



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

Date: September 1, 2023

To: Amber Michels

CC: Jared Ebert and Amy Eschberger

From: Zach Trujillo

RE: State Pit, DRMS File No. M-1990-112
2023 Reclamation Cost Estimate

Amber,

I have reviewed the State Pit's (SP) response and reclamation cost estimate (RCE) which resulted from the 2023 inspection in association to your request. Part of your request is for discussion on why the Division does not accept individualized rates from operators. First and foremost, the Division needs to assume that the work would be performed by the Division which may not reflect operator costs. Additionally, the Division needs to ensure its equipment rates are accurate and consistent across all operations from within the entire State. Locally surveyed costs may not always reflect costs found in a different region and/or county. Partly due to this, the Division uses third party survey companies that provide averaged costs from multiple sources which are then adjusted locally. Specifically for equipment rates, the Division uses the monthly rental rates provided from EquipmentWatch (EW). For your review, I have included the associated equipment rental rates from EW that were used in the CIRCES 2023 update at the end of this memo for supporting documentation

While not part of the request, I have made some key observations associated with SP's provided RCE that may assist in your ongoing discussions with SP.

1. SP equipment rates are from adjusted monthly rental rates from 3rd party rental, Wagner. Wagner rental rates are based off a 176 hr/month assumption. SP extrapolates the hourly rate from 176/hr to the assumption of a 200 hr/month which further **reduces** the hourly equipment rate used by SP. The Division does not use work hours per month beyond the assumed average of 176 hr/month.
2. Alternative equipment.
 - a. SP proposes the use of alternative equipment (e.g. D6 dozer instead of D7 dozer) however maintains the 'Total Job Time' (HRS) calculated by the original equipment in CIRCES in their RCE. This is in reference to CIRCES Task 001 and 003 in the Division's RCE. In SP's RCE, they propose the use of smaller equipment with their provided equipment rates. This ultimately results in a lower total cost assuming the same

State Pit RCE Memo

September 1, 2023



Total Job Hours as provided by the Division's RCE. However, the smaller equipment has a lower productivity which would increase the Total Job Hours. The hours assumed in SP's RCE does not accurately reflect the actual Total Job Hours for the suggested equipment due to the change in productivity. After a quick comparison, even with the lower equipment rate, the loss in productivity would result in an overall cost increase.

- b. For CIRCES Task 002 (ripping), SP proposes the use of a D6T dozer instead of the use of a 14M grader. Based on the Ripper task within CIRCES, this would be a cost increase due to the difference in equipment rates and Total Job Hours (Refer to Comment 2a. for additional details).
 - c. It appears SP suggests the use of a Dozer D6T instead of 14M grader for road maintenance found under support equipment for CIRCES Task 003 (scraper). Based on my personal experience, I have never seen the use of a dozer for road maintenance as the tracks of a dozer are often damaging to roads. This equipment suggestion may not seem appropriate without additional rational.
3. As you noted in your request, it may be appropriate to adjust the equipment based on their suggestions. The following are quick observations with the use of their recommended equipment:
- a. The use of D6 dozer over D7. Based on EW equipment rates (see attached), the D7 is actually less per hour than the D6. Combined with a loss in production, this would result in an overall cost increase.
 - b. The use of D6T over 14M grader for ripping. Overall cost increase based on CIRCES.
 - c. The use of 623G over 657G scraper. Loss of productivity compared to equipment rates (see attached) results in an overall cost increase.
 - d. One observation noted in the Division's Task 003 (scraper) is the utilization of 14M grader for road maintenance. Percent utilization *could* be lowered from 100% however the overall cost change is minimal.

This concludes my review of State Pit's reclamation cost estimate which resulted from the 2023 inspection in association to your request. If you have any questions, feel free to contact me.

Sincerely,



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Rental Rate Blue Book, Usage Report (Monthly)

May 25, 2023

Name: **Dozers**

Adjustments

Note: Values not specified at the fleet level will be taken from individual equipment adjustments.

