

PAN AMERICAN SILVER CORP

Form 6-K

January 31, 2008

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549  
FORM 6-K**

**REPORT OF FOREIGN PRIVATE ISSUER TO RULE 13A or 15D-16  
UNDER THE SECURITIES EXCHANGE ACT OF 1934**

**For the Month of: January, 2008**

**File No.: 000-13727**

**PAN AMERICAN SILVER CORP.**

(Translation of Registrant's Name into English)

**Suite 1500, 625 Howe Street Vancouver British Columbia, Canada V6C 2T6**

(Address of Principal Executive Office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20F or Form 40F:  
Form 20F  Form 40F

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If  Yes  is marked, indicate below the file number assigned to the registrant in connection with rule 12g-3-2(b): 82  
\_\_\_\_\_.

**Submitted herewith:**

**1. Form 43-101 Technical Report for the Huaron Property.**

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

**PAN AMERICAN SILVER CORP.**

**Date: January 30, 2008**

*Robert Pirooz*  
General Counsel

**43-101 Technical Report**  
**Huaron Property**  
**Cerro de Pasco, Peru**  
**Effective Date: December 31, 2006**

**Prepared By:**  
**Martin Wafforn, P. Eng.**  
**Michael Steinmann, P.Geo.**

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**1. Title Page**

This Technical Report has been prepared in accordance with National Instrument 43-101 *Standards of Disclosure for Mineral Projects* ( NI 43-101 ) and the contents herein are organized and in compliance with Form 43-101F1 - *Contents of the Technical Report* ( Form 43-101F1 ). The first two items are the Title Page and the Table of Contents presented previously in this report. They are mentioned here simply to maintain the specific report outline numbering required in Form 43-101F1.

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**2. Table of Contents**

See discussion in Section 1.

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### 3. Summary

#### 3.1 Background

Pan American Silver Corporation ( PAS ) prepared this Technical Report in support of its public disclosure of mineral reserve and mineral resource estimates as of 31 December 2006, as required by NI 43-101.

Mr. Martin Wafforn, P. Eng., Vice President of Mine Engineering of PAS, and Dr. Michael Steinmann, P. Geo., Senior Vice President of Exploration and Geology of PAS, are authors of this Technical Report. Each of Mr. Wafforn and Dr. Steinmann is a Qualified Person ( QP ) as the term is defined in NI 43-101.

#### 3.2 Property Description, Location, and Ownership

Following a merger with Cia. Minera Huaron S.A. in January 2006, the Huaron property has been owned and operated by Pan American Silver S.A. Mina Quiruvilca, a company that PAS indirectly through its subsidiaries, owns 100% of the outstanding voting shares and 99.93% of the total outstanding equity. The Huaron operating unit or Unidad Huaron of Pan American Silver S.A. Mina Quiruvilca is referred to as PASH in this report. Pan American Silver S.A.C. Mina Quiruvilca and Cia Minera Huaron S.A. merged to form the new Pan American Silver S.A. Mina Quiruvilca ( PASQ ) effective January 2006.

Huaron Mine is a polymetallic silver-copper-lead-zinc deposit, located in the province of Pasco, one of three provinces forming the Pasco Department in the Central Highlands of Peru. The nearest town is Cerro de Pasco, a major mining center, and the capital of the Pasco Department with a population of approximately 70,000 people. Cerro de Pasco is connected to Lima, the capital of Peru, by road and rail.

Geographically, the Huaron Mine is located at a latitude of 11°00' S and a longitude of 76°25' W in the eastern flank of the Western Cordillera of the Andes at elevations of 4,250 metres to 4,800 metres above sea level. Access to the Huaron property is by a continuously maintained 285 kilometre paved highway between Lima and Unish and a 35 kilometre partially paved road between Unish and the Huaron property. A program by the Peru government to upgrade the road to a paved highway between Unish and the Huaron property is partially complete.

The topographical relief at the mine-site is hilly and uneven with local slopes of more than sixty degrees. Natural vegetation consists mainly of grasses forming meadows. These meadows have permitted development of varied livestock operations. The climate at the mine site is classified as a cold climate or boreal with an average annual temperature ranging from three to ten degrees Celsius. The Huaron Mine operates throughout the entire year.

The property consists of 252 concessions spanning over 63,822.2 ha. PASH has the exclusive right on all of the concessions to explore, develop and exploit as well as the right to market the products. Currently, annual concession fees are \$3 per hectare.

### 3.3 Geology and Mineralization

The main lithology in the Huaron area is a sequence of continental redbeds consisting of interbedded sandstones, limestones, marls, conglomerates, breccias and cherts of the Abigarrada and Casapalca Formations of Upper Cretaceous to Lower Tertiary age. These rocks unconformably overlay massive marine limestones of the Upper Cretaceous Jumasha Formation. To the west of the mine, a series of andesites and dacites outcrop, which are of the mid to lower Tertiary Calipuy Formation. A series of sub-vertical porphyritic quartz monzonite dykes, generally strike north-south and cut across the mine stratigraphy.

The rocks in the central part of the mine and at lower elevations are principally thinly bedded marls and sandstones known as the lower redbeds. In the eastern side of the mine the upper redbeds occur consisting of a calcareous Sevilla chert that overlies sandstones and marls. The bottom of this sequence consists of the Barnabe quartzite conglomerate. On the western side of the mine, the stratigraphy consists of a series of interbedded conglomerates (San Pedro) and sandstones. The conglomerate contains poorly sorted limestone and quartz clasts in a sandy matrix.

The Huaron Mine is located within an anticline formed by east-west compressional forces. The axis of the anticline is approximately north-south striking and gently plunging to the north. There are two main fault systems: (i) north-south striking thrust faults parallel to the axis of the anticline; and (ii) east-west striking tensional faults. The intrusives strike in two principal directions: N70°E and S10°E. Most of the area is covered with recent soils except where the more resistant cherts and conglomerates form ridges parallel to the flanks of the anticline. These outcrops are discontinuous and are frequently offset by the crosscutting east-west faults.

The Huaron Mine is a polymetallic deposit (hosting silver, lead, zinc and copper) consisting of mineralized structures probably related to Miocene monzonite dykes principally within, but not confined to the Huaron anticline. Mineralization is encountered in veins parallel to the main fault systems, in replacement bodies associated with the calcareous sections of the conglomerates and other favorable stratigraphic horizons, and as dissemination in the monzonitic intrusions at vein intersections.

The first pulse of mineralization was associated with the emplacement of intrusive bodies and the subsequent opening of structures, during which zinc, iron, tin, and tungsten minerals were deposited. This was followed by a copper, lead and silver rich stage, and finally by an antimony/silver phase associated with quartz.

More than 95 minerals have been identified at Huaron with the most important economic minerals being tennantite-tetrahydrite containing most of the silver, sphalerite and galena. The principal gangue minerals are pyrite, quartz, calcite and rhodochrosite. Enargite and pyrrhotite are common in the central copper core of the mine and zinc oxides and silicates are encountered in structures with deep weathering. Silver is also found in pyrargyrite, proustite, polybasite and pearceite.



There is a definite mineral zoning at Huaron and the mine has been divided into seven separate zones. There is a central copper core (Zone 5) where the principal economic mineral is enargite. The structures contain copper with pyrite and quartz. This area was extensively mined by previous operators but, because of the high arsenic and antimony content and poor metal recoveries, further mining in this area could be problematic. To the east and west of the central core are Zones 2, 3 and 4 where silver, lead and zinc are found in carbonates, principally calcite and rhodochrosite. Zone 1 to the north of the central core contains silver, lead and zinc associated with pyrite. Zone 6 is along the west side of the axis of the anticline and south of Zone 2 is principally lead and zinc with lower silver values within carbonates. Zone 7 is a narrow band running north-south along the general axis of the anticline and to the south of Zone 3 and contains principally sphalerite and sulfosalts with rhodochrosite.

The central core of the district has adularia-sericite alteration overprinted with strong silicification and epidote-pyrite. This core is surrounded by a zone containing epidote-pyrite-quartz that grades outwardly to a zone containing chlorite and magnetite. The mineralized structures are concentrated in the central core of the district but important structures continue into the outer zones.

### 3.4 Exploration and Development

Exploration at the Huaron property is conducted using a combination of underground drilling and drifting. Generally, underground drillholes that intersect promising ore grade mineralization are followed up by drifting for mineral resource and mineral reserve definition. During 2006, 11,451 metres were drilled using three drill rigs. In addition, 6,256 metres of underground drifting were completed for mineral resource and mineral reserve definition.

In addition to the underground drilling a smaller amount of surface drilling is executed every year. In 2006 141 metres of BQ sized surface diamond drilling was done. As of September 30, 2007, no surface drill-holes have been drilled in 2007.

PASH employs their own exploration drilling crew for diamond drilling using two drill rigs. In addition, PASH is currently contracting Redrilsa S.A, a large Peruvian diamond drilling contractor. All exploration drilling is directed and supervised by the Huaron Mine geology department and periodically reviewed by Dr. Michael Steinmann, P. Geo., Senior Vice President of Exploration and Geology of PAS.

### 3.5 Mineral Resource and Mineral Reserve Estimates as at December 31, 2006

The mineral reserve estimate for Huaron (Table 3-1) as of December 31, 2006 was prepared by, or under the supervision of Dr. Michael Steinmann, P. Geo., Senior Vice President Geology & Exploration, and Mr. Martin Wafforn, P. Eng, Vice President of Mine Engineering of PAS.

**Table 3-1: Huaron Mineral Reserves**

Reserve Category	Tonnes	Silver	Ag Content	%		
		(g/t)	(ounces)	Copper	% Lead	% Zinc
Proven	4,638,300	184	27,438,944	0.31	1.57	3.16
Probable	4,048,556	183	23,820,012	0.21	1.79	3.21
Total	8,686,856	184	51,258,956	0.26	1.67	3.18

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Notes:

- 1) *PAS share is 100% of the total mineral reserves,*
- 2) *Huaron's mineral reserves have been estimated on the basis of blocks exposed by underground workings on one or more sides and having an in-place diluted value equal to or above the cut-off grade of \$27/tonne. Proven and probable mineral reserves are extrapolated between 15 and 30 metres down dip depending on vein continuity.*
- 3) *The geological model employed for Huaron involves geological interpretations on sections and plans derived from core drill hole information and channel sampling,*
- 4) *Mineral reserves have been estimated using the O'Hara dilution formula, which typically adds 20% to 50% dilution at zero grade depending on dip angle and vein width.*
- 5) *Mineral reserves have been estimated using a mining recovery of 90% with a further 5% subtracted for other mining losses.*
- 6) *The mining and processing rate is currently 2,390 tonnes per day,*
- 7) *Environmental, permitting, legal, title, taxation, socio economic, political, marketing or other issues are not expected to materially effect the above estimate of mineral reserves*
- 8) *Calculated using a price of \$9.00 per ounce of silver, \$2,100 per tonne of zinc, \$1,000 per tonne of lead and \$5,000 per tonne of copper. See also information in this Annual Information Form under the heading Mineral Reserve and Mineral Resource estimate information .*

The measured and indicated mineral resources at the Huaron property as of December 31, 2006 are estimated to be as shown in TABLE 3-2. This mineral resource estimate was calculated using a price of \$9.00 per ounce of silver, \$5,000 per tonne of copper, \$1,000 per tonne of lead, \$2,100 per tonne of zinc, and was prepared under the supervision of and reviewed by Mr Martin Wafforn, P. Eng., Vice President of Mine Engineering of PAS and Dr. Michael Steinmann, P. Geo., Senior Vice President of Exploration and Geology of PAS.

**Table 3-2: Huaron Mineral Resources**

Resource		Silver	Ag Content			
Category	Tonnes	(g/t)	(ounces)	%	%	%
				Copper	Lead	Zinc
Measured	1,581,966	166	8,442,984	0.45	2.02	3.68
Indicated	1,168,964	174	6,539,448	0.55	1.86	3.83
Total M&I	2,750,930	169	14,982,433	0.49	1.95	3.74

*Notes:*

- 1) *PAS reports mineral resources and mineral reserves separately. Reported mineral resources do not include amounts identified as mineral reserves.*
- 2) *PAS share is 100% of the total mineral resources.*
- 3) *The geological model employed for Huaron involves geological interpretations on sections and plans derived from core drill-hole information and channel sampling.*
- 4) *The mining and processing rate is currently 2,390 tonnes per day.*
- 5) *Mineral resources for the principal structures are estimated with a 3 dimensional block model using Datamine software. Mineral resources for minor structures are estimated using polygonal methods on longitudinal sections.*
- 6) *Environmental, permitting, legal, title, taxation, socio economic, political, marketing or other issues are not expected to materially effect the above estimate of mineral resources.*
- 7) *Mineral resources that are not mineral reserves do not have demonstrated economic viability.*
- 8) *Calculated using a price of \$9.00 per ounce of silver, \$2,100 per tonne of zinc, \$1,000 per tonne of lead and \$5,000 per tonne of copper. See also information in this Annual Information Form under the heading Mineral Reserve and Mineral Resource Estimate Information .*

**3.6 Mining Operations**

The Huaron Mine is located at an elevation between 4,250 and 4,650 metres above sea level. PAS mining activities extend over an area of two kilometres by two kilometres. The processing plant and mine offices are located at the same elevation as the 500 level. The 250 level is 250 metres below the 500 level and is the drainage level for the mine providing gravity drainage to a point further down a river valley. The main mine access is via a four metre by four metre ramp, which starts above the 500 level and extends to below the 250 level where a deepening project is in progress. This ramp is also used for truck haulage of ore and waste from below the 500 level. The 500 level is accessed via a 3 metre by 3 metre tracked drift that has been rehabilitated over the course of the previous three years. Electric locomotives are used for mine haulage on the 500 level. Ore from above the 500 level is either fed to that level via ore passes or taken out of the mine via other portals to be hauled to the mill stockpile with surface haul trucks. There are three existing shafts on the property, but these have not been used since the late 1980 s. A thorough analysis of the cost to refurbish shaft D has been completed and it has been assumed in this report that the shaft will be deepened to the 180 level and refurbished. The capital cost of this work and the anticipated operating cost savings are included in the economic analysis.

In 2006, stopes from 32 different veins (averaging 2.38 metres wide) were mined with approximately 77 stopes active at any given time. During 2006, the mine mechanized some of the stopes by introducing small scoop trams. This had the effect of increasing productivity and by the end of the year, only 35 stopes were required to maintain production.

The mining method is 100% overhand cut-and-fill using mill tailings as the backfill material. During 2007 the mine added a small crushing and grinding circuit to provide an additional 6,000 cubic metres per month of ground waste rock to augment the coarse portion of the mill tailings used for hydraulic backfill underground.

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Rehabilitation of the 500 level was completed in April 2005 and the ore haulage system was changed from commercial 12 cubic metre-capacity trucks to electric locomotives for the ore transport from 500 level to surface. This will continue to result in savings in operating costs, and provide access to new zones with mineral reserves.

During 2006, 263,357 tonnes of ore was extracted from the 500 and 600 levels. It is expected that PASH will continue to extract ore from the same levels in 2007.

During 2006, the Huaron Mine started the development of a new conveyor-way ramp from the current bottom of the mine (250 level) to the 180 level in the north zone. This work will deepen the north zone of the mine by 70 metres and provide access to known vein extensions that have not been previously mined.

### **3.7 Authors Conclusions**

Mr. Martin Wafforn, P. Eng., Vice President of Mine Engineering of PAS and Dr. Michael Steinmann, P. Geo., Senior Vice President of Exploration and Geology of PAS, reviewed pertinent data from the Huaron Mine regarding exploration data and methods, mineral resource and mineral reserve estimates, metallurgy, and process performance. They determined that Huaron Mine's estimates of mineral resources and mineral reserves as of 31 July 2007 are in accordance with NI 43-101, and as set forth in the CIM Standards on Mineral Resources and Mineral Reserves, Definitions and Guidelines. The authors generally conclude:

The geology and mineralization of a large system of poly-metallic veins on the mine property is well understood. Geological models are appropriate to guide mineral resource estimates, which have been developed in a professional manner.

Exploration drilling, sampling, sample preparation, assaying, density measurements and drill-hole surveys have generally been carried out in accordance with industry standard practices and are suitable to support mineral resource estimates.

Exploration and drilling programs are well-planned and executed and supply sufficient information for mineral resource estimates and mineral resource classification.

Sampling and assaying includes a QA/QC program, supervised by the geology department that includes external check samples and the routine submission of standards.

The Huaron deposit mineral resource model was developed using industry accepted methods. The authors of this Technical Report have validated the mineral resource estimate and found it to be acceptable in both tonnage and grade.

The mine designs have been developed using industry standard practices and appropriate design criteria. Proven and probable mineral reserves were developed from measured and indicated resources with appropriate application of cost and design criteria.

The metallurgy of individual veins and the deposit as a whole is well established from the actual results from processing Huaron Mine ores in the existing processing plant. The metallurgical assumptions used in this report are consistent with actual results obtained in that plant.

Mineral resources are classified as measured, indicated and inferred. Mineral resource classification criteria are appropriate in terms of the confidence in grade estimates and geological continuity and meet the requirements of NI 43-101 and CIM Definition Standards on Mineral Resources and Mineral Reserves (2005).

The economic analysis calculates a Net Present Value of \$21.4M at a 10% discount rate and \$17.5M at a 15% discount rate. The undiscounted after tax cash flow is \$36.6M. The Huaron Mine unit total operating costs are calculated to be an average \$52.25 from 2008 to 2018.

The life of mine plan presented in this report is based solely on proven and probable mineral reserves. The life of mine plan extends until 2019.

### **3.8 Authors Recommendations**

The authors of this Technical Report recommend execution of the Life of Mine ( LOM ) Plan and Schedule at the Huaron Mine.

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#### 4. Introduction

Pan American Silver Corp. asked its qualified senior personnel to review mineral resource and mineral reserve estimates for the silver deposit within the Huaron Mine in Peru, and prepare a Technical Report to support the public disclosure of mineral reserve and mineral resource estimates as of 31 December 2006, as required by NI 43-101. This Technical Report has been prepared in accordance with NI 43-101 and the format and contents of this Technical Report are intended to conform to Form 43-101 F1.

Mr. Martin Wafforn, P.Eng., PAS Vice President of Mine Engineering serves as the Qualified Person with respect to the mineral reserve statements described herein and sections 1, 2, 3, 4, 5, 6, 7, 8, 17, 18, 20, 21, 22, 23, 24 and 25 and for all figures, tables, and graphs within those sections, contained in this Technical Report. Mr. Wafforn last visited the Huaron mine site from September 17 to September 19, 2007.

Dr. Michael Steinmann, P.Geo., PAS s Senior Vice President of Exploration and Geology serves as the Qualified Person with respect to the mineral resource statements described herein and sections 1,2,3,4, 5, 9, 10, 11, 12, 13, 14, 15, 16, 19, 21, 22, 23 and 24 and for figures, tables, and graphs contained in sections 9, 10, 11, 12, 13, 14, 15, and 19 contained in this Technical Report. Dr. Steinmann last visited the Huaron mine site from September 17 to September 19, 2007.

Elmer Ildelfonso a consulting mining engineer to PAS (but not a Qualified Person according to NI 43 101) performed the mineral resource estimation and modeling under the direct supervision of Dr. Steinmann.

Information and data for the review and preparation of this Technical Report were obtained from the Huaron Mine operations personnel during site visits carried out between September 17 and September 19, 2007. Some aspects of this Technical Report regarding summaries of the geology, mineralization, mining, and mineral processing were derived from Pan American Silver Corp internally within the following reports; Annual Information Form, 2007 Inventory of Ore Reserves and Resources, and Description of the Concentrating Plant Huaron. Contributions from this and other reports were checked for accuracy by the authors of this Technical Report. Refer to section 23.0 for a complete list of the references used within this Technical Report.

The authors of this Technical Report have reviewed the information contained in these documents and determined in their professional judgment that such information is sound and prepared to industry standards.

Sources of information and data contained in this Technical Report or used in its preparation are shown in Table 4-1.

**Table 4-1: References**

<b>Sources Of Information</b>	<b>Used In Section</b>
Mr. Martin Wafforn, P.Eng.	1, 2, 3, 4, 5, 6, 7, 8, 17, 18, 20, 21, 22, 23, 24,25
Dr. Michael Steinmann, P.Geo.,	1,2,3,4, 5, 9, 10, 11, 12, 13, 14, 15, 16, 19, 21, 22, 23, 24
Mr. Elmer Idefonso (consultant)	19
Ignacio Couturier	25
Rodrigo, Elias & Medrano (legal)	6.2, 6.4, 6.5
SVS Ingenieros S.A (consultant)	25.5, 25.9

*Notes:*

PAS retained Estudios Mineros, an Engineering company based in Lima, Peru, to compile the land map, mining concessions and surface rights presented in this Technical Report.

PAS retained the Peruvian law firm of Rodrigo, Elias & Medrano to review the public register in Peru to ensure that the mining concessions and surface rights reported are held by PASH.

The authors have reviewed the information contained in these documents and included in this Technical Report and determined in their professional judgment that such information is sound and confirm and approve of such information.

All tonnages stated in this Technical Report are dry metric tonnes ( dmt ) unless otherwise specified. Ounces pertaining to silver metal content are expressed in troy ounces. All dollar values stated in this report are U.S. dollars.

The authors of this Technical Report are responsible for all information in this Technical Report that was not prepared by a Qualified Person, other than otherwise set out in Section 5, Reliance on Experts .

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## 5. Reliance on Other Experts

Martin Wafforn and Michael Steinmann, as authors of this Technical Report, have relied upon the references, opinions and statements from the Non-Qualified Persons contained within the references listed in Section 23 – References. It is assumed that technically qualified and competent persons prepared these reports and documents. It is the authors opinion that the materials referenced above are prepared and presented according to mining and engineering industry standards. These reports, documents, and statements were found to be generally well organized and well presented, and where applicable, the conclusions reached are judged reasonable.

The authors have relied upon the title opinion produced by Rodrigo, Elias & Medrano (a Peruvian law firm) in a report entitled *Opinion on the Huaron Mining Properties*, dated December 21, 2007 and expressly disclaim information derived from the opinion. Rodrigo, Elias & Medrano is a well known and established Peruvian law firm; however, the report written by Rodrigo, Elias & Medrano was not written by a QP as defined by NI 43-101. The authors have reviewed the report and have concluded that it is of high quality and will be adopted within this Technical Report. Rodrigo, Elias & Medrano have a good-standing working relationship with PAS and they have produced high quality work for PAS in the past.

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## 6. Property Description and Location

### 6.1 Introduction

Huaron Mine is an Ag-Cu-Pb-Zn deposit, located in the province of Pasco, one of three provinces forming the Pasco Department in the Central Highlands of Peru. The nearest town is Cerro de Pasco, a major mining center, and the capital of the Pasco Department with a population of approximately 70,000 people. Cerro de Pasco is connected to Lima, the capital of Peru, by road and rail.

Geographically the Huaron Mine is located at a latitude of 11°00' S and a longitude of 76°25' W in the eastern flank of the Western Cordillera at elevations of 4,250 metres to 4,800 metres above sea level. Access to the Huaron property is by a continuously maintained 285 kilometre paved highway between Lima and Unish and a 35 kilometre partially paved road between Unish and the Huaron property. A program by the Peru government to upgrade the road to a paved highway between Unish and the Huaron property is partially complete.

The topographical relief at the mine site is hilly and uneven with local slopes exceeding sixty degrees. Natural vegetation consists mainly of grasses forming meadows. These meadows have permitted development of varied livestock operations. The climate at the mine site is classified as a cold climate or boreal with average annual temperatures ranging from three to ten degrees Celsius. The Huaron Mine operates throughout the entire year.

The concessions owned by PASH consist of 252 concessions spanning over 63,822.2 ha. PASH has the exclusive right on all of the concessions to explore, develop and exploit as well as the right to marketing of the products. Currently annual concession fees are \$3 per hectare.

The mine produces zinc, and silver-rich copper and lead concentrates. The following figures show the location of the Huaron Mine:

Figure 6-1A Location of the Huaron Mine in Peru

Figure 6-1B Huaron Mine Location Map in the Pasco Department

Figure 6-2A Huaron Mine Property Layout

Figure 6-2B Huaron Mine Infrastructure Layout

Figure 6-3 Mineralized Veins and Structures

Property boundaries are located by co-ordinates and are not marked physically in the field.

The plant site, tailings facility, mine workings and other infrastructure are shown in Figures 6-2. The locations of all known mineralized veins and structures containing the mineral reserves and mineral resources are shown in Figure 6-3.

## 6.2 Mineral Tenure

PAS retained the Peruvian law firm of RODRIGO, ELÍAS & MEDRANO Abogados to provide a legal opinion regarding the mining properties, including surface rights, (the REM Opinion ) comprising the Huaron property. During the course of the review, it was decided that reviewing all of the 252 properties was not required and the review was limited to those 119 mining properties comprising the Huaron property from which production is or has been obtained (the Mining Properties ) plus one beneficiation concession. The report on the Mining Properties was provided dated December 21, 2007 and is relied upon by the authors of this Technical Report.

The main legal features related to the requirements for maintaining the Mining Properties in good standing and a brief explanation of the main administrative requirements have been summarized from the REM Opinion and are included herein:

Under Peruvian law, the right to explore for and exploit minerals is granted by way of concessions. Pursuant to Peruvian law, any local or foreign individual or legal entity is required to hold a specific concession granted by the Ministry of Energy and Mines ( MEM ) to carry out any mining activity other than: sampling, prospecting and/or trading in mining products or minerals of any type and condition. The exploration for and extraction of mineral substances from the ground or underground is governed by the Mining Law.

Under the Mining Law, the system of concessions includes:

Mining Concessions, which grant their holders the right to explore and exploit the mineral resources, whether metallic or non-metallic, within the area conferred by the concession;

Processing Concessions, which grant the right to process minerals.

General Service Concessions, which grant the right to render auxiliary services to one or more mining concessions; and

Mining Transportation Concessions, which grant the holders the right to operate a continuous massive transportation system of mineral products between one or more mining units.

A Peruvian mining concession is a property-related right; distinct and independent from the ownership of land on which it is located. The term of a concession is indefinite, provided that related annual fees are duly paid. The rights manifested in a mining concession are protected against third parties, transferable, chargeable and, in general, may be the subject of any transaction or contract. Mining concessions may be privately owned and no state participation is required. Buildings and other permanent structures used in a mining operation are considered real property accessories to the concession on which they are situated.

The concession grants to the concessionaire the right to perform, on an exclusive basis, certain mining activities within a duly determined area. All the concessions governed by the Mining Law should be registered with the Registry of Mining Rights, which forms part of the National System of Public Registers. They are also registered in the National Mining Cadastre, which is managed by the National Institute of Mining, Metallurgical and Geological Studies based on UTM coordinates.

The Concessions are irrevocable as long as its holder complies with the annual payment of the validity fee (US\$3 per hectare) and penalties for not achieving a minimum production (US\$100 per hectare per year) within six years following the year in which the respective Concession is granted. If said minimum production is not reached, as of the first semester of the seventh year, the holder of the concession shall pay a US\$6 penalty per hectare per year until such production is reached (the penalties increase to US\$20 as from the twelfth year). It is possible to avoid payment of the penalty if evidence is presented to the mining authorities that an amount equal to ten times the applicable penalty or more has been invested. Non-compliance with any of these obligations for two consecutive years will result in the extinction of the concession. Any payment made the year following a year of non-compliance will apply to the immediate previous year.

To comply with the established work and production obligations, holders of more than one mining concession of the same type and nature may group them in economic administrative units, provided the concessions are located within the same 5 km surface radius, in the case of non-ferrous metallic minerals. To form such economic administrative units requires approval from the General Mining Directorate.

Concessions may be transferred, assigned and mortgaged, while any movable assets used in mining activities as well as minerals extracted and/or processed from such concessions that belong to the concessionaire may be pledged. Any and all of these transactions and contracts must be formalized through a public deed and registered before the Mining Public Registry for them to be enforceable against the State and third parties.

It is important to note that the concept of overlapping with predecessor mineral titles is not uncommon in Peru. Such overlapping is common with regard to Peruvian mineral title as a result of a change to the Peruvian official system of granting mining concessions implemented in 1991 and which is based on UTM coordinates.

Administrative requirements include the Filing of a document in which information on the activities performed on the mining property during the previous year is provided to the mining authorities.

As mentioned above, property boundaries are located by UTM co-ordinates and are not marked physically in the field. In order to confirm and assess the 119 Mining Properties, the information from the following sources was gathered and analyzed.

The status of the Mining Properties at the computerized system of the INGEMMET (Instituto Nacional Geológico Minero y Metalúrgico);

In detail, the Public Registry records for each one of the Mining Properties.

The official list of mining rights updated to December 31, 2006 ( Padrón Minero ), published by the INGEMMET. Information and documentation provided by PASH.

The REM Opinion provided by the law firm of RODRIGO, ELÍAS & MEDRANO Abogados that has been relied upon by the authors of this Technical Report is summarized as follows:

1. All of the 119 Mining Properties, plus one beneficiation concession, are in good standing considering good standing as a situation in which such Mining Properties and beneficiation concession remain valid, in full force and effect and there are no circumstances which are likely to give rise to the Mining Properties or beneficiation concessions to be declared extinguished by the Peruvian State, in the ordinary course of events.

For 8 of the Mining Properties, the payment of the validity fee for 2007 was not able to be verified (fulfillment of the obligation for 2006 was verified). Non-compliance for 2 consecutive years would result in the extinction of the property. (PASH intends to ensure compliance with the payment obligation to prevent extinction of the properties).

2. Mining concession titles have been granted with respect to all Mining Properties.
3. All Mining Properties titles have been registered with the Public Registry. There are twenty one properties that need to be duly registered with the Public Registry. The rights derived from the concession title exist and may be exercised by PASH but additional protection is provided by public registry. In addition there is a minor name change for one property that has not been duly recorded with the Public Registry.
4. Compania Minera Huaron S.A. (absorbed by Quiruvilca in 2006) or Pan American Silver Peru S.A.C. are the current 100% registered titleholders of all the Mining Properties. In the case of two of the mining concessions, there is a registered interest that a number of third parties appear to have over them.

Due to the time elapsed since such rights were granted more than 30 years and the lack of documentation available, it is not possible to determine whether or not such interests are valid and/or enforceable to date:

- a) Nuestra Senora de Milagro 11.9793 Hectares: Compania Minera Huaron S.A, 50% and third parties 50%.
- b) Pandoara 1.9966 Hectares: Compania Minera Huaron 50%, and third parties the remainder.

In the event that the successors of the third parties could claim and obtain recognition of their respective interests, the creation of a legal mining partnership would be required. In this scenario the Huaron Mine, being the largest single shareholder, should be appointed as general manager. In any event these concessions are on the outskirts of the Huaron Mine property and the concessions involved are no longer in operation.

5. By public deeds dated September 14, 2000 and August 1, 2001, Compania Minera Huaron S.A. transferred to Empresa Administradora Chungar S.A.C., amongst other properties 78.5754 hectares of the Mining Property Acumulacion Huaron 3, 249.7079 hectares of Acumulacion Huaron 6, 1.9944 hectares of Huaron-1 and 21.75 hectares of C.M.H. No.74. The procedures necessary to split out the areas of the aforementioned Mining Properties are in process by the Peru Ministry of Energy and Mines and are still pending. As a consequence of this, PASH appears as the titleholder of the whole area of these properties in the Public Registry. The co-authors have reviewed this and confirm that none of the mineral reserves and mineral resources stated in this report are on the portions of the properties not owned by PASH.
6. There is a mortgage of US\$13.16 million in favor of Glencore International AG in order to guarantee the completion of obligations of a loan facility entered into on October 21, 2001. The mortgage concerns the following mining properties: C.M.H. No. 75; Dardanelos; Relave Francois 1, Teutonia 79; Teutonia Dos 79; Teutonia tres 79, Huaron 1 and Huaron 2. This loan facility agreement has since been cancelled nevertheless cancellation of the agreement needs to be registered for it to be removed from the public record.
7. There is a precautionary measure placed on the Olvido and Rosario mining properties relating to a law suit that was cancelled in 1963. The resolution of the law suit should have included cancellation of this measure on those properties and therefore if discrepancies arise pertaining to the ownership of the Olvido and Rosario mining properties the ownership should be easily mended without major inconveniences.
8. There is an easement for the construction of a drainage tunnel over the Alpamina, C.P.H. No. 6, Juana and Labor y Constancia mining properties. This agreement dates back to the water inflow to the Chungar Mine from Nanticocha Lake on April 23, 1998. The agreement was ended on September 14, 2000 by means of another agreement; however, the easement remains over parts of the 400 and 250 levels at the Huaron Mine.
9. There is a small degree of overlapping with third parties' mining rights. This is a result of regulatory modification in Peru to the system of using UTM co-ordinates in 1991. It is quite common for Peruvian mining rights to be overlapping and in these cases the older mining concessions have priority. Likewise there is some potential for blank spaces, these spaces in the case of the Huaron property would be small.

