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# WEST KIRKLAND MINING INC.

# TECHNICAL REPORT ON THE TECOMA UTAH GOLD PROJECT, UTAH, U.S.A.

NI 43-101 Report

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# **1 SUMMARY**

# **EXECUTIVE SUMMARY**

Roscoe Postle Associates Inc. (RPA) was retained by West Kirkland Mining Inc. (WKM) to prepare an independent Technical Report on the Tecoma Utah Gold (TUG) project (the Project), in northwestern Utah. The purpose of this report is to update Mineral Resources and disclose the results of a Preliminary Economic Assessment (PEA) on the Project. This Technical Report conforms to Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101). RPA visited the property on November 27, 2012.

WKM is a Canadian publicly traded mining company with a portfolio of exploration and development projects in North America. TUG is currently under earn-in option from Fronteer Development (USA) Inc., a subsidiary of Fronteer Gold Inc. (Fronteer), now a wholly-owned subsidiary of Newmont Mining Corporation. To meet its 60% earn-in requirement with Newmont, WKM has spent over US\$4 million at TUG, and subject to Newmont's confirmation of the earn-in expenditures, is currently forming a joint venture with Newmont to advance the Project. The PEA is based on a conventional truck and shovel operation with low-grade gold and silver mining from one open pit and recovery by heap leaching of the crushed, mineralized material. Mining would be at a rate of 3,000 tpd of mineralized material. The PEA contained in this report is based, in part, on Inferred Resources, and is preliminary in nature. Inferred Resources are considered too geologically speculative to have mining and economic considerations applied to them and to be categorized as Mineral Reserves. There is no certainty that economic forecasts on which this PEA is based will be realized.

# CONCLUSIONS

Based on a review of available information, RPA reached the following conclusions:

#### GEOLOGY AND MINERAL RESOURCES

- Mineral Resources are reported at a \$17/t net smelter return (NSR) cut-off value within a preliminary Whittle<sup>®</sup> pit shell. The pit shell used a gold price of US\$1,700/oz Au, and a silver price of US\$29/oz Ag, and certain costs and metal recovery parameters.
- Indicated Mineral Resources are estimated to total 4.85 Mt grading 0.84 g/t Au and 40.4 g/t Ag and contain 131,000 ounces of gold and 6.3 million ounces of silver.



- Inferred Mineral Resources are estimated to total 4.39 Mt grading 0.79 g/t Au and 30.3 g/t Ag and contain 111,000 ounces of gold and 4.3 million ounces of silver.
- There has been an under-reporting of some of the silver assays.
- The sample preparation, analysis, and security are appropriate for use in Mineral Resource estimation.
- The sampling and analytical procedures for gold and silver have very good precision and results are well within acceptable limits. The database is appropriate for use in mineral resource and mineral reserve estimation.
- RPA is of the opinion that the estimated Mineral Resources are reasonable and comply with CIM definition standards.
- The methods used for Mineral Resource estimation are appropriate for the style of mineralization at the TUG Project.
- Exploration drilling is ongoing. The down-plunge extension of the mineralization is being tested to the south and southeast of the proposed open pit.

#### MINING AND MINERAL RESERVES

- Conventional open pit mining methods (drilling, blasting, loading, and hauling) are proposed to extract the mineralized material and waste.
- Drilling and blasting is proposed to take place on five metre high benches and would be followed by loading of 64-tonne capacity off-highway trucks by a front end loader.
- Material would be crushed and conveyed to a heap leach pad for metal recovery.
- Mineralized material would be excavated at a rate of 3,000 tpd.
- Based on the current resource estimate, the current mine life is four years, preceded by a two-year pre-production period.
- Resources that are potentially mineable by open pits methods used for the PEA are approximately 4.2 Mt with average gold and silver grades of 0.87 g/t and 42.4 g/t, respectively.
- A mining contractor is proposed.
- Topographical relief, climate, haul distances, and political location do not appear to be issues for the TUG Project.
- There are no Mineral Reserves for the TUG Project at this time.

#### METALLURGY AND PROCESSING

• The samples that have been tested from the TUG Project show that the material is amenable to gold and silver recovery by cyanide leaching.



- The gold recovery appears to be very sensitive to the particle size of the material that is being leached. Smaller particle sizes result in significantly higher gold and silver recovery than larger particle sizes.
- Due to the small size of the Project, heap leaching is proposed as the recovery process.
- Due to high silver grades in the resource, the Merrill-Crowe zinc cementation process is used for the conceptual process design and estimated capital and operating costs.

#### ENVIRONMENTAL AND PERMITTING

- The Project is subject to the State of Utah permitting requirements and environmental regulations.
- Preliminary baseline studies indicate that there are no endangered species in the vicinity of the Project.

#### ECONOMIC ANALYSIS

- In order to minimize the capital costs, and due to the short mine life, a mining contractor is proposed to excavate the open pit and a crushing contractor is proposed to crush the mineralized material to a ¼-in nominal size.
- A power line to the Project would be installed and diesel generators would only be used for backup power.
- A water well would be drilled and developed for the Project's makeup water supply.
- The PEA indicates that the Project has a positive cash flow.

#### RECOMMENDATIONS

#### GENERAL

• The drill hole database should be converted from Metric to Imperial units. All of the drilling was completed using Imperial units. The local population and state regulators use Imperial units.

#### GEOLOGY AND MINERAL RESOURCES

- Twin more reverse circulation (RC) drill holes with diamond drill holes to further investigate if the RC holes understate the gold and silver grades and to determine if a more extensive re-drilling program is warranted.
- Send resource related pulps that were previously analyzed at American Assayers for silver re-assaying.
- Update the resource model as new data become available.
- A geotechnical investigation of the proposed TUG open pit highwalls is needed before production begins. A 3D geological model of the open pit area should be developed that includes the following minimum areas of study:
  - the spatial extent of any clay-altered zones



- o major faults cross cutting the pit area
- the surface weathering limits should be interpreted as a 3D surface for the area of the proposed pit
- o potential fold structures
- additional geotechnical investigations may be required to update the character and extent of faults dipping into the eastern side of the pit for the following:
  - define the spatial extent of the fault zones if needed;
  - define further the strength properties of the fault infilling.

#### METALLURGY AND PROCESSING

• RPA recommends that a comprehensive metallurgical testing program be completed for the Project.

#### MINING AND MINERAL RESERVES

- Carry out a Prefeasibility Study (PFS) to establish Mineral Reserves for the Project.
- Commence basic engineering to evaluate:
  - Detailed mine plans and schedules;
  - Economics of contractor versus owner mining;
- Conduct a detailed trade-off study to determine the optimal selective mining unit required to address mining selectivity, loss, and dilution associated with the loader/truck combination.
- Prepare a Request For Proposal, which would be submitted to a minimum of three mining contractors to perform the mining and site-wide earthwork maintenance.
- Carry out a geotechnical study to determine the safest and steepest pit slopes. Additional geotechnical investigations should be undertaken to delineate and characterize soils containing any discontinuities for the final and interim waste dump and heap leach pad slopes.
- Determine the suitability and the particle size distribution of sedimentary rocks from the open pit area for use as rock drain material for the leach pad.

#### ENVIRONMENTAL AND PERMITTING

- Prepare a detailed water balance to assist in optimizing the design of the water treatment facilities.
- Long-term geochemical characterization of mineralized material and mine wastes will be required.
- Model dilution of the heap leach pad solution during the rinsing period, and the corresponding decline in the concentration of metals and compounds in the water exiting the pad during and after the drain period.

#### ECONOMIC ANALYSIS

• Obtain detailed quotes for all equipment, supplies, and permanent infrastructure.





- Obtain quotes for the mining contractor unit mining costs (\$/bank cubic yard) and • equipment/operator hourly rates.
- Prepare detailed estimates for all mining, processing, and G&A operating costs.
- Carry out additional studies to investigate other options to improve the accuracy of capital and operating cost estimates, to optimize the mining schedule, and to investigate alternative crushing processes such as high pressure grinding rolls or vibration cone crushers which have the potential to improve the Project economics.

Table 1-1 presents the recommended work and budget to advance the TUG Project, estimated by WKM and accepted by RPA.

Major Item Description	Estimated Value (US\$)
Land and Development Budget	320,000
District-wide exploration	75,000
Metallurgical review and metallurgical testing	80,000
Drilling –	
Core drilling for exploration: 600 m @ \$300/m	180,000
Assays	40,000
Road and drill pad construction	194,000
Permitting (including reclamation)	401,000
Prefeasibility and Detailed Engineering Studies	1,545,000
Claim maintenance	179,000
General & Administrative	806,000
Total	3,820,000

# TABLE 1-1 PROPOSED PROGRAM AND BUDGET

### West Kirkland Mining Inc. – TUG Project

### ECONOMIC ANALYSIS

The PEA contained in this report is based, in part, on Inferred Resources, and is preliminary in nature. Inferred Resources are considered too geologically speculative to have mining and economic considerations applied to them and to be categorized as Mineral Reserves. There is no certainty that economic forecasts on which this PEA is based will be realized.

A pre-tax and after-tax cash flow projection has been generated from the Life of Mine production schedule and capital and operating cost estimates, and is summarized in Table 1-2. A summary of the key criteria is provided below.



### ECONOMIC CRITERIA

#### REVENUE

- 3,000 mineralized tonnes per day processed from a single open pit (approximately 1.1 million tonnes per year).
- Gold and silver recoveries, as indicated by test work, averaging 58% and 15%, respectively.
- Reduction in ounces for gold entrained in leach pad circuit.
- Gold at refinery 99.8% payable.
- Exchange rate US\$1.00 = C\$1.00.
- Metal prices: US\$1,525 per ounce gold and US\$28 per ounce silver.
- Gold revenue and silver revenue percentage contributions are 81% and 19%, respectively.
- Net Smelter Return includes doré refining, transport, and insurance costs.
- No salvage value was applied to any of the equipment or infrastructure.
- Mine life: 4 years.
- Gold and silver payable values were calculated based on metal price and exchange rate.
- Yearly revenues were calculated by subtracting the applicable refining charges and transportation costs from the payable metal value.
- Revenue is recognized at the time of production.

#### COSTS

- Pre-production period: 24 months (Year -2 and Year -1).
- Initial working capital proposed is US\$2.6 million. The working capital is recovered at the end of the mine life.
- Unit operating costs for mining, leaching, power, fuel, and G&A were applied to annual mined/leached tonnages, to determine the overall yearly operating cost. This cost was deducted from the precious metal revenues to derive annual operating cash flow.
- Life of Mine production plan as summarized in Table 22-2.
- Mine life capital totals US\$24.79 million, which does not include reclamation.
- Average operating cost over the mine life is US\$902 per gold ounce equivalent.



### ROYALTIES

There are a number of royalties associated with the TUG Project. The following royalties,

grouped below by their relative land Section location, were included in the economic analysis:

- Section 9, Township 8 North Range 19 West royalties:
  - A 1.4% net smelter return (NSR) of 35% of the Gross Revenue will be paid to a private party; and
  - A 2.47% NSR of the Gross Revenue will be paid to a private party.
  - For the economic criteria presented in this PEA, the estimated LOM royalties for Section 9 are US\$2.115 million.
- Section 10, Township 8 North Range 19 West royalty:
  - A 5.00% NSR of the Gross Revenue will be paid to a public corporation party.
  - For the economic criteria presented in this PEA, the estimated LOM royalties for Section 10 are US\$59,000.
- Section 15, Township 8 North Range 19 West royalties:
  - A 1.4% NSR of 35% of the Gross Revenue will be paid to a private party; and
  - A 2.47% NSR of the Gross Revenue will be paid to a private party.
  - For the economic criteria presented in this PEA, the estimated LOM royalties for Section 15 are US\$726,000.
- Section 16, Township 8 North Range 19 West royalties:
  - A 4.00% NSR of the Gross Revenue will be paid to the State of Utah.
  - School and Institutional Trust Lands Administration (SITLA) processing fee of 1%.
  - For the economic criteria presented in this PEA, the estimated LOM royalties for Section 16 are US\$2.239 million.

#### TAXATION

It should be noted that RPA is not an expert on accounting or taxes. Listed below are the tax assumptions that were used in this PEA:

- No Loss Carry Forward (LCF) was applied to the cash flow;
- A Utah State Severance tax at 2.6% of Gross Profit;
- Box Elder County, Utah property tax of 1.1153%;
- Utah State Income tax rate used was 5%; and
- U.S. Federal tax rate used ranged from 34% to 35%.

					TABLE 1-2 C												
Date:	05/09/2013				West Kirkland												
	Mining Open Pit Mine Operating Days Stacking Operating Days Leaching Operating Days Mineralized Material tornee moved per day Total Tornee moved per day, excluding Year -	INPUTS 350 350 350	days days days tonnes / day tonnes / day check (red)	2,160 2,160 2,160 7,203 7,203	Year -3	Year -2	Year -1 60 60 60 - 2,386	Year 1 350 350 2,379 4,371	Year 2 350 350 350 3,129 13,159	Year 3 350 350 350 3,273 12,980	Year 4 350 350 360 3,215 13,533	Year 5 350 350 350 -	Year 6 350 350 350 -	Year 7	Year 8	Year 9	Year 10
	Production Mineralized Material to Leach Pad Au Head Grade Ag Head Grade AuEq Head Grade Waste Stripping Ratio Mineralized Material & Waste	9,447 21,727 26,126	000 tonnes g/t g/t 000 tonnes 000 tonnes	4,198 0.87 42.39 11,359 2.71 15,558			- 143 - 143	833 0.94 50.23 1.85 697 0.84 1,530	1,095 1.00 53.16 1.96 3,511 3.21 4,606	1,145 0.78 33.68 1.38 3,397 2.97 4,543	1,125 0.79 35.00 1.42 3,611 3.21 4,736						
Stockpile	Opening tonnes Au Grade Ag Grade Addition tonnes	i.	000 tonnes g/t g/t 000 tonnes	-	-		·	- - - 1.00	- - - 1.00	:	- - - 1.00						
	Au Grade Ag Grade Deduction tonnes Au Grade	1.00 31.00 -	g/t g/t 000 tonnes g/t	:	0.91			1.00 31.00 - 1.00	1.00 31.00 -	1.00 31.00 - -	1.00 31.00 -						
	Ag Grade Closing tonnes Au Grade Ag Grade Total Production	4,399	g/t 000 tonnes g/t g/t	:				-	-	:	:						
	Tonnes leached Average Head Grade Au Average Head Grade Ag Average Head Grade Ag	4,399	000 tonnes g/t g/t g/t	4,198 0.87 42.39 1.64			-	833 0.94 50.23 1.85	1,095 1.00 53.16 1.96	1,145 0.78 33.68 1.38	1,125 0.79 35.00 1.42						
	Processing Mineralized Material to Leach Pad Head Grade at Pad Head Grade at Pad Head Grade at Pad		000 tonnes g/t Au g/t Ag g/t AuEq	4,198 0.87 42.39				833 0.94 50.23 1.85	1,095 1.00 53.16 1.96	1,145 0.78 33.68 1.38	1,125 0.79 35.00 1.42	-	-				
	Contained Au Contained Ag		oz oz	117,873 5,722,559			:	25,284 1,344,736	35,369 1,871,517	28,620 1,240,200	28,600 1,266,105	:	-				
	Average Recovery - Gold Average Recovery - Silve Average Recoverable AuEq	58% 15%	% g/t AuEq	58% 15%				58% 15% 0.68	58% 15% 0.73	58% 15% 0.54	58% 15% 0.55	58% 15% -	58% 15%	58%	58%	58%	58%
S	7% Total Recovered Au 33% Total Recovered Ag Total Recovered AuEq Note: Year -1 Reports to Year 1 Productio	83,765	oz oz oz	68,309 857,091 83,765				14,607 200,417 18,222	20,514 280,728 25,576	16,599 186,030 19,954	16,588 189,916 20,012	-	-				
	Revenue Metal Prices Au Ag Exchange Rate	\$ 1,525 \$ 28 \$ 1.00	Input Units US\$/oz Au US\$/oz Ag US\$/ US\$	\$ 1,525 \$ 28 \$ 1.00	Calculation Units US\$/oz Au \$	1,400 \$		\$ 30	\$ 1,600 \$ 29 \$ 1.00	\$ 27	\$ 24 5	\$ 24	\$ 24				
٤ 1	Total Revenue - Gold     Total Revenue - Silver     Total Gross (Payable) Revenue	99.8%	US\$ '000 US\$ '000 <b>US\$ '000</b>	\$ 104,317 \$ 23,734 \$ 128,051				\$ 23,372 \$ 6,013 <b>\$ 29,385</b>	\$ 8,141	\$ 5,023	\$ 4,558	ş -	\$- \$- <b>\$-</b>				
	Off-Site Costs Transport Au Ag Refining cost	\$0.25 US\$/oz Au \$0.25 US\$/oz Ag	US\$ '000 US\$ '000	\$ 17 \$ 214			:		\$ 5.13 \$ 70	\$	\$4.15 \$47	ş - ş -	\$- \$-				
	Au Ag Treatment Au	\$1.75 US\$/oz Au \$1.00 US\$/oz Ag \$0.00 US\$/oz Au	US\$ '000 US\$ '000 US\$ '000	\$ 120 \$ 857 \$ - \$ -				\$ 200			\$ 190 \$	6 -	s - s - s -				
	Ag Total Off-Site Costs	\$0.00 US\$/oz Ag	US\$ '000 US\$ '000	\$- \$1,208				5 - \$ 280	\$ - \$ 392	5 - 5 5 266	\$ - 1 \$ 271	5 - 5 -	\$ - \$ -				
	Net Smelter Return		US\$ '000	\$ 126,843 \$ -				\$ 29,105					\$ -				
	Royalty NSRs SITLA Processing Fee Section 9 - Private Mineral: Section 10 - Federal Unpatented Claim Section 15 - Private Mineral: Section 16 - Utah State Sectior	1%	US\$ '000	\$ 5,139 \$ 1,281 \$ 2,115 \$ 59 \$ 726 \$ 958				\$ 294 \$ 295 \$ 0 \$ 67 \$ 444	\$ 410 \$ 599 \$ - \$ 267 \$ 452	\$ 299 \$ 736 \$ - \$ 142 \$ -	\$         278           \$         484           \$         59           \$         250           \$         62	5 - 5 - 5 -	<b>\$</b> - \$\$- \$\$- \$\$- \$\$- \$\$- \$\$-				
	Net Revenue Unit NSR		US\$ '000 US\$/t leached	\$ 121,704 \$ 28.99				\$ 28,004 \$ 33.63		\$ 28,479 \$ 24.86	\$ 26,378	5 - 5 -	\$ - \$ -				



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1																	1
	Operating Costs Contractor Mining Cost- Mineralized Material	\$1.84/t movec	US\$/t moved	\$ 1.84		\$	1.84 \$	1.84 \$	1.84 \$	1.84 \$	1.84						
	Contractor Mining Cost- Waste WK Mining Cost	\$1.84/t movec	US\$/t moved US\$/t moved	\$ 1.82 \$ 0.16		\$	1.84 \$ 1.33 \$	1.84 \$ 0.38 \$	1.84 \$ 0.14 \$	1.84 \$ 0.15 \$	1.84 0.14						
	Total Mining Cost		US\$/t moved	\$ 3.87		ŝ	5.01 \$	4.06 \$	3.82 \$	3.83 \$	3.82						
	Processing G&A	\$8.90/t leached	US\$/t leached US\$/t leached	\$ 8.90 \$ 1.73		\$ \$	8.90 \$ - \$	8.90 \$ 1.94 \$	8.90 \$ 1.47 \$	8.90 \$ 1.41 \$	8.90 1.43						
	Total Unit Operating Cost		US\$/t leached	\$ 14.30		\$	13.90 \$	14.89 \$	14.19 \$	14.13 \$	14.15						
	Mining Cost- Mineralized Material	\$ 1.84	US\$ '000	\$ 7,725		\$	- \$	1,532 \$	2,015 \$	2,108 \$	2,070 \$	- \$					
	Mining Cost- Waste WK Mining Cost	\$ 4.92 \$ 0.61	US\$ '000 US\$ '000	\$ 20,638 \$ 2,562			\$	1,282 \$ 575 \$	6,459 \$ 661 \$	6,251 \$ 660 \$	6,645 \$ 665 \$	- \$					
	Total Mining Cost	\$ 7.37	US\$ '000	\$ 30,925		\$	- \$	3,390 \$	9,136 \$	9,019 \$	9,380 \$	- š	-				
	Processing G&A	\$ 8.90 \$ 1.73	US\$ '000 US\$ '000	\$ 37,348 \$ 7,254		\$	- \$ \$	7,408 \$ 1.612 \$	9,741 \$ 1.612 \$	10,190 \$ 1.612 \$	10,009 \$ 1.612 \$	- \$ 806					
	Total Operating Cost	\$ 17.99	US\$ '000	\$ 75,527			\$	12,410 \$	20,489 \$	20,820 \$	21,001 \$	806 \$	- \$	5 - \$	- \$	-	\$-
	Total Operating Cost/oz AuEQ Total Capital Cost/oz AuEQ			\$ 902 \$ 296													
	Net Income before Tax, Amortization & Depletion		US\$ '000	\$ 47,877			\$	15,594 \$	18,354 \$	7,659 \$	5,377 \$	(806) \$	- \$	\$ 1,700 \$	- \$	-	s -
	CAPITAL COST																
	Direct Capital Cost		1100 1000	e 105			75										
	Mining Leach Pad	Contract Mining + WKM OH	US\$ '000 US\$ '000	\$ 105 \$ 4,162	s	30 \$ - \$	75 4,162										
	Processing, Lab, Bldgs, Earthworks Infrastructure (Power, Water, Earthoworks)		US\$ '000 US\$ '000	\$ 3,995 \$ 4,632	S S	244 \$ 1,309 \$	3,751 3.323										
	Light Vehicles		US\$ '000	\$ 210	ŝ	140 \$	70										
	Wells and Waterlines Total Direct Capital		US\$ '000 US\$ '000	\$ 727 \$ 13.830	\$ \$	727 \$ 2,450 \$	- 11.381										
					, v	, *											
35.9%	Indirect Capital Cost EPCM / Owners / Indirect Cost	0%	US\$ '000	\$ 4,964	s	728 \$	4,236										
	Working Capital Total Indirect Capital	2.50 months operating	US\$ '000 US\$ '000	\$ - \$ 4.964	ş	- \$ 728 \$	4.236 \$	2,585 \$ 2.585 \$	- \$	- \$	- \$	(2,585) \$ (2,585) \$					
					*		., +	2,303 4		- 4	- 4	(2,303) \$					
	Contingency	25%	US\$ '000	\$ 4,699	\$	794 \$	3,904										
	Initial Capital		US\$ '000	\$ 23,493	\$	3,972 \$	19,521										
	Sustaining & Reclamation		US\$ '000	\$ 2,994			\$	3,214 \$	300 \$	200 \$	165 \$	(2,585) \$	- 9	1,700			
													- 9				
	Capital		US\$ '000 check	\$ 26,487 \$ 24,787	<u>\$</u>	3,972 \$ 3,972 \$	19,521 \$ 23,493 \$	3,214 \$ 26,707 \$	300 \$ 27,007 \$	200 \$ 27,207 \$	165 \$ 27,372 \$	(2,585) \$ 24,787	- \$	1,700			
	Pre-Tax Cash Flow																
	Net Pre-Tax Cashflow		US\$ '000	\$ 21,391	\$	(3,972) \$	(19,521) \$	12,380 \$	18,054 \$	7,459 \$	5,212 \$	1,779 \$	- 9	s - s	- \$		
	Cumulative Pre-Tax Cashflow		US\$ '000		\$	(3,972) \$	(23,493) \$	(11,113) \$	6,941 \$	14,400 \$	19,611 \$	21,391 \$	21,391 \$	\$ 21,391 \$	21,391 \$	21,391	\$ 21,391
	Less Depreciation		US\$ '000	\$ 26,487	\$	- \$	- \$	5,762 \$	8,087 \$	6,310 \$	6,328 \$	- \$	- \$	s - s	- \$	-	s -
	Less Amortizatior Less Other Writeoff's on DD&A	not calculatec not calculatec	US\$ '000 US\$ '000	\$- \$-													
	Taxable Income Before Depletion			\$ (5,096)	\$	(3,972) \$	(19,521) \$	6,618 \$	9,967 \$	1,149 \$	(1,116) \$	1,779 \$	- \$	\$ - \$	- \$		s -
	Depletion Allowance Taken		US\$ '000	\$ 10,245			\$	3,309 \$	4,983 \$	975 \$	977 \$	- \$	- 9	s - s	- \$		ş -
	50% or 100% Limit (Value % Depletion (Au, Ag %s)	50% 15%	\$ 4,091	as of 31-May-13	S S	- \$ - \$	- \$ - \$	3,309 \$ 4,201 \$	4,983 \$ 5,826 \$	575 \$ 4,272 \$	- \$ 3.957 \$	890 \$ - \$		- \$ 	- \$		s -
	Cost Depletion			-	· ·	Ŷ	ŝ	890 \$	1,249 \$	975 \$	977 \$	-		Ý Ý	Ŷ		Ŷ
	Less Loss Carry Forwarc Taxable Income After Depletion	not calculatec	US\$ '000 US\$ '000	\$ (15,341)	\$	(3,972) \$	(19,521) \$	3,309 \$	4,983 \$	174 \$	(2,094) \$	1,779 \$	- \$	<u> </u>	- \$		s -
FMV @ 10%	Taxes (FMV @ 10%)		US\$ '000	\$ 4,748	s			1,509 \$	2,247 \$	299 \$	- \$	694 \$		s - s	- s		s -
	Utah State Severence Tax (2.6% of 30% GF	2.6%	US\$ '000	\$ 949	\$	- \$ - \$	- \$ - \$	218 \$	303 \$	222 \$	206 \$	694 \$ - \$			- 5		\$- \$-
\$ 7,165	Utah - Box Elder County Property Ta Utah State Corporate Income Ta	1.1153% 5.0%	US\$ '000 US\$ '000	\$ 479 \$ 512	\$ \$	80 \$ - \$	80 \$ - \$	80 \$ 165 \$	80 \$ 249 \$	80 \$ 9 \$	80 - \$	89 \$	- 5	s - s	- s		s -
	U.S. Federal Corportate Income Tax Rat	0.070	US\$ '000	\$ 3,492	\$	- \$ 0%	- \$	1,125 \$	1,694 \$	68 \$	- \$	605 \$	- 5	\$-\$	- š	- 0%	\$ - 0%
	U.S. Federal Corportate Income Tax Rat Income After Tax		7% US\$ '000	\$ (20,089)	\$		(19,521) \$	34% 1,800 \$	34% 2,737 \$	39% (124) \$	0% (2,094) \$	34% 1,085 \$	- 5	0% \$ - \$	- \$		\$ -
			US\$ '000	\$ 26,487	s			5,762 \$	8,087 \$	6,310 \$	6,328 \$	- s	- 5				s -
1			US\$ '000	s -	\$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	- 5	s - s	- 3	-	\$ -
	Depreciation Amortization			\$ 10,245	s	- \$	- \$	3,309 \$	4,983 \$	975 \$ - \$	977 \$ - \$	- \$	- 9	s - s	- s		\$- \$-
	Amortization Depletion Taker		US\$ '000 US\$ '000	\$ 10,245	ŝ	- \$											
	Amortization Depletion Taker Writeoff's on DD&A Loss Carry Forwarc		US\$ '000 US\$ '000	s - s -	\$	- \$	- 5	- \$	- \$	- \$	- \$	- \$		<u> </u>	- 3	-	\$ -
	Amoritzation Depletion Taker Writeoff's on DD&A Loss Carry Forwarc After-Tax Cashflow		US\$ '000 US\$ '000 US\$ '000	\$ - \$ - \$ 16,642	\$ \$ \$	- \$ . \$ (3,972) \$ (3,972) \$	- \$ - \$ (19,521) \$ (23,493) \$	10,871 \$ (12,622) \$	15,808 \$ 3,185 \$	7,160 \$	- \$ 5,212 \$ 15,557 \$	- \$ 1,085 \$ 16,642 \$		s - s - s - s - s - s	- \$	:	\$ - \$ -
	Amortization Depletion Taker Writeoffs on DD&A Loss Carry Forwarc After-Tax Cashflow Cumulative After-Tax Cashflow		US\$ '000 US\$ '000 US\$ '000 US\$ '000	\$ - \$ - \$ 16,642	\$ \$ \$ \$	- \$ - \$ (3,972) \$ (3,972) \$	- \$ - \$ (19,521) \$ (23,493) \$	(12,622) \$	3,185 \$	10,345 \$	15,557 \$	- \$ 1,085 \$ 16,642 \$	- 5	5 16,642 \$	- \$ 16,642 \$	- - 16,642	\$ - \$ - \$ 16,642
	Amonization Depletion Taker Witteoff's on DD&A Loss Carry Forwarc After-Tax Cashflow Total Cash Cost Total Cash Cost Capital Cost		US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$/oz AuEg	\$ - \$ 16,642 \$ 916 \$ 916	\$ \$ \$ \$								- \$ - \$ 16,642 \$ - \$	,	- \$	- - 16,642	\$ - \$ -
	Amortization Depletion Taker Writeoff's on DD&A Loss Carry Forwarc After Tax Cashflow Cumutative Ahter Tax Cashflow Total Cash Cost		US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000	\$ - \$ - \$ 16,642 \$ 916	\$ \$ \$			(12,622) \$	3,185 \$	10,345 \$	15,557 \$		- \$ - \$ 16,642 \$ - \$	5 16,642 \$	- \$ 16,642 \$	- - 16,642	\$ - \$ - \$ 16,642
	Amonization Depletion Taker Writeoff's on DD&A Loss Carry Forwarc After Tax Cashflow Comutative Ahter-Tax Cashflow Total Cash Cost Capital Cost Al-In Cost Project Economics		US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$/oz AuEq US\$/oz AuEq	\$ - \$ 16,642 \$ 916 \$ 296 \$ 1,212	\$ \$ \$ \$			(12,622) \$	3,185 \$	10,345 \$	15,557 \$		- \$ - \$ 16,642 \$ - \$	5 16,642 \$	- \$ 16,642 \$	- - 16,642	\$ - \$ - \$ 16,642
	Amonization Depletion Taker Writeoff's on DD&A Loss Carry Forwarc After Tax Cashflow Cumulative After Tax Cashflow Total Cash Cost Capital Cost All-In Cost Project Economics Pre-tax IRR Pre-tax NPV at 8% discounting	8%	US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$/oz AuEg	\$ - \$ 16,642 \$ 916 \$ 916 \$ 296 \$ 1,212 33%	\$ \$ \$			(12,622) \$	3,185 \$	10,345 \$	15,557 \$		- \$	5 16,642 \$	- \$ 16,642 \$	- - 16,642	\$ - \$ - \$ 16,642
	Amortization Depletion Taker Writeoff's on DD&A Loss Carry Forwarc After-Tax Cashflow Total Cash Cost Total Cash Cost All-In Cost Project Economics Pre-Tax IRR Pre-tax NPV at 0% discounting Pre-tax NPV at 0% discounting	10%	US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000,000 US\$ '000,000 US\$ '000,000	\$ . \$ 16,642 \$ 916 \$ 916 \$ 296 \$ 1,212 33% \$12 \$10	\$ <u>\$</u> \$			(12,622) \$	3,185 \$	10,345 \$	15,557 \$		- \$ - \$ 16,642 \$ - \$	5 16,642 \$	- \$ 16,642 \$	- - 16,642	\$ - \$ - \$ 16,642
	Amotization Depletion Taker Writeoff's on DD&A Loss Carry Powarc After-Tax Cashflow Comutative After-Tax Cashflow Total Cash Cost Capital Cost All-In Cost Project Economics Pre-Tax IRP Pre-tax NPV at 10% discounting Pre-tax NPV at 10% discounting		US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000,000 US\$ '000,000 US\$ '000,000	\$ . <b>\$ 16,642</b> <b>\$ 916</b> <b>\$ 916</b> <b>\$ 296</b> <b>\$ 1,212</b> 33% \$12 \$10 \$7	\$ \$ \$ 			(12,622) \$	3,185 \$	10,345 \$	15,557 \$		- <u></u>	5 16,642 \$	- \$ 16,642 \$	- - 16,642	\$ - \$ - \$ 16,642
	Amonization Depletion Taker Writeodf's on DD&A Loss Carry Forwarc After-Tax Cashflow Total Cash Cost Capital Cost All-In Cost Project Economics Pre-tax NPV at 15% discounting Pre-tax NPV at 15% discounting After-Tax IRR	10%	US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000,000 US\$ '000,000 US\$ '000,000 US\$ '000,000	\$ . \$ 16,642 \$ 916 \$ 916 \$ 296 \$ 1,212 33% \$12 \$10	\$ \$ \$ 			(12,622) \$	3,185 \$	10,345 \$	15,557 \$		- <u></u> - <u></u> 16,642 \$ - \$	5 16,642 \$	- \$ 16,642 \$	- - 16,642	\$ - \$ - \$ 16,642
	Amonization Depletion Taker Writeoff's on DD&A Loss Carry Forwarc After-Tax Cashflow Cumulative After-Tax Cashflow Total Cash Cost Capital Cost All-In Cost Project Economics Pre-tax NPV at 15% discounting Pre-tax NPV at 15% discounting After-Tax IRR After-Tax NPV at 15% discounting After-Tax R	10% 15% 8% 10%	US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000,000 US\$ '000,000 US\$ '000,000 US\$ '000,000 US\$ '000,000 US\$ '000,000 US\$ '000,000	\$ . <b>\$ 16,642</b> <b>\$ 916</b> <b>\$ 916</b> <b>\$ 296</b> <b>\$ 1,212</b> 33% \$12 \$10 \$7 26% \$9 \$7	\$ \$ \$ 			(12,622) \$	3,185 \$	10,345 \$	15,557 \$		- <u></u> - <u></u> 16,642 \$ - \$	5 16,642 \$	- \$ 16,642 \$	- - 16,642	\$ - \$ - \$ 16,642
	Amotization Depletion Taker Writeoff's on DD&A Loss Carry Forwarc After-Tax Cashflow Comutative Aher-Tax Cashflow Total Cash Cost Capital Cost Project Economics Pro-tax IRR Pro-tax NPV at 10% discounting Pre-tax NPV at 10% discounting After-Tax NPV at 8% discounting After-Tax NPV at 8% discounting	10% 15% 8%	US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000 US\$ '000,000 US\$ '000,000 US\$ '000,000 US\$ '000,000 US\$ '000,000 US\$ '000,000 US\$ '000,000	\$ - \$ 16,642 \$ 916 \$ 296 \$ 1,212 33% \$12 \$10 \$7 26% \$9	\$ \$ \$ 			(12,622) \$	3,185 \$	10,345 \$	15,557 \$		- <u></u> - <u></u> 16,642 \$ - \$	5 16,642 \$	- \$ 16,642 \$	- - 16,642	\$ - \$ - \$ 16,642



# CASH FLOW ANALYSIS

The financial model was established on a 100% equity basis, which does not include debt financing and loan interest charges.

Considering the Project on a stand-alone basis, the undiscounted pre-tax cash flow totals \$21.4 million over the mine life, and simple payback occurs approximately 2.2 years from start of production.

The Operating Cash Cost is US\$902 per ounce of gold equivalent recovered. The mine life capital unit cost is US\$296 per ounce, for a Total Production Cost of US\$1,198 per ounce of gold. Average annual gold production during operation is 17,000 gold ounces per year.

A pre-tax Net Present Value (NPV) at an 8% discount rate is \$12 million, and the pre-tax Internal Rate of Return (IRR) is 33%. An after-tax NPV at an 8% discount rate is approximately US\$9 million, with an IRR of 26%. As noted in Figure 1-1 and Table 1-3, the pre-tax NPV at a 10% discount rate is \$10 million.

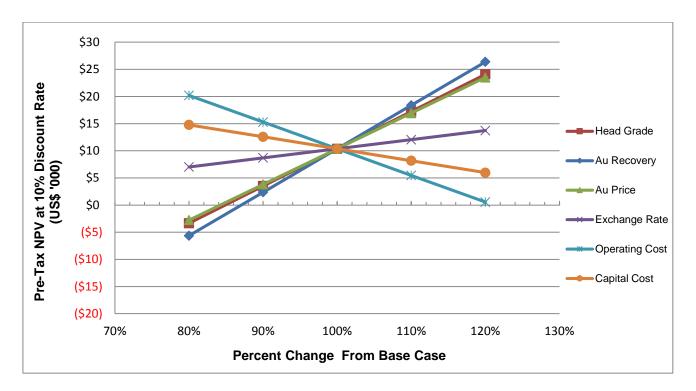
### SENSITIVITY ANALYSIS

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by running cash flow sensitivities:

- Gold price;
- Exchange rate;
- Head Grade;
- Gold Recovery;
- Operating costs; and
- Pre-production capital costs.

IRR sensitivity over the base case has been calculated for -20% to +20% variations. The sensitivities are shown in Figure 1-1 and Table 1-3.





# FIGURE 1-1 SENSITIVITY ANALYSIS

# TABLE 1-3SENSITIVITY ANALYSESWest Kirkland Mining Inc. – TUG Project

Parameter Variables	Units	-20%	-10%	Base	10%	20%
Gold Price	US\$/oz	1,220	1,373	1,525	1,678	1,830
Exchange Rate	US\$/C\$	0.8	0.9	1	1.1	1.2
Head Grade (Gold Only)	g/t	0.70	0.79	0.87	0.96	1.05
Total Cash Cost	\$millions	60.42	67.97	75.53	83.08	90.63
Total Capital Cost	\$millions	21.19	23.84	26.49	29.14	31.78
Pre-Tax NPV @ 10%	Units	-20%	-10%	Base	10%	20%
Gold Price	\$millions	(3)	4	10	17	24
Exchange Rate	\$millions	10	10	10	10	10
Head Grade (Gold Only)	\$millions	(3)	4	10	17	24
Total Cash Cost	\$millions	20	15	10	5	1
PPD Capital Cost	\$millions	15	13	10	8	6



# **TECHNICAL SUMMARY**

# PROPERTY DESCRIPTION AND LOCATION

The TUG property is located in northwestern Utah, USA, approximately 140 km northeast of Elko, Nevada. The property was optioned by WKM from Fronteer Gold Inc. (Fronteer) on December 16, 2010, and WKM can earn up to 60% depending on expenditures.

The TUG property encompasses 50.08 km<sup>2</sup> of patented and unpatented lode claims. Surface rights are 100% USA public. Surface rights and mining permits are administered by the Bureau of Land Management (BLM) office in Salt Lake City, Utah. WKM is the owner of 346 unpatented mining claims; 36 WKM-leased unpatented mining claims and 310 claims owned by WKM. WKM leases mineral rights from the State of Utah, and private mineral rights are leased from Lucine Energy and Michael D. Christensen. The property effectively covers the TUG district; with other known deposits and occurrences.

The TUG property is contiguous with the KB property, separated by the Utah-Nevada border. At various times in their history, the two properties were considered as the same project. Based on the option agreement between Fronteer and WKM, the KB and TUG are considered as separate projects.

# EXISTING INFRASTRUCTURE

There is no existing infrastructure in place at the TUG Project, except for an access road that would need to be upgraded for any potential mining operations.

# HISTORY

The Long Canyon Trend is recognized as part of the old Tecoma Mining District, and it has seen sporadic exploration for approximately 100 years. More recent exploration includes a drilling program by Noranda Exploration Inc. (Noranda), with a minor exploration program by Phelps Dodge Corporation (Phelps Dodge). Noranda completed 145 drill holes by 1984, when it joined with Western States Mineral Corporation (WSMC), which became the operator. In 1988, Noranda signed all titles and interests to the KB-TUG property to WSMC. WSMC completed a total of 431 drill holes, with 101 drill holes on the KB and 330 drill holes on the TUG. NewWest Gold Corp. (NewWest), formed by WSMC, was assigned titles and rights to the properties until 2007 when Fronteer acquired NewWest. In 2008, Fronteer completed



seven drill holes, which indicated that the geological setting was slightly different for the two deposits. As a result, the KB-TUG property was separated into two project areas.

There has been no mining at the Project.

### **GEOLOGY AND MINERALIZATION**

The TUG Project area is located within the Long Canyon Trend stretching from the northnortheast to the south-southwest. The deposit is located at and near the crest of the TUG anticline, within the Devonian Guilmette Formation, which represents a thick section of continental shelf carbonate rocks and is the oldest sedimentary unit exposed in the TUG Project area. The Guilmette Formation is unconformably overlain by Mississippian and Pennsylvanian sandstone, siltstone, conglomerate, and limestone rocks of the Tripon Pass, Diamond Peak, and Ely formations.

TUG mineralization is hosted in sedimentary rocks and primarily within carbonate protoliths. It appears to be focused along the axis of an anticline at the Tripon or Diamond Peak and Guilmette contact, where it is cut by a low angle structural break. Gold mineralization is approximately five metres to 30 m thick over a plan view area of 1,800 m by 750 m.

### **EXPLORATION STATUS**

WKM has carried out geological mapping, surface sampling, and compiled and reinterpreted historical geophysical data. In 2011 and 2012, WKM completed 13 diamond drill holes to prepare a Mineral Resource estimate.

### MINERAL RESOURCES

RPA updated the Mineral Resource estimate for the TUG deposit using drill hole data available as of April 2012 (Table 1-4). RPA Mineral Resources are reported at a \$17/t net smelter return (NSR) cut-off value within a preliminary Whittle pit shell.



# TABLE 1-4 MINERAL RESOURCE ESTIMATE – APRIL 30, 2013 West Kirkland Mining Inc. – TUG Project

Category/	Tonnes	Gold	Silver	Gold	Silver
Zone	(Mt)	(g/t)	(g/t)	(000 oz)	(000 oz)
Total Measured	-	-	-	-	
Total Indicated	4.85	0.84	40.4	131	6,303
Total Measured and Indicated	4.85	0.84	40.4	131	6,303
Total Inferred	4,39	0.79	30.3	111	4,272

Notes:

- 1. CIM definitions were followed for classification of Mineral Resources.
- 2. Mineral Resources are estimated using a gold price of US\$1,700 per ounce and a silver price of US\$29 per ounce.
- 3. Gold and silver mill recovery factors of 90% and 60%, respectively, were used based on preliminary metallurgical test work.
- 4. High grade assays are capped at 10 g/t Au and 500 g/t Ag.
- 5. Tonnage factor for mineralization was 2.55 t/m<sup>3</sup>.
- 6. Resources are constrained by a Whittle shell and reported at a \$17/t NSR cut-off.
- 7. Totals may not represent the sum of the parts due to rounding.
- 8. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

### MINERAL RESERVES

The TUG Project does not have any Mineral Reserves at this time.

#### MINING METHOD

The PEA is based on open pit mining with production from a single pit. Pit benches will be five metres high. Mineralized material will be hauled by truck from the pit face to a run of mine (ROM) area near the primary crusher. Haulage distances from the open pit to the crusher area will be only a few hundred metres. Mining will be carried out by a mining contractor.

It is proposed that the mine will operate on a general production schedule of 20 hours per day, six days per week. Production blasts are scheduled to occur five days per week. Mine life would be four years, and the mining rate will average approximately 3.9 million tonnes per year of mineralized material and waste mined.

Table 1-5 summarizes the open pit dimensions.



# TABLE 1-5 PIT DESIGN PARAMETERS AND DIMENSIONS SUMMARY West Kirkland Mining Inc. – TUG Project

Pit Slope	Length	Width	Depth	Pit Bottom Elevation
(°)	(m)	(m)	(m)	(MAMSL)
48	970	400	105	1,515

### MINERAL PROCESSING

The mineral processing is proposed to be via heap leaching of minus one quarter inch mineralized material, and gold and silver recovery in a Merrill Crowe plant and refinery. The proposed leach pad is located adjacent to the TUG deposit.

Mineralized material will be delivered to one leach pad via grasshopper conveyors directly from the crushing plant. Immediately before deposition onto the pad, there will be a lime dispensing silo where lime is added to the conveyor stream. Mineralized material will be placed on the pads in lifts that are four to five metres (15 ft) high. After the mineralized material is stacked on the leach pad, the mineralized material will be dozed to provide a flat working surface while a lift is being placed. After stacking, the top will be ripped with a D-9 dozer and drip leach lines will be buried in the ripper trenches.

The leach pad will have a proposed, ultimate stack height of 40 m (130 ft) and in the proposed plan of operations it will be expanded to an ultimate capacity of nine million tonnes. Total gold and silver production for the property for years one through four is estimated to be 68,000 oz Au and 857,000 oz Ag.

Gold production will be tracked in the monthly process reporting. Overall gold recovery from the leach pad over the project life is estimated at 58%. Life of Mine (LOM) silver recovery is estimated to be 15%.

# PROJECT INFRASTRUCTURE

The TUG Project primary facilities and infrastructure would include:

- Heap leach pad (HLP), a lined storage area, and solution storage pond, pumping wells, events ponds, diversion ditches, and leak detection, recovery and monitoring systems;
- Diversion channels to divert waters away from the heap leach pad, open pit and rock disposal areas;
- Water well and fresh water supply system to treat and distribute process water, fire water, and potable water;



- Access road and site roads, including the upgrading of the existing 4.83 km (3 mi) access road that runs north from Utah State Route 233;
- Sewage treatment infrastructures, e.g. septic tanks and leach fields;
- Office trailers;
- Merrill Crowe recovery plant;
- Assay laboratory;
- Gold and silver refinery;
- Process control and instrumentation;
- Two-bay truck shop (to be built by the mining contractor);
- Warehouse facility;
- Cold storage and laydown area;
- First aid room;
- Communication and IT systems;
- On-site fuel storage (to be built by mining contractor);
- 7.25 km (4.5 mi) power line, substation, transformers, and on-site distribution lines; and
- Explosive storage magazines and bulk blasting agent storage (to be supplied by a contractor).

### MARKET STUDIES

The principal commodities to be produced at the TUG mine are gold and silver, which are freely traded, at prices that are widely known, so that prospects for sale of any production are virtually assured. For the Base Case scenario in the economic analysis RPA used a gold price of US\$1,525.00/oz and a silver price of US\$28.00/oz for the life of mine.

# ENVIRONMENTAL, PERMITTING AND SOCIAL CONSIDERATIONS

The TUG Project is located on three sections of undeveloped fee land in northwestern Utah, adjacent to the Utah/Nevada state line. Because the Project is located on fee land, the majority of these programs are administered at the state level. The Project components that will impact the applicable regulations are:

- Open pit mining and minerals processing that will occur on fee land;
- Access to the property is gained via an established public roadway;
- Water for the Project will be derived from on-site wells;
- Project construction does not require dredge or fill activities in Waters of the United States; and
- Power for the Project will be generated on-site, or delivered via cable buried in an existing public roadway.

# CAPITAL AND OPERATING COST ESTIMATES

Table 1-6 summarizes the capital costs for the TUG Project.



