

## Appendix C

## **Quarry and Land Economics Spreadsheets**

## New Forecasts for KPQ 2016 onwards

TONNAGES											2021 to 2040																TOTAL (tonnes)
Tonnage demand	2016 280,000		2018 290,741	2019 296,265	2020 301,894	2021 307,630	2022 313,475	2023 319,431	2024 325,500	2025 325,500	2026 300,000	2027 300,000	2028 300,000	2029 300,000	2030 300,000	2031 305,700	2032 311,508	2033 317,427	2034 323,458	2035 329,604	2036 329,604	2037 329,604	2038 329,604	2039 329,604	2040 329,604	2041 329,604	7,781,474
Resource Usage											2021 to 2040	1															TOTAL (tonnes)
Nesource usage	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL (toffles)
Resource Usage with no constraint % from South face						100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
North Face South Face extraction	280,000	285,320	290,741	296,265	301,894	307.630	313.475	319,431	325.500	325,500	300.000	300.000	300,000	300,000	300,000	305.700	311,508	317.427	323.458	100 /0	10070	100 /0	10070	10070	10070	100 /0	1,454,220 4,349,631
TP extraction Total	280.000	285.320	290.741	296.265	301.894	307.630	313,475	319.431	325,500	325.500	300.000	300.000	300.000	300.000	300.000	305,700	311.508	317.427	323,458	329,604 329,604	329,604 329,604	329,604 329.604	329,604 329,604	329,604 329,604	329,604 329.604	24,377 24.377	2,002,000 7,805,851
North face remaining	1,170,000	884,680	593.939	297.674	,	001,000	0.0,0	010,101	020,000	020,000	000,000	000,000	000,000	000,000	000,000	000,700	011,000	011,121	020,100	020,001	020,001	020,001	020,001	020,001	020,001	21,011	1,000,001
South Face remaining Taylor Preston pit		4,369,640	,	4,369,640	, ,	4,062,010	3,748,535	3,429,103	3,103,603	2,778,103	2,478,103	2,178,103	1,878,103	1,578,103	1,278,103	972,403	660,894	343,467	20,009 2,002,000	1,672,396	1,342,792	1,013,189	683,585	353,981	24,377	-	
LAND VALUE Forecasts and Workings	i																										TOTAL (tonnes)
Land Value - North Face Land Value - South Face (when flat	\$19,760,000 \$19,760,000			\$20,969,470 \$20,969,470	\$21,388,859 \$21,388,859	\$21,816,637 \$21,816,637	\$22,252,969 \$22,252,969		\$23,151,989 \$23,151,989			\$24,569,076 \$24,569,076			\$26,072,900 \$26,072,900	\$26,594,358 \$26,594,358	\$27,126,246 \$27,126,246	\$27,668,770 \$27,668,770	\$28,222,146 \$28,222,146	\$28,786,589 \$28,786,589	\$29,362,321 \$29,362,321	\$29,949,567 \$29,949,567	\$30,548,558 \$30,548,558	\$31,159,529 \$31,159,529		\$32,418,374 \$32,418,374	
Land Value - TP (when flat)	\$11,856,000	\$12,093,120	\$12,334,982	\$12,581,682	\$12,833,316	\$13,089,982	\$13,351,782	\$13,618,817	\$13,891,194	\$14,169,017	\$14,452,398	\$14,741,446	\$15,036,275	\$15,337,000	\$15,643,740	\$15,956,615	\$16,275,747	\$16,601,262	\$16,933,288	\$17,271,953	\$17,617,392	\$17,969,740	\$18,329,135	\$18,695,718	\$19,069,632	\$19,451,025	
