11.2.1 Roads

The access road to the site which is known as the heavy haul road (HHR) is mostly complete and in use as shown in ***Figure 11-1***. The southernmost extension of the HHR, that from Espinar to Tintaya/Antapaccay, has been eliminated and the HHR is now routed directly to Espinar. Part of the road from Cusco to the Project is an existing road which has been upgraded; the HHR section of the Cusco to the Project road comprises that from the town of Ccapacmarca to the Project, that from Espinar to Ccapacmarca which is for the most part all new with very little of the route following existing roads and that from Espinar-Ccapacmarca. The HHR is currently a gravel-surface road but some parts in the vicinity of towns will be asphalt sealed to minimize dust. Total length of the HHR is approximately 250 km.

The HHR is critical to transport large and heavy machinery to the Project. RPM is aware that an EIA addendum has been applied to enable the HHR to be utilised for outbound product logistics as well as the main route for supplies and personnel.

The Project site is large, covering an area of about 50 sq.km, accordingly, a considerable network of internal roads is required. The total length of internal roads is about 70 km and most of these are already constructed; these are all 2 lane gravel roads.

11.2.2 Power Supply

Grid power will be supplied to the Project though a 130 km 220 kV double line from an existing substation at Cotaruse on a major power line that runs about 100 km to 150 km inland from the Peruvian coastline and parallel to it. The routing of this line is shown in ***Figure 11-2***. The line will be built and maintained by a Peruvian contractor (Abengoa Power) under a Build, Own, Operate (BOO) contract.

The power line will connect to a main substation close to the plant site. The main substation will include 3 primary transformers, with 2 operating and 1 on standby; the main transformers will transform the power from 220 kV to 33 kV. The main substation will include harmonic filters.

Primary power distribution will be at 33 kV with secondary substations transforming the voltage as required. The distribution system will include a 13.8 kV loop around the Ferrobamba open pit to supply power to the shovels and drills.

Emergency power systems will include diesel generators that will supply 4 MW at the concentrator and 12 MW at the Main Construction Camp, which will become the employee camp.

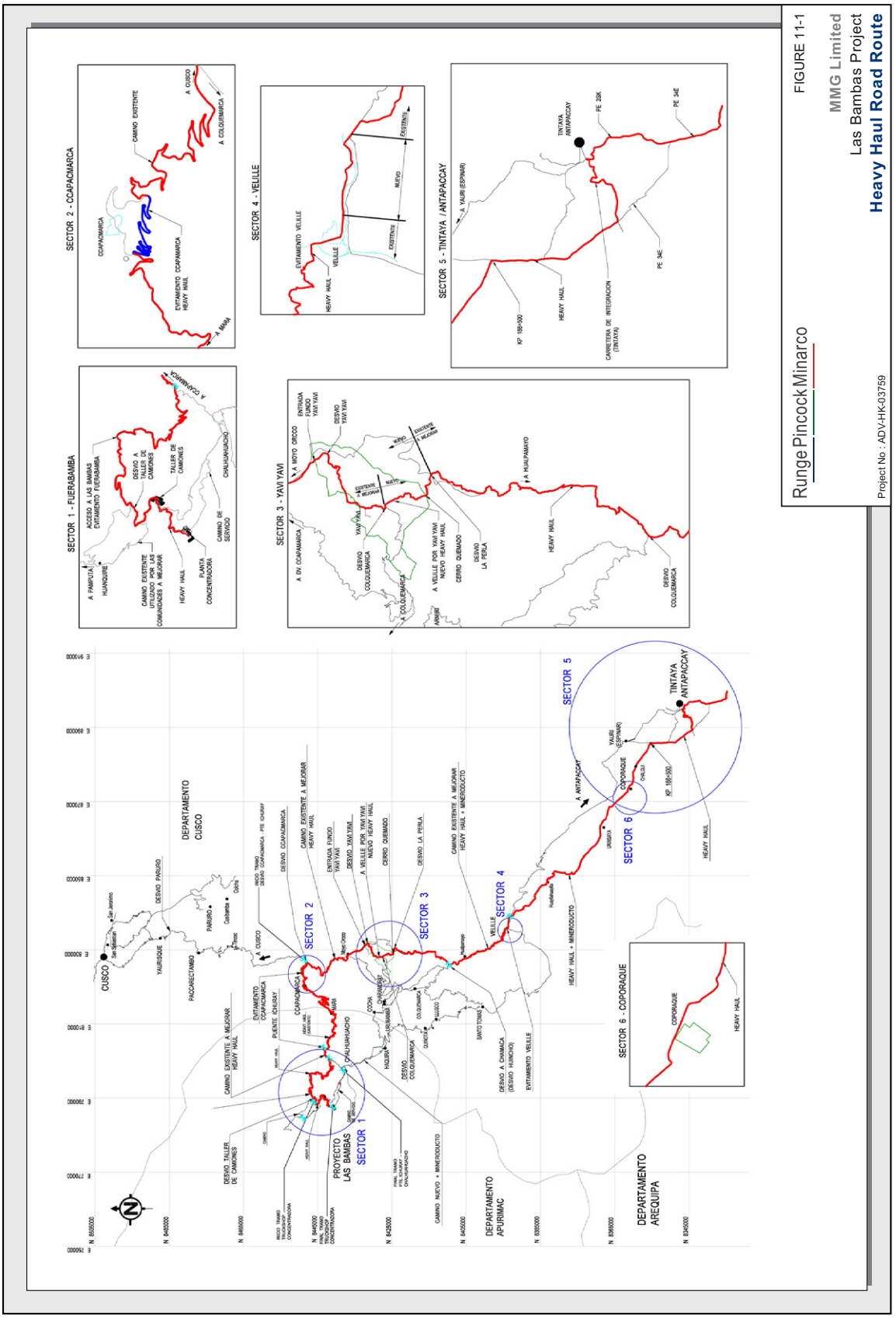
11.2.3 Fuel Supply

Fuel will be stored in two 1.3 Ml capacity tanks located near the primary crushers. One of these tanks has already been built.

11.2.4 Buildings

Buildings, other than the camps, will be concentrated in 2 separate areas: one adjoining the open pit and the other adjoining the ore processing facility. The buildings adjoining the open pit are discussed in the Mining Section of this report; the buildings adjoining the ore-processing facility will consist of the following:

- Gatehouse, about 70 m^2,
- Office, about 400 m^2,
- 770 m^2 Laboratory,
- Mechanical maintenance building, about 800 m^2, and
- Electrical maintenance building, about 600 m^2.


SECTOR 1 - FUERABAMBA
SECTOR 2 - CCAPACMARCA
SECTOR 3 - YAVI YAVI
SECTOR 4 - VELILLE
SECTOR 5 - TINTAYA / ANTAPACCAY
SECTOR 6 - COPORAQUE
CUSCO
DEPARTAMENTO CUSCO
DEPARTAMENTO APURIMAC
DEPARTAMENTO AREQUIPA
PROYECTO LAS BAMBAS
TINTAYA ANTAPACCAY
HEAVY HAUL
CAMINO EXISTENTE A MEJORAR
CAMINO NUEVO + MINERODUCTO
Runge Pincock Minarco
MMG Limited
Las Bambas Project
Heavy Haul Road Route
FIGURE 11-1
Project No : ADV-HK-03759

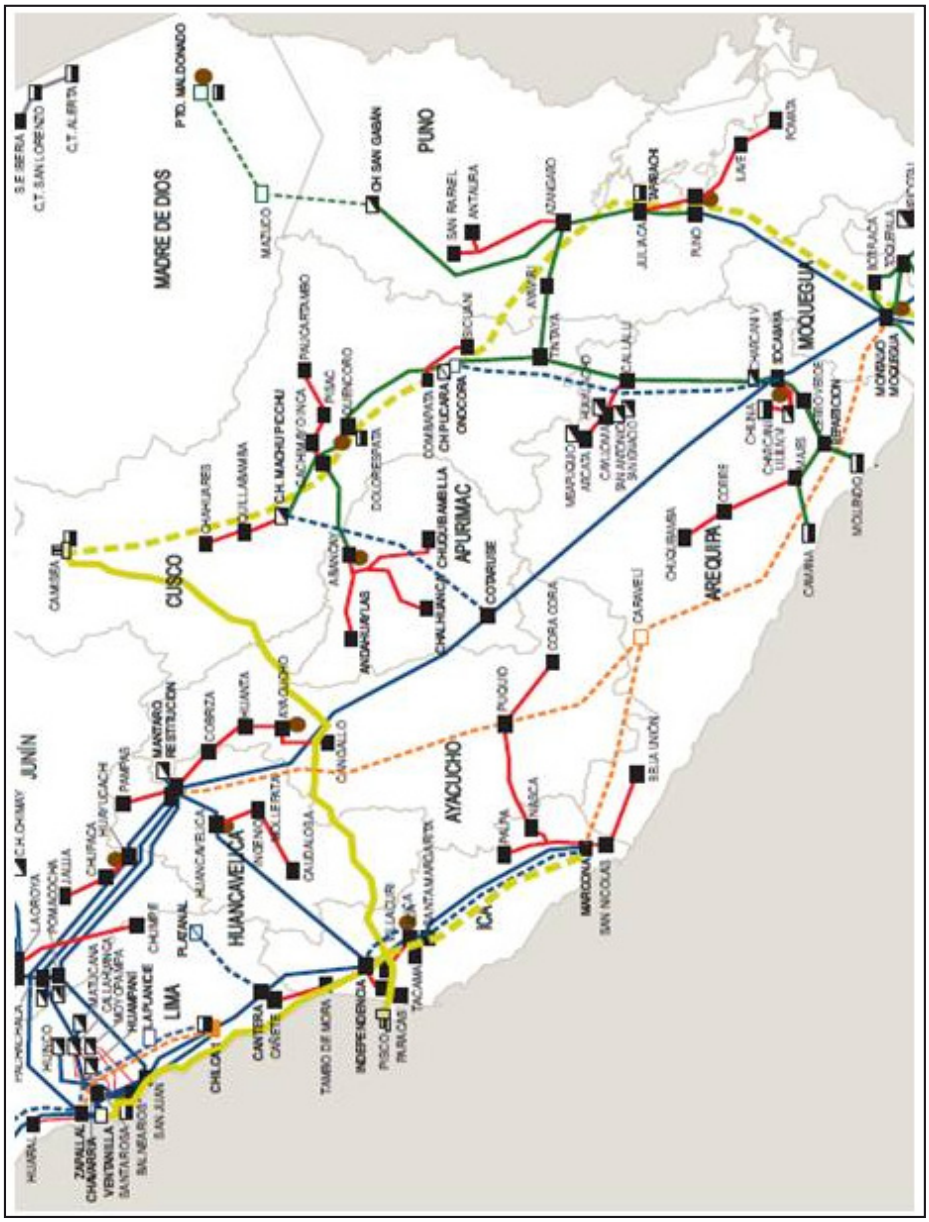


FIGURE 11-2

MMG Limited

Las Bambas Project

Power Line Route

Runge Pincock Minarco

Project No : ADV-HK-03759

11.2.5 Camps

Five large camps have been established for the Project within, or close to, the property boundary; they are as follows:

- Main Construction Camp (MCC) located at 4,000 m above sea level (masl) between the ore-processing plant and the open pit.
- XP Camp (XP) located at 4,200 masl on the northern property boundary where the HHR enters the property.
- Pioneer Camp located about 3 km west of the MCC; the Pioneer Camp primarily serves the exploration and operating personnel.
- Charcas Cocha Camp located off the property, west of Chuspiri dam; this was originally an exploration camp.
- Nueva Fuerabamba Camp adjoins the Nueva Fuerabamba townsite which is located outside the property boundary; this camp houses construction personnel working on the Nueva Fuerabamba townsite.

The permanent camp will be located at the MCC. Part of the existing MCC, comprising 2,000 beds, will be used for the permanent camp. The XP camp will be left intact and may be used in conjunction with development of the Chalcobamba open pit.

11.2.6 Medical Services and Fire Protection

A health centre has been established at the MCC that serves all site personnel and also currently serves local indigenous personnel living within the Project boundary. The health centre provides first-aid and has the capability to stabilize trauma patients prior to sending them to a hospital. The centre is provided with ambulances.

Fire-water reserves will be maintained in fresh-water storage tanks located at the ore-processing plant and at the primary crusher. These tanks will be linked to fire-water pumps and pipe loops with fire hydrants. Waterless DuPont FM-200 automatic fire protection systems will be installed in electrical rooms, control rooms, and communication systems. Buildings will be equipped with standard fire extinguishers.

11.2.7 Nueva Fuerabamba Town

The Nueva Fuerabamba Town development has been built offsite of the property to house about 2,500 people that will be displaced by operations within the property. This town comprises of 450 houses and is located about 3 km outside the property boundary, about 10 km southeast of the open pit.

The development includes all the usual amenities of a town such as schools, clinic, police station, recreation facilities, etc. The houses are all two or 3 story concrete buildings that incorporate a Styrofoam sandwich within the concrete for insulation.

Construction of the town-site has required considerably more earthwork than originally envisaged, a result of much of the earth being less stable than originally anticipated. This has delayed the Project and resulted in a major escalation in costs.

11.2.8 Communications

A series of microwave towers have been constructed to link the Project site with Cusco and with Espinar. The system provides full telephone and Internet connection externally and within the property. Communications systems within the property include radio as well as telephone and Internet systems.

11.2.9 Waste Systems

A sanitary fill has been established on the west side of the property. Sewage-treatment plants have been built for each of the camps. Additional sewage-treatment plants will be constructed for the ore-processing plant and for the mine shop/office area.

11.2.10 Explosives Magazines

Two separate explosives magazines will be constructed south of the open pit, one for ammonium nitrate and the other for detonators.

11.2.11 Mobile Equipment (Non-Mining)

The Project will be provided with the usual complement of mobile equipment including the following:

- 5 truck cranes,
- 1 bulldozer,
- 2 front-end loaders,
- 14 trucks of various types, and
- 6 forklifts.

It is likely that the mix will change from that planned following construction, depending on the availability of used construction machinery.

11.3 Water Systems

The principal water-system parameters of the Project are provided in ***Table 11-3*** and a listing of periods when available fresh water will be limited is shown in ***Table 11-4***. A listing of the components of the water systems is provided in ***Table 11-5***. The Project water balance is shown in ***Figure 11-3***. A flow diagram of the fresh-water system is shown in ***Figure 11-4*** and a flow diagram of the tailings-reclaim and contact-water system is shown in ***Figure 11-5***. The physical location of the water systems are shown in ***Figure 11-6***.

In order to assess the reasonableness of the assumed water requirements for the Project, RPM determined the probable water requirements as shown in ***Table 11-3*** and compared it to that of Montgomery Watson Harza (MWH), the engineers who determined the water requirement for the Project. As seen in the table, the estimates are close. The plans for water supply are also shown in ***Table 11-3*** and planned supply matches the water requirements.

The components of the water systems are discussed in the following text.

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Table 11-3 Water Systems, Principal Parameters

Parameter	Units	Value	Comments
Water Requirements			
Per RPM assessment			
Ore processing	m^3/hour	2,000	Estimate based on 75% solids in tails
Mine road watering	m^3/hour	175	Estimate based on 10 l/tonne rock moved
Potable water	m^3/hour	10	Estimate based on 200 l/person/day
Total, hourly	m^3/hour	2,185	
Total, monthly	million m^3/month	1.6	
Per MWH assessment			
Total, hourly	m^3/hour	2,657	
Water Supply			
Challhuahuacho intake	m^3/hour	1,900	Per Bechtel water balance
Sedimentation water pond intake	m^3/hour	383	Per Bechtel water balance
Total	m^3/hour	2,283	
Water Storage			
Volume			
Chuspiri dam	million m^3	4.2	
Tailings dam	million m^3	~4	
Sedimentation water pond	million m^3	0.5	
Total	million m^3	9	
Capacity	months	6	Sufficient to last through dry season
Elevation			
Chuspiri dam	masl	4,270-4,307	
Process water ponds		4,270	
Tailings dam	masl	3,940-4,145	
Sedimentation water pond	masl	3,860	
Challhuahuacho intake	masl	3,678	

Source: Provided by the Company.

Table 11-4 Water Systems, Shortage Periods

Situation	Number of Reduced Pumping Months	Months When Pumping from the Challhuahuacho River Less Than Required Quantity
Average	1	September
1- in 10-Year Low	2	August & September
1- in 20-Year Low	4	August - November
1- in 50-Year Low	6	June - November
1- in 100-Year Low	7	June - December

Source: Provided by the Company.

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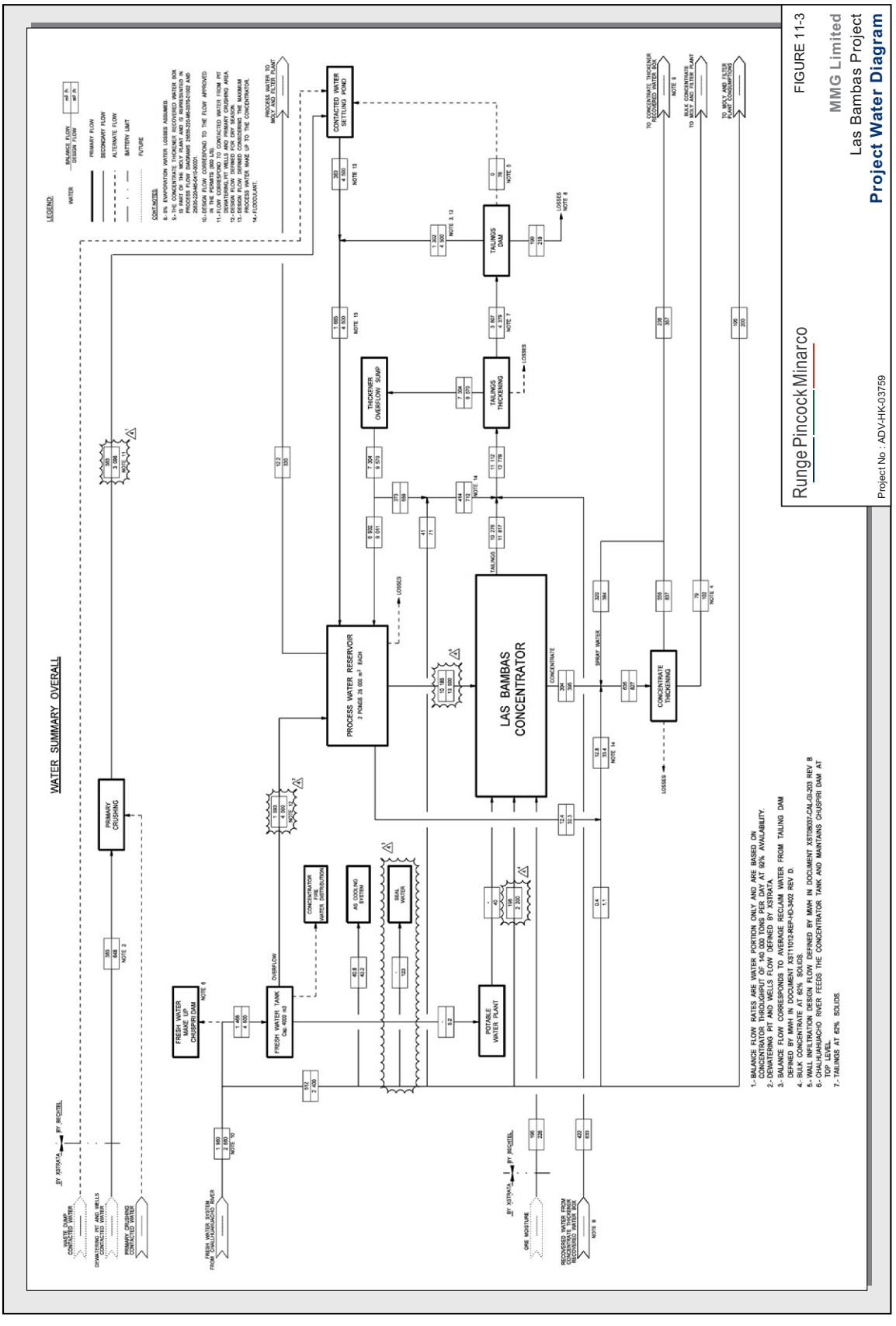
Table 11-5 Water Systems, Principal Equipment

Item	Description	kW each	Quantity Oper.	Quantity S'by.
Fresh Water System				
Pipeline	32-inch dia. x 23-km			
Pump Station No. 1 (Intake to Lift Station No. 2)				
Pumps	vertical, 720-m^3/h @ 240-m TDH	710	3	1
Lift Station No. 2 to Lift Station No. 3				
Tanks	3,600-m^3, 18- x 18-m		1	
Pumps	horizontal, 720-m^3/h @ 263-m TDH	1007	3	1
Lift Station No. 3 to Chuspiri Dam				
Tanks	3,600-m^3, 18- x 18-m		1	
Pumps	horizontal, 720-m^3/h @ 263-m TDH	1007	3	1
Tailings Reclaim and Sedimentation-Water System				
Tailings Dam Barge	4-section barge			
Pipeline	34-inch dia.			
Intake to Lift Station (Tailngs Reclaim)				
Pumps	vertical, 1,125-m^3/h @ 137-m TDH	671	3	1
Lift Station to Booster Station No. 2 (Tailings Reclaim + Sedimentation Pond Water)				
Tank	1,084 m^3, 12- x 12-m		1	
Pumps	horizontal, 1,125-m^3/h @ 134-m TDH	679	3	1
Booster Station No. 2 to Process Water Pond (Tailings Reclaim + Sedimentation Pond Water)				
Pumps	horizontal, 1,125-m^3/h @ 134-m TDH	679	3	1
Sedimentation Pond Barge	4-section barge			
Intake to Booster Station No. 1 (Sedimentation Pond Water)				
Pumps	vertical, 1,125-m^3/h @ 142-m TDH	671	3	1
Booster Station No. 1 to Lift Station (Sedimentation Pond Water)				
Pumps	horizontal, 1,125-m^3/h @ 134-m TDH	679	3	1
Chuspiri Dam Discharge				
System	flow by gravity			
Pipeline	36-inch dia.		1	
Fresh and Fire Water Tanks				
At primary crusher	1,000 m^3, 12- x 11-m		1	
At concentrator	5,600-m^3, 16.5- x 22-m		1	
Sedimentation Pond Water Storage				
Tank at primary crusher	500 m^3, 9.5- x 10.4-m		1	

Source: Provided by the Company.


