Table V-1. Estimated Yearly Costs of Final Rule Relative to Yearly Revenues For Underground M/NM Mines That Use Diesel-Powered Equipment

Mine Size	Yearly Costs of Final Rule[1]	Yearly Revenues[2]	Costs as Percentage of Revenues[3]
1-19 Employees	$9,968	$222,357,776	0.004%
20-500 Employees	$54,225	$3,653,028,457	0.001%
Over 500 Employees	$4,977	$960,859,144	0.001%
All Mines	$69,170	$4,836,245,377	0.001%

[1]Table IX-1, Total Yearly Costs of the final rule for given mine size categories.

[2]Yearly revenues for underground metal/nonmetal mines were obtained by multiplying price and production figures from Mining & Quarrying Trends, 2004 (Tables 1 and 3). These revenues were then prorated by hours of employment to obtain an estimate of revenues only for mines that use diesel equipment. Data for mine hours and employment are from MSHA's Directorate of Program Evaluation and Information Resources, 2004 calendar year data. Diesel mines are identified based on DPM sampling data.

[3](Costs as Percentage of Revenues) = (Yearly Costs of Final Rule) / (Yearly Revenues).

Table V-2. Estimated Yearly Cost of Implementing the 160_{TC} µg/m^3 Final Limit Given 400_{TC} (308_{EC}) µg/m^3 Interim Limit in Effect Relative to Yearly Revenues For Underground M/NM Mines That Use Diesel-Powered Equipment

Mine Size	Yearly Cost of Implementing the 160_{TC} µg/m^3 Final Limit[1]	Yearly Revenues[2]	Costs as Percentage of Revenues[3]
1-19 Employees	$1,917,604	$222,357,776	0.862%
20-500 Employees	$6,019,259	$3,653,028,457	0.165%
Over 500 Employees	$517,991	$960,859,144	0.054%
All Mines	$8,454,853	$4,836,245,377	0.175%

[1]Table IX-5, Yearly Cost Adjusted for Several Factors of implementing the 160_{TC} µg/m^3 final limit for given mine size categories.

[2]Yearly revenues for underground metal/nonmetal mines were obtained by multiplying price and production figures from Mining & Quarrying Trends, 2004 (Tables 1 and 3). These revenues were then prorated by hours of employment to obtain an estimate of revenues only for mines that use diesel equipment. Data for mine hours and employment are from MSHA's Directorate of Program Evaluation and Information Resources, 2004 calendar year data. Diesel mines are identified based on DPM sampling data.

[3](Costs as Percentage of Revenues) = (Yearly Costs of Final Rule) / (Yearly Revenues).

Table IX-1. Itemized Summary of the Estimated Yearly Costs of the Medical Evaluation and Miner Transfer Provisions of the Final Rule

Yearly Costs to Meet the 308_{EC} and 350_{TC} µg/m^3 Limits						
Mine Size by Number of Employees	Providing Information to the PLHCP	Medical Evaluations	PAPRs	Transfers Of Miners Who Cannot Wear Respirators	Total Yearly Costs	Yearly Cost Per Mine
1-19	$445	$1,847	$1,185	$4,115	$7,591	$131
20-500	$2,113	$10,126	$6,497	$22,559	$41,295	$390
Over 500	$94	$955	$613	$2,128	$3,790	$948
All Mines	$2,652	$12,928	$8,294	$28,802	$52,676	$314
Additional Yearly Costs to Meet the 160_{TC} µg/m^3 Limit[1]						
Mine Size by Number of Employees	Providing Information to the PLHCP	Medical Evaluations	PAPRs	Transfers Of Miners Who Cannot Wear Respirators	Total Yearly Costs	Yearly Cost Per Mine
1-19	$139	$578	$371	$1,288	$2,377	$41
20-500	$662	$3,171	$2,034	$7,064	$12,930	$122
Over 500	$29	$299	$192	$666	$1,187	$297
All Mines	$830	$4,048	$2,597	$9,018	$16,494	$98
Yearly Costs to Meet the 308_{EC}, 350_{TC}, and 160_{TC} µg/m^3 Limits						
Mine Size by Number of Employees	Providing Information to the PLHCP	Medical Evaluations	PAPRs	Transfers Of Miners Who Cannot Wear Respirators	Total Yearly Costs	Yearly Cost Per Mine
1-19	$584	$2,425	$1,556	$5,403	$9,968	$172
20-500	$2,775	$13,297	$8,531	$29,623	$54,225	$512
Over 500	$123	$1,254	$805	$2,795	$4,977	$1,244
All Mines	$3,482	$16,976	$10,891	$37,820	$69,170	$412

[1]The additional costs to meet the 160_{TC} µg/m^3 limit are discounted for two years at the 7% discount rate (divided by $(1.07)^2$), since the 160_{TC} µg/m^3 limit takes effect after two years.

