Cerro Quema Project - Pre-Feasibility Study on the La Pava and Quemita Oxide Gold Deposits

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

This report has been prepared by Kappes Cassiday and Associates, Golder Associates Inc., and P&E Mining Consultants Inc. at the request of Pershimco Resources Inc. ("Pershimco"). Pershimco is a Quebec based, publicly held company trading on the TSX Venture Exchange ("TSX.V") under the symbol PRO and on the Frankfurt exchange under the symbol BIZ.

The purpose of this report is to provide an independent, National Instrument ("NI") 43-101 Technical Report and Mineral Resource Estimate and Pre-Feasibility Study for the Cerro Quema Project (the "Project") in Los Santos Province, Panama.

1.2 Property Description and Location

The Cerro Quema Project is located on the Azuero Peninsula in the Los Santos Province of south-western Panama. The Project is located approximately 45 km south-southwest of the city of Chitré, the largest city on the Azuero Peninsula. Chitré is approximately 255 km by road from Panama City on the Panamanian Highway and about 150 km by air, southwest of Panama City. The Cerro Quema Project is 82 km by paved road from Chitré towards Tonosi. The Project is located at Latitude 7^{o} 33' 14" N by Longitude 80^{o} 32' 56" W and at UTM coordinates 17N 549772 mE, 834994 mN (NAD83).

1.3 Accessibility, Climate, Local Resources and Physiography

Basic infrastructure exists at the Project including a fixed exploration camp with preparation laboratory, a prepared platform at "KM7" and 5 gabion dams for sediment control of surface water. The terrain in the region is rugged, with a maximum elevation of about 950 meters above sea level (masl) and a relief of about 850 m. The Project can be operated on a continuous basis, however, there may be periods of time that operations may experience difficulties due to precipitation during the wet season from May to November.

1.4 History

Concession to the Cerro Quema Property comprises three contracts between the Republic of Panama and Minera Cerro Quema, S.A. ("MCQ"), a wholly owned Panamanian subsidiary of Pershimco. The Contracts numbered 19, 20 and 21, granted in February and March 1997 provide the exclusive rights for the extraction of class IV metallic minerals (gold and silver) for a period of 20 years and cover 14,893 ha. Pershimco has advised that the contracts can be extended for a first 10 year extension and then two additional extensions of 5 years each.

Pershimco acquired the property in September 2010 through an agreement with Central Sun Mining Inc., RNC (Panama) Ltd., MCQ, Carena Equities Corp., Bellhaven Copper & Gold Inc. and Julio Benedetti to acquire all interests in the Cerro Quema Mining Project held by the corporation MCQ. Under the terms of this agreement, Pershimco acquired all interests and obligations of MCQ for a total consideration of US$6,400,000 (the "Purchase Price") (Pershimco Press Release dated September 10, 2010).

Puritch et al. (2012) completed the previous NI 43-101 mineral resource estimate for the Cerro Quema Project and reported 513,000 oxide-derived ounces of gold in the Indicated category; 50,600 oxide-derived ounces of gold in the Inferred category; 57,000 sulphide-derived ounces of gold in the Indicated category; and 30,400 sulphide derived ounces of gold in the Inferred category. This mineral resource estimate has been superseded by the NI 43-101 mineral resource estimate that is the subject of this report.

1.5 Geological Setting

The Azuero Peninsula, on which the Cerro Quema Project is located, is a prominent feature on the southwest (Pacific) coastline of Panama. The basement of the Peninsula consists of massive and pillowed tholeiitic basalts that are currently interpreted to represent uplifted rocks from the western margin of the Caribbean plate. The Cerro Quema district is situated in the central part of the Azuero Peninsula. The rocks consist of andesite, dacite, limestone, basalt and turbidites that are interpreted to have been deposited in a fore-arc environment. The Rio Quema Formation is interpreted as the infill sequence of a fore-arc basin of the Cretaceous-Paleogene volcanic arc and the host to mineralization in the Cerro Quema district.

1.6 Mineralization

Several gold deposits have been identified on the Cerro Quema Property, and these include the La Pava, Quemita-Quema, and La Mesita deposits. Mineralization is hosted by andesites and dacitic lava domes of the Rio Quema Formation. The mineralization consists of disseminated pyrite, chalcopyrite, and enargite; and stockworks of quartz, pyrite, chalcopyrite, and barite with traces of galena and sphalerite. Gold occurs as disseminated microscopic grains of native gold and as "invisible gold" within the pyrite, particularly in the siliceous alteration zone. Strong supergene alteration forms an oxidation cap or gossan and has released the gold contained in the pyrite. The highest grades of gold mineralization are near the surface and decrease towards the lower limit of oxidation.

1.7 Deposit Types

The Cerro Quema deposits are characterized by the presence of widespread hydrothermal alteration that forms concentric halos around mineralization. The presence of vuggy silica, alunite, natro-alunite and enargite in addition to the hydrothermal alteration pattern are compatible with a high sulphidation epithermal system. The alteration pattern is fault controlled, following E-W trending regional faults. Work completed by Pershimco suggests that there is the potential of a porphyry deposit at depth.

1.8 Exploration

The Property has been explored since 1990. Pershimco's exploration program has included lithological and structural mapping, channel sampling and geochemical sampling in 2011 and geophysical surveys in 2011, 2012, and 2013. In 2012 Pershimco contracted Geotech Ltd. to complete airborne geophysics covering all of the Cerro Quema Property. The airborne geophysics included radiometric, magnetic and VTEM surveys. These surveys identify the mineralized trend and highlighted additional areas to the north showing coincident low magnetic susceptibility with low potassium and low Th/K ratios associated with the La Pava and Quema/Quemita Deposits. During 2011 to 2013, Pershimco completed Induced Polarization (IP) surveys that delineated four large chargeability targets located beneath the La Pava, Quema, Idaida and La Pelona gold oxides. These chargeability anomalies may represent sulphide mineralization at depth (Pershimco news release November 4, 2013).

1.9 Drilling

Between 1990 and 1994 Cyprus Minerals Company and successor companies completed 4,921.3 m of core drilling and 9,639 m of RC drilling on the Cerro Quema Project area. Subsequently Campbell Resources Inc. drilled a further 1,749.6 m of core drilling on the La Pava deposit in 1996.

Since acquiring the property in 2010, Pershimco has drilled 16,939 m of core drilling over 79 holes and 32,728 m of RC drilling over 330 holes.

1.10 Sample Preparation, Analyses and Security

For the present resource estimate, diamond drill core and reverse circulation ("RC") cuttings samples were collected, approximately each one meter. A thorough quality assurance/quality control ("QA/QC", or "QC") program was implemented, which included one field blank and at least one certified reference material, (also referred to as a standard), for every batch of 20 samples sent to the laboratory.

The principal laboratory used by Pershimco was Activation Laboratories ("Actlabs"). Samples were sent to Actlab's Panama laboratory for preparation and the resulting pulps were sent to Actlabs in Ancaster, ON, Canada for analysis. Silver and copper sample tenors were determined using a multi-element ICP method, and gold was determined using fire assay method with atomic absorption finish. Gold values exceeding the 2.5 g/t Au were rerun using fire assay with a gravimetric finish. The authors believe that the sample preparation, security, and analytical procedures are in keeping with standard industry practice, and are responsible for producing quality results which are suitable for use in the current resource estimate.

1.11 Data Verification

Mr. Antoine Yassa, P.Geo., and a qualified person, ("QP") visited the Cerro Quema Project on October 2, 2013. During the site visit Mr. Yassa collected 12 samples from four holes. Samples were collected from taking either a ¼ split of the half core remaining in the core box, or taking a split from the RC cuttings. Samples were analyzed by AGAT Labs in Mississauga, ON. Based on independent sampling, performance of certified reference materials, performance of duplicates, and performance of field blanks, P&E has declared the data adequate for use in the current resource estimate.

1.12 Metallurgical Testing

Metallurgical testing of material from the Cerro Quema deposit was completed by the previous owners and Pershimco. The testing included:

- Bottle roll tests that evaluated amenability of the materials to cyanidation
- Column leach tests that evaluated the amenability of the materials to conventional heap leaching
- Vat leach tests which evaluated the amenability of the materials to treatment in flooded tanks

Metallurgical testing results show:

- A constant field gold recovery of 86% for all La Pava material and the low grade Quema/Quemita. Further, it is recommended to discount Quema/Quemita ore recovery at 3% recovery of gold per 1 g/t head grade
- Oxide material from La Pava responds very well to cyanide bottle roll and column leaching yielding high gold extractions and low reagent consumptions.
- At lower head grades (about 1 g/t Au and lower), extractions are approximately the same for either La Pava or Quema/Quemita material
- At higher head grades (above 1 g/t Au), the extractions for La Pava are greater than for Quema/Quemita
- The data show no dependence of gold extraction on crush size for the materials and size ranges tested.
- Clay containing material shows poor permeability and will require cement agglomeration.

1.13 Mineral Resources Estimate

The mineral resource estimation work reported herein was carried out by Eugene Puritch, P.Eng., Antoinne Yassa P.Geo., and Fred Brown, P.Geo., all independent Qualified Persons in terms of NI 43-101. Mineral resource modeling and estimation were carried out using the commercially available Gemcom GEMS software program. Open-pit optimization was carried out using the Whittle Four-X Single Element software program. The effective date of this mineral resource estimate is 30 June 2014.

All drilling data were provided by Pershimco electronically. The database as supplied by Pershimco contains 714 drill hole records. After accounting for drill holes outside of the immediate project area, re-drilled drill holes and drill holes without assay information, the database as implemented by P&E contains results from 641 drill holes totaling 68,341.82 m. Industry standard validation checks were completed on the supplied databases. All specific gravity measurements were determined by Pershimco using water immersion of drill hole core and had an average value of 2.66 tonnes per cubic meter.

The Cerro Quema constraining mineralized domain boundaries for gold were determined from lithology, structure and grade boundary interpretation from visual inspection of drill hole sections. The domains were created with computer screen digitizing of drill hole intercepts. Outlines for high-grade Au domains were influenced by the selection of mineralized material above 1.00 g/t Au that demonstrated lithological and structural zonal continuity along strike and down dip. The outlines for low-grade Au domains were influenced by the selection of mineralized material above 0.20 g/t Au. Minimum constrained true width for interpretation was approximately 2.0 meters. Interpreted polylines from each section were then consolidated into three-dimensional wireframes. The resulting wireframes (domains) were used for statistical analysis, grade interpolation, rock coding and mineral resource reporting.

Pershimco supplied a database containing 46,323 sulphur measurements obtained from drill hole core. Reported sulphur values range from 0.01% to 20.0%, with an average value of 3.34%. The base of the oxide zone was identified by examination of sulphur results viewed down the drill hole, and in general corresponds to a marked transition from low sulphur values (less than 0.10%) to high sulphur values (greater than 1.00%) at the selected boundary.

Assay sample lengths within the defined mineralization domains for the Cerro Quema data range from 0.30 m to 12.80 m, with an average sample length of 1.19 m. A total of 67% of the constrained assay sample lengths fall between 0.90 m and 1.02 m. In order to ensure equal sample support a compositing length of 1.00 m was selected for mineral resource estimation. No significant correlation was noted between the Au and Cu composite values. Based on a review of individual domain and global summary statistics, capping levels of 9.00 g/t Au and 2.20 % Cu were selected, equivalent to the 99.86 percentile for the total Au composite population and the 99.66 percentile for the total Cu composite population. A total of 27 Au composite values and 58 Cu composite values were capped to these thresholds prior to estimation.

Domain-coded, composited sample data were used for continuity analysis. Based on the results of the gold variography a range of 35 m was selected as an appropriate range for classification.

Orthogonal block models were established with the block model limits selected so as to cover the extent of the mineralized domains, and with the block size reflecting the continuity of the mineralization and the drill hole spacing. Inverse Distance Cubed (“ID^3”) weighting of capped composite values was used for block estimation. Composite data used during grade estimation were restricted to samples located within their respective domain. Between four and twenty composites from two or more drill holes were required for estimation, with a maximum of three composites derived from any single drill hole.

Resource classification was implemented by generating three-dimensional envelopes around those parts of the block model for which the drill hole data and grade estimates met specific criteria. Measured mineral resources were defined by blocks located within thirty-five meters of eight or more drillholes. Measured resources were only reported for the La Pava deposit. Indicated resources were defined by blocks located within thirty-five meters of two or more drill holes. All remaining blocks estimated were classified as Inferred.

The Cerro Quema mineral resources are reported inside an optimized pit shell. The results from the optimized pit shell are used solely for the purpose of reporting mineral resources that have reasonable prospects for economic extraction, and the optimization is based on the economic parameters including US$1,500/oz gold, 86% oxide Au recovery, 90% sulphide Au recovery, US$2.20/tonne mining costs, $6.13/tonne oxide processing cost, $12.00 tonne sulphide process cost, US$1.00/tonne G&A. A cutoff of 0.18 g/t Au was used for oxide mineralization and 0.31 g/t Au for sulphide mineralization. The pit shell was optimized based on Au block grades for oxide zones and Au-equivalent (AuEq) block grades for sulphide zones. The Au-equivalent block grades were calculated using the formula:

EQUATION 1.0-1

AuEq = (Au g/t + (Cu% x 1.6)).

The In-Pit Mineral Resources are summarized in the table below.

TABLE 1-1
SUMMARY OF THE CERRO QUEMA IN-PIT MINERAL RESOURCES(1)(2)(3)

La Pava							
Zone	**Grade Group**	**Cutoff Au g/t**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**Au Ounces**
Oxides	Measured	0.18	7,052,600	0.82	0.04	NA	184,900
	Indicated	0.18	10,896,100	0.57	0.04	NA	201,100
	Meas & Ind	0.18	17,948,700	0.67	0.04	NA	386,000
	Inferred	0.18	331,700	0.36	0.03	NA	3,800
Zone	**Grade Group**	**Cutoff AuEq g/t**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq Ounces**
Sulphides	Measured	0.31	802,000	0.44	0.22	0.80	20,600
	Indicated	0.31	7,664,900	0.39	0.38	1.00	246,100
	Meas & Ind	0.31	8,466,900	0.39	0.36	0.98	266,700
	Inferred	0.31	75,000	0.28	0.2	0.61	1,500
La Pava	**Grade Group**	**Cutoff**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**Au + AuEq Ounces**
Total	Measured	----	7,854,600	0.78	0.06	0.81	205,500
	Indicated	----	18,561,000	0.50	0.18	0.75	447,200
	Meas & Ind	----	26,415,600	0.58	0.14	0.77	652,700
	Inferred	----	406,700	0.35	0.06	0.41	5,300

Quema + Quemita + Mesita							
Zone	**Grade Group**	**Cutoff Au g/t**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**Au Ounces**
Oxides	Measured	0.18	0	0	0	NA	0
	Indicated	0.18	5,983,700	0.86	0.03	NA	166,400
	Meas & Ind	0.18	5,983,700	0.86	0.03	NA	166,400
	Inferred	0.18	335,300	0.38	0.03	NA	4,100
Zone	**Grade Group**	**Cutoff AuEq g/t**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq Ounces**
Sulphides	Measured	0.31	0	0	0	0	0
	Indicated	0.31	2,539,000	0.49	0.15	0.73	59,600
	Meas & Ind	0.31	2,539,000	0.49	0.15	0.73	59,600
	Inferred	0.31	298,100	0.30	0.17	0.57	5,500
QQM	**Grade Group**	**Cutoff**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**Au + AuEq Ounces**
Total	Measured	----	0	0	0	0.00	0
	Indicated	----	8,522,700	0.75	0.07	0.82	226,000
	Meas & Ind	----	8,522,700	0.75	0.07	0.82	226,000
	Inferred	----	633,400	0.34	0.10	0.47	9,600

(1) Mineral resources are reported inside an optimized pit shell. AuEq was calculated using Au + 1.6 * Cu.
(2) Numbers may not add up due to rounding.
(3) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
(4) The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred resources as an Indicated or Measured mineral resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured mineral resource category.
(5) The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council..

An in-pit global sensitivity analysis to the updated mineral resource was also completed simultaneously with the in-pit mineral resource estimate. **Inclusion of this sensitivity analysis is not meant to supersede or replace the results of the in-pit mineral resource estimate and should not be construed as a mineral resource.** The block model was validated visually by the inspection of successive section lines in order to confirm that the model correctly reflects the distribution of high-grade and low-grade samples. The block models were also evaluated by comparing the ID^3 block estimates to a nearest neighbor estimate ("NN") at zero cutoff as well as to the mean of the uncapped composite data.

1.14 Mineral Reserve Estimate

The mineral reserve is that portion of the mineral resource that has been identified as mineable within a design pit. The mineral reserve estimate incorporates ore mining parameters such as mining recovery and waste rock dilution. The mineral reserves form the basis for the Pre-Feasibility Study mine production schedule and mine plans.

The Cerro Quema mining operation will consist of open-pit mining only with no underground mining component planned, hence, all of the ore reserves are deemed to be open pit reserves. No Inferred mineral resources are used in the estimation of the mineral reserve. Only oxide resources are used in the estimation of the mineral reserve.

The mineral reserves have been developed in a three-step process.

i. Select an optimized open-pit shell to be used as the basis for the pit design;
ii. Develop an operational pit design that incorporates benches, detailed pit slope criteria, and truck haulage ramps;
iii. Estimate the in-pit tonnage contained within the operational pit that meets or exceeds the cut-off grade criteria and apply the ore mining parameters (i.e. mining losses and dilution) to that tonnage. The final result is the mineral reserve.

The mineral reserves for the Cerro Quema Project will be provided by two separate pits; the La Pava pit and the Quema pit. Four mineralized deposits have been identified at the Cerro Quema Project. They are the La Pava deposit, and the Quema, Quemita, La Mesita Deposits. Two separate block models were developed; a block model for the La Pava deposit and a second block model containing the other three deposits. For mineral resource reporting purposes, the latter three deposits have been grouped into the Quema Pit area.

The Proven and Probable mineral reserves for the Project are summarized in Table 1.2. A cut-off grade of 0.21 g/t Au is used for reporting all reserves. The mineral reserve represents a diluted ore tonnage.

TABLE 1-2
CERRO QUEMA MINERAL RESERVES

		Ore (Mt)	Au (g/t)	Cu (%)	Gold Oz Contained
La Pava					
	Proven	6.82	0.80	0.04	176,000
	Probable	7.40	0.67	0.04	159,000
	Sub-total	14.22	0.73	0.04	335,000
Quema					
	Proven	-	-	-	-
	Probable	5.49	0.86	0.03	153,000
	Sub-total	5.49	0.86	0.03	153,000
Total					
	Proven	6.82	0.80	0.04	176,000
	Probable	12.89	0.75	0.03	312,000
	Total	19.71	0.77	0.04	488,000

1.15 Mining Operation

The mining method proposed for the Cerro Quema Project will be a conventional open-pit mine. A fleet of hydraulic excavators and trucks consisting of 50 tonne rigid frame trucks and 40 tonne articulated trucks will be used to mine the ore and waste materials. The drilling and blasting of both ore and waste rock will be required although some materials will be free-digging.

The ore production rate delivered to the heap leach pad area is approximately 3.6 million tonnes per year of silica and fresh rock type ore. Clay type ore will be stockpiled and processed at the end of the mine life since this ore requires a different crushing method and agglomeration.

Overall total annual mining rates will range from a high of 7.1 Mt of combined ore and waste to a low of 5.5 Mt with an average of about 6.4 Mt/year. This results in an average total daily mining rate of 18,000 tpd, of which 10,000 tpd would consist of ore.

In order to allocate waste stripping quantities over time and to allow faster access to better grade ore, the La Pava Pit has been sub-divided into three phases and the Quema Pit has been subdivided into two phases.

Golder Associates completed a geotechnical review to provide pit slope design recommendations for the Pre-Feasibility Study. They recommended a design catch bench width of 6.5 m for 10 m high double benches utilizing a bench face angle of 62 degrees results in an inter-ramp slope angle of 40 degrees.

The selected mine production schedule is shown in Table 1.3. The total mine life is 5 years in duration, not including one year of pre-production.

TABLE 1-3
MINE PRODUCTION SCHEDULE SUMMARY

		Total	-1	1	2	3	4	5
La Pava								
Waste	kt	10,251.9	1,373.9	933.0	2,637.3	3,192.8	1,730.8	384.1
Ore	kt	14,220.8	585.1	1,933.0	3,822.2	3,859.4	2,638.9	1,382.2
Au	g/t	0.73	0.88	0.85	0.75	0.63	0.70	0.80
Gold cont	*oz*	*334,350*	*16,532*	*53,058*	*91,921*	*77,829*	*59,513*	*35,497*
Strip Ratio	w:o	0.72	2.35	0.48	0.69	0.83	0.66	0.28
Quema								
Waste	kt	4,006.2	-	1,039.9	-	-	1,610.7	1,355.7
Ore	kt	5,487.2	-	1,910.7	-	-	1,178.9	2,397.7
Au	g/t	0.86	-	1.34	-	-	0.7	0.6
Gold cont	*oz*	*152,511*	-	*82,332*	-	-	*24,973*	*45,207*
Strip Ratio	w:o	0.73	-	0.54	-	-	1.37	0.57
Total								
Waste	kt	14,258.1	1,373.9	1,972.8	2,637.3	3,192.8	3,341.5	1,739.8
Ore	kt	19,708.0	585.1	3,843.7	3,822.2	3,859.4	3,817.8	3,779.8
Au	g/t	0.77	0.88	1.10	0.75	0.63	0.69	0.66
Gold cont	*oz*	*486,861*	*16,532*	*135,389*	*91,921*	*77,829*	*84,486*	*80,703*
Total Mat'l	kt	33,966.1	1,959.0	5,816.6	6,459.5	7,052.2	7,159.3	5,519.6
Strip Ratio	w:o	0.72	2.35	0.51	0.69	0.83	0.88	0.46

Ore and waste from the La Pava pit will be hauled to the crusher and Chontal waste dump. At the Quema pit, a trade-off study recommended the use of a conveyor system to transport both ore and waste down the hillside. Waste would be tripped off the conveyor in the Chontal valley and ore would be sent to the primary crushing area.

The Pre-Feasibility study evaluated both options of Owner-Operated mining and Contract mining however the base case for the study is the Owner-Operated mining.

The various activities associated with the mining operation will consist of:

- Drilling and blasting,
- Grade control,
- Loading and hauling of waste rock and ore,
- Pit dewatering,
- Mine services and supervision.

Initially, an excavator and front end loader would be purchased along with a total of six trucks (four articulated and two rigid frame) to be ready for Year-1. As the production rate ramps up and the La Pava pit deepens with longer haul distances, additional trucks will be required. The fleet of four articulated trucks will be supplemented with additional rigid frame trucks since working conditions in the pit will improve with depth. The truck fleet will peak at ten units. No major mining equipment replacements will be required over the project's short five year mine life.

The Cerro Quema mine will require mine offices, change house facilities, employee parking areas, maintenance facilities, warehousing and cold storage areas. The explosive contractor will be allocated storage space on the project site. The mine office and mine dry facilities will provide for mine management, engineering, geology, and mine maintenance services. These will be located in the vicinity of the truck shop. A maintenance shop which will provide pit support services will be located to the northeast of the primary crusher.

1.16 Mineral Processing

The Cerro Quema project will be a 10,000 tonne per day heap leach facility. Processing at Cerro Quema will be by conventional heap leaching of crushed ore stacked on a single use pad. Gold will be leached from the mineralized material with dilute cyanide solution. Gold will be recovered from solution in a carbon adsorption-desorption-recovery plant to produce doré bars.

Run-of-mine ore will be delivered by haul trucks from one of the open pit mines to the primary crusher. An apron feeder will deliver the run of mine at a rate of 556 dry t/h to a vibrating grizzly with 130 mm openings. Grizzly oversize will be crushed by a primary jaw crusher.

The jaw crusher will crush the grizzly oversize to 100% passing 130 mm. The jaw crusher product will combine with the grizzly undersize and discharge to the primary crusher discharge conveyor which feeds the secondary screen feed hopper. The secondary screen feed hopper provides 15 minutes of storage capacity for the secondary crusher.

A secondary screen belt feeder will feed primary crushed rock to a secondary screen. The secondary screen will scalp material at 70 mm. Oversize will be crushed in the secondary cone crusher. Cone crusher product and screen undersize will discharge to the crushed ore stockpile stacker which feeds secondary crushed material to the crushed ore stockpile. The stockpile will be constructed over a subterranean tunnel containing two reclaim belt feeders and the Reclaim Tunnel Conveyor.

Pebble lime will be added to the reclaim tunnel conveyor at a nominal rate of 1.6 kg/t material. The crushed material and lime will then be conveyed to the heap for stacking.

The ore will be leached using a dilute solution of sodium cyanide applied by a system of sprinklers. The dilute cyanide leach solution will percolate through the material, dissolving gold, and drain by gravity to a pregnant solution pond which will store the solution prior to further processing.

Pregnant solution will be pumped to a set of carbon adsorption columns. Pregnant solution will flow by gravity through the set of five columns, exiting the last adsorption column as barren solution.

The adsorption columns will operate in this fashion until the carbon contained in the lead column achieves the desired precious metal loading and then it will be stripped.

Stripping of the gold from the loaded carbon is accomplished by circulating a heated, dilute caustic and cyanide solution upwards through the carbon bed. The heated solution exits the elution vessel as pregnant eluent. The pregnant eluent flows to the recovery circuit where stripped gold is plated from the pregnant eluent onto mild steel wool cathodes.

The mild steel wool cathodes are removed periodically and treated in the retort furnace which removes all of the water and most of the mercury from the cathodes. The retorted cathodes are then mixed with fluxes, melted and poured into doré bars. The doré is then shipped to an offsite refiner for further processing and sale as fine gold.

1.17 Project Infrastructure

An existing site access road intersects with Via Tonosi approximately 32 km south of Macaracas. The access road runs north approximately 7 km to the location of the platform constructed between Quema and La Pava by Pershimco. Improvements to the existing road will be required and include widening to approximately 9 m to allow two over-the-road trucks to pass; re-contouring to eliminate grades in excess of 7%; and grading to a ditch on one side for drainage.

Raw water will be supplied by Well Number 4-2013 located approximately 1.1 km north, north east of the existing platform at an elevation of 190 masl. Raw water will be stored in a tank located approximately south-southeast of the existing platform near the access road to La Pava at an elevation of 480 masl. The raw water will be used for dust control, fire water, and process water make-up.

The majority of the diesel fuel used at Cerro Quema will be offloaded and stored in a cylindrical horizontal steel tank located on the western end of the existing platform at 423 masl. The tank will supply fuel for the mine fleet and light vehicles.

During construction a temporary first aid clinic will located on the existing platform. A treatment room will be located on the first floor of the Warehouse and Workshop building located near the ADR and process ponds. The treatment room is intended to be staffed by a nurse who can provide skilled medical treatment to sick or injured operators.

An emergency vehicle is already available at the existing base camp to transport injured or sick people to the nearest hospital.

A radio system is already installed at the Cerro Quema mine site. Radios will allow the different groups to communicate on dedicated channels. Wired phone and internet access will be available in the office areas.

Buildings and facilities are located throughout the project area. The facilities include:

Mine
- Mine Shop and Warehouse
- Laboratory
- Powder Magazine, La Pava
- Powder Magazine, Quema

Process
- Administration Building including Process Warehouse
- ADR Area
- Refinery
- Reagent Storage

1.18 Market Study and Contracts

Gold production will be shipped as doré bars to a precious metals refinery such as Johnson Mathey, Metalor or Argor-Heraeus. The refinery will produce gold bullion from the doré that will then be sold to banks, institutional investors, treasuries or private parties.

The large volume of gold traded on the international markets, approximately 21.0 million ounces per month, should allow Cerro Quema gold production to be readily sold.

Gold can be sold on either the spot market or on contracts that allow prices to be averaged. The realized gold price used in this study is $1,275 per ounce.

1.19 Environmental Studies, Permitting and Social Impact

An environmental impact assessment (EsIA) and permits are in place for the previously proposed continuous vat leach operation. However, as the current project will utilize heap leach processing methods, Pershimco has initiated an update of the EsIA and associated permits based on the new project design to meet Panamanian, more specifically National Authority of the Environment (Autoridad Nacional del Ambiente – ANAM) requirements. The environmental assessment and permit applications, including the closure plan, will be submitted to the Panamanian government in 2014. Additional studies that will are being competed to support the EsIA and permits include:

- Surface water and groundwater flow and quality conditions during dry and wet seasons.
- Sediment quality samples at selected surface water locations.
- Aquatic sampling to characterization seasonal and spatial variation.

- Archaeological survey in potentially disturbed areas.

In 2013 Pershimco completed a study to describe the socio-economic environment of the communities located within a 12.5 km radius of the Project and the main urban centres, as well as to identify the local perceptions in regards to Panama's current state of affairs, the environment, the project, and the mining industry in general. Data on demographics, housing and utilities, economics, and health and community well-being were obtained through surveys and secondary sources. The scope of the socio-economic study for the Project area will be expanded during completion of the EsIA.

The acid:base accounting (ABA) test results indicate that samples of potential waste rock from the La Pava ore body are expected to contain low to very low sulphide by weight percent; however there is essentially no buffering capacity. The classification of ABA results indicates that most waste rock samples have low potential for acid generation; however, a smaller portion of the waste rock from La Pava is potentially acid generating. The synthetic precipitation leach test results indicate that there is the potential for metal leaching. Geochemical characterization, including kinetic testing, of additional drill core is being completed to confirm the acid generation and metal leaching potential of the waste rock; in particular material associated with the Quemita-Quema ore bodies.

The ABA test results suggest that the oxide fraction of the La Pava and Quemita-Quema heap leached ore have some potential for acid generation; and all samples of the sulphide fraction of the La Pava heap leached ore are potentially acid generating. Results of the leachate testing indicate that the La Pava leached oxide ore tailings have a low potential for metal leaching. The development of the open pit will be halted within the oxidation zone such that the underling sulphide bearing, and potentially acid generating rock, will not be exposed.

1.19.1 Mine Closure

The mine and related facilities will be decommissioned at the end of the mine life. The Project's proposed decommissioning concept is to rehabilitate disturbed land and watercourses and restore them to their pre-Project conditions to the extent feasible. The primary aim of the mine site reclamation program is to control erosion and ensure physical stability, and to accelerate the development of a native self-sustaining vegetation cover. Infrastructure no longer needed after mining will be dismantled. At the option of the government, some facilities, such as the accommodations complex and main access road, could remain in place and be transferred to the community.

The open pits, which will remain open upon cessation of mining, will be fenced and access via the ramp block with a rock berm. The pits will be developed with overall slopes that are stable in operation and would continue to be stable in the long term in post-closure. Due to the highly fractured nature of the much of the rock the pit is expected to be dry except during short periods of time during precipitation events in the wet season when water may accumulate. This assumption will be confirmed when hydrogeological data is available.

The top and side slopes, including the inter-bench slopes, of the waste rock dump will be recontoured to stable slopes to minimize erosion from runoff. The waste rock dump will be covered to promote runoff and minimize infiltration, seeded and then allowed to naturally re-vegetate upon completion of deposition. As the surface water management system is developed on the benches on the slope of the waste rock dump, it will be constructed to drain to the surface water diversion systems developed during operation around the dump.

The HLF design will provide operational and post-closure stability and limit grading during reclamation to re-sloping between and on benches to facilitate surface water drainage. The HLF has been designed with a lining system in accordance with International Cyanide Code requirements and meets or exceeds North American standards and practices for lining systems, piping systems, and process ponds, which is intended to lessen the environmental risk of the facilities to impact the local soils, surface water, and groundwater in and around the site. Upon closure the HLF will be triple rinsed, covered with overburden and topsoil and revegetated. Water accumulating in the pond system will be treated (i.e., cyanide detoxification) during active leaching after ore stacking has ceased, and during rinsing.

Monitoring for physical and chemical stability of the site will be required after closure and will continue on a regular basis until water quality monitoring indicates that runoff from disturbed areas of the site can be released directly to the receiving environment. The monitoring program will be undertaken for at least 5 years after closure activities have been completed.

1.20 Capital and Operating Cost

The required pre-production capital expenditure for the Cerro Quema Project is summarized in Tables 1-4 and 1-5. These costs are based on the design outlined in this study and are considered to have an accuracy of +/-25%. The scope of these costs includes all mining equipment, process facilities, and infrastructure for the project.

The costs presented have been estimated primarily by Golder Associates Inc., KCA and P&E

The project capital costs are summarized as follows.

TABLE 1-4
SUMMARY OF MINING PRE-PRODUCTION CAPITAL COSTS ($,000S)

Mine	
Direct Costs	$ 10,926
Other Costs	$ 6,240
Total Pre-Production Mine	$ 17,166
Process	
Direct Costs	$ 78,010
Indirect Costs	$ 6,608
Initial Fills, EPCM and Owners Costs	$ 15,309
Total Pre-Production Capital Cost	$ 99,927
Total Cerro Quema	$ 117,093

A summary of the Cerro Quema sustaining capital and reclamation costs is presented in the table below.

TABLE 1-5
CERRO QUEMA PROJECT SUSTAINING CAPITAL COSTS

Area	**Total ($'000s)**
Leach	$ 9,906
Mine	$ 3,527
Closure	$ 10,381
Total	$ 23,814

A summary of the Cerro Quema operating costs is presented in the table below.

TABLE 1-6
CERRO QUEMA PROJECT AVERAGE OPERATING COST

Description	**Operating Cost**
Mine (Owners Fleet)	$3.30
Process (average)	$4.40
Site G & A	$0.93
Total	$8.63

Details of these costs can be found in Section 21.

1.21 Economic Analysis

The Cerro Quema project has a life of 5.3 years. The project internal rate-of-return (IRR) is estimated at 33.7%, the payback period is 2.2 years and the after-tax, net present value (NPV), at a 5% discount rate, is $110M. The average cash cost of Cerro Quema is $402 per ounce. The "Pre-Tax" IRR is 45.8% and the "Pre-Tax" NPV, at a 5% discount rate, is $165M

1.22 Adjacent Properties

There are currently no adjacent properties to Pershimco's Cerro Quema Project.

1.23 Other Relevant Data and Information

1.23.1 Geotechnical Design

- Slope stability analyses were performed for the La Pava and Quema Quemita open pits to support slope design recommendations. Results indicate that pit slopes are stable for the recommended slope configuration.
- A slope stability analysis was performed on the Maricela Heap Leach Facility (HLF) to provide minimum design criteria for civil design of the HLF Results indicate that the HLF is geotechnically stable under static and seismic loading conditions.
- A slope stability analysis was performed on the Upper Chontal Waste Rock Dump (WRD) to provide minimum design criteria for civil design of the WRD. Results indicate that the WRD is geotechnically stable under static and seismic loading conditions.
- A hydrologic analysis was performed for the HLF and WRD to estimate surface water run-off generated by the 25-year, 24-hour storm event falling on the catchment areas up-gradient of the HLF and WRD. Permanent stormwater diversion channels have been designed for both facilities to adequately capture and convey run-off.
- No observation wells or piezometers have been developed in the La Pava and Quema-Quemita Pit, HLF, or WRD areas to indicate the elevation of a local ground water table.

1.23.2 Project Implementation

The project schedule is planned to coincide with permitting and the dry season on Panama. The major project milestones are summarized in the table below:

TABLE 1-7
MAJOR PROJECT MILESTONES

Milestone	Start	Complete
ESIA Study	March 1, 2014	October 31, 2014
ANAM – ESIA Permitting	October 1, 2014	September 30, 2015
Detailed Engineering	January 1, 2015	September 30, 2015
Construction	October 1, 2015	December 1, 2016
Mine Commissioning	September 1, 2016	September 30, 2016
Stack Ore on Pad	October 1, 2016	
Process Commissioning	October 1, 2016	December 31, 2016
First Pour		December 31, 2016

1.23.3 Opportunities and Risks

- There is considerable potential to find additional zones of gold oxide mineralization along the alteration trend that hosts the La Pava, Quemita-Quema and La Mesita deposits.
- Sulphide resources have been estimated beneath the oxide zones in La Pava and Quema/Quemita (Table 14.7 Summary of the Cerro Quema In-Pit Mineral Resources). The sulphidic material represents a significant opportunity for a future gold-copper mining operation and a concentrator.
- More detailed review of the mine schedule could possibly improve on the amount of backfilling possible. Backfilling has the benefit of short hauls, which would improve equipment productivity and lower costs.
- Opportunities to achieve steeper pit slopes require encountering consistent zones of less fractured rock mass in the pit slopes where it is possible to form steep (70 degrees or steeper) bench face slopes by trim blasting and the ability to triple bench (leave a catch bench every 15 m)
- In less fractured rock, it may be possible to steepen slopes to 45 degrees, and if triple benching is possible, it may be possible to steepen inter-ramp slopes to 49 degrees. High quality mining practice, particularly blasting will be required to achieve either of these opportunities.
- Silver is present in La Pava and Quema/Quemita ore. Field recovery of silver is estimated at 12% based on assays that could be obtained from metallurgical test data. Using a silver price of $14 per ounce, the silver represents a potential revenue source of $2.7 million.
- The operating expenses assume we will use pebble lime for pH control. An emergency cement feeder will to be used provide cement, in addition to lime, if clay is fed to the crusher in an unplanned fashion. Cement (bulk) is estimated to cost $0.243 per kg delivered. The clay material will require 10 kg cement/t ore or $2.425 per tonne crushed. This will increase the operating cost by $1.910/t.
- The mining plan allows clay material to be stockpiled and campaigned during year six, if this is not followed the ore will need to be agglomerated. Installation of an agglomeration drum is not planned until year five. If the material requires agglomeration, the only alternative will be to rely on belt agglomeration until a drum can be purchased and installed.

1.23.4 Permitting

An environmental assessment and permits are in place for the previously proposed continuous vat leach operation. However, as the current project will utilize heap leach processing methods, an environmental assessment and permits to reflect the new project design will have to be submitted an approved by the Panamanian government.

1.24 Conclusions

The Cerro Quema project is currently planned to be a 10,000 tpd crushed ore heap leach that will last 5.3 years. The ore will be crushed, stacked on a permanent heap and leached with a dilute solution of sodium cyanide. The leached gold will be recovered in a carbon recovery plant and poured into doré onsite.

The mining fleet is currently planned to be owner procured and operated. The fleet will include a drill, excavators, loaders, haul trucks and support equipment.

The Cerro Quema project is profitable and will result in production of 417,812 oz of gold. The average cash cost of Cerro Quema is $402 per ounce. The project has an IRR of 33.7% and an after-tax NPV of $110M at a 5% discount rate.

1.25 Recommendations

1.25.1 Geology & Resource

- Additional exploration and step-out drilling to extend known mineralization and delineate additional resources.

1.25.2 Mining

- Complete a more detailed evaluation for the placement of the explosive storage facilities, as it relates to the site infrastructure.
- Further examination of full service contract mining or simply contract drill & blasting services should be considered

1.25.3 Mineral Processing

1.25.3.1 Existing Mine Plan

- Confirmation column leach tests should be performed on Core from La Pava and Quema-Quemita at the selected crush size. The material should be blended according to alteration (Silica, Silica-Clay and Clay) in the ratios expected for the final mine plan.
- A test program should be conducted on crushed core to determine the permeability, blended to match the average blend of alterations in the final mine plan at an equivalent pressure of 80 m.
- A test program should be conducted on crushed core from pure Clay alteration to determine the permeability versus cement dose. This will help Pershimco prepare for the final year when Clay will be campaigned.
- Pershimco should consider metallurgical testing at coarser crush sizes to determine if Primary Crushing alone could be performed. This may have to be done on bulk samples.

1.25.3.2 Rinsing

- Laboratory testing should be conducted to verify the rinsing requirements of the Cerro Quema heap

1.25.4 Geotechnical, Water and Closure Considerations

- Additional geotechnical field investigation and laboratory testing programs are recommended to facilitate feasibility and detailed design of the HLF and WRD. Subsurface conditions should be characterized in sufficient detail to provide a high level of confidence in the stratigraphy, ground water, structure, and preferential paths of flow in the upper 30 meters of the subsurface to satisfy standards of practice for design of heap leach facilities.
- Further consideration should be given to reevaluating the PGA value appropriate for feasibility and final design because of the historical record of strong earthquake shaking, the location of known major faults within about 40 km of the Cerro Quema Project.
- Further consideration should be given to evaluating the hydrogeologic conditions that exist at the Cerro Quema Project specifically in the vicinities of the Maricela HLF and Upper Chontal WRD sites.
- Monitoring of existing stream flows should be considered to measure sediment transportation in existing streams. This will provide valuable input for designing sediment control structures downstream of proposed improvements.
- Additional site specific precipitation and evaporation measurements should be collected to better refine the predictions of the HLF process fluid water balance.
- Additional effort should be made to optimize geometry of the proposed facilities.
- During construction of the HLF, and in addition to the on-site construction quality assurance team, the engineer of record (Golder Associates Inc.) should perform periodic site visits to verify that techniques used for construction and observation are in accordance with the project design and technical specifications.
- Golder recommends that additional effort be made in developing a feasible, yet proactive reclamation plan for the HLF and WRD.

2.0 INTRODUCTION

This report has been prepared for Persimco Resources Inc. (Pershimco) and it reflects the information and data available regarding the Cerro Quema property in the Los Santos Province of Panama with an effective date of June 30, 2014. Cerro Quema consists of two mineral resources, Quema/Quemita and La Pava separated by a distance of approximately 3 km.

Pershimco is a Canadian-based resource exploration corporation that controls 100% of the Cerro Quema Project, 100 % of the Courville and other gold properties in the Abitibi Region of Quebec, Canada, and 100% of various exploration properties in Chihuahua, Mexico.

Currently, the major assets and facilities associated with the Cerro Quema Project are:

- The La Pava and Quema/Quemita gold-silver deposits;
- The drilling database, geological models, and mineral resource models generated since 1993;
- Exploration Camp buildings and facilities;
- Access by public highway and gravel roads to the proposed open pit;
- Environmental Management Program (PAMA) permits.

2.1 Terms of Reference

Pershimco retained Golder Associates Inc., Kappes Cassiday and Associates, and P&E Mining Consultants Inc. to prepare an independent Technical Report on the Cerro Quema Project. This report documents the findings of a Preliminary Feasibility Study for the Cerro Quema Project and is the basis for Pershimco classifying resources of Cerro Quema as a Mineral Reserve.

Mr. Antoine Yassa, P.Geo., of P&E, a Qualified Person under the terms of NI 43-101 conducted site visits to the Property on January 17 and 18, 2012 and on October 2, 2013. An independent verification of Pershimco’s sampling program was conducted by Mr. Yassa at that time.

A site visit was performed on 24 and 25 September 2013 by:

- Gene Tortelli, PE of Golder Associates Inc.
- Christopher MacMahon, PE of Golder Associates Inc.
- George Lightwood, PE of Golder Associates Inc.
- Mark Gorman, PE of Kappes, Cassiday and Associates
- Pedro Rosales Valenzuela, Ing. of Kappes, Cassiday and Associates
- Ken Kuchling, M.Eng, P.Eng. of P&E Mining Consultants Inc.

David Brown, M.Sc., P. Geo. of Golder Associates Inc. did not visit the site in September of 2013 but previously visited the site in October of 2009.

Dr. Alan Hull of Golder Associates Inc. performed a site visit from 7 through 12 April, 2014.

The following Pershimco personnel were present during the September 2013 site visit and were instrumental in providing key company and project information:

- Pierre Bureau, P. Eng., PMP, Project Director Cerro Quema Project
- Loic Bureau, P. Eng., PMP, Operation Manager Canada
- Octavio Choy, V.P Latin America
- John Kapetas, P. Geo., Pershimco Vice President Exploration
- Dr. Michael Druecker, Ph.D., CPG, Consultant

Representatives from Golder Associates Inc. (Gene Tortelli, George Lightwood and David Brown) are responsible for portions of Sections 1, 2, 7, 17, 18, 24, 25, 26, 27, 28 and all of Section 20.

Representatives from Kappes Cassiday and Associates are responsible for portions of Sections 1, 2, 3, 17, 18, 21, 22, 24, 25, 26, 27 and 28 and all of Sections 13, 19 and 22.

Representatives from P&E Mining Consultants Inc. (Richard Sutcliffe, Ken Kuchling, David Burga, Tracy Armstrong, Antoine Yassa, Fred Brown and Eugene Puritch) are responsible for portions of Sections 1, 2, 3, 7, 18, 21 24, 25, 26, 27 and 28 and all of Sections 4, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16 and 23.

TABLE 2-1
RESPONSIBILITY FOR REPORT SECTIONS

Section		Responsible QP
1	Summary	RS, KK, GT, DB-G, MG, EP
2	Introduction	RS, MG, GT
3	Reliance on Other Experts	RS, MG
4	Property Description and Location	DB
5	Accessibility, Climate, Local Resources, Infrastructure and Physiography	RS, DB
6	History	DB
7	Geological Setting and Mineralization	RS, GT
8	Deposit Types	RS
9	Exploration	DB
10	Drilling	DB
11	Sample Preparation, Analyses and Security	TA
12	Data Verification	TA, AY
13	Mineral Processing and Metallurgical Testing	MG
14	Mineral Resource Estimates	EP, FB
15	Mineral Reserve Estimates	KK, EP
16	Mining Methods	KK, EP
17	Recovery Methods	MG, GT
18	Project Infrastructure	MG, KK, DB-G
19	Market Studies and Contracts	MG
20	Environmental Studies, Permitting and Social or Community Impact	DB-G
21	Capital and Operating Costs	KK, MG
22	Economic Analysis	MG
23	Adjacent Properties	RS
24	Other Relevant Data and Information	KK, RS, MG, GT
25	Interpretation and Conclusions	KK, RS, MG, GT, EP
26	Recommendations	KK, RS, MG, GT, EP
27	References	KK, RS, MG, GT
28	Statement of Qualifications	KK, RS, MG, GT

Abbreviations used above:

Richard Sutcliffe	*RS*	*Antoine Yassa*	*AY*	*David Brown*	*DB-G*
Ken Kuchling	*KK*	*Fred Brown*	*FB*	*George Lightwood*	*GL*
David Burga	*DB*	*Gene Tortelli*	*GT*	*Eugene Puritch*	*EP*
Tracy Armstrong	*TA*	*Mark Gorman*	*MG*		

2.2 Sources of Information

This report is based in part on internal company technical reports and maps, published government technical reports, published scientific papers, company letters and memoranda, and public information listed in Section 27 “References” at the conclusion of this report. Several sections from reports authored by other consultants have been directly quoted summarized in this report and are so indicated in the appropriate sections.

2.3 List of Abbreviations

Units of measurement used in this report are generally from the SI (metric) system. U.S. Customary and troy units are also used when appropriate. All currency in this report is US dollars (US$).

Distances/Speed:	mm – millimeter
	cm – centimeter
	m – meter
	km – kilometer
	km/h – kilometer per hour
	masl – Above Sea level
Areas/Flux Rate:	m^2 or sqm – square meter
	ha – hectare
	km^2 – square kilometer
	$l/h/m^2$ – liters per hour per square meter
	$m^3/h/m^2$ – cubic meters per hour per square meter
Weights/Rates:	oz – troy ounces
	Koz – 1,000 troy ounces
	g – grams
	kg – kilograms
	T or t or t_m – ton or tonne (1000 kg)
	Kt – 1,000 tonnes
	Mt – 1,000,000 tonnes
	kg/d – kilograms per day
	g/d – grams per day
	oz/day – troy ounces per day
Time:	min – minute
	s or sec – second
	h or hr – hour
	op hr – operating hour
	d – day
	yr – year
Volume/Flow:	m^3 or cu m – cubic meter
	m^3/h – cubic meters per hour
	l/min – liter per minute
	Nm^3/h – normal cubic meters per hour
	Am^3/h – actual cubic meters per hour
	bv or BV – bed volume
	Assay/Grade: gpt, g/ $t_{m,}$ gms/ t_m, grams per tonne
	ppm – parts per million;
	ppb - parts per billion
Other:	TPD or tpd – tonnes per day
	HLF – Heap Leach Facility
	kWh – kilowatt hour
	kWh/ t_m – kilowatt hour per metric ton

Au – gold
Ag – silver
Hg – mercury
Cu – copper
ID^3 – Inverse Distance Cubed
NN – nearest neighbor
AuEq – Au-equivalent
ABA – acid:base accounting
WAD CN – weak acid dissociable cyanide
NaCN – sodium cyanide
US$ or $ - United States dollar
IRR – Internal rate-of-return
NPV – Net present value
TSX.V – TSX Venture Exchange
PRO – Pershimco TSX.V symbol
Kg/ t_m – kilograms per metric ton
kPa – kilopascal
MPa – megapascal
mm Hg – mm mercury
˚C – degrees centigrade
kV – kilovolts
kVa – power, kilovolt ampere
MVa – power, megavolt ampere
MBTUs – million British thermal units
MJ/h – million joules per hour
S.G. – specific gravity
avg – average
P80 – 80% passing
P50 – 50% passing
Aspect ratio – tank's ratio of height to diameter
H:V – horizontal to vertical ratio
MW – megawatt
kW – kilowatt
ROM – run of mine
Bulk Density – t_m/m3, mass divided by volume
WMF – waste management facility

3.0 RELIANCE ON OTHER EXPERTS

Kappes, Cassiday and Associates, Golder Associates Inc. and P&E Mining Consultants Inc. have assumed, and relied on the fact, that all the information and existing technical documents listed in the References Section of this Report are accurate and complete in all material aspects. While all the available information presented was carefully reviewed, no guarantee to its accuracy and completeness can be made. The authors reserve the right, but will not be obligated to revise this Report and conclusions if additional information becomes known subsequent to the date of this Report.

Although copies of the tenure documents, operating licenses, permits, and work contracts were reviewed, an independent verification of land title and tenure was not performed. P&E has not verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties but has relied on the clients solicitor's to have conducted the proper legal due diligence. Information on tenure and permits was obtained from Pershimco. Pershimco has provided a legal opinion dated August 7, 2014, from Lealcast Abogados, Panama, acting as Panamanian counsel to Pershimco, confirming that Pershimco's title to the Cerro Quema project under concession Contracts 19, 20 and 21 is in good standing.

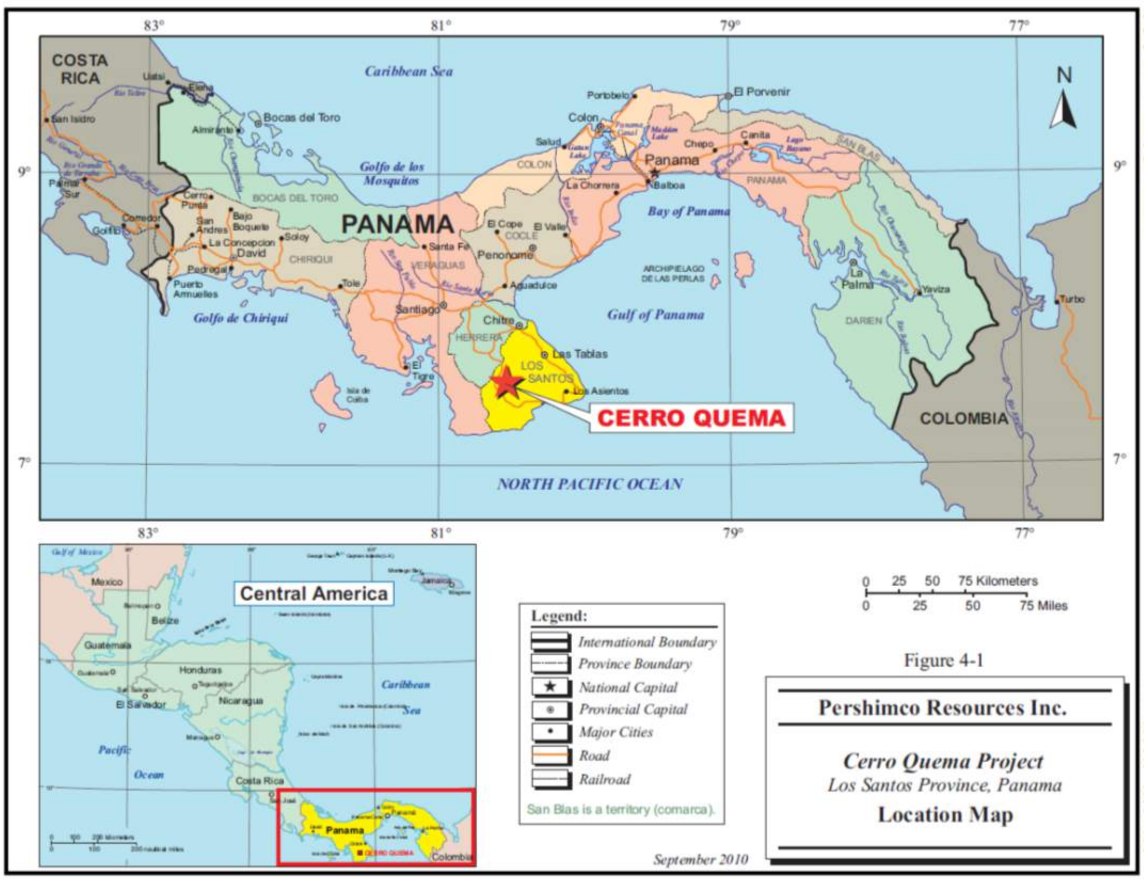
A draft copy of the Report has been reviewed for factual errors by Pershimco's management. Authors have relied on Pershimco's historical and current knowledge of the Property in this regard. Any statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the date of this Report.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Property Description

The Cerro Quema Project is located on the Azuero Peninsula in Los Santos Province of south-western Panama. The Project is located approximately 45 km by air south-southwest of the city of Chitré, from the largest city on the Azuero Peninsula. Chitré is approximately 255 km by road from Panama City and about 150 km by air, southwest of Panama City. The Project is located at Latitude 7^{o} 33.23' N by Longitude 80^{o} 32.81' W and at UTM coordinates (NAD83) 17 550000 E and 835000 N. The Project location is shown in Figure 4.1.

Figure 4.1
Cerro Quema Project Location



(Source: Scott Wilson RPA report 2011)

4.2 Location

The Cerro Quema Property comprises three contracts between the Republic of Panama and MCQ that grant exclusive rights for mineral extraction as follows:

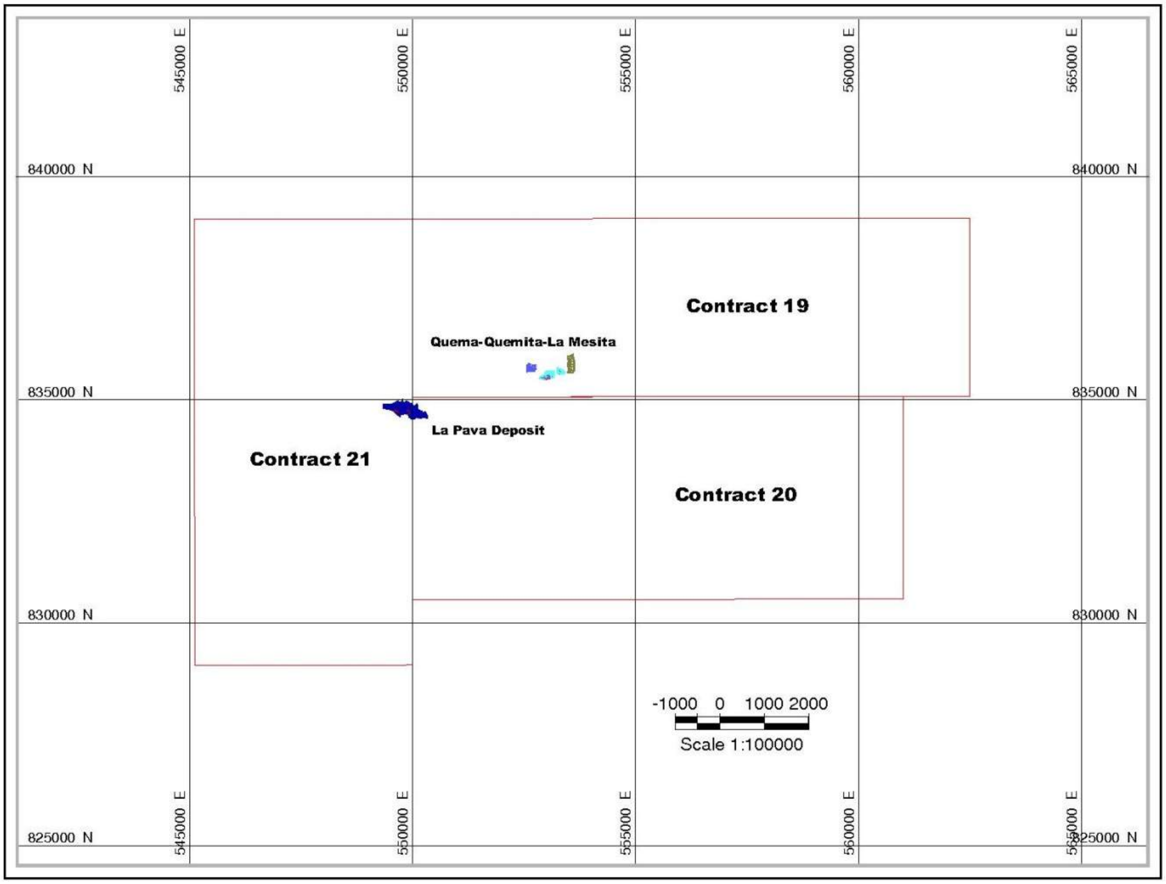
Contract No. 19, dated February 26, 1997, for the exclusive rights for the extraction of Class IV metallic minerals (gold and silver) for 5,000 ha and effective for 20 years, identified in the National Directorate of Mineral Resources with the symbol MCQSA-EXTR (gold and silver) 96-63;
Contract No. 20, dated February 26, 1997, for the exclusive rights for the extraction of Class IV metallic minerals (gold and silver) for 5,000 ha and effective for 20 years, identified in the National Directorate of Mineral Resources with the symbol MCQSA-EXTR (gold and silver) 96-62;
Contract No. 21, dated March 3, 1997, for the exclusive rights for the extraction of Class IV metallic minerals (gold and silver) for 4,893 ha and effective for 20 years, identified in the National Directorate of Mineral Resources with the symbol MCQSA-EXTR (gold and silver) 96-64.

The exploitation concessions listed above total 14,893 ha. The locations are described in the following table.

Table 4-1
Corner Coordinates in Latitude and Longitude for Contracts 19, 20, 21

	Latitude	Longitude
Contract 19	7°35’25.94”N	80°32’48.35”W
	7°35’25.94”N	80°26’00.41”W
	7°33’15.80”N	80°26’00.41”W
	7°33’15.80”N	80°32’48.35”W
Contract 20	7°33’15.80”N	80°32’48.35”W
	7°33’15.80”N	80°26’49.40”W
	7°30’47.91”N	80°26’49.40”W
	7°30’47.91”N	80°32’48.35”W
Contract 21	7°35’25.94”N	80°35’27.90”W
	7°35’25.94”N	80°32’48.35”W
	7°30’00.28”N	80°32’48.35”W
	7°30’00.28”N	80°35’27.90”W

Figure 4.2
Plan of the Cerro Quema Project Area Concessions in UTM (NAD83) Coordinates



4.3 Tenure

Pershimco's 100% ownership of the Cerro Quema Project is held through Pershimco's ownership of MCQ, a corporation incorporated under the laws of Panama. Pershimco provided a letter dated August 7, 2014, from Lealcast Abogados, Attorneys at Law, as Panamanian counsel to Pershimco that states as of August 7, 2014: that the MCQ Contracts 19, 20 and 21 are still in effect; that MCQ has not been dissolved; and that Pershimco is the owner of all of the issued and outstanding shares of MCQ. Pershimco also provided documentation dated January 22, 2014 from the Panamanian Ministry of Industry that indicates that the Contracts 19, 20 and 21 were valid as of that date.

The Concession contracts held by Pershimco through its ownership of MCQ include the following provisions:

- The state reserves the right to explore and extract under the granted area, by itself or by concessions to third parties other natural resources including different minerals to those granted under the contract;

- A land tax and royalty against production must be paid to the government as per article 211 of the mining resources code;
- The concession holder must submit to the government a detailed work plan each year including approximate cost;
- The concession holder has the right to import equipment, parts, and supplies to be used in any mining operation free of importation taxes and custom fees, except for fuel and vehicles that are not used in the mining operation;
- A warranty fund in the amount of 100,000 Panamanian balboas (pab) (equivalent to US$100,000) in the form of an insurance company deposit must be put in place to guarantee the payment of repairs for damage caused by dangerous acts or restoration due to abandonment for each concession. The fund must stay in place for two years after the expiration of the contract to ensure compliance;
- A warranty fund in the amount of 15,000 pab must be put in place to guarantee compliance with the obligations of each contract.

Pershimco's current extraction rights for the Cerro Quema Property are for gold, silver and any other metal classified as a by-product of the precious metals extraction process. Pershimco has advised P&E that it also has first rights for extraction of copper or other base metals in accordance with the Company's rights under present Panamanian law. Pershimco has also advised P&E that it has applied for rights to extract copper.

Pershimco announced the acquisition of the property on September 10, 2010, when Pershimco reached an agreement with Central Sun Mining Inc., RNC (Panama) Ltd., MCQ, Carena Equities Corp., Bellhaven Copper & Gold Inc. and Julio Benedetti to acquire all interests in the Cerro Quema Mining Project held by the corporation MCQ. Under the terms of this agreement, Pershimco acquired all interests and obligations of MCQ for a total consideration of $6,400,000 (the "Purchase Price") (Pershimco Press Release dated September 10, 2010). On September 21, 2010, Pershimco received the final approval of the TSX Venture Exchange regarding the acquisition.

The Purchase Price was payable as follows: (i) the payment of $1,560,000 at closing; (ii) the issuance of 8,500,000 common shares of Pershimco at a price of $0.35, 47% of which are subject to a 24 month contractual non-sale period starting at closing and 100% of which are subject to a mandatory 4 month holding period; (iii) the issuance of 4,500,000 warrants entitling the holder thereof to purchase one common share at $0.45 for the first year and increasing by $0.20 per year during the 4 subsequent years, the warrants and the common shares issuable upon exercise of the warrants being subject to a mandatory 4 month holding period; and (iv) the payment over a period of 8 months starting in March 2011 of US$1,800,000 as the balance of the Purchase Price.

Pershimco has advised P&E that MCQ currently has rights to 1,977 ha including possessory (surface) rights to 467.67 ha.

Most of the land required for the operation of the Project has been acquired. There are two properties, one adjacent to the Heap Leach Facility and the other adjacent to the Quema pit, that Pershimco is currently negotiating to obtain. The possessory rights (surface rights) are controlled by MCQ and there is no title to the land. As long as the concessions are in existence, no other parties can request title to the properties. Current Project holding costs are estimated to range between $1.0 million to $1.5 million per year.

4.4 Royalties

In August of 2013, Pershimco started repurchasing a 1.4% Net Smelter Royalty (NSR) related to future gold and silver production as well as a 2.45% royalty on copper and all other mineral production from the project's concessions. A 0.6% NSR on precious metals and 1.05% on other metals is still to be paid to CEMSA.

Pershimco has agreed to repurchase the NSR for a price of US $2.5 M to be paid over 18 months and bearing a 6% annual interest rate. The installment payments are outlined in Table 4.2. Two payments remain.

Table 4-2
Installment payments for NSR buyback

Installment	Payment	Interest
At Signature	$300,000	--
February 2014	$600,000	$66,000
August 2014	$700,000	$48,000
February 2015	$900,000	$27,000
Total	**$2,500,000**	**$141,000**

Pershimco has advised P&E that the Government of Panama has retained a 4% NSR.

4.5 Environmental

MCQ has implemented several measures to reduce the environmental impact of the Project including:

- Construction of 40 energy dissipation structures to prevent erosion;
- Reforestation of 75 hectares with 50,000 native species of trees, fruits and timbers; Additionally, 10 hectares of pines were planted in newly acquired areas where the ground prohibits the growth of native species;
- Vegetation and reforestation to control wind erosion in the Quebrada Seca;
- Sow 115 kg of grass on unused access roads and the old drill platform left in 1990s; and
- Reforestation of various streams using 6,000 plants covering an area of approximately 10 hectares.

MCQ submitted an Environmental Management Plan for the project. In early 2013, the Panamanian National Environmental Authority approved an addendum to the Environmental Management Plan. This addendum included a 5-year multi-stage development plan for the Project and allows MCQ to process up to 5,000 tons per day of oxide minerals from the Pava deposit, including the extraction of minerals from the Quema/Quemita deposit. The addendum also allows for additional metallurgical tests and bulk sampling.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

Information on climate, local resources, infrastructure and physiography is primarily summarized from the feasibility study completed by RNC Resources Ltd. and Bikerman Engineering (2002), from the Scott Wilson RPA NI 43-101 Technical Report on Cerro Quema (January 2011) and data received by MCQ obtained from a meteorological station located close to the Cerro Quema Project.

5.1 Access

The Cerro Quema Project is 82 km by road from Chitré of which approximately 75 km are on the paved Carretera Nacional road (Via Chitré-Macaracas & Via Macaracas-Tonosi). The Project is located 7.0 km from the asphalt road along an all-weather road from the paved highway.

Chitré is the nearest town with regular air service. A helipad is available at the camp for emergency services.

Container loads of equipment and supplies can be shipped from the Panama Canal to the site by road. Oversized truckloads may require bypass arrangements around bridges and power lines.

5.2 Climate

The Panamanian province of Los Santos is located in a tropical climate zone situated between the Pacific and Atlantic Oceans on the Azuero Peninsula. The climate is tropical with a prolonged high-humidity wet season between mid-May and November. A relatively warm, dry season occurs between December and mid-May. The majority of precipitation occurs during torrential thunderstorms during the wet season. The average annual precipitation at the Cerro Quema project site is about 1,850 mm.

Several weather stations are located on and around the site. Infrequent climate data collected from the on-site weather station (Cerro Quema Weather Station) began in 1994 including temperature, rainfall, wind speed, and direction. The climate data set collected between 1994 and the present does not provide a reliable long-term meteorological data set for its direct use in design.

There are several long-term weather stations located in the project's vicinity. These include the Santiago, Los Santos Tonosi, La Miel, and the La Llana Weather Stations. Although the Santiago, Los Santos, and Tonosi Weather Stations are the closest to the Site, their precipitation is considerably higher than the precipitation measured than the Cerro Quema Weather Station due to their lower elevation and proximity to the coast.

Golder Associates Inc. (Golder) performed a frequency-paired analysis to determine the long-term weather station that most strongly correlated to conditions measured at the Cerro Quema Project site. The results of the analysis indicated that the La Llana weather station provided the strongest correlation (R^2=0.97) to conditions measured at the site. Generally, there is 25 percent less monthly precipitation at Cerro Quema than recorded at the La Llana. For this study, the La Llana monthly precipitation data was reduced by 25 percent for use as the design monthly precipitation. The adjusted La Llana weather station has an annual precipitation of about 1,850 mm.

Average monthly pan evaporation rates are not available from the site or other nearby weather stations with similar geographic settings such as elevation and distance from the coast. The nearest source of suitable evaporation data is the Santiago Weather Station located approximately 75 km northwest of the Cerro Quema Project at the Aeropuerto Rubén Cantú in Santiago, Panama.

Pan evaporation data measured at the Santiago Weather Station between 1971 and 1991 were adjusted for elevation differences as reported in Knight Piésold's 1996 Environmental Viability Report (KP, 1996a). The average annual pan evaporation from the Santiago Weather Station used is 991 mm.

Monthly average air temperatures at the Cerro Quema site were determined by adjusting data from the Santiago weather station as reported in Knight Piésold's 1996 Environmental Viability Report (KP, 1996a). The site monthly average maximum and minimum air temperatures used for design are 28.5°C and 20.4°C. The Atlas Nacional de la República de Panamá indicates that the annual mean temperature at the project site is about 25.5°C (RNC, 2002).

Regionally, wind velocity averages approximately 1.30 km/hr with the strongest winds from January to March. Wind direction is typically from the north and northwest during the dry season and from the west during the rainy season. Wind data from the site indicates that the wind is predominantly from the north-northeast.

This Project can be operated on a continuous basis; however, there may be periods of time that operations may experience difficulties due to precipitation in the wet season from May to November.

5.3 Local Resources

Macaracas, Tonosi, Los Santos and Las Tablas are the districts most directly affected by the Project because they are closest to the Project and the highway that connects the district seats passes near the Project area. The 2010 census reported that these districts have populations of 9,021 and 9,787, 23,828 and 27,146, respectively. Populations in the towns of Macaracas, Tonosi and Las Tablas are 1,768, 1,411 and 8,939, respectively.

The towns under the immediate influence of the Project include Río Quema, La Llana, Quebrada Quema, and Boca de Quema in Tonosi District, and Río Abajo in Macaracas

District. All of these communities are small villages with the exception of Quebrada Quema and Río Abajo, which are abandoned communities. The combined population of these communities, according to the 2013 census, is 520 people. Most of the population stems from emigrants to the region in the 1940s and 1950s. Population densities in the subdistricts containing these communities are very low, at approximately five people per square kilometer. Fifty-four percent of the local residents are 20 years of age or older.

5.4 Infrastructure

MCQ has a main camp site and administration offices located near the Project area. This includes administration and geology offices, accommodation facilities, kitchen and recreational facilities, helipad, an equipment laydown area, geological sample logging and storage facilities, workshop and support facilities all under the control of MCQ.

There are several housing buildings on site as well as an independent sample preparation laboratory. Several of these have been expanded to accommodate more staff during construction period. A new core shack was built, increasing the work and core storage space by 300%.

The camp site area is connected to the main electrical supply lines in addition to having back-up electrical generators. An upgrade of the existing electrical systems is required for the installation of emergency power equipment. The wastewater treatment system has been modified for future needs.

There is sufficient area on the Property for tailings storage areas, waste disposal areas, heap leach pad areas and potential processing plant sites.

5.5 Physiography

The Property elevation ranges from approximately 200 masl to a maximum of approximately 950 m. Approximately 20% of the area has slopes of less than 55%. With the exception of the site access road and exploration drill roads, the surrounding countryside is only accessible via footpaths. Much of the surrounding area has been deforested and converted to pasture lands. The deforested areas are covered by one meter to two meter high hummocks of grasses, matted ferns, and scattered small trees. Thick stands of forest persist along some of the drainages and in the steeper valleys. Less than 5% of the Project area consists of rock exposures. Rockiness is typically slight in the soils on shallower slopes and moderate on steeper slopes. More extensive rock exposures are typically along active stream beds.

6.0 HISTORY

6.1 Ownership

The following section on ownership is summarized from RNC Resources Ltd. (RNC) and Bikerman Engineering (2002) and from Scott Wilson RPA (2011). Cerro Quema was initially identified as a potential economic mineral deposit during United Nations supported national surveys in the late 1960's. The Compañía de Exploración Minera, S.A. (CEMSA) investigated the area in 1986 and obtained the exploration concession for Cerro Quema in 1988.

Cyprus Minerals Company (Cyprus) formed a joint venture with CEMSA in 1990 to Cyprus Minera de Panama, S.A. (Cyprus Minera). From 1990 to 1994, Cyprus Minera conducted advanced exploration drilling of the La Pava, Quema and Quemita mineralization. Cyprus Minera merged with Amax Gold Inc. (Amax) in 1993 to form Cyprus Amax Minerals and formed Minera Cerro Quema S.A. (MCQ) to proceed with permitting and development.

Campbell Resources Inc. (Campbell) purchased the right of first refusal on the Project from CEMSA and subsequently exercised that right when Cyprus Minera put the property up for sale in 1996. Campbell subsequently earned a 100% interest in the Project, carried out an infill drilling program to further define the resources, and completed a Project Feasibility Study. Campbell sold its 100% interest in the Project to Carena Equities Corporation of Panama (Carena) in August 2001.

RNC Resources Ltd. (RNC) entered into an agreement with Carena in January 2002 wherein RNC agreed to complete a "bankable" Feasibility Study on the Cerro Quema Project and to place the Project into production for a 50% participation in the Project.

On September 27, 2007, Bellhaven signed a definitive agreement with Carena to acquire a 40% interest in the Project. Further, on November 1, 2007, Bellhaven signed a definitive agreement to acquire the remaining 60% interest from Central Sun Mining Inc. (formerly Glencairn Gold Corp.). The total purchase price of the property was $10.4 million and was equivalent to $23 per ounce of gold in the measured and indicated resource categories. At that time and upon completion of payments, Cerro Quema would be 100% wholly owned by Bellhaven, subject to a 4% net smelter return (NSR) royalty and a 9% net profits interest (NPI) royalty in favour of Campbell Resources. As reported by Scott Wilson RPA (2011) on November 13, 2008, Bellhaven and Weston Resources Inc. signed a letter of intent for Bellhaven to purchase the 9% NPI royalty. Scott Wilson RPA (2011) also reported that 2% NSR is to be paid to CEMSA and 2% NSR is to be paid to the Government of Panama. Pershimco has advised P&E that subsequently the Government of Panama has retained a 4% NSR and Pershimco has further confirmed that the purchase of the 9% NPI was completed by December 15, 2008 and that the NPI is now extinguished.

Most of the land required for the operation of the Project has been acquired and Pershimco is currently negotiating to obtain certain additional surface rights for operational requirements. The possessory rights (surface rights) are controlled by MCQ and there is no title to the land. As long as the concessions are in existence, no other parties can request title to the properties. A purchase agreement between Carena and RNC to purchase 50% of the outstanding shares of MCQ was completed on February 11, 2004. Current Project holding costs are estimated to range between $1.0 million to $1.5 million per year.

6.2 Exploration History

Between 1990 and 1994, Cyprus and successor companies completed 4,622.5 meters of core drilling and 17,578.8 meters of RC drilling on the Cerro Quema project. The number of holes and distribution between the La Pava deposit and the rest of the concession are shown in table 6.1. Cyprus also completed geochemical and geophysical surveys between 1990 and 1994. Subsequently in 1996, Campbell drilled a further 1,749.6 meters of core drilling on the La Pava deposit in 1996.

TABLE 6-1
PAST DRILLING CAMPAIGNS ON THE CERRO QUEMA

Company	La Pava				Remainder of Concession			
	RC Drilling		Core Drilling		RC Drilling		Core Drilling	
	No. Holes	Length (m)	No. Holes	Length (m)	No. Holes	Length (m)	No. Holes	Length (m)
1990 (Cyprus)			3	298.80				
1991 (Cyprus)	28	1,820.10	2	119.30	11	662.00	2	168.00
1992 (Cyprus)	41	3,271.50	3	324.80	35	2,186.00	0	0
1993 (Cyprus)			11	1,086.30			23	1,289.90
1994 (Cyprus)	80	6,400.70	13	1,180.50	51	3,238.50	7	453.70
1996 (Campbell)			29	1,749.60				
Total	**80**	**6,400.7**	**61**	**4,759.3**	**51**	**3,238.5**	**32**	**1,911.6**

6.3 Historical Mineral Resource and Mineral Reserve Estimates

Historical mineral resource estimates were previously summarized by Scott Wilson RPA in the January 2011 report and information here is summarized from that report.

6.3.1 Campbell Resources Inc. (Campbell)

The Campbell estimate was done in 1996 by Datamine North America Inc. (Datamine) under the supervision of Wayne Valliant (previously of Campbell) and subsequently with Scott Wilson RPA. Mineralized envelopes were correlated based on silica, pyrite, oxidation and gold grade and the saprolite cap was excluded from the estimate. Block models were created for La Pava and Quema using 10 m x 10 m x 3 m high blocks. Grade interpolation incorporated search distances and directions consistent with variography. Datamine used nearest neighbour inverse distance cubed (ID3), and ordinary kriging for grade interpolation. Ordinary kriging was determined as the most appropriate method.

Datamine created optimized pit shells using mining costs at $1.27/t, processing costs at $2.34/t (based on valley leach), general and administrative costs at $1.58/t ore, $400 oz Au, 86% metallurgical recovery and variable pit slopes. Mineral resources within the optimized pit shells are summarized in table 6.2.

TABLE 6-2
HISTORICAL MINERAL RESOURCES, DATAMINE 1996(1-4)

Zone	Tonnes (t 000s)	Grade (g/t Au)	Contained Au (oz)
La Pava	5,854	1.19	224,000
Quema	2,919	1.11	104,000
Total	8,773	1.16	328,000

(1) Mineral resources are not NI 43-101 compliant.
(2) Mineral resources estimated at $400/oz Au.
(3) Mineral resources estimated at 0.35 g/t Au cut-off grade.
(4) Mineral resource estimate assumed density of 2.0.