WATER SUMMARY OVERALL
LEGEND:
WATER
BALANCE FLOW
DESIGN FLOW
PRIMARY FLOW
SECONDARY FLOW
ALTERNATE FLOW
BATTERY LIMIT
FUTURE
CODE NOTES:
8.- 5% EVAPORATION WATER LOSSES ASSUMED
9.- THE CONCENTRATE THICKENER RECOVERED WATER BOX IS PART OF THE MOLY PLANT AND IS REPRESENTED IN PROCESS FLOW DIAGRAM 2069-220-MA-0010-D-0002 AND PROCESS FLOW DIAGRAM 2069-220-MA-0010-D-0003
10.- DESIGN FLOW CORRESPOND TO THE FLOW APPROVED IN THE PERMITS (800 L/S).
11.- FLOW CORRESPONDS TO CONTACTED WATER FROM PIT DEWATERING,PIT WELLS AND PRIMARY CRUSHING AREA.
12.- DESIGN FLOW DEFINED FOR DRY SEASON.
13.- SURPLUS WATER FROM CONCENTRATOR TANK MAXIMUM PROCESS WATER MAKE UP TO THE CONCENTRATOR.
14.- FLOCCULANT.
PROCESS WATER TO MOLY AND FILTER PLANT
CONTACTED WATER SETTLING POND
NOTE 13
TAILINGS DAM
NOTE 5
LOSSES
NOTE 6
TAILINGS THICKENING
NOTE 7
THICKENER OVERFLOW SUMP
PROCESS WATER RESERVOIR
2 PONDS 39 000 m³ EACH
LAS BAMBAS CONCENTRATOR
CONCENTRATE THICKENING
TO CONCENTRATE THICKENER RECOVERED WATER BOX
NOTE 9
BULK CONCENTRATE TO MOLY AND FILTER PLANT
NOTE 4
TO MOLY AND FILTER PLANT CONSUMPTIONS
PRIMARY CRUSHING
FRESH WATER TANK
Cap. 4000 m³
FRESH WATER MAKE UP
CHUSPIRI DAM
NOTE 6
POTABLE WATER PLANT
AG. COOLING SYSTEM
SEAL WATER
CONCENTRATOR WATER DISTRIBUTION
OVERFLOW
SPRAY WATER
CONCENTRATE
TAILINGS
LOSSES
WASTE DUMP CONTACTED WATER
DEWATERING PIT AND WELLS CONTACTED WATER
PRIMARY CRUSHING CONTACTED WATER
FRESH WATER SYSTEM FROM CHALHUAHUACHO RIVER
NOTE 10
ORE MOISTURE
RECOVERED WATER FROM CONCENTRATE THICKENER RECOVERED WATER BOX
NOTE 9
BY XSTRATA
BY BRGIEBL
1.- BALANCE FLOW RATES ARE WATER PORTION ONLY AND ARE BASED ON PLANT OPERATING HOURS AND TONNAGES FOR A PLANT AT 92% AVAILABILITY.
2.- DEWATERING PIT AND WELLS FLOW DEFINED BY XSTRATA.
3.- BALANCE FLOW CORRESPONDS TO AVERAGE RECLAIM WATER FROM TAILING DAM DEFINED BY MWH IN DOCUMENT XST11012-REP-HD-3402 REV D.
4.- BULK CONCENTRATE AT 82% SOLIDS.
5.- WALL INFILTRATION DESIGN FLOW DEFINED BY MWH IN DOCUMENT XST08037-CAL-GI-203 REV B
6.- CHALHUAHUACHO RIVER FEEDS THE CONCENTRATOR TANK AND MAINTAINS CHUSPIRI DAM AT TOP LEVEL.
7.- TAILINGS AT 62% SOLIDS.
FIGURE 11-3
MMG Limited
Las Bambas Project
Project Water Diagram
Runge Pincock Minarco
Project No : ADV-HK-03759

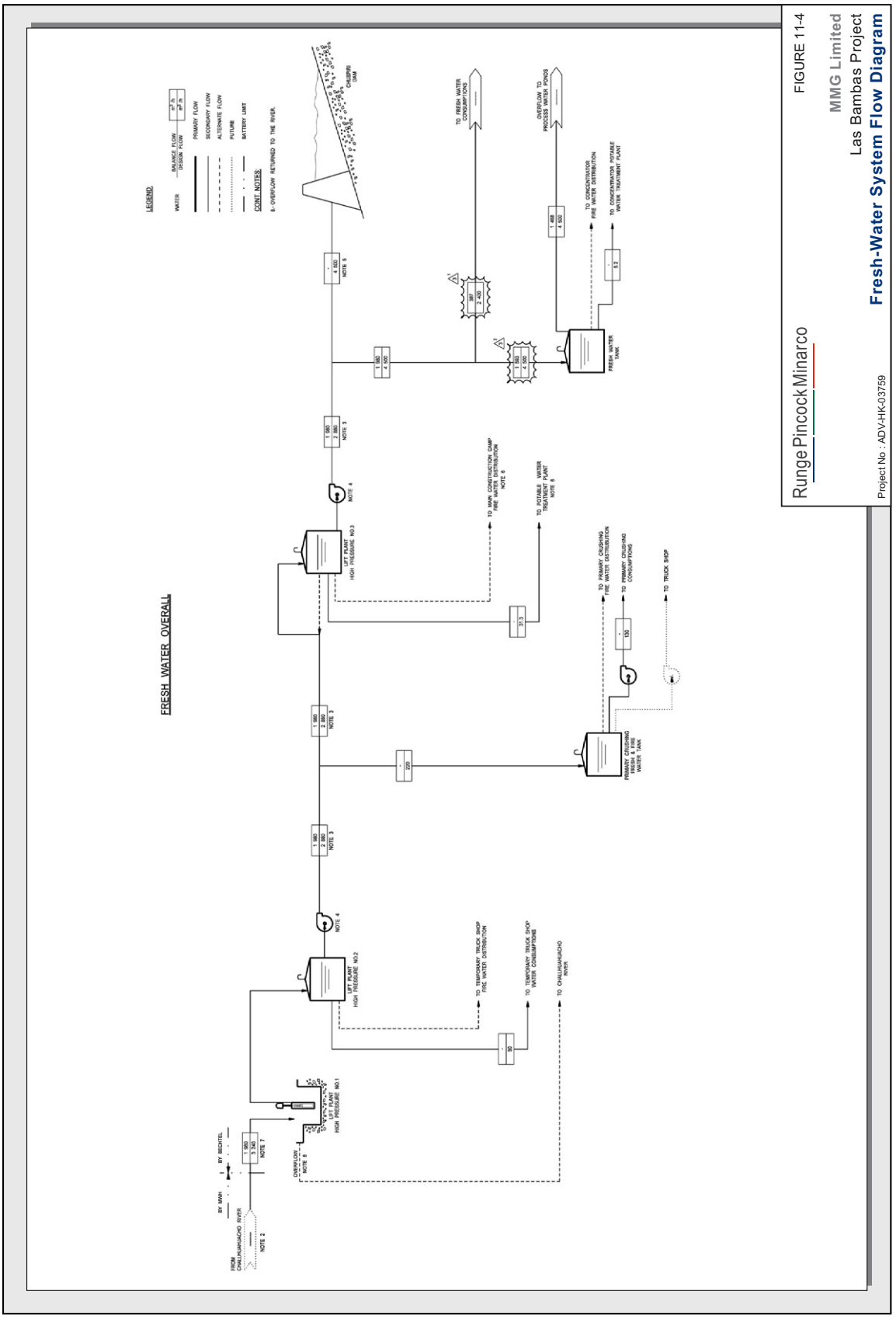


FIGURE 11-4

MMG Limited

Las Bambas Project

Fresh-Water System Flow Diagram

Runge Pincock Minarco

Project No : ADV-HK-03759

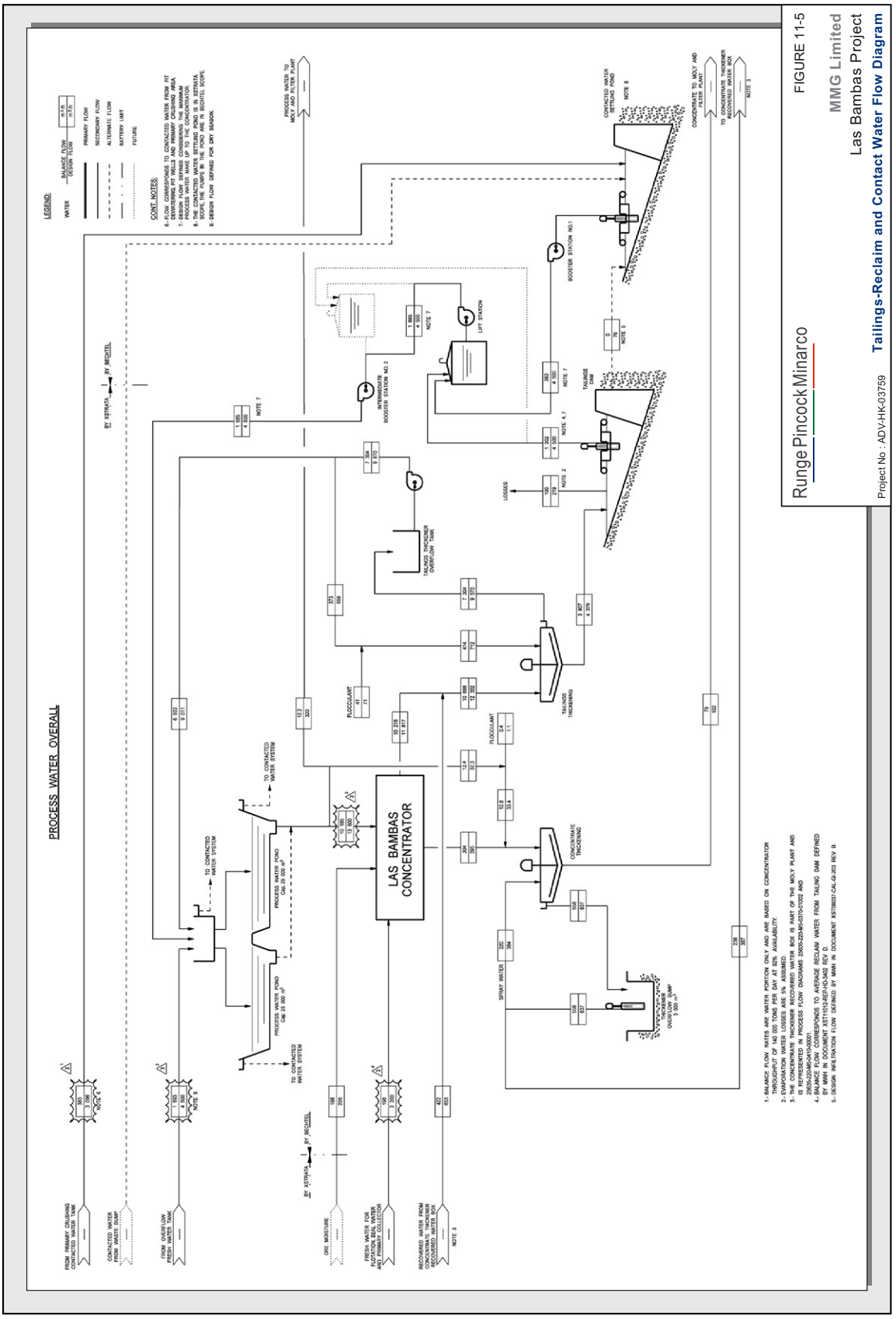


FIGURE 11-5

MMG Limited

Las Bambas Project

Runge Pincock Minarco

Project No : ADV-HK-03759

Tailings-Reclaim and Contact Water Flow Diagram

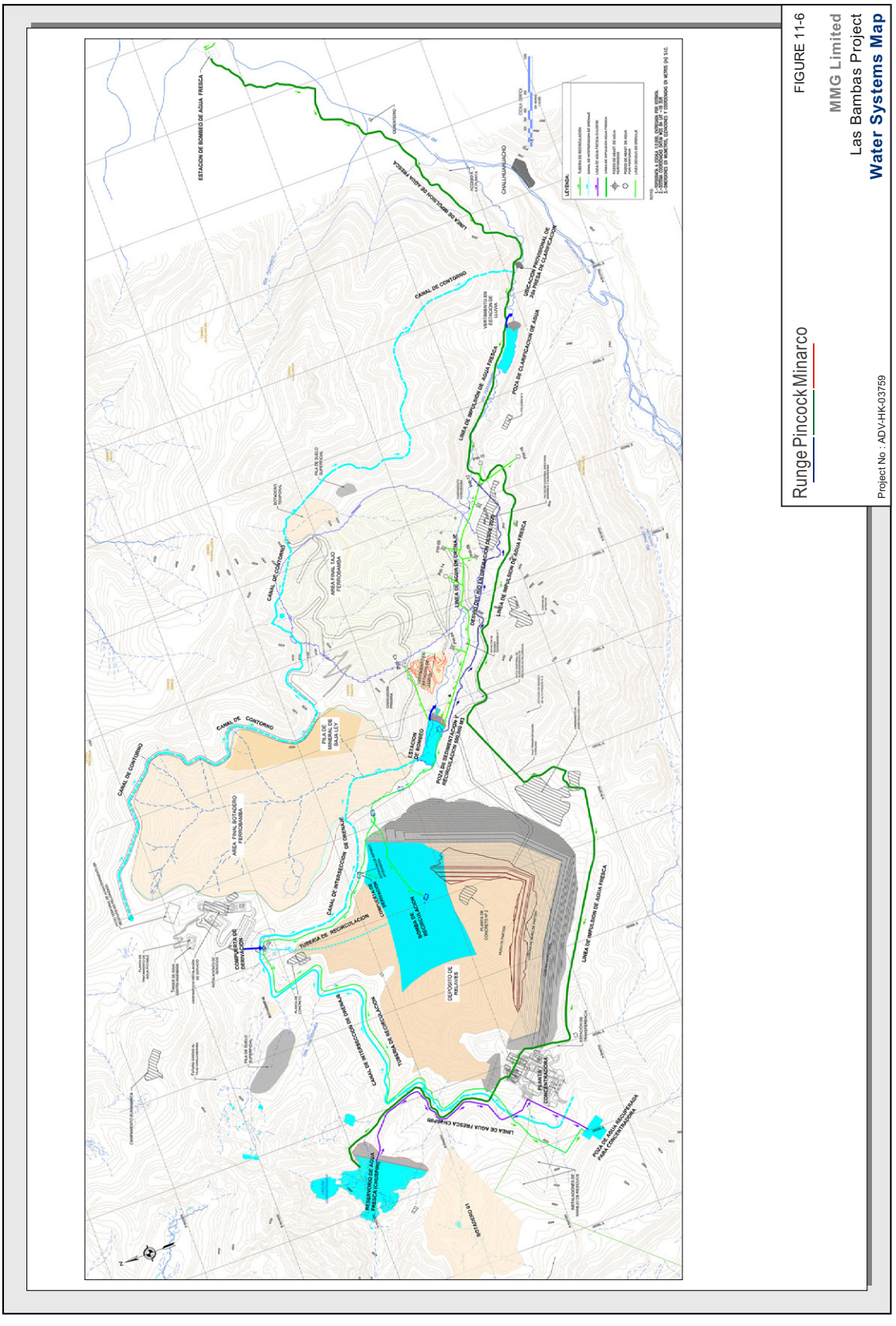


FIGURE 11-6

MMG Limited

Las Bambas Project

Water Systems Map

Runge Pincock Minarco

Project No : ADV-HK-03759

11.3.1 Fresh Water System

The fresh water system is based on pumping water from the Challhuahuacho River to the Chuspiri Dam, a new water-storage dam that is being built north of the ore-processing plant. The river intake and the dam are about 15 km apart and the dam is about 600 m higher in elevation than the river intake. The intake and dam will be linked by 23 km of 32" diameter pipe.

Three small weirs will be constructed in the Challhuahuacho River downstream of the intake structure to provide suitable aquatic habitat for the development of community aquaculture projects.

Vertical pumps at the intake station on the river will pump fresh water via 2 sequential lift stations to the dam. The intake is designated High Pressure No. 1, the 2 lift stations as High Pressure No. 2 and High Pressure No. 3. Tap-offs on the lines to the lift stations will provide water to the water tanks at the primary crusher and at the concentrator.

A drainage pipe at that base of the Chuspiri Dam will provide fresh water to the process-water ponds at the concentrator as needed. Water will flow from the Chuspiri dam to the ponds by gravity.

11.3.2 Chuspiri Dam

The Chuspiri dam will have a crest elevation of 4,316.5 masl and storage capacity of 4.2 Mm^3. In the zone of the left abutment, located in the Chuspiri creek, the dam will have a height of up to 45 m. In its central part and right abutment the dam will reach a height of about 25 m.

The dam is being constructed using compacted fill from borrow areas located in deep morrenic deposits, which are not potentially acid forming. The dam has been designed with a 2H:1V upstream slope and a 2.3H:1V downstream slope. The upstream slope is being covered with a geomembrane to control seepage. The geomembrane is anchored at its lower end in a concrete plinth and a grouted cut-off curtain installed from the plinth axis. A system of basal drains are being constructed under the dam in the lowest foundation areas.

Appurtenances include an emergency spillway in the left abutment, a culvert for diversion of the Chuspiri creek, and a bottom outlet.

The dam is being constructed in two stages in order to initiate early filling to supply construction water for other project features. The first stage comprised the Chuspiri creek diversion culvert, dam foundation preparation, placement of the bottom drain, excavation of the platform for the plinth, dam foundation grouting, and the intake for construction water supply.

Geotechnical investigations were conducted at the site of the Chuspiri dam and appurtenances. Stability analyses were performed for static and seismic loading conditions and indicate adequate factors of safety.

11.3.3 Tailings-Reclaim and Sedimentation-Pond Water System

Tailings-reclaim water will be pumped by barge-mounted pumps to a lift station that will serve for both tailings-reclaim water and sedimentation-pond water. Pumps at the lift station will pump the tailings-reclaim water and the sedimentation-pond water to an inline booster designated Intermediate Booster Station No. 2. Pumps at the Booster Station No. 2 will pump the water to the process-water ponds at the concentrator.

Sedimentation pond water in the Sedimentation Pond will be pumped by barge mounted pumps similar to that for the Tailings Dam to an inline booster designated Booster Station No. 1. Pumps at the Booster Station No. 1 will pump the sedimentation pond water to the tank at the lift station that will serve for both tailings reclaim water and sedimentation pond water.

11.3.4 Site Drainage-Diversion Ditches

In order to prevent excessive surface runoff entering the tailings, a diversion ditch will be built above the ore processing plant and tailings dam. The water from this ditch will normally discharge into the Tailings Dam, but when this water is in excess of requirements it will discharge to the Ferrobamba waste rock dump in the Huancarane valley and thence into the Sedimentation Pond.

In order to minimize excessive runoff water entering the waste rock dump, the Ferrobamba mine, and the Clarification Pond, another diversion ditch will be built above these facilities in addition to that described in the

previous paragraph. The water from this ditch will discharge just downstream of the Clarification Pond into the Challhuahuacho River.

11.3.5 Sedimentation Pond and Clarification Pond

The Sedimentation Pond will be situated to collect water draining from the mine waste dump, the Ferrobamba open pit dewatering wells, and surface-drainage water from within the Ferrobamba pit. Mine waste will be placed in the Huancarane valley that drains into the Ferrobamba River just upstream of the Sedimentation Pond. The amount of water draining into the Sedimentation Pond will, for short periods in most years, exceed the amount of water required by the ore-processing plant. On occasions when excess water accumulates in the Sedimentation Pond it will be discharged into the Ferrobamba River; it has been determined that the quality of this water will be acceptable to discharge since it is unlikely that the water will be acidic or contain excessive dissolved metals since the deposit contains negligible pyrite and has a high carbonate content.

The Clarification Pond will be situated about 4 km downstream of the Sedimentation Pond on the Ferrobamba River. Any sediment carried over from the Sedimentation Pond will settle in the Clarification Pond.

11.4 Copper Concentrate Transportation

The Project is 710 km from nearest port; accordingly, concentrate transportation requirements and costs are higher than is usually the case for most copper mining operations. A map of the road and road/rail transport route is shown in ***Figure 11-7***. The following three options are currently being evaluated:

- Trucks-only system: trucking the entire from the way from the Project to the port of Matarani.
- Bi-modal system: trucking from the Project to near Imata and rail from Imata to Matarani.
- Concentrate pipeline: slurry pipeline from the Project to Matarani.

Each of these options are discussed in the following sections.

11.4.1 Trucks Only

This would consist of trucks transporting the concentrate by truck on the Heavy Haul Road from the Project to Espinar, then on government roads from Espinar to Matarani. The road distance between the Project and Matarani is about 710 km. The route from Espinar to Matarani is currently used by the Antapaccay mine for the trucking of concentrates without encountering any particular difficulty and the same is expected for the Project's concentrates.

The trucking of the concentrates from the Project to Matarani would be by trucking contractors using 37-tonne capacity tractor/trailer rigs transporting about 4,000 wet tonnes per day. About 370 trucks will be required for the service, including spares. The system would operate 24 hours per day, 7 days per week.

The port facilities are owned and operated by TISUR, an independent company. The concentrate storage and ship-loading facilities will be provided by a Build, Own, Operate (BOO) contact with TISUR, the established port operator at Matarani. An agreement for port services is currently in place.

RPM has used this approach in estimating the costs associated with transportation of concentrates in its Ore Reserves estimate.

11.4.2 Bi-Modal System

This would consist of trucks transporting the concentrate from the Project on the same route as for the Trucks Only option as far as Pillones near Imata a distance of 410 km, then using Peru Rail to transport the concentrate 300 km from Pillones to Matarani. The system would require installation of the following new facilities and equipment:

- A siding/railhead at Pillones, approximately 30 km from Imata towards Arequipa, with concentrate storage and railcar loading systems.

- Railroad locomotives and railcars for transporting the concentrates from the Pillones railcar loading system to Matarani.

- Railcar unloading, concentrate storage, and ship-loading systems at the port of Matarani.

All of the off-site transport facilities and equipment will be owned or operated third party companies which will provide the services through Build, Own, Operate (BOO) contracts. These companies include:

- Peru Rail (Imata facilities, the locomotives and railcars).

- TISUR (Matarani port facilities).

A letter of intent has already been issued for the locomotives and a partial payment made for them since they are long lead-time purchases. The design of the railcars is pending, however are likely to be gondola-style cars.

The procedure for concentrate transportation would be as follows:

- Truck the concentrates from the Project to the railhead near Imata;

- Temporarily store the concentrate near Imata, then load it into railcars;

- Rail the concentrates to the port of Matarani, and

- Temporarily store the concentrate at Matarani, then load it onto ships

The trucking of the concentrates from the Project to near Imata would be the same as that described for the Trucks Only option except the distance travelled would be about 410 km rather than 710 km.

11.4.3 Concentrate Pipeline

Preliminary investigations have been made into installing a concentrate slurry pipeline from the Project to Matarani. The distance is about 450 km and the route would follow essentially unpopulated ground across the mountains, avoiding canyons, and then through the coastal dessert. Easement requirements are likely to be minimal however studies are required to confirm. The system would require the construction of a concentrate filter plant at Matarani but this should present no difficulty. Anticipated cost is of the entire project is of the order of US$500 million however RPM notes that some pipeline and associated plant equipment are currently on site. RPM notes that whilst preliminary studies have been completed which are positive, further detailed designs are required to confirm the appropriate scale, cost profile and potentially economic upside from the current base case of truck only method. RPM recommends that detailed studies be undertaken as soon as possible to fast track any economic benefits to the Project.

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FIGURE 11-7

MMG Limited
Las Bambas Project
Transport Route for Copper Concentrate

Project No : ADV-HK-03759

11.5 Molybdenum Concentrate Transportation

Molybdenum concentrate will be loaded into canvas super sacks of about 2 t capacity each and the concentrate shipped out on flat-bed trucks. The concentrate will be trucked all the way from the Project to Matarani with no partial shipment by rail. The quantity to be shipped will amount to about 35 tpd, equivalent to one truck load per day. Matarani is 710 km from the Project. A round trip is likely to take three to four days; thus, about five trucks will be required for this service. It is probable that trucking will be provided by a local contractor.

11.6 Administration

A listing of planned employees and on-site contractors is shown in ***Table 11-6***. As indicated on the table, RPM believes that the number of contractors shown is low, primarily because it appears not to include contracted camp operation and catering and contracted security personnel. The latter will include some police to guard the explosives magazines.

The planned organization for the general management of operations is shown in ***Figure 11-12***.

All of the mining and ore-processing personnel can be expected to be located at the Project's accommodation currently being built. Some of the administrative personnel will be based in Lima. It is likely that small offices will be located in other Peruvian cities in conjunction with logistics and community relations.

The current MCC camp with 5,000 beds will become the permanent operation camp. The permanent camp will require no more than 2,000 beds for the planned on-site employees and contractors. No decision has been made as yet as to what to do with the excess accommodation.

Bussing will be required to transport personnel to the site and within the property boundary. It is presumed that this service will be provided by off-site contractors.

Training requirements of employees will be considerable. The training will be conducted partly on site and partly off site at existing mines and at the facilities of equipment suppliers. Training of mine equipment operating personnel is currently in progress on-site using simulators. Some of the training for plant personnel will be initiated 12 months prior to plant start.

