

November 30, 2023

Hard Rock Mining Impact Board  
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**Subject: D. Weber Public Comments - Nov 30, 2023 Mine Impact Board Mtg – Zoom – read aloud and request this emailed follow up be included in written record of Meeting.**

Statement 1:

*The Nye Mine Impact Plan (Impact Plan) has not be amended in the last 25 years, despite a clear process that allows for an amendment and 2 amendments occurring in the first 13 years (1988, 1998).*

Statement 2:

*25 years ago (1998), was the last time Park City School District (PCSD) had any opportunity to object to the Impact Plan or demonstrate impacts. At that time (1998), the Nye Mineral Development (Mine) only said a maximum 700 employees would be needed for their expansion. (See Pages S-1, 1-2 and 2-1 of the Impact Plan). The Mine is now forecasting over 2,000 employees:*

2,054 total mineral development employees for 2024 (1,560 employees\* + 494 contractors\*\*)

\*See Manpower Projections on pages 141-143 of the Dec 31, 2021 Sibanye Stillwater Ltd Foreign Issuer Report 6-K. (**Exhibit 1**)

\*\*Since the 6K Report had no projections of contractors; the best available contractor number was used; see page 158 of the Sibanye-Stillwater Integrated Report 2021. (**Exhibit 2**)

Statement 3:

*PCSD already has Mineral Development Students and Mine Impact (in-migrating) students, as admitted to in the October 24, 2023 correspondence from the Mine and shown to be as high as 44 students in a November 7, 2022 email from the Mine. (**Exhibit 3**)*

Statement 4:

*PCSD would receive Metal Mines Tax Revenue (MMT) and Property Tax Base Sharing Revenue based on its % of Mineral Development Students in Stillwater County if PCSD were included as a “named” school district in the Impact Plan. (**Exhibit 4**)*

*MMT and Property Tax Base Sharing Revenue that would be distributed to PCSD are instead (annually) being distributed to the other “named” school districts in Stillwater County. By ignoring PCSD’s Mineral Development Students in Stillwater County, the County and the Mine are incorrectly calculating and distributing tax revenues to schools; this is in violation of the formula in the approved plan itself. (**Exhibit 4**)*

Statement 5:

*Stillwater County and/or the Mine could submit an amendment per the process defined in the approved Nye Impact Plan to name PCSD as an affected school district.*

Statement 6:

*The Mine Impact Board (MIB) certainly has the authority to recommend (if not require) the 25 year old Impact Plan be amended.*

Thank you for your time and consideration.

Sincerely,



Dusty R. Weber  
Parent of current and former students in PCSD and taxpayer in PCSD  
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Park City, MT 59063  
[dustyrweber29@gmail.com](mailto:dustyrweber29@gmail.com)

Attached to and included in this public comment:

**Exhibit 1** - Sibanye Mineral Development Employees Actual

**Exhibit 2** - Sibanye Mineral Development Projections

**Exhibit 3** - Email R Weimer to D Grabowska with Mine Employee and Mine Student Populations 2018 thru 2021

**Exhibit 4** - Page 2-7 of 1998 Nye Impact Plan\_tax base sharing percent of total mineral development students residing in SWC

Empowering our workforce *continued*

## OUR WORKFORCE PROFILE

The composition of our workforce is outlined below. There were no forced retrenchments during 2021.

### Workforce by operation at December 2021

	2021			2020			2019		
	<sup>1</sup> Employees	<sup>2</sup> Contractors	Total	<sup>1</sup> Employees	Contractors	Total	<sup>1</sup> Employees	Contractors	Total
<b>SA operations</b>									
Beatrix	6,555	1,868	8,423	6,577	1,579	8,156	6,374	735	7,109
Driefontein	8,481	1,690	10,171	8,609	1,537	10,146	8,547	1,164	9,711
Kloof	9,407	1,982	11,389	9,549	2,055	11,604	9,858	1,271	11,129
Burnstone	168	76	244	98	33	131	103	23	126
Cooke	487	428	915	480	426	906	493	353	846
<b>SA gold operations</b>	<b>25,098</b>	<b>6,044</b>	<b>31,142</b>	25,313	5,630	30,943	25,375	3,546	28,921
Kroondal (100%)	5,397	3,139	8,536	5,489	3,155	8,644	5,445	1,904	7,349
Rustenburg <sup>7</sup>	12,809	3,283	16,092	12,378	3,047	15,425	11,458	1,704	13,162
Marikana	17,963	3,413	21,376	18,461	3,855	22,316	20,200	3,385	23,585
<b>SA PGM operations</b>	<b>36,169</b>	<b>9,835</b>	<b>46,004</b>	36,328	10,057	46,385	37,103	6,993	44,096
Group and Integrated services <sup>3</sup>	2,671	2,164	4,835	2,682	1,852	4,534	2,748	2,617	5,365
						0	2,368	1,043	3,411
<b>SA operations – total</b>	<b>63,938</b>	<b>18,043</b>	<b>81,981</b>	64,323	17,539	81,862	67,594	14,199	81,793
<b>US PGM operations</b>									
Stillwater	1,219	494	1,713	1,163	462	1,625	1,090	480	1,570
East Boulder	454	262	716	446	264	710	436	239	675
Columbus Metallurgical Complex	199	177	376	217	233	450	196	149	345
Regional services <sup>4</sup>	99	0	99	55	2	57	67	4	71
Other <sup>5</sup>	0	0	0	0	0	0	0	0	0
<b>US PGM operations – total</b>	<b>1,971</b>	<b>933</b>	<b>2,904</b>	1,881	961	2,842	1,789	872	2,661
<b>Corporate office<sup>6</sup></b>	<b>96</b>	<b>0</b>	<b>96</b>	71		71	67	0	67
<b>Group – total</b>	<b>66,005</b>	<b>18,976</b>	<b>84,981</b>	66,275	18,500	84,775	69,450	15,071	84,521

<sup>1</sup> Employees include permanent and fixed term employees

<sup>2</sup> Contractors exclude 'fee' contractors (i.e. those paid for work performed as opposed to being paid per head)

<sup>3</sup> Previous years' data (before 2020) was split between Regional services and SA other. As of 2020 figures are combined, with the Property employees incorporated in the operations. Regional services includes executive management of the SA operations and employees providing a service to all SA operations

<sup>4</sup> Regional services in the US includes executive management located in the Columbus and Montana offices

<sup>5</sup> Other represents two employees at Marathon, Canada (no contractors at 31 December 2019)

<sup>6</sup> Blue Ridge included

### Workforce by age<sup>3</sup>

	2021				2020				2019			
	<sup>1</sup> Employees	Contractors	Total	%	Employees	Contractors	Total	%	Employees	Contractors	Total	%
<b>SA operations</b>												
18<30 years	2,964	4,614	7,578	9 %	2,823	4,411	7,234	9 %	3,458	3,261	6,719	8 %
30-50 years	45,878	11,328	57,206	70 %	47,187	11,102	58,289	71 %	49,530	9,222	58,752	72 %
>50 years	15,192	2,101	17,293	21 %	14,384	2,026	16,410	20 %	14,606	1,716	16,322	20 %
<b>US PGM operations<sup>2</sup></b>												
19<30 years	311	0	311	16 %	265		265	14 %	246		246	14 %
30-50 years	1,096	0	1,096	56 %	994		994	53 %	990		990	55 %
>50 years	564	0	564	29 %	622		622	33 %	553		553	31 %

<sup>1</sup> Employees include permanent and fixed term employees

<sup>2</sup> Ages of contractors at US PGM operations not available

<sup>3</sup> Including Corporate

Empowering our workforce *continued*

**EMPLOYEE TURNOVER**

The annual turnover for management level employees at the SA operations in 2021 was 135 (2021: 0.21%; 2020: 0.20%), including 60 for HDPs (2021: 0.09%; 2020: 0.10%) and 17 for women in management (2021: 0.03%; 2020: 0.03%). The total turnover for the SA operations was 4,982 (2021: 7.7%; 2020: 8.6%), with 2,325 and 2,459 recorded at the SA gold and PGM operations respectively (2021: 9.1% and 6.8%; 2020: 8.1% and 8.8%). Of our total turnover rate, 1% were women.