Mining concessions are a real property right different and independent from surface land property. Consequently, pursuant to Peruvian legislation, title over these concessions does not grant its holder ownership or a possession title over the surface land, this should be negotiated with the corresponding landowners. The mining concessionaire has three options available to develop exploration or exploitation works:

- i) Purchase the corresponding surface land;

ii) Reach an agreement with landholders for its temporary use, and

iii) Obtain the imposition of a legal easement by the MEM.

With respect thereof PASH furnished to Rodrigo, Elias & Modreno several public and private documents evidencing its property and other similar rights over a number of lands required for conducting mining activities at the Huaron mine. The agreements between the communities of Huayllay and San Augustin de Huaychao that were provided are as follows:

- a) Estancia Wuisca (about 3 hectares) acquired from huayllay through public deed dated October 23, 1996.
- b) Easement right (about 11 hectares) acquired from San Augustin de Huaychao through public deed dated March 14, 2000 for the Shuisha Site.
- c) Easement right of 167 hectares acquired from Huayllay through public deed dated March 28, 2000.
- d) Easement right of 11 hectares acquired from Huayllay through public deed dated December 11, 2000.
- e) Easement right of 2.5 hectares acquired from Huayllay through public deed dated April 4, 2002.
- f) Easement right of 50 hectares acquired from Huaychao through public deed dated April 4, 2002.
- g) Easement right of 9.79 hectares divided in two lots acquired from Huayllay through public deed dated January 7, 2004.
- h) Easement right of 16 hectares in the Trapiche area to be revegetated and 54.26 hectares of other community lands acquired from Huayllay through private agreement dated June 11, 2007.
- i) Easement right of 2 hectares acquired from Huayllay through private agreement dated June 20, 2007.

The ongoing operation of the existing tailings facility will require future raising of the tailings dam crest. This will result in the increase of the impoundment area and impact existing infrastructure in the area such as gravel access roads. As the impoundment area increases additional surface rights will need to be purchased on both the north and south side of the existing impoundment. PASH anticipates that it will be able to continue to make further agreements with the local communities as it has done in the past on an as required basis. The existing surface rights are listed in Table 6-3.

A complete list of all of the mining concessions with respect to the Huaron Mine property are shown in Table 6-1 and outlined in Figure 6-4. The list of Mining concessions that were reviewed Rodrigo, Elias & Medrano, Lima, Peru are shown in Table 6-2.

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**Table 6-1: Mining Concessions**  
**MINERAL CONCESIONES HUARÓN PROXIMITY**

<b>Nº</b>	<b>Registry No.</b>	<b>Concession</b>	<b>Title</b>	<b>Acquiry Date</b>	<b>Ha.</b>	<b>State</b>
1	04003370Y01	ABUNDANCIA	COMPAÑIA MINERA HUARON S.A.	9/1/1917	0.16	D.M. Titulado D.L. 109
2	0403370AY01	ABUNDANCIA-A	COMPAÑIA MINERA HUARON S.A.	9/1/1917	0.05	D.M. Titulado D.L. 109
3	04013287X01	ACUMULACION HUARON-4	COMPAÑIA MINERA HUARON S.A.	6/20/1985	96.66	Acumulación D.M. Titulada
4	04013289X01	ACUMULACION HUARON 6	COMPAÑIA MINERA HUARON S.A.	6/20/1985	242.7013	Acumulación D.M. Titulada
5	04013284X01	ACUMULACION HUARON-1	COMPAÑIA MINERA HUARON S.A.	6/20/1985	795.67	Acumulación D.M. Titulada
6	04013285X01	ACUMULACION HUARON-2	COMPAÑIA MINERA HUARON S.A.	6/20/1985	540.49	Acumulación D.M. Titulada
7	04013286X01	ACUMULACION HUARON-3	COMPAÑIA MINERA HUARON S.A.	6/20/1985	534.4302	Acumulación D.M. Titulada
8	04013290X01	ACUMULACION HUARON-7	COMPAÑIA MINERA HUARON S.A.	6/20/1985	795.07	Acumulación D.M. Titulada
9	04002265Y01	ALIANZA Y FIRMEZA	COMPAÑIA MINERA HUARON S.A.	5/15/1901	0.06	D.M. Titulado D.L. 109
10	0402265AY01	ALIANZA Y FIRMEZA-A	COMPAÑIA MINERA HUARON S.A.	5/15/1901	0.02	D.M. Titulado D.L. 109
11	04004655X01	ALICIA	COMPAÑIA MINERA HUARON S.A.	8/9/1912	0.77	D.M. Titulado D.L. 109
12	04002572X01	ALPAMINA	COMPAÑIA MINERA HUARON S.A.	10/25/1905	0.05	D.M. Titulado D.L. 109
13	0402572AX01	ALPAMINA-A	COMPAÑIA MINERA HUARON S.A.	10/25/1905	0.85	D.M. Titulado D.L. 109
14	04000997X01	ANIMAS	COMPAÑIA MINERA HUARON S.A.	5/10/1902	0.19	D.M. Titulado D.L. 109

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15	04003431X01	APURO	COMPAÑIA MINERA HUARON S.A.	1/27/1908	0.37	D.M. Titulado D.L. 109
16	11023860X01	AURORA-10	COMPAÑIA MINERA HUARON S.A.	1/16/1981	878.55	D.M. Titulado D.L. 109
17	04000466X01	BALCON DE JUDAS	COMPAÑIA MINERA HUARON S.A.	10/24/1901	17.97	D.M. Titulado D.L. 109
18	04001000X01	BALSAMO	COMPAÑIA MINERA HUARON S.A.	5/10/1902	2.00	D.M. Titulado D.L. 109
19	04009964X01	C.M.H. CHASQUI-HUASI	COMPAÑIA MINERA HUARON S.A.	8/31/1953	32.00	D.M. Titulado D.L. 109
20	04009995X01	C.M.H. CHASQUIHUASI NUMERO DOS	COMPAÑIA MINERA HUARON S.A.	4/10/1954	16.00	D.M. Titulado D.L. 109
21	07000365X01	C.M.H. LIMONITA NORTE	COMPAÑIA MINERA HUARON S.A.	4/23/1956	56.00	D.M. Titulado D.L. 109
22	07000367X01	C.M.H. LIMONITA SUR	COMPAÑIA MINERA HUARON S.A.	4/23/1956	40.00	D.M. Titulado D.L. 109
23	04013394X01	C.M.H. N° 101	COMPAÑIA MINERA HUARON S.A.	5/4/1987	0.57	D.M. Titulado D.L. 109
24	04013495X01	C.M.H. N° 102	COMPAÑIA MINERA HUARON S.A.	5/2/1991	1.16	D.M. Titulado D.L. 109
25	04013496X01	C.M.H. N° 103	COMPAÑIA MINERA HUARON S.A.	5/2/1991	0.18	D.M. Titulado D.L. 109
26	04010514X01	C.M.H. N° 15	COMPAÑIA MINERA HUARON S.A.	7/18/1957	125.78	D.M. Titulado D.L. 109
27	04008913X01	C.M.H. N° 16	COMPAÑIA MINERA HUARON S.A.	6/5/1944	0.73	D.M. Titulado D.L. 109
28	04008978X01	C.M.H. N° 18	COMPAÑIA MINERA HUARON S.A.	9/5/1945	8.00	D.M. Titulado D.L. 109
29	04009045X01	C.M.H. N° 19	COMPAÑIA MINERA HUARON S.A.	8/20/1946	16.00	D.M. Titulado D.L. 109
30	04008319X01	C.M.H. N° 2	COMPAÑIA MINERA HUARON S.A.	5/3/1937	0.94	D.M. Titulado D.L. 109
31	04009299X01	C.M.H. N° 25	COMPAÑIA MINERA HUARON S.A.	4/9/1949	21.66	D.M. Titulado D.L. 109

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32	04009300X01	C.M.H. N° 27	COMPAÑIA MINERA HUARON S.A.	4/11/1949	2.71	D.M. Titulado D.L. 109
33	04009301X01	C.M.H. N° 28	COMPAÑIA MINERA HUARON S.A.	4/11/1949	29.61	D.M. Titulado D.L. 109
34	04008320X01	C.M.H. N° 3	COMPAÑIA MINERA HUARON S.A.	5/3/1937	0.52	D.M. Titulado D.L. 109
35	04009303X01	C.M.H. N° 30	COMPAÑIA MINERA HUARON S.A.	4/11/1949	0.33	D.M. Titulado D.L. 109
36	04009433X02	C.M.H. N° 33	COMPAÑIA MINERA HUARON S.A.	11/17/1950	1.79	D.M. Titulado D.L. 109
37	04009435X01	C.M.H. N° 35	COMPAÑIA MINERA HUARON S.A.	11/17/1950	0.25	D.M. Titulado D.L. 109
38	0403885AY01	C.M.H. N° 3-A	COMPAÑIA MINERA HUARON S.A.	11/17/1950	0.74	D.M. Titulado D.L. 109
39	04009481X01	C.M.H. N° 44	COMPAÑIA MINERA HUARON S.A.	4/9/1951	0.80	D.M. Titulado D.L. 109
40	04008593X01	C.M.H. N° 5	COMPAÑIA MINERA HUARON S.A.	2/7/1941	0.24	D.M. Titulado D.L. 109
41	04009488X01	C.M.H. N° 51	COMPAÑIA MINERA HUARON S.A.	4/9/1951	0.13	D.M. Titulado D.L. 109
42	04009495X01	C.M.H. N° 52	COMPAÑIA MINERA HUARON S.A.	4/25/1951	0.88	D.M. Titulado D.L. 109
43	04009581X01	C.M.H. N° 57	COMPAÑIA MINERA HUARON S.A.	11/19/1951	0.10	D.M. Titulado D.L. 109
44	04009589X01	C.M.H. N° 65	COMPAÑIA MINERA HUARON S.A.	11/19/1951	0.08	D.M. Titulado D.L. 109
45	04009591X01	C.M.H. N° 67	COMPAÑIA MINERA HUARON S.A.	11/19/1951	0.03	D.M. Titulado D.L. 109
46	04008823X01	C.M.H. N° 7	COMPAÑIA MINERA HUARON S.A.	4/16/1943	0.14	D.M. Titulado D.L. 109

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<b>N°</b>	<b>Registry No.</b>	<b>Concession</b>	<b>Title</b>	<b>Acquiry Date</b>	<b>Ha.</b>	<b>State</b>
47	04009595X01	C.M.H. N° 71	COMPAÑIA MINERA HUARON S.A.	11/19/1951	7.68	D.M. Titulado D.L. 109
48	04009596X01	C.M.H. N° 72	COMPAÑIA MINERA HUARON S.A.	11/19/1951	9.39	D.M. Titulado D.L. 109
49	04009843X01	C.M.H. N° 74	COMPAÑIA MINERA HUARON S.A.	8/16/1952	4.4179	D.M. Titulado D.L. 109
50	04009844X01	C.M.H. N° 75	COMPAÑIA MINERA HUARON S.A.	8/16/1952	0.23	D.M. Titulado D.L. 109
51	04009846X01	C.M.H. N° 76	COMPAÑIA MINERA HUARON S.A.	8/16/1952	0.10	D.M. Titulado D.L. 109
52	04010746X01	C.M.H. N° 79	COMPAÑIA MINERA HUARON S.A.	11/13/1959	0.56	D.M. Titulado D.L. 109
53	04009911X01	C.M.H. TIPISH	COMPAÑIA MINERA HUARON S.A.	1/31/1953	60.00	D.M. Titulado D.L. 109
54	04007533X01	C.P.H. N° 1	COMPAÑIA MINERA HUARON S.A.	5/12/1926	0.06	D.M. Titulado D.L. 109
55	04007547X01	C.P.H. N° 15	COMPAÑIA MINERA HUARON S.A.	5/12/1926	0.00	D.M. Titulado D.L. 109
56	0407533AX01	C.P.H. N° 1-A	COMPAÑIA MINERA HUARON S.A.	5/12/1926	0.17	D.M. Titulado D.L. 109
57	04007534X01	C.P.H. N° 2	COMPAÑIA MINERA HUARON S.A.	5/12/1926	0.02	D.M. Titulado D.L. 109
58	04007555X01	C.P.H. N° 23	COMPAÑIA MINERA HUARON S.A.	5/12/1926	0.55	D.M. Titulado D.L. 109
59	04007556X01	C.P.H. N° 24	COMPAÑIA MINERA HUARON S.A.	5/12/1926	0.86	D.M. Titulado D.L. 109
60	0407534AX01	C.P.H. N° 2-A	COMPAÑIA MINERA HUARON S.A.	5/12/1926	0.38	D.M. Titulado D.L. 109
61	04007536X01	C.P.H. N° 4	COMPAÑIA MINERA	5/12/1926	0.05	D.M. Titulado D.L. 109

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62	04007594X01	C.P.H. N° 55	HUARON S.A. COMPAÑIA MINERA				
63	0403659AY01	C.P.H. N° 55-A	HUARON S.A. COMPAÑIA MINERA	3/29/1926	0.06	D.M. Titulado D.L. 109	
64	04007538X01	C.P.H. N° 6	HUARON S.A. COMPAÑIA MINERA	3/29/1926	0.34	D.M. Titulado D.L. 109	
65	04000874X01	CAGLIOSTRO	HUARON S.A. COMPAÑIA MINERA	5/12/1926	0.45	D.M. Titulado D.L. 109	
66	04003371Y01	CATORCE DE ABRIL	HUARON S.A. COMPAÑIA MINERA	4/4/1902	1.28	D.M. Titulado D.L. 109	
67	07000366X01	CMH CUESTAS	HUARON S.A. COMPAÑIA MINERA	9/28/1917	0.09	D.M. Titulado D.L. 109	
68	04000832X01	COMETA	HUARON S.A. COMPAÑIA MINERA	4/23/1956	18.00	D.M. Titulado D.L. 109	
69	P0100085	CONCENTRADORA FRANCOIS	HUARON S.A. COMPAÑIA MINERA	3/4/1902	15.97	D.M. Titulado D.L. 109	
70	04002573X01	CONCHUCOS	HUARON S.A. COMPAÑIA MINERA	3/4/1902	48.00	Planta de Beneficio	
71	04002451Y01	CONSTANCIA	HUARON S.A. COMPAÑIA MINERA	10/25/1905	0.68	D.M. Titulado D.L. 109	
72	0402451AY01	CONSTANCIA-A	HUARON S.A. COMPAÑIA MINERA	2/13/1902	1.08	D.M. Titulado D.L. 109	
73	04008037X01	CORDOBA	HUARON S.A. COMPAÑIA MINERA	2/13/1902	0.07	D.M. Titulado D.L. 109	
74	04012511X01	DARDANELOS	HUARON S.A. COMPAÑIA MINERA	5/7/1935	0.96	D.M. Titulado D.L. 109	
75	04003615X01	DIECINUEVE DE SETIEMBRE	HUARON S.A. COMPAÑIA MINERA	12/7/1978	0.20	D.M. Titulado D.L. 109	
76	04013463X01	DON JUAN N° 2-88	HUARON S.A. COMPAÑIA MINERA	11/18/1908	0.57	D.M. Titulado D.L. 109	
77	04013464X01	DON JUAN N° 4-88	HUARON S.A. COMPAÑIA MINERA	4/5/1989	687.54	D.M. Titulado D.L. 109	
78	04004653X01	DON PABLO	HUARON S.A. COMPAÑIA MINERA	4/5/1989	240.00	D.M. Titulado D.L. 109	
				8/9/1912	0.05	D.M. Titulado D.L. 109	

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79	04003023X01	EL RAYO	HUARON S.A. COMPAÑIA MINERA				
80	04003024X01	EL TRUENO	HUARON S.A. COMPAÑIA MINERA	11/26/1906	0.21	D.M. Titulado D.L. 109	
81	04008033X01	ESPAÑA	HUARON S.A. COMPAÑIA MINERA	11/26/1906	0.07	D.M. Titulado D.L. 109	
82	04006692X01	FARALLON	HUARON S.A. COMPAÑIA MINERA	5/7/1935	0.11	D.M. Titulado D.L. 109	
83	04008586X01	FLORENCIA	HUARON S.A. COMPAÑIA MINERA	9/1/1920	7.99	D.M. Titulado D.L. 109	
84	0403093AY01	FLORENCIA-A	HUARON S.A. COMPAÑIA MINERA	5/2/1912	0.12	D.M. Titulado D.L. 109	
85	04004527X01	GAVIOTA	HUARON S.A. COMPAÑIA MINERA	5/2/1912	0.24	D.M. Titulado D.L. 109	
86	0404527AX01	GAVIOTA-A	HUARON S.A. COMPAÑIA MINERA	4/10/1912	0.92	D.M. Titulado D.L. 109	
87	04008276X01	GRANADA	HUARON S.A. COMPAÑIA MINERA	4/10/1912	1.86	D.M. Titulado D.L. 109	
88	04004591X01	GUILLERMO BILLINGHURST	HUARON S.A. COMPAÑIA MINERA	12/17/1936	5.58	D.M. Titulado D.L. 109	
89	010236398	HORIZONTE 10	HUARON S.A. COMPAÑIA MINERA	5/20/1912	0.28	D.M. Titulado D.L. 109	
90	010236498	HORIZONTE 11	HUARON S.A. COMPAÑIA MINERA	11/25/1998	500.00	D.M. Titulado D.L. 708	
91	010236698	HORIZONTE 13	HUARON S.A. COMPAÑIA MINERA	11/25/1998	1000.00	D.M. Titulado D.L. 708	
92	010236798	HORIZONTE 14	HUARON S.A. COMPAÑIA MINERA	11/25/1998	700.00	D.M. Titulado D.L. 708	
93	010236898	HORIZONTE 15	HUARON S.A. COMPAÑIA MINERA	11/25/1998	1000.00	D.M. Titulado D.L. 708	
94	010236998	HORIZONTE 16	HUARON S.A. COMPAÑIA MINERA	11/25/1998	1000.00	D.M. Titulado D.L. 708	
95	010237198	HORIZONTE 18	HUARON S.A. COMPAÑIA MINERA	11/25/1998	1000.00	D.M. Titulado D.L. 708	
				11/25/1998	800.00	D.M. Titulado D.L. 708	

96	010237298	HORIZONTE 19	HUARON S.A. COMPAÑIA MINERA HUARON S.A.	11/25/1998	700.00	D.M. Titulado D.L. 708
43-101(PanAm)			Huaron Mine			27

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<b>N°</b>	<b>Registry No.</b>	<b>Concession</b>	<b>Title</b>	<b>Acquiry Date</b>	<b>Ha.</b>	<b>State</b>
97	010237398	HORIZONTE 20	COMPAÑIA MINERA HUARON S.A.	11/25/1998	1000.00	D.M. Titulado D.L. 708
98	010237498	HORIZONTE 21	COMPAÑIA MINERA HUARON S.A.	11/25/1998	1000.00	D.M. Titulado D.L. 708
99	010237598	HORIZONTE 22	COMPAÑIA MINERA HUARON S.A.	11/25/1998	1000.00	D.M. Titulado D.L. 708
100	010237698	HORIZONTE 23	COMPAÑIA MINERA HUARON S.A.	11/25/1998	1000.00	D.M. Titulado D.L. 708
101	010238898	HORIZONTE 31	COMPAÑIA MINERA HUARON S.A.	11/25/1998	600.00	D.M. Titulado D.L. 708
102	010238998	HORIZONTE 32	COMPAÑIA MINERA HUARON S.A.	11/27/1998	900.00	D.M. Titulado D.L. 708
103	010239098	HORIZONTE 33	COMPAÑIA MINERA HUARON S.A.	11/27/1998	700.00	D.M. Titulado D.L. 708
104	010239198	HORIZONTE 34	COMPAÑIA MINERA HUARON S.A.	11/27/1998	900.00	D.M. Titulado D.L. 708
105	010239598	HORIZONTE 38	COMPAÑIA MINERA HUARON S.A.	11/27/1998	1000.00	D.M. Titulado D.L. 708
106	010239698	HORIZONTE 39	COMPAÑIA MINERA HUARON S.A.	11/27/1998	1000.00	D.M. Titulado D.L. 708
107	010235798	HORIZONTE 4	COMPAÑIA MINERA HUARON S.A.	11/27/1998	1000.00	D.M. Titulado D.L. 708
108	010239798	HORIZONTE 40	COMPAÑIA MINERA HUARON S.A.	11/25/1998	1000.00	D.M. Titulado D.L. 708
109	010239898	HORIZONTE 41	COMPAÑIA MINERA HUARON S.A.	11/27/1998	1000.00	D.M. Titulado D.L. 708
110	010239998	HORIZONTE 42	COMPAÑIA MINERA HUARON S.A.	11/27/1998	1000.00	D.M. Titulado D.L. 708
111	010240098	HORIZONTE 43	COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708



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112	010240298	HORIZONTE 45	HUARON S.A. COMPAÑIA MINERA				
113	010240398	HORIZONTE 46	HUARON S.A. COMPAÑIA MINERA	11/27/1998	600.00	D.M. Titulado D.L. 708	
114	010240498	HORIZONTE 47	HUARON S.A. COMPAÑIA MINERA	11/27/1998	600.00	D.M. Titulado D.L. 708	
115	010240598	HORIZONTE 48	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
116	010240698	HORIZONTE 49	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
117	010240798	HORIZONTE 50	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
118	010241698	HORIZONTE 59	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
119	010241798	HORIZONTE 60	HUARON S.A. COMPAÑIA MINERA	11/27/1998	800.00	D.M. Titulado D.L. 708	
120	010241898	HORIZONTE 61	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
121	010241998	HORIZONTE 62	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
122	010242098	HORIZONTE 63	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
123	010242198	HORIZONTE 64	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
124	010242298	HORIZONTE 65	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
125	010242398	HORIZONTE 66	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
126	010242498	HORIZONTE 67	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
127	010242598	HORIZONTE 68	HUARON S.A. COMPAÑIA MINERA	11/27/1998	1000.00	D.M. Titulado D.L. 708	
128	04002568X01	HUALGAYOC	HUARON S.A. COMPAÑIA MINERA	11/27/1998 10/23/1905	400.00 0.05	D.M. Titulado D.L. 708 D.M. Titulado D.L. 109	

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129	04002567X01	HUANCAVELICA	HUARON S.A. COMPAÑIA MINERA				
130	04006355X01	HUAROCHIRI	HUARON S.A. COMPAÑIA MINERA	10/23/1905	0.03	D.M. Titulado D.L. 109	
131	010250094	HUARON 1	HUARON S.A. COMPAÑIA MINERA	6/3/1919	0.59	D.M. Titulado D.L. 109	
132	010250194	HUARON 2	HUARON S.A. COMPAÑIA MINERA	4/28/1994	500.00	D.M. Titulado D.L. 708	
133	010250194A	HUARON 2A	HUARON S.A. COMPAÑIA MINERA	4/28/1994	209.6609	D.M. Titulado D.L. 708	
134	010250294	HUARON 3	HUARON S.A. COMPAÑIA MINERA	4/28/1994	200.00	D.M. Titulado D.L. 708	
135	010250394	HUARON 4	HUARON S.A. COMPAÑIA MINERA	4/28/1994	1000.00	D.M. Titulado D.L. 708	
136	010250494	HUARON 5	HUARON S.A. COMPAÑIA MINERA	4/28/1994	1000.00	D.M. Titulado D.L. 708	
137	04008295X01	JUANA	HUARON S.A. COMPAÑIA MINERA	4/28/1994	700.00	D.M. Titulado D.L. 708	
138	04002211Y01	LA ALIANZA	HUARON S.A. COMPAÑIA MINERA	2/22/1937	0.04	D.M. Titulado D.L. 109	
139	04001001X01	LA CENTRAL	HUARON S.A. COMPAÑIA MINERA	7/15/1901	11.98	D.M. Titulado D.L. 109	
140	04006749X01	LA HUACA	HUARON S.A. COMPAÑIA MINERA	5/10/1902	2.00	D.M. Titulado D.L. 109	
141	0403589AY01	LA HUACA-A	HUARON S.A. COMPAÑIA MINERA	10/18/1920	0.71	D.M. Titulado D.L. 109	
142	0403589BY01	LA HUACA-B	HUARON S.A. COMPAÑIA MINERA	10/18/1920	0.09	D.M. Titulado D.L. 109	
143	04004599X01	LA PEDRERA	HUARON S.A. COMPAÑIA MINERA	10/18/1920	0.05	D.M. Titulado D.L. 109	
144	04000099X01	LA PROVIDENCIA	HUARON S.A. COMPAÑIA MINERA	5/28/1912	0.51	D.M. Titulado D.L. 109	
145	04000998X01	LA TAPADA	HUARON S.A. COMPAÑIA MINERA	5/24/1901	0.01	D.M. Titulado D.L. 109	
				5/10/1902	3.99	D.M. Titulado D.L. 109	

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146	04770771X01	LABOR Y CONSTANCIA	HUARON S.A. COMPAÑIA MINERA				
147	11024448X01	MANCAHUCRO	HUARON S.A. COMPAÑIA MINERA	2/13/1902	23.96	D.M. Titulado D.L. 109	
			HUARON S.A.	9/15/1982	303.96	D.M. Titulado D.L. 109	
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<b>N°</b>	<b>Registry No.</b>	<b>Concession</b>	<b>Title</b>	<b>Acquiry Date</b>	<b>Ha.</b>	<b>State</b>
148	04001486X01	MANLINCHER	COMPAÑIA MINERA HUARON S.A.	2/10/1903	6.00	D.M. Titulado D.L. 109
149	04006337X01	MARIA	COMPAÑIA MINERA HUARON S.A.	5/26/1919	0.08	D.M. Titulado D.L. 109
150	04000632X01	MARTE	COMPAÑIA MINERA HUARON S.A.	12/2/1901	0.08	D.M. Titulado D.L. 109
151	04008014X01	MAX	COMPAÑIA MINERA HUARON S.A.	5/6/1935	0.06	D.M. Titulado D.L. 109
152	04008013X01	MICHEL	COMPAÑIA MINERA HUARON S.A.	5/4/1935	0.54	D.M. Titulado D.L. 109
153	04002570X01	MOROCOCHA	COMPAÑIA MINERA HUARON S.A.	10/25/1905	0.07	D.M. Titulado D.L. 109
154	04007963X01	NUESTRA SEÑORA DEL MILAGRO	COMPAÑIA MINERA HUARON S.A.	11/25/1934	11.98	D.M. Titulado D.L. 109
155	04002435Y01	NUESTRA SEÑORA DEL ROSARIO	COMPAÑIA MINERA HUARON S.A.	5/24/1901	0.16	D.M. Titulado D.L. 109
156	04002617X01	OLVIDO	COMPAÑIA MINERA HUARON S.A.	11/30/1905	2.40	D.M. Titulado D.L. 109
157	04000999X01	ORACULO	COMPAÑIA MINERA HUARON S.A.	5/10/1902	3.99	D.M. Titulado D.L. 109
158	04006436X01	PACHITEA	COMPAÑIA MINERA HUARON S.A.	9/10/1919	0.77	D.M. Titulado D.L. 109
159	04007960X01	PANDORA	COMPAÑIA MINERA HUARON S.A.	11/21/1905	2.00	D.M. Titulado D.L. 109
160	04000811X01	PLANETA	COMPAÑIA MINERA HUARON S.A.	3/4/1902	2.00	D.M. Titulado D.L. 109
161	04012743X01	RELAVE FRANCOIS-1	COMPAÑIA MINERA HUARON S.A.	2/6/1980	60.00	D.M. Titulado D.L. 109
162	04001253Y01	ROSARIO	COMPAÑIA MINERA	7/11/18888	2.11	D.M. Titulado D.L. 109

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163	04007524X01	ROSARIO NUMERO CINCO	HUARON S.A. COMPAÑIA MINERA				
164	04008019X01	ROSARIO NUMERO CUATRO	HUARON S.A. COMPAÑIA MINERA	5/1/1926	0.01	D.M. Titulado D.L. 109	
165	04001130X01	SACERDOTIZA	HUARON S.A. COMPAÑIA MINERA	5/6/1935	0.02	D.M. Titulado D.L. 109	
166	11024447X01	SAN CAMILO	HUARON S.A. COMPAÑIA MINERA	8/11/1902	0.14	D.M. Titulado D.L. 109	
167	04012993X01	SAN CARLOS 79	HUARON S.A. COMPAÑIA MINERA	9/15/1982	211.72	D.M. Titulado D.L. 109	
168	07000131X01	SAN JORGE II	HUARON S.A. COMPAÑIA MINERA	3/27/1981	182.00	D.M. Titulado D.L. 109	
169	07000132X01	SAN JORGE III	HUARON S.A. COMPAÑIA MINERA	8/18/1952	40.00	D.M. Titulado D.L. 109	
170	07000130X01	SAN JORGE IV	HUARON S.A. COMPAÑIA MINERA	8/18/1952	32.00	D.M. Titulado D.L. 109	
171	07000146X01	SAN JORGE IX	HUARON S.A. COMPAÑIA MINERA	8/18/1952	50.00	D.M. Titulado D.L. 109	
172	07000017X01	SAN JORGE N° 1	HUARON S.A. COMPAÑIA MINERA	10/6/1952	48.00	D.M. Titulado D.L. 109	
173	07000133X01	SAN JORGE V	HUARON S.A. COMPAÑIA MINERA	7/25/1951	120.00	D.M. Titulado D.L. 109	
174	07000134X01	SAN JORGE VI	HUARON S.A. COMPAÑIA MINERA	8/18/1952	32.00	D.M. Titulado D.L. 109	
175	07000135X01	SAN JORGE VII	HUARON S.A. COMPAÑIA MINERA	8/18/1952	72.00	D.M. Titulado D.L. 109	
176	07000145X01	SAN JORGE VIII	HUARON S.A. COMPAÑIA MINERA	8/18/1952	36.00	D.M. Titulado D.L. 109	
177	04004654X01	SANTIAGO	HUARON S.A. COMPAÑIA MINERA	10/6/1952	30.00	D.M. Titulado D.L. 109	
178	04008039X01	SEVILLA	HUARON S.A. COMPAÑIA MINERA	8/9/1912	0.03	D.M. Titulado D.L. 109	
179	04012512X01	TEUTONIA 79	HUARON S.A. COMPAÑIA MINERA	5/7/1935 12/7/1978	0.06 0.04	D.M. Titulado D.L. 109 D.M. Titulado D.L. 109	

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180	04012513X01	TEUTONIA DOS-79	HUARON S.A. COMPAÑIA MINERA				
181	04012514X01	TEUTONIA TRES-79	HUARON S.A. COMPAÑIA MINERA	12/7/1978	3.51	D.M. Titulado D.L. 109	
182	04004857X01	VEINTE DE FEBRERO	HUARON S.A. COMPAÑIA MINERA	12/7/1978	0.00	D.M. Titulado D.L. 109	
183	04002221Y01	VENUS	HUARON S.A. COMPAÑIA MINERA	4/12/1913	0.14	D.M. Titulado D.L. 109	
184	07001624X01	SAN JORGE X	HUARON S.A. COMPAÑIA MINERA SAN	9/19/1901	1.22	D.M. Titulado D.L. 109	
185	010409797	VITACANCHA-R	JORGE S.A. COMPAÑIA MINERA SIPAN	3/9/1979	324.00	D.M. Titulado D.L. 109	
186	04010978X01	C.M.H. N° 84-DOS	S.A. S.M.R.L. CMH N° 84-DOS DE CERRO DE PASCO	12/4/1997	1000.00	D.M. Titulado D.L. 708	
				7/1/1961	1.00	D.M. Titulado D.L. 109	

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Huaron Mine

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## MINERAL CONCESSIONS SHALIPAYCO ZONE

N°	Registry No.	Concession	Title	Acquiry Date	Ha.	State
187	04008809X01	EL TRIUNFO	COMPAÑIA MINERA EL TRIUNFO S.A.	11/12/1936	8.00	D.M. Titulado D.L. 109
188	0410353AX01	LA ESPERANZA DE CARHUAMAYO	COMPAÑIA MINERA EL TRIUNFO S.A.	8/1/1950	15.00	D.M. Titulado D.L. 109
189	04009440X01	SAN ANDRES NUMERO UNO	COMPAÑIA MINERA EL TRIUNFO S.A.	11/30/1950	8.00	D.M. Titulado D.L. 109
190	04010668X01	SANTA LUISA N° 1	COMPAÑIA MINERA EL TRIUNFO S.A.	5/5/1959	10.00	D.M. Titulado D.L. 109
191	010182603	JUAN GILBERTO V	PAN AMERICAN SILVER PERU S.A.C.	6/2/2003	953.86	D.M. Titulado D.L. 708
192	010182703	JUAN GILBERTO VI	PAN AMERICAN SILVER PERU S.A.C.	6/2/2003	1000.00	D.M. Titulado D.L. 708
193	010182803	JUAN GILBERTO VII	PAN AMERICAN SILVER PERU S.A.C.	6/2/2003	1000.00	D.M. Titulado D.L. 708
194	010182903	JUAN GILBERTO VIII	PAN AMERICAN SILVER PERU S.A.C.	6/2/2003	1000.00	D.M. Titulado D.L. 708
195	010183103	EVA II	PAN AMERICAN SILVER PERU S.A.C.	6/2/2003	3.79	D.M. Titulado D.L. 708
196	010182503	TRIUNFO VI A	PAN AMERICAN SILVER PERU S.A.C.	6/2/2003	5.89	D.M. Titulado D.L. 708
197	0410129AX01	LA VERDAD	S.M.R.L. LA VERDAD DE CERRO DE PASCO	4/1/1955	15.00	D.M. Titulado D.L. 109
198	04012555X01	DELIA 79	COMPAÑIA MINERA HUARON S.A.	3/27/1979	4.00	D.M. Titulado D.L. 109
199	04012544X01	ESCALON N° 2	COMPAÑIA MINERA HUARON S.A.	2/14/1979	17.17	D.M. Titulado D.L. 109
200	04012165X01	JUAN GILBERTO 1	COMPAÑIA MINERA HUARON S.A.	6/11/1974	1000.00	D.M. Titulado D.L. 109

