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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

Form 6-K

REPORT OF FOREIGN PRIVATE ISSUER
PURSUANT TO RULE 13a-16 OR 15d-16
UNDER THE SECURITIES EXCHANGE ACT OF 1934

For the month of September 2015

Commission File Number: 1-9059

Barrick Gold Corporation
(Registrant's name)

Brookfield Place, TD Canada Trust Tower, Suite 3700
161 Bay Street, P.O. Box 212
Toronto, Ontario M5J 2S1 Canada
(Address of principal executive offices)

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

Form 20-F ☐ Form 40-F ☒

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1): ☐

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SIGNATURES

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

BARRICK GOLD CORPORATION

Date: September 11, 2015

By: /s/ Richie Haddock
Name: Richie Haddock
Title: Senior Vice President and General Counsel

EXHIBIT

Exhibit	Description of Exhibit
99.1	Technical Report on the Lagunas Norte Mine, La Libertad Region, Peru

Exhibit 99.1

Rock solid resources.
Proven advice. ™

BARRICK GOLD CORPORATION

TECHNICAL REPORT ON THE LAGUNAS NORTE MINE, LA LIBERTAD REGION, PERU

NI 43-101 Report

Qualified Persons:
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August 31, 2015

Report Control Form

Document Title	Technical Report on the Lagunas Norte Mine, La Libertad Region, Peru		
Client Name & Address	Barrick Gold Corporation Brookfield Place, TD Canada Trust Tower Suite 3700, 161 Bay Street, P.O. Box 212 Toronto, Ontario M5J 2S1		
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FORWARD-LOOKING INFORMATION

This report contains forward-looking statements. All statements, other than statements of historical fact regarding Barrick or Lagunas Norte, are forward-looking statements. The words “believe”, “expect”, “anticipate”, “contemplate”, “target”, “plan”, “intend”, “project”, “continue”, “budget”, “estimate”, “potential”, “may”, “will”, “can”, “could” and similar expressions identify forward-looking statements. In particular, this report contains forward-looking statements with respect to cash flow forecasts, projected capital, operating and exploration expenditure, targeted cost reductions, mine life and production rates, potential mineralization and metal or mineral recoveries, and information pertaining to potential improvements to financial and operating performance and mine life at the Lagunas Norte mine that may result from certain Value Realization Initiatives. All forward-looking statements in this report are necessarily based on opinions and estimates made as of the date such statements are made and are subject to important risk factors and uncertainties, many of which cannot be controlled or predicted. Material assumptions regarding forward-looking statements are discussed in this report, where applicable. In addition to such assumptions, the forward-looking statements are inherently subject to significant business, economic and competitive uncertainties and contingencies. Known and unknown factors could cause actual results to differ materially from those projected in the forward-looking statements. Such factors include, but are not limited to: fluctuations in the spot and forward price of commodities (including gold, copper, silver, diesel fuel, natural gas and electricity); the speculative nature of mineral exploration and development; changes in mineral production performance, exploitation and exploration successes; risks associated with the fact that certain Value Realization Initiatives are still in the early stages of evaluation and additional engineering and other analysis is required to fully assess their impact; diminishing quantities or grades of reserves; increased costs, delays, suspensions, and technical challenges associated with the construction of capital projects; operating or technical difficulties in connection with mining or development activities, including disruptions in the maintenance or provision of required infrastructure and information technology systems; damage to Barrick’s or Lagunas Norte’s reputation due to the actual or perceived occurrence of any number of events, including negative publicity with respect to the handling of environmental matters or dealings with community groups, whether true or not; risk of loss due to acts of war, terrorism, sabotage and civil disturbances; uncertainty whether some or all of the Value Realization Initiatives will meet Barrick’s capital allocation objectives; the impact of global liquidity and credit availability on the timing of cash flows and the values of assets and liabilities based on projected future cash flows; the impact of inflation; fluctuations in the currency markets; changes in interest rates; changes in national and local government legislation, taxation, controls or regulations and/or changes in the administration of laws, policies and practices, expropriation or nationalization of property and political or economic developments in Peru; failure to comply with environmental and health and safety laws and regulations; timing of receipt of, or failure to comply with, necessary permits and approvals; litigation; contests over title to properties or over access to water, power and other required infrastructure; increased costs and risks related to the potential impact of climate change; and availability and increased costs associated with mining inputs and labor. In addition, there are risks and hazards associated with the business of mineral exploration, development and mining, including environmental hazards, industrial accidents, unusual or unexpected formations, pressures, cave-ins, flooding and gold bullion, copper cathode or gold or copper concentrate losses (and the risk of inadequate insurance, or inability to obtain insurance, to cover these risks).

Many of these uncertainties and contingencies can affect Barrick’s actual results and could cause actual results to differ materially from those expressed or implied in any forward-looking statements made by, or on behalf of, Barrick. All of the forward-looking statements made in this report are qualified by these cautionary statements. Barrick and RPA and the Qualified Persons who authored this report undertake no obligation to update publicly or otherwise revise any forward-looking statements whether as a result of new information or future events or otherwise, except as may be required by law.