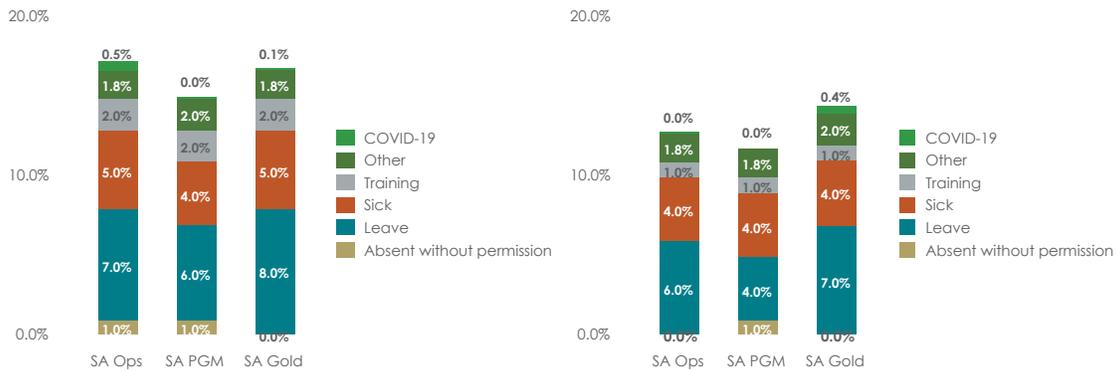
Annualised attrition in the US PGM operations was 13.92%, while the attrition rate among mineworkers was 12.74% (2020: 8.39% and 6.11% respectively).

In SA operations a total of 1,279 (27.7%) women were hired out of a total 4,622 hires.

**ABSENTEEISM**

Absenteeism is monitored monthly via an attendance management programme. Employees who are struggling to get to work can access help through our Employee Assistance Programmes (EAPs).

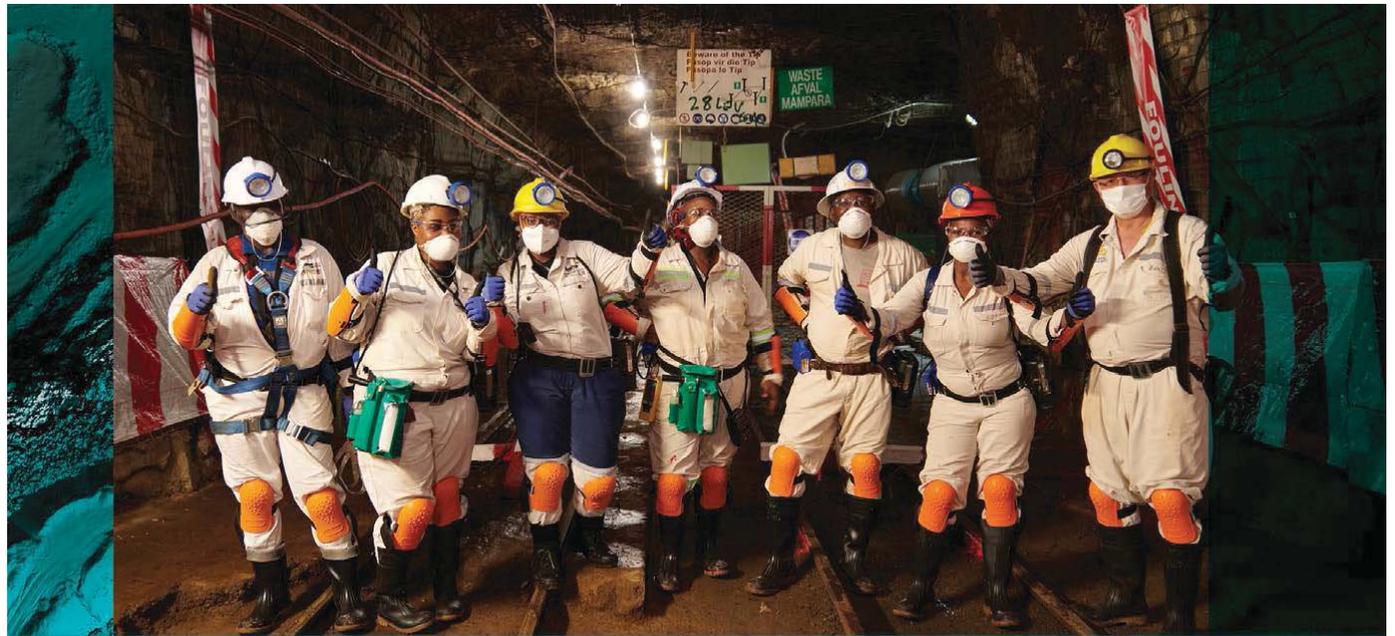
SA operations: shifts not worked including absenteeism (average %)



**PERFORMANCE**

Our HR focus has shifted from an emphasis on culture transformation to operational excellence and strategic workforce planning. The Organisational Growth department was split off from HR, allowing HR to focus its efforts on ensuring employees are fit to deliver (operational), leaving Organisational Growth to focus on culture change.

Our SA PGM operations spent R547 million on learning and development in 2021, while our Gold operations spent R422 million. Training spend for our US operations was 6 million.



Group of employees at the SA gold Driefontein 4 shaft

## SUPERIOR VALUE FOR THE WORKFORCE CONTINUED

### Workforce by operation at 31 December

	2018			2017			2016		
	Permanent employees	<sup>1</sup> Contractors	Total	Permanent employees	<sup>1</sup> Contractors	Total	Permanent employees	<sup>1</sup> Contractors	Total
<b>SA operations</b>									
Beatrix	7,329	929	8,258	7,084	925	8,009	7,884	1,671	9,555
Driefontein	10,576	1,072	11,648	10,969	1,495	12,464	10,941	1,648	12,589
Kloof	9,776	1,160	10,936	9,581	1,487	11,068	9,858	1,319	11,177
Burnstone	114	66	180	237	298	535	241	336	577
Cooke	486	260	746	717	542	1,259	3,788	1,624	5,412
Gold (excluding services)	28,281	3,487	31,768	28,588	4,747	33,335	32,712	6,598	39,310
Kroondal (100%)	5,673	2,617	8,290	5,715	2,849	8,564	6,021	4,378	10,399
Rustenburg <sup>3</sup>	13,023	2,354	15,377	13,194	2,049	15,243	14,891	3,114	18,005
SA PGM <sup>2</sup> (excluding services)	18,696	4,971	23,667	18,909	4,898	23,807	20,912	7,492	28,404
Regional Services <sup>3</sup>	2,251	1,239	3,490	2,262	1,349	3,611	3,054	1,018	4,072
SA other <sup>4</sup>	1,720	806	2,526	1,867	1,827	3,694	2,731	190	2,921
SA operations – Total	50,948	10,503	61,451	51,626	12,821	64,447	58,644	15,887	74,531
<b>US operations</b>									
Stillwater	962	280	1,242	863	333	1,196			
East Boulder	411	45	456	409	54	463			
Columbus									
Metallurgical Complex	186	54	240	179	64	243			
Regional services <sup>5</sup>	67	5	72	54	6	60			
Other <sup>6</sup>	2	0	2	8	0	8			
US operations – Total	1,628	384	2,012	1,513	457	1,970			
Corporate office <sup>7</sup>	55	0	55	55	-	55			
<b>Group – Total</b>	<b>52,631</b>	<b>10,887</b>	<b>63,518</b>	<b>53,194</b>	<b>13,278</b>	<b>66,472</b>	<b>58,644</b>	<b>15,887</b>	<b>74,531</b>