6.4 RNC Resources Ltd.

In 2002, RNC and Bikerman Engineering completed a feasibility study on the La Pava deposit. The 2002 feasibility study is not compliant with NI 43-101 and should not be relied on. RNC and Bikerman Engineering reviewed and accepted the kriged Datamine block model and re-optimized the pit based on mining costs at $0.81/t for ore and $0.86 for waste, processing costs at $2.92/t, G&A at $0.68/t, $325/oz Au, 80% metallurgical recovery, and 45° pit slopes. The resultant cut-off grade was 0.45 g/t Au. Ten percent dilution was added to the mineral resources for conversion to mineral reserves. Only the La Pava zone was considered for the study. The resultant mineral reserve estimate was 6.037 million tonnes grading 1.24 g/t Au, containing 240,000 oz Au.

The RNC and Bikerman Engineering estimated mineral reserves based on a designed pit with 6.0 m benches, 18 m wide haul roads with a maximum 10% grade, mining dilution of 2.0 m at 0.30 g/t Au, and pit slopes ranging from 40° to 50°. The resultant proven plus probable mineral reserve estimate was 6.037 million tonnes grading 1.236 g/t Au, containing 240,000 oz Au. These mineral reserves are not compliant with NI 43-101 and should not be relied on.

In 2002, Chlumsky, Armbrust and Meyer, LLC (CAM) prepared a mineral reserve audit for RNC. CAM reviewed and accepted the kriged, Datamine block model and reoptimized the pit based on mining costs of $0.85/t and $0.83/t for ore and waste respectively, processing costs of $2.95/t, G&A of $0.71/t $325/oz Au, 80% metallurgical recovery, and variable pit slopes. The resultant cut-off grade was 0.57 g/t Au. A two meter shell was added to the mineral resources for conversion to mineral reserves for a total of 6.344 million tonnes, grading 1.178 g/t Au, containing 240,000 oz Au at La Pava.

6.5 Scott Wilson RPA NI 43-101 Technical Report on the Cerro Quema Project, Panama

Scott Wilson RPA reported a NI 43-101 resource estimate for the La Pava deposit in January 2011. Scott Wilson RPA reviewed the 1996 resource estimate by Datamine for La Pava and was of the opinion that the parameters for correlation and block model remained appropriate. The parameters for open pit optimization were updated using current estimates of bulk density operating costs, metallurgical recovery and gold price. The Mineral Resources within the optimized La Pava model were classified as Indicated Mineral Resources based on drill hole spacing. Scott Wilson RPA used a 0.35 g/t cut-off grade. The 1996 mineral resource estimate for the Quema deposit was not reviewed and this resource remains a historical estimate.

TABLE 6-3
SCOTT WILSON RPA INDICATED MINERAL RESOURCE SUMMARY
(EFFECTIVE DATE DECEMBER 1, 2010) LA PAVA DEPOSIT

Cut-Off Grade (g/t Au)	Tonnes (t x 1000)	Grade (g/t Au)	Contained Au (oz Au x 1000)
0.00	9,084	0.92	269
0.17	8,462	0.98	267
0.20	8,339	0.99	265
0.30	7,610	1.06	259
0.35	**7,231**	**1.10**	**256**
0.45	6,453	1.19	247
0.50	6,093	1.23	241

(1) CIM definitions were followed for Mineral Resources.
(2) Mineral Resources are estimated at a cut-off grade of 0.35 g/t Au.
(3) Mineral Resources are estimated at a gold price of $1,125/oz.
(4) Metallurgical recovery is 90%.
(5) A density of 2.1 t/m^3 was used.
(6) A minimum thickness consideration was not required due to the geometry of the deposits.
(7) Columns and rows may not add exactly due to rounding.

Scott Wilson RPA estimated the resource using uncapped grades but recommended further study of this matter prior to proceeding to pre-feasibility work and reserve estimation. Scott Wilson RPA supported the earlier Datamine methodology for compositing drill hole samples and used downhole composites averaging three meters. Block dimensions were 10 m x 10 m x 6 m. Scott Wilson RPA considered the ordinary kriging was the most appropriate method of grade interpolation.

Scott Wilson RPA used Whittle software to test the condition of the La Pava Deposit having a reasonable prospect for economic extraction. Open pit optimization parameters used operating costs of $13.06/t, 4.0% NSR, refining costs of $4.00 oz, plant recovery of 90%, and a gold price of $1,125/oz. The results provided for an internal cut-off grade of 0.17 g/t Au and a break-even cut-off grade of 0.25 g/t Au. Scott Wilson RPA recommended reporting Mineral Resources for the project at a 0.35 g/t Au cut-off grade given the likely metallurgical recovery at such low grades.

Scott Wilson RPA's (2011) technical report reviewed the earlier RNC and Bikerman Engineering, (2002) feasibility study on the La Pava deposit. The RNC and Bikerman Engineering (2002) study is not compliant with NI 43-101 requirements, superseded by the current study and is not summarized here.

There has been no production from the Cerro Quema Project.

7.0 REGIONAL GEOLOGICAL SETTING AND MINERALIZATION

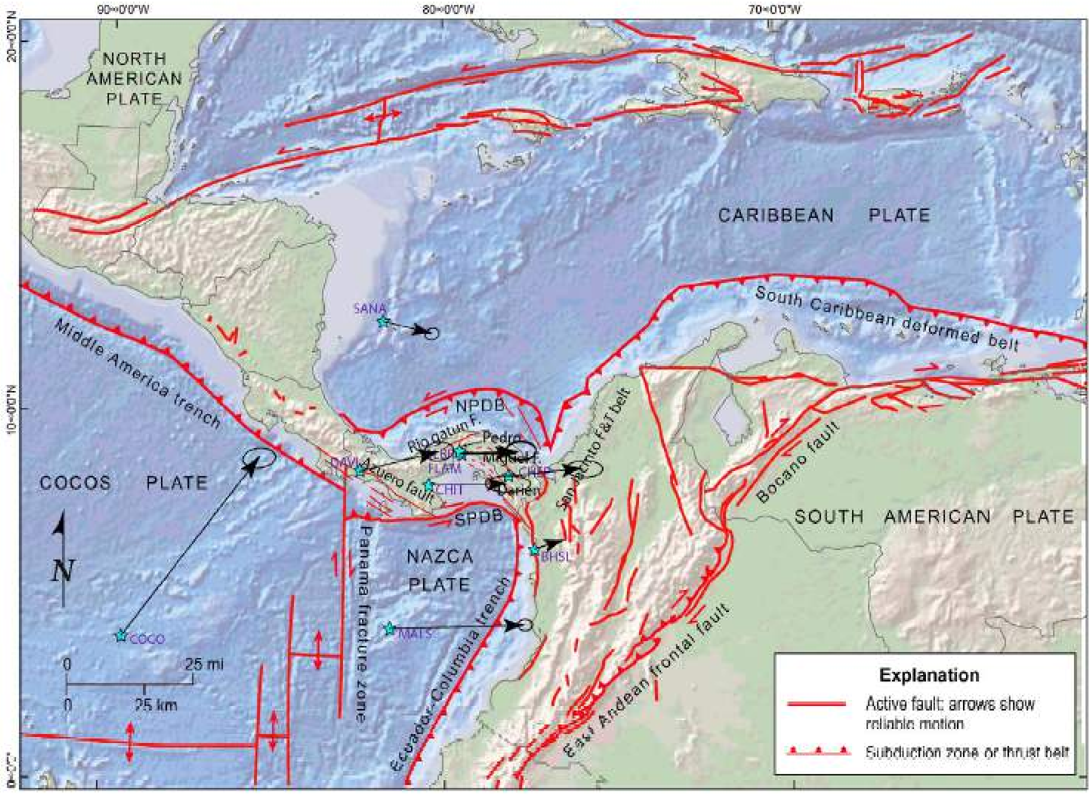
7.1 Plate Tectonic Setting

Pershimco's Cerro Quema property is located on the Azuero Peninsula, Panama, within a old magmatic-volcanic arc that developed during the Cretaceous-Paleogene Periods from about 75 million to 40 million years ago (Ma). Present-day Panama is considered to be part of a tectonic microplate that occupies the junction of the Caribbean, South American, Cocos and Nazca Plates (Figure 1). The Panama microplate is generally considered to be a rigid block that was once part of the Caribbean Plate, but its higher and more easterly present day velocity (Trenkamp et al. 2002) distinguish it from the Caribbean Plate. The southwest boundary of the Panama microplate is characterized by the oblique subduction of the Cocos oceanic plate beneath the western part of the Panama microplate. The Panama microplate-Nazaca plate boundary is marked by the Southern Panama Fault Zone--a predominately transform margin that accommodates relative motion with the Nazaca plate. These relative motions result in the subduction of the Nazaca plate beneath South America along the Ecuador Colombian Trench. To the north, the boundary of the Panama microplate comprises the North Panama deformed belt where the Caribbean Plate is obliquely thrust beneath Panama. Eastern and western boundaries of the Panama Microplate are not well defined (Figure 1).

Rockwell et al. (2010) argue that the Panama microplate is not a rigid block. Rather, they argue that it is undergoing significant internal deformation as shown by the presence of major, high slip rate (> 5 mm/yr), seismically active faults such as the Limon and Pedro Miguel faults near the Panama Canal (Rockwell et al. 2010a). Rockwell et al. (2010) propose a block model for Panama with major block-bounding faults that accommodate east-west contraction and northward deflection of the Panama arc. More recent Global Positioning System (GPS) testing of their model by Bennett et al. (2014) failed to reproduce the high fault slip rates estimated from the paleoseismic studies of Rockwell et al. (2010a).

In general, however, present day plate velocities as interpreted from GPS measurements and paleoseismic data show consistent eastward convergence of Panama toward South America (e.g. Trenkamp et al 2002). Plate velocities increase eastward from rates of about 10 to 15 mm/yr in Nicaragua, to 30 mm/yr in central Panama, coastal Colombia and Ecuador. The amount of bending and internal deformation of the Panama microplate, however, remains controversial

Figure 7.1
Plate Tectonic Model of northwest South America and Panama showing Major Tectonic Plates, Regional Tectonic Structures and Present Day Plate Velocities



7.2 Regional Geology

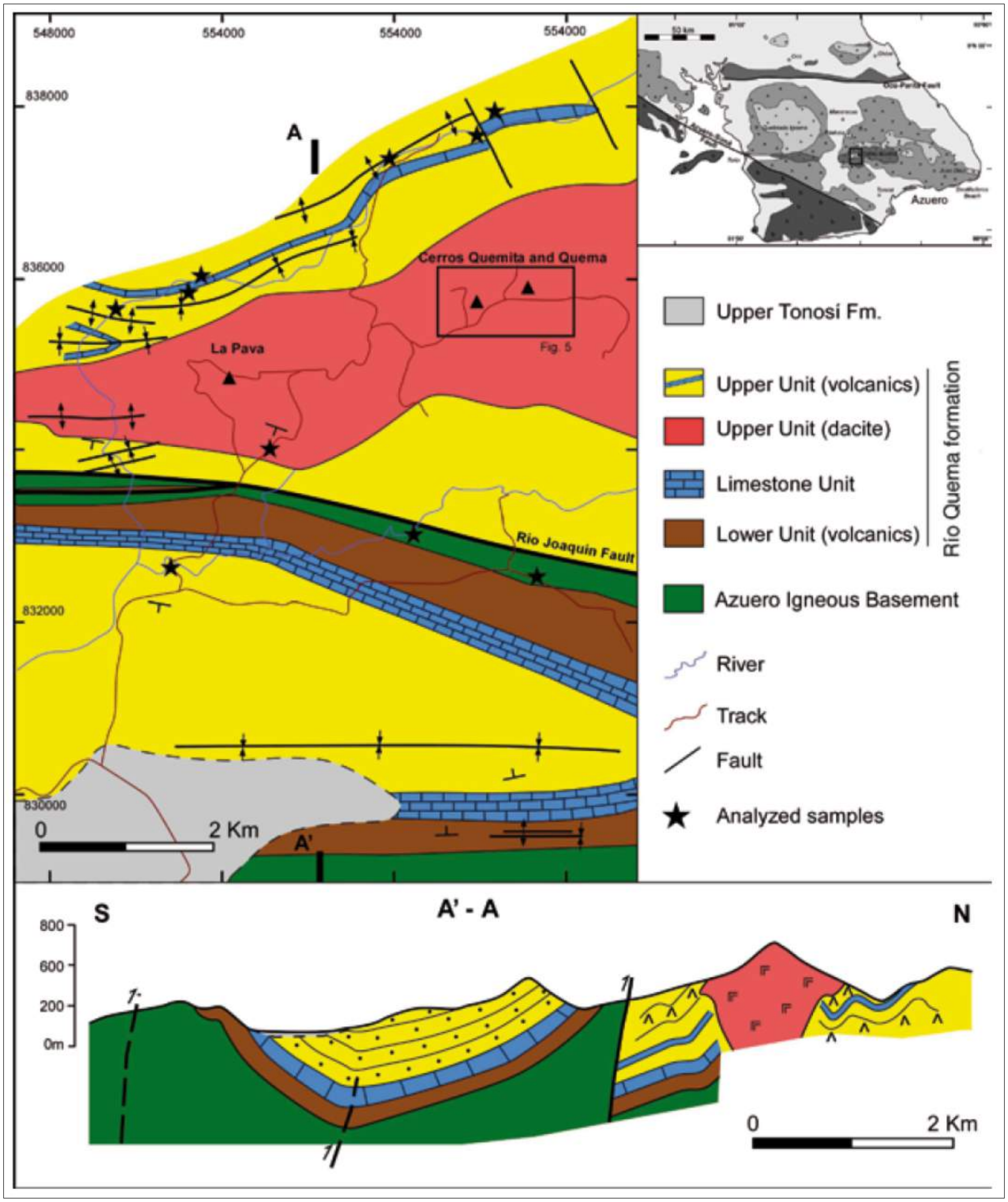
The Azuero Peninsula is a major topographic feature on the southwest (Pacific) coastline of Panama. The basement rocks of the Peninsula consist of massive and pillowed tholeiitic basalts that are currently interpreted to represent uplifted rocks from the western margin of the Caribbean plate (Corral et al. 2011). Following the onset of subduction at about 70 Ma, an arc magmatic sequence developed on the Azuero basement. The rocks of the Azuero Arc Group consist of volcanic rocks including associated tuffs and volcanoclastic rocks ranging in age from approximately 71 Ma to 40 Ma Late Cretaceous to Mid-Paleogene).

7.2.1 Stratigraphy

The Cerro Quema district is located with the Los Santos peninsula region in the central part of the Azuero Peninsula. Volcanic rocks in this part of the Azuero Peninsula consist of andesite, dacite, and basalt. Within and beneath the volcanic sequence are marine volcanoclastic sediments (conglomerate, sandstone and mudstone), limestone and turbidites. This volcanic-sedimentary sequence is interpreted to have been deposited in a subduction-fore-arc environment. Initial geologic studies grouped all of these rock units into the Ocu Formation. Subsequent interpreations by Corral et al. (2011) argue that the rocks of the Cerro Quema district are not all part of the Ocu Formation. Accordingly, Corral et al. (2011) defined the Rio Quema Formation that consists of volcanic and volcanoclastic sediments interbedded with hemipelagic limestones, sub-marine dacite lava domes with cross-cutting dikes of basaltic to andesitic compositions. The Rio Quema Formation is interpreted by Corral et al. (2011) as the infill sequence of a fore-arc basin of a Cretaceous-Paleogene volcanic arc. The Cerro Quema Formation hosts the mineralization in the Cerro Quema district (Corral et al. 2011).

Figure 7.2 (from Corral et al. 2011) is a generalized geologic map and cross-section of the area surrounding the Cerro Quema mineralized area. A detailed stratigraphic column for the area surrounding the mineralized deposits is shown in Figure 7.3. The general stratigraphic sequence applies to the Cerro Quema district, but the details of individual faults, folds and outcrops of the Azuero Igneous Basement can vary from that shown on the geologic map and cross section shown in Figure 7.2.

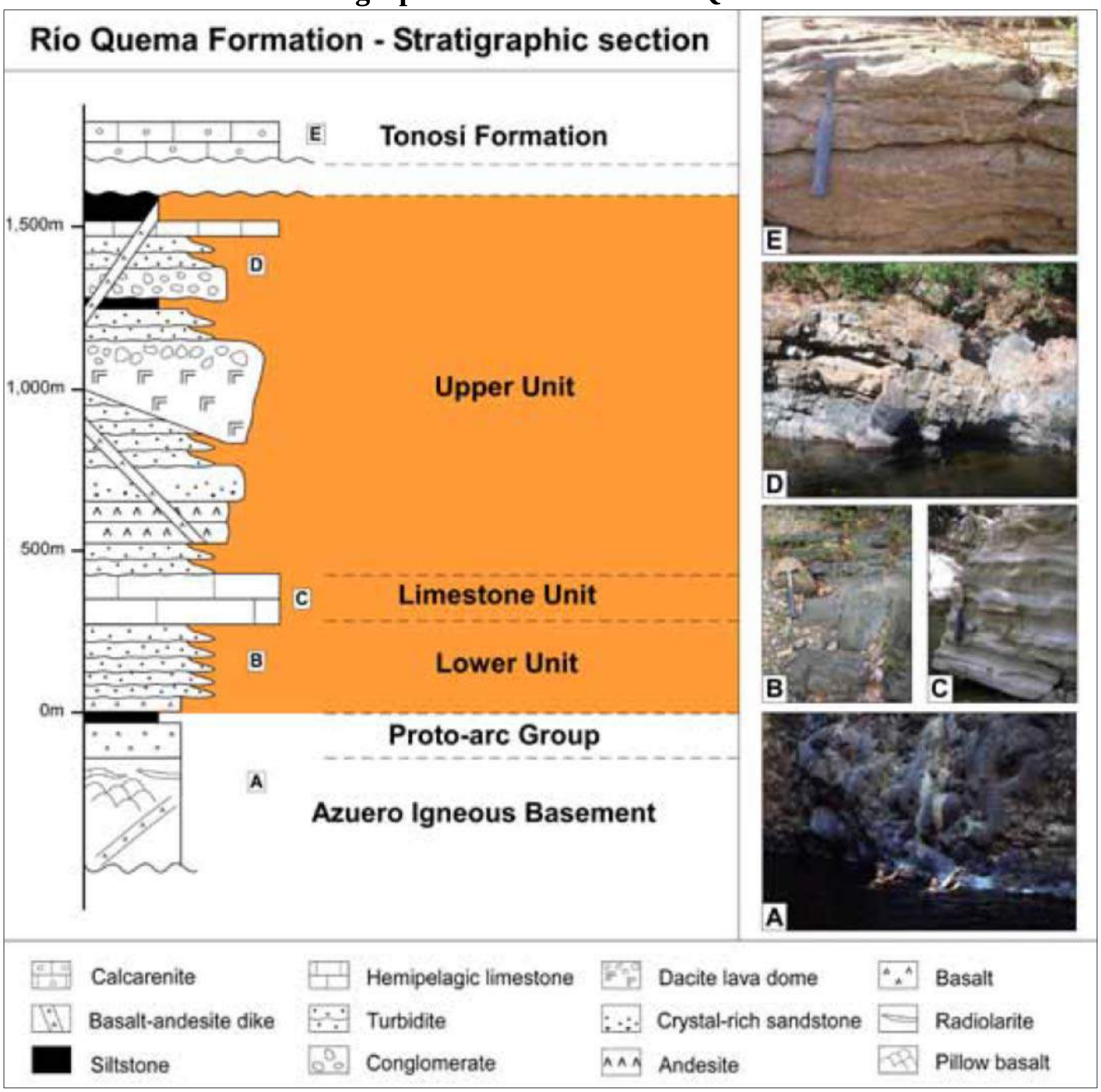
Figure 7.2
Regional Geology of the La Pava and Quemita/Quema Deposits



(**Source:** *Corral et al. 2011)*

The lower unit of the Rio Quema Formation consists of andesitic lava flow rocks, crystal rich sandstone, and turbidites interbedded with hemipelagic limestone (Figure 7.3). This sequence is interpreted by Corral et al. (2011) to represent a depositional environment close to the active volcanic front about 70 Ma. Limestone units represent periods when the rate of volcanic activity was much lower and normal marine deposition took place. The upper unit contains rocks erupted from submarine dacite lava domes that are inferred to have created a barrier within the fore-arc basin and restricted the marine and volcanoclastic sedimentation patterns. For example, the southern slopes of the dacite lava domes have a higher proportion of distal sediments including volcanoclastic units, turbidites, shale, siltstone, and the minor andesitic lava flows. North of the dacite domes, the units comprise massive volcanic rocks, many dikes and only minor volcanoclastic and limestone units. This sedimentary sequence suggests a deposition proximal to the volcanic arc in contrast to the south-side where the stratigraphic units are sediments deposited distal to the volcanic arc. The upper unit of the Rio Quema formation is intruded by arc-related quartz diorite and granodiorite dike intrusions.

Figure 7.2
Idealized Stratigraphic Section of the Río Quema Formation



(***Source:*** *Corral et al. 2011).*
(A) Pillow basalts of the Azuero Igneous Basement at Río Joaquín.

(B) Volcaniclastic sediments of the Río Quema Formation lower unit at Río Quema.
(C) Hemipelagic limestones from the Río Quema Formation limestone unit south of Río Quema.
(D) Volcaniclastic and hemipelagic sediments crosscut by a basaltic-andesitic dike of the Río Quema Formation upper unit north of Río Quema.
(E) Fossiliferous calcarenite of the Tonosí Formation at Río Güerita.

The Late Cretaceous-Paleogene Rio Quema Formation is unconformably overlain by the Tonosi Formation. Studies by Kalorsky and Mann (1995) divided the Tonasi Formation into upper and lower units, with the lower unit consisting of terrestrial and shallow marine units; and the upper unit comprising interbedded sandstone, siltstone and calcarenite sediments deposited in the deep ocean. The Tonasi Formation appears to have been deposited from about 40 to 15 Ma (Late Paleogene to Mid-Neogene Period). Kalorsky and Mann (1995) mapped flat-lying rocks of Tonasi Formation along the southeast coast of the Azuero Peninsula. Minor outcrops of sub-horizontal Tonasi Formation crop out immediately south and within the Cerro Quema Project office compound.

Late Neogene and Quaternary Period (15 Ma to present day) deposits are generally absent within the Cerro Quema area. Isolated deposits of Holocene (last 11,700 years) alluvial sediments are preserved within and on low-lying terraces surrounding the Rio Quema and its tributaries. Near the Pacific coast, broad alluvial plains are preserved surrounding the present day channels of the major rivers. These alluvial plains are underlain by an unknown thickness of Quaternary alluvium. Higher alluvial terraces are generally absent from the major river valleys. Marine terraces appear not to be preserved along the coast of the Azuero Peninsula.

7.2.2 Structure

The major geological structure on the Azuero Peninsula is the northwest-southeast striking Azuero-Sona fault. This fault separates two different basement terranes (Kalorsky and Mann 1995). Rocks on the southwest side of the fault are massive basalt flows and pillow lavas with interbedded volcanoclastic sediments. Basement rocks to the northeast of the fault are island-arc volcanics with basalt, andesite and dacite with interbedded sediments. Flat-lying sediments of the Tonasi Formation in places overly the basement rocks, particularly northeast of the Azuero-Sona fault on the southeast coast of the Azuero Peninsula.

Outcrop scale faults observed by Kalorsky and Mann (1995) in the upper and lower parts of the Tonasi formation all indicate a predominant northwest-southeast orientation for post-20 million years maximum extension direction.

The Azuero-Sona fault has a very clear trace within the topography of southwest Azuero Peninsula (Cowan et al. 1998). The fault has probably been seismically active within the Holocene Epoch as indicated by left-laterally offset streams noted by Rockwell et al. (2010). The slip rate and seismic potential of this major fault, however, is unknown.

7.2.3 Historical Seismicity

Instrumental and written records from the late 17th Century through 2013 indicate that at least 192 earthquakes of moment magnitude (**M**) ≥ 3 had epicenters located near the Cerro Quema Mine project site within an area bounded by approximately latitude 6° to 9° north, and longitude 82° to 80° west (ISC-GEM catalog). Of these earthquakes, 172 events were reported as less than **M** 5, fourteen (14) between **M** 5 and **M** 5.9, and seven between **M** 6 and **M** 6.9. The largest recorded earthquake near the site was the **M** 6.9 Panama Viejo Earthquake that occurred on May 2, 1621, with an epicenter located approximately 190 km northeast in Panama City. Significant Historical earthquakes significant to the Cerro Quema site, including an approximate **M** 6.7 event about 15 km from the site, are listed in Table 7.1.

Table 7-1
Major Historical Earthquakes (M ≥ 6.0) within about 150 km of the Cerro Quema Mine Project Site, Panama

Year	Month	Day	Latitude (°N)	Longitude (°W)	Magnitude (M)	Distance from Site[1] (km)
1802	10	25	7.500	80.400	6.7	15
1943	5	2	6.825	80.330	6.8	83
1951	1	6	7.329	80.993	6.6	57
1960	3	28	7.388	81.878	6.3	150

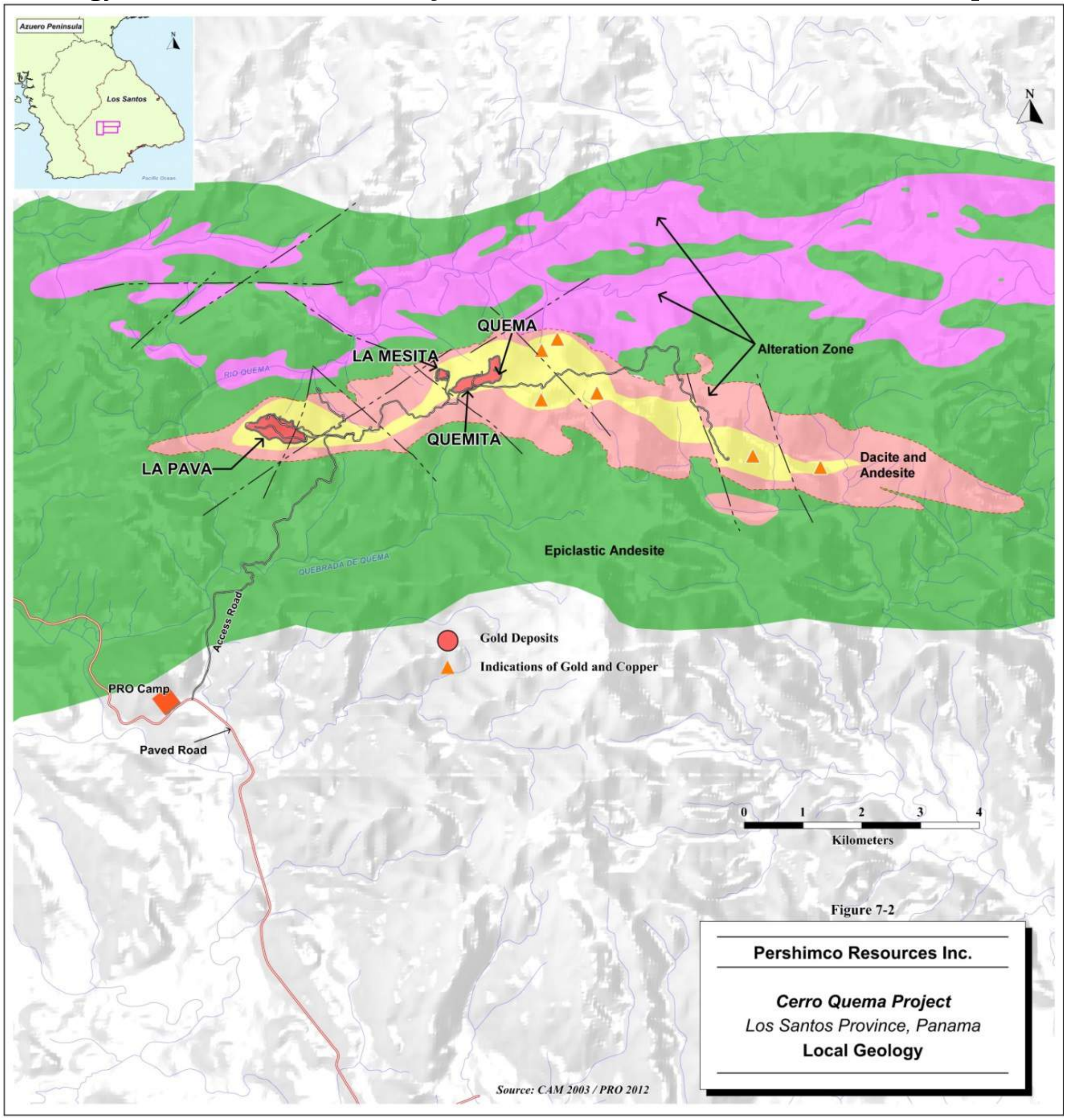
Note:
1. Location of Cerro Quema Mine project site is at 7.549ºN Latitude, 80.527ºW Longitude in this study.

7.3 Property Geology and Mineralization

In the Cerro Quema Project area, several gold mineralized zones are located along a 15 km long, east-west trend. These zones include the La Pava, Quemita-Quema and La Mesita deposits. RNC and Bikerman Engineering (2002) describe the mineralized zones as hosted in a belt of hornblende-pyrite pyroclastic flows and lavas of dacitic and andesitic composition. The volcanic belt is up to 1.5 km wide and conformably bounded to the north and south by epiclastic submarine sediments. The sequence dips south at 45° to 60° north. The main rock types within the mineralized zones are saprolitic dacitic clay, silicieous dacite with various degrees of acid leaching and iron-oxide cemented breccia.

Gold occurs as disseminated submicroscopic grains and as invisible gold within the crystalline structure of pyrite (Corral et al., 2011), especially in the advanced silica alteration zone. Strong supergene alteration results in the formation of an oxidation cap or gossan and released the gold contained in the pyrite. The highest grades of gold mineralization are near the surface and decrease toward the lower limit of oxidation.

Figure 7.4
Geology of the Cerro Quema Project Mineralized Trend and Location of Deposits



(***Source:*** *Pershimco 2012)*

The gold and copper mineralization are associated with disseminated pyrite, chalcopyrite, enargite and a stockwork of quartz, pyrite, chalcopyrite, and barite with traces of galena and sphalerite. The presence of vuggy silica, alunite, natro-alunite and enargite in addition to the hydrothermal alteration pattern is compatible with a high-sulfidation epithermal system.

Corral et al. (2011) identify the Rio Quema Formation as hosting the gold-copper mineralization in the Cerro Quema area and along strike to the east at Juan Diaz and to the west at the Pitaloza and Quebrada Iguana. This mineralization is all north of the Rio Joaquin fault zone.

7.4 Alteration

At Cerro Quema, RNC and Bikerman Engineering (2002) reported that the silica-pyrite alteration is characterized by a highly fractured, vuggy, locally brecciated rock composed of silica and iron-oxides at the surface. The oxidized rock extends from surface to a depth of up to 150 m. Beneath the oxidation boundary, pyrite is abundant and accounts for up to 35% of the rock. With few exceptions, gold mineralization above the cut-off grade is restricted to the silica-rich alteration type within the oxidized and leached cap. RNC and Bikerman Engineering (2002) also report that on the south side of the La Pava deposit, , steeply-dipping chalcopyrite veins appear to be associated with late stage fracturing. In this area, a zone of high grade supergene mineralization (0.5 to 5.0% copper) is present beneath the oxidation surface.

Recently, Pershimco has defined three alteration zones related to the Cerro Quema deposits:

- A silica alteration zone, occurring in the core of the deposit, that contains quartz with very minor alumino-silicate clay minerals.
- A silica-clay alteration zone that surrounds the silicic core and is composed of silica with up to 30% fine grained alumino-silicate clay minerals (kaolinite, dickite, pyrophillite). This zone may contain medium to low grade mineralization.
- A clay alteration zone that occurs as a transition between the silica-clay alteration and fresh rock. The clay alteration may contain up to 30% illite/smectite clays that replace original feldspar. This zone is unmineralized.

7.5 Site Structure

A large network of steeply-dipping NW-SE and NE-SW trending normal faults have been observed in the Rio Quema area. The east-west striking Rio Joaquin fault zone is the major mapped fault Corral et al. (2011). The fault can be easily observed about 3 km south of the Cerro Quema mineralization zone. The Rio Joaquin fault has had an apparent reverse slip sense with a minimum of 300 to 400 metres of vertical displacement (Corral et al. 2011). Fault movement has uplifted the southern block with respect to the northern block and has juxtaposed with the lower and upper units of the Rio Quema Formation.

8.0 DEPOSIT TYPES

RNC and Bikermann Engineering (2002) consider the Cerro Quema deposits to be high-sulphidation epithermal deposits. Corral et al. (2011) also consider that the mineralogy and spatial distribution of hydrothermal alteration observed in Cerro Quema fit well within the classical high-sulfidation epithermal gold deposit model. Hydrothermal alteration is interpreted to be related to the circulation of acidic fluids of magmatic origin and to the presence of a porphyry copper system at depth in a calc-alkaline volcanic arc in both, sub-aerial and submarine environment (Sillitoe et al., 1996). Corral et al. (2011) consider that despite the Cerro Quema deposit being consistent with the high sulphidation epithermal model, the presence of a porphyry copper at depth could not be proved at the time. On the other hand, a model based on an oxidized gold and copper deposit that shares characteristics of both epithermal and volcanogenic massive sulphide deposits (Nelson, 2007) is not preferred, as no signs of bedded massive sulphides have been found in the alteration zones, in the vicinity of the dacitic lava domes or associated hyaloclastitic sediments.

Work completed by Pershimco since the Corral et al. (2011) study further supports the potential of a porphyry deposit at depth. As outlined in Pershimco's November 14, 2013 press release, the principal porphyry manifestations or "indicators" identified to date on the Cerro Quema Project, which are typical of those developed above porphyry intrusive sources include:

- Stockwork, sheeted and ptygmatic quartz veins, which predate and have been overprinted by advanced argillic alteration associated with the high sulphidation Au-Cu mineralization event;
- Molybdenite in veins and fractures with local synchronous alunite, overprinted by epithermal alunite typical of porphyry veins;
- K-feldspar-magnetite alteration that is typical of porphyry-style potassic hydrothermal alteration; and
- Pershimco's deep IP survey identified a large, chargeable body beneath the Quema oxide gold deposit that is approximately 1.7 km long and 0.9 km wide and is consistent with a porphyry mineralization system (Pershimco July 25, 2013 press release).

Corral et al (2010) consider that deposition of mineralization took place from fluids of low salinity up to 5% wt NaCl eq.) and moderate temperatures (≈240°C). S isotope data of sulphides and sulphates indicate a sulphur source of magmatic origin. O and D data of silicates and sulphates (quartz, kaolinite, alunite-natroalunite and barite) suggest an important contribution of surface fluids during sulphate precipitation and hydrothermal alteration.

Corral et al. (2011) point out that some of the characteristics of the Cerro Quema deposit (presence of dacitic domes, geological setting, hydrothermal alteration pattern) are shared with the Pueblo Viejo gold deposit (Dominican Republic), the largest mineable high sulfidation epithermal gold deposit of the Caribbean (Sillitoe et al., 2006). Recognition of structurally controlled high sulfidation epithermal deposits in the area may have important consequences for mineral exploration. Prospecting should be focused at, or close to the E-W trending faults regardless of the enclosing rock type, as hydrothermal systems seem to be related to these structures situated to the North of the Río Joaquín fault.

9.0 EXPLORATION

9.1 Exploration 2010 – September 2012

In 2010 and 2011, Pershimco's exploration has focused on the drilling that is described in Puritch et. al. (2012). Lithological and structural mapping, channel sampling and geochemical sampling were conducted in 2011.

In 2012 Pershimco contracted Geotech Ltd. to complete airborne geophysics covering all of the Cerro Quema Property. The airborne geophysics included radiometric, magnetic and VTEM surveys. These surveys identify the mineralized trend and highlighted areas of coincident low magnetic susceptibility with low potassium and low Th/K ratios associated with the La Pava and Quema/Quemita Deposits. Additionally the survey identified two previously unknown corridors to the north of the main trend which highlighted areas of coincident low magnetic susceptibility with low potassium and low Th/K ratios similar to those associated with the La Pava and Quema/Quemita mineralized trend.

Pershimco also completed Induced Polarization (IP) surveys at La Pava that have identified resistivity anomalies coincident with silicification at La Pava and chargeability responses associated with deeper sulphide mineralization at La Pava.

9.2 Exploration September 2012 – November 2013

9.2.1 Geophysics

Following the completion of airborne geophysical studies in early 2012, Pershimco conducted ground IP surveys on the numerous geophysical targets. The first surveys done were over the Quema-Quemita target in late 2012. Surveys were completed over La Pava and a new exploration target, Idaida in 2013. (Figure 9.1 and 9.2). Each survey revealed the presence of large chargeable bodies at depth and show a generally inversed cone geometry. These large chargeable bodies are located over more than 11 km along the Cerro Quema Mineralized Corridor, which has been identified to extend for approximately 17 km within Pershimco's concessions.

The result of the new IP work support the Company's geological model that the high sulphidation systems located at surface are proximal to a porphyry system.

A total of 144.6 line kilometres of IP survey work was completed, 66.9 km at Quema/Quemita and Idaida, 57.1 km at La Pelona and 20.6 at La Pava (Figure 9.1). The IP geophysics program identified resistivity and chargeability anomalies on all four target areas. The Company will evaluate these geophysical anomalies with diamond drilling that commenced in late 2013.

9.2.2 Regional Mapping and Sampling

In 2014, a regional mapping and surface rock chip sampling program focused on a first-pass reconnaissance investigation over the priority targets identified by the airborne geophysical survey. A total of 12,307 line metres were mapped and a total of 1,204 surface rock chip samples were collected.

This work is intended to advance the best targets to drill ready status.

9.2.3 Petrology

Pershimco contracted an independent petrology consultant in Australia to conduct petrographic analysis on 70 samples. Samples were selected from various drill holes at La Pava, Quema, Quemita, Idaida and Pelona areas.

Samples were selected from the deeper feeder structures at La Pava, the oxide gold zone at La Pava, the supergene enriched copper-gold zones at La Pava, both the oxide and sulphide zones at the Pelona and Idaida projects, as well as the oxide and supergene zones at Quema-Quemita.

The aim of the petrographic studies was to gather further information about alteration phases, mineralogy and mineralization sequence within the various deposits in the concession area. X-ray Diffraction work was conducted was conducted to ascertain clay minerals as well as the composition of 'sericite'-like white mica and the various sulphates.

The interpretation of the petrographic samples also validates the Company's exploration model for the project.

Figure 9.1
Induced Polarization Surveys, 2013

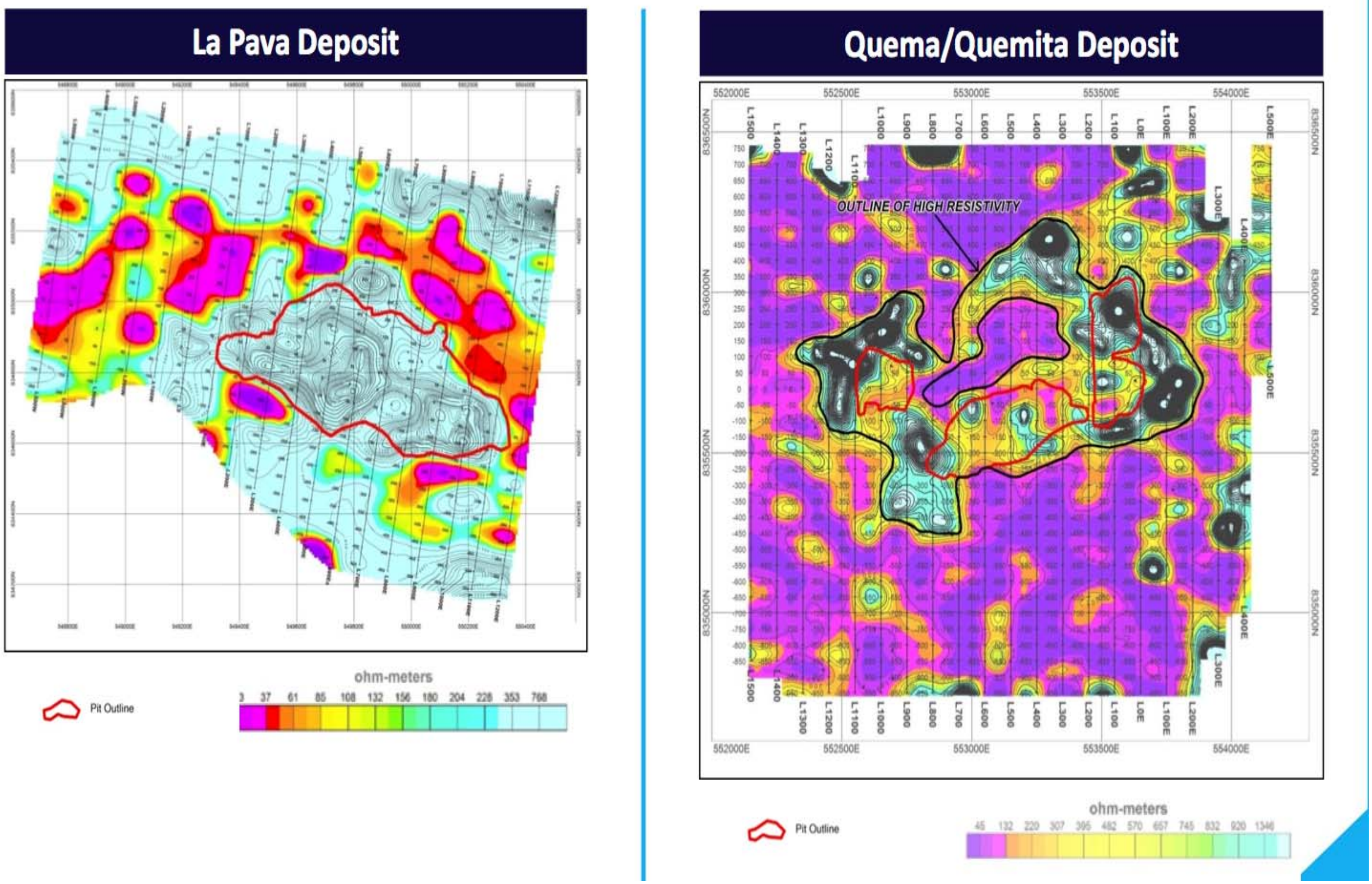
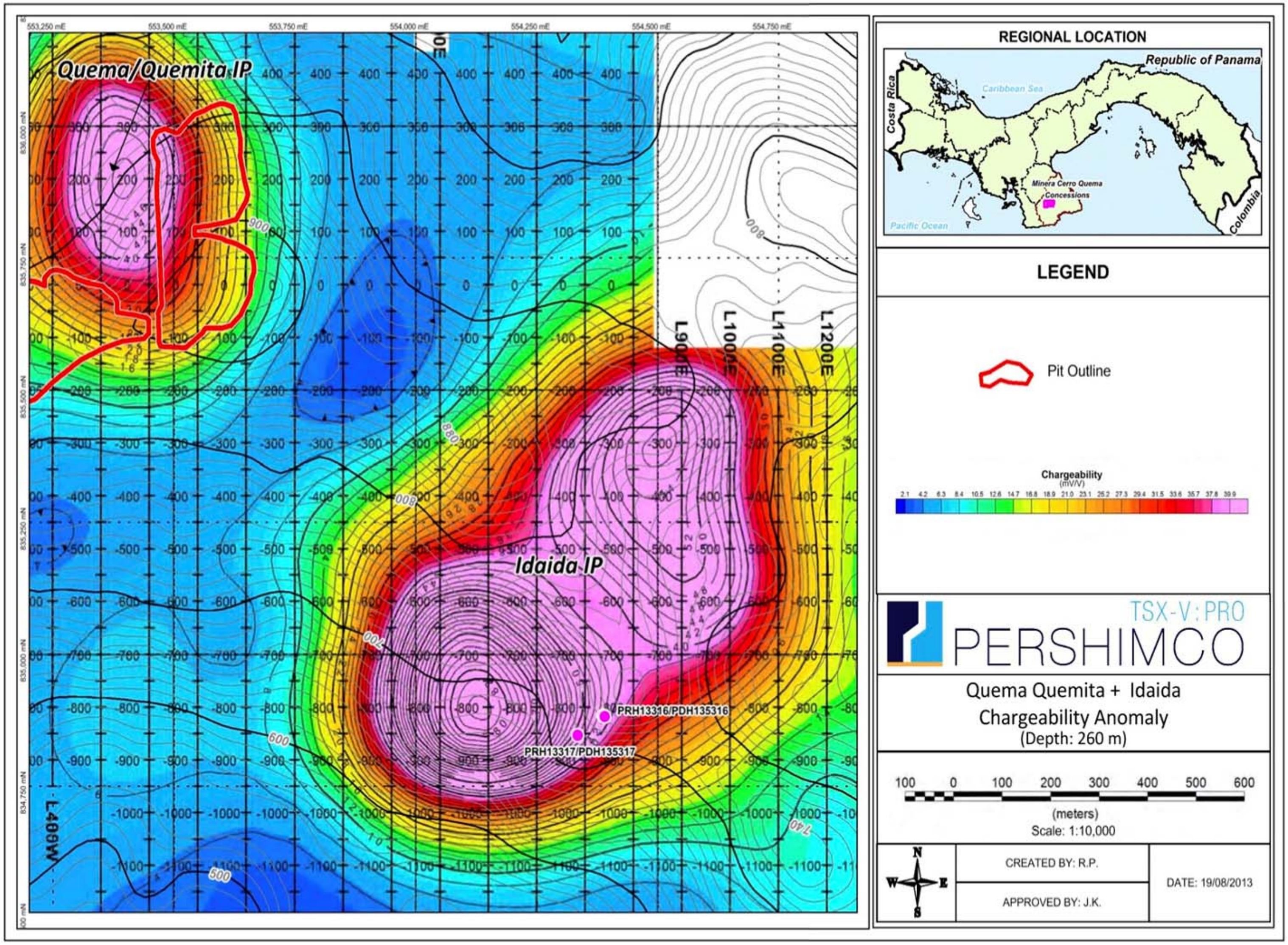


Figure 9.2
Induced Polarization Surveys, 2013



10.0 DRILLING

Since acquiring the project in 2010, Pershimco completed drilling programs each year to 2013 as summarized in Table 10-1. Details on drilling conducted prior to September 2012 are discussed Puritch et al. (2012).

TABLE 10-1
PERSHIMCO RESOURCES INC. - CERRO QUEMA PROJECT

Year	La Pava				Remainder of Concession			
	RC Drilling		Core Drilling		RC Drilling		Core Drilling	
	No. Holes	Lengt h (m)	No. Holes	Length (m)	No. Holes	Length (m)	No. Holes	Length (m)
2010	13	1,403	0	0.00				
2011	20	1,844	16	3,822.75	27	2,342	9	831.85
2012 (PE NI 43-101)	26	2,436	13	1,810.65	76	5,864	0	0.00
2012 (Not in Sep. 2012 43-101)	86	8,336	33	7,861.26	44	5,547	0	0.00
2013 (Not In Sep. 2012 43-101)	17	2,074	3	1,128.80	21	2,882	5	1,483.75
Total	162	16,093	65	14,623.46	168	16,635	14	2,315.60

10.1 Drilling September to December 2012

Following the September 2012 P&E technical report, 5,718 m of RC drilling and 4,239 m of diamond drill were completed on the Property, totalling 9,957 m of drilling. Drill collar locations are listed on Table 10-2

Pershimco's drilling in the final four months of 2012 continued its resource definition drilling at the La Pava and Quema/Quemita deposits and also commenced the initial validation drilling at the Idaida target.

Drilling extended a mineralized structure along the northern flank of the Quema/Quemita deposit to 750 m. This structure trends SW-NE and is located 100-200 m north-northeast of the Quema/Quemita open pit perimeter and southeast of the La Mesita deposit and the El Domo zone. Drilling conducted close to the perimeter of the southwestern and central north sections of the open pit design have intercepted new gold oxide and/or supergene copper mineralization. Supergene copper mineralization was encountered in the western area of the open pit design. (Figure 10.3)

The gold oxide drilling program returned intercepts including 14 m averaging 1.61 g/t Au in PRH-12178 within a larger intercept of 71 m averaging 0.49 g/t Au. Hole PRH-12147 intercepted 27 m averaging 1.38 g/t Au.

Two RC drill holes totalling 255 were completed on the Idaida exploration target. These drill holes were m based on historical holes completed in 1993 and intercepted oxide gold halo and supergene copper-gold mineralization. Hole PRH-12275 intersected 137 m averaging 0.28 g/t Au and 0.34% Cu beginning at a depth of 5 m and 2.5 % Cu between 137 m and 142 m. Hole PRH-12279 intersected 52 m, between 61 m and 113 m, averaging 1.29% including 4 m averaging 3.32 % Cu between 86 m and 90 m.

10.2 Drilling - 2013

Drilling in 2013 focused on resource definition at the La Pava and Quema/Quemita deposits as well as investigating geophysical anomalies at new exploration targets Idaida and Pelona. Exploration drilling on the Idaida target has revealed both near surface and deeper mineralized feeder structures analogous to the La Pava and Quema/Quemita deposits.

Select significant intersections from La Pava and Quema/Quemita can be found on Table 10.3 and Table 10.4, respectively.

10.2.1 La Pava Drilling

Ten holes drilled on La Pava (Figures 10.1 and 10.2), located outside or within 10 to 15 m of the southern and northwestern sides of the open pit design have intercepted significant new gold and copper mineralization.

In the Southern Zone, drill hole PRH12188, located approximately 30 m outside the southern margin of the open pit design, intercepted 5m grading 4.08 g/t Au. Drill hole PRH12255, located approximately 25m outside the southern margin of the open pit design, intercepted 13 m grading 0.72 g/t Au and 0.34 % Cu in the sulphide zone. Drill hole PRH12250, collared 8m north of the southern margin of the open pit design, intercepted 18 m grading 2.4% Cu and 0.22 g/t Au (including 7 m at 5.26% Cu) within the sulphide zone.

In the Central East Zone, drill hole PRH1211 returned 47 m of 1.23 g/t Au and drill hole PRH 1221 intersected 61 m of 0.86 g/t Au (including 40 m at 1.04 g/t Au). The drill results show the width and continuity of the mineralized zone within the area.

Drill hole PDH12037, in the Central South Zone, intercepted 7 m grading 1.92 g/t Au. This is the southernmost drill hole on section (Figures 10.1 and 10.2) and is open to the south. Further drilling is required to determine the extent of the mineralization.

Two drill holes in the Western Extension Zone confirmed that mineralized widths of gold and copper are present in the zone. Drill hole PRH12199 intersected 37 m, from surface, grading 0.41 g/t Au and 28 m grading 0.42% Cu and 0.22 g/t Au within the sulphide zone. Drill hole 12207 intersected 19 m grading 0.79% Cu, including 5 m grading 2.14% Cu. The mineralization in this zone remains open.

10.2.2 Quema-Quemita Drilling

Similar to the drilling at the La Pava deposit, the drilling at the Quema-Quemita deposit (Figures 10.3, 10.4, 10.5) increased the overall resource as well as identified mineralization outside of the current open pit design. Four drill holes located near the perimeter on the south-western and central north sections of the open pit design have intercepted gold oxide and/or supergene copper mineralization, providing new targets for future resource definition and upgrade drilling.

In the North Central Zone, drill hole PRH12252 intersected 18 m grading 0.71% copper and 0.44 g/t Au within the sulphide zone. The mineralized intersection is between the central and eastern open pit designs. Additional drilling may allow for the two pits to be combined into one larger pit. Drill hole PRH12246 intersected 102m grading 0.46% Cu, including 29 m o 0.92% Cu, in the sulphide zone. PRH12246 is located 130 m west of PRH12252, near the northern flank of central pit limit, where mineralization remains open (Figure 10.5).

In the South Central Zone, drill holes PRH12259, PRH12238 and PRH12178 returned oxide gold intercepted 8 m grading 3.84 g/t Au, 45 m grading 0.61 g/t Au, and 14 m grading 1.61 g/t Au, respectively. The three drill holes were collared near the southern perimeter of the open pit design, demonstrating the continuity of mineralization in this area. Drill hole PRH12241, located approximately 50 m outside the southern perimeter of the current open pit design, intercepted 19 m of 0.53% Cu within the sulphide zone. Mineralization remains open to the south and additional drilling is planned to define the extent of gold mineralization.

In the South Eastern Zone, drill hole PRH12200 intercepted 32 m, from surface, of 0.44 g/t oxide gold, including 10 grading 0.67 g/t Au. This drill hole was collared on the southeastern perimeter of the current open pit design.

10.2.3 Idaida Diamond Drilling

Reverse circulation drilling (RC) was initiated to investigate geophysical anomalies in the new exploration target at Cerro Idaida. Upon completion of the RC drill holes (PRH13316 and PRH13317), a diamond drill hole "tail" program was initiated to test for additional Cu-Au mineralization within the high sulfidation (HS) system at depth. Both diamond drill hole 'tails' (PDH135316 and PDH135317) encountered additional high-grade copper (enargite-covellite) mineralization as veinlets, disseminations and breccia matrix fill below the final depth of the reverse circulation holes. In addition, PDH135317 intercepted a deeper, higher temperature (pyrophyllite-rich) feeder zone containing copper and gold mineralization. Borehole locations can be found on Figure 9.2 (See Pershimco News Release dated August 22, 2013).

TABLE 10-2
2012-2013 DRILL PROGRAM COLLAR DATA

DDH No.	Easting	Northing	Elevation (m)	Dip (º)	Azimuth (º)	Length (m)
PRH12100	552724	835488	721	-90	360	100
PRH12101	550104	834853	440	-90	360	80
PRH12102	552676	835681	706	-90	360	99
PRH12103	552728	835536	713	-90	360	80
PRH12104	550152	834848	443	-90	360	97
PRH12105	550192	834799	469	-90	360	62
PRH12106	552674	835650	706	-90	360	90
PRH12107	552733	835647	699	-90	360	26
PRH12108	552628	835649	702	-90	360	90
PRH12109	550147	834803	468	-90	360	59
PRH12110	552626	835669	700	-90	360	60
PRH12111	550105	834802	463	-90	360	74
PRH12112	552568	835687	672	-90	360	100
PRH12113	550208	834845	438	-90	360	77
PRH12114	552688	835740	707	-90	360	93
PRH12115	550344	834702	480	-90	360	100
PRH12116	552820	835491	741	-90	360	30
PRH12117	550254	834747	487	-90	360	80
PRH12118	550304	834701	489	-90	360	71
PRH12119	552857	835610	738	-90	360	102
PRH12120	550359	834652	496	-90	360	62
PRH12121	552831	835617	739	-90	360	123
PRH12122	550349	834552	501	-90	360	100
PRH12123	552808	835601	741	-90	360	69
PRH12124	553249	835706	824	-90	360	102
PRH12125	552830	835615	739	-60	360	75
PRH12126	550314	834594	514	-90	360	100
PRH12127	553218	835692	822	-90	360	70
PRH12128	553179	835602	819	-90	360	72
PRH12129	552812	835571	738	-60	110	100
PRH12130	550401	834640	483	-90	360	54
PRH12131	553182	835648	813	-90	360	100
PRH12132	550273	834712	489	-90	360	74
PRH12133	553104	835662	790	-90	360	100
PRH12134	552742	835700	709	-90	360	100
PRH12135	549926	834693	543	-90	360	100
PRH12136	553029	835451	830	-90	360	128
PRH12137	552722	835773	704	-90	360	100
PRH12138	549849	834753	559	-90	0	150
PRH12139	553129	835506	835	-90	360	98
PRH12140	550202	834757	489	-90	360	99
PRH12141	550055	834649	546	-90	360	36
PRH12142	549823	834838	549	-60	360	120
PRH12143	552920	835446	822	-90	360	150
PRH12144	549499	834900	485	-90	360	110
PRH12145	549643	834858	531	-60	360	175
PRH12146	549421	834803	479	-90	360	89
PRH12147	553057	835584	838	-60	360	90
PRH12148	549581	834878	501	-90	360	150

DDH No.	Easting	Northing	Elevation (m)	Dip (°)	Azimuth (°)	Length (m)
PRH12149	549305	834850	451	-90	360	140
PRH12150	549523	834865	504	-90	0	150
PRH12151	549567	834846	517	-55	0	150
PRH12152	550176	834746	509	-90	0	81
PRH12153	550287	834680	503	-90	0	60
PRH12154	549953	834890	445	-90	0	156
PRH12155	549972	834933	423	-90	0	80
PRH12156	553227	835542	835	-90	0	127
PRH12157	550078	834829	444	-90	0	66
PRH12158	553350	835554	858	-90	0	129
PRH12159	550044	834804	455	-90	0	162
PRH12160	550144	834952	424	-90	0	87
PRH12161	553429	835553	859	-90	0	150
PRH12162	550102	834940	422	-90	0	84
PRH12163	550138	834899	421	-90	0	30
PRH12164	550173	834889	419	-90	0	48
PRH12165	550212	834603	509	-90	0	105
PRH12166	550257	834576	486	-90	0	59
PRH12167	550305	834586	506	-90	0	60
PRH12168	550347	834602	505	-90	0	75
PRH12169	550287	834579	495	-90	0	51
PRH12170	549399	834848	474	-90	0	41
PRH12171	550120	834600	515	-90	0	111
PRH12172	550158	834590	506	-90	0	78
PRH12173	550120	834745	497	-90	0	102
PRH12174	553376	835536	846	-60	0	171
PRH12175	549697	834842	549	-90	0	161
PRH12176	549526	834904	483	-70	0	134
PRH12177	553378	835533	846	-90	0	116
PRH12178	553324	835582	874	-90	0	171
PRH12179	553305	835578	873	-60	180	69
PRH12180	549700	834876	542	-90	0	165
PRH12181	549498	834800	491	-90	0	100
PRH12182	549521	834752	467	-90	0	50
PRH12183	549467	834860	489	-90	0	128
PRH12184	553545	835697	904	-90	0	140
PRH12185	549698	834646	462	-90	0	50
PRH12186	549729	834607	446	-90	0	56
PRH12187	553548	835668	911	-90	0	104
PRH12188	549693	834610	445	-90	0	14
PRH12189	553631	835747	921	-90	0	149
PRH12190	553613	835703	932	0	0	192
PRH12191	550796	834850	384	-90	0	105
PRH12192	550691	834754	397	-90	0	105
PRH12193	553654	835696	943	-90	0	189
PRH12194	550020	834552	480	-90	0	60
PRH12195	550048	834553	478	-90	0	53
PRH12196	549472	834893	480	-90	0	171
PRH12197	549947	834574	506	-90	0	110
PRH12198	549580	834742	470	-90	0	53
PRH12199	549356	834846	470	-90	0	143

DDH No.	Easting	Northing	Elevation (m)	Dip (°)	Azimuth (°)	Length (m)
PRH12200	553646	835665	949	-90	360	177
PRH12201	549988	834567	499	-90	360	59
PRH12202	549547	834906	482	-90	360	180
PRH12203	549252	834804	424	-90	360	60
PRH12204	553602	835651	940	-90	360	96
PRH12205	549303	834825	446	-90	360	60
PRH12206	549455	834902	467	-90	360	150
PRH12207	549450	834848	487	-90	360	134
PRH12208	553578	835746	904	-90	360	110
PRH12209	549470	834827	498	-90	360	110
PRH12210	549355	834893	440	-90	360	147
PRH12211	550047	834656	549	-90	360	62
PRH12212	553535	835760	888	-90	360	81
PRH12213	549379	834897	442	90	360	150
PRH12214	549296	834859	444	-90	360	143
PRH12215	553513	835622	917	-90	360	102
PRH12216	549280	834846	444	-90	360	55
PRH12217	553488	835652	891	-90	360	133
PRH12218	549407	834911	447	-90	360	102
PRH12219	549250	834851	430	-90	360	65
PRH12220	553582	835816	886	-90	360	213
PRH12221	550037	834653	550	-90	360	180
PRH12222	549275	834821	437	-90	360	74
PRH12223	550275	834610	518	-90	360	92
PRH12224	553547	835846	866	-90	360	159
PRH12225	550321	834660	501	-90	360	89
PRH12226	550322	834699	486	-90	360	59
PRH12227	553491	835797	864	-90	360	80
PRH12228	550221	834654	532	-90	360	143
PRH12229	549890	834908	454	-90	360	107
PRH12230	553555	835890	858	-90	360	213
PRH12231	550225	834778	471	-90	360	100
PRH12232	549447	834945	450	-90	360	144
PRH12233	549428	834926	446	-90	360	77
PRH12234	549469	834944	456	-90	360	143
PRH12235	553588	835942	828	-90	360	84
PRH12236	549544	834944	458	-90	360	107
PRH12237	549498	834943	454	-90	360	128
PRH12238	553209	835504	822	-90	360	132
PRH12239	549232	834795	416	-90	360	86
PRH12240	553156	835494	829	-90	360	143
PRH12241	553280	835489	814	-90	360	105
PRH12242	553211	835549	832	-90	360	78
PRH12243	553199	835604	827	-90	360	135
PRH12244	553202	835648	820	-90	360	195
PRH12245	550121	834562	480	-90	360	75
PRH12246	553277	835699	822	-90	360	132
PRH12247	550173	834555	475	-90	360	60
PRH12248	553324	835719	816	-90	360	84
PRH12249	550230	834567	477	-90	360	57
PRH12250	550232	834582	489	-90	360	56

DDH No.	Easting	Northing	Elevation (m)	Dip (°)	Azimuth (°)	Length (m)
PRH12251	553334	835999	765	-90	360	102
PRH12252	553415	835675	859	-90	360	153
PRH12253	549206	834851	408	-90	360	31
PRH12254	549457	834806	481	-90	360	100
PRH12255	549557	834715	452	-90	360	65
PRH12256	553430	835695	859	-90	360	105
PRH12257	549646	834675	461	-90	360	45
PRH12258	549200	834829	415	-90	360	49
PRH12259	553079	835485	834	-60	360	108
PRH12260	549675	834661	461	-90	360	48
PRH12261	553227	835507	821	-90	360	99
PRH12262	550324	834625	515	-90	360	135
PRH12263	552999	835406	810	-90	360	114
PRH12264	550098	834746	496	-90	360	96
PRH12265	550024	834808	454	-90	360	96
PRH12266	553045	835446	825	-90	360	144
PRH12267	549942	834765	520	-90	360	135
PRH12268	550224	834705	511	-90	360	81
PRH12269	550053	834875	432	-90	360	146
PRH12270	553231	835432	783	-90	360	74
PRH12271	550150	834610	522	-90	360	123
PRH12272	550021	834896	432	-90	360	150
PRH12273	553180	835424	785	-90	360	58
PRH12274	549702	835006	434	-90	360	147
PRH12275	554393	834886	759	-90	360	142
PRH12276	549929	834954	430	-90	360	87
PRH12277	549872	835048	407	-90	360	150
PRH12278	549830	835023	418	-90	360	99
PRH12279	554349	834919	732	-90	360	113
PRH13280	549859	834966	431	-90	360	146
PRH13281	550294	834810	442	-90	360	72
PRH13282	549900	834961	431	-90	360	144
PRH13283	553154	835440	792	-90	360	99
PRH13284	553101	835426	796	-90	360	110
PRH13285	553078	835425	798	-90	360	120
PRH13286	549428	834972	432	-90	360	156
PRH13287	553327	835956	772	-90	360	138
PRH13288	549470	834981	432	-90	360	148
PRH13289	553457	835912	791	-90	360	150
PRH13290	549532	834974	438	-90	360	135
PRH13291	549569	834976	443	-90	360	114
PRH13292	553330	835807	798	-90	360	117
PRH13293	549272	834882	425	-90	360	141
PRH13294	553356	835755	820	-90	360	110
PRH13295	549399	834949	428	-90	360	111
PRH13296	552721	835439	722	-90	360	147
PRH13297	549374	834949	421	-90	360	114
PRH13298	553379	835705	840	-90	360	126
PRH13299	552711	835395	708	-90	360	200
PRH13300	549327	834909	423	-90	360	150
PRH13301	549306	834902	424	-90	360	110

DDH No.	Easting	Northing	Elevation (m)	Dip (°)	Azimuth (°)	Length (m)
PRH13302	553654	835609	915	-90	360	129
PRH13303	549495	834999	417	-90	360	123
PRH13304	552730	835352	706	-90	360	169
PRH13305	553515	835746	877	-90	360	153
PRH13306	553696	835658	927	-90	360	150
PRH13307	553540	836000	778	-90	360	188
PRH13308	549452	834999	423	-90	360	105
PRH13309	557570	834292	598	-90	360	200
PRH13310	549548	834993	433	-90	360	135
PRH13311	549366	835004	401	-90	360	60
PRH13312	549340	834950	407	-90	360	114
PRH13313	553473	835956	779	-90	360	150
PRH13314	557625	834286	581	-90	360	200
PRH13315	553397	836025	745	-90	360	67
PRH13316	554390	834884	740	-90	360	96
PRH13317	554334	834849	717	-90	360	63

TABLE 10-3
DRILL PROGRAM SIGNIFICANT INTERSECTIONS – LA PAVA

Hole-ID(1)(2)	From (m)	To (m)	Length (m)(2)	Au(g/t)	Ag(g/t)	Cu (%)
PRH12028	18	51	33	0.37	N/A	N/A
PRH12028	83	102	19	0.21	N/A	1.40
PDH12033	69	224	155	0.46	N/A	0.72
Including	103	153	50	0.77	N/A	1.52
PRH12159	20	51	31	0.01	N/A	0.32
PRH12159	97	109	12	0.17	N/A	2.89
PRH12162	12	26	14	0.01	N/A	0.31
PRH12165	0	11	11	1.07	N/A	N/A
PRH12165	43	71	28	0.14	N/A	0.86
PRH12168	8	21	13	0.01	N/A	0.39
PRH12172	0	22	22	0.42	N/A	N/A
PRH12172	69	74	5	0.16	N/A	0.75
PDH12025	1	59	58	0.39	N/A	N/A
Including	1	33	32	0.68	1.74	0.15
Including	7	24	17	0.94	1.32	0.13
Including	9	24	15	0.97	N/A	N/A
Including	13	24	11	1.09	1.52	0.15
Including	43	59	16	0.04	5.59	0.40
Including	57	58	1	0.22	23.40	1.02
PDH12032	0	54	54	0.70	N/A	N/A
Including	21	35	14	1.34	N/A	N/A
PDH12034	130	155.1	25.1	0.30	N/A	N/A
PDH12041	2	60	58	0.38	1.55	0.03
Including	20	26	6	0.73	1.20	0.01
PDH12041	86	116.8	30.8	0.10	0.61	0.70
PRH12145	2	8	6	1.72	0.40	0.06
PRH12145	163	169	6	0.09	0.23	0.48
Including	164	165	1	0.12	0.40	1.20
PRH12181	0	18	18	0.45	N/A	N/A

Hole-ID(1)(2)	From (m)	To (m)	Length (m)(2)	Au(g/t)	Ag(g/t)	Cu (%)
PRH12188	0	1	1	18.60	0.20	0.10
PRH12188	4	5	1	1.53	0.10	0.02
PDH12025	14	24	10	1.12	N/A	0
PDH12025	43	49	6	0.03	N/A	0.74
PDH12036	0	7	7	0.84	N/A	0
PDH12037	0	7	7	1.92	N/A	0
PDH12038	4	9	5	2.34	N/A	0
PDH12038	13	29	16	0.92	N/A	0
Including	14	19	5	2.01	N/A	0
PDH12038	118	122	4	0.36	N/A	1.58
PDH12038	133	138	5	0.35	N/A	0.77
PDH12041	9	61	52	0.4	N/A	0
PDH12041	86	113	27	0.1	N/A	0.76
Including	88	91	3	0.13	N/A	2.52
PDH12042	141	155	14	0.07	N/A	0.38
PDH12044	117	124	7	0.09	N/A	0.44
PDH12044	345	361	16	0.08	N/A	0.44
PDH125180	158	160	2	0.44	N/A	1.15
PDH125180b	177	183	6	1.26	N/A	0.12
PRH12145	2	8	6	1.72	N/A	0
PRH12150	7	31	24	0.71	N/A	0
PRH12152	3	15	12	1.01	N/A	0
PRH12171	83	93	10	0.12	N/A	0.95
PRH12180	110	165	55	0.34	N/A	0
Including	155	165	10	0.47	N/A	0.74
PRH12188	0	5	5	4.08	N/A	0
PRH12196	153	161	8	0.41	N/A	0.03
PRH12199	8	45	37	0.41	N/A	0
PRH12199	51	79	28	0.42	N/A	0.22
PRH12201	2	5	3	0.87	N/A	0
PRH12202	3	17	14	0.42	N/A	0
PRH12205	0	5	5	0.58	N/A	0
PRH12207	61	80	19	0.79	N/A	0.17
Including	66	71	5	2.14	N/A	0.4
PRH12209	40	42	2	1.02	N/A	0
PRH12211	3	50	47	1.23	N/A	0
Including	21	41	20	1.65	N/A	0
PRH12213	117	132	15	0.65	N/A	0
PRH12221	3	64	61	0.86	N/A	0
Including	3	43	40	1.04	N/A	0
PRH12221	95	121	26	0.22	N/A	0.41
PRH12223	0	6	6	0.9	N/A	0
PRH12229	0	8	8	0.68	N/A	0
PRH12236	89	92	3	0.26	N/A	0.97
PRH12247	9	12	3	1.3	N/A	0
PRH12250	21	39	18	0.22	N/A	2.4
Including	21	28	7	0.28	N/A	5.26
PRH12254	0	15	15	0.62	N/A	0
PRH12255	15	28	13	0.34	N/A	0.72
PRH12201	0	7	7	0.49	0.40	0.01
PRH12207	62	79	17	0.18	0.71	0.86

Hole-ID[(1)(2)]	From (m)	To (m)	Length (m)[(2)]	Au(g/t)	Ag(g/t)	Cu (%)
PRH12209	39	42	3	0.78	0.23	0.03
PRH12216	0	9	9	0.31	0.12	0.04
PRH12219	0	33	33	0.25	0.94	0.02
PRH12221	3	143	140	0.47	5.03	0.12
Including	3	64	61	0.86	4.82	0.03
Including	35	43	8	1.77	5.95	0.04
Including	71	86	15	0.26	11.50	0.04
Including	94	108	14	0.29	6.93	0.49
PRH12223	0	10	10	0.68	0.42	0.02
PRH12229	0	9	9	0.63	0.29	0.09
PRH12229	94	99	5	0.06	0.10	0.32
PRH12232	140	144	4	0.35	1.30	0.21
PRH12236	89	92	3	0.26	0.27	0.97
PRH12237	82	90	8	0.30	0.96	0.36
PRH12167	0	22	22	0.25	N/A	N/A
PRH12169	2	17	15	0.75	N/A	N/A
PRH12181	0	18	18	0.45	N/A	N/A

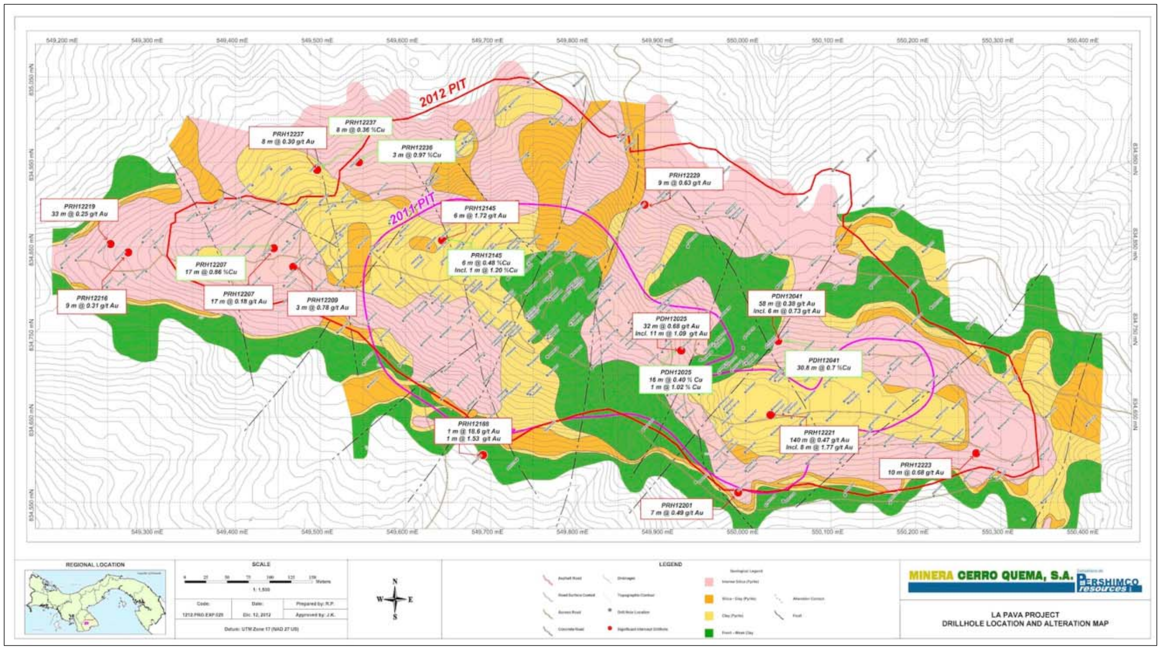
(1) Drill hole numbers with the PDH prefix are diamond drill holes.
(2) Drill hole numbers with the PRH prefix are Reverse Circulation (RC) drill holes.
(3) Intercepts are reported as drilled thicknesses and are apparent widths only.

TABLE 10-4
DRILL PROGRAM SIGNIFICANT INTERSECTIONS – QUEMA-QUEMITA

Hole-ID(1)	From (m)	To (m)	Length (m)(2)	Au(g/t)	Ag(g/t)	Cu (%)
PRH12161	0	14	14	0.40	N/A	N/A
PRH12161	44	67	23	0.25	N/A	N/A
PRH12179	7	18	11	1.00	N/A	N/A
PRH12048	7	42	35	0.05	N/A	0.20
PRH12149	86	100	14	0.06	N/A	0.45
PRH12050	52	66	14	0.05	N/A	0.63
PRH12053	35	36	1	0.01	N/A	0.47
PRH12091	0	3	3	0.13	N/A	0.47
PRH12093	57	59	2	0.06	N/A	0.46
PRH12095	43	51	8	0.06	N/A	0.72
PRH12121	0	123	123	0.03	N/A	0.13
PRH12123	39	69	30	0.04	N/A	0.13
PRH12178	0	71	71	0.49	N/A	N/A
Including	0	14	14	1.61	N/A	N/A
PRH12200	0	32	32	0.44	N/A	0
Including	9	23	14	0.64	N/A	N/A
PRH12076	0	22	22	0.49	N/A	N/A
PRH12077	23	26	3	0.63	N/A	N/A
PRH12071	34	41	7	0.42	N/A	N/A
PRH12212	27	31	4	0.44	N/A	N/A
PRH12147	0	27	27	1.38	N/A	N/A
PRH12084	21	29	8	0.49	N/A	N/A
PRH12099	75	78	3	0.78	N/A	N/A
PRH12100	65	69	4	0.38	N/A	N/A
PRH12103	23	28	5	0.29	N/A	N/A
PRH12215	2	8	6	0.35	0.10	0.02
PRH12217	43	68	25	0.36	7.61	0.06
PRH12220	72	75	3	1.34	0.10	0.07
PRH12238	22	84	62	0.63	5.57	0.07
Including	37	49	12	0.92	2.48	0.03
Including	77	83	6	0.94	28.07	0.27
PRH12242	56	77	21	0.5	N/A	0
PRH12244	105	114	9	0.04	N/A	0.51
PRH12246	23	125	102	0.05	N/A	0.46
Including	23	52	29	0.07	N/A	0.92
PRH12252	39	57	18	0.44	N/A	0.71
PRH12259	2	10	8	3.84	N/A	0

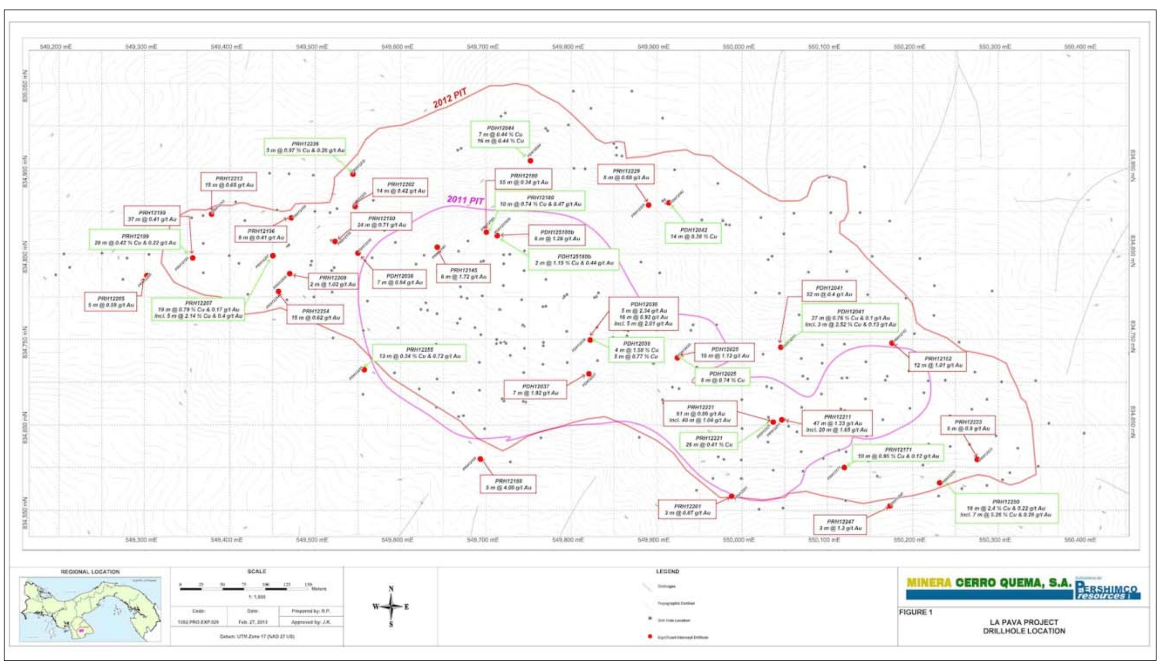
(1) Drill hole numbers with the PRH prefix are Reverse Circulation (RC) drill holes.
(2) Intercepts are reported as drilled thicknesses and are apparent widths only.