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1 SUMMARY

EXECUTIVE SUMMARY

Roscoe Postle Associates Inc. (RPA) was retained by Barrick Gold Corporation (Barrick) to prepare an independent Technical Report on the Lagunas Norte Gold Mine (the Mine or Lagunas Norte) in Peru. The purpose of this report is to support the public disclosure of Mineral Resource and Mineral Reserve estimates at the Mine as of December 31, 2014. This Technical Report conforms to National Instrument 43-101 Standards of Disclosure for Mineral Projects. RPA visited the property from January 6 to 7, 2015 and held meetings at the Barrick offices in Trujillo and Lima on January 8 and 9, 2015, respectively.

Barrick is a Canadian publicly traded mining company with a large portfolio of operating mines and projects across five continents. The Lagunas Norte Mine is located in the District of Quiruvilca in the Province of Santiago de Chuco and the Department of La Libertad, in north-central Peru. The mine site is approximately 90 km east of the coastal city of Trujillo.

The Mine is owned and operated by Minera Barrick Misquichilca S.A. (MBM), a wholly-owned Peruvian subsidiary of Barrick. The Mine is part of the Alto Chicama property. A 2.51% Net Smelter Return (NSR) royalty is paid to a Peruvian state company, Activos Mineros S.A.C., formerly Centromin Peru S.A. (Centromin). In December 2006, Centromin transferred all of its rights and obligations with respect to the mine to Activos Mineros S.A.C. (Activos Mineros), a state mining company.

Lagunas Norte is a large open-pit, heap leach gold and silver mine in the high Andean Cordillera. Operations include open pit mining of gold-silver ore, crushing, and extraction of precious metals using heap leaching and Merrill Crowe recovery. Since Lagunas Norte started production in March 2005 through December 31, 2014, the mine has recovered 8.4 million ounces (Moz) of gold and 7.8 Moz of silver from approximately 201 million tonnes (Mt) of ore averaging 1.59 g/t Au and 3.6 g/t Ag.

Mining will continue through 2017, including approximately 25 Mt of ore in 2015 and 23 Mt in 2016 and an average of approximately 25 Mt of waste per year. Heap leach placement from stockpile will continue for one year after mining ceases, with mine operations concluding in 2018. Most of the ore is crushed prior to placement on the heap leach facility (HLF).

In June 2015, Barrick completed a scoping study, or Preliminary Economic Assessment (PEA), of the potential to mine and process the Lagunas Norte sulphide resources and to extend the life of the operation beyond 2018 (the Lagunas Norte Refractory Material Mine Life Extension Project, or the Refractory Project). Based on a review of the Refractory Project PEA, RPA concurs with Barrick that some of the refractory sulphide mineralization at Lagunas Norte has reasonable prospects for eventual economic extraction if a new grinding-flotation-autoclave processing facility is installed. Work was initiated on a Prefeasibility Study (PFS) in June 2015 to further assess the technical and financial viability and risks associated with the Refractory Project, with completion expected by the end of 2015.

Table 1-1 summarizes the 2014 year-end open pit Mineral Resources exclusive of Mineral Reserves based on a $1,400/oz gold price. The resources in Table 1-1 are mostly oxide mineralization that could be processed using the current heap leaching facility.

TABLE 1-1 OXIDE MINERAL RESOURCES – DECEMBER 31, 2014
Barrick Gold Corporation – Lagunas Norte Mine

	Tonnage	Grade		Contained Metal	
Category	(Mt)	(g/t Au)	(g/t Ag)	(Moz Au)	(Moz Ag)
Measured	1.3	0.75	2.26	0.03	0.10
Indicated	18.1	0.68	2.10	0.40	1.22
Total Measured and Indicated	**19.4**	**0.69**	**2.11**	**0.43**	**1.32**
Inferred	1.6	0.73	2.48	0.04	0.12

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated as of December 31, 2014 using a gold price of US$1,400 per ounce and a silver price of US$19 per ounce.
3. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
4. Mineral Resources are estimated at gold cut-off grades that vary by material type from 0.184 g/t to 0.858 g/t.
5. Mineral Resources are exclusive of Mineral Reserves.
6. Numbers may not add due to rounding.

Table 1-2 summarizes the Refractory Project Mineral Resources that have been incorporated into the PEA. The effective date for the Refractory Project resource estimate is December 31, 2014. These resources are mostly sulphide mineralization. RPA notes that there is a minor overlap between the oxide and sulphide resource estimates that totals approximately 74,000 ounces of gold, which, in RPA's view, is insignificant as it represents approximately 3% of the total combined oxide and sulphide resource.