<sup>1</sup> Contractors excludes “free” contractors who receive a fee for service irrespective of the number of contractor employees on site (not compensated on a fee-per-head basis but a fee for the service or work performed)

<sup>2</sup> PGM operations under management: In 2016, Kroondal is included from April to December 2016 and Rustenburg operations from November to December 2016. In 2017, these operations are included for the full year.

<sup>3</sup> Regional services includes executive management of the SA operations and employees providing a service to the SA operations and to the gold operations not reflected in other. The number for the Rustenburg employees above includes 1,029 employees who provide regional services to the SA PGM operations

<sup>4</sup> Other includes Protection Services, Shared Services, Sibanye-Stillwater Academy, Health Services and Property (gold and SA PGM operations)

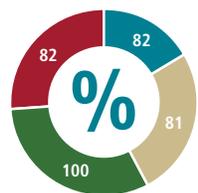
<sup>5</sup> Regional services in the US includes executive management located in Columbus and Montana offices

<sup>6</sup> Other represents two employees at Marathon, Canada (no contractors at 31 December 2018). Altar employees are included with Aldebaran from 2018 (non-managed).

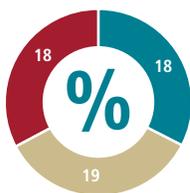
<sup>7</sup> Corporate office includes executive management since September 2017

### Workforce composition (2018)

#### Permanent employees



#### Contractors



SA operations	50,948
US operations <sup>1</sup>	1,628
Corporate office	55
<b>Group</b>	<b>52,631</b>

SA operations	18
US operations <sup>1</sup>	19
Corporate office	0
<b>Group</b>	<b>18</b>

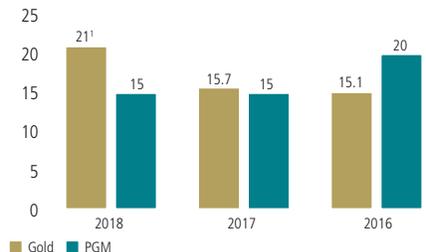
**Workforce by age**

	2018				2017				2016			
	Permanent employees	Contractors	Total	%	Permanent employees	Contractors	Total	%	Permanent employees	Contractors	Total	%
<b>SA operations</b>												
<30 years	3,402	2,950	6,352	10	4,034	3,694	7,728	12	5,913	4,560	10,473	14
30-50 years	37,230	6,492	43,722	71	37,275	7,738	45,013	70	41,636	9,536	51,172	69
>50 years	10,316	1,061	11,377	19	10,317	1,389	11,706	18	11,095	1,791	12,886	17
<b>US operations<sup>1</sup></b>												
<30 years	194		194	12	157			10				
30-50 years	904		904	55	848			56				
>50 years	530		530	33	508			34				

<sup>1</sup> Ages of contractors at US operations not available

**ABSENTEEISM**

SA operations: Absenteeism (%)



<sup>1</sup> The increase is a result of the AMCU wage-related industrial action

For more about absenteeism, refer to *Ensuring safe production, and Occupational health and well-being*.

US operations' employees are allotted a specific number of vacation and sick/personal days per year. When these discretionary days off of work have US operations' employees are allotted a specific number of vacation and sick/personal days per year. When these discretionary days off of work have been exhausted, should the employee miss work, employment is terminated.

**EMPLOYEE TURNOVER**

The annual turnover for management level employees in the SA operations in 2018 was 14%, including 9% HDSAs and 4% women in management. The total turnover in the SA operations was 5% (6% at the gold operations and 3% at the PGM operations).

Annualised attrition in the US operations in 2018 was 8.7%. The attrition rate among miners was 4.8%.

No incidents of discrimination were reported during 2018.

**GENDER DIVERSITY**

We aim to establish a working environment, and instil a culture, that supports and proactively attracts women at all levels, and which accelerates gender equity through employee development and improved communication, promoting awareness and understanding of gender diversity and equity, and removing gender-related barriers to make the working environment more conducive for women. Every effort has been made to ensure that our HR policies are gender-neutral.

Women representation in our workforce improved to 13% in 2018 with 9% of core mining roles held by women. A particular focus of succession planning is to increase female representation in middle management and in senior/executive management.

Sexual harassment is not tolerated at all as it violates our values and disrupts the workplace. As awareness and understanding of sexual harassment play a pivotal role in preventing sexual harassment in the workplace, regular awareness campaigns are conducted. Sexual harassment is also addressed in employee "return from leave" refresher induction training. Our sexual harassment policy governs procedures to be followed in dealing with sexual harassment. A sexual misconduct unit of Protection Services handles all reported sexual harassment cases, with information from anonymous tip-offs or HR managers, and counselling is provided to affected employees. In 2018, two cases of sexual harassment were reported at our SA PGM operations and one at our SA gold operations.

"Every effort has been made to ensure that our HR policies are gender-neutral"

## EMPLOYEES

At December 31, 2016, the Company employed 1,432 people. The following table shows the distribution of Company employees (excluding contractors) involved in each of the Company's activities:

SITE	December 31,		
	2016	2015	2014
Stillwater Mine	791	784	942
East Boulder Mine	402	410	419
Smelter and Refinery Complex	170	178	187
Administrative Support	59	58	61
Canadian Operations	2	2	3
South American Operations	8	7	7
Total	1,432	1,439	1,619

The Company's represented workforce at the Stillwater Mine, the East Boulder Mine, the smelter and the base metal refinery are represented by the United Steel Workers of America (USW) and are covered under two separate collective bargaining agreements. The Stillwater Mine and the Columbus processing facilities are covered by a collective bargaining agreement with the USW Local 11-0001, which expires June 1, 2019, with re-negotiation (for wages only) in 2017. The East Boulder Mine collective bargaining agreement with the USW Local 11-0001, expires December 31, 2019, with re-negotiation (for wages only) in 2017.

## MAJOR CUSTOMERS

As previously disclosed, the Company and JM entered into a five-year PGM supply agreement and a refining agreement during 2014. The supply agreement gives JM the right to purchase all of the Company's mine production of palladium and platinum at competitive market prices (with the exception of platinum sales under the Company's sales agreement with Tiffany & Co.) and the right to bid for any recycling volumes the Company has available.

The Company aims to sell forward all recycling material at the time the purchase is made, essentially fixing the sales margin on the material. Forward sales of recycled ounces are customarily offered to any of several counterparties whom the Company believes are able to take future physical delivery of the underlying metal. Such forward sales are regarded as "normal sales" transactions for accounting purposes and therefore are not accounted for as derivatives.

During 2016, JM purchased all of the Company's mined PGM production (excluding the platinum ounces delivered under a separate agreement with Tiffany & Co.). Approximately 56.9% of the Company's total revenues for the year ended December 31, 2016 were derived from mine production.