Rate Effective Date: -

Region: -

Ownership Adjustment: -

Rate Effective Date: -

Organization: -

Operating Adjustment: -

Rental Rate Blue Book Rates

All prices shown in US dollars (\$)

Equipment Details								Rental Rate Blue Book®				Revision	Region	Adjustments				Hours	Total Cost
ID	Equipment Type	Size Class	Manufacturer	Model	Year	Serial Number	Configuration/Notes	Ownership	Operating	Standby	Idling			Age	Ownership	Operating	FHWA Hourly Rate		
Cat D10T - 10SU	Standard Crawler Dozers	520 hp & Over	Caterpillar	D10T	2014		Dozer Type:Semi-U , Operator Protection:EROPS , Power Mode:Diesel	USD \$178.69	USD \$160.22	USD \$87.56	USD \$254.82	2023-04-01	, Colorado: 104.9%	100%	100%	100%	USD \$338.91	1	USD \$338.91
Cat D11T - 11U	Standard Crawler Dozers	520 hp & Over	Caterpillar	D11T	2018		Dozer Type:U Blade , Operator Protection:EROPS , Power Mode:Diesel	USD \$334.55	USD \$260.65	USD \$163.93	USD \$447.29	2023-04-01	, Colorado: 104.9%	100%	100%	100%	USD \$595.20	1	USD \$595.20
Cat D3K LGP - 3P	Lgp Crawler Dozers	60 - 74 hp	Caterpillar	D3K LGP	2018		Dozer Type:VPAT , Operator Protection:EROPS , Power Mode:Diesel	USD \$73.07	USD \$48.89	USD \$34.34	USD \$81.52	2023-04-01	, Colorado: 105.2%	100%	100%	100%	USD \$121.96	1	USD \$121.96
Cat D3K XL - 3P	Standard Crawler Dozers	60 - 74 hp	Caterpillar	D3K XL	2018		Dozer Type:VPAT , Operator Protection:EROPS , Power Mode:Diesel	USD \$47.41	USD \$33.78	USD \$23.23	USD \$55.86	2023-04-01	, Colorado: 104.9%	100%	100%	100%	USD \$81.19	1	USD \$81.19
Cat D4K LGP - 4P	Lgp Crawler Dozers	75 - 84 hp	Caterpillar	D4K LGP	2018		Dozer Type:VPAT , Operator Protection:EROPS , Power Mode:Diesel	USD \$99.76	USD \$62.65	USD \$46.89	USD \$109.35	2023-04-01	, Colorado: 105.2%	100%	100%	100%	USD \$162.41	1	USD \$162.41
Cat D4K XL - 4P	Standard Crawler Dozers	75 - 84 hp	Caterpillar	D4K XL	2018		Dozer Type:VPAT , Operator Protection:EROPS , Power Mode:Diesel	USD \$78.76	USD \$56.45	USD \$38.59	USD \$88.35	2023-04-01	, Colorado: 104.9%	100%	100%	100%	USD \$135.21	1	USD \$135.21
Cat D5K2 XL - 5P	Standard Crawler Dozers	85 - 104 hp	Caterpillar	D5K2 XL	2018		Dozer Type:VPAT , Operator Protection:EROPS , Power Mode:Diesel	USD \$102.71	USD \$61.54	USD \$50.33	USD \$113.38	2023-04-01	, Colorado: 104.9%	100.02%	100%	100%	USD \$164.25	1	USD \$164.25
Cat D5N LGP - 5P	Lgp Crawler Dozers	85 - 104 hp	Caterpillar	D5K LGP	2015		Dozer Type:VPAT , Operator Protection:EROPS , Power Mode:Diesel	USD \$68.32	USD \$44.72	USD \$32.11	USD \$78.17	2023-04-01	, Colorado: 105.2%	100%	100%	100%	USD \$113.04	1	USD \$113.04
Cat D6T LGP	Lgp Crawler Dozers	190 - 259 hp	Caterpillar	D6T LGP	2018		Dozer Type:Straight , Operator Protection:EROPS , Power Mode:Diesel	USD \$127.53	USD \$83.13	USD \$59.94	USD \$154.88	2023-04-01	, Colorado: 105.2%	100%	100%	100%	USD \$210.66	1	USD \$210.66
Cat D6T XL	Standard Crawler Dozers	190 - 259 hp	Caterpillar	D6T XL	2018		Dozer Type:Semi-U , Operator Protection:EROPS , Power Mode:Diesel	USD \$147.22	USD \$92.18	USD \$72.14	USD \$174.57	2023-04-01	, Colorado: 104.9%	100%	100%	100%	USD \$239.40	1	USD \$239.40
Cat D7R DS Series II LGP	Lgp Crawler Dozers	190 - 259 hp	Caterpillar	D7R DS LGP SERIES II	2007		Dozer Type:Straight , Operator Protection:EROPS , Power Mode:Diesel	USD \$114.76	USD \$91.98	USD \$53.94	USD \$147.31	2023-04-01	, Colorado: 105.2%	100%	100%	100%	USD \$206.74	1	USD \$206.74
Cat D7R DS XR Series II	Lgp Crawler Dozers	190 - 259 hp	Caterpillar	D7R DS LGP SERIES II	2018		Dozer Type:Straight , Operator Protection:EROPS , Power Mode:Diesel	USD \$114.76	USD \$91.98	USD \$53.94	USD \$147.31	2023-04-01	, Colorado: 105.2%	100%	100%	100%	USD \$206.74	1	USD \$206.74
Cat D8T - 8SU	Standard Crawler Dozers	260 - 359 hp	Caterpillar	D8T	2018		Dozer Type:Semi-U , Operator	USD \$241.38	USD \$143.92	USD \$118.28	USD \$283.78	2023-04-01	, Colorado: 104.9%	99.9%	100%	100%	USD \$385.30	1	USD \$385.30