Table IX-2. Estimate From 2001 REA, Adjusted for Inflation and Number of Mines, of the Yearly Cost of Implementing the 160_{TC} µg/m^3 Final Limit Given 400_{TC} (308_{EC}) µg/m^3 Interim Limit in Effect

Mine Size	Yearly Cost Estimate from 2001 REA[1]	1998 Number of Diesel Mines[2]	2004 Number of Diesel Mines[3]	Yearly Cost Adjusted for Number of Mines[4]	Yearly Cost Adjusted for Inflation[5]	Yearly Cost Per Mine[6]
1-19 Employees	$2,413,542	77	58	$1,817,993	$2,106,864	$36,325
20-500 Employees	$6,004,029	112	106	$5,682,385	$6,585,291	$62,125
Over 500 Employees	$856,753	7	4	$489,573	$567,364	$141,841
All Mines	$9,274,325	196	168	$7,989,950	$9,259,519	$55,116

[1]2001 REA, Table IV-10, page 58, with cost figure for over 500 employees corrected based on error discovered in Table IV-7, page 54.

[2]2001 REA, Table II-4, page 14.

[3]Number of mines based on data from MSHA's Directorate of Program Evaluation and Information Resources, 2004 calendar year data, for mines with employment. Diesel mines are identified based on DPM sampling data.

[4](Yearly Cost Adjusted for Number of Mines) = (Yearly Cost Estimate from 2001 REA) x (2004 Number of Diesel Mines) / (1998 Number of Diesel Mines).

[5](Yearly Cost Adjusted for Inflation) = (Yearly Cost Adjusted for Number of Mines) x (Price Index), where (Price Index) = (2004 Annual CPI) / (1998 Annual CPI) = (188.9) / (163.0) = 1.159.

[6](Yearly Cost Per Mine) = (Yearly Cost Adjusted for Inflation) / (2004 Number of Diesel Mines).

Table IX-3. Reduced Cost Estimate from Two-Year Phase-In of 160_{TC} µg/m^3 Final Limit

Year[1]	Yearly Cost of Immediate Phase-In[2]	TC Limit (µg/m^3)	Percent of Phase-In[3]	Yearly Cost of Delayed Phase-In[4]	Reduction in Yearly Cost Estimate[5]	Discount Factor[6]	Discounted Reduction in Yearly Cost Estimate[7]
1	$9,259,519	400 & 350	7%	$643,022	$8,616,497	1.0000	$8,616,497
2	$9,259,519	350	21%	$1,929,067	$7,330,453	0.9346	$6,850,890
3	$9,259,519	160	100%	$9,259,519	$0	0.8734	$0
4	$9,259,519	160	100%	$9,259,519	$0	0.8163	$0
Sum of Discounted Reduction in Yearly Cost Estimate							$15,467,387
Annualized Value of Reduced Cost Estimate (All Underground M/NM Mines)[8]							$1,082,717
Annualized Value of Reduced Cost Estimate (Mines with under 20 Employees)[9]							$246,356
Annualized Value of Reduced Cost Estimate (Mines with 20 to 500 Employees)[9]							$770,019
Annualized Value of Reduced Cost Estimate (Mines with over 500 employees)[9]							$66,342

[1]Years are measured from May 20 of one calendar year to May 19 of the next calendar year. The first year begins May 20, 2006.

[2](Yearly Cost of Immediate Phase-In) is obtained from Table IX-2, Yearly Cost Adjusted for Inflation.

[3](Percent of Phase-In) = {(400 - (TC Limit)) / (400 - 160)} x (100%), where the (TC Limit) = 383.333 in the first year, because it is a weighted average of 400_{TC} µg/m^3 for 8 months (May 20 to January 19) and 350_{TC} µg/m^3 for 4 months (January 20 to May 19).

[4](Yearly Cost of Delayed Phase-In) = (Yearly Cost of Immediate Phase-In) x (Percent of Phase-In).

[5](Reduction in Yearly Cost Estimate) = (Yearly Cost of Immediate Phase-In) - (Yearly Cost of Delayed Phase-In).

[6](Discount Factor) = $1 / (1.07)^{(Year - 1)}$.

[7](Discounted Reduction in Yearly Cost Estimate) = (Reduction in Yearly Cost Estimate) x (Discount Factor).

[8](Annualized Value of Reduced Cost Estimate, All Underground M/NM Mines) = (Sum of Discounted Reduction in Yearly Cost Estimate) x (0.07), where 0.07 is the annualization factor.

[9](Annualized Value of Reduced Cost Estimate, employment size subset) = (Annualized Value of Reduced Cost Estimate, All Underground M/NM Mines) x (Table IX-2, Yearly Cost Adjusted for Inflation, employment size subset) / (Table IX-2, Yearly Cost Adjusted for Inflation, All Mines).

Table IX-4. Increased Cost Estimate for Mines to Evaluate Technologies Needed to Meet 350_{TC} and 160_{TC} µg/m^3 Final Limits

Year[1]	Evaluation Costs Per Mine[2]	Percent of Mines with Evaluation Costs[3]	Number of Mines with Evaluation Costs[4]	Yearly Cost of Evaluating Controls[5]	Discount Factor[6]	Discounted Yearly Cost of Evaluating Controls[7]
1	$13,779	50%	84.0	$1,157,440	1.0000	$1,157,440
2	$13,779	50%	84.0	$1,157,440	0.9346	$1,081,720
3	$13,779	10%	16.8	$231,488	0.8734	$202,191
4	$13,779	10%	16.8	$231,488	0.8163	$188,963
Sum of Discounted Yearly Cost of Evaluating Controls						$2,630,313
Annualized Value of Evaluation Cost (All Underground M/NM Mines)[8]						$184,122
Annualized Value of Evaluation Cost (Mines with under 20 Employees)[9]						$41,894
Annualized Value of Evaluation Cost (Mines with 20 to 500 Employees)[9]						$130,946
Annualized Value of Evaluation Cost (Mines with over 500 employees)[9]						$11,282

[1]Years are measured from May 20 of one calendar year to May 19 of the next calendar year. The first year begins May 20, 2006.