TABLE 1-6	CAPITAL COSTS
West Kirkland Mi	ning Inc. – TUG Project

Conital Cost Cotogory	Totals (US\$000)	Pre-production Yr -2 to -1 (US\$000)	Sustaining Yr 1 to 4 (US\$000)
Capital Cost Category	(03\$000)	(03\$000)	(03\$000)
Direct Capital Mining Capital	125	105	20
Processing Capital			
Leach Pad, Ditches, Ponds	4,432	4,162	270
Process/Lab/Infrastructure	4,523	3,995	529
Processing Capital Subtotal	8,955	8,157	799
Infrastructure	4,832	4,632	200
Light Vehicles	385	210	175
Water Wells, Tanks and Water Lines	827	727	100
Direct Capital Subtotal	15,124	13,830	1,294
Indirect Capital			
Basic/Design Engineering - Electrical, Piping, Sanitation, Leach Pad	312	312	-
First Fills/Commissioning	200	200	-
Capital Spares	100	100	-
Bonding	1,700	1,700	-
Environmental/Permitting	401	401	-
CM/QA-QC: Leach Pad, MC, Elec., Water	471	471	-
Duties and Taxes, Freight, Logistics	529	529	-
Owner's Cost	1,252	1,252	-
Indirect Capital Subtotal (approximately 32%)	4,964	4,964	-
Direct + Indirect Subtotal	20,088	18,795	1,294
Contingency @ 25%	4,699	4,699	-
Total Capital	24,787	23,493	1,294

Table 1-7 displays the total estimated direct operating costs for year one through year four. The direct operating costs presented are calculated before inventory adjustments, deferred stripping, and other adjustments.

# TABLE 1-7 FORECASTED MINERALIZED MATERIAL OPERATING COSTS West Kirkland Mining Inc. – TUG Project

Yearly Unit Cost	Mining Cost	Process Cost	G&A Cost	Project Cost
US\$/t	US\$/t	US\$/t	US\$/t	US\$/t
Averages	8.92	8.90	1.82	19.64



# **2 INTRODUCTION**

Roscoe Postle Associates Inc. (RPA) was retained by West Kirkland Mining Inc. (WKM) to prepare an independent Technical Report on the Tecoma Utah Gold Project (TUG or the Project), located near the Nevada-Utah border, USA. The purpose of this report is to update Mineral Resources and disclose the results of a Preliminary Economic Assessment (PEA) on the Project. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects.

The TUG Project area is an advanced-stage exploration project located in the Long Canyon Trend, in Box Elder County along the Nevada-Utah border known as the Tecoma Mining District. The Project area is located approximately 140 km northeast of the city of Elko and 80 km from the town of Wells, Nevada, USA. The property consists of 50.08 km<sup>2</sup> of unpatented federal lode mining claims, state leases, and private mineral rights. TUG is currently under earn-in option from Fronteer Development (USA) Inc., a subsidiary of Fronteer Gold Inc. (Fronteer), now a wholly-owned subsidiary of Newmont Mining Corporation, whereby WKM can earn 51% to 60%, depending on expenditures.

TUG is one of WKM's primary assets. There has been no production from the TUG Project in the past.

This report is considered by RPA to meet the requirements of a PEA as defined in Canadian NI 43-101 regulations. The economic analysis contained in this report is based, in part, on Inferred Resources, and is preliminary in nature. Inferred Resources are considered too geologically speculative to have mining and economic considerations applied to them and to be categorized as Mineral Reserves. There is no certainty that economic forecasts on which this PEA is based will be realized.

# SOURCES OF INFORMATION

A site visit was carried out by Mr. Stuart Collins, P.E., RPA Principal Mining Engineer, and Dr. Kathleen Ann Altman, P.E., RPA Principal Metallurgist, on November 27, 2012. During the site visit, the following individuals, with their expertise indicated in brackets, accompanied the RPA team:



- Mr. Kevin Jennings, P.E., Senior Civil Engineer, Newfields (leach pad design);
- Mr. Pete Dahlberg, P.E., General Manager, Roche Ltd. Salt Lake City, Utah (process plant design);
- Mr. Matt Coffin, Northern Nevada Mining Manager, N.A. Degerstrom (mining contractor mining cost estimate);
- Mr. Stephan Glass, General Manager, Gault Group (environmental and permitting specialist);
- Mr. R.J. Johnson, Hydrologist, Gault Group (environmental and permitting).

Discussions were held with personnel from WKM:

- Mr. Sandy McVey, P. Eng., Chief Operating Officer, WKM
- Mr. Rich Histed, Regional Exploration Manager, WKM
- Mr. Michael Allen, Vice President Exploration, WKM

In addition to the site visit, an informational meeting was held with Utah State regulators in their Salt Lake City offices on November 28, 2012.

This Technical Report was prepared by Mr. Collins, Dr. Altman, and Mr. Luke Evans, P.Eng., RPA Principal Geologist, each a "Qualified Person" under NI 43-101. Mr. Evans is responsible for the geology and Mineral Resource estimation aspects; Mr. Collins is responsible for the mining and economic analysis aspects; and Ms. Altman is responsible for the mineral processing and processing cost aspects of the Technical Report.

The information, conclusions, and recommendations contained in this Technical Report are based on a review of digital and hard copy data and information supplied to RPA by WKM.

The documentation reviewed, and other sources of information, are listed at the end of this report in Section 27 References.



### LIST OF ABBREVIATIONS

Units of measurement used in this report conform to the metric system. All currency in this report is US dollars (US\$) unless otherwise noted.

0	0000	kWh	kilowett bour
a	annum		kilowatt-hour
A	ampere		litre
bbl	barrels	lb	pound
btu	British thermal units	L/s	litres per second
°C	degree Celsius	m	metre
C\$	Canadian dollars	М	mega (million); molar
cal	calorie	m²	square metre
cfm	cubic feet per minute	m <sup>3</sup>	cubic metre
cm	centimetre	μ	micron
cm <sup>2</sup>	square centimetre	MASL	metres above sea level
d	day	μg	microgram
dia	diameter	m <sup>3</sup> /h	cubic metres per hour
dmt	dry metric tonne	mi	mile
dwt	dead-weight ton	min	minute
٥F	degree Fahrenheit	μm	micrometre
ft	foot	mm	millimetre
ft <sup>2</sup>	square foot	mph	miles per hour
ft <sup>3</sup>	cubic foot	MVA	megavolt-amperes
ft/s	foot per second	MW	megawatt
g	gram	MWh	megawatt-hour
Ğ	giga (billion)	oz	Troy ounce (31.1035g)
Gal	Imperial gallon	oz/st, opt	ounce per short ton
g/L	gram per litre	ppb	part per billion
Ğpm	Imperial gallons per minute	ppm	part per million
g/t	gram per tonne	psia	pound per square inch absolute
gr/ft <sup>3</sup>	grain per cubic foot	psig	pound per square inch gauge
gr/m <sup>3</sup>	grain per cubic metre	RL	relative elevation
ha	hectare	RSA	rock storage area
hp	horsepower	s	second
hr	hour	st	short ton
Hz	hertz	stpa	short ton per year
in.	inch	stpd	short ton per day
in <sup>2</sup>	square inch	t	metric tonne
J	joule	tpa	metric tonne per year
s k	kilo (thousand)	tpd	metric tonne per day
kcal	kilocalorie	US\$	United States dollar
kg	kilogram	USg	United States gallon
km	kilometre	USgpm	US gallon per minute
km <sup>2</sup>	square kilometre	V	volt
km/h	kilometre per hour	Ŵ	watt
kn/n kPa	kilopascal		
kPa kVA	kilovolt-amperes	wmt wt%	wet metric tonne weight percent
kW	kilowatt	yd <sup>3</sup>	cubic yard
r v v	NIUwall	-	-
		yr	year



# **3 RELIANCE ON OTHER EXPERTS**

This report has been prepared by Roscoe Postle Associates Inc. (RPA) for West Kirkland Mining Inc. (WKM). The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to RPA at the time of preparation of this report;
- Assumptions, conditions, and qualifications as set forth in this report; and
- Data, reports, and other information supplied by WKM and other third party sources.

For the purpose of this report, RPA has relied on ownership information provided by WKM. The client has relied on two opinions by Parsons, Behle & Latimer dated February 4, 2013 entitled "Status Report on Box Elder Counties and Status Report with Respect to Utah Metalliferous Minerals Lease No. ML 39029", and this opinion is relied on in Sections 4 and 22, and the Summary of this report. RPA has not researched property title or mineral rights for the TUG Project and expresses no opinion as to the ownership status of the property.

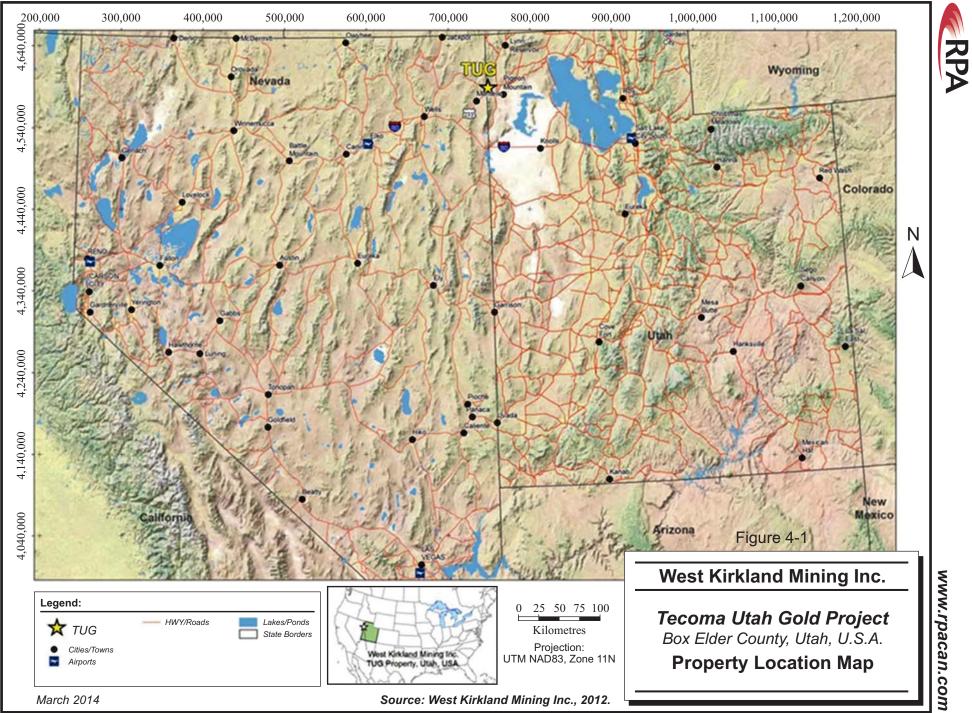
RPA has relied on WKM for guidance on applicable taxes, royalties, and other government levies or interests, applicable to revenue or income from the TUG Project.

Except for the purposes legislated under provincial securities law, any use of this report by any third party is at that party's sole risk.



# **4 PROPERTY DESCRIPTION AND LOCATION**

The TUG property is located in Box Elder County, Utah, USA. Box Elder County is located to the east of Elko County in the state of Utah. By road, the city of Elko is approximately 370 km west of Salt Lake City, Utah, 465 km northeast of Reno, Nevada, and 384 km south of Boise, Idaho (Figure 4-1). The nearest town to the TUG property is Montello, Nevada, approximately 25 km by road to the east. The site is located at approximately 41°25'10" North latitude and 114°01'15" West longitude. The Project is located within the Jackson Spring 7.5-minute USGS quadrangle map. Access to the Project is by way of a dirt road that extends northward from Utah State Route 30 (Nevada State Route 233), a distance of approximately seven kilometres.





# LAND TENURE

The TUG property consists of four types of mineral tenure (Figure 4-2):

- 1. US Federal Government, Bureau of Land Management (BLM) leased claims (ACATIM series) leased from Phelps Dodge Mining Company (Phelps Dodge);
- 2. US Federal Government, BLM mining claims (GUT and OMA series);
- 3. State of Utah mineral rights leases (Sections 2 and 16 Township 8 North Range 19 West and Section 36 Township 9 North, Range 19 West); and
- 4. Private mineral rights leased from Lucine Energy and Michael D. Christensen (Sections 3, 9, 11, 15, 21, 23 Township 8 North, Range 19 West).

WKM has 36 leased claims (ACATIM) and 310 owned claims (GUT and OMA). TUG BLM leased claims cover an area of 3.01 km<sup>2</sup>, the owned BLM claims cover an area of 25.7 km<sup>2</sup>, state leases cover an area of 7.68 km<sup>2</sup>, and private leases cover an area of 15.67 km<sup>2</sup>. The total area for the TUG property is 50.08 km<sup>2</sup>. Overlapping mineral rights create a slight discrepancy in total area of the TUG property.

All of WKM's tenure is contiguous except for the GUT BLM mining claims in Section 28 Township 9 North, Range 19 West, which is separated from the nearby OMA BLM mining claims by a small fraction.

The ACATIM leased claims are owned by Phelps Dodge, which is now owned by Freeport McMoRan Incorporated (Freeport). The lease is now held by Fronteer, which became a wholly owned subsidiary of Newmont.

The GUT claims are owned by NewWest Gold Corp. (NewWest), a subsidiary of Fronteer. WKM is optioning these claims from Fronteer.

The OMA claims are owned by Fronteer. WKM is optioning these claims from Fronteer.

The Lucine agreement is held by a subsidiary of Fronteer, Lucine Energy, which is based in Salt Lake City, Utah.

The Christensen Lease is held by Michael D. Christensen of Delta, Utah.

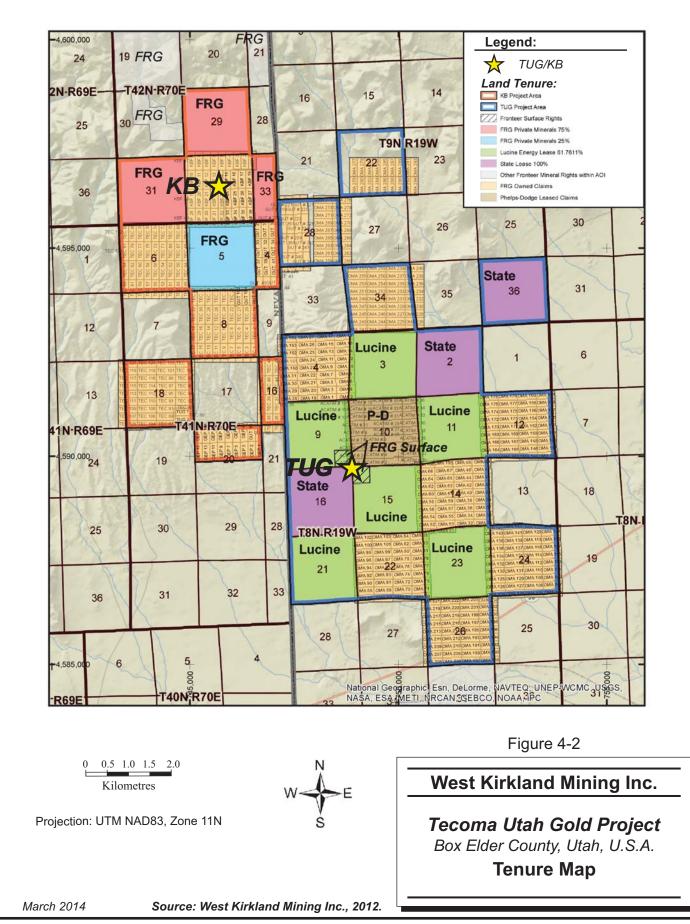


WKM has the mineral rights to explore and access the entire TUG property. The US Federal Government, BLM, has surface rights on ACATIM leases, and the GUT and OMA mining claims. The State of Utah has the surface rights on the state leases. The surface ownership on the private leases is a mix of Fronteer (Newmont) and private individuals. The key portions of the mineralization are under the surface rights held by Fronteer, which is part of the WKM-Fronteer option agreement, or the state.

WKM has provided a legal opinion with respect to title of key portions of the property and its associated claims (Figure 4-2). Key claims and leases appear to be in good standing according to the legal opinions provided by WKM. RPA has relied on this legal opinion, but has not verified it. Claims and leases owned or operated by WKM for the TUG Project area are listed in Appendix 1 Table 30-1.

WKM has an option agreement to earn up to a 60% interest in the adjacent KB property, separated from the TUG property by the Utah-Nevada border. There are 204 claims situated in Nevada related to the KB property (Figure 4-2 and Appendix 1 Table 30-2).







# WKM – FRONTEER/NEWMONT OPTION AGREEMENT

WKM has provided RPA with a summary of the option agreement. RPA has relied on WKM's legal opinions and has not verified them.

On December 14, 2010, WKM optioned 11 properties in Nevada and Utah from Fronteer. The legal transaction took place between WK Mining (USA) Ltd., a subsidiary of WKM and two subsidiaries of Fronteer: Fronteer Development (USA) Inc. and Nevada Eagle Resources LLC. The package of 11 properties included the TUG property located in Box Elder County, Utah, and the contiguous KB property, separated from TUG by the Utah-Nevada border.

Subsequent to the option agreement between WKM and Fronteer, Fronteer was purchased by Newmont for US\$2.3 billion dollars in the second quarter of 2011. To date, Fronteer Development (USA) Inc. and Nevada Eagle Resources LLC continue to exist as subsidiaries of Newmont. As a result of the Fronteer/Newmont transaction, WKM is effectively optioning 11 properties from Newmont, while all other aspects of the option agreement remain the same.

To earn an undivided 51% interest in the TUG property, WKM has to make expenditures totalling US\$1.8 million over four years according to the schedule in Table 4-1:

Year	Amount (US\$)
1&2	100,000
3	700,000
4	1,000,000
Total	1,800,000

# TABLE 4-1WKM SCHEDULE OF EXPENDITURESWest Kirkland Mining Inc. – TUG Project

WKM has the right to accelerate its earn-in and any excess amounts from a given year can be carried forward.

To earn an additional nine percent interest (60% total undivided interest) in the TUG property, WKM has the option of spending an aggregate of \$4,000,000 or completing a pre-feasibility study on the property within two years of completing the first earn-in right.

The Lucine Lease agreement is included in the option agreement between WKM and Fronteer. The Lucine Lease was signed on August 23, 2001, by Western States Minerals Corporation



(WSMC), which was ultimately acquired by Fronteer. The Christensen Lease was signed on September 25, 2012.

The Lucine Lease and Christensen Lease both cover six sections within Township 8 North, Range 19 West, Salt Lake Base and Meridian.

Section 3:	Lots 1,2,3,4, the south half of the north half and the south half
Section 9:	Lots 1,2,3,4, the east half of the west half, the east half
Section 11:	All
Section 15:	All

- Section 21: All
- Section 23: All

The term of the Lucine Lease is 20 years and the Christensen Lease is for 25 years. For the remainder of the Lucine Lease terms, there is an annual advance royalty of US\$15,000. The current annual advance royalty for the Christensen Lease is US\$10,000 and the amount increases by US\$5,000 every five years.

Under an amendment to the original option agreement with Fronteer, Newmont is responsible for tenure for the 11 optioned properties.

# LEGAL OBLIGATIONS ON TUG PROPERTY

A BLM mining claim and leased claim is a parcel of land for which the claimant has asserted a right of possession and the right to develop and extract a discovered, valuable, mineral deposit. This right does not include exclusive surface rights (Utah BLM, Mining Law website: <a href="http://www.blm.gov/ut/st/en/prog/more/mining\_law\_locatable.html">http://www.blm.gov/ut/st/en/prog/more/mining\_law\_locatable.html</a>). The annual maintenance fee is US\$140/claim, which is due on or before September 1 of each year to the BLM to keep the claims in good standing. Additional annual fees for US\$10.50 are paid to the Box Elder County and the county charges an additional US\$4.00 map fee when annual filings are made. The annual fees on the BLM mineral tenure are made by Newmont, as per an amendment to the option agreement with Fronteer.

There is an annual fee of US\$4,100 for the BLM leased claims payable to Phelps Dodge, a subsidiary of Freeport (Freeport) since 2006.



The annual fee for the state leases is approximately US\$4,500/year per section. An annual fee for the private leases is US\$15,000 payable to Lucine Energy and US\$10,000 currently payable to Christensen.

The known royalty obligations on the TUG property are as follows:

- BLM leased claims (ACATIM) have 5% net smelter return (NSR) on them payable to Freeport (Phelps Dodge).
- NewWest was granted a 3% NSR on the TUG property to be offset by third party royalties, but not less than 1%.
- State leases have a 4% NSR on non-fissionable metals (i.e., excluding uranium-233, uranium-235 and plutonium-239) payable to the state.
- Private mineral property leases have a 2.47% NSR payable to Lucine Energy and a 1.4% NSR of 35% of the gross revenue payable to Christensen.

There are no significant environmental liabilities on the TUG property. WKM has a bond with the Utah Department of Oil, Gas and Minerals (DOGM) that is in place to reclaim any sites that are un-reclaimed by WKM. WKM has an exploration permit through DOGM to work on the TUG property.

A risk to the TUG property is title, as the title system is complex. WKM has legal opinions on title based on county records showing they are able to earn their interest in the TUG property. Permitting is straightforward and access is granted with mineral rights.



## 5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

#### ACCESSIBILITY

The TUG property is located in high desert and accessible via a network of paved federal roads, local highways, gravel grid roads, and dirt tracks. Elko, Nevada has a regional airport with access to two major international airports; one located in Las Vegas, Nevada and the other in Salt Lake City, Utah.

The TUG Project area is approximately 140 km from the City of Elko, Nevada. The TUG Project area is located in Box Elder County, Utah, close to the border with Nevada as shown in Figures 4-1 and 4-2. The Project area is accessed by heading west from Elko on Dwight Eisenhower Highway (Interstate Highway I-80) to the turnoff at Oasis (Hwy 233) and then proceeding northwest on Nevada State Highway 233 towards the town of Montello, Nevada to the Utah border. The TUG Project is located approximately 3.5 km north along a gravel road, which is directly adjacent to the Nevada-Utah border.

#### CLIMATE AND VEGETATION

Box Elder County, Utah, is located adjacent to Elko County, Nevada, and both counties have similar climate and vegetation. Mean annual temperatures in the State of Nevada vary, but the average high for Elko County, Nevada, is 16.7°C with a daily mean of 8.3°C and an average low of -5.5°C. January is the coldest month with an average maximum of 2.8°C and average minimum of -9.9° C. July is typically the warmest month with an average maximum of 32°C and average minimum of 9.2°C (http://en.wikipedia.org/wiki/Elko, Nevada).

The climate is semi-arid (Koppen climate classification BSk) and classified as a western desert plateau with typical topography of the Great Basin consisting of broad valleys separated by mountain ranges. Vegetation is primarily salt desert shrubs, sagebrush, and perennial grasses with lesser pinion-juniper woodlands with mixed conifer stands occurring throughout (<u>http://www.blm.gov/nv/st/en/fo/elko\_field\_office.html</u>). Annual rainfall averages 24.3 cm. Annual snowfall averages 72 cm, with the most snowfall in one year at 256 cm in 1996 and heavier snowfalls reported in the more mountainous areas (<u>http://en.wikipedia.org/wiki/Elko,\_Nevada</u>).



Drilling can be conducted year round at lower elevations with short delays expected during the spring thaw from late February to April in more mountainous terrains. Geological mapping, outcrop sampling, and soil sampling surveys can easily be conducted from May to November when there is little or no snow on the ground.

#### LOCAL RESOURCES AND INFRASTRUCTURE

WKM's properties are all located relatively close to several small towns, but the City of Elko is considered the centre of northern Nevada's gold mining. Elko has a population of 18,297 according to the 2010 US Census and a history of gold mining, tourism, and ranching. It has sufficient railway, interstate highways, and local highways plus many well maintained local gravel and grid roads, which allow access to the Project areas. Elko and its surrounding towns contain adequate local infrastructure to support both extensive exploration and mining in the area (http://en.wikipedia.org/wiki/Elko, Nevada).

The nearest town to the Project is Montello, Nevada, which is approximately 10 km from the Project. The Project is adjacent to the Utah-Nevada border.

The TUG property is currently in the exploration stage, and has no existing infrastructure.

#### PHYSIOGRAPHY

The Project is located within the Basin and Range physiographic province. Distinctive features of this province are isolated, longitudinal fault-block mountain ranges separated by long, alluvial-filled basins. The Great Basin area of Nevada is characterized by north to northeast trending ranges separated by wide flat valleys, internal drainage, high heat flow and sustained periods of episodic magmatism as outlined in Sections 7 and 8 of this Technical Report.



## 6 HISTORY

This section is mainly taken from Hodder and Whetherup (2012), and Dilles et al. (2009).

The States of Utah and Nevada have been known exploration areas for over 100 years and several "mineralization trends" have been defined. The trends are based on the regional and local geology and structure, which have confined specific mineralization to particular units and formations. The TUG Project is located within the Long Canyon Trend (Figure 7-2).

#### LONG CANYON TREND

The Long Canyon Trend is recognized as part of the old Tecoma Mining District and has seen sporadic exploration for approximately 100 years. The Tecoma mine was originally discovered around 1864, operating until around 1875.

During the 1990s, Pittston Nevada Gold Company (Pittston) explored away from the known trends using Bulk Leach Extractable Gold (BLEG) technology. BLEG is essentially a chemical sieve, designed to focus on the disseminated, fine-grained gold fraction. Exploration led to the discovery of gold mineralization in the Pequop Mountains, first on the west side of the range in 1995 and later at Long Canyon on the east side of the range in 2000, in an area previously considered "not prospective" for precious metal mineralization.

In 2000, Pittston conducted detailed geologic mapping and sampling programs over the Long Canyon area and defined a very strong gold-in-soil anomaly. The anomaly was drill tested in late 2000 and encountered mineralization starting from surface. Weak gold prices and other economic factors contributed to Pittston's decision to discontinue exploration within the Long Canyon claims.

In 2005, AuEx Ventures (AuEx) acquired the assets of Pittston, which included Long Canyon. AuEx carried out a reverse circulation drilling program to extend the known mineralization at Long Canyon. NewWest controlled private mineral rights over a portion of the Long Canyon property, and in May 2006, a joint venture agreement was negotiated between NewWest and AuEx. NewWest further extended the known mineralization in 2006 and 2007. In September 2007, Fronteer acquired NewWest and rapidly increased its level of exploration activity in the Long Canyon Trend area by completing an additional 164 holes (109 RC and 55 core) in 2008 (Smith et al., 2010 (b)), a predictive geologic model, and a Mineral Resource estimate of the Long Canyon Deposit, which was released in March 2009.

#### TUG EXPLORATION HISTORY

Tecoma and Lucin Mining Districts have seen sporadic work completed for over 100 years with the first large discovery occurring in 1906, later to become the Jackson mine in Nevada. The Jackson mine is located approximately four kilometres to the southwest of the KB hill and was primarily a lead-silver deposit in production from 1907 to 1955. During this time, it was reported that 3.12 million lb Pb, 67,274 oz Ag, 21,361 lb Cu, 2000 lb Zn, and 91 oz Au was extracted from the Jackson mine (Dilles et al., 2009). RPA has not verified this historical production, thus it cannot be relied upon.

Several historic prospects and workings consisting of shafts, drifts, adits, and pits exist throughout the district such as the Queen of the West diggings noted in the KB claim area. The old workings were exploited predominantly for lead, silver, and barite with secondary metals including copper, gold, antimony, and zinc.

More recent exploration work for precious metals began in the late 1970s on the KB-TUG Project area At various times in their history, KB and TUG have been considered as two separate projects, or one combined project. Based on the option agreement between Fronteer and WKM, the KB and TUG are considered as separate projects. Combined KB-TUG claim areas were explored until 1984 by Noranda Exploration Inc. (Noranda) with a minor exploration program by Phelps Dodge during this period. Noranda completed 145 drill holes. Phelps Dodge completed three drill holes in 1983. In 1984, Noranda joined with Western States Mineral Corporation (WSMC) where WSMC acted as operator until 1988 when Noranda signed all titles and interests to the KB-TUG to WSMC. WSMC completed a total of 431 drill holes on their KB-TUG Project with 101 drill holes on the KB and 330 drill holes on the TUG. NewWest, formed by WSMC, was assigned titles and rights to the properties until 2007 when Fronteer acquired NewWest. In 2008, Fronteer completed seven drill holes, and the KB-TUG Project areas (Dilles et al., 2009).



Historic mapping of the TUG deposit identified the outcropping mineralized jasperoids hosted at the top of the TUG anticline. On a property scale, northwest structures were identified as being key to hosting mineralization.

The TUG property was optioned by WKM from Fronteer on December 16, 2010. A large geophysical data set came with the property. WKM has reinterpreted the data and the results are discussed in Section 9, Exploration.

The KB deposit is located four kilometres from the TUG deposit. The properties are contiguous, separated by the Utah-Nevada border. The KB deposit has been estimated by previous workers to contain between 15,000 oz Au and 40,000 oz Au (Dilles et al., 2009). WKM has an option agreement to earn up to a 60% interest in the KB property. This historical estimate is relevant as it indicates the potential mineralization on the property. The assumptions, parameters, and methods used to prepare the estimate are unknown. Sampling and drilling is required to confirm the historical estimate as current. A Qualified Person has not carried out sufficient work to classify the historical estimate as current Mineral Resources and WKM is not treating this historical estimate as current Mineral Resource estimate.

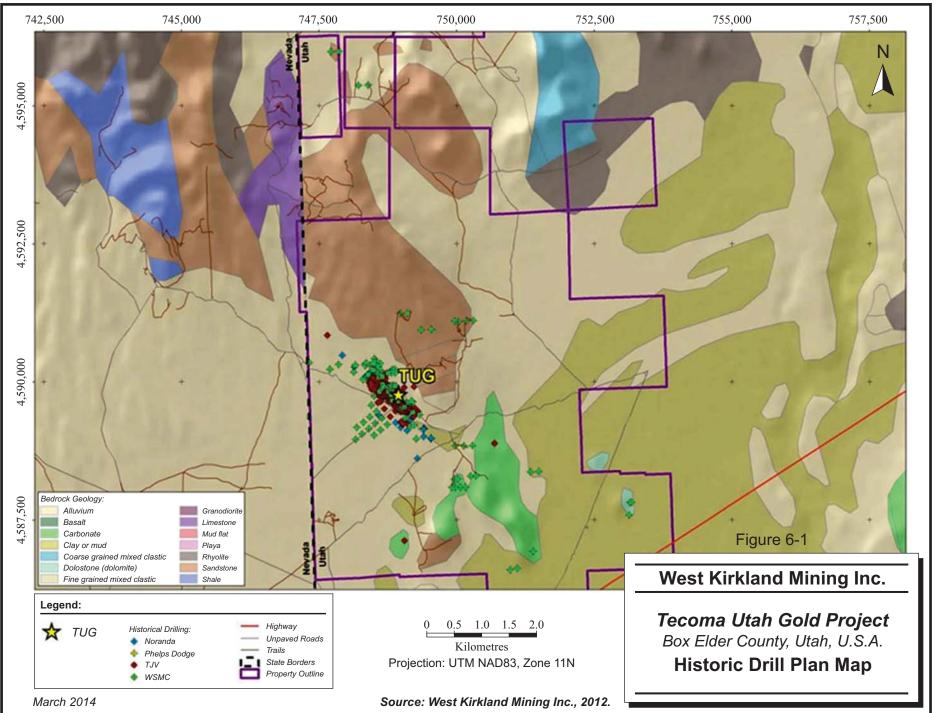


### TABLE 6-1 SUMMARY OF EXPLORATION WORK COMPLETED ON THE TUG-KB PROPERTY

Year	Company	Туре	Drilling Holes	l Metres	Other Work
1970-1984	Noranda	туре	110163	Metres	Regional Exploration
1981	Noranda	Rotary	9	441.0	
1982	Noranda	RC	75	3,653.0	
1982	Noranda	Core	3	38.1	
1983	Noranda	RC	44	1,348.1	
1983	Noranda	Core	14	210.9	
1983	Phelps	RC	3	414.5	
1984	Dodge/TUG JV	RC	82	3,985.3	
1985	TUG JV	RC	128	5,292.9	
1985	TUG JV	Rotary	10	489.2	
1987	TUG JV	RC	4	460.2	
1988	WSMC	RC	14	1,565.1	
1989	WSMC	RC	15	533.4	
1991	WSMC	RC	6	804.7	
1992	WSMC	RC	30	4,160.5	
1993	WSMC	RC	69	10,569.0	
1994	WSMC	RC	16	1,676.4	
1995	WSMC	RC	6	2,086.4	
1997	WSMC	RC	49	4,637.5	
1998	WSMC	RC	2	278.9	
2008	Fronteer	RC	5	1,258.8	Incl. 476 soils, 13 silts, 57 rock samples
2008	Fronteer	Core	2	393.0	3x3 km ground mag and 10x12 km gravity
TOTALS			586	44,297.0	

### West Kirkland Mining Inc. – TUG Project

Source: Griffith 2005; Dillies et al., 2009



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## 7 GEOLOGICAL SETTING AND MINERALIZATION

## **REGIONAL GEOLOGY**

North Central Nevada has had a complex and varied tectonic history that is part of the evolution of the North American Cordillera (Figure 7-1). In the late Proterozoic, the region was a west-facing passive rifted continental margin. During the Devonian to early Mississippian Antler Orogeny, eugeoclinal rocks of the Roberts Mountain allochthon (large blocks of rock moved by low angle thrust faulting) were thrust eastward over miogeoclinal rocks of the continental shelf, which was a significant tectonic event during the Early Mississippian and resulted in the movement eastward, from a source west of Elko County, of silicic and volcanic rocks originally deposited on the ocean floor. The boundary between thrust blocks is considered to be a major east-west-trending wrench, or transcurrent fault known as the Owyhee rift, currently buried beneath Idaho (Coats, 1987; Dilles et al, 2009). In the late Permian to early Triassic the Sonoma Orogeny placed eugeoclinal rocks of the Golconda allochthon over the Roberts Mountains allochthon. The Sonoma Orogeny culminated in the establishment of an active margin west of Nevada (Ronning, 2006).

Early to middle to Tertiary tectonism was characterized by a southward sweep of generally east-west belts of magmatism from 43 to 21 Ma and by discrete regions of highly extended domains. Middle to late Tertiary tectonism was characterized by regional uplift, formation of the Northern Nevada rift, and widespread development of tilted fault blocks. Rifting in the mid-Miocene was marked by a predominant north-northwest trending linear magnetic high extending for about 483 km, and an alignment of dykes, intrusions, and graben filling lava flows, which characterize the Basin and Range topography common in the area (Folger et al., 1998; Ronning, 2006). The graben fault-block components of the Basin and Range topography have been filled in by erosional effects of the uplifted mountains. Nevada remains a very seismically active area, littered with many north-south trending fault systems throughout the state exhibiting a repeating of the fault-block mountain sequences.

In the region, there are a number of "mineralized trends", which contain numerous gold deposits and showings partially defined on structural boundaries. The location of these trends is outlined in Figure 7-2.

## LOCAL GEOLOGY

The TUG Project area lies within the Long Canyon Trend (Figure 7-2). The Long Canyon region geology is best described in the Muller (1993) Windermere geologic map of northeastern Nevada, and its accompanying text, which outlines the geologic units and structural confines in the area. The following is a brief outline and synopsis of the area, which includes the Long Canyon Trend geology of the Pequop Mountains and Windermere Hills.

Stratigraphic units exposed in the Pequop Mountains and Windermere Hills consist of Paleozoic and Mesozoic strata ranging from Ordovician through Triassic made of clastic and carbonate units or their metamorphic equivalents. Paleozoic-Mesozoic units were deposited on the continental shelf of the Cordilleran miogeocline. Tertiary strata were deposited within the half-grabens formed by upper crustal normal faulting during overprinted periods of extension and volcanism (Muller, 1993).

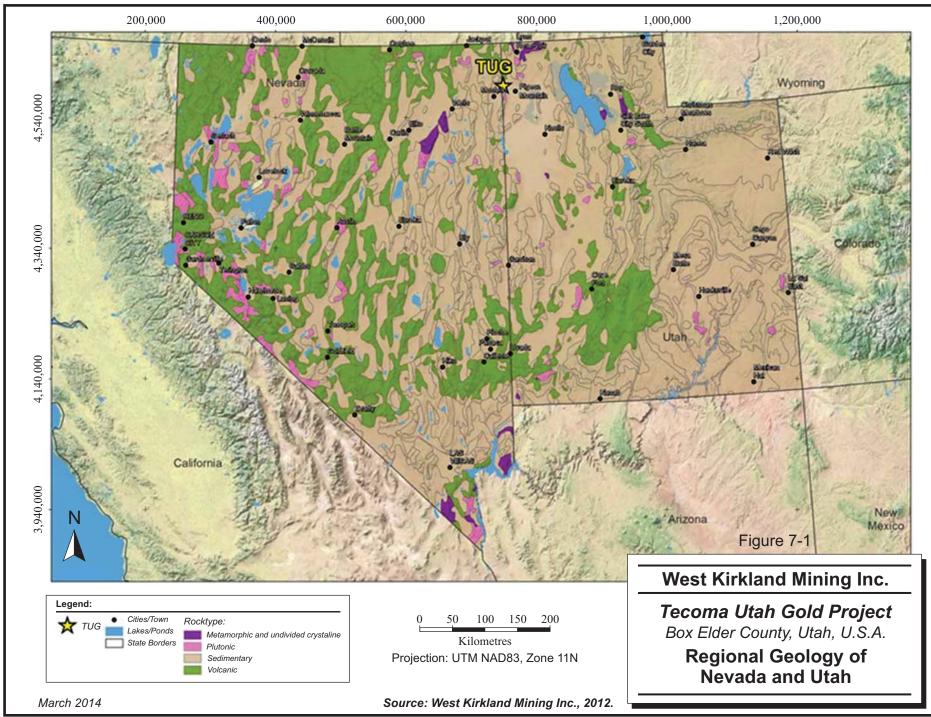
The Pequop Mountains are underlain by Lower and Middle Paleozoic stratigraphic units that recorded episodic shallowing of the passive continental margin and migration of the shelf break westward over time.

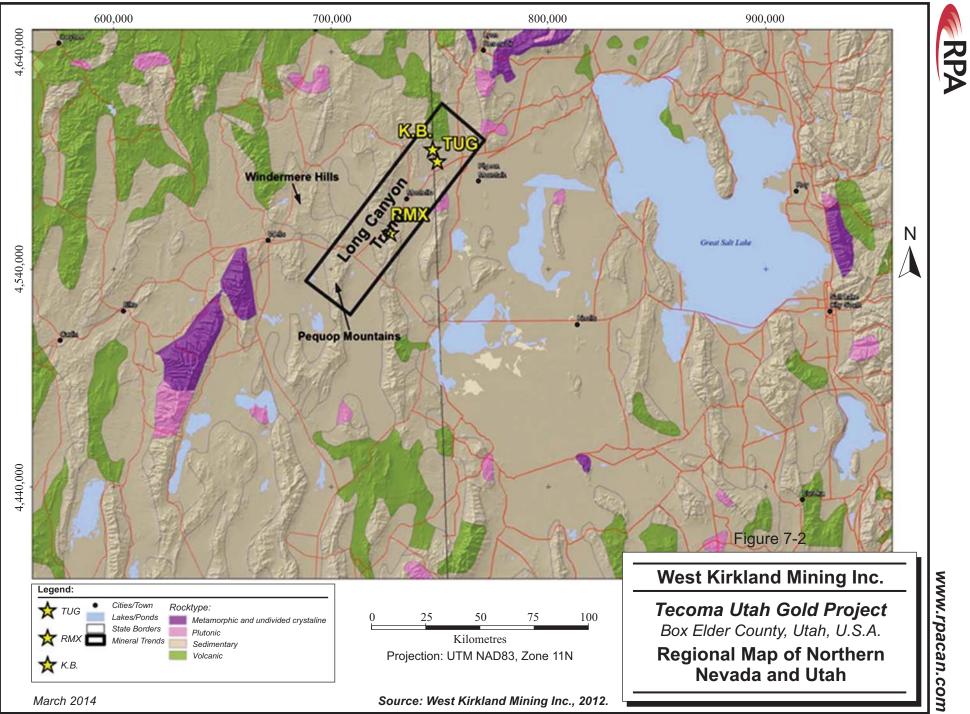
Oldest units are Ordovician strata exposed in the Pequop Mountains. The oldest is the Lower Ordovician Pogonip group consisting of light to dark grey limestone, poorly exposed shaly limestone, and sandy dolomite. These rocks are in contact with overlying Middle Ordovician Eureka Quartzite, consisting of light grey to white, quartz rich sandstone, which appears to have undergone minor heating without any appreciable strain (Muller, 1993). This is overlain by Late Ordovician Fish Haven Dolomite comprised of dark grey dolomite with minor black chert overlain by platy, grey argillaceous limestone of the lower portion of the Silurian-Devonian Roberts Mountain Formation.

Devonian units include the Sevy and Simonson Dolomites and the Guilmette Limestone. Sevy and Simonson dolomites consist of light to dark grey, relatively thickly bedded dolomite units. These units are overlain by the light grey, thickly bedded Late Devonian Guilmette Limestone, which in turn is overlain by Mississippian Tripon Pass Limestone, a grey thinly bedded unit with a thickly bedded sequence of clast supported limestone conglomerate of turbiditic origin. These limestones are interbedded with and grade into coarse sandstones and chert pebble grit and conglomerates of the overlying Melandco sandstone (Muller, 1993).



Based on mapping and stratigraphic studies in adjacent ranges, a thick section of the Paleozoic strata has been excised in the northern part of the general area along a major east rooted low angle normal fault named the Black Mountain fault. The fault contains Permian-Miocene strata in its hanging wall and Mississippian-Ordovician strata in its footwall.





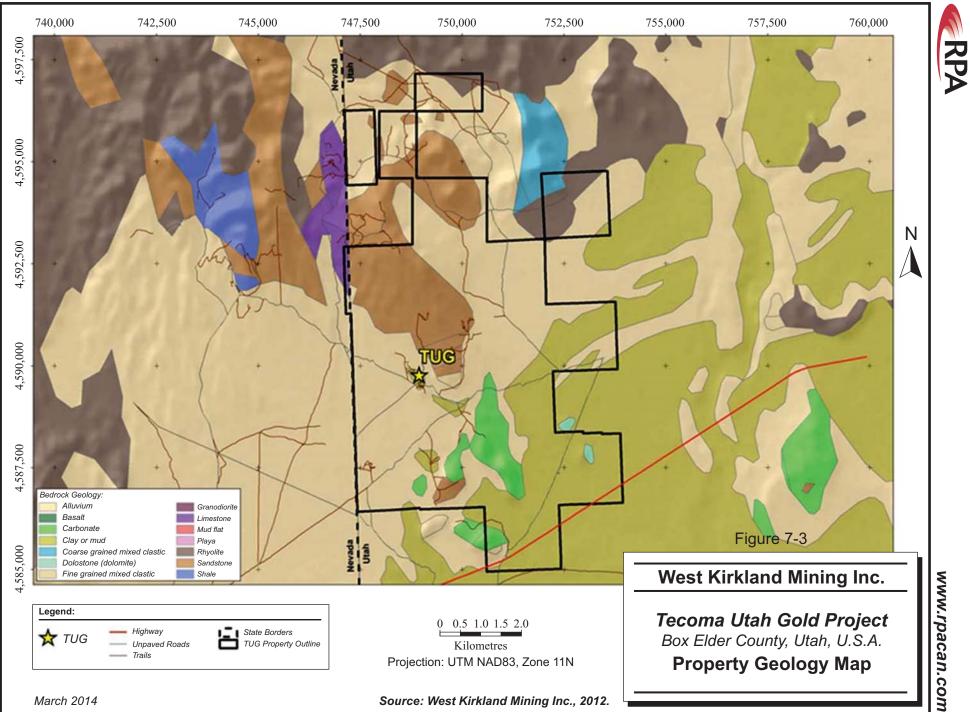


## PROPERTY GEOLOGY

The deposit is located at and near the crest of the TUG anticline, within the Devonian Guilmette Formation, which represents a thick section of continental shelf carbonate rocks and is the oldest sedimentary unit exposed in the TUG Project area. The Guilmette Formation is unconformably overlain by Mississippian and Pennsylvanian sandstone, siltstone, conglomerate, and limestone rocks of the Tripon Pass, Diamond Peak, and Ely formations. These strata were deposited in Antler Foreland Basin with the units interpreted as lenticular with a range of thicknesses. The Pennsylvanian beds are discontinuous suggesting that deposition was restricted by topography or has been sliced by attenuation style thrusting and high angle faulting.

Tertiary and Quaternary sedimentary rocks and sediments are present on the TUG Project areas where the oldest Tertiary conglomerate formed on a pre-volcanic paleosurface and consists of unsorted to well sorted, well rounded sand, pebbles and cobbles comprised mainly of quartz mica-schist and quartzite. Overlying Quaternary sediments are mainly lacustrine and alluvial. Lacustrine sediments include gravel with sand and finer grained marl, silt, and sand of Lake Bonneville (Dillies et al, 2009).

A large volume of Guilmette limestone is replaced by hydrothermal dolomite directly below gold-silver mineralization. Silicification as jasperoid occurs above the zone of dolomitization at a contact zone in both the dolomitized limestone and the decalcified Tripon Pass Limestone. Other deposits overlying the Guilmette are Alligator Ridge, Taylor, Hamilton, and Ward Mountain. Altered Tertiary quartz monzonite, monzonite, diorite dikes, and sills intrude the rocks with dikes trending north-northwest. Jasperoid is vuggy and cut by multiple generations of quartz veins. There are many zones within the TUG where formation identification is impossible due mainly to overprinting alteration throughout the area.





### MINERALIZATION

TUG mineralization is hosted in sedimentary rocks and primarily within carbonate protoliths. The gold mineralization is stratabound within the Tripon Pass limestone at or near the lower contact with the Guilmette Formation and tabular in morphology with abundant decarbonization and silicification of the calcareous host rocks. Jasperoid and late calcite veins are common as well. Gold is finely disseminated throughout hematitic highly silicified zones and quartz veins and veinlets.

Gold mineralization appears to be focused along the axis of an anticline at the Tripon or Diamond Peak and Guilmette contact where it is cut by a low angle structural break or fault. Influences of the Long Canyon Trend pull apart structures are hypothesized to cause local flexures in the steepening plunge of the TUG anticline in the northwestern area of the deposit. These are northeast striking structural zones with little vertical offset, with mineralization locally focused on the margins of the flexures in the mineralized horizon.

Gold mineralization is five metres to 30 m thick over a plan view area of 1,800 m x 750 m. Drilling by WKM has returned significant intercepts; for example, WT11-002 returned 47.70 m grading 1.04 g/t Au with 24.65 g/t Ag, including 2.41 m grading 7.88 g/t Au and 69.19 g/t Ag.