FIGURE 10.1
DRILL HOLE LOCATIONS AND ALTERATION MAP – LA PAVA DEPOSIT



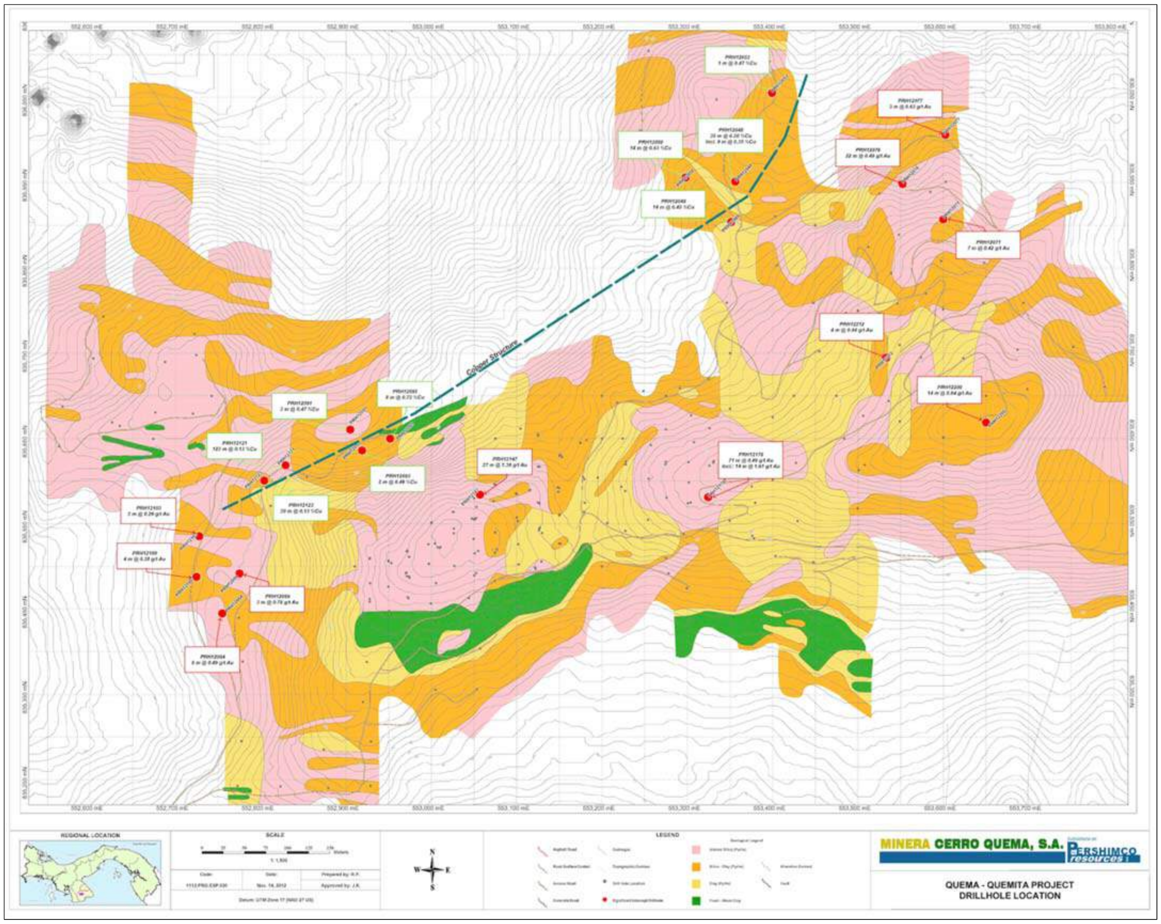
(***Source:*** *www.pershimco.ca)*

FIGURE 10.2
DRILL HOLE LOCATIONS – LA PAVA DEPOSIT



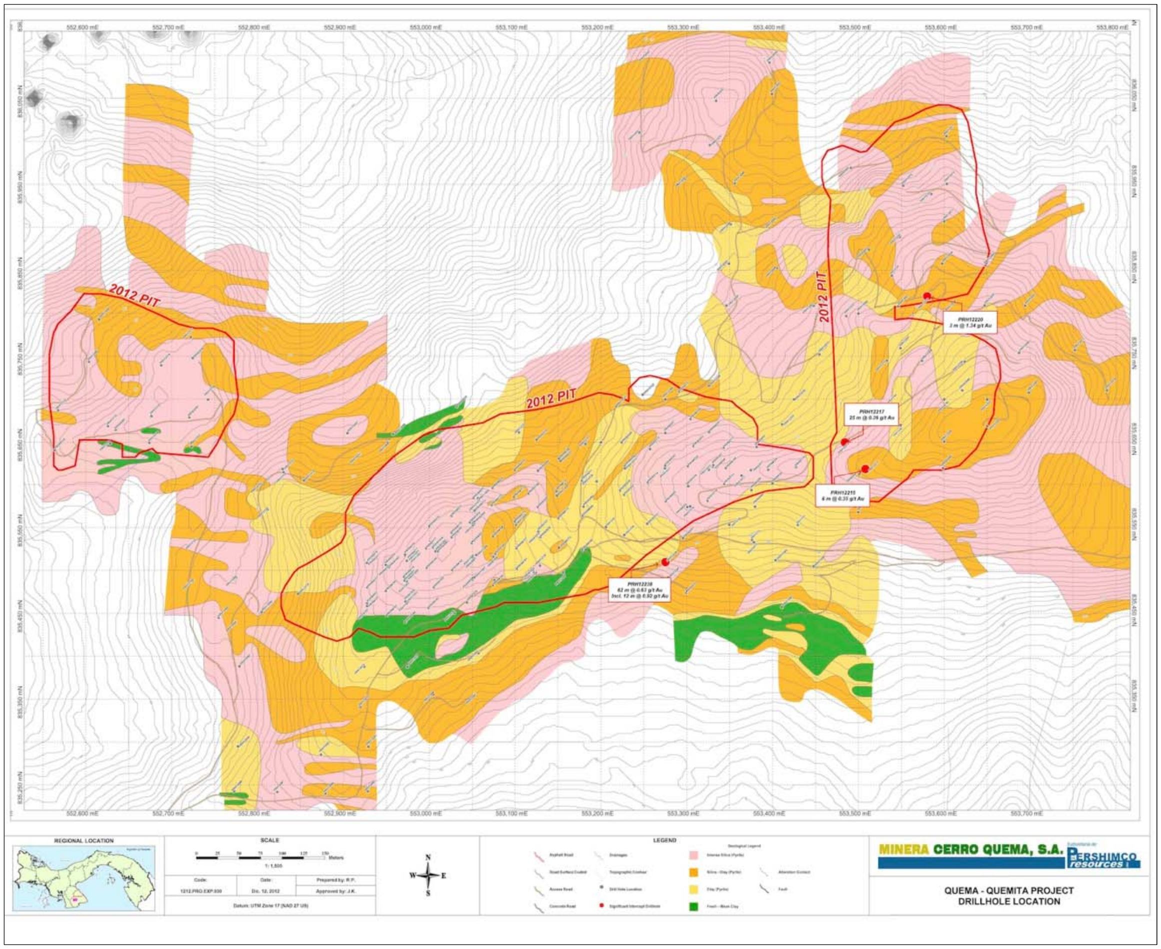
(***Source:*** *www.pershimco.ca)*

FIGURE 10.3
DRILL HOLE LOCATIONS AND ALTERATION MAP - QUEMA QUEMITA DEPOSIT



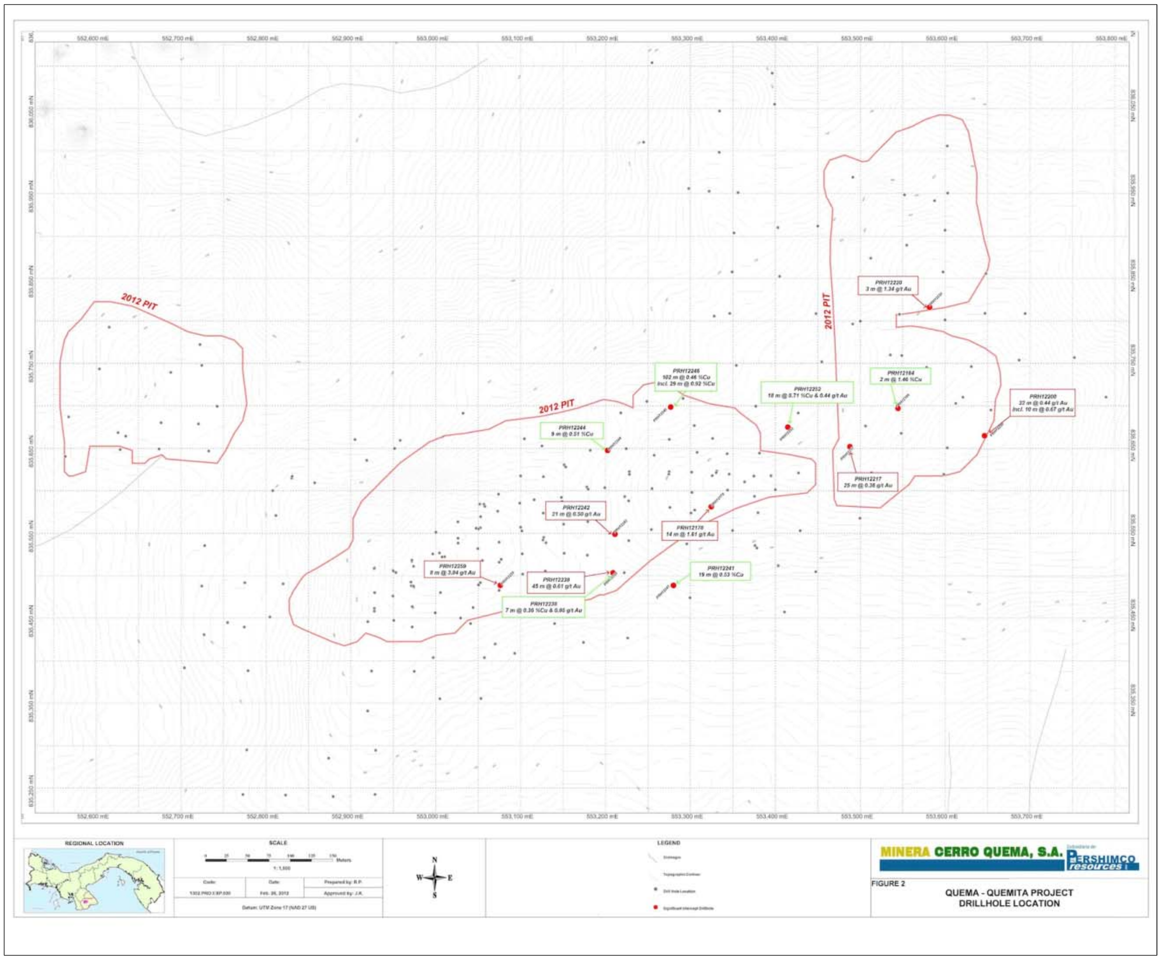
*(**Source:** www.pershimco.ca)*

FIGURE 10.4
DRILL HOLE LOCATIONS, ALTERATION MAP AND PIT OUTLINES – QUEMA QUEMITA DEPOSIT



(**Source:** *www.pershimco.ca*)

FIGURE 10.5
DRILL HOLE LOCATIONS – QUEMA/QUEMITA DEPOSIT



***(Source:** www.pershimco.ca)*

10.3 Deep Exploratory Drilling – 2014

Deep exploratory drilling was initiated in November 2013 utilizing a Longyear LF-70 diamond drill rig. This first phase of the deep drilling program was completed with six holes totalling 4459.15 meters of drill core (see Table 10-5).

TABLE 10-5
2013-2014 DEEP DRILL PROGRAM COLLAR DATA

DDH No.	Easting	Northing	Elevation (m)	Dip (°)	Azimuth (°)	Length (m)
PDH135316	554390	834884	736	-90	360	578.7
PDH135317	554334	834849	717	-90	360	507.4
PDH13059	553419	835785	831	-90	360	520.3
PDH14060	549772	835278	320	-80	180	335.4
PDH14061	549774	835272	329	-80	180	910.3
PDH14062	554124	834947	652	-90	360	892.6
PDH14063	554485	835236	729	-90	360	899
PDH14064	553382	836030	763	-70	160	901.55

The objective of the first phase of this program was to target and validate the strong (+40 mV/V) Induced Polarization (IP) chargeability anomalies below and adjacent to the high sulfidation (HS) Au-in-oxide and Cu-Au in sulfide mineralization at La Pava, Quema-Quemita and Idaida (refer to Pershimco News Release dated June 18, 2013). The targeting of the IP anomalies included correlative aeromagnetic (magnetic susceptibility lows) and radiometric (K40 depletion) signatures, as well as supportive geology (structure, lithology, alteration and mineralization). All holes, based on core log estimates, encountered abundant sulfide (mainly pyrite) mineralization at and below the targeted IP chargeability zones. Assays and geochemical analytical results for these holes are pending.

10.3.1 Quema-Quemita Deep Drilling

Two (2) holes located on the north flank of Cerro Quema, collared to intercept a strong (+40 mV/V) IP chargeability anomaly trending north-northwest.

PDH13059 (-90) was collared about 200 meters northwest of the Cerro Quema summit. This initial drill hole failed to reach the total planned depth of 900 meters due to ground condition problems. Despite not reaching planned depth, the drill hole did intercept a substantial thickness of untested acid leach altered, high sulfidation lithocap interpreted as high temperature feeder zones. Drill hole highlights based on core logging and spectral reflectance (alteration) readings show high sulfidation (HS) lithocap mineralization down to the bottom of the hole (520.30 meters). The HS mineralization is hosted by dacitic tuffs and flows that have been acid leach altered to a silicic-advanced argillic mineral assemblage. Visual logging observations noted the presence of enargite veinlets, supergene chalcocite mineralization, and zones containing pyrophyllite and molybdenite in fractures were noted. Numerous porphyry indicators were intercepted by the drilling and include: relict quartz “A” and “B” veins, molybdenite veinlets and quartz-feldspar porphyry dikes (QFP) with marginal phreatomagmatic breccias. All these early event indicators are overprinted by pervasive advanced argillic alteration.

Angle hole PDH14064 is located approximately 220 meters north from the collar of PDH13059. Long zones of high sulfidation lithocap mineralization with enargite veinlets and disseminations hosted in advanced argillic altered dacitic volcanic rocks were noted in the core logs down to 450 meters. Additionally, zones with pyrophyllite and pyrite-enargite-covellite mineralization were also observed during in the initial core logging. Porphyry indicators are abundant within this hole with strong relict quartz veining carrying trace molybdenite, zones of anastomosing stockworks of anhydrite veins with covellite and rare hypogene chalcocite noted, quartz-anhydrite veins with abundant pyrite. Strong advanced argillic (overprint) alteration and abundant pyrite were noted in drill logs throughout the hole.

10.3.2 La Pava Deep Drilling

Tw (2) angle (-80) south directed holes located down slope on the north flank of La Pava about 400 meters north of the summit ridge.

Drill hole PDH14060 had hole and ground condition problems resulting in hole abandonment at 335.4 meters.

Angle hole PDH14061 is located about 5 meters from PDH14060. Drill hole highlights based on core logging and spectral reflectance (alteration) readings show little to no high sulfidation lithocap mineralization, but several wide high sulfidation feeder zones from 450-700 meters. The feeder zone mineralization is characterized by enargite veinlets and patches as visually noted in drill logs. Abundant porphyry indicators hosted in quartz-feldspar porphyry dikes (QFP) and breccias include: relict quartz “A” and “B” veins with minor sulfide mineralization (pyrite + trace chalcopyrite) overprinted by advanced argillic alteration. Also noted in core logging is the deeper foot-wall mineralization hosted in dacitic volcanic rocks with moderate chlorite-clay (illite) alteration. Porphyry indicators in this zone are early, quartz “B” veins and anhydrite veins with trace molybdenite and chalcopyrite.

10.3.3 Idaida Deep Drilling

Two (2) vertical holes each located to test a strong dual apex high within a large IP chargeability anomaly trending southwest to northeast.

PDH14062 (-90) was collared about 200 west of the high-grade copper sulfide hole, PRH13317/PDH135317 at Cerro Idaida. Again, drill hole highlights are based on visual core logging and spectral reflectance (alteration) readings. High sulfidation lithocap and narrow (high temperature) feeder zones are hosed in dacitic tuffs and flows altered to an advanced argillic mineral assemblage with minor high sulfidation enargite-covellite mineralization in veinlets and disseminations as noted in drill core logs. Numerous quartz-feldspar porphyry (QFP) dikes with marginal phreatomagmatic breccias are cut by quartz “B” type veins and sulfide (pyrite) “D” type veins. Core logging noted theses vein types to be associated with minor chalcopyrite and molybdentite. QFP dikes and quartz veins are overprinted by advanced argillic (low temperature) alteration. The lower portion of the drill hole contains limestones and andesitic volcaniclastic rocks with argillic (illite-smectite) alteration and cut by minor amounts of chalcopyrite and bornite veinlets.

Vertical hole PDH14063 is located approximately 600 meters northwest from PDH14062. Based on drill core logging, porphyry margin indicators are manifested by late quartz-carbonate base metal Au-Ag veins and vein breccias that are in narrow feeder structures. Quartz(micro-crystalline, translucent blue-grey)-dolomite(medium crystalline, cream-white) as veins with sulfide (sphalerite-galena-chalcopyrite-gold-tetrahedrite) mineralization are visually noted. Host rocks are porphyritic dacite sub-volcanic rocks with intermediate argillic (illite-carbonate-chlorite) alteration. High temperature HS feeder zones are associated with advanced argillic (pyrophyllite-dickite) alteration and abundant pyrite veinlets and disseminations at or near porphyry dacite flow dome contacts. Deeper porphyry indicators include: early quartz “B” type veins, anhydrite-quartz veins and sulfide (pyrite) veins with trace chalcopyrite and hypogene chalcocite. These veins appear to occur near contacts of porphyry dacite dome complexes and narrow QFP dikes with breccias. This lower sequence is hosted in andesitic volcaniclastic rocks and porphyritic dacites with argillic (illite, illite/smectite) alteration.

In conclusion, this first phase of deep exploratory drilling has identified numerous key indicators of several types of mineralization including; high sulfidation Cu-Au feeder structures, Au-Ag base metal quartz-carbonate veins, and porphyry Cu-Mo-Au quartz veins at the tested targets. Based on these positive indicator results encountered during the deep drilling program at La Pava, Quema-Quemita and Idaida, a second phase of drilling is warranted to further develop and evaluate the potential of these targets, and commence testing of additional IP chargeability anomalies along known high sulfidation alteration corridors.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

Diamond drill core and reverse circulation ("RC") cuttings samples were collected, approximately each one meter. In the event there was a loss of core or cuttings, a change in lithological contact, vein contact or a change in matrix from oxide to sulphide, the minimum sample size allowed was 0.5 meters and maximum sample size allowed was 1.5 meters.

Lithological contacts, vein contacts and sulphide content were respected with an appropriate sample interval where possible.

A thorough quality assurance/quality control ("QA/QC", or "QC") program was implemented, which included one field blank and at least one certified reference material, (also referred to as a standard), for every batch of 20 samples sent to the laboratory

Each batch of samples sent to the laboratory followed the recommendations below:

- All the samples from the same batch had to have the same matrix type (Oxide or Sulphide);
- Oxide standards (OxD87 and OxK94) consisted of a sealed 50 g bag;
- Sulphide standards (SF57 and SF67) consisted of a sealed 50 g bag;
- Sulphide standards (OREAS 161 and OREAS 162) consisted of a sealed 30 g bag;
- Placement of the standards and blanks in each batch were rotated in a regular pattern.
- In addition to the insertion of standards and blanks, pulp duplicates were prepared and analyzed for each batch.

11.1 Sampling Protocol at the Principal Lab

The Principal lab used by Pershimco was Activation Laboratories ("Actlabs"). Samples were sent to Actlab's Panama lab for preparation and the resulting pulps were sent to Actlabs in Ancaster, ON, Canada for analysis.

Samples were initially sent to the sample preparation facilities in Panama. Individual samples were entered into the Laboratory Information Management System ("LIMS") by Actlabs personnel, dried, and finely crushed to 85% passing <2 mm. The samples are then returned for a second time to the dryer, and immediately upon their removal from the dryer, they are pulverized to 85% passing -200 mesh, and riffle-split to 150 grams. Prepared samples are then placed into air-deprived zip lock bags and then into 5-gallon plastic containers, which are sealed and shipped by courier services to Actlabs in Ancaster, Ontario, Canada for assaying. Silver and copper sample tenors are determined using a multi-element ICP method, and gold is determined using fire assay method with atomic absorption finish. Gold values exceeding the 2.5 g/t Au are rerun using fire assay with a gravimetric finish.

Actlabs has locations in North, Central and South America, Australia, Africa, Greenland and Mongolia.

The Actlabs' Quality System is accredited to international quality standards through the International Organization for Standardization /International Electrotechnical Commission (ISO/IEC) 17025 (ISO/IEC 17025 includes ISO 9001 and ISO 9002 specifications) with CAN-P-1758 (Forensics), CAN-P-1579 (Mineral Analysis) and CAN-P-1585 (Environmental) for specific registered tests by the SCC. The accreditation program includes ongoing audits, which verify the QA system and all applicable registered test methods. Actlabs is also accredited by the National Environmental Laboratory Accreditation Conference (NELAC) program and Health Canada.

Results of the quality Control program are presented in Section 12.2.

The authors believe that the sample preparation, security, and analytical procedures are in keeping with standard industry practise, and are responsible for producing quality results which are suitable for use in the current resource estimate.

12.0 DATA VERIFICATION

12.1 Site Visit and Independent Sampling

Mr. Antoine Yassa, P.Geo., and a qualified person, ("QP") according to the definition as set forth in Canadian National Instrument NI 43-101, "Standards of disclosure for Mineral Projects", visited the Cerro Quema Project most recently on October 2, 2013, (and previously on January 17 and 18, 2012). During the October site visit Mr. Yassa collected 12 samples from four holes. Samples were collected from taking either a ¼ split of the half core remaining in the core box, or taking a split from the RC cuttings. Samples were placed into plastic bags with a unique tag identification, and were placed into a larger bag for transport. Mr. Yassa brought the samples to DHL Courier in Chitré, where they were sent to the offices of P&E in Brampton, ON. From there the samples were sent via courier to AGAT Labs in Mississauga, ON for analysis.

AGAT 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.

AGAT maintains ISO registrations and accreditations. ISO registration and accreditation provide independent verification that a QMS is in operation at the location in question. Most AGAT laboratories are registered or are pending registration to ISO 9001:2000.

Results of the independent sampling are presented in Figures 12.1 and 12.2.

Figure 12.1
Cerro Quema Project Due Diligence Verification Results for Gold

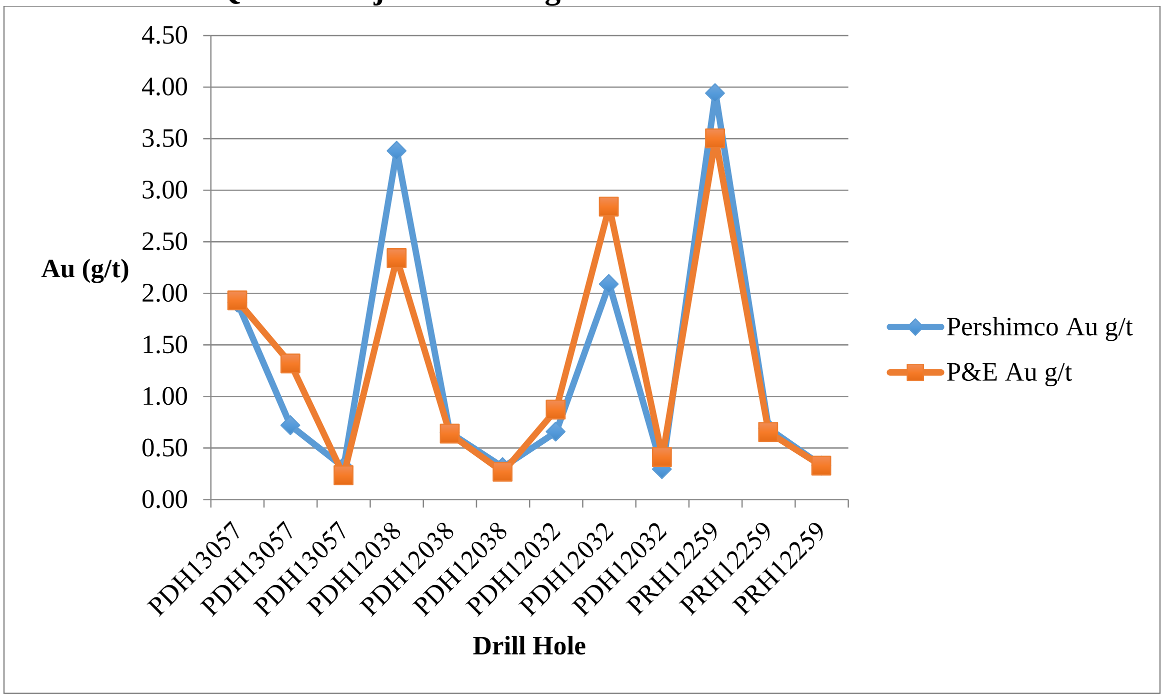
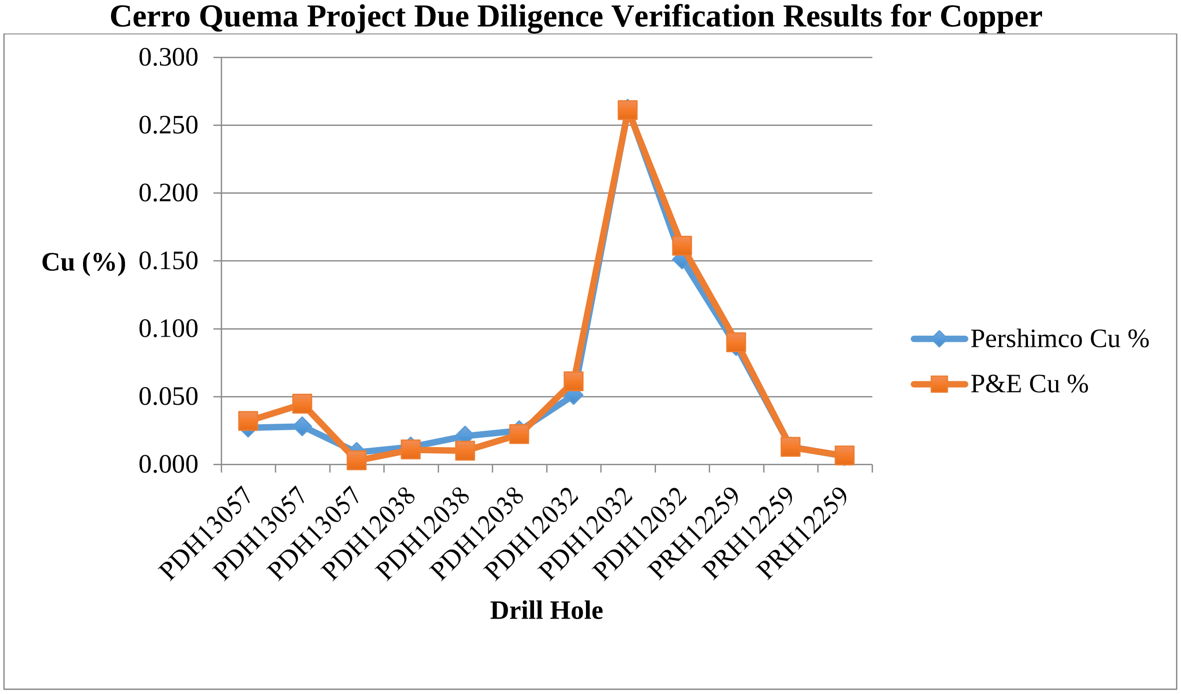


Figure 12.2
Cerro Quema Project Due Diligence Verification Results for Copper



12.1.1 Performance of Certified Reference Materials

Pershimco implemented a robust QA/QC program in 2010, when they acquired the Cerro Quema Project, and this QC program has been maintained throughout the 2011, 2012 and

2013 drill programs since that time. The QC program included the insertion of certified reference materials, field blanks and the preparation of pulp duplicate samples. The author of this section reviewed all results of the 2012-2103 QC program, and details are provided in the following sections. It is to be noted that results of the 2010-2011 drill programs were previously verified by P&E and were found to have passed the strict QC procedures.

For the 2012 and 2013 drill programs, a total of six certified reference materials, (also referred to as standards) were used to monitor lab accuracy. Two of the standards were certified for Cu-only, and four of them were certified for Au-only. There were 1,725 standards analyzed for gold and 1,155 standards analyzed for copper.

Performance for each of the standards is displayed in the following graphs. Some standards performed better than others, with instrument drift and low biases noted for some. Generally the performance was satisfactory; however there is room for improvement. The noted failures had no impact on the very large database.

Figure 12.3
Performance of OxK94 for Gold

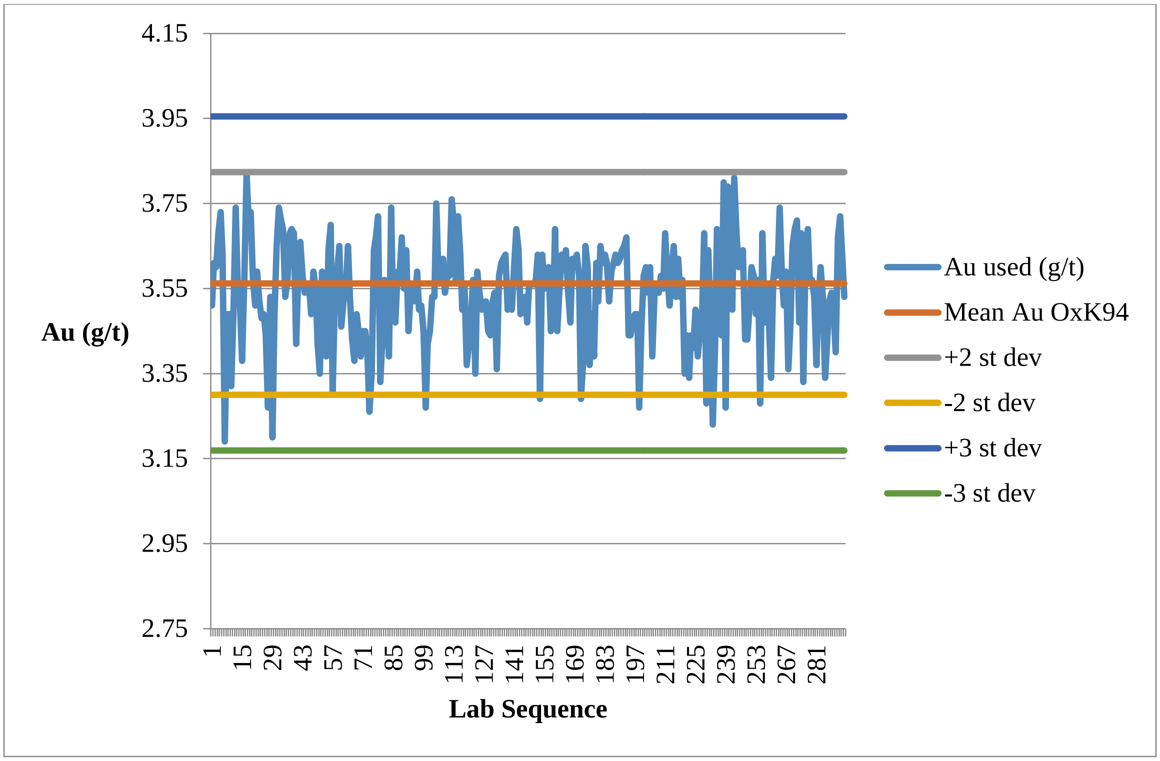


Figure 12.4
Performance of OxD87 for Gold

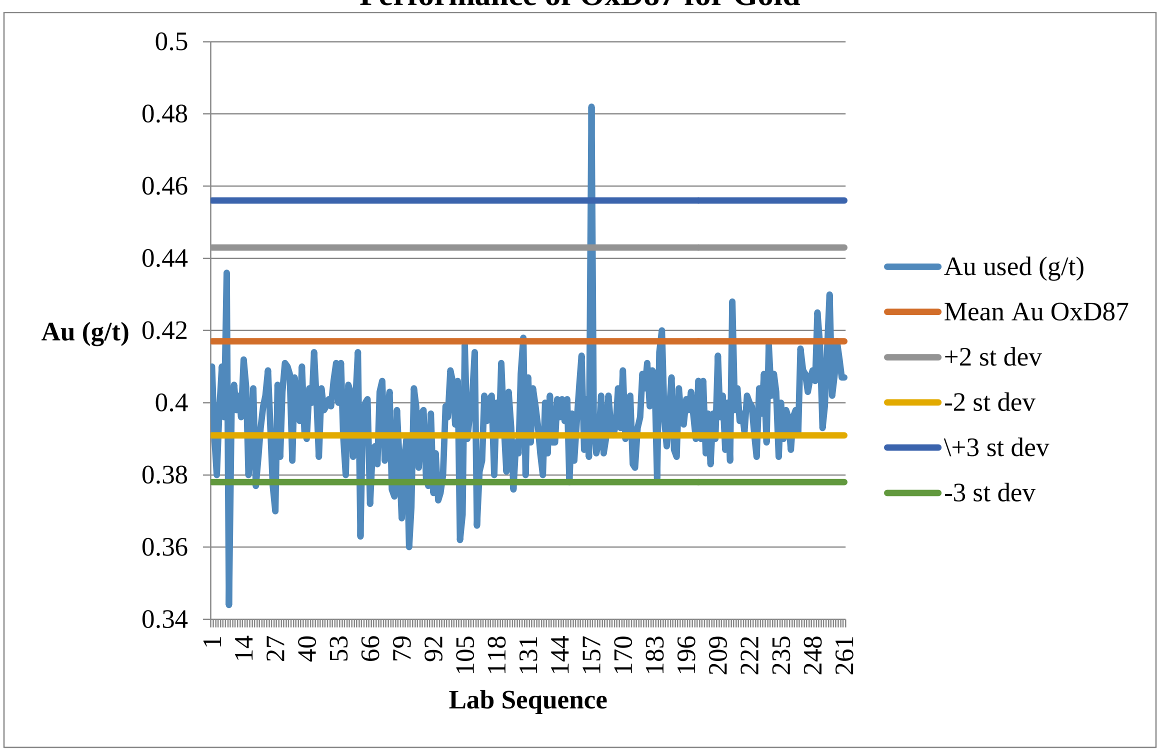


Figure 12.5
Performance of SF57 for Gold

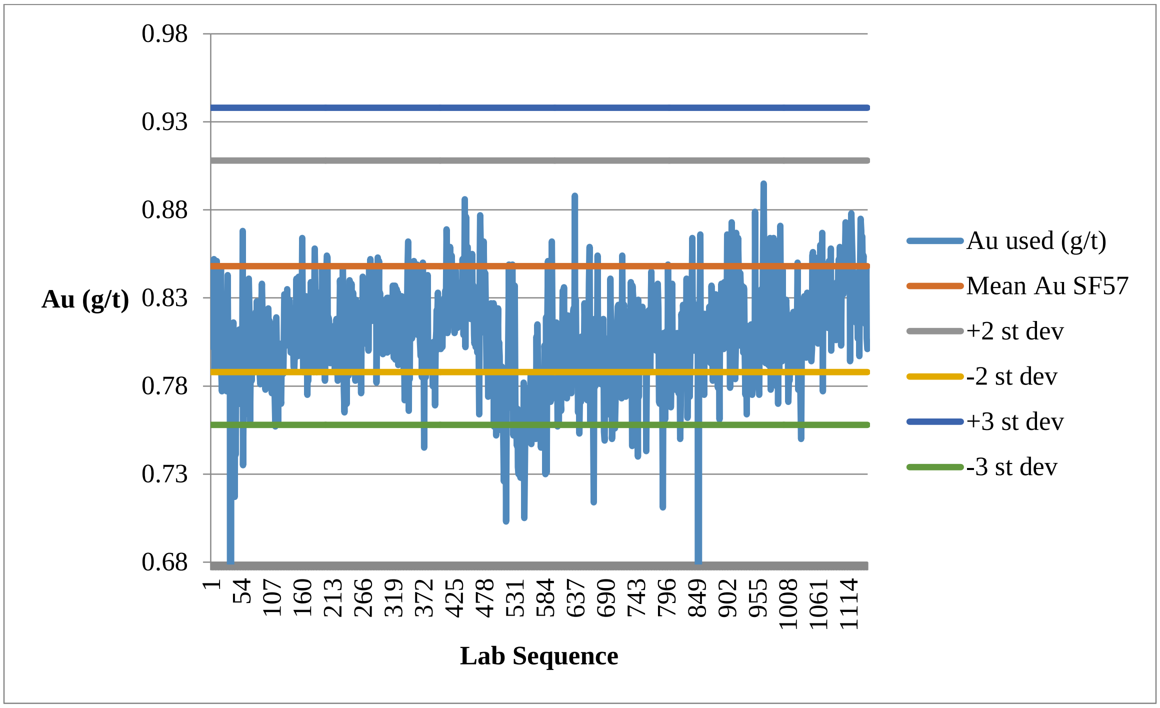


Figure 12.6
Performance of SF67 for Gold

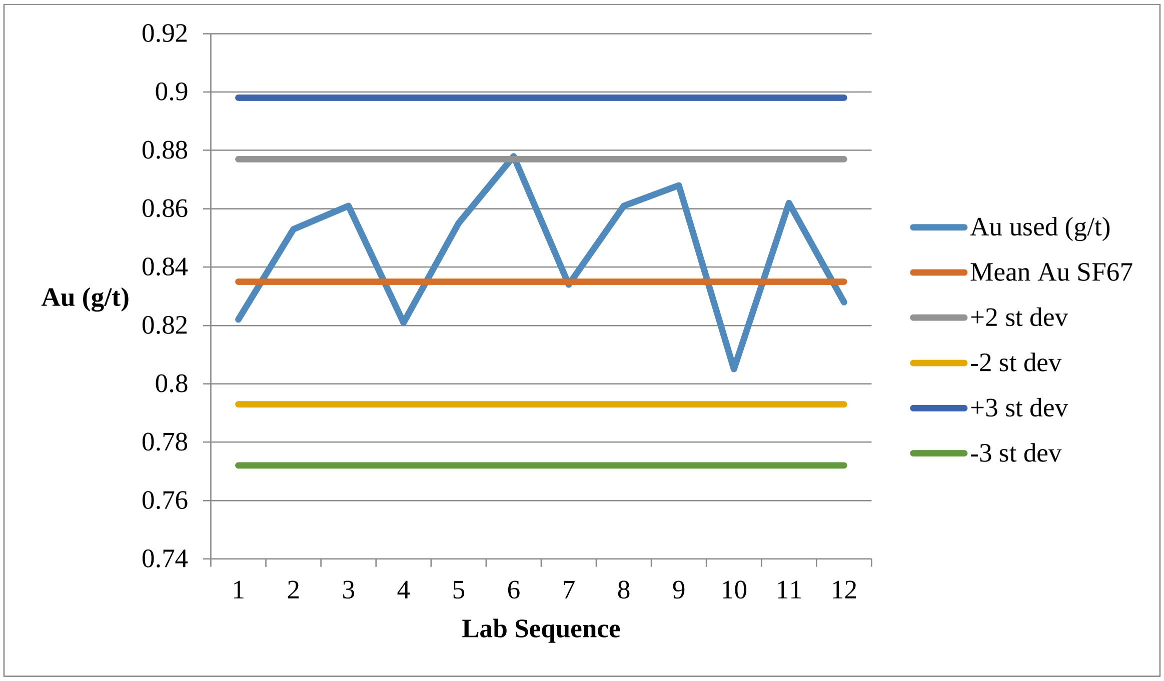


Figure 12.7
Performance of Oreas 161 for Copper

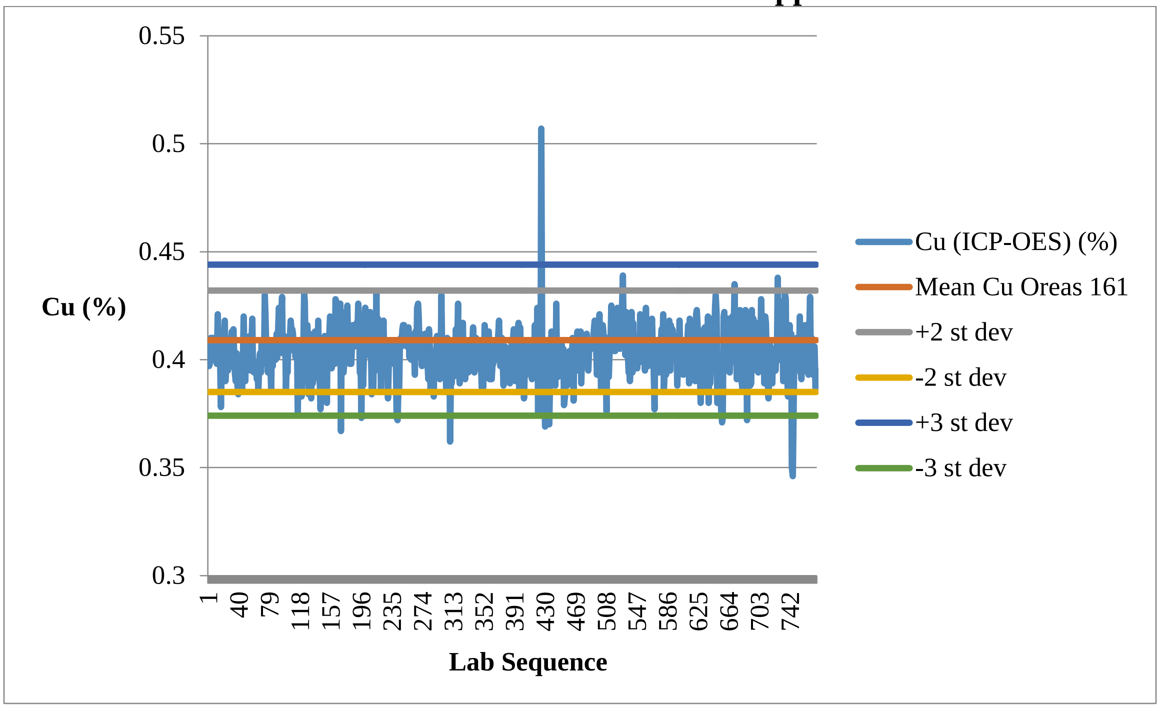
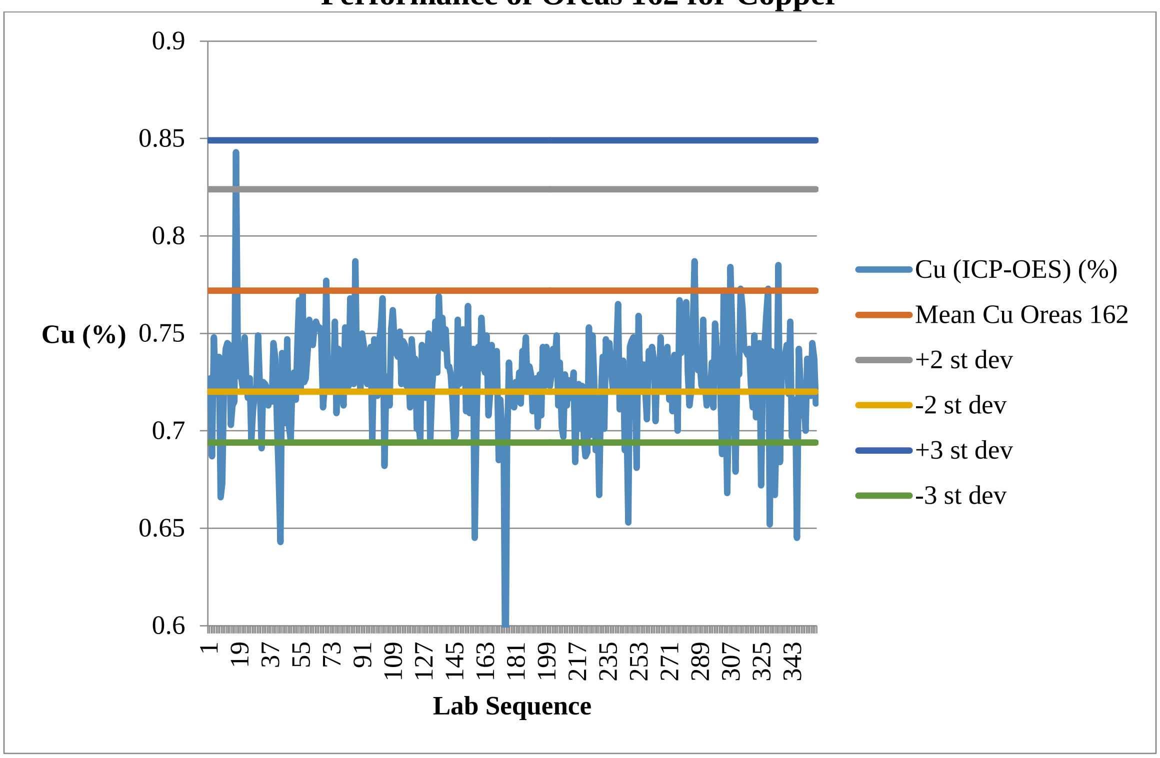


Figure 12.8
Performance of Oreas 162 for Copper

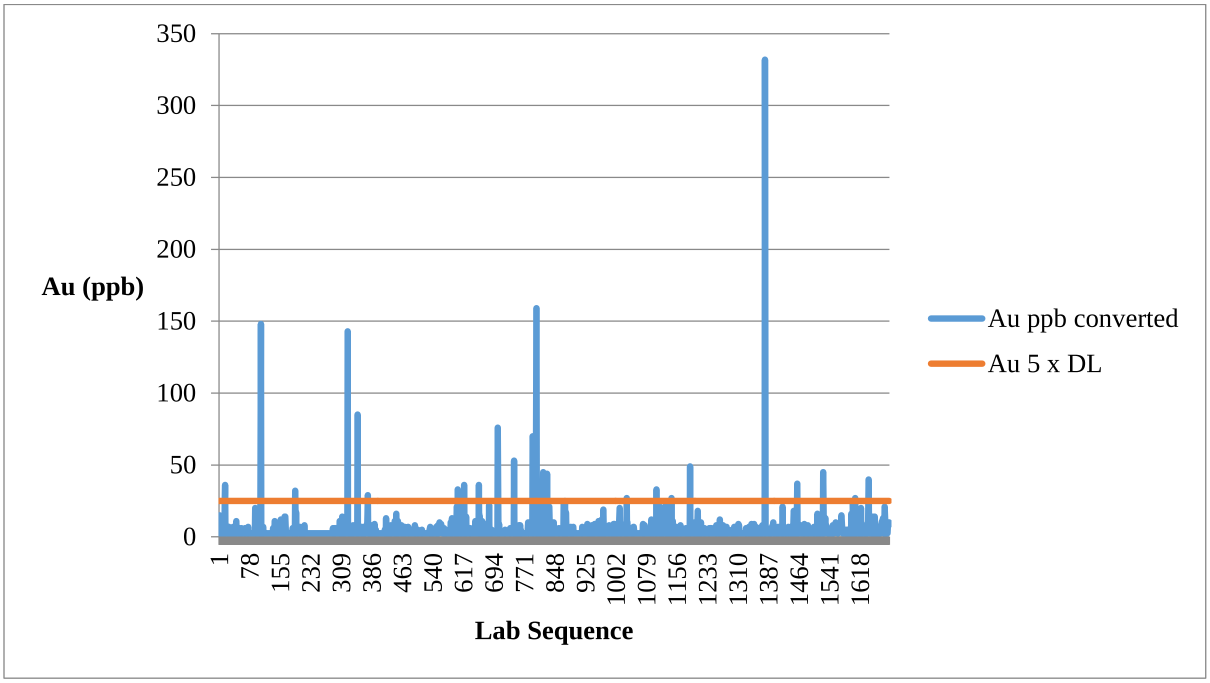


12.1.2 Performance of Field Blank Material

The rock mass found at Kilometer 0 on the Cerro Quema Property, named “Kms. 0 Minera C. Quema” was found to be suitable for use as a field blank. The fraction size of the field blank has to be large enough to require crushing, in order to monitor contamination at all stages of sample reduction.

Results of the 1,691 blank samples analyzed, indicated that there was no contamination at any level in the lab. Results are presented in Figure 12.9.

Figure 12.9
Performance of Blank Material for Gold



12.2 Performance of Duplicates

During the 2012-2103 drill campaigns, there were 651 pulp duplicate pairs analyzed for gold. When the few outliers were removed from the database, precision was better than 10% around the cut-off grade.

P&E has declared the data adequate for use in the current resource estimate.

13.0 METALLURGICAL TESTING

13.1 Summary of Test Results

Metallurgical testing of material from the Cerro Quema deposit was completed by the previous owners and Pershimco. The testing included:

- Bottle roll tests that evaluated amenability of the materials to cyanidation
- Column leach tests that evaluated the amenability of the materials to conventional heap leaching
- Vat leach tests which evaluated the amenability of the materials to treatment in flooded tanks

Process related testing is summarized in Table 13-1.

TABLE 13-1
SUMMARY OF PROCESS TEST WORK

Date	Owner	Sample Source	Test Work Type	Summary of Results
14-Apr-92	Cyprus Minera de Panama, S.A.	Unknown	One column and one bottle roll for gold recovery	high recovery (>95% Au recovery) from both tests
20-Oct-93	Cyprus Minera de Panama, S.A.	Unknown	two column tests for copper recovery	copper recovery of 68 and 79%
14-Feb-95	Cyprus Minera de Panama, S.A.	Trench Samples from La Pava and Quema/Quemita	Bottle Roll, Column and Vat Leach	bottle roll gold recovery 79.5 to 95.7%, column gold recoveries 76.7 to 96.6%, vat leach gold recoveries 77.9 to 95.5%
25-Sep-95	Cyprus Minera de Panama, S.A.	Trench Samples from La Pava (LP-LTR) and core samples from La Pava and Quema/Quemita	Bottle Roll, Staged Column Leach and Vat Leach	bottle roll gold recoveries between 80 and 95%, vat leach recoveries between 83 and 96%
14-Feb-96	Minera Cerro Quema	La Pava and Quema/Quemita Trench and Core Samples	Permeability tests with compressive loads to simulate heap stacking	Cement agglomeration will be required
2008	Bellhaven	Unknown	Pilot Vat Leach	70 t sample crushed to 80% passing 2.35 mm, batch leached for 48 hours, 93.2% gold recovery

Date	Owner	Sample Source	Test Work Type	Summary of Results
16-Apr-09	Bellhaven	Unknown	Bottle Roll, and Vat Leach	bottle roll gold recoveries between 80.0 and 95%, column leach gold recoveries between 83% and 94%
16-Oct-13	Pershimco	La Pava and Quema/Quemita core	Bottle Roll, Column and Vat Leach	bottle roll gold recoveries between 80.0 and 97.2%, column leach gold recoveries between 93.8 and 97.2%, vat leach recoveries between 72.5 and 98.3%
08-May-14	Pershimco	La Pava Alteration Samples (Silica and Silica-Clay)	Permeability, Physical Testing	No report, email correspondence only, permeability

Review of the original referenced material indicates the following summary information:

- Oxide material from La Pava responds very well to cyanide bottle roll and column leaching yielding high gold extractions and low reagent consumptions.
- At lower head grades (about 1 g/t Au and lower), extractions are approximately the same for either La Pava or Quema/Quemita material.
- At higher head grades (above 1 g/t Au), the extractions for La Pava are greater than for Quema/Quemita.
- The data shows no dependence of gold extraction on crush size for the materials and size ranges tested (75 mm to 12.5 mm)
- Clay material shows poor permeability and will require cement agglomeration.

13.2 Material Types

Four different types of material alterations at Cerro Quema are described by geologists as:

TABLE 13-2
ALTERATIONS AT CERRO QUEMA

Material	Geologic Description
Silica	Porous and/or brecciated quartz
Silica-Clay	Quartz (silica) and up to 30% disseminated fine grained alumino-silicate clay minerals (kaolinite, dickite, pyrophillite). It is slightly porous. It surrounds the silicic core of the deposit (Medium to low grade)
Clay	0 to 5 m thick superficial layer on top of the deposit and weakly altered rock that occurs as a transition zone between the fresh rock and the silica-clay altered rock
Fresh	Quartz feldspar porphyritic dacite lava. It is a fairly hard, brittle rock with no porosity. It is composed of roughly 50% fresh feldspar and 50% quartz

The abundance of each alteration is:

TABLE 13-3
RELATIVE ABUNDANCE OF ALTERATIONS IN MINERALIZED PITS

Alteration	Tonnage, Mt	Relative Tonnage, %
Silica	18.367	93.6%
Silica-Clay	0.823	4.2%
Clay	0.274	1.4%
Fresh	0.163	0.8%
Total	19.627	

The only pure alteration type in of core tested is “Silica” making it difficult to judge the effect of alteration on the parameters important to processing. Silica is the predominant alteration at Cerro Quema so this is not significant problem.

13.3 Column Test Results

Column tests have been performed on composites of core and trench samples from both the La Pava and Quema/Quemita deposits. The materials were crushed to various sizes to determine any effect of grain size on extraction. The results are presented and summarized in the following tables.

TABLE 13-4
CERRO QUEMA INDIVIDUAL COLUMN TEST RESULTS

MLI Test No.	Description	Material	Crush Size	Grade g/t Head	Grade g/t Tails	Extracted Au, %	Consumption, kg/t NaCN	Consumption, kg/t Lime	Consumption, kg/t Cement	Report
	LP-LTR[1]	La Pava	ROM	0.99	0.10	89.7	0.04	1.3	0.0	Feb-95
	LP-LTR[1]	La Pava	-12.5 mm	0.99	0.14	86.2	0.11	1.3	0.0	Feb-95
	LP-LTR[1]	La Pava	-25 mm	1.03	0.07	93.3	0.10	1.3	0.0	Feb-95
	LP-LTR[1]	La Pava	-25 mm	1.03	0.07	93.3	0.17	1.3	0.0	Feb-95
	LP-LTR[1]	La Pava	-12.5 mm	1.03	0.10	90..0	0.05	0.0	5.0	Feb-95
	LP-LTR[1]	La Pava	-75 mm	1.06	0.10	90.3	0.05	1.3	0.0	Feb-95
	LPE-TR[1]	La Pava	-75 mm	1.51	0.14	90.9	0.06	0.8	0.0	Feb-95
	LPE-TR[1]	La Pava	-12.5 mm	1.58	0.07	95.7	0.08	0.8	0.0	Feb-95
	LPE-TR[1]	La Pava	-25 mm	1.61	0.07	95.7	0.08	0.8	0.0	Feb-95
	LPE-TR[1]	La Pava	-25 mm	1.61	0.10	93.6	0.16	0.8	0.0	Feb-95
	LPW-HGT[1]	La Pava	-12.5 mm	2.61	0.14	95.0	0.03	0.8	0.0	Feb-95
	LPW-HGT[1]	La Pava	-75 mm	2.85	0.10	96.5	0.12	0.8	0.0	Feb-95
	LPW-HGT[1]	La Pava	-25 mm	2.92	0.14	95.5	0.06	0.8	0.0	Feb-95
	QMP-TR[1]	Quema/ Quemita	-75 mm	0.99	0.07	93.1	0.13	3.3	0.0	Feb-95
	QMP-TR[1]	Quema/ Quemita	-25 mm	0.99	0.07	93.1	0.13	3.3	0.0	Feb-95
	QMP-TR[1]	Quema/ Quemita	-12.5 mm	0.99	0.03	96.6	0.08	3.3	0.0	Feb-95

				Grade g/t			Consumption, kg/t			
MLI Test No.	Description	Material	Crush Size	Head	Tails	Extracted Au, %	NaCN	Lime	Cement	Report
	QMP-HGT[1]	Quema/ Quemita	-25 mm	3.46	0.48	86.1	0.18	3.3	0.0	Feb-95
	QMP-HGT[1]	Quema/ Quemita	-12.5 mm	3.53	0.82	76.7	0.10	3.3	0.0	Feb-95
Test #7	LP-LTR[2]	La Pava	-12.5 mm	0.99	0.10	89.7	0.48	0.0	5.0	Sep-95
Test #8	LP-LTR[2]	La Pava	-12.5 mm	1.17	0.14	88.2	0.50	0.0	5.0	Sep-95
Test #1	LP1-C[2]	La Pava	-25 mm	1.27	0.07	94.6	0.46	1.3	0.0	Sep-95
Test #6	LP1-C[2]	La Pava	-12.5 mm	1.27	0.03	97.3	0.51	1.3	0.0	Sep-95
Test #3	LP1-C[2]	La Pava	-12.5 mm	1.34	0.03	97.4	0.73	1.3	0.0	Sep-95
Test #9	LP1-C[2]	La Pava	-12.5 mm	1.37	0.03	97.5	0.69	1.3	0.0	Sep-95
Test #5	LP1-C[2]	La Pava	-25 mm	1.37	0.07	95.0	0.94	1.3	0.0	Sep-95
Test #10	LP2-C[2]	La Pava	-25 mm	4.60	0.07	98.5	2.26	1.3	0.0	Sep-95
Test #11	LP2-C[2]	La Pava	-12.5 mm	4.77	0.07	98.6	1.82	1.3	0.0	Sep-95
Test #2	Q1-C[2]	Quema/ Quemita	-25 mm	1.03	0.07	93.3	0.40	1.3	0.0	Sep-95
Test #4	Q1-C[2]	Quema/ Quemita	-12.5 mm	1.03	0.07	93.3	0.44	1.3	0.0	Sep-95
Test #12	Q2-C[2]	Quema/ Quemita	-12.5 mm	2.54	0.10	95.9	1.70	1.3	5.0	Sep-95
P-5	PO-11[2]	La Pava	-25 mm	0.67	0.02	97.0	0.67	1.8[3]	4.0	Sep-13
P-2	PO-15[2]	La Pava	-25 mm	0.71	0.02	97.2	1.01	2.9[3]	0.0	Sep-13
P-1	PO-08[2]	La Pava	-25 mm	0.81	0.05	93.8	1.28	0.9[3]	0.0	Sep-13
P-3	PO-16[2]	La Pava	-25 mm	0.90	0.03	96.7	1.16	4.1[3]	0.0	Sep-13

1. Composites of surface material collected from trenches excavator trenches
2. Composites of drill core
3. Hydrated lime was used ($Ca(OH)_2$)in the 2013 tests, the other samples were treated with pebble lime

TABLE 13-5
CERRO QUEMA COLUMN TEST RESULT SUMMARY

		Grade, g/t			Consumption, kg/t	
Material	**Crush Size/Grade**	**Head**	**Tails**	**Extracted Au, %**	**NaCN**	**Lime**
La Pava	All	1.6	0.08	94.1	0.52	1.2
La Pava	High Grade	1.9	0.08	94.6	0.46	0.9
La Pava	Low Grade	0.9	0.07	92.9	0.68	1.7
Quema/Quemita	All	1.8	0.21	91.0	0.39	2.5
Quema/Quemita	High Grade	2.3	0.31	89.1	0.56	2.1
Quema/Quemita	Low Grade	1.0	0.06	94.3	0.11	3.3
All	-3" (-75 mm)	1.6	0.10	92.7	0.09	1.5
All	-1" (-25 mm)	1.6	0.09	94.1	0.60	1.7
All	-1/2" (-12.5 mm)	1.8	0.22	90.0	0.07	1.5

"High Grade" in the above averages is above 1 g Au/t, "Low Grade" is 1 g Au/t and below.

The average results of the column data above show:

- Little dependence of gold extraction on crush size in the size ranges tested
- Lower grade Quema/Quemita and La Pava materials have similar gold extractions
- Higher grade Quema/Quemita has slightly lower gold extraction than La Pava or lower grade Quema/Quemita

Silver recovery was not reported but head grades, tails grades and silver extracted were found for 31 of the column tests performed. The average calculated recovery is 16%.

13.4 Column Recovery by Size

The column leach recovery by size fraction was studied to determine if there was an obvious effect of size on recovery.

The size of material in the column tests studied was approximately 25 mm. These tests included material that was -50 + 25 mm which will be similar to the planned Cerro Quema operation. The results are summarized in Figures 13.1 and 13.2.

FIGURE 13.1
COLUMN RECOVERY BY SIZE FRACTION, FEBRUARY 14, 1995 REPORT

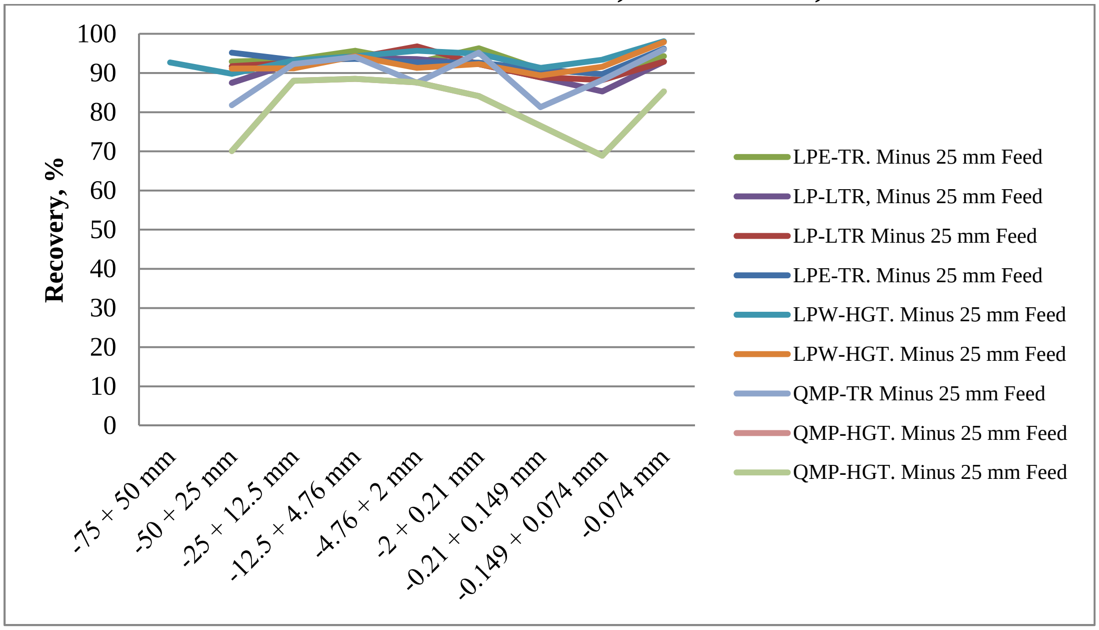
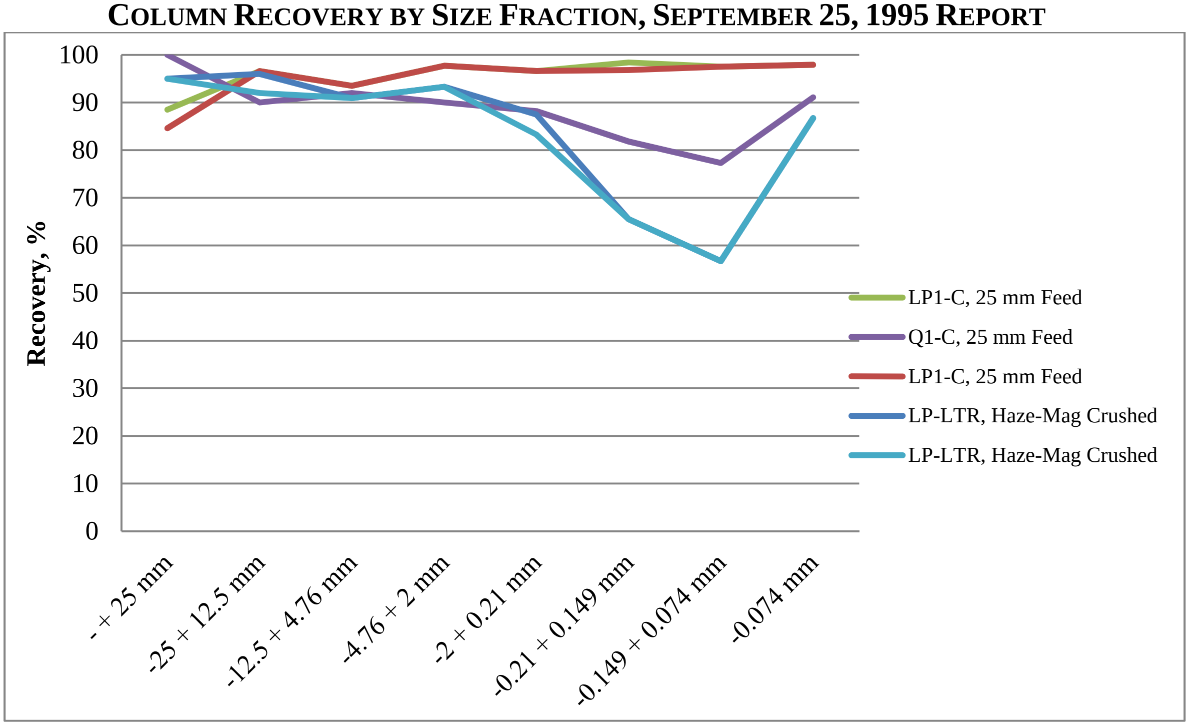


FIGURE 13.2
COLUMN RECOVERY BY SIZE FRACTION, SEPTEMBER 25, 1995 REPORT



There is no obvious trend in recovery by size fraction.

13.5 Bottle Roll Test Results

Bottle roll tests have been completed on composites of core and trench samples from both the La Pava and Quema/Quemita deposits. The materials were crushed, and milled if necessary, to various sizes to determine any effect of grain size on extraction. The results are summarized in the following table:

TABLE 13-6
CERRO QUEMA BOTTLE ROLL TEST RESULT SUMMARY

		Grade g/t			Consumption kg/t	
Material	**Size/Grade**	**Head**	**Leach Tails**	**Gold Extraction, %**	**NaCN**	**Lime**
La Pava	All	1.28	0.10	92.0	0.13	2.1
La Pava	High Grade	1.77	0.13	91.7	0.10	1.6
La Pava	Low Grade	0.66	0.05	92.4	0.18	2.7
Quema/Quemita	All	2.19	0.36	85.1	0.19	3.3
Quema/Quemita	High Grade	2.53	0.43	83.7	0.22	3.5
Quema/Quemita	Low Grade	0.72	0.06	91.2	0.06	2.5
All	-6.3 mm	1.49	0.15	90.8	0.17	2.54
All	-12.5 mm	1.48	0.16	91.2	0.21	2.09
All	-1.7 mm	1.67	0.20	89.1	0.03	2.23
All	-0.210 mm	2.13	0.31	86.5	0.06	2.51
All	-0.074 mm	2.13	0.27	86.2	0.33	2.49

The average results of the bottle roll tests are similar to that of the column tests; the results show:

- No dependence of gold extraction on size
- Lower grade Quema/Quemita and all La Pava materials had similar performance relative to gold extraction
- Higher grade Quema/Quemita material has a slightly lower gold extraction than La Pava or lower grade Quema/Quemita material

13.6 Comminution Tests

13.6.1 Crusher Work Index

The crusher work indices were tested on trench samples is 1995 by Allis Mineral Systems. The results were:

TABLE 13-7
CRUSHING WORK INDEX

Sample	Work Index, kWh/t
LP-LTR	4.29
LPE-LTR	5.27
LPW-HGT	5.66
QMP-TR	6.70

Allis Mineral System mentioned the material would be easy to crush but may tend to pack in the crusher. These samples were all surface trenches so the sample quality will be lower than core samples.

A bulk silica rock sample taken from the La Pava area in early 2014 was found to have a work index of 6.0 kWh/t by ALS Metallurgy.

The core examined at site and was found to be very soft and would break easily in by hand. This observation supports the results of Allis Mineral Systems.

13.6.2 Abrasion Index

Allis Mineral Systems also conducted abrasion tests on the trench samples above. The crusher work indices were tested on trench samples is 1995 by Allis Mineral Systems.

TABLE 13-8
ABRASION INDEX TESTING

Sample	Abrasion Index
LP-LTR	0.0715
LPE-LTR	0.2624
LPW-HGT	0.2071
QMP-TR	0.1721

Two bulk samples (silica and silica clay) were taken in 2014 from the La Pava area. The results were:

TABLE 13-9
BRASION INDEX TESTING

Sample	Abrasion Index
Silica	0.019
Silica Clay	0.003

A value of 0.2 is used to calculate steel consumption due to wear in the crushing circuit.

13.7 Crush Size

The materials tested from Cerro Quema do not appear to have a size-sensitivity relative to gold extraction.

KCA believes that the material should be crushed to -50 mm to make it appropriate for future drum agglomeration as rocky material coarser than 50 mm will hinder drum agglomeration by breaking apart agglomerates as they form. This size of crushing will require a two stage crushing facility.

No benefit will be gained from finer, tertiary crushing. Finer crushing does not aid extraction and may produce more fines that will consume cement and make future agglomeration more difficult.

13.8 Sample Location and Depth

The location of the samples tested by McClelland Laboratories from La Pava and Quema/Quemita were reviewed to ensure there was no obvious bias with respect to spatial representation.

The samples from La Pava are distributed across the deposit in an area that is 750 m long (east to west) x 150 m wide (north to south). Visually the samples are seem to distributed fairly evenly with respect to drill hole frequency. Future testing might include a sample from the eastern and northern extremes of the deposit if enough mineralized material exists in these areas to justify the expense.

The La Pava core samples used to create the metallurgical composites for testing ranged in depth from 1 to 146 m.

The metallurgical samples from Quema/Quemita are clustered in the two mineralized zones described by previous authors as Quema/Quemita East and Quemita. The samples seem to be distributed fairly evenly with respect to drill hole frequency and do not seem to be otherwise biased.

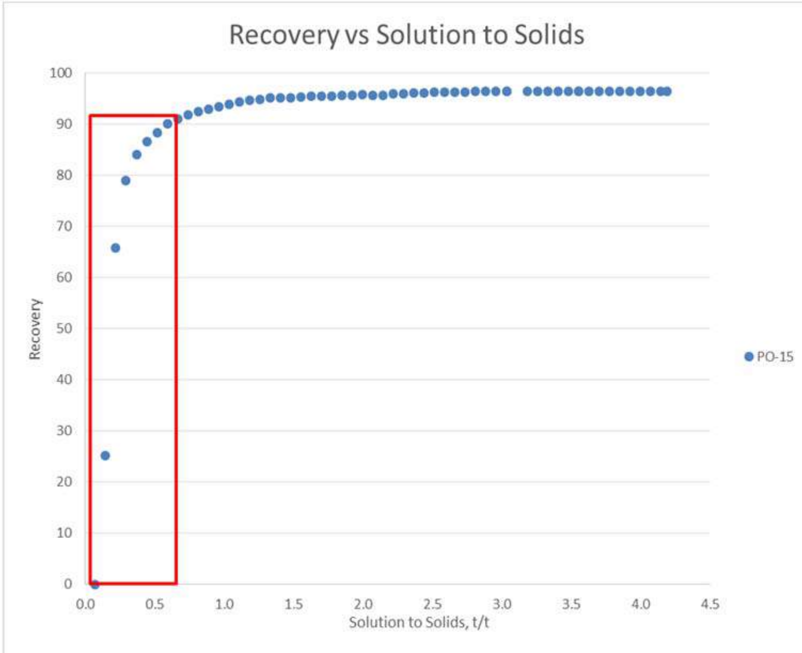
The Quema/Quemita core samples used to create the metallurgical composites for testing ranged in depth from 0 to 167 m.

13.9 Leach Cycle Duration

KCA estimates the field leach cycle duration from column leach test data. The method includes studying the shape of the Recovery versus Solution to Solids Ratio curve to determine where it bends or flattens. The “Solution to Solids Ratio” at the bend is converted to field time using the heap’s solution application rate. The Recovery versus Time curve is then studied to estimate the days between bend and when leaching is complete. The days are summed to determine a total leach time.

Typical curves follow which illustrate the procedure.

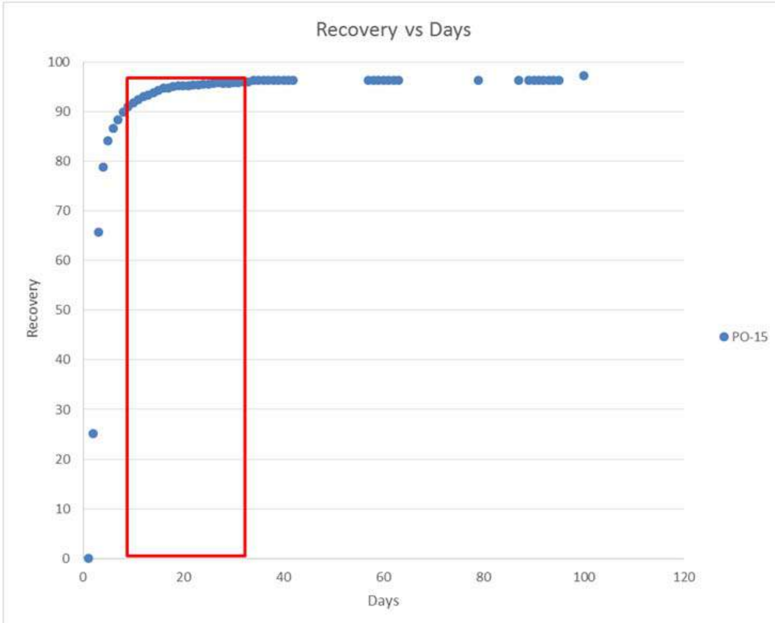
FIGURE 13.3
TYPICAL COLUMN TEST RECOVERY VS. SOLUTION TO SOLID RATIO
Sample PO-15 from McClelland Testing 16-October-2013



The Recovery versus Solution to Solids Ratio curve bends near a Solution to Solid Ratio value of 0.67. The heap design criteria results in a solution application rate of 0.02 t solution per t ore per day. The equivalent time in the field will be:

0.67 t solution/t ore / (0.02 t solution/t ore/day) = 33 days

FIGURE 13.4
TYPICAL COLUMN TEST RECOVERY VS. DAYS
Sample PO-15 from McClelland Testing 16-October-2013



The Recovery versus Days curve is studied to determine the days between when the Recovery versus Solution to Solids curve flattens and when recovery is complete. In the curve above, this is a period of 25 days. The total leach cycle is the sum of these values or 58 days.