[2](Evaluation Costs Per Mine) = (Table IX-2, Yearly Cost Per Mine) / 4.

[3](Percent of Mines with Evaluation Costs) is 50% for the first two years and 10% for the third and fourth years.

[4](Number of Mines with Evaluation Costs) = (Table IX-2, 2004 Number of Diesel Mines) x (Percent of Mines with Evaluation Costs).

[5](Yearly Cost of Evaluating Controls) = (Evaluation Costs Per Mine) x (Number of Mines with Evaluation Costs).

[6](Discount Factor) = $1 / (1.07)^{(Year - 1)}$.

[7](Discounted Yearly Cost of Evaluating Controls) = (Yearly Cost of Evaluating Controls) x (Discount Factor).

[8](Annualized Value of Evaluation Cost, All Underground M/NM Mines) = (Sum of Discounted Yearly Cost of Evaluating Controls) x (0.07), where 0.07 is the annualization factor.

[9](Annualized Value of Evaluation Cost, employment size subset) = (Annualized Value of Evaluation Cost, All Underground M/NM Mines) x (Table IX-2, Yearly Cost Adjusted for Inflation, employment size subset) / (Table IX-2, Yearly Cost Adjusted for Inflation, All Mines).

Table IX-5. Updated Estimate, Adjusted for Several Factors, of the Yearly Cost of Implementing the 160_{TC} µg/m^3 Final Limit Given 400_{TC} (308_{EC}) µg/m^3 Interim Limit in Effect

Mine Size by Number of Employees	Adjusted Estimate from 2001 REA[1]	Medical Evaluation and Miner Transfer Provisions[2]	Reduced Cost Estimate from Two-Year Phase-In[3]	Increased Cost Estimate for Mines to Evaluate Controls[4]	Revised Costs of Special Extension for Final Limit[5]	Yearly Cost Adjusted for Several Factors[6]	Yearly Cost Per Mine[7]
1-19	$2,106,864	$9,968	($246,356)	$41,894	$5,234	$1,917,604	$33,062
20-500	$6,585,291	$54,225	($770,019)	$130,946	$18,815	$6,019,259	$56,785
Over 500	$567,364	$4,977	($66,342)	$11,282	$710	$517,991	$129,498
All Mines	$9,259,519	$69,170	($1,082,717)	$184,122	$24,759	$8,454,853	$50,327

[1]From Table IX-2, Yearly Cost Adjusted for Inflation.

[2]From Table IX-1, Total Yearly Costs to Meet the 308_{EC}, 350_{TC}, and 160_{TC} µg/m^3 Limits.

[3]From Table IX-3, Annualized Value of Reduced Cost Estimate, for each employment size category.

[4]From Table IX-4, Annualized Value of Evaluation Cost, for each employment size category.

[5]From Regulatory Economic Analysis for Diesel Particulate Matter Exposure of Underground Metal and Nonmetal Miners, May 2005 (2005 REA), page 15, Table IV-3, "Adjusted Total Annual Cost". Figures are adjusted for change in number of underground M/NM diesel mines and for inflation between 2002 and 2004.

[6](Yearly Cost Adjusted for Several Factors) = (Adjusted Estimate from 2001 REA) + (Medical Evaluation and Miner Transfer Provisions) + (Reduced Cost Estimate from Two-Year Phase-In) + (Increased Cost Estimate for Mines to Evaluate Controls) + (Revised Costs of Special Extension for Final Limit).

[7](Yearly Cost Per Mine) = (Yearly Cost Adjusted for Several Factors) / (Table IX-2, 2004 Number of Diesel Mines).

Table X-1. Estimated Yearly Costs of Final Rule Relative to Yearly Revenues For Selected Small Underground M/NM Mines That Use Diesel-Powered Equipment

Mine Size	Yearly Costs of Final Rule[1]	Yearly Revenues[2]	Costs as Percentage of Revenues[3]
Fewer than 20 Employees	$9,968	$222,357,776	0.004%
500 or Fewer Employees	$64,193	$3,875,386,233	0.002%

[1]Table IX-1, Total Yearly Costs of the final rule for given small entities.

[2]Yearly revenues for underground metal/nonmetal mines were obtained by multiplying price and production figures from Mining & Quarrying Trends, 2004 (Tables 1 and 3). These revenues were then prorated by hours of employment to obtain an estimate of revenues only for mines that use diesel equipment. Data for mine hours and employment are from MSHA's Directorate of Program Evaluation and Information Resources, 2004 calendar year data. Diesel mines are identified based on DPM sampling data.

[3](Costs as Percentage of Revenues) = (Yearly Costs of Final Rule) / (Yearly Revenues).