This significant concentration of business with JM could leave the Company without precious metals refining services should JM experience significant financial or operating difficulties during the contract period. See *"Item 1A - Risk Factors - The Company's sales arrangements concentrate all of the Company's final refining activity and a large portion of its PGM sales from mine production with one entity"* for further information.

## PGM SALES AND HEDGING

### MINE PRODUCTION

The Company sells its palladium, platinum, rhodium, gold and silver through established trading relationships. Refined PGMs of 99.95% purity (rhodium of 99.9%) in sponge-form are transferred upon sale from the Company's account at the third-party refiner to the account of the purchaser. After final refining, by-product gold, silver and rhodium are normally sold at market prices to customers, brokers or outside refiners. Copper and nickel by-products from the Company's base metal refinery are produced at less than commercial grade, so prices for these metals typically reflect a modest quality discount. By-product sales are included in revenues from mine production. During 2016, 2015 and 2014, total revenues from by-product (copper, nickel, gold, silver and mined rhodium) sales were \$23.7 million, \$23.1 million and \$29.6 million, respectively.

The Company has a market-based platinum supply agreement in place with Tiffany & Co., through the end of 2017. At present the Company sells the remainder of its PGM mine production to JM under a five-year arrangement that commenced in July, 2014. Pricing is based on spot prices.

## SAFETY

Mining operations are conducted at the Stillwater Mine and at the East Boulder Mine and involve the use of heavy machinery and drilling and blasting in confined spaces. The pursuit of safety excellence at the Company continues with the utilization since 2001 of the Company's "G.E.T. (Guide, Educate and Train) Safe" safety and health management systems. Efforts are focused on accident prevention, seeking safer methods of mining and increased employee awareness and training. Areas of specific focus include enhanced work place examinations, safety standards implementation and compliance, accident/incident investigations, near miss reporting and use of loss control representatives who are part of the mining workforce. Employee-led focus teams have been successful in proactively solving many safety related challenges. The Company continues to use focus teams to address specific safety and health related issues. The Company has partnered with MSHA on several occasions for purposes of education, training, research, and technology sharing. Several breakthrough results have resulted from this partnership. Most noteworthy are the completion of a jointly created training seminar for MSHA inspectors and Company supervisors and cooperative study and research efforts for reducing employee exposures to noise and diesel particulate matter.

During 2008, continued focus on improving Company safety performance resulted in an overall Company reportable accident incidence rate reduction for employees of 8.3% from 2007. This equates to a 75% reduction in incidence rates for Company employees since the inception of the "G.E.T. Safe" safety management systems in 2001. During 2008, the mill at the East Boulder Mine received the Department of Labor's "Sentinels of Safety" Award for 2007 outstanding safety performance. The metallurgical complex in Columbus, Montana, continued to maintain a low incidence rate while being recognized by the Montana Department of Labor and Occupational Safety and Health Administration (OSHA) as a leader in workplace safety. In May of 2008, the Company's base metal refinery in Columbus, Montana was recognized for twelve years of operation without a lost-time accident; this accident-free record subsequently has continued through the end of 2008. The analytical laboratory achieved seven years of operation without a lost-time accident during 2008.

The smelter, base metal refinery and laboratory continue to participate in and support the Montana Department of Labor's Safety and Health Achievement Recognition Program ("SHARP"). They have all received SHARP recognition numerous times. The smelter received SHARP recognition in December of 2008. The base metal refinery and laboratory have both applied for SHARP recognition.

The SHARP program recognizes employers who have demonstrated exemplary achievements in workplace safety and health. By meeting the SHARP inspection requirements, these facilities may be exempt from general OSHA inspections for one year. During 2008, employee participation and involvement was further enhanced through the continued implementation of internal safety auditing processes.

## EMPLOYEES

As of December 31, 2008 and 2007, the Company had 1,364 and 1,625 employees, respectively, in the following areas:

<b>SITE</b>	<b>Number of Employees at December 31,</b>	
	<b>2008</b>	<b>2007</b>
Stillwater Mine	869	845
East Boulder Mine	261	551
Smelter and Refinery Complex	169	161
Administrative Support	65	68
Total	<u>1,364</u>	<u>1,625</u>

In response to sharply lower market prices for the Company's principal products, platinum and palladium, during the fourth quarter of 2008, the Company issued a notice at East Boulder Mine under the WARN Act and restructured its workforce company-wide. Some of the miners at East Boulder Mine were transferred to the Stillwater Mine to bolster operations there, replacing contractors and provisional employees. Staff and support personnel at all Company locations also were reduced. As part of the same effort, in early January 2009 the Company consolidated its corporate functions in Columbus, Montana, and closed the headquarters office in Billings, Montana.



### **Production and Overall Operations**

The Stillwater Mine produced 504,000 ounces of palladium and platinum during 2001, a 17 percent increase over the 430,000 ounces produced in 2000 and a 23 percent increase over the 409,000 ounces produced in 1999.

Mine dilution decreased four percent, the result of improved planning and increased attention from the underground crews. Total production and development tons mined increased nine percent to 1.96 million tons compared to 1.8 million tons in 2000.

The mill processed a total of 912,000 tons of ore and sub-grade material in 2001 with a mill head grade of 0.62 ounce per ton, a 20.6 percent increase over the 756,000 tons processed in 2000, at a head grade of 0.64 ounce per ton. The mill recovery rate was 90.2 percent in 2001 slightly lower than the previous year as a result of processing substantially more sub-grade material.

During 2001, total cash costs per ounce were \$264, the same as in 2000. Efficiencies achieved through increased production levels and lower royalties and taxes associated with the lower metal prices were offset by lower byproduct credits.

Development goals continued to be met during 2001 with 64,000 feet of development and 514,000 feet of total diamond drilling completed during the year. As a result proven reserves were increased slightly to 2.8 million tons replacing production during the year.

The Stillwater Mine MSHA (Mine Safety and Health Administration) reportable incident rate improved 38 percent to a 9.33 rate in 2001, from a 15.15 rate in 2000 and a 19.02 rate in 1999. The improvement is a result of employee involvement in safety stand-downs and workplace inspections, as well as safety system improvements. Though these efforts resulted in improved reportable injury incidence rate,

the Stillwater Mine suffered three fatalities, two involving Company employees and one involving an independent contractor's employee during the year. Thus, the recognition and elimination of all potentials for workplace fatalities is a highest priority at Stillwater Mining Company.

Total site manpower at the Stillwater Mine is 1,122 employees as compared with 963 at the end of 2000.

### **2002 Outlook**

Improvements in safety, planning, mine infrastructure, ore reserves, development, production, and costs are key focus for operations management during 2002. Planning, both short and long-term continues. Organizational development focused on employee involvement in developing and implementing systems for improved safety, production, and costs are major initiatives for 2002.