The Cerro Quema oxide column test result for -25 and -75 mm material was studied to determine an average value for leach cycle. These sizes were chosen because they are both slightly coarser and finer that the actual design crush size of 80% -50 mm.

The column leach cycle results are shown in the following table.

TABLE 13.10
CERRO QUEMA LEACH CYCLE RESULT SUMMARY

Test	Crush	Material	Bending Point S/O at bend	Bending Point Rec. at Bend	Bending Point Lab Days	Bending Point Field Days	Recovery Complete Recovery	Recovery Complete Lab Days	Recovery Complete Total Days
P-1	-25mm	PO-08	1.05	82.8	14	52.3	93.8	44	96.3
P-2	-25mm	PO-15	0.67	91.1	9	33.3	97.2	25	58.3
P-3	-25mm	PO-16	0.59	86.8	8	29.5	96.7	45	74.5
P-5	-25mm	PO-11	1.71	35.2	23	85.5	97.0	22	107.5
LP-LTR	-75 mm	LP-LTR	0.77	86.4	28	38.6	90.3	40	50.6
LPE-TR	-75 mm	LPE-TR	0.27	75.9	15	13.5	90.9	50	48.5
LPW-HGT	-75 mm	LPW-HGT	0.78	85.6	30	39.0	96.5	64	73.0
QMP-TR	-75 mm	QMP-TR	0.59	80	25	29.7	93.1	65	69.7
Test 1	-25mm	LP1C	0.56	91.1	10	27.8	94.6	25	42.8
Test 2	-25mm	Q1C	0.56	87	10	28.1	93.3	20	38.1
Test 5	-25mm	LP1C	0.29	78.6	6	14.3	95.0	45	53.3
Test 10	-25mm	LP2C	0.57	76	6	28.3	98.5	65	87.3

The average of all tests is 64 days. A value of 70 days was chosen for the Cerro Quema heap leach.

13.10 Metal Recovery Projection

The column and bottle roll results show that at head grades less than 1 g/t Au, the gold extractions for La Pava are 92 %.

Quema/Quemita gold extractions are similar to La Pava at low grades with an average of approximately 92% (94% and 91% for column and bottle roll extractions, respectively).

The Quema/Quemita column and bottle roll results both show decreasing gold extraction with increasing grade. The column results show gold extraction decreasing by 4% for each increase of 1 g/t Au head grade; bottle roll results show it decreasing by 2% for each increase of 1 g/t Au head grade. It is assumed averaging these is appropriate and a 3% loss in extraction for each 1 g/t Au head grade will be used.

Based on the results from the samples tested, KCA recommends using a constant field gold recovery of 86% for all La Pava material above the cut off head grade and the low grade Quema/Quemita. Further, it is recommended to discount Quema/Quemita ore recovery at 3% recovery of gold per 1 g/t head grade. For Quema/Quemita, the following formula should be used to estimate gold recovery at varying head grades greater than 1 g Au/t:

$$\% Au = (86\% - ((g\ Au/t - 1) \times 3\%))$$

The silver recovery from column tests averaged about 16%. Based upon experience KCA recommends using a constant field silver recovery of 12%.

13.11 Reagent Consumption Projection

13.11.1 Cyanide

The column leach test cyanide consumptions were studied to provide a basis for the expected field cyanide consumption. To get this value, consumptions by sample were averaged, then the average of the averages was determined. This procedure was preferred to a simple average of all column test results which would over-weight results from samples with multiple column test results.

The column results show that trench samples consume 0.13 kg NaCN/t while core consumes 1.00 kg NaCN/t. The trench samples would have been mostly surface material. There may be an effect of depth or rock type on cyanide consumption.

The La Pava columns on Silica versus Mixed alteration materials had the same cyanide consumptions of 1.04 and 1.05 kg NaCN/t respectively,

The resulting average value of cyanide consumes is 0.73 kg NaCN/t material leached. Based on field experience, KCA takes 25% to 33% of the column cyanide consumption for the expected field cyanide consumption. The test value was divided by approximately three to determine the nominal field heap leach cyanide consumption of 0.25 kg/t.

The cyanide dosing pumps will be capable of adding cyanide at a design rate of 0.38 kg NaCN/t ore, adequate for the average "Core" cyanide consumption.

13.11.2 Cement and Lime

13.11.2.1 Silica Material

Silica material is rock material that KCA believes will cause no percolation problems when crushed to 80% passing 50 mm. Further, KCA believe this material will require no cement or agglomeration.

Lime will be required for pH control; the nominal dose is assumed to be 1.6 kg/t. The lime dose is based on the ton weighted average of the average lime used in column tests as follows:

Lime Dose = (5.245 Mt QQ*2.5 kg/t+13.383 Mt LP*1.2 kg/t) / (5.245+13.383 t Ore) = 1.6 kg/t

An emergency cement feeder is included in the design so that cement could be added, in addition to lime, if the mine accidently feeds clay material to the crusher. The emergency feeder will be loaded with 1.5 ton super sacks of cement. The emergency cement feeder could be used until pneumatic cement trucks arrive to fill the silo.

13.11.2.2 Clay Material

An examination of core on site indicates that near surface material is known to contain clay and little or no competent rock or gravel. Agglomeration and permeability tests were conducted in 1996 on mostly surface material and in 2014 on material that is thought to be typical of Years One through Five of mining.

KCA and Knight Piésold conducted tests in 1996. The results were reported in a memo dated November 14, 1996 titled “Results of Cerro Quema Agglomeration & Permeability Testing”.

Most samples are from trenches excavated on site. The trenches are surface material due to the limits of excavating with a track hoe. As noted above, the surface material contains a great deal of clay. The results show that the 1996 samples tested will require at least 10 kg/t cement for agglomeration when the heap height exceeds 20 m.

Two bulk samples (silica and silica clay) were taken from La Pava by Pershimco in March 2014. The samples were crushed to a P80 of 50 mm and blended to a recipe of 96% silica and 4% clay, thought to approximate ore to be mined in Years One through Five. . Permeability on an un-agglomerated sample was tested at loadings equivalent to heap heights between 80 and 180 m. The blended sample passed the permeability test.

Pershimco plans to strip and stockpile the high clay material and process it in Year Six of the mine life. The ore processed in Years One through Five will have to be monitored to ensure clay is not fed to the crusher inadvertently. The agglomeration process, planned in Year 6, will need to be closely monitored by the on-site laboratory to ensure that the stacked material has adequate strength and permeability.

14.0 MINERAL RESOURCE ESTIMATES

14.1 Introduction

The mineral resource estimate presented herein is reported in accordance with the Canadian Securities Administrators' National Instrument 43-101 and has been estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of a mineral resource will be converted into mineral reserve. Confidence in the estimate of Inferred mineral resources is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Mineral resources may also be affected by further infill and exploration drilling that may result in changes to subsequent mineral resource estimates.

All mineral resource estimation work reported herein was carried out by Eugene Puritch, P.Eng., Antoinne Yassa P.Geo., and Fred Brown, P.Geo., all independent Qualified Persons in terms of NI43-101. A draft copy of this report was reviewed by Pershimco Inc. for factual errors. Mineral resource modeling and estimation were carried out using the commercially available Gemcom GEMS software program. Open-pit optimization was carried out using the Whittle Four-X Single Element software program. The effective date of this mineral resource estimate is 30 June 2014.

14.2 Previous Resource Estimates

The most recent public mineral resource estimate for the Cerro Quema deposits reports 513,000 oxide-derived ounces of gold in the Indicated category; 50,600 oxide-derived ounces of gold in the Inferred category; 57,000 sulphide-derived ounces of gold in the Indicated category; and 30,400 sulphide derived ounces of gold in the Inferred category (Table 14-1). This mineral resource estimate has been superseded by the NI 43-101 compliant mineral resource estimate that is the subject of this report.

TABLE 14-1
SUMMARY OF DECLARED MINERAL RESOURCE ESTIMATES
AS OF SEPTEMBER 20, 2012

Source	Cutoff Au g/t	Class	Tonnes	Grade Au g/t	Grade Cu %	Au ozs	AuEq ozs
Oxide	0.15	Indicated	20,189,000	0.79		513,000	nil
Sulphide	0.30	Indicated	2,750,000	0.64	0.24	57,000	nil
Total		**Indicated**	**22,939,000**	**0.77**		**570,000**	**nil**
Oxide	0.15	Inferred	4,492,000	0.35		50,600	nil
Sulphide	0.30	Inferred	1,963,000	0.48	0.32	30,400	nil

Source	Cutoff Au g/t	Class	Tonnes	Grade Au g/t	Grade Cu %	Au ozs	AuEq ozs
Total		**Inferred**	**6,455,000**	**0.39**		**81,100**	**nil**
Sulphide	0.30	Inferred	1,470,000	1.63	0.86	nil	76,900

[1] Puritch E, Sutcliffe R, Wu Y, Armstrong T and Yassa A (2012). *Technical report and mineral resource estimate of the Cerro Quema project, Los Santos Province, Panama.* Technical report prepared by P&E Mining Consultants Inc. for Pershimco Resources Inc., dated September 20, 2012.

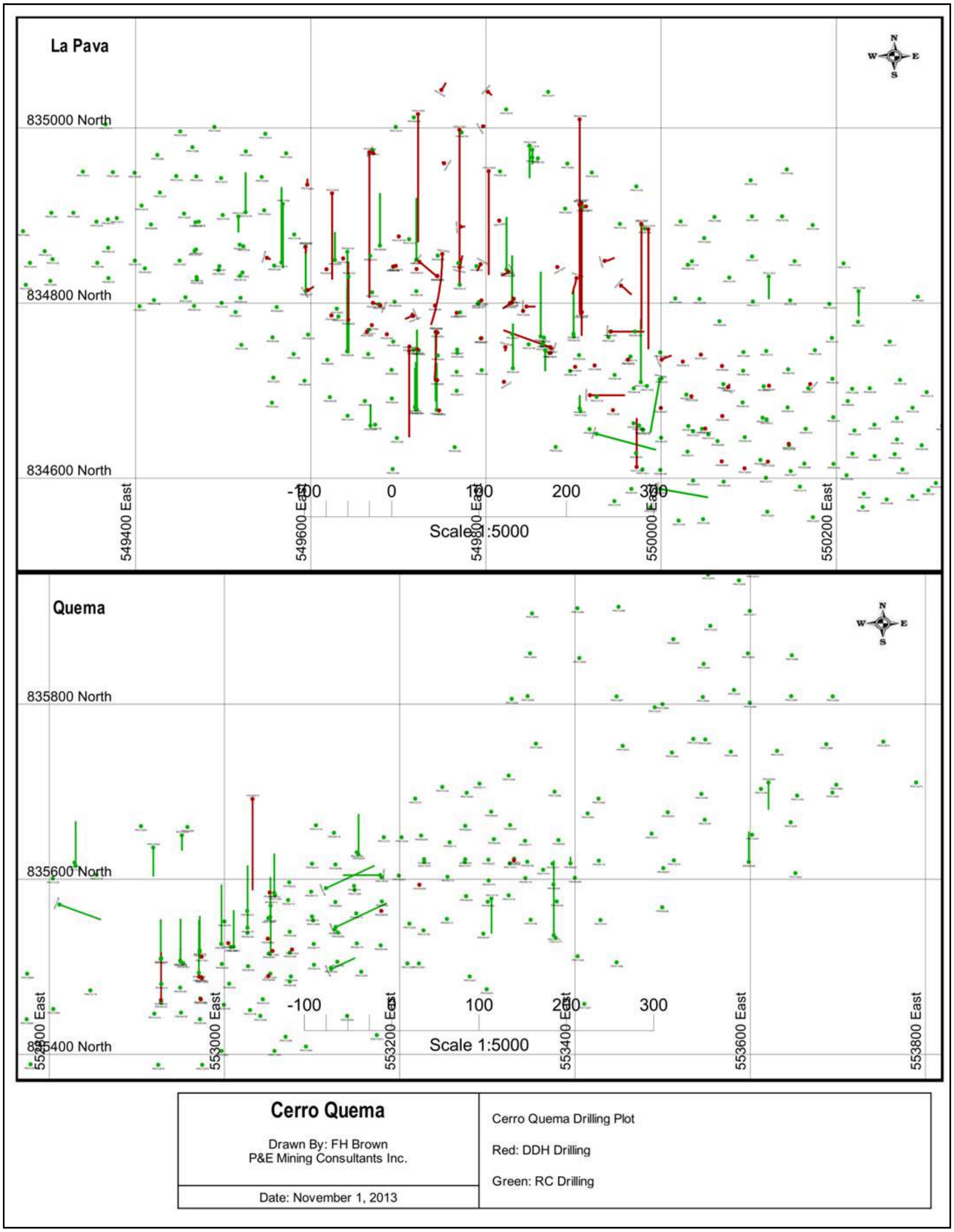
14.3 Data Supplied

All drilling data were provided by Pershimco electronically (Table 14-2). The information provided included collar coordinates, drillhole survey data, assay values and lithology intervals. All supplied coordinate data are relative to UTM NAD 83. The database as supplied by Pershimco contains 714 drillhole records. After accounting for drillholes outside of the immediate project area, re-drilled drillholes and drillholes without assay information, the database as implemented by P&E contains results from 641 drillholes (Figure 14-1).

TABLE 14-2
DATABASE SUMMARY

Type	Record Count	Total Meters
Diamond Drillhole	109	22882.39
Reverse Circulation	532	45459.43
Total	**641**	**68,341.82**

FIGURE 14.1
DRILLING LAYOUT



14.4 Database Validation

Industry standard validation checks were completed on the supplied databases. P&E typically validates a mineral resource database by checking for inconsistencies in naming conventions or analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, and missing interval and coordinate fields. P&E noted no significant validation errors. P&E believes that the supplied database is suitable for mineral resource estimation.

14.5 Specific Gravity

Pershimco supplied a total of 4,045 specific gravity measurements. The two highest reported specific gravity values of 28.44 and 32.18 were considered by P&E to be outliers and not used. The remaining specific gravity values range from 1.07 tonnes per cubic meter to 4.64 tonnes per cubic meter with an average reported specific gravity value of 2.66 tonnes per cubic meter. All specific gravity measurements were determined by Pershimco using water immersion of drillhole core.

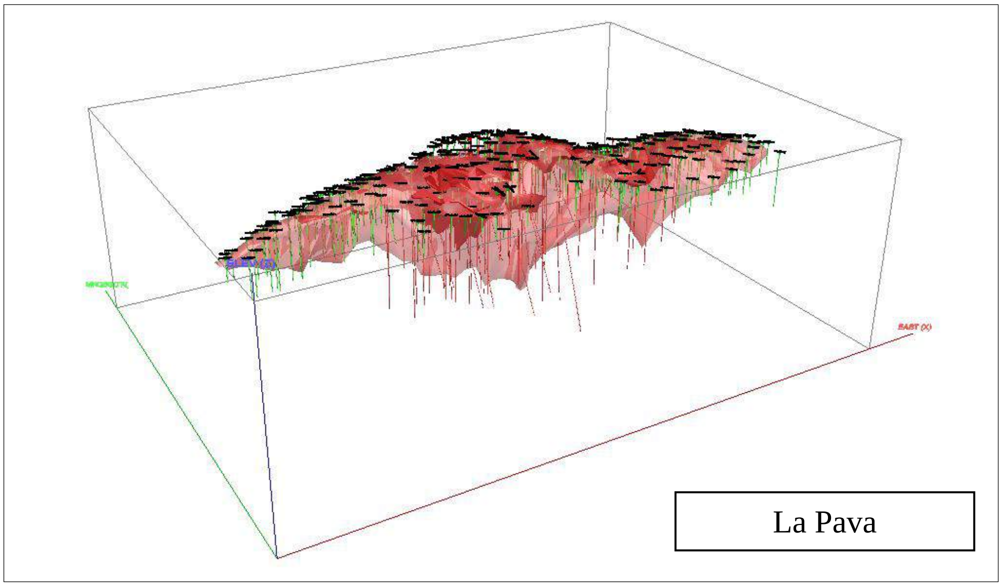
14.6 Gold Domain Modeling

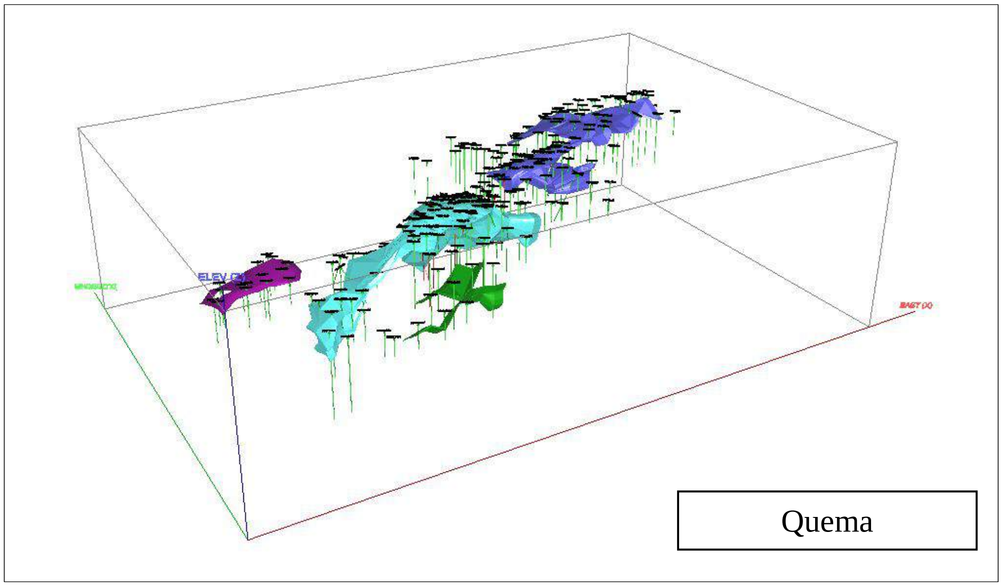
The Cerro Quema constraining mineralized domain boundaries for gold were determined from lithology, structure and grade boundary interpretation from visual inspection of drill hole sections. The domains were created with computer screen digitizing of drillhole intercepts by Antoine Yassa, P.Geo. The outlines for high-grade Au domains were influenced by the selection of mineralized material above 1.00 g/t Au that demonstrated lithological and structural zonal continuity along strike and down dip. The outlines for low-grade Au domains were influenced by the selection of mineralized material above 0.20 g/t Au. In some cases mineralization below the selected threshold was included for the purpose of maintaining zonal continuity. Smoothing was utilized to remove obvious jogs and dips in the constructed wireframes, and allowed for easier domain creation without triangulation errors from solids validation. On each section, polyline interpretations were digitized from drillhole to drillhole but not typically extended more than fifty meters into untested territory. Minimum constrained true width for interpretation was approximately 2.0 meters. Interpreted polylines from each section were then consolidated into three-dimensional wireframes. The resulting wireframes (domains) were used for statistical analysis, grade interpolation, rock coding and mineral resource reporting (Table 14-3 and Figure 14.2).

TABLE 14-3
MINERALIZATION DOMAINS

Location	Domain	Rock Code
La Pava	High Grade	110
La Pava	Low Grade	120
Quema	East High Grade	210
Quema	East Low Grade	220
Quema	West High Grade	310
Quema	West Low Grade	320
Quema	Low Grade – other	400
Mesita	Low Grade	500

Figure 14.2
DOMAIN MODELING-ISOMETRIC DISPLAY OF MODELED DOMAINS



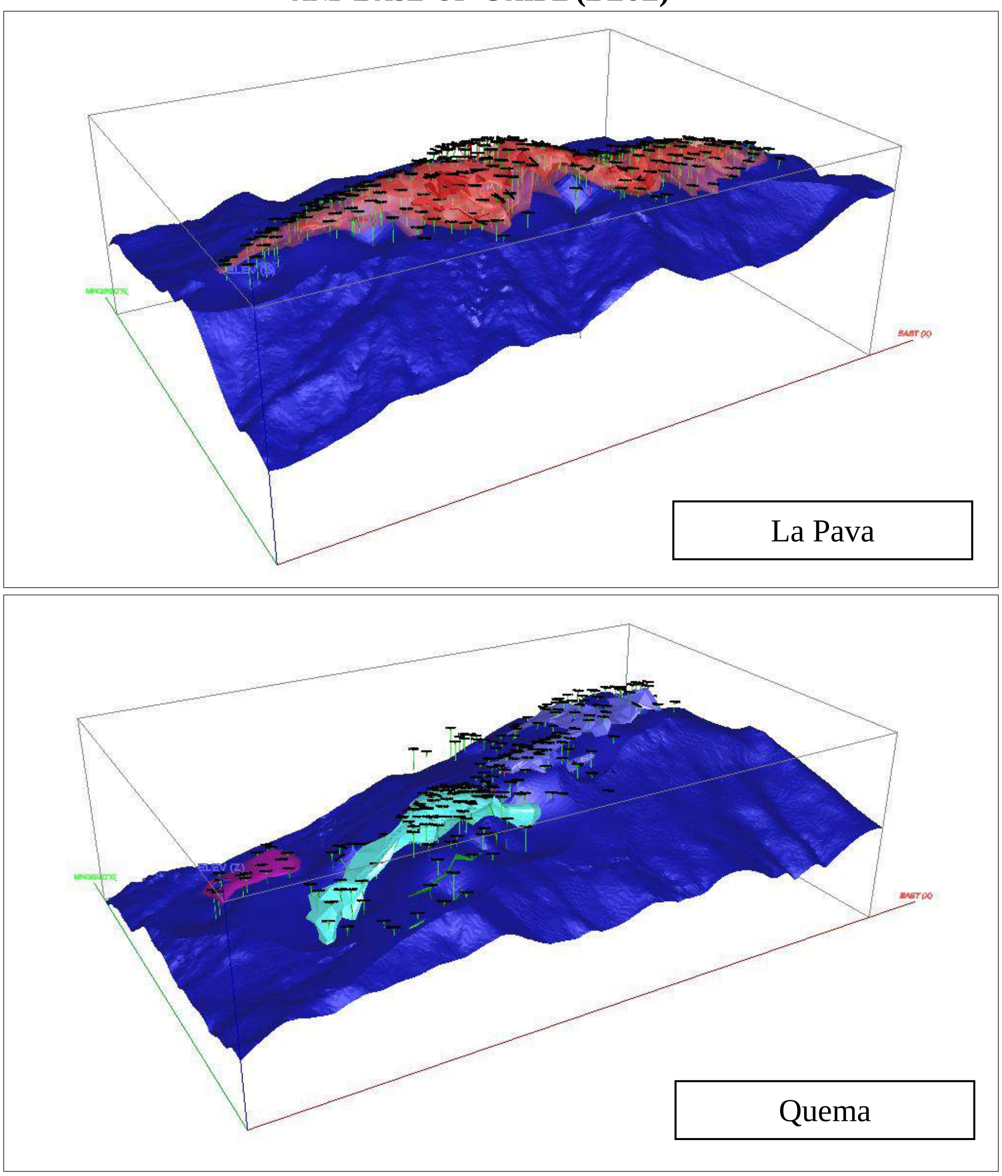


Note *View is to the NW, East-West axis is approximately 1,500m in length.*

14.7 Oxide & Sulphide Domain Modeling

Pershimco supplied a database containing 46,323 sulphur measurements obtained from drillhole core. Reported sulphur values range from 0.01% to 20.0%, with an average value of 3.34%. The base of the oxide zone was identified by examination of sulphur results viewed down the drillhole, and in general corresponds to a marked transition from low sulphur values (less than 0.10%) to high sulphur values (greater than 1.00%) at the selected boundary (Figure 14.3).

FIGURE 14.3
OXIDE MODELING -ISOMETRIC DISPLAY OF MODELED DOMAINS AND BASE-OF-OXIDE (BLUE)



Note: *View is to the NW, East-West axis is approximately 1,500m in length.*

14.8 Compositing

Assay sample lengths within the defined mineralization domains for the Cerro Quema data range from 0.30 m to 12.80 m, with an average sample length of 1.19 m. A total of 67% of the constrained assay sample lengths fall between 0.90m and 1.02m. In order to ensure equal sample support a compositing length of 1.00 m was selected for mineral resource estimation.

For Au, length-weighted composites were calculated within the defined mineralization domains, starting at the first point of intersection between the drillhole and the domain intersected, and halting upon exit from the domain wireframe. For Cu, length-weighted composites were calculated within the modeled oxide and sulphide zones. Composites were then assigned a rock code value based on the domain wireframe that the interval midpoint fell within. A nominal grade of 0.001 g/t was used to populate a small number of un-sampled Au intervals. Unsampled Cu intervals were treated as null values. A small number of residual composites that were less than 0.50 m in length were discarded. The resulting composite data were then exported to extraction files for statistical analysis and mineral resource estimation.

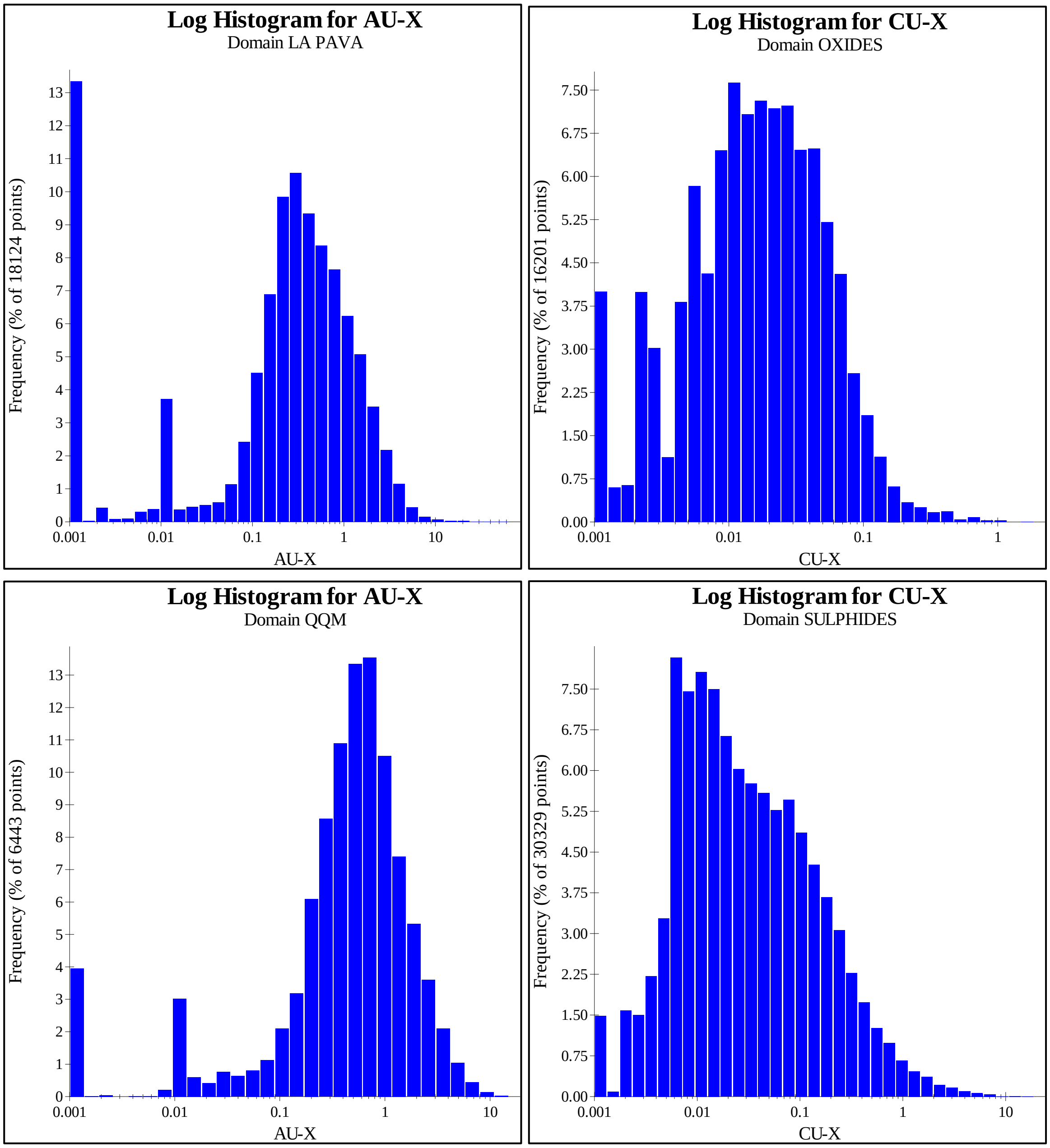
14.9 Composite Summary Statistics

P&E generated summary statistics for the composite samples from the defined domains (Table 14-4 and Figure 14.4). No significant correlation was noted between the Au and Cu composite values.

TABLE 14-4
DOMAIN COMPOSITE SUMMARY STATISTICS

	Domain	Samples	Min	Max	Mean	St Dev	CV
Au g/t	La Pava HG	4,459	0.001	63.834	1.487	1.959	1.317
	La Pava LG	13,665	0.001	7.367	0.319	0.370	1.157
	Quema East HG	293	0.449	15.094	2.676	2.047	0.765
	Quema East LG	1,009	0.001	3.141	0.344	0.272	0.789
	Quema Other	88	0.001	2.170	0.343	0.341	0.995
	Quema West HG	989	0.001	8.040	1.917	1.355	0.707
	Quema West LG	3,981	0.001	4.935	0.554	0.428	0.772
	Mesita	83	0.001	2.600	0.266	0.302	1.135
	Total Au	24,567	0.001	63.834	0.663	1.112	1.678
Cu %	La Pava Oxides	5,987	0.001	1.850	0.037	0.051	1.392
	La Pava Sulphides	3,125	0.001	18.757	0.476	0.974	2.046
	Quema Oxides	1,796	0.001	0.690	0.035	0.053	1.534
	Quema Sulphides	601	0.001	3.353	0.174	0.376	2.161
	Total Cu Oxides	7,783	0.001	1.850	0.036	0.051	1.424
	Total Cu Sulphides	3,726	0.001	18.757	0.427	0.912	2.133

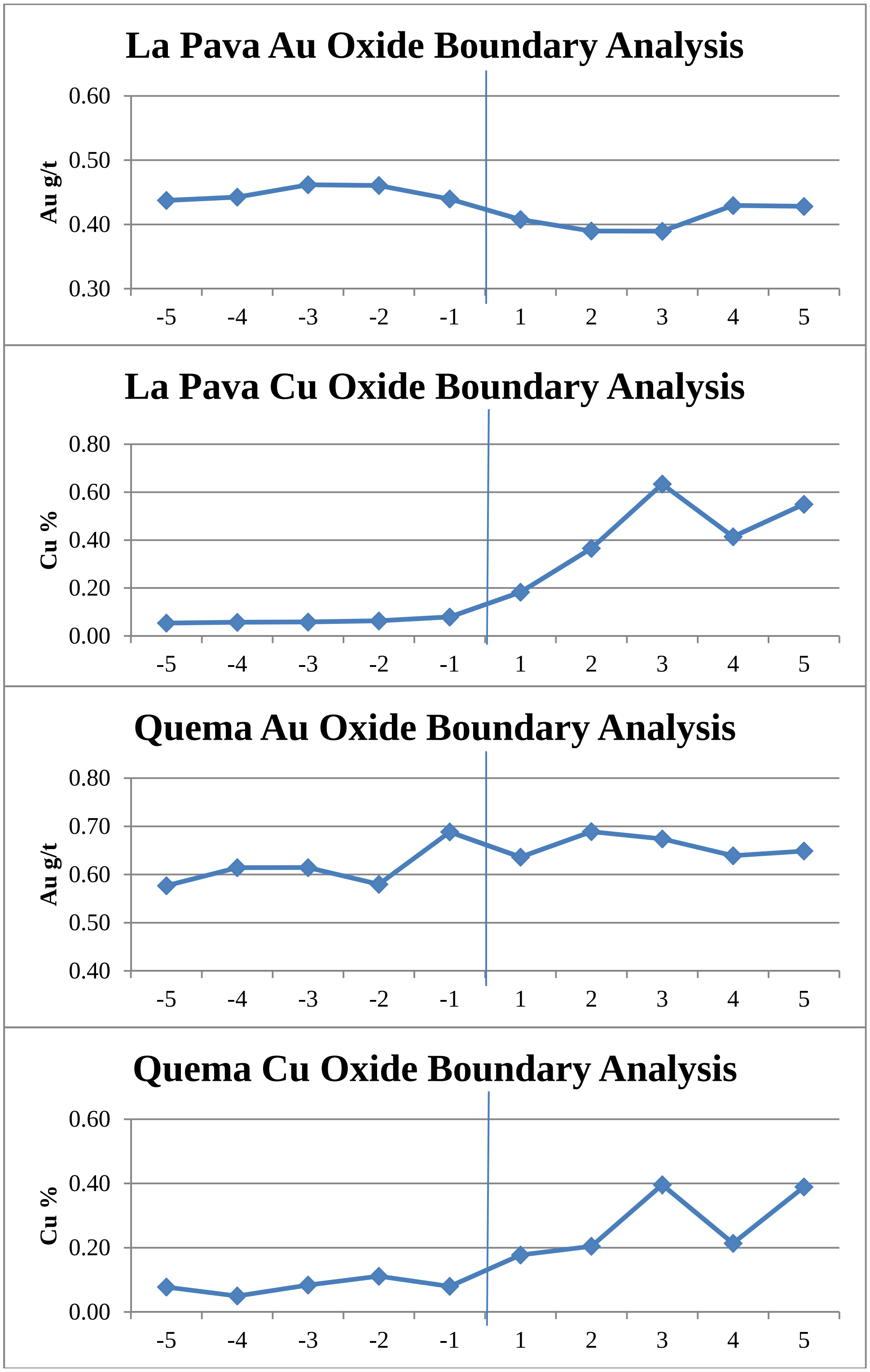
FIGURE 14.4
HISTOGRAMS OF AU AND CU COMPOSITE VALUES



14.10 Analysis

Boundary conditions across the defined oxide/sulphide contact were examined for composite samples across the contact. The rate of change of the Au sample grades is low, while the rate-of-change for Cu grades across the boundary is rapid (Figure 14-5). The oxide/sulphide boundary was therefore treated as a hard boundary for Cu estimation only.

FIGURE 14.5
BOUNDARY CONTACT PLOTS



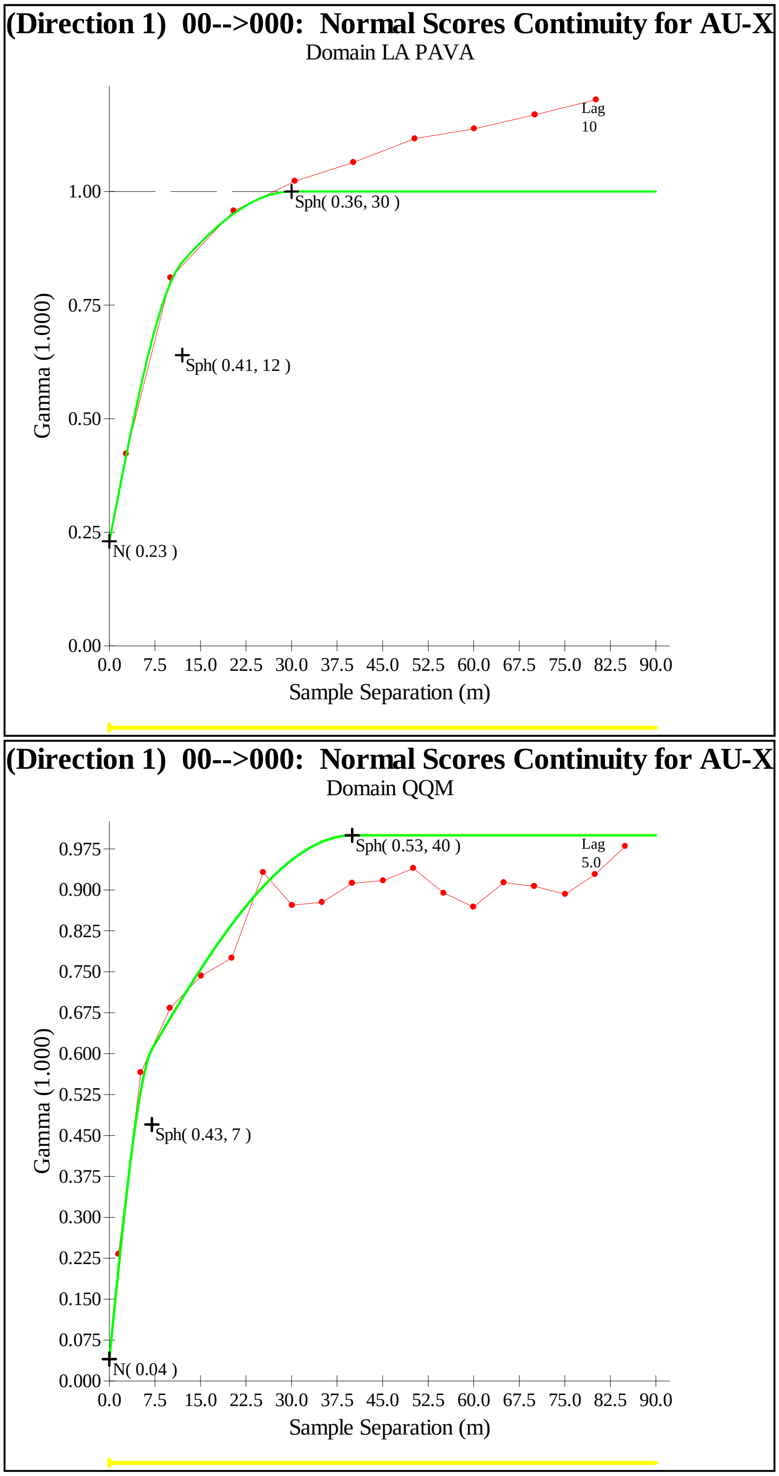
14.11 Treatment of Extreme Values

The presence of high-grade outliers for the composite data was evaluated by a review of composite summary statistics, histograms and probability plots. Based on a review of individual domain and global summary statistics, capping levels of 9.00 g/t Au and 2.20 % Cu were selected, equivalent to the 99.86 percentile for the total Au composite population and the 99.66 percentile for the total Cu composite population. A total of 27 Au composite values and 58 Cu composite values were capped to these thresholds prior to estimation.

14.12 Continuity Analysis

Domain-coded, composited sample data were used for continuity analysis. Strike orientations were developed using the modeled geometry of the mineralization. Dip and dip plane orientations were selected using orientations developed from variogram fans, which were assessed for geological reasonableness. Isotropic and anisotropic conventional and normal-scores experimental semi-variograms were then generated, with the nugget effect derived from the down-hole experimental semi-variogram set to the composite length. Variogram ranges were checked and iteratively refined for each model. Back-transformed variance contributions were calculated, and continuity ranges based on the isotropic semi-variogram models were then established for each variable by domain and used to define an appropriate search and classification strategy. Based on the results of the gold variography a range of 35 m was selected as an appropriate range for classification (Figure 14.6).

FIGURE 14.6
AU COMPOSITE EXPERIMENTAL SEMI-VARIOGRAMS



14.13 Block Model

Orthogonal block models were established with the block model limits selected so as to cover the extent of the mineralized domains, and with the block size reflecting the continuity of the mineralization and the drill hole spacing (Table 14-5). The block model consists of separate models for estimated grades, rock codes, percent, density and classification attributes. A percent block model was used to accurately represent the volume and tonnage contained within the constraining domains.

TABLE 14-5
BLOCK MODEL SETUP

La Pava				
Dimension	**Minimum**	**Maximum**	**Number**	**Size (m)**
Easting	549,100	550,500	280	5.0
Northing	834,370	835,395	410	2.5
Elevation	120	570	180	2.5
Rotation	None			
Quema/Quemita/Mesita				
Dimension	**Minimum**	**Maximum**	**Number**	**Size (m)**
Easting	552,430	553,930	300	5.0
Northing	835,140	836,090	380	2.5
Elevation	490	950	184	2.5
Rotation	None			

14.14 Estimation & Classification

Mineral resources were estimated and classified in compliance with guidelines established by the Canadian Institute of Mining, Metallurgy and Petroleum:

"A 'Measured Mineral Resource' is that part of a mineral resource for which quantity, grade or quality, densities, shape, and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough to confirm both geological and grade continuity."

"An 'Indicated Mineral Resource' is that part of a mineral resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and

economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough for geological and grade continuity to be reasonably assumed."

"An 'Inferred Mineral Resource' is that part of a mineral resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes."

Inverse Distance Cubed ("ID^3") weighting of capped composite values was used for block estimation. Composite data used during grade estimation were restricted to samples located within their respective domain. Between four and twenty composites from two or more drillholes were required for estimation, with a maximum of three composites derived from any single drillhole.

A bulk density model was developed using inverse distance squared interpolation of the nearest three specific gravity values. Specific gravity values were tagged to either the oxide or the sulphide domain.

Resource classification was implemented by generating three-dimensional envelopes around those parts of the block model for which the drillhole data and grade estimates met specific criteria. The resulting classifications were then iteratively refined to be geologically reasonable in order to prevent the generation of small, discontinuous areas of a higher confidence category being separated by a larger area of lower confidence mineral resources.

Measured mineral resources were defined by blocks located within thirty-five meters of eight or more drillholes, and then consolidated by an envelope digitized around the central area of blocks meeting this criteria. This process downgraded scattered isolated higher confidence blocks and combined the Measured mineral resources into a continuous unit. Measured resources were only reported for the La Pava deposit.

Indicated resources were defined by blocks located within thirty-five meters of two or more drillholes, and then consolidated by an envelope digitized around the central area of blocks meeting this criteria. This process downgraded scattered isolated higher confidence blocks and combined the Indicated mineral resources into a continuous unit.

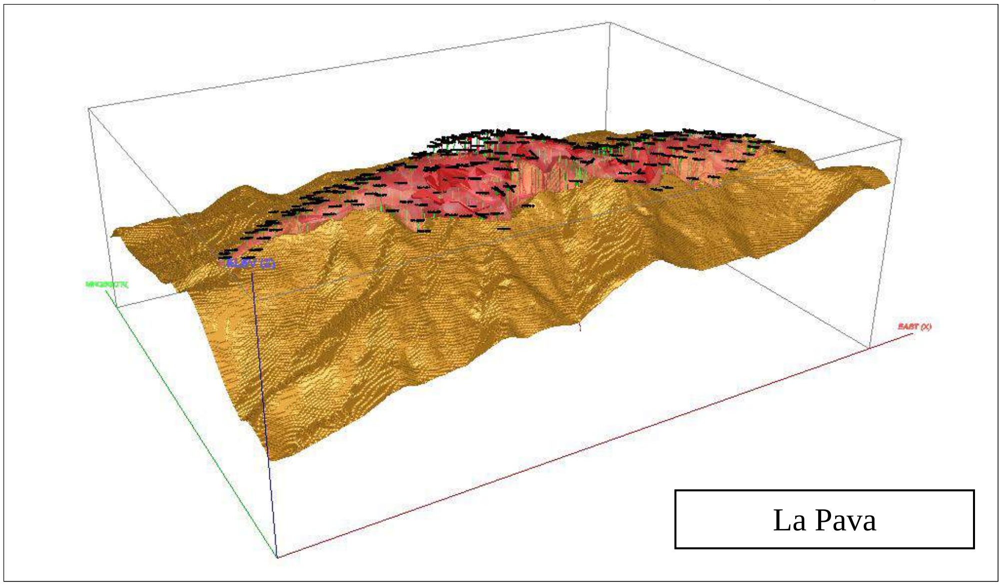
All remaining blocks estimated were classified as Inferred. Due to the limited drilling available for the Quema – Other and Mesita domains, these deposits were classified as Inferred.

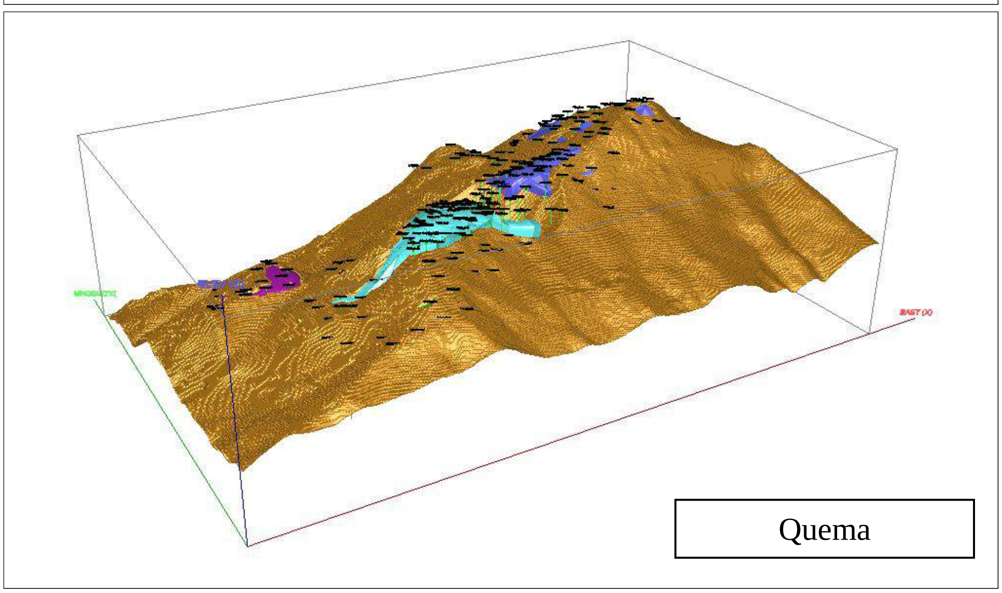
14.15 Mineral Resource Estimates

The Cerro Quema mineral resources are reported inside an optimized pit shell (Figure 14-7). The results from the optimized pit shell are used solely for the purpose of reporting mineral resources that have reasonable prospects for economic extraction, and the optimization is based on the economic parameters listed in Table 14-6. The pit shell was optimized based on Au block grades for oxide zones and Au-equivalent (AuEq) block grades for sulphide zones. The Au-equivalent block grades were calculated using the following formula:

AuEq = (Au g/t + (Cu% x 1.6))

FIGURE 14.7
ISOMETRIC DISPLAY OF OPTIMIZED PIT SHELLS (BROWN)





Note: *View is to the NW. East-West axis is approximately 1,500m in length*

TABLE 14-6
ECONOMIC PARAMETERS

	Oxide	Sulphide
Gold Price (USD/oz)	$1,500	$1,500
Copper Price (USD/lb)	NA	$3.50
Refining Cost (USD/oz)	$2.50	NA
Royalty	4%	4%
Au Process Recovery	86%	90%
Cu Process Recovery	0	90%
Ore Mining Cost (USD/t)	$2.20	$2.20
Waste Mining Cost (USD/t)	$2.00	$2.00
Au & AuEq Process Cost (USD/t)	$6.13	$12.00
G&A Cost (USD/t)	$1.00	$1.00
Pit Slope	40 deg	50 deg
Cutoff (Au g/t)	0.18	0.31

The mineral resource estimates for the Cerro Quema deposits are reported with an effective date of 30 June 2014 (Table 14-7).

TABLE 14-7
SUMMARY OF THE CERRO QUEMA IN-PIT MINERAL RESOURCES(1)(2)(3)

La Pava							
Zone	**Grade Group**	**Cutoff Au g/t**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**Au Ounces**
Oxides	Measured	0.18	7,052,600	0.82	0.04	NA	184,900
	Indicated	0.18	10,896,100	0.57	0.04	NA	201,100
	Meas & Ind	0.18	17,948,700	0.67	0.04	NA	386,000
	Inferred	0.18	331,700	0.36	0.03	NA	3,800
Zone	**Grade Group**	**Cutoff AuEq g/t**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq Ounces**
Sulphides	Measured	0.31	802,000	0.44	0.22	0.80	20,600
	Indicated	0.31	7,664,900	0.39	0.38	1.00	246,100
	Meas & Ind	0.31	8,466,900	0.39	0.36	0.98	266,700
	Inferred	0.31	75,000	0.28	0.2	0.61	1,500
La Pava	**Grade Group**	**Cutoff**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**Au + AuEq Ounces**
Total	Measured	----	7,854,600	0.78	0.06	0.81	205,500
	Indicated	----	18,561,000	0.50	0.18	0.75	447,200
	Meas & Ind	----	26,415,600	0.58	0.14	0.77	652,700
	Inferred	----	406,700	0.35	0.06	0.41	5,300

Quema + Quemita + Mesita							
Zone	**Grade Group**	**Cutoff Au g/t**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**Au Ounces**
Oxides	Measured	0.18	0	0	0	NA	0
	Indicated	0.18	5,983,700	0.86	0.03	NA	166,400
	Meas & Ind	0.18	5,983,700	0.86	0.03	NA	166,400
	Inferred	0.18	335,300	0.38	0.03	NA	4,100
Zone	**Grade Group**	**Cutoff AuEq g/t**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq Ounces**
Sulphides	Measured	0.31	0	0	0	0	0
	Indicated	0.31	2,539,000	0.49	0.15	0.73	59,600
	Meas & Ind	0.31	2,539,000	0.49	0.15	0.73	59,600
	Inferred	0.31	298,100	0.30	0.17	0.57	5,500
QQM	**Grade Group**	**Cutoff**	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**Au + AuEq Ounces**
Total	Measured	----	0	0	0	0.00	0
	Indicated	----	8,522,700	0.75	0.07	0.82	226,000
	Meas & Ind	----	8,522,700	0.75	0.07	0.82	226,000
	Inferred	----	633,400	0.34	0.10	0.47	9,600

*(1) Mineral resources are reported inside an optimized pit shell. AuEq was calculated using Au + 1.6 * Cu.*
(2) Numbers may not add up due to rounding.
(3) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
(4) The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred resources as an Indicated or Measured mineral resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured mineral resource category.

(5) The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council..

14.16 Resource Sensitivity

An in-pit global sensitivity analysis to the updated mineral resource was also completed simultaneously with the in-pit mineral resource estimate (Table 14-8). **The inclusion of this sensitivity analysis is not meant to supersede or replace the results of the in-pit mineral resource estimate and should not be construed as a mineral resource.**

TABLE 14-8
LA PAVA IN-PIT GLOBAL SENSITIVITY OF THE MINERAL RESOURCE

La Pava																	
Class	Cutoff AuEq g/t	Tonnes	Au g/t	Au ozs	Cu %	Class	Cutoff AuEq g/t	Tonnes	Au g/t	Au ozs	Cu %	Class	Cutoff AuEq g/t	Tonnes	Au g/t	Au ozs	Cu %
Totals for La Pava ROCKGROUP OXIDE + SULPHIDE																	
MEASURED	1.00	2,014,000	1.70	110,000	0.08	INDICATED	1.00	3,988,100	1.00	128,800	0.49	INFERRED	1.00	22,400	1.04	700	0.28
	0.90	2,284,900	1.60	117,800	0.08		0.90	4,613,300	0.94	139,600	0.46		0.90	27,900	0.92	800	0.28
	0.80	2,605,300	1.50	126,000	0.07		0.80	5,414,500	0.88	152,700	0.43		0.80	33,500	0.85	900	0.28
	0.70	3,055,500	1.39	136,200	0.07		0.70	6,437,900	0.82	169,000	0.39		0.70	40,400	0.81	1,000	0.25
	0.60	3,688,500	1.25	148,800	0.07		0.60	7,841,300	0.75	189,900	0.34		0.60	55,300	0.72	1,300	0.22
	0.50	4,451,000	1.13	161,600	0.06		0.50	9,658,500	0.69	214,100	0.30		0.50	77,200	0.65	1,600	0.18
	0.40	5,384,300	1.01	174,200	0.06		0.40	11,905,200	0.63	240,300	0.25		0.40	117,900	0.58	2,200	0.14
	0.31	6,378,400	0.90	184,700	0.06		0.31	14,410,600	0.57	265,900	0.22		0.31	216,800	0.45	3,100	0.10
	0.18	7,964,300	0.77	196,800	0.06		0.18	18,969,800	0.49	300,100	0.18		0.18	451,100	0.33	4,800	0.07
	0.10	8,762,700	0.71	200,400	0.05		0.10	20,952,300	0.46	309,100	0.16		0.10	525,900	0.3	5,100	0.06
Totals for La Pava ROCKGROUP OXIDE																	
MEASURED	1.00	1,832,100	1.78	105,000	0.04	INDICATED	1.00	1,391,600	1.83	81,800	0.03	INFERRED	1.00	11,900	1.49	600	0.04
	0.90	2,069,700	1.69	112,300	0.04		0.90	1,555,600	1.73	86,800	0.03		0.90	12,900	1.45	600	0.04
	0.80	2,347,500	1.59	119,800	0.04		0.80	1,794,100	1.62	93,300	0.03		0.80	15,000	1.36	700	0.04
	0.70	2,738,400	1.47	129,200	0.04		0.70	2,168,200	1.47	102,200	0.03		0.70	18,900	1.23	800	0.04
	0.60	3,285,400	1.33	140,600	0.04		0.60	2,768,400	1.29	114,700	0.04		0.60	27,800	1.04	900	0.05
	0.50	3,947,100	1.20	152,300	0.04		0.50	3,599,800	1.12	129,300	0.04		0.50	44,600	0.85	1,200	0.05
	0.40	4,735,800	1.08	163,700	0.04		0.40	4,872,900	0.94	147,500	0.04		0.40	82,500	0.67	1,800	0.05
	0.31	5,576,400	0.97	173,200	0.04		0.31	6,745,800	0.78	168,700	0.04		0.31	141,800	0.53	2,400	0.04
	0.18	7,052,600	0.82	184,900	0.04		0.18	10,896,100	0.57	201,100	0.04		0.18	331,700	0.36	3,800	0.03
	0.10	7,826,700	0.75	188,400	0.04		0.10	12,787,100	0.51	209,900	0.04		0.10	405,000	0.32	4,200	0.03
Totals for La Pava ROCKGROUP SULPHIDE																	
MEASURED	1.00	181,900	0.85	5,000	0.50	INDICATED	1.00	2,596,400	0.56	47,100	0.74	INFERRED	1.00	10,500	0.53	200	0.55
	0.90	215,200	0.80	5,500	0.46		0.90	3,057,700	0.54	52,800	0.68		0.90	15,100	0.48	200	0.49
	0.80	257,800	0.74	6,100	0.43		0.80	3,620,500	0.51	59,500	0.62		0.80	18,500	0.44	300	0.47
	0.70	317,100	0.69	7,000	0.38		0.70	4,269,700	0.49	66,800	0.56		0.70	21,400	0.43	300	0.44
	0.60	403,100	0.63	8,200	0.33		0.60	5,072,900	0.46	75,200	0.51		0.60	27,500	0.39	300	0.39
	0.50	503,800	0.57	9,300	0.29		0.50	6,058,800	0.44	84,800	0.45		0.50	32,700	0.37	400	0.36
	0.40	648,500	0.50	10,500	0.25		0.40	7,032,400	0.41	92,800	0.40		0.40	35,400	0.35	400	0.35
	0.31	802,000	0.44	11,400	0.22		0.31	7,664,900	0.39	97,100	0.38		0.31	75,000	0.28	700	0.20
	0.18	911,700	0.41	11,900	0.21		0.18	8,073,600	0.38	99,000	0.36		0.18	119,400	0.24	900	0.15
	0.10	936,000	0.40	11,900	0.20		0.10	8,165,200	0.38	99,100	0.36		0.10	120,800	0.24	900	0.15

TABLE 14-9
QQM IN-PIT GLOBAL SENSITIVITY OF THE MINERAL RESOURCE

Quema, Quemita & Mesita											
Class	**Cutoff AuEq g/t**	**Tonnes**	**Au g/t**	**Au ozs**	**Cu %**	**Class**	**Cutoff AuEq g/t**	**Tonnes**	**Au g/t**	**Au ozs**	**Cu %**
Totals for QQM ROCKGROUP OXIDE + SULPHIDE											
INDICATED	1.00	1,720,300	1.74	96,400	0.13	**INFERRED**	1.00	16,100	0.37	200	0.50
	0.90	1,993,900	1.62	104,100	0.12		0.90	20,100	0.41	300	0.45
	0.80	2,470,900	1.46	115,900	0.11		0.80	30,500	0.44	400	0.37
	0.70	3,231,000	1.27	132,000	0.10		0.70	74,800	0.33	800	0.34
	0.60	4,347,200	1.09	152,700	0.09		0.60	124,500	0.35	1,400	0.27
	0.50	5,678,700	0.95	173,900	0.08		0.50	191,200	0.37	2,200	0.21
	0.40	7,013,400	0.85	191,400	0.07		0.40	361,200	0.37	4,300	0.14
	0.31	7,900,300	0.79	201,100	0.07		0.31	555,200	0.35	6,300	0.11
	0.18	8,593,800	0.75	206,600	0.07		0.18	634,100	0.34	7,000	0.10
	0.10	8,793,000	0.73	207,500	0.07		0.10	635,100	0.34	7,000	0.10
Totals for QQM ROCKGROUP OXIDE											
INDICATED	1.00	1,374,900	1.97	87,000	0.04	**INFERRED**	1.00	1,000	1.35	0	0.02
	0.90	1,571,300	1.84	93,000	0.04		0.90	1,800	1.16	100	0.02
	0.80	1,904,100	1.67	102,100	0.04		0.80	3,500	1.01	100	0.02
	0.70	2,380,500	1.48	113,500	0.03		0.70	5,100	0.93	200	0.02
	0.60	3,061,300	1.30	127,700	0.03		0.60	14,000	0.74	300	0.02
	0.50	3,837,900	1.15	141,400	0.03		0.50	27,600	0.65	600	0.02
	0.40	4,645,000	1.03	153,100	0.03		0.40	119,200	0.49	1,900	0.03
	0.31	5,361,300	0.94	161,300	0.03		0.31	257,200	0.41	3,400	0.03
	0.18	5,983,700	0.86	166,400	0.03		0.18	335,300	0.38	4,100	0.03
	0.10	6,160,400	0.84	167,200	0.03		0.10	336,300	0.38	4,100	0.03
Totals for QQM ROCKGROUP SULPHIDE											
INDICATED	1.00	345,400	0.84	9,300	0.48	**INFERRED**	1.00	15,100	0.3	100	0.54
	0.90	422,600	0.81	11,100	0.42		0.90	18,300	0.33	200	0.49
	0.80	566,800	0.76	13,900	0.35		0.80	27,100	0.36	300	0.42
	0.70	850,500	0.67	18,500	0.29		0.70	69,700	0.29	600	0.36
	0.60	1,285,900	0.60	25,000	0.23		0.60	110,600	0.31	1,100	0.30
	0.50	1,840,800	0.55	32,500	0.18		0.50	163,500	0.32	1,700	0.24
	0.40	2,368,400	0.50	38,300	0.16		0.40	242,000	0.31	2,400	0.19
	0.31	2,539,000	0.49	39,800	0.15		0.31	298,100	0.3	2,900	0.17
	0.18	2,610,100	0.48	40,200	0.15		0.18	298,800	0.3	2,900	0.17
	0.10	2,632,700	0.48	40,300	0.15		0.10	298,800	0.3	2,900	0.17

14.17 Validation

The block model was validated visually by the inspection of successive section lines in order to confirm that the model correctly reflects the distribution of high-grade and low-grade samples (Figures 14.8 through 14.11).

FIGURE 14.8
LA PAVA CROSS-SECTION SHOWING GOLD GRADES

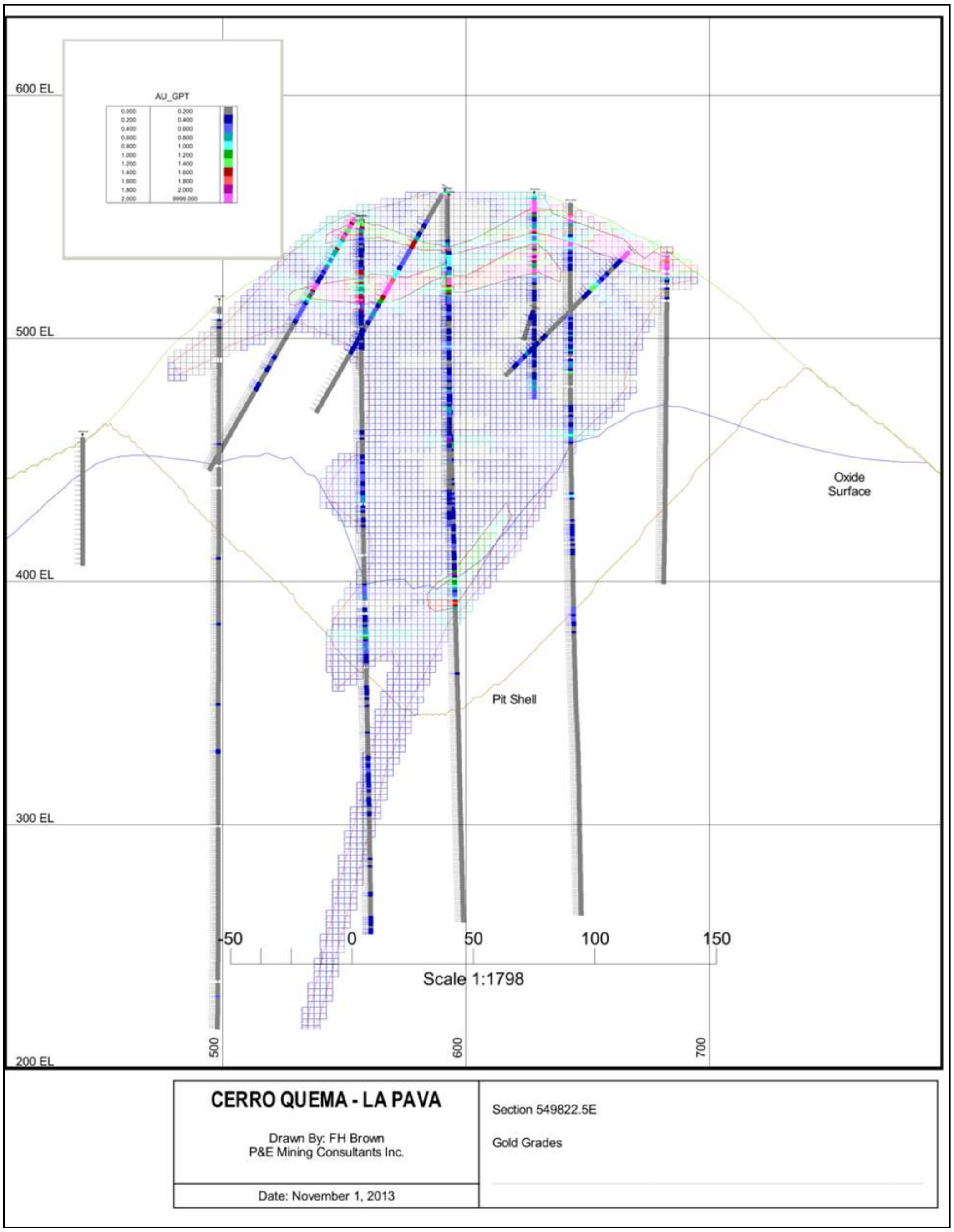


FIGURE 14.9
LA PAVA CROSS-SECTION SHOWING COPPER GRADES

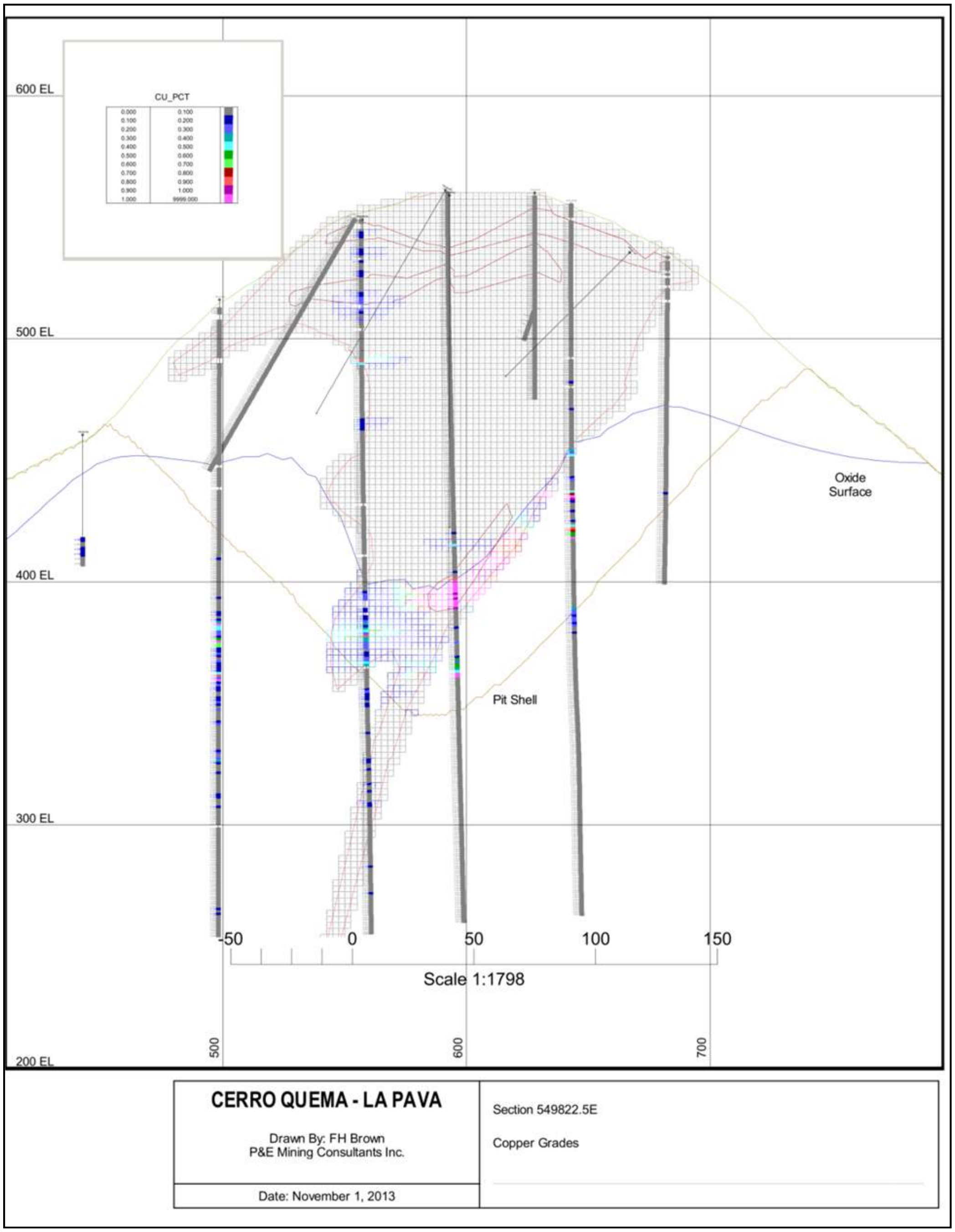


FIGURE 14.10
QUEMA CROSS-SECTION SHOWING GOLD GRADES

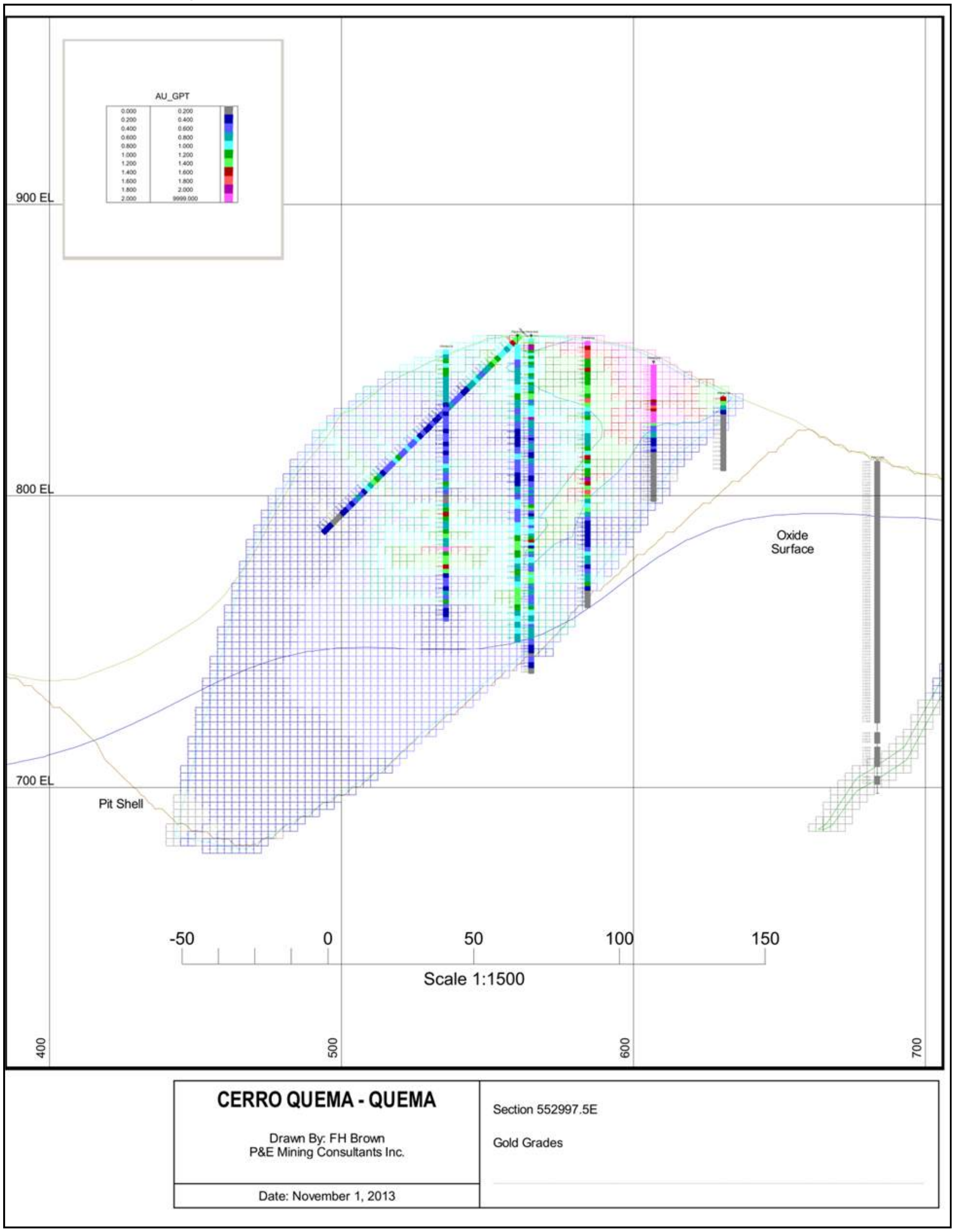
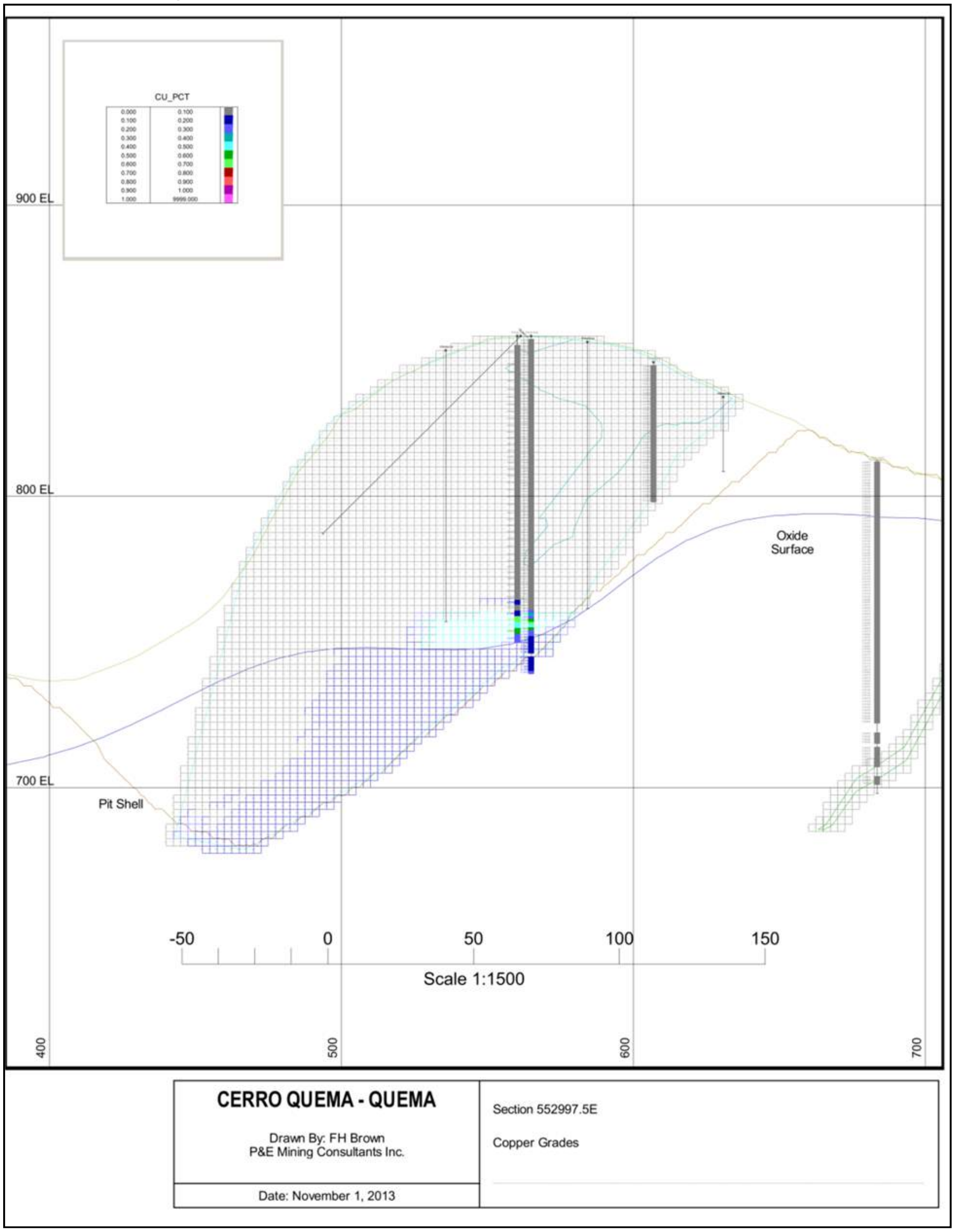


FIGURE 14.11
QUEMA CROSS-SECTION SHOWING COPPER GRADES



The block models were also evaluated by comparing the ID^3 block estimates to a nearest neighbor estimate ("NN") at zero cutoff as well as to the mean of the uncapped composite data. No significant global bias between the block model and the input data was noted (Table 14-9).

TABLE 14-10
DOMAIN VALIDATION STATISTICS

Domain	Model Mean Au g/t	NN Mean Au g/t	Composite Mean Au g/t
La Pava HG	1.46	1.45	1.487
La Pava LG	0.33	0.33	0.319
Quema East HG	2.64	2.55	2.676
Quema East LG	0.33	0.33	0.344
Quema Other	0.32	0.35	0.343
Quema West HG	1.91	1.91	1.917
Quema West LG	0.49	0.48	0.554
Mesita	0.26	0.29	0.266
Domain	**Model Mean Cu %**	**NN Mean Cu %**	**Composite Mean Cu %**
La Pava Oxides	0.04	0.04	0.037
La Pava Sulphides	0.28	0.35	0.476
Quema Oxides	0.03	0.03	0.035
Quema Sulphides	0.12	0.14	0.174

The total estimated volume reported at zero cut-off was also compared by domain to the calculated volume of the defining mineralization wireframe (Table 14-10). All reported volumes fall within acceptable tolerances.