Equipment Details							Rental Rate Blue Book®					Adjustments					Hours	Total Cost		
ID	Equipment Type	Size Class	Manufacturer	Model	Year	Serial Number	Configuration/Notes	Ownership	Operating	Standby	Idling	Revision	Region	Age	Ownership	Operating			FHWA Hourly Rate	
Cat D9T - 9SU	Standard Crawler Dozers	360 - 519 hp	Caterpillar	D9T	2018		Protection:EROPS , Power Mode:Diesel Dozer Type:Semi-U , Operator Protection:ROPS/FOPS , Power Mode:Diesel	USD \$238.76	USD \$162.29	USD \$116.99	USD \$294.09	2023-04-01	, Colorado: 104.9%	99.9%	100%	100%	USD \$401.05	1	USD \$401.05	
																			Total:	USD \$3,362.06

These are the most accurate rates for the selected Revision Date(s). However, due to more frequent online updates, these rates may not match Rental Rate Blue Book Print. Visit the Cost Recovery Product Guide on our Help page for more information.

The equipment represented in this report has been exclusively prepared for JARED EBERT (jared.ebert@state.co.us)

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Rental Rate Blue Book, Usage Report (Monthly)

May 25, 2023

Name: **Scrapers**

Adjustments

Note: Values not specified at the fleet level will be taken from individual equipment adjustments.