1) No South Face development	280,000	285,320	290,741	296,265	297,674																						1,450,000
Tonnage Shortfalls: 1) Tonnage shortfall (No South Fac 2) Tonnage shortfall (North Face but no	- ot TP)	-	-	-	4,220	307,630	313,475	319,431	325,500	325,500	300,000	300,000	300,000	300,000	300,000	305,700	311,508	317,427	323,458 323,458	329,604 329,604	329,604 329,604	329,604 329,604	329,604 329,604	329,604 329,604	329,604 329,604	24,377 24,377	6,355,851 2,325,458
Scenario 1 No development of South		2017	2242	2010	2000	2024	2222	0000	0004		2021 to 2040		0000	0000	0000	2024	2000	2000	2024	2005	0000	2007	2022	0000	2010	2044	TOTAL (\$)
COST INCREASES	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	
Regional Impost Increased transportation cost - all co Increased costs from reduced competit	\$0 ion	\$0	\$0	\$0 \$0	\$27,433 \$4,854	\$1,999,596 \$353,775		\$2,076,303 \$367,346	\$2,115,752 \$374,325								\$2,024,804 \$358,235		\$2,102,477 \$371,977	\$2,142,425 \$379,044		\$2,142,425 \$379,044	\$2,142,425 \$379,044	\$2,142,425 \$379,044	\$2,142,425 \$379,044		\$ 41,313,032 \$ 7,309,229
Direct WCC Costs WCC purchase of aggregate direct/	\$0	\$0	\$0	\$0	\$1,614	\$117,669	\$119,904	\$122,182	\$124,504	\$124,504	\$114,750	\$114,750	\$114,750	\$114,750	\$114,750	\$116,930	\$119,152	\$121,416	\$123,723	\$126,073	\$126,073	\$126,073	\$126,073	\$126,073	\$126,073	\$9,324	\$ 2,431,113
Loss of Royalty Total Rates impact	\$0 <b>\$0</b>			\$0 <b>\$0</b>	\$9,496 <b>\$11,110</b>	\$692,168 <b>\$809,836</b>	\$705,319 <b>\$825,223</b>		\$732,376 <b>\$856,880</b>				\$675,000 <b>\$789,750</b>		\$675,000 <b>\$789,750</b>	\$687,825 <b>\$804,755</b>	\$700,894 <b>\$820,046</b>	\$714,211 <b>\$835,626</b>	\$727,781 <b>\$851,503</b>	\$741,608 <b>\$867,682</b>		\$741,608 <b>\$867,682</b>	\$741,608 <b>\$867,682</b>	\$741,608 <b>\$867,682</b>	\$741,608 <b>\$867,682</b>		\$ 14,300,665 <b>\$ 16,731,778</b>
Total Opex Cost to Community		\$0	\$0	\$0	\$43,397	\$3,163,207	\$3,223,308	\$3,284,551	\$3,346,958	\$3,346,958	\$3,084,750	\$3,084,750	\$3,084,750	\$3,084,750	\$3,084,750	\$3,143,360	\$3,203,084	\$3,263,943	\$3,325,958	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$250,660	\$ 65,354,039
Land Sale (North Face only)							-\$22,252,969																				\$ (22,252,969)
Cash basis		\$0	\$0	\$0	\$43,397	\$3,163,207	-\$19,029,661	\$3,284,551	\$3,346,958	\$3,346,958	\$3,084,750	\$3,084,750	\$3,084,750	\$3,084,750	\$3,084,750	\$3,143,360	\$3,203,084	\$3,263,943	\$3,325,958	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$250,660	
Summary Rates impact \$ Total cost to community \$ Land Sale benefit \$	(16,731,778) (65,354,039)																										
Land Sale benefit \$ NPV	22,252,969 -\$18,350,867																										
	\$10,000,001																										