TABLE 14-11
VOLUME COMPARISON

Domain	Resource Volume m^3	Wireframe Volume m^3
La Pava	14,240,700	14,240,500
Quema East	1,412,500	1,407,200
Quema West	3,866,900	3,865,500
Quema Other	120,200	120,000
Mesita	140,300	140,400
Total	**19,780,600**	**19,653,600**

15.0 MINERAL RESERVE ESTIMATE

The mineral reserve is that portion of the mineral resource that has been identified as mineable within a design pit. The mineral reserve estimate incorporates ore mining parameters such as mining recovery and waste rock dilution. The mineral reserves form the basis for the Pre-Feasibility Study mine production schedule and mine plans.

The Cerro Quema mining operation will consist of open-pit mining only with no underground mining component planned, hence, all of the ore reserves are deemed to be open pit reserves.

No Inferred mineral resources are used in the estimation of the mineral reserve.

The mineral reserves are developed in a three-step process.

i. Select an optimized open-pit shell to be used as the basis for the pit design;
ii. Develop an operational pit design that incorporates benches, detailed pit slope criteria, and truck haulage ramps;
iii. Estimate the in-pit tonnage contained within the operational pit that meets or exceeds the cut-off grade criteria and apply the ore mining parameters (i.e. mining losses and dilution) to that tonnage. The final result is the mineral reserve.

15.1 Mineral Reserve Summary

The mineral reserves for the Cerro Quema Project will be provided by two separate pits: the La Pava pit and the Quema pit. Four mineralized deposits have been identified at the Cerro Quema Project. They are the La Pava deposit, and the Quema, Quemita, La Mesita Deposits. Two separate block models were developed; a block model for the La Pava deposit and a second block model containing the other three deposits. For mineral resource reporting purposes, the latter three deposits have been grouped into the Quema Pit area.

The Proven and Probable mineral reserves for the Project are summarized in Table 15-1. A cut-off grade of 0.21 g/t Au is used for reporting all reserves.

Three ore types have been indentified based on their different mining and processing characteristics. The mineral reserves are the combined tonnage of all three ore types. Section 16 describes the mining schedule for the different ore types.

- “Silica” ore represents the bulk (95.5%) of the tonnage and is a moderately hard ore type.
- “Clay” ore is a highly weathered material that can be soft and sticky. Due to the potential issues with crushing and agglomerating this material, it is stockpiled and

processed at the end of the mine life. Clay ore represents about 3.5% of the pit tonnage.
- "Fresh" ore represents a very minor portion (1%) of the pit tonnage and consists of unweathered material that transitions into the deeper sulphide gold-copper bearing mineralization. Some of this material will be encountered along the pit bottom.

TABLE 15-1
CERRO QUEMA MINERAL RESERVES

		Ore (Mt)	Au (g/t)	Cu (%)	Gold Oz Contained
La Pava					
	Proven	6.82	0.80	0.04	176,000
	Probable	7.40	0.67	0.04	159,000
	Sub-total	14.22	0.73	0.04	335,000
Quema					
	Proven	-	-	-	-
	Probable	5.49	0.86	0.03	153,000
	Sub-total	5.49	0.86	0.03	153,000
Total					
	Proven	6.82	0.80	0.04	176,000
	Probable	12.89	0.75	0.03	312,000
	Total	19.71	0.77	0.04	488,000

15.2 Pit Optimization

The Cerro Quema open-pits have been optimized using industry standard methods based on the criteria described in the following section.

The pit optimization step uses the Lerches-Grossman algorithm in CAE NPV Scheduler software. The procedure is applied to the resource blocks in the model using mining, processing and G&A costs, metallurgical recovery, and pit slope criteria.

Inferred resources are considered as waste material in the optimization process for this Pre-Feasibility Study.

15.2.1 Optimization Parameters

Table 15-2 lists the parameters used in the pit optimization step. A gold price of US$1,300/oz was used as the base case in the optimization.

Only the oxide resources in each pit were used in the optimization step and the underlying gold-copper-bearing sulphide mineralization was considered as waste in the optimization.

The operating costs shown in Table 15-2 are preliminary for optimization purposes only and updated operating costs developed from the results of the engineering work are used in the economic modeling.

TABLE 15-2
CERRO QUEMA OPTIMIZATION PARAMETERS

		La Pava	**Quema, Quemita, La Mesita**
	Unit	Oxide	Oxide
Ore Mining	$/t mined	$2.20	$2.60
Waste Mining	$/t mined	$2.00	$2.00
Process	$/t proc	$6.13	$6.13
G&A	$/t proc	$1.00	$1.00
Leach recovery	%	86%	86%[1]
old Price	$/oz	$1,300	$1,300
Refining Cost	$/oz	$2.50	$2.50
Royalty[2]	%	4.0%	4.0%
Cut-off Grade	Au g/t	0.21	0.21
Slope Angles	deg	40	40

1. *Recovery is 86% if gold grade is 1 g Au/t or less. If gold grade is greater than 1 g Au/t, Recovery % = (86% - ((gpt Au -1) x 3%))*
2. *It was subsequently specified that the royalty should be 4.6% instead of 4.0% however the optimization was not repeated since this impact was not deemed significant.*

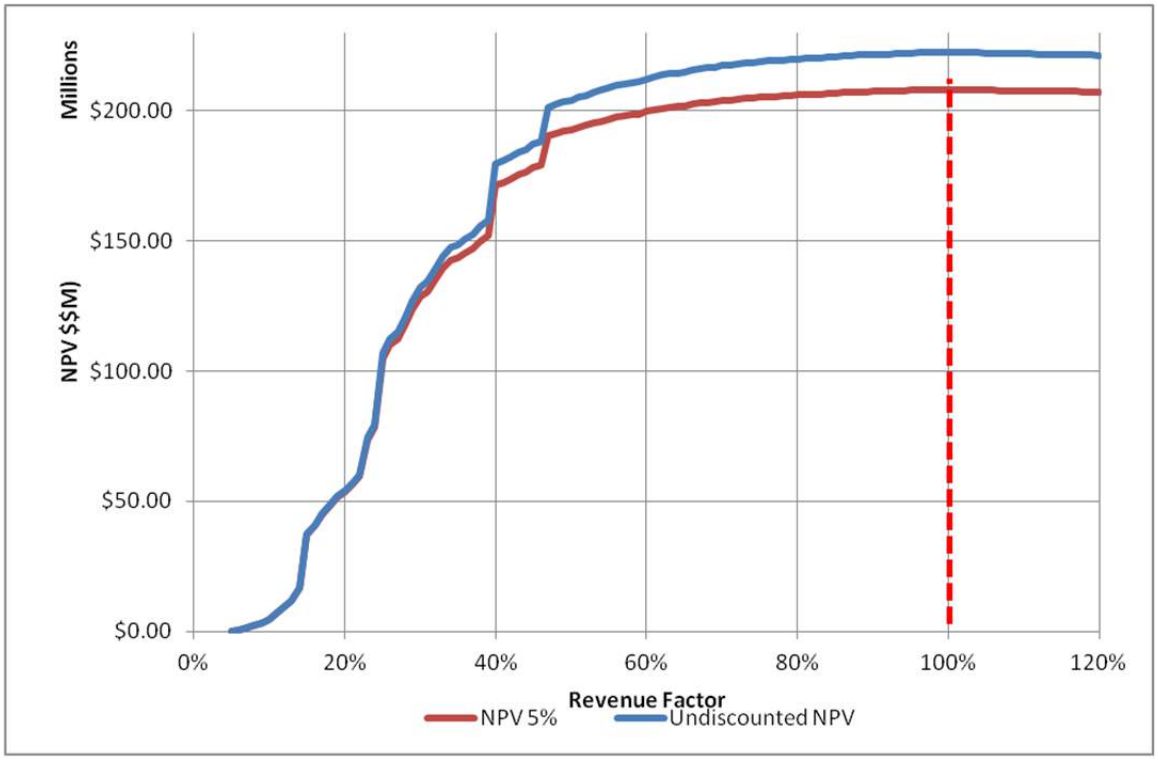
15.2.2 Optimization Results and Pit Selection

A series of pit optimization analyses were undertaken using variable gold revenue factors, ranging from 5% to 120%, with $1,300/oz being the 100% (base case) revenue factor. The variable revenue factors modify the gold value in each block, thereby changing the profit margin per block. An optimized pit shell is defined for each revenue factor during the optimization process and pits will tend to get larger at higher revenue factors.

15.2.2.1 La Pava Deposit Optimization

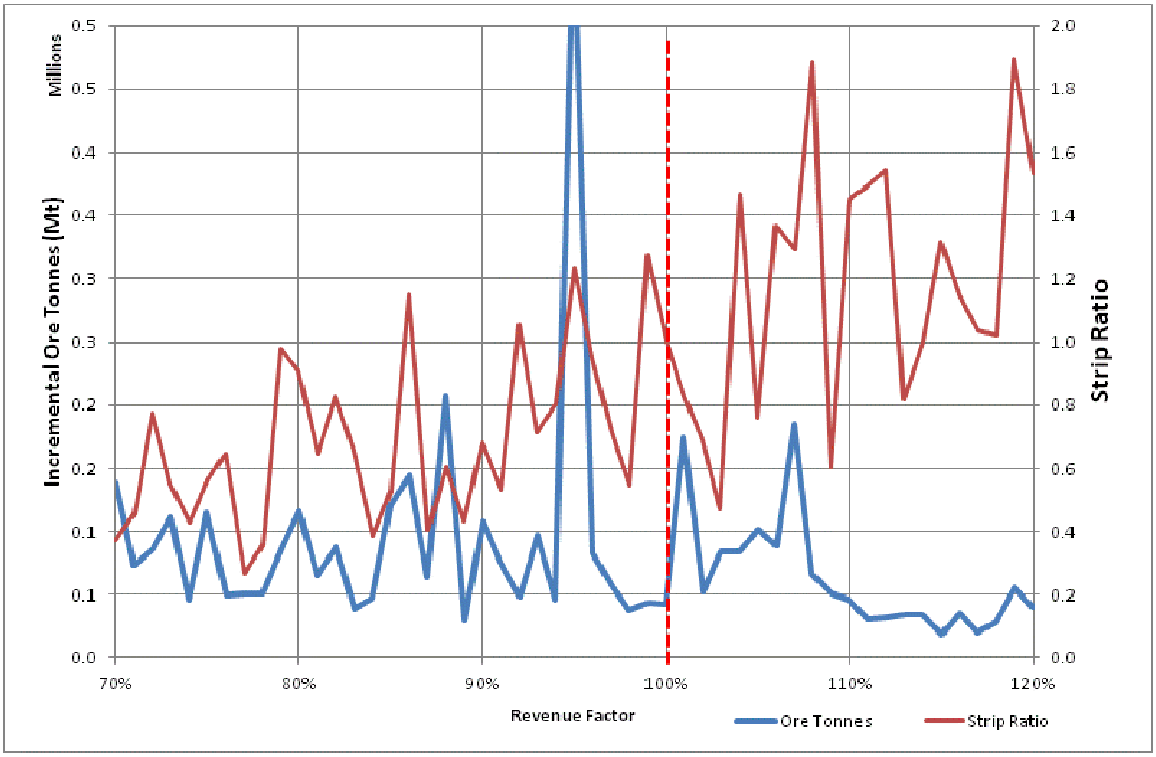
Figure 15.1 presents the results of the optimization analysis for the La Pava pit, showing how the project net present value (NPV) of the pit varies with increasing revenue factor.

FIGURE 15.1
LA PAVA PIT OPTIMIZATION NPV VS. GOLD REVENUE FACTOR



The La Pava NPV curve starts to flatten out beyond a revenue factor of 70%. In order to select the pit shell that will be used as the basis for the operational pit design, the incremental changes in pit size were examined in more detail, as shown in Figure 15.2. The curves show the ore tonnage and strip ratio at different revenue factors. Since there is no distinct jump in pit ore tonnage between 70% and 100%, the shell with revenue factor of 100% was selected as the basis for the pit design. Figure 15.5(a) shows a 3D view of the 100% optimized La Pava pit shell.

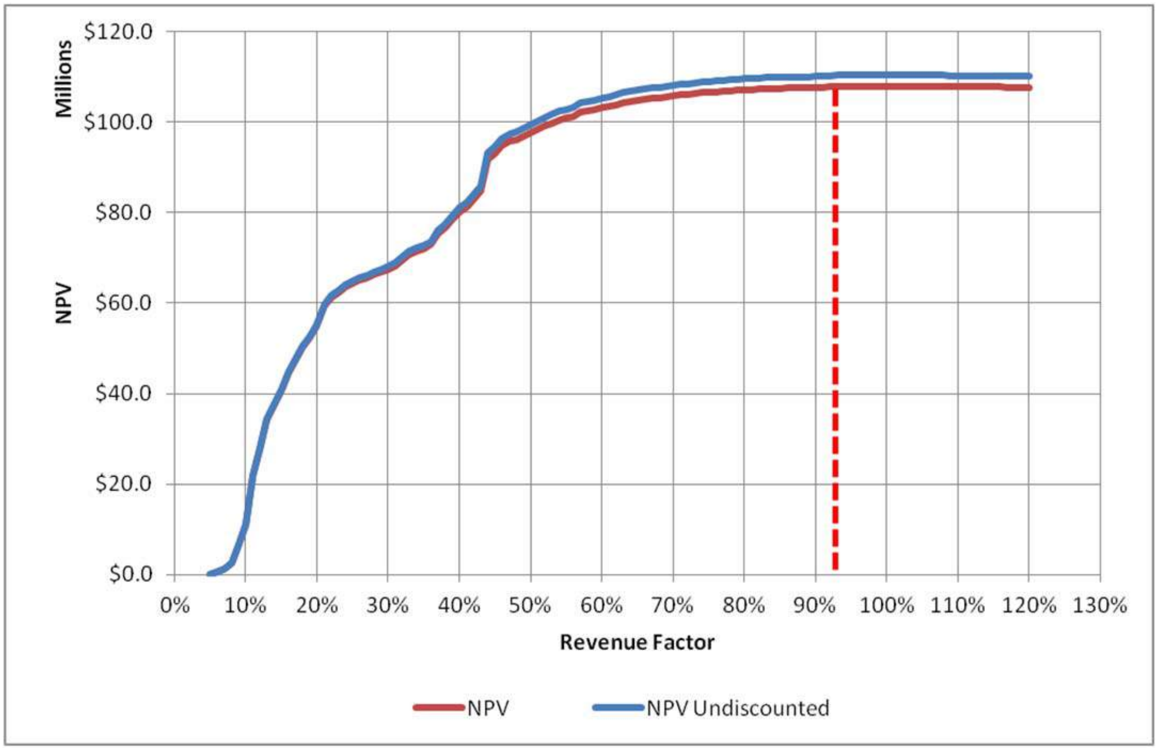
FIGURE 15.2
LA PAVA INCREMENTAL PIT TONNAGES



15.2.2.2 Quema-Quemita Deposit

Figure 15.3 presents the results of a similar optimization analysis for the Quema pit, showing how the economic value of the pit varies with increasing revenue factor.

FIGURE 15.3
QUEMA PIT OPTIMIZATION NPV VS. GOLD REVENUE FACTOR



The Quema NPV curve begins to flatten beyond a revenue factor of 60%. In order to select the pit shell to be used as the basis for the operational pit design, the incremental changes in pit size were examined in more detail, as shown in Figure 15.4. The incremental increase in ore tonnes gradually decline with higher revenue factors. Beyond the 92% revenue factor, the ore tonnage increases very gradually and the incremental strip jumps up. Hence the shell with a revenue factor of 92% was selected as the basis for the pit design. Figure 15.5(b) shows a 3D view of the 92% Quema optimized shell.

FIGURE 15.4
QUEMA INCREMENTAL PIT TONNAGES

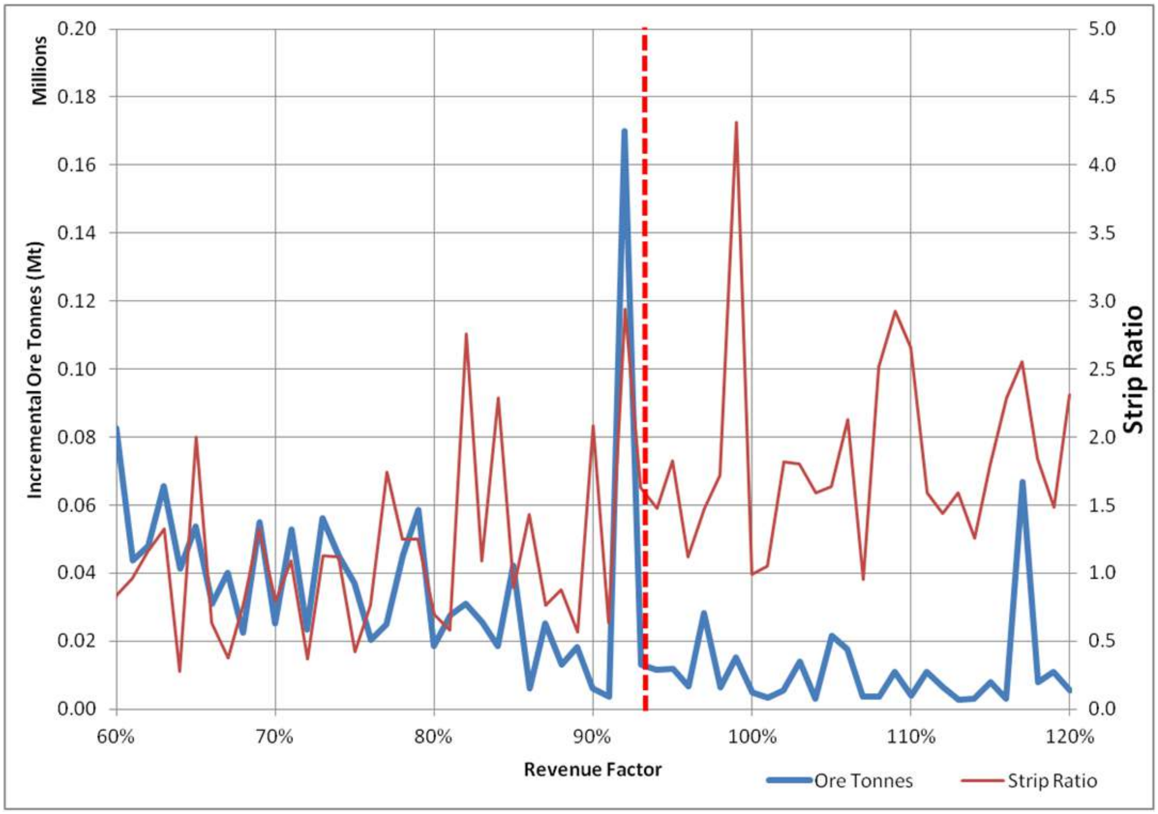


FIGURE 15.5
OPTIMIZED PIT SHELL 3D VIEWS

Figure 15.5(a) La Pava Shell (100%)

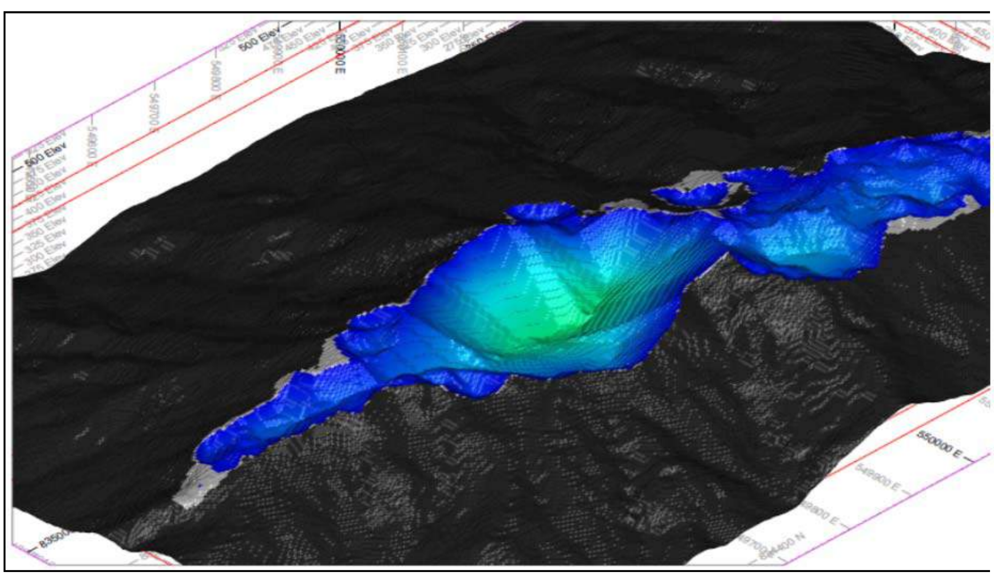
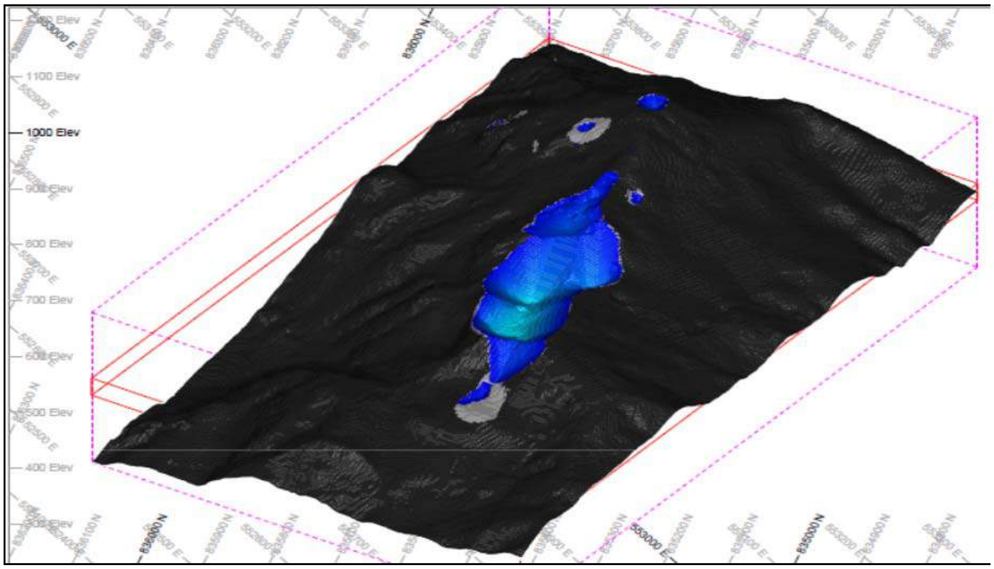


Figure 15.5(b) Quema Shell (92%)



15.3 Operational Pit Design

The next step in the mineral reserve estimation process is to design an operational open pit for each deposit, which will form the basis for the mine production plan. These pits will subsequently be subdivided into mining phases for production scheduling, but these internal phases do not affect the mineral reserve estimate contained within the ultimate pit.

The mine planning criteria used to design the operational pit are shown in Tables 15-3. The truck size being considered will be in the range of 40t to 50t capacity, which have an operating truck width of about 4.5 m. Figure 15.6(a) and 15.6(b) present plan views of the ultimate pits.

TABLE 15-3
CERRO QUEMA PIT DESIGN PARAMETERS

Haul road width	18 meters
Haul road grade	10% max
Single Lane truck ramps (if needed)	10-m wide and up to 15% for two benches for short-term access
Pit Slopes	40 degree inter-ramp; 10m double bench, 62º bench face angle and 6.5m bench width.

FIGURE 15.6
FINAL PIT LAYOUTS

Figure 15.6(a) La Pava Final Pit

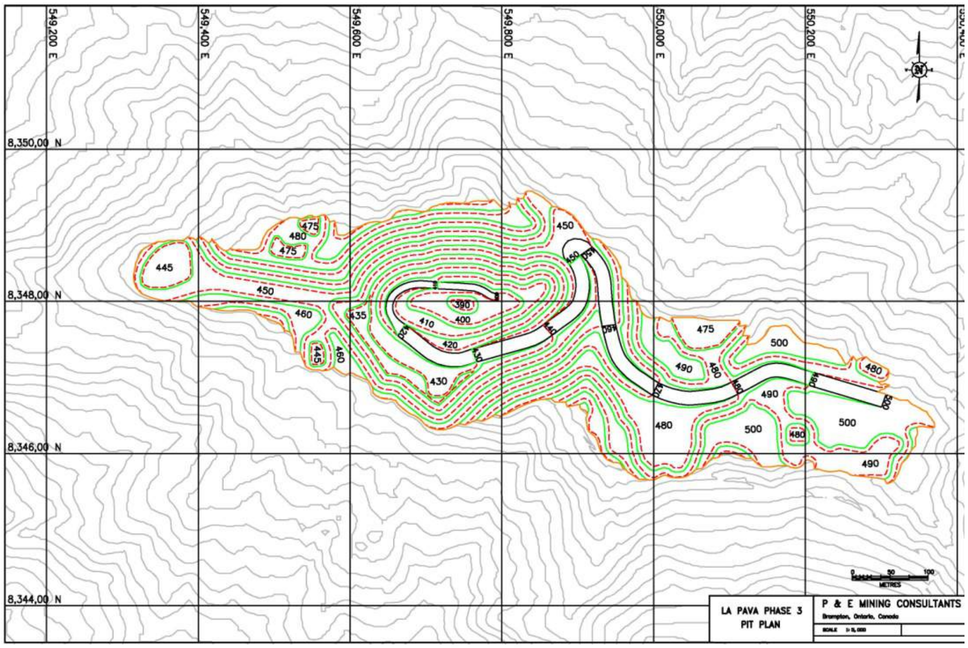
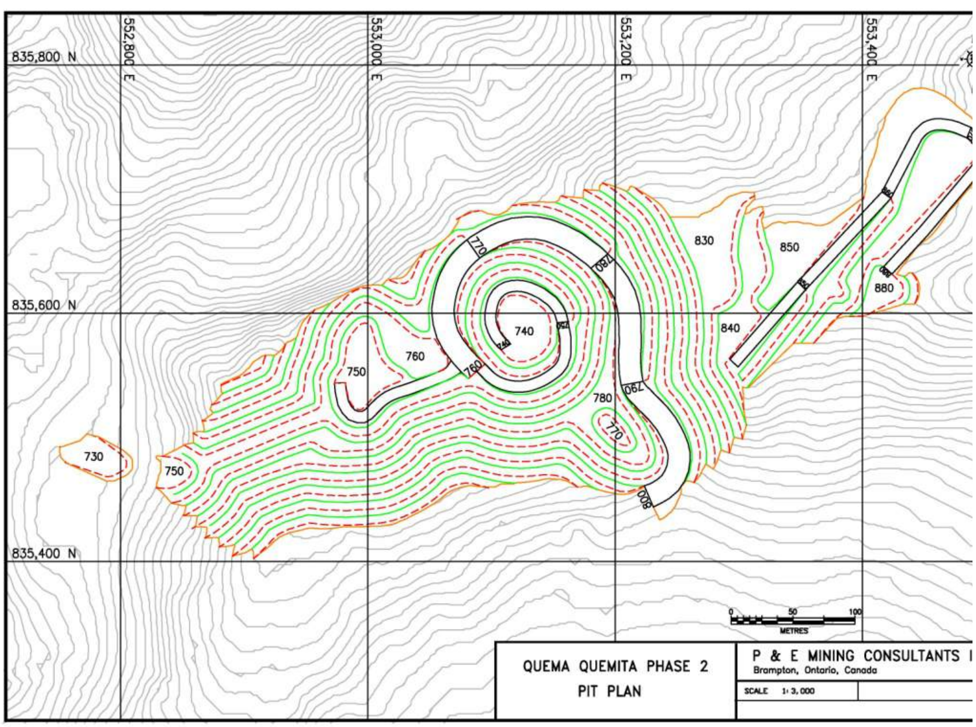


Figure 15.6(b) Quema Final Pit



15.4 Dilution and Ore Loss

In order to estimate the mineral reserve tonnage, mining losses and waste dilution must be applied to the ore tonnages contained within the operational pit.

15.4.1 Mining Losses

Based on P&E's mining experience, a mining loss factor of 3% was applied to each ore type.

15.4.2 Dilution

A dilution factor was applied to each ore type, as shown in Table 15-4. The amount of dilution was estimated based on an examination of the dimensions of the ore zones within the pit and on several benches. It was assumed that there would be a 1.5 meter thick dilution "skin" around those ore zones and the percentage of dilution is based on the proportion of the "skin" area to the area of the ore zone itself. With this approach, narrow ore zones would be diluted more heavily than large expansive ore zones.

TABLE 15-4
CERRO QUEMA DILUTION PARAMETERS

	Ore Loss Factor	Dilution Factor	Diluting Grade (Au)	Diluting Grade (%Cu)
La Pava	3%	6.7%	0.08 g/t	0.02%
Quema	3%	7.3%	0.06 g/t	0.01%

The final reserve ore tonnage is estimated using the formula:

Diluted Reserve tonnes = (insitu tonnes) x (1 – %OreLossFactor) x (1+%DilutionFactor)

The final reserve diluted ore grade is estimated using the formula:

Diluted grade = (insitu grade + %DilutionFactor x DilutingGrade) / (1+%DilutionFactor)

The resulting diluted pit tonnage is deemed the mineral reserve, and has been presented previously in Table 15-1.

16.0 MINING OPERATIONS

The mining method proposed for the Cerro Quema Project will be a conventional open-pit mine. Mining will occur in two open pits; the La Pava Pit and the Quema Pit. A fleet of hydraulic excavators and trucks consisting of 50 tonne rigid frame trucks and 40 tonne articulated trucks will be used to mine the ore and waste materials. The drilling and blasting of both ore and waste rock will be required although some materials will be free-digging.

The ore production rate delivered to the heap leach pad area is approximately 3.6 million tonnes per year of silica and fresh rock type ore. Clay type ore will be stockpiled and processed at the end of the mine life since this ore requires a different crushing method and agglomeration.

Overall total annual mining rates will range from a high of 7.1 Mt of combined ore and waste to a low of 5.5 Mt with an average of about 6.4 Mt/year. This results in an average total daily mining rate of 18,000 tpd, of which 10,000 tpd would consist of ore.

16.1 Stage Pit Designs and Phases

In order to allocate waste stripping quantities over time and to allow faster access to better grade ore, both the La Pava Pit and Quema Pit have been subdivided into mining phases that will be developed sequentially. Mining may occur in multiple phases simultaneously due to the need to keep total mining rates within a reasonable range, which is dependent on the ratios of ore and waste on the individual mining benches. For example, when mining in areas with low waste-to-ore ratios, mining may also take place elsewhere on benches with higher waste-to-ore ratios in order to equalize the quantity of total material moved over different time periods.

The three pit phases designed for the La Pava pit are shown in Figure 16.1. At Quema two pit phases were designed, as shown in Figure 16.2. The ore and waste tonnages for each pit phase are shown in Table 16-1 (La Pava) and Table 16-2 (Quema).

Table 16-1
La Pava Phase Tonnages

	Total Ore (diluted)		Waste	Total Material	
	Mt	Au g/t	Mt	Mt	Strip Ratio (W/O)
Phase 1	4.94	0.80	3.20	8.14	0.65
Phase 2	6.00	0.76	4.23	10.23	0.71
Phase 3	3.28	0.59	2.82	6.10	0.86
Total	14.22	0.73	10.25	24.47	0.72

Table 16-2
Quema Phase Tonnages

	Total Ore (diluted)		Waste	Total Material	
	Mt	Au g/t	Mt	Mt	Strip Ratio (W/O)
Phase 1	0.61	1.42	0.38	0.99	0.62
Phase 2	4.87	0.80	3.63	8.50	0.74
Total	5.49	0.86	4.01	9.49	0.73

16.1.1 Geotechnical Background

Golder Associates completed a geotechnical review to provide pit slope design recommendations for the Pre-Feasibility Study. This study included:

- a review of available geologic and geotechnical information;
- a field program which included collection of discontinuity data from existing rock cuts
- geotechnical logging of existing split core;
- a laboratory testing program to characterize geotechnical materials;
- a program of engineering analyses and evaluation to support the pit slope design recommendations.

The scope of the Golder field program was limited for the PFS due to preliminary economic analysis indicating that project economics are not greatly affected by pit slope angles due to the low strip ratios. Geotechnical information was collected from existing data and data that could readily be collected from rock exposures.

Logging data from the exploration core holes, surface mapping data and the analysis of this data indicates that both the Oxidized and Unoxidized Bedrock is classified as Weak (5 MPa < UCS < 25 MPa) and highly fractured based on the RQD measurements. Even though the intact rock is classified as Weak, the Rock Mass Quality is classified as Fair (41 < RMR76 < 60) and engineering analyses indicate that the potential for failure due to overstressing of the rock mass is low.

The structural geology model developed by Pershimco does not indicate the potential for large-scale, structurally controlled failures in the pit slopes. Large-scale structures are indicated to be too steep to daylight in the pit walls so as to form large-scale planar shear failures, or intersect in such a manner that will form large-scale, unstable wedges in the pit slopes. Inter-ramp slope angles will be limited by the bench configuration that can be safely developed and maintained. Joints in the rock mass are typically too steep and insufficiently persistent to form rock wedges that would control the steepness of bench faces. The rock mass is typically highly fractured as indicated by the low RQD. This limits the height of benches that can be safely developed and limits the steepness of bench face angles that can be developed during blasting and excavation.

Since there is mainly one rock type along the pit walls, and the degree of fracturing of the rock mass rather than the orientation of structures control the steepness of pit slopes, the following recommendations apply to all slopes in both the La Pava and Quema pits. Production bench height in the La Pava and Quema pits is 5 m based on grade control requirements. To achieve steeper final slopes, Golder recommended that two 5-m high production benches be stacked so as to leave catch benches at 10-m vertical intervals in final pit slopes (termed “double-benching”).

The following Modified Ritchie Criteria has been used to define an acceptable minimum catch bench width in bedrock:

Catch Bench Width (meters) = 4.5 meters + (0.2 * Bench Height in meters)

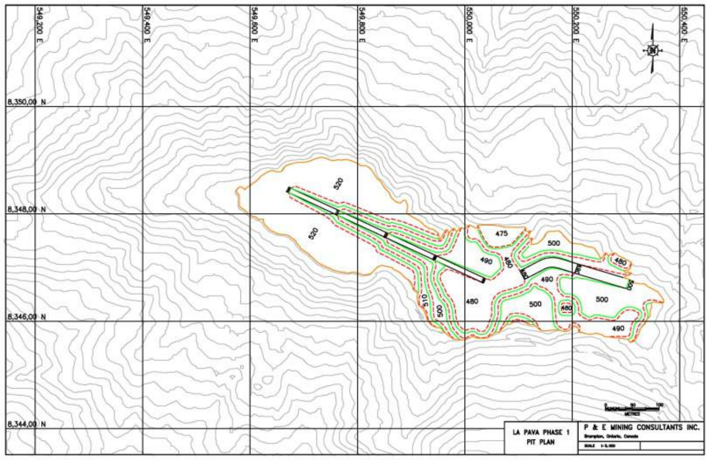
This results in a design catch bench width of 6.5 m for 10 m high benches used in the design of final slopes for these pits. For the PFS, Golder recommended designing slopes in all bedrock units that form final pit slopes by double benching and leaving 6.5m-wide catch benches at vertical intervals of 10 m. Utilizing a bench face angle of 62 degrees results in an inter-ramp slope angle of 40 degrees.

While Saprolite is not expected to occur over slopes with significant height, Golder recommended that the Saprolite be sloped at 30 degrees and a 5m-wide bench be left on top of Bedrock.

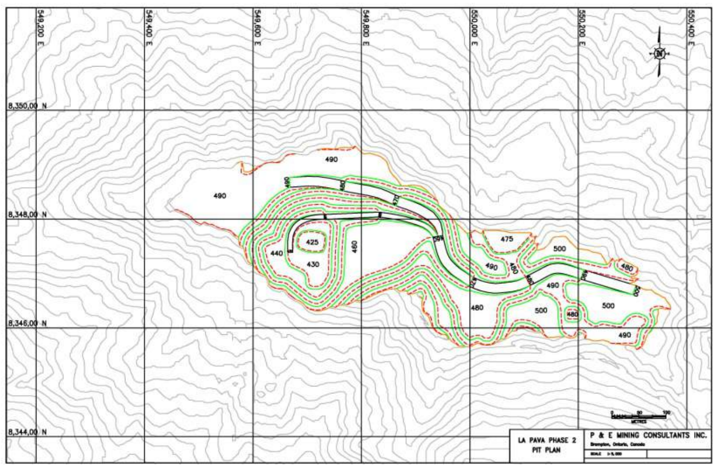
Pre-split blasting is not likely to be effective in the fractured bedrock at Cerro Quema. Trim blasting should provide good results in bedrock and should be used to achieve the recommended bench face angles.

Figure 16.1
La Pava Pit Phases (1, 2, 3)

Phase 1



Phase 2



Phase 3
(Final Pit)

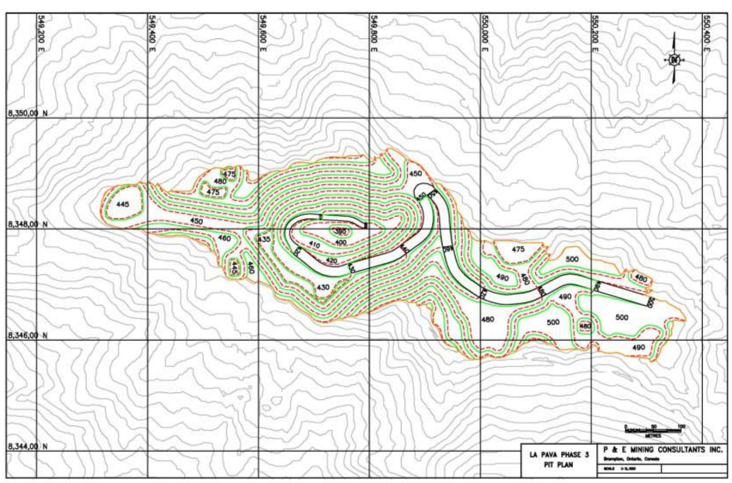
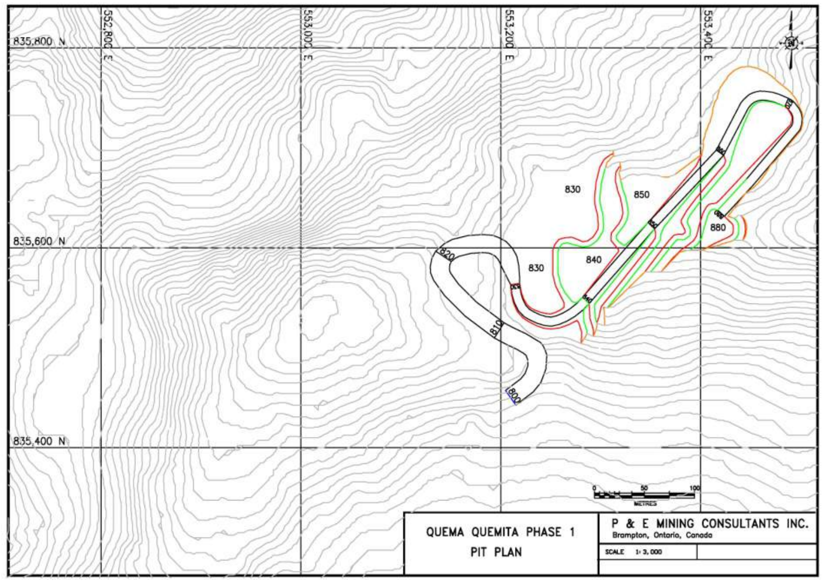
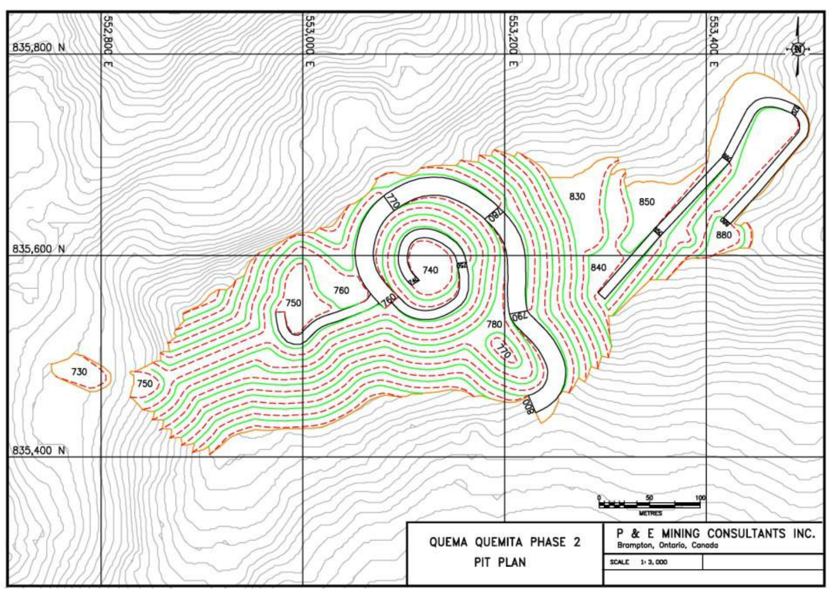


Figure 16.2
Quema Pit Phases (1, 2)

Phase 1



Phase 2
(Final
Pit)



16.2 Open-Pit Production Schedule

The open-pit production schedule was developed with several constraints providing a framework for the overall production plan. Some of the key constraints are as follows.

- Maintain overall mining rates with reasonable consistency from year to year; recognizing that waste volumes may diminish in the later years.
- The heap leaching rate to be based on 3.6 Mt per year of silica and fresh type ores.

- Clay ore that is encountered is to be stockpiled for processing at the end of the mine life due to the need for different front-end processing equipment.
- Assume the production ramp up schedule shown in Table 16.3.
- Initial mining in the La Pava Pit to provide waste rock fill for construction purposes and then transition to the Quema Pit to access higher grade ore.
- Production scheduling for Year-1 and Year+1 was done on a quarterly basis and subsequently on an annual basis thereafter.
- Minimal size ore stockpiles (50,000 t) to be maintained at the crusher, except for clay ore.
- Quantify individually the annual mine ore type tonnages with respect to silica ore, clay ore, and fresh ore types.

Table 16-3
Production Ramp Up Target

		Ore (t)	% of Capacity	
Year -1	Q1	-		
	Q2	-		
	Q3	-		Pre-stripping waste to build the ramp & pad.
	Q4	500,000	89%	Pre-stripping and stockpiling of ore
Year 1	Q1	900,000	100%	300kt per month = 900kt of silica/fresh ore
	Q2	900,000	100%	300kt per month = 900kt of silica/fresh ore
	Q3	900,000	100%	300kt per month = 900kt of silica/fresh ore
	Q4	900,000	100%	300kt per month = 900kt of silica/fresh ore
Year 2 and later		3,600,000	100%	300kt per month = 900kt of silica/fresh ore

The production schedule was developed using Microsoft Excel, based on the planning criteria described previously. Several iterations of the production schedule were developed to attempt to accommodate as many of the production criteria as possible.

The selected mine production schedule is shown in Table 16-4 and is summarized on an annual basis. The total mine life is 5 years in duration, not including one year of pre-production. Figure 16.3 illustrates the sequencing when mining will be occurring in the different pit phases.

In Year -1, pre-stripping and early ore mining would require mining around 1.96 million tonnes, a cost which would be capitalized. Of this tonnage, 1.37 Mt would be waste used for construction purposes. The ore and waste bulk densities are summarized in Table 16-5.

Table 16-4
Mine Production Schedule Summary

		Total	-1	1	2	3	4	5
La Pava								
Waste	kt	10,251.9	1,373.9	933.0	2,637.3	3,192.8	1,730.8	384.1
Ore	kt	14,220.8	585.1	1,933.0	3,822.2	3,859.4	2,638.9	1,382.2
Au	g/t	0.73	0.88	0.85	0.75	0.63	0.70	0.80
Gold cont	*oz*	*334,350*	*16,532*	*53,058*	*91,921*	*77,829*	*59,513*	*35,497*
Strip Ratio	w:o	0.72	2.35	0.48	0.69	0.83	0.66	0.28
Quema								
Waste	kt	4,006.2	-	1,039.9	-	-	1,610.7	1,355.7
Ore	kt	5,487.2	-	1,910.7	-	-	1,178.9	2,397.7
Au	g/t	0.86	-	1.34	-	-	0.7	0.6
Gold cont	*oz*	*152,511*	-	*82,332*	-	-	*24,973*	*45,207*
Strip Ratio	w:o	0.73	-	0.54	-	-	1.37	0.57
Total								
Waste	kt	14,258.1	1,373.9	1,972.8	2,637.3	3,192.8	3,341.5	1,739.8
Ore	kt	19,708.0	585.1	3,843.7	3,822.2	3,859.4	3,817.8	3,779.8
Au	g/t	0.77	0.88	1.10	0.75	0.63	0.69	0.66
Gold cont	*oz*	*486,861*	*16,532*	*135,389*	*91,921*	*77,829*	*84,486*	*80,703*
Total Mat'l	kt	33,966.1	1,959.0	5,816.6	6,459.5	7,052.2	7,159.3	5,519.6
Strip Ratio	w:o	0.72	2.35	0.51	0.69	0.83	0.88	0.46

Figure 16.3
Phase Mining Sequence Chart

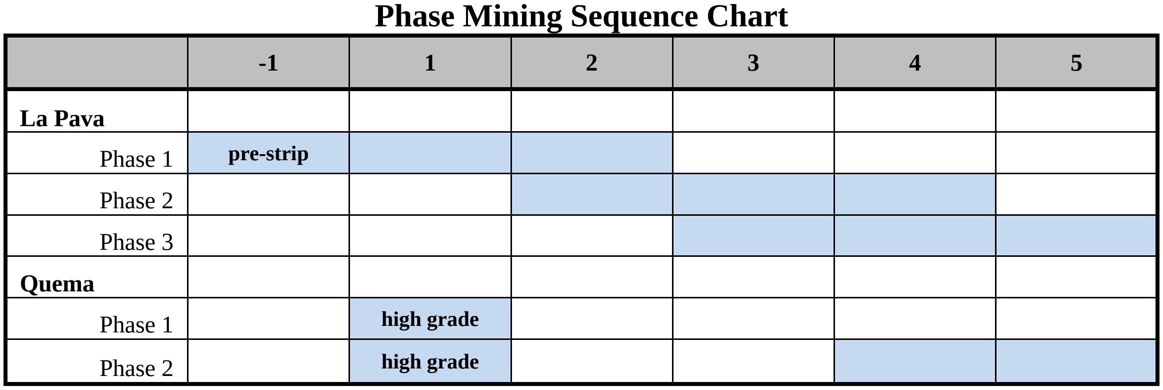


Table 16-5
Material Densities

La Pava	Bulk Density Insitu (t/m³)	Loose Density (Mined Swell Factor) 40%	Loose Density (Dump Compacted Swell Factor) 20%
Silica ore	2.45	1.75	-
Clay Ore	2.45	1.75	-
Fresh Ore	2.45	1.75	-
Waste	2.44	1.74	2.03
Quema	Bulk Density Insitu (t/m³)	Loose Density (Mined Swell Factor) 40%	Loose Density (Dump Compacted Swell Factor) 20%
Silica ore	2.32	1.66	-
Clay Ore	2.32	1.66	-
Fresh Ore	2.32	1.66	-
Waste	2.44	1.74	2.03

16.3 Stockpiles

An ore stockpile of approximately 50,000 tonnes (~5 days production) will be maintained near the primary crusher site. This stockpile would be reclaimed by a front end loader when required.

The intent of the stockpile is to provide emergency crusher feed in the event of operational difficulties in the mine. The stockpile will also enable the mine operations to continue to deliver ore during periods when the crushing and stacking systems are inoperable.

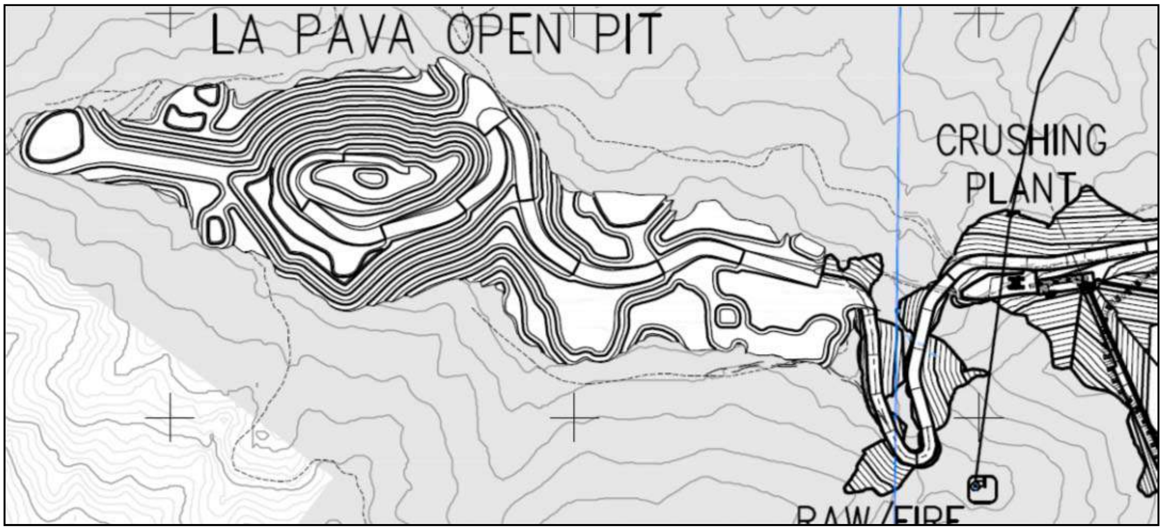
There is some concern that during the wet season the stockpile will become saturated and sloppy. Some consideration will need to be given as to how to manage moisture control during the wet season. Regular reclaiming from the stockpile (first-in / first –out) may help avoid this.

16.4 Haul Roads

Ore and waste from the La Pava pit will be hauled to the crusher and Chontal waste dump sites. The upper part of the La Pava haul road will be located along sloping topography and therefore will consist of both road cuts and earth fills. The lower portion of the La Pava road will consist of a large ramp built from waste material from La Pava pre-stripping. At this stage of study the detailed road designs were not completed since field surveys and field reconnaissance completion are required.

The La Pava haul road would be required for the 4th quarter of Year -1, therefore its construction would commence in the early part of Year -1. The cut & fill road length would be about 600 meters with an operating width of 18 meters and a maximum grade of 10%. The proposed alignment for this road is shown in Figure 16.4.

Figure 16.4
La Pava Pit Haul Road



At the Quema pit, construction of a haul road to access this higher elevation pit would be costly and haulage productivities and costs would be considerable. A trade-off study recommended the use of a conveyor system to transport both ore and waste down the hillside. Waste would be tripped off the conveyor in the Chontal valley and ore would be sent to the primary crushing area. A simply grizzly and rock breaker would be used to feed the Quema conveyor. Currently, a road trail exists that can be used for equipment access up to the Quema mine site to commence mining operations when required.

16.5 Waste Rock Disposal

The mining operation will require the stripping and disposal of waste rock. Generally the overall mining waste-to-ore ratio is relatively low, about 0.7:1 and the total waste quantity is about 14.3 million tonnes.

The organic soil cover on the pit areas is minimal and due to steep terrain, any organic soils will be stripped with the waste rock. No segregation is planned.

The bulk of the waste rock from both the La Pava and Quema pits will be placed into a single external waste dump located to the east of the process platform called the Upper Chontal Waste Rock Dump Facility. A trade-off study was performed to evaluate alternative locations for waste rock disposal for the Cerro Quema Project. Upon completion of this trade-off study, the site located within the upper reaches of the Quebrada Chontal drainage basin was selected for disposal of waste rock from the La Pava and Quema pits.

The Upper Chontal Waste Rock Dump is intended to minimize the overall disturbance footprint caused by the project. Initially some of the waste material will be used to construct roads, the process area platform, and stockpile areas.

At the La Pava Pit, it may be possible to undertake some minimal amounts of waste backfilling from Phases 2 and 3 into mined out Phase 1. Since haulage from Phases 2 and 3 are through the Phase 1 pit, the potential backfilling areas are minor, as shown in Figure 16.5. Table 16-6 summarizes the waste volumes and waste destinations.

The waste dump as designed has a capacity of 7.0 million cubic meters, while the estimated requirement is less than that (Table 16-6). However, there is some uncertainty in the placed density, and how much waste may get used for the process platform and road fills, therefore the designed dump provides some excess capacity if required.

Table 16-6
Waste Placement Volumes

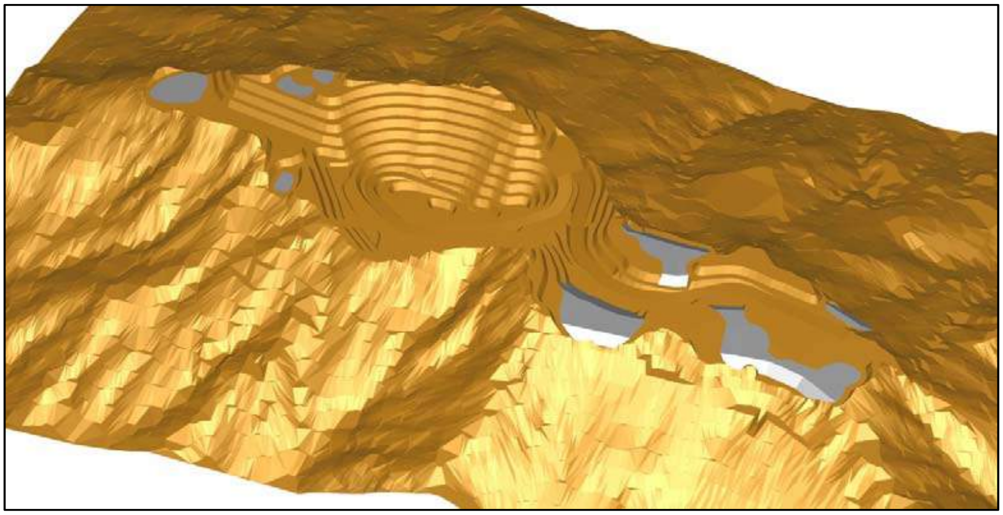
	Total Waste (Mt)	Waste Volume (Mm3)	To Construction (Mm3)	To Chontal (Mm3)	La Pava Backfill (Mm3)
La Pava	10.25	5.04	0.65	4.20	0.20
Quema	4.01	1.97	-	1.97	-
Total	14.26	7.01	0.65	6.17	0.20

The waste dumps will be built in lifts to ensure overall geotechnical stability. Golder provided the geotechnical design specifications for the waste dump, which are summarized in Table 16-7.

Table 16-7
Waste Dump Design Criteria (Chontal Dump)

Lift Height	15 meters
Total Dump Height	80 meters
Dump Crest Elevation Lift Face Angle	455 meters aMSL 1.5:1 (H:V)
Lift Bench Width	10 meters
Overall Dump Slope	2.5:1 (H:V) 21.8º

Figure 16.5
La Pava Pit – Possible Waste Backfill Areas



16.6 Open-Pit Operation

The Pre-Feasibility study initially evaluated both options of Owner-Operated mining and Contract mining. The base case for the study is the Owner-Operated mining option since the economics indicated a $17.3 million improvement in NPV with Owner mining.

The mine operations at Cerro Quema will employ methods and technologies proven at other tropical mine locations. The open pit would operate using 5-meter high benches and conventional mining equipment. No specific equipment manufacturers or models have been selected at this level of study and hence discussions tend to be generic.

The various activities associated with the mining operation will consist of:

- Drilling and blasting,
- Grade control,
- Loading and hauling of waste rock and ore,
- Pit dewatering,
- Mine services and supervision.

The mining fleet requirements were developed from first principles based on equipment fleet production estimates linked to the production schedule.

16.6.1 Equipment Scheduling

For equipment scheduling purposes, the mine would operate on a two 10-hour shifts per day, 7 days per week basis throughout the year.

16.6.2 Drilling and Blasting

The rock mass is considered a weaker rock and heavy blasting is not likely required. A powder factor in the range of 0.12 to 0.15 kg/t is anticipated. It is assumed that 80% of the silica rock and 100% of the fresh rock will require drilling and blasting although the weathered clay-like materials near surface will be free-digging.

The blast holes would be drilled using top-hammer or in-the-hole type drills. The proposed drill would be diesel-powered, crawler mounted, top-head drive multi-pass drill rig. The rig would be equipped with a carousel-type drill pipe changer and a control system that enables drill pipe changing to be accomplished remotely from the operator's cab. The projected overall drilling penetration rates in the relative soft ore and waste rock are 50 m/h.

The proposed blast patterns are summarized in Table 16-8.

Table 16-8
Drill and Blast Design

	Silica Ore	Clay Ore	Fresh Ore	Waste
Bench Ht (m)	5.00	No blasting	5.00	5.00
Subgrade 15% (m)	0.75		0.75	0.75
Total hole length (m)	5.75		5.75	5.75
Hole diameter (mm)	89.0		89.0	89.0
Target powder factor (kg/t)	0.12		0.15	0.12
Target powder in hole (kg)	19.3		19.3	19.3
Burden (m)	3.7		3.3	3.6
Spacing (m)	3.7		3.3	3.6

A licensed explosive supplier would provide the supply of explosives, blasting agents and blasting accessories. The Owner would undertake the blasting and drilling activities with a blasting engineer, lead blaster and blasting crew.

The explosive supplier would provide the explosive transport and delivery mix trucks, and crew trucks to charge the holes with explosive. The Owner would provide the explosive storage facilities, crushed rock for use as stemming; diesel fuel for use in the explosive supplier's on-site equipment; and electrical power, water and sanitary services at the explosive supplier's on-site building.

A conventional blast initiation system would be used. One non-electric type down line with one detonator and booster would be used in each blast hole. It is expected that a 70% emulsion-30% ANFO blasting agent would be used due to the expected wet conditions in the mine, especially during the wet season.

16.6.3 Loading and Haulage

The ore and waste mined materials would be excavated using diesel-powered backhoe excavators (6.5 m^3) supported by a front end loader (7 m^3). The materials would be hauled to the appropriate destinations (i.e., ore crusher or waste dump) using a mixed fleet of 50 tonne rigid frame haul trucks and 40 tonne articulated trucks. The rigid frame trucks provide better productivity and lower unit cost however the articulated trucks can operate better in soft wet conditions and re-start production quicker after rain storms. It is assume that about 80% of the overall material tonnage would be hauled by the rigid-frame trucks with 20% of the tonnage allocated to the articulated trucks.

Table 16-9 summarizes the haul distances from the pits to the crusher and dump. At Quema, all material is hauled to the conveyor loading station grizzly at the edge of the pit therefore the haul distances are short.

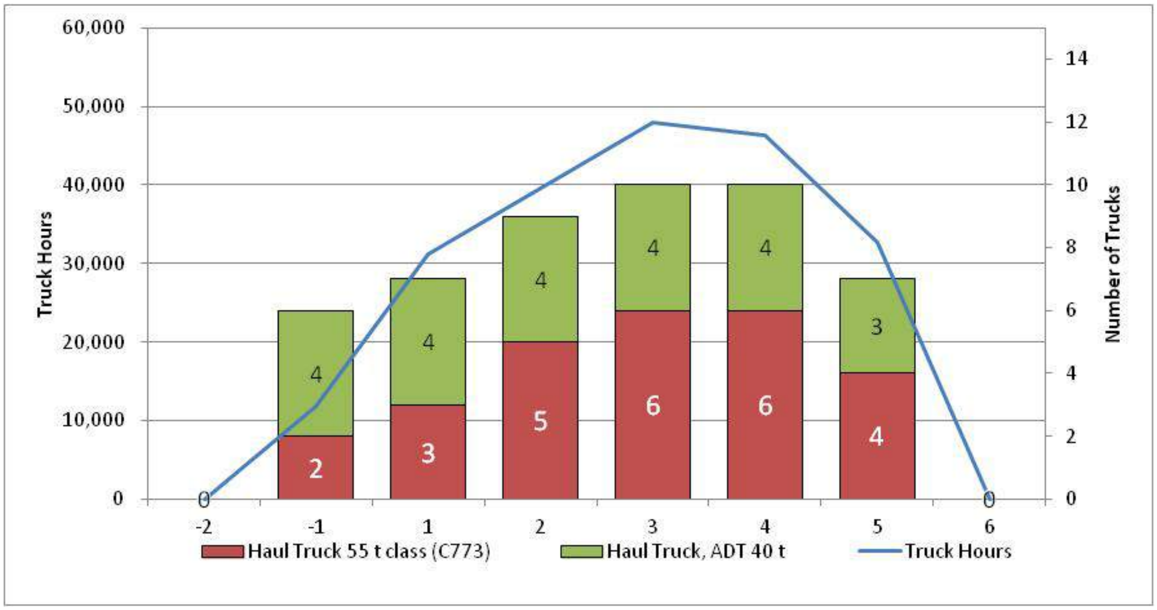
Table 16-9
Truck Haul Distances

	Haul Distance (meters)	
	To Primary Crusher or Quema Grizzy	**To Chontal Waste Dump**
La Pava Pit	800 m	1,400 m
Quema Pit	At pit edge	n/a

The equipment fleet required by year is shown in Table 16.10. Initially, an excavator and front end loader would be purchased along with a total of six trucks (four articulated and two rigid frame) to be ready for Year-1 (see Figure 16.6). As the production rate ramps up and the La Pava pit deepens with longer haul distances, additional trucks will be required (see Figure 16.6). The fleet of four articulated trucks will be supplemented with additional rigid frame trucks since working conditions in the pit will improve with depth. The truck fleet will peak at ten units

No major mining equipment replacements will be required over the project's short five year mine life.

Figure 16.6
Truck Requirements by Year



16.6.4 Support Equipment

The major mining equipment fleet will be supplemented with a fleet of support equipment such as dozers, graders, water trucks, and service vehicles. Table 16-10 also summarizes the support equipment fleet required in each year.

Table 16-10
Mine Equipment Fleet

	-1	1	2	3	4	5
Drill, 100 mm, Crawler, Top Head	1	2	2	2	2	2
Stemming Truck, 15 t	1	1	1	1	1	1
Transport for detonators	1	1	1	1	1	1
Hydraulic Shovel, 6.5 cu.m	1	1	1	1	1	1
Wheel Loader 7 cu.m	1	1	1	1	1	1
Haul Truck, ADT 40 tonne	4	4	4	4	4	3
Haul Truck 55 tonne class (Cat 773)	2	3	5	6	6	4
Personnel van/bus	1	1	1	1	1	1
Flat Deck w Hiab (from site services)	-	-	-	-	-	-
Dozer D8	2	2	2	2	2	2
Welding Truck	1	1	1	1	1	1
Excavator, 2 cu.m (Cat 336E)	1	1	1	1	1	1
Fuel Truck	1	1	1	1	1	1
Grader (Cat14H-class) 14' blade	1	1	1	1	1	1
Light plant	4	4	4	4	4	4
Lube truck	1	1	1	1	1	1

	-1	1	2	3	4	5
Mechanic truck	1	1	1	1	1	1
Pickup truck	6	6	6	6	6	6
Pit Water Pumps	2	2	2	2	2	2
Wheel Loader 4 cu.m (C966)	1	1	1	1	1	1
Water truck (40ton 9000 gallon)	1	1	1	1	1	1
Crane, Grove 40T (from site services)	-	-	-	-	-	-

16.6.5 Mining Manpower Requirements

Personnel requirements and costs include base salary / wages, burden and transportation. Labor for mine operation are costs are based on a 7 days per week 10-h per shift. The mining manpower, including office staff and technical support, are summarized in Table 16-11.

Table 16-11
Mine Manpower

Manpower	-1	1	2	3	4	5
Driller	2	5	6	6	6	5
Driller Helper	2	5	6	6	6	5
Blasting Foreman	1	1	1	1	1	1
Blaster	2	2	2	2	2	2
Laborer	2	2	2	2	2	2
Truck Drivers	11	33	45	57	55	39
Shovel Operator	4	4	4	5	5	4
Loader Operator	1	3	4	4	5	3
HD Mechanic	5	16	19	22	22	17
Pit services (dewatering)	1	1	1	1	1	1
Grader Operator	4	4	4	4	4	4
Dozer Operator	8	8	8	8	8	8
Water Truck Operator	4	4	4	4	4	4
Utility Operators	4	4	4	4	4	4
Mine Superintendent	1	1	1	1	1	1
Mine Gen Foremen	1	1	1	1	1	1
Mine Foremen	4	4	4	4	4	4
Mine Clerk	1	1	1	1	1	1
Maintenance Gen Foreman	1	1	1	1	1	1
Maintenance Foreman	4	4	4	4	4	4
Planner	1	1	1	1	1	1
Welder	4	4	4	4	4	4
Gas Mechanic	2	2	2	2	2	2
Tire man	1	1	1	1	1	1
Parts man	2	2	2	2	2	2
Laborer	8	8	8	8	8	8
Equipment Trainer	1	1	1	1	1	1
Chief Mine Engineer	1	1	1	1	1	1

Manpower	-1	1	2	3	4	5
Senior Mine Engineer	1	1	1	1	1	1
Mine Engineer	1	1	1	1	1	1
Geologist	1	1	1	1	1	1
Surveyor	1	1	1	1	1	1
Survey Tech	1	1	1	1	1	1
Mine Tech	1	1	1	1	1	1
Ore Control Tech	1	1	1	1	1	1
Total	**89**	**130**	**149**	**165**	**163**	**138**

16.6.6 Maintenance Shops and Pit Infrastructure

The Cerro Quema mine will require mine offices, change house facilities, employee parking areas, maintenance facilities, warehousing and cold storage areas.

The explosive contractor will be allocated storage space on the project site and these facilities are discussed in Section 18: Infrastructure.

The mine office and mine dry facilities will provide for mine management, engineering, geology, and mine maintenance services. These will be located in the vicinity of the truck shop.

A maintenance shop which will provide pit support services will be located to the northeast of the primary crusher. The mine maintenance facility will consist of a four-bay shop which will include a separate truck wash facility, welding equipment and a dedicated preventive maintenance bay. The maintenance facility will have an adjoining indoor parts storage and a tool crib.

A fuel and lube station will be conveniently located near the maintenance facility and main haul road for equipment access. A mobile truck mounted fuel and lube system will be available to service less mobile equipment in the pits.

Maintenance and office buildings will be of a permanent construction and built according to local regulations and building codes.

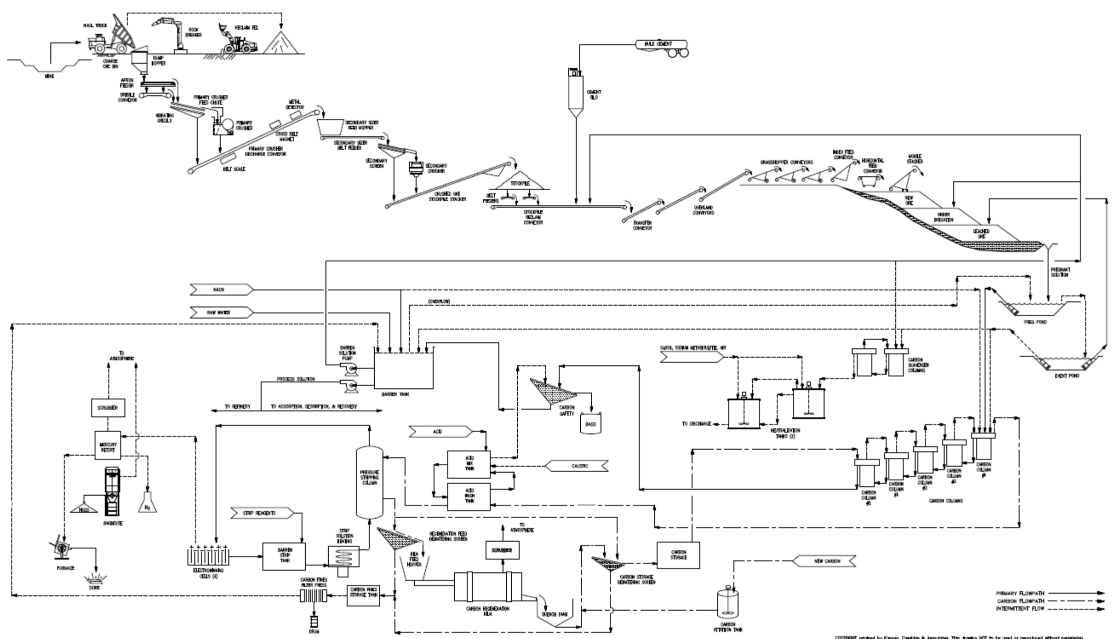
17.0 MINERAL PROCESSING

17.1 Process Description Summary

The Cerro Quema project will be a 10,000 tonnes per day heap leach facility. Processing at Cerro Quema will be by conventional heap leaching of crushed ore stacked on a single use pad. Gold will be leached from the mineralized material with dilute cyanide solution and recovered from the solution using a carbon adsorption-desorption-recovery plant to produce doré bars.

A simplified project flowsheet is presented in Figure 17.1.

Figure 17.1
Simplified General Project Flow Sheet



17.2 Process Design Criteria

The following are criteria excerpted from the complete Design Criteria.

Table 17-1
Summarized Design Criteria

Production Schedule	360 days/yr 7 days/wk
Production Rate	3.6 million t ore per yr 10,000 t ore per day
Life of Mine, Years	6
Average Grade	0.77 gpt Au
Ore Sources	La Pava
	Quema/ Quemita
	La Mesita
Leaching Cycle	70 Days
Tonnes Under Leach	700,000
Solution Application Flow Rate, maximum	700 m^3/hr
Solution Application Flow Rate, nominal	583 m^3/hr
Active Leach Area, maximum	70,000 m^2
Active Leach Area, nominal	58,333 m^2
Solution Application Rate, maximum	12 L/hr/m^2
Solution Application Rate, nominal	10 L/hr/m^2
Gold Recovery, average LOM	86%
Silver Recovery, average LOM	12%
Lime Consumption, kg/t (nominal)	1.6
Cyanide Consumption, kg/t (nominal)	0.25

17.3 Process Description

17.3.1 Crushing

Run-of-mine ore will be delivered by haul trucks from one of the open pit mines to the primary crusher. As much as possible, material will be direct-dumped by haul trucks into the primary crusher dump hopper. Ore will also be reclaimed from stockpiles by front-end loader into the dump hopper located above the apron feeder as required for either blending or haul truck availability.

A stationary grizzly over the dump hopper will be included to prevent oversized material (+500 mm) from plugging the feeder. A rock breaker will be used to break up any oversized material. An apron feeder will deliver the run of mine at a rate of 556 dry t/h to a vibrating grizzly with 130 mm openings, grizzly oversize will be crushed primary jaw crusher.

The primary jaw crusher will crush grizzly oversize to 100% passing 130 mm. The jaw crusher product will combine with the grizzly undersize and discharge to the primary crusher discharge conveyor which feeds the secondary screen feed hopper. The secondary screen feed hopper provides 15 minutes of storage capacity for the secondary crusher.

The secondary screen belt feeder will feed primary crushed rock to a secondary screen. The secondary screen will scalp material at 70 mm. Oversize will be crushed in the secondary mineral cone crusher. Cone crusher product and screen undersize will discharge to the crushed ore stockpile stacker which feeds secondary crushed material to the crushed ore stockpile.

17.3.2 Crushed Ore Stockpile and Reclamation

The crushed ore stockpile is filled by the crushed ore stockpile stacker. The stockpile will be conical and contain about 5,300 t of live feed and a total of 26,000 t of crushed material. The stockpile will be constructed over a subterranean tunnel containing two reclaim belt feeders and the reclaim tunnel conveyor. Each belt feeder will be able to reclaim and feed crushed material to the reclaim tunnel feeder at the design rate of 556 dry tph.

Pebble lime will be added to the reclaim tunnel conveyor from a 100 t silo with a screw feeder at a nominal rate of 1.6 kg/t material. The crushed material and lime will then be conveyed by two overland conveyors to the heap for stacking.

An emergency feeder will be available to add cement to the crushed ore from 1.5 tonne super sacks. The feeder will allow operators to add cement and lime if clay containing material is fed to the crushing plant.

17.4 Crushing and Agglomeration (years 5 and 6)

Stockpiled clay material will be campaigned in Year 6.

It is assumed that the primary crusher alone will be adequate for this material. The secondary crusher will be bypassed, possibly by removing, replacing or modifying the panels on the secondary screen deck.

One 3.6 m x 10 m long agglomeration drum is planned for years five and six for Cerro Quema. The drum will be needed to process the large amounts of clay that are planned to be stockpiled and campaigned at the end of the project.

Barren solution will be added at the agglomeration drum to adjust the crushed material's moisture content to between 7 and 13%. The tumbling in the agglomeration drum, combined with cement, will bind the clay and fines to rock forming a stable product. The agglomeration drum product can then be leached without releasing fines which could migrate down through the pad and form an impermeable zone. Impermeable zones in a heap can cause leach solution to channel, bypassing material, and leaving it un-leached.

The agglomeration drum will discharge onto the transfer conveyor, which in turn will discharge to overland conveyor 1 and overland conveyor 2.

The agglomeration drum and all downstream conveyors will be located on lined areas for containment purposes. The liner will prevent the release of cyanide containing solution to the environment.

17.5 Stacking

The heaps will be constructed using a conveyor stacking system. The conveyor stacking system includes the following components:

- "Ramp" portable transfer conveyors, each approximately 35 m in length for conveying crushed material up ramps.
- "Grasshopper" portable transfer conveyors, each approximately 35 m in length for conveying crushed material across relatively flat areas.
- A 35 m long horizontal “Index Feed Conveyor” that transfers crushed material from the grasshopper conveyors to a “Horizontal Feed Conveyor”.
- A moveable 35 m long “Horizontal Index Conveyor” that transfers crushed material to the radial stacker.
- A 33.5 m long “Radial Stacking Conveyor” capable of powered height adjustment, slewing and stacking to a height of 8 m.

The grasshopper and ramp conveyors will transport the crushed material from overland conveyor 2, onto and across the pad to the stacking conveyors. The stacking conveyors allow the radial stacker to place crushed material in 8 m lifts with minimal downtime. The radial stacker and horizontal feed conveyor together are capable of moving while slewing and stacking ore in an arc. The radial stacker can retreat approximately the length of a grasshopper conveyor.

As the stacker continues to move, the system will be periodically stopped to add or remove grasshopper conveyors. This will allow the pad to be stacked from the down slope toe in an upslope direction.

17.6 Solution Application and Leaching

Barren solution will report to the barren tank from the adsorption columns. High-strength cyanide solution and antiscalant will be added to the barren tank by metering pumps. The barren solution will be pumped to the heap leach pad using a split-case horizontal centrifugal pump. Strainers will be installed on the barren solution header to minimize the plugging of sprays by fine particulates.

The ore will be leached using a dilute solution of sodium cyanide applied by a system of sprinklers. Leach solutions will be applied to the crushed ore heap at a nominal application rate of 10 L/h/m^2.

Wobbler-type sprinklers will be used most of the year to apply leach solution to encourage evaporation and help the heap system to maintain water balance. During dry periods, the operation may switch to using drip emitters to minimize evaporation if required.

The dilute cyanide leach solution will percolate through the material, dissolving gold, and drain by gravity to a pregnant solution pond which will store the solution prior to further processing.

A submersible pump in the pregnant pond will pump solution to the head tank of the carbon columns. The solution will flow by gravity, through the carbon in columns, back to the barren tank.

17.7 Leach Pad Design

A trade-off study was performed to evaluate several alternative locations for the heap leach facility at the Cerro Quema Project. Upon completion of this trade-off study, the site located within the Quebrada Maricela was selected for the heap leach facility.

The Heap Leach Facility (Maricela HLF, HLF), located in the Quebrada Maricela, will be a multiple-lift, single-use type leach pad designed to accommodate approximately 20 million tonnes of crushed ore. The HLF has been designed with a lining system in accordance with International Cyanide Code requirements and meets or exceeds North American standards and practices for lining systems, piping systems, and process ponds, which are intended to lessen the environmental risk of the facilities to impact the local soils, surface water, and ground water in and around the site.

The 48.5-hectare HLF has been sized using an average stacked ore density of 1.5 tonnes per cubic meter and a maximum heap height of 75 meters. Ore will be conveyor-stacked at a rate of 10,000 tonnes per day (tpd). Ore will be crushed, then placed on the leach pad using portable conveyors feeding a conveyor-stacker. Ore will be stacked in approximately 8 meter lifts, and benches provided between lifts will create an average overall ore slope of 2.5H:1V (horizontal to vertical), which provides operational and post-closure stability of the heap, and minimizes grading during reclamation.