Table XI-1. Total Paperwork Burden Hours and Costs by Year

Mine Size	Burden Hours	Burden Cost
First Year Burden Hours and Costs		
< 20	541.0	$12,219
20-500	2,877.2	$62,348
> 500	268.9	$5,750
Total	3,687.0	$80,318
Second Year Burden Hours and Costs		
< 20	43.0	$1,122
20-500	235.6	$6,153
> 500	20.4	$484
Total	298.9	$7,759
Third Year Burden Hours and Costs		
< 20	165.4	$3,989
20-500	875.1	$20,205
> 500	79.8	$1,763
Total	1,120.3	$25,957
Annual Burden Hours and Costs After Third Year		
< 20	53.4	$1,419
20-500	292.6	$7,777
> 500	25.1	$603
Total	371.1	$9,799

Below is additional information obtained from table above:

DPV of First Three Years		
< 20	725.6	$16,752
20-500	3,861.6	$85,746
> 500	357.7	$7,742
Total	4,944.9	$110,240
Annualized DPV of First Three Years		
< 20	50.8	$1,173
20-500	270.3	$6,002
> 500	25.0	$542
Total	346.1	$7,717
DPV of Annual After Third Year		
< 20	135.0	$3,256
20-500	714.3	$16,493
> 500	65.1	$1,439
Total	914.5	$21,188
Annualized Value of All Years		
< 20	185.8	$4,429
20-500	984.6	$22,496
> 500	90.2	$1,981
Total	1,260.6	$28,905
Per Mine	7.5	$172.05

Wage Rates for Underground M/NM Mines

Occupation	Wage Rate
Miner	$21.17
Supervisor	$52.31
Clerical Worker	$22.84

2004 M/NM PER HOUR PAY RATES			
	Miner Hourly Pay Rate	**Supervisor Hourly Pay Rate**	**Clerical Worker Hourly Pay Rate**
Surface	$21.83	$45.63	$20.99
Underground	$21.17	$52.31	$22.84
Composite	**$21.76**	**$46.37**	**$21.20**

For 350 TC Limit

Mine Size	Number of Mines Using Diesel Equipment	Percent Using Respirators	Mines Using Respirators	Miners Per Mine Using Respirators	Number of Miners Using Respirators
< 20	58	41.9%	24.3	4.0	97.2
20 to 500	106	41.9%	44.4	12.0	532.7
> 500	4	41.9%	1.7	30.0	50.3
Total	168	41.9%	70.4	9.7	680.2

Incremental for 350 TC to 160 TC Limit

Mine Size	Number of Mines Using Diesel Equipment	Percent Using Respirators	Mines Using Respirators	Miners Per Mine Using Respirators	Number of Miners Using Respirators
< 20	58	15.0%	8.7	4.0	34.8
20 to 500	106	15.0%	15.9	12.0	191.0
> 500	4	15.0%	0.6	30.0	18.0
Total	168	15.0%	25.2	9.7	243.8

For 160 TC Limit

Mine Size	Number of Mines Using Diesel Equipment	Percent Using Respirators	Mines Using Respirators	Miners Per Mine Using Respirators	Number of Miners Using Respirators
< 20	58	56.9%	33.0	4.0	132.0
20 to 500	106	56.9%	60.3	12.0	723.7
> 500	4	56.9%	2.3	30.0	68.3
Total	168	56.9%	95.6	9.7	924.0

For 400 TC Limit

Mine Size	Number of Mines Using Diesel Equipment	Percent Using Respirators	Mines Using Respirators	Miners Per Mine Using Respirators	Number of Miners Using Respirators
< 20	58	37.9%	22.0	4.0	88.0
20 to 500	106	37.9%	40.2	12.0	482.5
> 500	4	37.9%	1.5	30.0	45.5
Total	168	37.9%	63.7	9.7	616.0

Information below is for updating number of special extensions in Table IX-5.

Table 1a. Industry Cost of Providing Information and Respiratory Protection Program to PLHCP for Mines to Meet the 350 TC Limit

Mine Size	Number of Mines	Number of Times per Year	Unit Cost[a]	Total	Annualized Costs[b]
First Year Costs					
< 20	24.3	1.00	$52.31	$1,271	$89
20-500	44.4	1.00	$52.31	$2,322	$163
> 500	1.7	1.00	$52.31	$88	$6
Total	70.4			$3,681	$258
Annual Costs					
< 20	24.3	0.28	$52.31	$356	$356
20-500	44.4	0.84	$52.31	$1,951	$1,951
> 500	1.7	1.00	$52.31	$88	$88
Total	70.4			$2,394	$2,394
Total Yearly Cost					$2,652

[a]Mine supervisor hourly wage rate.

[b]Using an annualization factor of 0.07 for first-year costs.

Table 2a. Costs of Medical Evaluations for Mines to Meet the 350 TC Limit

Mine Size	Number of Miners	Cost of Medical Evaluation	Cost of Miner's time to get evaluation[b]	Cost of Miner's Time to Submit Additional Evidence[c]	Cost of Clerical Worker's Time to Maintain Record[d]	Total[e]	Annualized Costs[a]
First Year Costs							
< 20	90	$50	$56	$2	$1	$9,915	$694
20-500	495	$50	$56	$2	$1	$54,361	$3,805
> 500	47	$50	$56	$2	$1	$5,128	$359
Total	633					$69,404	$4,858
Annual Costs							
< 20	6.8	$50	$56	$2	$1	$746	$746
20-500	37.3	$50	$56	$2	$1	$4,092	$4,092
> 500	3.5	$50	$56	$2	$1	$386	$386
Total	47.6					$5,224	$5,224
Total Yearly Costs							$10,082

[a]Using an annualization factor of 0.07 for costs that occur in the first year only.