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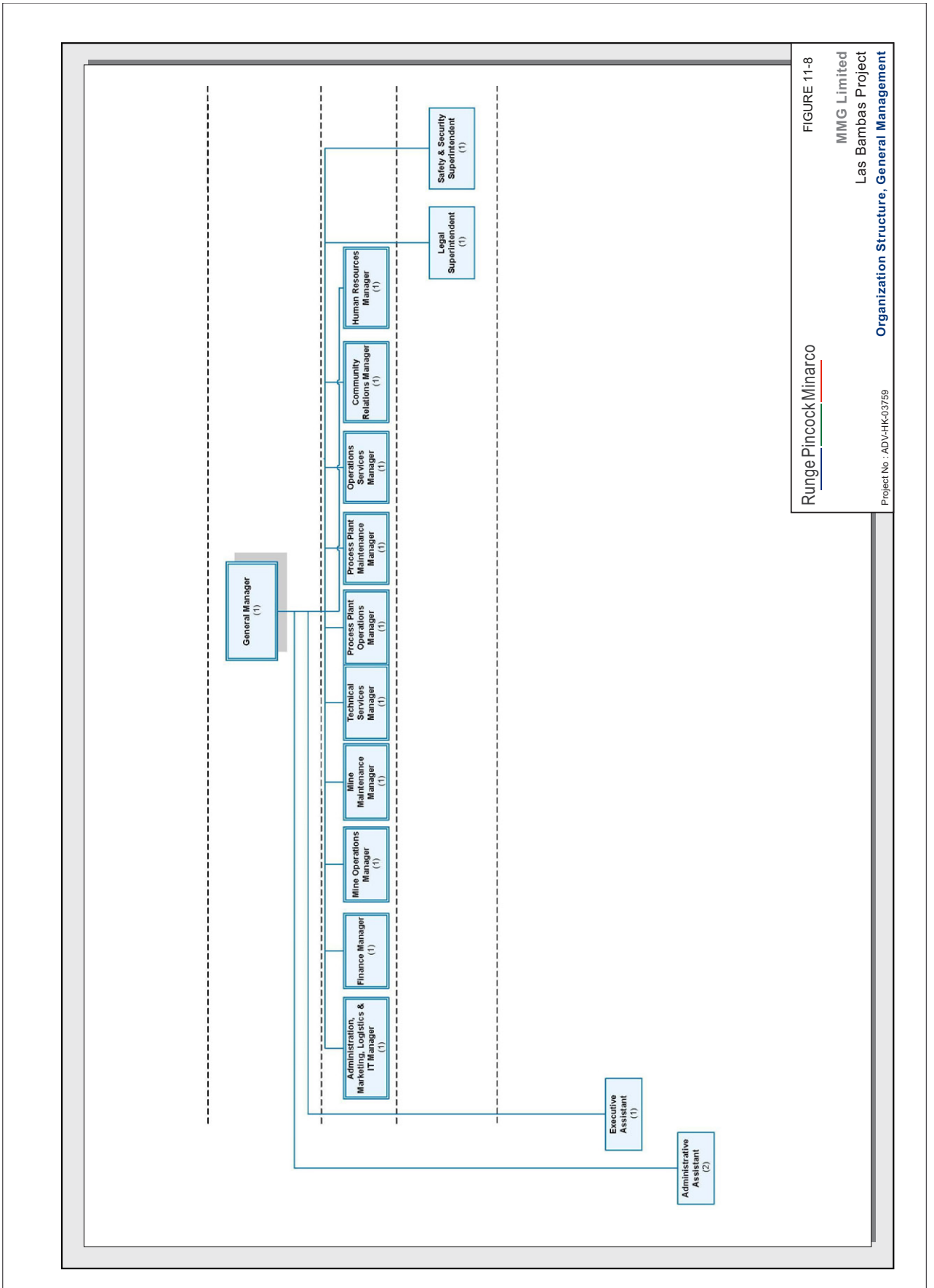
Table 11-6 Employee and On-Site Contractor Numbers

Department	Company Employees	On-Site Contractors	Comments
Administration			
General management	4		
Admin., marketing, logistics, & IT	80		
Camp catering and operation			No contractors shown, likely about 200
Finance	23		
Community relations	28		
Human resources	16		
Legal	4		
Safety & security	23		No contractors shown, likely about 200
Technical services	61		
Operational services	84		
Heavy-haul-road maintenance		28	
Total	**323**	**28**	
Mining			
Operations	312		
Blasting		18	
Maintenance		219	
Tire maintenance		14	
Total	**312**	**251**	
Ore-Processing			
Operations	195		
Maintenance	155		
Concentrator		24	
Molybdenum and filter plant		13	
Tailings		12	
Total	**350**	**49**	
TOTAL	**985**	**328**	

Source: Provided by the Company.


General Manager (1)
Safety & Security Superintendent (1)
Legal Superintendent (1)
Human Resources Manager (1)
Community Relations Manager (1)
Operations Services Manager (1)
Process Plant Maintenance Manager (1)
Process Plant Operations Manager (1)
Technical Services Manager (1)
Mine Maintenance Manager (1)
Mine Operations Manager (1)
Finance Manager (1)
Administration, Marketing, Logistics & IT Manager (1)
Executive Assistant (1)
Administrative Assistant (2)
FIGURE 11-8
MMG Limited
Las Bambas Project
Organization Structure, General Management
Runge Pincock Minarco
Project No : ADV-HK-03759

Runge Pincock Minarco

12 Project Execution

Overall control of the Project development and operation is by the Company with about 60% of the work assigned to Bechtel (third party contractor) and the remaining 40% managed directly by the Company. Bechtel is responsible for the majority of the processing plant and infrastructure construction work, while the Company has been responsible for building Nueva Fuerabamba town. Engineering for the water and tailings dams and the contracts for power supply, railroad transportation, and the marine terminal are also the responsibility of the Company.

Construction work on the Project is approximately 50% complete as at 1st January, 2014 and the entire Project is scheduled to be fully commissioned and operational by the end of 2015 with full production planned to be achieved in 2016. RPM notes that while the project is scheduled to be commissioned in late 2015, delays have occurred previously which have delayed construction of various major infrastructure items. RPM notes that the construction and relocation of on-site community residents is planned once a plan has been developed and formalised.

RPM considers the execution plans appropriate and achievable; however there is a likelihood that project delays may occur and that full project commissioning could extend beyond the projected time. Currently two months of schedule contingency are incorporated in the September 2015 completion estimate to allow for potential delays in major infrastructure construction, delivery of major items or other reasons; however RPM considers his contingency may not be sufficient since unforeseen difficulties have occurred previously.

12.1 Organization

The overall responsibility for the Project is in the hands of the Company's Executive Management. An organization chart for the project engineering, procurement, and construction is shown in ***Figure 12-1***. The organization chart also shows the internal Company budgets for the entities responsible for the project. With the exception of Bechtel, the major subcontractors working on the Project are as follows:

- Graña y Montero (major Peruvian-based contractor)
- Mota-Engil (major Portuguese-based earthwork contractor currently building the tailings dam)
- OHL Construction (Spanish-based contractor, responsible for most of the site earthworks)

In addition to these contractors there are 24 smaller contractors currently working on the project.

RPM notes that major impediment for the development phase of the Project has been the Nueva Fuerabamba town site. Engineering, procurement, and construction of this component is now complete though a small construction team will remain in place to correct the inevitable residual problems with any housing.

Three other major components of the project, components that are external to the site, are being provided under build, own, and operate (BOO) agreements managed directly by the Company; these are as follows:

- Power-supply line (Abengoa Power) (contract in-place)
- Railroad facilities and rolling stock (Peru Rail) (term sheet in-place)
- Port facilities (TISUR) (contract now in place)

The BOO agreements involve minimal capital cost outlays by the Project. The owner's capital costs are reimbursed through operating costs.

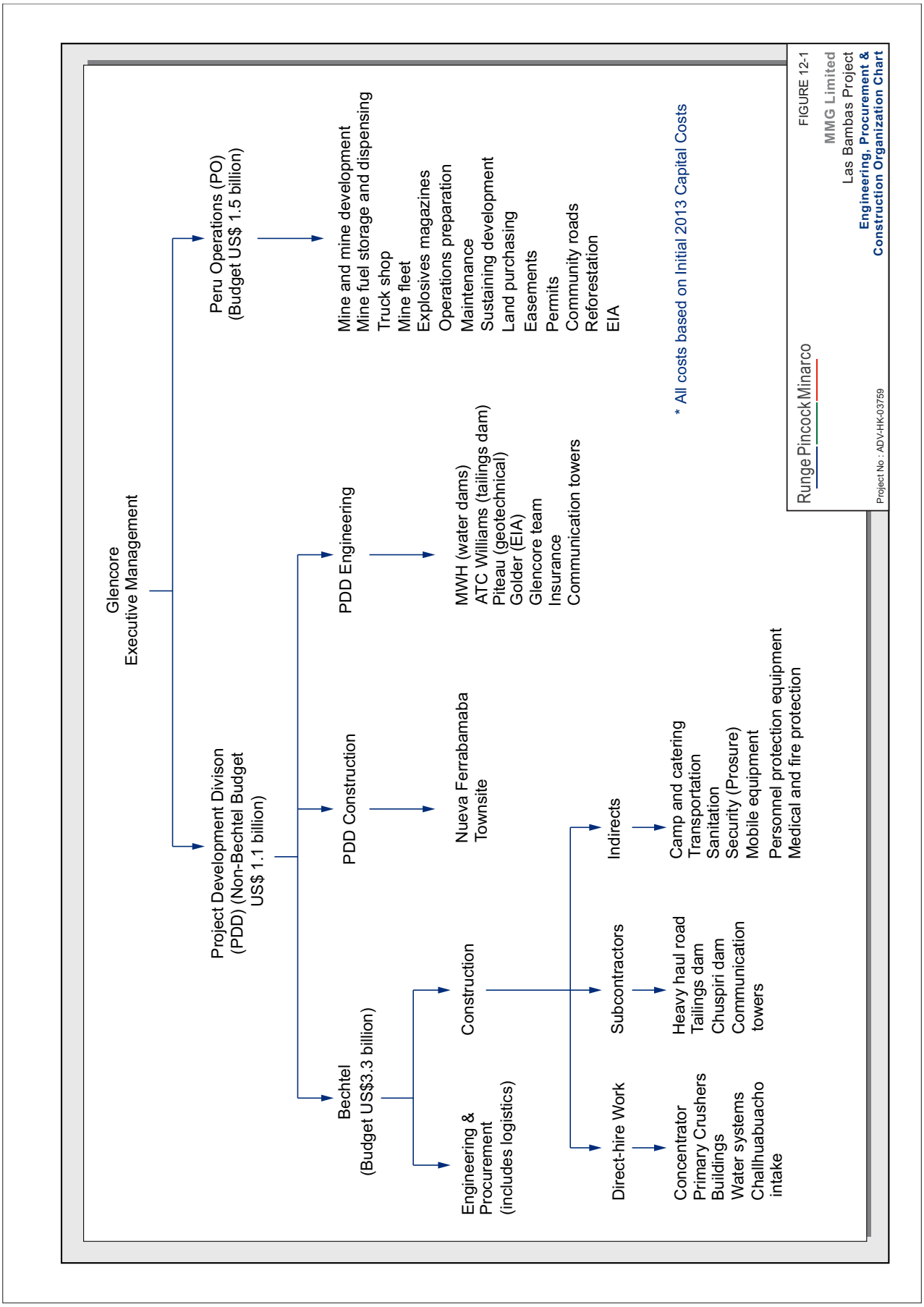
12.2 Personnel

RPM considers that the key management personnel onsite are critical to the development of the Project both on time and within Budget. The Company's overall manager of the Project is Joe Albright, Project Director, based at site.

Working with him are the following two the Company's employees:

- The Company Corporate Representative: Luis Rivera
- Bechtel's manager: Paige Wilson.

The Project currently employs about 8,000 people and is expected to rise to about 10,000 in December 2014. There is adequate accommodation for construction personnel onsite with the majority housed in on-site camps and additional hotel accommodation is available in the nearby town of Challhuahuacho.


Glencore
Executive Management
Peru Operations (PO)
(Budget US$ 1.5 billion)
Mine and mine development
Mine fuel storage and dispensing
Truck shop
Mine fleet
Explosives magazines
Operations preparation
Maintenance
Sustaining development
Land purchasing
Easements
Permits
Community roads
Reforestation
EIA
Project Development Divison
(PDD) (Non-Bechtel Budget
US$ 1.1 billion)
PDD Engineering
MWH (water dams)
ATC Williams (tailings dam)
Piteau (geotechnical)
Golder (EIA)
Glencore team
Insurance
Communication towers
PDD Construction
Nueva Ferrabamaba
Townsite
Bechtel
(Budget US$3.3 billion)
Construction
Engineering &
Procurement
(includes logistics)
Indirects
Camp and catering
Transportation
Sanitation
Security (Prosure)
Mobile equipment
Personnel protection equipment
Medical and fire protection
Subcontractors
Heavy haul road
Tailings dam
Chuspiri dam
Communication
towers
Direct-hire Work
Concentrator
Primary Crushers
Buildings
Water systems
Challhuabuacho
intake
* All costs based on Initial 2013 Capital Costs
Runge Pincock Minarco
Project No : ADV-HK-03759
FIGURE 12-1
MMG Limited
Las Bambas Project
Engineering, Procurement &
Construction Organization Chart

12.3 Project Status

Although some delays have occurred, development of the Project is progressing well and is forecast to be completed in late 2015. With a total overall development of approximately 60% and construction 50% complete RPM envisages that no major impediments are likely to occur with the exception of those that could occur as a consequence of delays in relocating local residents to the newly-completed township. A table of project milestones for the Bechtel work, as of March 2014, is shown in ***Table 12-1***.

Table 12-1 Bechtel Project Milestone Summary for March 2014

	Milestones	Forecast
1	The Company - Permits Issued (Moly Plant & Cu Filter Plant Facilities)	Complete
2	Start Early Works Construction	Complete
3	Start Permanent Plant Mass Earthworks	Complete
4	Start Concentrate Pipeline Construction	Complete
5	Start Construction Grinding Area	Complete
6	Flotation Area Tower Crane Commissioned	Complete
7	Passage Achieved for Heavy Haul Route from Antapaccay	Complete
8	All Mills on Site at Tintaya	Complete
9	Start First Grinding Mill Assembly	Complete
10	Fuerabamba Community Relocation Complete	31-May-14
11	Truck Shop Construction Completion (Transferred to The Company)	N/A
12	Permanent 220 kV Power Available	1-Oct-14
13	33 kV Power Available to Mine Loop	TBD
14	Energisation - 0210-DRR-0001-E-Room	21-Dec-14
15	Fresh Water System Mechanical Completion	25-Feb-15
16	Pebble Crushing Construction Completion	1-Apr-15
17	Coarse Ore Stockpile Mechanical completion	15-Apr-15
18	Copper Concentrate Filter Plant Mechanical Completion	19-Apr-15
19	Concentrate Thickening Mechanical Completion	24-Apr-15
20	Concentrate Pipeline Mechanical completion	N/A
21	Tailings Thickening Mechanical Completion	25-Apr-15
22	Flotation & Regrind Mechanical Completion	28-Apr-15
23	Tailings Dam Ready to Receive Tailings (Transferred to The Company)	De-scoped
24	Non-Contact Water Dam Mechanical Completion	On Hold
25	Overland Conveyor Mechanical Completion	28-Apr-15
26	Primary Crusher Mechanical Completion	28-Apr-15
27	Filter Cake Storage Loadout Building Completion	28-Apr-15
28	Grinding Line 2 Mechanical Completion (Ready to Accept Feed)	28-Apr-15
29	Grinding Line 1 Mechanical Completion (Ready to Accept Feed)	14-May-15
30	Process Plant Ready to Accept Feed	14-May-15
31	Molybdenum Plant Mechanical Completion	21-May-15
32	Project Mechanical Completion	21-May-15
33	Project Completion (Finish Milestone)	2H 2015*

** Inlcudes commioning of the plant, and crushers and 2 month contingency period for project delays.*
N/A - not applicable

12.4 Engineering Status

The status of the engineering work is as follows:

Bechtel:	Essentially complete.
MWH and ATC Williams:	Challhuahuacho River inlet: Complete Fresh-water pipeline route: Partially complete Chuspiri Dam: Complete Tailings Dam: Modifications have been engineered for this structure Sedimentation Pond and Clarification Pond: Partially complete Site drainage: Partially complete Geotechnical investigations of borrow pits and structural fills: Ongoing
Abengoa (220-kV Power Line):	Essentially complete.
Peru Rail:	Locomotive requirements: Complete Railcar design: Pending Loading station: In progress
TISUR (Matarani Port):	Concentrate storage and ship loading system: Complete Railcar unloading system: Pending finalization of railcar design or will be modified to offload trucks

12.5 Procurement Status

The status of procurement is as follows:

Bechtel:	All major equipment has been purchased.
Abengoa:	Essentially complete.
Peru Rail:	Locomotives: Letter of intent issued. Loading station: Pending completion of engineering. Railcars: Pending finalization of the design.
TISUR:	Concentrate storage and ship loading system: Contract for EPCM between TISUR and Odebrech signed May 31, 2013. Railcar unloading system: Pending finalizing of railcar design or truck offloading and finalization of contract.

12.6 Construction Status

The status of construction work is as follows:

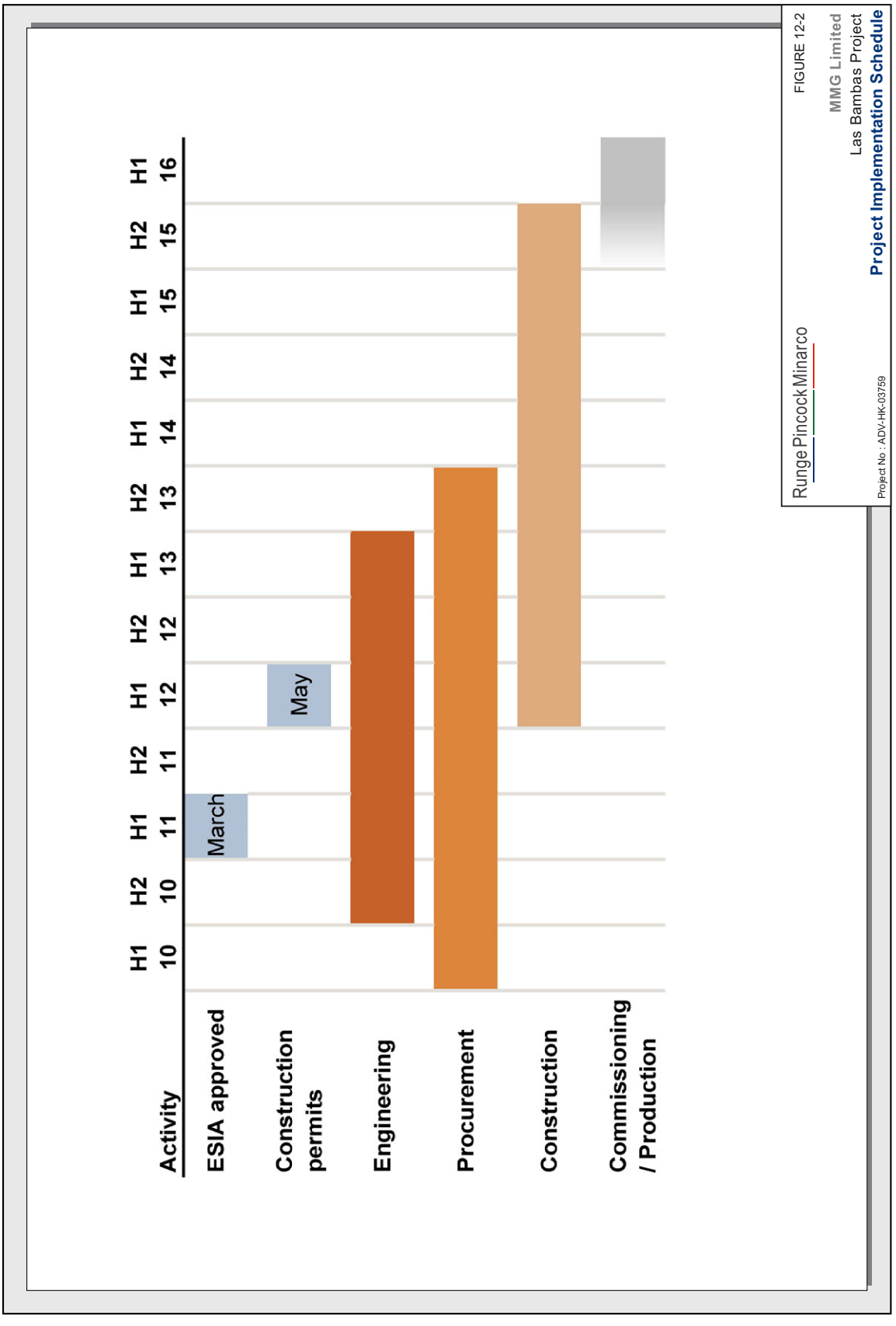
Temporary Facilities:	Complete.
Primary Crushers:	Work progressing well. Base concrete and walls are currently up to about 3 meters in height and on schedule to be completed in early 2015.
Overland Conveyors:	Work for the second-stage overland conveyors is progressing well. Earthwork for the first-stage conveyor is currently on hold awaiting the relocation of local residents.
Concentrator:	Work is progressing well. Most of the earthwork and concrete in this area is complete, except that for the relocated molybdenum and concentrate filter plants. Most of the structural steel is already in place. All of the four large mills are on site and their installation is in progress. Most of the flotation cell tanks are installed. The main substation installation is almost complete.
Tailings Dam:	Work is currently in progress on installing the plinth.
Challhuahuacho River Intake:	Earthwork in this area is close to complete.
Chuspiri Dam:	The dam is partially complete and storing water.
Water Pumping and Pipelines:	Work on some of the pipelines is in progress.
Sedimentation Pond Dam and Clarification Pond Dam:	Work has yet to start; awaiting permits.
Diversion Structures:	Work has yet to start.
Nueva Fuerabamba:	This is now complete and ready for occupancy.
Heavy Haul Road:	This road is complete and in use.

12.7 Implementation Schedule

A simplified Gantt chart of the project is provided in ***Figure 12-2***. As indicated on the chart, the plan is to start commissioning the plant by the third quarter of 2015 and be fully commissioned by year end. The Project delays against the original schedule have, thus far, predominately been related to the delay in completion of Nueva Fuerabamba town site. Due to the delays and associated construction delays and costs increases which have previously occurred, the Company has included a 2 month contingency into the schedule as well as capital expenditure contingency as outlined in ***Section 13***.

The two grinding lines are expected to be mechanically complete and pre-operationally tested in April and May, 2015, respectively. The Primary Crusher, Moly and Filter Plant (critical path items) are expected to be mechanically complete and operationally tested by the end of July, 2015.

At the present time, there is not a significant construction effort on night shift, but it is expected to be implemented in the future as warranted by the schedule, for specific areas that would benefit from the additional focus. RPM is aware that both the Company and the major contractor have significant local experience in development and commissioning projects on this scale and RPM considers it imperative that this management be retained as party of the transaction to ensure a smooth transition and continued development and successful commissioning of the Project. Ramp up to full production rate is expected to take 6 months with full production reached by the end of 2015.


Activity
H1 10
H2 10
H1 11
H2 11
H1 12
H2 12
H1 13
H2 13
H1 14
H2 14
H1 15
H2 15
H1 16
ESIA approved
March
Construction permits
May
Engineering
Procurement
Construction
Commissioning / Production
FIGURE 12-2
MMG Limited
Las Bambas Project
Project Implementation Schedule
Runge Pincock Minarco
Project No : ADV-HK-03759

Runge Pincock Minarco

13 Capital and Operating Costs

Estimated capital to construct the Project and achieve full production at the time of this Report is approximately US$ 6.03 billion, however of this initial capital requirement the Company has, as of 1st January 2014, sunk US$ 3.5 billion in project construction capital. In addition to the initial capital outlay the Life of Mine sustaining capital has been estimated at US$ 1.6 billion over the 21 years. Significant sustaining capital item include US$ 469 million for the tailings dam, US$ 388 million for mine equipment and US$ 237 million for the concentrator with the remainder made up of dewatering and other mining related capital.

13.1 Capital Costs

13.1.1 Initial Capital Costs

Estimated capital costs for the Project are summarized in ***Table 13-1***. This definitive estimate includes funds to construct the molybdenum and filter plant at the Project's concentrator site as opposed to at the Antapaccay site.

Table 13-1 The Company's Initial Definitive Capital Costs from Start of Development early 2013

Item	US$ millions
Mine	781
Bechtel Plant Directs	726
Bechtel Infrastructure Direct	833
Bechtel Indirect	1,761
Owners Operations	736
Owner Project Development	458
Nueva Fuerabamba Town Site	600
TOTAL	**5,895**

Source: Provided by the Company.

The Company's cost estimate of U$5,895 million is based on a definitive estimate completed in early 2013. The current total initial capital cost estimate of US$6,031 million is higher than the definitive estimate primarily due to delays in construction of major infrastructure items and continual reviews and updates to reflect relevant cost profiles and updated tenders as construction continues. Project expenditure prior to January 1st, 2014 was US$ 3,511 million with the current estimate to complete the project being US$ 2,519 million.

Although over 50% of the project is complete, material capital cost increases may still occur associated with social and unforseen construction issues. Delays during this time of peak construction could add significant cost and whilst the Company has included a US $30 million in Owner's contingency into its estimate this is likely to increase further.

Mining

The estimated total direct initial mining capital is U$ 781 million as listed in ***Table 13-2***. Mobile equipment makes up the largest portion of initial capital, followed by pre-stripping. As discussed in Section 9, equipment has already been purchased, and delivery is on-going.

Table 13-2 Mine Initial Capital Costs

Item	US$ million
Mobile Equipment	424
Pioneering Road Construction	79
Prestripping	110
Truck Shop	76
Other Mine Facilities	3
Other Mine Capital	89
Total	**781**

Source: Provided by the Company.

Runge Pincock Minarco

Ore Processing

Estimated direct ore-processing capital costs are shown in ***Table 13-3***. When combined with indirect costs (***Table 13-5***) in proportion to the direct costs, the estimated total costs amount to US$1.2 billion. This is at the higher end of the cost range expected for a plant of this size and is a reflection of the following factors:

- Government requirement to build to high seismic standard;
- Remoteness of the site;
- Extended construction period required to accommodate the presence and delayed moving of residents on site; and
- Extended construction period as a consequence of interference by local and nearby residents.