The HLF will be continuously lined with a composite lining system consisting of a prepared subgrade, a 300 mm thick low-permeability soil bedding layer, and a 2 mm high density polyethylene (HDPE) geomembrane liner.

The pregnant and event ponds utilize a similar composite lining system as the HLF with additional secondary 1.5 mm HDPE geomembrane and geonet layers above the soil bedding layer. These additional layers provide a synthetic dual-containment and leak detection system.

The HLF will be constructed in two phases providing a total lined leach pad surface area of approximately 310,000 square meters. Phase 1 consists of constructing the southern portion of the leach pad, perimeter access road, underdrain system, pad geomembrane lining system, solution collection system, permanent and temporary stormwater diversion facilities, and the geomembrane-lined process ponds. Phase 2 will consist of construction the northern portion of the leach pad, underdrain system, pad geomembrane liner system, and solution collection system.

The natural topography within the leach pad ranges from about 8 percent to 80 percent grade. Substantial local grading is required for constructability and geotechnical stability. A toe fill is required at the downhill end (southern toe) of the leach pad to meet the minimum geotechnical factors-of-safety. The toe fill is designed with a maximum 2 percent grade sloping towards the southern toe to promote drainage of the solution collection system above the geomembrane liner. The leach pad is designed to have a maximum internal slope of no steeper than 2H:1V for constructability and slopes facing towards the southern toe adjacent to the toe fill are to have a maximum slope of 3H:1V to meet geotechnical stability. Storm water will be conveyed around the HLF and process ponds in riprap and/or concrete-lined diversion channels. Sediment control structures will be constructed in drainages downstream of the facilities to control sediment.

17.8 Process Water Balance

A pre-feasibility level evaluation of water management for the Maricela HLF was developed. This evaluation included development of a deterministic water balance that accounts for inflows such as rain and leach solution, outflows such as evaporation and consumptive loss due to ore wetting.

To estimate inflow and outflow water requirements, the following criteria were considered:

- Phased leach pad area
- Solution application flow rate and area
- HLF capacity
- Climatic conditions for average, 1 in 100 year dry, and 1 in 100 year wet years
- Enhanced evaporation rates
- Water treatment plant rates
- Make-up water volume: Solution will be applied with wobbler-type spray or drip irrigation emitters
- HLF ore capacity of 20 million tonnes
- Average as-mined moisture content and specific moisture retention of the ore
- Nominal solution application rate is 10 l/hr/m²
- Maximum solution flow rate is 700 m^3/hr
- Enhanced evaporation via floating evaporator in the Event Pond
- Water treatment of excess water in wetter than average years
- Barren tank contains fluid storage capacity

17.9 Solution Storage

The heap leach facility utilizes a pregnant pond and an event pond. The process ponds have been designed to allow for no excess water discharge during an average year precipitation as discussed in Section 17.10.1.

A 300 m^3/hr water treatment plant has been incorporated into the process fluid system to remove excess process water in case of a large storm event or wetter than average annual climate conditions. The HLF process ponds include provisions to accommodate the minimum volume storage requirements from the following combined upset conditions, below 0.5 meter of freeboard across both ponds:

17.9.1 Pregnant Pond:

- 24-hours of draindown of the leach pad due to upset conditions such as a loss of power
- A 24-hour operating volume to maintain production of the ADR Plant at 700 m^3/hr during low inflow event
- 110% of the total barren tank volume

17.9.2 Event Pond:

- Maximum fluid accumulation in the event pond during an average annual wet season to eliminate discharge of treated water into the natural drainage

17.9.3 Combined Pregnant and Event Ponds to the Event Pond Emergency Spillway:

- The 25-year, 24-hour storm event of 148 mm falling on the lined pad and ponds

The following table presents the approximate volume of the pregnant pond based on the storage criteria listed above:

Table 17-2
Total Required Storage Volumes

Criteria	Required Storage Volume (m^3)	
	Pregnant Pond	Event Pond
24-hr Operating Volume	16,800	0
24-hr Draindown Volume	16,800	16,800
110% Barren Volume	600	0
25-yr, 24-hr Storm Volume	49,600	
Average Annual Fluid Accumulation Volume	0	239,400
Individual Pond Storage	34,200	239,400
Total Combined Storage	323,200	

17.10 Solution Management

Several methods of solution management will be employed for the Maricela HLF to maintain adequate solution storage within the process ponds to reduce or eliminate the need for seasonal make-up water and water treatment. The following design elements have been incorporated into the design:

- Large event pond for solution storage during dry season
- Wobbler-type and drip irrigation emitters on the heap
- Floating spray emitter evaporators in the Event Pond
- Air/SO_2 water treatment system to destroy cyanide in excess water during wet years

17.10.1 Average Year

The HLF is designed to be a zero discharge facility during average annual climate conditions. Based on the pond storage volumes presented in the previous section, during average annual climate conditions, no make-up water will be required. Enhanced evaporation techniques are employed during the average annual climate condition wet season to evaporate excess pond fluid stored in the process ponds so that water treatment will not be required.

At the end of the dry season (January through April) the event pond will be empty and accumulate excess solution from the leach pad due to precipitation during the wet season (May through December). A peak volume of 239,400 m^3 of water will be stored within the event pond at the end of wet season. Water stored will be utilized in the process stream during the dry season. No water treatment will be required during the average annual climate condition.

Enhanced evaporation techniques will be employed during the wet season to reduce excess water in the event pond. Floating spray emitter evaporators placed within the event pond and wobbler-type irrigation on the leach pad will increase evaporation during the dry season. During Phase 1 operation, enhanced evaporation will be constant throughout the year at about 22 m^3/hr. During Phase 2, enhanced evaporation will vary throughout the year ranging with a maximum evaporation rate of 25 m^3/hr during the wet season.

17.10.2 Wet Year

During wetter than average annual climate conditions, water treatment may be employed to treat and discharge excess water to extent necessary to maintain design storage volumes. Water treatment and discharge will only be required in wetter than average annual climate conditions. During the 1 in 100 wet year climate condition, even with enhanced evaporation, water treatment will be required every month of the year. Approximate water treatment flow rates range between zero in March and April to 65 m^3/hr in November, averaging about 32 m^3/hr.

During operations, early and frequent monitoring the pond storage volume will be required to determine when water treatment is required. Excess water in the event pond reduces the storage capacity of the system during large storm events. In addition to water treatment, enhanced evaporation techniques will be employed year-round to further reduce the excess water.

17.10.3 Dry Year

The elimination or reduction of enhanced evaporation, or addition of make-up water may be required in dryer than average annual climate conditions to maintain the solution storage in the Process Ponds for use in the process stream. During Phase 1 operation, make-up water may be required between December and July. During Phase 2 operation, make-up water may be required during the dry season only. The following table presents the approximate make-up water flow rates required for Phases 1 and 2 during the 1 in 100 dry year climate condition:

Table 17-3
Make-up Water During the 1 in 100 Dry Year Climate Conditions

Month	Phase 1 (m^3/hr)	Phase 2 (m^3/hr)
January	34.1	0
February	36.0	0
March	38.5	0
April	30.1	2.2
May	0.2	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

To further reduce evaporation loss on the heap during dryer than average years, drip emitters will replace the wobbler-type spray emitters on the heap.

17.11 Cyanide Destruction

Excess water can be removed from the process by destroying the contained cyanide. The detoxified solution will then be discharged down the Quebrada Maricela. The method chosen for cyanide destruction is the Air/SO_2 process.

Excess water will be pumped from the excess pond to the cyanide destruction area using a submersible pump. The solution will flow through two scavenger carbon columns in series to recover gold values, then discharge to the first of two detoxification tanks also arranged in series. The detoxification tanks are agitated, air sparged 150 m^3 tanks sized for a combined 60 minutes residence time.

The detoxification tanks are dosed with copper sulfate, hydrated lime and sodium metabisulfite.

Cyanide is destroyed according to the following chemical reaction:

$$CN^- + SO_2 + O_2 + H_2O = CNO^- + H_2SO_4$$

Copper sulfate is added to the process to provide cupric copper which acts as a catalyst. Hydrated lime is added when necessary to consume the acid produced during the process.

It should be noted that excess solutions usually contain much less cyanide than process solutions as they generally are only slightly contaminated storm water which usually remains dormant for long periods of time subjected to sunlight and resultant natural ultra-violet degradation of cyanide, particularly in the upper depths of the pond. Often the cyanide destruction step in this case constitutes more of a "polishing" step rather than a full-fledged detoxification of process solutions.

The detoxified water will overflow the second detoxification tank and drain by gravity to the Quebrada Maricela.

17.12 Adsorption, Desorption and Recovery (ADR)

17.12.1 Adsorption

The adsorption facility at Cerro Quema will consist of one train of five up-flow, open-top carbon columns (CICs). The columns are capable of holding 5 tonnes of carbon each providing a CIC process inventory of 25 tonnes of carbon.

Pregnant solution will be pumped to the adsorption-feed head-tank of the CICs at a nominal flow rate of 605 m^3/h. A magnetic flow meter and a wire sampler will be installed on the feed to the CICs to allow the calculation of total gold ounces fed to the carbon columns.

Pregnant solution will flow by gravity through the set of five columns, exiting the last adsorption column as barren solution. Barren solution from the last carbon column will be continuously sampled by a wire sampler for metallurgical accounting then discharged to the carbon safety screen to recover any floating carbon particles.

Underflow from the safety screen will flow by gravity to the barren solution tank. Any carbon recovered on the safety screen will be collected into a carbon super-sack for reuse.

The adsorption columns will operate in this fashion until the carbon contained in the lead column achieves the desired precious metal loading or the barren solution grade increases to an unacceptably high level. Loaded carbon from the first carbon adsorption column will then be pumped to the acid wash vessel. Carbon in each of the lower adsorption columns will be sequentially moved up the adsorption train, counter-current to the solution flow. This will continue from carbon column 2 to carbon column 5. Once carbon has been advanced through the carbon columns; barren, regenerated carbon will be pumped into column 5.

17.12.2 Desorption

The desorption facility at Cerro Quema will include both an acid wash and a pressurized strip circuit. Each circuit will be capable of processing a 2.5 tonne lot of carbon.

Loaded carbon will be advanced to an acid wash vessel. The acid wash vessel is a rubber lined, carbon steel vessel designed to contain 2.5 tonnes of carbon. The vessel is a contactor that allows the carbon to be treated with dilute acid to remove calcium carbonate scale.

A dilute hydrochloric acid solution is prepared in the acid mix tank and circulated through the acid wash vessel using a circulation pump. The dilute acid solution overflows the acid wash vessel and returns by gravity to the acid mix tank. Circulation continues for several hours while process operators monitor and add concentrated acid as needed to maintain the dilute acid solution's pH at or near 1. When acid is no longer being consumed, the carbon is cleaned of carbonate scale. The circulating acidic solution is neutralized with caustic and pumped to the adsorption carbon safety screen for disposal as barren solution make-up water.

Acid washed carbon is advanced to the Elution Vessel. Stripping of the gold from the loaded carbon is accomplished by circulating a heated (135°C at a pressure of approximately 483kPa), dilute caustic and cyanide solution upwards through the carbon bed. The heated solution exits the elution vessel as pregnant eluent. The pregnant eluent flows to the recovery circuit and is returned to the barren strip solution tank. Elution continues until either the grade of the pregnant eluent and barren eluent is approximately the same or the allowed strip time is elapsed.

The Elution Vessel is then vented to the carbon handling area's carbon dewatering screen. Pressure from the barren solution is used to push the carbon from the elution vessel on to the screen for dewatering and further carbon handling.

17.12.3 Recovery

Pregnant eluent flows to two electrowinning cells that are operated in parallel. Stripped gold is plated from the pregnant eluent onto mild steel wool cathodes. The mild steel wool cathodes are removed periodically and treated in the retort furnace which removes all of the water and most of the mercury from the cathodes.

Retorted cathodes are then treated in the diesel fired, tilting smelting furnace. The cathodes are mixed with fluxes, typically a combination of borax, niter, soda ash and silica sand and melted. The soda ash and niter oxidize impurities and allow them to collect into the slag phase and the bullion settles to the bottom of the crucible. The slag and impurities are poured off into a slag mold and the molten bullion is then poured into a cascading series of molds. Off-gases from the furnace are extracted with a blower and filtered in a baghouse (furnace dust collector) to remove particulates and discharge to the atmosphere.

The bullion or doré is cooled and quenched in a water bath. Doré bars are cleaned of slag and loose bits of metal, labeled and weighed. The doré is then shipped to an offsite refiner for further processing and sale as fine gold.

Slag is crushed and inspected to remove visible prills or beads of bullion that can be immediately re-melted or recycled to the pour. The remaining slag will be re-melted to settle and recover any unrecovered bullion. The resulting slag will be crushed and disposed of on the heap.

17.13 ADR Reagents and Mixing

17.13.1 Acid Wash Dilute Hydrochloric Acid

Dilute hydrochloric acid is prepared by metering concentrated hydrochloric acid into the raw water that is circulating through the acid wash vessel and back to the acid mix tank. The addition of acid will be controlled based pH measurements of the water made either with a meter or pH paper.

Concentrated hydrochloric acid will be purchased in 1 m^3 polyethylene totes and fed using a small metering pump.

17.13.2 Acid Wash Caustic

Caustic solution, from the reagent area caustic mix/storage tank, will be used to neutralize excess acid in the acid wash. The caustic will be fed using a small metering pump. Like the acid, caustic addition will be controlled based on pH measurements. Enough caustic will need to be added to neutralize the circulating water prior to disposal.

17.13.3 Strip Solution Cyanide

Prior to the start of a strip, the cyanide metering pump will be used to add cyanide to the barren tank to adjust the grade to approximately 0.25 to 0.5 g NaCN/l solution. Operators will periodically sample and titrate the barren solution for free NaCN using silver nitrate. When necessary, cyanide will be added to the strip barren tank batchwise to maintain free cyanide in solution.

17.13.4 Strip Solution Caustic

Prior to the start of a strip, the caustic transfer pump will be used to add caustic to the barren tank to adjust the grade to approximately 10 g NaOH/l solution. Operators will periodically sample and titrate the barren solution for NaOH using standardized hydrochloric acid. When necessary, caustic will be added to the barren tank batchwise to maintain the required caustic grade in solution.

17.13.5 Flux to Smelt

A standard smelting flux will be used, composed approximately of the following components:

Silica	25%
Borax	40%
Niter	20%
Soda Ash	15%

Flux will be prepared by blending in a cement mixer. It will then be added to the mild steel wool cathodes prior to smelting. The flux contains oxidants which will cause base metals to react so they can be dissolved in the slag phase.

17.14 Carbon Handling

Stripped carbon from the elution vessel is screened on the carbon dewatering screen; dewatered carbon falls into the Carbon Storage Tank, transport water reports to the carbon fines storage tank.

Carbon, as needed, is transferred from the carbon storage tank to the kiln feed hopper to maintain constant feed to the carbon regeneration kiln. The kiln is a diesel fired device that reactivates carbon, at a temperature of approximately 750˚C prior to reuse. Reactivation removes organic compounds that foul activated carbon, reducing the carbon's activity or capacity to adsorb gold. The kiln can treat approximately 45 kg activated carbon/hr. Assuming a nominal carbon advance rate of 1.7 t carbon per day, the kiln can reactivate 64% of the stripped carbon.

Reactivated carbon from the quench tank or stripped carbon from the carbon storage tank will be advanced to carbon column 5.

17.15 Process Reagents and Consumables

17.15.1 Pebble Lime

Pebble Lime will be used to treat the crushed material prior to leaching. Lime maintains an alkaline pH during leach. Lime will be delivered in tanker trucks. The truck will off load lime pneumatically into a silo. A variable speed feeder on the bottom of the silo will meter pebble lime onto the reclaim tunnel conveyor in proportion to the tonnage.

17.15.2 Cement

Dry cement will be purchased in super sacks and stored on site. If cement is required due to an ore blending error, a sack will be loaded into an emergency feeder. A variable speed screw feeder will meter dry cement onto the reclaim tunnel conveyor in proportion to the tonnage.

17.15.3 Cyanide

Sodium cyanide (NaCN) will be used in the leaching, elution and potentially the adsorption process. Cyanide forms stable complexes with gold and silver, allowing them to remain dissolved in solution for eventual recovery in the ADR plant.

Cyanide will be purchased as briquettes in 1 t super sacks. Cyanide will be mixed in a 6 m^3 agitated, steel tank. The super sack will be hoisted up and lowered into a chute with a bag breaker. The briquettes will fall into the tank and dissolve to a grade of 25% by weight. After mixing, the cyanide solution will be transferred to a storage tank that can contain approximately 3 dry t NaCN. Combined storage will be approximately 1.6 days of NaCN.

17.15.4 Caustic

Caustic (NaOH) will be used in the elution and acid wash process. Caustic is a convenient way to add alkalinity to process solutions without causing large amounts of scale.

Caustic will be purchased as flakes or beads in 25 kg sacks. Caustic will be mixed in a 6 m^3 agitated, steel tank. The caustic sacks will dumped by hand into the tank and dissolve to form a solution grade of approximately 25% by weight. After mixing, the caustic solution will be fed directly from the mix tank. Combined storage will be approximately 10 days of caustic.

17.15.5 Sodium Metabisulfite

Sodium metabisulfite ($Na_2S_2O_5$) will be used in the cyanide destruction process. Sodium metabisulfite is a solid and convenient source of SO_2 for the destruction process.

Sodium metabisulfite will be purchased as a solid in 1 t super sacks. The sodium metabisulfite will be mixed in a 4.2 m^3 agitated, polyethylene tank. The super sack will be hoisted up and lowered into a chute with a bag breaker. The solid will fall into the tank and dissolve to a grade of 20% by weight. After mixing, the sodium metabisulfite solution will be transferred to a storage tank that can contain approximately 2 dry t sodium metabisulfite. Combined storage will be approximately 4.7 days which is 6 hours of sodium metabisulfite under design treatment conditions of 300 m^3/h.

17.15.6 Copper Sulfate

Copper sulfate pentahydrate ($CuSO_4 \cdot 5H_2O$) will be used in the cyanide destruction process. Copper sulfate provides the cupric copper cation (Cu^{+2}) that catalyzes the cyanide destruction reaction.

Copper sulfate will be purchased as a solid in 1 t super sacks and will be mixed in a 3.5 m^3 agitated, polyethylene tank. The super sack will be hoisted up and lowered into a chute with a bag breaker. The solid will fall into the tank and dissolve to a grade of 25% by weight. After mixing, the copper sulfate solution will be transferred to a storage tank that can contain approximately 1.5 dry t copper sulfate which is approximately 14 days of copper sulfate under design treatment conditions of 300 m^3/h.

17.15.7 Hydrated Lime

Hydrated lime or calcium hydroxide ($Ca(OH)_2$) will be used in the cyanide destruction process to consume excess acid. It is unknown if there will be enough acid produced to require lime addition.

Hydrated lime, if needed, will be purchased as a solid in 1 t super sacks. The lime sack will be hoisted onto a dry feeder system. The dry feeder will auger hydrated lime into an agitated tank where it will be mixed with water. The resulting slurry will be pumped to the detoxification tanks. Lime will be made up continuously as it is used.

18.0 PROJECT INFRASTRUCTURE

Drawings CQ01-000-121-401 through 481 show the general arrangement of the infrastructure and support facilities.

18.2 Construction Facilities

Pershimco operates a gated office and core shed facility located on Via Tonosi approximately 0.5 kilometers east of the property access road. It includes the following facilities:

- Administration and Geology Offices
- Helipad
- Sample Preparation Facility and Laboratory
- Sample Logging and Storage Area
- Dormitories
- Showers and bathroom
- Kitchen
- Laundry
- Dining Hall
- First aid clinic and Ambulance

Finished containers will be located at the gated site for use as living facilities by the construction staff.

A temporary construction camp will be built at the location of the existing platform, 7 km from the Via Tonosi intersection at an elevation of 425 masl. The construction facilities will include:

- Dormitories
- Showers and bathroom
- Kitchen
- Laundry
- Dining Hall

The camp will provide contractors with secure living facilities at a location convenient to the work site while discouraging them from disrupting local residents.

On the same platform additional facilities supporting the construction will be located including:

- Construction Offices
- Construction Warehouse

- Construction Laydown Area

The construction offices will be modular, finished containers. The Construction Warehouse and Laydown Areas will later become the permanent Mine Shop Warehouse and Laydown area. These will be built early in the site construction schedule to serve this purpose.

18.3 Site Facilities

Refer to the General Arrangement CQ01-000-121-401 for the relative location of major site facilities.

18.3.1 Access Road

An existing site access road intersects with Via Tonosi approximately 32 km south of Macaracas. The access road runs north approximately 7 km to the location of the platform constructed between Quema and La Pava by Pershimco. The road climbs approximately 321 m in elevation at an average grade of approximately 5%.

The access road will be the route that contractors and equipment access the site during construction and Pershimco personnel and supplies access the site during operation.

The current road will be widened to approximately 9 m to allow two over-the-road trucks to pass each other, re-contoured to eliminate grades in excess of 7%, and sloped to a ditch on one side of the road to improve drainage.

18.3.2 Security and Fencing

A security check point exists approximately 1.5 km north of Via Tonosi. The security checkpoint will be relocated to allow security to safely control access to the magazines. Cost for a small office container, lighting, fencing and a hinged gate were included.

A three-strand barbed wire fence will be erected in all locations where livestock can access mining and process areas.

Cyclone fencing, approximately 2.4 m tall, will be installed around the process ponds. The fence will assure that foraging livestock and wild game cannot enter the ponds. Warning signs will be mounted on the fence to alert personnel that the process ponds have water containing cyanide.

Cattle guards will be installed in roadways where they cross fence lines to prevent livestock from entering process areas via roadways.

18.3.3 Water Supply

18.3.3.1 Raw Water

Raw water will be supplied by Well Number 4-2013 located approximately 1.1 km north, north-east of the existing platform at an elevation of 190 masl. The well was tested to have an equilibrium capacity of 27.5 m3/h. The well will be fitted with a pump capable of producing at approximately 200 m of hydraulic head. A second well can be added, if needed, for a cost of less than $20,000.

Raw water will be stored in a 762 m3 tank located approximately 600 m south-southeast of the existing platform near the access road to La Pava at an elevation of 480 masl. The tank will be divided by internal piping into a 549 m3 fire water reserve and 213 m3 for mining and process needs.

18.3.3.2 Potable Water

Bottled drinking water will be supplied by Pershimco. The suggested water supply is 3 liters per day per person in the tropics based on information published by the World Health Organization. The average daily drinking water requirement is estimated to be 300 liters per day.

18.3.3.3 Fire Water

A gravity fire water system will be provided for the Cerro Quema. The system will provide fire water to the platform facilities including the mine shop and the crusher, the crushed ore stockpile, the ADR area and the administration building.

Fire water will be supplied from the raw water tank. Distribution piping will be sized to deliver 366 m^3/h of fire water. The tank will have 549 m^3 of water reserved for firefighting; this volume is equivalent to 90 minutes water supply.

18.3.4 Electrical Power Supply

Electrical power will be supplied from the grid by Distribuidora Eléctrica de Metro-Oeste (Edemet) at the Substation in Las Tablas, a community about 31 km southeast of Chitre along the Carretera Nacional.

Power will be delivered to site using a 34.5 kV power line constructed from Las Tablas to Cerro Quema. This power line will be financed by the Cerro Quema Project but purchased by Edemet over five years through electrical power credits.

Power will be distributed onsite at 34.5 kV and stepped down at transformer stations in the process areas.

Emergency power will be generated on site by a single 680 kW diesel driven generator located on the existing platform at an elevation of 423 masl.

The generator will produce 480 V power that will be stepped up to 34.5 kV for on-site distribution through the planned supply system. Operators will need to be judicious in running only designated emergency systems to avoid overloading the generator.

The site power supply will include the following standard voltages:

- Generation 480 V, 3 ph, 60 Hz
- Distribution 34.5 kV, 3ph, 60 Hz
- Medium Voltage 4,160 V, 3ph, 60 Hz
- Low Voltage 480 V, 3ph, 60 Hz
- Control Voltage 110 V, 1 ph, 60 Hz

18.3.5 Fuel Handling

The majority of the diesel fuel used at Cerro Quema will be offloaded and stored in a single cylindrical, horizontal steel tanks located on the western end of the existing platform at 423 masl, adjacent to the generators. The tank is 3.3 m diameter x 11.9 m long for a storage capacity of approximately 100 m^3.

Diesel will be delivered by tanker truck and offloaded using a dedicated horizontal, centrifugal pump. It will then be distributed to the mine fleet by dedicated pumps.

A fueling station for light and heavy-duty vehicles will be a 214 m^2 paved, concrete pad located to the east of the storage tanks. Fuel dispensing equipment will be included for light and heavy-duty equipment.

A 1.91 m diameter x 4.86 m long cylindrical, horizontal steel tank will be located in the process area. Diesel will be delivered by tanker truck and offloaded to this tank using a dedicated horizontal, centrifugal pump. Diesel will then be distributed to process equipment using a dedicated supply loop. It is anticipated that the regularly scheduled diesel delivery trucks will occasionally be diverted to the process diesel tank to top it off with a partial load of fuel.

A 1.36 m diameter x 3.45 m long cylindrical, horizontal steel tank will be located adjacent to the emergency generator. The diesel will be fed to the emergency generator to using a dedicated supply pump. It is anticipated that the emergency generator will be used mostly to check that it operates. The tank will be filled infrequently and the mine fleet’s fuel truck can satisfy the needs.

All fuel tanks will be installed on concrete containment facilities with capacity to contain 110% of the fuel stored.

18.3.6 First Aid

During construction, a temporary first aid clinic will be put in place on the existing platform. The clinic is intended to be staffed by a nurse who can provide skilled medical treatment to sick or injured workers.

An ambulance is available at the existing office located on Via Tonosi during construction. When needed the injured or sick people are driven to one of the nearest hospital:

- Tonosi
- Chitré

A permanent treatment room will be located on the first floor of the Warehouse and Workshop building located near the ADR and process ponds. The treatment room is intended to be staffed by a nurse who can provide skilled medical treatment to sick or injured operators. The treatment room has space for two beds and an office for the nurse on duty.

The ambulance, which can be used to transport employees from the mine, mine shop or crusher, will be relocated in a bay located adjacent to the permanent treatment room.

18.3.7 Communication

There is an existing radio system installed at the Cerro Quema site. The radios system will be upgraded to allow the different groups to communicate on dedicated channels. A repeating station will rebroadcast the signal to all areas of the property.

Wired phone and internet access will be available in the office areas.

18.3.8 Transportation

Transportation will be provided for the workers from Macaracas and surrounding areas to the mine via buses and vans on scheduled shift changes. Light vehicles and pickups will be provided to transport mine workers on the project site to their respective work areas.

18.3.9 Waste Disposal

18.3.9.1 Sanitary Waste

Lavatory facilities will be located throughout the project site. Sanitary waste from the lavatories will flow by gravity to multiple septic systems for treatment and disposal.

18.3.9.2 Solid Waste

Solid waste will be managed in dumpsters or other appropriate waste containers. All containers will be covered (or covered and weighted, if covers are not attached) to reduce the potential for blowing trash and to prevent access by wildlife. Containers used on site will be labeled. Trash from office and lunch areas will be bagged.

A licensed waste management company will transport collected waste to a dedicated offsite, third party controlled landfill site. On-site burning of any waste materials, vegetation, domestic waste, etc. will not be allowed.

18.3.9.3 Hazardous Waste

Hazardous waste will be placed in drums, put on pallets, and stored in secure, impermeable, and appropriately sized containers, providing the required secondary containment, until being hauled offsite by a licensed contractor. Hazardous waste will be disposed of in a safe and environmentally sound manner using outside contractors.

18.4 Operations Buildings

Buildings and facilities are located throughout the project area. General Arrangement drawing CQ01-000-121-401 shows the location of facilities relative to each other. Facilities include:

Mine

- Mine Truck Shop and Warehouse (895 m^2)
- Laboratory (441 m^2)
- Powder Magazine, La Pava
- Powder Magazine, Quema

Process

- Administration Building including Process Warehouse (762 m^2)
- ADR Area (1,123 m^2)
- Refinery (339 m^2)
- Reagent Storage (302 m^2)

18.4.1 Mine Truck Shop and Warehouse

The Mine Truck Shop and Warehouse is an 895 m^2 single-story steel building constructed near the center of the existing platform area.

The warehouse will be a 180 m^2 section of the building that will store parts that require protection from the environment for mine and process maintenance. Adjacent to the warehouse, a laydown area is provided for storage of larger, weatherproof parts.

The mine workshop area includes two enclosed repair bays that occupy the remaining 379 m^2 of the building. Mine maintenance personnel can repair mobile equipment in enclosed bays while protected from wind and rain.

A 231 m^2 outdoor vehicle wash facility is located to the south of the mine workshop bays. The wash facility floor will slope to a collection sump which will overflow into a settling sump. Skimming equipment will remove floating oil and a recirculation pump will recycle the water to the wash bay. A high pressure washing system will be included to remove dirt and grease from heavy equipment.

A 231 m^2 outdoor vehicle welding facility is located to the north of the mine workshop bays.

18.4.2 Laboratory

The Laboratory is a 441 m^2 single story steel building constructed adjacent to the Mine Warehouse and Workshop building near the center of the existing platform area.

The laboratory will include sample receiving, sample preparation, fire assay, a wet laboratory complete with an atomic adsorption instrument and a metallurgical laboratory. The building will also include office space and utilities for a Chief Chemist and his staff.

The laboratory will be able to receive, prepare and analyze ore control samples from the mine and process samples from the leach facility.

18.4.3 Explosives Magazine

An Explosives Magazine will be located approximately 700 m south of the existing pad along the access road.

The magazine will be a fenced, gated area approximately 84 m by 43 m. The magazine will be divided into three areas separated by two 3 m-tall berms. Each of these three areas will have a CMU storage building for explosive components as follows:

- Detonators, 36 m^2 building
- Boosters, 100 m^2 building
- Packaged Explosives, 36 m^2 building

18.4.4 Explosive Isotank Laydown Area

An Explosives Isotank Laydown Area will be located approximately 1,200 m south of the existing pad along the access road. The isotanks will store the bulk explosives to be used onsite.

The Explosives Isotank Laydown Area will be a fenced, gated area approximately 45 m wide by 31 m deep, enough space for four isotanks. The area will need to be leveled and covered with gravel for vehicle access.

18.4.5 Administration Building

A 760 m^2, single story concrete block Administration Building will be constructed near the southern corner of the event pond at the 220 masl elevation level.

The building will provide space for employee lockers, treatment room office space, a meeting room and utilities for site managers and their staff.

18.4.6 ADR Area

The ADR Area includes a 1,123 m^2 concrete slab that will house the five carbon columns, kiln and strip facilities. The ADR Area will be located at an elevation of 230 masl near the north side of the pregnant pond. The ADR area will be covered by a roof to protect the area from rain; no walls are required due to the climate and nature of the process equipment.

A 32.1 m^2 concrete block building adjacent to the ADR Area will house the motor control center.

18.4.7 Refinery

The Refinery is a 339 m^2 block building adjacent to the ADR Area. The refinery houses the electrowinning and smelting equipment. The building also includes an office that allows security to monitor the electrowinning and smelting processes.

18.4.8 Reagent Storage Area

The Reagent Storage Area is 302 m^2 concrete slab located 15 m north east of the ADR area. The storage area is divided into separate areas so cyanide, caustic and acid can be segregated. The building can be accessed by a forklift.

The storage area has a roof to protect reagents from the weather.

Flatbed delivery trucks can drive up to the Reagent Storage Area and turn around in a 30 m wide yard.

19.0 MARKET STUDIES AND CONTRACTS

Gold production will be shipped as doré bars to a precious metals refinery such as Johnson Mathey, Metalor or Argor-Heraeus. The refinery will produce gold bullion from the doré that will then be sold to banks, institutional investors, treasuries or private parties using a precious metals merchant such as Auramet.

Data from the London Bullion Market Association shows that the average volume of gold traded was 21 million ounces per month in the period December 2010 through November 2013. This volume of trading should ensure that Cerro Quema will find buyers for their production.

The doré sold will contain silver. The silver is a beneficial side product that will result in additional revenue. As silver revenue is not included in the mine economics no silver refining charge is considered.

Gold can be sold on either the spot market or on contracts that allow prices to be averaged. The gold price used as the base case in the cash flow analysis is $1,275 per ounce.

20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL IMPACT

This section provides a summary of the environmental and social baseline studies and assessments conducted to date and the Panamanian regulatory requirements to prepare an environmental impact assessment (EsIA) to meet National Authority of the Environment (Autoridad Nacional del Ambiente – ANAM) requirements and associated permits. Pershimco is currently evaluating which additional studies will be required to support the EsIA as well as which studies would be needed to support an International Finance Corporation (IFC) environmental and social impact assessment (ESIA), if the project was to seek financing from an International Finance Institution (IFI).

20.1 Environmental Assessment Regulatory Requirements

An environmental assessment and permits are in place for the previously proposed continuous vat leach operation. However, as the current project will utilize heap leach processing methods, Pershimco has initiated an update of the environmental assessment and permits to reflect the new project design. The environmental assessment and permit applications, including the closure plan, will be submitted to the Panamanian government in 2014.

A high level overview of the environmental assessment requirements in Panama, which are regulated by Decree Law #123 (the Decree, August 14, 2009), is provided below. The Decree provides detailed measures by which the process of submitting and reviewing an Environmental Impact Study (Estudio de Impacto Ambiental – EsIA) for a proposed project shall be carried out, in accordance with the provisions of Law No. 41 of July 1, 1998 – Environmental Protection Law of the Republic of Panama.

20.1.1 Development of an Environmental Impact Study

Proposed project types that require an EsIA are indicated under Article 16 of the Decree or can also be determined by ANAM based on the environmental risk that the proposed project may cause. The proposed Cerro Quema mining project falls under Article 16 of the Decree (Associated *International Standard Industrial Classification of All Economic Activities* [ISIC] Code # 1310). In accordance with the Decree a proposed project may fall under one (1) of three (3) EsIA categories based on the five (5) environmental criteria provided under Article 23 of the Decree. The five criteria are summarized as follows:

- Criterion 1: Creation of risk to the health of the human population, flora and fauna and the environment in general.
- Criterion 2: Significant alterations to the quantity and quality of natural resources, with special attention given to the effects on biodiversity, and territories or resources with environmental and/or national value.

- Criterion 3: Significant alterations to the attributes that classify an area as environmentally protected or to the scenic, aesthetic and/or touristic value of an area.
- Criterion 4: Cause for displacement and relocation of human communities, and significant changes on the life systems and customs of human groups, including urban areas.
- Criterion 5: Alterations to sites with declared anthropological, archaeological, historical and/or cultural heritage value.

Based on these criteria, the proponent recommends an EsIA Category for the proposed project, which is then ratified by the ANAM. Currently, the Cerro Quema project is classified as a Category III EsIA. The description of the EsIA categories as provided in Article 24 of the Decree and can be summarized as follows:

- Category I EsIA: The proposed project may generate negative environmental effects that are not significant, and which do not implicate significant environmental risks.
- Category II EsIA: The proposed project may cause negative environmental effects of significant nature that partially affect the environment, which can be eliminated or mitigated with known and easily applicable measures, and which are consistent with current environmental regulations.
- Category III EsIA: The project may cause negative environmental effects that are of indirect, cumulative and/or synergistic nature and which are quantitatively and qualitatively significant, and therefore must be subjected to a more in-depth evaluation of effects, and identification and implementation of appropriate mitigation measures.

Regardless of the category, an EsIA must meet the minimum content specified in Article 26 of the Decree, to ensure the adequate prediction, identification and interpretation of environmental effects, as well as the technical suitability of the proposed mitigation measures.

20.1.2 Evaluation of the Environmental Impact Study

Once the EsIA is submitted by the proponent to the ANAM, the EsIA evaluation process begins, which consists of the following phases (as per Article 41 of the Decree):

- Admission Phase: This phase begins with the formal electronic submission of the EsIA, along with the application for environmental assessment if it is a Category II or III EsIA, or a duly notarized affidavit if it is a Category I EsIA. During this phase it will be verified, according to its category, if the EsIA meets the minimum requirements established in Article 26 of the Decree. This phase shall not exceed five (5) business days.
- Assessment and Analysis Phase: During this phase, the ANAM and the pertinent municipal and sectorial environmental units evaluate the EsIA by looking at the technical, environmental and sustainability aspects of the respective study.

Information requests may be issued to the proponent if they are deemed necessary. This phase should be completed within a period not exceeding thirty-five (35) business days for a Category II EsIA, and fifty-five (55) business days for a Category III EsIA. A report will be issued at the end of this phase.

- Decision Phase: During this phase the ANAM formalizes its decision to approve/reject the EsIA through an Environmental Resolution. This phase should not exceed five (5) business days.

Once approved, the proponent must submit evidence demonstrating compliance with the follow-up monitoring outlined in the Environmental Management Plan section of the EsIA with the frequency and detail set out in the Environmental Resolution issued by ANAM.

20.1.3 Public Participation and Engagement

The proponent is required to engage the public in the early stages of the project and in the evaluation process of the corresponding EsIA, so that it can fulfill the requirements established in the Decree and in the *Citizen Participation Regulation*. The proponent shall document in the EsIA all activities carried out to engage and/or consult the public and/or community. The proponent shall carry out public participation and engagement throughout the EsIA using mechanisms outlined in Article 29 of the Decree, and based on the assigned EsIA category. Additionally, as per Article 30 of the Decree, the proponent shall develop a Public Consultation and Engagement Plan.

The proponent must hold a public forum at their cost during the evaluation stage of a Category III EsIA at a date coordinated with ANAM, which would serve as the moderator of the forum.

20.1.4 Panamanian Permitting Requirements

20.1.4.1 Previous Permitting Activities

In 1996, under Decree 23 of 1963 an Environmental Viability Report (Informe de Viabilidad Ambiental - IVA) was approved by Resolución No. 070 INRENARE of December 24, 1996. The project included the development of 3 pits La Pava, Quema and Quemita in an area of 110 hectares.

In 2004, under Decree 57 of 2004 a Environmental Management Program (so called Programa de Adecuación y Manejo Ambiental - PAMA) was approved by Resolución DINAPROCA-PAMA No.017-2004 of July 30, 2004. This PAMA was first amended by Resolución AG-0211-2010 of February 22, 2010 and this was further amended by a second addenda presented to ANAM on October 23, 2012 which it was approved by Resolución AG-07422012 of December 27, 2012. The latest PAMA approval is valid until December 31, 2017. The project included a first phase to develop only the La Pava deposit. The development of Quema and Quemita pits (Phase II) would be determined based on the results of the Phase I study. The total area for project development was provided to be 817.17 hectares and there was no mention of main access road to the project. Monitoring work related with this approval is associated with the direct area of influence of the proposed La Pava pit.

20.1.4.2 Permits for Project Development

Pershimco has identified the following Panamanian permits that must be acquired for the Project. Permits that have been approved at the time of writing of this PFS report are noted.

20.1.4.3 Environmental Permits

- Application for surface water and groundwater concessions
- Groundwater exploration
- Temporary use of water
- Building permit for work on water channels
- Reforestation Plans and Financial Reports approval certification
- Tree cutting permit
- Ecological Compensation
- Wildlife Rescue and Relocation Plans approval certification
- Category I Environmental Impact Assessment (EsIA) for electric plant *(approval granted)*
- Category II EsIA for road rehabilitation (km 0 to km 7)

20.1.4.4 Social Security

- Industrial Permit – permit to be granted based on Occupational Health and Safety Program, risk maps and procedures, physical-chemical monitoring

20.1.4.5 Municipal Permits

- Construction of infrastructure (offices and plant infrastructure, bridges, fords, dam, road up to km 7)
- Movement of land for construction.

20.1.4.6 Ministry of Commerce and Industry

- Commercial Registration *(approval granted)*.

20.1.4.7 Ministry of Labor

- Internal Labor Regulations *(approval granted)*.

20.1.4.8 National Commission for the Study and Prevention of Drug-Related Crimes (Comisión Nacional para el Estudio y la Prevención de los Delitos Relacionados con Drogas - CONAPRED)

- Controlled use of reagents.

20.2 Physical Environment Baseline Studies

A summary of physical baseline studies that have been completed in supporting of previous permitting activities is provided below. Some of these studies will need to be updated, while new studies to address current gaps will need to be competed, to support the environmental assessment and future permits.

20.2.1 Topography

The local terrain is rugged, ranging from 200 meters above sea level (masl) to over 900 masl, with a maximum relief of about 850 m. Approximately 80 % of the land surrounding the project site has slopes of greater than 55 %. With the exception of the site access road and exploration drill roads, the surrounding countryside is only accessible by footpaths. Much of the surrounding area has been deforested and converted to pasture lands. Deforested areas are covered by 1 to 2 m high hummocks of grasses, matted ferns, and scattered small trees. Thick stands of forest persist along some of the drainages and in the steeper valleys. Some reforestation has been initiated following the Environmental Viability Report (Knight Piésold, 1996). Between 1997 and 2004, a total of 84 hectares had been reforested. In 2008 a total of 8 hectares had been reforested, and in 2012 a total of 70 hectares were reforested within terrain owned by the company (Mojica and Pérez Ramos, 2012a). Moreover, by 2009, approximately 600 hectares of native forest were allowed to naturally regenerate (Pérez Ramos, 2009). Less than five (5) % of the project area consists of rock exposures, with most occurring along active stream beds (Innovat, 2009).

20.2.2 Geological Setting and Mineralization

The Azuero Peninsula, on which the Cerro Quema Project is located, is a prominent feature on the southwest (Pacific) coastline of Panama. The Cerro Quema district is situated in the central part of the Azuero Peninsula. The rocks consist of andesite, dacite, limestone, basalt and turbidites that are interpreted to have been deposited in a fore-arc environment. The Rio Quema Formation is interpreted as the infill sequence of a fore-arc basin of the Cretaceous-Paleogene volcanic arc and the host to mineralization in the Cerro Quema district.

Several gold deposits have been identified on the Cerro Quema Property, and these include the La Pava, Quemita-Quema, and La Mesita deposits. Mineralization is hosted by andesites and dacitic lava domes of the Rio Quema Formation. The mineralization consists of disseminated pyrite, chalcopyrite, and enargite and stockworks of quartz, pyrite, chalcopyrite, and barite with traces of galena and sphalerite. Gold occurs as disseminated microscopic grains of native gold and as “invisible gold” within the pyrite, particularly in the siliceous alteration zone. Strong supergene alteration forms an oxidation cap or gossan and has released the gold contained in the pyrite. The highest grades of gold mineralization are near the surface and decrease towards the lower limit of oxidation.

Pershimco has defined three alteration zones related to the Cerro Quema deposits:

- A silica alteration zone, occurring in the core of the deposit, that contains quartz with very minor alumino-silicate clay minerals;
- A silica-clay alteration zone that surrounds the silicic core and is composed of silica with up to 30% fine grained alumino-silicate clay minerals (kaolinite, dickite, pyrophillite). This zone may contain medium to low grade mineralization;
- A clay alteration zone that occurs as a transition between the silica-clay alteration and fresh rock. The clay alteration may contain up to 30% illite/smectite clays that replace original feldspar. This zone is unmineralized.

The fresh unaltered rocks are quartz-feldspar phyric dacite.

The regional and local geological setting and mineralization are described in Section 7 of this report.

20.2.3 Geochemistry

The Cerro Quema Project will be mined as two separate gold deposits: La Pava (the largest deposit) and Quemita-Quema. Samples that have been submitted for geochemical characterization testing to date (e.g. Knight Piésold, 1993 and 1996) were collected from the La Pava ore body because it will produce the majority of the waste. The composition and distribution of waste rock from the La Pava deposit is believed to be representative of the Quemita-Quema ore bodies based on similar geology; however, this assumption needs to be confirmed through geochemical testing of drill core associated with those ore bodies.

Sections of the existing drillholes located in the La Pava ore body were reviewed to determine the distribution of alteration types in the waste and if these holes are representative of the samples that have been geochemically evaluated to date (e.g. Knight Piésold, 1993 and 1996). The distribution of rock types evaluated by Pershimco includes: 49% silica; 32% silica-clay; 3% silica-clay and 16% fresh rock. Waste rock that is intersected in the existing holes (i.e. silica, silica-clay, clay, and combinations of all three with varying degrees of silicification and argillation) represent a similar alternation type distribution that has been geochemically evaluated to date. The development of the open pit will be halted within the oxidation zone such that the underling sulphide bearing, and potentially acid generating rock, will not be exposed.

Isolated pockets of sulphides (unweathered rock) are believed to exist in the oxide zone of the ore body. Considering the lack of detailed information on the rock description in the drillhole database that has been provided, this relationship at this time is only speculated. Additional samples of drill core should be collected to confirm the geochemical characteristics. The alteration of waste samples should be continually confirmed throughout Operations.

Additionally, acidic pH levels and elevated copper concentrations are currently observed in water emanating from a spring near the La Pava ore zone, suggesting impact from the oxidation of sulfide minerals associated with regional mineralization. Water quality and flow monitoring data from springs, surface water, and groundwater must be collected and evaluated to further understand the geochemical characteristics of the rock associated with the ore deposits.

20.2.3.1 Waste Rock

Fifty-six samples of the silica, silica-clay, clay alteration types and weathered fresh rock samples were submitted for acid base accounting (ABA) test work between 1993 and 1994 (Knight Piésold, 1996). The results of the ABA testing indicate a varied potential for acid generation based on the classification that was applied to the ABA test results (see Knight Piésold, 1996 for methods, theory and results).

The following results indicate a low potential for acid generation:

- 77% of samples had very low total sulfur contents (i.e. less than 0.2 weight percent).

The following results indicate an uncertain potential for acid generation:

- The ratio of acid neutralizing potential (ANP) to acid producing potential (APPtot) (ANP/APPtot) indicates uncertain potential for acid generation according to the following:
  - ANP/APPtot is uncertain (between 0.1 and 1.2) with a minimum ratio of -2.7 (hanging wall clay sample) and maximum ratio of 1.4 (weathered fresh rock sample).

The following results indicate both uncertain and a likely potential for acid generation:

- The net ANP (ANP-APPtot) indicates three samples are potentially acid generating (i.e. net ANP < -20 kton/ton) and the remaining samples have an uncertain potential for acid generation (-20 < net ANP < 20 kton/ton) as follows:
  - The net ANP for one silica-clay is -233.8 kton/ton and for two hanging wall clay samples is -301.6 and -169.8 kton/ton.
- The samples have acidic to neutrophilic paste pH and acidic NAG pH suggesting there is stored potential for acid generation.

Eleven samples of the silica, silica-clay, clay alteration types and weathered fresh rock samples were submitted for synthetic precipitate leaching procedure (SPLP) short term leachate testing (Knight Piésold, 1996). The results of the leach testing indicate that the silica, silica-clay, clay alteration types and weathered fresh rock have an acidic pH (3.89 to 5.69). The following rock types are expected to leach metals at concentrations greater than the Panama drinking water guidelines:

- 1 of 3 silica alteration samples has the potential to leach iron, and manganese;
- Silica-clay alterations samples have the potential to leach aluminum (1 of 2 samples), copper (1 of 2 samples), iron (2 of 2), and manganese (2 of 2); and,
- 1 of 3 weathered fresh rock samples has the potential to leach aluminum, copper, iron and manganese.

In summary, the ABA test results indicate that samples of potential waste rock are expected to contain low to very low sulphide by weight percent. Although the classification of ABA results indicate that most samples have a low to uncertain potential for acid generation, two silica-clay alteration samples and one clay alteration sample have a net ANP that indicates a likely potential for acid generation. The SPLP leachate results indicate that there is the potential for aluminum, copper, iron and manganese to leach at concentrations greater than the Panama drinking water guidelines in some of waste rock samples.

Additional sampling of drill core should be completed to confirm the geochemical characteristics of the waste rock; in particular material associated with the Quemita-Quema ore bodies. Kinetic test work has not been completed on waste rock samples. It is recommended that kinetic testing be completed on samples of selected alteration types. Such testing is consistent with standard practice, as outlined in the following recognized documents:

- Draft Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia (Price, 1997);
- Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials (MEND, 2009); and
- Global Acid Rock Drainage (GARD) Guide (INAP, 2014).

20.2.3.2 Ore

The results of ABA testing conducted on four (4) ore samples (i.e. samples M1 through M4) suggest there is a potential for acid generation based on the NP/AP ratios ranging from -1.37 to 0.80. The low sulphide-sulphur contents of 0.07 to 0.11 % of three of the samples suggest that acid generation potential is low. However, the sulphide content of 0.81 % in one sample indicates that some acid generation would be likely to occur from this sample.

20.2.3.3 Leached Ore

McClelland Laboratories, Inc. (2013) reported the results of a detailed metallurgical study to evaluate the response of the Cerro Quema ore samples to various cyanide leaching procedures (e.g. whole ore bottle roll; whole ore up-flow vat leach; and column leach tests). The report concluded that both oxide and sulphide ore are amenable to simulated heap leach cyanidation treatment at a 100% -25 mm feed size.

Included in the McClelland (2013) report, ABA testing was carried out on 30 head samples (e.g. samples prior to cyanide leach testing) that were composited from 134 La Pava oxide, La Pava sulphide, and Quemita-Quema oxide samples; and leached residue (e.g. heap leach ore post cyanide leach testing) from one La Pava oxide composite sample was submitted for synthetic precipitation leachate procedure (SPLP).

MEND (2009) presents a standard interpretation of ABA test results based on the ratio of neutralization potential (NP) and acid potential (AP), i.e. NP/AP, whereby samples with NP/AP <1 are potentially acid generating; samples with NP/AP between 1 and 2 have uncertain acid generating potential; and samples with NP/AP > 2 are non-potentially acid generating. The heap leach residue ABA test results indicate a varied potential for acid generation based on the MEND (2009) classification and are summarized as follows:

- 17 composite La Pava leached oxide ore samples had low to moderate sulphide-sulphur contents of <0.01 to 1 % (with a median of 0.1 %); an acidic median paste pH of 5.4; and an average NP/AP ratio of 2.1 (with a median of 1.0) indicating that there is some potential for acid generation.
- 5 composite La Pava leached sulphide ore samples had high sulphide-sulphur contents of 0.06 to 13.9 % (with a median of 4.2 %); an acidic median paste pH of 3.3; and all samples had a neutralization potential (NP) to acid potential (AP), i.e. NP/AP ratio below 1 indicating that these samples are potentially acid generating.
- 8 composite Quemita-Quema leached oxide ore samples had low sulphide-sulphur contents of < 0.01 to 0.45 % (with a median of 0.03 %); an acidic median paste pH of 5.5; and 5 of 8 samples had an NP/AP ratio above 2 indicating that the majority of Quemita-Quema oxide samples are non-potentially acid generating. Two samples had an NP/AP ratio below 1 indicating they are potentially acid generating and one sample had an NP/AP ratio between 1 and 2 indicating an uncertain acid generation potential.

In general the ABA test results suggest that the oxide fraction of the La Pava and Quemita-Quema heap leach residue has some potential for acid generation; and all samples of the sulphide fraction of the La Pava heap leach residue are potentially acid generating.

The results of the SPLP leachate testing reported an alkaline pH (9.34), low sulphate concentration (13 mg/L), and concentrations of all metals below detection values except antimony (0.0033 mg/L) and arsenic (0.031 mg/L). There is no Panama drinking water guideline for antimony, and the arsenic concentration is below the value (0.05 mg/L).

These results indicate that the La Pava oxide heap leach residue has a low potential for metal leaching.

20.2.3.4 Pit Geology at Closure

The expected geology of the La Pava pit at closure was predicted assuming that the development of the open pit will be halted within the weathered fresh rock. The lithology of boreholes from ten sections of the La Pava block model was identified at the point of intersection with the pit boundary. The major lithology and alteration of 32 boreholes at this intersection is presented in Table 20-1.

Table 20-1
Major Lithology and Alteration of Boreholes

Borehole ID	**Lithology**	
	Major	Alteration
PRH92081, PRH10001, PRH12144, PRH94120, PRH94239, PRH94122, PRH10008, PRH94127A, PDH12017, PRH94141, PRH94142, PRH92071, PRH94155, PDH12024, PRH11023, PRH94190, PRH94161, PDH94047, PRH94187, PRH94242, PRH94198, PRH94236, PRH12097, PRH12101, PRH94152, PRH94150, PRH94185, PRH94153, PRH94156, PRH12118, PRH94195	Dacite; dacite porphyry; dacite hornblende porphyry	Moderate to advanced argillation; moderate to strong silicification; prophylitic alteration; carbonaceous clay

Dacite with argillization/silicification/propylitic alteration is expected to be non-potentially acid generating based on the waste rock ABA test results, as has been identified based on similar rock types provided in Section 2.1.3.1. The occurrence of sulphides in porphyry and hornblende is uncertain, moreover, localized zones of pyrite have been shown to occur in the La Pava ore body; thus, pyrite and the potential for acid generation may be encountered in the pit wall. To enable an accurate prediction of the potential for acid generation and metal leaching it is therefore recommended that the detailed lithology of waste rock samples be confirmed and static geochemical testing be conducted throughout Operations.

20.2.4 Surface Water Quality

A detailed description of the water resources within the project area including flow measurements and water quality test results is provided in the Environmental Viability Report (Knight Piésold, 1996) and the Environmental Management Plan (PAMA – Plan de Adecuación y Manejo Ambiental) (VIDA-Proyectos S.A, 2004).

Water quality analysis of 16 sampling sites indicates that the stream waters originating or flowing though the project area are typically a dilute calcium carbonate solution. Little change in water quality parameters was observed when comparing the 1992-1994 and 2004 dry season data (refer to Appendix A, Knight Piésold 1996, Table 5.1 and 5.2 and Appendix B, PAMA 2004, Anexo 4). The median steam pH is 7.5. Specific conductivity is generally lower during the wet season due to the dilution by runoff from storm events.

Two streams showed low pH values and appear to have sulphate as a dominant anion, suggesting impact from the oxidation of sulphide minerals associated with regional mineralization. pH values ranged from 3.2 to 4.5 at sample point M-6 and from 4.6 to 5.9 at sample point M-15. The copper concentration at sampling point M-6 was between 1.5 and 2.9 mg/L in the dry season, which is greater than the Panamanian drinking water limit of 1 mg/L. Concentrations of the remaining metal and anion tested were within recommended Panamanian drinking water levels during both the dry and wet seasons. Some of the streams had elevated fecal materials which are probably due to the presence of livestock in the area.

In November 1994 field data (pH, conductivity, and temperature) were collected samples from ten (10) springs in the project area. pH values of spring samples were slightly acidic, with pH values ranging from 4.2 to 4.7. Conductivities were low, ranging from 26-64 micromhos, indicative of low concentrations of aqueous species in these samples.

Surface water quality monitoring has been on-goin since September 2009. Eight sampling events were completed between September, 2009 and June 2013 at between 12 to 14 stations per event. Analyses were completed for physical and chemical parameters. The results of these sampling events are being complied and interpreted as part of the EsIA.

Future work will be completed to assess baseline water quality conditions in both surface water and groundwater during dry and wet seasons. Sediment samples will also be collected at selected surface water locations. Water and sediment quality baseline data will require sufficient coverage to cover the seasonal variation, the spatial coverage and users upstream and downstream within the Project's area of influence and utilizing a laboratory that can comply with the levels of detection to support other disciplines, such as human health and ecological risk assessment, that are part of the EsIA.

20.2.5 Hydrology

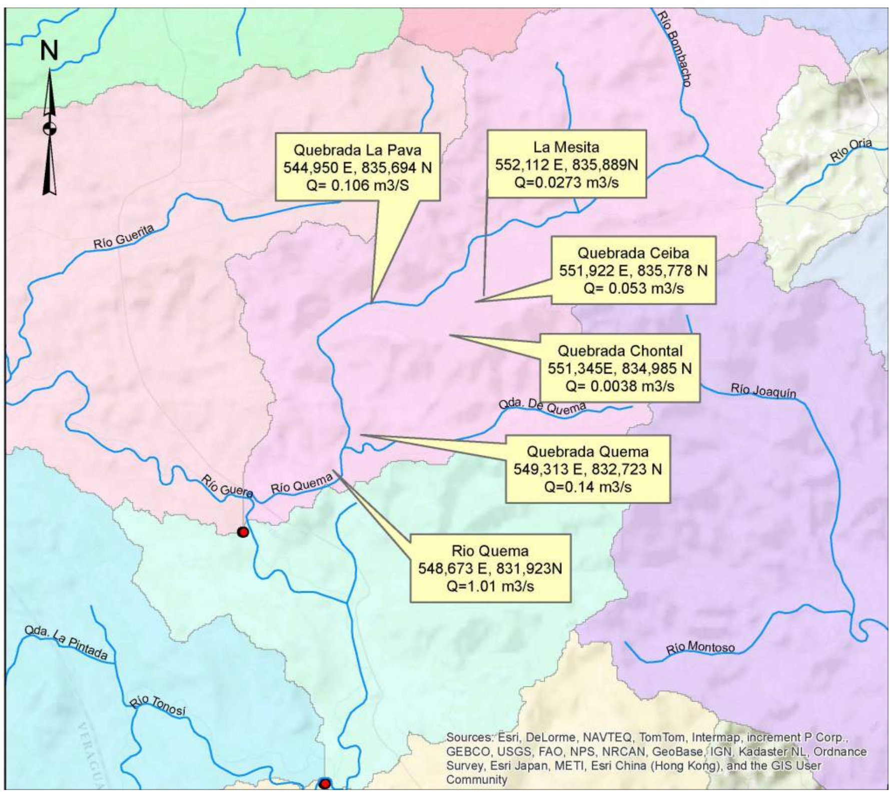
The regional watersheds and drainage in the region are shown on Figure 20.1. The east-west ridge of hills that defines the project area drains to the north and south. The northern portion of the project drains to Quebrada Chontal, while the southern portion drains to Quebrada Seca. Both of these streams are tributaries to Río Quema. Creeks that drain to the north flow into the Río Quema. Creeks that drain to the south flow into Quebrada Quema (including Quebrada Seca), which ultimately flows into the Río Quema downstream of the project site. Río Quema flows into the Río Güera, which then drains into the Río Tonosí basin. The Río Tonosí finally discharges into the Pacific Ocean. No lakes or wetlands exist on the project site, although there are intermittent springs present during the wet season. Stream levels vary greatly between the wet and dry seasons. It has been observed that the primary channel of Quebrada Chontal continues to flow through the dry season (Dyer Engineering Consultants Inc., 2013).

Flow measurements were taken in January 2013 by Consultoría, Estudios y Diseños S.A. (CEDSA) at six watercourses nearby to the project: Quebrada Las Mesitas, Quebrada

Ceibal, Quebrada Quema, Río Quema, Quebrada Chontal and Quebrada La Pava (Figure 20.1).

Although some water flow measures have been conducted at six streams during January 2013 (Quebrada Las Mesitas, Quebrada Ceibal, Quebrada Quema, Rio Quema, Quebrada Chontal and Quebrada La Pava). The data collected does not account for seasonal variation nor does it provide sufficient spatial coverage to characterize the Project's area of influence for establishing stream hydraulics. A site reconnaissance was completed in February 2014 to characterize the existing surface water flow regime for the Project. During this site visit additional surface water stations were located to provide supplement monitoring data to support the EsIA.

Figure 20.1
Water Flow Measurements



Flow rates in Quebrada Las Mesitas, Quebrada Ceibal, Quebrada Quema, Rio Quema, Quebrada Chontal and Quebrada La Pava, located in the vicinity of the Cerro Quema Project (CEDSA 2013)

20.2.6 Climate

The Panamanian province of Los Santos is located in a tropical climate zone situated between the Pacific and Atlantic Oceans on the Azuero Peninsula. The climate is tropical with a prolonged high-humidity wet season between mid-May and November. A relatively warm, dry season occurs between December and mid-May. Additional details on climate are provided in Section 5.

The existing meteorology station at the project will be upgraded as part of the EsIA to provide suitable site specific data for comparison with government owned, longer term data meteorological stations.

20.2.7 Air and Noise Quality

Ambient air and noise quality have not been collected for the Project. Specific air and noise quality baseline data requirements will be determined during the EsIA.

20.3 Biological Environment Baseline Studies

A summary of biological baseline studies that have been completed in supporting of previous permitting activities is provided below. Some of these studies will need to be updated, while new studies to address current gaps will need to be competed, to support the EsIA and future permits.

20.3.1 Vegetation

The project area is classified into two life zones (Holdridge classification). The area below 750 m (lower life zone) is within the Humid Tropical Forest Zone and the area above 750 m (upper life zone) is within the Very Humid Premontane Forest Zone. The project area, except the highlands and the summit of Cerro Quema, is within the lower life zone. Both zones contain forested and open area.

Much of the Humid Tropical Forest Zone is currently grassland and pasture due to deforestation. The Very Humid Premontane forest consists mainly of isolated tree species, grasses, herbs, and shrubby vegetation. Cerro Quema is one of the few places in Panama where the carnivorous plant *Drossera panamensis* can be found.

Two inventories carried out in areas in the following areas: 1) expansion of the access road to the project 2) expansion and improvement of the access road adjacent to Cerro La Pava 3) Quebrada Chontal. These areas have been heavily disturbed by livestock and agricultural activities. Based on the inventories completed it is assumed that the species originally found in the area have been eliminated, allowing for the establishment of pioneer species such as nance (*Byrsonima crassifolia*), papelillo (*Miconia argentea*) and guarumo (*Cecropia peltata*), amongst others (Mojica and Pérez Ramos, 2012a; 2012b). However, the areas surveyed might not necessarily encompass the entire area of the project.

Reforestation efforts have included species such as pine (*Pinus caribaea*), acacia (*Acacia mangium*) and wild cashew (*Anacardium excelsum*). Regenerated forest includes native species such as Spanish elm (*Cordia alliodora*) and Spanish cedar (*Cedrela odorata*), and the pioneer species mentioned above (Pérez Ramos, 2009).

The need for additional vegetation baseline data will be determined during the EsIA.

20.3.2 Wildlife

Ecological baseline studies were conducted in the project area as part of the Environmental Reconnaissance during the wet and dry season of 1992-1993 (Delgado, 1994). These baseline studies included field surveys for wildlife.

Nine (9) species of frogs and toads, as well as nineteen (19) reptile species, were observed in the Project area. Of special note is the presence of the pit viper (*Bothrops atrox*), whose bite can be deadly. One-hundred and thirty-seven (137) species of birds were identified in and near the project area. One bird of special note was a ruby-throated hummingbird, which is infrequently observed in Panama. Forty-two (42) mammal species, bats being the most dominant, were observed in field studies. These species are not exclusive to the area.

The need for additional wildlife baseline data will be determined during the EsIA.

20.3.3 Aquatic Biology/Fish

The aquatic species observed are widely distributed in Panama and none are protected by law.

Quebrada Chontal, Quebrada Seca and Quebrada Bruja contain aquatic ecosystems characterized by a diversity of habitats that provide refuge and support to a variety of species. Monitoring studies carried out in Quebrada Chontal, Quebrada Seca and Quebrada Bruja (Adames Arjona, 2008) identified sixty-six (66) species which include fish, amphibians, aquatic insects, crustaceans and molluscs. The largest diversity was observed amongst the aquatic insects with a total of thirty-nine (39) species observed. Several of the aquatic insect species, along with the crustaceans and mollusc species identified are considered indicators of habitat integrity and quality.

Quebrada Chontal has the greatest abundance and diversity of aquatic species among the creeks monitored in the vicinity of the project. Moreover, high aquatic activity has been observed in Quebrada Chontal at night (Adames Arjona, 2008).

To assess specific Project effects on the aquatic ecosystem, additional baseline sampling will be completed to characterization seasonal and spatial variation as part of the EsIA.

20.3.4 Insects and Diseases

No special surveys were conducted on insects during the baseline studies (Delgado, 1994). Butterflies were the most diverse group of insects observed, two species of butterflies, *Klutsios maerula* and *Klutsios clorinde*, are only found in the open areas of the Azuero peninsula. Killer bees were also observed in the area.

The tree species acacia (*Acacia magnum)* is subject to diseases and pests, which has hindered its adaptation in Panama (Pérez Ramos, 2009).

20.4 Description of Human (Socio-Economic) and Cultural Environment

In 2013 Pershimco completed a study to describe the socio-economic environment of the communities located within a 12.5 km radius of the Project and the main urban centers, as well as to identify the local perceptions in regards to Panama's current state of affairs, the environment, the project, and the mining industry in general. The study included 12 rural communities (Boca Quema, Rio Quema, Mogollón, La Corocita, Guaniquito, Bajo de Güera, La Paula, Joaquín Abajo, Joaquín Arriba, Loma Blanca, La Llana and Quema) and three (3) urban centers (Macaracas Cabecera, Llano de Piedra, and Tonosí Cabecera). The data for the study were obtained through surveys and secondary sources (including census data). The scope of the study will be expanded as part of the EsIA currently being prepared for the Project.

An initial cultural heritage site reconnaissance was completed in 1993. This study indicated that there is a high potential for archaeological findings. An updated archaeological reconnaissance and detail survey should be conducted as part of the baseline studies to support the EsIA.

20.5 Environmental and Social Management

Environmental and social management plans will be developed as part of the environmental assessment.

20.6 Closure Plan

20.6.1 Decommissioning

The mine and related facilities will be decommissioned at the end of the mine life. The Project's proposed decommissioning concept is to rehabilitate disturbed land and watercourses and restore them to their pre-Project conditions to the extent feasible.

20.6.1.1 Facilities

Infrastructure no longer needed after mining will be dismantled and the ground surface will generally be contoured to restore natural drainage conditions, as feasible, and planted with native vegetation. The main access road to the site from the town of Rio Quema will remain in place. At closure, processing facilities, storage areas and auxiliary infrastructure will be decommissioned as follows:

- Temporary buildings (including those at the camp located in Rio Quema) will be removed and sold;
- Machinery and equipment will be removed from the site;
- Permanent aboveground structures will be torn down to their foundations, which will be level with ground surface;

- Demolition debris will be sold as scrap or disposed the landfill;
- Concrete floor slabs will be perforated to facilitate drainage and covered with soil;
- Disturbed areas will be scarified and graded to provide drainage towards natural watercourses and revegetated;
- Remaining inventory of fuel, petroleum products, propane and explosives will be removed from the site and returned to the supplier or disposed of in a licensed, third party facility;
- Fuel storage and waste oil tanks will be pumped dry, and the pumped fluid and tanks will be removed for off-site disposal;
- Diesel generators will be removed from site and sold;
- Overhead power lines will be taken down;
- Buried utilities will be disconnected and left in place;
- The septic tank systems will be pumped dry and backfilled with soil; the tile bed will remain in place;
- The compacted surface of haul roads from the pits and yard areas will be scarified, graded to provide drainage towards natural watercourses, and revegetated;
- Above ground piping will be removed; and
- Underground pipes will be triple flushed, capped and left in place.

At the option of the government, some facilities, such as the accommodations complex and main access road, could remain in place and be transferred to the community. Some soil contamination may be found in the areas of the ore loading area, as well as the mechanical shop and the tank storage areas (due to hydrocarbon contamination). Once a decision is made to permanently close the processing facilities, a soil survey will be completed to identify contaminated soils.

20.6.1.2 La Pava and Quema-Quemita Pits

The La Pava and Quema-Quemita pits will remain open upon cessation of mining. The barbed wire fencing surrounding the site perimeter will remain in place. Mine benches constructed during operation will be left in place. The pits will be developed with overall slopes that are stable in operation and would continue to be stable in the long term in post-closure. The pit slopes will be developed with factors of safety consist with local regulations and will be stable during local design seismic events. Slope stability analyses for the La Pava and Quema-Quemita open pits were completed during the PFS pit design. Geotechnical core logging, field index testing, and focused laboratory testing was performed to develop a model of the geotechnical material properties for the geologic units that comprise the pit slopes. Results indicate that pit slopes are stable for the recommended slope configuration. Much of the pit is expected to be inaccessible due to the adjacent steep slopes. A waste rock berm will be constructed at entrance of the ramp to the pits to restrict access. Warning signs will be posted around the perimeter of the open pits.

No observation wells or piezometers have been developed in the La Pava and Quema-Quemita Pit, Heap Leach Facility (HLF), or waste rock stockpile areas to indicate the elevation of a regional groundwater table. The position of the groundwater table has to be inferred from geologic conditions. The regional groundwater table likely conforms to the topography such that it is deeper in areas of higher elevations and shallower near stream channels. Exploration drilling programs to date have encountered little water within the pit boundary and the projected elevation of the pit floor is not expected to encounter the groundwater table. Due to the highly fractured nature of the much of the rock the pit is expected to be dry except during short periods of time during precipitation events in the wet season when water may accumulate. The base of the open pit will be halted within the oxide zone such that the underling sulphide bearing, and potentially acid generating rock, will not be exposed.

20.6.1.3 Acidic Drainage

Acidic pH levels and elevated copper concentrations are currently observed in water emanating from a spring near the La Pava ore zone, suggesting impact from the oxidation of sulfide minerals associated with regional mineralization. Excavation associated with the La Pava pit will reduce the infiltration zone overlying the sulphide minerals and may therefore accelerate the rate of oxidation of underlying sulphide bearing rock. The spring water quality will be monitoring during operation and if degradation in water quality is observed this water will be collected and treated.

The rock in La Pava pit walls is expected to be non-potentially acid generating based on the waste rock ABA test results for similar rock types. The occurrence of sulphides in porphyry and hornblende is uncertain, moreover, localized zones of pyrite have been shown to occur in the La Pava ore body; thus, pyrite and the potential for acid generation may be encountered in the pit wall. To enable an accurate prediction of the potential for acid generation and metal leaching it is therefore recommended that the detailed lithology of waste rock samples be confirmed and static geochemical testing be conducted throughout Operations.

20.6.1.4 Waste Rock Dump

The waste rock will be placed in approximately 10 meter to 15 meter high, angle-of-repose lifts, with offsets between lifts to provide an overall, nominal 2.5H:1V slope angle. Slope stability analyses were performed to confirm the long-term, post-closure stability of the waste rock dump design. The top and side slopes, including the inter-bench slopes, of the waste rock dump will be recontoured to stable slopes to minimize erosion from runoff. The waste rock dump will becovered to promote runoff and minimize infiltration, seeded and then allowed to naturally re-vegetate upon completion of deposition. The proposed closure cover consists of a topsoil, or a composite topsoil/soil, capable of supporting local vegetation. The cover system will reduce seepage into the waste rock and will minimize potential soil erosion and sediment to Quebrada Chontal. It is anticipated that the infiltration will be analyzed in future designs to assist in design of post-closure water management systems for the waste rock dump.

As the surface water management system is developed on the benches on the slope of the waste rock dump, it will be constructed to drain to the surface water diversion systems developed during operation around the dump. It is anticipated that some of the existing water management structures will be removed and closed, while others will be modified, and with final ditches directing runoff to Quebrada Chontal and downstream sediment control structures at the confluence of Quebrada Chontal and Rio Quema.

The ABA test results indicate that samples of potential waste rock from the La Pava ore body are expected to contain low to very low sulphide by weight percent. Although the classification of ABA results indicate that most samples have a low to uncertain potential for acid generation, two silica-clay alteration samples and one clay alteration sample have a net ANP that indicates a likely potential for acid generation. The synthetic precipitation leach test results indicate that there is the potential for aluminum, copper, iron and manganese to leach at concentrations greater than the Panama drinking water guidelines in some of waste rock samples. The composition and distribution of waste rock from the La Pava deposit is believed to be representative of the Quemita-Quema ore bodies based on similar geology. A waste rock management plan will be implemented during operations to identified potentially acid generated and/or metal leaching waste rock. If, during mining, some portion of the waste rock shows signs of acid generation, then the problematic rock will be encapsulated within the waste rock pile. As the waste dump will be constructed using the bottom up method isolated zones of acid generating waste rock will be covered by non-acid generating waste rock prior to closure.

20.6.1.5 Heap Leach Facility

The HLF will be constructed in approximately 8 meter high lifts, with benches provided between lifts to create an average overall ore slope of 2.5H:1V. This design will provide operational and post-closure stability and limit grading during reclamation to re-sloping between, and on, benches to facilitate surface water drainage. Slope stability analyses were performed to confirm the long-term, post-closure stability of the HLF design.

The HLF has been designed with a lining system in accordance with International Cyanide Code requirements and meets or exceeds North American standards and practices for lining systems, piping systems, and process ponds, which is intended to lessen the environmental risk of the facilities to impact the local soils, surface water, and ground water in and around the site. The HLF will be continuously lined with a composite lining system consisting of a prepared subgrade, 300 mm thick low-permeability soil bedding layer, and a 2 mm high density polyethylene (HDPE) geomembrane liner. Upon closure the HLF will be triple rinsed, covered with overburden and topsoil and revegetated. The proposed HLF closure cover consists of a topsoil, or a composite topsoil/soil, capable of supporting local vegetation and having a low permeability to reduce infiltration into the heap. The cover will be placed over the entire heap, including slopes, benches, and top platform (crest). This cover system will reduce seepage into the heap and will minimize potential soil erosion and sediment to Quebrada Maricela.

At the end of the operation, the heap will be triple rinsed (i.e., three pore volumes). It is expected that approximately 2.3 years will be required to rinse the HLF; this allows for a period of drain down of the last of the water used to rinse the heap. During active leaching after ore stacking has ceased, and during rinsing, water accumulating in the pond system will be treated (i.e., cyanide detoxification) and discharged to Quebrada Maricela. At the end of the rinsing process and installation of the cover, the runoff from the closure cover will be considered non-contact water. It is anticipated that infiltration through the cover will be analyzed in future designs to develop a more detailed design of the cover and of post-closure water management systems. In addition, the adequacy of rinsing with three pore volumes will be assessed during operations based on the performance of the HLF. Testing to be completed after the HLF is in operation, will determine the water quality that will be anticipated from the HLF in post closure.

At closure the liner from the pregnant solution pond will also be triple rinsed, cut, folded and buried in the base of the pond. The pond will be flatten by pushing the berms inwards. The cyanide destruction will remain in place until HLF seepage can be released directly to the environment.

At closure accumulated sediment in the event ponds will be removed and placed in the final lift of the Heap Leach Facility. The event ponds down-gradient of the waste rock piles will remain in place until vegetation has been established. Once vegetation has been established the event ponds will be decommissioned by rinsing the liners and burying them in the base of the pond. The pond will be flattened by pushing the berms inwards. The pond down-gradient of the HLF will remain in operation until HLF seepage is deem suitable for direct discharge to the environment. The pond will then be emptied and gradually flattened by pushing the berms inwards. The HLF pond liners will be triple rinsed, cut, folded and buried in the base of the pond. The disturbed areas will then be re-vegetated at the time of regarding of the pond berms.

The ponds may be converted into passive wetland treatment features if the water quality form the heap is such that a passive wetland would be satisfactory for treatment. The design of the wetlands will be completed during detailed design stage and the design confirmed during operation as the water quality from the area is identified by monitoring during operation.

20.6.2 Storm Water Control

Permanent storm water diversion channels have been designed for both HLF and waste rock stockpiles to adequately capture and convey run-off generated by the 25-year, 24-hour storm event. These diversion channels will remain in place at mine closure.

20.6.3 Topsoil and Revegetation

Topsoil and overburden removed during development of the open pit, waste rock stockpile, HLF, and site development will be stockpiled during operations for use during closure. The waste rock stockpiles and HLF will be covered and revegetated. The cover will consist of soil overlain by topsoil. For cost estimating it has been assumed the soil and topsoil would be 40 cm thick. In some areas, rock for erosion protection may be required. Overburden will be used for covering and regarding disturbed surface, such as the processing site and haul roads.

The primary aim of the mine site reclamation program is to control erosion and ensure physical stability, and to accelerate the development of a native self-sustaining vegetation cover. Revegetation activities will be completed on major areas that will be disturbed by the Project (e.g. plant site, waste dump, HLF, roadways). Native species will be used for revegetation. The species mix or mixes for site revegetation will be determined through onsite testing to be conducted during operations, to help ensure revegetation success at closure. Based on revegetation of previous disturbed areas at the Project site natural revegetation is expected to occur within a few years.