[b]Cost of Miners' Time to get Evaluation = (Miners' wage) x (Travel time and time needed to take medical evaluation) = $21.17 x (2.0 + 0.67) hours ≈ $56.

[c]Cost of Miners' Time to Submit Additional Evidence = (Miners' wage) x (Time needed to to submit additonal Evidence) = $21.17 x 1 hour = $21.17.

[d]Cost of Clerical Worker's Time to Maintain Record = (Clerical Workers Wage) x (Time Needed to maintain record) = $22.84 x0.05 hours = $1.142.

[e]Only 10% of the miners in the second column of this table will submit additional evidence.

Below is additional information used in table above:

Miner's wage	$21.17
Time for MedEval	2.67

Table 3a. Costs of Additional Medical Evaluations for Mines to Meet the 350TC Limit

Mine Size	Number of Miners	Cost of Medical Evaluation	Cost of Miner's time[b]	Cost of Miner's Time to Submit Additional Evidence[c]	Cost of Clerical Worker's Time to Maintain Record[d]	Total Annual Costs[e]	Annualized Costs[a]
First Year Costs							
< 20	9.0	$250	$56	$2	$1	$2,799	$196
20-500	49.5	$250	$56	$2	$1	$15,345	$1,074
> 500	4.7	$250	$56	$2	$1	$1,448	$101
Total	63.3					$19,591	$1,371
Annual Costs							
< 20	0.7	$250	$56	$2	$1	$211	$211
20-500	3.7	$250	$56	$2	$1	$1,155	$1,155
> 500	0.4	$250	$56	$2	$1	$109	$109
Total	4.8					$1,475	$1,475
Total Yearly Costs							$2,846

[a]Using an annualization factor of 0.07 for costs that occur in the first year only.

[b]Cost of Miners' Time to get Evaluation = (Miners' wage) x (Travel time and time needed to take medical evaluation) = $21.17 x (2.0 + 0.67) hours ≈ $56.

[c]Cost of Miners' Time to Submit Additional Evidence = (Miners' wage) x (Time needed to to submit additonal Evidence) = $21.17 x 1 hour = $21.17.

[d]Cost of Clerical Worker's Time to Maintain Record = (Clerical Workers Wage) x (Time Needed to maintain record) = $22.84 x0.05 hours = $1.142.

[e]Only 10% of the miners in the second column of this table will submit additional evidence.

Below is additional information used in table above:

10.00% Need additional Med Evals

Miner's wage	$21.17
Time for MedEval	2.67
Clerical Worker's time (hours)	0.050

Table 4a: Costs of PAPRs for Mines to Meet the 350 TC Limit

Mine Size	Number of Miners	Cost of PAPR	Total	Annualized Costs[a]
< 20	4.9	$1,000	$4,858	$1,185
20-500	26.6	$1,000	$26,637	$6,497
> 500	2.5	$1,000	$2,513	$613
Total	34.0		$34,008	$8,294

[a]Using an annualization factor of 0.24389.

Below is additional information used in table above:

0.24389 Formula for annualization factor.

Table 5a: Costs of Transfers for Mines to Meet the 350 TC Limit

Mine Size	Number of Miners	Number of Transferees	Number of Transfers per Year	Cost of Transfer[a]	Total Annual Cost
< 20	97	0.49	0.0243	$8,469	$4,115
20-500	533	2.66	0.1332	$8,469	$22,559
> 500	50	0.25	0.0126	$8,469	$2,128
Total	680	3.40	0.1700	$8,469	$28,802

[a]Cost of transfer = (20% x miner wage x 2,000 hours).

Table 6a: Itemized Summary of the Incremental Yearly Costs of Medical Evaluation and Miner Transfer Provisions to Meet the 350 TC Limit

Mine Size	Providing Info to PLHCP Table 1	Medical Evaluations Tables 2 and 3	PAPRS Table 4	Transfers Table 5	Total
< 20	$445	$1,847	$1,185	$4,115	$7,591
20-500	$2,113	$10,126	$6,497	$22,559	$41,295
> 500	$94	$955	$613	$2,128	$3,790
Total	$2,652	$12,928	$8,294	$28,802	$52,676

Table 1b. Incremental Industry Cost of Providing Information and Respiratory Protection Program to PLHCP for Additional Mines to Meet the 160 TC Limit

Mine Size	Number of Mines	Number of Times per Year	Unit Cost[a]	Total	Annualized Costs[b]
First Year Costs					
< 20	8.7	1.00	$52.31	$456	$32
20-500	15.9	1.00	$52.31	$833	$58
> 500	0.6	1.00	$52.31	$31	$2
Total	25.2			$1,319	$92
Annual Costs					
< 20	8.7	0.28	$52.31	$128	$128
20-500	15.9	0.84	$52.31	$699	$699
> 500	0.6	1.00	$52.31	$31	$31
Total	25.2			$858	$858
Total Yearly Cost					$951

[a]Mine supervisor hourly wage rate.

[b]Using an annualization factor of 0.07 for first-year costs.