The KB deposit is located four kilometres from the TUG deposit. See Section 6, History for details. WKM has optioned various private mineral rights from Rubicon Minerals in the Long Canyon Trend. These properties form part of the "Santa Fe Checkerboard" of private mineral parcels and cover approximately 909 km<sup>2</sup> in North Eastern Nevada. The property optioned from Rubicon gives WKM control over the northern portion of the emerging Long Canyon Trend.

Approximately 10 km to the west of the TUG deposit is the 12 Mile showing, which is located on property that WKM has optioned from Rubicon Minerals Corporation. The 12 Mile showing was drilled by Noranda and Bow Valley, which identified a mineralized horizon averaging 80 ft to 100 ft in thickness with a strike length of 1,000 ft. This horizon has an average grade of 0.006 opt Au to 0.015 opt Au (Limbach, 1995). Recent sampling by WKM returned 29 m grading 0.33 g/t Au and 1.00 g/t Ag from continuous chip samples taken from a recently constructed drill pad. This potential quantity and grade is conceptual in nature and there has



been insufficient exploration to categorize this as a Mineral Resource and it is uncertain if further exploration will result in a target being delineated as a Mineral Resource.





## 8 DEPOSIT TYPES

The term Carlin-type deposits was first used to describe a class of sediment hosted gold deposits in central Nevada following the discovery of the Carlin mine in 1961. Carlin-type mineralization consists of disseminated gold in decalcified and variable silicified, silty limestone and limy siltstone characterized by relatively high gold and silver with enrichment in antimony, mercury, thallium, and barium and by the dominance of disseminated gold particles within pyrite and arsenopyrite or other iron sulphides. Main mineralization consists of gold in the lattice of arsenical pyrite rims on pre-mineral pyrite cores and of disseminated sooty auriferous pyrite, which is commonly overprinted by late mineral-stage realgar, orpiment, and stibnite in fractures, veinlets, and cavities.

Deposits are generally hosted by Paleozoic slope-facies carbonate turbidites and debris flows within the North American continental passive margin. Mineralized zones can be stratiform or discordant and consist of quartz veins and silicified bodies usually impregnated with abundant pyrite, pyrrhotite, and/or arsenopyrite accompanied by other minor base sulphides. Primary alteration types are silicification, chloritization, tourmalinization, pyritization, and the development of pyrite. Alteration also occurs by the formation of clay minerals by interaction of water and feldspar (Boyle, 1984; Tosdal et al., 2000). They are thought to be largely controlled by deep seated faulted and folded miogeoclinal sequences where the carbonate minerals are dissolved or converted to silicates by silicate- rich hydrothermal water (dolomite to jasperoid).

Carlin-type deposits and the districts in which they cluster are distributed along well-defined, narrow trends that are now understood to represent deep crustal breaks extending into the upper mantle. Main trends are oblique to the early Paleozoic passive continental margin and possibly represent deep crustal structures related to the Neoproterozoic break-up of the continental (Tosdal et al., 2000). The TUG Project area is within the Long Canyon Trend stretching from the north-northeast to the south-southwest.

The Long Canyon deposit represents a typical, sediment hosted gold deposit in Nevada; a summary of the genesis of the deposit below has been modified from Smith et al. (2010 (a,b,c)).



The Long Canyon deposit is hosted primarily in solution breccias and decalcified silty limestone along the segmented margins of a 100 m thick dolomite horizon marking the Cambro-Ordovician boundary. Subsequent deformation caused brittle segmentation and separation, or "boudinage", of the dolomite horizon on a regional scale and ductile flow of the enclosing limestone into the pressure shadows between the boudins (Smith et al., 2010 (b)).

Gold mineralization consists of a series of linear to tabular mineralized shoots focused along the edges of the northeast to north trending dolomite "megaboudins", as well as between the areas where the upper and lower limestone have been juxtaposed through separation of the dolomite blocks. The effect of the dolomite megaboudins induced brittle and ductile deformation resulting in fracturing and dissolution cavity development. Late gold-bearing fluids exploited the enhanced permeability of these regions and preferentially precipitated gold within dissolution cavities and along favourable stratigraphic horizons (Smith et al., 2010 (b)).



## **9 EXPLORATION**

## MAPPING AND SAMPLING

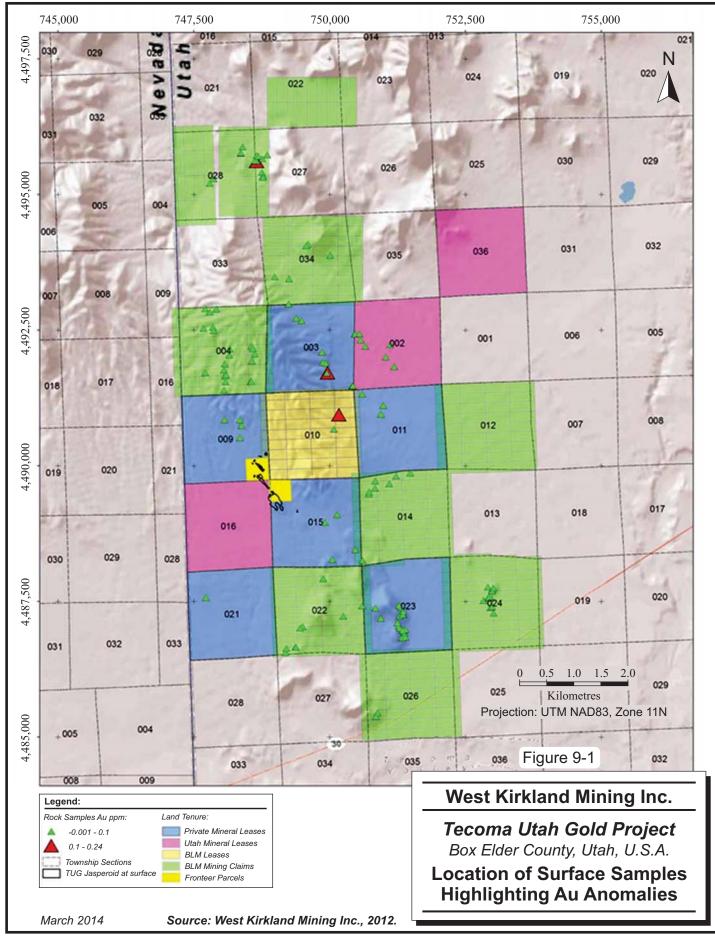
Previous operators have extensively mapped and sampled the TUG Project. WKM collected 129 rock samples on the TUG Project area as of spring of 2012, largely confirming what had already been mapped and sampled on the Project. WKM sampling on the TUG property was carried out in conjunction with mapping of outcrops. The surface sample locations are given in Figures 9-1 and 9-2 and assay highlights are given in Table 9-1. One to two kilogram samples were collected and placed in labelled bags with a sample tag. The bags were then sealed and placed in larger sealable "rice" bags for transport to the laboratory. A description of the sample, and UTM coordinate, was recorded in the geologist's handbook and transferred to an electronic database.

Sample Id	Zone	UTM_E_NAD83	UTM_N_NAD83	Sample type	Au (ppm)	Ag (ppm)
657255	11	749965	4591719	float	0.242	0.44
657276	11	750172	4590946	outcrop	0.178	0.24
247016	11	748656	4595616	outcrop	0.171	1.90
657128	11	748773	4595341	outcrop	0.098	2.46
657917	11	748549	4591556	float	0.073	0.10
657254	11	749950	4591715	outcrop	0.067	0.36
246993	11	752943.7	4587576	outcrop	0.066	0.52
657275	11	750073	4590677	outcrop	0.066	0.67
657129	11	748753	4595410	outcrop	0.062	1.83
657264	11	749250	4593447	float	0.055	0.20

TABLE 9-1 ASSAY HIGHLIGHTS FOR SURFACE SAMPLING West Kirkland Mining Inc. – TUG Project

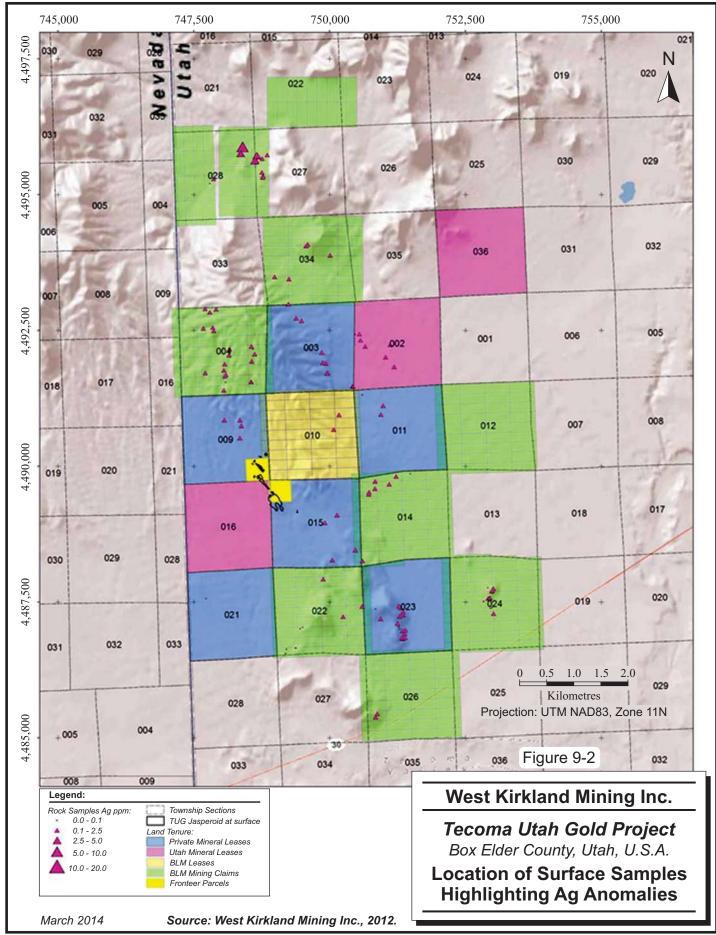


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### GEOPHYSICS

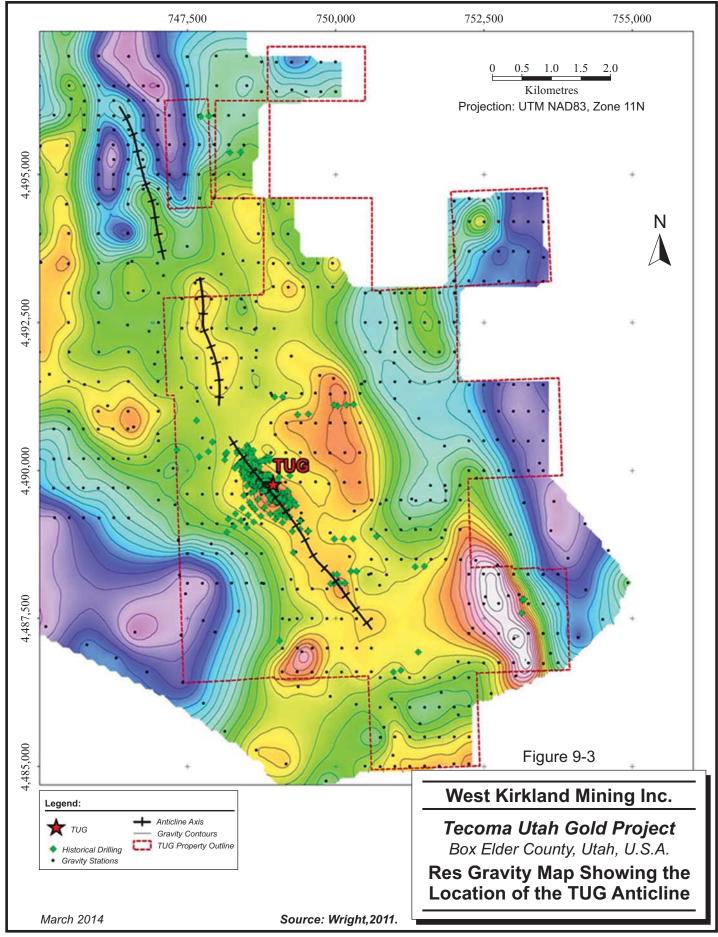
WKM has not completed geophysical surveys over the TUG Project area. Existing geophysical databases (i.e., Gravity, Magnetics, Radiometrics) for the TUG claims have been compiled and re-interpreted by Wright Geophysics. Gravity was the most effective geophysical tool for identifying the TUG anticline and possible extensions (Figure 9-3). Wright (2011) hypothesized a semi-continuous anticlinal structure between the TUG and KB deposits. WKM drilled one hole, WT11-006, into a gravity high within this structure. The hole did not reach the horizon that hosts mineralization of the TUG deposit and was terminated. No significant assays were returned.

## DRILLING

WKM drilling is discussed in more detail in Section 10, Drilling.



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## **10 DRILLING**

Thirteen diamond core holes were completed at TUG during the period May 20, 2011 to March 8, 2012. The WKM drill hole locations are listed in Table 10-1 and plotted on a plan map in Figure 10-1.

Hole ID	UTM X (NAD83)	UTM Y (NAD83)	Elevation (m)	Length (m)	Az (°)	Dip (°)	Year
WT11-001	748842.41	4589841.39	1594.31	304.19	244	-60.00	2011
WT11-002	748491.42	4590489.42	1629.66	298.09	235	-45.00	2011
WT11-003	748496.45	4590492.98	1629.95	190.50	55	-45.00	2011
WT11-004	748837.63	4589848.13	1595.17	245.95	320	-45.00	2011
WT11-005	749054.70	4589902.90	1601.97	551.84	235	-55.00	2011
WT11-006	748173.26	4591835.85	1735.66	397.76	235	-65.00	2011
WT11-007	748489.12	4590493.56	1629.82	339.85	257	-45.00	2011
WT12-008	748490.19	4590500.09	1630.49	363.78	310	-50.00	2012
WT12-009	748491.31	4590496.76	1630.23	294.43	275	-65.00	2012
WT12-010	748528.59	4590272.87	1617.82	406.60	160	-45.00	2012
WT12-011	748227.49	4590323.18	1618.64	233.78	40	-50.00	2012
WT12-012	748228.22	4590324.17	1618.59	191.11	40	-68.00	2012
WT12-013	748224.25	4590321.68	1618.67	204.83	125	-45.00	2012

#### TABLE 10-1 DRILL HOLE COLLAR LOCATION AND SURVEY INFORMATION FROM 2011 WKM DRILLING West Kirkland Mining Inc. – TUG Project

Core was transported from the drilling rig to an onsite core logging facility where it was logged and sampled by WKM geologists. WKM used a computerized database to control the logging parameters in order to achieve a consistency in the logging procedures. Samples were laid out by the geologist logging the core. As a general rule, samples were approximately 1.52 m (5 ft) while honouring geological contacts during the sampling process. Samples were split onsite using a rock saw. Water was used to cool the blade and was not recirculated. One half of the split core was put into a sealable bag and firmly closed. Individual samples were collected into larger (rice) bags, which were sealed and transported to the laboratory by WKM.

Table 10-2 summarizes the highlights from 2011-2012 drilling based on information provided by WKM. The sample lengths may not reflect true thicknesses because the mineralization has variable strike and dips locally and some of the drill holes are inclined. The best assays



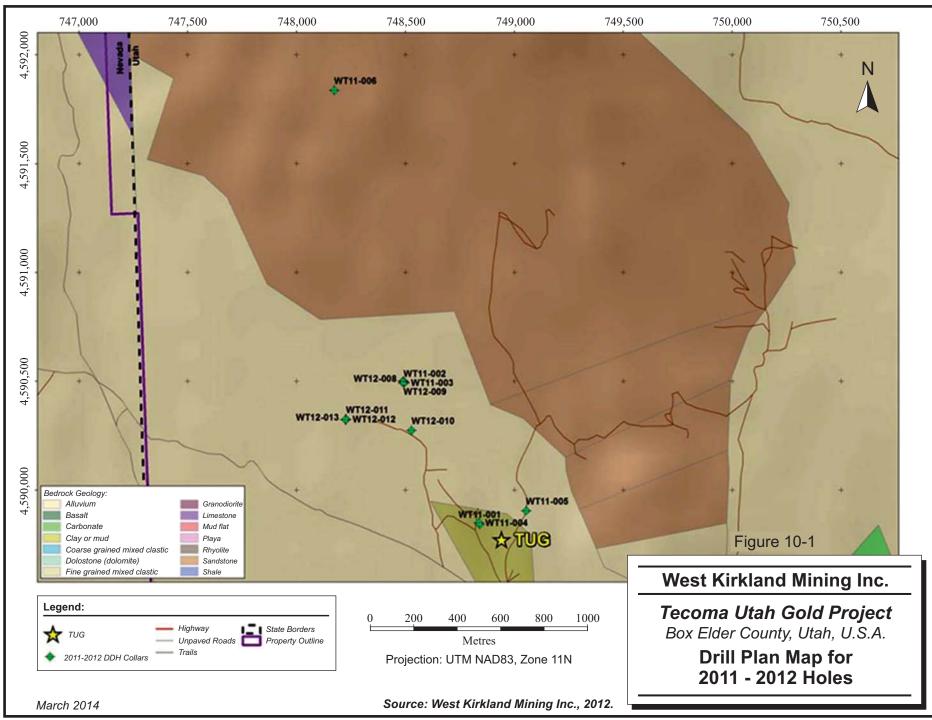
include 6.35 g/t Au and 214.4 g/t Ag over 3.2 m from WT11-001 and 4.72 g/t Au and 45.13 g/t Ag over 5.54 m from WT12-011.

Hole ID	From (m)	To (m)	Length (m)	Au (g/t)	Ag (g/t)
WT11-001	31.69	47.17	15.48	3.08	94.75
Incl.	39.32	42.52	3.20	6.35	214.40
WT11-002	165.81	213.50	47.4	1.04	24.65
Incl.	165.81	170.40	4.57	3.39	83.34
and	211.10	213.50	2.41	7.88	69.19
WT11-004	58.52	81.080	22.56	1.55	58.58
Incl.	60.05	61.15	1.10	6.45	82.00
and	69.19	72.24	3.05	3.37	72.45
WT11-007	193.55	240.80	47.24	0.52	18.17
Incl.	193.55	199.60	6.09	2.89	112.05
WT12-011	180.99	197.50	16.51	1.66	26.89
Incl.	180.99	186.50	5.54	4.72	45.13
WT12-012	148.59	157.60	8.99	1.18	200.73
Incl.	148.59	151.60	3.050	1.53	516.21
WT12-013	151.63	165.40	13.78	0.64	19.00

#### TABLE 10-2 ASSAY HIGHLIGHTS FROM WKM 2011-2012 DRILLING West Kirkland Mining Inc. – TUG Project

RPA has not identified any drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the drilling results.

The drill holes are shown in plan, sections, and 3D perspectives in Section 14.



RPA



## 11 SAMPLE PREPARATION, ANALYSES AND SECURITY

## SAMPLE SECURITY

The chain of custody of samples from the drill core to the core shack was performed by the drillers delivering the core to the locked core storage facility onsite until core could be logged and sampled by WKM geologists. Samples were placed in sealed bags, prior to shipping to ALS Minerals (part of ALS Global and ALS Chemex) Analytical Laboratory in Winnemucca or Elko, Nevada.

### PRE-WKM

Previous operators used conventional rotary drilling for exploration and development, although reverse circulation (RC) and diamond core drilling were used when necessary. Splits of drill core samples were collected for assay. Other sample methods included rock chip and channel sampling of front rock outcrops or trenches. These samples were generally taken for metallurgical testing.

Samples collected by Noranda during its exploration and development drilling programs were prepared and fire assayed for gold and silver by Skyline Labs Incorporated of Wheat Ridge, Colorado. The fire assay method used one assay-ton pulp sample. Quality control was maintained through the use of standards blanks and repeat assays. Independent laboratories such as Bondar Clegg Company Ltd., Barringer Resources Inc., Noranda Exploration Inc., and Lakeshore laboratory were employed for the repeat assays.

Samples collected by Western States Minerals Corporation during its exploration and development drilling program were assayed at a variety of analytical laboratories. These laboratories included Western States Minerals Corporation Elko laboratory, Monitor Geochemical laboratory of Elko Nevada, Intermountain Analytical Services of Pocatello Idaho, and Rocky Mountain Geochemical of Salt Lake City, Utah. Assay methods used by these laboratories included atomic absorption with one-half hour hot cyanide solution leach of pulp samples. Fire assay was performed on all samples submitted using one assay-ton pulp sample for both gold and silver. The assay database utilized the maximum assay value of



either the fire assay or the atomic absorption analysis. In the majority of cases, the fire assay was the value used.

Some of the historical samples were also sent to American Assay Laboratories.

### WKM

Drill core samples approximately 1.52 m (5 ft) long were split onsite using a rock saw. One half of the split core was put into a sealable bag and firmly closed. Individual samples were collected into larger (rice) bags, which were sealed and transported to the laboratory by WKM. WKM inserted both standards and blanks on a random but regular basis.

For the 2011-2012 drill program and for the check assays of historic holes, WKM used the ALS Minerals laboratory in either Elko or Winnemucca, Nevada, USA. ALS has developed and implemented at each of its locations a Quality Management System (QMS) designed to ensure the production of consistently reliable data. The system covers all laboratory activities and takes into consideration the requirements of ISO standards.

QMS operates under global and regional Quality Control (QC) teams responsible for the execution and monitoring of the Quality Assurance (QA) and Quality Control programs in each department, on a regular basis. The ALS laboratories are audited both internally and by outside parties ensuring that all key methods have standard operating procedures (SOPs) that are in place and being followed properly, and ensuring that quality control standards are producing consistent results. Most ALS laboratories are registered or are pending registration to ISO 9001:2008, and a number of analytical facilities have received ISO 17025 accreditations for specific laboratory procedures.

Gold was assayed using ALS's Au-ICP21 method; samples in excess of 1 g/t Au were assayed using Au-Gra21. WKM also assayed for trace elements and silver using the ME-MS61 method. Silver samples in excess of 100 g/t Ag were assayed using Ag-OG62. Mercury assays were collected using Hg-CV41. In hole WT12-009, 49 samples were assayed for gold using the Au-AA25 method.

Analytical methodology is described on the ALS website (<u>http://www.alsglobal.com</u>) and is summarized below.



#### AU-ICP21

A prepared sample is fused with a mixture of lead oxide, sodium carbonate, borax, silica and other reagents as required, inquarted (used with high silver contents) with 6 mg of gold-free silver, and then cupelled to yield a precious metal bead. The bead is digested in 0.5 mL dilute nitric acid in the microwave oven. Then 0.5 mL concentrated hydrochloric acid is added and the bead is further digested in the microwave at a lower power setting. The digested solution is cooled, diluted to a total volume of 4 mL with de-mineralized water, and analyzed by inductively coupled plasma atomic emission spectrometry (ICP-AES) against matrix-matched standards. The method lower detection limit is 0.001 g/t.

#### AU-GRA21

A prepared sample is fused with a mixture of lead oxide, sodium carbonate, borax, silica, and other reagents in order to produce a lead button. The lead button containing the precious metals is cupelled to remove the lead. The remaining gold and silver bead is parted in dilute nitric acid, annealed, and weighed as gold. Silver, if requested, is then determined by the difference in weights.

#### ME-MS61

A prepared sample (0.25 g) is digested with perchloric, nitric, hydrofluoric, and hydrochloric acids. The residue is topped up with dilute hydrochloric acid and analyzed by ICP-AES. Following this analysis, the results are reviewed for high concentrations of bismuth, mercury, molybdenum, silver, and tungsten and diluted accordingly. Samples meeting this criterion are then analyzed by inductively coupled plasma-mass spectrometry (ICP-MS). Results are corrected for spectral inter-element interferences. The method lower detection limit is 0.01 g/t.

#### HG-CV41

A prepared sample (0.50 g) is digested with aqua regia for 45 minutes in a graphite heating block. After cooling, the resulting solution is diluted to 12.5 mL with demineralized water and mixed. A portion of the sample is treated with stannous chloride to reduce the mercury, which is subsequently volatized by argon-purging and measured by atomic absorption spectrometry.

#### AU-AA25

A prepared sample is fused with a mixture of lead oxide, sodium carbonate, borax, silica, and other reagents as required, inquarted with 6 mg of gold-free silver, and then cupelled to yield a precious metal bead. The bead is digested in 0.5 mL dilute nitric acid in the microwave oven, then 0.5 mL concentrated hydrochloric acid is added and the bead is further digested in the



microwave at a lower power setting. The digested solution is cooled, diluted to a total volume of 10 mL with de-mineralized water, and analyzed by atomic absorption spectroscopy against matrix-matched standards.

The quality assurance/quality control (QA/QC) procedures and results are discussed in Section 12.

In RPA's opinion, the sample preparation, analysis, and security are appropriate for use in Mineral Resource estimation.



## **12 DATA VERIFICATION**

Extensive database compilation and verification work was done by WKM and a significant amount of database validation work was completed by Caracle Creek International Consulting Inc. (CCIC) as part of the previous resource estimate work and technical report by CCIC (Selway et al., 2012).

#### COLLAR COORDINATES AND DOWNHOLE SURVEY DATA

The collar and survey certificates used a local grid and feet for units, whereas the drill database used UTM coordinates and metres for units. The conversion of coordinate systems was checked and units were correct. Few discrepancies were found and all issues related to the collar checks were resolved by CCIC and WKM.

#### LITHOLOGY DATA

WKM entered lithology information in the database by hand based on the historical and current log information. Two holes have no lithology information entered in the database: WT079 and WT080.

#### ASSAYS

WKM scanned all TUG historical (1981 to 1997) assay certificates information and a comprehensive database was built. Since 2011, WKM has received the analytical data from ALS Chemex laboratory electronically as .csv or .xls files and the final certificates as pdf-type files. The transfer of the assay data to the main database is done digitally.

RPA checked 7.9% of the gold and silver in the 1981 to 2012 drill holes against the scanned certificate copies and found no significant errors.



Year	Number of assays	RPA Checks	% Checked	Errors found
1981	277	55	19.9	0
1982	1,473	103	7.0	0
1983	904	88	9.7	0
1984	2,483	278	11.2	0
1985	3,810	444	11.7	1
1987	302	30	9.9	0
1988	691	38	5.5	0
1989	380	75	19.7	2
1991	162	26	16.0	0
1992	1,500	74	4.9	0
1993	2,568	102	4.0	0
1994	395	20	5.1	0
1997	2,960	186	6.3	0
2011	1,493	70	4.7	0
2012	1,428	59	4.1	0
Total	20,826	1,648	7.9	3 (0.2%)

## TABLE 12-1 RPA ASSAY VALIDATION CHECKS West Kirkland Mining Inc. – TUG Project

Previously, Selway et al. (2012) used the assay certificates to verify every tenth gold and silver assays in the database, the ten highest gold assays and the ten highest silver assays. Selway et al. (2012) did not find any significant errors with the assay data in the Gemcom database.

### QUALITY ASSURANCE AND QUALITY CONTROL

Quality assurance (QA) consists of evidence to demonstrate that the assay data has precision and accuracy within generally accepted limits for the sampling and analytical method(s) used in order to have confidence in the resource estimation. Quality control (QC) consists of procedures used to ensure that an adequate level of quality is maintained in the process of sampling, preparing and assaying the exploration drilling samples. In general, QA/QC programs are designed to prevent or detect contamination and allow analytical precision and accuracy to be quantified. In addition, a QA/QC program can disclose the overall sampling – assaying variability of the sampling method itself.

Accuracy is assessed by a review of assays of certified reference material (CRM) standards, and by check assaying at outside accredited laboratories. Assay precision is assessed by reprocessing duplicate samples from each stage of the analytical process from the primary

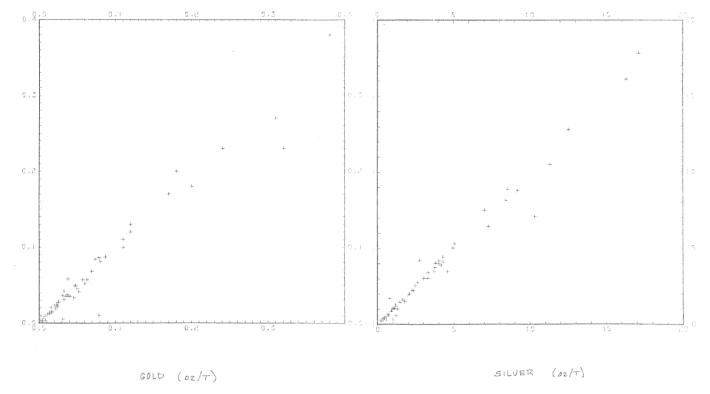


stage of sample splitting, through sample preparation stages of crushing/splitting, pulverizing/splitting, and assaying.

#### HISTORICAL DATASET

For historical assays (1981 to 1997), QA/QC was maintained through the use of duplicates, standards, blanks, and repeat assays as well as independent laboratories checks. Figure 12-1 shows a historical example of quality control checks carried out on pulp duplicate pairs during the 1983 drilling program. The results for gold and silver are reasonable for this type of deposit.





#### WKM 2011-2012 DATA

QA/QC was completed by the submission of external blanks, plus the inclusion of duplicate samples on a random but regular basis.

WKM used two certified standards as well as blanks and duplicates as part of its internal QA/QC process. The insertion sequence for control samples into the sample stream is outlined in Table 12-2.



# TABLE 12-2 QC SAMPLE INSERTION SEQUENCE FOR 2011-2012 DRILL PROGRAM West Kirkland Mining Inc. – TUG Project

No.	Type of Control Sample
12	Blank
18	Standard, high grade
24	Duplicate of previous sample
38	Duplicate of Previous sample
42	Blank
52	Standard, low grade
67	Blank
70	Duplicate of previous sample
91	Standard, high grade
94	Standard, low grade

#### BLANKS

The regular submission of blank material is used to assess contamination during sample preparation and to identify sample numbering errors.

A total of 93 blank samples were inserted into the sample stream for the 2011-2012 drill program and analyzed for gold and Ag (Figure 12-2). The blank was Vigoro white marble chips purchased from the local hardware store. A marble blank was chosen over a quartz blank to match the matrix of the drill core. An assay was considered a failure if the result was higher than ten times the detection limit of the method of analysis.

Ninety of the external blanks were analyzed for gold using 30 g aliquot fire assays with an ICP finish, one blank was re-assayed by fire assay with an ICP finish, and two blanks were analyzed for gold using fire assay with an AAS finish. Only one blank sample (L455865) from WT11-007 failed with 0.057 g/t Au. This sample was close to high grade gold and silver mineralization and it also failed for Ag, so the failure was likely due to sample contamination during sample preparation. WKM's internal QA/QC review identified the failed blank. The failed sample was re-assayed and produced a better result of 0.011 g/t Au, which is a minor failure.

All of the blanks were analyzed for silver using four acid digestion and ICP finish. Of the 93 blanks, seven were failures (8%) with results in the 0.1 g/t Ag to 0.4 g/t Ag range. The high rate of failures suggests that the marble might contain trace amounts of silver and/or there is

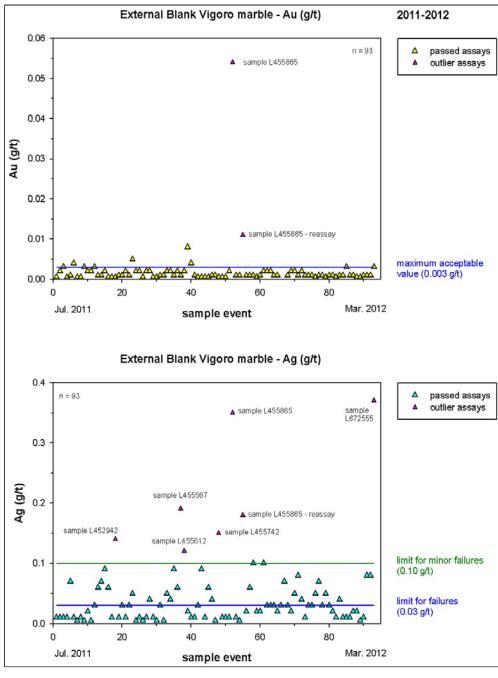


minor contamination during sample preparation in the laboratory. Sample L455865 from WT11-007 contained 0.35 g/t Ag. This sample was close to high grade gold and silver mineralization and it also failed for gold, so the failure was due likely to sample contamination during sample preparation. WKM's internal QA/QC review identified the failed blank. The failed sample was re-assayed and produced a result of 0.018 g/t Ag, which is better, but still a failure.

The impact of these blank failures is considered to be of no consequence due to the low grades reported, but they indicate that a minor sample contamination problem may exist. In RPA's opinion, the results of the blanks are within acceptable limits and the data can be used for resource estimation purposes.



#### FIGURE 12-2 EXTERNAL BLANKS - 2011-2012 PROGRAM - AU AND AG



From CCIC (2012)

#### DRILL CORE DUPLICATES

Drill core or field duplicates help assess the natural local-scale grade variance or nugget effect and are also useful for detecting sample numbering mix-ups. The field duplicates help monitor the grade variability as a function of both sample homogeneity and laboratory error.



The Thompson-Howarth (T-H) precision plot can be used to compare results for the three duplicate types (field duplicates, reject duplicates, and pulp duplicates). The field duplicates are expected to have the lowest precision, followed by the coarse reject duplicates. The pulp duplicates are expected to have the best precision as they are the finest grain size and are the most homogenized.

RPA received the gold results from 69 field duplicate pairs and 97 pulp duplicate pairs and for silver results from 70 field duplicates and 72 pulp duplicates. Figures 12-3 and 12-4 illustrate the results of the duplicate pairs for gold and Figures 12-6 and 12-7 illustrate the results of the duplicate pairs for silver. Outliers exist in the dataset for silver. Statistics for the duplicates were calculated after removal of outliers and the results are shown in Tables 12-3 and 12-4 for gold and silver, respectively.

For gold, the precision for field duplicates is approximately 6% at 1 g/t Au and the precision for the pulp duplicates is approximately 4% at 1 g/t Au (Figure 12-5). For silver, the precision for field duplicates is approximately 13% at 1 g/t Ag and the precision for the pulp duplicates is approximately 8% at 1 g/t Ag (Figure 12-8).

The sample duplicates for gold have good correlation coefficients for gold and the relative standard deviations (RSDs) range from 11% for field duplicates and 7% for pulp duplicates, which is very good for gold mineralization. For silver, the sample duplicates have good correlation coefficients and the relative standard deviations (RSDs) range from 9% for field duplicates and 7% for pulp duplicates.

In RPA's opinion, the duplicate results indicate that the sampling and analytical procedures for gold and silver have very good precision and results are well within acceptable limits.



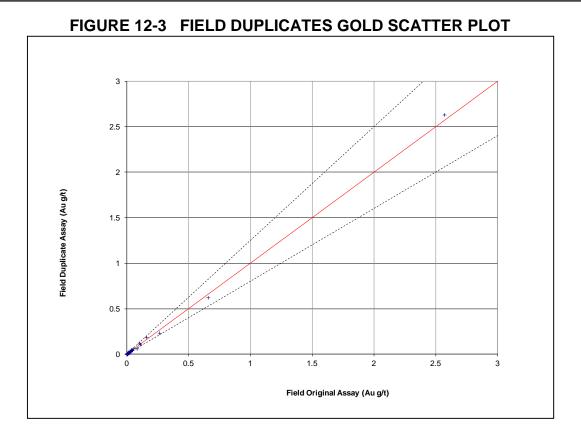
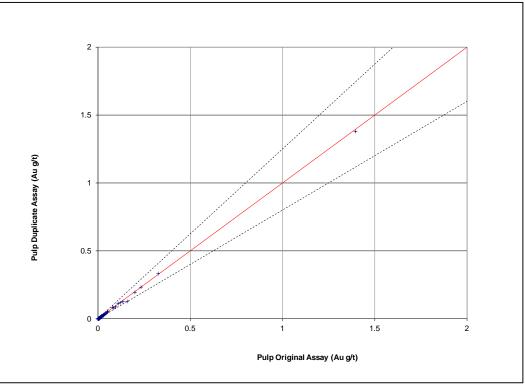


FIGURE 12-4 PULP DUPLICATES GOLD SCATTER PLOT

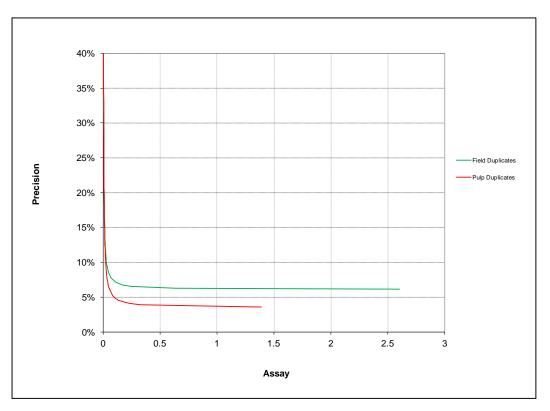




# TABLE 12-3 SUMMARY STATISTICS FOR GOLD DUPLICATES West Kirkland Mining Inc. – TUG Project

	F	ield	Р	ulp
Statistical Measurement	Original	Duplicate	Original	Duplicate
Number of Samples > DL (N)	69	69	97	97
Number of outliers removed	0	0	0	0
Mean Assay	0.07	0.07	0.04	0.04
Maximum Assay	2.57	2.63	1.40	1.38
Minimum Assay	0.00	0.00	0.00	0.00
Median Assay	0.01	0.01	0.01	0.01
Variance	0.10	0.10	0.02	0.02
Standard Deviation	0.32	0.32	0.15	0.15
Coefficient of Variation	4.64	4.69	3.53	3.52
Correlation Coefficient	1.000		1.000	
RSD	1	1%	7	%
% Difference Between Means	-0	.8%	0.	8%

### FIGURE 12-5 PRECISION CURVES FOR GOLD DUPLICATES





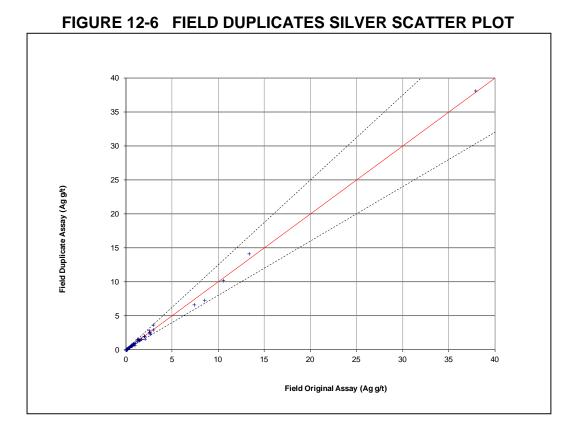
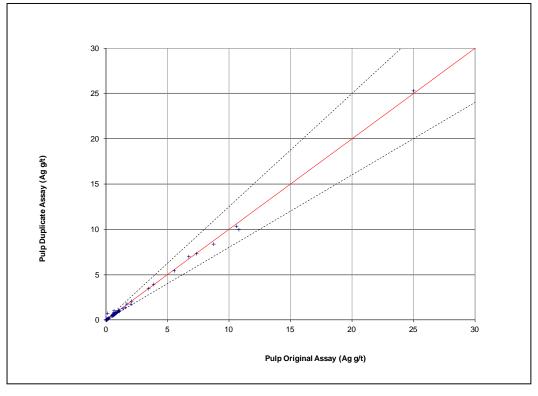


FIGURE 12-7 PULP DUPLICATES SILVER SCATTER PLOT

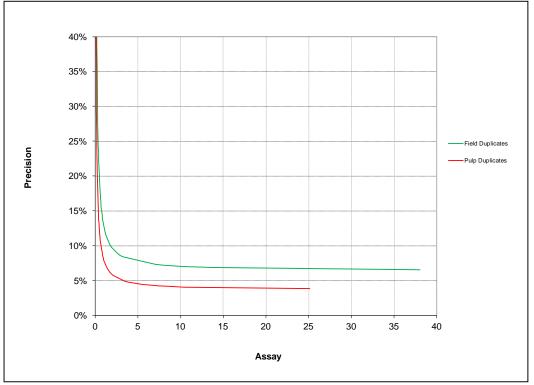




# TABLE 12-4 SUMMARY STATISTICS FOR SILVER DUPLICATES West Kirkland Mining Inc. – TUG Project

	F	ield	P	ulp
Statistical Measurement	Original	Duplicate	Original	Duplicate
Number of Samples > DL (N)	70	70	69	69
Number of outliers removed	0	0	3	3
Mean Assay	1.91	1.90	1.68	1.68
Maximum Assay	37.90	38.10	25.00	25.30
Minimum Assay	0.01	0.01	0.01	0.01
Median Assay	0.71	0.69	0.64	0.68
Variance	24.50	24.59	13.62	13.49
Standard Deviation	4.95	4.96	3.69	3.67
Coefficient of Variation	2.59	2.61	2.20	2.19
Correlation Coefficient	0.	999	0.999	
RSD	ę	9%	7	%
% Difference Between Means	0.	5%	0.	3%

### FIGURE 12-8 PRECISION CURVES FOR SILVER DUPLICATES





### CERTIFIED REFERENCE MATERIAL (STANDARDS)

Results of the regular submission of CRM are used to monitor analytical accuracy and to identify potential problems with specific batches.

External standards were purchased from CDN Resource Laboratories, and selected to be a "matrix match" to the TUG deposit. Two samples were prepared using examples of ore from Barrick Gold Corporation's Bald Mountain Mine, and are from breccias near the contact between Mississippian Pilot Shale and Devonian Guilmette Formation. CDN-GS-P2 and CDN-GS-2G are the two external standards inserted in the sample stream. Their certified values and standard deviation are given in Table 12-5.

## TABLE 12-5 CERTIFIED VALUES FOR EXTERNAL QC STANDARDS FOR AU West Kirkland Mining Inc. – TUG Project

CRM	Element	Units	Certified Value	1 Standard Deviation
CDN-GS-P2	Au	ppm	0.214	0.010
CDN-GS-2G	Au	ppm	2.26	0.095

Due to lack of external QC samples for silver, ALS internal standards were checked for silver. The certified values and standard deviation for ALS internal standards are listed in Table 12-6.

## TABLE 12-6 CERTIFIED VALUES FOR ALS INTERNAL CRMS FOR AG West Kirkland Mining Inc. – TUG Project

CRM	Element	Units	Certified Value	1 SD
GEOMS-03	Ag	ppm	0.70	0.05
GBM908-10	Ag	ppm	3.00	0.40
MRGeo08	Ag	ppm	4.63	0.29
GBM908-5	Ag	ppm	57.80	5.40

In RPA's opinion, the CRMs cover a reasonable range of grades with respect to the overall resource grade.

Specific pass/fail criteria are determined from the standard deviations provided for each CRM. The conventional approach for setting standard acceptance limits is to use the mean assay  $\pm$  2 standard deviations as a warning limit and  $\pm$  3 standard deviations as a failure limit. Results falling outside of the  $\pm$  3 standard deviation failure limit must be investigated to determine the



source of the erratic result, either analytical or clerical. The CRM results are discussed individually below.

#### CDN-GS-P2

A total of 44 external low grade gold standards were inserted into the sample stream for the 2011-2012 drill program (Figure 12-9). The gold was analyzed using 30 g fire assay with an ICP finish. Only one of the gold analyses of this standard failed (L453352, hole WWT11-005). The gold values show a fairly even distribution about the mean indicating no analytical bias.

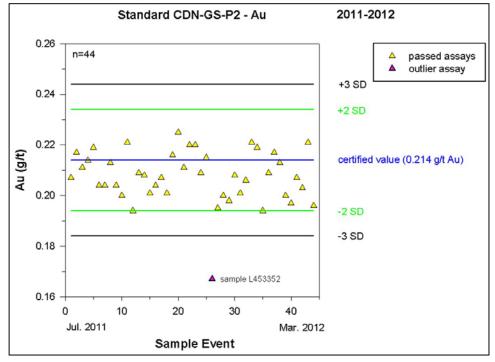


FIGURE 12-9 CRM CDN-GS-P2 – GOLD

### CDN-GS-2G

A total of 49 (Figure 12-10) external high-grade gold standards were inserted into the sample stream for the 2011-2012 drill program. The gold was analyzed using 30 g fire assay with an ICP finish, which the gold values are all within three standard deviations of the CRM mean. The gold values show a fairly even distribution about the mean indicating no analytical bias.

From CCIC (2012)



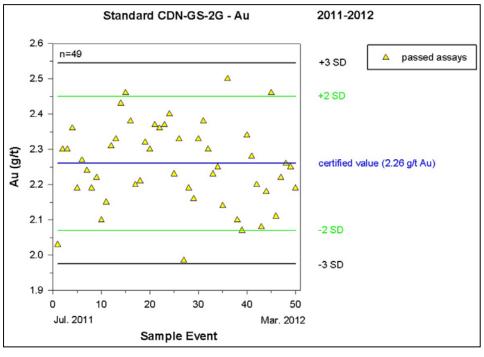


FIGURE 12-10 CRM CDN-GS-2G - GOLD

#### LABORATORY INTERNAL CRMS

ALS' internal blanks and standards were checked for silver due to the lack of external silver standards in the sample stream for the 2011-2012 drill program.

ALS use analytical blanks, which are reagents, used in digestion and calibration blanks that are a blank solution. The calibration blanks are not reported. A QC review of the 128 analyses of analytical blanks for silver by 4-acid ICP indicates that they all passed. All of the 31 analysis of the analytical blank for gold by gravimetry passed. A total of 84 analysis of the analytical blank for gold by gravimetry passed. A total of 84 analysis failed (1 % failure rate) from job WN11096782. This failed blank for gold was flagged by ALS system and a comment was made that it was contaminated by surrounding high-grade gold samples. The affected samples were sent for re-assay following the required ALS protocol. The re-assay result for the drill core is what was reported in the assay certificate, not the original result. Thus ALS followed protocol and reported the corrected assay results. All of the analyses of the analytical blank failed for gold by fire assay failed; which indicates that contamination is not a problem at ALS.

From CCIC (2012)



ALS used GBM908-10, GBM908-5, GEOMS-3 and MRGeo08 as external standards for Ag. ALS set the pass/fail limits based on precision and detection limits of the analytical method. All of the silver analyses for GBM908-10 (n=73), GBM908-5 (n=47) and MRGeo08 (n=73) passed. Only one analysis out of the total of 50 analyses of GEOMS-03 failed (2 % failure rate). The failed internal GEOMS-03 was in job WN11119141. The fact that three of the internal standards had no failures for silver and one internal standard had only one failure indicates that the silver assays are accurate.

QA/QC checking on laboratory internal data is not the most effective way to analyse precisions as, it is a requirement under ISO17025, that all the internal standards be checked/repeated and followed-up in a failure event before the final assay result is reported. RPA recommends purchasing silver CRMs and insert them on a regular basis in the future.

In summary, the 2011-2012 WKM samples show very good precision levels for both gold and silver and the gold and silver assays are accurate with no significant bias evident. Overall, RPA is of the opinion that the assay results are reliable and acceptable to support the current resource estimate.