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201	04012166X01	JUAN GILBERTO 2	COMPAÑIA MINERA HUARON S.A.	6/11/1974	1000.00	D.M. Titulado D.L. 109
202	04012167X01	JUAN GILBERTO 3	COMPAÑIA MINERA HUARON S.A.	6/11/1974	960.67	D.M. Titulado D.L. 109
203	04012168X01	JUAN GILBERTO 4	COMPAÑIA MINERA HUARON S.A.	6/11/1974	575.33	D.M. Titulado D.L. 109
204	0412168AX01	JUAN GILBERTO 4-A	COMPAÑIA MINERA HUARON S.A.	6/11/1974	192.01	D.M. Titulado D.L. 109
205	04012552X01	LA VERDAD	COMPAÑIA MINERA HUARON S.A.	3/8/1979	15.00	D.M. Titulado D.L. 109
206	04012541X01	MONICA 79	COMPAÑIA MINERA HUARON S.A.	2/14/1979	4.00	D.M. Titulado D.L. 109
207	04012551X01	RESURGIDORA N° 2	COMPAÑIA MINERA HUARON S.A.	3/8/1979	56.00	D.M. Titulado D.L. 109
208	04012550X01	SAN LUIS N° 2	COMPAÑIA MINERA HUARON S.A.	3/7/1979	100.00	D.M. Titulado D.L. 109
209	04013395X01	SAN SEBASTIAN-87	COMPAÑIA MINERA HUARON S.A.	5/4/1987	60.58	D.M. Titulado D.L. 109
210	04012391X01	SAN TEODORO N° 1	COMPAÑIA MINERA HUARON S.A.	11/9/1977	46.94	D.M. Titulado D.L. 109
211	04012556X01	TRIUNFO	COMPAÑIA MINERA HUARON S.A.	3/27/1979	8.00	D.M. Titulado D.L. 109

**MINERAL CONCESSIONS PAS PERU ZONES**

N°	Registry No.	Concession	Title	Acquiry Date	Ha.	State
212	010211905	C.M.H.05	PAN AMERICAN SILVER PERU S.A.C.	07/07/05	2.74	D.M. Titulado D.L. 708
213	010211805	EL TRUENO 1-2	PAN AMERICAN SILVER PERU S.A.C.	07/07/05	0.03	D.M. Titulado D.L. 708
214	010211705	ELTRUENO 1-1	PAN AMERICAN SILVER PERU S.A.C.	07/07/05	0.03	D.M. Titulado D.L. 708
215	010212705	FEBRERO 20	PAN AMERICAN SILVER PERU	07/07/05	0.19	D.M. Titulado D.L. 708



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216	010212605	LA VENUS	S.A.C. PAN AMERICAN SILVER PERU			
217	010212005	MARTE 1-1	S.A.C. PAN AMERICAN SILVER PERU	07/07/05	0.09	D.M. Titulado D.L. 708
218	010212105	MARTE 1-2	S.A.C. PAN AMERICAN SILVER PERU	07/07/05	0.04	D.M. Titulado D.L. 708
219	010212205	MARTE 3	S.A.C. PAN AMERICAN SILVER PERU	07/07/05	0.04	D.M. Titulado D.L. 708
220	010017899	PASP-99-1-MALLAY	S.A.C. PAN AMERICAN SILVER PERU	07/07/05	0.01	D.M. Titulado D.L. 708
221	010409307	SHALIPAYCO 1	S.A.C. PAN AMERICAN SILVER PERU	02/23/99	200.00	D.M. Titulado D.L. 708
222	010409207	SHALIPAYCO 2	S.A.C. PAN AMERICAN SILVER PERU	08/01/07	10.00	D.M. en Trámite D.L. 708
223	010346306	UNION 2	S.A.C. PAN AMERICAN SILVER S.A. MINA	08/01/07	18.00	D.M. en Trámite D.L. 708
224	010348106	UNION 21	QUIRUVILCA PAN AMERICAN SILVER S.A. MINA	08/09/06	100.00	D.M. Titulado D.L. 708
225	010347206	UNION 12	QUIRUVILCA PAN AMERICAN SILVER S.A.C. MINA	08/09/06	100.00	D.M. Titulado D.L. 708
226	010347306	UNION 13	QUIRUVILCA PAN AMERICAN SILVER S.A.C. MINA	08/09/06	100.00	D.M. Titulado D.L. 708
227	010347706	UNION 17	QUIRUVILCA PAN AMERICAN	08/09/06 08/09/06	100.00 100.00	D.M. Titulado D.L. 708 D.M. Titulado D.L. 708

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228	010347806	UNION 18	SILVER S.A.C. MINA QUIRUVILCA PAN AMERICAN SILVER S.A.C. MINA QUIRUVILCA	08/09/06	100.00	D.M. Titulado D.L. 708
229	010347906	UNION 19	PAN AMERICAN SILVER S.A.C. MINA QUIRUVILCA	08/09/06	100.00	D.M. Titulado D.L. 708
230	010346806	UNION 7	PAN AMERICAN SILVER S.A.C. MINA QUIRUVILCA	08/09/06	100.00	D.M. Titulado D.L. 708
231	010610407	LIMONITA 1	PAN AMERICAN SILVER PERU S.A.C.	11/22/07	200.00	D.M. en Trámite D.L. 708
232	010610307	LIMONITA 2	PAN AMERICAN SILVER PERU S.A.C.	11/22/07	100.00	D.M. en Trámite D.L. 708
233	010618807	LIMONITA 3	PAN AMERICAN SILVER PERU S.A.C.	11/26/07	100.00	D.M. en Trámite D.L. 708
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**MINERAL CONCESSIONS CAUJUL ZONE**

<b>N°</b>	<b>Registry No.</b>	<b>Concession</b>	<b>Title</b>	<b>Acquiry Date</b>	<b>Ha.</b>	<b>State</b>
234	010258407	CAUJUL 1	Awaiting Title Name Transfer	05/02/07	4.00	D.M. Titulado D.L. 708
235	010288807	CAUJUL 10	Awaiting Title Name Transfer	05/14/07	100.00	D.M. Titulado D.L. 708
236	010288907	CAUJUL 11	Awaiting Title Name Transfer	05/14/07	100.00	D.M. Titulado D.L. 708
237	010289007	CAUJUL 12	Awaiting Title Name Transfer	05/14/07	100.00	D.M. Titulado D.L. 708
238	010289107	CAUJUL 13	Awaiting Title Name Transfer	05/14/07	983.30	D.M. Titulado D.L. 708
239	010289207	CAUJUL 14	Awaiting Title Name Transfer	05/14/07	998.85	D.M. Titulado D.L. 708
240	010289307	CAUJUL 15	Awaiting Title Name Transfer	05/14/07	199.77	D.M. Titulado D.L. 708
241	010258207	CAUJUL 3	Awaiting Title Name Transfer	05/02/07	5.99	D.M. en trámite D.L. 708
242	010258107	CAUJUL 4	Awaiting Title Name Transfer	05/02/07	95.89	D.M. Titulado D.L. 708
243	010258007	CAUJUL 5	Awaiting Title Name Transfer	05/02/07	2.08	D.M. en trámite D.L. 708
244	010258607	CAUJUL 7	Awaiting Title Name Transfer	05/02/07	379.39	D.M. Titulado D.L. 708
245	010288607	CAUJUL 8	Awaiting Title Name Transfer	05/14/07	100.00	D.M. Titulado D.L. 708
246	010288707	CAUJUL 9	Awaiting Title Name Transfer	05/14/07	100.00	D.M. Titulado D.L. 708

**MINERAL CONCESSIONS PLATA DE CERRO ZONE**

<b>N°</b>	<b>Registry No.</b>	<b>Concession</b>	<b>Title</b>	<b>Acquiry Date</b>	<b>Ha.</b>	<b>State</b>
247	010103807	PLATA DE CERRO 1	Awaiting Title Name Transfer	1/25/07	800.00	D.M. en trámite D.L. 708
248	010104007	PLATA DE CERRO 3	Awaiting Title Name Transfer	1/25/07	200.00	D.M. Titulado D.L. 708
249	010104107	PLATA DE CERRO 4	Awaiting Title Name Transfer	1/25/07	200.00	D.M. Titulado D.L. 708

**MINERAL CONCESSIONS PLATA DE OYON ZONE**

<b>N°</b>	<b>Registry No.</b>	<b>Concession</b>	<b>Title</b>	<b>Acquiry Date</b>	<b>Ha.</b>	<b>State</b>
250	010103507	PLATA DE OYON 1	Awaiting Title Name Transfer	1/25/07	898.78	D.M. Titulado D.L. 708
251	010103607	PLATA DE OYON 2	Awaiting Title Name Transfer	1/25/07	898.78	D.M. Titulado D.L. 708
252	010103707			1/25/07	810.18	D.M. Titulado D.L. 708

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PLATA DE OYON Awaiting Title  
3 Name Transfer

Notes:

[1] Various concessions owned by PASH are awaiting new title names. These concessions are identified with the Awaiting Title Name Transfer within the Title column  
The area in hectares (Ha.) for the properties Acumulacion Huaron 3, Acumulacion Huaron 6, C.M.H No. 74 and Huaron 2 are shown after subtracting the the amounts of those Mining Properties transferred to Empresa Administradora Chungar S.A.C.

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**Table 6-2: Concessions that were reviewed by Rodrigo, Elias & Medrano**

<b>No.</b>	<b>Registry #</b>	<b>Concession</b>	<b>Hectares<sup>1</sup></b>	<b>Debts regarding validity fees</b>	<b>Penalties</b>
1	04003370Y01	ABUNDANCIA	0.1603	All paid up to 2007	No pending debt
2	04013284X01	ACUMULACION HUARON - 1	795.6725	All paid up to 2007	No pending debt
3	04013285X01	ACUMULACION HUARON - 2	540.4909	All paid up to 2007	No pending debt
4	04013286X01	ACUMULACION HUARON - 3 <sup>2</sup>	534.4302	All paid up to 2007	No pending debt
5	04013287X01	ACUMULACION HUARON 4	96.6606	All paid up to 2007	No pending debt
6	04013289X01	ACUMULACION HUARON - 6 <sup>2</sup>	242.7013	All paid up to 2007	No pending debt
7	04002265Y01	ALIANZA Y FIRMEZA	0.0639	All paid up to 2007	No pending debt
8	0402265AY01	ALIANZA Y FIRMEZA - A	0.0169	All paid up to 2007	No pending debt
9	04004655X01	ALICIA	0.7654	All paid up to 2007	No pending debt
10	04002572X01	ALPAMINA	0.0506	All paid up to 2007	No pending debt
11	0402572AX01	ALPAMINA - A	0.8525	All paid up to 2007	No pending debt
12	04000997X01	ANIMAS	0.1872	All paid up to 2007	No pending debt
13	04003431X01	APURO	0.3709	All paid up to 2007	No pending debt
14	04000466X01	BALCON DE JUDAS	17.9689	All paid up to 2007	No pending debt
15	04001000X01	BALSAMO	1.9965	All paid up to 2007	No pending debt
16	04010514X01	C.M.H. N° 15	125.7841	All paid up to 2007	No pending debt
17	04008913X01	C.M.H. N° 16	0.7284	All paid up to 2007	No pending debt
18	04008319X01	C.M.H. N° 2	0.9388	All paid up to 2007	No pending debt
19	04009299X01	C.M.H. N° 25	21.6565	All paid up to 2007	No pending debt
20	04009300X01	C.M.H. N° 27	2.7139	All paid up to 2007	No pending debt
21	04009301X01	C.M.H. N° 28	29.6141	All paid up to 2007	No pending debt
22	04008320X01	C.M.H. N° 3	0.5161	All paid up to 2007	No pending debt

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					No pending debt
23	0403885AY01	C.M.H. N° 3 - A	0.7375	All paid up to 2007	No pending debt
24	04009303X01	C.M.H. N° 30	0.3297	All paid up to 2007	No pending debt
25	04009433X02	C.M.H. N° 33	1.7925	All paid up to 2007	No pending debt
26	04009435X01	C.M.H. N° 35	0.2543	All paid up to 2007	No pending debt
27	04009481X01	C.M.H. N° 44	0.8016	All paid up to 2007	No pending debt
28	04008593X01	C.M.H. N° 5	0.2413	All paid up to 2007	No pending debt
29	04009488X01	C.M.H. N° 51	0.1332	All paid up to 2007	No pending debt
30	04009495X01	C.M.H. N° 52	0.8838	All paid up to 2007	No pending debt
31	04009581X01	C.M.H. N° 57	0.0967	All paid up to 2007	No pending debt
32	04009589X01	C.M.H. N° 65	0.0837	All paid up to 2007	No pending debt
33	04009591X01	C.M.H. N° 67	0.0288	All paid up to 2007	No pending debt
34	04008823X01	C.M.H. N° 7	0.1435	All paid up to 2007	No pending debt
35	04009595X01	C.M.H. N° 71	7.6848	All paid up to 2007	No pending debt
36	04009596X01	C.M.H. N° 72	9.3854	All paid up to 2007	No pending debt
37	04009843X01	C.M.H. N° 74 <sup>2</sup>	4.4179	All paid up to 2007	No pending debt
38	04009844X01	C.M.H. N° 75	0.2346	All paid up to 2007	No pending debt
39	04009846X01	C.M.H. N° 76	0.102	All paid up to 2007	No pending debt
40	04010746X01	C.M.H. N° 79	0.557	All paid up to 2007	No pending debt
41	010211905	C.M.N.H. 05	2.7415	Was Paid for 2006	No pending debt
42	04007533X01	C.P.H. N° 1	0.0601	All paid up to 2007	No pending debt
43	0407533AX01	C.P.H. No 1 - A	0.1651	All paid up to 2007	No pending debt
44	04007547X01	C.P.H. N° 15	0.01	All paid up to 2007	No pending debt
45	04007534X01	C.P.H. N° 2	0.0226	All paid up to 2007	No pending debt
46	04007555X01	C.P.H. N° 23	0.5511	All paid up to 2007	No pending debt
47	04007556X01	C.P.H. N° 24	0.857	All paid up to 2007	No pending debt

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		C.P.H. N° 4			No pending debt
48	04007536X01		0.0459	All paid up to 2007	No pending debt
		C.P.H. N° 55			No pending debt
49	04007594X01		0.0642	All paid up to 2007	No pending debt
		C.P.H. N° 55 - A			No pending debt
50	0403659AY01		0.3420	All paid up to 2007	No pending debt
		C.P.H. N° 6			No pending debt
51	04007538X01		0.4477	All paid up to 2007	No pending debt
		CAGLIOSTRO			No pending debt
52	04000874X01		1.2773	All paid up to 2007	No pending debt
		CATORCE DE ABRIL			No pending debt
53	04003371Y01		0.0853	All paid up to 2007	No pending debt
		COMETA			No pending debt
54	04000832X01		15.9727	All paid up to 2007	No pending debt
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No.	Registry #	Concession	Hectares <sup>1</sup>	Debts regarding validity fees	Penalties
55	P0100085	CONCENTRADORA FRANCOIS (BENEFICIATION CONCESSION) CONCHUCOS	2,000.00 TM/Mts.	All paid up to 2007	No pending debt
56	04002573X01	CONSTANCIA - A	0.6759	All paid up to 2007	No pending debt
57	0402451AY01	CORDOBA	0.0739	All paid up to 2007	No pending debt
58	04008037X01	DARDANELOS	0.9554	All paid up to 2007	No pending debt
59	04012511X01	DIECINUEVE DE SETIEMBRE DON PABLO	0.1982	All paid up to 2007	No pending debt
60	04003615X01	EL RAYO	0.5719	All paid up to 2007	No pending debt
61	04004653X01	EL TRUENO	0.0464	All paid up to 2007	No pending debt
62	04003023X01	EL TRUENO 1-1	0.2082	All paid up to 2007	No pending debt
63	04003024X01	EL TRUENO 1-2	0.0741	All paid up to 2007	No pending debt
64	010211705	ESPAÑA	0.0256	Was Paid for 2006	No pending debt
65	010211805	FARALLON	0.0323	Was Paid for 2006	No pending debt
66	04008033X01	FEBRERO 20	0.112	All paid up to 2007	No pending debt
67	04006692X0	FLORENCIA	7.986	All paid up to 2007	No pending debt
68	010212705	FLORENCIA - A	0.1933	Was Paid for 2006	No pending debt
69	04008586X01	GAVIOTA	0.1164	All paid up to 2007	No pending debt
70	0403093AY01	GAVIOTA - A	0.2448	All paid up to 2007	No pending debt
71	04004527X01	GRANADA	0.9225	All paid up to 2007	No pending debt
72	0404527AX01	GUILLERMO BILLINGHURST HUALGAYOC	1.8589	All paid up to 2007	No pending debt
73	04008276X01		5.5781	All paid up to 2007	No pending debt
74	04004591X01		0.276	All paid up to 2007	No pending debt
75	04002568X01		0.0451	All paid up to 2007	No pending debt



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		HUANCAVELICA			No pending debt
76	04002567X01		0.0314	All paid up to 2007	
		HUAROCHIRI			No pending debt
77	04006355X01		0.5925	All paid up to 2007	
		HUARON 1 <sup>23</sup>			No pending debt
78	04006355X01		209.6609	All paid up to 2007	
		HUARON 2 <sup>4</sup>			No pending debt
79	010250094		1.6569	All paid up to 2007	
		HUARON 3 <sup>5</sup>			No pending debt
80	010250194		180.9170	All paid up to 2007	
		JUANA			No pending debt
81	04008295X01		0.0437	All paid up to 2007	
		LA ALIANZA			No pending debt
82	04002211Y01		11.9792	All paid up to 2007	
		LA CENTRAL			No pending debt
83	04001001X01		1.9966	All paid up to 2007	
		LA HUACA			No pending debt
84	04006749X01		0.7078	All paid up to 2007	
		LA HUACA - A			No pending debt
85	0403589AY01		0.0883	All paid up to 2007	
		LA HUACA - B			No pending debt
86	0403589BY01		0.0486	All paid up to 2007	
		LA PEDRERA			No pending debt
87	04004599X01		0.5145	All paid up to 2007	
		LA PROVIDENCIA			No pending debt
88	04000099X01		0.0114	All paid up to 2007	
		LA TAPADA			No pending debt
89	04000998X01		3.9931	All paid up to 2007	
		LA VENUS			No pending debt
90	010212605		0.0896	Was Paid for 2006	
		LABOR Y CONSTANCIA			No pending debt
91	04770771X01		23.959	All paid up to 2007	
		MANLINCHER			No pending debt
92	04001486X01		5.9959	All paid up to 2007	
		MARIA			No pending debt
93	04006337X01		0.0836	All paid up to 2007	
		MARTE			No pending debt
94	04000632X01		0.0798	All paid up to 2007	
		MARTE 1-1			No pending debt
95	010212005		0.0433	Was Paid for 2006	
		MARTE 1-2			No pending debt
96	010212105		0.0363	Was Paid for 2006	
		MARTE 3			No pending debt
97	010212205		0.0100	Was Paid for 2006	
		MAX			No pending debt
98	04008014X01		0.0627	All paid up to 2007	
		MICHEL			No pending debt
99	04008013X01		0.5375	All paid up to 2007	
		MOROCOCHA			No pending debt
100	04002570X01		0.0677	All paid up to 2007	
101	04007963X01		11.9793	All paid up to 2007	

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		NUESTRA SEÑORA DEL MILAGRO			No pending debt
102	04002435Y01	NUESTRA SEÑORA DEL ROSARIO OLVIDO	0.1614	All paid up to 2007	No pending debt
103	04002617X01	ORACULO	2.4026	All paid up to 2007	No pending debt
104	04000999X01	PACHITEA	3.993	All paid up to 2007	No pending debt
105	04006436X01	PANDORA	0.7729	All paid up to 2007	No pending debt
106	04007960X01	PLANETA	1.9966	All paid up to 2007	No pending debt
107	04000811X01	RELAVE FRANCOIS - 1	1.9965	All paid up to 2007	No pending debt
108	04012743X01	ROSARIO	60.000	All paid up to 2007	No pending debt
109	04001253Y01	ROSARIO NUMERO CINCO	2.1132	All paid up to 2007	No pending debt
110	04007524X01	ROSARIO NUMERO CUATRO	0.01	All paid up to 2007	No pending debt
111	04008019X01		0.0246	All paid up to 2007	No pending debt

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No.	Registry #	Concession	Hectares <sup>1</sup>	Debts regarding validity fees	Penalties
112	04001130X01	SACERDORTIZA	0.1416	All paid up to 2007	No pending debt
113	04004654X01	SANTIAGO	0.0341	All paid up to 2007	No pending debt
114	04008039X01	SEVILLA	0.0608	All paid up to 2007	No pending debt
115	04012512X01	TEUTONIA 79	0.0425	All paid up to 2007	No pending debt
116	04012513X01	TEUTONIA DOS-79	3.5061	All paid up to 2007	No pending debt
117	04012514X01	TEUTONIA TRES-79	0.01	All paid up to 2007	No pending debt
118	04004857X01	VEINTE DE FEBRERO	0.1448	All paid up to 2007	No pending debt
119	04002221Y01	VENUS	1.2216	All paid up to 2007	No pending debt

## Notes:

[1] Area according to the 2007 Mining Concessions Cadastre prepared by INGEMMET. This is the real and updated area of the concessions as they are recorded with the Mining Cadastre. The area in the Mining Cadastre may differ from that appearing in the mining concessions file with the Public Registry. Although registration of a mining concession with the public registry grants its titleholder with enforceability against the State and third parties, the area appearing in the Mining Cadastre is more accurate and prevails. Actually, the Public Registry should reflect the exact area that is recorded in the Mining Cadastre. Considering that almost all the titles of the mining concessions which are part of Quiruvilca Mining Unit were granted in the early or mid 1900 s, in order to accurately determine whether or not there is an overlap with another mining concession it would be necessary to review and analyze the Mining Cadastre Map of the Quiruvilca Mining Unit.

[2] Division of these properties are pending the entire area of the concession as reported by INGEMMET minus the amount transferred to Empresa Minera Chungar S.A.C is reported.

[3] The mining concession HUARON 1 partially overlaps the following priority rights: Marte, Constancia, Constancia A, Manlincher, Alicia, Pachitea, C.P.H. No. 55, C.P.H. No. 55-A, C.P.H. No. 24, C.P.H. No. 5, C.P.H. No. 7, C.P.H. No. 33, C.P.H. No. 33-A, C.P.H. No. 65, Acumulación Huaron 1, Acumulación Huaron 3 and Acumulacion Huaron 4.

[4] The mining concession HUARON 2 partially overlaps the following priority rights: Florencia A, Max A, CMH No. 3 A, Rosario, Alianza y Firmeza, Alianza y Firmeza A, La Providencia, La Alianza, Venus, Venus A, Balcón de Judas, Marte B, Labor y Constancia, Planeta, Cometa, Cagliostro, Animas, La Tapada, Oráculo, Bálsamo, La Central, Sacerdotiza, Huancavelica, Hualgayoc, Morococha, Alpamina, Pandora, Olvido, El Rayo, El Trueno, Apuro, Diecinueve de setiembre, Gaviota, Florencia, Guillermo Billinghurst, Santiago, Anita, Naticocha, Huarochiri, CPH No. 1, CPH No. 2, CPH No. 4, CPH No. 5, CPH No. 6, CPH No. 15, Nuestra Señora del Milagro, Michel, Max, España, Juana, CMH No. 2, CMH No. 16, Dardanelos, Providencia A, Alpamina A, El Trueno A, Gaviota A, CPH No. 1-A, CPH No. 2-A, Acumulación Huaron 1, Acumulación Huarón 2, Acumulación Huarón 3, Acumulación Huarón A, Acumulación Huarón 6

[5] The mining concession HUARON 3 partially overlaps the following priority rights: Abundancia, Catorce de abril, Huarochiri, Esperanza, España, Farallón, La Huaca, Nuestra señora del milagro, Rosario número cuatro, Evilla, Granada, CMH No. 2, CMH No. 24, CMH No. 22, CMH No. 23, CMH No. 25, CMH No. 27, CMH

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No. 28, CMH No. 44, CMH No. 45, CMH No. 49, CMH No. 50, CMH No. 51, CMH No. 53, CMH No. 52, CMH No. 54, CMH No. 57, CMH No. 58, CMH No. 59, Demasía CMH No. 26, CMH No. 78, CMH No. 79, CMH No. 84-DOS, Teutonia 79, Teutonia Dos-79, Teutona Tres 79, Rosario No. 6, Rosario Séptimo 79, Veinte de Febrero, CMH No. 46, CMH No. 72, Demasía CMH No. 29, Relave Francois 1, CMH No. 70, CMH No. 42, CMH No. 71, Halcón de Judas, Florencia, CMH No. 3, Pandora, Rosario número cinco, CMH No. 34, CMH No. 43, CMH No. 56, Acumulación Huaron 6, Acumulación Huaron 7, Acumulación Huaron 1 y Acumulación Huaron 2.

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**Table 6-3: Existing Surface Rights**

DATE	HECTARES	PROPERTY	STATE
		COMMUNITY OF HUAYLLAY ZONE	
Oct. 23, 1996	3	Estancia Wuishcas 142 Ha. in Francois, including Tailings storage,	Land Purchase
Mar. 28, 2000	167	25 Ha. in Satelite zone, Shelby San Jose transmission line	Easement
Dec. 11, 2000	11	Community of Huayllay	Easement
Apr. 4, 2002	2.5	Shuisha and Tailings storage	Easement
Apr. 4, 2002	50	Various	Easement
Jan. 7, 2004	9.79	Tailings storage and electrical transmission	Easement
Jun. 11, 2007	60.26	Trapiche and community lands	Easement
Jun. 20, 2007	2	Quebrada de Condorcayan	Easement
		COMMUNITY OF HUAYCHAO ZONE	
Mar. 14, 2000	11	Industrial Area of Francois plus San Jose Francois Transmission Line	Easement
		HUAYLLAY NATIONAL SANCTUARY ZONE	
Not Reviewed	472.969	Presidio San Jose	PASH Ownership
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### 6.3 Property Ownership

Since January 2006, the Huaron property has been owned and operated by PASH, a company in which PAS, indirectly through its subsidiaries, owns 100% of the outstanding voting shares and 99.93% of the total outstanding equity. Pan American Silver S.A.C. Mina Quiruvilca and Cia Minera Huaron merged to form the new Pan American Silver S.A. Mina Quiruvilca effective January 2006.

Pan American Energy Corporation was incorporated under the Company Act (British Columbia) on March 7, 1979 and underwent two name changes, the last occurring on April 11, 1995, when the present name Pan American Silver Corp. was adopted. Amendments to the memorandum of PAS to date have been limited to name changes and capital alterations. In May of 2006, PAS obtained shareholder approval to amend its memorandum and articles, including the increase in the authorized share capital of the company from 100,000,000 to 200,000,000 common shares in connection with the company's required transition under the Business Corporations Act (British Columbia).

PAS' head office is situated at 1500 - 625 Howe Street, Vancouver, British Columbia, Canada, V6C 2T6 and their registered and records offices are situated at 1200 Waterfront Centre, 200 Burrard Street, Vancouver, British Columbia, Canada, V7X 1T2. The Company's web site can be found at [www.panamericansilver.com](http://www.panamericansilver.com).

### 6.4 Agreements

To the best of PAS' knowledge, verified by Rodrigo, Elias & Medrano, the Huaron Property is not subject to any royalties or encumbrances other than those disclosed herein and the mining royalty tax. In June 2004, Peru's congress approved a new bill that allows royalties to be charged on mining projects based on net smelter returns. The progressive rates are as follows:

- 1.0% for companies with sales up to \$60 million
- 2.0% for companies with sales between \$60 to \$120 million
- 3.0% for companies with sales greater than \$120 million

Huaron Mine's revenue for 2006 was approximately \$70.6 million. A 1% royalty was payable on the first \$60 million, while the balance of the revenue attracted a 2% royalty. The total royalty tax on the Huaron Mine's production amounted to approximately \$1.0 million in 2006, \$0.3 million in 2005 and \$0.2 million in 2004.

## 6.5 Permits

### 6.5.1 Water Use Permit for Mining

By means of Administrative Resolution, N° 025-2000-CTARP/ATDRP dated October 26, 2000, granted by the Irrigation District Technical Administration of the Pasco Region, PASH is authorized to use surface water for mining activities. Surface water use of up to 320 litres per second is permitted from the system of interconnected Shegui, Huaroncocha, Quimacocha, Naticocha and Llacsacocha lakes.

The permit does not require renewal unless an increase in volume is requested, but will expire if two consecutive years pass without payment. PAS payments are in good standing.

### 6.5.2 Water Use Permit for Human Consumption

By means of administrative Resolution N° 084-2004-GRP/DRA dated July 15, 2004, granted by the Irrigation District Technical Administration of the Pasco Region PASH is authorized to use surface water for human consumption. Water use for human consumption of up to 1.84 litres per second is permitted from the Llacsacocha Lake.

The permit does not require renewal but will expire if two consecutive years pass without payment. PAS payments are in good standing.

### 6.5.3 Permit to Release Effluents

By means of DR N° 0647/2005/DIGESA/S dated May 04, 2005, DIGESA has granted authorization to the Huaron Mine to discharge effluents for a volume of up to 20.6 million m<sup>3</sup>/year as per the following volumes and effluents:

Monitoring Station	Location	Flow (litres per second)	Volume (m <sup>3</sup> /year)
EF-01	Level 500 - Pomacancha Canal	85.11	2,684,028.96
EF-02	Entrance Level 400 - Trapiche	24.22	763,801.92
EF-03	Paul Nevejans Tunnel - Level 250	476.55	15,028,480.80
EF-05	Tailings Dam N°5; leakage from the lower section of the main dike.	57.36	1,808,904.96
EF-06	Huayllay Tailings Dam	10.00	315,360.00

A petition requesting the renewal of effluents discharge states authorization was initially filed on April 26, 2007, before the term authorized in the aforementioned resolution had elapsed, and it is currently under the evaluation of DIGESA at the Ministry of Health.

### 6.5.4 The Domestic Landfill Permit

The existing landfill for the Hauron Mine is nearly at the end of its design capacity and a new facility is in the permitting stage. The Environmental Impact Assessment for the proposed new facility has been delivered to DIGESA. The external consultant hired to carry out the design is currently preparing modifications to the submission in response to DIGESA's comments.

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**6.5.5 The Operating Permit**

By DR N° 105-80-EM/DCFM dated July 9, 1980, MEM granted a business license to PASH for the Francois Processing Plant with an installed capacity of 2,000 tpd. The mine is currently compiling the documentation in order to apply for an increase in the authorized processing capacity to 2,800 tonnes per day.

**6.5.6 Tailings Storage Permits**

The enlargement and stabilization of Dam N°5 was approved by MR N° 391-2001-EM/DGAA on November 30, 2001 as part of the Program of Environmental Remediation and Management ( PAMA ).

**6.5.7 Acquisition and Use of Explosives Permit**

On June 26, 2007 the Global Authorization for the 2<sup>nd</sup> semester of 2007 ( the Authorization ) was issued in favor of the Huaron unit for the following explosives and related products:

Dynamite:	118,798 kg.
Rapid Igniter Chord:	231,254 m.
Detonator Chord:	300,032 m
Emulsion Explosives:	44,705 Units
Slow Igniter:	158,893 Units
Ammonium Nitrate:	277,386 kg
Non electric detonator:	238,340 units

By the Authorization, PASH was also expressly authorized to use the remainder of the explosive materials existing in the explosives storage deposit, as well as to acquire materials that were pending from the 1<sup>st</sup> semester of 2007.

On July 23, 2007 the requested extension of the Authorization for Using ANFO in certain areas of the Huaron property was approved and therefore extended for those areas as per the technical filing.

In addition, PASH s explosives storage deposit has been authorized by means of Directorial Resolution No.2589-2005-IN-1703-2.

**6.5.8 Archaeology Certificates**

The Certificate of Non-Existence of Archaeology Remains CIRA N° 2006 279 was granted as part of environmental impact assessment ( EIA ) for the power line.



## 6.6 Liabilities

In the opinion of the authors of this Technical Report, PASH largest liabilities with respect to the Huaron property are:

- mine closure work;

- localized areas of acid rock drainage from the mine s tailings deposit areas;

- metal-laden waters discharged from the mine;

- and the containment and stability of the existing tailing impoundments.