## Annual Employment Production

Year	Mine ID	Subunit	Coal Production	Annual Hrs.	Avg. Annual Emp.*
2022	2401490	01 UNDERGROUND	0		
2022	2401490	02 SURFACE AT UNDERGROUND	0		
2022	2401490	30 MILL OPERATION/PREPARATION PLANT	0		
2022	2401490	99 OFFICE WORKERS AT MINE SITE	0		
2022	2401490	<b>Total</b>	<b>0</b>		
2021	2401490	01 UNDERGROUND	0	1,862,670	1,026
2021	2401490	02 SURFACE AT UNDERGROUND	0	218,456	114
2021	2401490	30 MILL OPERATION/PREPARATION PLANT	0	90,375	53
2021	2401490	99 OFFICE WORKERS AT MINE SITE	0	18,733	10
2021	2401490	<b>Total</b>	<b>0</b>	<b>2,190,234</b>	<b>1,203</b>
2020	2401490	01 UNDERGROUND	0	1,803,998	963
2020	2401490	02 SURFACE AT UNDERGROUND	0	195,081	105
2020	2401490	30 MILL OPERATION/PREPARATION PLANT	0	94,843	52
2020	2401490	99 OFFICE WORKERS AT MINE SITE	0	15,807	8
2020	2401490	<b>Total</b>	<b>0</b>	<b>2,109,729</b>	<b>1,128</b>
2019	2401490	01 UNDERGROUND	0	1,701,180	896
2019	2401490	02 SURFACE AT UNDERGROUND	0	165,914	88
2019	2401490	30 MILL OPERATION/PREPARATION PLANT	0	101,862	53
2019	2401490	99 OFFICE WORKERS AT MINE SITE	0	11,239	7
2019	2401490	<b>Total</b>	<b>0</b>	<b>1,980,195</b>	<b>1,044</b>
2018	2401490	01 UNDERGROUND	0	1,497,892	780
2018	2401490	02 SURFACE AT UNDERGROUND	0	155,244	83
2018	2401490	30 MILL OPERATION/PREPARATION PLANT	0	92,483	49
2018	2401490	99 OFFICE WORKERS AT MINE SITE	0	7,701	4
2018	2401490	<b>Total</b>	<b>0</b>	<b>1,753,320</b>	<b>916</b>
2017	2401490	01 UNDERGROUND	0	1,328,181	702
2017	2401490	02 SURFACE AT UNDERGROUND	0	137,945	75
2017	2401490	30 MILL OPERATION/PREPARATION PLANT	0	90,189	46
2017	2401490	99 OFFICE WORKERS AT MINE SITE	0	9,266	5
2017	2401490	<b>Total</b>	<b>0</b>	<b>1,565,581</b>	<b>828</b>
2016	2401490	01 UNDERGROUND	0	1,238,687	665
2016	2401490	02 SURFACE AT UNDERGROUND	0	129,276	71
2016	2401490	30 MILL OPERATION/PREPARATION PLANT	0	87,576	44
2016	2401490	99 OFFICE WORKERS AT MINE SITE	0	8,746	5
2016	2401490	<b>Total</b>	<b>0</b>	<b>1,464,285</b>	<b>785</b>
2015	2401490	01 UNDERGROUND	0	1,386,760	735
2015	2401490	02 SURFACE AT UNDERGROUND	0	145,405	78
2015	2401490	30 MILL OPERATION/PREPARATION PLANT	0	101,543	51
2015	2401490	99 OFFICE WORKERS AT MINE SITE	0	16,535	9
2015	2401490	<b>Total</b>	<b>0</b>	<b>1,650,243</b>	<b>873</b>
2014	2401490	01 UNDERGROUND	0	1,602,279	832
2014	2401490	02 SURFACE AT UNDERGROUND	0	156,770	83
2014	2401490	30 MILL OPERATION/PREPARATION PLANT	0	113,381	59
2014	2401490	99 OFFICE WORKERS AT MINE SITE	0	21,367	11
2014	2401490	<b>Total</b>	<b>0</b>	<b>1,893,797</b>	<b>985</b>
2013	2401490	01 UNDERGROUND	0	1,675,691	860
2013	2401490	02 SURFACE AT UNDERGROUND	0	177,071	92
2013	2401490	30 MILL OPERATION/PREPARATION PLANT	0	118,827	62
2013	2401490	99 OFFICE WORKERS AT MINE SITE	0	24,147	15
2013	2401490	<b>Total</b>	<b>0</b>	<b>1,995,736</b>	<b>1,029</b>
2012	2401490	01 UNDERGROUND	0	1,659,579	789
2012	2401490	02 SURFACE AT UNDERGROUND	0	68,161	94
2012	2401490	30 MILL OPERATION/PREPARATION PLANT	0	130,004	62
2012	2401490	99 OFFICE WORKERS AT MINE SITE	0	23,010	9
2012	2401490	<b>Total</b>	<b>0</b>	<b>1,880,754</b>	<b>954</b>
2011	2401490	01 UNDERGROUND	0	1,582,364	797
2011	2401490	02 SURFACE AT UNDERGROUND	0	59,479	30
2011	2401490	30 MILL OPERATION/PREPARATION PLANT	0	132,921	66
2011	2401490	99 OFFICE WORKERS AT MINE SITE	0	23,661	12
2011	2401490	<b>Total</b>	<b>0</b>	<b>1,798,425</b>	<b>905</b>
2010	2401490	01 UNDERGROUND	0	1,378,500	708
2010	2401490	02 SURFACE AT UNDERGROUND	0	45,416	24
2010	2401490	30 MILL OPERATION/PREPARATION PLANT	0	127,804	66
2010	2401490	99 OFFICE WORKERS AT MINE SITE	0	21,387	11
2010	2401490	<b>Total</b>	<b>0</b>	<b>1,573,107</b>	<b>809</b>
2009	2401490	01 UNDERGROUND	0	1,425,114	731
2009	2401490	02 SURFACE AT UNDERGROUND	0	48,874	26
2009	2401490	30 MILL OPERATION/PREPARATION PLANT	0	133,586	70
2009	2401490	99 OFFICE WORKERS AT MINE SITE	0	20,342	11
2009	2401490	<b>Total</b>	<b>0</b>	<b>1,627,916</b>	<b>838</b>
2008	2401490	01 UNDERGROUND	0	1,518,805	732
2008	2401490	02 SURFACE AT UNDERGROUND	0	65,320	33
2008	2401490	30 MILL OPERATION/PREPARATION PLANT	0	149,647	74
2008	2401490	99 OFFICE WORKERS AT MINE SITE	0	16,966	9
2008	2401490	<b>Total</b>	<b>0</b>	<b>1,750,738</b>	<b>848</b>
2007	2401490	01 UNDERGROUND	0	1,437,008	721
2007	2401490	02 SURFACE AT UNDERGROUND	0	76,896	45
2007	2401490	30 MILL OPERATION/PREPARATION PLANT	0	140,458	70
2007	2401490	99 OFFICE WORKERS AT MINE SITE	0	16,502	9
2007	2401490	<b>Total</b>	<b>0</b>	<b>1,670,864</b>	<b>845</b>
2006	2401490	01 UNDERGROUND	0	1,551,838	829

\* DOES NOT INCLUDE CONTRACTORS.  
SOURCE OF DATA <https://www.msha.gov/data-and-reports/mine-data-retrieval-system>