### **CHECK ASSAYS ON HISTORIC CORE**

In order to verify historic assay results from previous exploration on the TUG property, a program to re-analyze a subset of the historic samples was undertaken. This program consisted of selecting a set of 866 sample pulps from the historic drilling and submitting them to ALS Minerals for analysis. The samples were selected to be analyzed for gold and silver to test for reproducibility of historic analytical results. Samples were selected from 27 drill holes covering a representative area of the historic drilling.

These samples were submitted following a standard QA protocol. This involved submitting a set of standard, blank and duplicate samples at random intervals into the sample stream. CCIC (2012) report discusses in detail the results of control sample data included in the check assay program. In summary, the results of the standards, blanks and duplicates were good and there were no noteworthy discrepancies. The internal laboratory duplicates was examined in order to ensure that the analytical results were repeatable and accurate. Only minor inconsistencies were noted.

RPA received the re-assay results for 866 samples for gold and silver.



#### GOLD

Overall the gold assays show good correlation coefficient of 0.964. The data was separated into two grade ranges: Au>=0.3 g/t shown on left in Figures 12-11 and 12-12 and; Au <0.3 g/t shown on right in Figures 12-11 and 12-12. Overall, the pulp re-assays showed reasonable repeatability and variance (note different colors means results from different laboratories).

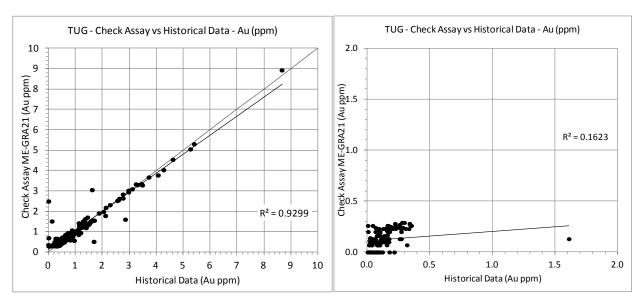


FIGURE 12-11 CHECK ASSAYS SCATTER PLOTS – GOLD

FIGURE 12-12 CHECK ASSAY VARIANCE PLOTS – GOLD

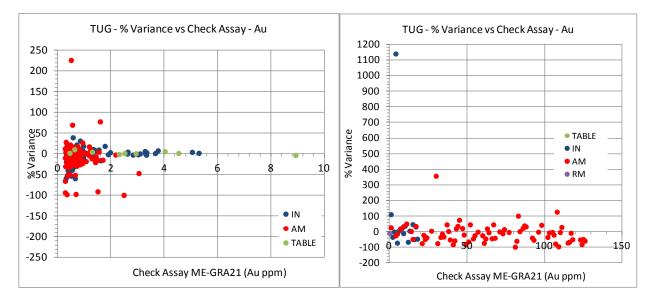
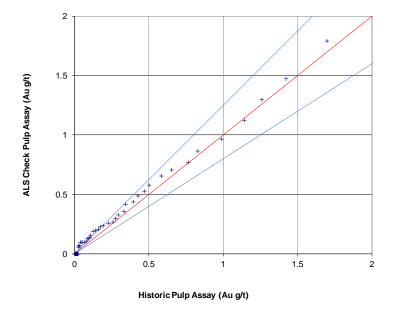




Figure 12-13 shows a Q-Q plot for all gold values below 2 g/t. In general, the gold check assay values at ALS are approximately 5% to 10% higher than the historic assays. The difference is more pronounced in the lower grades.



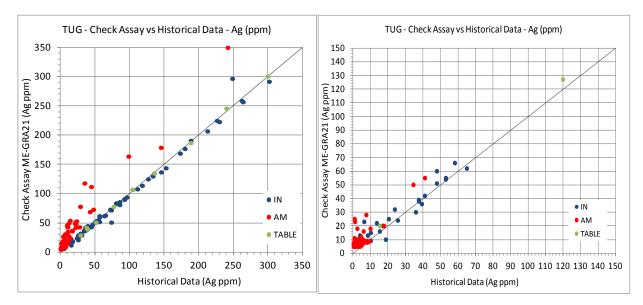


#### SILVER

In general, the silver assays show a good correlation coefficient of 0.973. The data was separated into the same two grade ranges as for gold: Au >= 0.3 g/t shown on left in Figures 12-14 and 12-15 and; Au < 0.3 g/t shown on right in Figures 12-14 and 12-15. The difference in colors means results from different laboratories. Very poor repeatability is seen in the results from the American Assay Laboratories (red dots) where a great range on the variances exists. For the other laboratories the results were within acceptable ranges.







### FIGURE 12-15 CHECK ASSAY VARIANCE PLOTS – SILVER

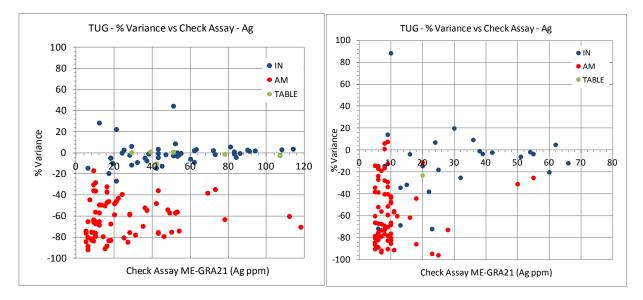
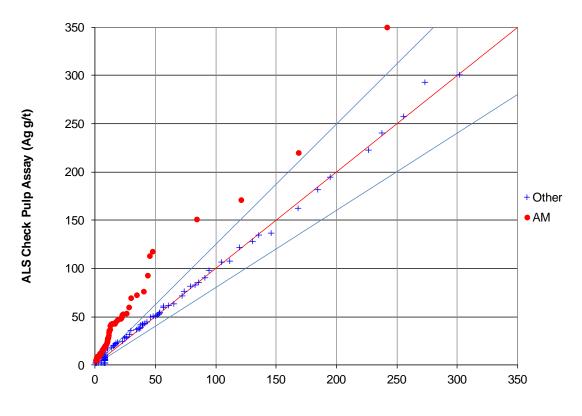


Figure 12-16 shows a Q-Q plot for silver values related to the group of gold values greater than 0.3 g/t. The red dots are assays corresponding to the American Assay Laboratories results and the check values are much higher than the historic assays from this laboratory. The blue crosses are assays from the other laboratories and the results are acceptable ranges.

The American Assay results for silver clearly have a significant negative bias. Overall, the ALS silver assays average approximately twice those from American Assay.



FIGURE 12-16 CHECK ASSAY Q-Q PLOT – SILVER



Historic Pulp Assay (Ag g/t)

RPA investigated the impact of this bias on the overall resource estimate and concludes that the resource silver grade could be understated by approximately 10%. This represents an excellent opportunity to enhance the resource silver grade and there is potential to increase the gold equivalent grade by approximately 0.05 g/t. There are 3,731 resource assays corresponding to the samples situated in the resource wireframes. Some 770 resource assays, or approximately 21%, have results from American Assay, including 132 samples that were re-assayed recently at ALS. This leaves 638 resource samples that could be sent for re-assaying at ALS. Assuming that the ALS silver re-assays are approximately 10% higher there is potential to increase the resource silver grade by approximately 10% and the resource gold grade by one or two percent. RPA recommends that WKM re-assay the pulps for these 638 samples.

RPA compared the results of the check sampling with the historic analytical results and is of the opinion that the historic data may be included in the resource estimation.



### TWINNED HOLE PROGRAM

In early 2013, six metallurgical diamond drill holes were drilled by WKM. These holes were collared immediately next to historical RC drill holes. RPA has used these six holes and a seventh twin hole drilled by WKM in 2011 to examine the accuracy of the historical drilling data. The seven twin hole locations are well distributed spatially throughout the deposit and were chosen based on location, grade, and lithology. The core from six of the seven twinned holes is also being used for metallurgical testing.

The six PQ sized (83 mm) metallurgical program diamond drill holes are all located within six metres of historical collars. The twinned hole locations were spotted using a handheld GPS and then surveyed once drilling had been completed. All twin drill holes were logged in detail and sampled for Au and Ag. The comparison focused on the interpreted mineralized zone with particular consideration for lithology, thickness and grade.

Compilation of the seven twinned holes indicates that the gold grades average significantly higher in the diamond drill holes relative to the historic RC holes. However, three of the seven duplicate drill holes reported disparate intersection widths from the historic holes or a material offset in the down hole position of the mineralized zone between the pairs. Removing these three holes from the comparison indicates the gold grades average slightly lower in the diamond drill holes relative to the historic RC holes.

Overall, RPA is of the opinion that the four twinned holes selected by RPA confirm that the historical gold and silver results are reliable with the exception of the American Laboratories silver results as previously discussed. Nevertheless, the results are very sensitive to which pairs of holes are included. It is important that the planned twin hole collar locations are surveyed beforehand to help ensure that they are drilled within one metre or so from the historical RC collars. RPA recommends drilling some more twinned holes to further investigate if the historical RC grades are biased.

It is RPA's opinion that the drill hole data is acceptable to support the resource estimate.



## 13 MINERAL PROCESSING AND METALLURGICAL TESTING

### METALLURGICAL TESTING

A large amount of metallurgical testing was done for the TUG Project by Noranda and WSMC, starting as early as 1983. Many of the test reports are available for review. The preponderance of work was done using bottle roll cyanide leach tests (BRT) and RC chips, which are indicative of mineralization's amenability to cyanide leaching. The results, however, are not generally effective at estimating the results that will be experienced in a heap leaching operation. In this case, there is limited information about the source of samples that were used for the testing, as well. A summary of the data is provided in Table 13-1.

For the current study, which contemplates a heap leach operation, the most indicative data is contained in three metallurgical test reports. In 1984, Kappes Cassiday & Associates (KCA) conducted cyanide leach tests on core samples for Noranda (KCA, 1984). In 1989, McClelland Laboratories, Inc. (MLI) conducted heap leach cyanidation test work on a bulk mineralized composite for WSMC (MLI, 1987), and in 1992, KCA conducted metallurgical test work on a sample that was crushed with a Barmac crusher by REMCO (KCA, 1992).

### **KAPPES, CASSIDAY & ASSOCIATES – 1984**

KCA testing in 1984 was conducted on drill core, rotary drill hole cuttings, and core rejects from Lakefield Research. Three core composites were made up using core samples that were supplemented by cuttings from rotary drill holes for the siliceous sample since there was not a sufficient quantity of drill core to complete the column leach tests. Three additional composites were made up using core rejects from the Lakefield Research testing program. Data from the column leach tests is summarized in Table 13-2.



TABLE 13-1 SUMMARY OF METALLURGICAL TEST DATA West Kirkland Mining Inc. – TUG Project

Owner/Sponsor	Date	Laboratory	Sample	Head Grade	Grade	Geological Units	Particle Size	Columr		Bottle Ro	Bottle Roll Tests Agitated Leach	Agitated I	.each	t Lea		ket Le		Zinc
			Source	Au g/t	Ag g/t			Au	Ag	٩u	Ag	Au	Ag	Au	Ag	Au	Ag Au	u Ag
Noranda	1 083-06-1 3	KCA	RC chine			4	3/8"	56%	33%									
						r	"medium grind"					82%	58%					
				1	-					71%	40%							
Noranda ?	1984-11-14	1984-11-14 Lakefield	RC chips	1.7	31 - 65	jasperoid, dolostone, shale	85 - 96% -400#			%06	66%							
Noranda	1 984-07-11 KC.A	KCA	RC chips &				3/8"	52%	15%									
	11-10-1001		Core				6# (~1/8")	56%	22%									
WSMC	1984-09-14	Hazen	RC chips				80% -200#					76%	35%	81% 3	36%			
WSMC	1985-03-20	Hazen	cf 1-25416 -	2.2	110.1	Central area of resource	-400#						50%					
		Skyline								×	×							
CINOIN	1010 10 1001	Chulino		5	1 03	composite of dolostone,	4 / A !!			100/	/000							
2 MICVV	1.96/-04-24 SKyIINE	Skyllne		0.1	00.7	jasperoid, shale	1/4			49%	72%							
				0.0	0.0	Dolomite	1/4"			40%	33%							
WSMC	1987-03-11	Skyline		0.0	0.0	Jasperoid	1/4"			53%	34%							
				0.0	0.0	Shale				%09	20%							
WSMC	1987-12-16	Skyline		0.0	0.0		3/4"			36%	5%					31% (	6%	
WSMC	1988-08-12	McClelland																
WSMC	1988-12-12	McClelland															×	××
WSMC	1989-07-10	McClelland					1/2"	49%	8%									
WSMC	1990-03-26 Hazen	Hazen	RC chips			composite of dolostone,				41%								
						Jasperoid, siltstone	HOOF /0001			////	100/							
CTAOLA1		101	Coarse rock,	0			#001- %.001			03%	40%							
	1992-10-12 KUA	KCA	mainly quartz	0.0	0.0	or aolostone, jasperola, siltstone	1/4"	52%	12%									

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Sample	КСА		Extraction, %			
Description	Sample	Size	Gold	Silver	NaCN, lb/t	Lime, lb/t
Noranda Core:						
Siliceous (65%)	4038	- <sup>3</sup> /8 in	46.6	15.1	15.47	3.31
Dolomite (25%)	4022	- <sup>3</sup> /8 in	52.3	28.6	14.75	3.28
Shale (10%)	4037	- <sup>3</sup> /8 in	57.6	2.0	13.75	2.80
Weighted Average			49.1	17.2		
Noranda Core:						
Siliceous (65%)	4038	0.132 in	50.6	23.4	14.87	5.23
Dolomite (25%)	4022	0.132 in	57.4	32.9	15.86	5.28
Shale (10%)	4037	0.132 in	59.5	2.0	14.04	5.45
Weighted Average			53.2	23.6		
Lakefield Rejects:						
Siliceous (65%)	4003	0.132 in	47.8	31.8	12.56	5.11
Dolomite (25%)	4004	0.132 in	62.7	36.7	12.84	5.28
Shale (10%)	4005	0.132 in	55.0	4.7	8.30	5.23
Weighted Average			52.2	30.3		

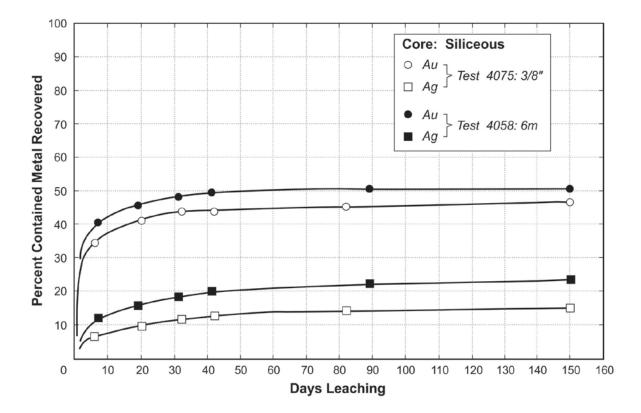
## TABLE 13-2 SUMMARY OF 1984 KCA COLUMN LEACH TESTS West Kirkland Mining Inc. – TUG Project

The leach curves for the siliceous sample are shown in Figure 13-1. The leach curves show that the extraction is dependent upon the particle size and the majority of the leaching is completed after 40 days.

KCA also conducted preliminary agglomeration tests. They concluded that agglomeration was needed to prevent fines migration and to assure proper contact between the leaching solution and the sample material in the columns. All samples were agglomerated with a combination of hydrated lime and Portland cement.



### FIGURE 13-1 COLUMN LEACH EXTRACTION CURVE FOR THE SILICEOUS MINERALIZED MATERIAL SAMPLE TESTED BY KCA IN 1984





### **MCCLELLAND LABORATORIES, INC. – 1989**

A bulk mineralized material composite sample was used to conduct a column leach test at a particle size of 80% passing ½ in. The sample was composited from three bulk mineralized material samples designated "TUG A", "TUG B", and "TUG C". Preliminary BRTs were conducted to estimate the amount of lime needed. The results are shown in Table 13-3.

#### TABLE 13-3 SUMMARY OF 1989 MLI COLUMN LEACH TESTS West Kirkland Mining Inc. – TUG Project

0:	Extrac	tion, %	h NaCN lb/t lime lb/t				
Size	Gold	Silver	NaCN, lb/t	Lime, lb/t			
80% -½ in	48.5	8.3	1.54	5.0			

The gold extraction rate for this test was rapid with 42.6% of the gold extracted in the first 15 days of leaching.

### KAPPES, CASSIDAY & ASSOCIATES – 1992

Coarse mineralized material samples were received from WSMC by KCA. The material was screened at one inch and ¼ in. The plus one inch material was crushed to 100% passing one inch and recombined with the minus one inch plus ¼ in. material and sent to California for crushing with a Barmac crusher. Upon receipt, KCA combined the crushed material with the minus ¼ in. material that had been screened out prior to shipment. Cyanide BRTs, agglomeration tests, and a column leach test were conducted. The sample used for the column leach test was agglomerated with 2 lb/t Portland cement and 1.0 g/L sodium cyanide solution. The material was leached for 34 days. The results of the test are summarized in Table 13-4.

## TABLE 13-4 SUMMARY OF 1992 KCA COLUMN LEACH TESTS West Kirkland Mining Inc. – TUG Project

Sino	Extrac	tion, %		lime lh/t
Size	Gold	Silver	NaCN, lb/t	Lime, lb/t
-¼ in	51.6	11.8	0.75	0.13

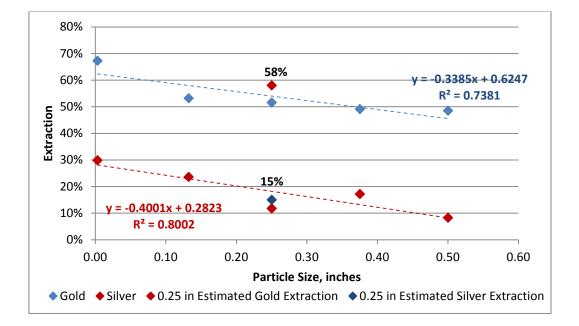
### SUMMARY

The results of the tests are difficult to interpret because the samples used for the MLI 1989 tests and the KCA 1992 tests were bulk samples that were not designated by material type



(e.g., siliceous, dolomite, or shale) in the metallurgical reports, however, it is clear that particle size plays a significant role in the gold extraction. Figure 13-2 shows a graphical representation of the gold and silver extraction as a function of particle size for the samples tested by KCA and MLI in the series of tests discussed.

Even though the samples were not consistent, the results show good correlations between particle size and both gold and silver extraction.



### FIGURE 13-2 EXTRACTION AS A FUNCTION OF PARTICLE SIZE

### WEST KIRKLAND MINING, INC. – 2012 DATA

In early 2013, WKM drilled six core holes to provide additional material for assay and metallurgical test work. From these holes, 94 interval samples were collected and submitted for chemical analysis of gold and silver. The assays were completed by fire assay (FA) and cyanide soluble (AA) gold and silver analysis. The ratio of the cyanide soluble gold (AA) to FA gold is an estimate of the maximum gold recovery that can be expected from cyanide leaching. It is commonly called the AA/FA ratio in Nevada. The data was sorted and samples with a gold grade equivalent grade of less than 0.24 g/t were removed from the data set and the weighted average of the AA/FA ratios was calculated in order to compensate for the varied sample sizes. The weighted average of the data was 66.4% gold extraction and 31.1% silver



extraction, which compares favourably to the mean extractions of 67.3% for gold and 29.9% for silver. Table 13-5 presents the data.

				0	•		
Sample	Weight, kg	Au FA, ppm	Au AA, ppm	Ag AA, ppm	Ag FA, ppm	Au AA/FA	Ag AA/FA
987012	10.13	0.27	0.21	0.31	3.9	77.8%	7.9%
987013	15.18	0.15	0.12	1.26	14.65	80.0%	8.6%
987014	9.25	0.861	0.69	4.83	50.2	80.1%	9.6%
987015	10.83	0.968	0.85	8.63	45.6	87.8%	18.9%
987016	23.27	0.564	0.51	18.97	45.7	90.4%	41.5%
987018	10.09	0.959	0.84	8.66	40	87.6%	21.7%
987019	12.26	1.375	1.15	16.95	63	82.7%	26.9%
987020	14.12	2.55	1.95	23.58	>100	72.2%	16.2%
987021	17.00	1.51	1.03	17.01	>100	56.9%	10.3%
987022	21.50	0.666	0.54	5.67	50.1	81.1%	11.3%
987023	23.36	0.212	0.19	2.71	8.12	89.6%	33.4%
987025	25.74	0.075	0.06	2.7	10.7	80.0%	25.2%
987027	12.82	0.298	0.26	7.82	21.1	87.2%	37.1%
987049	7.38	0.082	0.05	1.66	42.6	61.0%	3.9%
987050	10.81	0.382	0.25	12.05	>100	65.4%	10.8%
987051	21.41	4.22	2.65	153.15	>100	58.0%	39.1%
987052	11.55	3.15	1.77	100.4	>100	55.5%	54.3%
987053	8.73	7.61	5.46	144.15	>100	72.2%	57.7%
987054	19.75	0.792	0.5	53.71	75.1	63.1%	71.5%
987056	22.27	0.628	0.37	44.87	63.9	58.9%	70.2%
987057	25.26	0.692	0.39	33.69	57.4	56.4%	58.7%
987058	14.23	0.355	0.13	15.96	45.4	36.6%	35.2%
987059	18.21	0.365	0.16	10.36	31.4	43.8%	33.0%
987060	21.88	3.29	2.42	55.45	84.6	70.6%	65.5%
987061	15.78	1.46	0.94	78.52	>100	66.2%	36.4%
987062	7.89	0.355	0.24	7.57	17.45	67.6%	43.4%
987063	9.57	0.106	0.08	7.89	34.3	75.5%	23.0%
987064	20.61	0.044	0.03	9.82	38.8	68.2%	25.3%
987065	20.53	0.009	<0.03	5.17	28.1	100.0%	18.4%
987066	22.02	0.011	<0.03	9.61	47.5	100.0%	20.2%
987068	19.22	0.022	<0.03	5.15	25.2	68.2%	20.4%
987069	21.10	0.052	<0.03	2.44	11.75	28.8%	20.8%
987076	6.54	2.26	1.52	21.14	89.5	67.6%	23.6%
987077	15.02	3.13	1.56	31.7	>100	47.4%	30.8%
987078	18.11	3	0.64	27.48	99.4	22.0%	27.6%
987079	8.26	3.15	2.63	19.62	83.1	84.0%	23.6%

#### TABLE 13-5 SUMMARY OF 2013 WKM ANALYTICAL DATA West Kirkland Mining Inc. – TUG Project



Sample	Weight, kg	Au FA, ppm	Au AA, ppm	Ag AA, ppm	Ag FA, ppm	Au AA/FA	Ag AA/FA
987081	17.90	0.153	0.12	2.81	7.02	78.4%	40.0%
987090	11.67	1.36	1.09	3.62	20.4	76.8%	17.7%
987091	18.40	0.40	0.18	3.97	24	45.0%	16.5%
987093	9.95	1.41	1.17	4.3	24.6	79.6%	17.5%
987094	7.15	1.175	0.99	3.24	31.5	76.7%	10.3%
987095	19.43	1.465	0.78	49.13	>100	51.0%	22.7%
987096	10.51	1.945	1.41	>350	>100	69.5%	74.2%
987097	13.47	0.733	0.50	62.87	>100	68.2%	37.2%
987098	18.59	0.986	0.62	66.22	>100	62.9%	24.2%
987101	19.43	0.018	<0.03	7.96	14.8	83.3%	53.8%
987102	21.45	0.006	<0.03	6.21	14.3	0.0%	43.4%
987103	23.43	0.008	<0.03	6.07	13.45	0.0%	45.1%
987104	18.33	0.007	<0.03	6.26	15.5	0.0%	40.4%
987105	6.41	0.070	<0.03	10.86	34.4	21.4%	31.6%
987106	17.89	0.055	<0.03	3.1	15.1	54.5%	20.5%
987107	23.97	0.037	<0.03	5.72	20.6	40.5%	27.8%
987109	20.05	0.148	0.09	3.2	10.75	60.8%	29.8%
987110	21.89	0.221	0.15	5.28	18.25	67.9%	28.9%
987111	22.51	0.196	0.13	3.99	15.25	66.3%	26.2%
987112	12.10	0.076	<0.03	3.74	19.9	19.7%	18.8%
987113	10.86	0.238	0.19	2.12	11.3	79.8%	18.8%
987114	9.13	0.235	0.18	3.25	15.05	76.6%	21.6%
987115	10.46	0.069	0.04	2.22	13.6	58.0%	16.3%
987142	14.94	2.38	2.21	1.95	11.1	90.2%	17.6%
987143	15.58	5.21	4.55	18.77	91.2	82.3%	20.6%
987144	22.03	8.79	7.42	32.45	>100	84.6%	26.6%
987145	19.65	7.3	5.77	55.1	>100	80.6%	38.0%
987146	19.56	0.72	0.53	7.29	22.2	73.6%	32.8%
987147	15.57	0.203	0.18	3.13	11.4	88.7%	27.5%
987152	14.17	0.124	0.11	2.19	10.2	88.7%	21.5%
987153	27.40	0.076	0.05	2.48	10.6	65.8%	23.4%
987154	18.11	0.122	0.11	2.56	19.9	90.2%	12.9%
987162	17.76	0.145	0.14	3.15	7.02	96.6%	44.9%
987163	12.70	0.579	0.48	6.92	19.25	82.9%	35.9%
987164	7.50	0.536	0.42	5.44	14.45	78.4%	37.6%
987165	14.42	0.403	0.32	5.7	14.35	79.4%	39.7%
987166	18.40	0.239	0.20	4.65	11.9	83.7%	39.1%
987175	19.37	0.236	0.22	21.43	56.5	93.2%	37.9%
987177	17.56	0.253	0.16	17.22	86	63.2%	20.0%
Average						67.3%	29.9%
Weighted A	Average					66.4%	31.1%

### **RECOVERY ESTIMATE**

The procedures from ALS indicated that the assayed samples were pulverized to approximately 85% minus 75 µm prior to analysis by FA and cyanide AA assays. In comparing the AA/FA ratio to the extractions estimated using the equations generated from the relationships shown in Figure 13-2, RPA estimated 58% gold extraction and 15% silver extraction for a crush size of ¼ in. No further adjustments were made to account for the amount of precious metal that will be recovered in the Merrill-Crowe plant.

RPA considers the assayed samples to be representative of the material that will be mined over the life of the mine.

Note that the 90% gold and 60% silver recoveries used for RPA's Mineral Resource estimate are based on assuming a conventional mill process, and not the heap leach recoveries used for the PEA. This estimate was based on some of the early bottle roll test data that showed gold extraction approaching 90% for some of the samples tested.



## **14 MINERAL RESOURCE ESTIMATE**

### SUMMARY

RPA updated the mineral resource estimate for the TUG deposit using drill hole data available as of April 2012. The previous Mineral Resource estimate was reported by Caracle Creek International Consulting Inc. (CCIC) in July 2012 and included an Inferred Resource of 27 million tonnes grading 0.49 g/t Au and 15.9 g/t Ag. There has been no more drilling at TUG since the date of the CCIC report except for six metallurgical drill holes completed in March 2013. The resource estimate does not include the assay results from the metallurgical holes.

RPA Mineral Resources are reported at a \$17/t net smelter return (NSR) cut-off value within a preliminary Whittle pit shell. Indicated Mineral Resources are estimated to total 4.85 Mt grading 0.84 g/t Au and 40.4 g/t Ag and contain 131,000 ounces of gold and 6.3 million ounces of silver. Inferred Mineral Resources are estimated to total 4.39 Mt grading 0.79 g/t Au and 30.3 g/t Ag and contain 111,000 ounces of gold and 4.3 million ounces of silver. The RPA resource estimate is significantly lower than CCIC's because it is constrained by a resource shell and there are a number of differences in the resource estimation approach.

Category/ Zone	Tonnes (Mt)	Gold (g/t)	Silver (g/t)	Gold (000 oz)	Silver (000 oz)
Total Measured	-	-	-	-	
Total Indicated	4.85	0.84	40.4	131	6,303
Total Measured and Indicated	4.85	0.84	40.4	131	6,303
Total Inferred	4.39	0.79	30.3	111	4,272

## TABLE 14-1 MINERAL RESOURCE ESTIMATE – APRIL 30, 2013 West Kirkland Mining Inc. – TUG Project

Notes:

- 1. CIM definitions were followed for classification of Mineral Resources.
- 2. Mineral Resources are estimated using a gold price of US\$1,700 per ounce and a silver price of US\$29 per ounce.
- 3. Gold and silver mill recovery factors of 90% and 60%, respectively, were used based on preliminary metallurgical test work.
- 4. High grade assays are capped at 10 g/t Au and 500 g/t Ag.
- 5. Tonnage factor for mineralization was 2.55 t/m<sup>3</sup>.
- 6. Resources are constrained by a Whittle shell and reported at a \$17/t NSR cut-off.
- 7. Totals may not represent the sum of the parts due to rounding.
- 8. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.



RPA is not aware of any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the current resource estimate.

### DATABASE

The drill hole database has 615 drill holes. Sixteen drill holes were drilled by WKM and 599 are historical. RPA received the drill hole database as a Gemcom project. The database includes 113 drill holes from the KB deposit.

The RPA Gemcom drill hole database tables and fields are listed in Table 14-2. The number of records in the drill hole database used by RPA for the resource estimation work are summarized in Table 14-3.

File	Variables	Description
Header	Hole-Id	
	Location[X]	East coordinate
	Location[Y]	North coordinate
	Location[Z]	Elevation coordinate
	Length (m)	
	Company	
	Year	(1981 to 2013)
	Area	(TUG or KB)
Survey	Hole-Id	
	Distance (m)	
	Azimuth	
	Dip	
Assay	Hole-Id	
	From (m)	
	To (m)	
	Length (m)	
	Sample-Id	
	Au (g/t)	
	Ag (g/t)	
	Au_Cap (g/t)	
	Ag_Cap (g/t)	
	AuEq (g/t)	Au + Ag * 0.006203 (Heap Leach)
	AuEq2 (g/t)	Au + Ag * 0.011373 (Mill)

#### TABLE 14-2 GEMCOM DATABASE STRUCTURE West Kirkland Mining Inc. – TUG Project



File	Variables	Description
	Au_Check	WKM Pulp-Re-Assays (N=866)
Lithology	Ag_Check	WKM Pulp-Re-Assays (N=866)
	Lithology	Back-flagged from Lithology Table
	Hole-Id	
	From (m)	
	To (m)	
	Lith	Lithological Mapped name
	Ox	
	Sulp	
	Alt	
	Hard	
	HCI	
	Lim	
	Hem	
	Comments	Comments of lithology
RPA_Ints5	Hole-Id	
	From (m)	
	To (m)	
	C_Length (m)	Total sampled length
	Au (g/t)	
	Ag (g/t)	
	RockCode	Search Domain –Text
	SolidName	Wireframe Name
	BlockCode	Search Domain - Integer
RPA_Comp5	Hole-Id	
	From (m)	
	To (m)	
	Length (m)	
	Au (g/t)	
	Ag (g/t)	
	RockCode	Search Domain - Text
	SolidName	Wireframe Name
	BlockCode	Search Domain - Integer
		-

# TABLE 14-3 DRILL HOLE DATABASE RECORDS West Kirkland Mining Inc. – TUG Project

Description	Record Count		
Holes	615		
Survey	867		
Assays	20,843		
Lithology	26,237		
RPA_Ints5	446		
RPA_Comp5	2,138		



The drill hole spacing varies from approximately 20 m to 30 m spaced holes in the main deposit area to over 100 m spacing further away to the north and south (Figures 14-1 and 14-2).

### **2013 TOPOGRAPHIC SURVEY**

The TUG control survey report was completed on March 5, 2013, by John Grange of Grange Surveying, Inc. of Elko, Nevada. The area surveyed was 572 acres and was completed using Trimble 5800 receivers. The stated survey accuracy is  $\pm 0.03$  m horizontally or vertically.

Horizontal coordinates are UTM US Survey feet converted from NAO 83 Latitude and Longitude. These UTM coordinates are in Zone 11 of the UTM system, as requested by WKM. Elevations were completed in NAVD88 coordinates.

Latitude and longitude and elevations were derived from a static GPS survey utilizing the Online Positioning User Service (OPUS) on the National Geodetic Survey (NGS) web site. Data was collected and submitted to OPUS on two survey points in the field, one near the northeast corner of Section 16 and the other near the entrance gate close to the southwest corner of Section 16. The latitude and longitude of these two points derived from OPUS matched field measurements within 0.01 m.

A published NGS monument (Designation 19 GWM, PIO AH7043) was found and surveyed and matched to the site coordinate system within 0.2 m horizontally. The coordinates of this monument were established in January of 1999 by classical geodetic methods. The top of this concrete monument had crumbled with about 0.1 m of rebar exposed. This marker was found to be 0.2 m low in elevation.

In order to preserve as much accuracy as possible while still respecting the drill hole collar locations, a hybrid topography was created to utilize data from the two sources. In this hybrid topography, the collar locations were combined with surveyed contours to fully utilize the recently surveyed contours while still respecting the collar locations. This new topography significantly improved the accuracy of the topography used for the model as it was not solely based on drill hole collar locations; however, there is some local dimpling where the collars do not exactly match the surveyed topography.

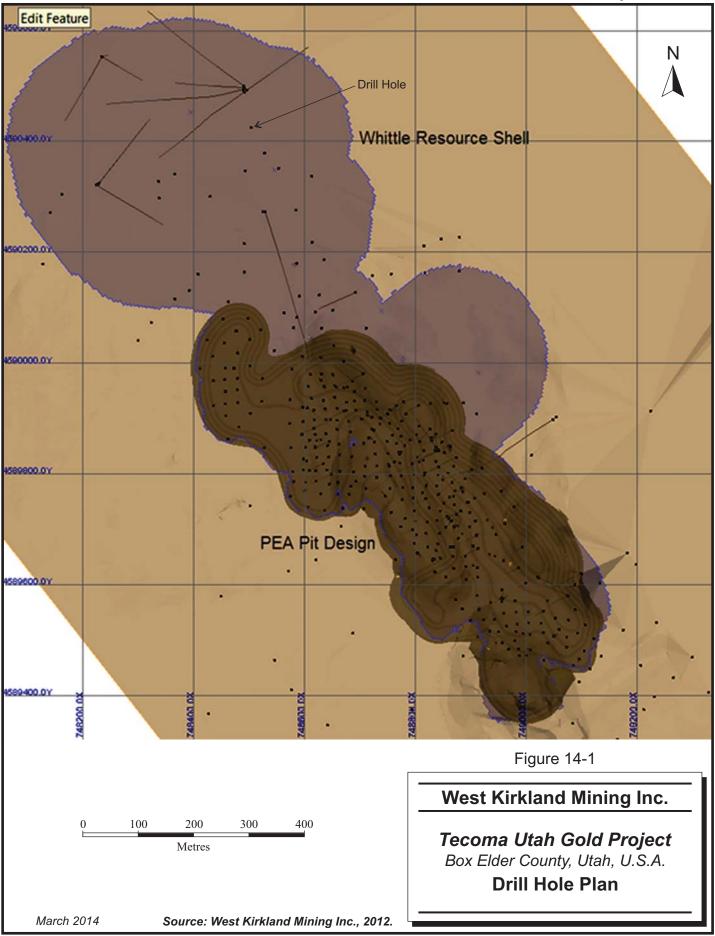


Out of 117 drill holes that intersect the surface that is based on the most recent survey, 26 holes are greater than one metre (absolute value) from this surface with the greatest discrepancy being 3.5 m and the average being 1.8 m. The discrepancy could be associated with the original surveys being done in NAD 27 and the current survey work being done in NAD 83, or it could be associated with drilling pad construction/removal or with errors made while conducting the original survey.

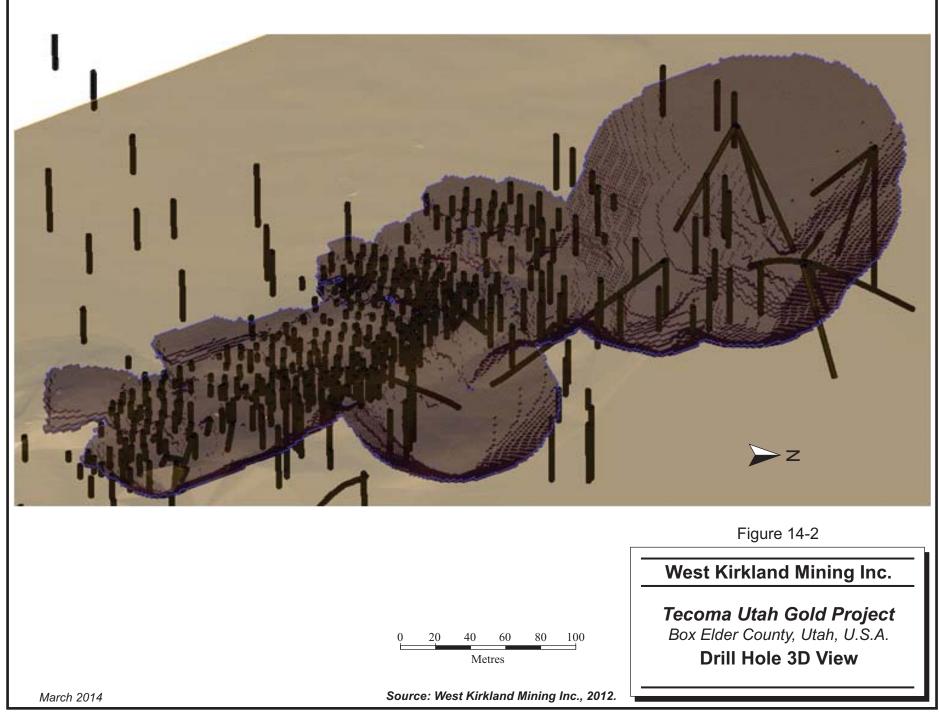
The area surveyed did not cover the entire area that is to be mined and should be extended in future surveys.



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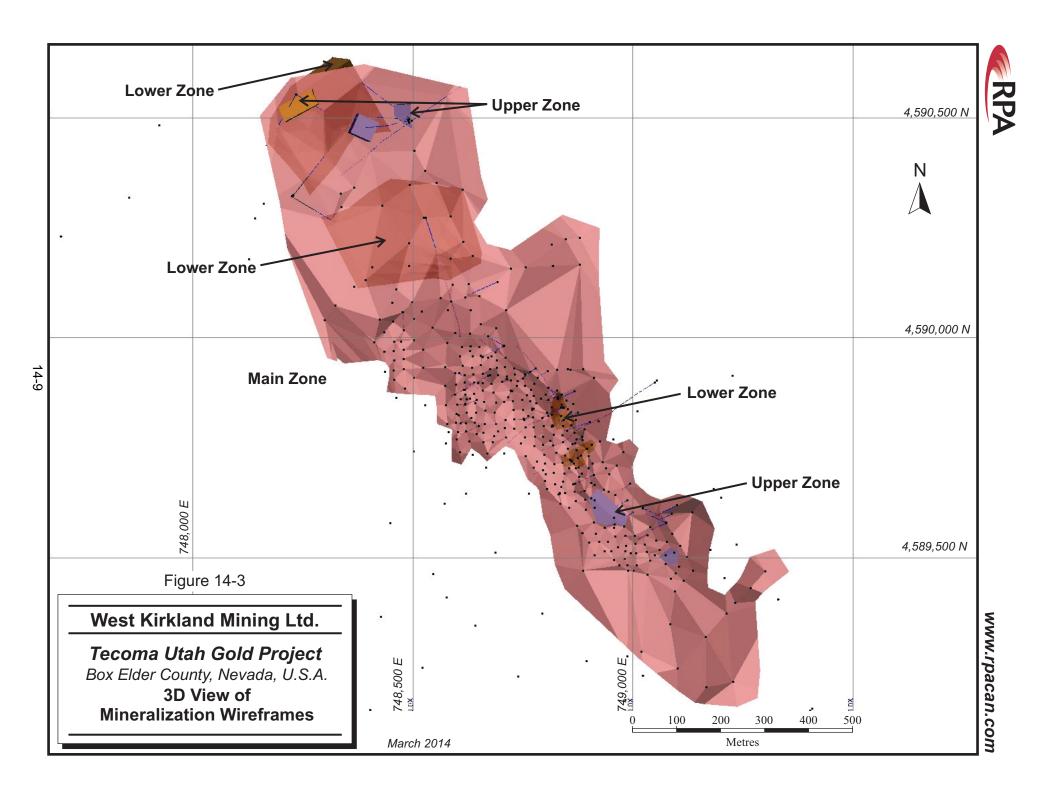
### **GEOLOGICAL INTERPRETATION**

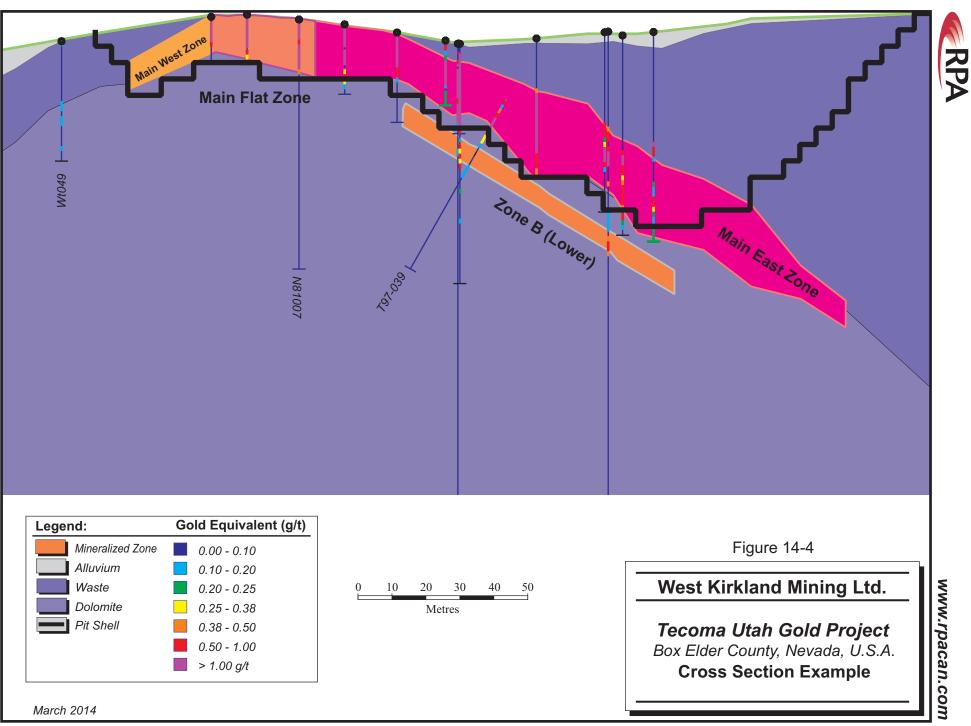
RPA used Gemcom for the resource estimation work. RPA also used Leapfrog 3D software with the assay database to create 3D shells at a number of gold and silver grades to guide the mineralization interpretation, trend analysis, variography, and grade interpolation work.

RPA created mineralization wireframes based on approximately a 0.2 g/t gold equivalent (AuEq) cut-off grade. The mineralization wireframes comprise a Main Zone, a Lower Zone, and an Upper Zone. The mineralization zones generally have an anticlinal form that were subdivided into search domains based on whether they dip to the west, are subhorizontal, or dip to the east. RPA also created surfaces to enable flagging the alluvium, dolomite, and undifferentiated waste rock in the block model. The mineralization and waste codes are summarized in Table 14-4 and shown in Figures 14-3 and 14-4.

Domain	Description				
101	Main West Zone Dipping				
102	Main Flat Zone Dipping				
103	Main East Zone Dipping				
104	Zone B (Lower) East Dipping				
105	Zone B (Lower) Flat Dipping				
106	Zone C (Upper) Flat Dipping				
107	Zone C (Upper) West Dipping				
1	Alluvium				
2	Dolomite				
98	Waste (other)				

# TABLE 14-4DOMAIN NUMBERINGWest Kirkland Mining Inc. – TUG Project





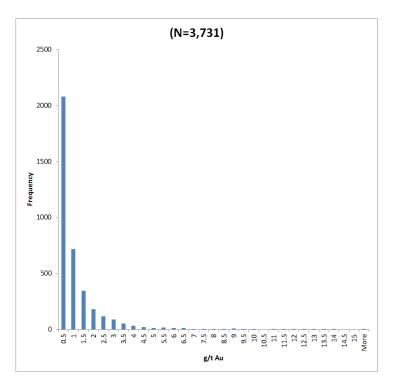


### ASSAY STATISTICS

The mineralization wireframes contain 3,730 assays for gold and silver. These assays are referred to as the resource assays. The gold and silver resource assay lengths both average approximately 1.5 m. The gold and silver resource assays average 0.88 g/t Au and 39.9 g/t Ag. The capped gold and silver resource assay distributions have relatively low coefficients of variation of 1.5 and 1.6, respectively (Table 14-5). Histograms of the resource assays are shown in Figures 14-5 and 14-6.

Description	Length (m)	Au g/t	Au g/t (capped)	Ag g/t	Ag g/t (capped)
Number of assays	3,731	3,731	3,731	3,731	3,731
Mean	1.47	0.88	0.87	39.9	38.6
Standard Deviation	0.26	1.47	1.30	77.1	62.1
Variance	0.07	2.17	1.70	5949.5	3853.8
Range	5.94	32.33	10.00	1385.2	500.0
Minimum	0.16	0.00	0.00	0.00	0.00
Maximum	6.1	32.33	10.00	1385.2	500.0
Coefficient of Variation	0.2	1.7	1.5	1.9	1.6

### TABLE 14-5 RESOURCE ASSAY STATISTICS – GOLD AND SILVER West Kirkland Mining Inc. – TUG Project

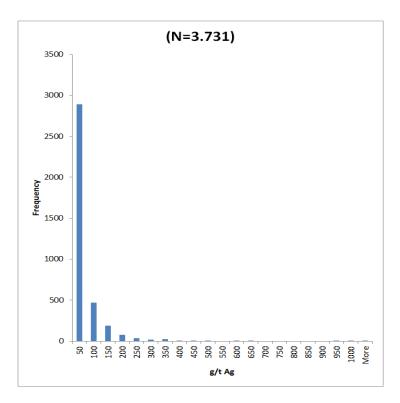


### FIGURE 14-5 GOLD RESOURCE ASSAY HISTOGRAM

West Kirkland Mining Inc. – TUG Project, Project #2030 Technical Report NI 43-101 – March 7, 2014







### CAPPING OF HIGH GRADE ASSAYS

Where the assay distribution is skewed positively or approaches lognormal, erratic high grade assay values can have a disproportionate effect on the average grade of a deposit. One method of treating these outliers in order to reduce their influence on the average grade is to cap them at a specific grade level. In the absence of production data to calibrate the capping level, inspection of assay distributions can be used to estimate preliminary capping levels. The gold and silver resource assay distributions were evaluated by RPA using a combination of histograms, probability plots, decile (ten equal parts) analyses, and cutting curves. The data suggests that the main resource assay populations reach approximately 10 g/t Au and 500 g/t Ag before the grades become much less frequent and more erratic.