Before PAS acquired its interest in the Huaron property, Cia Minera Huaron S.A. ( Minera Huaron ) had filed a PAMA with the government on July 26, 1996 in compliance with Peruvian regulations. The PAMA addressed, among other things, stability of tailings impoundments, water quality and the fact that liquid effluents from the mine exceeded certain permissible levels of metals, as well as the required re-vegetation of a historic tailings area near the adjacent town. The PAMA set forth an implementation time line of nine months for Huaron to make certain expenditures to address the environmental issues raised. In January of 1997 and March of 1998, the Minister of Energy and Environment consented to the modification of certain expenditures under the PAMA and an extension of the implementation time line.

As a result of the 1998 flood of the adjacent Animon Mine, waters inundated portions of the Huaron Mine, causing a temporary closure of the mine. For this reason, Minera Huaron was not able to satisfy all of its obligations under the PAMA in accordance with the established implementation time line. Given the magnitude of the incident at the Huaron Mine, in December 2001, the Minister of Energy and Environment granted further modification of the PAMA and an extension of implementation time. At the same time, the Minister of Energy and Environment approved a special program of environmental management ( PEMA ) to continue until the end of 2005.

Minera Huaron completed requirements under the PAMA program, and compliance and expenditures have been audited by third party consultants. Under the PEMA program, work was focused on two projects: remediation of water quality exiting within the old workings and closure of the historic Huayllay tailings impoundment. Remedial work started on the Huayllay tailings impoundment in 2004 and was completed in 2005.

### 6.6.1 Mine Closure

In August of 2006, PAS submitted a comprehensive closure plan for the Huaron Mine to MEM in accordance with its regulations. The closure plan was prepared by SVS Ingenieros S.A , a third party consultant registered with the Peruvian authorities as qualified to present closure plans to the MEM. The closure plan includes a summary of the proposed closure scheme for each of the major areas of impact such as mine water, tailings areas, waste rock dumps, plant site infrastructure, and underground mine. A detailed cost estimate was prepared based on PAS and the consultant s shared experience with closure works over the past 12 years and experience with other projects in Peru.

The current present value of expenditures for closure work is \$9.2 million. This cost estimate serves as the basis for the calculation of the financial guarantee required by the ministry's closure plan regulations. The authors of this Technical Report believe that \$9.2 million is a reasonable estimate of the cost of closure and rehabilitation to meet legislated standards and as such is a reasonable provision for the mine's long term closure liability.

**6.6.2 Acid Rock Drainage and Metal Laden Waters**

Before PAS acquired its interest in the Huaron Mine, Minera Huaron had filed a PAMA with the Peruvian government on July 26, 1996 in compliance with Peruvian regulations. One of the issues addressed within the PAMA was that the liquid effluent discharge from the mine exceeded certain permissible levels of metals.

The site water quality at the Huaron Mine has improved due to the expansion and modification of the effluent management and treatment system. Water from the tailings facility and the upper levels of the mine are now combined with the flows from the lower level of the mine. The flows are directed via a borehole from the upper level to the lower level of the Huaron Mine where they are directed to a lime addition and sedimentation treatment system. Following the implementation of treatment system, the water quality at the downstream discharge point is at levels permitted by Peruvian regulations. The sampling program is ongoing and the water quality is expected to further improve.

During 2004 and 2005, water quality has met pH standards and a majority of metal compliance standards. The closure planning process, now underway with the support of independent consultants, will define closure and further mitigation options for improving water quality exiting within the site.

The authors of this Technical Report conclude that the mine's water neutralization system is adequate for the size of operation.

**6.6.3 Containment and Stability of Tailing Impoundments**

Remediation of the Huallay and Trapiche tailings impoundment are complete and the remediation of the Condorcayan tailings impoundment is 50% complete.

Various changes to the dam design of the functioning tailings impoundment, Presa #5, have been implemented and details are discussed in Section 24.4. The changes addressed improve dam stability and engineering design work has been completed for the construction of the dam.

## **7. Accessibility, Climate, Local Resources, Infrastructure and Physiography**

### **7.1 Accessibility**

Access to the Huaron property is by a continuously maintained 285 km paved highway between Lima and Unish and a 35 km gravel road between Unish and the Huaron property. A program by the Peruvian government to upgrade the road between Unish and the Huaron property to a paved highway is partially complete.

Alternatively, the property can be accessed from Lima by two other routes; Lima-Huaral-Huaron (210km) and Lima-Canta-Huaron (215km). However these roads are gravel and travel over more treacherous terrain.

There is also a light aircraft airstrip at Vicco, which is approximately 30 minutes flying time from Lima, at which point an additional 30 minutes of driving is required to reach Huaron.

Lead and Zinc concentrates produced at the Huaron Mill are loaded and transported by road to the port at Callao near Lima. Copper concentrate with high silver grades is transported to the La Oroya smelter.

### **7.2 Climate and Physiography**

The topographical relief at the mine site is hilly and uneven with local slopes of more than sixty degrees. The Huaron Mine is located at elevations of 4,250 metres to 4,800 metres above sea level. Natural vegetation consists mainly of grasses forming meadows. These meadows have permitted development of varied livestock operations.

The climate at the mine site is classified as a cold climate or boreal with average annual temperatures ranging from three to ten degrees Celsius. The winter months are May to September and minimum temperatures reach minus 5.7 °C. The average monthly rainfall in 2006 was 71 mm. The Huaron Mine operates throughout the entire year.

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### **7.3 Local Resources and Infrastructure**

#### **7.3.1 Manpower**

Peru's economy is dependent on mining and the Huaron property is in a historical mining area with a sufficient supply of experienced mining personnel to support operations. In addition, PAS has been dedicated in developing programs to train and retain people.

As of December 31, 2006, PASH directly employed 625 full time employees (208 permanent and 417 temporary) and indirectly employed 940 persons through agreements with Peruvian mining contractors. Employees commute to the property via company sponsored bussing, company vehicles, or privately owned vehicles.

#### **7.3.2 Infrastructure**

Access to the mine is via three adits driven into the side of the mountain at levels 500, 420, and 250. The main haulage level is on Level 500. The mine uses a combination of locomotives and haul trucks through an inter-level ramp system to move ore. In addition, there are three de-commissioned shafts on site; studies have concluded that it is economically viable to refurbish and deepen the D shaft. This work is included in the economic analysis as part of the 2008 and 2009 capital programs.

Following the mine closure caused by flooding, the plant re-started operations in 2001. The circuit consists of crushing, ball mill grinding, selective flotation and filtering. Some reconfigurations and additions have been completed as part of a value-added initiative, which is an on-going program started at the end of 2005. The plant currently has a rated throughput capacity of 2,300 tonnes per day ( tpd ).

Tailings from the processing plant are pumped to the Presa #5 tailing impoundment. A number of changes to the impoundment design have been implemented, as recommended by external consultants, to improve dam stability. The current plans for Presa #5 will allow for tailing disposal into 2012. As Presa #5 gradually increases in height, it will eventually encapsulate Presa #1 to #4, directly upstream of Presa #5.

The continuous fresh water supply requirements for the Huaron concentrating plant average 91.7 litres per second. The water is gravity fed from the Llacsacocha Lake with an 8" diameter pipe and is directed to the mill, flotation, and other areas of the plant. The layout of the plant, tailings impoundment, and Lake Llacsacocha are shown in Figure 6-2B.

Mine water is directed down to the Level 250, where it flows by gravity out of the mine through the Paul Nevejans drainage tunnel and daylights in the San Jose zone. There is a water treatment plant near the tunnel exit where the water is treated and released back into the environment. The sediments within the water are allowed to dry, then are hauled back to Presa #5 for permanent storage.

The primary source of power for the Huaron Mine is the Peruvian national power grid and is sufficient for the Mine's current requirements.

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## 8. History

The Huaron Mine is an underground mine with both narrow and wide veins of silver-rich base metal sulphides, as well as replacement mineralization in conglomerates and dissemination in sediments. The mine, mill and supporting villages were originally built and operated by a subsidiary of the French Penarroya Company from 1912 to 1987. In 1987, the mine was sold to Mauricio Hochschild and Cia Ltda. Prior to its acquisition by PAS, approximately 22 million tonnes of silver-rich base metals sulphide ore were mined from the Huaron property. Silver was the main constituent, contributing about 49% of the historic sales value, with zinc, lead and copper, 33%, 15% and 3% respectively, making up the remainder. Ore from the mine was processed on-site by crushing, grinding, and differential flotation to produce copper, lead and zinc concentrates.

In April, 1998, a portion of the lakebed of the nearby Lake Naticocha collapsed, and water from the lake flowed into the adjacent Animon Mine (operated by an unrelated company). Through interconnected tunnels, the water entered and flooded the Huaron Mine, causing its closure.

After the April 1998 flooding, the Huaron Mine operations were shut down, the labour force was terminated, the village closed and work was undertaken to clean up the flood damage, drain the workings and prepare for an eventual mine re-opening. The water level in the lake, which provided the source of floodwater, is currently maintained well below the level where it flooded the old workings and PASH does not expect a threat of further flooding. The Animon Mine, in accordance with a settlement agreement reached with Cia. Minera Huaron S.A. in September 2000, constructed a channel to route water around the lake to provide water for the Huaron Mine and to reduce the water in upstream lakes to prevent agricultural flooding, which had created local social pressures.

During this time, PAS saw the opportunity to double its Peruvian silver production and acquired a 72.6% majority interest in the Huaron Mine from Mauricio Hochschild and Cia Ltda. The acquisition cost to PAS included 1,780,389 common shares of Pan American shares and 700,000 ten-year stock options at an exercise price of \$4.00. In addition, a 2.16% net smelter return royalty would be payable after 4.3 million tonnes of ore had been mined. On October 23, 2003, the Company purchased this existing net smelter royalty on its Huaron silver mine for cash consideration of \$2,500,000.

A feasibility study to re-open the mine was completed by May 2000 and PAS was able to arrange financing by August, with construction beginning in September. Final estimates for the re-construction tallied to \$10.1M and financing was secured through Standard Bank London Limited to Pan American Silver Peru, a wholly owned subsidiary of PAS. A summary of the capital costs to re-instate Huaron Mine is shown in the following table.

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**Table 8-1: Summary of costs to re open the Huaron operations**

Mill Repairs	\$ 2.4M
Mine Rehabilitation	\$ 2.4M
Pre-production Costs	\$ 1.5M
Tailings	\$ 0.75M
Stabilization	
Working Capital	\$ 0.70M
Other	\$ 2.35M

Production at the Huaron Mine officially re-commenced April 2001. By August 2001, PAS completed another transaction to obtain the outstanding 27% interest of Huaron mining operation from Mauricio Hochschild and Cia Ltda. The exchange involved 48 ha of Huaron's land adjacent to Volcan's operations and two parcels of distal Huaron exploration property for the 27% interest plus \$200,000 in cash and \$500,000 in Volcan shares.

As of January 2006, the Huaron property is owned and operated by Pan American Silver S.A. Mina Quiruvilca, a company that was formed by the merger of the Pan American Silver S.A.C. Mina Quiruvilca and Cia Minera Huaron S.A.. Production and historical mineral reserves since PAS's acquisition are as follows:

**Table 8-2: Production at Huaron, since PAS acquisition**

	HUARON MILL PRODUCTION							
	Tonnes Milled	Silver	Copper	Lead	Zinc	Tonnes of Concentrate		
		(ounces)	(tonnes)	(tonnes)	(tonnes)	Copper	Lead	Zinc
<b>2006</b>	693,285	3,664,660	1,603	6,858	11,735	6,716	17,002	24,975
<b>2005</b>	639,849	3,690,786	1,689	6,774	11,701	7,470	16,162	23,110
<b>2004</b>	635,845	4,080,737	1,754	10,569	15,041	7,030	20,253	34,314
<b>2003</b>	905,790	4,365,061	1,332	14,246	18,855	5,687	14,246	34,819
<b>2002</b>	606,300	4,527,971	1,740	14,006	20,896	6,249	14,006	43,988
<b>2001</b>	367,274	2,897,946	959	8,445	9,574	3,915	8,445	14,237
<b>TOTAL</b>	<b>3,848,343</b>	<b>23,227,161</b>	<b>9,077</b>	<b>60,898</b>	<b>87,802</b>	<b>37,067</b>	<b>90,114</b>	<b>175,443</b>

**Table 8-3: Historical Reserves at Huaron, since PAS acquisition**

Year*	Historical Proven & Probable Reserves				
	Tonnes	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
<b>2006</b>	7,354,026	208	0.34%	1.90%	3.29%
<b>2005</b>	6,756,335	221	0.42%	2.14%	4.02%
<b>2004</b>	6,547,870	241	0.44%	2.41%	4.17%
<b>2003</b>	5,914,700	249	0.46%	2.54%	4.63%
<b>2002</b>	6,684,825	252	0.50%	2.39%	4.55%
<b>2001</b>	5,998,670	258	0.49%	2.26%	4.26%

\* Reported as beginning of year





## 9. Geological Setting

### 9.1 Regional Geology

The Huaron property is located within the Western Cordillera of the Andes Mountains. The regional geology of Huaron property is dominated by the Cretaceous Machay Group limestones and Tertiary Pocobamba (Casapalca Red Beds) continental sedimentary rocks. These groups have been deformed by the Huaron anticline, the dominant structural feature of the area. A map of the regional geology is included in Figure 9-1A.

The Machay Group limestones and Pocobamba sedimentary rocks are strongly folded, and are intruded by quartz monzonites and quartz monzonite dikes, with accompanying fracturing. This fracturing was followed by alteration and mineral deposition by hydrothermal fluids. Following the intrusion of the dikes, the sedimentary rocks were further compressed and fractured, and the fractures were subsequently mineralized by hydrothermal fluids. The dikes have undergone extensive hydrothermal alteration, typified by sericitization, kaolinization and pyritization. The entire sedimentary sequence has been covered with the Huayllay pyroclastics (mainly ignimbrites) which have a post mineralization age.

### 9.2 Local Geology

The main lithology in the Huaron area is a sequence of continental redbeds consisting of interbedded sandstones, limestones, marls, conglomerates, breccias and cherts of the Abigarrada and Casapalca Formations of Upper Cretaceous to Lower Tertiary age. These rocks unconformably overlay massive marine limestones of the Upper Cretaceous Jumasha Formation. To the west of the mine, a series of andesites and dacites outcrop of the mid to lower Tertiary Calipuy Formation. A series of sub-vertical porphyritic quartz monzonite dykes generally strike north-south and cut across the mine stratigraphy.

The rocks in the central part of the mine and at lower elevations are principally thinly bedded marls and sandstones known as the lower redbeds. In the eastern side of the mine a sequence of upper redbeds occur. The upper section of these rocks consists of calcareous Sevilla chert that overlies sandstones and marls. The bottom of this sequence consists of the Barnabe quartzite conglomerate. In the western side of the mine, the stratigraphy consists of a series of interbedded conglomerates and sandstones. The conglomerate contains poorly sorted limestone and quartz clasts in a sandy matrix.

The Huaron Mine is located within an anticline formed by east-west compressional forces. The axis of the anticline is approximately north-south, gently plunging to the north. There are two main fault systems:

Thrust Faults, striking north to south, parallel to the axis of the anticline

Tensional Faults, striking east to west.

In the Huaron area, monzonite intrusives strike in two principal directions: N70°E and S10°E. They have recognizable elongated outcrops throughout the property. These intrusives were emplaced in the Casapalca Formation and in the Calipuy Volcanics. The monzonite stock's thickness varies, reaching thicknesses up to 300 m. These two predominant orientations are also observed inside the Huaron Mine. Most of the area is covered with recent soils except where the more resistant cherts and conglomerates form ridges parallel to the flanks of the anticline. These outcrops are discontinuous and are frequently offset by the crosscutting east-west faults.

Figure 9-1B is a localized depiction of the regional geology map.

### 9.2.1 Lithostratigraphy

The known lithostratigraphy is interpreted as follows:

#### 1) Casapalca Formation

The Casapalca Formation consists of up to 1,000 metres of lutites, limonites, and red colored sandstones. Toward the base, there are conglomerate beds containing clasts of limestone, red sandstone, intrusives and subangular schists. Toward the top there is a predominance of whitish limestones with intercalations of reddish conglomeritic sandstone. It contains three members:

**Lower Member** formed by red lutites, semi-consolidated grayish-green to reddish sandstones, and conglomerates with various limestone beds and lenses. The thickness of this member is between 150 and 200 metres.

**Shuco Conglomerate Member** containing conglomerates with limestone, quartzite, chert, red sandstone and phyllite clasts within a calcareous, brecciated matrix. The clasts have sub-angular borders and are variable in size. The thickness varies between 150 to 200 metres.

**Calera Member** consists at the base of marls and lutites in thin strata, grading to limestones and dolomites with chert nodules. The thickness is approximately 60 to 65 metres. The centre is composed of limestones and marls with intercalations of finely bedded lutites measuring over 50 metres in thickness. Toward the top there are limestones and dolomites with chert nodules in the whitish grey middle beds.

#### Calipuy Formation

The volcanoclastic sediments of the Calipuy Formation lie in a discordant contact over the Casapalca Formation, and were deposited after the period of folding, erosion and uplift, which affected the Casapalca Formation. It consists of pyroclastic rocks, lavas, ignimbrites, tuffs, rhyolites and dacites.

Four different Members have been recognized in the Huaron region.

**Yantac Member**, a volcano-sedimentary sequence formed by clastic and pyroclastic rocks, varying from conglomerates to grayish-brown sandstones, limonites and multi-colored (green to brown, purple, pink, grey, white and brown) lutites. Toward the top of the member, there are intercalations of tuff, breccia, andesitic agglomerates and andesitic flows. The thickness varies between 60 and 150 metres. This sequence is dated from Paleocene to Eocene.

**Carlos Francisco Member** consists of porphyritic andesite flows occasionally intercalated by flows of volcanic breccia and massive porphyry. Its thickness varies between 400 and 1000 metres and is of Eocene to Oligocene age.

**Colqui Member** consists of andesitic flows alternating with fine tuff, lapilli and agglomerates. There are thin beds of sandstone and tuffaceous limestone present. Its thickness is 200 metres and it is of Eocene to Oligocene age.

**Millotingo Member** was formed by andesitic to rhyodacitic and occasionally trachyandesitic lavic flows. Its average thickness is 180 metres and is of an Upper Oligocene to Lower Miocene age.

#### **Rumillana Formation**

The Rumillana Formation consists of an Upper Miocene volcanoclastic sequence of agglomerates and tuffs. The agglomerates contain angular and sub-angular limestone clasts, phyllite, chert and strongly altered porphyritic clasts. They are intercalated by pyroclastics and lava flows. The entire sequence is up to 150 metres thick.

#### **Pacococha Formation**

The younger Pacococha Formation was formed by andesitic to basalt flows and thin tuff layers. The formation reaches up to 150 metres in thickness and is dated to a Miocene to Pliocene age.

#### **Huayllay Formation**

During the Pliocene Age and after the latest tectonic event, ignimbrites of the Huayllay Formation have been deposited covering the Cretaceous and Tertiary sedimentary and volcanic sequences in an angular unconformity.

#### **Quaternary deposits**

Pleistocene alluvial deposits, marine deposits, fluvioglacial deposits, peat deposits, colluvial deposits and alluvial deposits are the most common quaternary sediments.

#### **9.2.2 Structural Geology**

##### **FOLDING**

The Huaron Mine is within an anticline formed by east-west compressional forces. The axis of the anticline is approximately north-south, gently plunging to the north. There are two main fault systems: (i) north-south striking thrust faults, parallel to the axis of the anticline; and (ii) east-west striking tensional faults. The intrusives strike in two principal directions: N70°E and S10°E. Most of the area is covered with recent soils except where the more resistant cherts and conglomerates form ridges parallel to the flanks of the anticline. These outcrops are discontinuous and are frequently offset by the crosscutting east-west faults.

**FAULTS**

Large dislocations accompanied by secondary faults occur in the region. These secondary faults in the Huaron area are represented by the Huaychao-Cometa Fault (N-S) and the Llacsacocha Fault (E-W). Both faults together divide the deposit into four sectors.

Local faults recognized later through the mining works are: Shiusha Fault (related to the Pozo D Fault) and the Tapada Fault (related to the Anteabigarrada Fault). Many local faults exist which are directly related to the mineralization.

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## 10. Deposit Type

The Huaron Mine consists of a hydrothermal polymetallic silver-copper-lead-zinc deposit probably related to Miocene monzonite dykes principally within, but not confined to, the Huaron anticline. Mineralization occurs mainly in veins but also in Mantos (stratiform orebodies) and replacement orebodies. More than 95 different minerals have been identified at the Huaron Mine. The most important economic minerals are silver bearing tennantite-tetrahydrite, sphalerite and galena. Ore bearing veins vary from a few centimeters to 10 metres wide, and may extend along strike for up to 1,800 metres. The deepest exploration drill holes have indicated that there is there is over 500 metres of down dip mineralization. Most of the structures show open mineralization at depth and have excellent exploration potential.

The types of deposits are defined as follows:

### **Veins**

Veins are tabular structures emplaced in tensional or compressional fractures. Their thicknesses vary from centimetres up to 10 metres. Two main systems exist (NS and EW).

### **Mantos**

Mantos are formed by stratiform mineralization replacing limestone beds and limestone clasts in conglomerates. They are mostly localized on the western flank of the anticline and have irregular shapes with limited lateral extension.

### **Orebodies**

Orebodies have been discovered at the intersection of veins and at the intersection of veins with conglomerate or limestone beds. Stockwork bodies also exist at the intrusive-sandstone contact.

Distribution of mineral reserves by deposit type is shown in Graph 10-1.

PASH is currently focused on exploring the continuity of existing veins in the horizontal and vertical directions. Table 10-1 is a list of the existing structures and associated mineral deposits on the Huaron property. These structures are shown in Figure 6-3.

**Table 10-1: Mineralized Structures**  
**GENERAL INDEX OF MINERALIZED STRUCTURES**

**1. ALIANZA STRUCTURE**

ALIANZA VEIN

UNO SPLIT

DOS SPLIT

**2. CAPRICHOSA STRUCTURE**

CAPRICHOSA VEIN

CAPRICHOSA SPLIT

SHARON SPLIT

**3. COMETA STRUCTURE**

COMETA VEIN

COMETA SPLIT

**4. CONSTANCIA STRUCTURE**

CONSTANCIA VEIN

**5. CUATRO STRUCTURE**

CUATRO VEIN

NUEVEDEAGOSTO SPLIT

TREINTAYNUEVE SPLIT

**6. FASTIDIOSA STRUCTURE**

FASTIDIOSA VEIN

FASTIDIOSA SPLIT 1

FASTIDIOSA SPLIT 2

FASTIDIOSA SPLIT 3

FASTIDIOSA SPLIT 4

SPLIT 4

JUANITA SPLIT

KATY SPLIT

**7. GAVIA STRUCTURE**

GAVIA VEIN

ELENA SPLIT

LABORESTE SPLIT

LABOROESTE SPLIT

OCHENTAYUNO SPLIT

OCHENTAYUNOESTE SPLIT

PROVIDENCIA SPLIT

**8. LLACSACOCCHA STRUCTURE**

LLACSACOCHANORTE SPLIT

LLACSACOCHASUR SPLIT

**9. OCHENTAYCINCO STRUCTURE**

OCHENTAYCINCO VEIN

**10. PATRICK STRUCTURE**

PATRICK VEIN

ANITA SPLIT

DANITZA SPLIT

JULY SPLIT

LUCERO SPLIT

MARGARITA SPLIT

MARTIN SPLIT

MILY SPLIT

PAOLA SPLIT

PATRICIA SPLIT

PATRICK SPLIT

ROQUE SPLIT

ROQUE SPLIT 1

ROSA SPLIT

ROSARIO SPLIT

ROXANA SPLIT

TATOO SPLIT

TOTEE SPLIT

XIMENA SPLIT

**11. REY STRUCTURE**

REY VEIN

BARNABE SPLIT

**12. SAN NARCISO STRUCTURE**

SAN NARCISO VEIN

LORENA SPLIT

MARIANA SPLIT

MARIBEL SPLIT

SAN NARCISO SPLIT 20

SORPRESA SPLIT

SURPRISE SPLIT

SURPRISE SPLIT 1

SURPRISE SPLIT 2

VIVIANA SPLIT

YADIRA SPLIT

**13. SAN PEDRO STRUCTURE**



SAN PEDRO VEIN

SAN PEDRO SPLIT 1

SAN PEDRO SPLIT 102

SAN PEDRO SPLIT 2

SAN PEDRO SPLIT 5

SAN PEDRO SPLIT 6

SAN PEDRO SPLIT 8

SESENTAYCUATRO SPLIT

SETENTAYSEIS SPLIT

**14. SHIUSHA WARREN STRUCTURE**

SHIUSHA WARREN VEIN

SHIUSHA SPLIT C

SHIUSHA SPLIT SUR

**15. TAPADA STRUCTURE**

TAPADA VEIN

PRODUCTORA SPLIT

SAN FRANCISCO SPLIT

**16. TRAVIESO VEIN**

TRAVIESO VEIN

**17. YANACRESTON STRUCTURE**

YANACRESTON VEIN

NOVENTAYCINCO SPLIT

NOVENTAYCUATRO SPLIT

OCHO SPLIT

YANACRESTON SPLIT

**18. YANAMINA STRUCTURE**

YANAMINA VEIN

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## 11. Mineralization

The most economic minerals are silver bearing tennantite-tetrahydrite, sphalerite, and galena. An electron microprobe analysis on silver bearing ore shows that 62% of the silver content is associated with tetrahedrite. Graph 11-1 shows the distribution of silver by mineral type. The principal gangue minerals are pyrite, quartz, calcite and rhodochrosite. Paragenesis of the region demonstrates three distinct and sequential stages of deposition.

### First Stage

The initial mineralization consists of relatively high-temperature minerals deposited in the following order: milky quartz, pyrite, enargite, and tetrahedrite. Enargite dominates the mineralization in the central part of the district, while tetrahedrite dominates the outer part of the enargite zone.

### Second Stage

Re-opening of the fractures caused the initial mineralization to be brecciated, and the breccia was subsequently cemented by the next, second-period generation of medium-temperature minerals: milky quartz, brown sphalerite, and galena.

### Third Stage

A final, third period of re-fracturing, followed by a rapid deposition of hydrothermal minerals, resulted initially in the formation of colloform and botryoidal textures. This rapid deposition continued with fine-grained crystallization and continuous late precipitation of carbonates, starting with siderite and gradually changing to dolomite, rhodochrosite, and calcite. As a final pulse during this late-stage deposition, barite, pale to reddish amber-colored sphalerite, galena, tetrahedrite, polybasite and chalcopyrite were deposited.

A summary of the Paragenesis is shown on Figure 11-1.

### 11.1 Mineral Zones

There is a defined mineral zoning at Huaron and the mine has been divided into seven separate zones as shown on Figure 11-2.

**Zone 1** contains silver, lead and zinc associated with pyrite.

**Zones 2, 3 and 4** silver, lead and zinc are found in carbonates, principally calcite and rhodochrosite.

**Zone 5** is the central copper core where the principal mineral is enargite. The structures contain copper with pyrite and quartz. This area was extensively mined by previous operators but, because of the high arsenic and antimony content and poor metal recoveries, mining in this area has ceased.

**Zone 6** is principally lead and zinc with lower silver values within carbonates.

**Zone 7** is a narrow band running north-south along the general axis of the anticline and contains principally sphalerite and silver-sulfosalts with rhodochrosite.

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Graph 11-2 shows the distribution of mineral reserves by zones.

The hydrothermal alteration of the wall rocks is argillization-silicification (associated with the copper zone), potassic (associated with the lead-zinc zone), epidotization-pyritization associated with the silicified zone) and chlorite-magnetite (found in the whole deposit).

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## 12. Exploration

Exploration at the Huaron Mine is conducted using a combination of underground drilling and drifting. Generally, underground drillholes that intersect promising ore grade mineralization are followed by drifting for mineral resource and mineral reserve definition. During 2006, 11,451 metres were drilled using three drill rigs. In addition, 6,256 metres of underground drifting were completed for mineral resource and mineral reserve definition.

In addition to the underground drilling a smaller amount of surface drilling is executed every year. In 2006 141 metres of BQ sized surface diamond drilling was completed. As of September 31, 2007, no surface drill-holes had been completed withing 2007.

PASH employs their own exploration drilling crew and has two diamond drill rigs. In addition, PAS is currently contracting Redrilsa S.A, a large Peruvian diamond drilling contractor. All exploration drilling is directed and supervised by the Huaron Mine geology department and is periodically reviewed by Dr. Michael Steinmann, P. Geo., Senior Vice President of Exploration and Geology of PAS,.

A summary of the amount of drilling completed in 2006 and to the end of September 2007 is shown in Table 12.1.

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**Table 12-1: Summary of 2006 and 2007 (to September) Diamond Drilling Exploration.**  
**Summary of 2006 Diamond Drilling Exploration**

<b>Zone</b>	<b>Level</b>	<b>Vein Intersected</b>	<b># of Holes</b>	<b>Total Metres Drilled</b>		
Surface	Surface	no intersects	2	141.20		
Norte	530	Fastidiosa exploraciones	1	150.00		
	500	Surprise	1	58.60		
	280	July	2	143.30		
		Fastidiosa	2	65.30		
	250	Julia	2	154.90		
		Sorpresa	1	52.70		
		July	1	36.00		
		Aglomerado	4	1,203.80		
		Fastidiosa	5	343.65		
		Patrick	14	2,440.55		
		Ramal 1	2	264.70		
		Sorpresa	1	7.20		
	Satelite	600	Travieso	7	875.80	
			Ximena	4	298.20	
Drenaje			2	42.30		
Fastidiosa piso			2	189.80		
Llacsacocha			2	338.10		
Llacsacocha superficie			1	202.00		
Pack Sack			1	15.20		
Patrick			2	438.60		
Sur			500	Sorpresa	2	171.95
				Sorpresa Ramal 1	2	226.10
	420	Surprise	2	155.30		
		Cometa	4	408.50		
		Constancia	12	2,234.20		
		Fastidiosa	1	217.30		
		Fastidiosa Ramal 1	3	323.95		
		Sorpresa	1	72.10		
		Yadira	1	61.40		
		320	San Narciso	1	18.30	
280	July	1	100.00			
<b>Total</b>			<b>89</b>	<b>11,451.00</b>		

**Summary of 2007 Diamond Drilling Exploration**

<b>Zone</b>	<b>Level</b>	<b>Vein Intersected</b>	<b># of Holes</b>	<b>Total Metres Drilled</b>
Norte	420	Cuatro Ramal	1	201.70
		no intercept	2	291.80

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		Veta Fastidiosa	2	422.60
	250	Juanita Ramal	1	68.00
		no intercept	5	584.45
		Ramal Danitza	2	231.40
		Veta Alianza	6	457.80
		Veta Fastidiosa	1	173.70
	180	no intercept	1	40.80
Satelite	600	no intercept	11	907.85
	530	no intercept	3	425.10
	500	no intercept	1	123.30
	250	Veta Fastidiosa	1	88.25
SUR	530	Veta Surprise	1	150.60
	500	no intercept	6	755.40
		Veta Surprise	1	159.60
	430	no intercept	1	295.40
	420	no intercept	16	1,953.56
		Veta Alianza	2	259.60
		Veta Llacsacocha	7	1,435.38
		Veta San Narciso	3	199.50
		Veta Surprise	6	788.10
	320	no intercept	2	359.70
		Veta Roxana	1	170.85
		<b>Total</b>	<b>83</b>	<b>10,544.44</b>

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### 13. Drilling

Exploration at the Huaron property is conducted using a combination of diamond drilling and underground drifting. Currently five diamond drills are in continuous operation at the property, drilling holes between 50 and 350 m length. Two drill rigs belong to PASH and 3 to Redrilsa S.A. a Peruvian drill contractor. Drill core recoveries are generally high and average 88.3% for the surface and underground drilling. Positive exploration results are followed by underground drifting and cross-cutting. The majority of diamond drilling is done from underground working, of holes sizes BQ, NQ, and HQ diameter. In 2006, 89 holes were drilled targeting 26 different structures. The results are presented in Table 13-1.

In 2007 (as of the end of September), 87 holes totaling 10,544 m were drilled targeting 21 different structures. The results are presented in Table 13-2°. A greater number of holes were drilled in Llascacocha, Fastidiosa, and Alianza veins providing a good indication of mineral continuity.

Surveys of the drill-hole collars are completed and verified by the engineering department and the inclination of the holes are determined by the geologist in the field using a compass to verify the working angle of the drill rods. Down-hole surveys are not used as the holes are generally short and considering the good rock mass quality (RQD >70) it is assumed that potential deviations are very minor.

Drill-hole orientations are planned in order to intersect the targeted vein in an angle close to 90° if possible. The strike and dip angle of most target veins are known and true width of a drill intersect can be easily calculated for day to day reporting purposes using trigonometrical functions. Hole collar information as well as hole lengths, rock types, sampling results and RQD information are loaded into the Datamine database and converted into true widths by the software used for mineral resource estimation.