**Annual Employment Production**

2006	2401490	02	SURFACE AT UNDERGROUND	0	137,028	72
2006	2401490	30	MILL OPERATION/PREPARATION PLANT	0	107,585	53
2006	2401490	99	OFFICE WORKERS AT MINE SITE	0	11,314	7
2006	2401490	<b>Total</b>		<b>0</b>	<b>1,807,765</b>	<b>961</b>
2005	2401490	01	UNDERGROUND	0	1,529,770	812
2005	2401490	02	SURFACE AT UNDERGROUND	0	159,395	80
2005	2401490	30	MILL OPERATION/PREPARATION PLANT	0	104,802	51
2005	2401490	99	OFFICE WORKERS AT MINE SITE	0	15,048	8
2005	2401490	<b>Total</b>		<b>0</b>	<b>1,809,015</b>	<b>951</b>
2004	2401490	01	UNDERGROUND	0	1,485,923	824
2004	2401490	02	SURFACE AT UNDERGROUND	0	175,928	91
2004	2401490	30	MILL OPERATION/PREPARATION PLANT	0	105,258	54
2004	2401490	99	OFFICE WORKERS AT MINE SITE	0	16,563	9
2004	2401490	<b>Total</b>		<b>0</b>	<b>1,783,672</b>	<b>978</b>
2003	2401490	01	UNDERGROUND	0	1,577,630	849
2003	2401490	02	SURFACE AT UNDERGROUND	0	188,523	96
2003	2401490	30	MILL OPERATION/PREPARATION PLANT	0	107,250	55
2003	2401490	99	OFFICE WORKERS AT MINE SITE	0	18,772	10
2003	2401490	<b>Total</b>		<b>0</b>	<b>1,892,175</b>	<b>1,010</b>
2002	2401490	01	UNDERGROUND		1,709,752	947
2002	2401490	02	SURFACE AT UNDERGROUND		197,855	101
2002	2401490	30	MILL OPERATION/PREPARATION PLANT		116,164	58
2002	2401490	99	OFFICE WORKERS AT MINE SITE		22,332	12
2002	2401490	<b>Total</b>			<b>2,046,103</b>	<b>1,118</b>
2001	2401490	01	UNDERGROUND		1,778,918	936
2001	2401490	02	SURFACE AT UNDERGROUND		195,127	96
2001	2401490	30	MILL OPERATION/PREPARATION PLANT		113,458	55
2001	2401490	99	OFFICE WORKERS AT MINE SITE		24,341	12
2001	2401490	<b>Total</b>			<b>2,111,844</b>	<b>1,099</b>
2000	2401490	01	UNDERGROUND		1,039,529	580
2000	2401490	02	SURFACE AT UNDERGROUND		331,439	155
2000	2401490	30	MILL OPERATION/PREPARATION PLANT		66,117	37
2000	2401490	99	OFFICE WORKERS AT MINE SITE		173,263	96
2000	2401490	<b>Total</b>			<b>1,610,348</b>	<b>868</b>
1999	2401490	01	UNDERGROUND		1,050,854	566
1999	2401490	02	SURFACE AT UNDERGROUND		325,663	177
1999	2401490	30	MILL OPERATION/PREPARATION PLANT		50,191	27
1999	2401490	99	OFFICE WORKERS AT MINE SITE		161,493	91
1999	2401490	<b>Total</b>			<b>1,588,201</b>	<b>861</b>
1998	2401490	01	UNDERGROUND		886,405	494
1998	2401490	02	SURFACE AT UNDERGROUND		216,515	116
1998	2401490	30	MILL OPERATION/PREPARATION PLANT		43,907	26
1998	2401490	99	OFFICE WORKERS AT MINE SITE		154,808	96
1998	2401490	<b>Total</b>			<b>1,301,635</b>	<b>732</b>
1997	2401490	01	UNDERGROUND		745,820	385
1997	2401490	02	SURFACE AT UNDERGROUND		209,625	105
1997	2401490	30	MILL OPERATION/PREPARATION PLANT		43,441	22
1997	2401490	99	OFFICE WORKERS AT MINE SITE		161,986	81
1997	2401490	<b>Total</b>			<b>1,160,872</b>	<b>593</b>
1996	2401490	01	UNDERGROUND		647,220	337
1996	2401490	02	SURFACE AT UNDERGROUND		194,897	95
1996	2401490	30	MILL OPERATION/PREPARATION PLANT		41,400	20
1996	2401490	99	OFFICE WORKERS AT MINE SITE		172,901	83
1996	2401490	<b>Total</b>			<b>1,056,418</b>	<b>535</b>
1995	2401490	01	UNDERGROUND		504,626	274
1995	2401490	02	SURFACE AT UNDERGROUND		176,487	91
1995	2401490	30	MILL OPERATION/PREPARATION PLANT		34,435	18
1995	2401490	99	OFFICE WORKERS AT MINE SITE		137,272	72
1995	2401490	<b>Total</b>			<b>852,820</b>	<b>455</b>
1994	2401490	01	UNDERGROUND		456,776	254
1994	2401490	02	SURFACE AT UNDERGROUND		143,110	79
1994	2401490	30	MILL OPERATION/PREPARATION PLANT		28,747	16
1994	2401490	99	OFFICE WORKERS AT MINE SITE		147,679	82
1994	2401490	<b>Total</b>			<b>776,312</b>	<b>431</b>
1993	2401490	01	UNDERGROUND		487,005	272
1993	2401490	02	SURFACE AT UNDERGROUND		137,656	74
1993	2401490	30	MILL OPERATION/PREPARATION PLANT		87,030	43
1993	2401490	99	OFFICE WORKERS AT MINE SITE		60,998	35
1993	2401490	<b>Total</b>			<b>772,689</b>	<b>424</b>
1992	2401490	01	UNDERGROUND		438,306	228
1992	2401490	02	SURFACE AT UNDERGROUND		168,334	87
1992	2401490	30	MILL OPERATION/PREPARATION PLANT		67,638	35
1992	2401490	99	OFFICE WORKERS AT MINE SITE		19,791	14
1992	2401490	<b>Total</b>			<b>694,069</b>	<b>364</b>
1991	2401490	01	UNDERGROUND		441,234	231
1991	2401490	02	SURFACE AT UNDERGROUND		201,925	99
1991	2401490	30	MILL OPERATION/PREPARATION PLANT		69,470	35
1991	2401490	99	OFFICE WORKERS AT MINE SITE		16,409	8
1991	2401490	<b>Total</b>			<b>729,038</b>	<b>373</b>
1990	2401490	01	UNDERGROUND		606,849	304
1990	2401490	02	SURFACE AT UNDERGROUND		211,357	92
1990	2401490	30	MILL OPERATION/PREPARATION PLANT		79,884	47
1990	2401490	99	OFFICE WORKERS AT MINE SITE		34,264	26

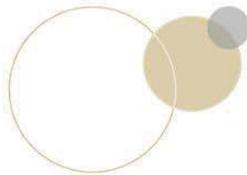
\* DOES NOT INCLUDE CONTRACTORS. SOURCE OF DATA <https://www.msha.gov/data-and-reports/mine-data-retrieval-system>