	Face									2	021 to 2040																TOTAL (\$)
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	
OST INCREASES																											
gional Impost																											
reased transportation cost - all ci	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$2,142,425	\$2,142,425	\$2,142,425	\$2,142,425	\$2,142,425	\$2,142,425	\$158,453	\$ 13,01
reased costs from reduced competition				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$379,044	\$379,044	\$379,044	\$379,044	\$379,044	\$379,044	\$28,034	\$ 2,30
rect WCC Costs																											
CC purchase of aggregate direct/	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$126,073	\$126,073	\$126,073	\$126,073	\$126,073	\$126,073	\$9,324	\$ 76
ss of Royalty	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$741,608	\$741,608	\$741,608	\$741,608	\$741,608	\$741,608	\$54,849	\$ 4,5
tal Rates impact	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$867,682	\$867,682	\$867,682	\$867,682	\$867,682	\$867,682	\$64,173	\$ 5,27
tal Opex Cost to Community		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$250,660	\$ 20,58
nd Sale						-\$2	2,252,969													-\$28,786,589							\$ (51,03
asing value then sale						-5	1,780,238 -	\$1,815,842 -	\$1,852,159 -	\$1,889,202	-\$1,926,986	-\$1,965,526	-\$2,004,837	-\$2,044,933	-\$2,085,832	-\$2,127,549 -	\$2,170,100 -	\$2,213,502	-\$2,257,772	-\$57,573,178							\$ (83,70
ash basis land sale		\$0	\$0	\$0	\$0	\$0 -\$2	22,252,969	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	-\$25,397,438	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$250,660	\$ (30,4
sh basis lease then sale		\$0	\$0	\$0	\$0	\$0 -	1,780,238 -	\$1,815,842 -	\$1,852,159 -	\$1,889,202	-\$1,926,986	-\$1,965,526	-\$2,004,837	-\$2,044,933	-\$2,085,832	-\$2,127,549 -	\$2,170,100	\$2,213,502	-\$2,257,772	-\$54,184,027	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$3,389,151	\$250,660	\$ (63,1
mmary Land sale																											
•	(5,270,265)																										
•	(20,585,565)																										
	51,039,558																										
	21,562,522																										
mmary																											
	(5 270 265)																										
tes impact s	(5,270,265)																										
otal cost to community s	(20,585,565)																										
tes impact s tal cost to community s ase and Land Sale benefit s	(20,585,565) 83,707,655																										
es impact s al cost to community s se and Land Sale benefit s	(20,585,565)																										
tes impact s al cost to community s use and Land Sale benefit s V s	(20,585,565) 83,707,655 32,379,332	2017	2019	2010	2020	2021	2022	2022	2024		2021 to 2040		2029	2020	2020	2021	2022	2022	2024	2025	2026	2027	2029	2020	2040	2041	TOTAL (
tes impact s al cost to community s sise and Land Sale benefit s V s serario 4 & 5 Plan Change and all area	(20,585,565) 83,707,655 32,379,332	2017	2018	2019	2020	2021	2022	2023	2024	2025	2021 to 2040 2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	
tes impact stal cost to community sase and Land Sale benefit s V s senario 4 & 5 Plan Change and all area in INCREASES	(20,585,565) 83,707,655 32,379,332	2017	2018	2019	2020	2021	2022	2023	2024				2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	
tes impact s tal cost to community s sase and Land Sale benefit s V s s s s s s s s s s s s s s s s s	(20,585,565) 83,707,655 32,379,332	2017	2018	2019	2020	2021	2022	2023	2024				2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	
tes impact s all cost to community s see and Land Sale benefit s v s s see and Land Sale benefit s s v s s s s s s s s s s s s s s s s	(20,585,565) 83,707,655 32,379,332	2017	2018	2019	2020	2021	2022	2023	2024				2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	
es impact s al cost to community s size and Land Sale benefit s v senario 4 & 5 Plan Change and all area ST INCREASES joinal Impost eased transportation cost - all custome	(20,585,565) 83,707,655 32,379,332	2017	2018	2019	2020	2021	2022	2023	2024				2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	
es impact  al cost to community  see and Land Sale benefit  s  /  s  TinCREASES  ional impost eased transportation cost - all custome eased costs from reduced competition  ct WCC Costs  C purchase of aggregate direct/indirect	(20,585,565) 83,707,655 32,379,332 2016		2018	2019	2020	2021	2022	2023	2024				2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	
es impact  Il cost to community  se and Land Sale benefit  s  Inario 4 & 5 Plan Change and all area  ST INCREASES  ional Impost  assed transportation cost - all custome  assed costs from reduced competition  ct WCC Costs  C purchase of aggregate direct/indirect  sof Royalty	(20,585,565) 83,707,655 32,379,332 2016		2018	2019	2020	2021	2022	2023	2024				2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039			\$ \$
es impact s el cost to community s es and Land Sale benefit s enario 4 & 5 Plan Change and all area strincreases it increases is including to the second of the second increases eased cransportation cost - all custome eased costs from reduced competition ct WCC Costs C purchase of aggregate direct/indirect of Royalty	(20,585,565) 83,707,655 32,379,332 2016		2018	2019	2020	2021	2022	2023	2024				2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	\$ \$
es impact al cost to community s se and Land Sale benefit s  Inario 4 & 5 Plan Change and all area  ST INCREASES joinal Impost eased transportation cost - all custome eased costs from reduced competition	(20,585,565) 83,707,655 32,379,332 2016			\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0		\$0 \$0	\$0 \$0 \$0				2028 \$0 \$0	2029 \$0 \$0	2030 \$0 \$0	2031 \$0 \$0	\$0 \$0 \$0	2033 \$0 \$0	2034 \$0 \$0	2035 \$0 \$0	2036 \$0	\$0 \$0 \$0	2038 \$0 \$0	2039 \$0 \$0			\$ \$ \$ <b>\$</b>
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es impact s a control of the control	(20,585,565) 83,707,655 32,379,332 2016	ost \$0	\$0	\$0	\$0	\$0 \$0	\$0 \$0 22,252,969	\$0	\$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	2027 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0 -\$19,451,025	\$ \$ \$ \$ \$
s impact s cost to community s e and Land Sale benefit s s  ario 4 & 5 Plan Change and all area of the sale should be sale benefit s s  T INCREASES onal Impost assed transportation cost - all custome assed costs from reduced competition the WCC Costs purchase of aggregate direct/indirect of Royalty  Rates impact  Opex Cost to Community  Sale	(20,585,565) 83,707,655 32,379,332 2016	ost \$0	\$0	\$0	\$0	\$0 \$0 -\$:	\$0 \$0 22,252,969	\$0 \$0	\$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0 -\$28,786,589	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0 -\$5,085,235	\$0 \$0 -\$19,451,025	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$

Summary Land sale Rates impact Total cost to community Land Sale benefit NPV

Summary
Rates impact
Total cost to community
Lease and Land Sale benefit
NPV

\$ 70,490,583 \$ 36,033,192

\$ 139,476,536