20.6.4 Future Changes to Closure Plan

The closure plan will evolve through the operations phase, becoming increasingly more detailed as the environmental monitoring database is built up, enabling refinement of the technical basis for the closure design. Community feedback through ongoing public consultations will help determine post-closure Project land and facility uses, and thereby shape the evolution of the closure plan. Additionally, current mineral exploration activities in the Project vicinity may eventually result in more mines becoming operational, potentially extending the life of the local mining industry. This may affect the Project's ultimate closure design to the extent that some Project infrastructure may be useful to other mining operations.

20.6.5 Post-Closure Monitoring

Monitoring for physical and chemical stability of the site will be required after closure and will continue on a regular basis until water quality monitoring indicates that runoff from disturbed areas of the site can be released directly to the receiving environment. Monitoring results will be consolidated annually to produce a report with an interpretation of conditions relative to the previous year. It is anticipated that closure activities will be completed in 1 year. However, effluent treatment for the HLF will remain in place for 2.3 years (i.e. until the facility has been rinsed with 3 pore volumes). The monitoring program will be undertaken for at least 5 years and it is expected that closure activities (with the exception of HLF treatment) will be completed in one year. Therefore, most monitoring will be completed in years 1 – 5 post-closure. Water quality monitoring for the HLF will continue for 5 years after the cessation of treatment. The need for monitoring will depend upon the success of closure implementation activities.

Annual inspection will be carried out by a professional engineer experienced in surface and groundwater, earth embankments and closed mine sites. Physical monitoring of the closed property will include annual visual inspection, photography and field notes on conditions of the rehabilitated surface area. Changes such as surface soil cracks or ground depressions, etc. which may lead to a safety hazard will be surveyed and documented in detail for assessment of following remedial action. The waste dumps and the HLF, as well as the earth embankment slopes and toe areas, will be inspected for settlement, cracks, slides, slumping, depressions, etc. These could be caused by excessive stress or a weak layer in the embankment or foundation. Possible signs of distress or potential distress will be marked for re-examination and evaluation leading to remedial action.

A thorough inspection will also be immediately carried out following extreme events, such as significant flood events or a major earthquake. This inspection will include the items normally monitored, as well as a detailed inspection of structures, drainage features, etc., that may have been impacted by the event. Observed damage to these structures will be assessed and necessary remedial measures will be undertaken immediately to restore the structures to their original design conditions.

A surface water and groundwater monitoring program will be established during operations to establish the background averages and temporal variations in the parameter concentrations. This monitoring program will be continued during closure to assess the effectiveness of the closure measures and to define impacts on the groundwater and receiving surface waters should they occur. For cost estimation purposes, it is assumed that surface water samples will be collected at 10 locations, on a quarterly basis during the monitoring period. Groundwater samples will be collected from 5 locations twice per year.

Annual monitoring of areas that have been re-vegetated will be conducted following mine closure. These annual inspections will be conducted at the end of the dry season and the revegetated sites should be examined to determine the success rate of germination of the vegetative cover. Areas that appear to be thinly vegetated should be enhanced with the addition of appropriate quantities of seed and nutrients.

20.7 Future Work Plans

An EsIA will be completed on the updated project description. Permit applications, including the closure plan, will be updated during preparation of the EsIA. The environmental baseline studies, including physical, biological and socio-economic studies as outlined above, will be updated as part of the environmental assessment. Additional studies that will need to be competed to support the environmental assessment and future permits include:

- Baseline water quality conditions in both surface water and groundwater during dry and wet seasons. Sediment samples will also be collected at selected surface water locations. Water and sediment quality baseline data will require sufficient coverage to cover the seasonal variation, the spatial coverage and users upstream and downstream within the Project's area of influence.
- Although some water flow measures have been conducted at six streams during January 2013 (Quebrada Las Mesitas, Quebrada Ceibal, Quebrada Quema, Rio Quema, Quebrada Chontal and Quebrada La Pava). The data collected does not account for seasonal variation nor does it provide sufficient spatial coverage to

characterize the Project's area of influence for establishing stream hydraulics. A site reconnaissance was completed in February 2014 to characterize the existing surface water flow regime for the Project. During this site visit additional surface water stations were located to provide supplement monitoring data to support the EsIA.

- The existing meteorology station at the project will be upgraded to provide suitable site specific data for comparison with government owned, longer term data meteorological stations.
- Hydrogeological studies will be completed to provide the necessary hydrogeological parameters (depth to groundwater, groundwater inflow, groundwater quality) that will establish the baseline for the assessment of Project-related effects during preparation of the EsIA. Groundwater conditions in the weathered rock (saprolite) versus fresh rock will be determined through the installation and testing of monitoring well clusters with monitoring well screens installed in the saprolite and in the underlying fresh rock.
- Additional geochemical testing (including kinetic testing) of drill core will be completed to confirm the geochemical characteristics of the waste rock; in particular material associated with the Quemita-Quema ore bodies.
- Ambient air and noise quality have not been collected for the Project. Specific air and noise quality baseline data requirements will be determined during the EsIA.
- To assess specific Project effects on the aquatic ecosystem, additional baseline sampling will be completed to characterization seasonal and spatial variation.
- The need for additional vegetation and wildlife baseline data will be determined during the EsIA.
- The socio-economic study for the Project area will be completed during preparation of the EsIA.
- An initial cultural heritage site reconnaissance was completed in 1993. This study indicated that there is a high potential for archaeological findings. An updated archaeological reconnaissance and detail survey should be conducted as part of the baseline studies to support the EsIA.

21.0 Capital and Operating Costs

21.1 Capital Cost Summary

The required pre-production capital expenditure for the Cerro Quema Project is summarized in Tables 21-1 and 21-2. These costs are based on the design outlined in this study and are considered to have an accuracy of +/-25%. The scope of these costs includes all mining equipment, process facilities, and infrastructure for the project.

The costs presented have been estimated primarily by Golder, KCA and P&E. All equipment and material requirements are based on the design information described in previous sections of this study. Capital cost estimates have been made primarily using budgetary supplier quotes for all major and most minor equipment items. Where supplier quotes were not available, a reasonable cost estimate was made based on supplier quotes in KCA project files.

All capital cost estimates are based on the purchase of equipment quoted new from the manufacturer, used equipment purchased in Panama (buses, pickups for construction, mining equipment) or estimated to be fabricated new.

Most costs have been collected in the last quarter of 2013 and the first quarter of 2014 and are considered to be valid for first quarter 2014 US dollars (US$).

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TABLE 21-1
SUMMARY OF MINING PRE-PRODUCTION CAPITAL COSTS

Direct Costs	**US$ ('000s)**
Mobile Equipment	$10,134
Haul Roads	$500
Office Equipment	$60
Communication	$50
Surveying	$50
Miscellaneous	$132
Total Direct Costs	**$10,926**
Other Costs	
Freight	$507
Contingency	$572
Capitalized Pre-Strip	$4,177
Taxes	$985
Total Other Costs	**$6,240**
Total Mining	**$17,166**

Values in table may not add due to truncation of digits in display

TABLE 21-2
SUMMARY OF PROCESS PRE-PRODUCTION CAPITAL COSTS BY AREA

Plant Totals Direct Costs	Total Supply Cost	Install	Grand Total
	US$ (1,000)	US$ (1,000)	US$ (1,000)
Area 00 - Site & Utilities General	$ 10,124	$ 5,968	$ 16,092
Area 10 - Water Supply & Distribution	$ 925	$ 149	$ 1,073
Area 08 - Mobile Equipment	$ 2,770	$ 00	$ 2,770
Area 20 - Crushing	$ 5,414	$ 1,841	$ 7,255
Area 20 - Ore Reclaim & Stacking	$ 7,104	$ 2,245	$ 9,349
Area 30 - Heap Leach & Solution Handling	$ 5,853	$ 10,117	$ 15,970
Area 50 - Electrowinning & Refining	$ 1,132	$ 241	$ 1,372
Area 40 - Carbon Handling & Regeneration	$ 931	$ 213	$ 1,144
Area 40 - Adsorption	$ 1,692	$ 374	$ 2,067
Area 40 - Acid Wash & Elution	$ 1,036	$ 238	$ 1,274
Area 60 - Detoxification	$ 1,074	$ 228	$ 1,302
Area 65 - Electrical	$ 58	$ 12	$ 70
Area 70 - Reagents	$ 1,221	$ 223	$ 1,444
Area 75 - Laboratory	$ 1,395	$ 136	$ 1,532
Area 80 - Ancillaries (Truck Shop/Offices/Change Room/Clinic/Fuel Station/Genset)	$ 2,680	$ 240	$ 2,920
Plant Total Direct Costs	**$ 43,407**	**$ 22,225**	**$ 65,632**
Spare Parts	$ 1,550		$ 1,550
Sub Total with Spare Parts			**$ 67,182**
Contingency	$ 10,828		$ 10,828
Plant Total Direct Costs with Contingency			**$ 78,010**
Indirect Field Costs			**$ 6,608**
Initial Fills			**$ 1,164**
Sub Total Plant Cost Before EPCM			**$ 85,781**
EPCM			**$ 9,845**
Subtotal Plant Cost			**$ 95,626**
Owner's Costs			**$ 4,301**
TOTAL Pre-Production Capital Cost			**$ 99,927**
Working Capital (60 days)			**$ 5,105**

Values in table may not add due to truncation of digits in display

21.2 Mining Capital Costs

The owner will undertake all mining related activities, including the procurement of all the capital mining equipment and the staffing and training of necessary operating personnel.

Duties, customs fees, and VAT are not directly included in the mining capital costs but are dealt with appropriately in the project capital cost tax discussion.

21.2.1 Mining Capital Cost

In the owner-operating mining approach, the owner will procure the entire equipment fleet. The estimated initial capital cost is about $16.2 million, as outlined in Table 21-3. With on-going sustaining capital and equipment additions, the life-of-mine capital will be about $18.6 million. The mine life is 5.3 years and equipment replacements will not be required.

The mining equipment cost would be about $11.9 million over the life of project, which includes the purchase of additional equipment as haul cycles get longer as pits deepen.

Capital costs for the major mining equipment were provided by the local Panamanian CAT dealer (IIASA Panama), Volvo vendors, as well as from P&E's in-house cost databases. Since the mine life is short and the country of Panama is experiencing a great deal of construction activity, the mine Owner will source used equipment where possible. The size of the equipment being used at Cerro Quema is similar to that used at typical construction projects.

Table 21-4 summarizes the equipment prices and assumption used. For used equipment, a 25% discount has been applied to the new vendor prices, however it may be possible to acquire used equipment at greater price discounts. The application of the 25% used price discount to some of the equipment results in an initial capex cost saving of about $2.4 million over that of acquiring all new equipment.

A pre-stripping cost of $4.2 million (1.96 million tonnes at $2.13/t) would be incurred in Year-1, and this is based on the operating cost estimate and capitalizing expenditures in the pre-production year. This assumes that the owner fleet would undertake the pre-stripping activities.

On-going mining equipment sustaining capital costs over the life of the operation will be an additional $2.5 million, which includes future equipment purchases.

TABLE 21-3
MINE CAPITAL – OWNER MINING OPTION

	Total $('000)	-2	-1	1	2	3	4	5
Drill, 100 mm, Crawler, DTH (T40)	$ 1,130		$ 1,130					
Stemming Truck, 15 t	$ 90		$ 90					
Transport for detonators	$ 40		$ 40					
Hydraulic Excatator, 6.5 cu.m (6015)	$ 1,143		$ 1,143					
Wheel Loader 7 cu.m (C988)	$ 637		$ 637					
Haul Truck 55 t class (TR60)	$ 3,461		$ 1,730	$1,154	$ 577			
Haul Truck, ADT 40 t	$ 1,660		$ 1,660					
Personnel van/bus	$ 100		$ 100					
Dozer TD25M (D8)	$ 1,249		$ 1,249					
Welding Truck	$ 75		$ 75					
Excavator, 2 cu.m (CAT 336E)	$ 231		$ 231					
Fuel Truck	$ 150		$ 150					
Grader 14' blade (990E)	$ 320		$ 320					
Light plant	$ 100		$ 100					
Lube truck	$ 200		$ 200					
Mechanic truck	$ 75		$ 75					
Pickup truck	$ 240		$ 240					
Pit Water Pumps Diesel	$ 100		$ 100					
Wheel Loader 4 cu.m (C966)	$ 341		$ 341					
Water truck (40ton 8000 gallon)	$ 522		$ 522					
Sub-total (Direct Equipment)	$ 11,864		$ 10,134	$1,154	$ 577			
Other Capital Costs								
Haul Road to LaPava	$ 500		$ 500					
Office Equip plus Software	$ 60		$ 60					
Radio Communications + GPS	$ 50		$ 50					
Survey Equipment	$ 50		$ 50					
Sustaining miscellaneous	$ 660		$ 132	$ 132	$ 132	$ 132	$ 132	
Sub-total (Direct Other)	$ 1,320		$ 792	$ 132	$ 132	$ 132	$ 132	
Total Direct Cost	$ 13,184		$ 10,926	$1,286	$ 709	$ 132	$ 132	
Freight & Spares	$ 593		$ 507	$ 58	$ 29			
Contingency	$ 689		$ 572	$ 67	$ 37	$ 7	$ 7	
Capitalized Pre-Strip (t)	$ 4,177		$ 4,177					
Total Mining LOM Capital	$ 18,643		$ 16,181	$1,410	$ 774	$ 139	$ 139	

Values in table may not add due to truncation of digits in display

TABLE 21-4
INITIAL MINE EQUIPMENT CAPITAL

Equipment Fleet	Used (75%) or New	Unit Cost ($'000)	Year -1 Units	Total Cost ($'000)
Drill, 100 mm, Crawler, DTH (T40)		$ 565	2	$ 1,130
Stemming Truck, 15 t		$ 90	1	$ 90
Transport for detonators		$ 40	1	$ 40
Hydraulic Excatator, 6.5 cu.m (6015)	Used	$ 1,143	1	$ 1,143
Wheel Loader 7 cu.m (C988)	Used	$ 637	1	$ 637
Haul Truck 55 t class (TR60)	Used	$ 577	3	$ 1,730
Haul Truck, ADT 40 t	Used	$ 415	4	$ 1,660
Personnel van/bus		$ 100	1	$ 100
Dozer TD25M (D8)		$ 625	2	$ 1,249
Welding Truck		$ 75	1	$ 75
Excavator, 2 cu.m (CAT 336E)	Used	$ 231	1	$ 231
Fuel Truck		$ 150	1	$ 150
Grader 14' blade (990E)	Used	$ 320	1	$ 320
Light plant		$ 25	4	$ 100
Lube truck		$ 200	1	$ 200.
Mechanic truck		$ 75	1	$ 75
Pickup truck		$ 40	6	$ 240
Pit Water Pumps Diesel		$ 50	2	$ 100
Wheel Loader 4 cu.m (C966)	Used	$ 341	1	$ 341
Water truck (40ton 8000 gallon)	Used	$ 522	1	$ 522
Initial Equipment Capital				**$ 10,134**

Values in table may not add due to truncation of digits in display

21.3 Process Capital Costs

Process costs have been estimated by KCA with some inputs from Golder and Pershimco. Capital cost estimates have been made using budgetary quotes for all major and most minor equipment items. Where supplier quotes were not available a reasonable cost estimate was made based on costs in KCA's project files.

21.3.1 Process Cost Basis

The capital costs for each process area, including crushing, stacking, heap leach solution handling, recovery plant, etc. in the capital cost table are separated into the following disciplines, where applicable:

- major earthworks (includes pad/pond liner);
- civils (concrete);
- structural steel;
- platework;

- mechanical equipment;
- piping;
- electrical;
- instrumentation;
- commissioning and supervision;
- infrastructure;

Supply, freight, customs fees and duties and installation costs are included in the capital cost buildup for each discipline, and are discussed in the following sections.

Engineering, procurement, and construction management (EPCM), indirect costs, and initial fills inventory are added to the total direct costs.

21.3.2 Freight

The freight cost was estimated based on percentage of mechanical equipment costs. The factor of 8% was based on experience with similar projects in Mexico and South America.

21.3.3 Duties and Customs Fees

Pershimco has stated that there will be no duties or customs fees on processing equipment in Panama.

21.3.4 Value Added Tax (VAT)

A VAT of 7% is applied to goods purchased in Panama when applicable. This VAT is not recoverable.

21.3.5 Major Earthworks

Major earthwork quantities were estimated based on the preliminary site and heap leach pad design. This includes earthworks for providing level areas for the crusher, heap pad and ponds, building and process areas, and interconnecting roads.

Major earthworks volumes have been estimated by KCA and Golder and the unit rates used are from a local contractor in Panama. These unit rates were compared with those from other Mexican and South American projects that KCA has recently worked on. KCA has found that the unit rates provided by the local contractors were within the expected normal earthworks unit cost ranges.

21.3.6 Civils

Civils include detailed earthworks and concrete. Concrete quantities have been estimated from takeoffs based drawings and calculations when possible or estimated from previous equipment installations if not. Supply and placement rates for concrete are based on quotations from local contractors.

21.3.7 Structural Steel

Structural steel requirements for the various areas were estimated from takeoff lists developed from general arrangement drawings. When sufficient detail is missing, steel requirements from similar projects were used. Unit costs for steel, including installation labor and equipment requirements, were provided by a local contractor.

21.3.8 Platework

The platework discipline includes the supply and installation of steel tanks, bins and chutes. Costs were estimated from material takeoffs. The material takeoffs estimated the weight of the object based on its basic design.

A local contractor bid the unit steel costs based on typical KCA tank drawings as $3.00 per kg for steel supply and fabrication and $2.00 per kg for delivery to site and installation.

21.3.9 Mechanical Equipment

Costs for all major items of new equipment are based on budgetary quotes from vendors collected in the fourth quarter of 2013 through the second quarter of 2015. Costs for minor equipment items are based on budgetary quotes, costs found in supplier's catalogs, KCA's in-house database of recent quotes or a standard mining cost guide.

Installation estimates are based on equipment type. Each type of equipment is assigned an installation rate of hours per unit cost allowing the total installation hours to be estimated. The installation cost is estimated from the installation labor rate.

Vendor supplied installation costs are used when available.

21.3.10 Piping and Valves

Piping, fittings, and valve costs for major areas including raw water supply and distribution, heap leach irrigation and drainage and fire water distribution are based on material take offs and vendor budget quotes for supply of major items. Installation costs are calculated estimates based on factored installation time and assumed hourly rates of contractors.

Piping, fittings, and valve costs for other areas have been estimated on a percentage basis of the mechanical equipment costs or included in the vendor's scope of supply.

21.3.11 Electrical

Site power distribution electrical costs, including power line supply and installation cost were estimated by KCA based on supply costs at similar projects.

Electrical switchgear, MCCs and transformer stations were separately quoted or estimated based on supply costs at similar projects.

Various small electrical equipment items were based on a percentage of mechanical equipment supply costs, based on cost experience from recent projects in KCA's files.

Installation costs were based on assumed hourly rates for contractors and installation times estimated from recent KCA projects.

21.3.12 Instrumentation

Most of the processing facilities are manually operated so the need for instrumentation is small.

Instrumentation costs are estimated as a percentage of the mechanical equipment installed. The factor used for instrumentation ranges between 1 and 6% based on the area applied. Installation costs were developed from KCA's recent project experience using estimated local labor rates.

21.3.13 Infrastructure Capital Costs

Costs for the site infrastructure for the Cerro Quema Project have been estimated using material takeoffs developed from drawings and supplier quotes for earthworks, concrete and steel. When sufficient detail is not for this type of estimate, estimates based on pricing from previous projects were used.

21.3.13.1 Construction Facilities

Costs for the 300 man Construction Camp at the existing platform were estimated from a similar camp at a project in Mexico. Installation costs were factored.

The Construction Offices and lodging facilities for the Owners Team are assumed to be finished containers. The costs are budgetary pricing from a supplier for these units. Installation costs were factored estimates.

21.3.13.2 Access Road

The main site access road from Via Tonosi will be relocated to serve both the process area and the existing platform. Costs for the road modification are estimated from earthwork quantities and unit earthwork rates from a Panamanian contractor.

21.3.13.3 Fencing

Costs for a three strand barbed wire fence around the project are based on pricing from a similar project in Mexico.

Chain link fencing costs for the process ponds, magazines and the raw water well are estimated from budget pricing for the fence components and a factored installation cost.

Pricing for cattle guards were estimated from budget pricing for the components and a factored installation cost.

21.3.13.4 Raw Water

A well exists approximately 1.1 km north, north east of the existing platform. A budgetary quote from a supplier was used to price the well and booster pump. The piping costs were estimated from budgetary unit pricing and a factored installation cost.

The raw water tank supply and installation cost was estimated from the tank geometry and the project unit plate work cost. The costs of the concrete slab were estimated from the quantity of concrete and the project unit cost.

21.3.13.5 Power Supply

Electrical power will be supplied from the grid by Distribuidora Eléctrica de Metro-Oeste (Edemet) at the Substation in Las Tablas, a community about 31 km southeast of Chitre along the Carretera Nacional.

Power will be delivered to site using a 34.5 kV power line constructed from Las Tablas to Cerro Quema. This power line will be financed by the Cerro Quema Project but purchased by Edemet over five years through electrical power credits.

Power will be distributed onsite at 34.5 kV and stepped down at transformer stations in the process areas.

Emergency power will be generated on site by a single 680 kW diesel driven generator located on the existing platform at an elevation of 423 masl.

Costs for the power line and associated equipment were estimated by KCA from pricing on projects in Mexico. The KCA estimate was compared to one from a Panamanian Engineering company. KCA’s costs were higher by about 20% and are thought to be conservative.

21.3.13.6 Fuel Handling

Diesel fuel will be stored in one 100 m^3 steel tanks. The tank will be installed on a concrete slab.

The fuel tanks’ supply and installation cost was estimated from the tank geometry and the project unit plate work cost. The costs of the concrete slab were estimated from the quantity of concrete and the project unit cost.

Budget pricing from a vendor was used for fuel dispensing equipment.

21.3.13.7 Communications

An existing radio system can be used for onsite two way communications. Budget pricing for handhelds and truck mounted radio units are included.

21.3.13.8 Buildings

Costs for the Mine Shop and Warehouse, Laboratory, Administration Building and Refinery were estimated from material takeoffs developed from building drawings and Panamanian unit costs for concrete, steel and concrete masonry unit construction (CMU).

The ADR area equipment is installed on a concrete slab; a small roof protects the kiln from rain. The cost of the concrete slab and small steel roof were estimated from material quantities and respective material unit costs.

21.3.13.9 Overland Conveying from Quema/Quemita

Capital costs are included for four overland conveyors and two stackers (waste and ore) to transport ore and waste from the Quema/Quemita pit.

Ore or waster will be campaigned from the pit. There will be a diverter chute and stacker near the waste dump to allow waste to be stacked for dozing. Ore will continue to the crusher pad where it will be stacked and fed to the crusher.

The conveyors will operate in Years One, Four and Five.

21.4 Spare Parts

Spares were estimated as a percentage of the mechanical equipment costs. For most equipment a percentage of 5% was applied to the equipment supply cost. Freight and import duties were included in addition to the estimated spare parts supply costs.

21.5 Indirect Capital Costs

Indirect costs include costs for items such as equipment rentals, temporary construction facilities, quality control, survey support, warehouse and fenced yards, consumables such as fuel and power, security, and commissioning of certain equipment items. These costs have been estimated based on budgetary quotes, estimated equipment requirements and experience with projects in Mexico.

21.6 Initial Fills

A separate initial fills component of the pre-production capital costs is included, which consists of critical consumable items purchased and stored on site at the onset of operations. Initial fills items include sodium cyanide (NaCN), pebble lime, cement, activated carbon, antiscalant, caustic soda, hydrochloric acid, diesel fuel, and fluxes (silica, borax, niter, and soda ash). This inventory of initial fills ensures adequate consumables are available for plant commissioning. Details of the initial fills are presented in Table 21-5.

TABLE 21-5
INITIAL FILLS

Item	Basis	Needed Weight kg or L	Quantity to Order kg	Unit Price US$	Tax 7%	Shipping 8%	Total Cost (Including ITBMS) US$ (,000s)
NaCN	4 weeks	70,283	75,000	2.60	0.18		$ 209
Pebble Lime	Full Silo	100,000	100,000	0.32	0.02		$ 34
Carbon	Full Circuit	30	30,000	2.76	0.19		$ 88
Antiscalant	4 weeks	5,151	6,000	1.96	0.14		$ 13
Caustic Soda	4 weeks	2,808	3,000	0.98	0.07		$ 3
Hydrochloric Acid	4 weeks	1,147	2,000	0.52	0.04		$ 1
Copper Sulfate	4 weeks	267	1,000	3.29	0.23		$ 4
Sodium Metabisulfite	4 weeks	16,714	20,000	0.70	0.05		$ 15
Hydrated Lime	1 week	4,067	5,000	0.28	0.02		$ 1
Cement	1 truckload	21,000	21,000	0.26	0.02		$ 6
Diesel (L)	Total Fill	272,475	260,000	0.89	0.06		$ 248
Flux	4 weeks						
SiO2		229	1,000	0.50	0.04		$ 1
Borax		366	1,000	0.98	0.07		$ 1
Niter		183	1,000	1.75	0.12		$ 2
Soda Ash		137	1,000	1.70	0.12		$ 2
Lab Consumables			1	200,000	14,000	16,000	$ 230
Lab Supplies, Process			1	100,000	7,000	8,000	$ 115
Process Operator Tools			1	10,000	700	800	$ 12
Tools, Mill Wright			10	4,483	314	359	$ 45
Tools, Mine Shop			1	100,000	7,000	8,000	$ 115
Tools, Heap Leach			1	16,355	1,145	1,308	$ 19
TOTAL							**$ 1,164**

Values in table may not add due to truncation of digits in display

21.7 Closure and Sustaining Capital Costs

Sustaining capital expenditures are defined as those expenditures which do not increase annual gold production at the mine site and excludes all expenditures which are deemed expansionary in nature. These capital items are presented in Table 21-6 and include:

- Phase II Pad Expansion
- Upper Chontal Waste Dump Expansion
- Barren Booster Pump
- Mine Equipment Replacement
- Closure Costs

- Agglomeration Drum
- Quema/Quemita Conveyor Costs

21.7.1 Phase II Pad Expansion

Phase II pad expansion will cost US$7.5 million and occur during year one of process operation. The cost includes earthworks, liner and piping to expand the heap leach pad to accommodate the full mine life of ore stacking.

21.7.2 Upper Chontal Waste Dump Expansion

Annual costs are included for the Upper Chontal Waste Dump Expansion. The costs cover stripping and diversion channels.

21.7.3 Barren Booster Pump

A barren booster station is planned in Year 3. The booster station will allow pumping to higher elevations on the pad.

21.7.4 Mine Equipment Replacement

Costs for additional haul trucks are included in Years 1 and 2.

21.7.5 Agglomeration Drum

Costs for an agglomeration drum are included in Year 5 for processing clay type ores in Year 6.

21.7.6 Quema/Quemita Conveyor Costs

Costs to remove the Quema/Quemita Conveyor are included in Year 1; this is assumed to occur late in the year. The costs are assumed to be 70% of the installation costs.

Costs are included to re-install the conveyors in Year 3 for use in Year 4 and 5.

21.7.7 Closure Costs

Closure costs are included in Years 7, 8 and 9. The costs include heap rinsing and site reclamation.

TABLE 21-6
SUSTAINING CAPITAL
All Costs in $1,000s

Project	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14
Phase II Pad	$ 7,495													
Barren Booster			$ 308											
Upper Chontal WRD	$ 147	$ 163	$ 118	$ 186	$ 186	$ 91								
Mine Equipment	$ 1,154	$ 577												
Monitoring							$ 63	$ 48	$ 48	$ 48	$ 48	$ 27	$ 27	$ 27
Closure							$ 2,358	$ 2,358	$ 5,331					
Mine Other	$ 257	$ 198	$ 139	$ 139										
Quema/Quemita Haul Road														
Agglo Drum					$ 1,744									
Conveyor Remove/Install	$ 148		$ 212											
Yearly Total	$ 9,201	$ 938	$ 777	$ 325	$ 1,930	$ 91	$ 2,421	$ 2,406	$ 5,379	$ 48	$ 48	$ 27	$ 27	$ 27

Values in table may not sum due to rounding/ truncation of digits displayed

21.8 Owners Costs

Owner's costs are included which essentially cover pre-production G&A costs, process labor, and mining labor (pre-stripping).

Pre-production G&A costs include office operating expenses, legal fees, phones/internet service, office supplies, insurance, IT services and computers, travel, community assistance and environmental expenses. Labor G&A costs include office, safety, security and warehouse staff.

It is assumed that 12 months of general and administrative costs will be required before commencement of production.

Process labor was assumed to be staffed an average of 3 months prior to production. The laboratory was assumed to be staffed 6 months due to the fact that some assay work to support the mine would be required.

21.9 Working Capital

The working capital listed above was estimated at $5.1 M as 60 days of operating costs for the Mine and Process.

The actual working capital used in the cash flow was approximately $5.7 M. The uncertainty exists because the Year -1 Mining Opex is included in the Pre stripping cost.

21.10 Exclusions

The following capital costs are excluded from KCA's scope of supply and estimate:

- Finance charges and interest during construction.
- Escalation costs.
- Currency exchange fluctuations

21.11 Operating Cost Summary

Operating costs for the Cerro Quema Project have been based on the information presented in earlier sections of this study.

Estimated life of mine average operating costs for the mine are estimated to be $3.30/t ore, the average process, laboratory, and support services are estimated to be US$ 4.40/t ore. The G&A is estimated to be US$ 0.93/t ore.

These results are presented in more detail in Sections 21.12 and 21.13, respectively. A summary of projected operating costs is presented in Table 21-7.

TABLE 21-7
CERRO QUEMA PROJECT AVERAGE OPERATING COST

Description	Operating Cost
Mine (Owners Fleet)	$3.30
Process (average)	$4.40
Site G & A	$0.93
Total	$8.63

Values in table may not sum due to rounding/ truncation of digits displayed

Operating costs for all areas of the project have been estimated from first principles. Labor costs are estimated using project-specific staffing, salary, wage, and benefit requirements. Unit consumptions of materials, supplies, power, water, and delivered supply costs are also estimated.

21.12 Mining Operating Costs

In the Owner-operated approach, the owner will undertake all mining related activities, both operational and technical supervisory.

21.12.1 Mining Cost

The mining cost was estimated from first principles based on projected equipment operated rates and expected labor rates.

The annual mine operating cost is shown in Table 21-8 and the unit cost is shown in Table 21-9. The unit cost will vary by year from $1.93/t to $2.03, averaging $1.98/tonne of total material.

The operating costs in pre-production Year -1 are capitalized and shown as the pre-strip cost.

Diesel fuel price assumed is $0.89/liter and annual fuel consumption averages about 2.5 million litres per year.

Salaries, wages and payroll burdens are shown in Table 21-10 and are based on typical Panamanian rates.

The operating cost estimate includes an allowance of 5% to account for undefined items. This is viewed as an allowance and not a contingency, and hence is expected to be spent.

TABLE 21-8
OWNER OPERATED MINING COST – TOTAL PER YEAR

		Total LOM	-1	1	2	3	4	5
Total tonnes mined	kt	33,966.1	1,959.0	5,816.6	6,459.5	7,052.2	7,159.3	5,519.6
Direct Mining Costs (by Activity)			**CAPITAL**					
Drilling	$ ('000)	$ 5,564	$ 306	$ 945	$ 1,074	$ 1,151	$ 1,174	$ 914
Blasting	$ ('000)	$ 8,358	$ 616	$ 1,417	$ 1,560	$ 1,680	$ 1,715	$ 1,370
Loading	$ ('000)	$ 6,531	$ 387	$ 1,139	$ 1,247	$ 1,339	$ 1,374	$ 1,046
Hauling	$ ('000)	$ 26,709	$ 1,422	$ 4,030	$ 5,090	$ 6,082	$ 5,877	$ 4,208
Services/Roads/Dumps	$ ('000)	$ 9,365	$ 565	$ 1,770	$ 1,761	$ 1,749	$ 1,748	$ 1,771
General, Superv & Tech	$ ('000)	$ 7,499	$ 682	$ 1,364	$ 1,364	$ 1,364	$ 1,364	$ 1,364
Allowance	$ ('000)	$ 3,201	$ 199	$ 533	$ 605	$ 668	$ 663	$ 534
Total Operating Cost	$ ('000)	$ 67,227	$ 4,177	$ 11,198	$ 12,699	$ 14,033	$ 13,914	$ 11,205
Direct Mining Costs (by Cost Element)								
Operating Labour	$ ('000)	$ 8,742	$ 418	$ 1,392	$ 1,660	$ 1,896	$ 1,878	$ 1,499
Maintenance Labour	$ ('000)	$ 4,532	$ 238	$ 753	$ 864	$ 947	$ 920	$ 809
Supervision & Technical	$ ('000)	$ 6,918	$ 629	$ 1,258	$ 1,258	$ 1,258	$ 1,258	$ 1,258
Non-Energy Consum & Parts	$ ('000)	$ 28,423	$ 1,726	$ 4,755	$ 5,437	$ 6,006	$ 5,968	$ 4,531
Fuel	$ ('000)	$ 13,541	$ 714	$ 2,183	$ 2,553	$ 2,935	$ 2,905	$ 2,250
Electric Power	$ ('000)							
Leases & Outside Services	$ ('000)	$ 1,870	$ 253	$ 323	$ 323	$ 323	$ 323	$ 323
Allowance	$ ('000)	$ 3,201	$ 199	$ 533	$ 605	$ 668	$ 663	$ 534
Total Operating Cost	$ ('000)	$ 67,227	$ 4,177	$ 11,198	$ 12,699	$ 14,033	$ 13,914	$ 11,205

Values in table may not sum due to rounding/ truncation of digits displayed

TABLE 21-9
OWNER OPERATED MINING COST – UNIT COST

		Total LOM	-1	1	2	3	4	5
Total tonnes mined	kt	33,966.1	1,959.0	5,816.6	6,459.5	7,052.2	7,159.3	5,519.6
Direct Mining Costs (by Activity)			**CAPITAL**					
Drilling	$/t mat'l	$0.16	$0.16	$0.16	$0.17	$0.16	$0.16	$0.17
Blasting	$/t mat'l	$0.25	$0.31	$0.24	$0.24	$0.24	$0.24	$0.25
Loading	$/t mat'l	$0.19	$0.20	$0.20	$0.19	$0.19	$0.19	$0.19
Hauling	$/t mat'l	$0.79	$0.73	$0.69	$0.79	$0.86	$0.82	$0.76
Services/Roads/Dumps	$/t mat'l	$0.28	$0.29	$0.30	$0.27	$0.25	$0.24	$0.32
General, Superv & Tech	$/t mat'l	$0.22	$0.35	$0.23	$0.21	$0.19	$0.19	$0.25
Allowance	$/t mat'l	$0.09	$0.10	$0.09	$0.09	$0.09	$0.09	$0.10
Total Operating Cost	$/t mat'l	$1.98	$2.13	$1.93	$1.97	$1.99	$1.94	$2.03
Total Operating Cost	$/t ore	$3.44		$2.94	$3.34	$3.66	$3.68	$2.97
Direct Mining Costs (by Cost Element)								
Operating Labour	$/t mat'l	$0.26	$0.21	$0.24	$0.26	$0.27	$0.26	$0.27
Maintenance Labour	$/t mat'l	$0.13	$0.12	$0.13	$0.13	$0.13	$0.13	$0.15
Supervision & Technical	$/t mat'l	$0.20	$0.32	$0.22	$0.19	$0.18	$0.18	$0.23
Non-Energy Consum & Parts	$/t mat'l	$0.84	$0.88	$0.82	$0.84	$0.85	$0.83	$0.82
Fuel	$/t mat'l	$0.40	$0.36	$0.38	$0.40	$0.42	$0.41	$0.41
Electric Power	$/t mat'l							
Leases & Outside Services	$/t mat'l	$0.06	$0.13	$0.06	$0.05	$0.05	$0.05	$0.06
Allowance	$/t mat'l	$0.09	$0.10	$0.09	$0.09	$0.09	$0.09	$0.10
Total Operating Cost	$/t mat'l	$1.98	$2.13	$1.93	$1.97	$1.99	$1.94	$2.03
Total Operating Cost	$/t ore	$3.44		$2.94	$3.34	$3.66	$3.68	$2.97

Values in table may not sum due to rounding/ truncation of digits displayed

TABLE 21-10
MINE SALARY AND WAGES

	Base ($/year)	Burden	OT (%)	Burden ($/yr)	Total ($/yr)
Driller	13,024	40%	9.1%	6,400	19,400
Driller Helper	10,306	40%	9.1%	5,100	15,400
Blasting Foreman	36,000	40%	9.1%	17,700	53,700
Blaster	14,016	40%	9.1%	6,900	20,900
Bulk Truck Operator	13,024	40%	9.1%	6,400	19,400
Laborer	8,016	40%	9.1%	3,900	12,000
Truck Drivers	12,024	40%	9.1%	5,900	17,900
Shovel Operator	14,016	40%	9.1%	6,900	20,900
Loader Operator	12,024	40%	9.1%	5,900	17,900
HD Mechanic	18,596	40%	9.1%	9,100	27,700
Pit sevices (dewatering)	10,306	40%	9.1%	5,100	15,400
Grader Operator	13,024	40%	9.1%	6,400	19,400
Dozer Operator	13,024	40%	9.1%	6,400	19,400
Water Truck Operator	13,024	40%	9.1%	6,400	19,400
Utility Operators	13,024	40%	9.1%	6,400	19,400
Mine Superintendent	123,800	40%		49,500	173,300
Mine Gen Foremen	54,400	40%		21,800	76,200
Mine Foremen	36,000	40%	9.1%	17,700	53,700
Mine Clerk	13,024	40%	9.1%	6,400	19,400
Maint Gen Foreman	54,400	40%		21,800	76,200
Maintenance Foreman	36,000	40%	9.1%	17,700	53,700
Planner	15,000	40%	9.1%	7,400	22,400
Welder	18,024	40%	9.1%	8,800	26,900
Gas Mechanic	18,024	40%	9.1%	8,800	26,900
Tireman	13,024	40%	9.1%	6,400	19,400
Partsman	13,024	40%	9.1%	6,400	19,400
Laborer	8,016	40%	9.1%	3,900	12,000
Equipment Trainer	18,024	40%		7,200	25,200
Chief Engineer	79,400	40%		31,800	111,200
Senior Mine Engineer	55,000	40%		22,000	77,000
Mine Engineer	40,000	40%		16,000	56,000
Geologist	79,400	40%		31,800	111,200
Surveyor	18,024	40%		7,200	25,200
Survey Tech	10,306	40%		4,100	14,400
Mine Tech	10,306	40%		4,100	14,400
Ore Control Tech	10,306	40%		4,100	14,400

Values in table may not sum due to rounding/ truncation of digits displayed

21.13 Process and Support Services Operating Costs

The operating costs for Cerro Quema have been estimated at $5.208 per ton on a tax free basis for year one, details are shown in Table 21-11 below. The costs vary slightly between years two and five, and then increase dramatically to $7.473 per ton in year six. The costs were estimated at a pre-feasibility study level and are based on information presented earlier in this report.

Taxes are totaled separately for crediting purposes in the cash flow and are estimated at about $0.29 per ton in year one through five and $0.45 per ton year six.

Labor costs for the project have been estimated using staffing levels typical in Mexican heap leach operations and wage rates that are typical in Panama.

Unit consumptions of the costliest materials (cyanide, cement and diesel) are based on test work or the cost of diesel, diesel consumption and the total attached power. Other values are based on information for similar operations, or generally accepted industry standards.

Costs increase drastically in year six due to the need to agglomerate with 10 kg/t cement.

All costs are presented in second quarter 2014 dollars. No contingency has been added to the process operating costs and G&A. A summary of the operating costs is presented in the following table.

TABLE 21-11
SUMMARY CERRO QUEMA OPERATING COSTS

	Cost per Ton				
Category	Year One	Year Two & Three	Year Four	Year Five	Year Six
Labor	$1.054	$1.054	$1.054	$1.054	$1.054
Primary Crushing	$0.303	$0.303	$0.303	$0.303	$0.482
Secondary Crushing	$0.143	$0.143	$0.143	$0.143	$0.143
Reclaim /Convey/Stacking	$0.442	$0.442	$0.442	$0.442	$0.565
Heap Leach Systems	$0.592	$0.592	$0.675	$0.675	$0.675
Carbon ADR Plant	$0.198	$0.198	$0.198	$0.198	$0.198
Refinery	$0.080	$0.080	$0.080	$0.080	$0.080
Reagents	$1.245	$1.245	$1.245	$1.245	$3.155
Water Distribution	$0.017	$0.017	$0.017	$0.017	$0.017
Laboratory	$0.189	$0.189	$0.189	$0.189	$0.189
Support Services	$0.403	$0.255	$0.371	$0.399	$0.374
G & A Non-Labor	$0.541	$0.541	$0.541	$0.541	$0.541
Total	$5.208	$5.060	$5.258	$5.286	$7.473

Values in table may not sum due to rounding/ truncation of digits displayed

The costs can be further summarized as shown in the following table:

TABLE 21-12
OPERATING COSTS PROCESS VS G&A

	Cost per Ton				
Category	Year One	Year Two & Three	Year Four	Year Five	Year Six
Operating Cost Labor	$0.686	$0.686	$0.686	$0.686	$0.686
Operating Cost Non-Labor	$3.613	$3.465	$3.663	$3.691	$5.878
Operating Cost Total	$4.299	$4.151	$4.349	$4.377	$6.564
G&A Labor	$0.368	$0.368	$0.368	$0.368	$0.368
G&A Non Labor	$0.541	$0.541	$0.541	$0.541	$0.541
G&A Cost Total	$0.909	$0.909	$0.909	$0.909	$0.909
Total	$5.208	$5.060	$5.258	$5.286	$7.473

Values in table may not sum due to rounding/ truncation of digits displayed

Costs are described by type in the following sections in order of decreasing value. The “Process Costs” referred to below do not include any G&A costs.

Years four through six will require a booster pump for barren solution. This is estimated to add $0.08 per ton to the operating costs.

21.13.1 Reagents

Reagents include lime, cyanide and few other consumable items required to recover gold and cast it into doré. Reagents cost $1.245 per ton and represent about 24% of costs in years 1 through 5. Reagents increase to $3.16 per ton in year 6 due to cement consumption and represent about 42% of the process operating costs.

Reagents consumed are summarized in the following table.

TABLE 21-13
SUMMARY CERRO QUEMA REAGENT COSTS

	Cost per Ton				
Component	Year One	Year Two & Three	Year Four	Year Five	Year Six
Lime/Cement	$0.515	$0.515	$0.515	$0.515	$2.425
Cyanide	$0.653	$0.653	$0.653	$0.653	$0.653
Other	$0.077	$0.077	$0.077	$0.077	$0.077
Total Reagents	$1.245	$1.245	$1.245	$1.245	$3.155

Values in table may not sum due to rounding/ truncation of digits displayed

21.13.1.1 Cyanide

Cyanide consumption is 0.251 kg/t ore. The supply cost in Panama is $2.60 per kg and represents a total cost of $0.653 per t ore or about 13% of the total operating costs. Cyanide is the third single largest cost behind power and labor.

21.13.1.2 Cement (Year Six Only)

Cement consumption is 10 kg/t ore in year six. The supply cost in Panama is $0.243 per kg cement and represents a total cost of $2.425 per t ore or 32.5% of the total operating costs. Cement is the single largest component of the both the reagents and the process operating costs in year six.

21.13.1.3 Lime

Pebble lime is added at 1.6 kg/t in years one through five for pH control. The lime costs $0.515 per t ore or about 10% of the operating costs.

21.13.1.4 Other Reagents

Other reagents include carbon, caustic antiscalant and fluxes. The cost for these components is $0.077 per t ore. These represent 1.5% of the process operating costs.

21.13.1.5 Process Power

The process area will consume between 5.23 and 5.89 kWh/t of ore. The estimated unit power cost is $0.201 per kW/h; this cost is from the published rates for Distribuidora Eléctrica de Metro-Oeste (Edemet). The total cost is $1.052 to $1.185 per ton representing about 22% of the process operating costs. Power is the largest single cost.

Power consumption is detailed in the table below:

TABLE 21-14
POWER CONSUMPTION BY AREA

	Year One	Year Two & Three	Year Four	Year Five	Year Six
Primary Crushing	0.733	0.733	0.733	0.733	0.733
Secondary Crushing	0.113	0.113	0.113	0.113	0.113
Reclaim /Convey/Stacking	1.289	1.289	1.289	1.289	1.540
Heap Leach Systems	2.596	2.596	3.005	3.005	3.005
Carbon ADR Plant	0.166	0.166	0.166	0.166	0.166
Refinery	0.284	0.284	0.284	0.284	0.284
Reagents	0.051	0.051	0.051	0.051	0.051
Process Sub Total	**5.231**	**5.231**	**5.640**	**5.640**	**5.892**
Water Distribution	0.030	0.030	0.030	0.030	0.030
Laboratory	0.354	0.354	0.354	0.354	0.354
Support Services	0.979	0.817	0.817	0.956	0.832
Other Sub Total	**1.363**	**1.201**	**1.201**	**1.340**	**1.216**
Total	**6.594**	**6.432**	**6.842**	**6.980**	**7.108**

Values in table may not sum due to rounding/ truncation of digits displayed

21.13.1.6 Labor

The labor cost is subdivided between Process and Laboratory, labor details are presented in the table below.

TABLE 21-15
STAFFING LEVELS & SALARY SCHEDULES

Job Title	Qty.	Base Pay Salary (1,000s)	Hourly (1,000s)	Overtime (1,000s)	Burdens (1,000s)	Total (1,000s)	Cost, US$ (1,000s)
PROCESS							
Supervision							
Process Manager	1	$ 152			$ 61	$ 213	$ 213
Metallurgist	1	$ 95			$ 38	$ 133	$ 133
Metallurgical Technician	3		$ 13	$ 6	$ 5	$ 24	$ 73
Administrative Technician	1		$ 7	$ 6	$ 3	$ 15	$ 15
Process General Foreman	1	$ 114			$ 46	$ 160	$ 160
Shift Foreman	6	$ 34			$ 14	$ 48	$ 287
Process Maint General Foreman	1	$ 114			$ 46	$ 160	$ 160
Crushing							
Primary Crusher Operator	3		$ 11	$ 5	$ 5	$ 21	$ 62
Secondary Crusher Operator	3		$ 11	$ 5	$ 5	$ 21	$ 62
Crusher Feed Loader Operator	3		$ 11	$ 5	$ 5	$ 21	$ 62
Crusher Helper	2		$ 13	$ 6	$ 5	$ 24	$ 48
Heap Leach							
Heap Leach Operator	3		$ 11	$ 5	$ 5	$ 21	$ 62
Reagent Operator	3		$ 10	$ 4	$ 4	$ 18	$ 53
Stacking Operator	3		$ 11	$ 5	$ 5	$ 21	$ 62
Heap Dozer Operator	3		$ 11	$ 5	$ 5	$ 21	$ 62
Piping Crew - Heap Leach	7		$ 7	$ 3	$ 3	$ 12	$ 83
Day Laborer	2		$ 7	$ 3	$ 3	$ 12	$ 24
Shift Laborer	3		$ 7	$ 3	$ 3	$ 12	$ 36
Recovery Plant							
Recovery Plant Operator	3		$ 11	$ 5	$ 5	$ 21	$ 62
Refining Operator	1		$ 11	$ 5	$ 5	$ 21	$ 21
Day Laborer	2		$ 7	$ 3	$ 3	$ 12	$ 24
Process Maintenance							
Mechanic I	7		$ 18	$ 7	$ 7	$ 32	$ 225
Planner	1	$ 14			$ 6	$ 20	$ 20
Mechanic II	4		$ 11	$ 5	$ 5	$ 21	$ 83
Electrician	2		$ 17	$ 7	$ 7	$ 31	$ 62
Instrumentation Technician	1		$ 18	$ 7	$ 7	$ 32	$ 32
Subtotal Process	**70**	**$ 523**	**$ 224**	**$ 97**	**$ 299**	**$ 1,143**	**$ 2,186**
TOTAL PROCESS							**$ 2,186**
LABORATORY							
Lab Manager	1	$ 95			$ 38	$ 133	$ 133
Assayers	3		$ 11	$ 4	$ 5	$ 20	$ 60
Lab Technician	3		$ 7	$ 6	$ 3	$ 15	$ 44
Sample Preparation Labor	4		$ 7	$ 3	$ 3	$ 12	$ 47
SUBTOTAL LABORATORY	**11**	**$ 95**	**$ 24**	**$ 12**	**$ 48**	**$ 180**	**$ 285**
TOTAL	**81**						**$ 2,471**
Total Process						$0.61	US$/t
Total Process & Laboratory						$0.69	US$/t

Values in table may not sum due to rounding/ truncation of digits displayed

Labor is the third largest cost behind power and reagents. The labor can be summarized as in the table below.

TABLE 21-16
SUMMARY CERRO QUEMA LABOR COSTS

	Annual Cost (1,000s)	Cost per ton	Year One	Year Two & Three	Year Four	Year Five	Year Six
Process Labor	$ 2,186	$0.607	14.1%	14.6%	14.0%	13.9%	9.3%
Laboratory Labor	$ 285	$0.079	1.8%	1.9%	1.8%	1.8%	1.2%
Total Labor	$ 2,471	$0.686	16.0%	16.5%	15.8%	15.7%	10.5%

Values in table may not sum due to rounding/ truncation of digits displayed

21.13.2 Process Equipment Costs

Process equipment cost includes the operating costs of two loaders, one D6 dozer, three forklifts, two cranes and two backhoes when needed. This is the mobile equipment needed to keep the plant operating. The costs are estimated at $0.251 to $0.559 per t or about 6 to 8.5% of the total process operating costs.

21.13.3 Supplies

Supplies are an allowance for maintenance parts and consumable items. The consumables are estimated to be $0.33 to $0.39 per t or about 8 to 9% of the process operating costs in Years 1 through 5.

21.13.4 Fuel

Fuel is an estimate of the diesel consumed by the process equipment including the kiln, strip boiler and smelting furnace. This does not include the fuel used by vehicles or the generators. The daily fuel quantity is estimated from the expected demand of the equipment at 38,307 l/month. The resulting cost is estimated at $0.114 per t ore or about 2.7% of the operating costs in Years 1 through 5.

21.13.5 Assays

Assays are the costs of analyzing solid and solution samples onsite. The assay cost is estimated at $405,000 per year or $0.113 per ton of ore processed. This represents about 2.6% of the operating costs in Years 1 through 5.

21.13.6 Wear Steel

Wear steel is the cost of replacing abrasion resistant steel plate in the crushing circuit. The cost is estimated from the abrasion index and the estimated power consumption of the crushers. The steel consumption is estimated at 0.016 kg/t or $0.071 per t ore processed. This represents about 1.6% of the process operating costs in Years 1 through 5.

21.13.7 Vehicle Costs

Vehicle costs are the cost of operating a fleet of 12 vehicles. The vehicles are assumed to be ¾ ton pickup trucks and the operating costs are $185,143 per year or $0.051 per t ore. The costs represent 1.2% of the total operating costs in Years 1 through 5.

21.13.8 Quema/Quemita Overland Conveyors

The Quema/Quemita Overland conveyors costs (power and wear parts) are included in the "Support Services" category.

21.14 General Administrative Costs (G&A)

G&A expenses represent the cost of activities that are necessary to the operation of the business as a whole, but for which a direct relationship to any particular cost objective cannot be shown. Cerro Quema G&A costs are summarized as in the following table.

TABLE 21-17
SUMMARY CERRO QUEMA G&A COSTS

Type	Cost, Annual (1,000s)	Cost per ton	Fraction[1]
G&A Labor	$ 1,324	$0.368	7.1%
G&A Non Labor	$ 1,947	$0.541	10.4%
G&A Total	$ 3,271	$0.909	17.4%

1. As a percentage of Year 1 Total Operating Costs
2. Values in table may not sum due to rounding/ truncation of digits displayed

21.14.1 General Administrative Costs - Labor

The G&A labor is presented in the table below.

TABLE 21-18
G&A STAFFING LEVELS & SALARY SCHEDULES

		Annual (,000s)			
Job Title	Quantity	Salary	Overtime	Burden	Total
General Manager	1	$171	$12	$68	$251
Clerks	1	$8	$1	$3	$11
Accounting Manager	1	$68	$5	$27	$101
Mine Accountant	1	$16	$1	$6	$23
Accounts Payable	1	$16	$1	$6	$23
Accounting Clerk	1	$8	$1	$3	$11
IT Tech	1	$13	$1	$5	$19
HR Manager	1	$68	$5	$27	$101
HR Specialist	1	$16	$1	$6	$23
Payroll Administrator	1	$16	$1	$6	$23
Payroll Clerk	1	$8	$1	$3	$11
Security/Safety Director	1	$45	$3	$18	$67
Security Guards	12	$94	$7	$37	$138
Nurse	4	$121	$8	$48	$178
Purchasing Agent	1	$20	$1	$8	$29
Warehousemen	3	$32	$2	$13	$46
Environmental Manager	1	$68	$5	$27	$101
Environmental Technician	2	$27	$2	$11	$40
Safety Technician	4	$55	$4	$22	$80
Driver	2	$18	$1	$7	$26
Janitor	2	$15	$1	$6	$23
Total	43	$901	$63	$360	$1,324

Values in table may not sum due to rounding/ truncation of digits displayed

21.14.2 Non –Labor G & A Costs

Cerro Quema non-labor G&A costs are $0.541 per t. This cost includes maintenance on the access road, donations to community projects, insurance and the costs of operating the administrative offices. The costs are detailed in the following table.

TABLE 21-19
G&A NON LABOR COSTS

	Cost	
Category	Annual (1,000s)	per t
Insurance	$180	$ 0.050
Rentals	$30	$ 0.008
Office/Janitorial/Maint Supplies	$24	$ 0.007
Fees and Licenses	$24	$ 0.007
Payroll and Bank Charges	$10	$ 0.003
Postage/Courier	$18	$ 0.005
Telephone/Fax	$60	$ 0.017
Travel/Entertainment	$72	$ 0.020
Donations/Community Support	$240	$ 0.067
Employee Transportation	$110	$ 0.031
Safety/Security/Training	$72	$ 0.020
Access Road Maintenance/Repair	$400	$ 0.111
Accounting	$120	$ 0.033
Legal	$50	$ 0.014
Human Resources	$156	$ 0.043
Computer Services/Software	$24	$ 0.007
Outside Consultants	$48	$ 0.013
Maintenance Allocation	$15	$ 0.004
Harzardous Waste Removal	$30	$ 0.008
Environmental Expenses	$120	$ 0.033
Power	$0	$ -
Bottled Water	$24	$ 0.007
Propane	$0	$ -
Software Licenses	$120	$ 0.033
Total	$1,947	$ 0.541

Values in table may not sum due to rounding/ truncation of digits displayed

21.15 Taxes

The consumable prices in the operating costs were on a “Tax Free” basis.

Taxes on the consumables in the process operating costs will be 7% and are calculated separately as shown in the following table.

TABLE 21-20
TAXES ON PROCESS CONSUMABLE ITEMS

Component	Year One	Year Two & Three	Year Four	Year Five	Year Six
G&A Labor	$0.368	$0.368	$0.368	$0.368	$0.368
Opex Labor	$0.686	$0.686	$0.686	$0.686	$0.686
G&A Non Labor	$0.541	$0.541	$0.541	$0.541	$0.541
Opex Non Labor	$3.613	$3.465	$3.663	$3.691	$5.878
Taxable	$4.154	$4.006	$4.203	$4.231	$6.419
Non-Taxable	$1.054	$1.054	$1.054	$1.054	$1.054
Total Opex	$5.208	$5.060	$5.258	$5.286	$7.473
Tax	$0.291	$0.280	$0.294	$0.296	$0.449

Values in table may not sum due to rounding/ truncation of digits displayed

Taxes on the consumables in the mine operating costs will be 7% and are calculated separately in the following table.

TABLE 21-21
TAXES ON MINING CONSUMABLE ITEMS BY YEAR
COSTS IN $1,000S

	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Taxable	$ 2,639	$ 7,472	$ 8,594	$ 9,609	$ 9,536	$ 7,315	$ 0
Non-Taxable	$ 1,538	$ 3,726	$ 4,105	$ 4,424	$ 4,379	$ 3,889	$ 0
Taxes	$ 185	$ 523	$ 602	$ 673	$ 668	$ 512	$ 0

Values in table may not sum due to rounding/ truncation of digits displayed

22.0 Economic Analysis

22.1 Summary

Based on the estimated production parameters, revenue, capital costs, and operating costs, taxes, and royalties, a cash flow model was prepared by KCA for the economic analysis of the Cerro Quema project. All of the information used in this economic evaluation has been taken from work completed by Golder, KCA and P&E as described in previous sections of this report.

The Cerro Quema project economics were evaluated using both a discounted and undiscounted cash flows. Net Present Values were calculated at several discount rates including 0%.

The final economic model was developed by KCA using the following assumptions:

The period of analysis of 16 years includes two year of pre-production and investment, six years of production, three years for closure and reclamation and five additional years of monitoring

- Gold price of US$ 1,275/oz
- Processing rate of 10,000 tpd ore
- Average gold grade of 0.77 g/t
- Total average opex of US$ 8.63/t
- Total preproduction capex of $117.1 M
- Net Smelter Royalties of 4.6% (Government and CEMSA)
- Income Tax Rate of 25%
- ITBMS tax of 7%
- Local and Land Use taxes of approximately $81,000/year
- Gold recoveries of:
  - 86% for all La Pava material above the cut off head grade and the low grade Quema/Quemita
  - For Quema/Quemita, the following formula should be used to estimate gold recovery at varying head grades greater than 1 g Au/t:

$$\% \text{ Au} = (86\% - ((\text{g Au/t} - 1) \times 3\%))$$

Capital and operating costs used for this model are described in Section 21 of this report.

The project economics based on these criteria from the cash flow model are summarized in Table 22-1.

Table 22-1
Life of Mine Summary

Financial Analysis	
Internal Rate of Return (IRR), After-Tax	33.7%
NPV @ 0% (After-Tax)	$152,415,000
NPV @ 5% (After-Tax)	$110,052,200
NPV @ 10% (After-Tax)	$77,997,400
Gold Price Assumption (US$/Ounce)	$1,275
Pay Back Period (Years based on After-tax)	2.2
Initial Capital Costs	
Pre-Production Initial Capital	$115,929,368
Working Capital	$1,163,664
Total Initial Capital	$117,093,032
Future Capital (life of mine)	$23,480,397
Operating Costs (Average Life of Mine)	
Mining (Contract and Owner)	$3.30
Processing	$4.40
G&A	$0.93
Total Operating Cost/Tonne Ore	$8.63
Cash Operating Costs (per ounce of gold)	$402
Production Data	
Life of Mine	5.3
Mine Throughput (Ore)	10,000
Metallurgical Recovery Au (Avg)	85.8%
Average Annual Gold Production	78,800
Average LOM Strip Ratio (waste:ore)	0.72

22.2 Methodology

The Cerro Quema project economics are evaluated using a discounted cash flow (DCF) method. The DCF method requires that annual estimated cash inflows and outflows are converted to equivalent dollars in the year of evaluation. Considerations for this analysis include the following:

- The cash flow model was prepared by KCA with input from Peshimco, Golder and P&E.
- The period of analysis is 16 years (including two years of pre-production and investment), 6 years of production, 3 years for closure and reclamation and 5 years for monitoring.

- All cash flow amounts are in US dollars (US$). All costs are considered to be valid first quarter 2014 costs. Inflation is not included in this model.
- The Internal Rate of Return (IRR) is calculated as the discount rate that yields a Net Present Value (NPV) of zero.
- The NPV is calculated by converting annualized cash streams to Year -2 at different discount rates. Year -2 costs are not discounted,
- The Payback Period is the amount of time, in years, required to achieve an NPV of 0 with a discount rate of 5%.
- Working Capital is not included in the model; operating costs are assigned where necessary to ensure there is money spent to operate before there is revenue.
- Taxes on capital and operating costs are included. Where necessary, they have been added as separate annual expenses. Additionally, relevant local and land use taxes have been added.
- Royalties totaling 4.6% (NSR)
- 100% equity financing is assumed.
- Sustaining Capital, Reclamation and Closure costs are included in the model.
- Accelerated depreciation of capital by "Sum of Years Digits" method was used

22.3 General Assumptions

A summary of the general assumptions for cost inputs, parameters, royalties, and taxes used in the economic analysis are as follows.

22.3.1 Project Timing

The financial analysis assumes that spending begins in 2015 (Year -2). The first gold pour is assumed to occur in the fourth quarter of 2016 (Year -1).

22.3.2 Smelting and Refining Terms

The smelting and refining terms were developed with information from Pershimco and past KCA projects. The gold returned from the refinery is 99.925%, equal to a refinery deduction of $0.956 per ounce at the base case gold price. A refining charge of $5.00 per ounce is included, plus shipping and insurance costs averaging $4.57 per ounce.

22.3.3 Gold Price and Revenue

A gold price of US$1,275/oz is used as the base case commodity price. The three year trailing average price of gold at of the end of 2013 was $1,549/oz. The spot price for mid May 2014 was approximately $1,290/oz.

Gold production and revenue in the model are delayed one quarter from the time ore is stacked. This delay reflects the time required to recover gold from the heap.

22.3.4 Operating Costs

Operating costs were developed on an annual basis based on the production schedule and other operating parameters. The life-of-mine average operating costs are US$3.30/tonne for mining (owner fleet), US$4.40/tonne for processing, and US$0.93/tonne for G&A. The specific annual operating costs as applied to the cash flow model are included in Table 22-4 later in this section.

22.3.5 Capital Costs

The initial capital costs for project construction are incurred in the first and second year of development (Year -2 and -1). The following sustaining capital is also included:

- Additional mining equipment in Years 1 and 2;
- Expansion of the heap leach in Year 1;
- Quema/Quemita Overland Conveyor Removal end of Year 1, reinstallation in Year 3;
- Upper Chontal Waste Rock Dump costs in Years 1 through 6;
- Barren Booster Pump station in Year 3;
- Agglomeration Drum Installation in Year 5;
- Rinsing costs in Years 7, 8 and 9;
- Closure costs in Year 9;
- Monitoring costs in years 7 through 14;

The distribution of the estimated project capital costs are included below. Refer to Section 21 for capital cost details.

Table 22-2
Capital Cost Summary

	Cost, US$ Millions
Initial / Construction Capital	117.09
Future Capital	13.43
Closure Costs (includes monitoring)	10.38
Salvage Value	6.22
Total Project Capital Cost (excluding closure and salvage)	130.53

22.3.6 Taxes and Duties

The tax used on imported items was 7%. Imported mining equipment is assumed to be exempt from duties.

Goods and services purchased in Panama were assumed to be taxed at a rate of 7%.

22.3.7 Royalties

A 4.0% NSR royalty is payable to the Government of Panama. A 0.6% net smelter royalty is payable to Compañía de Exploración Minera, S.A. (CEMSA).

Using base case prices, the current financial model estimates the total value of royalty payments as US$ 24.3 million over the life of the mine.

22.3.8 Working Capital and Initial Fills

A working capital of 60 days of operating cost (mine and process) during the pre-production ramp-up period is included in the Capital Cost Estimate.

An estimated cash reserve of $1.4 M is required to cover process operating expenses prior to getting a positive cash flow.

Initial fill of reagents (such as cyanide, carbon, etc) are also included as part of the process capital. The capital for initial fills is estimated at US$ 1.2 million.

The assumption is made that all 80% of the working capital can be recovered in year six.

22.3.9 Closure Costs and Salvage

Closure costs of US$ 10.38 million are included, which occur during the Years 7 through 14 of the project.

Some salvage value of project equipment is assumed and included in the model. It is assumed that 33% of the construction camp will be recovered in Year 1, 15% of the mining equipment costs will be recovered in Year 7 and 15% of the process equipment in Year 9. The steel equipment such as tanks and structures are assumed to be salvaged for scrap at no cost to the project.

The power line cost (Las Tablas Station and line) is assumed to be credited back over 5 years. This is treated like as a salvage value in the cash flow.

22.3.9.1 Income Tax

Deductions from revenue to determine taxable income include operating costs, royalties, sustaining capital and depreciation.

A corporate tax rate of 25% was used.

22.3.9.2 Depreciation

All capital, with the exception of initial fills, is depreciated over Years One through Six. Depreciation is subtracted from the “Pre Tax” income. All depreciation is done by the “Sum of Years Digits” method.

Buildings are depreciated over 30 years; the rest of the capital is depreciated over the life of project. The minimum depreciation period was 3 years.

Depreciated losses ($1.8M) and exploration expenses ($40.4M) from preproduction years are deducted from the pre-tax income per instructions from Pershimco accounting staff.

22.3.10 Average Cash Cost

The average cash cost for the life of the mine is calculated by adding all the mining, process and G&A operating costs and dividing that number by the total ounces payable. The total operating costs for the project are US$168.1 million with the total ounces payable at 417,819 ounces; equating to an average cash cost per ounce of US$402.

22.4 Financial Model and Results

A discounted cash flow (DCF) method was used to evaluate the economics of the Cerro Quema project. The DCF method measures the Net Present Value (NPV) of future cash flow streams. This financial model has been developed by KCA with input from Peshimco, Golder and P&E.

Table 22-3 shows the key financial parameters derived from the cash flow analysis. Table 22-4 presents the cash flows.

Table 22-3
Key Financial Parameters

Au price	$1,275	/oz
Au Recovery La Pava	86.0%	
Au Recovery Quema (Weighted)	85.4%	
Au Recovery, Project	85.8%	
Treatment rate	10,000	t/d

Refining cost Au (includes shipping)	$5	/oz
Payable factor	99.925%	

Panamanian tax rate	25%	

Discount Rate i, %	Post-Tax NPV
0	$152,415,000
5	$110,052,200
10	$77,997,400
15	$53,393,900

IRR	33.7%	

Annual Au oz	78,800	(Rounded to nearest 100 oz)
Total Au oz produced	417,800	(Rounded to nearest 100 oz)

Cash Cost/oz Au, $	$402	Per payable ounce

Mine life	5.3	years
Payback	2.2	years

NPV, 5% Discount Rate, Pre-Tax	$165,139,800	
IRR, Pre-Tax	45.8%	

Table 22-4
Cash Flow Analysis

Cerro Quema Cash Flow - 10,000 tpd

			Preproduction	Year -1 Q3	Year -1 Q4	Year 1 Q1	Year 1 Q2	Year 1 Q3	Year 1 Q4	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Total
$/oz Au	1275			$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	$1,275	
Ore Processed				36,931	472,071	908,212	904,546	901,905	907,128	3,614,746	3,608,392	3,619,141	3,655,870	1,079,084	0	0	0	0	0	0	0	0	0	0	19,708,025
Au, gpt				1.50	0.88	1.27	1.42	0.85	0.93	0.77	0.64	0.70	0.67	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77
Ag, gpt				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
% R Au				86.0%	86.0%	85.0%	84.7%	86.0%	86.0%	86.0%	86.0%	86.0%	86.0%	86.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	85.8%
% R Ag				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
oz Au prod.				0	1,536	11,528	31,578	35,003	21,099	80,718	67,202	68,571	68,134	32,442	0	0	0	0	0	0	0	0	0	0	417,812
oz Ag prod.				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross Sales, US$																									
Au				$0	$1,958,412	$14,697,824	$40,262,323	$44,629,172	$26,900,966	$102,914,844	$85,683,047	$87,427,768	$86,871,209	$41,364,111	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$532,709,675
Ag				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Gross Sales				**$0**	**$1,958,412**	**$14,697,824**	**$40,262,323**	**$44,629,172**	**$26,900,966**	**$102,914,844**	**$85,683,047**	**$87,427,768**	**$86,871,209**	**$41,364,111**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$532,709,675**
Taxes & Royalties																									
Panamanian Tax	25.0%			$0	$0	$161,079	$4,602,204	$5,642,209	$1,427,235	$6,982,846	$4,385,661	$6,133,793	$8,148,068	$5,367,140	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$42,850,235
Panamanian Gov't NSR	4.0%			$0	$77,690	$581,551	$1,599,293	$1,773,141	$1,067,368	$4,082,797	$3,396,786	$3,466,245	$3,444,088	$1,643,432	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$21,132,390
CEMSA NSR	0.6%			**$0**	**$11,654**	**$87,233**	**$239,894**	**$265,971**	**$160,105**	**$612,420**	**$509,518**	**$519,937**	**$516,613**	**$246,515**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$3,169,858**
Total Taxes and Royaties				$0	$89,344	$829,863	$6,441,391	$7,681,321	$2,654,708	$11,678,062	$8,291,965	$10,119,974	$12,108,769	$7,257,086	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$67,152,483
Income (after taxes)				**$0**	**$1,869,068**	**$13,867,960**	**$33,820,932**	**$36,947,851**	**$24,246,258**	**$91,236,782**	**$77,391,083**	**$77,307,794**	**$74,762,439**	**$34,107,026**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$465,557,192**
MINING																									
Tonnes Ore Mined				48,991	536,091	964,064	962,055	963,828	953,799	3,822,196	3,859,383	3,817,781	3,779,838		0	0	0	0	0	0	0	0	0	0	19,708,025
Avg Cost/Tonne Ore (includes waste)	**$3.30**					$ 2.90	$ 2.91	$ 2.90	$ 2.94	$ 3.32	$ 3.64	$ 3.64	$ 2.96												
Total Mining Cost						**$2,799,521**	**$2,799,521**	**$2,799,521**	**$2,799,521**	**$12,699,433**	**$14,033,404**	**$13,914,324**	**$11,204,760**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$63,050,004**
PROCESSING																									
Process Labor					$551,593	$551,593	$549,367	$547,762	$550,935	$2,195,377	$2,191,519	$2,198,047	$2,220,354	$655,371	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$12,211,917
Processing				$111,543	$1,425,813	$2,743,131	$2,732,060	$2,724,082	$2,739,859	$10,917,754	$10,898,563	$11,229,136	$11,343,097	$5,735,340	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$62,600,378
Laboratory (Labor + Lab Cost)				$9,911	$160,546	$243,742	$242,758	$242,049	$243,451	$970,109	$968,403	$971,288	$981,145	$289,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,323,002
Service & Support				$9,421	$120,431	$366,183	$364,705	$363,640	$365,746	$922,164	$920,543	$1,341,440	$1,457,037	$403,232	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,634,540
Total Processing Cost	**$4.40**			**$130,875**	**$2,258,382**	**$3,904,648**	**$3,888,889**	**$3,877,533**	**$3,899,990**	**$15,005,404**	**$14,979,028**	**$15,739,911**	**$16,001,634**	**$7,083,542**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$86,769,836**
GENERAL & ADMINISTRATION																									
Labor					$333,980	$333,980	$332,632	$331,660	$333,581	$1,329,262	$1,326,925	$1,330,878	$1,344,385	$396,815	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$7,394,097
G&A Costs					$491,191	$491,191	$489,209	$487,780	$490,605	$1,954,975	$1,951,539	$1,957,352	$1,977,217	$583,605	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10,874,663
Total G&A Cost	**$0.93**			**$0**	**$825,171**	**$825,171**	**$821,840**	**$819,441**	**$824,186**	**$3,284,237**	**$3,278,464**	**$3,288,230**	**$3,321,601**	**$980,420**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$18,268,760**
MONITORING/RECLAMATION & CLOSURE									**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$62,500**	**$47,500**	**$47,500**	**$47,500**	**$47,500**	**$27,000**	**$27,000**	**$27,000**	**$0**	**$0**	**$333,500**
Other Taxes				**($30,642)**	**($152,651)**	**($415,112)**	**($414,047)**	**($413,279)**	**($414,797)**	**($1,696,292)**	**($1,765,544)**	**($1,813,556)**	**($1,676,083)**	**($565,999)**											**($9,358,002)**
TRANSPORT, INSURANCE, REFINING				**$0**	**($16,151)**	**($159,043)**	**($279,992)**	**($300,652)**	**($216,777)**	**($844,925)**	**($763,399)**	**($771,653)**	**($769,020)**	**($278,320)**	**$0**	**$0**	**$0**								**($4,399,930)**
NET INCOME				**($161,518)**	**($1,383,287)**	**$5,764,467**	**$25,616,643**	**$28,737,426**	**$16,090,986**	**$57,706,491**	**$42,571,244**	**$41,780,120**	**$41,789,341**	**$25,198,745**	**($62,500)**	**($47,500)**	**($47,500)**	**($47,500)**	**($47,500)**	**($27,000)**	**($27,000)**	**($27,000)**	**$0**	**$0**	**$283,377,159**
CAPITAL EXPENDITURES																									
Mining																									
Mobile Equipment				$10,134,126					$1,153,500	$576,750	$0	$0	$0	$0	$0										$11,864,376
Haul Roads				$500,000																					$500,000
Office Equipment				$60,000																					$60,000
Communication				$50,000																					$50,000
Surveying				$50,000																					$50,000
Miscellaneous				$132,000					$256,834	$197,717	$138,600	$138,600	$0	$0	$0										$863,751
																									$0
																									$0
																									$0
Freight				$506,706																					$506,706
Contingency				$571,642																					$571,642
Capitalized Pre-Strip				$4,176,984																					$4,176,984
Taxes				$985,000					$98,723	$54,213	$9,702	$9,702													$1,157,340
Total Mining Capital Cost			**$0**	**$17,166,458**	**$0**	**$0**	**$0**	**$0**	**$1,509,057**	**$828,680**	**$148,302**	**$148,302**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$19,800,799**
Process	0.257139793	0.742860207																							
Direct Cost			$16,876,691	$48,755,667					$7,643,039	$0	$519,789	$0	$1,743,563	$0	$2,358,081	$2,358,081	$5,331,105								$85,586,015
Spares				$1,549,595																					$1,549,595
Contingency			$2,784,308	$8,043,686																					$10,827,995
Indirect Costs			$1,699,074	$4,908,514																					$6,607,588
Initial Fills				$1,163,664																					$1,163,664
EPCM			$2,531,504	$7,313,350																					$9,844,854
Owners Costs			$1,105,835	$3,194,685																					$4,300,520
Working Capital																									$0
WRD									$147,170	$163,230	$118,200	$186,420	$186,420	$90,960	$0	$0	$0								$892,400
																									$0
Total Process & Infrastructure Capital Cost			**$24,997,412**	**$74,929,162**	**$0**	**$0**	**$0**	**$0**	**$7,790,209**	**$163,230**	**$637,989**	**$186,420**	**$1,929,983**	**$90,960**	**$2,358,081**	**$2,358,081**	**$5,331,105**	**$0**	**$0**	**$0**					**$120,772,630**
TOTAL CAPITAL COST			**$24,997,412**	**$92,095,620**	**$0**	**$0**	**$0**	**$0**	**$9,299,266**	**$991,910**	**$786,291**	**$334,722**	**$1,929,983**	**$90,960**	**$2,358,081**	**$2,358,081**	**$5,331,105**	**$0**	**$0**	**$0**					**$140,573,429**
Salvage Value						$491,753									$2,063,194		$4,069,061								$6,624,008
Credit Power Line						$102,816	$102,816	$102,816	$102,816	$411,262	$411,262	$411,262	$411,262												$2,056,312
Working Capital, Initial Inventory Credit @ 80%														$930,931											$930,931
IVA Tax Refund																									$0
After Tax Cash Flow, US$			**($24,997,412)**	**($92,257,138)**	**($1,383,287)**	**$6,359,035**	**$25,719,459**	**$28,840,242**	**$6,894,536**	**$57,125,844**	**$42,196,216**	**$41,856,660**	**$40,270,621**	**$26,038,716**	**($357,387)**	**($2,405,581)**	**($1,309,544)**	**($47,500)**	**($47,500)**	**($27,000)**	**($27,000)**	**($27,000)**	**$0**	**$0**	**$152,414,981**
Cumulative After Tax Cash Flow, US$			**($24,997,412)**	**($117,254,550)**	**($118,637,836)**	**($112,278,801)**	**($86,559,342)**	**($57,719,100)**	**($50,824,564)**	**$6,301,280**	**$48,497,496**	**$90,354,156**	**$130,624,777**	**$156,663,493**	**$156,306,106**	**$153,900,525**	**$152,590,981**	**$152,543,481**	**$152,495,981**	**$152,468,981**	**$152,441,981**	**$152,414,981**	**$152,414,981**	**$152,414,981**	

Table 22-5
Cash Flow Analysis Cont.