**Annual Employment Production**

1990	2401490	<b>Total</b>		<b>932,354</b>	<b>469</b>
1989	2401490	01	UNDERGROUND	556,024	283
1989	2401490	02	SURFACE AT UNDERGROUND	162,696	54
1989	2401490	30	MILL OPERATION/PREPARATION PLANT	80,420	24
1989	2401490	99	OFFICE WORKERS AT MINE SITE	26,075	55
1989	2401490	<b>Total</b>		<b>825,215</b>	<b>416</b>
1988	2401490	01	UNDERGROUND	460,750	235
1988	2401490	02	SURFACE AT UNDERGROUND	124,289	45
1988	2401490	30	MILL OPERATION/PREPARATION PLANT	71,846	26
1988	2401490	99	OFFICE WORKERS AT MINE SITE	56,923	37
1988	2401490	<b>Total</b>		<b>713,808</b>	<b>343</b>
1987	2401490	01	UNDERGROUND	300,590	168
1987	2401490	02	SURFACE AT UNDERGROUND	80,713	27
1987	2401490	30	MILL OPERATION/PREPARATION PLANT	23,368	15
1987	2401490	99	OFFICE WORKERS AT MINE SITE	19,593	13
1987	2401490	<b>Total</b>		<b>424,264</b>	<b>223</b>
1986	2401490	01	UNDERGROUND	68,562	37
1986	2401490	02	SURFACE AT UNDERGROUND	9,699	5
1986	2401490	99	OFFICE WORKERS AT MINE SITE	20,094	10
1986	2401490	<b>Total</b>		<b>98,355</b>	<b>52</b>
1985	2401490	01	UNDERGROUND	8,800	12
1985	2401490	02	SURFACE AT UNDERGROUND	1,550	1
1985	2401490	99	OFFICE WORKERS AT MINE SITE	15,426	9
1985	2401490	<b>Total</b>		<b>25,776</b>	<b>22</b>
1984	2401490	02	SURFACE AT UNDERGROUND	202	1
1984	2401490	99	OFFICE WORKERS AT MINE SITE	42,259	20
1984	2401490	<b>Total</b>		<b>42,461</b>	<b>21</b>
1983	2401490	02	SURFACE AT UNDERGROUND	1,566	3
1983	2401490	99	OFFICE WORKERS AT MINE SITE	13,335	7
1983	2401490	<b>Total</b>		<b>14,901</b>	<b>10</b>

\* DOES NOT INCLUDE CONTRACTORS. SOURCE OF DATA <https://www.msha.gov/data-and-reports/mine-data-retrieval-system>

commissioned on 6500 Level in early FY2020 to reduce water in the air lines. A 10-inch diameter pipeline loop from the 7500 Level up to the 8200 Level was installed in FY2020 to increase storage capacity above the 7500 Level. A 200 HP satellite compressor was added in FY2021 to service a long hole drilling machine, with three more satellite compressors to be added and installed at long hole drilling locations. In addition, studies on long-term engineering and option planning started in FY2021 and scheduled for completion in FY2022 will which more closely define the long-term compressed air requirements and strategy. As a result, the Qualified Person is satisfied with the compressed air system in place at East Boulder Mine. The compressed air service map for East Boulder Mine is shown in Figure 52. 140 Figure 52: East Boulder Mine Compressed Air Distribution System 15.11.2.5 Service Water The current service water system consists of multiple DWRs situated on each level underground (Figure 53). The DWR system is fed from the riser pump located at the surface clarifier, which receives the return water from the mining activities underground. The clarified water is pumped underground via a pipeline from the clarifier to the 6500 Level DWR from where it is pumped vertically to the DWRs at the higher levels in the mine in a cascading fashion – DWRs are located at the 6500, 6700, 6900, 7200, 7500, 7900, 8200, 8500 and 8800 Levels. Clean Portal Water is also distributed to the 6500 DWR via a pipeline in Tunnel 1 from a sump inside Portal 1. The future water distribution plan provides for one more DWR at the 9100 Level. The DWRs are equipped with pump skids that have two pumps per skid, each pump delivering 300gal per minute at 350ft of head. The 7900, 8200, 8500 and 8800 DWRs are controlled via variable frequency drives (VFDs) and 40hp pumps, whereas the rest of the DWRs have 125hp direct feed pumps. Each system is sufficient and the DWR planned will be constructed with 40hp pumps and VFDs. The Qualified Person is satisfied with the current service water system, which provides sufficient service water to the mining operations, and no major additions are required. The planned upgrades will ensure the mine has sufficient service water for to the expanded operations.



**Figure 53: East Boulder Mine Drill Water Reservoir Layout**



### 15.12 Manpower

Table 35 and Table 36 show the LoM manpower plans for Stillwater and East Boulder Mines, respectively. A 13% increase in total manpower is planned in FY2022 to bolster the mining, technical services and administration, surface operations and engineering and maintenance complements for the sustainability of the steady state production levels following the conclusion of the Fill The Mill Project at East Boulder Mine. However, the manpower figures are forecast to remain at the FY2022 levels for the remainder of the LoM. Total manpower increases ranging from 4% to 9% are planned at Stillwater Mine





from FY2022 to FY2024 because of the expansion of the mining complement required to achieve the production ramp up at the Stillwater East Section. The manpower levels are forecast to remain relatively stable from FY2025 to FY2046 as the operations approach and attain the steady state production level after which the manpower figures decline in response to declining tonnage planned in the LoM production plan.

**Table 35: LoM Manpower Plan for Stillwater Mine**

Description	Actual						Budget						
	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Mining	761	777	870	772	839	944	918	888	848	816	812	820	822
Engineering Maintenance	169	191	148	209	234	243	243	243	243	243	243	243	243
Technical Services & Admin	99	123	147	228	291	291	291	291	291	291	291	291	291
Concentrator	42	42	43	52	54	54	54	54	54	54	54	54	54
Surface	19	27	28	24	28	28	28	28	28	28	28	28	28
<b>Total Mine Site</b>	<b>1 090</b>	<b>1 159</b>	<b>1 236</b>	<b>1 285</b>	<b>1 446</b>	<b>1 560</b>	<b>1 534</b>	<b>1 504</b>	<b>1 464</b>	<b>1 432</b>	<b>1 428</b>	<b>1 436</b>	<b>1 438</b>

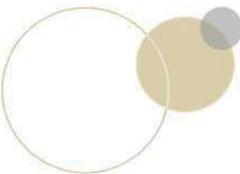
  

Description	Budget												
	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041	FY2042	FY2043	FY2044
Mining	824	821	825	824	823	814	814	814	813	814	770	740	707
Engineering Maintenance	243	243	243	243	243	243	243	243	243	243	243	222	199
Technical Services & Admin	291	291	291	291	291	291	291	291	291	291	291	291	291
Concentrator	54	54	54	54	54	54	54	54	54	54	54	54	54
Surface	28	28	28	28	28	28	28	28	28	28	28	28	28
<b>Total Mine Site</b>	<b>1 440</b>	<b>1 437</b>	<b>1 441</b>	<b>1 440</b>	<b>1 439</b>	<b>1 430</b>	<b>1 430</b>	<b>1 430</b>	<b>1 429</b>	<b>1 430</b>	<b>1 386</b>	<b>1 335</b>	<b>1 279</b>

Description	Budget											
	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051	FY2052	FY2053	FY2054	FY2055	
Mining	692	665	576	576	576	559	559	494	361	260	190	-
Engineering Maintenance	199	194	194	194	194	194	194	194	194	194	194	-
Technical Services & Admin	291	291	291	291	276	276	276	266	256	222	205	-
Concentrator	54	54	54	54	54	54	54	54	54	54	54	-
Surface	28	28	28	28	28	28	28	28	28	28	28	-
<b>Total Mine Site</b>	<b>1 264</b>	<b>1 232</b>	<b>1 143</b>	<b>1 143</b>	<b>1 128</b>	<b>1 111</b>	<b>1 111</b>	<b>1 036</b>	<b>893</b>	<b>758</b>	<b>671</b>	-

141 Figure 53: East Boulder



**Table 36: LoM Manpower Plan for East Boulder Mine**

Description	Actual						Budget										
	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033		
Mining	282	281	294	326	325	327	327	327	327	327	327	327	327	327	327		
Engineering Maintenance	64	71	71	79	79	79	79	79	79	79	79	79	79	79	79		
Technical Services & Admin	41	44	46	57	57	58	58	58	58	58	58	58	58	58	58		
Concentrator	31	29	30	34	34	33	34	34	34	34	34	34	34	34	34		
Surface	18	18	16	20	20	20	20	20	20	20	20	20	20	20	20		
<b>Total Mine Site</b>	<b>436</b>	<b>443</b>	<b>457</b>	<b>516</b>	<b>515</b>	<b>517</b>	<b>518</b>										