Drill cores are placed in wooden core boxes and transported to the core logging facility on site. The boxes are properly marked and numbered by the drill crews and tags are inserted to indicate the drill depths. After receiving the core, logging is initiated by the geology department. In a first step, the responsible geologist measures the core length between two tags and calculates the core recovery by comparing the core length to the tag depths. Afterwards, fracture density is recorded in order to determine the rock quality (RQD). Lithology, structures and alterations are logged and the geologist marks sampling intervals on the core.

Cores are split in half using a saw with diamond blade. Half of the core is sent for analysis to the on-site laboratory and the other half is stored on-site in core boxes.

Logging information is entered into the DHLogger software where it is automatically combined with the sampling results from the lab using the Fusion software. Log sheets are printed out for each hole and stored on-site. The electronic database with all the logging information is periodically backed up by the IT department.



**Table 13-1: Result from 2006 Underground Diamond Drilling**

<b>Drill Hole ID</b>	<b>Objective</b>	<b>From</b>	<b>To</b>	<b>True Width (m)</b>	<b>Ag (g/t)</b>	<b>Cu (%)</b>	<b>Pb (%)</b>	<b>Zn (%)</b>
DDH-3706	Aglomerado	337.37	338.32	0.95	172.94	0.05	2.46	5.87
DDH-3706	Aglomerado	338.32	339.42	1.10	64.13	0.04	3.02	6.10
DDH-3706	Aglomerado	339.42	339.61	0.19	84.98	0.05	3.07	9.62
DDH-2706	Conglomerado	302.74	303.57	0.83	333.88	0.22	6.90	29.63
DDH-3106	Conglomerado	422.30	423.27	0.97	122.76	0.11	1.64	9.41
DDH-3106	Conglomerado	423.27	423.50	0.23	117.70	0.10	0.82	8.94
DDH-3106	Conglomerado	423.50	425.10	1.60	44.28	0.04	2.57	1.91
DDH-3106	Conglomerado	425.10	426.30	1.20	47.91	0.01	0.11	0.30
DDH-3106	Conglomerado	426.30	427.05	0.75	378.33	0.03	0.26	0.52
DDH-3106	Conglomerado	427.05	428.45	1.40	125.93	0.02	0.38	0.80
DDH-3106	Conglomerado	428.45	429.55	1.10	69.36	0.03	0.97	3.08
DDH-5506	Constancia	151.00	151.70	0.70	197.98	1.57	0.28	0.60
DDH-5806	Constancia	163.22	164.30	1.08	207.05	3.41	0.22	0.85
DDH-6306	Constancia	155.70	156.40	0.70	147.00	0.36	0.06	0.06
DDH-6406	Constancia	137.35	138.26	0.91	133.00	1.01	0.04	0.15
DDH-6506	Constancia	187.34	188.40	1.06	57.76	0.10	0.68	1.58
DDH-6706	Constancia	140.25	140.98	0.73	50.30	0.09	0.07	0.83
DDH-6906	Constancia	193.76	195.00	1.24	99.80	0.19	0.15	0.80
DDH-7306	Constancia	181.63	184.34	0.71	169.00	0.54	0.91	1.88
DDH-7306	Constancia	182.34	182.77	0.43	838.00	14.75	0.16	0.47
DDH-0106	Fastidiosa	16.16	16.43	0.27	769.51	0.04	19.09	2.87
DDH-0106	Fastidiosa	16.43	17.11	0.68	311.77	0.04	3.86	1.66
DDH-1006	Fastidiosa	23.96	24.24	0.28	1649.59	1.27	16.15	15.67
DDH-1306	Fastidiosa	39.05	39.60	0.55	209.57	0.07	1.76	1.47
DDH-4306	Fastidiosa	48.40	49.18	0.78	204.51	0.05	6.54	6.90
DDH-4406	Fastidiosa	32.20	32.36	0.16	127.08	0.04	4.05	10.83
DDH-4606	Fastidiosa	43.30	44.18	0.88	58.84	0.08	2.70	3.38
DDH-4806	Fastidiosa	31.60	32.22	0.62	145.49	0.08	2.84	1.57
DDH-1306	Fastidiosa	39.60	39.80	0.20	2223.40	0.58	3.83	0.93
DDH-7506	Fastidiosa Piso	45.30	46.45	1.15	133.00	0.11	2.02	2.67
DDH-7506	Fastidiosa Piso	46.45	48.35	1.90	535.00	0.02	0.52	2.17
DDH-7506	Fastidiosa Piso	48.35	49.60	1.25	111.00	0.07	1.44	4.37
DDH-1406	Halley	47.56	48.17	0.61	114.00	0.04	2.30	3.75
DDH-1406	Halley	48.17	48.77	0.60	152.08	0.04	2.96	2.87
DDH-1406	Halley	48.77	49.38	0.61	21.04	0.01	0.21	0.20
DDH-1606	Halley	31.99	32.50	0.51	111.47	0.08	5.31	5.43
DDH-1606	Halley	32.50	33.40	0.90	145.35	0.12	4.34	5.89
DDH-1606	Halley	33.40	34.20	0.80	248.60	0.06	8.63	2.82
DDH-1406	Halley	49.38	50.00	0.62	129.45	0.04	3.39	3.00
DDH-1406	Halley	50.00	51.00	1.00	267.29	0.08	6.14	9.03
DDH-1406	Halley	51.00	52.00	1.00	170.99	0.06	4.51	6.02
DDH-1406	Halley	52.00	52.60	0.60	172.78	0.04	3.93	3.80

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DDH-1406	Halley	52.60	52.80	0.20	100.43	0.03	2.06	2.81
DDH-1406	Halley	53.79	54.36	0.57	119.19	0.05	1.74	1.49
DDH-1406	Halley	54.36	55.00	0.64	163.80	0.06	3.43	5.03
DDH-1406	Halley	55.00	55.64	0.64	212.86	0.05	4.50	4.06
DDH-1406	Halley	55.86	56.40	0.54	74.41	0.03	1.40	1.99
DDH-1406	Halley	56.40	56.98	0.58	256.86	0.09	6.11	6.24
DDH-1406	Halley	56.98	57.65	0.67	210.08	0.05	4.11	4.11
DDH-1406	Halley	57.65	58.24	0.59	220.10	0.08	4.88	4.28

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<b>Drill Hole ID</b>	<b>Objective</b>	<b>From</b>	<b>To</b>	<b>True Width (m)</b>	<b>Ag (g/t)</b>	<b>Cu (%)</b>	<b>Pb (%)</b>	<b>Zn (%)</b>
DDH-1406	Halley	58.24	58.84	0.60	282.47	0.08	6.26	4.74
DDH-1406	Halley	58.84	59.40	0.56	422.69	0.09	8.51	4.48
DDH-1406	Halley	59.40	60.00	0.60	87.63	0.03	1.72	3.57
DDH-1406	Halley	60.00	61.00	1.00	262.24	0.06	5.28	4.92
DDH-1406	Halley	61.00	61.70	0.70	363.52	0.11	7.03	10.54
DDH-1406	Halley	61.70	62.29	0.59	180.50	0.05	3.58	4.26
DDH-1406	Halley	62.29	62.87	0.58	253.98	0.06	5.25	5.10
DDH-1406	Halley	62.87	63.47	0.60	131.06	0.03	3.20	2.78
DDH-1406	Halley	63.47	63.96	0.49	77.82	0.04	1.65	2.73
DDH-1406	Halley	63.96	64.36	0.40	799.89	0.22	26.28	13.57
DDH-1406	Halley	64.36	64.90	0.54	328.77	0.07	4.91	2.92
DDH-1406	Halley	64.90	65.80	0.90	81.93	0.02	1.64	1.79
DDH-1406	Halley	65.80	66.60	0.80	118.17	0.04	3.13	3.57
DDH-1406	Halley	66.60	67.50	0.90	102.56	0.02	1.49	1.83
DDH-1406	Halley	67.50	68.10	0.60	178.71	0.03	3.25	1.96
DDH-1406	Halley	68.10	69.26	1.16	100.08	0.04	1.46	2.14
DDH-1606	Halley	34.20	34.80	0.60	268.06	0.09	8.01	4.59
DDH-1606	Halley	34.80	35.80	1.00	131.88	0.08	3.78	4.16
DDH-1606	Halley	35.80	36.60	0.80	116.16	0.04	4.05	2.37
DDH-1606	Halley	36.60	37.60	1.00	63.51	0.04	3.13	2.68
DDH-1606	Halley	37.60	38.10	0.50	108.86	0.04	3.91	3.62
DDH-1606	Halley	38.10	38.80	0.70	155.06	0.09	4.65	6.49
DDH-1606	Halley	38.80	39.60	0.80	82.54	0.03	1.44	3.19
DDH-1606	Halley	39.60	40.40	0.80	53.63	0.02	1.01	1.77
DDH-1606	Halley	40.40	41.00	0.60	227.76	0.06	2.16	1.44
DDH-1606	Halley	41.00	41.60	0.60	217.44	0.11	5.97	8.73
DDH-1606	Halley	43.34	43.92	0.58	261.12	0.07	3.56	2.42
DDH-1606	Halley	43.92	44.40	0.48	326.20	0.08	6.97	3.85
DDH-1606	Halley	44.40	44.87	0.47	124.28	0.04	2.35	1.94
DDH-1606	Halley	46.91	47.40	0.49	409.73	0.17	11.60	6.45
DDH-1606	Halley	47.40	48.18	0.78	271.39	0.07	6.82	1.60
DDH-1606	Halley	48.18	48.79	0.61	84.21	0.04	1.98	0.86
DDH-1606	Halley	48.79	49.38	0.59	520.57	0.13	16.94	4.37
DDH-1606	Halley	49.38	50.40	1.02	502.23	0.11	10.71	2.57
DDH-1606	Halley	50.40	51.17	0.77	138.79	0.03	5.57	0.78
DDH-1606	Halley	51.17	52.00	0.83	943.78	0.21	13.19	0.73
DDH-1606	Halley	52.79	53.40	0.61	345.80	0.13	10.99	6.26
DDH-1606	Halley	53.40	54.00	0.60	74.38	0.03	2.33	2.35
DDH-1606	Halley	54.00	55.00	1.00	78.97	0.04	1.99	0.82
DDH-1606	Halley	55.00	56.20	1.20	31.97	0.02	0.63	0.52
DDH-1606	Halley	56.20	57.00	0.80	58.82	0.03	1.64	0.25
DDH-1606	Halley	57.00	57.78	0.78	61.56	0.02	2.00	0.66
DDH-1606	Halley	57.78	58.40	0.62	127.25	0.03	2.32	2.58

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DDH-1606	Halley	58.40	58.80	0.40	365.36	0.07	10.02	12.07
DDH-1606	Halley	58.80	59.57	0.77	249.74	0.04	4.94	8.61
DDH-0206	July	44.21	44.80	0.59	322.26	0.07	4.62	10.07
DDH-0206	July	44.80	45.65	0.85	857.03	0.05	4.36	11.52
DDH-0206	July	45.65	46.30	0.65	96.44	0.03	0.51	5.72
DDH-0206	July	46.30	46.94	0.64	353.94	0.06	2.97	6.49
DDH-0206	July	46.94	47.23	0.29	427.60	0.07	5.16	8.66
DDH-0206	July	47.23	47.70	0.47	54.42	0.04	0.50	4.48
DDH-0206	July	47.70	48.11	0.41	77.82	0.07	0.87	5.59
DDH-0306	July	36.55	37.04	0.49	376.92	0.07	12.21	4.12
DDH-0306	July	39.40	39.70	0.30	511.67	0.06	16.13	2.46
DDH-0606	July	29.06	29.91	0.85	278.33	0.07	8.76	14.32
DDH-7406	July	16.94	17.78	0.84	398.00	0.25	3.72	29.05

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<b>Drill Hole ID</b>	<b>Objective</b>	<b>From</b>	<b>To</b>	<b>True Width (m)</b>	<b>Ag (g/t)</b>	<b>Cu (%)</b>	<b>Pb (%)</b>	<b>Zn (%)</b>
DDH-3906	Llacasacocha (superficie)	149.30	149.70	0.40	69.92	0.01	0.41	3.98
DDH-3906	Llacasacocha (superficie)	149.70	150.70	1.00	213.53	0.23	0.60	4.15
DDH-3906	Llacasacocha (superficie)	150.70	151.70	1.00	120.56	0.03	0.75	3.97
DDH-4706	Llacasacocha	97.36	97.93	0.57	398.69	0.08	1.99	4.02
DDH-3406	Martin	91.09	91.34	0.25	2892.20	2.18	3.29	0.55
DDH-2006	Mily	0.00	121.08	121.08	106.77	0.02	1.37	4.26
DDH-2006	Mily	121.08	121.95	0.87	54.02	0.03	0.84	3.57
DDH-2006	Mily	121.95	122.53	0.58	21.19	0.02	0.19	5.17
DDH-2006	Mily	122.53	123.15	0.62	53.45	0.11	0.25	4.04
DDH-2006	Mily	123.15	123.80	0.65	247.14	0.35	3.15	11.88
DDH-3506	Mily	46.77	47.73	0.96	202.43	0.04	1.78	1.55
DDH-3506	Mily	47.73	48.68	0.95	238.39	0.03	2.60	1.07
DDH-3506	Mily	48.68	49.69	1.01	176.46	0.03	3.55	1.53
DDH-3506	Mily	49.69	50.45	0.76	307.27	0.05	6.03	3.26
DDH-0906	Patrick	11.42	11.55	0.13	595.70	0.20	26.61	18.30
DDH-3606	Patrick	96.40	97.40	1.00	376.41	0.10	4.25	7.01
DDH-4206	Patrick	65.70	65.75	0.05	143.39	0.02	1.76	5.86
DDH-4506	Patrick	21.28	22.00	0.72	448.04	0.11	8.41	2.25
DDH-4506	Patrick	22.00	23.00	1.00	23.82	0.01	0.43	0.79
DDH-4506	Patrick	23.00	24.00	1.00	232.36	0.06	3.93	0.93
DDH-4506	Patrick	24.00	25.20	1.20	475.04	0.10	16.83	8.06
DDH-4506	Patrick	25.20	26.20	1.00	117.26	0.05	3.95	2.94
DDH-4506	Patrick	26.20	27.00	0.80	539.10	0.03	17.97	1.10
DDH-4506	Patrick	27.00	28.00	1.00	91.61	0.08	2.40	1.80
DDH-4506	Patrick	28.00	29.00	1.00	360.39	0.05	12.25	9.88
DDH-4506	Patrick	29.00	30.50	1.50	211.53	0.13	0.85	2.05
DDH-4506	Patrick	30.50	31.84	1.34	1179.03	0.54	20.00	10.58
DDH-4906	Patrick	107.47	108.20	0.73	70.42	0.06	2.40	3.42
DDH-4906	Patrick	108.20	109.20	1.00	79.52	0.09	3.57	4.20
DDH-5206	Patrick	136.05	137.00	0.95	318.80	0.18	8.65	9.43
DDH-6606	Patrick	13.88	14.52	0.64	217.79	0.17	0.70	26.11
DDH-7006	Patrick	166.10	166.89	0.79	195.00	0.11	4.39	7.13
DDH-7006	Patrick	166.89	167.20	0.31	23.90	0.40	0.28	0.27
DDH-7006	Patrick	167.20	168.39	1.19	138.00	0.06	3.17	4.97
DDH-7206	Patrick	193.65	194.95	1.30	115.00	0.04	1.50	3.11
DDH-0906	Patrick	11.55	12.40	0.85	132.57	0.05	6.03	2.72
DDH-0906	Patrick	12.40	13.40	1.00	103.52	0.01	3.71	1.50
DDH-0906	Patrick	13.40	13.95	0.55	154.55	0.06	5.21	3.22
DDH-0906	Patrick	16.81	17.93	1.12	17.98	0.01	0.19	0.41
DDH-0906	Patrick	17.93	18.12	0.19	87.12	0.02	3.54	0.60

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DDH-0906	Patrick	18.12	19.09	0.97	384.15	0.06	12.55	11.98
DDH-0906	Patrick	19.09	19.90	0.81	156.77	0.04	6.40	4.43
DDH-2906	Ramal 1	115.80	116.50	0.70	374.93	0.74	0.55	1.12
DDH-2906	Ramal 1	116.50	117.30	0.80	1427.09	2.62	0.97	1.28
DDH-2906	Ramal 1	117.30	117.55	0.25	2022.49	19.23	1.44	2.71
DDH-3006	Ramal 1	110.80	111.75	0.95	140.80	0.08	0.66	0.69
DDH-2306	Sorpresa	100.80	101.18	0.38	295.56	0.10	0.31	3.83
DDH-4006	Sorpresa	68.20	69.30	1.10	523.03	0.26	0.34	0.78
DDH-0406	Surprise	72.70	73.60	0.90	235.99	0.06	0.58	0.80
DDH-1706	Surprise	88.70	89.31	0.61	581.72	0.20	1.42	1.18
DDH-1806	Travieso	133.76	134.80	1.04	280.89	1.44	0.27	2.31

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<b>Drill Hole ID</b>	<b>Objective</b>	<b>From</b>	<b>To</b>	<b>True Width (m)</b>	<b>Ag (g/t)</b>	<b>Cu (%)</b>	<b>Pb (%)</b>	<b>Zn (%)</b>
DDH-1806	Travieso	134.80	135.80	1.00	410.54	2.45	0.54	3.70
DDH-1806	Travieso	135.80	136.80	1.00	185.67	1.05	0.43	1.88
DDH-2606	Travieso	133.27	134.36	1.09	263.63	0.14	1.05	0.66
DDH-2806	Travieso	133.83	134.60	0.77	202.42	0.22	0.30	1.80
DDH-3206	Travieso	137.16	137.87	0.71	89.22	1.85	0.11	0.36
DDH-5106	Ximena	50.42	51.00	0.58	371.05	0.17	1.59	0.42
DDH-5306	Ximena	52.50	53.40	0.90	167.80	0.08	3.60	3.98
DDH-5406	Ximena	47.70	49.20	1.50	283.81	0.10	4.22	9.94
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**Table 13-2: Result from 2007 Underground Diamond Drilling**

<b>Drill Hole ID</b>	<b>Objective</b>	<b>From</b>	<b>To</b>	<b>True Width (m)</b>	<b>Ag (g/t)</b>	<b>Cu (%)</b>	<b>Pb (%)</b>	<b>Zn (%)</b>
DDH-0107	Juanita Ramal	46.00	47.00	1.00	1341.00	4.00	0.35	0.86
DDH-0107	Juanita Ramal	57.10	57.70	0.60	221.00	0.25	6.07	5.53
DDH-0107	Juanita Ramal	57.70	58.77	1.07	139.00	1.29	0.91	1.02
DDH-0107	Juanita Ramal	58.77	59.70	0.93	29.70	0.08	0.17	0.52
DDH-0107	Juanita Ramal	59.70	60.62	0.92	151.00	0.29	4.57	4.93
DDH-0107	Juanita Ramal	65.10	66.50	1.40	442.00	1.42	0.82	3.23
DDH-0107	Juanita Ramal	66.50	67.13	0.63	277.00	0.61	0.58	2.57
DDH-0107	Juanita Ramal	67.13	67.84	0.71	55.50	0.05	0.21	1.17
DDH-6707	Ramal Danitza	94.55	95.35	0.80	122.35	0.24	0.14	0.52
DDH-6707	Ramal Danitza	95.35	96.15	0.80	185.60	0.12	0.41	0.70
DDH-6907	Ramal Danitza	23.11	23.40	0.29	37.29	0.02	1.30	5.89
DDH-6907	Ramal Danitza	35.80	36.02	0.22	57.97	0.02	1.52	3.22
DDH-6907	Ramal Danitza	54.43	54.52	0.09	452.96	0.08	7.88	8.08
DDH-6907	Ramal Danitza	55.94	56.17	0.23	992.43	0.15	8.83	1.58
DDH-6907	Ramal Danitza	56.57	56.68	0.11	4051.36	0.29	14.02	3.40
DDH-6907	Ramal Danitza	87.18	87.29	0.10	2043.99	0.66	4.87	2.38
DDH-6907	Ramal Danitza	109.88	110.10	0.22	231.66	0.21	6.13	11.99
DDH-6907	Ramal Danitza	110.10	110.40	0.30	242.04	0.09	2.61	2.41
DDH-6907	Ramal Danitza	110.40	110.80	0.40	1620.55	0.39	13.79	11.14
DDH-6907	Ramal Danitza	110.80	111.31	0.51	204.46	0.03	0.41	0.14
DDH-0407	Veta Alianza	64.33	64.90	0.57	785.00	0.32	2.81	2.97
DDH-0407	Veta Alianza	64.90	66.70	1.80	95.60	0.09	0.17	0.57
DDH-0407	Veta Alianza	66.70	67.59	0.89	26.90	0.10	0.03	0.42
DDH-0407	Veta Alianza	67.59	68.20	0.61	606.00	1.09	0.34	0.34
DDH-0807	Veta Alianza	114.94	115.35	0.41	104.79	0.11	1.28	0.49
DDH-0807	Veta Alianza	115.35	116.06	0.71	120.47	0.09	3.58	2.65
DDH-0807	Veta Alianza	116.06	117.61	1.55	295.54	0.20	1.67	1.51
DDH-0807	Veta Alianza	117.61	119.03	1.42	111.18	0.12	1.58	3.49
DDH-5407	Veta Alianza	33.10	33.65	0.55	127.63	0.25	1.79	8.19
DDH-5407	Veta Alianza	33.65	33.95	0.30	295.06	1.44	0.25	3.05
DDH-5407	Veta Alianza	33.95	34.90	0.95	140.27	0.13	1.64	5.28
DDH-5407	Veta Alianza	34.90	36.00	1.10	125.45	0.09	1.45	4.85
DDH-5407	Veta Alianza	36.00	37.35	1.35	82.43	0.07	0.57	2.41
DDH-5407	Veta Alianza	37.35	38.40	1.05	69.87	0.12	0.19	0.77
DDH-5407	Veta Alianza	38.40	39.20	0.80	110.69	0.42	0.56	2.72
DDH-5407	Veta Alianza	39.20	40.10	0.90	61.71	0.09	0.95	3.60
DDH-5607	Veta Alianza	51.35	52.10	0.75	48.22	0.14	0.79	3.10
DDH-5607	Veta Alianza	52.10	52.80	0.70	50.55	0.19	0.57	2.77
DDH-5607	Veta Alianza	52.80	53.50	0.70	96.96	0.37	0.56	3.28
DDH-5807	Veta Alianza	34.54	35.25	0.71	11.37	0.01	0.94	2.00
DDH-5807	Veta Alianza	40.90	41.70	0.80	24.20	0.05	0.28	1.44
DDH-5907	Veta Alianza	46.04	47.10	1.06	160.77	0.36	0.76	1.81



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DDH-6307	Veta Alianza	71.91	72.95	1.04	139.89	0.44	0.72	4.11
DDH-6307	Veta Alianza	72.95	74.05	1.10	420.08	1.52	1.03	8.19
DDH-6307	Veta Alianza	74.05	74.85	0.80	226.58	5.68	1.22	1.83
DDH-6307	Veta Alianza	74.85	75.70	0.85	153.08	1.14	1.52	6.17
DDH-6607	Veta Alianza	79.84	80.85	1.01	910.37	0.20	7.58	0.62
DDH-6607	Veta Alianza	80.85	81.55	0.70	1559.18	1.19	0.28	0.26
DDH-6607	Veta Alianza	81.55	81.65	0.10	7.12	0.01	0.01	0.02
DDH-6607	Veta Alianza	81.65	81.88	0.23	402.30	0.40	0.22	0.09

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Huaron Mine

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<b>Drill Hole ID</b>	<b>Objective</b>	<b>From</b>	<b>To</b>	<b>True Width (m)</b>	<b>Ag (g/t)</b>	<b>Cu (%)</b>	<b>Pb (%)</b>	<b>Zn (%)</b>
DDH-6307	Veta Alianza	39.15	40.27	1.12	73.27	0.53	0.16	2.44
DDH-1907	Veta Cuatro	51.30	53.43	2.13	171.57	0.02	3.60	0.49
DDH-2407	Veta Fastidiosa	43.67	44.77	1.10	126.29	0.16	2.22	3.51
DDH-0307	Veta Fastidiosa	133.33	133.70	0.37	202.00	0.07	0.34	0.03
DDH-0307	Veta Fastidiosa	133.70	134.50	0.80	198.00	0.03	2.36	0.13
DDH-0307	Veta Fastidiosa	134.50	135.43	0.93	439.00	0.07	6.91	0.45
DDH-0307	Veta Fastidiosa	135.43	135.90	0.47	383.00	0.07	9.39	2.27
DDH-0307	Veta Fastidiosa	97.65	98.17	0.52	193.00	0.14	0.25	0.06
DDH-0307	Veta Fastidiosa	98.17	98.51	0.34	721.00	0.27	3.11	1.99
DDH-0307	Veta Fastidiosa	79.56	80.76	1.20	287.00	0.15	7.56	9.53
DDH-0307	Veta Fastidiosa	80.76	81.71	0.95	282.00	0.07	5.73	2.79
DDH-2407	Veta Fastidiosa	104.80	106.10	1.30	326.98	0.68	1.85	2.20
DDH-0307	Veta Fastidiosa	154.64	154.80	0.16	397.00	0.14	6.70	4.24
DDH-0307	Veta Fastidiosa	154.80	155.04	0.24	23.30	0.01	0.26	0.35
DDH-0307	Veta Fastidiosa	155.04	156.10	1.06	168.00	0.06	2.31	1.33
DDH-0307	Veta Fastidiosa	156.10	156.46	0.36	82.30	0.03	1.08	1.07
DDH-0307	Veta Fastidiosa	156.46	157.60	1.14	92.60	0.04	0.54	3.17
DDH-0307	Veta Fastidiosa	157.60	158.57	0.97	79.90	0.02	0.61	2.72
DDH-0307	Veta Fastidiosa	158.57	159.17	0.60	68.50	0.02	0.74	0.89
DDH-0707	Veta Fastidiosa	189.47	190.38	0.91	306.00	0.32	0.39	1.24
DDH-0707	Veta Fastidiosa	190.38	191.40	1.02	253.54	0.11	0.33	1.02
DDH-0707	Veta Fastidiosa	212.70	213.33	0.63	15.74	0.01	0.08	0.05
DDH-0707	Veta Fastidiosa	218.28	219.40	1.12	167.56	0.02	0.31	2.54
DDH-0707	Veta Fastidiosa	219.40	220.40	1.00	1150.51	0.12	1.55	8.20
DDH-0707	Veta Fastidiosa	220.40	221.20	0.80	98.56	0.03	0.18	2.91
DDH-2407	Veta Fastidiosa	152.30	153.30	1.00	544.85	0.32	0.96	3.72
DDH-2407	Veta Fastidiosa	153.30	154.63	1.33	1611.28	0.99	0.48	2.67
DDH-5707	Veta Fastidiosa	103.54	104.30	0.76	99.64	0.02	0.43	3.98
DDH-5707	Veta Fastidiosa	104.30	105.30	1.00	136.83	0.13	2.36	12.20
DDH-5707	Veta Fastidiosa	105.30	106.70	1.40	83.37	0.07	1.08	7.78
DDH-5707	Veta Fastidiosa	107.70	109.13	1.43	139.56	0.07	2.32	1.48
DDH-5007	Veta Llacsacocha	116.08	117.70	1.62	102.35	0.21	1.28	2.94
DDH-5007	Veta Llacsacocha	117.70	119.30	1.60	1334.32	2.44	0.78	2.59
DDH-5007	Veta Llacsacocha	145.90	147.34	1.44	338.06	0.25	0.76	5.64
DDH-5007	Veta Llacsacocha	147.34	148.04	0.70	31.76	0.14	0.99	3.82
DDH-5007	Veta Llacsacocha	148.04	148.82	0.78	186.19	0.21	0.67	5.49
DDH-6107	Veta Llacsacocha	114.01	114.82	0.81	70.53	0.09	1.85	13.68
DDH-6407	Veta Llacsacocha	77.07	77.72	0.65	62.05	0.08	0.77	2.26
DDH-6407	Veta Llacsacocha	121.51	122.95	1.44	72.55	0.05	1.47	4.72
DDH-6407	Veta Llacsacocha	130.49	133.19	2.70	49.41	0.06	0.21	1.34
DDH-6407	Veta Llacsacocha	133.19	136.65	3.46	25.54	0.02	0.19	1.26
DDH-6807	Veta Llacsacocha	117.90	118.05	0.15	282.23	0.10	0.17	6.83
DDH-6807	Veta Llacsacocha	118.05	119.05	1.00	54.25	0.02	1.43	2.94

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DDH-6807	Veta Llacsacocha	119.05	123.06	4.01	105.90	0.62	0.09	1.50
DDH-6807	Veta Llacsacocha	129.03	129.18	0.15	51.25	0.04	0.80	3.84
DDH-7007	Veta Llacsacocha	125.55	126.75	1.20	176.32	0.64	0.17	0.28
DDH-7007	Veta Llacsacocha	127.55	128.35	0.80	92.30	0.07	1.85	3.86
DDH-7007	Veta Llacsacocha	135.45	136.75	1.30	17.51	0.06	0.06	4.56
DDH-7007	Veta Llacsacocha	136.75	137.75	1.00	373.45	0.99	0.07	3.90
DDH-7007	Veta Llacsacocha	137.75	139.04	1.29	157.17	0.42	0.57	4.50
DDH-7007	Veta Llacsacocha	142.75	143.75	1.00	69.08	0.05	0.55	3.87
DDH-7207	Veta Llacsacocha	80.52	80.59	0.07	295.84	0.11	8.58	20.12
DDH-7207	Veta Llacsacocha	104.59	105.05	0.46	128.27	0.05	1.30	3.68
DDH-7207	Veta Llacsacocha	127.22	128.42	1.20	106.91	0.11	0.31	3.31
DDH-7207	Veta Llacsacocha	129.70	130.50	0.80	61.76	0.01	0.89	5.33

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<b>Drill Hole ID</b>	<b>Objective</b>	<b>From</b>	<b>To</b>	<b>True Width (m)</b>	<b>Ag (g/t)</b>	<b>Cu (%)</b>	<b>Pb (%)</b>	<b>Zn (%)</b>
DDH-7207	Veta Llacsacocha	137.38	138.55	1.17	477.19	0.37	0.16	0.53
DDH-7207	Veta Llacsacocha	139.65	140.65	1.00	683.22	0.80	0.12	0.28
DDH-7207	Veta Llacsacocha	140.65	141.45	0.80	169.48	1.12	0.10	0.20
DDH-7207	Veta Llacsacocha	141.45	143.20	1.75	59.93	0.01	1.04	3.54
DDH-7207	Veta Llacsacocha	143.20	144.71	1.51	133.99	0.13	0.11	6.78
DDH-7207	Veta Llacsacocha	152.31	152.50	0.19	56.73	0.03	1.01	4.40
DDH-7207	Veta Llacsacocha	184.34	186.69	2.35	67.26	0.06	0.86	3.18
DDH-7207	Veta Llacsacocha	198.03	198.30	0.27	170.34	0.02	0.63	2.29
DDH-7407	Veta Llacsacocha	111.21	114.08	2.87	23.55	0.02	0.41	2.31
DDH-7407	Veta Llacsacocha	114.08	115.57	1.49	331.56	1.60	0.18	3.12
DDH-7407	Veta Llacsacocha	117.20	117.74	0.54	381.41	0.28	0.26	3.21
DDH-7407	Veta Llacsacocha	121.05	122.64	1.59	34.14	0.02	1.45	4.41
DDH-7407	Veta Llacsacocha	127.10	134.05	6.95	35.54	0.09	0.27	2.45
DDH-7407	Veta Llacsacocha	134.05	138.22	4.17	162.40	0.64	0.23	2.33
DDH-7407	Veta Llacsacocha	138.22	139.40	1.58	12.99	0.01	0.19	1.65
DDH-5507	Veta Roxana	159.60	160.10	0.50	84.95	1.73	0.05	0.23
DDH-5507	Veta Roxana	160.10	160.37	0.27	170.31	3.59	0.07	0.54
DDH-5507	Veta Roxana	140.46	141.15	0.69	203.59	1.25	0.06	0.20
DDH-5507	Veta Roxana	141.15	141.50	0.35	218.54	1.52	0.12	0.24
DDH-5507	Veta Roxana	116.07	116.26	0.19	377.56	0.17	0.24	0.28
DDH-5107	Veta San Narciso	36.77	37.42	0.65	592.42	0.86	1.11	2.58
DDH-5107	Veta San Narciso	37.42	37.85	0.43	515.35	1.04	15.13	27.00
DDH-5307	Veta San Narciso	54.35	55.02	0.67	66.55	0.09	0.60	1.25
DDH-5307	Veta San Narciso	55.02	55.75	0.73	69.74	0.07	0.68	2.20
DDH-6207	Veta San Narciso	5.31	6.30	0.99	117.05	0.13	0.58	3.58
DDH-6207	Veta San Narciso	6.30	7.22	0.92	162.03	0.22	2.98	8.20
DDH-0607	Veta Surprise	111.60	112.20	0.60	109.03	0.12	3.81	1.70
DDH-0607	Veta Surprise	112.20	113.40	1.20	166.93	0.13	4.24	7.57
DDH-0907	Veta Surprise	89.81	90.55	0.74	176.63	0.09	6.24	5.78
DDH-1207	Veta Surprise	122.43	122.64	0.21	355.22	0.15	0.44	0.18
DDH-1707	Veta Surprise	91.93	92.69	0.76	375.88	0.15	14.74	15.24
DDH-1807	Veta Surprise	125.27	126.37	1.10	146.06	0.11	4.36	5.50
DDH-2007	Veta Surprise	124.49	125.08	0.59	308.96	0.19	7.75	10.17
DDH-2307	Veta Surprise	131.85	132.57	0.72	648.86	0.23	7.30	8.63
DDH-2507	Veta Surprise	127.25	127.60	0.35	69.66	0.03	1.47	0.76

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## 14. Sampling Method and Approach

### 14.1 Introduction

There are no core or sample recovery problems which could have materially impacted the accuracy and reliability of the results. Recovery of drill core samples has averaged 88.3% for surface underground drilling.