Rate Effective Date: -

Region: -

Ownership Adjustment: -

Rate Effective Date: -

Organization: -

Operating Adjustment: -

Rental Rate Blue Book Rates

All prices shown in US dollars (\$)

Equipment Details								Rental Rate Blue Book®					Adjustments						
ID	Equipment Type	Size Class	Manufacturer	Model	Year	Serial Number	Configuration/Notes	Ownership	Operating	Standby	Idling	Revision	Region	Age	Ownership	Operating	FHWA Hourly Rate	Hours	Total Cost
Cat 613C Series 2	Single Engine Elevating Scrapers	To 11 cu yd	Caterpillar	613C SERIES II	2008		Operator Protection:EROPS , Power Mode:Diesel , Scraper Capacity:8.9 - 11.0	USD \$109.92	USD \$92.39	USD \$52.76	USD \$132.63	2023-04-01	, Colorado: 104.6%	100%	100%	100%	USD \$202.31	1	USD \$202.31
Cat 623G	Single Engine Elevating Scrapers	18 - 29 cu yd	Caterpillar	623G	2018		Operator Protection:EROPS , Power Mode:Diesel , Scraper Capacity:18.0 - 23.0	USD \$252.73	USD \$192.59	USD \$121.31	USD \$300.09	2023-04-01	, Colorado: 104.6%	100%	100%	100%	USD \$445.32	1	USD \$445.32
Cat 627G	Dual Engine Conventional Scrapers	To 17 cu yd	Caterpillar	627G	2006		Operator Protection:EROPS , Power Mode:Diesel , Scraper Capacity:15.7 - 22.0 , Scraper Horsepower:266.0	USD \$230.18	USD \$281.21	USD \$131.21	USD \$369.80	2023-04-01	, Colorado: 104.9%	98.56%	100%	100%	USD \$511.39	1	USD \$511.39
Cat 627G w/push-pull	Dual Engine Conventional Scrapers	To 17 cu yd	Caterpillar	627G P-P	2006		Operator Protection:EROPS , Power Mode:Diesel , Scraper Capacity:15.7 - 22.0 , Scraper Horsepower:266.0	USD \$249.04	USD \$289.36	USD \$141.95	USD \$388.66	2023-04-01	, Colorado: 104.9%	98.56%	100%	100%	USD \$538.40	1	USD \$538.40
Cat 631G	Single Engine Conventional Scrapers	18 cu yd & Over	Caterpillar	631G	2018		Operator Protection:EROPS , Power Mode:Diesel , Scraper Capacity:24.0 - 34.0	USD \$341.67	USD \$285.26	USD \$160.59	USD \$422.36	2023-04-01	, Colorado: 104.7%	100%	100%	100%	USD \$626.93	1	USD \$626.93
Cat 637G	Dual Engine Conventional Scrapers	18 cu yd & Over	Caterpillar	637G	2018		Operator Protection:EROPS , Power Mode:Diesel , Scraper Capacity:24.0 - 34.0 , Scraper Horsepower:283.0	USD \$239.90	USD \$303.13	USD \$136.74	USD \$408.97	2023-04-01	, Colorado: 104.9%	100%	100%	100%	USD \$543.03	1	USD \$543.03
Cat 637G w/push-pull	Dual Engine Conventional Scrapers	18 cu yd & Over	Caterpillar	637G P-P	2018		Operator Protection:EROPS , Power Mode:Diesel , Scraper Capacity:24.0 - 34.0 , Scraper Horsepower:283.0	USD \$255.23	USD \$280.59	USD \$145.48	USD \$424.30	2023-04-01	, Colorado: 104.9%	99.9%	100%	100%	USD \$535.82	1	USD \$535.82
Cat 657G	Dual Engine Conventional Scrapers	18 cu yd & Over	Caterpillar	657G	2018		Operator Protection:EROPS , Power Mode:Diesel , Scraper Capacity:32.0 - 44.0 , Scraper Horsepower:410.0	USD \$390.03	USD \$361.96	USD \$222.32	USD \$595.39	2023-04-01	, Colorado: 104.9%	99.9%	100%	100%	USD \$751.99	1	USD \$751.99