Table 13-3 Process Capital Costs

Item	US$ millions
BECHTEL PLANT DIRECTS	
Primary crushing	86
Coarse ore conveying, storage, and reclaim	142
Grinding	230
Pebble crushing	32
Flotation and regrind	113
Concentrate thickening	9
Molybdenum plant	56
Lime, reagents, air compressors, concentrate receiving	28
Dewatering, filter plant and filter-cake storage and loadout	30
Total	**726**

Source: Provided by the Company.

Infrastructure

Estimated infrastructure costs are shown in ***Table 13-4***. When combined with indirect costs ***Table 13-5***) in proportion to the direct costs the estimated total costs amount to US$3.2 billion. This at the high end of the cost range expected for infrastructure of this size.

Table 13-4 Infrastructure Capital Costs

Item	US$ millions
BECHTEL INFRASTRUCTURE DIRECTS	
Mine facilities	33
Shops. Warehouses, laboratory, guard houses	15
Site development, plant roads, water, sewer	102
Main substation, yard distribution, communication, fire	71
Site access roads	259
Fresh water dam, reservoir, pump stations, infrastructure	95
Concentrate pipeline and pump stations sunk costs	66
Tailings thickening and pipeline	22
Tailings dam and reclaim water system	170
Total	**833**
OWNER PROJECT DEVELOPMENT	
General	407
Contingency	41
Escalation	10
Total	**458**
NUEVA FUERABAMBA TOWNSITE	600
TOTAL	**1,891**

Source: Provided by the Company.

The reasons for this are, in part, the same as those for the higher cost of the ore processing plant, but other contributing factors also include as follows:

- The size of the Nueva Fuerabamba town site;
- Increase in estimated earthwork for the Nueva Fuerabamba town site;
- Extended construction period as a consequence of the more extensive earthwork;
- Delays in obtaining easements for roads and pipelines.

Indirect Costs

Estimated indirect costs are shown in ***Table 13-5***. The contributing factors to these costs include:

- Much of the work is done on a direct-hire basis rather than using subcontractors
- Remoteness of the site
- Extended project schedule

Table 13-5 Indirect Capital Costs

Item	US$ millions
BECHTEL INDIRECTS	
Temporary facilities general, concentrator	536
Temporary facilities - concEntrate pipeline sunk costs	48
Temporary facilities - Antapaccay	4
Construction water supply	15
Health services, small tools, safety supplies, consumables	64
Camp facilities – concentrator	223
Camp facilities - concentrate pipeline sunk costs	12
Direct hire craft labor overhead	25
Professional services (EPC/CM and 3rd-party engineering	605
Escalation	68
Contingency	161
Total	**1,761**

Source: Provided by the Company.

Owner's Costs

Estimated Owner's costs, other than the mine, are shown in ***Table 13-6***. These costs are relatively high, largely as a result of the high costs for community relations and land, although the operations cost is also high. With the large number of local residents the high costs for community relations and land are as expected. Owner's costs for operations in the construction period usually approximate the estimated annual General & Administrative costs multiplied by the years of construction; for the Project this would amount to about US$ 250 million; accordingly, the estimated cost is high and is unlikely to be exceeded unless the construction schedule is further extended.

Table 13-6 Owner's Capital Costs

Item	US$ millions
OWNER OPERATIONS (capitalized)	
Community relations, land	365
Operations	371
Total	**736**

Source: Provided by the Company.

Project Contingency

Through June 30, 2013, the following project contingencies remained:

- US$30 million contingency for construction delays which are generally associated with development of projects of this size, location and socio economic climate. In addition the Company has also included

approximately two months of EPCM costs and time delays in the forecast schedule. RPM considers that contingencies are in line with the delays expected for this type of project development at this stage of completion.

- Bechtel's contingency is US$161 million plus an additional escalation allowance of US$68 million for a total of US$229 million.

- The Company estimates a FOREX impact at completion of US$165.9 million, which is not considered a contingency and is not included in the Project cost estimate of US $5,895 million. Including this expected cost (which is based on having a weaker US dollar than existed when the project costs were estimated) would bring the total cost of the project to US$6,061 million. Until expenditures are completed it is uncertain if the impact of foreign exchange will reach this projected level.

13.1.2 Sustaining Capital

Mining

RPM believes the sustaining capital estimate for mobile equipment (totalling US$387.9 million) was reasonably estimated and reflects the high level of initial mine mobile equipment capital and the reduced mining rate for the last ten years of mine life. That lower mining rate allows the Project to avoid certain equipment replacements and as such requires less working hours per equipment and as such less sustaining capital to ensure the production rate forecast. ***Table 13-7*** shows the hours upon which mobile equipment replacements were based. ***Table 13-8*** shows the hours upon which mobile equipment replacements were based.

Table 13-7 Mobile Equipment Replacement Criteria

	Hours at Replacement
Trucks	85,000
Shovels	100,000
Drills	75,000
Track Dozers	50,000

Source: Provided by the Company.

A permanent truck shop will be constructed post 2016, between the Ferrobamba and Chalcobamba deposits, although that expense is not included in the sustaining capital list. Therefore, a large portion the amount listed as initial capital for the truck shop (US$ 76 million) will be deferred until post 2016, with US$ 26 million spent initially.

In addition to the mining equipment related sustaining capital requirements a total of US$ 429.5 million is required over the mine in other mining relating areas, such as roads, workshops etc. The majority of this is expended during the early years of the Chalcobamba and Sulfobamba pit construction and commissioning (***Table 13-10***).

Processing

Ore-processing related sustaining capital costs are shown in ***Table 13-8***, these include the principal costs of:

- Crushing and conveyor: US$150 million in 2016 - 2018 to construct a new primary crusher at Chalcobamba and associated conveyor.

- Grinding & Flotation: US$8 million in 2017 - 2018 to construct a roof over the grinding and flotation sections.

- Tailings Disposal and Water Recovery: US$25 million each year to raise the tailings dam.

Table 13-8 Ore-Processing Sustaining Capital Costs

Item	US$ millions
Crushing	176
Grinding & Flotation	56
Molybdenum and Filter Plant	5.4
Tailings Disposal & Water Recovery	469.3
Plant Infrastructure	7
Total	**713.7**

Source: Provided by the Company.

Infrastructure

Infrastructure sustaining capital is listed in ***Table 13-9***.

Table 13-9 Infrastructure Sustaining Capital Costs,

Item	US$ Million
Energy Supply	3.00
Environmental	26.93
Others	18.96
Total	**48.89**

Source: Provided by the Company.

Closure

Closure costs incurred during operation are estimated at $88 million, and final closure costs are estimated at US$197 million.

Runge Pincock Minarco

Annual Sustaining Cost

The annual sustaining costs are summarized in ***Table 13-10***.

Table 13-10 Annual Sustaining Capital Costs

Year	Mining Equipment (Million US$)	Mining Other (Million US$)	Concentrator Plant (Million US$)	Tailings Disposal and Water Recovery (Million US$)	General Site (Million US$)	Total (Million US$)
2014						
2015						
2016	37.5	52.6	52.4	24.7	17.2	184.3
2017	10.0	107.2	61.6	24.7	7.3	210.7
2018	0.0	40.0	62.6	24.7	4.4	131.6
2019	10.0	49.7	4.3	24.7	1.1	89.8
2020	4.3	97.1	3.2	24.7	3.1	136.3
2021	0.0	8.4	3.1	24.7	1.4	37.6
2022	6.0	12.4	3.1	24.7	2.2	48.3
2023	17.1	7.3	3.7	24.7	1.6	54.4
2024	11.0	9.4	9.0	24.7	2.3	56.4
2025	13.1	12.8	6.4	24.7	1.1	60.0
2026	6.6	4.4	3.7	24.7	2.9	42.3
2027	80.0	4.5	3.1	24.7	1.2	121.5
2028	78.3	5.8	3.2	24.7	2.1	122.1
2029	29.9	5.2	4.0	24.7	1.6	67.4
2030	58.3	4.7	3.6	24.7	2.1	95.4
2031	26.0	3.3	3.6	24.7	1.4	58.9
2032	0.0	2.6	3.6	24.7	2.1	33.0
2033	0.0	2.0	3.6	24.7	1.1	31.3
2034	0.0	0.0	0.0	24.7	0.0	24.7
Total	**387.9**	**429.5**	**237.4**	**469.3**	**55.8**	**1,605.9**

Note: this table excludes closure costs, estimated at $88 million during operation and $197 million at the end o the mine life.
Source: Provided by the Company.

13.2 Operating Costs

Estimated LOM operating costs for the Project are summarized in ***Table 13-11*** and are described below. Including by-product credits, the cost of production is expected to be US$0.81 per pound of saleable copper produced over the life of the mine.

Table 13-11 Operating Cost Estimate

Item	LOM US$/tonne ore	LOM US$/lb Cu
Mining	$5.19	$0.39
Processing	$5.77	$0.44
G&A	$0.84	$0.06
Transportation	$2.99	$0.22
TCRC	$2.58	$0.19
Total	**$17.37**	**$1.31**
By product credit*		$0.48
Total after by-product credit		**$0.81**

**Note: For determination of by-product revenue, the Company used the following long term price estimate: Mo = $13.00/lb, Ag = $25/oz, Au = $1,500/oz.*
Source: Unit Costs Provided by the Company and utilised by RPM in the Ore Reserve Schedule .

13.2.1 Key Assumptions

Principal consumables costs are shown in ***Table 13-12***. The Company based these on operating experience from their other Peruvian operations.

Table 13-12 Principal Consumables and Labor

Item	Units	Value
Power	US$/kWh	0.73
Diesel	US$/litre	1.07
Grinding Media		
5-inch balls	US$/kilogram	1.30
3-inch balls	US$/kilogram	1.18
Labor	US$/year	~17,000

Source: Provided by the Company.

13.2.2 Mining Costs

Mining costs have a life of mine average of US$1.75 per tonne of material (waste + ore + rehandle costs) or US $4.29 per processed tonne, based on the cost assumptions and estimates, haulage profiles and the Company actual supply costs at their other Peruvian operations. This total cost includes mining related administration and technical services which account for 13 % of the total cost over the life of the Project. As outlined in ***Section 9***, RPM has modified the haulage road to what is considered more achievable which results in an additional 5% of the Company's estimates. This additional cost is included in the ***Table 13-13***.

Table 13-13 Mine Operating Costs Breakdown

Mining Unit Costs	US$/tonne Moved
Drilling	$0.08
Blasting	$0.21
Loading	$0.14
Hauling	$0.90
Support Services	$0.16
Mine Administration	$0.18
Tech Services	$0.04
Rehandle Load and Haul	$1.09*

Source: Provided by the Company.
**Rehandle Unit Cost is per tonne moved from the stock pile, not per total pit movement*

13.2.3 Ore-Processing Costs

Estimated ore-processing unit operating costs are shown in ***Table 13-14***. The costs shown are those projected for 2018, the third full production year. Operating costs are estimated to vary slightly year by year but 2018 is reasonably representative of the LOM averages. Total estimated unit costs, at US$5.88 per tonne milled, are slightly higher than that of most large copper flotation concentrators though this is appropriate considering the remoteness and high elevation of the site plus the use of the BOO facilities for power transmission.

As is generally observed in operation of this type, more than half the total costs are for primary grinding, a result of the high power draw and grinding-ball consumption inherent in the primary grinding circuit. The next highest operating cost component is flotation and regrinding, comprising about 20% of the total costs; this is as expected and is accounted for by consumption of power, reagents, and grinding media.

Table 13-14 Ore Processing Operating Costs (Year 2018)

Item	US$/tonne Milled
Primary Crusher	0.06
Conveying	0.46
Mills (SAG and Ball)	3.16
Pebble Crushing	0.08
Flotation and Regrind	1.22
Thickening	0.05
Lime Plant and Other Reagents	0.03
Tailings Thickening	0.11
Fresh Water	0.12
Reclaim Water	0.11
Molybdenum Separation	0.23
Copper Concentrate Filtration	0.14
TOTAL	**5.77**

Source: Provided by the Company.

13.2.4 General & Administrative (G&A) Costs

Estimated General & Administration unit operating costs are shown in ***Table 13-15***. As for the ore-processing costs, the costs shown are for 2018, the third full production year when costs are projected to have stabilized. G&A costs are estimated to be unchanged for the succeeding years and gradually fall in the final 6 years of operation. Total estimated unit costs, at unit cost of US$0.95 per tonne milled, are as expected. RPM notes that in the last five years of the mine life these unit costs drop with the winding down of the Projects operation, as syuch over the entire mine life the average G & A is US$ 0.84/ tonne milled.

Table 13-15 General & Administration Operating Costs

Item	US$/tonne Milled
General Management	0.10
Administration, Logistics, & IT	0.15
Finance	0.05
Community Relations	0.07
Human Resources	0.09
Legal	0.06
Environmental	0.11
Project Management	0.14
Security & Insurance	0.18
TOTAL	**0.95**

Source: Provided by the Company.

Camp and employee-transportation costs are not shown as separate items in the G&A estimate. In total, these would be expected to amount to about US$ 0.20 per tonne milled; they are incorporated in the other cost categories within the total.

13.2.5 Downstream Costs

Downstream cost estimates are summarized in ***Table 13-16***. TCRC rates for copper concentrate are expected to fluctuate over the life of the property but in the long term average US$70/tonne of concentrate and US$0.07 per pound of copper. Note, inland freight (rail) and port charges include a premium to account for the respective operators to construct facilities capable of transporting material from the Project. The facilities were expanded under a Build-Own-Operate (BOO) contract wherein the owner of those facilities invested capital that is to be reimbursed through operating costs.

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Table 13-16 Downstream Costs

	$/t Wet Conc	$/t Dry Conc	$/lb	$/oz
Copper Treatment Charge		$70		
Copper Refining Charge			$0.07	
Au Refining Charge				$5.00
Ag Refining Charge				$0.35
Mo Treatment Charge			$1.60	
Inland Freight, Cu Concentrate	$80.00			
Inland Freight, Mo Concentrate	$80.00			
Ocean Freight, Cu and Mo Conc to Asia	$55.00			
Port Charges	$18.50			

Source: Provided by the Company.

13.2.6 Annual Costs

Table 13-17 shows the annual total operating costs, exclusive of by-product credits.

Table 13-17 Annual Operating Costs

Year	Mining (Million US$)	Processing (Million US$)	G&A (Million US$)	Transportation (Million US$)	TCRC (Million US$)	Total (Million US$)
2014	36.36					36.36
2015	174.31	80.66	31.74	61.59	54.06	402.36
2016	242.23	294.27	48.81	241.58	209.64	1036.53
2017	205.49	294.27	48.86	198.45	178.38	925.45
2018	257.35	294.27	48.9	196.33	155.62	952.46
2019	263.28	294.27	48.9	204.72	159.86	971.03
2020	255.84	294.27	48.9	184.81	149.02	932.84
2021	266.97	294.27	48.9	125.48	108.02	843.65
2022	270.28	294.27	48.9	179.64	136.1	929.2
2023	264.16	294.27	48.9	206.62	164.79	978.74
2024	264.26	294.27	48.9	189.42	167.95	964.8
2025	265.99	294.27	48.9	133.14	126.45	868.75
2026	272.53	294.27	48.9	126.68	98.94	841.32
2027	269.48	294.27	48.9	117.89	94.28	824.81
2028	274.4	271.84	48.9	77.06	67.33	739.54
2029	261.77	294.27	34.75	155.88	144.37	891.04
2030	256.31	294.27	24.54	105.39	103.97	784.49
2031	247.83	282.01	20.29	99.69	99.69	749.5
2032	254.03	253.68	19.64	67.46	66.78	661.59
2033	243.1	289.81	21.1	101.63	99.02	754.66
2034	95.83	197.95	16.07	71.23	70.86	451.94
LOM	**4,941.8**	**5,495.73**	**803.7**	**2,844.69**	**2,455.13**	**16,541.06**

Source: Unit Rates Provided by the Company and applied to the Ore Reserve Schedule.

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14 Overview of Permitting, Environmental Impact, and Social and Community Impact

14.1 Background

This section of the report provides a detailed review of the environmental and social aspects of the Project. The review is based on a detailed evaluation of the important components of the environmental and social facets of the Project identified from the site visit, interviews, presentations, and document review. The development of the Project appears to be viable as the potential social and environmental impacts resulting during all phases of the Project can be mitigated. In addition, the Company and their contractors have the organizational capacity to address permitting, environmental and social issues, and health and safety management. However, there are a number of challenges to be addressed during the life of the Project that are discussed in this section of the report.

14.2 Environmental Management System (EMS)

The EMS developed by the Project is based on the identification of hazards and risks associated with the strategy and plans developed for the Project. Legal requirements, including national, international and local government, and the applicable regulations, standards and statutory licenses, have been included in the management system. Appropriate mitigation measures are implemented to eliminate or reduce potential impacts. Monitoring is ongoing, while the project activities are implemented, providing an indication of how mitigation measures are working to protect the environment. Adjustments are made to the mitigation actions to improve environmental control measures. The Company recognizes leadership as a valuable component of environmental performance.

Environmental Management Plans (EMP) determine the focus for environmental management by defining objectives and goals. Impacts and associated mitigations have been identified for the activities anticipated for the Project. Each major component of the Project has been included in an EMP.

14.3 Environmental Management Program

The Environmental Management Plan (EMP) for construction and operations has been developed based upon the conceptual EMP provided within the ESIA. The EMP's will include the four general elements of a management plan: (1) Planning: a statement of principles, definitions of responsibilities for the performance of plans and planning of activities; (2) Execution: a number of guidelines for the protection of the various environmental components and/or management of environmental risks; (3) Verification: a process for the control of activities by means of monitoring and inspections; and (4) Mitigation: corrective action in different areas under the environmental guidelines and implementation of remediation measures for the environment.

The Company understands that the EMS is a dynamic program and that modifications are required to meet ever changing conditions throughout the Project period.

The Project has received and has maintained ISO 14001 certification. This certification provides an indication of good management and a positive attitude toward environmental control.

14.4 Environmental Compliance Performance

Monitoring reports have been submitted pursuant to the commitments of the EIS and other approvals. No compliance issues with applicable regulatory authorities were noted either in documentation or during conversations with environmental, social and legal staff.

The environmental staff at the Project maintains detailed files on environmental incidents. Incident report workshops are conducted to educate personnel with regard to environmental control. This type of program supports the development of environmental awareness in the Project area and in the impacted communities. The incidents are categorized in five (5) levels with Category 1 having the least impact on the environment and Category 5 having the greatest. Category 1 incidents include such items as small oil spills and improper storage of petroleum products, that are easily corrected and do not require substantial consideration. A listing of environmental incidents is provided in ***Table 14-1***.

Table 14-1 Environmental Incident Reports

Environmental Incident Level	Quarter 3, 2013	Quarter 4, 2013	Quarter 1, 2014
Category I	36	122	62
Category II	0	0	0
Category III	0	0	0
Category IV	0	0	0
Category V	0	0	0

14.5 Status of Project EIS Permitting Activities

The Company's Legal Department manages Project permitting, especially for interaction with government authorities. Permitting actions are supported by the Environmental and Social/Community Departments and the Project design team. A detailed review of the permitting activities shows that the Project is progressing toward fulfillment of all requirements. The EIS for the Project was approved in March 2011. As the project planning process continued, a change in the water acquisition system was made from constructing a dam on the Challhuahuacho River to the development of a water intake system in the River. An additional change in plans was associated with an increase in the volume held behind the Chuspiri Dam from 3.2 to 4.2 million cubic meters. This modification required an amendment to the EIS, which was approved in August 2013.

With time, additional changes were made to the Project plan including the construction of the molybdenum facility and the filter plant at the Project rather than using the facilities located at Antapaccay. Additional changes were made including: identification of quarry sites; construction of a concrete plant; construction of a truck shop; relocation and size increase of the camp; change in starting date of work; and several other items. These changes were detailed in a technical report approved by the regulatory agency in August 2013. It should be noted that a technical report can be used to acquire approval for insignificant changes in plans. This type of approval is usually granted in 30 days versus months for approval of the EIS amendment.

Another technical report was approved in February 2014 for several modifications including sediment pond construction (without discharge), the addition of a water treatment facility, an assay laboratory, a low-grade ore stockpile and other items. The sediment pond construction was included without discharge to allow quick approval and initiation of the construction activities. If discharge was included in the approval process, an amendment to the EIS would likely be required. Since the approval of this technical report, a design change was made with the projected construction of two (2) smaller sedimentation ponds in lieu of the large pond. It is anticipated that approval will be granted via the technical report option.

A second amendment to the EIS was submitted in March 2014 that included a water balance, topsoil stockpile location and to acquire approval to discharge from the sedimentation pond. The approval of this amendment is expected in November 2014. A third amendment to the EIS, which will include the method of concentrate transport from the processing plant to the Port is projected to be submitted in November 2014 with an anticipated approval in late 2015

14.6 Environmental Management Team Capacity

The Environmental Management Team is organized with a Manager position that leads all environmental activities at the Project site. At the time of the site visit, the position has not been filled. The current lead environmental position is an Environmental Superintendent, which is responsible for all activities in the Project area including the reforestation and community sampling programs. The interactions between the environmental group and the communities have proven to be a very important link between The Company and the Communities.

The current lead position for environmental management has a good understanding of the program and appears to be well organized making sure all obligations associated with compliance monitoring and reporting are fulfilled. It appears that the environmental group is well managed and the overall work effort is well organized.

14.7 Environmental Management

14.7.1 Baseline Studies

Baseline studies were conducted for the major components of the environment. The baseline development was used to identify potential impacts and associated mitigations. This information was presented in the ESIA. Environmental baseline disciplines included: (1) Air Quality; (2) Noise; (3) Geomorphology and Geology; (4) Soils and Land Use Capability; (5) Surface Water Quality; (6) Meteorology and Hydrology; (7) Hydrogeology; (8) Geochemistry; (9) Flora; (10) Fauna, including mammals, birds and reptiles and amphibians; (11) Aquatic ecology; (12) Biodiversity; and (13) Protected Areas. The baseline work appears to be adequate for Project development.

14.7.2 Air Quality Management

Management of air quality for the Project is primarily associated with controlling particulate emissions. The primary source during construction is associated with the actual construction activities and the transport of equipment and materials on unpaved roads. The emissions related to Operations will be associated with mining activities including transport of ore and other materials within the Project area, blasting and ore processing. Wind-blown materials will likely be an important component of air quality throughout the Project area including impacted communities.

Dust potentially generated from roads and other work areas will be controlled using water. This will be a prime consideration during the dry season. Water taken from the sewage treatment plant will be the primary source.

All crushing circuit equipment will be equipped with dust collection systems. The crusher will include sleeve filters to control emissions during loading activities. All ore transference points, such as belt conveyor transferences and screens, will be equipped with rubber skirts. Ore flow in belt conveyors will be centered to help prevent leaks causing the generation of dust. Dust suppression or capture systems will be installed at all transfer points. The use of material and/or equipment using biphenyl polyvinyl chloride (BPC) or Freon will be prohibited.

14.7.3 Noise Management

There are a number of sources of noise during the construction and operations phases of the Project. The primary sources of concern include: (1) road traffic; (2) impact equipment such as jack hammers; (3) compressors and generators; (4) blasting; and (5) material handling equipment such as crushers, and earth moving equipment.

Mitigation measures applicable to all noise sources during operation that will be implemented include, but are not limited to: (1) performing regular inspection and maintenance of material handling vehicles and equipment to ensure that they have good quality mufflers installed, worn parts are replaced and lubricants applied; (2) comply with established noise limits, defined by regulatory requirements and use equipment that conforms to noise standards; (3) consider noise barriers, baffles or enclosures for particularly noisy equipment (e.g., crushers, grinders); and (4) develop and implement a noise monitoring program for the operation phase.

The following measures will be implemented to minimize transportation-related noise impacts: (1) speed limits in relation to road conditions and location of identified sensitive noise receptors (e.g., communities, important wildlife habitat) will be enforced; (2) road surfaces will be maintained in good repair to reduce tire noise; (3) prolonged idling will not be allowed; and (4) transportation will be scheduled for daytime hours as much as possible.

14.7.4 Soils Management

Topsoil materials will be salvaged prior to disturbing areas associated with facility construction and development and disturbances related to mining. Most of the topsoil will be derived during pit stripping. The topsoil salvaged will be stockpiled and used as reclamation material at Project closure. Topsoil stockpiles will be strategically located to avoid operational disturbance and erosion control measures (including vegetating) will be applied to the salvage stockpiles to reduce erosion. Topsoil will also be used to rehabilitate the concentrate pipeline right of way in sensitive areas as soon as it is feasible.