PAS has standardized sampling procedures throughout its operations and ensures that its practices meet or exceed industry standards. All sampling is done by PASH personnel under the direct supervision of the site geology department. Procedures and results were reviewed and approved by the authors of this Technical Report.

Drill-holes are sampled after the core has been logged. A geologist determines the vein intersect and marks the sample lengths; lengths vary between 0.10 and 1.5 metres depending on geological observation. The cores are then split using a circular saw with a diamond blade. Half the sample is taken by the geologist to the on-site laboratory and the other half is stored in the core box. In general, the drill cores are in good condition as the rock mass is of good quality (RQD>70). As such there are no issues regarding contamination, during sample splitting.

Channel sampling is a major part of mine development and ore control. Underground sampling is carried out by a trained sample collector and one assistant using hammer and chisel. For stope sampling, a sample is collected every 4 metres across the vein using the chute or access drift as a reference. For sublevels and exploration drifts, samples are collected every 2 metres across the vein. In vertical development, samples are collected every metre. The average sample sent to the laboratory weighs 4 to 6 kg.

All samples are sent to the on-site laboratory in Huaron. SGS entered a 5 year contract with PASH in 2007 to run the laboratory as a third party contractor. SGS laboratory in Lima is accredited for ISO 17025 and applies the same quality standards in the Huaron laboratory as in its main Lima facility.

Within 24hrs of receiving a sample, the laboratory delivers assay results referenced by number, type, location, and metallic values. Sample numbers are bar coded in the lab and assay results are automatically captured by the installed Laboratory Information Management System ( LIMS ), sent to the geology department and then stored in the database. Channel samples are the main contributor for the calculation of mineral resources and mineral reserves. They are also an important tool in determining mining constraints. As there are over 43,000 channel samples in the PASH database, it is not practical to list them in his Technical Report.

PASH samplers are part of the geology department and are trained to adhere to PAS sampling procedures. These procedures were written and issued by Michael Steinmann, P. Geo and are considered to be acceptable within industry norms. On-site there are typically eighteen samplers under the direction and supervision of five experienced geologists.

## 14.2 Sampling Procedures

Each sample is registered on a sampling card containing the following information: Sample number, name of sampler, date, place of sampling, sample type, x, y, and z coordinates. The procedures have been reviewed and approved by Dr. Michael Steinmann, P. Geo. No re-occurring or systemic errors have been an issue in the operating history of the mine. The data verification procedures have been adequate in identifying errors in the recorded data when they occur.

### 14.2.1 Drill Core Samples

As soon as a new drill hole has been started it is numbered following the system explained below:

Drill cores must be cleaned from mud and grease by the drill contractor and placed in provided core boxes of adequate size. The cores are transported to the surface logging shack and logged by an experienced geologist. As soon as possible, the underground survey team surveys the x, y and z coordinates as well as the dip and azimuth of the drill hole.

Sample intervals are determined by the geologist after the drill-hole has been logged.

Vein samples vary between 0.1 and 1.5 m long depending on geological observations.

Hanging and foot wall are sampled for at least 3 m outside visible mineralization. Barren parts in between mineralized intersections are sampled over their entire length if they are smaller than 6 m.

If the intersects are clearly defined mineralized zones which can be mined separately, the sample length depends on the geology to get independent results for ore and wall rock without compositing.

The responsible geologist indicates with paint on the core boxes where the sampling has to take place and notes the exact distances on the log sheets.

The core is sawn longitudinally in two equal half parts without biasing mineralization.

Once the sample has been packed, the sample number is written on an aluminum tape and stapled to the core box in the sample position. Additionally an aluminum tape with the drill-hole number and consecutive core box number is stapled at the front face of each box.

Core boxes are stored on metal or wooden racks for easy handling.

Samples are put into new, clean and transparent plastic bags with two number tags inside and one number and barcode tag outside and closed with a metal strip.

Assay results from exploration and delineation drill holes are emailed to the chief geologist on-site as well as certain staff members in head office for review. Results are entered into the Century LIMS database by the lab and a hard copy is filed by the geology department.

#### ***14.2.2 Channel Samples***

Channel samples are taken to sample vein structures. They are always taken perpendicular to structures to avoid introducing bias. If there are cross cutting vein systems, they have to be taken very carefully, to avoid sampling along a possibly mineralized structure. Each sample location contains three samples taken from the vein, hanging wall and foot wall crossing the entire development width. The channel sampling methodology is listed below:

Before taking the sample, the face is cleaned from dust, mud or any other contaminating agent. The rock may be washed with a water hose or by brushing it with a hard brush. It is recommendable to expand the cleaning area towards the contour of the channel. It is preferable, however, to take off the external part of the rock along the channel where the sample will be collected.

The exact location of the channel is marked by drawing two parallel lines separated 20 cm and using spray paint. The location is determined using a measuring tape from the nearest topographic point.

The channel is carved manually with a chisel and hammer.

The sample is collected from the total material taken from the channel.

If the structure has different types of mineralization separate samples are taken for each type.

The distance between channels is 4 meters in stopes, 2 meters in horizontal exploration development and 1 meter in vertical development.

All samples collected are placed in clean plastic bags together with a sample tag.

After taking the sample vein thickness and the widths of the drifts are measured and filled into the sample card together with the location information.

Assay results are sent by e-mail to the geology department and mine engineering department for verification and planning. Results are entered into the Century LIMS database by the lab and a hard copy is filed by the geology department.

***14.2.3 Numbering System***

**DRILL-HOLE ID**

Drill-hole IDs formatted as follows:

**SAMPLE NUMBERS**

All channel samples, standard samples, and blanks are labeled with a sequential 5-digit number.

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### **15. Sample Preparation, Analysis and Security**

PASH retained SGS Laboratory, Lima during 2007 for a 5 year contract to run the on-site laboratory as a third party contractor. SGS laboratory in Lima is accredited for ISO 17025 and they apply the same quality standards in the Huaron laboratory. All sample preparation and analysis is executed by SGS employees. Two PASH laboratory specialists work in the laboratory supervising and controlling functions.

Underground channel samples are transferred from the plastic bags into a metal tray and dried in an oven for 1.5 hours. After crushing, the samples are split to a size of 200-250 grams. Samples are pulverized using a concentric-ring mill for approximately 1 minute 15 seconds and then homogenized. The pulp is transferred into a bar-coded envelop for later analysis.

The Huaron laboratory uses acid digestion and atomic absorption ( AA ) spectroscopy. The prepared samples are analysed for Ag, Zn, Pb, and Cu. During the entire procedure from sampling to analysis, sample security is controlled by PASH employees or by the certified third party laboratory.

It is PASH standard practice to have a primary lab on-site that performs all sample analysis and also a third party secondary lab to re-iterate analysis on at least 2% of the samples for quality assurance and quality control (QA/QC, check samples).

The primary laboratory is the on-site Laboratory in Huaron operated by SGS Lima. The laboratory conducts a routine internal QA/QC program; results of this program are available on the LIMS database. The laboratory also conducts a second QA/QC program, supervised by the geology department, which includes external check samples and the routine submission of certified standards. For each batch of twenty at least one internal duplicate and one internal standard is added by the laboratory. The responsible geologist will add one certified standard and one blank on a daily basis. Duplicate samples of diamond core come from the remaining half core split to a quarter core. For channel samples, a duplicate is obtained by collecting a sample of equal weight from the same sampling location.

PASH also contracts ALS Chemex in Lima to act as their external secondary lab to analyze the check samples by AA spectroscopy for Ag, Zn, Pb and Cu. ALS Chemex Lima fulfills the requirement of ISO 9001:2000 and reports assay results by e-mail and by certified paper copy to PASH.

The general sample preparation methodology and analysis procedures are as follows:

#### **1. Sample Check-In**

Geology staff delivers samples to the sample preparation area of the assay laboratory.

Samples are delivered in plastic bags identified with a labeled tag. Each sample has an average weight between 3 and 6 kilograms and has a humidity over 7%.

Geology staff logs the codes and check-in time in the Logbook.

## **2. Sample Drying**

Samples and tags set on the aluminum trays are placed in the drying oven.

After approximately 1.3 hours, the trays are removed from the heat and are allowed to cool down.

## **3. Sample Codification**

Sample numbers are recorded in a logbook

Envelopes are identified with samples date and sample number as received.

## **4. Mechanical Sample Preparation**

Dry samples are passed through the jaw and roll crushers, split and then crushed.

Crushed samples are transferred into barcoded envelopes.

## **5. Sample Weighing**

Sample barcodes are read and sample weight for digestion is then determined. This information enters the database automatically via the LIMS system.

## **6. Sample Digestion**

Acids are added to the samples and they are transferred to a hot plate where digestion begins.

Samples are allowed to cool and are then homogenized and dissolved.

## **7. Sample Tracing by Atomic Absorption**

Lab assistants identify the number of samples and elements to be analyzed.

Quantification is performed by AA spectroscopy.

Results enter automatically the database via LIMS.

## **8. REPORT OF RESULTS**

The geology department receives the sample results directly from the database and imports the information into Autocad Sample maps and/or into the drill log sheets. Sample information can also be imported directly from the database into Datamine software.

The purpose of the QA/QC is to control and constantly improve the quality of the results from the laboratory performing the assays of channel samples and diamond core samples. At the beginning of 2006, PAS implemented a new QA/QC procedure that involved the submission of certified standard samples (pulp) as well as sterile blank samples. Material for standards have been collected using Huaron mill feed over a two week period and have been prepared and certified by ALS Chemex Lima, which fulfills the requirement of ISO 9001:2000 standards. The LIMS

system was also deployed at the Huaron Mine to automate data entry and secure safe data storage in a database.

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Blank sample assay results from 2007 are shown on GRAPH 15-1 and standard samples on GRAPH 15-2. Each graph is plotted with a warning and action line, to identify outliers. These indicators are equal to plus or minus two times the standard deviation and plus or minus three times the standard deviation respectively. The values of the certified standard sample are as follows:

**Table 15-1: Certified Standard Value**

ELEMENT	Ag ppm	Cu %	Pb %	Zn %
Average	214.00	0.68	1.48	3.07
St. Dev.	6.1	0.01	0.04	3.07

Standard results outside the warning lines are acceptable but further attention is then given to the quality control process. Standard results outside the action line trigger further investigations and re-analysis may be requested. Typically, if the channel samples are from stopes, they represent small tonnages and are for immediate production. Re-assaying all of the samples, in these cases, is not practical and instead the deviations are used to improve procedures.

Observations from GRAPH 15-1 and GRAPH 15-2 show several outliers that are erratic. Results are further summarized in table 15-2.

**Table 15-2: Monthly Average Assay Results of Inserted Standards  
2007 Montly Average Assay Results of Inserted Standards**

	JAN	FEB	MAR	APR	MAY	JUN	JUL	YTD
<b>Number of Std Samples</b>	25	23	25	28	23	25	29	178
<b>Avg Ag (g/t)</b>	211.54	215.68	212.75	213.56	213.17	211.11	214.81	213.25
<b>Variance (g/t)</b>	-2.46	1.68	-1.25	-0.44	-0.83	-2.89	0.81	-0.75
<b>% diff from Certified Value</b>	-1.15%	0.79%	-0.58%	-0.21%	-0.39%	-1.35%	0.38%	-0.35%
<b>Avg Cu (%)</b>	0.63	0.63	0.64	0.65	0.65	0.63	0.64	0.64
<b>Variance (%)</b>	-0.054	-0.049	-0.041	-0.035	-0.026	-0.049	-0.037	-0.041
<b>% diff from Certified Value</b>	-7.90%	-7.16%	-6.06%	-5.09%	-3.77%	-7.24%	-5.43%	-6.07%
<b>Avg Pb (%)</b>	1.49	1.44	1.45	1.46	1.48	1.45	1.45	1.46
<b>Variance (%)</b>	0.010	-0.036	-0.032	-0.019	0.002	-0.030	-0.030	-0.020
<b>% diff from Certified Value</b>	0.67%	-2.44%	-2.19%	-1.28%	0.15%	-2.00%	-2.03%	-1.32%
<b>Avg Zn (%)</b>	2.96	2.94	2.96	3.07	3.02	2.98	3.05	3.00
<b>Variance (%)</b>	-0.108	-0.133	-0.110	-0.002	-0.049	-0.091	-0.017	-0.070
<b>% diff from Certified Value</b>	-3.53%	-4.33%	-3.60%	-0.07%	-1.59%	-2.97%	-0.54%	-2.28%

General notes about table 15-2.

Absolute values of the % difference from the certified value that are greater than 5%, represent values where the monthly average of the assay results are beyond the action line (greater than three standard deviations from the expected value).

In general, assays of inserted standards are undervalued with results lower than the expected certified value.



As shown in Table 15-2, copper assay results have been flagged for being more than 36 from the certified value. The authors recognize that part of the mineral resources and mineral reserves are affected by these discrepancies, but based on the long production history and the small difference between the theoretical and analyzed standard grades, it is the authors' opinion that the effect on the overall mineral reserves and mineral resources do not impact the assessment of the economic viability of the proven and probably mineral reserves. In the authors' opinion, the sample preparation, security and analytical procedures are of adequate quality for resource and reserve estimation.

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## 16. Data Verification

PASH performs routine assay data verification by primary and secondary laboratory check sample analyses. In addition, the on-site Huaron Laboratory (SGS) and ALS Chemex Lima perform numerous internal standard determinations and checks. Michael Steinmann, P.Ge., reviews the results and performance of the labs on a monthly basis. ALS Chemex reports the check sample results by e-mail and by certified hard copy. Results of these two reports are compared on a monthly basis by the Huaron Mine geology department.

Channel samples, generally 2 to 3 per sample location (see chapter 14.3.1), are reviewed by the geology and mine engineering department to identify possible duplicity of spatial location or grades. Duplication of grades or sample locations (closer than 1 metre) are highlighted for easy revision. The responsible geologist compares the duplicated grades to the original data entry and omits one sample in the case of an entry error. If two samples have actually been taken in a spacing of less than 1 metre, a weighted average of the grades is used in the database.

Most of the data spatial verification is done using AutoCAD software, by plotting samples onto level plans and longitudinal sections to verify the correct location in the drifts or stopes.

Channel samples enter the database with assigned X, Y, Z coordinates and a vein code. Hence, they can easily be plotted on each vein long section. 3D sample location for the drill holes are plotted in AutoCAD software using the collar information, dip and plunge angles and drill hole depth information. Visibly wrong locations, due to erroneous data entry are corrected.

The authors of this Technical Report conclude that the quality of data given within this report follows industry standards and that the types and quantities of anomalies are within industry norms for databases of this size and age. They further conclude that these anomalies have no material effect on the overall mineral resource estimate.

On the basis of the statistical checks, the authors of this Technical Report believe that the exploration database has been prepared according to industry norms and is suitable for the development of geological and grade models.

## 17. Adjacent Properties

Volcan Compania Minera S.A.A operates the adjacent Animon Mine via its subsidiary Empresa Administradora Chungar S.A.C. Information on this mine has been publicly disclosed by Volcan on their web page at the following address [www.Volcan.com.pe](http://www.Volcan.com.pe).

The Animon Mine is located 4,600 metres above sea level in the Cerro de Pasco province some 219 kilometres from Lima via Canta. It is a mostly mechanized underground mine with 100% of the production coming via the overhand cut and fill mining method. The mine has a shaft called Pique Esperanza and is in the process of developing the vein systems deeper. Drilling in 2006 confirmed the existence of the Maria Rosa and Principal veins down to 4,150 metres above sea level as well as adding 2.2 million tonnes of reserves primarily in the Ramal 85, Lorena and Maria Rosa veins.

The processing plant has a capacity of 2,800 tonnes per day and produces copper, lead and zinc concentrates. Average annual treatment rates were 2,295 tpd in 2005 and 2,519 tpd in 2006. An increase in the plant capacity to 3,500 tpd is being contemplated for 2007. The plant production for the previous 3 years is as follows:

Year	Tonnes	Lead (%)	Zinc (%)	Copper (%)	Silver (opt)
2006	851,685	3.20	7.70	0.20	3.50
2005	737,080	3.42	7.89	0.29	3.18
2004	609,893	3.76	9.09	0.33	2.81

The authors of this report have not verified any of the information provided above or any information provided on the Volcan Compania Minera S.A.A web page. The mineralization at the Animon Mine is not necessarily indicative of the mineralization at the Huaron mine.

The following is taken from previous Pan American Silver Corp. publicly disclosed information that the authors of this Technical Report have been able to verify. In April, 1998, a portion of the lakebed of nearby Lake Naticocha collapsed and water from the lake flowed into the Animon Mine and, through interconnected tunnels, the water entered and flooded the Huaron Mine, causing its closure.

After the April 1998 flooding, the Huaron mine operations were shut down, the labour force was terminated, the village closed and work was undertaken to clean up the flood damage, drain the workings and prepare for an eventual restart of production. The water level in the lake, which provided the source of floodwater, is maintained well below the level where it flooded into the old workings and PASH does not expect a threat of further flooding. The Animon Mine, in accordance with a settlement agreement reached with Cia. Minera Huaron S.A. in September 2000, constructed a channel to route water around the lake to provide water for the Huaron Mine's operation and to reduce the water in upstream lakes to prevent agricultural flooding, which had created local social pressures. The opening where the water flooded in to the Animon Mine is visible from surface, and during visits to the Huaron Mine, the authors of this Technical Report have confirmed visually that the water level in Lake Naticocha is being maintained below this level.



### 18. Mineral Processing and Metallurgical Testing

Forecasts for metal recovery are based on historical performance of plant operations. Because Huaron is an operating mine with an operating mineral processing plant, metallurgical testing is conducted every day in the plant. Therefore, the forecasts of recoveries in this report are based on historical performances of the processing plant. A description of the existing mill and discussion of the historical recovery and metallurgical balances are presented in Section 25.

Metal recovery forecasts are based on processing plant results and are considered by the authors of this Technical Report to be representative. There are some veins and portions of the mine, particularly above the 500 level, where the veins have more complex metallurgy and or contain more oxidized material. This material does not respond as well to flotation as some of the other zones and lower recoveries are expected from these areas. The life of mine ( LOM ) plan, however, has been designed to manage the blend of this material to keep it similar to the current levels and so any negative impact to the overall recoveries that can be expected from the deposit are already accounted for by using the actual plant average results. Over the long term, as mining progresses deeper, the amount of primary sulphide ore in the feed will increase. The projected recoveries used for the LOM plan are based on head grades that are calculated from the mine plan, which are based on the grades defined from the mineral reserves and mineral resources of the veins planned to be mined. Although not relevant for this mine plan economic analysis, the practice is that when a new vein is intersected, samples are tested at the on-site laboratory.

The metallurgical assumptions used in the LOM plan are shown in the tables 18-1 and 18-2. The mine typically receives payment for a small amount of gold that is recovered into the concentrates that are produced and have been included in the actual cash flow that has been recorded to December 31, 2007. As the mine does not have an estimate for the gold grades in the mineral reserves and mineral resources, the recovery of gold in future years has been assumed to be zero. The authors of this Technical Report have no reason to believe that the gold revenues from the mine will suddenly stop in 2008; however, there is not enough data to accurately estimate what those gold revenues will be and so for conservatism they have been assumed to be zero.

The relationship between the silver head grade and the metallurgical recovery of silver since 2001 is shown in the following graph. Silver recovery is directly related to the silver head grade as well as copper and lead grades. The long term silver recovery in the life of mine plan is 80%.

The graph of copper recovery versus head grade displays improving recovery despite an overall declining head grade. Copper recoveries in the life of mine plan are forecast to vary between 55% and 61% depending on the head grade: The head grade for lead dropped dramatically over the course of the last 3 years, impacting the recovery which dropped below 75% with a head grade of 1.24%. Lead grades are forecast to return to higher levels of 1.8% in 2008 although the longer term outlook is for the grades to be 1.5% and recovery 74% (this is the same recovery as currently being achieved with a lower head grade).

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The zinc head grade has been receding since 2002 and this has reduced zinc recovery and zinc concentrate grades. The increased throughput is partly responsible for the decline in the zinc metallurgy and PASH plans to install 8 reconditioned flotation cells in early 2008. These cells will replace the current third stage bulk cleaner and be used as first cleaners for lead-copper separation. The long term projection is for zinc grade to increase to 3.3% at a recovery of 67% with a concentrate grade of 47%.

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**Table 18-1: Life of Mine Head Grade Projections**

Head Grade	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Au (g/t)
2007	194.93	0.36	1.21	2.55	0.40
2008	188.01	0.39	1.78	3.25	0.28
2009	187.69	0.40	1.81	3.29	0.00
2010	187.23	0.40	1.85	3.29	0.00
2011	186.76	0.40	1.90	3.30	0.00
2012	177.54	0.42	1.92	3.36	0.00
2013	177.80	0.24	1.54	3.27	0.00
2014	178.06	0.29	1.53	3.30	0.00
2015	178.19	0.35	1.51	3.33	0.00
2016	178.32	0.37	1.50	3.35	0.00
2017	178.51	0.40	1.49	3.36	0.00
2018	187.74	0.44	1.48	3.38	0.00

**Table 18-2: Life of Mine Recovery Projections**

Recovery	Ag (%)	Cu (%)	Pb (%)	Zn (%)	Au (%)
2007	80.31	59.08	73.55	63.44	30.54
2008	79.81	60.10	74.89	66.24	0.00
2009	80.00	60.00	75.00	67.00	0.00
2010	80.00	60.00	76.00	67.00	0.00
2011	80.00	60.00	77.00	67.00	0.00
2012	80.00	60.00	77.00	67.00	0.00
2013	80.00	55.00	74.00	67.00	0.00
2014	80.00	57.00	74.00	67.00	0.00
2015	80.00	59.00	74.00	67.00	0.00
2016	80.00	59.00	74.00	67.00	0.00
2017	80.00	60.00	74.00	67.00	0.00
2018	80.00	61.00	74.00	67.00	0.00

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**Table 18-3: Life of Mine Concentrate Projections**

	Copper Concentrate				Lead Concentrate			Zinc Concentrate		
	Tonnes	Ag (g/t)	Cu (%)	Zn (%)	Tonnes	Ag (g/t)	Pb (%)	Tonnes	Ag (g/t)	Zn (%)
2007	6,588	10,012	24.42	9.60	16,023	2,320	42.01	27,234	561	44.93
2008	7,486	7,775	24.77	12.80	23,842	1,721	43.66	37,111	494	45.45
2009	7,517	7,505	25.00	12.80	23,610	1,842	45.00	36,659	481	47.00
2010	7,500	7,510	25.00	12.80	24,404	1,779	45.00	36,677	480	47.00
2011	7,581	7,417	25.00	12.80	25,372	1,708	45.00	36,816	477	47.00
2012	7,825	7,188	25.00	12.80	25,820	1,679	45.00	37,595	468	47.00
2013	4,083	13,108	25.00	12.80	19,920	2,071	45.00	36,557	457	47.00
2014	5,222	10,264	25.00	8.10	19,694	2,098	45.00	36,908	454	47.00
2015	6,430	8,347	25.00	8.10	19,469	2,125	45.00	37,259	450	47.00
2016	6,943	7,737	25.00	8.10	19,356	2,139	45.00	37,434	448	47.00
2017	7,582	7,090	25.00	8.10	19,243	2,153	45.00	37,610	447	47.00
2018	6,657	6,346	25.00	8.10	14,979	2,174	45.00	29,728	444	47.00

As there is distinct zonation of the mineralogy at the Huaron mine, the mineralogy of the principal veins on the production plan has been taken into account in order to arrive at the metallurgical assumptions shown above in Table 18-1, Table 18-2, and Table 18-3. The principal veins that are considered within this forecasted production plan are described in section 11.2.

### 18.1 Plant Improvement Projects

A value chain (see Figure 18-1), has been prepared for the plant aiming at identifying processing strengths and weaknesses and finding opportunities for improvement. With this basis, research work and reconfiguration of the entire milling process has been prioritized with the goal of creating economic and environmental value.

#### 18.1.1 Grinding Circuit

Recent changes made to the grinding circuit include putting an 8 x 8 and an 8 x 3 ball mill into operation as secondary ball mills and increasing the motor of the 8 x 20 pump to 100 horsepower. These changes were necessary to achieve a processing throughput of 2,300 tpd at the required particle size of 60% passing 200 mesh.

#### 18.1.2 Flotation Circuit

The copper concentrate is subject to smelter penalties as it currently contains some 7.1% arsenic 8.7% lead and 13% zinc. There is a study underway to determine if the arsenic is in free arsenopyrite and if the arsenic content of the copper concentrate can be reduced. The activation of zinc by copper ions from secondary copper minerals released during grinding cause zinc to float in the bulk flotation circuit when processing ores with complex mineralogy. The circuit has been reconfigured by sending the primary cleaner tails directly to the zinc circuit; this has improved and controlled the situation. If an absolute solution could be found then it would add significant value to the operation. The reconfiguration is summarized in Figure 18-2.

Reconfiguration of the copper and lead separation circuit was done to increase the float time through the inclusion of additional float tanks and dosifying pumps. The result is a more consistent and stable process. Changes are shown in Figure 18-3.

In the zinc circuit, there is 5% to 6% manganese in the feed, and the manganese floats in the same manner as zinc resulting in lower concentrate quality. Mineralogical studies revealed fine zinc is inside the manganese carbonates, which explains the 0.5% to 0.7% zinc in the tails when these are present. Reconfiguration of the zinc circuit is in progress, as shown in Figure 18-4.

### ***18.1.3 Authors Comments***

Many years of production history, including actual results from processing in the mill, mean that the metallurgy to be expected from the deposit is very well-know and established.

In the authors opinion, there is sufficient information to predict the metallurgy to be expected in the life of mine plan to a reasonable degree of accuracy.

Metallurgical testing may be undertaken to review the metallurgy of any new veins if they are discovered. Other metallurgical testing may be undertaken from time to time to explore ideas for improvement or the application of new technology as it becomes available. This type of testing would only lead to improvements over the life of mine economic case as it is presented in this Technical Report.

Martin Wafforn, P.Eng, has reviewed the metallurgical assumptions used in the economic analysis and compared them to the historic performance of the Huaron mill. In addition, the metallurgical assumptions in the plan have been reviewed by the Pan American Silver Peru S.A.C., a subsidiary of PAS, corporate metallurgist, Edgar Canta, who is not a Qualified Person but is considered to be an expert on flotation metallurgy. Mr. Canta has presented papers on flotation metallurgy internationally and has written a detailed report on the Huaron plant entitled Memoria Descriptiva del Proceso Metalurgico en Planta Concentradora Huaron dated September, 2007 that contains the basis for the processing and metallurgical information presented in this section 18 and section 25. In the opinion of the authors, this is further confirmation that the metallurgical assumptions used are reasonable.

### 19. Mineral Resource and Mineral Reserve Estimates

The PASH geology department uses AutoCad, Microsoft Excel, and Microsoft Access to tabulate mineral reserves and mineral resource estimates on an annual basis. For each estimated vein, there is a long section of mineralization oriented along strike of the vein, perpendicular to the X-Y plane. The geology and mine engineering department examine the section and layout a geo-block system based on mining levels, stope layout and mined out areas. The geo-block system is a configuration of geometric blocks created to best fit an area of mineralization into a physically minable block if deemed economic. Block sizes vary, but are generally 50mx20m (strike x dip). These blocks are updated on a regular basis as ore extraction advances.

All quoted mineral resources and mineral reserves are estimated in accordance with accepted industry practices, are in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum definitions on Mineral Resources and Mineral Reserves, and are in compliance with NI 43-101.

Inventory estimates are calculated using the traditional polygonal method. Each structure is projected and plotted out onto a longitudinal section. Channel sample locations as well as mine workings are plotted onto these sections. Variogram analysis on 3 mayor structures (Alianza, Tapada, Cometa) showed variable grade continuity along strike and dip. Based on the available data a mineral resource block size down dip of 20 metres has been assumed for new blocks of the three analyzed structures. Historical block size will be maintained for all other structures until further variogram analysis are available. Silver and Zinc were considered to be the main variables in determining the maximum block dimensions. The block length was determined by the homogeneity of available sample results and not on the variogram results. All measured mineral resource blocks contain detailed channel sampling, hence variable grade distribution will be recognized by the sampling. The block width is a function of the weighted average of the vein channel samples and trigonometrically corrected for true width. A summary of the variogram parameters are listed below in Table 19-1, variogram plots are include as Figure 19-1A to Figure 19-1C.

**Table 19-1: Variogram Parameters**

Vein	Variable	Variogram Range (Strike x dip)	Measured Resource (Strike x dip)	Indicated Resource (Strike x dip)	Inferred Resource (Strike x dip)
ALIANZA	Silver	15m x 20m	15m x 20m	30m x 40m	37.5m x 50m
ALIANZA	Zinc	15m x 12m			
TAPADA	Silver	25m x 35m	25m x 30m	50m x 60m	62.5m x 75m
TAPADA	Zinc	32m x 40m			
COMETA	Silver	30m x 25m	30m x 25m	60m x 50m	75m x 62.5m
COMETA	Zinc	25m x 20m			

PAS is working on the implementation of Datamine Software and geo-statistical techniques to estimate the mineral resources and mineral reserves at the Huaron property.



**19.1 Specific Gravity**

A total of 89 samples were collected from different veins in the Huaron property for specific gravity ( SG ) analysis. The work was executed by CIMM Peru, a certified geochemical laboratory in Lima. CIMM Peru is an ISO 9001:2000-registered laboratory for geochemical and metallurgical sample analysis and has an ISO 17025 certification for environmental sample analysis. The results of the SG analysis are indicated in Table 19-2. The Patrick, San Narciso and Fastidiosa veins showed slightly different results in the analysis and the values shown in Table 19-2 are used for those veins. For all other veins an SG of 3.32 tonnes per cubic meter ( t/m<sup>3</sup> ) was assumed. Waste rock was assigned an SG of 2.70 t/m<sup>3</sup>. The geology department is constantly analyzing additional samples in order to continue to adapt the SG estimate in the mineral resources to changing information as mining progresses.

**Table 19-2: Applied specific gravity used for different veins at Huaron**

<b>Vein</b>	<b>SG Waste</b>	<b>SG Ore</b>
Patrick	2.70	3.58
San Narciso	2.70	3.30
Fastidiosa	2.70	3.20
All other veins	2.70	3.32

**19.2 Erratic Values**

High erratic values are corrected before a mineral reserve block is estimated. Sample grades are first multiplied by the respective vein width. In order to determine if a value is erratic, these products are compared to the average products of a block. If the result (grade x vein width) for a certain sample is larger than 1.5 times, the average product of the block, the sample is considered to be erratic and the sample grade is replaced by the average grade of the block.

**19.3 Criteria for Resource definition**

Following CIM standards, a measured mineral resource must have enough information about quantity, grade or quality, densities, shape, and physical characteristics 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, spaced closely enough to confirm both geological and grade continuity. All measured blocks at the Huaron Mine are sampled on at least one long block side with 2 to 4 metre spaced channel samples. For operational reasons the blocks are not longer than 70 metres and not shorter than 20 metres.

Indicated blocks have the same dimensions as measured blocks, but form the vertical continuation of the measured mineral resources. They contain sufficient geological information from diamond drill holes and sample grade interpolations to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit.

Inferred blocks have the same size as Indicated blocks but form the vertical continuation of the Indicated mineral resources. They contain limited diamond drill holes and have reasonably assumed, but not verified, geological and grade continuity.

For the end of 2006 mineral resource calculation, dilution was added utilizing an empirical formula similar to that proposed by T. Alan O Hara. The formula takes into account the vein width and dip angle when calculating the dilution percentage. The calculated amount of dilution decreases as a percentage as the dip and or the vein width increase. This is consistent with PAS experience in other mines in Peru in similar mining and ground conditions. The formulas used for calculating dilution are as follows:

Following the calculation of the diluted tonnes and grade in each block, economic parameters were applied to the measured and indicated mineral resources to calculate the proven and probable mineral reserves. The measured and indicated mineral resources remaining are that portion of the overall mineral resource that have the necessary data density and geologic confidence to be assigned to those mineral resource categories but require improvements in the economic conditions or assumptions in order to convert to mineral reserves.

