

Appendix A. Economic Impact

Full economic impact results are shown below for each of the five possible scenarios. Each table displays direct, indirect, induced, and total impacts as well as economic multipliers for employment, labor income, and output. Note that "value added" is also included for completeness. Value added incorporates labor income as well as taxes on production and other property income. Below each impact table is an additional table listing the most impacted employment industries (in descending order by the number of jobs) as well as associated labor income, value added, and output.

The results are organized first by mine type (surface and underground) and then by disposal method (non-disposal, onsite, offsite).

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Surface Mine

Non-Disposal (Surface Mine)

Impact Type	Employment	Labor Income	Labor Income/Job	Output	Output/Job
Direct Effect	3.3	\$201,846	\$61,165.45	\$515,737	\$156,283.94
Indirect Effect	1.1	\$49,066	\$44,605.45	\$154,203	\$140,184.55
Induced Effect	1.4	\$52,559	\$37,542.14	\$181,482	\$129,630.00
Total Effect	5.8	\$303,471	\$52,322.59	\$851,421	\$146,796.72
Multiplier	1.8	1.5	N/A	1.7	N/A

Sector	Description	Employment	Labor Income	Labor Income/Job	Output	Output/Job
455	Environmental and other technical consulting services	1	\$52,340	\$52,340	\$72,914	\$72,914
395	Wholesale trade	0.6	\$33,854	\$56,423	\$123,550	\$205,917
449	Architectural, engineering, and related services	0.5	\$36,071	\$72,142	\$76,921	\$153,842
445	Commercial and industrial machinery and equipment rental and leasing	0.4	\$35,845	\$89,613	\$138,946	\$347,365
462	Office administrative services	0.4	\$21,224	\$53,060	\$29,721	\$74,303
411	Truck transportation	0.3	\$15,784	\$52,613	\$43,741	\$145,803
56	Construction of new highways and streets	0.1	\$3,197	\$31,970	\$11,407	\$114,070
405	Retail - General merchandise stores	0.1	\$1,471	\$14,710	\$3,767	\$37,670
440	Real estate	0.1	\$1,978	\$19,780	\$28,303	\$283,030
442	Automotive equipment rental and leasing	0.1	\$7,030	\$70,300	\$31,036	\$310,360
464	Employment services	0.1	\$4,037	\$40,370	\$7,181	\$71,810
465	Business support services	0.1	\$2,759	\$27,590	\$4,386	\$43,860
468	Services to buildings	0.1	\$908	\$9,080	\$1,790	\$17,900
471	Waste management and remediation services	0.1	\$7,634	\$76,340	\$22,459	\$224,590
482	Hospitals	0.1	\$4,773	\$47,730	\$9,480	\$94,800
x	Other (Implied)	1.7	\$74,560	\$43,859	\$245,814	\$144,596
Total		5.8	\$303,471	\$52,323	\$851,421	\$146,797

Onsite Disposal (Surface Mine)

Impact Type	Employment	Labor Income	Labor Income/Job	Output	Output/Job
Direct Effect	4.3	\$296,903	\$69,047	\$887,498	\$206,395
Indirect Effect	1.6	\$73,534	\$45,959	\$235,906	\$147,441
Induced Effect	2.1	\$77,547	\$36,927	\$267,770	\$127,510
Total Effect	8	\$447,984	\$55,998	\$1,391,174	\$173,897
Multiplier	1.9	1.5	N/A	1.6	N/A

