry 18	9.86	540	5,320
Quarry 19	6.69	540	3,609
Potential interseeding	4.2	313	1,315
Annual monitoring		8,000	8,000
Total	242.48		140,136

BOND AMOUNT CALCULATION
New Mexico Mining and Minerals Division
Other Reclamation Activity Costs

Tijeras Cement Plant
Worksheet #15
01/21/20
0

NOT USED

BOND AMOUNT CALCULATION
 New Mexico Mining and Minerals Division
Reclamation Bond Summary

Tijeras Cement Plant
 Worksheet #16
 01/21/20

DIRECT COSTS	Facility and Structure Removal		\$0
	Earthmoving		\$446,857
	Revegetation @ percent bonded	160%	\$228,029
	Other		\$0
		Subtotal	\$674,886
	Cost Escalation Period (years)	5	
Cost Escalation Rate	2.2%		
	Adjusted Subtotal	\$750,623	
INDIRECT COSTS	Construction Indirect Costs	60%	\$450,374.07
	Liability Insurance (1.5% of \$74,632 labor costs)		\$1,198
TOTAL BOND AMOUNT			\$1,202,196