14.7.5 Biodiversity/Wildlife Management

Detailed baseline programs were designed and implemented with regard to the biological components of the areas potentially impacted by the Project. The evaluation provided detailed information on flora and fauna including mammals, birds and reptiles and amphibians. Major components of the studies included aquatic ecology, biodiversity, and protected areas.

The impact of the Project on wetland resources is an important issue related to biodiversity and wildlife management. No protected areas were found to be impacted by the Project activities.

14.7.6 Water Resources Management

The water management plan (WMP) developed for the Project reflects the strategy for management of all surface water and groundwater within the Project area to achieve the following objectives: (1) adequately and safely convey all surface water runoff through the Project site; (2) segregate and separate the different kinds of water that should not be mixed within the Project area (e.g., freshwater, non-contact water, stormwater (contact water) runoff, including mainly sediment laden, contact waters, and process water); and (3) provide temporary storage of all waters from the project site to allow controlled release to the environment (for instance, sedimentation ponds, conveyance to discharge and/or recycling facilities, and project water supply (process water, non-process water, etc.).

The Water Management Plan establishes specific objectives and criteria to manage the water in the Project area according to the climatic conditions, types of waste water generated, commitments of minimum riparian flow, and other water users in the basin, while minimizing the impacts to water quality and quantity. The Plan also describes the logic and the rationale to operate each of the mine components (e.g., pit, WRSFs, process plant, TSF) throughout the life of the mine; and locate, size and select the proper engineering design criteria for all surface water and groundwater management infrastructure (e.g., ponds, diversion channels, collection channels, under drains, sumps, treatment facilities, pumps, culverts, etc.).

As described above, most of the water management strategies are part of the project engineering design to minimize impacts on the quality and quantity of off-site water resources. Below is a description of the main water management strategies for the Waste Rock Storage Facilities (WRSF's) and the Tailings Storage Facility (TSF).

Ferrabamba, Chalobamba and Sulfobamba Waste Rock Storage Facilities

Runoff from the waste dumps will be collected in diversion channels built around the individual waste dumps. The channel construction will be staged given that the construction of the waste dumps is bottom up.

No ARD issues are anticipated with waste rock from the Ferrobamba deposit, with possible exception of the Biotitic Monzonite rock type. Staged interception ditches will be constructed to intercept non-contact water up-gradient of the waste rock facility. The intercepted water will be conveyed to the non-contact water diversion channel around the open pit and discharged into the Ferrobamba River. A contact water collection sump will be constructed at the base of the waste rock facility and the low grade ore stockpiles. During operation this sump will collect contact water from the face of the tailings dam, low grade and waste rock stockpiles, as well as discharge from the open pit dewatering system. The water collected in the pit will be pumped to the contact water sump and used in the processing operation.

The Ferrobamba WRSF will be placed in an adjacent drainage that appears to have a perennial stream associated with the existence of springs. In addition, the by-pass water collected and transported around the TSF will also be discharged into the drainage. The proper management of this water is critical to prevent stability issues with regard to the WRSF and may also contribute to water quality issues. The Company did not propose a strategy or plan to deal with this potential issue. However, the construction of a "French Drain" under the facility to convey water to a discharge point downstream of the WRSF would mitigate the stability and water issues.

The Ferrabamba and Chalcobamba waste rock materials are characterized with no anticipated ARD issues. All indications are that the water quality will be appropriate for discharge to the environment but possible issues with copper, iron, zinc and molybdenum will require further investigation.

The waste rock material from the Sulfobamba deposit is potentially acid generating ("PAG"). Bechtel indicated in their feasibility study that the management of this material will involve segregation of the PAG rock and the independent deposition and temporary placement of the rock in a location naturally draining to the open pit. At closure, the PAG waste rock would be deposited subaqueous.

Sediment control facilities will be built at the toe of each of the waste rock facilities to collect runoff water from the non-PAG rock. This water would be discharged to the environment, assuming suitable water quality for discharge to the environment.

Tailings Storage Facility

Tailings will initially be deposited as a conventional slurry and then thickened in the later years of deposition, therefore minimizing the water collected inside the tailings facility. Water collected will be pumped to the concentrator plant for use in the processing activities.

During operation, non-contact water upstream of the tailings facility, the waste rock facility and the open pit will be conveyed around the south side of the open pit and discharged into the Ferrobamba River. All the non-contact water upstream of the tailings facility will be diverted around it and into the valley where the waste rock will be stored (as discussed in the previous section). The dam will be raised in advance of the tailings deposition at a rate sufficient to ensure no discharge of contact water from the tailings facility to the environment during operation.

Runoff from the tailings dam is considered contact water because the dam will be constructed from waste rock material. An under drain will be constructed in the base of the old river bed with the primary objective of limiting lateral seepage through the side of the impoundment. The under drain will discharge through the toe of the tailings dam which, during operation, will be collected along with other contact water and pumped back up to the tailings management area. Immediately downstream of the contact water collection pond, wells will be installed to monitor ground water quality and to perform extraction using submersible pumps, if necessary to protect water quality of the aquifer.

Infrastructure including Processing Plant and the Truck Shop

Stormwater facilities associated with the Concentrator Plant and Truck Shop will be provided to collect runoff. Because the concentrator plant will ultimately be located in a depression once the tailings facility is constructed, the stormwater pond will be drained using a pumped discharge. After decommissioning the depression will be allowed to fill and will eventually overflow to the environment.

The Chuspiri fresh water reservoir is the principle source of fresh water supply for the process. It was designed to store water pumped from the Challhuahuacho River intake. The dam will be removed at closure and the dam material will be used as closure cover material in the tailings facility.

Ideally the plant area will be graded to allow gravity drainage at the construction stage. A protected outlet along the toe of the tailings facility will be required at the closure stage regardless, to prevent erosion of the toe of the TSF.

Erosion and Sedimentation Control Management

Erosion and sediment management will involve the use of a number of management practices that will target each of the erosion process stages. Upstream and non-contact diversion systems will help to keep clean water from running onto disturbed areas, thus reducing volumes for handling and the erosive power of the water that would otherwise need to be handled. This will minimize the volumes potentially requiring sediment control and/or treatment as well as the overall footprint of areas required for treatment facilities.

A number of examples of effective management practices for surface erosion protection and sediment control for consideration at the mine site include: (1) maximize the diversion of non-contact waters around areas of potential disturbance; (2) prohibit the operation of construction equipment close to watercourses where there is a risk of bank sloughing, failure of the vehicle crossing or flooding the work area; (3) selection of construction season, timing and method to minimize sediment generation at stream crossing locations; (4) election of water/withdraw and discharge locations and rates to minimize changes in water levels and sediment concentrations associated with pipeline hydrostatic testing and other miscellaneous construction uses; (5)

further assessment of proposed crossings just prior to construction to determine the need for minor adjustments in the pipeline route to avoid or minimize impacts to sensitive areas; (6) establish buffer zones around disturbed areas for natural filtering of surface runoff waters en route to watercourses; (7) intercept sources of potential sediment-laden waters as close to source of erosion as possible and use runoff control and conveyance measures to move these waters to a receiving water-body; (8) establish self-sustaining vegetation in erosion-prone areas once disturbed but no longer required for use; (9) use appropriate sediment traps and barriers such as silt fences to minimize sheet erosion and velocity of sheet flow in areas prone to erosion; (10) use rock check dams or riprap to reduce water velocity and scour potential and to provide for temporary sediment retention; (11) use sediment catchment basins along the base of the disturbed features during the construction, operations and the beginning of the closure phase to reduce siltation in downstream basins; (12) use ditch armoring along ditches depending on factors such as area steepness, erodability of soil materials and presence of any immediate downstream watercourses; (13) promote progressive reclamation with revegetation and slopes contouring to help maintain long term stability where practical; and (14) undertake sensitive operations during periods of dry weather to minimize traffic through these areas and select equipment that will create the least disturbance.

14.7.7 Waste Rock Management

Waste rock generated during the mining of the three (3) pits will be stored in WRSF's located adjacent to each pit. The facilities will be constructed without seepage collection structures. Waste rock from the Ferrobamba and Chalobamba pits is not expected to generate acid conditions. However, leachable metals such as copper, iron and zinc could exist in concentrations that may exceed regulatory and/or baseliine requirements. It should be noted that elements such as copper, iron and zinc exceed regulatory limits in the baseline condition, which indicates that baseline conditions can be considered the regulatory limit.

Waste rock from the Sulfobamba Pit will likely form acid conditions with leachable elements exceeding the baseline concentrations. Appropriate mitigation measures will be required to protect the water resources in the area. Bechtel indicated in their feasibility study that the management of the acid rock drainage (ARD) from the Sulfobamba Pit will involve the segregation of the PAG rock, independent deposition and temporary placement of the PAG material in a location naturally draining to the open pit. At closure, the PAG rock will be deposited subaqueous in the adjacent mine pit. This mitigation plan will likely prevent substantial environmental impact.

14.7.8 Tailings Management

Tailings generated in the ore processing facility will be placed in the TSF via pipeline. The TSF will be a zero discharge facility during the operations phase of the project as the dam will be constructed using concrete and PVC material to prevent seepage. In addition, the embankment will be placed on bedrock and the underlying bedrock will be grouted, which will significantly reduce seepage from the facility into the adjacent surface water. Immediately downstream of the contact water collection pond, monitoring wells will be installed to monitor ground water quality and to extract contaminated water using submersible pumps, if necessary.

The expected chemical characteristics of the tailings generated from ore mined from the Ferrobamba and Chalobamba mine pits should not cause environmental problems either with seepage or surface discharge. This material should not generate acid but could generate leachable elements such as copper, iron and zinc, which could become toxic to the environment.

However, tailings generated from ore processed from the Sulfobamba could become an environmental issue as about 25% of the ore and waste rock will likely generate acid and/or release substantial amounts of potentially toxic elements into adjacent water resources. Bechtel suggested that the Sulfobama pit should be mined prior to the Chalobamba reserve, which would result in the placement of better quality tailings at the surface covering the poor quality Sulfobama tailings. This proposed modification would substantially enhance successful closure of the TSF.

14.7.9 Waste Management

The Solid Waste Management Program for the Project will be performed based on the following criteria or basic concepts: (1) hazardous wastes generated within the site, either domestic or industrial, willl be handled by Contractor Companies authorized by the Environmental Health General Direction of the Health Ministry (DIGESA) and will be disposed in authorized disposal areas. The only exception to this rule will be the used oils generated in the mining equipment shop, part of which can be used in the blasting processes; (2) Non-hazardous wastes generated both during construction and operation phases, will be disposed in special

installations (sanitary landfill), located within the Project boundaries; (3) Industrial and construction non-hazardous wastes will be temporarily stored within the Project area at a storage location until their final destination is determined. Such wastes will be used on site or recycled at off-site locations; and (4) Much of the kitchen wastes are composted and used to enhance growth of the trees and brush to be used in the tree establishment program.

Management and handling procedures for solid waste will be the same during the construction and operations phases of the Project using the same facilities (segregation at origin, temporary storage yards, and sanitary landfills). The size of the installations will vary according to waste generation rate during the Projects' life.

The primary concern with waste management at the Project is the development and implementation of a strategy to handle used tires. At the present, the Peruvian Government does not allow the disposal of used tires anywhere in the country. Over the life of the operation, the Project will generate hundreds of very large used tires (300 tonne trucks) without any apparent mechanism for disposal or recycling. Other operations in South America have experienced the same problem. Final resolution to this waste disposal problem will likely be costly..

14.7.10 Water Acquisition/Availability

Water acquisition for the construction activities was approved with two (2) temporary withdrawal points from adjacent rivers. The water to be used for the operations phase of the Project will be withdrawn from the intake facility constructed in the Challhuahuacho River and stored in the fresh water storage reservoir created behind the Chuspiri Dam. The intake facility and the dam will be linked by a 23 km, 32-inch diameter pipeline. Approvals have been acquired for the intake facility and the dam. However, acquisition of the ROW or landownership for the pipeline has not been completed. Groundwater will be used as a backup source.

The impact of water acquisition to water resources in the area is expected to be minimal as water will be recycled, where possible. Water collected from the TSF will be recycled to the processing system while sewage treatment solution will be used for dust control on the roads. In addition, water extracted from the pit dewatering system and the water collected in the mine pits will also be used likely for processing. Storm water collected in the sedimentation impoundments will be used for operations activities.

Approval of the water right or the right to extract water from the Challhuahuacho River consists of several steps. First, the water intake facility and the ore processing plant must be constructed and commissioned. In addition, the tailings facility must be completed with the no discharge consideration incorporated into the design. In other words, seepage that will likely report to the surface water regime must be prevented. The Company plans to build the TSF on bedrock and grout the bedrock, which should provide the necessary seepage control. Once these facilities are constructed and commissioned, the water license will be granted.

14.8 Environmental Monitoring Program

The objective of the environmental monitoring program is to verify the accuracy of predicted environmental impacts identified in the ESIA and to determine the effectiveness of mitigate measures incorporated into the environmental management plan. The Program will allow the Company to comply with applicable regulatory requirements and internal policies.

Detailed monitoring plans have been developed for many aspects of the Project. The plans outline the rationale for monitoring, the parameters to be monitored, monitoring program details and follow-up actions to be taken as appropriate.

The Company is committed to monitoring all aspects of the environment. Unforeseen issues identified by the monitoring program will be mitigated using appropriate technology.

14.9 Social and Community Management Program

The Project has the potential to greatly influence the communities impacted by the Project. Doubts and fears of the local population with regard to the impacts of the Project on their livelihoods, make it necessary to create consultation proceedings and channels to provide assurance that the concerns of the community are considered and taken into account in the execution of the Project. The resettlement issue has the potential of changing lives and creating unmanageable community relations. Detailed discussions of the social

management activities are described in the following paragraphs. It should be noted that the social and community team has accomplished a significant amount of work and has established good relationships with the impacted communities. It will be critical for the Social and Community Management Program to experience continued success for the Project to be successful.

14.9.1 Resettlement

At the time of the site visit, the construction of the resettlement community was in the final stages of completion. In fact, the people to be moved were planning to visit their new homes on May 12, 2014, a day after the completion of the RPM site visit. Resettlement is expected to commence in mid 2014

The resettlement facilities include housing for each family moved from the impacted area. Families living in the Project area at the time of the agreement approval will receive a house that has 8 bedrooms and 3 bathrooms and the families that had previously lived in the impacted community, but did not live on site at the time of the agreement, will receive a home with 4 bedrooms. The homes are equipped with running water and sewage collection and treatment. Each home is surrounded by a concrete fence and includes about 500 m^2 of land and a small greenhouse. Community facilities include the following: (1) schools including day care (1 to 4 years old), pre-school, kindergarten, primary and secondary facilities. The schools are equipped with libraries, a computer lab (35 computers), chemistry and physics labs, sports facilities and equipment, and other facilities required to support state of the art schools; (2) hospital/medical clinic; (3) sewage treatment facility; (4) landfill for domestic waste; (5) community center including a town square; (6) industrial center including a slaughter house capable of handling 120 animals per day; (7) market where people can sell their goods; (8) horse racing track; (9) bull ring; (10) sports arena for soccer and track and field competitions; (11) 3 churches; (12) recreational areas located at various sites to support children and adult activities; (13) Home for the Elderly; and (14) about 4500 ha of communal land, which will support agricultural activities of all the households.

14.9.2 Potential Issues with Resettlement

The constructed housing and other facilities are very well prepared. However, RPM contends that the housing portion of the accommodations does not meet the life style of the people, which may lead to issues as the families adjust to the new way-of-life. rePlan, which is the current resettlement consultant working in the Project area, indicated that many of the women are anxious to move into their new homes but are very apprehensive about how to live in the homes. The women are concerned about the three (3) flights of stairs and how to use the kitchen and bathrooms. Replan has identified this potentially serious issue and has developed a program to closely work with the people to help the adjustment to the new life style. The success of this program will dictate the success of the resettlement.

14.9.3 Programs Initiated to Support Successful Resettlement (ESIA Commitments)

Local Employment

An employment agency (Manpower, Inc.) has been engaged to provide manpower requirements for various aspects of the Project. rePlan is working with the agency to assure that employment opportunities are afforded to the communities as the first alternative. Positions will be filled with locals unless people are not available or do not have the skills required for the position.

Training programs are under development to fulfill the needs of the Project as construction progresses to production. It is anticipated that labor positions and most of the management positions for the Operations stage of the Project will be filled by Peruvians. Much of the labor force will have the skills required gained from experience in other mines located in the area, while a significant number of unskilled locals will be trained to fulfill important needs. The unskilled work force will likely originate from the local communities.

Local Procurement - Promote Development to Support Long-Term Needs of the Project including Wood, Rock, Steel, etc.

An effort is being spearheaded by the Company and the social consultant (rePlan) to promote the development of business in the vicinity of the Project to support the needs as the operations phase progresses. The ready availability of supplies such as wood products, rock, steel and other important components supporting operations will greatly benefit the Project and at the same time, enhance the development of sustainable business in the nearby communities. It is anticipated that the Project may extend for several decades beyond the current projected time-frame. Therefore, it is anticipated that the development of a supply chain within the impacted communities will enhance the local economy and provide good community relations.

Identify and Promote Development of Business Ventures Outside the Scope of the Project

An important component of the strategy being developed by rePlan is to promote the development of business in the local communities as part of the closure strategy. Project closure will result in lost jobs directly related to the Project. In addition, businesses supporting the various aspects of the project will also experience significant decreases in revenues. Therefore, it is important that the impacted communities develop business opportunities outside of the Project influence. These businesses would support other industries and provide components for various niche markets. It will be important for the Company to support this component of the closure plan so that Project closure becomes a mute-point and that long-term viable businesses exist that support the local economy into the future.

Promote the Development of Infrastructure in the Region that Will Support the Needs of the Project

A key component of Project success is to have the ability to acquire supplies and services at reasonable rates within the region. rePlan is developing a strategy or marketing effort to promote the development of business in the Region to provide Project necessities. Such development of industry would likely support projects either existing or that will become viable in the future. Results of this effort are expected to provide jobs throughout the region and generally enhance social economic conditions in the region.

Fondo Social Las Bambas (FOSBAM)

Fondo Social Las Bambas (FOSBAM) is a social/community development fund used to supply grants or funds to local communities to support worthwhile projects. A total of US$ 64.5 million has been donated by the Company to FOSBAM, as agreed. As noted in RPM's previous report, participation, administration and allocation of these funds are regulated through Legislative Decree No. 996, which established formulas for how fund resources are to be distributed among local and regional municipalities. The Company reported that 20 district municipalities are involved, 4 of which are considered to be located in the area of direct project influence. The Executive Committee of FOSBAM, which has the major influence on the distribution of funds, includes five municipality mayors and two members from The Company. All resources go to public actions based in part on community desires and on stipulations within the Legislative Decree. The Company reports that FOSBAM has generally been successful, as it has generated support for the Project; however, there have been some incidences of fund mismanagement and corruption.

Stakeholder Engagement and Awareness

It is a necessity to engage with all stakeholders to make the Project a success. Stakeholder interaction describing potential environmental and social impacts and proposed mitigations and acquiring their input will help solve potential issues before they become problems that may not be solvable. Communities must be aware of activities impacting their surroundings. Only then will developments such as the Project become successful.

Engagement Activities

As noted in the initial site visit conducted in 2013, the company appears to have an excellent relationship with the local communities. However, social issues resulting in unrest are always a concern for developing projects in Peru potentially causing delays and added costs. As noted during the first site visit, there had been a number of challenges, including isolated strikes/protests, isolated temporary shutdowns, and isolated issues with obtaining right-of-way (ROW) for the HHR, railroad and pipeline transport options. However, these issues appear not to be associated with the nearby communities of Fuerabamba and Challhuahuacho, which have not supported the recent strikers and protest activities.

In addition, mine construction activities have continued to be impeded by the existing Fuerabamba community until Nueva Fuerabamba is constructed and the residents are resettled. As noted previously, the construction of Nueva Fuerabamba is very near complete.

Environmental Monitoring with Community Representatives

The Company has initiated a water quality sampling program that includes community representatives in field sample collection. The community representatives are trained to take samples at the field sites and are included in data review discussions once the laboratory data are received. This program has proven to be

successful as participants become engaged in the process and can see how the current activities have impacted the environment. It appears that this activity is promoting a trust between the community and the Company. This activity will likely continue throughout the life of the Project.

Forest Establishment

The Project has initiated a program of planting 100,000 trees on an annual basis projected to continue for 7 years. The Project has established two (2) greenhouse facilities in nearby communities with plans for another next year. Each facility is manned by community workers. It appears that much of the tree planting is accomplished by community people on a voluntary basis. This program appears to promote interaction between the Project and the communities and seems to be a success.

14.9.4 Social Aspects associated with the Transport of Concentrate from the Facility to the Port

Three alternatives are being evaluated for the transport of concentrate from the processing facility to the Port Facility located at Matarani, including the use of trucks, railroad and pipeline. The status of right-of-way (ROW) acquisition and related social interactions are described in the following sections.

Truck Transport on the Heavy Haul Road (HHR)

The concentrate generated at the Project's processing plant is planned to be shipped to the Matarani Port Facility via the HHR, however other options are being considered to minimise the use and costs of the HHR. A portion of the road will require upgrading to handle the size and number of trucks that will be used for transport. Where needed, ROW agreements have been acquired for the initial years of production and interactions with all the communities impacted by the transport have been ongoing. Agreements discussion for the ongoing use of the HHR over the LOM between the Company and each community are ongoing. Detailed traffic modeling was used to determine critical traffic areas and appropriate mitigation measures will be implemented to assure safe travel and reduced impact to current traffic patterns. Truck transport will be used during the initial stages of the project until the railroad or pipeline transport methods has been planned and implemented.

Railroad Transport

The use of a railroad to transport concentrate from the processing plant to the port or at least a portion of the distance has been evaluated. The status of the plan is not known at this time but the Company has an agreement with the locomotive distributor to acquire 15 locomotives to support the railroad transport concept if desired.

Pipeline Transport

Another viable alternative for transporting concentrate to the Matarani Port Facility is a pipeline. Discussions with the communities and individuals along the route have been successful with only a few issues, however no formal agreements are currently in place. With further discussion RPM understands the necessary ROW's could be in-place and the agreements and authorizations required for construction should not be problematic.

14.9.5 Transmission Line

The Project is currently using diesel generators to supply power during the construction period. Operations will be supported using electricity provided from the grid via a power line. Electrical power will be supplied to the Project from the existing SEIN substation at Cotaruse along a new 130 km long, 220 kV transmission line. The route of the new transmission line is Cotaruse-Antabamba-Virindo- Las Bambas and according to Peruvian requirements, an EIS is required for this facility. The transmission line will be owned by Abenogoa Power, which is responsible for obtaining permits and right of- ways (ROW). Both the archaeological and EIS certificates have been acquired for the route. rePlan is currently providing support to acquire the remaining ROW needed to allow construction of the facility.

14.9.6 Matarani Port Facility

The Matarani Port Facility was not visited during the site review. The Port EIS approval was anticipated for the 3rd Quarter of 2013; construction authorization was estimated for January 2014 with the authorization to operate in March of 2015. The Port Facility is responsible for obtaining the EIS approval and will have ownership of the facility. The status of the acquisition of the EIS and other appropriate permits is not known.

14.9.7 Social Activities Monitoring Program

A detailed monitoring program has been developed to document the status of all social activities related to the Project except the transmission line and the Port Facility. The program is setup using a similar format employed for the environmental monitoring program. Grievance documentation describing the mitigation actions is included in the actions. The monitoring program appears adequate for the the Project's social activities.

14.9.8 Social Management Team Capacity

The Social Management activities are divided into three (3) areas: (1) Resettlement; (2) Direct Impact Area near the Project Site; and (3) Regional Area including the Pipeline and the Transmission Line Impacts. A Manager position is responsible for the areas of interest with a Superintendent in charge of each area. The Manager was not available during the site visit. However, a meeting was held with the Superintendents. RPM's discussions with the management and the review of activities documented in the information reviewed provide a good indication that the management team capacity is good. The interactions with communities and the work conducted acquiring ROW's for the various construction activities has been commendable. However, the management team does not appear to have significant experience with resettlement outside of the activities ongoing at the Project. Several contractors have been employed to support this effort. rePlan is currently on site to support the resettlement effort and initiate programs that should improve the potential for successful resettlement. These activities will likely be required for an extended period.

14.9.9 Potential Issues and Risks

As noted in the previous paragraph, the effort will be substantial to assure successful resettlement. The primary concern is that the housing facilities near completion are significantly different from the current living conditions. Communities are not acquainted with indoor sewage facilities, flights of stairs and other accommodations. rePlan is currently developing a program that will provide guidance supporting household and community-level livelihoods restoration planning. It is RPM's expectation that significant support will be required to successfully restore livelihoods in the Nueve Fuerabamba community.