The first economic parameter applied was a Net Smelter Return ( NSR ) value per tonne. This was calculated for each block by applying metal prices and using the existing and projected smelter terms to derive NSR or Value per Tonne ( VPT ) factors. The concentrates are sold under a contract with Doe Run Peru S.A.C (Ag, Pb concentrates), Cousorcio Thio S.A. (Pb concentrate), Glencore International (Pb, Zn concentrates) and Volorantin Metais Cajamarquilla S.A.C. (Zn concentrate). The factors and metal prices calculated are shown in Table 19-3.

**Table 19-3: Resource Metal Price and Factors****Metal Price and Factors Used to Calculate VPT**

<b>Metal Price</b>	<b>Ag</b>	<b>Cu</b>	<b>Pb</b>	<b>Zn</b>
<b>STRUCTURE</b>	<b>\$9.00/ounce</b>	<b>\$5,000/tonne</b>	<b>\$1,000/tonne</b>	<b>\$2,100/tonne</b>
	<b>KAg</b>	<b>KCu</b>	<b>KPb</b>	<b>KZn</b>
TAPADA	0.2200	15.5264	0.9437	4.7591
YADIRA	0.2127	15.2702	2.9868	5.1606
R. FASTIDIOSA	0.2164	7.0290	1.9983	4.8127
FASTIDIOSA	0.2183	19.5906	0.9552	5.4377
YANACRESTON	0.2074	15.4130	2.5873	6.6831
LABOR	0.2310	9.2339	4.1835	6.2120
SAN FRANCISCO	0.1782	5.4223	3.6151	7.3857
CUATRO	0.2314	14.7650	3.4712	5.9040
SAN NARCISO	0.2336	21.9188	1.4915	6.7057
ALIANZA	0.1738	4.7643	0.2446	4.6633
ROSARIO	0.2356	16.8475	3.8858	2.5940
LUCERO	0.2189	6.1666	4.0146	6.8279
VETA 81	0.2437	21.9970	3.6469	7.8356
SORPRESA	0.2119	16.7993	-1.5441	5.2058
ANITA	0.2191	2.4161	3.5637	7.7117
DANITZA	0.2196	6.1661	3.5357	6.6455
<b>AVERAGE</b>	<b>0.2153</b>	<b>13.9994</b>	<b>2.6006</b>	<b>6.2384</b>

The second economic parameter was applied in the overall mine plan by considering the economic merits of each zone to ensure that small isolated blocks that do not justify development are not included in the proven and probable mineral reserves.

The third economic parameter applied was the calculation of a cut off VPT. In consideration of the estimated operating costs and metallurgical recoveries, a cut off VPT was applied for each zone in the mine based on mining costs and metallurgical recoveries. The cut offs are given in table 19-4 below.

**Table 19-4: Reserve Cut Off Values****Cut Off for Reserve/Resource Statements Dec. 31, 2006**

		<b>Avg.</b>	<b>Norte</b>	<b>Norte</b>	<b>Norte</b>	<b>Sur</b>	<b>Satelite</b>
				<b>500</b>	<b>600</b>	<b>700</b>	
<b>Break Even</b>							
<b>(Economical)</b>	<b>Proven</b>	<b>46.00</b>	<b>48.00</b>	<b>42.00</b>	<b>45.00</b>	<b>45.00</b>	<b>48.00</b>
<b>Break Even</b>							
<b>(Economical)</b>	<b>Probable</b>	<b>46.00</b>	<b>48.00</b>	<b>42.00</b>	<b>45.00</b>	<b>45.00</b>	<b>48.00</b>
<b>Incremental Ore</b>							
<b>(Marginal)</b>	<b>Proven</b>	<b>32.00</b>	<b>34.00</b>	<b>28.00</b>	<b>31.00</b>	<b>31.00</b>	<b>34.00</b>
<b>Incremental Ore</b>							
<b>(Marginal)</b>	<b>Probable</b>	<b>32.00</b>	<b>34.00</b>	<b>28.00</b>	<b>31.00</b>	<b>31.00</b>	<b>34.00</b>

The plant has some excess capacity, hence an incremental cut off was applied to ore which covers all variable on site costs.



All measured mineral resource blocks which, after the application of the mining parameters, have a VPT higher than respective cut off, were converted to proven mineral reserves. Similarly, all indicated mineral resource blocks that met the requirements above were converted to probable mineral reserves. As all mineral resources are potentially economic, all remaining measured and indicated mineral resource blocks as well as any inferred mineral resource blocks with a VPT of less than \$25 per tonne were eliminated from the mineral resource summary.

There are no other known issues relating to environmental, permitting, legal, title, taxation, socio-economic, marketing, political, metallurgical, infrastructure, or other relevant factors that would materially affect the reported mineral resource and mineral reserve estimates reported in this Technical Report.

#### 19.3.1.1 Mineral Reserves

The Company's management estimates proven and probable mineral reserves at the Huaron Mine, as at December 31, 2006 are as follows:

#### Huaron Mineral Reserves

Reserve Category	Tonnes	Silver	Ag Content	% Content		
		(g/t)	(ounces)	Copper	% Lead	% Zinc
Proven	4,638,300	184	27,438,944	0.31	1.57	3.16
Probable	4,048,556	183	23,820,012	0.21	1.79	3.21
Total	8,686,856	184	51,258,956	0.26	1.67	3.18

Notes:

Calculated using a price of \$9.00 per ounce of silver, \$2,100 per tonne of zinc, \$1,000 per tonne of lead and \$5,000 per tonne of copper.

Estimates of mineral reserves are calculated on the basis of blocks exposed by underground workings on one or more sides and having an in-place diluted value equal to or above the cutoff grade (\$27/tonne). Proven and probable mineral reserves are extrapolated between 15 and 30 metres down dip depending on vein continuity.

Mineral reserve estimates for Huaron were prepared under the supervision of, or were reviewed by, Michael Steinmann, P.Geol., Senior Vice President Geology & Exploration, and Martin G. Wafforn, P.Eng., Vice-President of Mine Engineering, as Qualified Persons as that term is defined in *National Instrument 43-101-Standards of Disclosure for Mineral Projects* ( NI 43-101 ).

The Huaron mine has proven and probable mineral reserves, which indicate a projected mine life of at least ten years at current production rates.

#### 19.3.1.2 Mineral Resources

The Company's management estimates that mineral resources at the Huaron mine, as of December 31, 2006, are as follows:

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**Huaron Mineral Resources**

Resource		Silver	Ag Content			
Category	Tonnes	(g/t)	(ounces)	% Copper	% Lead	% Zinc
Measured	1,581,966	166	8,442,984	0.45	2.02	3.68
Indicated	1,168,964	174	6,539,448	0.55	1.86	3.83
Total M&I	2,750,930	169	14,982,433	0.49	1.95	3.74
Inferred	3,457,751	182	20,232,793	0.30	1.69	3.03

## Notes:

These resources are in addition to mineral reserves. Calculated using a price of \$9.00 per ounce of silver, \$2,100 per tonne of zinc, \$1,000 per tonne of lead and \$5,000 per tonne of copper.

Mineral resource estimates for Huaron were prepared under the supervision of, or were reviewed by, Michael Steinmann, P.Ge., Senior Vice President Geology & Exploration, and Martin G. Wafforn, P.Eng., Vice-President of Mine Engineering, as Qualified Persons as that term is defined in NI 43-101.

Mineral resources that did not prove to be economic are not included in the economic analyses.

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**20. Other Relevant Data and Information**

No other data or information is relevant to the review of the Huaron property.

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## 21. Interpretation and Conclusions

Mr. Martin Wafforn, P. Eng., Vice President of Mine Engineering of PAS, and Dr. Michael Steinmann, P. Geo., Senior Vice President of Exploration and Geology of PAS, both QP's, reviewed pertinent data from the Huaron property regarding exploration data and methods, mineral resource and mineral reserve estimates, metallurgy, and process performance. They determined that PAS' estimates of mineral resources and mineral reserves for the Huaron property as of December 31, 2006 are in accordance with Canadian National Instrument 43-101, and as set forth in the CIM Standards on Mineral Resources and Mineral Reserves, Definitions and Guidelines. The authors generally conclude:

The geology and mineralization of deposits on the Huaron property are well understood. Current geological models are conservative in approach for estimating reserves and resources and have been developed in a professional manner. Exploration drilling, sampling, sample preparation, assaying, density measurements and drill-hole surveys have been carried out in accordance with industry standard practices and are suitable to support resource estimates.

Exploration and drilling programs are well-planned and executed and supply sufficient information for mineral resource estimates and mineral resource classification.

Sampling and assaying includes a QA/QC program, supervised by the geology department that includes external check samples and the routine submission of standards. The implementation of inserted standards and blanks has identified potential sample analysis quality, in particular the reported zinc content. Corrective action has been taken to improve the quality of assays. Results have been positive but continued improvements are necessary to keep inserted standard and blanks within 5% of the certified value.

The Huaron deposit mineral resource model was developed using industry accepted methods. The QP's validated the mineral resource estimate and found it to be acceptable in both tonnage and grade. However the advantages of using modern geostatistics have been recognized for the purposes of mineral reserves and mineral resource estimation and mine planning. Further variogram analysis and specific gravity tests for individual mineralized structure are in progress.

Mine designs have been developed using industry standard practices and appropriate design criteria. Proven and probable mineral reserves were developed from measured and indicated mineral resources with appropriate application of cost and design criteria.

The metallurgical process has been historically proven and the existing plant has been well maintained. Additional reconfigures have improved metallic recovery and concentrate quality.



Mineral resources are classified as measured, indicated and inferred mineral resources. Mineral resource classification criteria are appropriate in terms of the confidence in grade estimates and geological continuity and meet the requirements of National Instrument 43-101 and CIM Definition Standards on Mineral Resources and Mineral Reserves (2005). The majority of the proven and probable mineral reserves are found in wider veins (>°1.5 m) available to semi-mechanical mining methods, which allow for more productive mining and reduced operating costs. Additional categorization shows that a majority of the proven and probable mineral reserves are currently defined within Mineral Zone 1, which contains silver, lead, and zinc associated with pyrite. In general, this zone contains lower copper grades and higher zinc and lead grades.

The economic analysis calculates a Net Present Value of \$70.2M at a 10% discount rate and \$53M at a 15% discount rate. The undiscounted after tax cash flow is \$137M. The Huaron Mine unit average operating costs are \$51.21 from 2008 to 2018.

The LOM plan presented in this Technical Report is based on proven and probable mineral reserves and measured and indicated mineral resources. The LOM plan extends until 2018.

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**22. Recommendations**

The authors of this Technical Report recommend the continued development and execution of the mine plan. The capital expenditures included in the economic analysis are required to enable the execution of the mine plan. Items critical to the continuation of mining include:

Acquisition of additional surface rights for the future expansion of Presa #5 tailings impoundment.

Approval of the Acquisition and Use of Explosive Permit , which will allow the use of ANFO on-site and subsequently reduce blasting costs.

Approval of the Domestic Landfill Permit .

Continued improvement of water quality released back into the environment.

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**23. References**

Report entitled Memoria Descriptiva Del Proceso Metalurgico En Planta Concentradora Huarón dated September 2007 by Edgar Canta, PAS Peru Corporate metallurgist.

Report entitled Inventario de Reservas Minerales y de Recursos Minerals dated September 2007 by Micheal Steinmann, PAS Senior VP.

Report entitled Sample Procedures, Quality Assurance and Quality Control(QA/QC) for sampling dated February 2005 by Micheal Steinmann, PAS Senior VP.

Report entitled Mining Sample Collectors Manual dated February 2005 by R. Olazabal T.

Report entitled Pan American Silver Corp Annual Information Form for the Year 2006 , dated March 21, 2007.

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## **24. Additional Requirements for Technical Reports on Development Properties and Production Properties**

### **24.1 Mining**

PAS completed the Huron LOM plan. Martin Wafforn, P.Eng., who is a co-author of this Technical Report has reviewed and determined in his professional judgment that the mine plan discussed in this Section 25 is sound and that this mine plan is to be adopted. The plan is based on providing 2,150 tpd of ore to the mill. This LOM plan does not include any inferred mineral resources.

#### ***24.1.1 Mine Layout***

The mine from a planning and operations perspective is laid out into eight geographical octants. On plan the mine is divided in four quadrants by the Travieso (E-W) and Constancia (N-S) veins as the axes. In addition the mine is split vertically at the 500 level into the area above and the area below. The naming convention for mine levels are in descending order, i.e. Level 500 is at the 4500 metre elevation and Level 250 is between 4250 and 4235 metre elevation.

The main mine access is via a four metre by four metre ramp which starts above the 500 level and extends to below the 250 level where a deepening project is in progress. Two other tunnels, Trapiche Tunnel and Paul Nevejans Tunnel, on Level 420 and Level 250 respectively provide additional access to the mine. All mine water is collected on the 250 level and drained down the Paul Nevejans Tunnel to the treatment ponds.

There are three de-commissioned shafts on the property that have not been operated since the late 1980 s. A thorough analysis of the cost to refurbish shaft D has been completed and it is assumed in this report that the shaft will be refurbished and deepened to the 180 level. The capital cost of this work and the anticipated ore handling cost savings are included in the economic analysis.

Figure 25-1 is a representative longitudinal section, illustrating the above mentioned infrastructure.

In 2006, the mine started the development of a new conveyor way ramp from the current bottom of the mine (250 level) to the 180 level in the north zone. This work will deepen the north zone of the mine by 70 metres and provide access to known vein extensions that have not been previously mined.

#### ***24.1.2 Mining Method***

In 2006, stopes from 32 different veins (averaging 2.38 metres wide) were mined with approximately 77 stopes active at any time. During 2006, the mine mechanized some of the stopes by introducing small scoop trams. This had the effect of increasing productivity, and by the end of the year only 35 stopes were required to maintain production. The mining method is 100% overhand cut-and-fill using mill tailings as the backfill material.

Figure 25-2A and Figure 25-2B illustrate the general cut-and-fill sequence with a slusher and scoop tram respectively. Cut lengths when using slusher are typically 30-40 m and 40-70 m when utilizing scoop trams.

#### **DRILLING AND BLASTING**

Drilling is performed with jackleg and jumbo electro-hydraulic drills, drilling over head, 1.2 m cuts. The blasts are done with emulsion, gel dynamite explosives, and in some areas of the mine PASH is permitted to use ANFO.

#### **MUCKING**

In general veins that are less than 1.8 m thick are mined with 15-30 hp slushers utilizing 25 to 36 inch buckets. For veins exceeding 1.8 m it is advantageous to muck with LHD scoop-trams of 1.25, 2.5 or 3.5 cubic meter capacity.

#### **TRANSPORT**

Ore is hauled from the lower levels by 20 tonne haul trucks to the 500 level, where electric locomotives transport ore to the surface.

Rehabilitation of the 500 level was completed in April 2005 in order to change the ore haulage system from commercial 12 m<sup>3</sup> capacity trucks to electric locomotives for the ore transport from 500 level to surface. This will continue to result in savings in operating costs, and provide access to new zones with ore reserves.

During 2006, the mine started the development of a new conveyorway ramp from the current bottom of the mine (250 level) to the 180 level in the north zone. This work will deepen the north zone of the mine by 70 metres and provide access to known vein extensions that have not been previously mined.

#### **BACKFILL**

The mine uses hydraulic tailings from the plant and waste rock from the development headings as backfill.

During 2007 the mine added a small crushing and grinding circuit to provide an additional 6,000 cubic meters per month of ground waste rock to augment the coarse portion of the mill tailings used for hydraulic backfill underground.

#### **24.2 Processing**

In 2006, the concentrator plant processed 693,285 tonnes of ore. Processing is expected to be in the range of 780,000 tonnes per year throughout the LOM plan. The actual capacity of the mill is higher than this, in the order of 840,000 tonnes per year. In the opinion of Martin Wafforn, P.Eng., the mill is capable of processing the production forecast in the LOM plan.

The Huaron Mine operates a mill using froth induced flotation technology to produce silver in copper, lead, and zinc concentrates. The mill flowsheet consists of three-stage-crushing, ball mill grinding and selective flotation of the ore to concentrates, followed by thickening and filtering of the concentrates.

The Huaron deposit is polymetallic comprising the following main minerals:

Copper minerals:	Tetrahedrite, Chalcopyrite
Silver minerals:	Argentiferous Tetrahedrite, Freibergite
Lead mineral:	Galena
Zinc minerals:	Sphalerite, Marmatite

Gangue minerals: Pyrite, Rhodocrosite, Quartz, Roderite

The mills flow sheet is shown in Figure 25-3A and a list of the components are provided in Figure 25-3B.

#### **24.2.1 Crushing**

The crushing plant has a single coarse ore bin with a 30 cubic metre capacity. Ore is fed via a feeder from the storage bin onto a by conveyor belt. From there, the ore travels over a sequence of conveyor belts to a 4 ft by 8 ft vibrating grizzly. The oversize from the grizzly is then crushed in a 24 inch by 36 inch jaw crusher. The combined ore stream is then transported to the secondary crusher circuit via multiple conveyors. The ore travels to a vibrating screen with rectangular openings of 2 1/2 inches with the reject from this screen going to a 4 1/4 ft Symons cone crusher. The undersize travels to another vibrating screen, with openings of 3/4 x 2/2 , which feeds a 4/2 ft Symons short head cone crusher. The final product is crushed to a size of 100% 3/4 and is stored within fine ore bins prior to entering the grinding circuit.

#### **24.2.2 Grinding and Classification**

The crushed ore is stored in six fine ore bins each with a capacity of 350 tonnes. The grinding circuit consists of a 12 ft diameter by 16 ft long primary ball mill operating in a closed circuit with one of an 8 ft diameter by 8 ft long secondary ball mill or an 8 ft diameter by 3 ft long secondary ball mill. The grinding circuit uses a D-20 hydrocyclone for classification. Final product from this circuit is 10% plus 65 mesh and 60% minus 200 mesh (with the remaining 30% between 65 and 200 mesh).

#### **24.2.3 Flotation**

The pulp from the grinding circuit is fed to the flotation cells at a density of 1,310 to 1,340 grams per liter. Bulk flotation to produce a copper / lead concentrate is followed by copper and then zinc separation.

Bulk flotation occurs in 3 stages: roughing, cleaning and scavenging. The pulp from the mill enters the OK8 primary rougher cell followed by an OK8 secondary rougher cell. The froth from the first rougher is sent to the copper separation circuit and the froth from the second rougher is sent to cleaning in 8 DR24 cells and 2 DR-18 cells producing the bulk concentrate for lead / copper separation. The tailings from the DR24/DR18 cells go to a scavenger and the froth is returned to the first cleaner the tails are pumped to the zinc separation circuit.

The Copper / lead concentrate is gathered in a 8 ft by 8 ft separating conditioner where activated carbon and sodium bicromate are added to activate the copper. Separation is done in 2 Denver SubA100 cells and 4 Denver SubA50 cells where the copper is floated. The floated copper goes to a series of cleaning and scavenging cells. The copper concentrate obtained typically grades 22% to 25% copper. The tailings from the copper scavenger is the lead concentrate which typically grades 45% to 50% lead.

The tailings from the bulk concentrate become the feed for the zinc flotation circuit. First, the pulp goes to 3 10 ft diameter by 10 ft high conditioning cells. After conditioning, the pulp travels to a rougher stage and the froth is sent to 3 cleaners in a conventional circuit where the zinc concentrate is produced. The tailings from the 3 rougher cells are the final tailings.

#### **24.2.4 Filtration**

The lead concentrate is thickened in a Dorr Oliver 26 ft diameter by 6 ft high thickener or an auxiliary 20 ft diameter by 8 ft high Dorr Oliver thickener. In the same way, the copper concentrate is thickened in a Denver 18 foot diameter by 8 ft thickener. The zinc concentrate goes to a 28 ft diameter by 10 ft Fima thickener and excess concentrate is sent to a Dorr Oliver 24 ft diameter by 8 ft thickener.

The concentrates are stored in separate holding tanks and from there are pumped at a pulp density of 1,800 grams per litre or higher to a 1.2 metre by 1.2 metre Andritz 1500 filter press with 34 plates. The final concentrates have a moisture content of approximately 8%.

**24.2.5 Reagents Used in the Plant****Table 24-1: Typical Reagent Consumption Rates**

	<b>Reagent</b>	<b>Concentration cc/min</b>	<b>Consumption g/tonne</b>
<b>Bulk Flotation</b>	ZnSO <sub>4</sub>	6.53	198.384
	NaCN	3	50.24
	Z-11	8	7.96
	Z-6	8	4.55
	MIBC	100	41.95
	A-208	100	5.1
	MT-4064	100	3.99
	R-404	100	3.42
	Activated Carbon	0.5	5.14
	Na <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	2	47.85
	Fosfato	2	8.1
	CMC	2	17.45
	Dextrine	0.75	2.14
<b>Zinc Flotation</b>	CuSO <sub>4</sub>	8	247.83
	Z-11	8	8.46
	Z-6	8	14.78
	MIBC	100	9.11
	Dextrine	0.75	2.145
	MT-4064	100	2.98
	Cal	60	3758.58
<b>Thickeners</b>	Magnafloc 351 (Cu)	0.01	0.37
	Magnafloc 351 (Pb)	0.01	0.29
	Magnafloc 351 (Zn)	0.01	0.15

**24.3 Metal Recovery**

The projected recoveries used in the economic analysis are shown in section 18.

Projected metallurgy in the LOM plan has been summarized as follows:

- Copper concentrates contain 24% to 25% copper depending on the head grades. Copper recoveries vary from 59% to 61%. The silver grade in the copper concentrate is projected to vary from 6,300 g/t to 10,000 g/t.
- Lead concentrates contain 42% to 45% lead and recovers 74% of the lead contained in the feed. Silver grades in the lead concentrate are projected to be between 1,680 g/t and 2,300 g/t depending on the head grade. Overall silver recovery to the copper and lead concentrates averages 80%.
- Zinc concentrates contain 45% to 47% zinc at a recovery of 63.4% to 67.0%.



#### **24.4 Tailings Management**

Tailings from the processing plant are pumped to Presa #5 impoundment via an HDPE pipeline. The slurried tailings are discharged from an area upstream of the dam alignment from the crest of the tailings dam. A tailings beach is maintained above the water level and against the upstream face of the dam to control seepage and improve stability.

The tailings dam is constructed primarily of waste rock from the mine. Since acquiring the Huaron Mine, PAS has carried out a number of improvements to the design of the ongoing raising of the tailings dam to improve stability.

The due diligence process prior to acquiring the mine identified the potential for the original starter dam and subsequent dam raises to have been constructed over tailings overlying organic, loose and wet natural soils. Subsequent drilling and testing of the soils confirmed this to be the case.

A number of changes to the dam design have been implemented, as recommended by external consultants Vector Peru S.A.C., to improve the dam stability.

The dam raising design was changed from the centerline method of construction to the downstream method. This change allows for the placement and compaction of a larger section of robust material to improve the internal stability of the dam embankment.

A downstream buttress was constructed along the dam alignment where the dam was identified to have been constructed over soft and wet foundation soils. The buttress improves the stability of the dam against potential failures resulting from the low shear strengths of the foundation soil units.

As mentioned above, the tailings discharge routine includes the discharge of tailings from the dam crest to form an above water beach against the face of the dam. This forces the water pond to form towards the back side of the impoundment, reduces the phreatic level in the dam embankment and improves stability.

The decant intake is currently being relocated further away from the dam crest to increase the distance between the water pond and the dam crest while still allowing water to be decanted via gravity.

An emergency spillway is constructed at the right abutment of the dam to route flows from extreme precipitation events through the impoundment while maintaining the minimum allowable freeboard to protect the dam from overtopping and/or erosion.

Diversion ditches are maintained at both sides to the tailings impoundment to minimize the amount of runoff reporting to them.

Finally, monitoring instrumentation has been installed and incorporated into the management plan for the impoundment to confirm that the dam performance is within design limits. Vibrating wire, pneumatic and standpipe piezometers have been installed to measure phreatic and pore water pressure conditions and inclinometers have been installed to measure deformations.

In the final phases of Presa #5 future development will encapsulate Presa #1 to Presa #4, located directly upstream of Presa #5. There are no known stability or volume storage issues that would prevent the current dam being raised to store the projected volume of tailings in the LOM plan as presented in this report. The current dam raise, in progress in 2007, is being completed using the down stream method. An engineering firm will be retained in 2008 to consider the methods to be applied for future dam raises over the current life of mine. The cost of the study is budgeted, there is a potential for some capital cost savings if future dam raises can be done using the less expensive center line method. As the dam is raised and the surface area of the tailings deposit expands, additional lands will need to be negotiated with the local communities. These negotiations have been conducted in the past and there is no reason to believe that they won't be successfully completed in the future. The Huaron mine is a large part of the local economy and so both parties are motivated to conclude agreements.

#### **24.5 Environmental Considerations**

The most significant environmental issues currently associated with the mine are metal-laden waters discharged from the mine, localized areas of acid rock drainage from the mine's tailings deposit areas and the containment and stability of the active tailings ponds.

During 2004 and 2005, water quality at the compliance point has met pH standards and a majority of metal compliance standards. The closure planning process, now underway with the support of independent consultants, will define closure and mitigation options for improving water quality exiting the site.

The site water quality at Huaron has improved due to the expansion and modification of the effluent management and treatment system. Water from the tailings facility and the upper levels of the mine are now combined with the flows from the lower level of the mine. The flows are directed to a lime addition and sedimentation treatment system. Following the implementation of this change the water quality at the downstream discharge point is at levels permitted by Peruvian regulations. The sampling program is continuing to monitor the expected improvement in water quality.

##### ***24.5.1 Mine Water Drainage***

The oxidation of sulphide minerals in the Huaron Mine causes some acid drainage that must be captured and treated in order to comply with the operating permits and to protect the environment. The principal sources of acid drainage are:

- Mine flow from the 250 level

- Seepage from the tailings impoundment;

- Seepage and runoff from areas impacted by tailings resulting from the mine inundation in the past.

The seepage and runoff from the tailings impoundment and impacted areas are collected in surface channels and directed into the 400 level mine adit. From here the flows are combined with mine water from the 400 level. The combined flow is directed through a raise bore to the 250 level. This is the main drainage level where all mine water is collected.

The combined mine drainage and acid surface flows are then directed via open channels to two sedimentation ponds where flocculent is added. The water quality of the combined flow has a neutral pH and the regulated metals levels are low enough that the sedimentation process works well to improve the quality to meet discharge limits. The main issue with the water treatment is the relatively high flows, averaging 650 litres/s. Treated water is discharged to the environment meeting MEM's discharge requirements.

The sludge from the sedimentation ponds is stored temporarily at an adjacent impoundment and after a period of drying it is excavated and trucked to the Presa #5 tailings impoundment for permanent storage. The mine is currently looking at continuous reclaim solutions to deliver the sludge directly to the Presa #5 impoundment without temporary storage and drying. Lime addition has also been implemented at the processing plant to reduce the pH and assist with treatment.

#### ***24.5.2 Monitoring Program and Inspections***

The environmental monitoring program at the Huaron Mine has been approved by MEM and includes seven water quality and two air quality monitoring locations. Of the seven water quality monitoring locations, five monitor the quality of effluents and two monitor the quality of the receiving waters. The monitoring data is reported regularly to MEM and they carry out audits generally two times per year.

#### ***24.5.3 Closure Plan***

In accordance with MEM regulations a closure plan for the Huaron Mine was submitted to the MEM in August of 2006. The closure plan included a detailed estimated of cost to carry out the final closure of the mine and associated surface and underground workings. The closure plan has been submitted to MEM and is pending their review. Once reviewed and approved a financial guarantee will be payable for the final years of operation of the mine. The amount of the guarantee is adjustable based on changes to the mine plan or changes in closure cost estimates.

For the economic assessment of the Huaron Mine presented in this report PAS has also estimated an Asset Retirement Obligation (ARO) of \$11.21 million. The undiscounted ARO estimate is summarized in Table 24-2.

**Table 24-2: Asset Retirement Obligation**

#	Area	Estimated Cost (USD)
1	Closure Plan Design/Permitting	1,019,252
2	Underground/Open Pit Mine Closure	1,392,427
3	Process Facility Demolition	1,499,539
4	Other On-site Demolition	1,060,365
5	Off-site Infrastructure Demolition/Rehabilitation	0
6	Wasterock Dump Closure/Reclamation	296,191
7	Tailings Impoundment Closure/Reclamation	5,622,498
8	Heap Leach Facility Closure/Reclamation	0
9	Other Surface Contouring/Reclamation	0
10	Water Treatment System Construction	0
11	Post Closure Water Treatment	0
12	Post Closure Monitoring	321,500
	Total	11,211,772

The principal area of uncertainty relating to the final closure of the Huaron mine is the closure of the existing tailings impoundment, Presa #5.

#### **24.6 Markets and Contracts**

Prices for the metals that the Huaron Mine produces have been robust for the last three years, after several years of prolonged weakness. Factors contributing to the recovery in metal prices include demand resulting from strong industrial growth in China, weakness in the US dollar and supply concerns due to under-investment in new production capacity. PAS anticipates that these factors will continue to support prices in the future and that the long-term fundamentals for metal prices are positive.

The principal products from the Huaron Mine are silver rich copper, lead, and zinc concentrates. All of these concentrates are sold under arm's length contracts to metals trading companies or integrated mining and smelting companies. Under the terms of all of its sales contracts, Huaron Mine receives payment for an agreed percentage of the silver, copper, lead, or zinc contained in the concentrate, after deductions for smelting and refining costs.

In 2006, the revenues per type of concentrate produced at the Huaron Mine were as follows:

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**Table 24-3: Concentrate Revenues 2006**

	Revenue	Tonnes	Average Sales Price
2006	(\$ Million)	Sold	(\$/Tonne)
Copper Concentrate	31.3	6,716	4,661
Lead Concentrate	17.1	17,002	1,006
Zinc Concentrate	23.2	24,975	929

**24.7 Contracts**

To date, PAS has been able to secure contracts for the sale of the Huaron concentrates.

**Table 24-4: List of Existing Sale Contracts**

Contract Sales for Huaron Mine 2008-09			
	Client	Sales (Tonnes Per Year)	Contract Duration (Year)
Copper Concentrate	Doe Run Peru S.A.C	7,500 to 8,500	2008
Lead Concentrate	Doe Run Peru S.A.C	1,000 ( $\pm 10\%$ )	2008 2009
	Consorcio Minero S.A Cormin SA	7,000 ( $\pm 15\%$ )	2008 2009
	Glencore International AG	7,000	2008 2009
Zinc Concentrate	Glencore International AG	Total Production	2008
	Glencore International AG	60 % of Total Production	2009 2011
	Votorantim Metais Cajamarquilla S.A.	15,000 ( $\pm 20\%$ )	2009

The terms of smelting contracts are confidential as specified within each contract. However, Mr. Martin Wafforn and Dr. Michael Steinmann, authors of this Technical Report, have reviewed these terms and compared them with similar contracts signed at the other PAS operations. The authors consider these contracts to be within industry norms.

Some of the mining, mine construction projects and hauling of concentrates are done by third party contactors, as is a normal practice in Peru. The markets for mining and hauling contactors in Peru are extremely well-established and they have been and they are very competitive. The authors of this Technical Report have reviewed these contracts and considered the mining and hauling contracts at the Huaron Mine to be within industry standards. Electrical energy is purchased under long term contracts of 5 cents per kWh, which is within industry norms in Peru for companies with long term contracts.

Current electricity rates are 5 cents per kilowatt hour. There is a risk that PAS might not be able to secure a new long term electricity contract and the cost of electricity might increase to 8 cents per kilowatt hour. Current life of mine scheduling is based on 104 kilowatt hours per tonne of ore mined and if the cost is increased by 3 cents per kilowatt hour, the new schedule would be increased by approximately 3 kilowatt hours per tonne to a total of 107 kilowatt hours per tonne.

## **24.8 Taxes**

The following is a summary of current Peruvian fiscal rates and legislation.

### **24.8.1 Fiscal Depreciation Rates**

The following is a summary of the annual depreciation rates for various types of assets:

Exploration, mine development, mine rehabilitation: 100%

Mine equipment: 20%

Vehicles: 20% · Computers: 25%

Buildings and other infrastructure: 3%

Other: 10%

### **24.8.2 Income Tax and Workers Participation**

The corporate tax rate on taxable income in Peru is 30%. The workers participation rate is 8%. Workers participation is deductible from taxable income. Therefore, the effective income tax / worker s participation rate is 35.6%

### **24.8.3 Value Added Taxes**

The value added tax ( VAT ) rate in Peru is 19%. VAT is paid on all goods and services except for direct labour costs. Indirect labour costs (i.e. contractors and sub-contractors) are subject to VAT.

VAT is recovered through domestic sales. A 19% VAT rate is applied to all domestic sales and is applied against the VAT receivable. Companies cannot recover more VAT in any period than the amount accounted for as receivable.