Table 2b. Costs of Incremental Medical Evaluations for Additional Mines to Meet the 160 TC Limit

Mine Size	Number of Miners	Cost of Medical Evaluation	Cost of Miner's time to get evaluation[b]	Cost of Miner's Time to Submit Additional Evidence[c]	Clerical Worker's Time to Maintain Record[d]	Total[d]	Annualized Costs[a]
First Year Costs							
< 20	32	$50	$56	$2	$1	$3,554	$249
20-500	178	$50	$56	$2	$1	$19,488	$1,364
> 500	17	$50	$56	$2	$1	$1,838	$129
Total	227					$24,881	$1,742
Annual Costs							
< 20	2.4	$50	$56	$2	$1	$268	$268
20-500	13.4	$50	$56	$2	$1	$1,467	$1,467
> 500	1.3	$50	$56	$2	$1	$138	$138
Total	17.1					$1,873	$1,873
Total Yearly Costs							$3,614

[a]Using an annualization factor of 0.07 for costs that occur in the first year only.

[b]Cost of Miners' Time to get Evaluation = (Miners' wage) x (Travel time and time needed to take medical evaluation) = $21.17 x (2.0 + 0.67) hours ≈ $56.

[c]Cost of Miners' Time to Submit Additional Evidence = (Miners' wage) x (Time needed to to submit additonal Evidence) = $21.17 x 1 hour = $21.17.

[d]Only 10% of the miners in the second column of this table will submit additional evidence.

Below is additional information used in table above:

Table 3b. Costs of Incremental Additional Medical Evaluations for Additional Mines to Meet the 160 TC Limit

Mine Size	Number of Miners	Cost of Medical Evaluation	Cost of Miner's time to get evaluation[b]	Cost of Miner's Time to Submit Additional Evidence[c]	Cost of Clerical Worker's Time to Maintain Record[d]	Total Annual Costs	Annualized Costs[a]
First Year Costs							
< 20	3.2	$250	$56	$2	$1	$1,003	$70
20-500	17.8	$250	$56	$2	$1	$5,501	$385
> 500	1.7	$250	$56	$2	$1	$519	$36
Total	22.7					$7,023	$492
Annual Costs							
< 20	0.2	$250	$56	$2	$1	$76	$76
20-500	1.3	$250	$56	$2	$1	$414	$414
> 500	0.1	$250	$56	$2	$1	$39	$39
Total	1.7					$529	$529
Total Yearly Costs							$1,020

[a]Using an annualization factor of 0.07 for costs that occur in the first year only.

[b]Cost of Miners' Time to get Evaluation = (Miners' wage) x (Travel time and time needed to take medical evaluation) = $21.17 x (2.0 + 0.67) hours ≈ $56.

[c]Cost of Miners' Time to Submit Additional Evidence = (Miners' wage) x (Time needed to to submit additonal Evidence) = $21.17 x 1 hour = $21.17.

[d]Only 10% of the miners in the second column of this table will submit additional evidence.

Below is additional information used in table above:

10.00% Need additional Med Evals

Miner's wage	$21.17
Time for MedEval	2.67

Table 4b: Costs of Incremental PAPRs for Additional Mines to Meet the 160 TC Limit

Mine Size	Number of Miners	Cost of PAPR	Total	Annualized Costs[a]
< 20	1.7	$1,000	$1,742	$425
20-500	9.5	$1,000	$9,549	$2,329
> 500	0.9	$1,000	$901	$220
Total	12.2		$12,192	$2,973

[a]Using an annualization factor of 0.24389.

Below is additional information used in table above:

0.24389 Formula for annualization factor.

Table 5b: Costs of Incremental Transfers for Additional Mines to Meet the 160 TC Limit

Mine Size	Number of Miners	Number of Transferees	Number of Transfers per Year	Cost of Transfer[a]	Total Annual Cost
< 20	35	0.17	0.0087	$8,469	$1,475
20-500	191	0.95	0.0477	$8,469	$8,087
> 500	18	0.09	0.0045	$8,469	$763
Total	244	1.22	0.0610	$8,469	$10,325

[a]Cost of transfer = (20% x miner wage x 2,000 hours).

Table 6b: Itemized Summary of the Incremental Yearly Costs of Medical Evaluation and Miner Transfer Provisions for Additional Mines to Meet the 160 TC Limit

Mine Size	Providing Info to PLHCP Table 1	Medical Evaluations Tables 2 and 3	PAPRS Table 4	Transfers Table 5	Total
< 20	$159	$662	$425	$1,475	$2,721
20-500	$758	$3,630	$2,329	$8,087	$14,804
> 500	$34	$342	$220	$763	$1,359
Total	$951	$4,635	$2,973	$10,325	$18,884

Paperwork Table 1a.
Table 1a, Section 57.5060(d)(3)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
First Year Burden Hours and Costs			
< 20	24.3	24.3	$1,271
20-500	44.4	44.4	$2,322
> 500	1.7	1.7	$88
Total	70.4	70.4	$3,681
After First Year Burden Hours and Costs			
< 20	6.8	6.8	$356
20-500	37.3	37.3	$1,951
> 500	1.7	1.7	$88
Total	45.8	45.8	$2,394