The community residing in the Sulfobamba reserve area relies on illegal mining as a major source of income. This fact will likely become a major issue as the Company moves toward the development of the reserve. At this time, the social team has very limited interactions with the local community. No negotiations have been initiated and therefore, the potential for developing these reserves cannot be evaluated from the social standpoint.

14.10 Occupational Health and Safety Management

During this construction phase, the Company and Bechtel combined their individual environmental, health and safety ("EHS") policies/procedures to have a coordinated approach for the Project. It is noted that Project construction has continued to have a very good safety record. At the time of RPM's site visit during September 2013, there had been over 35 million work hours without a lost time accident (LTA). As of the end of June 2013, there were 41 million hours worked without an LTA. The Company has maintained the OHSAS 180001 certification, which demonstrates good management of health and safety issues.

The Company has a health and safety staff of 14, and Bechtel has 7 safety people in the field at any one time and 5 in the office. In addition, Bechtel has designated 12 health and safety people to the Nueva Fuerabamba town site construction. As noted under Environmental, the Company and Bechtel developed joint EHS policies/procedures for the Project in order to be coordinated with the subcontractors. The Company/Bechtel conducts random alcohol and drug testing and has a zero tolerance policy.

During the site visit, RPM talked to number of people and determined that safety was considered a primary consideration in all Project activities. RPM was informed that safety issues were not a problem. However, we have been informed of two fatalities occurring on site during the past few months. It will be very important to carefully review Occupational Health and Safety Management in the near future to make sure appropriate programs are initiated to make sure lessons are learned and that mitigation measures are implemented to help prevent future safety issues.

14.11 Archaeological Cultural Resources

During 2007, Xstrata (previous owner of the Project) notified the Cultural National Institute an Archaeological Evaluation Plan that including excavations in order to evaluate 31 potentially important sites. The evaluation determined that out of 31 spots, 16 were archaeological, while 15 were determined to be modern or non-archaeologically important sites. However, the evaluation resulted in the discovery of 18 archaeological sites. Therefore, a total of 34 sites were found within the concession area and neighboring areas potentially impacted (direct or indirect) by the Project.

The archaeological sites were identified on maps, registration forms were completed, and the descriptive studies were submitted to the Cultural National Institute. Each site was fenced to prevent impact from project activities. Of the 34 spots defined as archaeological, 28 will be affected by the Project during the mine extraction process. As a result, the Company requested the Cultural National Institute to authorize a third stage implementing an Archaeological Rescue Action. The aim of this Project is to recover in a scientific and methodological manner all cultural information of each of the spots using archaeological excavations.

As of the date of this site visit, the Project has obtained archaeological authorizations (CIRA) for the following components of the Project: (1) the Project sites without archaeological content; (2) the Project sites with archaeological content – 28 sites; (3) Nueva Fuerabamba resettlement site; (4) Ring Road Fuerbamba; (5) By pass road at Yavi Yavi; (6) Capaccmarca – Challhuahuacho; (7) Velille – Capaccmarca; (8) Ring raod Coporaque; and (9) Pipeline ROW.

The Company is currently seeking CIRA certifications for 86 ancillary areas associated with the heavy haul road, NFB and the LB.

14.12 Closure and Reclamation Plans

Closure plans are required for the environmental and social components of the Project. Site closure should be designed so that future public health and safety are not compromised and the future use of the site is beneficial and sustainable to the affected communities for the long term. Adverse socio-economic impacts should be minimized and benefits should be maximized. Closure plans for the environmental and social aspects of the Project are discussed below.

14.12.1 Environmental Closure Plans

The Company submitted a Mine Closure Plan to the regulatory authorities, which was approved on June 24, 2013. The associated closure cost estimate was for approximately US$ 285.65 million. The Company also reported that in accordance to the Peruvian mine closure laws, it must maintain a bond of approximately US$ 11 million as an annual guarantee. This annual amount is based on a legislated formula involving, in the Companies' case, the grand total for closure minus the cost for progressive closure, divided by the 18 years of mine life.

To address decoupling changes to the Project, the Company will need to submit a revised Mine Closure Plan and cost estimate modification for approval by the mining authorities. The following discussion provides an indication of potential closure issues that will require appropriate mitigation measures for successful closure.

14.12.2 Tailings Storage Facility (TSF)

The TSF facility will be capped using four (4) feet of topdressing material. The perimeter channels will be breached and the tailings surface will be graded to drain towards the existing operational channel down the abutment incorporating a defined low permeability channel to convey upstream drainage. Vegetation will be established to promote evapotranspiration and decrease the amount of infiltration into the facility.

On the basis of the available test results, the Company has assumed that runoff from the covered tailings facility will be suitable for discharge to the environment. Seepage from the TSF is expected to be minimal. However, the quality of the seepage could be characterized with elevated levels of copper, iron, zinc and molybdenum. The monitoring results will provide a good indication if mitigation actions required to protect the water resources in the area. However, it is anticipated that a mitigation plan should be developed to address this potential issue.

14.12.3 Waste Rock Storage Facilities (WRSF)

The Ferrobamba and Chalobamba WRSF's are expected to contain small quantities of acid forming materials and have very limited capacity to form leachable elements that would impact the environment. Much of the water from the facilities (runoff and infiltration) will be collected in diversion channels around the individual structures. Sediment control structures will be built downstream to control sediment discharge to the environment. Water will be discharged if applicable compliance limits are met. If water quality becomes an issue during the post-closure period, appropriate mitigation actions will be developed to assure maintenance of the water quality.

Water generated from the Sulfobamba WRSF will be managed similarly to the Ferrobamba and Chalobamba facilities. However, the Sulfobamba facility is expected to contain about 25% PAG rock. During operations, the PAG rock will be placed near the mine pit so that seepage and runoff are controlled by the pit and not allowed to migrate into the environment. At closure, the PAG rock will be deposited subaqueous in the adjacent mine pit. This disposal environment will greatly reduce any water quality issues with regard to acid formation. Thus, environmental impact associated with the Sulfobamba WRSF should be minimal during the post-closure period. If issues do occur, appropriate mitigation actions are available to alleviate major environmental impact.

14.12.4 Pit Lake Development

Depending on the estimated pit lake water quality for the Ferrobamba Pit, the following options for water management are considered at post-closure: (1) release to the environment; (2) establish a passive treatment system (possibly through a designed limestone filter or a wetland type configuration); and (3)active treatment (through a water treatment plant that may be required in perpetuity). The seepage quality and quantity at post-closure will be monitored to evaluate the need of placing contingency measures.

The Chalobamba pit will also be flooded at closure. It is anticipated that two pit lakes will exist during post-closure: the south and the north pit lakes. The south pit lake will drain into the Ferrobamba watershed through a hole to be punch through the existing rock ridge. As a result, the post-closure flows in the Ferrobamba watershed will increase and any discharge towards the Chalcobamba waste rock facilities will be avoided. The north pit lake will drain to a channel diverting water above the west waste dump along a contour channel over the ridge to Quebrada Contahuirihuayjo. The seepage quality and quantity at post-closure will be monitored to evaluate the need of placing contingency measures.

A lake will likely form in the Sulfobamba pit during the post-closure period. The significant quantity of PAG present in the waste rock provides an indication that water quality issues can be expected during the post-closure period. Depending on the pit lake water quality, the following options for water management will be considered at post-closure: (1) release to the environment; (2) passive treatment (possibly through a wetland type configuration); and (3) active treatment (through a water treatment plant that may be required in perpetuity). The seepage quality and quantity at post-closure will be monitored to evaluate the need of placing contingency measures.

14.12.5 Erosion and Sedimentation Control

Erosion and sedimentation will likely be an issue through the post-closure period primarily because of the steep slopes used in the construction of the Project. It will be important during closure to decrease cut and fill slopes, where possible, to reduce potential erosion issues during the post-closure period.

The erosion and sedimentation control program described in ***Section 1.8.7*** should be continued through the post-closure period.

14.12.6 Social Closure Plans

The closure plan for the social aspects of the Project was not found in a detailed document. However, the Company's social and community department and their contractor rePlan are developing strategies to deal with Project closure.

As noted in various sections of this Report, an important component of the strategy being developed by rePlan is to promote the development of business in the local communities as part of the closure strategy. Project closure will result in lost jobs directly related to the Project. In addition, businesses supporting the various aspects of the project will also experience significant decreases in revenues. Therefore, it is important that the

impacted communities develop business opportunities outside of the Project influence. These businesses would support other industries and provide components for various niche markets. It will be important for the Company to support this component of the closure plan so that Project closure becomes a mute-point and that long-term viable businesses exist that support the local economy without the Project into the future.

14.13 Summary of the Potential Environmental and Social Issues

Potential issues related to the construction, operation, closure and post-closure phases of the Project are summarized by environmental components below. As with any mining project, the central issues are related to potential effects on water quantity and quality. In addition, social effects are a prime consideration for projects that require resettlement especially in Peru. It appears that most of the potential issues will be addressed with appropriate mitigation actions.

Potential Environmental Issues

- Decrease in surface water quality in the Ferrobamba and eventually in Pamputa rivers due to sedimentation, primarily during the construction phase of the Project.
- Decrease in surface water quality in the Chalhuahuacho River due to sedimentation, primarily from the construction of the water reservoir and water supply (intake structure) for the Project.
- Decrease in surface water quality due to discharge of contact water from the waste dumps and low grade ore sedimentation ponds, and of excess water pumped from the open pits that cannot be recycled back into the process.
- Loss of wetland habitat due to construction and operations activities.
- Decrease in ground and surface water quality due to seepage of contact water from waste rock storage facilities.
- Decrease in surface water quality due to the accidental release of hazardous materials in the concentrator plant and mine area and accidental spills associated with concentrate shipment.
- Alteration of the groundwater and baseflow regime during construction, operation, closure and post-closure of the Project, primarily through pit excavation and dewatering, and post-closure pit filling
- Loss and alteration in vegetation/habitat types during construction phase land clearing.
- Changes in flora species associated with riparian and wetlands habitats potentially affected by the flow reductions and changes in water quality.
- Physical loss and damage to aquatic habitats primarily during the construction phase (including pipeline and river road crossings).
- Defects on the aquatic fauna and microorganisms living out of the riparian and wetland habitats potentially affected by the flow reductions and changes in water quality.

Social and Community Issues

- Effects of the land acquisition and resettlement on livelihoods of people with economic dependence on the land in the Ferrobamba River, Pamputa River and/or Chalhuahuacho River watersheds.
- Project effects on the livelihoods, health and/or quality of life of people living in close proximity to the mine site and along the access road due to air quality, noise, water quantity and quality, biological resources and traffic.
- Potential obstacles from Project footprint to movement of people and livestock from their homes to livelihood resources, markets, social networks, social services, or other facilities.

- Socio-economic effects at mine closure with the primary issues associated with lost jobs and lost business.
- Accidental damage or destruction of archaeological or cultural resources during construction and operation of the different project facilities.

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15 Mine Risks and Opportunity Assessment

15.1 Opportunity

RPM considers that there are several opportunities within the Project. These include:

- **Inferred material:** Within the current final pit designs a total of 125 Mt of "inferred" material has been reported, this is particularly prevalent in the upper western zone of the Ferrobamba deposit. This material has been included in the Ore Reserves estimate as waste. As such, if successfully upgraded, this material presents a significant opportunity to further increase the Ore Reserves quantities and the Mine Life and decrease the strip ratio.

- **Regional Exploration Targets:** Although significant exploration has taken place within the Project, RPM notes that a number of high priority targets have been identified via drilling which could further increase the resource base. These targets are near surface and although at an early stage of exploration, warrant additional work in the near term. In addition, RPM notes that of the large concession holding of the Company, only approximately 35 % has been explored near surface.

- **Sulfobamba Feeder System**: Recent exploration works by the Company have identified potential extensions along strike and adjacent to the pit design which contains the currently defined Mineral Resource. Drilling to date has identified a number of mineralised areas, which require follow up drilling to define the extent of mineralisation. RPM considers this to be a priority target and shows excellent potential to define near planned mining infrastructure resource which can form a future mine planning and optimisation studies.

- **Tails Dam Storage Capacity:** RPM's Ore Reserve estimate is restricted by the currently approved capacity of the tailings storage facility. RPM's review of the optimised mine plans identified potential opportunities to increase the overall pit limits and hence ore schedule. This would require further studies in the feasibility of expanding the current approved tails storage facility which have yet to be completed or approved. Should the tails dam expansion be feasible than it is possible that the mine life could be expanded by up to 5 years with the additional ROM Ore sourced from the Inferred material within the existing pit limits and the identified potential expansion to the existing pit limits.

- **Cut-off Grade:** A review of the in pit quantities at varying cut off grades indicates the Project is reasonably sensitive to cut off grade with material increases in ROM quantities occurring with decreasing cut-off grade. RPM notes that several limiting factors have been incorporated into the estimation of the cut off grade, including the tailings storage facility capacity limitation. RPM recommends that a trade off study be completed as the economic benefits of optimising cut off grades as this has the potential to increase the project profitability.

- **Plant Provisions**: Provision has been made in the ore-processing plant to add two additional ball mills if warranted. Adding these mills would increase plant capacity considerably, probably of the order of 30% and could add considerable economic benefit to the Project. Such an increase would require that the mining fleet be expanded to provide additional ore and the tailing dam expansion approved.

- **Concentrate Pipeline:** Installing a concentrate pipeline from the Project to the port of Matarani appears practical and to have minimal concerns with easements. Having a concentrate pipeline in place would reduce truck traffic on the road route, minimizing social and safety concerns and in the long term could be more economic. RPM does however note that a pipeline would require considerable Capital expenditure.

15.2 Risk

Mining is a relatively high risk business when compared to other industrial and commercial operations. Each mine has unique characteristics and responses during mining and processing, which can never be wholly predicted. RPM's review of the Mines indicates mine risk profiles typical of large scale mines at similar levels of resource, mine planning and development in Peru. Until further studies provide greater certainty, RPM notes that it has identified risks and opportunities with the Project as outlined in ***Table 15-2***.

RPM has attempted to classify risks associated with the Mine based on Guidance Note 7 issued by The Stock Exchange of Hong Kong Limited. Risks are ranked as **High**, **Medium** or **Low**, and are determined by assessing the perceived consequence of a risk and its likelihood of occurring using the following definitions:

Consequence of risk:

- **Major**: the factor poses an immediate danger of a failure, which if uncorrected, will have a material effect (>15% to 20%) on the Mine cash flow and performance and could potentially lead to Mine failure;
- **Moderate**: the factor, if uncorrected, could have a significant effect (10% to 15% or 20%) on the Mine cash flow and performance unless mitigated by some corrective action, and
- **Minor**: the factor, if uncorrected, will have little or no effect (<10%) on Mine cash flow and performance.

Likelihood of risk occurring within a 7 year timeframe:

- **Likely**: will probably occur;
- **Possible**: may occur, and
- **Unlikely**: unlikely to occur.

The consequence of a risk and its likelihood of occurring are then combined into an overall risk assessment as shown in ***Table 15-1*** to determine the overall risk rank.

Table 15-1 Risk Assessment Ranking

Likelihood	Consequence		
	Minor	Moderate	Major
Likely	Medium	High	High
Possible	Low	Medium	High
Unlikely	Low	Low	Medium

RPM notes that in most instances it is likely that through enacting controls identified through detailed review of the Mine's operation, existing documentation and additional technical studies, many of the normally encountered Mine risks may be mitigated.

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Table 15-2 Mine Risk Assessment

Risk Ranking	Risk Description and Suggested Further Review	Potential Mitigant	Area of Impact
H	**Relocation of Local Residents**		
	The constructed housing and other facilities are very well constructed. However, it appears that the housing portion of the accommodations does not meet the life style of the people, which may lead to issues as the families adjust to the new way-of-life.	rePlan (consultant to The Company) has identified this potentially serious issue and has developed a program to closely work with the people to help them adjust to the new life style. The success of this program will dictate the success of the resettlement.	Life of Project
M	**Construction CAPEX and Timing**		
	The Project construction CAPEX has increase by U$ 200 million since the latest definitive estimate in early 2013 due to unforeseen construction delays and social issues. Material capital cost increases may still occur associated with social and unforeseen construction issues. Delays during this time of peak construction could add significant costs.	Regular review and updating of the CAPEX requirement, close management of potential social issues.	Construction Costs and timing, Production Ramp up
M	**Ongoing Assistance to Relocated Residents**		
	Appropriate arrangements with impacted communities will be required to promote positive relationships with the Project. The development of programs that benefit impacted communities in a positive manner will prevent social problems through the Operations and Post-Closure phases.	Impacted communities will receive preference for job opportunities. In addition, rePlan is initiating a program to promote business development in the vicinity of the Project. It is anticipated that the development of businesses to provide supply chain items for the project will enhance the local economy and provide good community relations.	Life of Project
M	**Water Pipeline Easements**		
	There are numerous easements along the route of this 23-km pipeline, particularly in the 10-km length closest to the intake. While these easements are considered to be in place there could be challenges and complications.	Vigorously pursue any challenges or complications that arise. Also could consider relocating the intake further upstream	Project Startup

		of the Challhuahuacho River about 1 km south of the Clarification Pond.	
M	**Power-Supply-Line Construction**		
	Obtaining easements for the line has been problematical thus far. There could be delay in completion of the line.	Provide assistance to Abengoa (the power-line installation and operating company) where possible.	Plant Construction Schedule
M	**Mine Pre-Stripping**		
	Pre-stripping has been delayed awaiting relocation of local residents near the mine and waste-dump sites. Further delay could jeopardize availability ore at the time of plant startup.	Ensure that any delay in relocation of local residents is minimized.	Ore-Processing Plant Startup
M	**Concentrate Transportation System**		
	Current plan is to truck concentrates all the way from the mine to the port but the possibility of using both trucks and rail is still being considered. A decision needs to be made soon as to which option will be adopted to have the system ready in time.	If the truck only option is adopted it is unlikely that there will be any delay. A concentrate pipeline appears to be a worthwhile long-term option.	Concentrate Shipping
M	**Seepage Control in the TSF**		
	Seepage Control associated with the Tailings Storage Facility is required as the TSF is a no discharge facility. Also, seepage control will likely prevent contaminants from impactiing the water resources in the area.	Use construction methods to prevent seepage through the dam and grouting the underlying bedrock to enhance seepage control. Installation of monitoring wells to determine if the groundwater is impacted that can be used to collect contaminated water, if needed.	Tailings Storage and Water Resource Protection
M	**Sedimentation Pond Dam**		
	This dam will be located in an area of karstic limesone with evidence of solution cavities. This could result in the possibility of leakage and ground subsidence that could impact the dam structure and its impermeabilization.	Ensure that the design includes adequate impermeabilization and drainage elements to control potential infiltration that could worsen the karstic condition.	Dam Integrity

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M	**Employee Training**		
	The plan is to employ as many local residents as practical, most of which have little industrial experience. Training these employees is likely to be more difficult and take longer than anticipated.	A training program is already in place for mine machinery operators. Training of plant operators and maintenance personnel could be initiated well in advance of plant startup.	Time to Reach Full Production Rate
M	**Chalcobamba and Sulfobamba Drainage**		
	Waste rock at Chalcobamba and particularly at Sulfobamba could have potential environmental concerns. It would be prudent to initiate studies on how best to handle drainage from the mine and waste dump sooner than later.	Studies could begin at any time.	Chalcobamba and Sulfobamba Drainage
M	**Key Person Management**		
	RPM considers that retention of the key management personnel onsite are critical to achieving development of the Project on time and within Budget	Discussions with key persons should occur to ensure a smooth transition of ownership.	Project construction, budget and ramp up
L	**Commodity Price Fluctuations**		
	The revenue stream of the Project is dominated by the Copper concentrate with 10 % from the Mo concentrate and by products. As noted in the JLL valuation report the NPV sensitivity analysis suggests the Project is not highly sensitive to changing commodity rather changing costs and discount rates likely due to high CAPEX required.	Offtake agreements or long terms sales contracts.	Project Economics
L	**Chalcobamba Crusher and Conveyor Installation**		
	The plan is to start mining at Chalcobamba in Production Year 4. A start on engineering for the crusher and conveyor that serves this mine, including utility systems, will need to be initiated before the end of 2015.	Conceptual engineering can be started at any time.	Chalcobamba Crusher
L	**Copper Recovery**		
	The boundary between oxide and sulfide ore is always difficult to determine and some portion of oxide ore is likely to be encountered deep in sulfide ore. This often results in lower metal recoveries in the initial year or two of production.	Assays of both total and acid-soluble copper should be done for grade control when the mine commences operation and boundaries developed as to whether to mill, stockpile, or waste marginal ore.	Grade Control

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L	**Environmental Permits and Approvals**		
	A detailed review of the permitting activities shows that the Project is progressing toward fulfillment of all requirements. The Company Legal Staff is working with the Environmental and Social groups to assure that all permits and authorizations are acquired.	The permitting process is closely tracked to assure that permits and authorizations are acquired using strategic planning to assure the least amount of problems. The current permitting plan appears to meet the Project requirements.	Approvals required to initiate mining, processing and concentrate transport activities.
L	**Tailings Discharge Flow Characteristics**		
	Flow characteristics of thickened tailings will only really be known when production commences. It will be necessary to vary the pulp density to find the best value to get adequate flow with an acceptable deposition slope.	Ensure operators are aware of the importance of tailings flow characteristics and deposition slope.	Tailings Storage

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A1. Annexure A – Qualifications and Experience

Tim J. Swendseid, Chartered Financial Analyst, CFA Institute, Charlottesville, Virginia, USA, 2010. MBA, Eller Graduate School of Management, University of Arizona, Tucson, Arizona, USA, 2006, B.S. Mining Engineering, Montana School of Mineral Science and Technology, Butte, Montana, USA, 1984. President, Consulting Services - Americas. Member, CFA Institute and Colorado CFA Society, Professional Engineer License: Arizona and Idaho, USA, Registered Member of Society of Mining, Metallurgy, and Exploration Organization (SME), Member, Instituto de Ingenieros de Minas de Chile

Mr. Swendseid has over 30 years of operational and engineering experience including senior leadership positions at operating properties in the USA, Chile and Mexico. He has been involved with numerous operation & construction audits, numerous investigations and implementations of internal growth projects and numerous acquisition evaluations of individual properties and of entire companies. His experience includes open pit and narrow vein underground operations. He has a solid grasp of the technical, operational and financial aspects of mining for all sizes of projects. Mr. Swendseid is fluent in Spanish.

Jeremy Clark – Manager, Hong Kong, Bsc. with Honours in Applied Geology, Grad Cert Geostatistics, MAIG, MAusimm

Jeremy has over 13 years of experience working in the mining industry. During this time he has been responsible for the planning, implementation and supervision of various exploration programs, open pit and underground production duties, detailed structural and geological mapping and logging and has a wide range of experience in resource estimation techniques. Jeremy's wide range of experience within various mining operations in Australia and recent experience working in South and North America gives him an excellent practical and theoretical basis for resource estimation of various metalliferous deposits including Iron Ore and extensive experience in reporting resource under the recommendations of the JORC and NI-43-101 reporting codes.

With relevant experience in a wide range of commodity and deposit types, Jeremy meets the requirements for Qualified Person for 43-101 reporting, and Competent Person ("CP") for JORC reporting for most metalliferous Mineral Resources. Jeremy is a member of the Australian Institute of Geoscientists.

Philippe Baudry – General Manager – China and Mongolia, Bsc. Mineral Exploration and Mining Geology, Assoc Dip Geo science, Grad Cert Geostatistics, MAIG

Philippe is a geologist with over 15 years of experience. He has worked as a consultant geologist for over 6 years first with Resource Evaluations and subsequently with Runge after they acquired the ResEval group in 2008. During this time Philippe has worked extensively in Russia assisting with the development of two large scale copper porphyry Mines from exploration to feasibility level, as well as carrying out due diligence studies on metalliferous Mines throughout Russia. His work in Australia has included resource estimates for BHPB, St Barbara Mines and many other clients both in Australia and overseas on most styles of mineralisation and metals. Philippe furthered his modelling and geostatistic skills in 2008 by completing a Post Graduate Certificate in Geostatistics at Edith Cowan University. Philippe relocated to China in 2008 and has since Mine managed numerous Due Diligences and Independent Technical Reviews for private acquisitions and IPO listings purpose mostly in China and Mongolia.

Prior to working as a consultant Philippe spent 7 years working in the Western Australian Goldfields in various positions from mine geologist in a large scale open cut gold mine through to Senior Underground Geologist. Before this time Philippe worked as a contractor on early stage gold and metal exploration mines in central and northern Australia.