### **24.8.4 Mining Royalties**

Mining royalties are charged on revenues net of refining, smelting, transportation, and general selling charges. Mining royalties are escalated in the following way:

1% on the first \$60 million of net revenues

2% on net revenues from \$60 million to \$120 million

3% on net revenues above \$120 million

Mining royalties are income tax deductible.

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**24.8.5 Voluntary Contributions**

Voluntary contributions are paid into two separate mine funds: local and regional funds. The contributions calculations are based on after tax net income. The following are the rates on the two funds:

Local mining fund: 2% of after tax net income excluding mining royalties

Regional mining fund: 1% of after tax net income

**24.9 Capital and Operating Costs****24.9.1 Capital Costs**

During 2006, capital expenditures were approximately \$5.2 million and consisted of:

equipment replacement and improvements totalling \$1.8 million;

and mine development and deepening totalling \$3.4 million.

Table 24-5 summarizes the capital expenditure estimate for the LOM plan. Highlights of the 2007 capital budget include:

\$6.2 million for deepening to the 180 level and installing a conveyor belt between 180 and 250 levels, and the rehabilitating and upgrading works needed to bring D shaft back into operation;

And \$2.3 million for providing additional backfill capacity and to raise the tailings dam

**Table 24-5: Life of Mine Capital Expenditure Estimate**

LOM SUMMARY OF CAPITAL EXPENDITURES (x \$1000)

Area	Geology	Mine	Plant	Maintenance	Safety & Enviro	Other	Total
2007	1,270	6,249	2,285	1,385	270	800	<b>12,259</b>
2008	200	9,170	1,702	1,970	100	1,412	<b>14,554</b>
2009	1,000	5,280	250	1,600	150	1,300	<b>9,580</b>
2010	1,000	3,300	1,135	1,300	150	650	<b>7,535</b>
2011	1,000	2,700	250	1,800	150	420	<b>6,320</b>
2012	1,000	2,920	1,060	600	150	420	<b>6,150</b>
2013	1,000	2,920	250	600	150	420	<b>5,340</b>
2014	1,000	2,920	1,060	600	150	420	<b>6,150</b>
2015	1,000	2,920	250	600	150	420	<b>5,340</b>
2016	1,000	2,920	1,060	600	150	420	<b>6,150</b>
2017	1,000	2,920	250	600	150	420	<b>5,340</b>
2018	1,000	2,920	1,060	600	150	420	<b>6,150</b>
2019	0	1,500	250	300	50	200	<b>2,300</b>

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**24.9.2 Operating Costs**

Actual operating costs, as calculated by the Mine accounting department, are summarized in Table 24-6 for 2006.

**Table 24-6: Year 2006 Budget and Actual Operating Costs**

	<b>BUDGETED</b>	<b>ACTUAL</b>	<b>DIFF</b>	<b>VAR</b>
Tonnes Milled	478,300	496,375	18,075	4%
<b>Net Smelter Return</b>				
Zinc Concentrate	\$ 13,282,787	\$ 14,313,260	\$ 1,030,474	8%
Lead Concentrate	\$ 10,845,296	\$ 14,992,014	\$ 4,146,718	38%
Copper Concentrate	\$ 15,453,759	\$ 22,279,241	\$ 6,825,482	44%
Unbudgeted Tenders	\$ 0	\$ 0	\$ 0	0%
Mining Royalties	\$ (395,818)	\$ (502,486)	\$ (106,668)	27%
<b>Total NSR</b>	<b>\$ 39,186,023</b>	<b>\$ 51,082,029</b>	<b>\$ 11,896,006</b>	<b>30%</b>
<b>Costs</b>				
Mine	\$ 11,285,429	\$ 11,422,817	\$ (137,389)	-1%
Mill	\$ 1,680,688	\$ 1,990,792	\$ (310,104)	-18%
Water Treatment Plant	\$ 187,713	\$ 259,463	\$ (71,750)	-38%
Engineering	\$ 430,198	\$ 380,794	\$ 49,404	11%
Geology	\$ 503,154	\$ 520,667	\$ (17,513)	-3%
Safety	\$ 500,304	\$ 534,296	\$ (33,992)	-7%
Maintenance and Services	\$ 1,690,136	\$ 1,987,292	\$ (297,156)	-18%
Electric Energy	\$ 1,940,705	\$ 2,047,824	\$ (107,119)	-6%
Camp Administration	\$ 2,255,273	\$ 3,113,947	\$ (858,673)	-38%
<b>Production Costs</b>	<b>\$ 20,473,600</b>	<b>\$ 22,257,892</b>	<b>\$ (1,784,292)</b>	<b>-9%</b>
Transaction Costs	\$ 58,420	\$ 112,339	\$ (53,919)	-92%
Mining Concessions	\$ 107,204	\$ 107,260	\$ (56)	0%
Administ,Insurance+ Legal + PAMA	\$ 624,793	\$ 449,230	\$ 175,563	28%
Management Fee Peru	\$ 741,488	\$ 1,201,626	\$ (460,138)	-62%
Management Fee Canada	\$ 144,000	\$ 155,893	\$ (11,893)	-8%
Shipping & Selling	\$ 756,935	\$ 826,109	\$ (69,174)	-9%
Ocean Freight	\$ 358,821	\$ 657,054	\$ (298,233)	-83%
<b>Operation s Costs</b>	<b>\$ 23,265,261</b>	<b>\$ 25,767,403</b>	<b>\$ (2,502,142)</b>	<b>-11%</b>
<b>Production Basis Margin</b>	<b>\$ 15,920,762</b>	<b>\$ 25,314,626</b>	<b>\$ 9,393,864</b>	<b>59%</b>
Miscellaneous Costs	\$ 320,000	\$ 193,405	\$ 126,595	40%
Capital Spending	\$ 8,172,667	\$ 4,590,296	\$ 3,582,371	44%
Reclamation Expenditures	\$ 200,000	\$ 387,545	\$ (187,545)	-94%
<b>Margin</b>	<b>\$ 7,228,096</b>	<b>\$ 20,143,380</b>	<b>\$ 12,915,285</b>	<b>179%</b>



NSR per tonne	\$	81.93	\$	102.91	\$	20.98	26%
Total Cost per tonne	\$	48.64	\$	51.91	\$	(3.27)	-7%
<b>Margin per tonne</b>	\$	33.29	\$	51.00	\$	17.71	53%
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The actual costs are used as a foundation of the operating cost estimate during the LOM plan. Mr. Martin Wafforn has reviewed these estimates and determined in his professional judgment that these estimates are reasonable.

The operating cost estimates exclude any consideration for inflation. The estimates were calculated using 3<sup>rd</sup> quarter 2007 US dollars and a flat Peruvian Nuevo Sol ( PEN ) to US dollar exchange rate of 3:1 for the life of the Huaron Mine. In order to reflect the cost escalations in the industry, all of the operating costs were subsequently escalated by 10%.

Operating costs are paid in Peruvian Soles. In 2007, the Sole has strengthened against the USD and operating costs at the mine might increase if the Sole continues to strengthen. PAS has taken into account a strong Sole for 2008 assigning a value of 3 Soles per USD.

There has been an increase in labor, contractor and material cost associated with the increase in metal price. PAS currently assumes a 5-10% increase in cost the following year; however, current costs might increase more than the predicted rate.

The life of mine unit operating cost estimate is summarized in table 24-7.

**Table 24-7: Life of Mine Operating Cost Projections**  
**OPERATING COST ESTIMATE**

<b>Unit Costs per Tonne</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Mine	\$ 22.62	\$ 23.31	\$ 23.92	\$ 23.92	\$ 23.90	\$ 23.83	\$ 23.81
Processing	\$ 3.37	\$ 4.12	\$ 4.10	\$ 4.09	\$ 4.09	\$ 4.08	\$ 4.08
Water Treatment Plant	\$ 0.38	\$ 0.44	\$ 0.45	\$ 0.45	\$ 0.45	\$ 0.45	\$ 0.45
Planning & Engineering	\$ 0.86	\$ 0.99	\$ 0.96	\$ 0.96	\$ 0.96	\$ 0.96	\$ 0.96
Geology	\$ 1.01	\$ 1.11	\$ 1.09	\$ 1.09	\$ 1.09	\$ 1.08	\$ 1.08
Safety & Environment	\$ 0.99	\$ 1.34	\$ 0.99	\$ 0.99	\$ 0.99	\$ 0.98	\$ 0.98
Maintenance	\$ 3.41	\$ 4.82	\$ 4.73	\$ 4.73	\$ 4.73	\$ 4.72	\$ 4.71
Electric System	\$ 3.90	\$ 4.23	\$ 4.18	\$ 4.18	\$ 4.17	\$ 4.16	\$ 4.16
Camp Administration	\$ 4.53	\$ 6.57	\$ 6.40	\$ 6.40	\$ 6.39	\$ 6.37	\$ 6.37
Inventory Variations	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
<b>Production Costs</b>	<b>\$ 41.05</b>	<b>\$ 46.94</b>	<b>\$ 46.82</b>	<b>\$ 46.81</b>	<b>\$ 46.78</b>	<b>\$ 46.64</b>	<b>\$ 46.60</b>
Transaction Costs	\$ 0.12	\$ 0.22	\$ 0.21	\$ 0.21	\$ 0.21	\$ 0.21	\$ 0.21
Mining Concessions	\$ 0.21	\$ 0.20	\$ 0.20	\$ 0.20	\$ 0.20	\$ 0.20	\$ 0.20
Administrative Insurance+Legal	\$ 1.25	\$ 0.87	\$ 0.90	\$ 0.90	\$ 0.90	\$ 0.89	\$ 0.89
Management Fee Peru	\$ 1.48	\$ 1.53	\$ 1.54	\$ 1.54	\$ 1.53	\$ 1.53	\$ 1.53
Management Fee Canada	\$ 0.29	\$ 0.62	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Shipping & Selling	\$ 1.53	\$ 1.49	\$ 1.54	\$ 1.54	\$ 1.53	\$ 1.53	\$ 1.53
Ocean Freight	\$ 0.71	\$ 1.38	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
<b>Operation s Costs</b>	<b>\$ 46.64</b>	<b>\$ 53.27</b>	<b>\$ 51.20</b>	<b>\$ 51.19</b>	<b>\$ 51.16</b>	<b>\$ 51.01</b>	<b>\$ 50.97</b>

### **24.9.3 Economic Analysis**

PAS, like many other precious metals producers, uses methods established by The Gold Institute (Production Cost Standards, Nov. 1999) to calculate costs per ounce of silver produced at mine operations. For each mine, PAS totals all direct mining costs, adds smelting and shipping costs, and adds the value of metals lost in smelting, plus royalties, production-related taxes, interest on loans and mine management/administration costs. From this total operating cost, PAS subtracts the amount received from selling the mine's by-products (zinc, lead, copper, and gold) to get the total cash cost per ounce of silver produced. This calculation allows comparison of PAS' operational efficiency at a mine relative to its performance in previous years and also allows comparison with peer companies' operations. This cost also reflects by-product metal prices. For instance, when zinc prices are low, PAS gets lower by-product revenues from zinc. Subtracting this smaller by-product revenue from the total costs yields a higher total cash cost per ounce of silver produced. The total production cost per ounce of silver differs from the total cash cost per ounce of silver in that it includes provisions for DD&A (depreciation, depletion and amortization) and reclamation, which are non-cash items on our financial statements and the effect of all other taxes. The DD&A number is an accounting allowance for the cost to acquire, develop, construct and sustain a mining operation. The reclamation component is an accounting allowance of the estimated cost to reclaim the mine at the end of its life. The bulk of these expenditures occur at the beginning or end of a mine's life but reflect the true total mine cost.

A summary of the economic model is shown in Table 24-8. The net present value is \$21.4M at a 10% discount rate and is \$17.5M at a 15% discount rate. The undiscounted after tax cash flow is \$39.5M over a 12 year mine life.

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Table 24-8: Economic Model

Year	2007	2008	2009	2010	2011	2012	2013
<b>Metal Price Assumptions:</b>							
Silver Price (\$ / ounce) \$	9.00	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00
Zinc Price (\$ / tonne) \$	2,100.00	\$ 2,100.00	\$ 2,100.00	\$ 2,100.00	\$ 2,100.00	\$ 2,100.00	\$ 2,100.00
Lead Price (\$ / tonne) \$	1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00
Copper Price (\$ / tonne) \$	5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
Au Price To\$	525.00	\$ 525.00	\$ 525.00	\$ 525.00	\$ 525.00	\$ 525.00	\$ 525.00
<b>Production:</b>							
Tonnes Mined	756,375	782,605	781,440	781,560	782,065	784,381	785,000
Silver Head Grade (g/t)	194.93	188.01	187.69	187.23	186.76	177.54	177.80
Copper Head Grade (%)	0.36	0.39	0.40	0.40	0.40	0.42	0.24
Lead Head Grade (%)	1.21	1.78	1.81	1.85	1.90	1.92	1.54
Zinc Head Grade (%)	2.55	3.25	3.29	3.29	3.30	3.36	3.27
Gold Head Grade (g/t)	0.40	0.28	0.00	0.00	0.00	0.00	0.00
Silver Ounces Produced	3,806,611	3,780,434	3,778,808	3,772,903	3,766,192	3,767,874	3,584,630
Copper Tonnes Produced	1,609	1,854	1,879	1,875	1,895	1,956	1,021
Lead Tonnes Produced	6,731	10,410	10,624	10,982	11,417	11,619	8,964
Zinc Tonnes Produced	12,236	16,867	17,230	17,238	17,304	17,670	17,182
Gold Ounces Produced	1,182	0	0	0	0	0	0
<b>Cash Flow Summary (x \$1000)</b>							
Total NSR	76,548	55,024	53,819	53,910	53,909	53,779	48,515
Total Operating Costs \$	(39,339)	\$ (41,666)	\$ (40,768)	\$ (40,774)	\$ (40,800)	\$ (40,921)	\$ (40,953)
Other Costs \$	(3,499)	\$ (495)	\$ (687)	\$ (717)	\$ (742)	\$ (364)	\$ (25)
Royalty \$	(765)	\$ (719)	\$ (755)	\$ (757)	\$ (757)	\$ (527)	\$ (474)
Reclamation \$	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Total Depreciation \$	(3,858)	\$ (3,991)	\$ (3,985)	\$ (3,986)	\$ (4,301)	\$ (4,706)	\$ (5,103)
<b>Huaron Pre-Tax Income</b>	<b>29,087</b>	<b>\$ 8,152</b>	<b>\$ 7,624</b>	<b>\$ 7,676</b>	<b>\$ 7,308</b>	<b>\$ 7,260</b>	<b>\$ 1,960</b>
Taxes \$	(8,506)	\$ (1,413)	\$ (2,131)	\$ (2,237)	\$ (2,342)	\$ (983)	\$ 0
Taxes Deferred \$	(1,713)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
<b>Net Income (Loss) after taxes</b>	<b>18,868</b>	<b>\$ 6,740</b>	<b>\$ 5,493</b>	<b>\$ 5,440</b>	<b>\$ 4,966</b>	<b>\$ 6,277</b>	<b>\$ 1,960</b>
Add back Depreciation \$	3,858	\$ 3,991	\$ 3,985	\$ 3,986	\$ 4,301	\$ 4,706	\$ 5,103
Tax Deferred \$	1,713	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Total Changes Working Capital	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

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Reclamation \$	(300) \$	(500) \$	(500) \$	(500) \$	(500) \$	(500) \$	(500)
Provision-Expenditures							
Capital Costs \$	(10,967) \$	(15,102) \$	(7,600) \$	(6,400) \$	(6,800) \$	(5,300) \$	(5,300)
<b>Projected Cash Flows \$</b>	<b>13,172 \$</b>	<b>(4,871) \$</b>	<b>1,378 \$</b>	<b>2,526 \$</b>	<b>1,967 \$</b>	<b>5,184 \$</b>	<b>1,262</b>

**Financial Metrics:**

Payable Silver Ounces	3,428,514	3,348,772	3,354,561	3,349,147	3,359,562	3,342,483	3,178,129
Cash Cost per Payable Ounce \$	4.81 \$	6.71 \$	4.82 \$	5.09 \$	5.72 \$	5.73 \$	4.31
Not-Cash Cost per Ounce \$	1.25 \$	1.19 \$	1.16 \$	1.16 \$	1.24 \$	1.36 \$	1.51
<b>Total Cost per Payable Ounce \$</b>	<b>6.05 \$</b>	<b>7.91 \$</b>	<b>5.98 \$</b>	<b>6.24 \$</b>	<b>6.97 \$</b>	<b>7.09 \$</b>	<b>5.82</b>
NSR per tonne \$	100.19 \$	69.39 \$	67.91 \$	68.01 \$	67.96 \$	67.89 \$	61.20
Cost per tonne \$	52.01 \$	53.24 \$	52.17 \$	52.17 \$	52.17 \$	52.17 \$	52.17
<b>Margin \$</b>	<b>48.18 \$</b>	<b>16.15 \$</b>	<b>15.74 \$</b>	<b>15.84 \$</b>	<b>15.79 \$</b>	<b>15.72 \$</b>	<b>9.03</b>

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Year	2014	2015	2016	2017	2018
<b>Metal Price Assumptions:</b>					
Silver Price (\$ / ounce)	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00
Zinc Price (\$ / tonne)	\$ 2,100.00	\$ 2,100.00	\$ 2,100.00	\$ 2,100.00	\$ 2,100.00
Lead Price (\$ / tonne)	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00
Copper Price (\$ / tonne)	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
Au Price Toz	\$ 525.00	\$ 525.00	\$ 525.00	\$ 525.00	\$ 525.00
<b>Production:</b>					
Tonnes Mined	785,000	785,000	785,000	785,000	616,293
Silver Head Grade (g/t)	178.06	178.19	178.32	178.51	187.74
Copper Head Grade (%)	0.29	0.35	0.37	0.40	0.44
Lead Head Grade (%)	1.53	1.51	1.50	1.49	1.48
Zinc Head Grade (%)	3.30	3.33	3.35	3.36	3.38
Gold Head Grade (g/t)	0.00	0.00	0.00	0.00	0.00
Silver Ounces Produced	3,589,903	3,595,177	3,597,814	3,600,451	2,829,681
Copper Tonnes Produced	1,305	1,608	1,736	1,895	1,664
Lead Tonnes Produced	8,862	8,761	8,710	8,660	6,741
Zinc Tonnes Produced	17,347	17,512	17,594	17,677	13,972
Gold Ounces Produced	0	0	0	0	0
<b>Cash Flow Summary (x \$1000)</b>					
Total NSR	49,441	50,252	50,604	51,030	40,534
Total Operating Costs	\$ (40,953)	\$ (40,953)	\$ (40,953)	\$ (40,953)	\$ (32,152)
Other Costs	\$ (36)	\$ (46)	\$ (293)	\$ (439)	\$ (313)
Royalty	\$ (484)	\$ (492)	\$ (495)	\$ (499)	\$ (397)
Reclamation	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Total Depreciation	\$ (5,103)	\$ (5,103)	\$ (5,103)	\$ (5,103)	\$ (4,006)
<b>Huaron Pre-Tax Income</b>	<b>\$ 2,865</b>	<b>\$ 3,658</b>	<b>\$ 3,760</b>	<b>\$ 4,035</b>	<b>\$ 3,667</b>
Taxes	\$ 0	\$ 0	\$ (885)	\$ (1,401)	\$ (962)
Taxes Deferred	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
<b>Net Income (Loss) after taxes</b>	<b>\$ 2,865</b>	<b>\$ 3,658</b>	<b>\$ 2,875</b>	<b>\$ 2,634</b>	<b>\$ 2,705</b>
Add back Depreciation	\$ 5,103	\$ 5,103	\$ 5,103	\$ 5,103	\$ 4,006
Tax Deferred	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Total Changes Working Capital	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Reclamation	\$ (500)	\$ (500)	\$ (500)	\$ (500)	\$ (500)
Provision-Expenditures					
Capital Costs	\$ (5,300)	\$ (7,100)	\$ (5,000)	\$ (2,600)	\$ (650)
<b>Projected Cash Flows</b>	<b>\$ 2,167</b>	<b>\$ 1,160</b>	<b>\$ 2,477</b>	<b>\$ 4,636</b>	<b>\$ 5,560</b>

**Financial Metrics:**

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Payable Silver Ounces	3,182,128	3,186,128	3,188,128	3,190,128	2,506,813
Cash Cost per Payable Ounce	\$ 4.17	\$ 4.17	\$ 4.17	\$ 4.17	\$ 4.17
Not-Cash Cost per Ounce	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50
<b>Total Cost per Payable Ounce</b>	<b>\$ 5.67</b>	<b>\$ 5.67</b>	<b>\$ 5.67</b>	<b>\$ 5.67</b>	<b>\$ 5.67</b>
NSR per tonne	\$ 62.37	\$ 63.39	\$ 63.83	\$ 64.37	\$ 65.13
Cost per tonne	\$ 52.17	\$ 52.17	\$ 52.17	\$ 52.17	\$ 52.17
<b>Margin</b>	<b>\$ 10.20</b>	<b>\$ 11.22</b>	<b>\$ 11.66</b>	<b>\$ 12.20</b>	<b>\$ 12.96</b>

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**24.9.4 Metal Price Sensitivity**

The positive economics of the project over a wide range of metal prices is shown in Table 24-9. Note that the higher metal prices are used for Case 2 and the lower metal prices are used for Case 3. As the date of this report is effective December 31, 2006, the analysis is developed for the period from 2007 to the end of life of mine (2018). Metal price is assumed to be the same for the duration of mine life for each case. The prices have been considerably higher than those used in Case 1; therefore, the authors of this Technical Report consider this to be a reasonable assumption. If metal price decreased by 9% of the assumed price, the NPV would be equal to \$0.00.

**Table 24-9: Metal Price Sensitivity**

Metal Prices	Case #1	Case #2	Case #3
Silver \$/Ounce	\$ 9.00	\$ 10.80	\$ 7.20
Zinc \$/Tonne	\$ 2,100.00	\$ 2,520.00	\$ 1,680.00
Lead \$/Tonne	\$ 1,000.00	\$ 1,700.00	\$ 600.00
Copper \$/Tonne	\$ 5,000.00	\$ 6,000.00	\$ 4,000.00
Gold \$/Ounce	\$ 525.00	\$ 630.00	\$ 420.00
NPV (Discount Rate) (x \$1000)	Case #1	Case #2	Case #3
NPV 0%	\$ 36,620	\$ 114,268	\$ (65,869)
NPV 10%	\$ 21,360	\$ 63,992	\$ (34,000)
NPV 15%	\$ 17,501	\$ 50,667	\$ (25,259)

**24.9.5 Grade Sensitivity**

In order to test the metal grade sensitivity, each metal and for each year of operation was multiplied by factors of 100% (the case presented in Table 24-9), 75%, 90%, 110%, and 125%. The cash flow and financial metrics for each case were then recalculated and are shown in Table 24-10. An 8 % decrease of the projected head grades would result in a NPV equal to \$0.00.

**Table 24-10: Metal Grade Sensitivity**

Metal Grade Sensitivity	100% (base)	75%	90%	110%	125%
NPV 0%	\$ 36,620	\$ (10,061)	\$ 38,165	\$ 76,663	\$ 135,542
NPV 10%	\$ 21,360	\$ (5,355)	\$ 7,591	\$ 45,110	\$ 79,998
NPV 15%	\$ 17,501	\$ (3,809)	\$ 1,667	\$ 36,760	\$ 65,073



**24.9.6 Capital Cost Sensitivity**

The economics of the Huaron Mine are not sensitive to changes in capital cost up to the limits of the engineering estimate that is plus or minus 25%.

**Table 24-11: Capital Cost Sensitivity**

Capital Cost Sensitivity	100%	75%	90%	110%	125%
NPV 0%	\$ 36,620	\$ 53,408	\$ 43,335	\$ 29,905	\$ 19,832
NPV 10%	\$ 21,360	\$ 31,616	\$ 25,462	\$ 17,257	\$ 11,103
NPV 15%	\$ 17,501	\$ 25,853	\$ 20,842	\$ 14,161	\$ 9,149

**24.9.7 Operating Cost Sensitivity**

The economics of the project to variances in operating costs were calculated in a similar manner. This calculation further demonstrates that the economics of the project are sensitive on variance in operating costs. If operating costs increase by 11%, the undiscounted NPV would be equal to \$0.00.

**Table 24-12: Operating Cost Sensitivity**

Operating Cost Sensitivity	100%	75%	90%	110%	125%
NPV 0%	\$ 36,620	\$ 113,202	\$ 67,253	\$ 1,609	\$ (63,059)
NPV 10%	\$ 21,360	\$ 65,296	\$ 39,021	\$ 1,748	\$ (33,974)
NPV 15%	\$ 17,501	\$ 52,562	\$ 31,614	\$ 2,049	\$ (25,978)

**24.10 Mine Life**

Pan American Silver completed the Huaron life of mine plan (LOM). Mr. Martin Wafforn, who is a co-author of this Technical Report has reviewed and determined in his professional judgment that the mine plan discussed in this Section 25 is sound and that this mine plan is to be adopted. The plan is based on providing average of 2,150 tpd of ore to the mill. This LOM plan does not include any inferred resources.

All of the proven and probable mineral reserves and measure and indicated mineral resources totalling 8.7 million tonnes grading 184 g/t silver, 3.18 % zinc, 0.26 % copper, and 1.67 % lead are planned to be mined over a mine life that extends to 2018. The mine plan does not include any of the inferred resources or any possible mineral reserve additions that may occur in the future through exploration. A total of 522,864 tonnes of measured and indicated reserves were included in the economic analysis grading 183 g/t Au, 3.25% Zn, 1.63% Pb and 0.37% Cu. The included mineral resources are projected to be mined at a yearly rate not exceeding 17% of the overall tonnes mined during that year. These mineral resource tonnes were added to the LOM plan to achieve the tonnage required to enable a full year of production during 2018. Every year, the Huaron Mine has mined mineral resources in place of mineral reserves and the authors of this Technical Report conclude that the addition of the measured and indicated mineral resources to the LOM plan is reasonable. No inferred mineral resources were included in the economic analysis.

**25.0 Date and Signature Page**

The information in this report is current as of September 30, 2007. Operation data such as costs and recovery are more current, as it was made available during the time frame between the mineral resource and reserve estimate and the period taken to prepare this Technical Report.

This report has been prepared by Martin G. Wafforn, P. Eng. and Dr. Michael Steinmann, P. Geo. each of whom are Qualified Persons.

Respectfully submitted this 28th day of January, 2008.

*Martin Wafforn*

Signature and seal of Qualified Person

Martin Wafforn, P.Eng.

Print Name of Qualified Person

*Michael Steinmann*

Signature and seal of Qualified Person

Michael Steinmann, P.Geo., Ph.D.

Print Name of Qualified Person

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**26.0 Figures**

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**FIGURE 11.1**  
**PARAGENESIS OF HUARON POLYMETALLIC DEPOSIT**

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**FIGURE 18-1**  
**Reconfiguration of the Grinding Circuit**

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**FIGURE 18-2**  
**Reconfiguration of the Bulk Flotation Circuit**

This Diagram shows the WS240 cell that receives the tailings from the 1st bulk cleaning. The concentrate is sent to the zinc circuit because of the high zinc contents and the tailings do not return to the head of the flotation.

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**FIGURE 18-3**  
**Reconfiguration of the Cu/Pb Separation Circuit**

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**FIGURE 18-4**  
**Reconfiguration of the Zinc Flotation Circuit**

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**FIGURE 19-1A**  
**ALIANZA VEIN**  
**Variogram Analysis**  
**Silver**

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**FIGURE 19-1B**  
**TAPADA VEIN**  
**Silver**  
**Variogram Analysis**

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**FIGURE 19-1C**  
**COMETA VEIN**  
**Silver**  
**Variogram Analysis**

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**CERTIFICATE OF QUALIFIED PERSON**

I, Martin Wafforn, P.Eng, of Pan American Silver Corp., 1500-625 Howe St., Vancouver, British Columbia, Canada V6C 2T6 do hereby certify that:

1. I graduated with a degree in Bachelor s of Science in Mining from Camborne School of Mines in Cornwall, England in 1980.
2. I am a Professional Engineer in good standing in the Province of British Columbia in the areas of Mining engineering. I am a Chartered Engineer in good standing in the United Kingdom.
3. I am currently employed as Vice President of Mine Engineering for Pan American Silver Corp. and, by reason of my employment, am not independent of Pan American Silver Corp. as described in section 1.4 of NI 43-101.
4. I have worked as an engineer in the mining industry for a total of twenty-six years since my graduation from Camborne School of Mines.
5. 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.
6. Pan American Silver Corp. is a "Producing Issuer" as defined in NI 43-101.
7. I visited the Huaron property from September 18 to September 19, 2007. I am responsible for the sections 1, 2, 3, 4, 5, 6, 7, 8, 17, 18, 20, 21, 22, 23, 24 and 25 of the report entitled "Technical Report for the Huaron Property, Cerro de Pasco, Peru" dated effective December 31, 2006 (the "Technical Report" ) and for all figures, tables, and graphs within those sections of the Technical Report.
8. I am co-author of the Technical Report dated effective December 31, 2006.
9. I have read NI 43-101 and the Technical Report has been prepared in compliance with NI 43-101.
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.

11.

Dated the 28th Day of January, 2008.

Martin G. Wafforn

Signature and Seal of Qualified Person

Martin G. Wafforn, P.Eng.



**CONSENT OF QUALIFIED PERSON**

TO: British Columbia Securities Commission  
Alberta Securities Commission  
Saskatchewan Financial Services Commission  
The Manitoba Securities Commission  
Ontario Securities Commission  
Autorité des marchés financiers  
New Brunswick Securities Commission  
Securities Commission of Newfoundland & Labrador  
Nova Scotia Securities Commission  
Registrar of Securities, Prince Edward Island  
Government of the Northwest Territories, Department of Justice, Securities Registry  
Nunavut Legal Registries  
Registrar of Securities, Government of the Yukon Territories

I, Martin Wafforn P.Eng. do hereby consent to the filing, with the regulatory authorities referred to above, of the technical report titled Technical Report for the Huaron Property, Cerro de Pasco, Peru dated effective December 31, 2006 (the Technical Report ).

No additional written disclosure will be filed with the Technical Report.

Dated the 28th Day of January, 2008.

Martin G. Wafforn

Signature and Seal of Qualified Person

Martin G. Wafforn, P.Eng.

Martin G. Wafforn P.Eng.

Print name of Qualified Person

**CERTIFICATE OF QUALIFIED PERSON**

I, Dr. Michael Steinmann, P.Ge., Ph.D., of Pan American Silver Corp., 1500-625 Howe St., Vancouver, B.C., Canada V6C 2T6, do hereby certify that:

1. I graduated with a degree in Master of Science in Geology from the University of Zurich in 1993. In addition, I earned a Doctor of Natural Science in Geology from the Swiss Federal Institute of Technology, Zurich, Switzerland.
2. I am a Professional Geoscientist in good standing in the Province of British Columbia in the areas of mining geology and exploration.
3. I have worked as a geologist for a total of fourteen years since my graduation from the University of Zurich.
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 the NI 43-101.
5. I am currently employed as Senior Vice President of Exploration and Geology for Pan American Silver Corp. and, by reason of my employment, am not independent of Pan American Silver Corp. as described in section 1.4 of NI 43-101.
6. Pan American Silver Corp. is a "producing issuer" as defined in NI 43-101.
7. I visited the Hauron property from September 18, 2007 to September 19, 2007. I am responsible for the sections 1,2,3,4, 5, 9, 10, 11, 12, 13, 14, 15, 16, 19, 21, 22, 23 and 24 of the report entitled "Technical Report for the Huaron Property, Cerro de Pasco, Peru" dated effective December 31, 2006(the "Technical Report" ) and for figures, tables, and graphs contained in sections 9, 10, 11, 12, 13, 14, 15, and 19 of the Technical Report.
8. I am co-author of the Technical Report dated effective December 31, 2006
9. I have read NI 43-101 and the Technical Report has been prepared in compliance with NI 43-101.
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.

Dated the 28th day of January, 2008.

Michael Steinmann

Signature and seal of Qualified Person  
Michael Steinmann, P.Ge., Ph.D.

**CONSENT OF QUALIFIED PERSON**

TO: British Columbia Securities Commission  
Alberta Securities Commission  
Saskatchewan Financial Services Commission  
The Manitoba Securities Commission  
Ontario Securities Commission  
Autorité des marchés financiers  
New Brunswick Securities Commission  
Securities Commission of Newfoundland & Labrador  
Nova Scotia Securities Commission  
Registrar of Securities, Prince Edward Island  
Government of the Northwest Territories, Department of Justice, Securities Registry  
Nunavut Legal Registries  
Registrar of Securities, Government of the Yukon Territories

I, Michael Steinmann, P.Eng. do hereby consent to the filing, with the regulatory authorities referred to above, of the technical report titled Technical Report for the Huaron Mine Project, Cerro de Pasco, Peru dated effective Decemeber 31, 2006 (the Technical Report ).

No additional written disclosure will be filed with the Technical Report.

Dated the 28th Day of January, 2008.

Michael Steinmann

Signature and Seal of Qualified Person  
Michael Steinmann, P.Eng.

Michael Steinmann, P.Eng.