The probability plots for gold and silver are shown in Figure 14-7. The probability curves are relatively straight with no significant inflections from approximately 0.01 g/t to 10 g/t for gold and from approximately 0.1 g/t to 500 g/t for silver. Approximately 99.6% of the resource assays have grades below 10 g/t Au and 99.6% of the resource assays have grades below 500 g/t Ag.



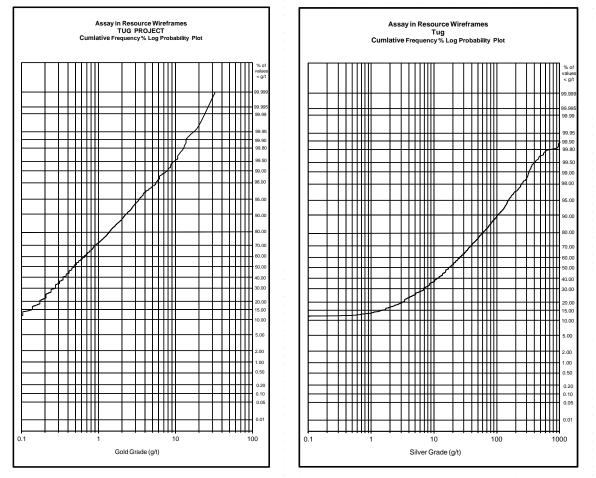
The resource assay decile analyses indicate that approximately 46% of the gold is contained in the top decile including 12% in the top percentile and approximately 50% of the silver is contained in the top decile including 14% in the top percentile. Deposits with more than approximately 40% of the metal in the top decile or 10% of the metal in the top percentile generally require capping or other methods to manage erratic high grade assays. The decile analyses results suggest that capping may not be required to estimate the global average gold and silver grades.

The cutting curves show that the resource assays are insensitive to capping at capping levels above approximately 5 g/t Au and 400 g/t Ag.

In order to improve the reliability of the block grade estimates in some areas, RPA capped a small number of high gold and silver assays to 10 g/t and 500 g/t, respectively, before compositing. Capping high values reduces the gold and silver average grades by approximately 2% and 3%, respectively (Table 14-6).



## FIGURE 14-7 GOLD AND SILVER LOG PROBABILITY PLOTS



### TABLE 14-6 CAPPING LEVELS West Kirkland Mining Inc. – TUG Project

Statistic	Gold	Silver
RPA capping levels (g/t - Au and g/t - Ag)	10	500
Number of samples capped	15	11
Percent of samples capped (%)	0.32	0.32
Total core length capped (m)	21.77	15.86
Percent of total core length capped (%)	0.43	0.31
Percent decrease in grade (%)	1.8	3.4

## COMPOSITING

Capped assays were composited to three metre lengths within the mineralization wireframes starting at the collars. This process created a number of remnant composites shorter than three metres in some of the drill holes that were located at the footwall contacts and that are



generally much lower grade than the fill length composites. There are 446 remnant composites that average 0.93 m in length, 0.40 g/t Au, and 20.3 g/t Ag. They represent approximately 21% of the 2,138 composites that average 2.6 m in length, 0.80 g/t Au, and 35.2 g/t Ag. RPA included these remnant composites for the grade interpolation because of their relative abundance; however, their inclusion may add a slight element of conservatism to the block estimates is some areas.

Summary statistics for the 2,138 gold and silver composites that were used for grade interpolation are summarized in Table 14-7.

Description	Length (m)	Au g/t (capped)	Ag g/t (capped)
Number of composites	2,138	2,138	2,138
Mean	2.6	0.80	35.18
Standard Deviation	0.91	1.05	50.90
Variance	0.84	1.11	2590.38
Range	2.96	9.59	500.00
Minimum	0.04	0.00	0.00
Maximum	3.00	9.59	500.00
Coefficient of Variation	0.4	1.3	1.4

## TABLE 14-7 COMPOSITE STATISTICS West Kirkland Mining Inc. – TUG Project

## DENSITY

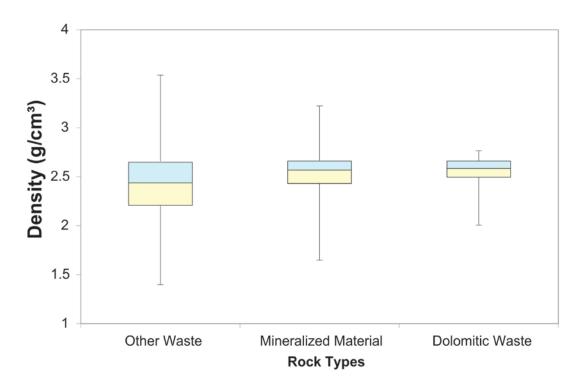
RPA reviewed 155 density determinations completed by KCA on core samples from the WKM metallurgical drill holes and calculated statistics for the waste and mineralized material types (Table 14-8 and Figure 14-8). The density tests were done using the water immersion method and the samples were coated with paraffin. There are 60 tests on mineralization samples that average 2.55 g/cm<sup>3</sup>, 26 tests on dolomitic waste samples that average 2.53 g/cm<sup>3</sup>, and 69 tests on other types of waste samples that average 2.44 g/cm<sup>3</sup>. RPA notes that other density data exist, but they have been discarded by RPA because the tests did not use paraffin and therefore produced less reliable results.



Types	Average (g/cm³)	Number of tests	Min (g/cm³)	Max (g/cm³)
Mineralized Material	2.55	60	1.646	3.21
Dolomitic Waste	2.53	26	2.00	2.76
Other Waste	2.44	69	1.39	3.52

### TABLE 14-8 DENSITY STATISTICS FOR KCA TESTS West Kirkland Mining Inc. – TUG Project

## FIGURE 14-8 BOXPLOTS FOR KCA DENSITY TESTS



## SILVER AND GOLD GRADE TREND ANALYSIS

RPA evaluated the gold and silver spatial distribution by generating a number of 3D grade shells using Leapfrog software with isotropic searches. The gold and silver mineralization generally shows three similar trends shown as blue dashed lines in Figure 14-9. RPA assumes that the "gap" area is bounded by two north-northeast trending faults.



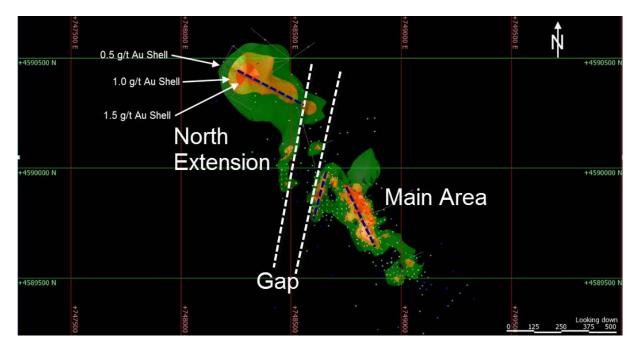


FIGURE 14-9 PLANVIEW SHOWING GOLD GRADE SHELLS

## VARIOGRAPHY

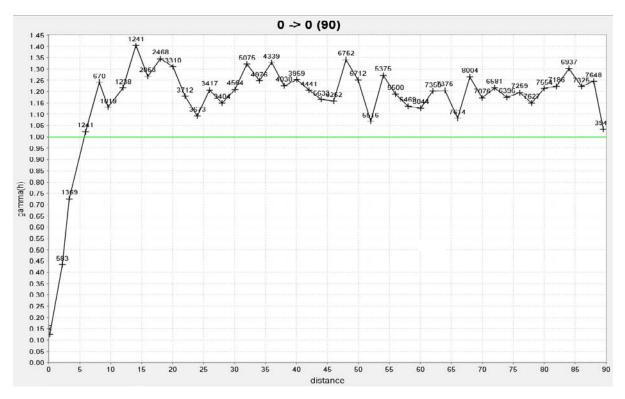
Variography was completed using Gemcom software on the gold and silver three metre composite data for the Main Zone composites. The down hole semi-variograms have well-defined curves that are supported by large numbers of pairs and show very low relative nugget effects of approximately only 10% to 15% for both gold and silver (Figures 14-10 and 14-11). These low nugget effects are consistent with the gold and silver assay and composite statistics, which have very few high values and very low coefficients of variations for gold mineralization.

The along strike (360/-0°) variograms have ranges of approximately 50 m for gold and 75 m for silver (Figures 14-12 and 14-13).

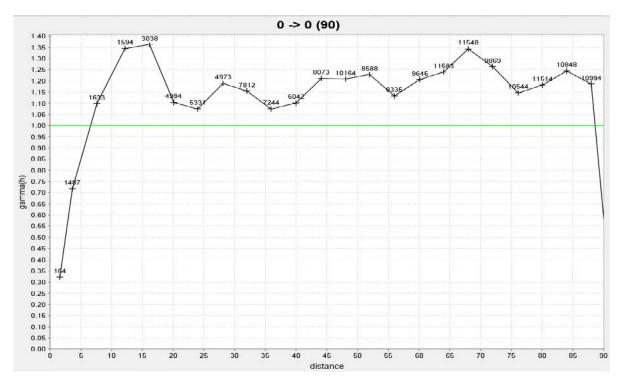
The down dip (090/-24°) variograms have ranges of approximately 50 m for gold and approximately 60 m for silver (Figures 14-14 and 14-15).





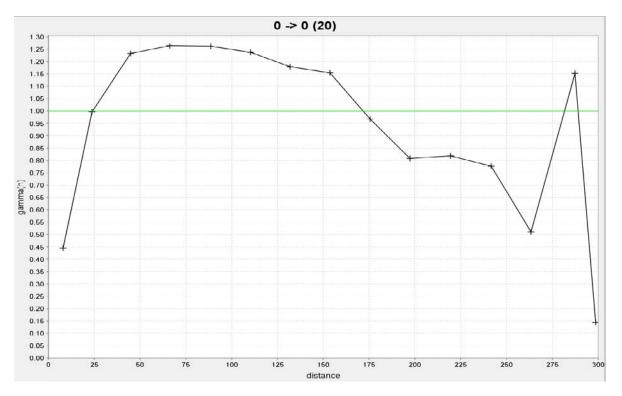








#### FIGURE 14-12 ALONG STRIKE SEMI-VARIOGRAM – GOLD COMPOSITES





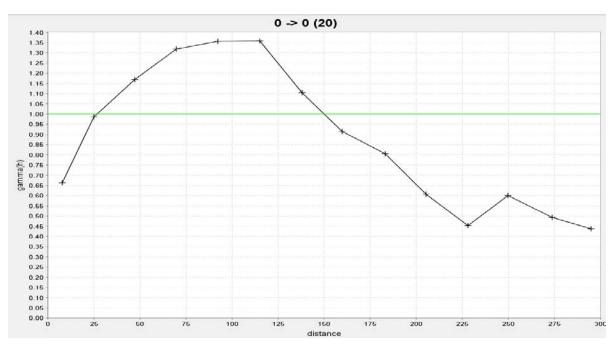




FIGURE 14-14 DOWN DIP SEMI-VARIOGRAM – GOLD COMPOSITES

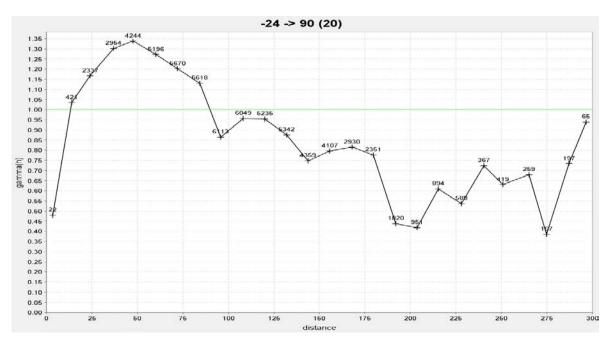
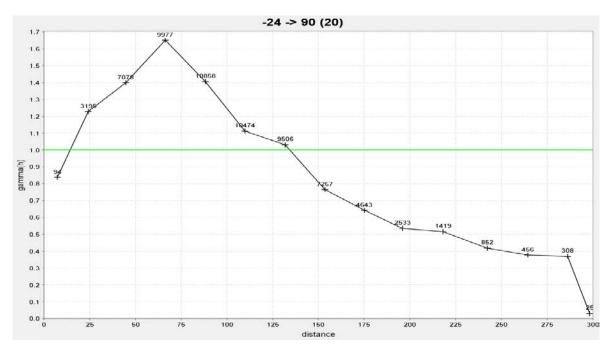


FIGURE 14-15 DOWN DIP SEMI-VARIOGRAM – SILVER COMPOSITES





## **BLOCK MODEL**

The block model consists of 5 m by 5 m by 5 m blocks. The model is rotated 38° counterclockwise. The extents and dimensions of the block model are summarized in Table 14-9.

TABLE 14-9 BLOCK MODEL DIMENSIONS

West Kirkland Mining Inc. – TUG Project			
Description	Easting (X)	Northing (Y)	Elevation (Z)
Minimum (m)	749,000	4,588,800	1350
Maximum (m)	750,000	4,590,800	1700
Extents (m)	1,000	2,000	350
Rotation	38		
	Column	Row	Level
Block size (m)	5	5	5
Number of blocks	200	400	70

The tonnage factors applied to the mineralization and waste units are listed in Table 14-10.

### TABLE 14-10 BLOCK MODEL TONNAGE FACTORS West Kirkland Mining Inc. – TUG Project

Material Type	Tonnage Factor (t/m <sup>3</sup> )
Mineralization	2.55
Dolomitic Waste	2.53
Other Waste	2.44

RPA used Gemcom to build a block model with the attributes listed in Table 14-11. The rock type model was created using majority rules with the main lithology surfaces. The tonnage factors above were assigned directly based on the rock type model.

The AuEq block model has gold equivalent grades that were calculated based on recoveries of 90% for gold and 60% for silver based on a mill process assumption. The equation used is provided in Table 14-11.

Two NSR models were populated based on heap leach (HL) and mill processing scenarios. The NSR equations are provided in Table 14-11. A block model with the distance from block centroids to the nearest composite was created to help develop the resource classification criteria.

TABLE 14-11 BLOCK MODEL FIELD DESCRIPTIONS West Kirkland Mining Inc. – TUG Project

Attribute Name	Description
Rock Type	RockType (Mineralized Material and Waste model)
Density	Density (Mineralized Material and Waste Model)
Percent	% of Block within Mineralized Domain
AU_CAP	Estimated Gold Values
AG_CAP	Estimated Silver Values
AuEQ_CAP	(g/t Au) + 0.011373 * (g/t Ag)
Meandist	Mean Distance to Closest Sample
NB_Comps	Number of Composites Used to Populate a Block
Pass	Estimation Pass Number
Classif	Classification
NSR-Mill	(g/t Au)*\$47.09 + (g/t Ag) * \$0.50
NSR-HL	(g/t Au)*\$28.76 + (g/t Ag) * \$0.14

#### The block model coding and the solid precedence hierarchy are summarized in Table 14-12.

# TABLE 14-12 BLOCK PRECEDENCE AND CODING FOR ATTRIBUTES West Kirkland Mining Inc. – TUG Project

<b>_</b> .		Wireframe			Density
Precedence Number	Block Code	NAME1	NAME2	NAME3	(t/m³)
50	101	5	20130321	Westcl	2.55
51	102	5	20130321	Flat*	2.55
52	103	5	20130321	East*	2.55
53	104	5b	20130321	East	2.55
54	105	5b	20130321	Flat_N	2.55
55	106	5c	20130321	Flat	2.55
30	107	5c	20130321	West	2.55
31	1 (waste)	Waste	20130221		2.44
32	2 (waste)	Dolomite	20130221		2.53
33	98 (waste)	Alluv	20130221		1.8



## **GRADE INTERPOLATION**

Grades for gold and silver were interpolated using inverse distance cubed (ID<sup>3</sup>) weighting in two passes. The first pass used a minimum of three composites with a maximum of two composites per hole and a maximum of eight composites and a flat pancake search ellipsoid with 50 m by 10 m radii. The second pass relaxed the minimum number of composites to two and increased the search radii to 150 m by 50 m (Table 14-13).

Estimation Pass	East Domains	Flat Domains	West Domains
Estimation Pass 1:			
Composites			
Minimum composites used	3	3	3
Maximum composites used	8	8	8
Maximum composites per hole	2	2	2
Distances (m)			
Range Major	50	50	50
Range Semi-Major	50	50	50
Range Minor	10	10	10
Ellipsoid Orientation			
Principal Azimuth (degrees)	360	360	360
Principal Dip (degrees)	-25	0	25
Intermediate Azimuth (degrees)	090	090	090
Estimation Pass 2:			
Composites			
Minimum composites used	2	2	2
Maximum composites used	8	8	8
Maximum composites per hole	2	2	2
Distances (m)			
Range Major	150	150	150
Range Semi-Major	150	150	150
Range Minor	50	50	50
Ellipsoid Orientation			
Principal Azimuth (degrees)	360	360	360
Principal Dip (degrees)	-25	0	25
Intermediate Azimuth (degrees)	090	090	090

### TABLE 14-13 GOLD AND SILVER INTERPOLATION PARAMETERS West Kirkland Mining Inc. – TUG Project



## CUT-OFF GRADE AND WHITTLE SHELL

RPA has estimated open pit gold discard cut-off values of \$8.05/t for mineralization sent to a heap leach and \$17/t for mineralization processed by a mill based on the assumptions shown in Table 14-14. Metal prices used for reserves are based on consensus, long term forecasts from banks, financial institutions, and other sources. For resources, metal prices used are slightly higher than those used for reserves. RPA's metal price, cost, and recovery assumptions are summarized in Table 14-14.

Input Parameter	Units	Value
Gold Price	US\$/oz	1,700
Silver Price	US\$/oz	29
HL Recovery-Au	%	55
HL Recovery-Ag	%	20
Mill Recovery-Au	%	90
Mill Recovery-Ag	%	60
Mining Waste	US\$/t	2.30
Mining Mineralized Material	US\$/t	2.06
HL Processing Cost	US\$/t	6.05
Mill Processing Cost	US\$/t	15.00
G&A Cost	US\$/t	2.00
Refining Payable	%	99.8
Selling Costs - Gold	US\$/oz	2.00
Selling Costs - Silver	US\$/oz	1.25
Royalty	%	4
Mining Recovery	%	97
Pit Wall Slopes	Degrees	48

### TABLE 14-14 CUT-OFF GRADE AND WHITTLE ASSUMPTIONS West Kirkland Mining Inc. – TUG Project

RPA used the Indicated and Inferred resource blocks and the input assumptions related to both mill and heap leach processing scenarios in Table 14-14 to create Whittle open pit shells to provide a constraint for the open pit resource that complies with the CIM (2010) resource definition requirement for "reasonable prospects for economic extraction".

RPA notes that the discard cut-off grade is only applicable to the resource blocks situated inside the Whittle open pit shell constraint generated with the same input assumptions. Mining costs are incorporated in the Whittle process and are not included in the discard cut-off grade calculation. Consequently, it is the Whittle process that defines the approximate pit size and



identifies the blocks that will be mined and transported to the pit rim. Blocks with grades above the discard cut-off grade will be processed as mineralized material and the rest will be treated as waste. RPA cautions that open pit discard cut-off values should not be applied to unconstrained block models.

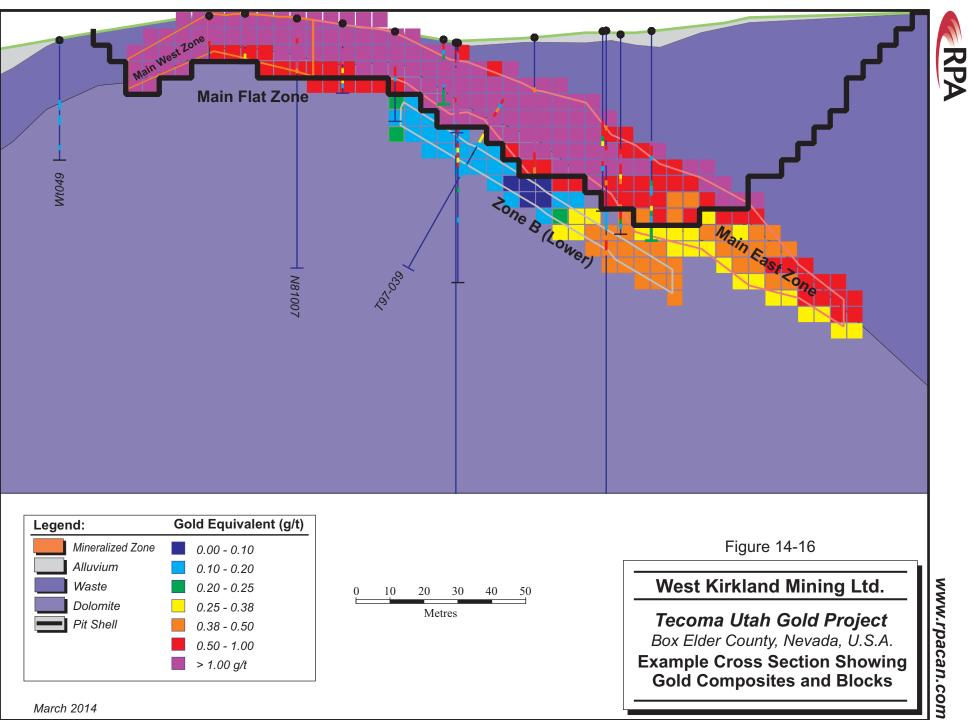
All classified resource blocks located between the surface and the Whittle open pit shell constraint for the mill scenario with NSR values greater than \$17/t are included in the TUG resource estimate.

## **BLOCK MODEL VALIDATION**

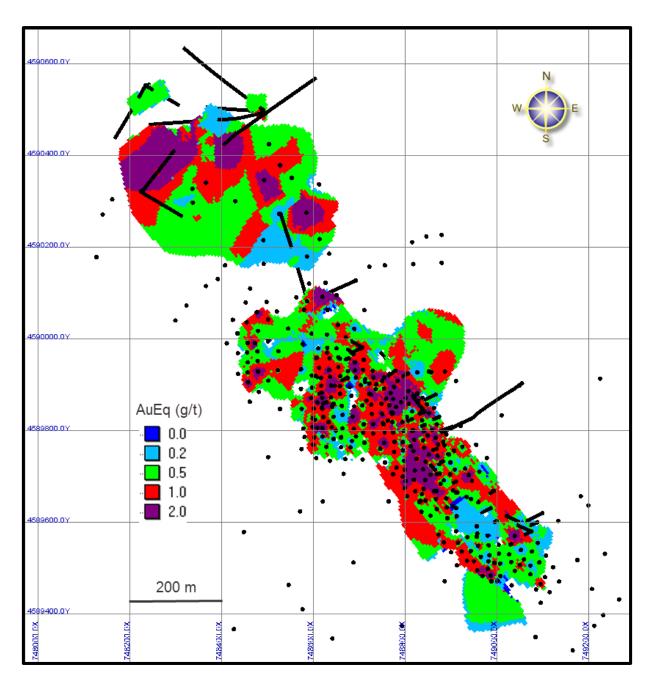
RPA carried out a number of block model validation procedures including:

- 1. Visual comparisons of block versus composite grades
- 2. Statistical comparisons

The composite and block grades were visually compared on vertical sections and plans and the spatial grade correlation is good. An example of the composite and block gold grades on a cross section and in plan are provided in Figures 14-16 and 14-17.







### FIGURE 14-17 GOLD COMPOSITES AND BLOCKS LOOKING DOWN

The assay, composite, and block statistics for gold and silver are summarized in Tables 14-15 and 14-16, respectively. The gold and silver means for assays and composites match well and the block means are significantly lower due to a data clustering effect.



# TABLE 14-15 ASSAY, COMPOSITE, AND BLOCK MODEL GOLD STATISTICS West Kirkland Mining Inc. – TUG Project

Description	Assays	Composites	Blocks
Number of values	3,731	2,138	98,869
Mean (g/t)	0.87	0.80	0.53
Standard Deviation (g/t)	1.30	1.05	0.50
Variance	1.70	1.11	0.25
Minimum (g/t)	0.00	0.00	0
Maximum (g/t)	10.00	9.59	8.81
Coefficient of Variation	1.5	1.3	0.95

## TABLE 14-16 ASSAY, COMPOSITE, AND BLOCK MODEL SILVER STATISTICS West Kirkland Mining Inc. – TUG Project

Description	Assays	Composites	Blocks
Number of values	3,731	2,138	98,869
Mean (g/t)	38.6	35.18	20.4
Standard Deviation (g/t)	62.1	50.90	26.1
Variance	3,853.8	2,590.38	680.9
Minimum (g/t)	0.00	0.00	0
Maximum (g/t)	500.0	500.00	388.6
Coefficient of Variation	1.6	1.4	1.3

RPA is of the opinion that the block model is valid and acceptable to support the current resource estimate.

## SENSITIVITY TO CUT-OFF GRADE

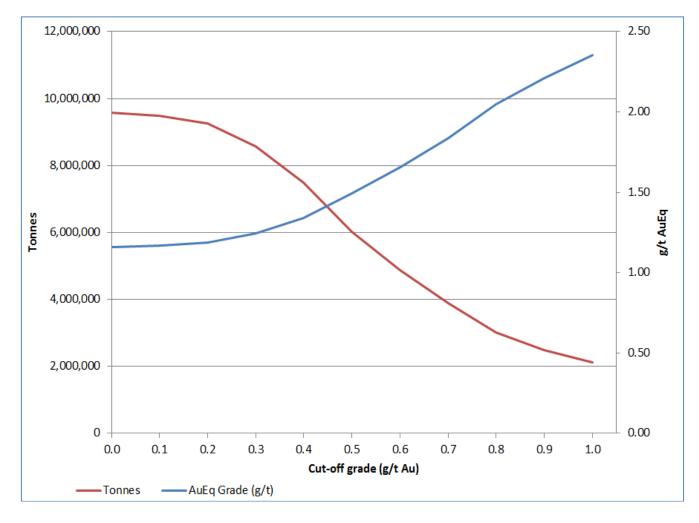
RPA prepared grade-tonnage curves for all of the Indicated and Inferred blocks located in the resource wireframes (Table 14-17 and Figure 14-18). The tonnages range from approximately 9.6 Mt averaging 1.16 g//t AuEq to approximately 2.1 Mt averaging 2.35 g/t AuEq and the contained gold equivalent ounces range from approximately 360,000 to 160,000. RPA concludes that the gold mineralization is very sensitive to cut-off grades above approximately 0.3 g/t Au.



# TABLE 14-17 MINERALIZATION TONNAGE GRADE CURVE DATA West Kirkland Mining Inc. – TUG Project

COG (g/t Au)	Block Model (Tonnes)	Block Model Grade (g/t Au)	Block Model Grade (g/t Ag)	Block Model Grade (g/t AuEq)	Block Model Ounces (AuEq oz)
0.0	9,567,000	0.80	34.6	1.16	357,000
0.1	9,479,000	0.80	34.7	1.17	356,000
0.2	9,268,000	0.82	35.1	1.19	354,000
0.3	8,578,000	0.86	36.3	1.24	343,000
0.4	7,482,000	0.94	38.4	1.34	323,000
0.5	6,024,000	1.05	41.6	1.49	289,000
0.6	4,866,000	1.17	45.5	1.65	259,000
0.7	3,879,000	1.31	50.2	1.84	229,000
0.8	3,025,000	1.46	55.3	2.05	199,000
0.9	2,495,000	1.60	58.4	2.21	177,000
1.0	2,109,000	1.71	60.7	2.35	160,000

## FIGURE 14-18 RESOURCE WIREFRAME TONNAGE-GRADE CURVES



West Kirkland Mining Inc. – TUG Project, Project #2030 Technical Report NI 43-101 – March 7, 2014



## **RESOURCE CLASSIFICATION**

RPA created an Indicated classification wireframe that was generally based on the blocks that were interpolated during the first pass (Figure 14-19) and blocks with average distances of less than approximately 50 m (Figure 14-20). All interpolated blocks situated within the resource shell not classified as Indicated were classified as Inferred. The Indicated criteria corresponds to areas supported by drill holes spaced approximately 50 m or closer, which could be viewed as conservative with respect to the long semi-variogram ranges, but is reasonable based on RPA's experience with this style of mineralization and considering the overall deposit geometry and dimensions. The classification block model is shown in Figure 14-21.

RPA is of the opinion that there is some uncertainty in the quality of some of the historical drill results. Consequently, RPA has not defined any Measured Resources even though some of the drill holes are spaced close enough in some areas to do so.

Histograms for the mean distance from block centroids to the included composite mid-points are provided in Figure 14-22. The overall average distance from block centroids to composite mid-points is approximately 27 m for Indicated blocks and 74 m for Inferred blocks.

A 3D view of the classification block model and the Whittle resource shell is shown in Figure 14-23.



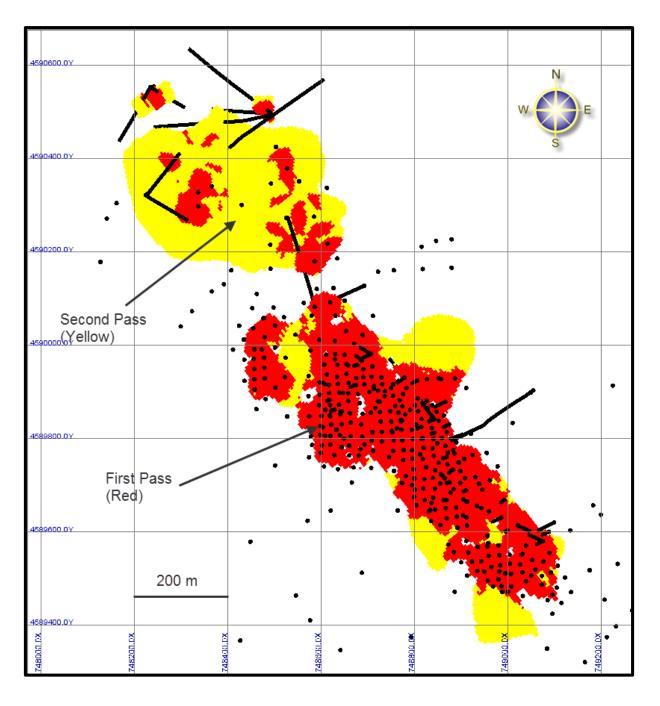
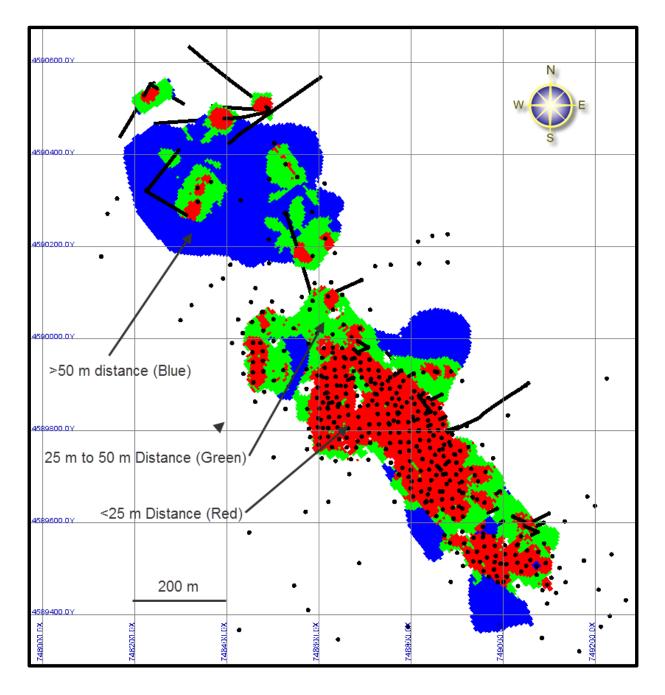


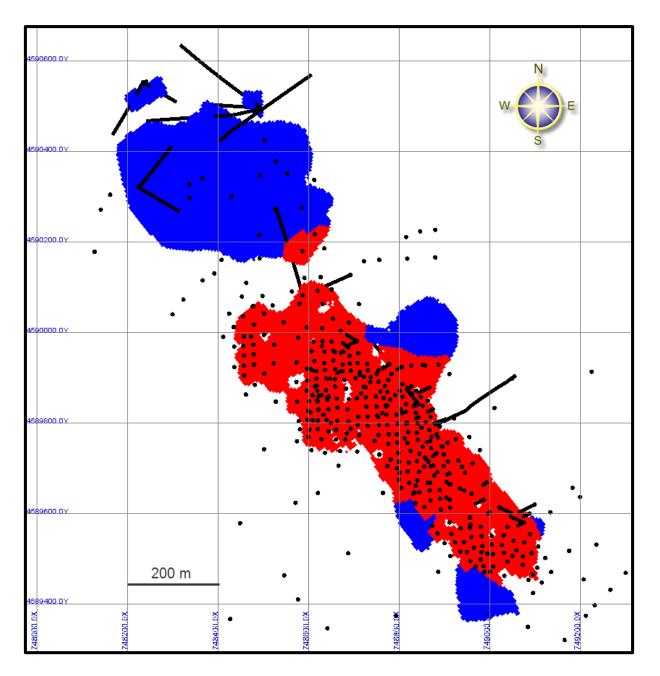
FIGURE 14-19 INTERPOLATION PASS BLOCK MODEL





### FIGURE 14-20 MEAN DISTANCES OF COMPOSITES TO BLOCKS

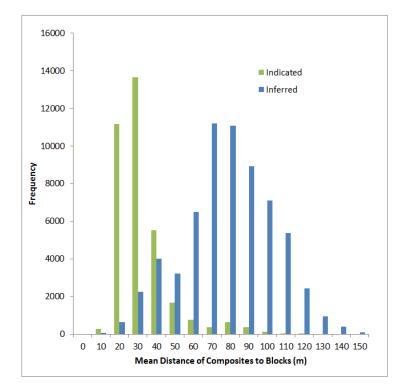




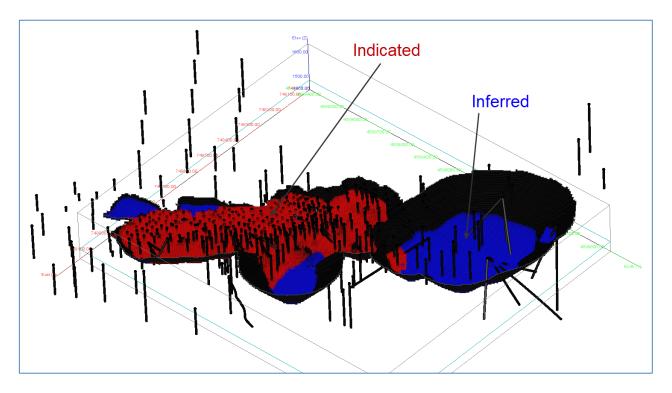
## FIGURE 14-21 CLASSIFICATION BLOCK MODEL PLAN



## FIGURE 14-22 HISTOGRAM OF MEAN DISTANCES TO BLOCKS



## FIGURE 14-23 RESOURCE CLASSIFICATION BLOCK MODEL – 3D VIEW LOOKING SOUTHWEST





## **15 MINERAL RESERVE ESTIMATE**

The TUG Project does not contain any Mineral Reserves at this time.



## **16 MINING METHODS**

The mining method proposed for the Project is conventional truck and shovel open pit. Vegetation and topsoil will be cleared by dozers and graders preceding the mining operation. Suitable growth media material will be stockpiled for future reclamation use. For calculation purposes, it was assumed that a 10 cm thick layer of growth media is present on the TUG resource area. As stripping activities are started, the actual thickness of the growth media will be determined, and the appropriate amount set aside. If any overburden needs to be stripped, then front end loaders will load off highway rigid-frame mining trucks, which will haul it to the overburden stockpile. The mineralized material and waste rock will be drilled and blasted, loaded with front end loaders and hauled with the same fleet of rigid frame mining trucks to either a crusher or waste rock pile. Ancillary activities managed by WKM and executed by the mining contractor will include, but not be limited to road maintenance, road dust control, site dewatering, leach pad heavy equipment support (as needed), dump and stockpile maintenance, and grade control. The starting date for mining operations has not been determined.

## **MINE DESIGN**

### DILUTION

Dilution was not applied in the model to the mineralized blocks at this time. Blocks in the model that did not contain any grade information were assigned an average grade of zero.

## EXTRACTION

The Whittle pit optimization resulted in a mining extraction of 97%, therefore 3% of the mineralized blocks that were above the cut-off value were excluded from the net result of the Whittle pit optimization.

## **CUT-OFF VALUE**

There are no Mineral Reserves at the Project. For the purpose of this PEA, RPA used Mineral Resources based on open pit mine designs. To arrive at the Mineral Resources that are potentially mineable by open pit methods, two separate cut-off values were used to generate the Whittle open pit mineralized material and low grade mineralized material: US\$10.50/t and



US\$8.05/t. Both the categories of mineralized material are included in the open pit that could potentially be mined and processed by a heap leach processing method. The Mineral Resources at the two cut-off values used for this PEA are summarized in Table 16-1.

• • • • •			
Cut-off Values	Category	Units	Totals
\$10.50/t	Mineralized Material	t (000)	3,933
	Au Grade	g/t	0.92
	Au Ounces	oz (000)	116
	Ag Grade	g/t	44.30
	Ag Ounces	oz (000)	5,601
\$8.05/t	Low Grade Mineralized Material	t (000)	266
	Au Grade	g/t	0.25
	Au Ounces	oz (000)	2
	Ag Grade	g/t	14.24
	Ag Ounces	oz (000)	122
	Total Waste Tonnes Total Tonnes	t (000)	11,359
	(Waste + Mineralized Material + Low Grade)	t (000)	15,558
	Total Gold Ounces	oz (000)	118
	Total Silver Ounces	oz (000)	5,723

# TABLE 16-1 "PROPOSED PRODUCTION" QUANTITIES West Kirkland Mining Inc. – TUG Project

## **BLOCK MODEL STATISTICS AND MODEL PARAMETERS**

The block model used in the pit optimization is a rotated percentage block model including gold and silver grade estimates. Two block model files were available; the mineralized material block model and the waste block model. The block models were loaded into Vulcan Software in a single, combined block model and the appropriate rotation and variable definition was made. The list of relevant variables is presented in Table 16-2.



### TABLE 16-2 BLOCK MODEL STATISTICS West Kirkland Mining Inc. – TUG Project

Name	Description	Units	Value	Minimum	Maximum
	"Mineralized Material" Block Model File				
Rtype	Rock Type				
	Mineralized Material			101	107
Density	Mineralized Material Density	t/m³	2.55		
Percent	Mineralized Material percentage	%		0	100
Au	Gold Grade	Grams/tonne		0	8.809
Ag	Silver Grade	Grams/tonne		0	388.620
Classif	Resource classification			2	3
	Waste Block Model File				
Rtype	Rock Type				
	Waste			1	2
	Alluvium		98		
Density	Waste Density				
	Waste (1)	t/m³	2.44		
	Dolomite (2)	t/m³	2.53		
	Alluvium (98)	t/m³	1.80		

## PIT OPTIMIZATION

Open pit optimization was conducted on the Mineral Resources to determine the potential pit limits. The pit optimization was done using Whittle software.

Blocks classified as Indicated and Inferred Resources were included in the pit optimization process.



The pit optimization parameters used for the PEA are listed in Table 16-3.

Pit Optimization Parameter	Value	Units
Block Size; i,j,k	5 x 5 x 5	m
Mining Extraction	97.0%	%
Mining Dilution	0%	%
Pit slopes, IRA	48	0
Gold Price	1,700	US\$/oz
Silver Price	29	US\$/oz
Costs		
Mining Cost	1.50	US\$/t
Process Cost	6.05	US\$/t
G&A Cost	2.00	US\$/t
Au Refining & Freight	2.00	US\$/oz
Ag Refining & Freight	1.25	US\$/oz
Recoveries		
Gold Recovery	58.0%	%
Silver Recovery	15.0%	%
Refinery	99.8%	%
Average Royalty	4.0%	%
Row Limit For Stripping	272	Row #

## TABLE 16-3 PEA PIT OPTIMIZATION PARAMETERS West Kirkland Mining Inc. – TUG Project

The high stripping ratio mineralized material is located in the northern side of the deposit, and it was determined to be marginally economic and was not included in the Mineral Resources used in the PEA evaluation.

## PIT DESIGN

The Mineral Resources that are potentially mineable in the open pit include a total 4.2 Mt of mineralized material (at cut-off value of US\$8.05/t), and the other 11.4 Mt of Mineral Resources are considered waste rock. The average gold and silver grades are 0.87 g/t and 42.39 g/t, respectively.

The Mineral Resources potentially mineable in the open pit include 3.93 million tonnes of mineralized high grade material above a cut-off value of US\$10.50/t grading 0.92 g/t Au and 44.3 g/t Ag. The pit also contains low grade material above a cut-off value of \$8.05/t totalling 266,000 t grading 0.25 g/t Au and 14.24 g/t Ag. Total material in the pit, including waste and mineralized material, is equal to 15.6 million tonnes. The overall waste to mineralized material



stripping ratio is 2.7:1. The Mineral Resources that are potentially mineable in this PEA, as detailed in Table 16-1, account for any mining dilution and extraction losses.

Figure 16-1 shows the ultimate pit, dump layout, block model outline, and the cross section locations. Figures 16-2, 16-3, and 16-4 show the cross sections with the pit design and block model grades.

The Mineral Resource classification used for the PEA is summarized in Table 16-4. Table 16-5 summarizes the pit design parameters used in the PEA.