Sector	Description	Employment	Labor Income	Labor Income/Job	Output	Output/Job
445	Commercial and industrial machinery and equipment rental and leasing	1.3	\$119,494	\$91,918	\$463,187	\$356,298
449	Architectural, engineering, and related services	0.8	\$61,696	\$77,120	\$131,566	\$164,458
455	Environmental and other technical consulting services	0.6	\$32,789	\$54,648	\$45,678	\$76,130
56	Construction of new highways and streets	0.5	\$25,055	\$50,110	\$89,385	\$178,770
395	Wholesale trade	0.3	\$17,912	\$59,707	\$65,368	\$217,893
411	Truck transportation	0.3	\$21,159	\$70,530	\$58,637	\$195,457
462	Office administrative services	0.3	\$15,336	\$51,120	\$21,475	\$71,583
471	Waste management and remediation services	0.3	\$25,712	\$85,707	\$75,641	\$252,137
440	Real estate	0.2	\$2,546	\$12,730	\$36,441	\$182,205
501	Full-service restaurants	0.2	\$4,586	\$22,930	\$9,766	\$48,830
502	Limited-service restaurants	0.2	\$3,079	\$15,395	\$12,530	\$62,650
400	Retail - Food and beverage stores	0.1	\$1,889	\$18,890	\$4,214	\$42,140
405	Retail - General merchandise stores	0.1	\$2,171	\$21,710	\$5,561	\$55,610
415	Couriers and messengers	0.1	\$1,866	\$18,660	\$5,617	\$56,170
433	Monetary authorities and depository credit intermediation	0.1	\$3,115	\$31,150	\$9,667	\$96,670
x	Other (Implied)	2.6	\$109,572	\$42,143	\$356,435	\$137,090
Total		8	\$447,984	\$55,998	\$1,391,174	\$173,897

Offsite Disposal (Surface Mine)

Impact Type	Employment	Labor Income	Labor Income/Job	Output	Output/Job
Direct Effect	4.5	\$278,736	\$61,941	\$780,577	\$173,462
Indirect Effect	2.1	\$107,422	\$51,153	\$357,693	\$170,330
Induced Effect	2.1	\$80,881	\$38,515	\$279,277	\$132,989
Total Effect	8.7	\$467,039	\$53,683	\$1,417,548	\$162,937
Multiplier	1.9	1.7	N/A	1.8	N/A

Sector	Description	Employment	Labor Income	Labor Income/Job	Output	Output/Job
411	Truck transportation	3.6	\$224,265	\$62,296	\$621,493	\$172,637
395	Wholesale trade	0.4	\$21,653	\$54,133	\$79,023	\$197,558
415	Couriers and messengers	0.3	\$10,160	\$33,867	\$30,575	\$101,917
440	Real estate	0.2	\$2,662	\$13,310	\$38,097	\$190,485
445	Commercial and industrial machinery and equipment rental and leasing	0.2	\$17,318	\$86,590	\$67,128	\$335,640
449	Architectural, engineering, and related services	0.2	\$12,898	\$64,490	\$27,504	\$137,520
455	Environmental and other technical consulting services	0.2	\$9,937	\$49,685	\$13,843	\$69,215
501	Full-service restaurants	0.2	\$3,617	\$18,085	\$7,703	\$38,515
502	Limited-service restaurants	0.2	\$2,874	\$14,370	\$11,696	\$58,480
518	Postal service	0.2	\$15,376	\$76,880	\$18,810	\$94,050
20	Extraction of natural gas and crude petroleum	0.1	\$4,796	\$47,960	\$12,387	\$123,870
56	Construction of new highways and streets	0.1	\$2,966	\$29,660	\$10,582	\$105,820
396	Retail - Motor vehicle and parts dealers	0.1	\$3,552	\$35,520	\$7,269	\$72,690
400	Retail - Food and beverage stores	0.1	\$2,028	\$20,280	\$4,523	\$45,230
405	Retail - General merchandise stores	0.1	\$2,446	\$24,460	\$6,264	\$62,640
x	Other (Implied)	2.5	\$130,480	\$52,192	\$460,644	\$184,258
Total		8.7	\$467,039	\$53,683	\$1,417,548	\$162,937

Underground Mine

Onsite Disposal (Underground Mine)

Impact Type	Employment	Labor Income	Labor Income/Job	Output	Output/Job
Direct Effect	4.7	\$300,160	\$63,864	\$844,369	\$179,653
Indirect Effect	1.6	\$74,823	\$46,764	\$239,427	\$149,642
Induced Effect	2.1	\$78,535	\$37,398	\$271,175	\$129,131
Total Effect	8.5	\$453,517	\$53,355	\$1,354,972	\$159,408
Multiplier	1.8	1.5	N/A	1.6	N/A