With relevant experience in a wide range of commodity and deposit types, Philippe meets the requirements for Qualified Person for 43-101 reporting, and Competent Person ("CP") for JORC reporting for most metalliferous Mineral Resources. Philippe is a member of the Australian Institute of Geoscientists

Richard Addison, P.E., Principal Process Engineer. M.S. Metallurgical Engineering, Colorado School of Mines, 1968, A.C.S.M. (Honors), Camborne School of Mines, 1964. Registered Member of Mining, Metallurgy and Exploration (SME)4, Registered Engineer, Nevada, Chartered Engineer, U.K, Eur. Ing., EEC.

Mr. Addison has over 45 years of diversified experience in the mineral processing and extractive metallurgy field. He is a well-known authority in the field of mineral processing with particular emphasis on complex ores and base and precious metals, having worked on numerous projects throughout his career. He has evaluated the processing facilities and operations of many domestic and foreign metals operations involving both oxide and complex refractory type ores. Copper experience includes the appraisal of existing and proposed facilities, production, and costs of the Ilo smelter for Southern Peru Copper Company; the Ellatzite Copper Mine Feasibility Study, Bulgaria; the Alumbrera Copper/Gold Mine Competent Persons Report, Argentina; Batu Hijau Copper Mine Completion Test, Indonesia; the Independent Engineers assignment on the Candaleria Project in Chile and the Los Pelambres Copper Mine Completion Test, Chile. Mr. Addison is fluent in Spanish.

Terry H. Brown, Ph.D., Pincipal Environmental Specialist. Ph.D. Soil and Environmental Chemistry, University of Idaho, 1986, M.S. Soil Chemistry/Morphology, Washington State University, 1977, B.S. Forest Management, Washington State University, 1974. Member of American Chemical Society, RCPAC Certified Professional Soil Scientist # 1742 American Society for Surface Mining and Reclamation, Soil Science Society of America (American Society of Agronomy)

Over 35 years of U.S. and International experience serving in environmental management positions with two coal mining companies, a U.S. federal coal mining/environmental regulatory agency, an international research institute and with an International environmental consulting company. Specializing in soil and water management activities including: Water Management - potential for development of acid rock drainage in mineral and coal mines, metals dissolution, tailings storage, waste rock management, water treatment, erosion and sedimentation control, and water and soil chemistry; Soil Management - soil chemistry, soil morphology/mapping, soil fertility and soil microbiology/bioremediation;. Significant experience in environmental impact analysis, development of impact mitigation measures, permitting of mine construction and operations, reclamation/mine closure planning, pit lake development, environmental monitoring, soil mapping, evaluation of compliance with environmental standards, liability determinations, and environmental cost accounting.

Esteban Acuña, Senior Geologist. Geology, Universidad De Concepcion - Concepcion, Chile. Registered Member of the Chilean Mining Commission.

Mr. Acuña has 17 years experience in geostatistics, geological modeling and 3D modeling. His experience includes sampling control, QAQC, design and control of exploration drilling activities, drilling and surface mappings, ore control, ore feeding control to plant, and mine-plant grade reconciliations. Prior to joining PAH, Mr. Acuña worked as Resource Geologist with Antofagasta Minerals S.A. and Minera el Tesoro Company. He is proficient in the use of Vulcan, Medsystem, Minesight, Pcxplor, Geomodel, Dips, Surface, and Gslib.

Pedro Repetto, P.E., Principal Civil Engineer, M. S.Civil Engineering, Purdue University, 1970, B. S. Civil Engineering, Catholic University of Peru, 1965. Engineering Registration (P.E. is in Colorado and several other states plus in Peru)

Mr. Repetto has over 40 years of experience in civil, geotechnical, earthquake engineering, mining, solid waste, and environmental remediation projects. Experience comprises over 500 projects which include all phases of project development, implementation, and closure. Qualifications in the mining industry include over one hundred projects for the mining industry and over one hundred civil and geotechnical projects. He has managed projects at several Freeport McMoRan properties, including Safford, Morenci, Chino, Cobre, Tyrone, Henderson, Cerro Verde, El Abra, Candelaria, and Ojos del Salado and was recently project manager for the design and construction monitoring of the Coermotibo (Suriname) tailings ponds for BHP Billiton. Experience as an independent consultant include tailing dams, leach pads, shallow and deep foundations, slope stability, retaining walls, solid waste management, closure and reclamation of mining facilities, and environmental remediation projects.

Rondinelli Sousa, Senior Mining Engineer. M.Sc., Mineral Engineering, University of Sao Paulo, Brazil –2006., B.Sc., Mineral Engineering, Federal University of Campina Grande, Brazil – 2002. Registered Member of Mining, Metallurgy and Exploration (SME)

Mr. Sousa has a strong background in technology customization. His experience includes mine planning technology implementation projects, orebody modeling, grade estimation, and applied geostatistics. Prior to joining RPM, Mr. Sousa was a Mining Consultant with The Datamine Group where he provided technical consulting and support services for mining companies in the USA and Latin and South America. He is fluent in English, Portuguese and Spanish.

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Company's Relevant Experience

RungePincockMinarco (RPM) is the market leader in the innovation of advisory and technology solutions that optimise the economic value of mining assets and operations. RPM has serviced the industry with a full suite of advisory services for over 45 years and is the largest publicly traded independent group of mining technical experts in the world.

RPM has completed over 11,000 studies across all major commodities and mining methods, having worked in over 118 countries globally.

RPM has operations in all of the world's key mining locations enabling them to provide experts who understand the local language, culture and terrain. RPM's global team of technical specialists are located in 18 offices around the world. Through their global network, RPM can provide you access to the right specialist technical skills for your project.

RPM's advisory division operates as independent technical consultants providing services across the entire mining life cycle including exploration and project feasibility, resource and reserve evaluation, mining engineering and mine valuation services to both the mining and financial services industries.

RPM's trusted advisors typically complete assignments across all commodities in the disciplines of:

- Geology;
- Mining Engineering;
- Minerals Processing;
- Coal Handling and Preparation;
- Infrastructure and Transportation;
- Environmental Management;
- Contracts Management;
- Mine Management;
- Finance and Project Funding;
- Commercial Negotiations.

RPM was founded in Australia and as a result, has a solid understanding of and is committed to compliance with the codes which regulate Australian corporations and consultants.

Over the past 45 years, RPM has grown into an international business which has continued to provide clients and those that rely on its work the confidence that can be associated by the use of the relevant global industry codes some of which include:

- The Australasian Institute of Mining and Metallurgy Code of Ethics;
- The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves;
- The Australian Institute of Geoscientists Code of Ethics and Practices;
- Society for Mining, Metallurgy and Exploration Code of Ethics; and
- The National Instrument 43-101 Standards of Disclosure for Mineral Projects.

RPM has conducted numerous independent mining technical due diligence studies and reporting for IPO's and capital raisings under the requirements of all key mining equity markets over the past six years, with involvement in capital raisings worth more than US$44 billion. Some of this and other work is summarised in ***Table A1***.

RPM leverages the power of its specialist knowledge to also provide cutting edge mining software that is sought after globally for mine scheduling, equipment simulation and financial analysis. RPM software is relied on by mining professionals to understand how to structure their long and short term operations efficiently using auditable best practice methodologies and solutions.

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Table A1 - Mining Related IPO and Capital Raising Due Diligence Experience

2014 Hidili International Development Company., Ltd; Competent Persons Report of Mineral Resources and Ore Reserves under JORC and Independent Technical Review for inclusion in a HKSE Circular to support the divestment of Multiple Coal Mines, Yunnan Province, China.

2013 China Molybdenum Company., Ltd; Competent Persons Report of Mineral Resources and Ore Reserves under JORC and Independent Technical Review for inclusion in a HKSE Circular to support the acquisition of the Northparkes Copper and Gold Mine, Central West NSW, Australia.

2012 China Gold Resources International., Ltd; Tibet Jiama Copper-Polymetallic Phase II NI 43-101 HKEx Pre-Feasibility Study. China

2012 China Precious Metal Resources Holdings Co., Ltd Competent Persons Report of Mineral Resources and Ore Reserves under JORC and Independent Technical Review for inclusion in a HKSE Circular to support the acquisition of an Gold Operation Yunnan Province, China.

2012 Kinetic Mines and Energy., Ltd; Competent Persons Report of Mineral Resources and Ore Reserves under JORC and Independent Technical Review for inclusion in a HKSE Circular to support the IPO of an underground coal asset in Inner Mongolia Province, China.

2012 China Daye Non-Ferrous Metals Mining., Ltd; Competent Persons Report of Mineral Resources and Ore Reserves under JORC and Independent Technical Review for inclusion in a HKSE Circular to support the acquisition of 4 operating underground copper, lead, zinc assets in Hubei Province, China.

2012 Huili Resources Group ., Ltd; Competent Persons Report of Mineral Resources and Ore Reserves under JORC and Independent Technical Review for inclusion in a HKSE Circular to support the IPO of multiple underground nickel, lead, zinc, copper and gold mining assets in Xinjiang and Hami Province, China.

2011 China Polymetallic Limited Mining., Ltd; Competent Persons Report of Mineral Resources and Ore Reserves under JORC and Independent Technical Review for inclusion in a HKSE Circular to support the IPO of a lead zinc silver polymetallic underground mining assets in Yunnan Province, China.

2011 China Precious Metal Resources Holdings Co., Ltd; Competent Persons Report of Mineral Resources and Ore Reserves under JORC and Independent Technical Review for inclusion in a HKSE Circular to support the acquisition of multiple underground gold mining assets in Henan Province, China.

2011 HaoTian Resources Group Limited; Competent Persons Report of Mineral Resources and Reserves under JORC and Independent Technical Review for inclusion in a HKEx Circular to support acquisition of and underground coal mines in Xinjiang Autonomous Region, China.

2011 King Stone Energy Group., Ltd; Competent Persons Report of Mineral Resources and Reserves under JORC and Independent Technical Review for inclusion in a HKEx Circular to support acquisition of 2 underground coal mines in Shanxi Province, China.

2010 China Precious Metals Holdings Co., Ltd; Competent Persons Report of Mineral Resources and Ore Reserves under JORC and Independent Technical Review for inclusion in a HKEx Circular to support the acquisition of multiple underground gold mining assets in Henan Province, China.

2010 Century Sunshine Group Holdings Limited; Competent Persons Report of Mineral Resources and Ore Reserves under JORC and Independent Technical Review for inclusion in a HKEx Circular to support the acquisition of a serpentinite mining asset in Jiangsu Province, China.

2010 Doxen Energy Group Limited; Independent Technical Review and estimation of Mineral Resources under JORC for inclusion in a HKEx Circular to support the acquisition of a coal mining asset in Xinjiang Autonomous Region, China.

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2010 KwongHing International Holdings (Bermuda) Limited; Independent Technical Review for inclusion in a HKEx Circular to support a Very Substantial Acquisition.

2009 Metallurgical Corporation Of China Ltd ("MCC"); Independent Technical Review for inclusion in a Prospectus to support a stock exchange listing on the Hong Kong Stock Exchange.

2009 Nubrands Group Holdings Limited, Guyi Coal Mine; Independent Technical Review for inclusion in a Stock Exchange Circular to support a mining asset purchase by a listed Hong Kong Company.

2008 China Blue Chemical Limited, Wangji and Dayukou Phosphate Mines: Independent Technical Review for inclusion in a Stock Exchange Circular to support a mining asset purchase by a listed Hong Kong Company.

2008 Kenfair International (Holdings) Limited, Shengping Coal Mine: Independent Technical Review for inclusion in a Stock Exchange Circular to support a mining asset purchase by a listed Hong Kong Company.

2007 China Railway Company Limited, African Copper/Cobalt Assets: Capital raising for mining assets on the Hong Kong Stock Exchange. Preparation of Competent Persons Report for planned IPO on the HKEx.

2007 China Railway Company Limited, African Copper/Cobalt Assets: Capital raising for mining assets on the Hong Kong Stock Exchange. Preparation of Competent Persons Report for planned IPO on the HKEx.

2007 Gloucester Coal Limited – Independent Technical Review for Australian Stock Exchange Scheme of Arrangement.

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A2. Annexure B – Glossary of Terms

The key terms used in this report include:

- **AA** stands for atomic adsorption, and analytical procedure
- **Ag** refers to silver
- **ANFO** stands for ammonium nitrate fuel-oil, an explosive used in mining
- **ARD** stands for acid rock drainage
- **ARI** refers to Average Recurrence Interval
- **Au** refers to Gold
- **AUSIMM** stands for Australasian Institute of Mining and Metallurgy
- **BOO** stands for Build, Own, Operate (placing a system in the hands of a third party to build, own, and operate; for example, the power transmission line)
- **BPC** stands for biphenyl polyvinyl chloride
- **bornite** refers to a brown metallic mineral containing Cu Sulphide
- **chalcopyrite** refers to a brassy sulphide mineral containing copper and iron.
- **chalcocite** refers to a gray to black brittle copper sulphide mineral
- **CIRA** refers to archaeological review approval of a site, which allows disturbance to occur.
- **covellite** refers to a purple mineral consisting of thin sheets of Cu sulphide
- **Client** refers to MMG Limited
- **concentrate** refers to the Cu and Au Product and to the Mo Product produced and sold by the Operation
- **Company** means Glencore plc.
- **Cu** refers to Copper
- **Cu.m/h** refers to refers to cubic meters per hour
- **Cut-Off Grade** ('cog')
- ***Resource cog:*** is the lowest grade of mineralised material that qualifies as having reasonable economic potential for eventual extraction and supports a geologically justifiable and continuous mineralisation domain.
- ***Economic/Reserve cog:*** is the lowest grade of mineralised material that qualifies as economically mineable and available in a given deposit after application of modifying factors and economic assessment at given commodity prices. It may be defined on the basis of economic evaluation, or on physical or chemical attributes that define an acceptable product specification.
- **DE** stands for Definitive Estimate (of the cost and schedule to complete construction)
- **deposits** refers to the cluster of mineralised bodies which are contained within the Project.

- **DH** stands for diamond-drill hole
- **EGL** stands for effective grinding length, used of grinding mills
- **EHS** means Environmental, Health and Safety
- **EIS** stands for environmental impact assessment
- **EMP** stands for environmental management plan
- **EMS** stands for environmental management system
- **EPCM** stands for engineering, procurement, and construction-management, a type of contract
- **ESIA** stands for environmental social impact assessment
- **Fault** refers to a slip-surface between two portions of the earth's surface that have moved relative to each other. A fault is a failure surface and is evidence of severe earth stresses.
- **FOSBAM** stands for Fondo Social Las Bambas, which is a social/community development fund used to support local communities supporting worthwhile projects.
- **FS** stands for Feasibility Study
- **FSR** stands for freight, smelting, and refining, the costs for transporting and processing of concentrates to produce metal for sale
- **G&A** stands for General and Administrative, a category of operating costs
- **GL** refers to a giga litre
- **g/t** stands for grams per tonne
- **GyM** stands for Graña and Montero, a major construction company working on the Project
- **Ha** also **ha** stands for Hectares
- **HDPE** stands for high-density polyethylene, a type of plastic film
- **HHR** means heavy haul road, which is the newly-constructed road connecting the Project to Espinar.
- **HKEx** stands for Hong Kong Stock Exchange
- **hr** stands for hour
- **ITR** stands for Independent Technical Review
- **JORC** stands for Joint Ore Reserves Committee
- **JORC Code** refers to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 edition, which is used to determine resources and reserves, and is published by JORC of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists and the Minerals Council of Australia
- **kg** stands for kilogram
- **km** stands for kilometre

- **kt** stands for 000's of tonnes of kilo tonnes
- **ktpa** stands for 000's tonnes per annum or kilo tonnes per annum
- **KV** refers to kilovolt
- **kW** stands for kilowatt
- **KWh** refers to kilowatt hours
- **the Project** refers to the Las Bambas Project
- **L** stands for litres
- **lbs** stands for pounds (avoirdupois)
- **LOM** stands for Life of Mine
- **LOM plan** stands for Life of Mine Plan
- **LTA** means lost time accident
- **m** stands for metre
- **m^3** stands for cubic metres
- **masl** stands for metres above sea level
- **MCC** stands for Main Construction Camp, the camp that will become the permanent camp
- **mm** refers to millimetre
- **mine production** is the total raw production from any particular mine
- **Mining rights** means the rights to mine mineral resources and obtain mineral products in areas where mining activities are licensed
- **Ml** stands for mega litre which is equal to one million litres
- **Mt** stands for mega tonnes which is equal to one million tonnes
- **Mtpa** stands for million tonnes per annum
- **MVA** refers to megavolt ampere
- **MW** refers to megawatt
- **MWH** refers to the international engineering firm of Montgomery Watson and Harza
- **NFB** refers to Nueva Fuerabamba, the town-site for relocated Project residents
- **NSR** refers to Net Smelter Return, the net value of concentrate after deducting freight, smelting, and refining costs
- **P_{80}** refers to 80 weight % passing, used in association with particle size
- **PAG** stands for potential acid generating

- **PDD** stands for Project Development Division, a Glencore group
- **PO** stands for Peru Operations, a Glencore group
- **Project** refers to the Las Bambas Project contained within the Exploration and Mining Licences
- **PVC** stands for polyvinyl chloride, a type of plastic film
- **pyrite** refers to a hard, heavy, shiny, yellow mineral, FeS_2 or iron disulfide, generally in cubic crystals.
- **QA/QC** stands for quality assurance and quality control
- **RC** stands for reverse circulation, a drilling method
- **Relevant Asset** means the open-pit mine, processing facility, associated mining and administration infrastructure and mining and exploration licences.
- **ROM** stands for run-of-mine, being material as mined before beneficiation
- **ROW** means right-of-way
- **RPM** refers to RungePincockMinarco
- **SAG** stands for semi-autogenous mill, a type of grinding mill
- **s.g.** stands for specific gravity
- **t** stands for tonne
- **TDH** stands for total dynamic head, the hydraulic head applied to pumps
- **TISUR** refers to the owner/operator of the port at Matarani
- **Troy Oz** equates to 31.103477g
- **TSF** stands for tailings storage facility
- **tonne** refers to metric tonne
- **tpd** stands for tonnes per day
- **tph** stands for tonnes per hour
- **TSF** stands for tailings storage facility
- **µm** stands for micron (1/1,000 of a metre)
- **Wi** stands for work index, a measure of rock hardness
- **WMP** stands for water management plan
- **WRSF** stands for waste rock storage facility
- **Wmt** stands for Wet metric tonne
- **XP** refers to the XP construction camp, located on the north side of the Project

- **US$** refers to United States dollar currency.
- **$** refers to United States dollar currency
- **¥** is the symbol for the Chinese Renminbi Currency Unit
- **%** refers to a Percentage.
- Note: Where the terms Competent Person, Inferred Resources and Measured and Indicated Resources are used in this report, they have the same meaning as in the JORC Code.

A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.

An 'Ore Reserve' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

A 'Measured Mineral Resource' is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity.

Mineralisation may be classified as a Measured Mineral Resource when the nature, quality, amount and distribution of data are such as to leave no reasonable doubt, in the opinion of the Competent Person determining the Mineral Resource, that the tonnage and grade of the mineralisation can be estimated to within close limits, and that any variation from the estimate would be unlikely to significantly affect potential economic viability.

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource, but has a higher level of confidence than that applying to an Inferred Mineral Resource. Mineralisation may be classified as an Indicated Mineral Resource when the nature, quality, amount and distribution of data are such as to allow confident interpretation of the geological framework and to assume continuity of mineralisation. Confidence in the estimate is sufficient to allow the application of technical and economic parameters, and to enable an evaluation of economic viability.

An 'Inferred Mineral Resource' is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes which may be limited or of uncertain quality and reliability.

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource. The Inferred category is intended to cover situations where a mineral concentration or occurrence has been identified and limited measurements and sampling completed, but where the data are insufficient to allow the geological and/or grade continuity to be confidently interpreted. Commonly, it would be reasonable to expect that the majority of Inferred Mineral Resources would upgrade to Indicated Mineral Resources with

continued exploration. However, due to the uncertainty of Inferred Mineral Resources, it should not be assumed that such upgrading will always occur. Confidence in the estimate of Inferred Mineral Resources is usually not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning. For this reason, there is no direct link from an Inferred Resource to any category of Ore Reserves.

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A3. Annexure C – JORC Code Disclosure Requirements

Section 1 Sampling Techniques and Data

Criteria	*JORC Explanation*	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handhel XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• The resources were estimated based on samples generated from industry standard surface diamond core rigs. Holes were drilled on predominantly 35m or 50m spacing. The drill core was logged then marked for sampling keeping a minimum length of 1.2 m and a maximum of 2 m samples and honouring geological contacts. Samples were taken using an industry standard procedures and is considered suitable by RPM. • The drill core was extracted from the tube subsequent to being drilled and laid in plastic half-pipe sections inside plastic core trays to preserve the core. The core was cut in half using a standard core saw. Half was retained and the other half was form the sample as per industry standards. • All drill-holes were surveyed using industry Reflex Maxibor II equipment which RPM considers suitable for the deposit. • Preparation generated two pulp samples of 150 g each. One was analysed for Cu, Ag, Pb, Zn, and Mo by Atomic Absorption Spectrometry (AAS) while Au was analysed by fire assay and the other retained for a check if required.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• The drilling method utilised was a standard tube and a triple-tube surface diamond drilling method producing PQ (8.3 cm diameter), HQ-size (6.3cm diameter) and NQ-size (4.8 cm diameter) drill core. Drill holes were orientated approximately orthogonal to the stratification planes of each deposit. Ferrobamba's drill holes were generally orientated 35/-60, Chalcobamba' drill holes were oriented NS/-60 and Sulfobamba were orientated 105 and 215 and drilled to an average depth of 300m below the surface. Drill bits were diamond and tungsten face-sampling bits.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• The core recovery was recorded by standard measurement of the core length divided by the run length. Where there was more than one type of material in the 1m, the approximate proportions of recovery for each type

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Criteria	JORC Explanation	Commentary
	• *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	of material was estimated. This was applied to determine a more accurate estimate of core recovery. • Sample recovery was maximised by the use of the triple-tube drilling method. This reduces any possible contamination of material from other parts of the drill hole. Samples were placed in plastic half-pipe sections inside plastic core trays. • Sample recovery data was contained in the drill hole databases provided which indicated recovery was generally above >95% which is considered suitable. • A review by RPM indicated that no relationship occurs between recovery and grade.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• All drill hole cores were geologically logged including weathering, mineralisation, alteration, texture, lithology and sample recovery. RPM considers the information suitable for use in a mineral resource and subsequent mining studies. • Logging is qualitative in nature, but weathering zone, lithology and mineral zone information can be checked with sample assays. All core was photographed. Historical photos or original logging hard copies were supplied for validation of the database. • Drill core totalling 330,785 m was used in the resource estimation of which 100% was geologically logged.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• The core was sawed into two halves following the geologist's sample line with half core samples taken with one half retained in storage. • The initial wet sample was dried, and then crushed to 10 mesh. After homogenisation and quartering the sample was then pulverised to a size fraction of minus 150 mesh retaining two 150 gram pulp envelopes for additional duplicate checks. • RPM considers the sample sizes are appropriate to the grain size of the material. • Duplicate or the other half of core was randomly selected to ensure representative sample techniques.
Quality of assay data	• *The nature, quality and appropriateness of the assaying and*	• All assaying and sample preparation subsequent to cutting was completed

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Criteria	JORC Explanation	Commentary
and laboratory tests	*laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	by the international accredited Inspectorate laboratory in Lima. • The assaying method was atomic absorption spectroscopy, (AAS) for Cu, Ag, Pb, Zn, Mo and gravimetric method for Au for all samples. • Assaying was conducted using ISP – 138 method with AAS instruments. Calibrations for the instruments were carried out on a regular basis since 2005 as per international standard and certificated procedures. • QA/QC procedures consisted of project coarse and fine duplicates, blanks, reference samples in addition to external laboratory checks. RPM considers QA/QC results were acceptable to confirm accuracy and precision. • RPM considers that this assaying method is acceptable provided the AAS instruments are calibrated regularly and second laboratory results are unbiased.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative Client personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• All sampling and assaying procedures were reviewed by RPM and found to be industry standard and acceptable. • RPM reviewed the remaining core of several holes, compared the assays to visual confirm the mineralisation and reviewed several original assay certificates and drill records • No twin holes were completed as all drilling was completed after 2005 and contained suitable records, original data and remaining core to verify the data, • No adjustments were made to the assays.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• All collars were surveys using industry standard total station equipment and which has suitable accuracy for inclusion in a Mineral Resource. • The datum used is WGS 84with a UTM coordinate system zone 19 South. • RPM Five collars were checked for location by handhelp GPS in addition RPM found good correlation between drill hole elevations and topographic surfaces. Detailed and 16 cm accurate topographic surfaces were provided.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade*	• The majority of the drill holes across the Project area are spaced at 35 m x 35 m to 50 m x 50 m . These spacings are sufficient and appropriate for this type of mineralisation to determine

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Criteria	JORC Explanation	Commentary
	continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • *Whether sample compositing has been applied.*	geological and grade continuity appropriate to the Mineral Resource estimation procedure and classifications applied. • Samples have been composited to 7.5m.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The orientation of the drill hole pattern are considered appropriate (orthogonal) to the strike of the mineralised zones for each deposit. • Mineralisation is controlled by stratification and contacts between the sediments and the intrusive. Skarn was generated by mineralised porphyry intrusions in favourable limestone rocks. The majority of drilling was orthogonal to these structure which RPM believes will not result in an sample bias
Sample security	• *The measures taken to ensure sample security.*	• All samples were taken and prepared on site. Chain of custody was kept to Inspectorate laboratory in Lima. The process was overseen by the Company's geologists.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• During the desktop and site review, RPM reviewed previous JORC statements, the previous due diligence and feasibility study (FS) for the Project as well as sample procedures and records, remaining core and mineralisation outcrops. RPM did not identify and material issues and considers the data suitable for inclusion in a Mineral Resource.