# TABLE 16-4 PEA PIT MINERALIZATION CLASSIFICATION SUMMARY West Kirkland Mining Inc. – TUG Project

PEA Resource By Classification	% Tonnes of Total	Mineralized Tonnes	Gold Grade	Contained Gold	Silver Grade	Contained Silver
		(000 t)	(g/t Au)	(000 oz Au)	(g/t Ag)	(000 oz Ag)
Indicated	94%	3,944	0.90	114	42.80	5,427
Inferred	6%	255	0.42	3	36.32	298

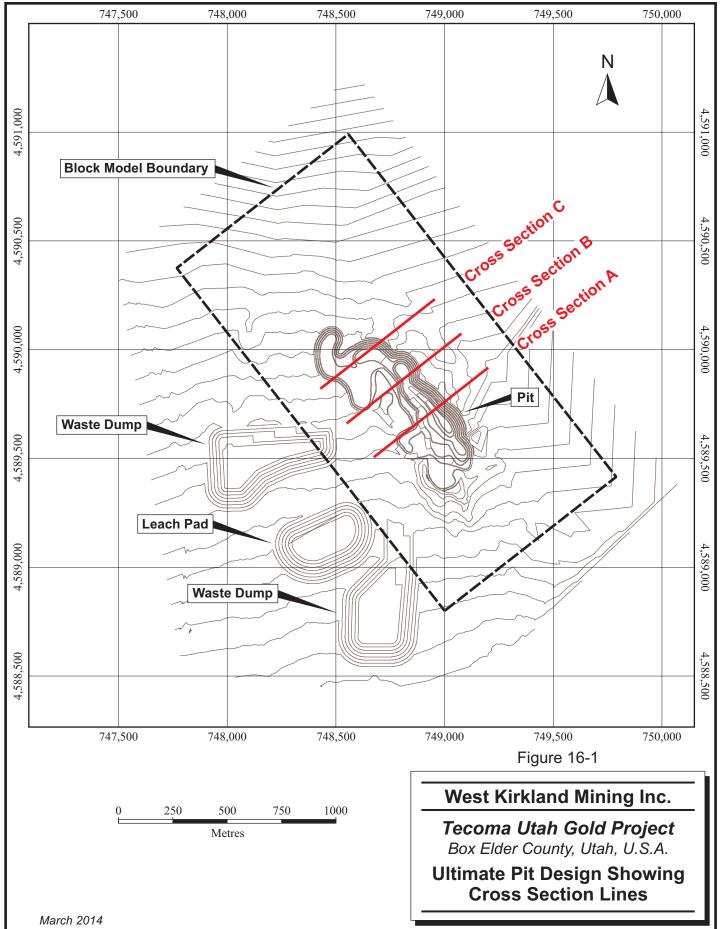
## TABLE 16-5 TUG PIT DESIGN OVERVIEW

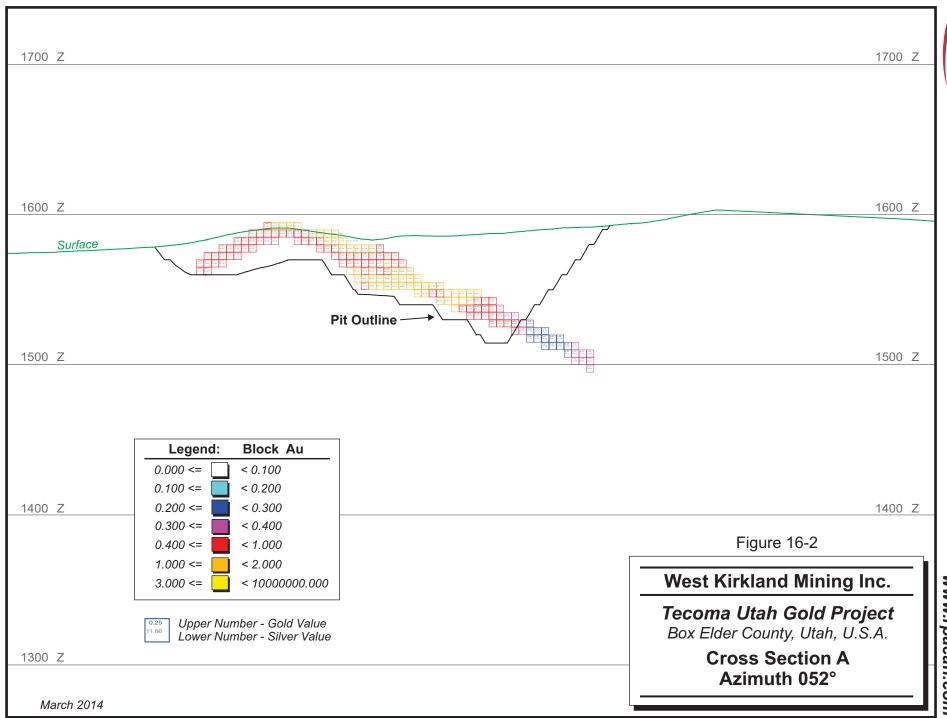
West Kirkland Mining Inc. - TUG Project

Pit Dimensions Deposit	TUG Main Area Pit
Pit Length (m)	970 m
Pit Width (m)	400 m
Surface Area (m <sup>2</sup> )	275,000 m <sup>2</sup>
Maximum Pit Depth (m)	105 m
Pit Bottom Elevation (MASL)	1,515 MASL
Pit Exit Elevation (MASL)	1,575 MASL
Average Ramp Grade (%)	10%
Ramp Width (m)	20 m
Overall Highwall Slope, (°)	Varies
Bench Height (m)	5 m
3D Model Block Size (m)	5 m x 5 m x 5 m
Type Benching (berming)	Double benching



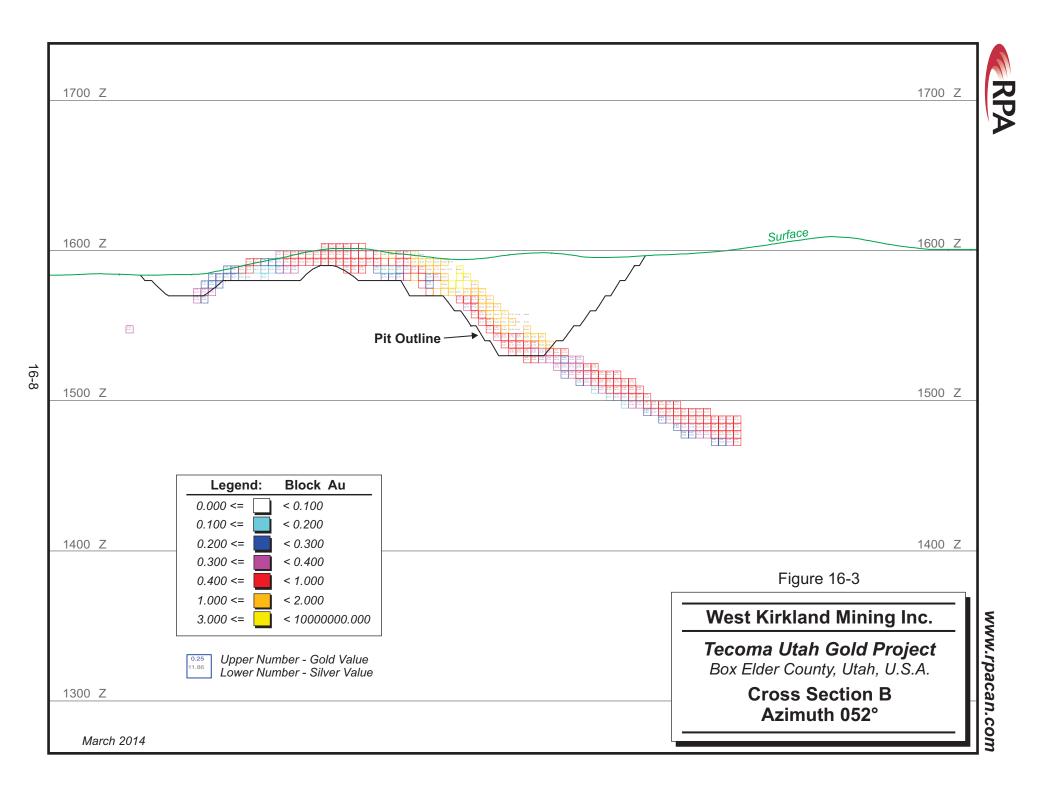
#### www.rpacan.com

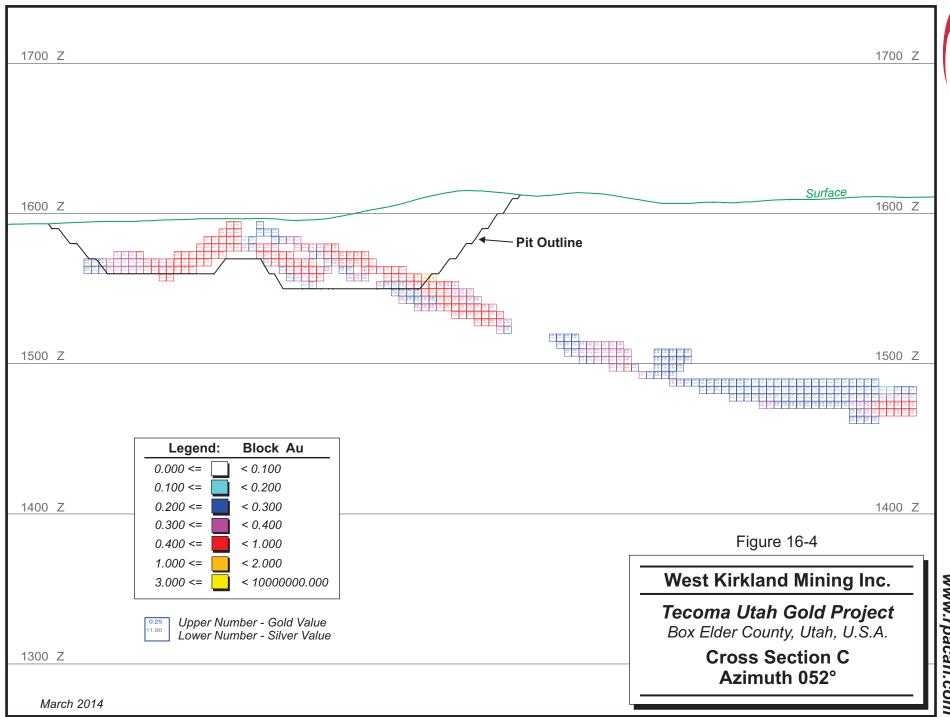




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#### GEOMECHANICS

#### Pit Wall Slopes

The overall mineralization azimuth is approximately 134°, which is the orientation of the pit. Whittle pit optimizations used a 48° slope for the highwalls. Pit design slopes vary based on the attitude of the mineralization. Average design highwall slopes are shown below:

- Approximately 45° Azimuth (Northeast Wall): 46°
- Approximately 135° Azimuth (Southeast Walls): 48°
- Approximately 270° Azimuth (West Walls):

31° to 45°, which is due to the orientation and attitude of the mineralization.

#### <u>Ramp Design</u>

The dimensions of the loaders, haul trucks and excavators that will be used for the Project were evaluated, and it was determined that the turning radius of the haul truck is the constraint on the minimum mining width and the ramp design. The turning radius of the Caterpillar 775F haul truck is approximately 11.8 m. Ramp road grades were limited to 10% or less. Road widths were designed at 20 m, but the bottom 40 m of the ramp was narrowed to 15 m.

#### Minimum Mining Width

In order to reduce the waste quantities associated with each of the two pit bottoms, the access ramps were not designed to the bottom of the lowest bench. This bench will be excavated using a backhoe.

A minimum mining width of 20 m was used for the pit designs. This width must be honored to ensure safe loading and hauling will be feasible using the mining contractor's equipment fleet.

## WASTE DUMP DESIGN

A topsoil stockpile and rock waste piles were designed to contain the capacity of material that will be excavated plus 15%. The following parameters were used for the rock waste pile designs:

- Road Grade 10%;
- Road Width (minimum) 17 m;
- Catch Bench (Waste Rock Dump) 5 m berm per 15 m lift;
- Swell Percent 35%;
- Overall slope (Stockpile) 34°;
- Overall slope (Waste Rock Dump) 31°;
- Lift slope (Waste Rock Dump) 34°;



- Maximum dump height 45 m;
- Setback from pit crests 45.7 m;
- Setback from mine haul roads 10 m;
- Setback from other dumps 10 m
- Setback from the land boundary 22.9 m.

The waste dumps and the stockpile will have a perimeter ditch around the toe to capture water run-off. The dump and stockpile will be constructed in five metre high lifts, compacted by a bulldozer.

RPA has considered a rather conservative design for the waste dumps to ensure their long term stability. The maximum height of the dumps will be limited to less than 45 m.

The five metre berm on the waste rock pile has been included to assist in the mine reclamation and closure process.

In order to confirm that the location of the waste rock piles and ROM stockpile at TUG do not restrict access to potential mineralization, RPA recommends that condemnation drilling be performed over the location of the latest design of the stockpile and dump footprints.

## MINE SCHEDULE

Mining operations will begin after a 24-month permitting and pre-production period. Operations will consist of stripping and overburden removal, drilling and blasting, and loading and hauling. Ancillary activities will include road maintenance, site dewatering, waste dump and stockpile maintenance, and grade control.

WKM does not plan to operate its own fleet of mining equipment; a mining contractor will be employed for the life of the mine.

## LOM PRODUCTION SCHEDULE

The temperatures, precipitation, topographical relief, and altitude will not adversely affect mining operations at the TUG Project. The Project is located in a temperate region of the United States, which receives little precipitation. Topography at the Project site is gentle, and it is located at a nominal elevation of 1,550 MASL (5,400 fasl).

#### PRE-PRODUCTION

Pre-production waste material was estimated to be 143,000 t of waste and topsoil. Much of the waste material mined during pre-production will be used in the building of the leach pad and pond foundations.

#### PRODUCTION

Mining of mineralized material will occur at a rate of 3,000 tpd, or 1.1 million tonnes per year. The detailed mine production schedule for the TUG Project outlines the quantity of mineralized material and waste rock that are mined from the TUG resource area. The plan also identifies the gold and silver mineralization at two separate cut-off values: mineralized material at US\$10.50/t and low grade mineralized material at US\$8.05/t.

The detailed mine production schedule was established on a year-by-year basis for the mine life. The mine production schedule is presented in Table 16-6 and provides a yearly summary of the tonnages and grades used in this PEA.

Low grade mineralized material is planned for removal to the low grade stockpile as defined by WKM's grade criteria. Currently, it has been estimated that 266,000 t of low grade mineralized material may be either stockpiled or processed. This low grade material was included in the production schedule, and it represents 6.3% of the total processed material.

### MINE EQUIPMENT

The selection of the mining contractor is currently being finalized, but based on the discussions, the anticipated equipment list is presented in Table 16-7. The mine and roads are designed for 64-tonne trucks, which is a common equipment size used by mining contractors. Truck size used to mine the TUG resource may vary, depending on the mining contractor's fleet. A cost benefit analysis has indicated, that due to the short mine life, it is advantageous for WKM to not purchase its own mine equipment because of the impact that this capital cost would have on the cash flow.

An explosives contractor or mining contractor will provide all the blasting equipment; including all bulk (blasting agents) loading trucks. Capital and operating costs of mobilizing this specialized equipment, and maintaining these facilities and equipment was included as part of direct blasting unit operating costs.



TABLE 16-6	MINE PRODUCTION SCHEDULE
West Kirl	kland Mining Inc. – TUG Project

Material Description	Units	Totals	Year -1	Year 1	Year 2	Year 3	Year 4
Total Mineralized Tonnes	t (000)	3,933	-	798	1,032	1,071	1,032
Average Au Grade	g/t	0.92	-	0.98	1.05	0.81	0.84
Average Ag Grade	g/t	44.30	-	51.78	55.55	34.85	37.07
Total Low Grade Tonnes	t (000)	266	_	34.47	63.53	74.56	93.28
	· · ·			-			
Average Au Grade	g/t	0.25	-	0.21	0.26	0.25	0.27
Average Ag Grade	g/t	14.24	-	14.34	14.25	16.85	12.10
Waste Tonnes	t (000)	11,359	143.18	697	3,511	3,397	3,611
Total Tonnes	t (000)	15,558	143.18	1,530	4,606	4,543	4,736
Total Au Ounces	(000)	118	-	25	35	29	29
Total Ag Ounces	(000)	5,723	-	1,345	1,872	1,240	1,266
Strip Ratio	W:O	2.7	0.0	0.84	3.21	2.97	3.21

## TABLE 16-7MINING EQUIPMENTWest Kirkland Mining Inc. – TUG Project

Туре	Item	No.			
Operations (Typical)					
Percussion Drill	DM40	1			
Loader	Cat 990K FEL (Example)	1			
Haul Truck	Cat 775F Truck (Example)*	4-5			
Support (Typical)					
Grader	Cat 14M Grader	1			
Track Dozer	Cat D10 Dozer	1			
Water Truck	18,927 I. Water Truck	1			
Utility	Utility Backhoe	1			
Maintenance	Fuel/Lube Truck	1			
Maintenance	Mechanic's Truck	1			
Maintenance	Boom Truck	1			
Maintenance	Fork Lift 3.5 Ton	1			
Operations	Light Plant	4			
	Pickup Truck	6			

"\*" - Dependent on equipment availabilities and utilizations, and haul distances.

### MINING SCHEDULE AND MANPOWER

Mining operations for the TUG Project will be 300 days per year (six days per week), operating on a two shift basis of two, 12-hour shifts per day. RPA used a 50-min/hour for scheduling purposes. The mine plan, fleet requirements, and manpower are based on this work schedule.



The following criteria were used to evaluate mine fleet requirements:

- Moisture Content: 3%;
- Truck Fill Factor: 97%;
- Bucket Fill Factor: 98%;
- Swell Factor: 0.741 (35% Swell);
- Truck Size: 64 tonnes;
- Loader Bucket Size: 12.2 m<sup>3</sup>;
- Average In-pit haul distance (vertical): 35 m;
- Average In-pit haul distance (horizontal): 680 m
- Average external-pit waste haul distance (vertical): 60 m;
- Average external-pit waste haul distance (horizontal): 365 m
- Average external-pit mineralized material haul distance (vertical): 0 m;
- Average external-pit mineralized material haul distance (horizontal): 225 m
- Average fix time:6.4 minutes (loading, wait, and dumping);
- Mechanical Availability: 95% (Mining Contractor); and
- Equipment Utilization: 90% (Mining Contractor).

### DEWATERING

Preliminary hydrogeological studies indicate that the potential open pit will not intercept the water table, and all surface water will be absorbed by the factures in the pit. Given these findings, dewatering was not considered for the TUG resource pit.

## MINE INFRASTRUCTURE

Mine infrastructure is addressed in Section 18 - Project Infrastructure of this report. Given the small size of this operation and the short mine life, mine infrastructure will be relatively minimal. It is assumed that the mining contractor will supply office trailers, a single-bay shop, portable compressors and use shipping containers for warehouse storage. The overall long-term impact to the environment should be minimal.

Water will be supplied by WKM via a water well, pipeline and lined water storage pond. Electrical connections for the mining contractor will be provided by WKM via a power line that originates approximately 10.3 km (6.4 mi) south of the Project area.



### **17 RECOVERY METHODS**

The recovery process is conceptual in nature and was developed to support the PEA. The conceptual flow sheet is shown in Figure 17-1.

The mineralized material will be mined from the open pit by contractor and hauled to a primary jaw crusher. After primary crushing, it will be conveyed to the secondary vibrating screen. The undersize from the screen will be the final product. The oversize from the screen will discharge into a secondary cone crusher. The discharge from the secondary cone crusher will be conveyed to the tertiary vibrating screen. The oversize from the screen will discharge into a tertiary cone crusher. The discharge from the crusher will be collected and conveyed to the tertiary screen feed conveyor which will discharge onto the tertiary vibrating screen for resizing. The undersize from the tertiary screen will be the tertiary screen for resizing. The undersize from the tertiary screen will be the product from the crushing circuit at a nominal size of 80% passing ¼ inch. A series of grasshopper conveyors will transport the material to a radial stacker which will be used to stack the material on the leach pad. Lime will be added to the material from a lime bin which will discharge onto the conveyor.

The material will be stacked in 15 ft lifts and diluted cyanide solution will be applied to the leach pad using drip emitters. Pregnant leach solution (PLS) will drain by gravity from the leach pad and will be collected in ditches and directed to the PLS pond. From the PLS pond, the solution will be pumped to a Merrill-Crowe zinc cementation recovery plant.

The pregnant solution will be clarified in pressure leaf filters and stored in a clarified solution tank. From the tank, solution will be pumped to a vacuum de-aeration tower which removes the dissolved oxygen from the solution. Zinc dust will be fed to the solution as it exits the de-aeration tower and the precious metals will be removed from the solution as solid precipitate. Plate and frame filter presses will be used to separate the precipitate from the solution. The solution will be collected in a barren solution tank, cyanide, lime, and make-up water will be added to the solution and it will be recirculated to the leach pad for reuse. The solid precipitate will be collected from the filter presses and moved to mercury retorts which are designed to collect mercury vapors from the precipitate as the precipitate is dried. The dried precipitate will be mixed with flux and smelted in electric induction furnaces. Gold doré that is produced by the refining process is shipped off site for further refining to produce fine gold and silver.

TABLE 17-1 PROCESSING DESIGN BASIS SUMMARY West Kirkland Mining Inc. – TUG Project	
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Design Criteria Description	Units	Value	Comments/Notes (Units: Imperial (short tons))
Characteristics of Process Materials			
Abrasion Index Feed Rate	t/d	0.9923 3.000	
Mine Operational rate	bours/day	20	
Crushing, Agglomeration and Storage			
Feed Rate	t/hr 2	150	
Design ractor Feed Size Maximum	% Inches	20% 26	
Product Size, P80	Inches	0.25	
Stages of crushing	number	с	
Bulk Density	lb/ft <sup>3</sup>	110	
Lime Addition	t/hr	0.08	
		0.00	
Stacking Height	+	15	
Leaching Cycle	davs	45	
Area Under Leach		135,000	
Solution Application Rate	tt <sup>2</sup>	0.005	
Solution Flow Rate	gpm	680	
Solution pH	PH	10.5	
Gold Recovery Silver Becovery	%	15.0	
Merrill-Crowe	2	0.0	
Solution Flow Rate	dpm	680	
Solution Grade, Gold	oz/t	0.019	
Solution Grade, Silver	oz/t	0.145	
Deaeration Oxygen Concentration	bpm	0.50	
Zinc Addition Rate	g Zn/g Au	0.33	
Zinc Addition Rate	g Zn/g Ag	0.61	
Excess Zinc Addition		200%	
Zinc Addition Rate		2.77	
Suspenaea Solias Concenitation Precipitate Produced	mg/L h/hr	0.1	
Reagents		i	
Lime	Ib/t	1.0	
Cement	lb/t	1.0	
Cyanide (heap leach plus Merrill-Crowe) Zinc	Ib/t Ib/t	0.5	
Product			
Gold	Troy ozday	47	
Silver	Troy oz/day	586	
Mercury	lb/day	29.0	
Heap Configuration			
Target pad capacity Exnansion Potential	Mt Mt	4.5 4.5 Ad	Constructed in 1 phase Additional expansion to the North utilize same pregnant headers
Loading method		•	
Staked Mineral Material density (dry basis)	ft <sup>3</sup>		To be confirmed with laboratory unit weight testing
Maximum neap neignt Maximum overall heap slope	1	3H:1V Measu	ineasured from the top surface of geomemorane liner at any point on the

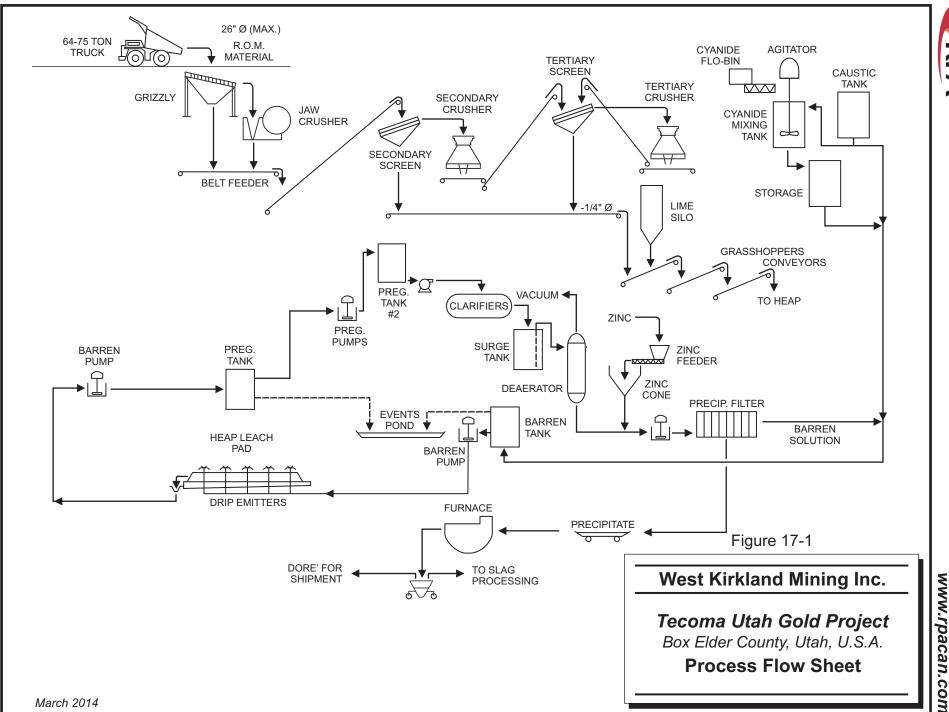
West Kirkland Mining Inc. – TUG Project, Project #2030 Technical Report NI 43-101 – March 7, 2014







Design Criteria Description	Units	Value	Comments/Notes (Units: Imperial (short tons))
Individual lift slope		1.4H:1V	
Minimum slope for base pad grading	%	2%	
Maximum slope for base pad grading		5H:1V	Based on constructability of overliner material
Minimum heap set-back from heap toe to perimeter berm	Ħ	30	Required to establish reclamation slope of 3H:1V
Heap Design Features			
Pad Lining (bottom to top)			Stripped and compacted native subgrade. Prepared subgrade
Prepared subgrade thickness	incnes	9-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0	
Prepared subgrade coefficient of permeability	cm/sec	KS1X10 <sup>-</sup> TDS	Material permeability confirmed with laboratory testing
Prepared subgrade source	:		Sources identified
Geomembrane	mi	. 60	Permeability K≤1X10-11 cm/s - double textured HDPE
Overliner source		crushed	Crushed mineralized material to meet specification
Overliner thickness	inches	12	
Drainage layer source		crushed	Crushed mineralized material to meet specification
Drainage layer thickness	inches	15	Equal the maximum average hydrostatic head on liner
Drainage layer coefficient of permeability	cm/sec	K≥2.5X10 <sup>-2</sup>	to be confirmed with laboratory testing
Solution collection pipe		(CPeP)	Spaced 30-ft apart in Herring Bone arrangement - Double wall perforated
Leak detection system		Perforated leak detection pipes	located under the primary solution collection headers
Perimeter berm height	ft	4	Measured vertically from the top of the drainage layer to the top of the
Events Pond			
Pond Sizing Approach		Probabilistic and Deterministic	Approach that results in the maximum water volume to be used for pond
Pond Sizing			Deterministic Approach
Draindown	hr	8	Solution flow rate - In the event of a power/pump outage
Storm Event		100 yr / 24 hour	Storm Event durations (volume)
Operational Volume	hr	ω	Hours of solution flow rate
Freeboard	ft	3 ft minimum	Measured from pond crest
Pond slopes		2.0H:1V	
Pond Sizing-			Probabilistic Approach
Sizing		Monte Carlo Simulation	Historic data from nearby weather station to be used
Freeboard	ft	0	Measured from pond crest - minimum
Pond Volume	Mgal	0	Assumed pond volume for PEA
Pond Lining		Double synthetic liner with a	Stripped and compacted native subgrade, prepared subgrade,
Prepared subgrade thickness	Inches	12	Compacted thickness
Prepared subgrade coefficient of permeability		k≤1×10 <sup>-6</sup> cm/s	
Geomembrane	mil	60	k≤1x10 <sup>-11</sup> cm/s
Pumping Criteria			
Pregnant Pump Tank		Vertical Turbine Pumps	1 primary pump and 1 secondary, pump destination to either trash rack at
Pond Reclaim Pumpback		Sloping deep-well submersible	1 pump in both cells of pond, pump destination to either trash rack at top of
LCRS Pumps		Sloping deep-well submersible	1 pump in both cells of pond, pump destination to be to surface above liner
Power Supply for Pumps		460 V / 3 Phase / 60 Hertz	



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### **18 PROJECT INFRASTRUCTURE**

The Project will require the development of infrastructure. The proposed locations of Project facilities and other infrastructure items were selected to take advantage of local topography, reduce the capital cost, account for environmental considerations, and ensure efficient and convenient operation of the mine haul fleet for minimum haulage times. Figure 18-1 is the proposed TUG site layout.

The primary facilities and infrastructure will include:

- Heap leach pad (HLP), a lined storage area, a solution storage pond, pumping wells, events ponds, diversion ditches, and leak detection, recovery and monitoring systems;
- Diversion channels to divert waters away from the heap leach pad, open pit and rock disposal areas;
- Water well and fresh water supply system to treat and distribute process water, fire water, and potable water;
- Access road and site roads, including the upgrading of the existing 4.83 km (3 mi) access road that runs north from Utah State Route 233;
- Sewage treatment infrastructures, e.g. septic tanks and leach fields;
- Office trailers;
- Merrill Crowe recovery plant;
- Assay laboratory;
- Gold and silver refinery;
- Process control and instrumentation;
- Two-bay truck shop (to be built by the mining contractor);
- Warehouse facility;
- Cold storage and laydown area;
- First aid room;
- Communication and IT systems;
- On-site fuel storage (to be built by mining contractor);
- 7.25 km (4.5 mi) power line, substation, transformers, and on-site distribution lines; and
- Explosive storage magazines and bulk blasting agent storage (to be supplied by a contractor).

The proposed location of the main Project facilities is shown in Figure 18-1.

#### HEAP LEACH PAD

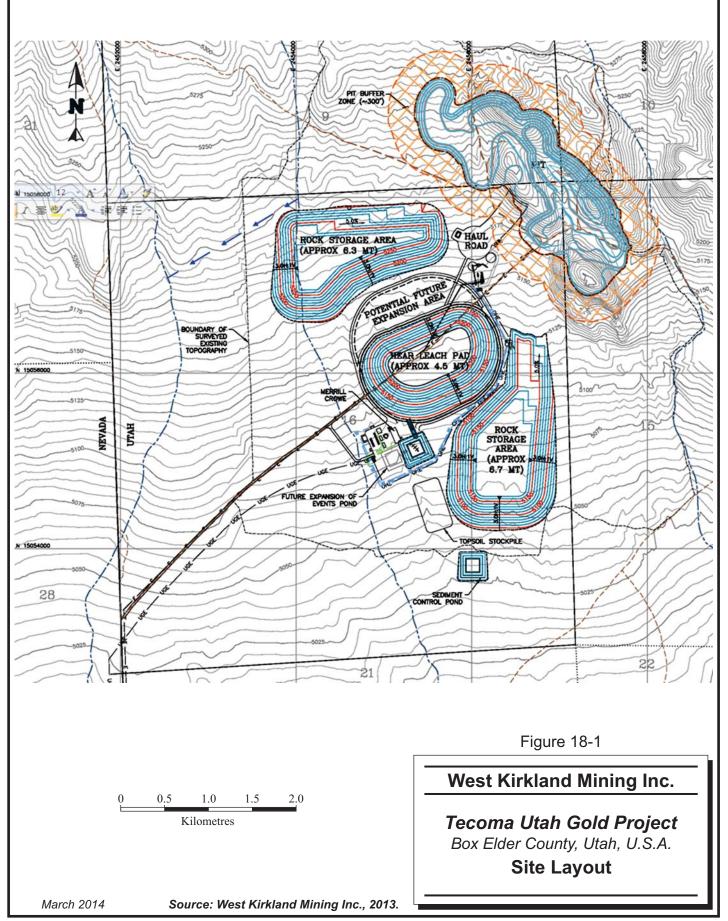
The HLP is designed to hold 4.5 Mt of crushed mineralized material with the option for an additional 4.5 Mt expansion to the north. The proposed pad location is to the west of the pit and will be constructed in one phase. The existing ground of the site has a mild and uniform 4.5% cross slope that provides a suitable foundation for the pad with minimal earthworks required for stability. Prior to construction, topsoil will be removed from the HLP and stored



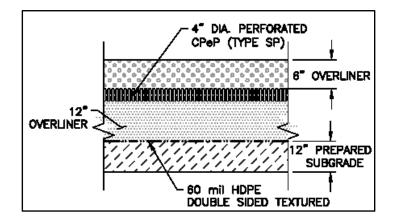
for future reclamation activities. Preliminary measurements indicate that the topsoil is approximately 10 cm to 20 cm deep. A storm water diversion channel will be provided upstream of the Rock Storage Area (RSA), which is upstream of the HLP, to re-direct storm flows to an adjacent drainage way.

The HLP will be lined using a 60 mil high density polyethylene (HDPE) double sided textured geomembrane, which is underlain by 30.5 cm (12-inches) of low permeability clay. A protective layer, consisting of crushed mineralized material, will be placed directly over the geomembrane. It will be screened to meet specifications developed from future strength testing results. Once the protective layer is placed, the pad will be loaded with mineralized material crushed to ¼-inch nominal size having an assumed density of 1.76 t/m<sup>3</sup> (110 pounds per cubic foot). The mineralized material will be stacked using portable conveyors from the crusher. Individual lifts will be approximately 4.5 m to 5.0 m (15 ft) high and maintained at an overall slope equal to the angle of repose (approximately 1.5H:1V). Benches will be used between each lift to produce an overall slope of 3H:1V.





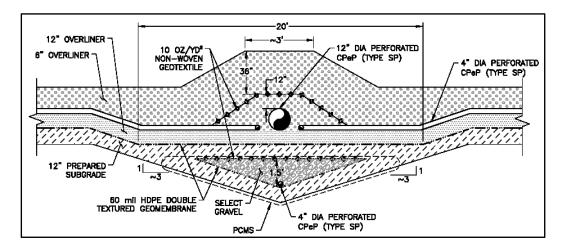




#### FIGURE 18-2 LEACH PAD TYPICAL SECTION

The leachate solution will be pumped onto the HLP using a barren solution pipeline. The barren pipeline will extend around the perimeter of the pad, but remain inside the lined containment area. A perimeter road will be constructed around the HLP for monitoring and maintaining the barren pipeline. The barren solution will be pumped onto the pad at a flow rate of 159 m<sup>3</sup>/hr (700 gpm), and applied using drip irrigation techniques. To minimize hydraulic head on the HDPE liner, 10.2 cm (4 in) perforated collection pipes will be spaced every 9.1 m (30 ft) in a herring bone configuration under the heap. The collection pipes will run from north to south and convey the flow to a main external collection channel located along the south side of the pad.

## FIGURE 18-3 SECTION OF INTERNAL COLLECTION CHANNEL WITH LEAK DETECTION





The pregnant solution will be collected in a pipe channel along the south side of the facility in order to convey the solution to a pump tank located upstream of the event pond. In the event of an upset condition, such as a power outage or significant storm event, the pump tank will over flow into the event Pond. The pregnant solution will then be pumped directly to the Merrill-Crowe plant, thereby by-passing the event Pond. This will allow the pond to be dry during normal operation and thus reduce evaporation and minimize the potential for leaks from the pond. The pond will be designed to hold approximately three million gallons of overflow solution with 0.92 m (3 ft) of freeboard and will be double lined with a HDPE liner with a leak detection system between the two liners.

Make-up water for the leach system will be added from a water well located on-site, and it will be added directly to the barren tank located within the Merrill-Crowe plant. An independent lined water storage pond will also be constructed closer to the crusher location to store clean water for dust suppression and site wide make-up raw water.

#### GEOTECHNICAL CONSIDERATIONS

A geotechnical field investigation was performed to locate construction materials such as clay and gravel. Preliminary laboratory test data indicated clay with a plasticity index (PI) in excess of 15 was located in sufficient quantities in the southwest corner of Section 27, Township 8 North, Range 19 West. Permeability tests have not yet been performed on the clay material to confirm if it will meet the State of Utah requirements. An existing road, which routes from the northwest corner to the southeast corner of Section 28 will be improved for the transport of approximately 91,750 cubic metres (120,000 cubic yards) of clay for the leach pad and pond construction.

During the test pit investigation, a layer of caliche was encountered approximately 1.83 m to 3.05 m (6 ft to 10 ft) below the ground surface in the proposed pad area. The excavator was unsuccessful when attempting to dig through this hard calcium carbonate deposit; therefore, the designed depth of the water storage pond will be limited to 1.83 m (6 ft) below ground surface.

#### ROCK STORAGE AREA

The Rock Storage Areas (RSA) were sized to store up to approximately 13 Mt of overburden and waste rock with average side slopes of 3H:1V. The RSAs will be located to the north and south of the heap leach pad in order to minimize the haul distances from each end of the pit.



The RSAs will be developed in a series of lifts by end dumping material from the haulage equipment. The individual lifts will be 6.1 m (20 ft) high and maintained at an overall slope equal to the angle of repose (approximately 1.5H:1V). Benches will be used between each lift to produce an overall slope of 3H:1V.

Topsoil from the RSAs will be removed prior to overburden placement to be used for future reclamation activities. The facilities are unlined due to the fact that the overburden is assumed to be non-acid generating, based on the mineralogy encountered to date. A storm water pond will be located downstream of the RSAs in order to capture runoff.

#### MERRILL CROWE RECOVERY PLANT

Merrill-Crowe is a separation method for removing gold and silver from the cyanide solution that originates on the heap leach pad. The solution will be separated from the metals with filter presses. A clear solution is achieved by using filters that have been pre-coated with diatomaceous earth. Oxygen is removed from the solution by passing the solution through a vacuum de-aeration column. Zinc dust is added to the clarified, de-aerated solution, which precipitates the gold and silver; because zinc has a higher affinity for the cyanide ions than gold. The gold precipitate (mixed with zinc dust) is filtered out of the solution, zinc dust and gold and silver are mixed with sulphuric acid to dissolve the zinc. The solution is filtered, and the remaining solids smelted to a doré bar. These bars are sent to an off-site refiner to separate any impurities and separate the gold and silver.

#### POWER SUPPLY AND POWER DISTRIBUTION

Electric power is provided to the region by Raft River Rural Electric Cooperative (Raft River). Analysis of the delivery alternatives was based on estimated construction costs (\$100k per mile), land ownership complexity, and permitting complexity related to public lands (Gault Group 2013).

The preferred alternative for delivery of electrical power to the mine site by Raft River is via a combination of overhead and buried distribution line. The line would originate at the Tecoma Substation, serve the local community between the Substation and Highway 30, and terminate at the mine site. The general route of the distribution line is immediately adjacent and parallel to the Nevada/Utah state line.



An existing distribution 25 kV (No. 0) line supports the town of Lucin, Utah. The line originates at the substation in Nevada (S21, T40N, R70E), crosses immediately into Utah (S9, T7N, R19W) and parallels the state line north approximately 0.5 miles to the southern-most of the two railway lines. At this point the Lucin distribution line turns east and follows the railway corridor to the community of Lucin. Raft River proposes increasing the size (No.0 to No. 0000) of the portion of the overhead line from the substation to the railway to accommodate the increased load from the new customers (Gault Group 2013).

At the railroad, the overhead line will split, with a new No.0000 line continuing north in Utah, staying within 30-foot-wide easements (obtained in the name of Raft River) on fee land across the west boundary of Sections 9, 4 and 33 (T8N, R19W). Immediately after crossing over highway 30, the line will cross into Nevada (S9, T40N, R70E), where the Raft River overhead line terminates at its intersection with the Stateline access road to the TUG property. The overhead line crossing Highway 30 requires compliance with AASHTO guidelines, and engineered drawings are necessary to support issuance of a permit from the Utah Department of Transportation (UDOT). TUG would take delivery of the electrical power at the terminus of the overhead line, and convey electrical power to the mine-site via a cable buried in a right-of-way (ROW), beneath, or immediately adjacent to, the existing gravel access road.

Based on cursory information from two separate rural electric cooperatives, the estimated cost of this 10.3-km (6.4-mi) long distribution line is \$705,000. Power consumption for the Project is estimated to be approximately 2.7 MW; the primary consumer of power will be the three-stage crushing and screening plant.

#### WATER SUPPLY AND WATER DISTRIBUTION

Make up water supply for the Project has been estimated to be approximately 17.7 L/s (280 gpm), which includes makeup water for the heap leach, dust suppression at the crusher and on the haul roads, and plant make-up water.

WKM plans on drilling a 450-m deep water well located within 1.61 km (one mile) from the process plant site. Potable water would be hauled to the site by commercial vendors.



#### ACCESS ROAD AND SITE ROADS

The existing 4.83 km (three miles) access road will be upgraded in order to accommodate the increased traffic load. Ditching, culverts, and sub-base improvements will be made after a survey of the road conditions is completed.

#### FUEL SYSTEMS

#### PROPANE

Propane will be used for heating and for the refining furnace. It will be delivered by a local supplier and stored in an on-site storage tank that will also be supplied by the local propane supplier.

#### DIESEL AND GASOLINE

The primary consumer of diesel fuel will be the mining contractor, who will supply their own diesel fuel storage. It is estimated that a 38,000 L (10,000 gallon) diesel storage tank should be adequate. The necessary containment areas for all fuel, gasoline, and oil products will be built to Utah State environmental standards.

#### ADMINISTRATION

#### BUILDINGS

Due to the size and longevity of the operation; all administration, engineering, processing and supervision offices will be composed of mobile trailers. RPA estimates that the number of trailers should total three, 10 ft by 30 ft, a typical office trailer size in the United States. These office trailers would be supplied with air conditioning, heaters, and the necessary toilets.

#### COMMUNICATIONS AND IT SYSTEM

A satellite communications system will be constructed near the administration office and will employ a satellite telephone/data system linking the mine and process plant site to the administration trailers and corporate office. Site radio communications will be by both stationary and mobile radios. Cellular telephones will be prevalent at the TUG operation.



### **19 MARKET STUDIES AND CONTRACTS**

#### MARKETS

The principal commodities to be produced at the TUG mine are gold and silver, which are freely traded, at prices that are widely known, so that prospects for sale of any production are virtually assured. For the Base Case scenario in the economic analysis; RPA used a gold price of US\$1,525.00 per ounce for the life of mine, and a silver price of US\$28.00/oz.

Gold is a principal metal traded at spot prices for immediate delivery. The market for gold trading typically spans 24 hours a day within multiple locations around the world (such as New York, London, Zurich, Sydney, Tokyo, Hong Kong, and Dubai). Daily prices are quoted on the London market and New York spot market, and can be found on <u>www.kitco.com</u>. The London Fix price, as of June 25, 2013, was \$1,279 per ounce. This Technical Report uses the long-term price forecasts from the major banks with a long-term average price for gold of \$1,525 per ounce for the economic analysis.

Silver trading follows a pattern that is similar to that of gold (as described above). Daily prices are quoted on the New York spot market and can be found on <u>www.kitcosilver.com</u>. The London PM Fix price, as of June 25, 2013, was \$19.77 per ounce. This Technical Report uses the long-term price forecasts from the major banks with a long-term average price for silver of US\$28.00 per ounce for the economic analysis. Historical gold and silver metal prices are summarized in Table 19-1.

# TABLE 19-1 HISTORICAL GOLD AND SILVER PRICES West Kirkland Mining Inc. – TUG Project

Year	Au Price, US\$/oz	Ag Price, US\$/oz
2010	1,224.53	20.19
2011	1,571.52	35.12
2012	1,668.98	31.15
28/06/2013	1,523.29	26.63
Average 2010 – 28/Jun/2013	1,497.08	28.27

Source: www.kitco.com , London PM Fix prices



Operations at TUG are expected to produce a nominal 17,000 ounces of gold and 214,000 ounces of silver, annually, over an estimated mine life of four years.

It was assumed that WKM will not rely on the sale of its gold and silver to any particular buyer. WKM's gold and silver doré should be refined to market delivery standards, which could be accepted by any reputable commercial refinery.

#### CONTRACTS

Quotes of contracts for goods and services reviewed to date are within industry standards. No contracts have been established for TUG, which is in the early stages of development.

Doré will be shipped from site to a major refiner where the silver and gold will be separated. Contracts will be put in place for refining with charges. For the PEA economic analysis, RPA used refining costs of US\$1.75 per ounce gold and US\$1.00 per ounce silver with a payment of 99.8% of the precious metal content.



### 20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

#### **ENVIRONMENTAL STUDIES**

WKM retained Gault Group, LLC (GGL) to identify and obtain the permits and approvals necessary for the construction and operation of the TUG mine. GGL specializes in performing entitlement work for the mining industry in the southwestern United States.

The TUG Project is located on three sections of undeveloped fee land in northwestern Utah, adjacent to the Utah/Nevada state line. The Project is subject to several regulatory programs. Because the Project is located on fee land, the majority of these programs are administered at the state level. Project components that impact the regulations are as follows:

- Open-pit mining and minerals processing will occur on fee land;
- Access to the property is gained via an established public roadway;
- Water for the Project will be derived from on-site wells;
- Project construction does not require dredge or fill activities in Waters of the United States; and
- Power for the Project will be generated on-site, or delivered via cable buried in an existing public roadway.

#### STATE PERMITS

The key State regulatory programs applicable to the TUG Project are administered by the Utah Department of Environmental Quality (UDEQ), Utah Division of Oil, Gas, and Mining (DOGM), and the Utah Division of Water Rights (DWR). ADEQ administers permits for the protection of air and water quality. DOGM provides oversight and has approval authority for mine and reclamation planning, as well as financial assurance and reclamation monitoring. DWR, through the Office of the State Engineer, regulates the appropriation and distribution of water in the state of Utah. In addition to the key permits, there are a number of less onerous State compliance programs including those pertaining to drinking water, waste disposal, and safety including UDEQ Division of Radiation Control for permitting of nuclear gauges and other radioactive process instrumentation.



The State permitting processes represent a critical path for the TUG Project. Critical path permits are described below.

#### GROUND WATER DISCHARGE PERMIT (GWDP)

The GWDP is administered by the Water Quality Division of UDEQ and is necessary to demonstrate compliance with State regulations pertaining to the protection of ground water. The GWDP includes detailed information on site-specific geological and hydrological conditions. Preliminary investigations indicate that ground water beneath the Project is of sufficient depth to minimize concerns for ground water impacts from mining or mineral processing.

#### CONSTRUCTION PERMIT

The Construction Permit is administered by UDEQ, and consists of a review and approval of TUG's engineered drawings and specifications by UDEQ's engineers.

#### LARGE MINE OPERATING PERMIT (LMO)

The LMO is a complex permit administered by DOGM. The LMO is required for a mine that exceeds 10 acres of surface disturbance and contains a detailed plan of operations, rock geochemical characterization, a reclamation plan, and financial assurance requirements.

#### APPROVAL ORDER (AO)

The AO (air permit) is administered by UDEQ Division of Air Quality (DAQ). Although the Project is located in an Attainment Area and is likely to have low emissions, dispersion modeling will be required. GGL has acquired a meteorological data set for the Project vicinity of obtained DAQ approval for using the data in the modeling effort.

#### FEDERAL PERMITS

Federal permits and approvals necessary for the construction and operation of the TUG mine are extremely limited. Should WKM elect to obtain electrical power from Raft River Electrical Cooperative, TUG would need to obtain approval from the Bureau of Land Management (BLM) for the burial of electric cable in the portion of existing public roadway that crosses BLM administered public land (Sections 4 and 28, T41N, R70E). Barring the existence of an Extraordinary Circumstance, an activity of this type may be categorically excluded from National Environmental Policy Act (NEPA) review (CX #12 for grants of right-of-way wholly within the boundaries of other compatibly developed rights-of-way).



Additional Federal regulatory programs to which TUG would be subject include the Bureau of Alcohol, Tobacco, Firearms, and Explosives (BATF) administered explosives program, Environmental Protection Administration (EPA) administered Title V air permit, Mine Safety and Health Administration (MSHA) facility registration and safety programs, and potential compliance and/or permits from the Federal Communications Commission (FCC) for on-site communication systems.

Table 20-1 presents a comprehensive list of permit requirements for the TUG Project.

Permits	Agency
Pre-Construction Permits/Approvals/ Clearances	
Archaeological Clearance	School and Institutional Trust Lands Administration (SITLA), Division of Oil Gas and Mining (DOGM), State Historic Preservation Office (SHPO)
Construction Permit (Engineering Specifications Based)	Utah Department of Environmental Quality (UDEQ) - Division of Water Quality (DWQ)
Approval Order (Air Permit)	UDEQ - Division of Air Quality (DAQ)
Ground Water Discharge Permit (GWDP)	UDEQ - DWQ
Public Drinking Water System Permit	UDEQ - Division of Drinking Water (DDW)
Test Well Drilling Permit	Utah Division of Water Rights (DWR)
Large Mine Operation Permit	DOGM
Storm Water Pollution Prevention Plan (Construction)	UDEQ-DWQ
Water Rights	DWR
Underground Right-of-Way (ROW) (Power Cable)	Bureau of Land Management (BLM)
On Site Wastewater Facility	UDEQ - DWQ
Operating Permits/Approvals	
Title V Operating Permit (12 months after startup)	UDEQ - DAQ, EPA
Explosives User's Licence	Bureau of Alcohol, Tobacco, Firearms, and Explosives (BATF)
Spill Prevention Control Countermeasure Plan (SPCC)	EPA
General Multi-Sector Industrial Storm Water Permit	UDEQ - DWQ
Above Ground Storage Tank Notification	Box Elder County
Mine Registration	Mine Safety and Health Administration (MSHA)
Mine Safety Training Plan	MSHA
Used Oil Program Registration	UDEQ - Division of Solid and Hazardous Waste (DSHW)

# TABLE 20-1MAJOR PERMITSWest Kirkland Mining Inc. – TUG Project



#### LOCAL CONSULTATION

Native American consultation may be required as part of the BLM review of the underground right of way application. No Traditional Cultural Properties are known to exist in the Project area, and no concerns have been expressed to-date.

Local residents in Montello, Nevada, and Grouse Creek, Utah will be advised of the Project during development of the LMO Permit.

#### FINANCIAL ASSURANCE

The amount of financial assurance necessary to meet DOGM standards will be stipulated in the LMO. WKM has defined the post-mining land use for the area as "wild life habitat and limited grazing". Standard Reclamation Cost Estimating Software (SRCE) will be used to arrive at a final cost, subject to DOGM approval.

#### MINE CLOSURE REQUIREMENTS

The goal of the Project's reclamation plan is to return the site to a landscape comparable to the surrounding area, and that supports an ecosystem near to or greater than the pre-mining site ecosystem. After the heap leach pad reaches it maximum gold and silver recovery, the spent (completely leached) residue will be rinsed and detoxified with water and/or a neutralizing chemical, e.g. hydrogen peroxide. Side slopes on the pad will be sloped and contoured with a track dozer to a minimum of 3:1 (H:V). Growth media from topsoil stockpile areas will be used as a final cover over the reclaimed heap and other re-contoured areas. All areas will be re-seeded with a State of Utah-approved seed mixture. Once acceptable water quality is verified, the water in the process ponds will be used to irrigate reclaimed areas within the Project site. The necessary sediment control structures will be built to minimize erosion of the reclaimed areas.

All infrastructure installed by WKM will be re-moved from the Project site.

The current bonding estimate for the Project is US\$1.7 million.



### **21 CAPITAL AND OPERATING COSTS**

#### CAPITAL COSTS

An estimate of the pre-production and sustaining capital was generated for the TUG Project and it is presented in Table 21-1. Due to the size of the Project, i.e. the short mine life of four years, and the relative simplicity of the mining and processing, capital requirements will be relatively low compared to larger projects with longer mine lives. For example, RPA proposes that mining will be performed by a third-party mining contractor; therefore, the capital costs for the mining equipment will be included in the contractor's mine operating costs. The crushing plant will also be supplied by a third-party contractor, and therefore the contractor's capital cost will be included in the unit crushing costs. Office trailers will be used instead of an office building.