Description	Budget														
	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048
Mining	327	327	327	327	327	327	327	327	327	327	327	327	327	327	329
Engineering Maintenance	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
Technical Services & Admin	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
Concentrator	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
Surface	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
<b>Total Mine Site</b>	<b>518</b>	<b>520</b>													

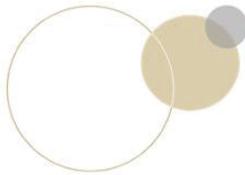
  

Description	Budget														
	FY2049	FY2050	FY2051	FY2052	FY2053	FY2054	FY2055	FY2056	FY2057	FY2058	FY2059	FY2060	FY2061	FY2062	FY2063
Mining	331	333	335	337	339	341	343	345	347	345	348	335	301	303	305
Engineering Maintenance	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
Technical Services & Admin	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58



Concentrator	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
Surface	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Mine Site	522	524	526	528	530	532	534	536	538	539	526	492	494	496	

The Qualified Person noted that higher mining productivities are forecast at East Boulder Mine than the steady state productivity levels at Stillwater Mine when viewed in terms of tonnage generated per number of mining employees. However, the planned mining manpower levels for Stillwater and East Boulder Mines are aligned to the actual levels of productivity achieved previously. Accordingly, the Qualified Person is satisfied with the current manpower plans for Stillwater and East Boulder Mines.



## 16 PROCESSING AND RECOVERY

### 16.1 Mineral Processing Methods

#### 16.1.1 Background

Ore processing plants at Stillwater and East Boulder Mines and the smelter and base metal refinery at the Columbus Metallurgical Complex have been in continuous operation for decades. All metallurgical processes and technology in place at the ore processing, smelting and refining facilities are appropriate, well-proven and aligned to norms and practices in the PGM sectors. The processing methods were selected based on metallurgical testwork carried out as part of feasibility studies at the time of development. However, results of the testwork have been superseded by actual operational data and experience accumulated over several years of continuous successful operation of these facilities. Accordingly, there are no plans to introduce new processing technology at the processing facilities. The plant capacity upgrades at Stillwater Concentrator and the metallurgical complex are based on existing technology and process flowsheets. The plans to maximise installed capacity at the East Boulder Concentrator is similarly based on existing and proven technology.

### 16.2 Ore Processing

#### 16.2.1 Stillwater Concentrator

##### 16.2.1.1 Plant Capacity

The PGM concentrator at Stillwater Mine was commissioned in 1987 as a 500-ton per operating day conventional crushing, milling and flotation plant producing a PGM-base metal sulphide concentrate suitable for downstream smelting and refining. Following several process modifications and expansions, the concentrator capacity increased to approximately 3 100 tons per operating day by FY2020. The concentrator has historically operated on a ten-day or eleven-day fortnight basis and has been switched off every second weekend resulting in approximately 75% utilisation. This was required to maintain the balance with mining volumes of 750 000 tons per year at the time, but the concentrator currently operates on a continuous basis with a target utilisation of 92% due to the increased tonnage delivered from the mine in recent years. At the 92% utilisation, the plant capacity is forecast to be



From: Randy Weimer [REDACTED]  
Date: Mon, Nov 7, 2022 at 10:43 AM  
Subject: Re: mine changes  
To: Dan Grabowska [REDACTED]

Morning Dan --

Sorry this request and information fell through the cracks. Appreciate the follow-up email. Below is the information you requested. We changed up our reporting process about 5 years ago so only presenting the last 4 years of reporting for consistency (apples to apples comparison). Hope this helps. If you have any questions please let me know - call (406-[REDACTED]) or email.

These are the number of Sibanye-Stillwater employees that live in the Park City School District and which operation they work at. That's important as related to which Hard Rock Mine Impact Plan applies. Keep in mind the folks that work in Columbus do not fall under a Plan. It only applies to mines. If we can't make is any more confusing than it already is. As you can see, the majority of employees that live in the School District work at the Stillwater Mine (Nye). Therefore the Stillwater Mine Impact Plan seems most applicable.

	Work Location	Number of Employees
Year 2021	Nye	42
	Columbus	13
	East Boulder	5
Year 2020	Nye	49
	Columbus	13
	East Boulder	5
Year 2019	Nye	44
	Columbus	12
	East Boulder	5
Year 2018	Nye	38
	Columbus	11
	East Boulder	4

Below is a comparison of student numbers with relationships to Sibanye-Stillwater Employees.

		Total
2021	Absarokee	59
	Columbus	145
	Park City	31
2020	Absarokee	63
	Columbus	154
	Park City	39
2019	Absarokee	64
	Columbus	144
	Park City	40
2018	Absarokee	86
	Columbus	141
	Park City	44

This is information we solicit from our employees on an annual basis - where do you live and if you have any school age children, what school do they attend (k-12). We assume that the information provided by our employees is true and accurate.

Again, hope this helps. Thanks again for the follow-up.

Randy

### 2.3.2 Tax Base Sharing: Taxable Valuation

Table 2-4 shows how the tax base sharing ratios were derived. *Note: Tax base sharing allocations are based on the percentage of total mineral development employees and total mineral development students, not just immigrating mineral development employees and students.* Table 2-4 shows that the current total number of mineral development employees are added to the projected total mineral development employees resulting from the expansion.

The tax base sharing percentages are calculated based on the percentage of total number of mineral development employees in Stillwater County residing in each jurisdiction. Of the mineral development employees living in Stillwater County, 29% live in Columbus, and 71% in the unincorporated area of Stillwater County. Likewise for schools, the tax base sharing percentage for each elementary school (or high school) district is based on the number of mineral development elementary (or high school) students residing in the district **as a percentage of the total number of mineral development students residing in Stillwater County.**

Table 2-5 shows the projected taxable valuation of the SMC mineral development, and its distribution among units of local government based on tax base sharing. The SMC taxable valuation is allocated according to the tax base sharing percentages shown in Table 2-4.

Section A, Total SMC T.V., of Table 2-5, shows the total SMC taxable valuation in 1996-97, and the projected total SMC taxable valuation resulting after the mine expansion, and includes the taxable valuation of the mine property, equipment, and gross proceeds, (which is allocated under tax base sharing) and the smelter and base metals refinery in Columbus. Because the smelter/base metals refinery is located in Stillwater County, the Town of Columbus, the Columbus Elementary School District and the Columbus High School District, the taxable valuation of those facilities are included as part of the SMC taxable valuation for each of those four taxing jurisdiction. Sections B, C, and D of Table 2-5 show the additional SMC taxable value and total taxable valuation with SMC for each affected unit of local government.

*Note: SMC has applied for a permit to construct a new tailings impoundment on the Hertzler Ranch. The market value of the proposed tailings is estimated at approximately \$23 million. The impoundment will be classified as property tax class five, air and water pollution control, which carries a tax rate of 6%, unless SMC applies for the 3% rate for pollution control equipment. The taxable valuation of the tailings impoundment is expected to be approximately \$690,000. The impoundment is planned for 1999 or 2000 and has not been included in the projected SMC taxable valuation in this Plan Amendment. However, affected units of local government very likely will realize this added taxable valuation in 1999 or 2000 as a result of this planned facility.*