		Preproduction	Year -1	Year -1	Year 1	Year 1	Year 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Total
			Q3	Q4	Q1	Q2	Q3	Q4																
								1	2	3	4	5	6	7	8	9								
													30											
Capital for Depreciation (life of mine, all but bldgs, initial fills)		$24,576,622																						
			$89,716,322																					
								$9,299,266																
									$991,910															
										$786,291														
											$334,722													
												$1,929,983												
Capital for Depreciation (30 years, bldgs)		$420,790																						
			$1,215,634																					
					0.19	0.27	0.27	0.27																
Pre Tax Net Income			($130,875)	($1,230,636)	$6,935,227	$30,735,709	$34,895,729	$18,035,834	$66,796,892	$49,133,712	$50,138,731	$52,024,755	$32,062,814											$24,576,622
Depreciation (-2)	6 year life				$1,347,070	$1,891,607	$1,891,607	$1,891,607	$5,851,577	$4,681,261	$3,510,946	$2,340,631	$1,170,315											$89,716,322
Depreciation (-1)	6 year life				$4,917,445	$6,905,263	$6,905,263	$6,905,263	$21,361,029	$17,088,823	$12,816,617	$8,544,412	$4,272,206											$9,299,266
Depreciation (1)	6 year life								$3,099,755	$2,479,804	$1,859,853	$1,239,902	$619,951											$991,910
Depreciation (2)	6 year life									$396,764	$297,573	$198,382	$99,191											$786,291
Depreciation (3)	6 year life										$393,145	$262,097	$131,048											
Depreciation (4)	6 year life											$167,361	$111,574											
Depreciation (5)	6 year life												$964,991											
																								$149,312
Depreciation (-2)	30 year life				$6,787	$6,787	$6,787	$6,787	$26,243	$25,338	$24,433	$23,528	$22,623											$431,354
Depreciation (-1)	30 year life				$19,607	$19,607	$19,607	$19,607	$75,814	$73,199	$70,585	$67,971	$65,357											$ 40,400,000
Exploration						$ 3,247,127	$ 3,247,127	$ 3,247,127	$ 7,804,926	$ 6,498,089	$ 6,630,407	$ 6,588,198	$ 3,137,000											
Tax Losses		$ -	$ -	$ -	$ -	$ 256,503	$ 256,503	$ 256,503	$ 646,165	$ 347,788	$ -	$ -	$ -											
Taxable Income			($130,875)	($1,230,636)	$644,318	$18,408,815	$22,568,835	$5,708,940	$27,931,383	$17,542,644	$24,535,171	$32,592,274	$21,468,558											
Extra/Other Annual Taxes	Municipal Tax	$ 20,850	$ 5,213	$ 5,213	$ 5,213	$ 5,213	$ 5,213	$ 5,213	$ 20,850	$ 20,850	$ 20,850	$ 20,850	$ 20,850											
	patents	$ 60,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000											
	Tasa Unica	$ 300	$ 75	$ 75	$ 75	$ 75	$ 75	$ 75	$ 300	$ 300	$ 300	$ 300	$ 300											
	7% Tax, Process Opex		$ 10,355	$ 132,363	$ 264,068	$ 263,002	$ 262,234	$ 263,753	$ 1,013,532	$ 1,011,751	$ 1,064,903	$ 1,082,849	$ 484,849											
	7% Tax, Mine Opex		$ -	$ -	$ 130,757	$ 130,757	$ 130,757	$ 130,757	$ 601,610	$ 672,643	$ 667,503	$ 512,084	$ -											
	Total	$ 81,150	$ 30,642	$ 152,651	$ 415,112	$ 414,047	$ 413,279	$ 414,797	$ 1,696,292	$ 1,765,544	$ 1,813,556	$ 1,676,083	$ 565,999											
Tax Losses	2012 $ 616,716																							
	2013 $ 1,491,884																							
	2014 $ 1,738,941																							
Credit	$ 3,847,541					$ 256,503	$ 256,503	$ 256,503	$ 646,165	$ 347,788														
Deferred Exploration Cost	$ 40,400,000		$ -	$ -	$ -	$ 3,247,127	$ 3,247,127	$ 3,247,127	$ 7,804,926	$ 6,498,089	$ 6,630,407	$ 6,588,198	$ 3,137,000	$ 40,400,000										
Ounces Produced, %	100.00%					8.0%	8.0%	8.0%	19%	16%	16%	16%	8%											

$110,052,200

After-tax IRR	33.7%	0.335990033
Operating Years to Payback (5% discount rate)	2.2	
After-tax NPV of Project Cash Flow		
At 0% Discount Rate	$152,415,000	
At 5% Discount Rate	$110,052,200	
At 10% Discount Rate	$77,997,400	
At 15% Discount Rate	$53,393,900	

Year	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Annualized Cash Flow	($24,997,412)	($93,640,425)	$67,813,272	$57,125,844	$42,196,216	$41,856,660	$40,270,621	$26,038,716	($357,387)	($2,405,581)	($1,309,544)	($47,500)	($47,500)	($27,000)	($27,000)	($27,000)	$0	$0
NPV Looking Forward	($24,997,412)	($114,178,800)	($52,670,100)	($3,322,700)	$31,392,300	$64,188,000	$94,238,600	$112,743,800	$112,501,900									

After-tax Net Present Value	
Discount Rate	NPV
0.0%	$152,415,000
5.0%	$110,052,200
7.5%	$92,939,900
10.0%	$77,997,400
15.0%	$53,393,900
25.0%	$19,221,300

22.5 Sensitivity Analysis

Sensitivity of project economics to key parameters including gold price, total capital cost (including reclamation, closure and salvage) and average operating cash cost per ounce gold has been prepared. The after-tax sensitivity analysis is presented in Table 22-6, and graphically in Figures 22.1, 22.2, 22.3 and 22.4. The economic indicators chosen for sensitivity evaluation are the internal rate of return (IRR) and NPV at 0, 5, 10 and 15% discount rates.

The sensitivity analysis indicates that the project is most sensitive to revenue (gold price, ore grade, and recovery), followed by either capital or operating costs depending on the discount rate.

Table 22-6
Sensitivity Analysis (After Tax)

			NPV (in USD 1,000's)			
	Variation	IRR	0%	5%	10%	15%
Gold Price						
	$1,275	33.7%	152,415	110,052	77,997	53,394
85%	$1,084	22.3%	94,850	62,606	38,305	19,750
90%	$1,148	26.2%	114,092	78,470	51,580	31,005
100%	$1,275	33.7%	152,415	110,052	77,997	53,394
110%	$1,403	40.7%	190,548	141,463	104,258	75,640
115%	$1,466	44.2%	209,615	157,168	117,389	86,763
Capital Cost						
	$117,093	33.7%	152,415	110,052	77,997	53,394
85%	$99,529	42.1%	168,648	125,624	93,052	68,017
90%	$105,384	39.0%	163,237	120,433	88,034	63,142
100%	$117,093	33.7%	152,415	110,052	77,997	53,394
110%	$128,802	29.2%	141,593	99,671	67,961	43,646
115%	$134,657	27.1%	136,102	94,409	62,877	38,711
Operating Cost						
	$168,089	33.7%	152,415	110,052	77,997	53,394
85%	$142,875	37.4%	172,770	126,776	91,940	65,169
90%	$151,280	36.2%	165,985	121,201	87,292	61,244
100%	$168,089	33.7%	152,415	110,052	77,997	53,394
110%	$184,897	31.1%	138,818	98,878	68,680	45,523
115%	$193,302	29.8%	131,939	93,218	63,955	41,527

Figure 22.1
After-Tax IRR vs. Gold Price, Capital Cost, and Operating Cash Cost

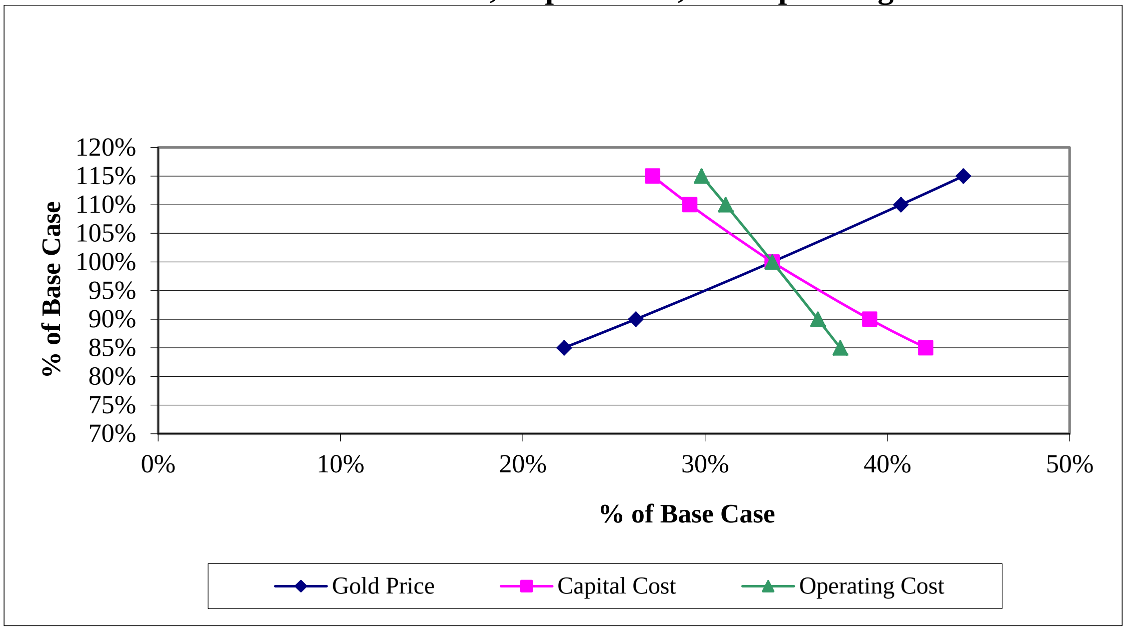


Figure 22.2
NPV @ 0% vs. Gold Price, Capital Cost, and Operating Cash Cost

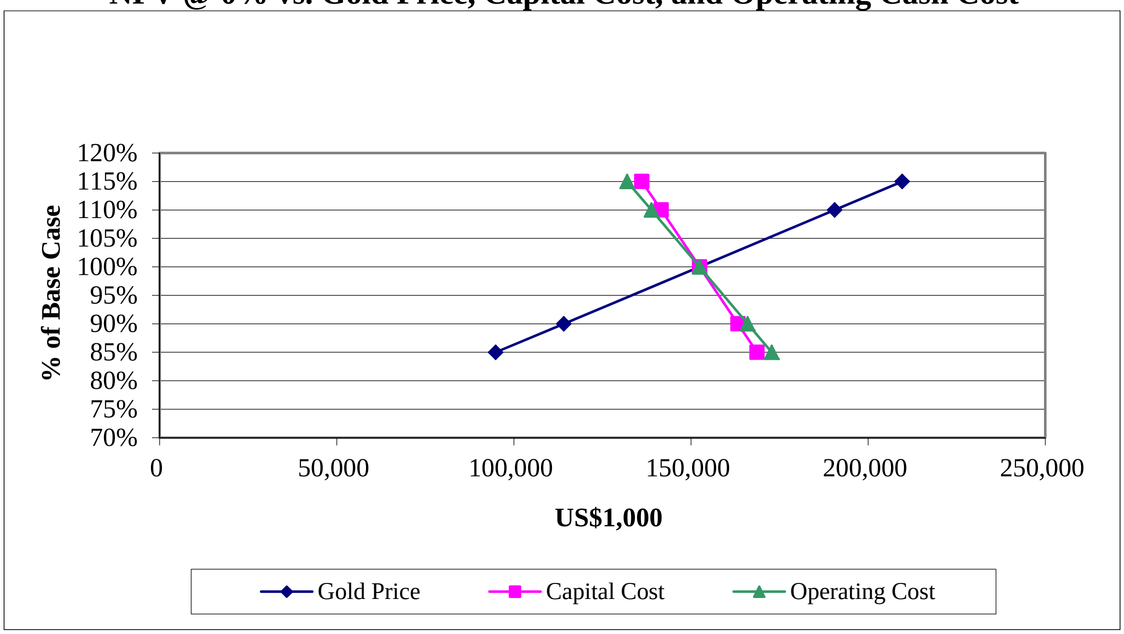


Figure 22.2
NPV @ 5% vs. Gold Price, Capital Cost, and Operating Cash Cost

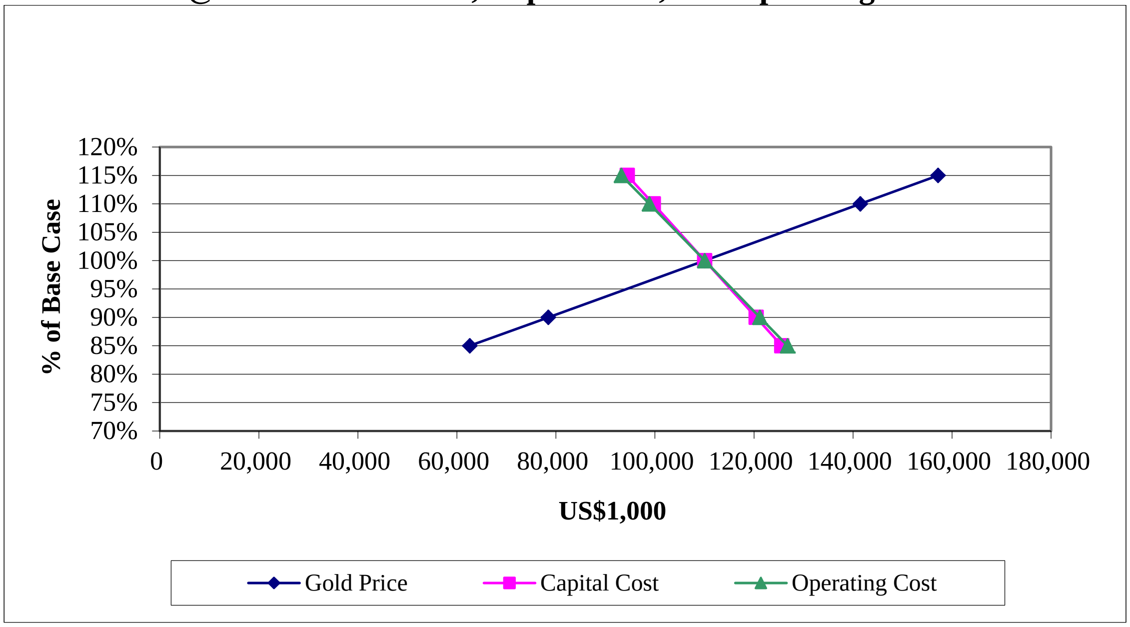
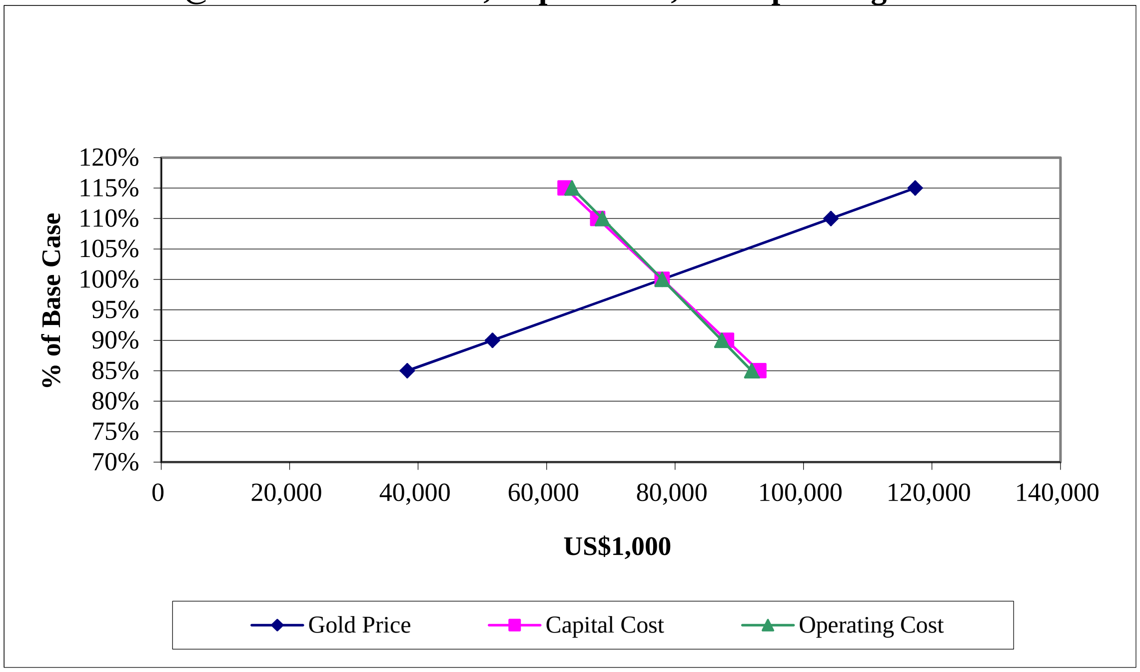


Figure 22.3
NPV @ 10% vs. Gold Price, Capital Cost, and Operating Cash Cost



23.0 ADJACENT PROPERTIES

There are currently no mineral properties adjacent to Pershimco's Cerro Quema Project that may impact the potential development of the Project.

24.0 OTHER RELEVANT DATA AND INFORMATION

24.1 Geotechnical Design

Geotechnical engineering analyses were performed for the design of the La Pava and Quema Quemita Pits, Maricela heap leach pad, and the Upper Chontal Waste Rock Dump. Analyses included slope stability and leach pad foundation settlement. The following sections present a summary each analysis.

24.1.1 Pit Slope Stability Analysis

Slope stability analyses were performed for the La Pava and Quema Quemita open pits to support slope design recommendations. The following analyses were performed:

- Kinematic analyses to evaluate the potential for development of bench and inter-ramp-scale plane shear and wedge failures in rock
- Limit-equilibrium analyses to evaluate the potential for development of slope instability in overall slopes due to overstressing of the bedrock

Fault orientations were collected and summarized, and rock structures were measured and characterized during a site reconnaissance to support the kinematic analyses. Results indicate that wedge and plane-shear failures are not likely to form over large portions of the pit slopes.

Geotechnical core logging, field index testing, and focused laboratory testing was performed to develop a model of the geotechnical material properties for the geologic units that comprise the pit slopes. Limit-equilibrium stability analyses included circular failure types for two groundwater conditions. Results indicate that pit slopes are stable for the recommended slope configuration.

24.1.2 Heap Leach Facilities Geotechnical

A slope stability analysis was performed on the Maricela Heap Leach Facility (HLF) to provide minimum design criteria for civil design of the HLF. The following tasks were performed:

- Developed geotechnical material properties of heap leach ore, liner system components, and foundation materials for the slope stability and foundation settlement analyses based on current and previous laboratory testing results
- Performed limit-equilibrium slope stability analyses to evaluate potential instabilities along the liner of the HLF and through the WRD under both static and seismic conditions

Comprehensive geotechnical laboratory testing programs were performed for past facility designs (Knight Piésold, 1996 and Tetra Tech, 2009) and was well additional laboratory testing for this study (Golder, 2013). Testing included classification, shear strength, liner interface direct shear, and flexible wall permeability.

HLF stability analyses included evaluation of block-type (non-circular), shallow circular, and deep circular potential failure types for both static and seismic loading conditions. Results indicate that the HLF is geotechnically stable under static and seismic loading conditions.

24.1.3 Waste Dump Facilities Geotechnical

A slope stability analysis was performed on the Upper Chontal Waste Rock Dump (WRD) to provide minimum design criteria for civil design of the WRD. The following tasks were performed:

- Developed geotechnical material properties of waste rock and foundation materials for the slope stability analysis based on current and previous laboratory testing results
- Performed limit-equilibrium slope stability analyses to evaluate potential instabilities through the WRD under both static and seismic conditions

Comprehensive geotechnical laboratory testing programs were performed for past facility designs (Knight Piésold, 1996 and Tetra Tech, 2009) to characterize foundation soil characteristics.

WRD stability analyses included evaluation of block-type (non-circular), shallow circular, and deep circular potential failure types for both static and seismic loading conditions. Results indicate that the WRD is geotechnically stable under static and seismic loading conditions.

24.2 Hydrology

A hydrologic analysis was performed for the HLF and WRD to estimate surface water run-off generated by the 25-year, 24-hour storm event falling on the catchment areas up-gradient of the HLF and WRD. Permanent stormwater diversion channels have been designed for both facilities to adequately capture and convey run-off.

A concrete-lined U-shaped channel located adjacent to the northern HLF perimeter access road will convey run-off east of the HLF and release captured flows into the un-named drainage east of Quebrada Maricela.

An earth-lined trapezoidal channel located up-gradient of the WRD in the Chontal Basin will divert stormwater run-off around the WRD and release into both Quebrada Chontal and Quebrada Seca.

Outlets of the stormwater diversion channels around the HLF and WRD will release captured flows via a grouted riprap-lined outlet apron.

A new sediment control structure will be located downstream of the HLF process ponds, in Quebrada Maricela, to capture and control transported sediments generated from improvements constructed up-gradient. The existing sediment control structure located in Quebrada Chontal near its confluence with Rio Quema will be used to capture and control transported sediments generated from improvements constructed up gradient for the WRD and crushing/process pad. A new sediment control structure will be located in the lower reaches of Quebrada Las Brujas to capture and control transported sediments generated from haul road improvements to the Quema-Quemita Pit.

24.3 Hydrogeology

No observation wells or piezometers have been developed in the La Pava and Quema-Quemita Pit, HLF, or WRD areas to indicate the elevation of a local ground water table. Several monitoring and pumpback wells are located along Quebrada Chontal. Ground water level readings have been collected monthly between 2008 and 2012. Several of wells have been abandoned due to site improvements along Quebrada Chontal including construction of the Chontal sediment control structure and a light vehicle access road. These wells are located within, or adjacent to Quebrada Chontal. Ground water levels measured may not be representative of the surrounding area up gradient to the natural drainage. Based on review of the available data from these wells, ground water levels vary between 0.25 meters below ground surface at Pozo No. 10 Sur and 18 meters below ground surface at Pozo No. 5. Observations indicate limited seasonal fluctuations in water levels within the vicinity of the Quebrada Chontal drainage.

24.4 Project Implementation

The project schedule is planned to coincide with permitting and the dry season on Panama.

The major project milestones are summarized in the table below.

TABLE 24-1
MAJOR PROJECT MILESTONES

Milestone	Start	Complete
ESIA Study	March 1, 2014	October 31, 2014
ANAM – ESIA Permitting	October 1, 2014	September 30, 2015
Detailed Engineering	January 1, 2015	September 30, 2015
Construction	October 1, 2015	December 1, 2016
Mine Commissioning	September 1, 2016	September 30, 2016
Stack Ore on Pad	October 1, 2016	
Process Commissioning	October 1, 2016	December 31, 2016
First Pour		December 31, 2016

Pershimco plans to start crushing and stacking ore in the fourth quarter of 2016. Mining and crushing will ramp up over the quarter. Leaching will start mid November 2016 with a goal of pouring the first doré by December 31, 2016.

24.5 Opportunities and Risks

24.5.1 Mineral Resource Growth, Mineral Resource Conversion, Sulphide Mineralization

24.5.1.1 Opportunity

24.5.1.1.1 Mineral Resource Growth

There is limited potential to significantly increase the quantity of oxide ore material at the La Pava pit however there is some potential for incremental addition of oxide ore at the Quema-Quemita pits.

There is considerable potential to find additional zones of gold oxide mineralization along the alteration trend that hosts the La Pava, Quemita-Quema and La Mesita deposits. Pershimco's recent exploration has defined several additional drill targets based on identification of airborne magnetic and radiometric lows, combined with resistivity highs determined from IP ground geophysics.

If additional oxide material can be defined at Quema/Quemita, mine production would likely remain at 10,000 tpd, thereby extending the mine life.

24.5.1.1.2 Sulphidic Material

Sulphide resources have been estimated beneath the oxide zones in La Pava and Quema/Quemita (Table 14.7 Summary of the Cerro Quema In-Pit Mineral Resources).

The data in Table 14.7 shows that this mineralization is estimated to include Measured and Indicated Resources 8.467 million tonnes at a grade of 0.36 g/t Au and 0.36% Cu (0.98 g/t Au-eq) at La Pava and Measured and Indicated Resources of 2.539 million tonnes at a grade of 0.49 g/t Au and 0.15% Cu (0.73 g/t Au-eq) at Quema/Quemita.

The sulphidic material represents a significant opportunity for a future gold-copper mining operation and a concentrator.

24.5.1.1.3 Mine Planning, Pit Backfilling, Contracting Mining

At more advanced stages of engineering, the pit designs and mine plans can be updated. The addition of more geotechnical information may require modifications to the pit design. Final slope angle could be steeper or shallower than used in this Pre-Feasibility Study but this would likely have limited impact on the mine plan.

Any pit re-design would require a new production schedule to be developed. More detailed review of the schedule could possibly improve on the amount of backfilling possible. Backfilling has the benefit of short hauls, which would improve equipment productivity and lower costs.

The Pre-Feasibility Study examined both Contract mining and Owner-Operated mining. The economics for the Owner-Operated mining fleet appear to be the preferred option. At the next stage of engineering it would be prudent to provide the mining contractor with a more detailed mining scope of work document to enable him to develop a more precise cost quotation. This could possibly affect the decision regarding contract mining and impact the final costs.

Further study should be done for the optimal types of mining equipment required for the site conditions. Site construction activities may require an equipment fleet that is less-than optimal than needed for commercial production mining. Therefore more detailed examination of the linkage between construction and production, particularly if the same contractor is used for construction and mining.

Waste haulage distances to the Chontal dump site can be up to 4 km from the Quema Pit. Further study should be done to seek waste dump sites closer to the Quema Pit if possible. The same comment applies to the La Pava pit operation, although distances to the Chontal dump are not as great from there.

24.5.1.1.4 Pit Geotechnical

A slope stability analysis was performed on the Upper Chontal Waste Rock Dump (WRD) to provide minimum design criteria for civil design of the WRD. The following tasks were performed:

- zones of intense clay alteration without silicification that would result in the rock mass consisting of a stiff to hard clay soil
- major structures that would form large plane shear and wedge failures
- zones of persistent low- to moderate-dipping joints that result in bench failures over a significant portion of the pit

The impact of these risks on mine economics is at least partially mitigated as the preliminary studies indicate the economics of the project are insensitive to pit slope angle. Also inter-ramp slope angle recommendations were made conservatively so the occasional loss of catch benches is anticipated.

Opportunities to achieve steeper pit slopes require:

- Encountering consistent zones of less fractured rock mass in the pit slopes where it is possible to form steep (70 degrees or steeper) bench face slopes by trim blasting
- The ability to triple bench (leave a catch bench every 15 m)

In less fractured rock, it may be possible to steepen slopes to 45 degrees, and if triple benching is possible, it may be possible to steepen inter-ramp slopes to 49 degrees. High quality mining practice, particularly blasting will be required to achieve either of these opportunities.

24.5.2 Metallurgy and Processing

24.5.2.1 Opportunity

24.5.2.1.1 Gold Recovery

Gold recoveries from laboratory testing (column and bottle roll testing) showed average recovery of about 92% for Quema/Quemita and La Pava respectively. The average recovery used in this report is 85.8%.; the difference is the discount KCA recommends for the actual operation versus ideal laboratory work. The actual field recovery may be higher and the discounted amount may be smaller than that assumed.

24.5.2.1.2 Silver

Silver is present in La Pava and Quema/Quemita ore. Field recovery of silver is estimated at 12% based on assays that could be obtained from metallurgical test data.

The mineralized inventory of silver at Cerro Quema is currently estimated at:

TABLE 24-2
ESTIMATED CONTAINED SILVER

	Contained Oz	Recoverable Oz
La Pava	1,112,094	133,451
Quema/Quemita	499,623	59,955
La Mesita	4,974	597
Total	1,616,691	194,003

The following should be noted:

- The above silver values are a derivative of the gold cut-off; no standalone silver cut-off grade was used
- The above silver values do not meet the standards of a resource
- The above silver values are not NI 43-101 compliant and cannot be relied upon.

Using a silver price of $14 per ounce, the silver represents a potential revenue source of $2.7 million.

24.5.2.1.3 Lime

An abandoned limestone quarry is located within 15km of mine site, along the highway to Tonosi. The limestone from this quarry is not enough high quality to be commercially viable. Pershimco will evaluate the potential of using this, or another local lime source, at Cerro Quema in place of commercial lime.

24.5.2.2 Risk

24.5.2.2.1 Lime

The operating expenses assume we will use pebble lime for pH control. Pebble lime will be added at a dosage rate of 1.6 kg/t and a cost of $0.515/t. Pebble lime is assumed because:

- Mining plan allows clay material to be stockpiled and campaigned during year six
- Pershimco geological staff are confident that the silica material to be mined is consistent with rock samples taken on site that do not require agglomeration

An emergency cement feeder will to be used provide cement, in addition to lime, if clay is fed to the crusher in an unplanned fashion. Cement can then be ordered for filling the silo if the mining problems persist.

Cement (bulk) is estimated to cost $0.243 per kg delivered. The clay material will require 10 kg cement/t ore or $2.425 per tonne crushed. This will increase the operating cost by $1.910/t.

24.5.2.2.2 Clay

The Cerro Quema core was observed during a site visit. The material was found to occur as:

- Clay, typically near the surface
- Silica fines, at intervals deeper in the holes, less common than whole rock or gravel
- Gravel, below the clay and at intervals deeper in the holes
- Whole rock easily broken by hand, intervals of rock were broken up by intervals of gravel and occasionally silica

As mentioned above:

- Mining plan allows clay material to be stockpiled and campaigned during year six
- Pershimco geological staff are confident that the silica material to be mined is consistent with rock samples taken on site that do not require agglomeration

Installation of an agglomeration drum is not planned until year five. If the material requires agglomeration, the only alternative will be to rely on belt agglomeration until a drum can be purchased and installed.

KCA estimates that the purchase, transport and installation of a new agglomeration drum could require 32 to 35 weeks as follows:

Drawing Review	3 to 4 weeks
Fabrication	24 to 26 weeks
Shipping	4 weeks

Installation 1 week

Any poorly agglomerated material clay material processed while waiting for the drum could be a liability for the permeability of the heap in the future.

24.5.2.2.3 Sulphide Material

There is a risk that sulphidic material will be mined with oxide and leached. The sulphidic material may consume large amounts of cyanide and cement. Sulphide sulphur and cyanide soluble gold assays can provided by the laboratory and used by ore control technicians to properly flag ore, waste and sulphidic material in the pits.

Visual cues such as grey rock color should allow skilled crusher operators and foreman to identify sulphide material in haul trucks and divert it to stockpiles at the crusher.

24.5.2.2.4 Crush Size

Column tests on core have only been performed on materials with a P_{80} of 25 mm or less. Coarser tests have all been on trench samples. There is a risk that core at sizes coarser than 25 mm will behave differently than the surface materials. This will be evaluated in future test work.

An additional risk exists that the planned crusher will perform poorly on the clay material processed in year six. The result will be reduced crusher throughput and increased operating costs. Test work is planned to determine if the clay can be blended with the Silica material without deleterious consequences.

24.5.3 Heap Leach Design and Operation

24.5.3.1 Risk

24.5.3.1.1 Cyanide Soluble Copper

The presence of cyanide soluble copper in leach feed is a concern due to the presence of sulphidic material below the oxide ore. Copper will consume cyanide and could appear in the doré.

The ADR has two methods to compensate for this copper:

- Cyanide addition to the Carbon in Column (CIC) feed installed prior commissioning
- Cold cyanide strip, to be installed if required

Both of the methods will consume some additional cyanide increasing operating costs. The cold cyanide strip will require an additional mix tank and circulation pump. The equipment could be inexpensive (less than $15,000) if the need for its use is infrequent.

24.5.3.1.2 Access to Electrical Power

This study assumes all power will be supplied from the grid by Distribuidora Eléctrica de Metro-Oeste (Edemet) at the Substation in Las Tablas, a community about 31 km southeast of Chitre along the Carretera Nacional.

Power will be delivered to site using a 34.5 kV power line constructed from Las Tablas to Cerro Quema. This power line will be financed by the Cerro Quema Project but purchased by Edemet over five years through electrical power credits.

The cost to construct the power line is estimated based on information from SNC-Panama. The power line will follow the existing roads. The costs associated with using the right-of-way for the power line is not fully understood. Pershimco expects no problems constructing this power line because it will benefit the surrounding communities as well as the project.

24.5.4 Water Management

24.5.4.1 Risk

24.5.4.1.1 Dry Year

A dry year could present problems if it is not recognized early. If evaporation losses are not minimized early, there will not be enough water stored in the event pond for the dry season.

Water will need to be added to the process from the existing well. This will add to the operating costs and reduce the availability of water for dust control uses.

24.5.4.1.2 Wet Year

A wet year could present problems if it is not recognized early so evaporation strategies can be maximized.

A large excess volume of water will require detoxifying water at a higher rate. While the equipment is sized for a 300 m^3/h detoxification rate, the cost of operating detoxification will be higher than operating evaporators. This will add to the operating costs and consume manpower that could be used for economic benefit elsewhere.

24.5.5 Social Opposition

There does not currently appear to be social opposition to the Project. A local perception study completed for the project indicated that water (for drinking and farming) is considered the most important natural resource and mining negatively impacts the environment, especially in regards to water. There is a lack of knowledge in regards to the agencies responsible for regulating mining projects. Pershimco will need to engage local communities during the EsIA process, and throughout mining operations, to identify their interests and concerns, describe environmental protection and social management issues and documentation in a clear and direct manner; and demonstrate how issues and concerns raised during the public engagement were taken into consideration and influenced decision making.

24.5.6 Land Acquisition & Resettlement

Pershimco will need to own or control the approximately 131 hectares of additional land for the Heap Leach facility and access road.

The heap leach facility will require 94 hectares. The cost of acquiring this land for the heap leach facility is estimated at $197,000.

The access road will require approximately 37 hectares of land in the form of a right-of-way corridor approximately 50 m wide. The cost of acquiring land for the access road is estimated at $78,000.

24.5.7 Political Situation

There is little political risk to doing business in Panama. Panama was militarily occupied by the United States in 1989 and its military strongman Manuel Noriega was overthrown. The country has since been a constitutional democracy and faces no current threats of hostility either domestically or externally.

24.5.8 Permitting

An environmental assessment and permits are in place for the previously proposed continuous vat leach operation. However, as the current project will utilize heap leach processing methods, an environmental assessment and permits to reflect the new project design will have to be submitted an approved by the Panamanian government. Active engagement with with government officials prior to and during submission and review of the environmental assessment and permit applications will need to be undertaking to minimize delays in the regulatory approval process.

Geochemical data indicate that the majority of samples of potential waste rock have a low to uncertain potential for acid generation; however, some samples are potentially acid generating. The synthetic precipitation leach test results indicate that there is the potential for aluminum, copper, iron and manganese to leach at concentrations greater than the Panama drinking water guidelines in some of waste rock samples. In addition, isolated pockets of sulphides (unweathered rock) are believed to exist in the oxide zone of the ore body. Considering the lack of detailed information on the rock description in the drillhole database that has been provided, this relationship at this time is only speculated. Additional sampling of drill core should be completed to confirm the geochemical characteristics of the waste rock; in particular material associated with the Quemita-Quema ore bodies. Kinetic test work has not been completed on waste rock samples. The presence of potentially acid generating and/or metal leaching waste rock would affect the waste rock dump design and water management plan for operations and closure.

Additional baseline studies will need to be competed to support the environmental assessment and future permits including:

- Baseline water quality conditions in both surface water and groundwater during dry and wet seasons. Sediment samples will also be collected at selected surface water locations. Water and sediment quality baseline data will require sufficient coverage to cover the seasonal variation, the spatial coverage and users upstream and downstream within the Project's area of influence.
- Although some water flow measures have been conducted at six streams during January 2013 (Quebrada Las Mesitas, Quebrada Ceibal, Quebrada Quema, Rio Quema, Quebrada Chontal and Quebrada La Pava). The data collected does not account for seasonal variation nor does it provide sufficient spatial coverage to characterize the Project's area of influence for establishing stream hydraulics. A site reconnaissance was completed in February 2014 to characterize the existing surface water flow regime for the Project. During this site visit additional surface water stations were located to provide supplement monitoring data to support the EsIA.
- The existing meteorology station at the project will be upgraded to provide suitable site specific data for comparison with government owned, longer term data meteorological stations.
- Ambient air and noise quality have not been collected for the Project. Specific air and noise quality baseline data requirements will be determined during the EsIA.
- To assess specific Project effects on the aquatic ecosystem, additional baseline sampling that includes sampling for fish, benthic macroinvertebrates, periphyton, and plankton, will be completed to characterization seasonal and spatial variation.
- The need for additional vegetation and wildlife baseline data will be determined during the EsIA.
- An initial cultural heritage site reconnaissance was completed in 1993. This study indicated that there is a high potential for archaeological findings. An updated archaeological reconnaissance and detail survey should be conducted as part of the baseline studies to support the EsIA.

The timing of completion of these studies could affect the environmental assessment submission schedule.

25.0 INTERPRETATIONS AND CONCLUSIONS

The following section presents general conclusions key design aspects of the Cerro Quema Project. Key design aspects follow.

25.1 Geotechnical Stability

25.1.1 Heap Leach Facility

Golder performed a geotechnical stability analysis for the Maricela Heap Leach Facility (HLF) to evaluate long-term, post-closure stability. The analysis included static and seismic loading conditions of the HLF. Two failure modes were evaluated for each loading condition. These included failure along the geomembrane liner surface and a deep failure through the foundation.

The lowest factors of safety (FOSs) were observed along the geomembrane liner surface. Results of the analyses indicate a relatively low risk for failure under both loading conditions. FOSs for the HLF were calculated to be above 1.4 for static and 1.05 for seismic loading conditions.

25.1.2 Waste Rock Dump

Golder performed a geotechnical stability analysis for the Upper Chontal Waste Rock Dump (WRD) to evaluate long-term, post-closure stability. The analysis included static and seismic loading conditions of the HLF. Two failure modes were evaluated for each loading condition. These included an overall slope failure through the dump and a deep failure through the foundation.

The lowest FOSs were observed through the overall slope of the WRD. Results of the analyses indicate a relatively low risk for failure under both loading conditions. FOS for the WRD were calculated to be above 1.6 for static and 1.05 for seismic loading conditions.

25.1.3 Open Pits

Golder performed pit slope stability studies to evaluate bench, inter-ramp and overall slope stability in the open pits. Golder also provided pit slope design recommendations including maximum inter-ramp pit slope angles for use in mine design. Providing inter-ramp pit slopes are mined at 40 degrees or less and controlled blasting consisting of trim blasting is used to form the 10-m high benches, pit and bench slopes are expected to be stable. No large scale structurally controlled failures were identified in the pit slopes due to faults.

The lowest static FOS for failure through the rock mass in the highest pit slopes is 1.95 assuming the pit slopes are fully drained and 1.63 assuming groundwater is encountered in the pit slopes. No stability analyses were performed to calculate a FOS for seismic loading conditions because the life of the pits are short and there are few, if any, case studies of deep seated pit slope failures in open pits excavated in rock even in seismically active areas.

25.2 Geology and Resource

- The La Pava, Quemita-Quema, and La Mesita deposits on the Cerro Quema Property are hosted by andesites and dacitic lava domes of the Rio Quema Formation that is part of a Cretaceous-Paleogene volcanic arc.
- The Cerro Quema deposits are characterized by the presence of widespread hydrothermal alteration that forms concentric halos around mineralization. The presence of vuggy silica, alunite, natro-alunite and enargite in addition to the hydrothermal alteration pattern are compatible with mineralization that formed in a high-sulfidation epithermal system.
- The mineralization consists of disseminated pyrite, chalcopyrite, and enargite and stockworks of quartz, pyrite, chalcopyrite, and barite with traces of galena and sphalerite. Gold occurs as disseminated microscopic grains of native gold and as "invisible gold" within the pyrite, particularly in the siliceous alteration zone. Strong supergene alteration forms an oxidation cap or gossan and has released the gold contained in the pyrite. The highest grades of gold mineralization are near the surface and decrease towards the lower limit of oxidation.
- The updated NI43-101 mineral resource estimate for the Cerro Quema Project that is documented in this study reports 552,400 oxide-derived ounces of gold in the Measured and Indicated categories; 7,900 oxide-derived ounces of gold in the Inferred category; 326,300 sulphide-derived ounces of gold in the Measured and Indicated categories; and 7,000 sulphide derived ounces of gold in the Inferred category.
- In the Cerro Quema Project area, the gold deposits are located along a 15 km long, east-west trend along which there is opportunity for further discovery. In addition, Pershimco has reported that a deep IP geophysical survey has identified a large, chargeable body beneath the Quema oxide gold deposit that is approximately 1.7 km long and 0.9 km wide and is consistent with a porphyry mineralization system

25.3 Reserves and Mining

- The Cerro Quema project production plan is based on a reserve of 19.7 million tonnes at an average grade of 0.77 g/t, containing approximately 487,000 ounces of gold.
- Based on a daily production rate of 10,000 t/day or 3.6 million tonnes per year, the project life is slightly over 5 years. The life of mine strip ratio is about 0.72:1, thereby requiring the stripping of 14.3 million tonnes of waste.
- Two open pits would be developed; the La Pava Pit and the Quema Pit. The La Pava pit extends for the duration of the project life while the Quema pit is only mined in years 3 through 5.
- Mining operations can be conducted as an Owner-Operated activity or on a Contract Mining basis. The average mining cost for the Owner option is $1.98/tonne of material compared to the Contract option at $2.86/tonne.
- The Owner mining option would have a higher capital cost ($18.643 million) versus the Contractor option capital cost ($6.903 million).
- The mining equipment fleet would consist of approximately three excavators and eleven mining trucks, with capacities ranging from 40 to 50 tonnes.

25.4 Metallurgy

- The oxide La Pava and Quema/Quemita materials are amenable to cyanidation for gold extraction. The expected gold recovery is 86% for all La Pava and the Quema/Quemita with head grades of 1 g Au/t or lower.
- Quema/Quemita materials with head grades greater than 1 g Au/t, the following formula should be used to estimate gold recovery:

$$\% \text{ Au} = (86\% - ((\text{g Au/t} - 1) \times 3\%))$$

25.5 Mineral Processing

- The core studied at the Cerro Quema site contained clay, fines, gravel and rock. The near surface material was almost entirely clay, clay bands occurred at depth. The rock in the core could be easily broken by hand. KCA's recommendation is to use conventional crushers based on Pershimco's alteration model and a mine plan that stockpiles clay until Year Six. Further study of core will determine if this is a wise recommendation.
- The permeability testwork completed in 1996 indicates a need to agglomerate Cerro Quema material with cement. This is consistent with the observation of clay and fines in core. KCA's recommendation to use pebble lime in Years One through Five is based on Pershimco's alteration model and a mine plan that stockpiles clay until Year Six. Further study of core will determine if this is a wise recommendation.
- A ROM stockpile area at the crusher will be needed to allow the process operators to vary the blend of feed types to produce more stable agglomerates.

25.6 Project Economics

- The Cerro Quema project has a life of 5.3 years. The project internal rate-of-return (IRR) is estimated at 33.7% and the after-tax net present value (NPV), at a 5% discount rate, is $110M. The payback period is 2.2 years and the cash cost is estimated at $402 per ounce.

26.0 RECOMMENDATIONS

26.1 Geology and Resource

The exploration recommendations in this report are largely based on drilling to defining additional gold oxide resources to support a longer mine life at Cerro Quema. An exploration program budgeted at $2.78 million is recommended.

Since the Cerro Quema project resources have a high proportion of Indicated category resources there is only limited opportunity for conversion of resources from Inferred to Indicated. Additional exploration and step-out drilling, however, is warranted to extend known mineralization and delineate additional resources. In particular, there is considerable potential to find additional zones of gold oxide mineralization along the 15 km east-west striking alteration trend in the Cerro Quema Formation that hosts the La Pava, Quemita-Quema and La Mesita deposits.

The project has considerable opportunity for discovery of additional copper-gold sulphide resources beneath the oxide zone. Pershimco's deep IP survey has identified a large, chargeable body beneath the Quema oxide gold deposit that is approximately 1.7 km long and 0.9 km wide. Three additional areas surveyed also identified chargeability anomalies beneath the gold oxides. These are located at the La Pava oxide gold deposit and both the Idaida and Pelona targets. These large chargeable bodies may represent sulphide mineralization at depth. (Pershimco July 25 and November 14, 2013 press releases).

TABLE 26-1
RECOMMENDED WORK PROGRAM

Description	Units	Cost per Unit	Total
IP Geophysics	100 km	$1,500/km	$150,000
Diamond drilling	5,000 m	$200/m	$1,000,000
RC Drilling	10,000 m	$100/m	$1,000,000
Analytical	5,000 samples	$30	$150,000
Geology and technical support	12 months	$40,000/month	$480,000
Total			$2,780,000

26.2 Mining

- Complete a detailed evaluation for the siting of the explosive storage facilities, as it relates to the overall site infrastructure.
- Further consideration should be given to full service contract mining or simply contracted services for drilling and blasting. A competitive bidding process may result in lower unit prices than used in this study, which were solicited from a single contractor.

26.3 Mineral Processing

The metallurgical testing below could be done in one phase and is estimated to cost about $300,000.

26.3.1 Metallurgical Testing, Existing Mine Plan

Column leach tests should be performed on core from La Pava and Quema-Quemita crushed to a P80 of 50 mm. The material should be according to alteration (Silica, Silica-Clay and Clay) in the ratios expected for Years 1 through 5 and Year Six.

A test program should be conducted on crushed core to determine the permeability, blended to match the average blend of alterations in Years 1 through 5, at an equivalent pressure of 80 m.

A test program should be conducted on crushed core from pure Clay alteration to determine the permeability versus cement dose. This will help Pershimco prepare for Year 6 when Clay will be campaigned.

26.3.2 Metallurgical Testing, Alternate Mine Plan

Pershimco would like to consider blending clay throughout the mine life, eliminating clay stockpiles. Column leach tests should be performed on core from La Pava and Quema-Quemita crushed to a P_{80} of 50 mm and blended by alteration to match this mine plan.

A test program should be conducted on crushed core to determine the permeability, blended to match the average blend of alterations for the life of mine, at an equivalent pressure of 80 m.

26.3.3 Potential Coarsening of Crush

Pershimco should consider metallurgical testing at coarser crush sizes to determine if Primary Crushing alone could be performed. This may have to be done on bulk samples.

26.3.4 Rinsing

Laboratory testing should be conducted to verify the rinsing requirements of the Cerro Quema heap. Rinse solution from the tests should be treated with air, sodium metabisulphite and copper sulphate to destroy cyanide. The resulting detoxified solution should be assayed by ICP to determine if any metals of concern remain.

26.4 Geotechnical Considerations

To facilitate feasibility and detailed design of the HLF and WRD, additional geotechnical field investigation and laboratory testing programs are recommended. To satisfy standards of practice for design of heap leach facilities, subsurface conditions should be characterized in sufficient detail to provide a high level of confidence in the stratigraphy, ground water, structure, and preferential paths of flow in the upper 30 meters of the subsurface. This is accomplished through the advancement of geotechnical boreholes located within the footprint of the facility. The depth and quantity of boreholes will depend on the final design of the facilities.

Additionally, a shallow subsurface investigation should be performed to characterize the near surface soil conditions across the entire site to better delineate vegetative root mass and depth, stripping depth of topsoil and weak soils, near surface bedrock, and mass grading requirements. This can be performed using a track-mounted excavator or by hand-excavation of exploratory test pits.

The geotechnical investigation required to facilitate the feasibility design to the HLF and WRD is anticipated to cost approximately $250,000.

26.5 Seismic Hazards

Further consideration should be given to reevaluating the PGA value appropriate for feasibility and final design because of the historical record of strong earthquake shaking, the location of known major faults within about 40 km of the Cerro Quema Project, and the observed lineament within one kilometer south of the proposed mine site. This lineament may be associated with the Rio Joaquin Fault, and should be further evaluated as a surface fault rupture and very strong earthquake shaking hazard.

The seismic hazard assessment required to facilitate the feasibility design to the HLF and WRD is anticipated to cost approximately $75,000.

26.6 Hydrogeology

Further consideration should be given to evaluating the hydrogeologic conditions that exist at the Cerro Quema Project specifically in the vicinities of the Maricela HLF and Upper Chontal WRD sites. Existing ground water monitoring wells are located along Quebrada Chontal, downstream of the process platform and WRD. At the time of this report, Golder is unaware of any additional monitoring points in the vicinity of the Maricela HLF and Upper Chontal WRD.

Ground water conditions can be recorded during the geotechnical field investigation for detailed design through installation of slotted PVC well casings installed in geotechnical boreholes. Additionally, a comprehensive ground water spring study is recommended to better delineate and quantify year-round or seasonal spring flows below the proposed HLF and WRD sites. This study will assist is adequately sizing underdrain collection piping installed below each facility’s foundation.

The hydrogeologic study required to facilitate the feasibility design to the HLF and WRD is anticipated to cost approximately $250,000.

26.7 Surface Water Controls

Monitoring of existing stream flows should be considered to measure sediment transportation in existing streams. This will provide valuable input for designing sediment control structures downstream of proposed improvements. Currently, Golder is working with PRO to develop a monitoring plan for the on-going environmental and social impact assessment.

The surface water monitoring required to facilitate the feasibility design to the HLF and WRD is anticipated to cost approximately $100,000.

26.8 Climate Data

Additional site specific precipitation and evaporation measurements should be collected to better refine the predictions of the HLF process fluid water balance. More accurate precipitation and evaporation data for the Cerro Quema Project will provide a higher confidence in estimating process fluid consumption and pond storage capacities.

The development of site-specific climate data to facilitate the feasibility design to the HLF and WRD is anticipated to cost approximately $25,000.

26.9 Facility Optimization

Additional effort should be made to optimize geometry of the proposed facilities. Constructability of the HLF and process ponds is very important. Earthworks constitute the largest single cost in the HLF construction. Due to the naturally steep terrain and short dry season, construction will be challenging. Additional effort should be made to optimize the following:

- Mass grading earthworks
- Heap and leach pad geometry
- Pond side slopes
- Liner system construction
- Access road grades and side-hill cuts
- Facility access
- Integration of storm water diversion channels and roads, the HLF, and the WRD

To optimize the mass grading and more accurately estimate the earthwork quantities required, a detailed survey of the natural topography should be performed. It is recommended that the survey be performed to a vertical accuracy of less than ½ meters.

To facilitate the feasibility design to the HLF and WRD, the additional facility optimization effort is anticipated to cost approximately $100,000.

26.10 Annual Engineer of Record Site Visits

During construction of the HLF, and in addition to the on-site construction quality assurance team, the engineer of record (Golder Associates Inc.) should perform periodic site visits to verify that techniques used for construction and observation are in accordance with the project design and technical specifications.

Additionally, after construction is completed, and during operation, the engineer of record should perform, at a minimum, annual site visits to verify that the HLF is being operated in accordance with the project design and technical specifications. During these visits, the engineer of record should also review geotechnical and environmental monitoring data to verify that the facility is geotechnically and environmentally stable.

Engineer of Record site visits during HLF construction is anticipated to cost approximately $40,000.

26.11 Reclamation and Closure

Golder recommends that additional effort be made in developing a feasible, yet proactive reclamation plan for the HLF and WRD. Sediment and erosion control and storm water management will be challenging throughout operation. To reduce potential sediment transportation and erosion of operational slopes, Golder recommends implementing a concurrent reclamation plan to actively reclaim completed HLF and WRD slopes during operation. This will include re-sloping, placement of cover soil, placement of topsoil, and revegetation.

In addition to reducing sediment and erosion management efforts, placement of a low permeable cover over the HLF and WRD during operation will reduce unwanted storm water infiltration into the heap from precipitation which could lead to long-term geotechnical instability.

To facilitate the feasibility design to the HLF and WRD, the additional reclamation and closure design effort is anticipated to cost approximately $60,000.

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28.0 Statement of Qualifications

The effective date of this Technical Report is 30 June 2014.

Signed and sealed,

P&E Mining Consultants Inc.

Richard Sutcliffe, P. Geo.	"Richard Sutcliffe, P. Geo." Date Signed: 13-August-2014
Ken Kuchling, P. Eng.	"Kenneth Kuchling, P. Eng." Date Signed: 15-August-2014
David Burga, P. Geo.	"David Burga, P. Geo." Date Signed: 13-August-2014
Tracy Armstrong, P. Geo.	"Tracy J. Armstrong, P. Geo." Date Signed: 13-August-2014
Antoine Yassa, P. Geo.	"Antoine Yassa, P. Geo." Date Signed: 13-August-2014
Fred Brown, CPG	"Fred H. Brown, CPG" Date Signed: 13-August-2014
Eugene Puritch, P. Eng	"Eugene Puritch, P. Eng." Date Signed: 13-August-2014

Golder Associates Inc.

Gene Tortelli, PE	"Gene R. Tortelli, PE" Date Signed: 07-August-2014
George Lightwood, PE	"George T. Lightwood, PE." Date Signed: 07-August-2014
David Brown, P. Geo.	"David Brown, P. Geo." Date Signed: 08-August-2014

Kappes, Cassiday and Associates

Mark Gorman, PE	"Mark Gorman, PE." Date Signed: 25-July-2014

CERTIFICATE OF QUALIFIED PERSON

RICHARD SUTCLIFFE, Ph.D., P. GEO.

I, Richard Sutcliffe, Ph.D., P. Geo., residing at 100 Broadleaf Crescent, Ancaster, Ontario, do hereby certify that:

1. I am an independent geological consultant and Vice President Geology, P&E Mining Consultants Inc.
2. This certificate applies to the technical report titled "Cerro Quema Project - Pre-Feasibility study on the La Pava and Quemita Oxide Gold Deposits" (the "Technical Report"), with an effective date of June 30, 2014.
3. I am a graduate of the University of Toronto with a Bachelor of Science degree in Geology (1977). In addition, I have a Master of Science in Geology (1980) from University of Toronto and a Ph.D. in Geology (1986) from the University of Western Ontario. I have worked as a geologist for a total of 32 years since obtaining my M.Sc. degree. I am a geological consultant currently licensed by the Association of Professional Geoscientists of Ontario (License No 852).
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.

   My relevant experience for the purpose of the Technical Report is:

   - Precambrian Geologist, Ontario Geological Survey 1980-1989
   - Senior Research Geologist, Ontario Geological Survey 1989-1991
   - Associate Professor of Geology, University of Western Ontario. 1990-1992
   - President and CEO, URSA Major Minerals Inc.. 1992-2012
   - President and CEO, Patricia Mining Corp... 1998-2008
   - President and CEO, Auriga Gold Corp. 2010-2012
   - Consulting Geologist... 1992-Present
5. I have not visited the Property that is the subject of this report.
6. I am responsible for authoring Sections 8 and 23 and co-authoring Sections 2, 3, 5, 7 and 24-28 of the Technical Report along with those sections of the Summary pertaining thereto.
7. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
8. I have had prior involvement with the project that is the subject of this Technical Report. The nature of my involvement was as co-author of a Technical Report titled "Technical Report and Mineral Resource Estimate on the Cerro Quema Project, Los Santos Province, Panama" dated November 2, 2012.
9. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
10. As of the date of this certificate, 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.

Effective Date: June 30, 2014
Signing Date: August 13, 2014

{SIGNED AND SEALED}
[Richard Sutcliffe]

____

Dr. Richard H. Sutcliffe, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

KEN KUCHLING, P.ENG.

I, Ken Kuchling, P. Eng., residing at 33 University Ave., Toronto, Ontario, M5J 2S7, do hereby certify that:

1. I am a senior mining consultant with KJ Kuchling Consulting Ltd. located at #33 University Ave, Toronto, Ontario Canada contracted by P&E Mining Consultants Inc.
2. This certificate applies to the technical report titled "Cerro Quema Project - Pre-Feasibility study on the La Pava and Quemita Oxide Gold Deposits", with an effective date of June 30, 2014.
3. I graduated with a Bachelor degree in Mining Engineering in 1980 from McGill University and a M. Eng degree in Mining Engineering from UBC in 1984. I have worked as a mining engineer for a total of 31 years since my graduation from university. My relevant work experience for the purpose of the Technical Report is 14 years as an independent mining consultant in commodities such as gold, copper, potash, diamonds, molybdenum, tungsten, and bauxite. I have practiced my profession continuously since 1980. I am a member of the Professional Engineers of Ontario.
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.

   My relevant experience for the purpose of the Technical Report is:
   - Associate Mining Engineer, P&E Mining Consultants Inc. .... 2011 – Present
   - Mining Consultant, KJ Kuchling Consulting Ltd. .... 2000 – Present
   - Senior Mining Engineer, Diavik Diamond Mines Inc., ... 1997 – 2000
   - Senior Mining Consultant, KJ Kuchling Consulting Ltd., ... 1995 – 1997
   - Senior Geotechnical Engineer, Terracon Geotechnique Ltd., ... 1989 - 1995
   - Chief Mine Engineer, Mosaic, Esterhazy K1 Operation. .... 1985 – 1989
   - Mining Engineering, Syncrude Canada Ltd.. .... 1980 – 1983
5. I have visited the Property that is the subject of this Technical Report on Sept 24-25, 2013.
6. I am responsible for co-authoring Sections 15, 16, 18, 21, 24-28 of the Technical Report, along with those sections of the Summary pertaining thereto.
7. I am independent of the Issuer applying all of the tests in section 1.5 of National Instrument 43-101.
8. I have had prior involvement with the project that is the subject of this Technical Report.The nature of my prior involvement was completing some mine design trade-off studies in October 2012.
9. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
10. As of the date of this certificate, 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.

Effective Date: June 30, 2014

Signed Date: August 15, 2014

{SIGNED AND SEALED}
[Kenneth Kuchling]

Ken Kuchling P.Eng.

CERTIFICATE OF QUALIFIED PERSON

DAVID BURGA, P.GEO.

I, David Burga, P. Geo., residing at 3884 Freeman Terrace, Mississauga, Ontario, do hereby certify that:

1. I am an independent geological consultant contracted by P & E Mining Consultants Inc.
2. This certificate applies to the technical report titled "Cerro Quema Project - Pre-Feasibility study on the La Pava and Quemita Oxide Gold Deposits**"** (the "Technical Report"), with an effective date of June 30, 2014.
3. I am a graduate of the University of Toronto with a Bachelor of Science degree in Geological Sciences (1997). I have worked as a geologist for over 12 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by the Association of Professional Geoscientists of Ontario (License No 1836).

   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.

   My relevant experience for the purpose of the Technical Report is:

   Exploration Geologist, Cameco Gold 1997-1998
   Field Geophysicist, Quantec Geoscience 1998-1999
   Geological Consultant, Andeburg Consulting Ltd. 1999-2003
   Geologist, Aeon Egmond Ltd. 2003-2005
   Project Manager, Jacques Whitford 2005-2008
   Exploration Manager – Chile, Red Metal Resources 2008-2009
   Consulting Geologist....................2009-Present

4. I have not visited the Property that is the subject of this report.
5. I am responsible for authoring Sections 6, 9 and 10 and co-authoring Sections 4, 5 and 20 of the Technical Report along with those sections of the Summary pertaining thereto.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Property that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the date of this certificate, 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.

Effective Date: June 30, 2014
Signed Date: 13 August 2014

{SIGNED AND SEALED}
[David Burga]

____
David Burga, P.Geo.

CERTIFICATE of AUTHOR

TRACY J. ARMSTRONG, P.GEO.

I, Tracy J. Armstrong, residing at 1739 Route 132 Est St-Georges-de-Malbaie, QC G0C 2X0, do hereby certify that:

1. I am an independent geological consultant contracted by P&E Mining Consultants Inc. and have worked as a geologist continuously since my graduation from university in 1982.
2. This certificate applies to the technical report titled "Cerro Quema Project - Pre-Feasibility study on the La Pava and Quemita Oxide Gold Deposits" (the "Technical Report"), with an effective date of June 30, 2014
3. I am a graduate of Queen's University at Kingston, Ontario with a B.Sc. (HONS) in Geological Sciences (1982). I am a geological consultant currently licensed by the Order of Geologists of Québec (License 566), the Association of Professional Geoscientists of Ontario (License 1204) and the Association of Professional Engineers and Geoscientists of British Columbia, (Licence No. 34720).

   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 and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. This report is based on my personal review of information provided by the Issuer and on discussions with the Issuer's representatives. My relevant experience for the purpose of the Technical Report is:

   - Underground production geologist, Agnico-Eagle Laronde Mine 1988-1993
   - Exploration geologist, Laronde Mine....................1993-1995
   - Exploration coordinator, Placer Dome 1995-1997
   - Senior Exploration Geologist, Barrick Exploration....................1997-1998
   - Exploration Manager, McWatters Mining....................1998-2003
   - Chief Geologist Sigma Mine 2003
   - Consulting Geologist....................2003-to present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring of Section 11 and coauthoring 12 of this Technical Report.
6. I am independent of issuer applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the project that is the subject of this Technical Report. The nature of my involvement was as co-author of a Technical Report titled "Technical Report and Mineral Resource Estimate on the Cerro Quema Project, Los Santos Province, Panama" dated November 2, 2012.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the date of this certificate, 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.

Effective Date: June 30, 2014
Signing Date: 13 August 2014

{SIGNED AND SEALED}

[Tracy J. Armstrong]

Tracy J. Armstrong, P. Geo.

CERTIFICATE OF QUALIFIED PERSON

ANTOINE R. YASSA, P. GEO.

I, Antoine R. Yassa, P. Geo., residing at 3602 Rang des Cavaliers Rouyn-Noranda, Qc. J0Z 1Y2, do hereby certify that:

1. I am an independent geological consultant contracted by P&E Mining Consultants Inc.
2. This certificate applies to the technical report titled "Cerro Quema Project - Pre-Feasibility study on the La Pava and Quemita Oxide Gold Deposits**"** (the "Technical Report"), with an effective date of June 30, 2014.
3. I am a graduate of Ottawa University at Ottawa, Ontario with a B.Sc (HONS) in Geological Sciences (1977). I have worked as a geologist for over 30 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by the Order of Geologists of Québec (License No 224) and a practising member of the APGO (Registration Number 1890).

   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.

   My relevant experience for the purpose of the Technical Report is:

   - Minex Geologist (Val d'Or), 3D Modeling (Timmins), Placer Dome 1993-1995
   - Database Manager, Senior Geologist, West Africa, PDX 1996-1998
   - Senior Geologist, Database Manager, McWatters Mine 1998-2000
   - Database Manager, Gemcom modeling and Resources Evaluation (Kiena Mine) QAQC Manager (Sigma Open pit), McWatters Mines 2001-2003
   - Database Manager and Resources Evaluation at Julietta Mine, Far-East Russia, Bema Gold Corporation 2003-2006
   - Consulting Geologist ....since 2006
4. I visited the Property in January 2012 that is the subject of this Technical Report in relation to the preparation of the previous technical report on the Cerro Quema project dated November 2, 2012.
5. I am responsible for co-authoring Section 12 of the Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the project that is the subject of this Technical Report. The nature of my involvement was as co-author of a Technical Report titled "Technical Report and Mineral Resource Estimate on the Cerro Quema Project, Los Santos Province, Panama" dated November 2, 2012.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the date of this certificate, 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.

Effective Date: June 30, 2014
Signed Date: 13 August 2014

{SIGNED AND SEALED}
[Antoine Yassa]

____
Antoine R. Yassa, P. Geo.

CERTIFICATE OF QUALIFIED PERSON

FRED H. BROWN, P.GEO.

I, Fred H. Brown, of 114 East Magnolia St, Suite 400-127, Bellingham WA 98255 USA, do hereby certify that:

1. I am an independent geological consultant and have worked as a geologist continuously since my graduation from university in 1987.
2. This certificate applies to the technical report titled "Cerro Quema Project - Pre-Feasibility study on the La Pava and Quemita Oxide Gold Deposits" with an effective date of June 30, 2014.
3. I graduated with a Bachelor of Science degree in Geology from New Mexico State University in 1987. I obtained a Graduate Diploma in Engineering (Mining) in 1997 from the University of the Witwatersrand and a Master of Science in Engineering (Civil) from the University of the Witwatersrand in 2005. I am registered with the South African Council for Natural Scientific Professions as a Professional Geological Scientist (registration number 400008/04), the Association of Professional Engineers and Geoscientists of British Columbia as a Professional Geoscientist (171602) and the Society for Mining, Metallurgy and Exploration as a Registered Member (#4152172).

   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

   My relevant experience for the purpose of the Technical Report is:

   - Resident Geologist, Venetia Mine, De Beers 1997-2000
   - Chief Geologist, De Beers Consolidated Mines..2000-2004
   - Consulting Geologist...2004-2008
   - P&E Mining Consultants Inc. – Sr. Associate Geologist 2008-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for co-authoring Section 14 of this Technical Report along along with those sections of the Summary pertaining thereto.
6. I am independent of the issuer applying the test in Section 1.5 of NI 43-101.
7. I have not had any prior involvement with the Project that is the subject of this Technical Report
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the date of this certificate, 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.

Effective Date: June 30, 2014
Signed Date: 13 August 2014

{SIGNED AND SEALED
[Fred H. Brown]

____
Fred H. Brown, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

EUGENE J. PURITCH, P. ENG.

I, Eugene J. Puritch, P. Eng., residing at 44 Turtlecreek Blvd., Brampton, Ontario, L6W 3X7, do hereby certify that:

1. I am an independent mining consultant and President of P&E Mining Consultants Inc.
2. This certificate applies to the technical report titled "Cerro Quema Project - Pre-Feasibility study on the La Pava and Quemita Oxide Gold Deposits" (the "Technical Report"), with an effective date of June 30, 2014.
3. I am a graduate of The Haileybury School of Mines, with a Technologist Diploma in Mining, as well as obtaining an additional year of undergraduate education in Mine Engineering at Queen's University. In addition I have also met the Professional Engineers of Ontario Academic Requirement Committee's Examination requirement for Bachelor's Degree in Engineering Equivalency. I am a mining consultant currently licensed by the Professional Engineers of Ontario (License No. 100014010) and registered with the Ontario Association of Certified Engineering Technicians and Technologists as a Senior Engineering Technologist. I am also a member of the National and Toronto Canadian Institute of Mining and Metallurgy.

   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.

   I have practiced my profession continuously since 1978. My summarized career experience is as follows:
   - Mining Technologist - H.B.M.& S. and Inco Ltd.,..1978-1980
   - Open Pit Mine Engineer – Cassiar Asbestos/Brinco Ltd.,..1981-1983
   - Pit Engineer/Drill & Blast Supervisor – Detour Lake Mine,..1984-1986
   - Self-Employed Mining Consultant – Timmins Area,...1987-1988
   - Mine Designer/Resource Estimator – Dynatec/CMD/Bharti, ...1989-1995
   - Self-Employed Mining Consultant/Resource-Reserve Estimator,..1995-2004
   - President – P&E Mining Consultants Inc,..2004-Present

4. I have not visited the Property that is the subject of this report.
5. I am responsible for co-authoring section 14, 15 and 16 and relevant parts of sections 25 and 26 of the Technical Report along with those sections of the Summary pertaining thereto.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the project that is the subject of this Technical Report. The nature of my involvement was as co-author of a Technical Report titled "Technical Report and Mineral Resource Estimate on the Cerro Quema Project, Los Santos Province, Panama" dated November 2, 2012.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the date of this certificate, 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.

Effective Date: June 30, 2014
Signed Date: 13 August 2014

{SIGNED AND SEALED}
[Eugene Puritch]

____
Eugene J. Puritch, P. Eng.

Golder Associates

CERTIFICATE of AUTHOR

I, Gene R. Tortelli, PE do hereby certify that:

1. I am an Senior Consultant employed by:
   Golder Associates Inc.
   595 Double Eagle Court, Suite 1000
   Reno, Nevada 89521
   Telephone: 775-828-9604
   Email: gtortelli@golder.com

2. I contributed to a report titled "Cerro Quema Project - Pre-Feasibility Study on the La Pava and Quemita Oxide Gold Deposits" dated August 15. 2014 with an effective date of June 30, 2014. (Technical Report).

3. I graduated with a Bachelor of Science degree in Civil Engineering from Michigan Technological University in 1994. I graduated with a Master of Science degree in Civil Engineering from Michigan Technological University in 1995.

4. I am a member of the Society for Mining, Metallurgy, and Exploration (SME), and the American Society of Civil Engineers (ASCE) and am a registered professional Civil Engineer in good standing in the United States of America in the state of Nevada.

5. I have worked as an engineer for a total of 18 years since my graduation from university, 12 of which have been in the mining industry designing heap leach facilities and other process and waste containment facilities.

6. 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.

7. I am responsible for the conceptual design and preparation of capital cost estimating associated with the heap leach and waste dump facilities for the Cerro Quema Project as described in Sections 1, 2, 7, 17, 24, 25, 26, 27, and 28 of the Technical Report. I visited the properties from September 24 through September 25, 2013.

8. I have not had prior involvement with the property that is the subject of the Technical Report.

9. As of the date hereof, to the best of my knowledge, information and belief, the sections of the Technical Report that I am responsible for as listed in Item 7 above contains all technical information that is required to be disclosed to make the Technical Report not misleading.

10. I am independent of the issuer applying all of the tests in Section 1.4 of National Instrument 43-101.

11. I have read National Instrument 43-101 and Form 43-101F1, and the portions of the Technical Report for which I am responsible have been prepared in compliance with that instrument and form.

Dated this 7th Day of August, 2014

{SIGNED AND SEALED} **[Gene R. Tortelli]**	**Gene R. Tortelli**
Signature of Qualified Person	**Name of Qualified Person**

Golder Associates Inc.
595 Double Eagle Court, Suite 1000
Reno, NV 89521 USA
Tel: (775) 828-9604 Fax: (775) 828-9645 www.golder.com

CERTIFICATE of AUTHOR

I, George T. Lightwood, PE do hereby certify that:

1. I am an Senior Engineer employed by:

   Golder Associates Inc.
   595 Double Eagle Court, Suite 1000
   Reno, Nevada 89521
   Telephone: 775-828-9604
   Email: glightwood@golder.com

2. I contributed to a report titled "Cerro Quema Project - Pre-Feasibility Study on the La Pava and Quemita Oxide Gold Deposits" dated August 15. 2014 with an effective date of June 30, 2014. (Technical Report).
3. I graduated with a Bachelor of Science degree in Mining Engineering from the Colorado School of Mine in 1979. I graduated with a Master of Science degree in Civil Engineering from Stanford University in 1987. I graduated with a Master of Engineering degree in Civil (Geotechnical) Engineering from the University of California, Berkeley in 1989.
4. I am a registered member of the Society for Mining, Metallurgy, and Exploration (SME), a member of the American Society of Civil Engineers (ASCE), and I am a registered professional Mining Engineer in good standing in the United States of America in the state of Nevada.
5. I have worked as an engineer for a total of 30 years since my graduation from university, 10 of which have been in the mining industry performing rock mechanics and pit slope stability studies for open pit mines.
6. 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.
7. I am responsible for the conclusions regarding open pit slope stability and slope design recommendations for the Cerro Quema Project as described in Sections 1, 2, 15, 16, 24, 25, 26, 27, and 28 of the Technical Report. I visited the properties from September 24 through September 27, 2013.
8. I have not had prior involvement with the property that is the subject of the Technical Report.
9. As of the date hereof, to the best of my knowledge, information and belief, the sections of the Technical Report that I am responsible for as listed in Item 7 above contains all technical information that is required to be disclosed to make the Technical Report not misleading.
10. I am independent of the issuer applying all of the tests in Section 1.4 of National Instrument 43-101.
11. I have read National Instrument 43-101 and Form 43-101F1, and the portions of the Technical Report for which I am responsible have been prepared in compliance with that instrument and form.

Dated this 7th Day of August, 2014

{SIGNED AND SEALED} **[George T. Lightwood]**	**George T. Lightwood**
Signature of Qualified Person	**Name of Qualified Person**

Golder Associates Inc.
595 Double Eagle Court, Suite 1000
Reno, NV 89521 USA
Tel: (775) 828-9604 Fax: (775) 828-9645 www.golder.com

CERTIFICATE of AUTHOR

I, David G. Brown, P.Geo., do hereby certify that:

1. I am a Principal employed by:

   Golder Associates Ltd.
   141 Adelaide Street W., Suite 910
   Toronto, ON, Canada M5H 3L5
   Telephone: 416-366-6999
   Email: david_brown@golder.com

2. I contributed to a report titled "Cerro Quema Project - Pre-Feasibility Study on the La Pava and Quemita Oxide Gold Deposits" dated August 15. 2014 with an effective date of June 30, 2014. (Technical Report).
3. I graduated with a Bachelor of Science degree in Chemistry and Environment and Resource Studies from University of Waterloo in 1990. I graduated with a Master of Science degree in Earth Science from University of Waterloo 1996.
4. I am a registered professional geoscientist with the Association of Professional Geoscientists of Ontario.
5. I have worked as an environmental geoscientist for a total of 24 years, 17 of which have been in the mining industry. I have experience in baseline investigations, characterizing mine wastes (tailings, waste rock, slag and process residues), environmental monitoring programs, site rehabilitation and closure, and environmental assessment and permitting related to proposed, existing and closed mining facilities.
6. 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.
7. I am responsible for summarizing the existing environmental and social baseline studies, the Panamanian environmental regulatory requirements, and the conceptual closure plan for the Cerro Quema Project as described in Sections 1 and 20 of the Technical Report. I visited the property on October 27 and 28, 2009.
8. In 2009, I completed an update of the closure plan for the Cerro Quema Project for Bellhaven Copper and Gold Inc., the owner of the property at that time. I have not had other prior involvement with the property that is the subject of the Technical Report.
9. As of the date hereof, to the best of my knowledge, information and belief, the sections of the Technical Report that I am responsible for as listed in Item 7 above contains all technical information that is required to be disclosed to make the Technical Report not misleading.
10. I am independent of the issuer applying all of the tests in Section 1.4 of National Instrument 43-101.
11. I have read National Instrument 43-101 and Form 43-101F1, and the portions of the Technical Report for which I am responsible have been prepared in compliance with that instrument and form.

Dated this 8th Day of August, 2014

{SIGNED AND SEALED} **[David Brown]**	**David Brown**
Signature of Qualified Person	**Name of Qualified Person**

Golder Associates Inc.
595 Double Eagle Court, Suite 1000
Reno, NV 89521 USA
Tel: (775) 828-9604 Fax: (775) 828-9645 www.golder.com

Kappes, Cassiday & Associates

7950 Security Circle Reno, Nevada 89506
Telephone: (775) 972-7575 FAX: (775) 972-4567
Website: www.kcareno.com E-Mail: mgorman@kcareno.com

Mark Gorman

I, Mark Gorman, PE do hereby certify that I am currently employed as Senior Engineer for Kappes, Cassiday & Associates located at 7950 Security Circle, Reno, Nevada 89506 and:

1. I graduated with a Master of Science degree in Metallurgical Engineering from the University of Nevada in 1988.

2. I am a Registered Professional Engineer in the State of Nevada (018284).

3. 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. I am independent of the Issuer and related companies applying all of the tests in section 1.5 of National Instrument 43-101.

4. I am one of the authors of this Technical Report titled *Cerro Quema Project - Pre-Feasibility Study on the La Pava and Quemita Oxide Gold Deposit* prepared for Pershimco Resources Inc., effective as of June 30, 2014, and dated August 15, 2014. I am responsible for the portions of Sections 1, 2, 3, 17, 18, 21, 22, 24, 25, 26, 27 and 28 related to metallurgical testing, mineral processing, project infrastructure (with the exception of leach pad and ponds), process operating costs, process capital costs and infrastructure capital costs as well as all of Sections 13, 19 and 22.

5. I visited the Cerro Quema project site on 24 and 25 September 2013.

6. As of the date of the certificate, to the best of my knowledge, information and belief, the Technical Report contains the necessary scientific and technical information to make the Technical Report not misleading.

7. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

8. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

{SIGNED AND SEALED}
[**Mark Gorman**]

Dated 25-July-14