Sustaining capital for the Project will be associated primarily with the process plant and leach pad. Based on the current resource estimate, the Project has a four year mine life.

Capital Cost Category	Totals (US\$000)	Pre-production Yr -2 to -1 (US\$000)	Sustaining Yr 1 to 4 (US\$000)
Direct Capital			
Mining Capital	125	105	20
Processing Capital			
Leach Pad, Ditches, Ponds	4,432	4,162	270
Process/Lab/Infrastructure	4,523	3,995	529
Processing Capital Subtotal	8,955	8,157	799
Infrastructure	4,832	4,632	200
Light Vehicles	385	210	175
Water Wells, Tanks and Water Lines	827	727	100
Direct Capital Subtotal	15,124	13,830	1,294
Indirect Capital			
Basic/Design Engineering - Electrical, Piping, Sanitation, Leach Pad	312	312	-
First Fills/Commissioning	200	200	-
Capital Spares	100	100	-

#### TABLE 21-1 SUMMARY OF CAPITAL COSTS West Kirkland Mining Inc. – TUG Project



Capital Cost Category	Totals (US\$000)	Pre-production Yr -2 to -1 (US\$000)	Sustaining Yr 1 to 4 (US\$000)
Bonding	1,700	1,700	-
Environmental/Permitting	401	401	-
CM/QA-QC: Leach Pad, MC, Elec., Water	471	471	-
Duties and Taxes, Freight, Logistics	529	529	-
Owner's Cost	1,252	1,252	-
Indirect Capital Subtotal (approximately 32%)	4,964	4,964	-
Direct + Indirect Subtotal	20,088	18,795	1,294
Contingency @ 25%	4,699	4,699	-
Total Capital	24,787	23,493	1,294

The following is excluded from the capital cost estimate:

- Project financing and interest charges;
- Escalation during construction;
- Any additional civil, concrete work due to the adverse soil condition and location;
- Insurance during construction;
- Taxes;
- Import duties and custom fees;
- Cost of geotechnical investigation
- Sunk costs;
- Pilot Plant and other test work;
- Exploration drilling;
- Costs of fluctuations in currency exchanges;
- Project application and approval expenses; and
- Future expansion.

#### **OPERATING COSTS**

#### MANPOWER

Estimated manpower for the Project is listed in Table 21-2.

#### TABLE 21-2SUMMARY OF MANPOWER

West Kirkland Mining Inc. – TUG Project

Project Manpower	WKM	Contractor	Total
Mining	4	32	36
Processing	25	12	37
G&A	5	0	5
Totals	34	44	78

1



#### **OPERATING COSTS**

The operating costs for the Project are summarized by year in Table 21-3.

#### TABLE 21-3 SUMMARY OF YEARLY OPERATING COSTS

#### West Kirkland Mining Inc. – TUG Project

Yearly Operating Costs, US\$/yr	Mining Cost US\$/yr	Process Cost US\$/yr	G&A Cost US\$/yr	Total Cost US\$/yr
Year 1	4,064	7,408	1,912	13,384
Year 2	11,062	9,741	1,912	22,715
Year 3	10,964	10,190	1,912	23,066
Year 4	11,359	10,009	1,912	23,281
Totals	37,449	37,348	7,648	82,445
Yearly Unit Cost, US\$/oz	Mining Cost US\$/oz rec	Process Cost US\$/oz rec	G&A Cost US\$/oz rec	Total Cost US\$/oz rec
Year 1	225	411	106	742
Year 2	437	385	76	898
Year 3	554	515	97	1,167
Year 4	573	505	96	1,174
Averages	452	450	92	994
Yearly Unit Cost, US\$/t min. mat.	Mining Cost US\$/t min. mat.	Process Cost US\$/t min. mat.	G&A Cost US\$/t min. mat.	Total Cost US\$/t min. mat.
Year 1	4.88	8.90	2.30	16.07
Year 2	10.10	8.90	1.75	20.74
Year 3	9.57	8.90	1.67	20.14
Year 4	10.10	8.90	1.70	20.69
Averages	8.92	8.90	1.82	19.64

"min. mat." - mineralized material

Three experienced mining contractors were contacted and each provided a budgetary mining cost, which are summarized in Table 21-4. The mining contractor cost was combined with owner operating costs for grade control, work outside of the mining contractor's scope and general mining supplies to calculate the overall mining cost.



#### TABLE 21-4 BUDGETARY CONTRACT MINING QUOTES

#### West Kirkland Mining Inc. – TUG Project

Contractor	Mineralized Material Mining Cost, US\$/t	Waste Mining Cost, US\$/t
Contractor A	2.06	2.30
Contractor B	4.50	4.04
Contractor C	1.84	1.84

Unit process operating costs are presented in Table 21-5.

West Mindana	in ing i	
Description	Unit Cost, (US\$/t)	Annual Cost, (US\$/yr)
Consumables	1.86	1,846,000
Fuel	0.13	126,000
Labor	1.81	1,797,000
Power	1.35	1,335,000
Maintenance	0.46	465,000
Contract Crushing	3.28	3,256,000
Total	8.90	9,825,000

#### TABLE 21-5 TYPICAL PROCESSING COSTS West Kirkland Mining – TUG Project

General and Administration costs were estimated to be approximately US\$1.73 per tonne mineralized material. This unit cost equates to approximately US\$1.612 million per year. G&A costs calculated included the following subcategories:

- Labor;
- Supplies;
- Travel;
- Insurance, miscellaneous taxes, fees;
- Land holding costs;
- Offsite overhead;
- Environmental and permitting;
- IT/computers/telephones;
- Maintenance, power, light vehicles;
- Legal, audits, and consultants; and
- Other onsite overhead.



### **22 ECONOMIC ANALYSIS**

The PEA contained in this report is based, in part, on Inferred Resources, and is preliminary in nature. Inferred Resources are considered too geologically speculative to have mining and economic considerations applied to them and to be categorized as Mineral Reserves. There is no certainty that economic forecasts on which this PEA is based will be realized.

A pre-tax and after-tax cash flow projection has been generated from the Life of Mine production schedule and capital and operating cost estimates, and is summarized in Table 22-1. A summary of the key criteria is provided below.

#### ECONOMIC CRITERIA

#### REVENUE

- 3,000 mineralized tonnes per day processed from a single open pit (approximately 1.1 million tonnes per year).
- Gold and silver recoveries, as indicated by test work, averaging 58% and 15%, respectively.
- Reduction in ounces for gold entrained in leach pad circuit.
- Gold at refinery 99.8% payable.
- Exchange rate US\$1.00 = C\$1.00.
- Metal prices: US\$1,525 per ounce gold and US\$28 per ounce silver.
- Gold revenue and silver revenue percentage contributions are 81% and 19%, respectively.
- Net Smelter Return includes doré refining, transport, and insurance costs.
- No salvage value was applied to any of the equipment or infrastructure.
- Mine life: 4 years.
- Gold and silver payable values were calculated based on metal price and exchange rate.
- Yearly revenues were calculated by subtracting the applicable refining charges and transportation costs from the payable metal value.



• Revenue is recognized at the time of production.

#### COSTS

- Pre-production period: 24 months (Year -2 and Year -1).
- Initial working capital proposed is US\$2.6 million. The working capital is recovered at the end of the mine life.
- Unit operating costs for mining, leaching, power, fuel, and G&A were applied to annual mined/leached tonnages, to determine the overall yearly operating cost. This cost was deducted from the precious metal revenues to derive annual operating cash flow.
- Life of Mine production plan as summarized in Table 22-2.
- Mine life capital totals US\$24.79 million, which does not include reclamation.
- Average operating cost over the mine life is US\$902 per gold ounce equivalent.

#### ROYALTIES

There are a number of royalties associated with the TUG Project. The following royalties, grouped below by their relative land Section location, were included in the economic analysis:

- Section 9, Township 8 North Range 19 West royalties:
  - A 1.4% net smelter return (NSR) of 35% of the Gross Revenue will be paid to a private party; and
  - A 2.47% NSR of the Gross Revenue will be paid to a private party.
  - For the economic criteria presented in this PEA, the estimated LOM royalties for Section 9 are US\$2.115 million.
- Section 10, Township 8 North Range 19 West royalty:
  - A 5.00% NSR of the Gross Revenue will be paid to a public corporation party.
  - For the economic criteria presented in this PEA, the estimated LOM royalties for Section 10 are US\$59,000.
- Section 15, Township 8 North Range 19 West royalties:
  - A 1.4% NSR of 35% of the Gross Revenue will be paid to a private party; and
  - A 2.47% NSR of the Gross Revenue will be paid to a private party.
  - For the economic criteria presented in this PEA, the estimated LOM royalties for Section 15 are US\$726,000.
- Section 16, Township 8 North Range 19 West royalties:
  - o A 4.00% NSR of the Gross Revenue will be paid to a State of Utah.
  - School and Institutional Trust Lands Administration (SITLA) processing fee of 1%.
  - For the economic criteria presented in this PEA, the estimated LOM royalties for Section 16 are US\$2.239 million.



#### TAXATION

It should be noted that RPA is not an expert on accounting or taxes. Listed below are the tax assumptions that were used in this PEA:

• No Loss Carry Forward (LCF) was applied to the cash flow;

- A Utah State Severance tax at 2.6% of Gross Profit;
- Box Elder County, Utah property tax of 1.1153%;
- Utah State Income tax rate used was 5%; and
- U.S. Federal tax rate used ranged from 34% to 35%.

					TABLE 22-1 West Kirklan												
Date:	05/09/2013	INPUTS	UNITS	TOTAL		Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	Mining Open Pit Mine Operating Days Stacking Operating Days Leaching Operating Days Mineraized Material tonnes moved per day Total Tonnes moved per day, excluding Year -	350 350 350	days days days tonnes / day tonnes / day check (red)	2,160 2,160 2,160 7,203 7,203			60 60 - 2,386	350 350 2,379 4,371	350 350 350 3,129 13,159	350 350 350 3,273 12,980	350 350 350 3,215 13,533	350 350 350 -	350 350 350 -				
	Production Mineralized Material to Leach Pad Au Head Grade Ag Head Grade AuEq Head Grade Waste Stripping Ratio Mineralized Material & Waste	9,447 21,727 26,126	000 tonnes g/t g/t 000 tonnes 000 tonnes	4,198 0.87 42.39 11,359 2.71 15,558			- 143 - 143	833 0.94 50.23 1.85 697 0.84 1,530	1,095 1.00 53.16 1.96 3,511 3.21 4,606	1,145 0.78 33.68 1.38 3,397 2.97 4,543	1,125 0.79 35.00 1.42 3,611 3.21 4,736						
Stockpile	Opening tornes Au Grade Ag Grade Addition tonnes		000 tonnes g/t g/t 000 tonnes	:				:	:	:	:						
	Au Grade Ag Grade Deduction tonnes	1.00 31.00	g/t g/t 000 tonnes					1.00 31.00	1.00 31.00	1.00 31.00	1.00 31.00						
	Au Grade Ag Grade Closing tonnes Au Grade		g/t g/t 000 tonnes g/t	:	0.91			1.00 - -	-	-							
	Ag Grade Total Production Tonnes leached Average Head Grade Au Average Head Grade Ag	4,399 0.906	g/t 000 tonnes g/t g/t	4,198 0.87 42.39			-	833 0.94 50.23	1,095 1.00 53.16	1,145 0.78 33.68	1,125 0.79 35.00						
	Average Head Grade AuEq Processing Mineralized Material to Leach Pad Head Grade at Pad Head Grade at Pad Head Grade at Pad		g/t 000 tonnes g/t Au g/t Ag g/t AuEq	1.64 4,198 0.87 42.39				1.85 833 0.94 50.23 1.85	1,96 1,095 1.00 53.16 1.96	1.38 1,145 0.78 33.68 1.38	1,42 1,125 0.79 35.00 1.42	-	-				
	Contained Au Contained Ag		oz oz	117,873 5,722,559			:	25,284 1,344,736	35,369 1,871,517	28,620 1,240,200	28,600 1,266,105	:	-				
	Average Recovery - Gold Average Recovery - Silve Average Recoverable AuEq	58% 15%	% g/t AuEq	58% 15%				58% 15% 0.68	58% 15% 0.73	58% 15% 0.54	58% 15% 0.55	58% 15% -	58% 15%	58%	58%	58%	58
9	7% Total Recovered Au 3% Total Recovered Ag Total Recovered AuEq Note: Year -1 Reports to Year 1 Productio	83,765	oz oz oz	68,309 857,091 83,765				14,607 200,417 18,222	20,514 280,728 25,576	16,599 186,030 19,954	16,588 189,916 20,012		-				
	Revenue Metal Prices Au Ag Exchange Rate	\$ 1,525 \$ 28 \$ 1.00	Input Units US\$/oz Au US\$/oz Ag US\$/ US\$	\$ 1,525 \$ 28 \$ 1.00	Calculation Units US\$/oz Au \$	1,400 \$	:	\$ 30	\$ 29	\$ 1,500 \$ 27 \$ 1.00	\$ 24 \$	\$ 24	\$ 24				
	11% Total Revenue - Gold 9% Total Revenue - Silver Total Gross (Payable) Revenue	99.8%	US\$ '000 US\$ '000 US\$ '000	\$ 104,317 \$ 23,734 \$ 128,051				\$ 6,013	\$ 8,141	\$ 5,023	\$ 4,558	\$-	\$- \$- <b>\$-</b>				
	Off-Site Costs Transport Au Ag Refining cost	\$0.25 US\$/oz Au \$0.25 US\$/oz Ag	US\$ '000 US\$ '000	\$ 17 \$ 214			:			\$ 4.15 \$ 47	\$ 4.15 \$ 47 5	\$- \$-	\$- \$-				
	Au Ag Treatment Au	\$1.75 US\$/oz Au \$1.00 US\$/oz Ag \$0.00 US\$/oz Au	US\$ '000 US\$ '000 US\$ '000	\$ 120 \$ 857 \$ - \$ -			:	\$ 200	\$ 281	\$29 \$186 \$-	\$ 190 \$	s -	\$- \$- \$-				
	Ag Total Off-Site Costs Net Smelter Return	\$0.00 US\$/oz Ag	US\$ '000 US\$ '000 US\$ '000	\$ - \$ 1,208 \$ 126,843				\$ - \$ 280 \$ 29,105				•	\$ - \$ -				
	Royatity NSRs SITL A Processing Fee Section 9 - Private Mineral: Section 10 - Federal Unpatented Claim Section 16 - Private Mineralt Section 16 - Utah State Section	1%	US\$ '000	\$				<b>1,101</b> 294 295	\$ 1,728 \$ 410 \$ 599 \$ -	\$ 1,177	<b>1,132</b> 5 278 5 484 5 59	<b>\$ -</b> \$ - \$ - \$ -	<b>\$</b> - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$				
	Net Revenue Unit NSR		US\$ '000 US\$/t leached	\$ 938 \$ 121,704 \$ 28.99				\$ 28,004 \$ 33.63	\$ 38,843	\$ 28,479 \$ 24.86	\$ 26,378		\$ - \$ - \$ -				



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P

	Operating Costs Contractor Mining Cost- Mineralized Material	\$1.84/t movec	US\$/t moved	\$ 1.84		s	1.84 \$	1.84 \$	1.84 \$	1.84 \$	1.84						
	Contractor Mining Cost- Waste WK Mining Cost	\$1.84/t movec	US\$/t moved US\$/t moved	\$ 1.82 \$ 0.16		\$ \$	1.84 \$ 1.33 \$	1.84 \$ 0.38 \$	1.84 \$ 0.14 \$	1.84 \$ 0.15 \$	1.84 0.14						
	Total Mining Cost Processing	\$8.90/t leached	US\$/t moved US\$/t leached	\$ 3.87 \$ 8.90		<b>\$</b> \$	5.01 \$ 8.90 \$	4.06 \$ 8.90 \$	3.82 \$ 8.90 \$	3.83 \$ 8.90 \$	3.82 8.90						
	G&A Total Unit Operating Cost		US\$/t leached US\$/t leached	\$ 1.73 \$ 14.30		\$ \$	- \$ 13.90 \$	1.94 \$ 14.89 \$	1.47 \$ 14.19 \$	1.41 \$ 14.13 \$	1.43 14.15						
	Mining Cost- Mineralized Material	\$ 1.84	US\$ '000	\$ 7,725		s	- \$	1,532 \$	2.015 \$	2,108 \$	2,070 \$	- \$					
	Mining Cost- Waste WK Mining Cost	\$ 4.92 \$ 0.61	US\$ '000 US\$ '000	\$ 20,638 \$ 2,562		÷	\$ ¢	1,282 \$ 575 \$	6,459 \$ 661 \$	6,251 \$ 660 \$	6,645 \$ 665 \$	- \$ - \$	-				
	Total Mining Cost	\$ 7.37	US\$ '000	\$ 30,925		\$ S	- \$ - \$	3,390 \$	9,136 \$	9,019 \$	9,380 \$	- \$ - \$	-				
	Processing G&A	\$ 8.90 \$ 1.73	US\$ '000 US\$ '000	\$ 37,348 \$ 7,254		\$	\$	7,408 \$ 1,612 \$	1,612 \$	10,190 \$ 1,612 \$	10,009 \$ 1,612 \$	806	-				
	Total Operating Cost Total Operating Cost/oz AuEQ	\$ 17.99	US\$ '000	\$ 75,527 \$ 902			\$	12,410 \$	20,489 \$	20,820 \$	21,001 \$	806 \$	- \$	- \$	- \$	- \$	
	Total Capital Cost/oz AuEQ			\$ 296													
	Net Income before Tax, Amortization & Depletion		US\$ '000	\$ 47,877			\$	15,594 \$	18,354 \$	7,659 \$	5,377 \$	(806) \$	<u> </u>	1,700 \$	- \$	- s	; -
	CAPITAL COST																
	Direct Capital Cost Mining	Contract Mining + WKM OH	US\$ '000	\$ 105	s	30 \$	75										
	Leach Pad	Contract Willing + WKW OH	US\$ '000	\$ 4.162	S S	- S	4,162										
	Processing, Lab, Bldgs, Earthwork: Infrastructure (Power, Water, Earthoworks)		US\$ '000 US\$ '000	\$ 3,995 \$ 4,632	\$	244 \$ 1,309 \$	3,751 3,323										
	Light Vehicles Wells and Waterlines		US\$ '000 US\$ '000	\$ 210 \$ 727	S S	140 \$ 727 \$	70										
	Total Direct Capital		US\$ '000	\$ 13,830	\$	2,450 \$	11,381	-			-	-					
35.9%	Indirect Capital Cost EPCM / Owners / Indirect Cost	0%	US\$ '000	\$ 4,964	s	728 \$	4,236										
35.9%	Working Capital	2.50 months operating	US\$ '000	s -	\$	- S	- \$	2,585 \$	- ş	- \$	- \$	(2,585) \$ (2,585) \$	-				
	Total Indirect Capital		US\$ '000	\$ 4,964	\$	728 \$	4,236 \$	2,585 \$	- \$	- \$	- \$	(2,585) \$					
	Contingency	25%	US\$ '000	\$ 4,699	\$	794 \$	3,904										
	Initial Capital		US\$ '000	\$ 23,493	\$	3,972 \$	19,521										
	Sustaining & Reclamation		US\$ '000	\$ 2,994			\$	3,214 \$	300 \$	200 \$	165 \$	(2,585) \$	- \$	1,700			
	Capital		US\$ '000	\$ 26,487	s	3,972 \$	19,521 \$	3,214 \$	300 \$	200 \$	165 \$	(2,585) \$	- \$	1,700			
			check	\$ 24,787	\$	3,972 \$	23,493 \$	26,707 \$	27,007 \$	27,207 \$	27,372 \$	24,787					
	Pre-Tax Cash Flow Net Pre-Tax Cashflow Cumulative Pre-Tax Cashflow		US\$ '000 US\$ '000	\$ 21,391	s s	(3,972) \$ (3,972) \$	(19,521) \$ (23,493) \$	12,380 \$ (11,113) \$	18,054 \$ 6,941 \$	7,459 \$ 14,400 \$	5,212 \$ 19,611 \$	1,779 \$ 21,391 \$	- \$ 21,391 \$		- \$ 21,391 \$	- \$ 21,391 \$	21,391
	Less Depreciation Less Amortization Less Other Writeoff's on DD&A	not calculatec not calculatec	US\$ '000 US\$ '000 US\$ '000	\$ 26,487 \$ -	\$	- \$	- \$	5,762 \$	8,087 \$	6,310 \$	6,328 \$	- \$	- \$	- \$	- \$	- \$	-
	Taxable Income Before Depletion	Hot calculated	03\$ 000	\$ (5,096)	\$	(3,972) \$	(19,521) \$	6,618 \$	9,967 \$	1,149 \$	(1,116) \$	1,779 \$	- \$	- \$	- \$	- \$	
	Depletion Allowance Taken 50% or 100% Limit (Value % Depletion (Au, Ag %s)	50% 15%	<b>US\$ '000</b> \$ 4,091	\$ 10,245 as of 31-May-13	s s	- \$ - \$	- \$ - \$	<b>3,309 \$</b> 3,309 <b>\$</b> 4,201 <b>\$</b>	<b>4,983 \$</b> 4,983 \$ 5,826 \$	975 \$ 575 \$ 4,272 \$	977 \$ - \$ 3,957 \$	- \$ 890 \$ - \$	- S - S - S	- \$ - \$ - \$	- \$ - \$ - \$	- S - S - S	-
	Cost Depletion Less Loss Carry Forwarc	not calculatec	US\$ '000	\$ -			\$	890 \$	1,249 \$	975 \$	977 \$						
	Taxable Income After Depletion		US\$ '000	\$ (15,341)	\$	(3,972) \$	(19,521) \$	3,309 \$	4,983 \$	174 \$	(2,094) \$	1,779 \$	- \$	Ÿ	- \$	- \$	-
FMV @ 10%	Taxes (FMV @ 10%) Utah State Severence Tax (2.6% of 30% GF	2.6%	US\$ '000 US\$ '000	\$ 4,748 \$ 949	\$ S	- <b>\$</b> - \$	- <b>\$</b> - \$	1,509 \$ 218 \$	2,247 \$ 303 \$	299 \$ 222 \$	- \$ 206 \$	694 \$ - \$	- \$ - \$		- \$ - \$	- 9	-
\$ 7,165	Utah - Box Elder County Property Ta Utah State Corporate Income Ta	1.1153%	US\$ '000 US\$ '000	\$ 479 \$ 512	\$ S	80 \$ - \$	80 \$ - \$	80 \$ 165 \$	80 \$ 249 \$	80 \$ 9 \$	80 - \$	89 \$	- s		- s	- 9	
	U.S. Federal Corportate Income Tax Rat U.S. Federal Corportate Income Tax Rat	0.070	US\$ '000 %	\$ 3,492	ŝ	- 3 - \$ 0%	- \$ - \$	1,125 \$	1,694 \$ 34%		- 3 - \$ 0%	605 \$ 34%	- 3 - \$ 0%		- 3 - \$ 0%		
	Income After Tax		% US\$ '000	\$ (20,089)	\$		(19,521) \$	34% 1,800 \$	2,737 \$	39% (124) \$	(2,094) \$	34% 1,085 \$	- \$	- \$	- \$	- \$	
	Depreciation		US\$ '000	\$ 26,487	\$	- \$	- \$	5,762 \$	8,087 \$	6,310 \$	6,328 \$	- \$	- \$		- s	- 9	
	Amortization Depletion Taker		US\$ '000 US\$ '000	\$ - \$ 10,245	\$ \$	- \$ - \$	- \$ - \$	- \$ 3,309 \$	- \$ 4,983 \$	- \$ 975 \$	- \$ 977 \$	- \$ - \$	- \$ - \$		- S - S	- 9	6 -
	Writeoff's on DD&A Loss Carry Forwarc		US\$ '000 US\$ '000	s - s -	\$ \$	- \$ - \$	- \$ - \$	- S - S	- \$ - \$	- S - S	- S - S	- \$ - \$	- \$ - \$	- \$ - \$	- S - S	- 9	
	After-Tax Cashflow Cumulative After-Tax Cashflow		US\$ '000 US\$ '000	\$ 16,642	\$	(3,972) \$ (3,972) \$	(19,521) \$ (23,493) \$	10,871 \$ (12,622) \$	15,808 \$ 3,185 \$	7,160 \$ 10,345 \$	5,212 \$ 15,557 \$	1,085 \$ 16,642 \$	- \$	- \$	- \$ 16,642 \$	- \$ 16,642 \$	-
	Total Cash Cost		US\$/oz AuEq	\$ 916	3	(3,312) \$	(20,400) \$	944 \$		1,341 \$	1,351 \$	10,042 Ø	10,042 \$	10,042 \$	- \$	- \$	
	Capital Cost		US\$/oz AuEq	\$ 296			\$	944 Ş	1,102 \$	1,341 \$	1,351 \$	- \$	- \$	- \$	- \$	- \$	-
	All-In Cost		US\$/oz AuEq	\$ 1,212													
	Project Economics Pre-Tax IRR		%	33%													
	Pre-tax NPV at 8% discounting Pre-tax NPV at 10% discounting Pre-tax NPV at 15% discounting	8% 10% 15%	US\$ '000,000 US\$ '000,000 US\$ '000,000	\$12 \$10 \$7													
	After-Tax IRR		%	26%													
	After-Tax NPV at 8% discounting After-Tax NPV at 10% discounting	8% 10%	US\$ '000,000 US\$ '000,000	\$9 \$7													
	After-tax NPV at 15% discounting	15%	US\$ '000,000	\$4													
					1												





#### CASH FLOW ANALYSIS

The financial model was established on a 100% equity basis, which does not include debt financing and loan interest charges.

Considering the Project on a stand-alone basis, the undiscounted pre-tax cash flow totals \$21.4 million over the mine life, and simple payback occurs approximately 2.2 years from start of production.

The Operating Cash Cost is US\$902 per ounce of gold equivalent recovered. The mine life capital unit cost is US\$296 per ounce, for a Total Production Cost of US\$1,198 per ounce of gold. Average annual gold production during operation is 17,000 gold ounces per year.

A pre-tax Net Present Value (NPV) at an 8% discount rate is \$12 million, and the pre-tax Internal Rate of Return (IRR) is 33%. An after-tax NPV at an 8% discount rate is approximately US\$9 million, with an IRR of 26%.

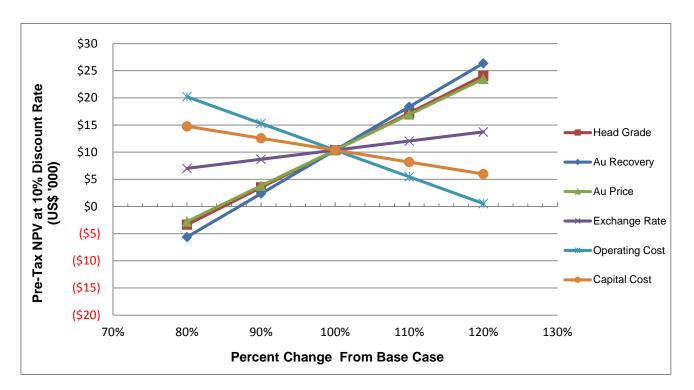
#### SENSITIVITY ANALYSIS

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by running cash flow sensitivities:

- Gold price;
- Exchange rate;
- Head Grade;
- Gold Recovery;
- Operating costs; and
- Pre-production capital costs.

IRR sensitivity over the base case has been calculated for -20% to +20% variations. The sensitivities are shown in Figure 22-1 and Table 22-2.





#### FIGURE 22-1 SENSITIVITY ANALYSIS

# TABLE 22-2 SENSITIVITY ANALYSES West Kirkland Mining Inc. – TUG Project

Parameter Variables	Units	-20%	-10%	Base	10%	20%
Gold Price	US\$/oz	1,220	1,373	1,525	1,678	1,830
Exchange Rate	US\$/C\$	0.8	0.9	1	1.1	1.2
Head Grade (Gold Only)	g/t	0.70	0.79	0.87	0.96	1.05
Total Cash Cost	\$millions	60.42	67.97	75.53	83.08	90.63
Total Capital Cost	\$millions	21.19	23.84	26.49	29.14	31.78
Pre-Tax NPV @ 10%	Units	-20%	-10%	Base	10%	20%
Gold Price	\$millions	(3)	4	10	17	24
Exchange Rate	\$millions	10	10	10	10	10
Head Grade (Gold Only)	\$millions	(3)	4	10	17	24
Total Cash Cost	\$millions	20	15	10	5	1
PPD Capital Cost	\$millions	15	13	10	8	6



### **23 ADJACENT PROPERTIES**

There are no adjacent properties with known mineralization.



# 24 OTHER RELEVANT DATA AND INFORMATION

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.



### **25 INTERPRETATION AND CONCLUSIONS**

Based on a review of available information, RPA reached the following conclusions:

#### **GEOLOGY AND MINERAL RESOURCES**

- Mineral Resources are reported at a \$17/t net smelter return (NSR) cut-off value within a preliminary Whittle pit shell. The pit shell used a gold price of US\$1,700/oz Au, and a silver price of US\$29/oz Ag, and certain costs and metal recovery parameters.
- Indicated Mineral Resources are estimated to total 4.85 Mt grading 0.84 g/t Au and 40.4 g/t Ag and contain 131,000 ounces of gold and 6.3 million ounces of silver.
- Inferred Mineral Resources are estimated to total 4.39 Mt grading 0.79 g/t Au and 30.3 g/t Ag and contain 111,000 ounces of gold and 4.3 million ounces of silver.
- There has been an under-reporting of some of the silver assays.
- The sample preparation, analysis, and security are appropriate for use in Mineral Resource estimation.
- The sampling and analytical procedures for gold and silver have very good precision and results are well within acceptable limits. The database is appropriate for use in mineral resource and mineral reserve estimation.
- RPA is of the opinion that the estimated Mineral Resources are reasonable and comply with CIM definition standards.
- The methods used for Mineral Resource estimation are appropriate for the style of mineralization at the TUG Project.
- Exploration drilling is ongoing. The down-plunge extension of the mineralization is being tested to the south and southeast of the proposed open pit.

#### MINING AND MINERAL RESERVES

- Conventional open pit mining methods (drilling, blasting, loading, and hauling) are proposed to extract the mineralized material and waste.
- Drilling and blasting is proposed to take place on five metre high benches and would be followed by loading of 64-tonne capacity off-highway trucks by a front end loader.
- Material would be crushed and conveyed to a heap leach pad for metal recovery.
- Mineralized material would be excavated at a rate of 3,000 tpd.
- Based on the current resource estimate, mine life is four years, preceded by a two-year pre-production period.



- Resources that are potentially mineable used for the PEA are approximately 4.2 Mt with average gold and silver grades of 0.87 g/t and 42.4 g/t, respectively.
- A mining contractor is proposed.
- Topographical relief, climate, haul distances, and political location do not appear to be issues for the TUG Project.
- There are no Mineral Reserves for the TUG Project at this time.

#### METALLURGY AND PROCESSING

- The samples that have been tested from the TUG Project show that the material is amenable to gold and silver recovery by cyanide leaching.
- The gold recovery appears to be very sensitive to the particle size of the material that is being leached. Smaller particle sizes result in significantly higher gold and silver recovery than larger particle sizes.
- Due to the small size of the Project, heap leaching is supposed as the recovery process.
- Due to high silver grades in the resource, the Merrill-Crowe zinc cementation process is used for the conceptual process design and estimated capital and operating costs.

#### ENVIRONMENTAL AND PERMITTING

- The Project is subject to the State of Utah permitting requirements and environmental regulations.
- Preliminary baseline studies indicate that there are no endangered species in the vicinity of the Project.

#### ECONOMIC ANALYSIS

- In order to minimize the capital costs, and due to the short mine life, a mining contractor is proposed to excavate the open pit and a crushing contractor is proposed to crush the mineralized material to a ¼-in nominal size.
- A power line to the Project would be installed and diesel generators will only be used for backup power.
- A water well will be drilled and developed for the Project's makeup water supply.
- The PEA indicates that the Project has a positive cash flow.



### 26 RECOMMENDATIONS

#### GENERAL

• The drill hole database should be converted from Metric to Imperial units. All of the drilling was completed using Imperial units. The local population and state regulators use Imperial units.

#### **GEOLOGY AND MINERAL RESOURCES**

- Twin more RC drill holes with diamond drill holes to further investigate if the RC holes understate the gold and silver grades and to determine if a more extensive re-drilling program is warranted.
- Send resource related pulps that were previously analyzed at American Assayers for silver re-assaying.
- Update the resource model as new data become available.
- A geotechnical investigation of the proposed TUG open pit highwalls is needed before production begins. A 3D geological model of the open pit area should be developed that includes the following minimum areas of study:
  - the spatial extent of any clay-altered zones
  - major faults cross cutting the pit area
  - the surface weathering limits should be interpreted as a 3D surface for the area of the proposed pit
  - o potential fold structures
  - additional geotechnical investigations may be required to update the character and extent of faults dipping into the eastern side of the pit for the following:
    - define the spatial extent of the fault zones if needed;
    - define further the strength properties of the fault infilling.

#### METALLURGY AND PROCESSING

• RPA recommends that a comprehensive metallurgical testing program be completed for the Project.

#### MINING AND MINERAL RESERVES

- Carry out a PFS to establish Mineral Reserves for the Project.
- Commence basic engineering to evaluate:
  - Detailed mine plans and schedules;
  - o Economics of contractor versus owner mining;
- Conduct a detailed trade-off study to determine the optimal selective mining unit required to address mining selectivity, loss and dilution associated with the loader/truck combination.



- Prepare a Request For Proposal, which would be submitted to a minimum of three mining contractors to perform the mining and site-wide earthwork maintenance.
- Carry out a geotechnical study to determine the safest and steepest pit slopes. Additional geotechnical investigations should be undertaken to delineate and characterize soils containing any discontinuities for the final and interim waste dump and heap leach pad slopes.
- Determine the suitability and the particle size distribution of sedimentary rocks from the open pit area for use as rock drain material for the leach pad.

#### ENVIRONMENTAL AND PERMITTING

- Prepare a detailed water balance to assist in optimizing the design of the water treatment facilities.
- Long-term geochemical characterization of mineralized material and mine wastes will be required.
- Model dilution of the heap leach pad solution during the rinsing period, and the corresponding decline in the concentration of metals and compounds in the water exiting the pad during and after the drain period.

#### ECONOMIC ANALYSIS

- Obtain detailed quotes for all equipment, supplies, and permanent infrastructure.
- Obtain quotes for the mining contractor unit mining costs (\$/bank cubic yard) and equipment/operator hourly rates.
- Prepare detailed estimates for all mining, processing, and G&A operating costs.
- Carry out additional studies to investigate other options to improve the accuracy of capital and operating cost estimates, to optimize the mining schedule, and to investigate alternative crushing processes such as high pressure grinding rolls or vibration cone crushers which have the potential to improve the Project economics.

Table 26-1 presents the recommended work and budget to advance the TUG Project, estimated by WKM and accepted by RPA.



#### TABLE 26-1 PROPOSED PROGRAM AND BUDGET

#### West Kirkland Mining Inc. – TUG Project

Major Item Description	Estimated Value (US\$)
Land and Development Budget	320,000
District-wide exploration	75,000
Metallurgical review and metallurgical testing	80,000
Drilling –	
Core drilling for exploration: 600 m @ \$300/m	180,000
Assays	40,000
Road and drill pad construction	194,000
Permitting (including reclamation)	401,000
Prefeasibility and Detailed Engineering	1,545,000
Claim maintenance	179,000
General & Administrative	806,000
Total	3,820,000



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# **28 DATE AND SIGNATURE PAGE**

This report titled "Technical Report on the Tecoma Utah Gold Project, Utah, USA" and dated September 13, 2013 as amended March 7, 2014, was prepared and signed by the following authors:

(Signed & Sealed) "Luke Evans"

Dated at Toronto, ON March 7, 2014

Luke Evans, M.Sc., P.Eng. Principal Geologist

(Signed & Sealed) "Stuart E. Collins"

Dated at Lakewood, CO March 7, 2014

Stuart E. Collins, P.E. Principal Mining Engineer

(Signed & Sealed) "Kathleen A. Altman"

Dated at Lakewood, CO March 7, 2014

Kathleen A. Altman, Ph.D., P.E. Principal Metallurgist



# 29 CERTIFICATE OF QUALIFIED PERSON

### LUKE EVANS

I, Luke Evans, M.Sc., P.Eng., as an author of this report entitled "Technical Report on the Tecoma Utah Gold Project, Utah, USA" prepared for West Kirkland Mining Inc. and dated September 13, 2013, as amended March 7, 2014, do hereby certify that:

- 1. I am a Principal Geologist with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave., Toronto, ON M5J 2H7.
- 2. I am a graduate of University of Toronto, Ontario, Canada, in 1983 with a Bachelor of Science (Applied) degree in Geological Engineering and Queen's University, Kingston, Ontario, Canada, in 1986 with a Master of Science degree in Mineral Exploration.
- 3. I am registered as a Professional Engineer in the Province of Ontario (Reg. #90345885). I have worked as a professional geologist for a total of 30 years since my graduation. My relevant experience for the purpose of the Technical Report is:
  - Consulting Geological Engineer specializing in resource and reserve estimates, audits, technical assistance, and training since 1995.
  - Review and report as a consultant on numerous exploration and mining projects around the world for due diligence and regulatory requirements.
  - Senior Project Geologist in charge of exploration programs at several gold and base metal mines in Quebec.
  - Project Geologist at a gold mine in Quebec in charge of exploration and definition drilling.
  - Project Geologist in charge of sampling and mapping programs at gold and base metal properties in Ontario, Canada.
- 4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 5. I did not visit the TUG Project.
- 6. I am responsible for Sections 4 through 12, 14, 23 and share responsibility with my coauthors for Sections 1, 25, 26, and 27 of the Technical Report.
- 7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
- 8. I have had no prior involvement with the property that is the subject of the Technical Report.
- 9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.



10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 7<sup>th</sup> day of March, 2014

#### (Signed & Sealed) "Luke Evans"

Luke Evans, M.Sc., P.Eng.



### STUART E. COLLINS

I, Stuart E. Collins, P.E., as an author of this report entitled "Technical Report on the Tecoma Utah Gold Project, Utah, USA" prepared for West Kirkland Mining Inc. and dated September 13, 2013, as amended March 7, 2014, do hereby certify that:

- 1. I am Principal Mining Engineer with RPA (USA) Ltd. of 143 Union Boulevard, Suite 505, Lakewood, Colorado, USA 80228.
- 2. I am a graduate of South Dakota School of Mines and Technology, Rapid City, South Dakota, U.S.A., in 1985 with a B.S. degree in Mining Engineering.
- 3. I am a Registered Professional Engineer in the state of Colorado (#29455). I have been a member of the Society for Mining, Metallurgy, and Exploration (SME) since 1985, and a Registered Member (#612514) since September 2006. I have worked as a mining engineer for a total of 27 years since my graduation. My relevant experience for the purpose of the Technical Report is:
  - Review and report as a consultant on numerous exploration, development and production mining projects around the world for due diligence and regulatory requirements;
  - Mine engineering, mine management, mine operations and mine financial analyses, involving copper, gold, silver, nickel, cobalt, uranium, coal and base metals located in the United States, Canada, Mexico, Turkey, Bolivia, Chile, Brazil, Costa Rica, Peru, Argentina and Colombia.
  - Engineering Manager for a number of mining-related companies;
  - Business Development for a small, privately-owned mining company in Colorado;
  - Operations supervisor at a large gold mine in Nevada, USA ;
  - Involvement with the development and operation of a small underground gold mine in Arizona, USA.
- 4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 5. I visited the TUG Project on November 27, 2012.
- 6. I am responsible for Sections 2, 3, 15, 16, 18 through 22, and 24 and share responsibility with my co-authors for Sections 1, 25, 26, and 27 of the Technical Report.
- 7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
- 8. I have had prior involvement with the property that is the subject of the Technical Report while employed by Western States Minerals Corporation in the 1980s and 1990s.
- 9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.



10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 7<sup>th</sup> day of March, 2014

(Signed & Sealed) "Stuart E. Collins"

Stuart E. Collins, P.E.



### KATHLEEN ANN ALTMAN

I Kathleen Ann Altman, P.E., as an author of this report entitled "Technical Report on the Tecoma Utah Gold Project, Utah, USA" prepared for West Kirkland Mining Inc. and dated September 13, 2013, as amended March 7, 2014, do hereby certify that:

- 1. I am Principal Metallurgist with Roscoe Postle (USA) Ltd. of Suite 505, 143 Union Boulevard, Lakewood, Co., USA 80228.
- 2. I am a graduate of the Colorado School of Mines in 1980 with a B.S in Metallurgical Engineering. I am a graduate of the University of Nevada, Reno Mackay School of Mines with an M.S. in Metallurgical Engineering in 1994 and a Ph.D. in Metallurgical Engineering in 1999.
- 3. I am registered as a Professional Engineer in the State of Colorado (Reg.# 37556) and a Qualified Professional Member of the Mining and Metallurgical Society of America (Member # 01321QP). I have worked as a metallurgical engineer for a total of 30 years since my graduation. My relevant experience for the purpose of the Technical Report is:
  - I have worked for operating companies, including the Climax Molybdenum Company, Barrick Goldstrike, and FMC Gold in a series of positions of increasing responsibility.
  - I have worked as a consulting engineer on mining projects for approximately 15 years in roles such a process engineer, process manager, project engineer, area manager, study manager, and project manager. Projects have included scoping, prefeasibility and feasibility studies, basic engineering, detailed engineering and start-up and commissioning of new projects.
  - I was the Newmont Professor for Extractive Mineral Process Engineering in the Mining Engineering Department of the Mackay School of Earth Sciences and Engineering at the University of Nevada, Reno from 2005 to 2009.
- 4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 5. I visited the TUG Project on November 27, 2012.
- 6. I am responsible for preparation of Items 13 and 17 and parts of Items 1, 25, 26, and 27 of the Technical Report.
- 7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
- 8. I have had no prior involvement with the property that is the subject of the Technical Report.
- 9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.



10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 7<sup>th</sup> day of March, 2014

#### (Signed & Sealed) "Kathleen Ann Altman"

Kathleen Ann Altman, P.E.