Equipment Details							Rental Rate Blue Book®				Adjustments							Hours	Total Cost
ID	Equipment Type	Size Class	Manufacturer	Model	Year	Serial Number	Configuration/Notes	Ownership	Operating	Standby	Idling	Revision	Region	Age	Ownership	Operating	FHWA Hourly Rate		
Cat 657G w/push-pull	Dual Engine Conventional Scrapers	18 cu yd & Over	Caterpillar	657G P-P	2018		Operator Protection:EROPS , Power Mode:Diesel , Scraper Capacity:32.0 - 44.0 , Scraper Horsepower:410.0	USD \$379.25	USD \$358.77	USD \$216.18	USD \$584.61	2023-04-01	, Colorado: 104.9%	99.9%	100%	100%	USD \$738.02	1	USD \$738.02

Total: USD \$4,893.21

These are the most accurate rates for the selected Revision Date(s). However, due to more frequent online updates, these rates may not match Rental Rate Blue Book Print. Visit the Cost Recovery Product Guide on our Help page for more information.

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All prices shown in US dollars (\$)

Rental Rate Blue Book, Usage Report (Monthly)

May 25, 2023

Name: **Graders**

Adjustments

Note: Values not specified at the fleet level will be taken from individual equipment adjustments.

Rate Effective Date: -

Region: -

Ownership Adjustment: -

Rate Effective Date: -

Organization: -

Operating Adjustment: -

Rental Rate Blue Book Rates

All prices shown in US dollars (\$)

Equipment Details										Rental Rate Blue Book®			Adjustments					Hours	Total Cost
ID	Equipment Type	Size Class	Manufacturer	Model	Year	Serial Number	Configuration/Notes	Ownership	Operating	Standby	Idling	Revision	Region	Age	Ownership	Operating	FHWA Hourly Rate		
CAT 120M	Articulated Frame Graders	130 - 144 hp	Caterpillar	120M	2018		Moldboard Size:12.0 , Operator Protection:EROPS , Power Mode:Diesel	USD \$85.55	USD \$56.03	USD \$50.47	USD \$107.82	2023-04-01	, Colorado: 105.4%	100%	100%	100%	USD \$141.58	1	USD \$141.58
CAT 12M	Articulated Frame Graders	170 - 199 hp	Caterpillar	12M	2012		Moldboard Size:12.0 , Operator Protection:EROPS , Power Mode:Diesel	USD \$74.98	USD \$55.26	USD \$44.24	USD \$96.45	2023-04-01	, Colorado: 105.4%	100%	100%	100%	USD \$130.24	1	USD \$130.24
CAT 140M	Articulated Frame Graders	170 - 199 hp	Caterpillar	140M	2018		Moldboard Size:12.0 , Operator Protection:EROPS , Power Mode:Diesel	USD \$83.57	USD \$57.55	USD \$49.31	USD \$108.44	2023-04-01	, Colorado: 105.4%	100%	100%	100%	USD \$141.12	1	USD \$141.12
CAT 14M	Articulated Frame Graders	250 hp & Over	Caterpillar	14M	2015		Moldboard Size:14.0 , Operator Protection:EROPS , Power Mode:Diesel	USD \$149.33	USD \$92.79	USD \$88.10	USD \$184.53	2023-04-01	, Colorado: 105.4%	100%	100%	100%	USD \$242.12	1	USD \$242.12
CAT 160M	Articulated Frame Graders	200 - 249 hp	Caterpillar	160M	2012		Moldboard Size:14.0 , Operator Protection:EROPS , Power Mode:Diesel	USD \$102.08	USD \$79.65	USD \$60.23	USD \$131.03	2023-04-01	, Colorado: 105.4%	100%	100%	100%	USD \$181.73	1	USD \$181.73
CAT 16M	Articulated Frame Graders	250 hp & Over	Caterpillar	16M	2018		Moldboard Size:16.0 , Operator Protection:EROPS , Power Mode:Diesel	USD \$212.21	USD \$124.88	USD \$125.20	USD \$252.57	2023-04-01	, Colorado: 105.4%	100%	100%	100%	USD \$337.09	1	USD \$337.09
																		Total:	USD \$1,173.88

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