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Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Project is contained within 41 mining concessions (Figure 3-1) which are currently held by the Company. The Project possesses all of the mineral rights (concessions) and surface rights necessary to fully develop the Project at the forecast rate as detailed in Annexure E. RPM does however note that a number of occupants still reside within the concession area and the Company is in the process of relocating them as described in Section 14. The main risk for future operation is the granting of continued enviromental permits for the transport of product to port. While this is a risk RPM considers that this can be mitigated with work as described in Sections 13 and 14.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Project has a long history of exploration by the current and previous owners which commenced in 1966 with over 343 km of surface diamond drilling to date. As outlined in Table 4-1, Cerro de Pasco completed the initial works followed by Cyprus, Phelps Dodge, BHP, Tech, and Pro Invest prior to Xstrata resource definition drilling which commenced in 2005. The current owners gained the rights to the project following the purchase of Xstrata in 2013.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The currently defined deposits considered to be Cu-Mo-Au skarn mineralised bodies associated with the porphyry system belt in south-eastern Peru. This metallogenic belt is controlled by the Eocene-Oligocene Andahuaylas-Yauri Batholith, which intrudes Mesozoic sedimentary units, including the Ferrobamba formation (lower-to-upper Cretaceous). Figure 5-1 shows the regional geological map. • The Andahuaylas-Yauri Batholith was emplaced south of the "Abancay Deflection" with NW-SE, NE-SW lineaments and others that were generated principally by the Andean Orogeny. The contact between the batholith and the Ferrobamba limestone has been metasomatically altered to form the skarn bodies which host the Cu-Mo-Au mineralisation within the Project.

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Criteria	JORC Code explanation	Commentary
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• Not Applicable as not exploration results included in the report.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Not Applicable as not exploration results included in the report.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Not Applicable as not exploration results included in the report.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of*	• Not Applicable as not exploration results included in the report.

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Criteria	JORC Code explanation	Commentary
	intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Not Applicable as not exploration results included in the report.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Not Applicable as not exploration results included in the report.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• RPM is not aware of future exploration plans, other than typical grade control drilling. • RPM notes that several exploration targets exists in the project area as outlined in Section7.

Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• The Company provided a digital drill hole data to RPM. The digital data contained detailed lithology, assays, topographic surfaces and weathering domain surfaces. • RPM only had limited hard copy data with which to verify the digital data however not issues were noted. • Hard copies were checked against the database, statistical validation of mathematical fields carried out and spatial validation of drill-hole locations was carried out in Vulcan software. • RPM undertook two site visit to review the remaining core and site records. No issues were noted.

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Criteria	JORC Explanation	Commentary
Site visits	• *Comment on any site visits undertaken by the Competent Perso and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• RPM made two separate site visits to the Project. The first visit was carried out by RPM Consultant Geologist Esteban Acuña (Competent Person), the Consultant Mining Engineer Tim Swendseid (Competent Person), the Process Engineer Richard Addison and the Environmental Specialist Tom Noyes in April, 2013. The second visit was carried out by RPM Consultants Geologist Esteban Acuña, the Process Engineer Richard Addison and the Environmental Specialist Terry Brown between the 5th and 7th May, 2014. During both site visits, RPM reviewed all drilling, sampling and analytical procedures and inspected and verified mineralised core intersections. • No issues were noted during the site visit.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• RPM has a good level of confidence in the geological interpretation as the domain contacts which is consistent with the assay data in the drill hole database and the geological logging as well as the surface geological mapping. • RPM utilised the digital model provided by the Company that represented geological and mineralisation units, defined by stratification and porphyry intrusions. These were interpreted and wireframed as solids using drill hole logs and assay data as per industry standard sectional approach. • The Mineral Resource estimation was guided and controlled by the interpreted geological domains with hard boundaries. The domains were coded in the block model and blocks in each domain were contact analysis supported the estimation only using assays within the same domain. • The main factor affecting grade is the lithology as such the geological domains were used to guide mineralisation and estimation interpolation. In addition the depth and degree of weathering generated an oxidation zone which was is contains distinctly different mineralisation to the fresh sulphide zone. The depth of weathering was modeled using geological logging and formed a separate geological domain in the resource estimate. • Contact and block Dilution was calculated from the proportion of the solids into the blocks.

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Criteria	JORC Explanation	Commentary
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The Project's concession contains 3 deposits that have been defined by drilling and estimated. Each estimate is contained with approximately 300ha each. • The Mineral Resources extend from the surface vertically down to a depth of around 400m in Ferrobamba, 300 m in Chalcobamba and 200 m in Sulfobamba below the surface across all deposits.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation metho was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• After examination of the assay statistics for each domain for each deposit, ordinary kriging was used to estimate Cu and Mo in the mineralized domains and the Inverse Distance Weighting power of 2 (ID2) method was used to estimate Ag, and Au within the same domains as the Cu. Extreme grade influences in each domain were restricted after examination of probability. • The parameters were selected based on geostatistical analysis of each domain and specifically the variogram parameters. • Three passes were used to estimate the three deposits. An isotropic search in the structural and lithological plane based on the geospatial analysis was used to estimate blocks with a first pass radius ranging from 30 m to 75 m, a second of 60 m to 250 m and a third of 150 m to 200 m according the domain and element. A minimum of 6 samples were used for the first two passes while a minimum of 4 samples was used for the third pass. A maximum of 16 samples and a maximum of 3 samples per hole were used for all passes. More detail is provided within the body of the report. • MineSight software was used for the estimations. • Only drill holes completed post 2005 were included in the estimate as no information was available to confirm the veracity of the data prior to this data. • No assumptions were made and were not deemed necessary regarding recovery of by-products for the Project. RPM estimate Cu, Mo, Au and Ag as not deleterious were noted during the metallurgical testwork. • The parent block size was determined based on the drill spacing, geological variability of the deposit and the likely size of the selective mining unit. A

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Criteria	JORC Explanation	Commentary
		significant number of drill holes have a spacing of 35 m with the remainder having spacing of 50 m. Taking into account the dominant drill hole spacing, the variability of mineralisation within deposit and the likely selective mining unit size of 20 m by 20 m by 15 m, RPM considers a block size of 20 m (northing) by 20 m (easting) by 15 m (vertical) to be appropriate for all deposits within the Project. • No assumptions about correlation between variables was made as a statistical analysis indicates there is no correlation between the elements. • No high grade cutting was applied however high grade search ellipse restrictions were used for all elements and in most cases less than 1% of the sample population in the domain was above the threshold value. Threshold values were determined from inspection of histograms, probability plots and spatial continuity. • Sample data was composited to 7.5 m down hole lengths using the best fit method. Intervals with no assays were excluded from the estimates. • Geostatistical analysis was conducted for Cu, Mo, Ag and Au in all domains for each deposit. . Due to bedding and intrusion orientation mineralisation shows some anisotropy in the stratification plane. Ranges for domains in each deposit were between 215 m to 360 m. • Resource was constrained by a pit in each deposit which was calculated with a copper price of 2.20 U$/lb. • Estimation validation was carried out by visually inspecting the block against the drill hole and reviewing the statistics of the block estimates compared to the declustered composite mean. Additionally smoothing was validated with Hermitian correction analysis.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages are estimated with natural moisture and also on a dry basis. Moisture content was calculated from wet and dry bulk densities for each deposit.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The Cutoff grade was selected based on the mining study as outlined in Section 7 and 8 of this Report.
Mining factors or	• *Assumptions made regarding possible mining methods, minimum*	• Mining methods for all deposits will be open-pit. RPM assumed minimum

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Criteria	JORC Explanation	Commentary
assumptions	*mining dimensions and internal (or, i applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumption made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	mining dimensions of 20m x 20m x 15m. • The Project has an Ore Reserve estimate which is underpinned by a mining study. The parameters from this mining study were used to generate a pit shell for each deposit at US$ 2.20.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may no always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• No metallurgical factors were applied to the resource however RPM is aware of numerous metallurgical tests. These are outlined section 8, ***Table 8-2*** and highlight the likely economic recoveries which are likely to be achieved.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects fo eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• RPM has not made any assumptions regarding environmental factors • RPM has completed an Environmental Review as part of its Reserve Report and is not aware of any limitation to mining.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material*	• The wet bulk density and moisture content was assigned as an average of the determinations for each mineralised domain in each deposit. The dry bulk density was calculated from the assigned values wet bulk density and moisture content. • In Ferrobamba there were 11,145

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Criteria	JORC Explanation	Commentary
	must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	densities, in Chaclobamba 656, and in Sulfobamba 635 determined • Industry standard wax emersion method was utilised on whole core sample for the determinations.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The classification method took into account geological and grade continuity based on variogram analysis, amount of composites, and quality of the information. RPM notes that for all deposits copper correlogram ranges are over 200 m and also correlograms have a first structure around 50 m. RPM considers that 1) a searching distance (20 m 60 m) for measured resources, searching distances between 60 m to 80 m for indicated resources and searching distances of 150 m to 250 m for inferred, 2) the use of at least 2 drill hole in each case and 3) using octants restrictions in each case. More details are provided in Table 7-8. • RPM considers appropriate the implementation to classify the resources including the post process for smoothing algorithm as outlined in Section 7 The classification is consistent with the Competent Person view of the deposits.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• Internal reviews of the Mineral Resource Estimate followed RPM's standard internal peer review procedures.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of th relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation.*	• In the classification of the resource RPM has applied quantitative measures which reflect the underlying data, sample spacing and geological confidence. As such RPM considers the classification and black estimates is consistent with the approach of estimation and is suitable for inclusion a Mineral Resource statement reported in accordance with the 2012 JORC Code. • The Mineral Resource statement relates to global estimates of tonnes and grade in each mineralised domain in each deposit.

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Criteria	JORC Explanation	Commentary
	Documentation should include assumptions made and the procedures used. • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• The independent Mineral Resources (***Section 7***) completed by RPM have been utilised for the Ore Reserve estimate. • The JORC Measured and Indicated Mineral Resources quantities are inclusive and not additional to the Ore Reserves reported
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Mr. Tim J. Swendseid (Competent Person) visited the site from June 14th through June 16th, 2013 and from September 2nd through September 13th, 2012. The outcome of those visits was an in-depth understanding of the Project.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	• Ore Reserves were estimated using a suit of specialized open pit mine planning software packages, which includes the pit optimization program, the haul analyse program, and the production schedule program (OPMS). The input parameters selected by RPM are based on the review of the Feasibility level geotechnical, hydrological and mining studies completed by the Company, discussions with site personnel and site visit observations. • The estimation of JORC Ore Reserves were prepared based on studies of Feasibility level confidence.
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	• RPM undertook a cut-off grade to assess the pit optimization sensitivity associated to different cut-off grade strategies. RPM verified that the use of an internal constant 0.2% Cu cut-off grade to all ore types is suitable given the mining and tails dam current design capacity.

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Criteria	JORC Code explanation	Commentary
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	• Three deposits are planned to be mined at Project in the current LOM plan through large scale open pit mining methods. RPM has evaluated the block models used the estimate the Mineral Resource, using a pit optimization software package, which resulted in the identification of approximately 952 million tonnes of material at a 0.2% Cu cut off that could economically be mined using reasonable assumptions for costs and metals prices estimate based on Feasibility level studies. • Feasibility level geotechnical studies have been completed by the Company and have been utilised to derive the mine designs slope angles (**Section 9**). • The pit limits and phases were designed with suitable level of detail taking into account the recommended geotechnical and mining operation parameters. • During the development of the pits a number of phases or push back are planned. These phases are planned to ensure consistent ROM ore is produced and minimise long period of waste mining • Mining recovery and dilution were revised and were used with suitable level of detail taking into account the mining method applied. • RPM reviewed the planned production rates and haulage profiles of the Company within the open pit and the resultant truck and shovel requirements to ensure the rate can be meet planned rates. • All design parameters and assumptions are outlined in ***Section 9*** of this report. • Inferred resources were assumed to be waste in the pit optimisation and mine scheduling of the projects. • The mining method will require varying quantities of mining equipment throughout the mine life. These are outlined in ***Section 9.***
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied*	• The metallurgical process is a conventional froth flotation concentrator and thickener to produce two separate Cu and Mo concentrates and is appropriate for the style of mineralization. • The metallurgical process is well-tested technology and widely used in the mining industry. • Extensive comminution and flotation test work has been conducted and

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Criteria	JORC Code explanation	Commentary
	and the corresponding metallurgical recovery factors applied. • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	metallurgical recoveries determined for different rock types and different mining areas. • The ore contains no deleterious elements. • Bulk samples and pilot scale tests have been conducted on representative samples of the deposits. • The ore reserve recoveries are based on metallurgical recoveries for different rock types from different mining areas. • A detailed review of the metallurgical testwork is provided in ***Section 10***.
Environmen-tal	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	• Baseline data was collected for all the environmental aspects of the Project including the physical and biological components. The information collected included water quality evaluations as well as tailings and waste rock characterization. This information was used to assess the potential impacts that Project construction and operations would have on the environment and provided a basis for development of appropriate mitigation measures required to eliminate or significantly reduce environmental impacts. The design of the TSF, WRSF's and other important structures including the sedimentation ponds and water containment facilities were based on baseline data including surface and groundwater hydrology and good engineering practices. As noted in the report, the major environmental considerations are associated with protection of the water resources potentially impacted by the Project. The primary concern is associated with management of waste rock storage. Appropriate mitigation measures must be reviewed and modified as needed to protect the water resources in the area.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	• Adequate infrastructure is in the process of being constructed, including roads, power, water, service buildings, communication systems, employee camps, and product transportation in addition to the processing plant and associated overland conveyor system • As at 1st January 2014 50% of the construction is complete with the remainder due for completion mid 2015 and commissioning by late 2015.
Costs	• *The derivation of, or assumptions*	• Construction of the Project is currently

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Criteria	JORC Code explanation	Commentary
	made, regarding projected capital costs in the study. • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	about 50% complete; accordingly, projected capital costs are soundly established. The costs are actuals based on tenders and local conditions. • Operating costs have been determined to a feasibility study level based on tendered prices for consumables and estimated quantities of consumables, labour, and services. • No deleterious elements are expected in the concentrates that would result in smelter penalties. • The exchange rates costs are based on US$ and Peruvian soles which have been reasonably stable and expected to remain so. • Transportation charges are based on quotations from local companies. • Treatment and refining charges are based on the usual charges commonly seen in the last five years. • Royalties payable are based on information provided by the Company.
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *the derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	• All mining input parameters are based on the Ore Reserve estimate LOM production schedule. All cost inputs are based on tenders and estimates from contracts in place as with net smelter returns and freight charges. These costs are incline with the regional averages. • RPM has based its metal prices on long term bank consensus forecast of US $2.91 Cu, Molybdenum price: $13.37/lb; Silver price: $19.83/oz; Gold price: $1,196/oz • The Gold and Silver revenue is via a credit at the refinery which equates to a LOM average of US$0.81/Tonnes Ore. • The Treatment charges and Refining costs have been included in the revenue for the project as outlined in ***Section 13***.
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a*	• It is proposed that the majority of the product will be sold to Chinese customers. • RPM has based its metal prices on long term bank consensus forecast. Although no contracts are inplace RPM does not envisages any issues with sales given the product type and the likely target customer in China and market conditions. • RPM also note the market research completed by the Client as presented in the Circular.

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Criteria	JORC Code explanation	Commentary
	supply contract.	
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	• RPM derived the inputs for an economic analysis by review of project documentation, by evaluation of project during site visit, by interviews with employees and by own experience • RPM supplied technical input to a licensed Hong Kong Stock Exchange Competent Evaluator for the NPV calculation of discounted cash flows
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• The Company has developed good relationships with the impacted communities. As a result, the communities appear to currently support the construction and operations of the Project. However, the effort will be substantial to assure successful resettlement and the overall success of the social/community program. The primary concern is that the housing facilities near completion are significantly different from the current living conditions. Measures are being taken by rePlan to provide guidance supporting the restoration of household and community-level livelihoods. It is RPM's expectation that significant support will be required to successfully restore livelihoods in the Nueve Fuerabamba community. • Agreements allowing the development of associated facilities including the transmission line, the port facilities and concentrate transport to the port are impacted by holdouts associated with ROW agreements along the path of the structures. Activities are progressing and a final successful outcome is expected. • It is RPM's expectation that the social license to operation will be acquired. Maintenance of this achievement will require significant input from the Social/Community staff and their Consultants for the life of the Project
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental*	• RPM has not independently reviewed the legal arrangements and agreements associated with the Project, but is given to understand that most of requisite the permits and approvals are already in place and that those outstanding can be expected to be received on a timely basis to meet the projected implementation schedule. The relocation of residents within the Project

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Criteria	JORC Code explanation	Commentary
	agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	area is a concern but RPM understands that this will begin shortly. • No offtake agreements are in place, however the majority of the product will be sold the Chinese buyers
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• RPM has Classified all the Indicated resource as Probable and Measured resources as Proved. • The classification is consistent with the Competent Person view of the deposits.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	• Internal reviews of the Ore Reserves estimate followed RPM's standard internal peer review procedures.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve*	• All related confidence level work was undertaken based on the results of global estimates. • Confidence level for the reserves was tested performing sensitivity check based on economic model generated by RPM, after economically mineable portion of the mineral resource was defined through Whittle optimization, subsequent mine design and scheduling. Key elements found to be sensitive to the project economics are transportation/shipment cost (Mine site to processing plant), capital investment for the planned plant expansion and concentrate price. However, the reserve was found to be resilient to +/-20% variation in key parameters employed for sensitivity test.

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Criteria	JORC Code explanation	Commentary
	viability, or for which there are remaining areas of uncertainty at the current study stage. • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

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A4. Annexure D - Data Verification Checks by RPM (Drill Hole Data)

Collar checks

	LB Database		RPM GPS (Garmin etrex)		Differences	
ID	E	N	E	N	dE	dN
FE-40900-5	793,571.0	8,440,890	793,571	8,440,890	0.0	0.0
FE-40875-8	793,535.9	8,440,872	793,535	8,440,872	0.9	0.0
CH-44250-6	786,763.3	8,444,244	786,762	8,444,246	1.3	-2.0
CH-43750-4	786,499.8	8,443,749	786,501	8,443,750	-1.2	-1.0
CH-44250-5	786,697.4	8,444,239	786,700	8,444,240	-2.6	-1.0

Downhole Surveys MultiShot Checks

SU-43625-2

Geological Logging Holes Checks

ID	Depth
FE-39825-5	500.5
FE-39850-3	260.5
CH-44100-7	254.3
CH-43950-5	219.65
SU-43050-1	359.4

Sample Dispatch Report Check

85F0001

Assay Holes Checks

FE-39825-5	FE-39850-3	CH-44100-7	CH-43950-5	SU-43625-2

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A5. Annexure E - Data Verification Checks by RPM (Permits and Licenses)

Instrument ID	Date Approved/ Issued	Expiration	Description
Planning Consents and Environmental Protection Licenses			
Project EIS	March 2011	Project Period	Environmental Social Impact assessment for the Las Bambas portion of the project
1st Amendment to EIS	August 2013	Project Period	Amendment to the ESIA for change in the water acquisition system from a dam/lake to a water intake system on the Challhuahuacho River.
Supporting - Technical Report 1	August 2013	Project Period	Construction of the molybdenum processing facility and the filter plant at the Project; identification of quarry locations. Other changes included: construction of cement plant; construction of truck shop; relocation and change in size of camp; and change in starting date for mining.
Supporting - Technical Report 2	February 2014	Project Period	Changes included: sediment pond construction without discharge; water treatment facility; assay laboratory; and location of low grade ore stockpile.
Supporting - Technical Report 3	Expected to be Submitted		Design change for sediment pond to a two (2) pond system
2nd Amendment to the EIS	Submitted in March 2014 with expected approval in October 2014.	Project Period	Included a water balance, topsoil stockpile location, and approval to discharge from the sedimentation pond.
3rd Amendment to the EIS	Expected to be submitted in November 2014 with expected approval in July 2015	Project Period	Will include method of concentrate transport to the port.
Closure Plan	July 2013		The closure plan for the Project was approved, which included the closure costs and projected bonding levels.
Transmission Line EIS	Acquired	Project Period	The EIS for the Transmission Line was be acquired by Abenogoa Power, which will own and operate it.
Port Facility EIS	Submitted and ongoing	Project Period	The EIS for the Port Facility will be acquired by the Company that will own and operate it.
Submission of application for verification of completion of mining and metallurgical works	Expected to be submitted in May 2015		The construction of the facilities must be completed prior to acquiring an approved completion.
Submission for a water use license	Expected to be submitted June 2015		The facilities and applicable structures including the tailings storage facility must be completed before a water use license for the operation can be acquired.
Granting authorization to operate the beneficiation plant	Expected approval October 2015		An operations permit can be approved after construction is completed.
Granting	Approved 2 May	2nd stage – visual	Once the 1st stage of development is

Instrument ID	Date Approved/ Issued	Expiration	Description
authorization for the first stage of development, preparation and mining activities at the Ferrobamba Pit	2013	inspection to verify completion expected January 2015. Authorization for mining activities at the Ferrobamba Pit is expected July 2015.	completed, a visual inspection is conducted to verify completion (2nd stage). After the approval of the 2nd stage, a request is submitted to acquire authorization to initiate mining.
Authorization for the construction of the concentrate pipeline	Approved May 2013		Authorization for the construction of civil works and installation of the pipeline. This permit will require an extension during May 2014.
Submit an extension to the pipeline construction schedule	Expected submittal May 2014		Construction of the pipeline can be initiated – if a slurry pipeline is the chosen method of transport.
Use of Explosives Supplies and Related Products	November 2013 (First half 2014)	Application to be filed for 2nd half of 2014 end of May 2014.	Permit must be renewed semi-annually
Water Use Rights for Construction Stage	Granted	In force for the Charcascocha Spring until 3 July 2015.	Water acquired for the construction phase of the Project. 1.78 l/s.
Water Use Rights for Construction Stage	Granted	In force until 2 December 2015	Water acquired for the construction phase of the Project. 150 l/s.

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A6. Annexure F – Data Capacity Checks by RPM (Ore-Processing)

Circuit	Units	Value
Primary Crushing		
Crush size, nominal	P_{80}, mm	152
Throughput	tonnes/hour	13,000
Primary Grinding		
Work index	kWh/tonne	13.2
Product size	P_{80}, microns	240
Throughput	tonnes/day	140,000
Rougher Flotation		
Feed rate	tonnes/hour	6,340
Feed density	percent solids	38
Residence time	minutes	8
Rougher-Scavenger Flotation		
Feed rate	tonnes/hour	6,000
Feed density	percent solids	39
Residence time	minutes	23
Rougher Concentrate Regrinding		
Feed rate	tonnes/hour	352
Specific power (new feed)	kWh/tonne	4.3
Product size	P_{80}, microns	60-65
Rougher-Scavenger Concentrate Regrinding		
Feed rate	tonnes/hour	404
Specific power (new feed)	kWh/tonne	7.4
Product size	P_{80}, microns	45-50
Molybdenum Rougher Flotation		
Feed rate	tonnes/hour	128
Feed density	percent solids	40
Residence time	minutes	78
Moly First Cleaner Concentrate Regrinding		
Feed rate	tonnes/hour	4.2
Specific power (new feed)	kWh/tonne	18
Product size	P_{80}, microns	30-35
Tailings Storage Facility		
Slurry density	percent solids	62
Beach slope	percent	1
Capacity	million tonnes	960

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END OF REPORT