Paperwork Table 2a.
Table 2a, Section 57.5060(d)(3)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
First Year Burden Hours and Costs			
< 20	97.2	259.1	$5,486
20-500	532.7	1,420.6	$30,079
> 500	50.3	134.0	$2,838
Total	680.2	1,813.8	$38,403
After First Year Burden Hours and Costs			
< 20	6.8	18.1	$384
20-500	37.3	99.4	$2,106
> 500	3.5	9.4	$199
Total	47.6	127.0	$2,688

Paperwork Table 3a.
Table 2a, Section 57.5060(d)(4)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
First Year Burden Hours and Costs			
< 20	9.7	25.9	$549
20-500	53.3	142.1	$3,008
> 500	5.0	13.4	$284
Total	68.0	181.4	$3,840
After First Year Burden Hours and Costs			
< 20	0.7	1.8	$38
20-500	3.7	9.9	$211
> 500	0.4	0.9	$20
Total	4.8	12.7	$269

Paperwork Table 4a.
Table 2a, Section 57.5060(d)(8)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
First Year Burden Hours and Costs			
< 20	97.2	4.9	$111
20-500	532.7	26.6	$608
> 500	50.3	2.5	$57
Total	680.2	34.0	$777
After First Year Burden Hours and Costs			
< 20	6.8	0.3	$8
20-500	37.3	1.9	$43
> 500	3.5	0.2	$4
Total	47.6	2.4	$54

Paperwork Table 5a.
Table 3a, Section 57.5060(d)(3)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
First Year Burden Hours and Costs			
< 20	9.7	205.7	$4,356
20-500	53.3	1,128.0	$23,882
> 500	5.0	106.4	$2,253
Total	68.0	1,440.1	$30,491
After First Year Burden Hours and Costs			
< 20	0.7	14.4	$305
20-500	3.7	79.0	$1,672
> 500	0.4	7.4	$158
Total	4.8	100.8	$2,134

Paperwork Table 6a.
Table 3a, Section 57.5060(d)(4)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
First Year Burden Hours and Costs			
< 20	1.0	20.6	$436
20-500	5.3	112.8	$2,388
> 500	0.5	10.6	$225
Total	6.8	144.0	$3,049
After First Year Burden Hours and Costs			
< 20	0.1	1.4	$30
20-500	0.4	7.9	$167
> 500	0.0	0.7	$16
Total	0.5	10.1	$213

Paperwork Table 7a.
Table 3a, Section 57.5060(d)(8)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
First Year Burden Hours and Costs			
< 20	9.7	0.5	$11
20-500	53.3	2.7	$61
> 500	5.0	0.3	$6
Total	68.0	3.4	$78
After First Year Burden Hours and Costs			
< 20	0.7	0.0	$1
20-500	3.7	0.2	$4
> 500	0.4	0.0	$0
Total	4.8	0.2	$5

Paperwork Table 1b.
Table 1b, Section 57.5060(d)(3)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
Third Year Burden Hours and Costs			
< 20	8.7	8.7	$456
20-500	15.9	15.9	$833
> 500	0.6	0.6	$31
Total	25.2	25.2	$1,319
After Third Year Burden Hours and Costs			
< 20	2.4	2.4	$128
20-500	13.4	13.4	$699
> 500	0.6	0.6	$31
Total	16.4	16.4	$858

Paperwork Table 2b.
Table 2b, Section 57.5060(d)(3)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
Third Year Burden Hours and Costs			
< 20	34.8	92.9	$1,967
20-500	191.0	509.3	$10,783
> 500	18.0	48.0	$1,017
Total	243.8	650.2	$13,767
After Third Year Burden Hours and Costs			
< 20	2.4	6.5	$138
20-500	13.4	35.7	$755
> 500	1.3	3.4	$71
Total	17.1	45.5	$964

Paperwork Table 3b.
Table 2b, Section 57.5060(d)(4)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
Third Year Burden Hours and Costs			
< 20	3.5	9.3	$197
20-500	19.1	50.9	$1,078
> 500	1.8	4.8	$102
Total	24.4	65.0	$1,377
After Third Year Burden Hours and Costs			
< 20	0.2	0.7	$14
20-500	1.3	3.6	$75
> 500	0.1	0.3	$7
Total	1.7	4.6	$96

Paperwork Table 4b.
Table 2b, Section 57.5060(d)(8)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
Third Year Burden Hours and Costs			
< 20	34.8	1.7	$40
20-500	191.0	9.5	$218
> 500	18.0	0.9	$21
Total	243.8	12.2	$278
After Third Year Burden Hours and Costs			
< 20	2.4	0.1	$3
20-500	13.4	0.7	$15
> 500	1.3	0.1	$1
Total	17.1	0.9	$19

Paperwork Table 5b.
Table 3b, Section 57.5060(d)(3)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
Third Year Burden Hours and Costs			
< 20	3.5	9.3	$197
20-500	19.1	50.9	$1,078
> 500	1.8	4.8	$102
Total	24.4	65.0	$1,377
After Third Year Burden Hours and Costs			
< 20	0.2	0.7	$14
20-500	1.3	3.6	$75
> 500	0.1	0.3	$7
Total	1.7	4.6	$96