Sector	Description	Employment	Labor Income	Labor Income/Job	Output	Output/Job
445	Commercial and industrial machinery and equipment rental and leasing	1	\$84,214	\$84,214	\$326,435	\$326,435
455	Environmental and other technical consulting services	0.9	\$46,069	\$51,188	\$64,179	\$71,310
449	Architectural, engineering, and related services	0.7	\$54,996	\$78,566	\$117,277	\$167,539
471	Waste management and remediation services	0.6	\$45,846	\$76,410	\$134,872	\$224,787
56	Construction of new highways and streets	0.5	\$21,665	\$43,330	\$77,291	\$154,582
411	Truck transportation	0.4	\$23,328	\$58,320	\$64,648	\$161,620
462	Office administrative services	0.4	\$18,482	\$46,205	\$25,880	\$64,700
395	Wholesale trade	0.3	\$18,913	\$63,043	\$69,023	\$230,077
19	Support activities for agriculture and forestry	0.2	\$4,609	\$23,045	\$10,436	\$52,180
440	Real estate	0.2	\$2,692	\$13,460	\$38,532	\$192,660
501	Full-service restaurants	0.2	\$4,577	\$22,885	\$9,747	\$48,735
502	Limited-service restaurants	0.2	\$3,093	\$15,465	\$12,587	\$62,935
400	Retail - Food and beverage stores	0.1	\$1,915	\$19,150	\$4,272	\$42,720
405	Retail - General merchandise stores	0.1	\$2,205	\$22,050	\$5,646	\$56,460
415	Couriers and messengers	0.1	\$1,941	\$19,410	\$5,840	\$58,400
x	Other (Implied)	2.6	\$118,958	\$45,753	\$388,303	\$149,347
Total		8.5	\$453,517	\$53,355	\$1,354,972	\$159,408

Offsite Disposal (Underground Mine)

Impact Type	Employment	Labor Income	Labor Income/Job	Output	Output/Job
Direct Effect	5.3	\$337,874	\$63,750	\$991,600	\$187,094
Indirect Effect	2.5	\$132,165	\$52,866	\$446,138	\$178,455
Induced Effect	2.6	\$98,462	\$37,870	\$339,982	\$130,762
Total Effect	10.4	\$568,502	\$54,664	\$1,777,720	\$170,935
Multiplier	2.0	1.7	N/A	1.8	N/A

Sector	Description	Employment	Labor Income	Labor Income/Job	Output	Output/Job
411	Truck transportation	4.7	\$290,575	\$61,824	\$805,253	\$171,330
415	Couriers and messengers	0.4	\$12,838	\$32,095	\$38,632	\$96,580
395	Wholesale trade	0.2	\$11,047	\$55,235	\$40,317	\$201,585
409	Rail transportation	0.2	\$25,508	\$127,540	\$141,538	\$707,690
414	Scenic and sightseeing transportation and support activities for transportation	0.2	\$14,969	\$74,845	\$34,222	\$171,110
440	Real estate	0.2	\$3,083	\$15,415	\$44,130	\$220,650
455	Environmental and other technical consulting services	0.2	\$8,729	\$43,645	\$12,160	\$60,800
501	Full-service restaurants	0.2	\$4,196	\$20,980	\$8,936	\$44,680
502	Limited-service restaurants	0.2	\$3,415	\$17,075	\$13,895	\$69,475
518	Postal service	0.2	\$19,387	\$96,935	\$23,717	\$118,585
20	Extraction of natural gas and crude petroleum	0.1	\$6,609	\$66,090	\$17,068	\$170,680
62	Maintenance and repair construction of nonresidential structures	0.1	\$2,585	\$25,850	\$8,302	\$83,020
396	Retail - Motor vehicle and parts dealers	0.1	\$4,440	\$44,400	\$9,088	\$90,880
400	Retail - Food and beverage stores	0.1	\$2,474	\$24,740	\$5,519	\$55,190
405	Retail - General merchandise stores	0.1	\$2,994	\$29,940	\$7,667	\$76,670
x	Other (Implied)	3.2	\$155,639	\$48,637	\$567,271	\$177,272
Total		10.4	\$568,502	\$54,664	\$1,777,720	\$170,935