## **30 APPENDIX 1**

**CLAIM LIST** 



TABLE 30-1 TUG PROPERTY CLAIM LIST (UTAH)



TUG Claim	Location Date	Filed BLM	<b>BLM Serial No</b>	Expiry Date	Ownership
GUT219	05-Sep-93	08-Oct-93	UMC353730	01-Sep-14	100%
GUT220	05-Sep-93	08-Oct-93	UMC353731	01-Sep-14	100%
GUT221	05-Sep-93	08-Oct-93	UMC353732	01-Sep-14	100%
GUT222	05-Sep-93	08-Oct-93	UMC353733	01-Sep-14	100%
GUT223	05-Sep-93	08-Oct-93	UMC353734	01-Sep-14	100%
GUT224	05-Sep-93	08-Oct-93	UMC353735	01-Sep-14	100%
GUT225	05-Sep-93	08-Oct-93	UMC353736	01-Sep-14	100%
GUT226	05-Sep-93	08-Oct-93	UMC353737	01-Sep-14	100%
GUT237	04-Sep-93	08-Oct-93	UMC353748	01-Sep-14	100%
GUT238	04-Sep-93	08-Oct-93	UMC353749	01-Sep-14	100%
GUT239	04-Sep-93	08-Oct-93	UMC353750	01-Sep-14	100%
GUT240	04-Sep-93	08-Oct-93	UMC353751	01-Sep-14	100%
GUT241	04-Sep-93	08-Oct-93	UMC353752	01-Sep-14	100%
GUT242	04-Sep-93	08-Oct-93	UMC353753	01-Sep-14	100%
GUT243	04-Sep-93	08-Oct-93	UMC353754	01-Sep-14	100%
GUT244	04-Sep-93	08-Oct-93	UMC353755	01-Sep-14	100%
OMA1	01-Apr-08	02-May-08	UMC406161	01-Sep-14	100%
OMA2	01-Apr-08	02-May-08	UMC406162	01-Sep-14	100%
OMA3	01-Apr-08	02-May-08	UMC406163	01-Sep-14	100%
OMA4	01-Apr-08	02-May-08	UMC406164	01-Sep-14	100%
OMA5	01-Apr-08	02-May-08	UMC406165	01-Sep-14	100%
OMA6	01-Apr-08	02-May-08	UMC406166	01-Sep-14	100%
OMA7	01-Apr-08	02-May-08	UMC406167	01-Sep-14	100%
OMA8	01-Apr-08	02-May-08	UMC406168	01-Sep-14	100%
OMA9	01-Apr-08	02-May-08	UMC406169	01-Sep-14	100%
OMA10	01-Apr-08	02-May-08	UMC406170	01-Sep-14	100%
OMA11	01-Apr-08	02-May-08	UMC406171	01-Sep-14	100%
OMA12	01-Apr-08	02-May-08	UMC406172	01-Sep-14	100%
OMA13	01-Apr-08	02-May-08	UMC406173	01-Sep-14	100%
OMA14	01-Apr-08	02-May-08	UMC406174	01-Sep-14	100%
OMA15	01-Apr-08	02-May-08	UMC406175	01-Sep-14	100%
OMA16	01-Apr-08	02-May-08	UMC406176	01-Sep-14	100%
OMA17	01-Apr-08	02-May-08	UMC406177	01-Sep-14	100%
OMA18	01-Apr-08	02-May-08	UMC406178	01-Sep-14	100%
OMA19	01-Apr-08	02-May-08 02-May-08	UMC406179	01-Sep-14 01-Sep-14	100%
OMA19 OMA20	01-Apr-08	02-May-08 02-May-08	UMC406180	01-Sep-14 01-Sep-14	100%
OMA20 OMA21	01-Apr-08	02-May-08 02-May-08	UMC406180	01-Sep-14 01-Sep-14	100%
OMA21 OMA22	•	-	UMC406181	-	100%
	01-Apr-08	02-May-08		01-Sep-14	
OMA23	01-Apr-08	02-May-08	UMC406183	01-Sep-14	100%
OMA24	01-Apr-08	02-May-08	UMC406184	01-Sep-14	100%
OMA25	01-Apr-08	02-May-08	UMC406185	01-Sep-14	100%
OMA26	01-Apr-08	02-May-08	UMC406186	01-Sep-14	100%
OMA27	01-Apr-08	02-May-08	UMC406187	01-Sep-14	100%
OMA28	01-Apr-08	02-May-08	UMC406188	01-Sep-14	100%
OMA29	01-Apr-08	02-May-08	UMC406189	01-Sep-14	100%



TUG Claim	Location Date	Filed BLM	<b>BLM Serial No</b>	Expiry Date	Ownership
OMA30	01-Apr-08	02-May-08	UMC406190	01-Sep-14	100%
OMA31	01-Apr-08	02-May-08	UMC406191	01-Sep-14	100%
OMA32	28-Mar-08	02-May-08	UMC406192	01-Sep-14	100%
OMA33	28-Mar-08	02-May-08	UMC406193	01-Sep-14	100%
OMA34	28-Mar-08	02-May-08	UMC406194	01-Sep-14	100%
OMA35	28-Mar-08	02-May-08	UMC406195	01-Sep-14	100%
OMA36	28-Mar-08	02-May-08	UMC406196	01-Sep-14	100%
OMA37	28-Mar-08	02-May-08	UMC406197	01-Sep-14	100%
OMA38	28-Mar-08	02-May-08	UMC406198	01-Sep-14	100%
OMA39	28-Mar-08	02-May-08	UMC406199	01-Sep-14	100%
OMA40	28-Mar-08	02-May-08	UMC406200	01-Sep-14	100%
OMA41	28-Mar-08	02-May-08	UMC406201	01-Sep-14	100%
OMA42	28-Mar-08	02-May-08	UMC406202	01-Sep-14	100%
OMA43	28-Mar-08	02-May-08	UMC406203	01-Sep-14	100%
OMA44	28-Mar-08	02-May-08	UMC406204	01-Sep-14	100%
OMA45	28-Mar-08	02-May-08	UMC406205	01-Sep-14	100%
OMA46	28-Mar-08	02-May-08	UMC406206	01-Sep-14	100%
OMA47	28-Mar-08	02-May-08	UMC406207	01-Sep-14	100%
OMA48	28-Mar-08	02-May-08	UMC406208	01-Sep-14	100%
OMA49	28-Mar-08	02-May-08	UMC406209	01-Sep-14	100%
OMA50	23-Apr-08	02-May-08	UMC406210	01-Sep-14	100%
OMA51	23-Apr-08	02-May-08	UMC406211	01-Sep-14	100%
OMA52	28-Mar-08	02-May-08	UMC406212	01-Sep-14	100%
OMA53	28-Mar-08	02-May-08	UMC406213	01-Sep-14	100%
OMA54	28-Mar-08	02-May-08	UMC406214	01-Sep-14	100%
OMA55	28-Mar-08	02-May-08	UMC406215	01-Sep-14	100%
OMA56	28-Mar-08	02-May-08	UMC406216	01-Sep-14	100%
OMA57	28-Mar-08	02-May-08	UMC406217	01-Sep-14	100%
OMA58	28-Mar-08	02-May-08	UMC406218	01-Sep-14	100%
OMA59	28-Mar-08	02-May-08	UMC406219	01-Sep-14	100%
OMA60	28-Mar-08	02-May-08	UMC406220	01-Sep-14	100%
OMA61	28-Mar-08	02-May-08	UMC406221	01-Sep-14	100%
OMA62	28-Mar-08	02-May-08	UMC406222	01-Sep-14	100%
OMA62	28-Mar-08	02-May-08	UMC406223	01-Sep-14	100%
OMA64	28-Mar-08	02-May-08	UMC406224	01-Sep-14	100%
OMA65	28-Mar-08	02-May-08 02-May-08	UMC406224	01-Sep-14	100%
OMA65 OMA66	28-Mar-08	02-May-08 02-May-08	UMC406225	01-Sep-14 01-Sep-14	100%
		-		-	
OMA67	28-Mar-08	02-May-08	UMC406227	01-Sep-14	100%
OMA68	28-Mar-08	02-May-08	UMC406228	01-Sep-14	100%
OMA69	28-Mar-08	02-May-08	UMC406229	01-Sep-14	100%
OMA70	28-Mar-08	02-May-08	UMC406230	01-Sep-14	100%
OMA71	28-Mar-08	02-May-08	UMC406231	01-Sep-14	100%
OMA72	28-Mar-08	02-May-08	UMC406232	01-Sep-14	100%
OMA73	28-Mar-08	02-May-08	UMC406233	01-Sep-14	100%
OMA74	28-Mar-08	02-May-08	UMC406234	01-Sep-14	100%



TUG Claim	Location Date	Filed BLM	<b>BLM Serial No</b>	Expiry Date	Ownership
OMA75	28-Mar-08	02-May-08	UMC406235	01-Sep-14	100%
OMA76	28-Mar-08	02-May-08	UMC406236	01-Sep-14	100%
OMA77	28-Mar-08	02-May-08	UMC406237	01-Sep-14	100%
OMA78	28-Mar-08	02-May-08	UMC406238	01-Sep-14	100%
OMA79	28-Mar-08	02-May-08	UMC406239	01-Sep-14	100%
OMA80	28-Mar-08	02-May-08	UMC406240	01-Sep-14	100%
OMA81	28-Mar-08	02-May-08	UMC406241	01-Sep-14	100%
OMA82	28-Mar-08	02-May-08	UMC406242	01-Sep-14	100%
OMA83	28-Mar-08	02-May-08	UMC406243	01-Sep-14	100%
OMA84	28-Mar-08	02-May-08	UMC406244	01-Sep-14	100%
OMA85	28-Mar-08	02-May-08	UMC406245	01-Sep-14	100%
OMA86	28-Mar-08	02-May-08	UMC406246	01-Sep-14	100%
OMA87	28-Mar-08	02-May-08	UMC406247	01-Sep-14	100%
OMA88	28-Mar-08	02-May-08	UMC406248	01-Sep-14	100%
OMA89	28-Mar-08	02-May-08	UMC406249	01-Sep-14	100%
OMA90	28-Mar-08	02-May-08	UMC406250	01-Sep-14	100%
OMA91	28-Mar-08	02-May-08	UMC406251	01-Sep-14	100%
OMA92	28-Mar-08	02-May-08	UMC406252	01-Sep-14	100%
OMA93	28-Mar-08	02-May-08	UMC406253	01-Sep-14	100%
OMA94	28-Mar-08	02-May-08	UMC406254	01-Sep-14	100%
OMA95	28-Mar-08	02-May-08	UMC406255	01-Sep-14	100%
OMA96	28-Mar-08	02-May-08	UMC406256	01-Sep-14	100%
OMA97	28-Mar-08	02-May-08	UMC406257	01-Sep-14	100%
OMA98	28-Mar-08	02-May-08	UMC406258	01-Sep-14	100%
OMA99	28-Mar-08	02-May-08	UMC406259	01-Sep-14	100%
OMA100	28-Mar-08	02-May-08	UMC406260	01-Sep-14	100%
OMA101	28-Mar-08	02-May-08	UMC406261	01-Sep-14	100%
OMA102	28-Mar-08	02-May-08	UMC406262	01-Sep-14	100%
OMA102	28-Mar-08	02-May-08	UMC406263	01-Sep-14	100%
OMA104	28-Mar-08	02-May-08	UMC406264	01-Sep-14	100%
OMA105	28-Mar-08	02-May-08	UMC406265	01-Sep-14	100%
OMA106	28-Mar-08	02-May-08	UMC406266	01-Sep-14	100%
OMA107	28-Mar-08	02-May-08	UMC406267	01-Sep-14	100%
OMA108	28-Mar-08	02-May-08	UMC406268	01-Sep-14	100%
OMA109	28-Mar-08	02-May-08	UMC406269	01-Sep-14	100%
OMA103	28-Mar-08	02-May-00 02-May-08	UMC406270	01-Sep-14	100%
OMA111 OMA111	28-Mar-08	02-May-08 02-May-08	UMC406271	01-Sep-14	100%
OMA112	28-Mar-08	02-May-08	UMC406271	01-Sep-14 01-Sep-14	100%
OMA112 OMA113	28-Mar-08	-	UMC406272	-	
OMATT3 OMA114		02-May-08		01-Sep-14 01-Sep-14	100% 100%
	28-Mar-08	02-May-08	UMC406274	-	100%
OMA115	28-Mar-08	02-May-08	UMC406275	01-Sep-14	100%
OMA116	28-Mar-08	02-May-08	UMC406276	01-Sep-14	100%
OMA117	28-Mar-08	02-May-08	UMC406277	01-Sep-14	100%
OMA118	28-Mar-08	02-May-08	UMC406278	01-Sep-14	100%
OMA119	28-Mar-08	02-May-08	UMC406279	01-Sep-14	100%



TUG Claim	Location Date	Filed BLM	<b>BLM Serial No</b>	Expiry Date	Ownership
OMA120	28-Mar-08	02-May-08	UMC406280	01-Sep-14	100%
OMA121	28-Mar-08	02-May-08	UMC406281	01-Sep-14	100%
OMA122	25-Mar-08	02-May-08	UMC406282	01-Sep-14	100%
OMA123	28-Mar-08	02-May-08	UMC406283	01-Sep-14	100%
OMA124	28-Mar-08	02-May-08	UMC406284	01-Sep-14	100%
OMA125	28-Mar-08	02-May-08	UMC406285	01-Sep-14	100%
OMA126	28-Mar-08	02-May-08	UMC406286	01-Sep-14	100%
OMA127	28-Mar-08	02-May-08	UMC406287	01-Sep-14	100%
OMA128	28-Mar-08	02-May-08	UMC406288	01-Sep-14	100%
OMA129	28-Mar-08	02-May-08	UMC406289	01-Sep-14	100%
OMA130	28-Mar-08	02-May-08	UMC406290	01-Sep-14	100%
OMA131	28-Mar-08	02-May-08	UMC406291	01-Sep-14	100%
OMA132	28-Mar-08	02-May-08	UMC406292	01-Sep-14	100%
OMA133	28-Mar-08	02-May-08	UMC406293	01-Sep-14	100%
OMA134	28-Mar-08	02-May-08	UMC406294	01-Sep-14	100%
OMA135	28-Mar-08	02-May-08	UMC406295	01-Sep-14	100%
OMA136	28-Mar-08	02-May-08	UMC406296	01-Sep-14	100%
OMA137	28-Mar-08	02-May-08	UMC406297	01-Sep-14	100%
OMA138	28-Mar-08	02-May-08	UMC406298	01-Sep-14	100%
OMA139	28-Mar-08	02-May-08	UMC406299	01-Sep-14	100%
OMA140	28-Mar-08	02-May-08	UMC406300	01-Sep-14	100%
OMA141	28-Mar-08	02-May-08	UMC406301	01-Sep-14	100%
OMA142	28-Mar-08	02-May-08	UMC406302	01-Sep-14	100%
OMA143	28-Mar-08	02-May-08	UMC406303	01-Sep-14	100%
OMA144	03-Apr-08	02-May-08	UMC406304	01-Sep-14	100%
OMA145	03-Apr-08	02-May-08	UMC406305	01-Sep-14	100%
OMA146	03-Apr-08	02-May-08	UMC406306	01-Sep-14	100%
OMA147	03-Apr-08	02-May-08	UMC406307	01-Sep-14	100%
OMA148	03-Apr-08	02-May-08	UMC406308	01-Sep-14	100%
OMA149	03-Apr-08	02-May-08	UMC406309	01-Sep-14	100%
OMA150	03-Apr-08	02-May-08	UMC406310	01-Sep-14	100%
OMA151	03-Apr-08	02-May-08	UMC406311	01-Sep-14	100%
OMA152	03-Apr-08	02-May-08	UMC406312	01-Sep-14	100%
OMA153	03-Apr-08	02-May-08	UMC406313	01-Sep-14	100%
OMA153	03-Apr-08	02-May-08	UMC406314	01-Sep-14	100%
OMA155	03-Apr-08	02-May-08	UMC406315	01-Sep-14	100%
OMA155 OMA156	03-Apr-08	02-May-08 02-May-08	UMC406316	01-Sep-14	100%
OMA150 OMA157	03-Apr-08	02-May-08 02-May-08	UMC406317	01-Sep-14 01-Sep-14	100%
	-	-		-	
OMA158	03-Apr-08 03-Apr-08	02-May-08	UMC406318	01-Sep-14 01-Sep-14	100% 100%
OMA159	-	02-May-08	UMC406319	-	100%
OMA160	03-Apr-08	02-May-08	UMC406320	01-Sep-14	100%
OMA161	03-Apr-08	02-May-08	UMC406321	01-Sep-14	100%
OMA162	03-Apr-08	02-May-08	UMC406322	01-Sep-14	100%
OMA163	03-Apr-08	02-May-08	UMC406323	01-Sep-14	100%
OMA164	03-Apr-08	02-May-08	UMC406324	01-Sep-14	100%



TUG Claim	Location Date	Filed BLM	BLM Serial No	Expiry Date	Ownership
OMA165	03-Apr-08	02-May-08	UMC406325	01-Sep-14	100%
OMA166	03-Apr-08	02-May-08	UMC406326	01-Sep-14	100%
OMA167	03-Apr-08	02-May-08	UMC406327	01-Sep-14	100%
OMA168	03-Apr-08	02-May-08	UMC406328	01-Sep-14	100%
OMA169	03-Apr-08	02-May-08	UMC406329	01-Sep-14	100%
OMA170	03-Apr-08	02-May-08	UMC406330	01-Sep-14	100%
OMA171	03-Apr-08	02-May-08	UMC406331	01-Sep-14	100%
OMA172	03-Apr-08	02-May-08	UMC406332	01-Sep-14	100%
OMA173	03-Apr-08	02-May-08	UMC406333	01-Sep-14	100%
OMA174	03-Apr-08	02-May-08	UMC406334	01-Sep-14	100%
OMA175	03-Apr-08	02-May-08	UMC406335	01-Sep-14	100%
OMA176	03-Apr-08	02-May-08	UMC406336	01-Sep-14	100%
OMA177	03-Apr-08	02-May-08	UMC406337	01-Sep-14	100%
OMA178	03-Apr-08	02-May-08	UMC406338	01-Sep-14	100%
OMA179	03-Apr-08	02-May-08	UMC406339	01-Sep-14	100%
OMA180	01-Apr-08	02-May-08	UMC406340	01-Sep-14	100%
OMA181	01-Apr-08	02-May-08	UMC406341	01-Sep-14	100%
OMA182	01-Apr-08	02-May-08	UMC406342	01-Sep-14	100%
OMA183	01-Apr-08	02-May-08	UMC406343	01-Sep-14	100%
OMA184	01-Apr-08	02-May-08	UMC406344	01-Sep-14	100%
OMA185	23-Apr-08	02-May-08	UMC406345	01-Sep-14	100%
OMA186	23-Apr-08	02-May-08	UMC406346	01-Sep-14	100%
OMA187	14-Apr-08	02-May-08	UMC406347	01-Sep-14	100%
OMA188	14-Apr-08	02-May-08	UMC406348	01-Sep-14	100%
OMA189	14-Apr-08	02-May-08	UMC406349	01-Sep-14	100%
OMA190	14-Apr-08	02-May-08	UMC406350	01-Sep-14	100%
OMA191	14-Apr-08	02-May-08	UMC406351	01-Sep-14	100%
OMA192	14-Apr-08	02-May-08	UMC406352	01-Sep-14	100%
OMA193	14-Apr-08	02-May-08	UMC406353	01-Sep-14	100%
OMA194	14-Apr-08	02-May-08	UMC406354	01-Sep-14	100%
OMA195	14-Apr-08	02-May-08	UMC406355	01-Sep-14	100%
OMA196	14-Apr-08	02-May-08	UMC406356	01-Sep-14	100%
OMA197	14-Apr-08	02-May-08	UMC406357	01-Sep-14	100%
OMA198	14-Apr-08	02-May-08	UMC406358	01-Sep-14	100%
OMA199	14-Apr-08	02-May-08	UMC406359	01-Sep-14	100%
OMA200	14-Apr-08	02-May-08	UMC406360	01-Sep-14	100%
OMA201	14-Apr-08	02-May-08	UMC406361	01-Sep-14	100%
OMA202	14-Apr-08	02-May-08	UMC406362	01-Sep-14	100%
OMA203	14-Apr-08	02-May-08	UMC406363	01-Sep-14	100%
OMA204	14-Apr-08	02-May-08	UMC406364	01-Sep-14	100%
OMA205	14-Apr-08	02-May-08	UMC406365	01-Sep-14	100%
OMA206	14-Apr-08	02-May-08	UMC406366	01-Sep-14	100%
OMA207	14-Apr-08	02-May-08	UMC406367	01-Sep-14	100%
OMA208	14-Apr-08	02-May-08	UMC406368	01-Sep-14	100%
OMA209	14-Apr-08	02-May-08	UMC406369	01-Sep-14	100%



TUG Claim	Location Date	Filed BLM	BLM Serial No	Expiry Date	Ownership
OMA210	14-Apr-08	02-May-08	UMC406370	01-Sep-14	100%
OMA211	14-Apr-08	02-May-08	UMC406371	01-Sep-14	100%
OMA212	14-Apr-08	02-May-08	UMC406372	01-Sep-14	100%
OMA213	14-Apr-08	02-May-08	UMC406373	01-Sep-14	100%
OMA214	14-Apr-08	02-May-08	UMC406374	01-Sep-14	100%
OMA215	14-Apr-08	02-May-08	UMC406375	01-Sep-14	100%
OMA216	14-Apr-08	02-May-08	UMC406376	01-Sep-14	100%
OMA217	14-Apr-08	02-May-08	UMC406377	01-Sep-14	100%
OMA218	14-Apr-08	02-May-08	UMC406378	01-Sep-14	100%
OMA219	14-Apr-08	02-May-08	UMC406379	01-Sep-14	100%
OMA220	14-Apr-08	02-May-08	UMC406380	01-Sep-14	100%
OMA221	14-Apr-08	02-May-08	UMC406381	01-Sep-14	100%
OMA222	14-Apr-08	02-May-08	UMC406382	01-Sep-14	100%
OMA223	22-May-08	30-Jun-08	UMC406796	01-Sep-14	100%
OMA224	22-May-08	30-Jun-08	UMC406797	01-Sep-14	100%
OMA225	22-May-08	30-Jun-08	UMC406798	01-Sep-14	100%
OMA226	22-May-08	30-Jun-08	UMC406799	01-Sep-14	100%
OMA227	22-May-08	30-Jun-08	UMC406800	01-Sep-14	100%
OMA228	22-May-08	30-Jun-08	UMC406801	01-Sep-14	100%
OMA229	22-May-08	30-Jun-08	UMC406802	01-Sep-14	100%
OMA230	22-May-08	30-Jun-08	UMC406803	01-Sep-14	100%
OMA231	22-May-08	30-Jun-08	UMC406804	01-Sep-14	100%
OMA232	22-May-08	30-Jun-08	UMC406805	01-Sep-14	100%
OMA233	21-May-08	30-Jun-08	UMC406806	01-Sep-14	100%
OMA234	21-May-08	30-Jun-08	UMC406807	01-Sep-14	100%
OMA235	21-May-08	30-Jun-08	UMC406808	01-Sep-14	100%
OMA236	21-May-08	30-Jun-08	UMC406809	01-Sep-14	100%
OMA237	21-May-08	30-Jun-08	UMC406810	01-Sep-14	100%
OMA238	21-May-08	30-Jun-08	UMC406811	01-Sep-14	100%
OMA239	21-May-08	30-Jun-08	UMC406812	01-Sep-14	100%
OMA240	21-May-08	30-Jun-08	UMC406813	01-Sep-14	100%
OMA241	21-May-08	30-Jun-08	UMC406814	01-Sep-14	100%
OMA242	21-May-08	30-Jun-08	UMC406815	01-Sep-14	100%
OMA242	21-May-08	30-Jun-08	UMC406816	01-Sep-14	100%
OMA244	21-May-08	30-Jun-08	UMC406817	01-Sep-14	100%
OMA245	21-May-08	30-Jun-08	UMC406818	01-Sep-14	100%
OMA246	21-May-08	30-Jun-08	UMC406819	01-Sep-14	100%
OMA240 OMA247	21-May-08	30-Jun-08	UMC406820	01-Sep-14	100%
OMA247 OMA248	21-May-08	30-Jun-08	UMC406820	01-Sep-14 01-Sep-14	100%
OMA240 OMA249	21-May-08 21-May-08	30-Jun-08	UMC406822	01-Sep-14 01-Sep-14	100%
OMA249 OMA250	21-May-08 21-May-08	30-Jun-08	UMC406822	01-Sep-14 01-Sep-14	100%
OMA250 OMA251	21-May-08	30-Jun-08	UMC406823	01-Sep-14 01-Sep-14	100%
OMA251 OMA252	-	30-Jun-08 30-Jun-08	UMC406824 UMC406825	-	100%
	21-May-08			01-Sep-14 01-Sep-14	
OMA253	21-May-08	30-Jun-08	UMC406826	01-Sep-14	100%
OMA254	21-May-08	30-Jun-08	UMC406827	01-Sep-14	100%



TUG Claim	Location Date	Filed BLM	BLM Serial No	Expiry Date	Ownership
OMA255	21-May-08	30-Jun-08	UMC406828	01-Sep-14	100%
OMA256	21-May-08	30-Jun-08	UMC406829	01-Sep-14	100%
OMA257	21-May-08	30-Jun-08	UMC406830	01-Sep-14	100%
OMA258	21-May-08	30-Jun-08	UMC406831	01-Sep-14	100%
OMA259	18-Jun-08	30-Jun-08	UMC406832	01-Sep-14	100%
OMA260	18-Jun-08	30-Jun-08	UMC406833	01-Sep-14	100%
OMA261	18-Jun-08	30-Jun-08	UMC406834	01-Sep-14	100%
OMA262	18-Jun-08	30-Jun-08	UMC406835	01-Sep-14	100%
OMA263	18-Jun-08	30-Jun-08	UMC406836	01-Sep-14	100%
OMA264	18-Jun-08	30-Jun-08	UMC406837	01-Sep-14	100%
OMA265	18-Jun-08	30-Jun-08	UMC406838	01-Sep-14	100%
OMA266	18-Jun-08	30-Jun-08	UMC406839	01-Sep-14	100%
OMA267	18-Jun-08	30-Jun-08	UMC406840	01-Sep-14	100%
OMA268	18-Jun-08	30-Jun-08	UMC406841	01-Sep-14	100%
OMA269	18-Jun-08	30-Jun-08	UMC406842	01-Sep-14	100%
OMA270	18-Jun-08	30-Jun-08	UMC406843	01-Sep-14	100%
OMA271	18-Jun-08	30-Jun-08	UMC406844	01-Sep-14	100%
OMA272	18-Jun-08	30-Jun-08	UMC406845	01-Sep-14	100%
OMA273	18-Jun-08	30-Jun-08	UMC406846	01-Sep-14	100%
OMA274	18-Jun-08	30-Jun-08	UMC406847	01-Sep-14	100%
OMA275	18-Jun-08	30-Jun-08	UMC406848	01-Sep-14	100%
OMA276	18-Jun-08	30-Jun-08	UMC406849	01-Sep-14	100%
OMA277	18-Jun-08	30-Jun-08	UMC406850	01-Sep-14	100%
OMA278	18-Jun-08	30-Jun-08	UMC406851	01-Sep-14	100%
OMA279	18-Jun-08	30-Jun-08	UMC406852	01-Sep-14	100%
OMA280	18-Jun-08	30-Jun-08	UMC406853	01-Sep-14	100%
OMA281	18-Jun-08	30-Jun-08	UMC406854	01-Sep-14	100%
OMA282	18-Jun-08	30-Jun-08	UMC406855	01-Sep-14	100%
OMA283	18-Jun-08	30-Jun-08	UMC406856	01-Sep-14	100%
OMA284	18-Jun-08	30-Jun-08	UMC406857	01-Sep-14	100%
OMA285	18-Jun-08	30-Jun-08	UMC406858	01-Sep-14	100%
OMA286	18-Jun-08	30-Jun-08	UMC406859	01-Sep-14	100%
OMA287	18-Jun-08	30-Jun-08	UMC406860	01-Sep-14	100%
OMA288	18-Jun-08	30-Jun-08	UMC406861	01-Sep-14	100%
OMA289	18-Jun-08	30-Jun-08	UMC406862	01-Sep-14	100%
OMA290	18-Jun-08	30-Jun-08	UMC406863	01-Sep-14	100%
OMA291	18-Jun-08	30-Jun-08	UMC406864	01-Sep-14	100%
OMA292	18-Jun-08	30-Jun-08	UMC406865	01-Sep-14	100%
OMA292 OMA293	18-Jun-08	30-Jun-08	UMC406866	01-Sep-14 01-Sep-14	100%
OMA293 OMA294	18-Jun-08	30-Jun-08	UMC406867	01-Sep-14 01-Sep-14	100%
ACATIM1	22-Aug-93	20-Sep-93	UMC353672	01-Sep-14 01-Sep-14	100%
ACATIM1 ACATIM2	22-Aug-93 22-Aug-93	20-Sep-93 20-Sep-93	UMC353672	01-Sep-14 01-Sep-14	100%
ACATIM2 ACATIM3	22-Aug-93 22-Aug-93	20-Sep-93 20-Sep-93	UMC353673	01-Sep-14 01-Sep-14	100%
ACATIM3 ACATIM4	22-Aug-93 22-Aug-93	20-Sep-93 20-Sep-93		01-Sep-14 01-Sep-14	
	-	-	UMC353675	-	100%
ACATIM5	22-Aug-93	20-Sep-93	UMC353676	01-Sep-14	100%



TUG Claim	Location Date	Filed BLM	<b>BLM Serial No</b>	Expiry Date	Ownership
ACATIM6	22-Aug-93	20-Sep-93	UMC353677	01-Sep-14	100%
ACATIM7	22-Aug-93	20-Sep-93	UMC353678	01-Sep-14	100%
ACATIM8	22-Aug-93	20-Sep-93	UMC353679	01-Sep-14	100%
ACATIM9	22-Aug-93	20-Sep-93	UMC353680	01-Sep-14	100%
ACATIM10	22-Aug-93	20-Sep-93	UMC353681	01-Sep-14	100%
ACATIM11	22-Aug-93	20-Sep-93	UMC353682	01-Sep-14	100%
ACATIM12	22-Aug-93	20-Sep-93	UMC353683	01-Sep-14	100%
ACATIM13	22-Aug-93	20-Sep-93	UMC353684	01-Sep-14	100%
ACATIM14	22-Aug-93	20-Sep-93	UMC353685	01-Sep-14	100%
ACATIM15	22-Aug-93	20-Sep-93	UMC353686	01-Sep-14	100%
ACATIM16	22-Aug-93	20-Sep-93	UMC353687	01-Sep-14	100%
ACATIM17	22-Aug-93	20-Sep-93	UMC353688	01-Sep-14	100%
ACATIM18	22-Aug-93	20-Sep-93	UMC353689	01-Sep-14	100%
ACATIM19	22-Aug-93	20-Sep-93	UMC353690	01-Sep-14	100%
ACATIM20	22-Aug-93	20-Sep-93	UMC353691	01-Sep-14	100%
ACATIM21	22-Aug-93	20-Sep-93	UMC353692	01-Sep-14	100%
ACATIM22	22-Aug-93	20-Sep-93	UMC353693	01-Sep-14	100%
ACATIM23	22-Aug-93	20-Sep-93	UMC353694	01-Sep-14	100%
ACATIM24	22-Aug-93	20-Sep-93	UMC353695	01-Sep-14	100%
ACATIM25	22-Aug-93	20-Sep-93	UMC353696	01-Sep-14	100%
ACATIM26	22-Aug-93	20-Sep-93	UMC353697	01-Sep-14	100%
ACATIM27	22-Aug-93	20-Sep-93	UMC353698	01-Sep-14	100%
ACATIM28	22-Aug-93	20-Sep-93	UMC353699	01-Sep-14	100%
ACATIM29	22-Aug-93	20-Sep-93	UMC353700	01-Sep-14	100%
ACATIM30	22-Aug-93	20-Sep-93	UMC353701	01-Sep-14	100%
ACATIM31	22-Aug-93	20-Sep-93	UMC353702	01-Sep-14	100%
ACATIM32	22-Aug-93	20-Sep-93	UMC353703	01-Sep-14	100%
ACATIM33	22-Aug-93	20-Sep-93	UMC353704	01-Sep-14	100%
ACATIM34	22-Aug-93	20-Sep-93	UMC353705	01-Sep-14	100%
ACATIM35	22-Aug-93	20-Sep-93	UMC353706	01-Sep-14	100%
ACATIM36	22-Aug-93	20-Sep-93	UMC353707	01-Sep-14	100%



 TABLE 30-2
 KB PROPERTY CLAIM LIST (NEVADA)

 West Kirkland Mining Inc. – TUG Project



Claim Number	Location Date	Filed BLM	BLM Serial No	Expiry Date	Ownership
GUT 29	07/20/1992	10-08-1992	663469	01-Sep-14	100%
GUT 29 (Amended)	04/22/1994	05-11-1994			
GUT 30	07/20/1992	10-08-1992	663470	01-Sep-14	100%
GUT 30 (Amended)	04/22/1994	05-11-1994			
GUT 31	07/20/1992	10-08-1992	663471	01-Sep-14	100%
GUT 31 (Amended)	04/22/1994	05-11-1994			
GUT 32	07/20/1992	10-08-1992	663472	01-Sep-14	100%
GUT 32 (Amended)	04/22/1994	05-11-1994			
GUT 33	07/20/1992	10-08-1992	663473	01-Sep-14	100%
GUT 33 (Amended)	04/22/1994	05-11-1994			
GUT 34	07/20/1992	10-08-1992	663474	01-Sep-14	100%
GUT 34 (Amended)	04/22/1994	05-11-1994			
GUT 35	07/20/1992	10-08-1992	663475	01-Sep-14	100%
GUT 35 (Amended)	04/22/1994	05-11-1994			
GUT 36	07/20/1992	10-08-1992	663476	01-Sep-14	100%
GUT 36 (Amended)	04/22/1994	05-11-1994			
GUT 37	07/21/1992	10-08-1992	663477	01-Sep-14	100%
GUT 37 (Amended)	04/22/1994	05-11-1994			
GUT 38	07/21/1992	10-08-1992	663478	01-Sep-14	100%
GUT 38 (Amended)	04/22/1994	05-11-1994			
GUT 39	07/21/1992	10-08-1992	663479	01-Sep-14	100%
GUT 39 (Amended)	04/22/1994	05-11-1994			
GUT 40	07/21/1992	10-08-1992	663480	01-Sep-14	100%
GUT 40 (Amended)	04/22/1994	05-11-1994			
GUT 41	07/21/1992	10-08-1992	663481	01-Sep-14	100%
GUT 41 (Amended)	04/22/1994	05-11-1993			
GUT42	07/20/1992	10/08/1992	663482	01-Sep-14	100%
GUT 42 (Amended)	04/22/1994	05/11/1994			
GUT43	07/20/1992	10/08/1992	663483	01-Sep-14	100%
GUT 43 (Amended)	04/22/1994	05/11/1994			
GUT44	07/20/1992	10/08/1992	663484	01-Sep-14	100%
GUT 44 (Amended)	04/22/1994	05/11/1994			
GUT 93	07/21/1992	10/08/1992	663530	01-Sep-14	100%
GUT 95	07/21/1992	10/08/1992	663532	01-Sep-14	100%
GUT182	09/11/1992	11/02/1992	664390	01-Sep-14	100%
GUT 184	09/11/1992	11/02/1992	664392	01-Sep-14	100%
GUT 186	09/11/1992	11/02/1992	664394	01-Sep-14	100%
GEP 1	03/06/1998	05/14/1998	789848	01-Sep-14	100%
GEP 2	03/06/1998	05/14/1998	789849	01-Sep-14	100%
GEP 3	03/06/1998	05/14/1998	789850	01-Sep-14	100%
GEP 4	03/06/1998	05/14/1998	789851	01-Sep-14	100%
GEP 5	03/06/1998	05/14/1998	789852	01-Sep-14	100%
GEP 6	03/06/1998	05/14/1998	789853	01-Sep-14	100%
GEP 7	03/06/1998	05/14/1998	789854	01-Sep-14	100%



Claim Number	Location Date	Filed BLM	BLM Serial No	Expiry Date	Ownership
GEP 8	03/06/1998	05/14/1998	789855	01-Sep-14	100%
GEP 9	03/06/1998	05/14/1998	789856	01-Sep-14	100%
GEP 10	03/06/1998	05/14/1998	789857	01-Sep-14	100%
GEP 11	03/06/1998	05/14/1998	789858	01-Sep-14	100%
GEP 12	03/06/1998	05/14/1998	789859	01-Sep-14	100%
GEP 13	03/06/1998	05/14/1998	789860	01-Sep-14	100%
GEP 14	03/06/1998	05/14/1998	789861	01-Sep-14	100%
GEP 15	03/06/1998	05/14/1998	789862	01-Sep-14	100%
GEP 16	03/06/1998	05/14/1998	789863	01-Sep-14	100%
TUG 1	07/08/2005	07/28/2005	905386	01-Sep-14	100%
TUG 2	07/08/2005	07/28/2005	905387	01-Sep-14	100%
KBF 1	05/27/2008	07/24/2008	994057	01-Sep-14	100%
KBF 2	05/27/2008	07/24/2008	994058	01-Sep-14	100%
KBF 3	05/27/2008	07/24/2008	994059	01-Sep-14	100%
KBF 4	05/27/2008	07/24/2008	994060	01-Sep-14	100%
KBF 5	03/06/2008	05/30/2008	988266	01-Sep-14	100%
KBF 6	03/06/2008	05/30/2008	988267	01-Sep-14	100%
KBF 7	03/06/2008	05/30/2008	988268	01-Sep-14	100%
KBF 8	03/06/2008	05/30/2008	988269	01-Sep-14	100%
KBF 9	03/06/2008	05/30/2008	988270	01-Sep-14	100%
KBF 10	03-06-2008	05/30/2008	988271	01-Sep-14	100%
KBF 11	03-06-2008	05/30/2008	988272	01-Sep-14	100%
KBF 12	03-06-2008	05/30/2008	988273	01-Sep-14	100%
KBF 13	03-06-2008	05/30/2008	988274	01-Sep-14	100%
KBF 14	03-06-2008	05/30/2008	988275	01-Sep-14	100%
KBF 15	03/26/1999	05/13/1999	804230	01-Sep-14	100%
KBF 16	03/26/1999	05/13/1999	804231	01-Sep-14	100%
KBF 17	03/26/1999	05/13/1999	804232	01-Sep-14	100%
KBF 18	03/25/1999	05/13/1999	804233	01-Sep-14	100%
KBF 19	03-06-2008	05/30/2008	988276	01-Sep-14	100%
KBF 20	03-06-2008	05/30/2008	988277	01-Sep-14	100%
KBF 21	03-06-2008	05/30/2008	988278	01-Sep-14	100%
KBF 22	03-06-2008	05/30/2008	988279	01-Sep-14	100%
KBF 23	03-06-2008	05/30/2008	988280	01-Sep-14	100%
KBF 24	03/25/1999	05/13/1999	804239	01-Sep-14	100%
KBF 25	03/25/1999	05/13/1999	804240	01-Sep-14	100%
KBF 26	03/25/1999	05/13/1999	804241	01-Sep-14	100%
KBF 27	03/25/1999	05/13/1999	804242	01-Sep-14	100%
KBF 28	03-06-2008	05/30/2008	988281	01-Sep-14	100%
KBF 29	03-06-2008	05/30/2008	988282	01-Sep-14	100%
KBF 30	03-06-2008	05/30/2008	988283	01-Sep-14	100%
KBF 31	03-06-2008	05/30/2008	988284	01-Sep-14 01-Sep-14	100%
KBF 32	03-06-2008	05/30/2008	988285	01-Sep-14 01-Sep-14	100%
KBF 33	03/25/1999	05/13/1999	804248	01-Sep-14 01-Sep-14	100%
	03/23/1999	03/13/1999	004240	01-Sep-14	100%



Claim Number	Location Date	Filed BLM	BLM Serial No	Expiry Date	Ownership
KBF 34	03/25/1999	05/13/1999	804249	01-Sep-14	100%
KBF 35	03/25/1999	05/13/1999	804250	01-Sep-14	100%
KBF 36	03/25/1999	05/13/1999	804251	01-Sep-14	100%
KBF 37	06-02-2008	07/24/2008	994061	01-Sep-14	100%
KBF 38	06-02-2008	07/24/2008	994062	01-Sep-14	100%
KBF 39	06-02-2008	07/24/2008	994063	01-Sep-14	100%
KBF 40	06-02-2008	07/24/2008	994064	01-Sep-14	100%
TEC 1	03-05-2008	05/30/2008	988286	01-Sep-14	100%
TEC 2	03-05-2008	05/30/2008	988287	01-Sep-14	100%
TEC 3	03-05-2008	05/30/2008	988288	01-Sep-14	100%
TEC4	03-05-2008	05/30/2008	988289	01-Sep-14	100%
TEC 5	03-05-2008	05/30/2008	988290	01-Sep-14	100%
TEC 6	03-05-2008	05/30/2008	988291	01-Sep-14	100%
TEC 7	03-05-2008	05/30/2008	988292	01-Sep-14	100%
TEC 8	03-05-2008	05/30/2008	988293	01-Sep-14	100%
TEC 9	03-05-2008	05/30/2008	988294	01-Sep-14	100%
TEC 10	03-05-2008	05/30/2008	988295	01-Sep-14	100%
TEC 11	03/05/2008	05/30/2008	988296	01-Sep-14	100%
TEC 12	03/05/2008	05/30/2008	988297	01-Sep-14	100%
TEC 13	03/05/2008	05/30/2008	988298	01-Sep-14	100%
TEC 14	03/05/2008	05/30/2008	988299	01-Sep-14	100%
TEC 15	03/05/2008	05/30/2008	988300	01-Sep-14	100%
TEC 16	03/05/2008	05/30/2008	988301	01-Sep-14	100%
TEC 17	03/05/2008	05/30/2008	988302	01-Sep-14	100%
TEC 18	03/05/2008	05/30/2008	988303	01-Sep-14	100%
TEC 19	03/04/2008	05/30/2008	988304	01-Sep-14	100%
TEC 20	03/04/2008	05/30/2008	988305	01-Sep-14	100%
TEC 21	03/04/2008	05/30/2008	988306	01-Sep-14	100%
TEC 22	03/04/2008	05/30/2008	988307	01-Sep-14	100%
TEC 23	03/04/2008	05/30/2008	988308	01-Sep-14	100%
TEC 24	03/04/2008	05/30/2008	988309	01-Sep-14	100%
TEC 25	03/04/2008	05/30/2008	988310	01-Sep-14	100%
TEC 26	03/04/2008	05/30/2008	988311	01-Sep-14	100%
TEC 27	03/04/2008	05/30/2008	988312	01-Sep-14	100%
TEC 28	03/04/2008	05/30/2008	988313	01-Sep-14	100%
TEC 29	03/04/2008	05/30/2008	988314	01-Sep-14	100%
TEC 30	03/04/2008	05/30/2008	988315	01-Sep-14	100%
TEC 31	03/04/2008	05/30/2008	988316	01-Sep-14	100%
TEC 32	03/04/2008	05/30/2008	988317	01-Sep-14	100%
TEC 33	03/04/2008	05/30/2008	988318	01-Sep-14	100%
TEC 34	03/03/2008	05/30/2008	988319	01-Sep-14	100%
TEC 35	03/03/2008	05/30/2008	988320	01-Sep-14	100%
TEC 36	03/03/2008	05/30/2008	988321	01-Sep-14	100%
TEC 37	03/03/2008	05/30/2008	988322	01-Sep-14	100%



Claim Number	Location Date	Filed BLM	BLM Serial No	Expiry Date	Ownership
TEC 38	03/03/2008	05/30/2008	988323	01-Sep-14	100%
TEC 39	03/03/2008	05/30/2008	988324	01-Sep-14	100%
TEC 40	03/03/2008	05/30/2008	988325	01-Sep-14	100%
TEC 41	03/03/2008	05/30/2008	988326	01-Sep-14	100%
TEC 42	03/03/2008	05/30/2008	988327	01-Sep-14	100%
TEC 43	03/03/2008	05/30/2008	988328	01-Sep-14	100%
TEC 44	03/03/2008	05/30/2008	988329	01-Sep-14	100%
TEC 45	03/03/2008	05/30/2008	988330	01-Sep-14	100%
TEC 46	03/03/2008	05/30/2008	988331	01-Sep-14	100%
TEC 47	03/03/2008	05/30/2008	988332	01-Sep-14	100%
TEC 48	03/03/2908	05/30/2008	988333	01-Sep-14	100%
TEC 49	03/03/2008	05/30/2008	988334	01-Sep-14	100%
TEC 50	04/25/2008	05/30/2008	988335	01-Sep-14	100%
TEC 51	04/25/2008	05/30/2008	988336	01-Sep-14	100%
TEC 52	04/25/2008	05/30/2008	988337	01-Sep-14	100%
TEC 53	04/25/2008	05/30/2008	988338	01-Sep-14	100%
TEC 54	04/25/2008	05/30/2008	988339	01-Sep-14	100%
TEC 55	04/25/2008	05/30/2008	988340	01-Sep-14	100%
TEC 56	04/25/2008	05/30/2008	988341	01-Sep-14	100%
TEC 57	04/25/2008	05/30/2008	988342	01-Sep-14	100%
TEC 58	04/25/2008	05/30/2008	988343	01-Sep-14	100%
TEC 59	04/25/2008	05/30/2008	988344	01-Sep-14	100%
TEC 60	04/25/2008	05/30/2008	988345	01-Sep-14	100%
TEC 61	04/25/2008	05/30/2008	988346	01-Sep-14	100%
TEC 62	04/25/2008	05/30/2008	988347	01-Sep-14	100%
TEC 63	04/25/2008	05/30/2008	988348	01-Sep-14	100%
TEC 64	04/25/2008	05/30/2008	988349	01-Sep-14	100%
TEC 65	03/27/2008	05/30/2008	988350	01-Sep-14	100%
TEC 66	03/27/2008	05/30/2008	988351	01-Sep-14	100%
TEC 67	03/27/2008	05/30/2008	988352	01-Sep-14	100%
TEC 68	03/27/2008	05/30/2008	988353	01-Sep-14	100%
TEC 69	03/27/2008	05/30/2008	988354	01-Sep-14	100%
TEC 70	03/27/2008	05/30/2008	988355	01-Sep-14	100%
TEC 71	03/27/2008	05/30/2008	988356	01-Sep-14	100%
TEC 72	03/27/2008	05/30/2008	988357	01-Sep-14	100%
TEC 73	03/27/2008	05/30/2008	988358	01-Sep-14	100%
TEC 74	03/27/2008	05/30/2008	988359	01-Sep-14	100%
TEC 75	03/27/2008	05/30/2008	988360	01-Sep-14	100%
TEC 76	03/27/2008	05/30/2008	988361	01-Sep-14	100%
TEC 77	03/27/2008	05/30/2008	988362	01-Sep-14	100%
TEC 78	03/27/2008	05/30/2008	988363	01-Sep-14	100%
TEC 79	03/27/2008	05/30/2008	988364	01-Sep-14	100%
TEC 80	03/27/2008	05/30/2008	988365	01-Sep-14	100%
TEC 81	03/27/2008	05/30/2008	988366	01-Sep-14	100%



Claim Number	Location Date	Filed BLM	BLM Serial No	Expiry Date	Ownership
TEC 82	03/27/2008	05/30/2008	988367	01-Sep-14	100%
TEC 83	04/25/2008	05/30/2008	988368	01-Sep-14	100%
TEC 84	04/25/2008	05/30/2008	988369	01-Sep-14	100%
TEC 85	04/25/2008	05/30/2008	988370	01-Sep-14	100%
TEC 86	04/24/2008	05/30/2008	988371	01-Sep-14	100%
TEC 87	04/24/2008	05/30/2008	988372	01-Sep-14	100%
TEC 88	06/19/2008	07/24/2008	994065	01-Sep-14	100%
TEC 89	04/24/2008	05/30/2008	988373	01-Sep-14	100%
TEC 90	06/19/2008	07/24/2008	994066	01-Sep-14	100%
TEC 91	04/24/2008	05/30/2008	988374	01-Sep-14	100%
TEC 92	04/24/2d08	05/30/2008	988375	01-Sep-14	100%
TEC 93	04/24/2008	05/30/2008	988376	01-Sep-14	100%
TEC 94	04/24/2008	05/30/2008	988377	01-Sep-14	100%
TEC 95	04/24/2008	05/30/2008	988378	01-Sep-14	100%
TEC 96	04/24/2008	05/30/2008	988379	01-Sep-14	100%
TEC 97	04/24/2008	05/30/2008	988380	01-Sep-14	100%
TEC 98	04/24/2008	05/30/2008	988381	01-Sep-14	100%
TEC 99	04/24/2008	05/30/2008	988382	01-Sep-14	100%
TEC 100	04/24/2008	05/30/2008	988383	01-Sep-14	100%
TEC 101	04/24/2008	05/30/2008	988384	01-Sep-14	100%
TEC 102	04/24/2008	05/30/2008	988385	01-Sep-14	100%
TEC 103	04/24/2008	05/30/2008	988386	01-Sep-14	100%
TEC 104	04/25/2008	05/30/3008	988387	01-Sep-14	100%
TEC 105	04/25/2008	05/30/2008	988388	01-Sep-14	100%
TEC 106	04/25/2008	05/30/2008	988389	01-Sep-14	100%
TEC 107	04/25/2008	05/30/2008	988390	01-Sep-14	100%
TEC 108	04/25/2008	05/30/2008	988391	01-Sep-14	100%
TEC 109	04/25/2008	05/30/2008	988392	01-Sep-14	100%
TEC 110	04/25/2008	05/30/2008	988393	01-Sep-14	100%
TEC 111	04/25/2008	05/30/2008	988394	01-Sep-14	100%
TEC 112	04/25/2008	05/30/2008	988395	01-Sep-14	100%
TEC 113	04/25/2008	05/30/2008	988396	01-Sep-14	100%
TEC 114	04/25/2008	05/30/2008	988397	01-Sep-14	100%
TEC 115	04/25/2008	05/30/2008	988398	01-Sep-14	100%
TEC 116	04/25/2008	05/30/2008	988399	01-Sep-14	100%
TEC 117	04/25/2008	05/30/2008	988400	01-Sep-14	100%
TEC 118	04/25/2008	05/30/2008	988401	01-Sep-14	100%
TEC 119	04/25/2008	05/30/2008	988402	01-Sep-14	100%
TEC 120	04/25/2008	05/30/2008	988403	01-Sep-14	100%
TEC 121	04/25/2008	05/30/2008	988404	01-Sep-14	100%
TEC 122	06/02/2008	07/24/2008	994067	01-Sep-14	100%
TEC 123	06/02/2008	07/24/2008	994068	01-Sep-14	100%
TEC 124	05/27/2008	07/24/2008	994069	01-Sep-14	100%
TEC 125	05/27/2008	07/24/2008	994070	01-Sep-14	100%
	55,21,2000	0.72 1/2000	501070		.0070



A 25% interest in the metalliferous minerals in the following fee lands:

Township 41 North, Range 70 East Section 5 - All

A 75% interest in the metalliferous minerals in the following fee lands:

Township 42 North, Range 70 East Section 29: All Section 31: All Section 33: Lots I, 2, 3, 4, WYZW Z