Paperwork Table 6b.
Table 3b, Section 57.5060(d)(4)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
Third Year Burden Hours and Costs			
< 20	0.3	0.3	$7
20-500	1.9	1.9	$40
> 500	0.2	0.2	$4
Total	2.4	2.4	$52
After Third Year Burden Hours and Costs			
< 20	0.0	0.0	$1
20-500	0.1	0.1	$3
> 500	0.0	0.0	$0
Total	0.2	0.2	$4

Paperwork Table 7b.
Table 3b, Section 57.5060(d)(8)

Mine Size	Number of Times per Year	Burden Hours	Burden Cost
Third Year Burden Hours and Costs			
< 20	3.5	0.2	$4
20-500	19.1	1.0	$22
> 500	1.8	0.1	$2
Total	24.4	1.2	$28
After Third Year Burden Hours and Costs			
< 20	0.2	0.0	$0
20-500	1.3	0.1	$2
> 500	0.1	0.0	$0
Total	1.7	0.1	$2

Table XI-1. Paperwork Burden Hours and Costs

Sub-Table for Section 57.5060(d)(3) Only

Mine Size	Burden Hours	Burden Cost
First Year Burden Hours and Costs		
< 20	489.1	$11,113
20-500	2,593.0	$56,283
> 500	242.1	$5,178
Total	3,324.2	$72,574
Second Year Burden Hours and Costs		
< 20	39.3	$1,045
20-500	215.7	$5,728
> 500	18.5	$444
Total	273.5	$7,217
Third Year Burden Hours and Costs		
< 20	150.2	$3,664
20-500	791.8	$18,422
> 500	72.0	$1,594
Total	1,014.0	$23,680
Annual Burden Hours and Costs After Third Year		
< 20	48.9	$1,324
20-500	268.3	$7,258
> 500	22.8	$554
Total	340.0	$9,135

Below is additional information obtained from table above:

DPV of First Three Years		
< 20	657.1	$15,289
20-500	3,486.2	$77,727
> 500	322.3	$6,986
Total	4,465.6	$100,001
Annualized DPV of First Three Years		
< 20	46.0	$1,070
20-500	244.0	$5,441
> 500	22.6	$489
Total	312.6	$7,000
DPV of Annual After Third Year		
< 20	122.6	$2,991
20-500	646.4	$15,038
> 500	58.7	$1,301
Total	827.7	$19,330
Annualized Value of All Years		
< 20	168.6	$4,061
20-500	890.4	$20,479
> 500	81.3	$1,790
Total	1,140.3	$26,330
Per Mine	6.8	$156.73

Table XI-1. Paperwork Burden Hours and Costs

Sub-Table for Section 57.5060(d)(4) Only

Mine Size	Burden Hours	Burden Cost
First Year Burden Hours and Costs		
< 20	46.5	$984
	254.9	$5,396
> 500	24.0	$509
Total	325.4	$6,889
Second Year Burden Hours and Costs		
< 20	3.3	$69
20-500	17.8	$378
> 500	1.7	$36
Total	22.8	$482
Third Year Burden Hours and Costs		
< 20	12.9	$273
20-500	70.7	$1,496
> 500	6.7	$141
Total	90.2	$1,911
Annual Burden Hours and Costs After Third Year		
< 20	3.9	$83
20-500	21.5	$456
> 500	2.0	$43
Total	27.5	$582

Below is additional information obtained from table above:

DPV of First Three Years		
< 20	60.8	$1,287
20-500	333.3	$7,056
> 500	31.4	$666
Total	425.5	$9,009
Annualized DPV of First Three Years		
< 20	4.3	$90
20-500	23.3	$494
> 500	2.2	$47
Total	29.8	$631
DPV of Annual After Third Year		
< 20	10.5	$223
20-500	57.7	$1,222
> 500	5.4	$115
Total	73.7	$1,560
Annualized Value of All Years		
< 20	14.8	$313
20-500	81.0	$1,715
> 500	7.6	$162
Total	103.4	$2,190
Per Mine	0.6	$13.04

Table XI-1. Paperwork Burden Hours and Costs

Sub-Table for Section 57.5060(d)(8) Only

Mine Size	Burden Hours	Burden Cost
First Year Burden Hours and Costs		
< 20	5.3	$122
20-500	29.3	$669
> 500	2.8	$63
Total	37.4	$854
Second Year Burden Hours and Costs		
< 20	0.4	$9
20-500	2.1	$47
> 500	0.2	$4
Total	2.6	$60
Third Year Burden Hours and Costs		
< 20	2.3	$52
20-500	12.6	$287
> 500	1.2	$27
Total	16.0	$366
Annual Burden Hours and Costs After Third Year		
< 20	0.5	$12
20-500	2.8	$64
> 500	0.3	$6
Total	3.6	$81

Below is additional information obtained from table above:

DPV of First Three Years		
< 20	7.7	$176
20-500	42.2	$963
> 500	4.0	$91
Total	53.9	$1,230
Annualized DPV of First Three Years		
< 20	0.5	$12
20-500	3.0	$67
> 500	0.3	$6
Total	3.8	$86
DPV of Annual After Third Year		
< 20	1.9	$43
20-500	10.2	$234
> 500	1.0	$22
Total	13.1	$299
Annualized Value of All Years		
< 20	2.4	$55
20-500	13.2	$301
> 500	1.2	$28
Total	16.9	$385
Per Mine	0.1	$2.29