TABLE 1-2 REFRACTORY PROJECT MINERAL RESOURCES – DECEMBER 31, 2014
Barrick Gold Corporation – Lagunas Norte Mine

Category	Tonnage (Mt)	Grade (g/t Au)	Grade (g/t Ag)	Contained Metal (Moz Au)	Contained Metal (Moz Ag)
Within Pit Design					
Measured	1.2	2.60	6.51	0.10	0.25
Indicated	21.2	2.54	5.90	1.73	4.02
Measured and Indicated	**22.4**	**2.55**	**5.93**	**1.83**	**4.27**
Inferred	0.3	1.92	7.35	0.02	0.07
Heap Leach Stockpile					
Indicated	5.3	2.29	8.59	0.39	1.46

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated as at December 31, 2014 based on a gold price of US$1,400 per ounce and a silver price of US$24 per ounce.
3. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
4. Mineral Resources are estimated at gold cut-off grades that vary by material type from approximately 0.48 g/t to 1.00 g/t.
5. Gold recovery as a result of the PEA is expected to reach an average of 90%.
6. The "Within Pit Design" material includes 2.013 Mt of Measured and Indicated Resources grading 1.15 g/t Au and containing 74,000 ounces of gold that are already reported in Table 1-1.
7. The "Heap Leach Stockpile" material is expected to be reclaimed from the existing leach facility and re-processed through the new Refractory Project processing facility.
8. Numbers may not add due to rounding.

Table 1-3 summarizes the open pit Mineral Reserves, including existing stockpiles scheduled for processing and inventory, as of December 31, 2014.

TABLE 1-3 MINERAL RESERVES – DECEMBER 31, 2014
Barrick Gold Corporation – Lagunas Norte Mine

Category	Tonnage (Mt)	Au (g/t)	Ag (g/t)	Contained Metal (Moz Au)	Contained Metal (Moz Ag)
Proven	3.0	1.30	5.05	0.1	0.5
Probable	52.6	1.21	4.75	2.1	8.0
Stockpiles	12.1	1.47	3.56	0.6	1.4
Inventory	2.0	1.27	0.00	0.1	0.0
Proven & Probable	**69.7**	**1.27**	**4.42**	**2.8**	**9.9**

Notes:

1. CIM definitions were followed for Mineral Reserves.
2. Mineral Reserves are estimated at a variable cut-off grade based on process cost, recovery, and profit. The cut-off grades vary from approximately 0.235 g/t Au to 1.093 g/t Au.
3. Mineral Reserves as at December 31, 2014 are estimated using an average long-term gold price of US$1,100 per ounce, US$17 per ounce silver, and an US$/PEN exchange rate of 2.8.
4. The Mineral Reserve estimate includes inventory.
5. Numbers may not add due to rounding.

CONCLUSIONS

Based on the site visit and subsequent review, RPA offers the following conclusions:

MINERAL RESOURCE ESTIMATION

- The 2014 year-end Measured and Indicated Mineral Resources, exclusive of Mineral Reserves, total 19.4 Mt averaging 0.69 g/t Au and 2.11 g/t Ag and contain 430,000 oz of gold and 1,320,000 oz of silver. In addition, the 2014 year-end Inferred Mineral Resources total 1.6 Mt averaging 0.73 g/t Au and 2.48 g/t Ag and contain 40,000 oz of gold and 120,000 oz of silver. These resources are mostly oxide mineralization that can be processed using the current heap leaching facility.
- The Refractory Project Measured and Indicated Mineral Resources total 27.7 Mt averaging 2.50 g/t Au and 6.44 g/t Ag and contain 2.2 Moz of gold and 5.7 Moz of silver. In addition, the sulphide Inferred Mineral Resources total 0.3 Mt averaging 1.92 g/t Au and 7.35 g/t Ag and contain 19,000 oz of gold and 74,000 oz of silver. These resources are mostly sulphide mineralization.
- Mineral Resource estimates have been prepared utilizing acceptable estimation methodologies. The classification of Measured, Indicated, and Inferred Resources, conforms to Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves dated May 10, 2014 (CIM definitions).
- The current drill hole database is reasonable for supporting a resource model for use in Mineral Resource and Mineral Reserve estimation.
- The methods and procedures utilized by MBM at the Lagunas Norte Mine to gather geological, geotechnical, assaying, density, and other information are reasonable and meet generally accepted industry standards. Standard operating protocols are well

documented and updated on a regular basis for most of the common tasks. MBM developed and implemented its own laboratory information management system (LIMS) for the mine laboratory. The mine carries out regular comparisons with blast hole data, previous models, and production reconciliation results to calibrate and improve the resource modelling procedures.

- Exploration and development sampling and analysis programs use standard practices, providing generally reasonable results. The resulting data can effectively be used for the estimation of Mineral Resources and Mineral Reserves.
- The modelling procedures include hundreds of interpolation runs, the use of length weighted composites to simulate semi-soft boundaries, multiple interim block sizes, and other advanced features that collectively result in a very complex process that is well documented in a step-by-step manner.
- The positive gold reconciliation variance of approximately 20% in the past has been eliminated due mostly to infill reverse circulation (RC) drilling and to procedural improvements to the resource model. RC drilling on the Refractory Project sulphide resource could lead to higher grades than currently estimated based on diamond drilling.
- Overall, RPA is of the opinion that MBM has conducted very high quality work that exceeds industry practice.

MINING AND MINERAL RESERVES

- The 2014 year-end Proven and Probable Reserves, including existing stockpiles scheduled for processing and inventory, total 69.7 Mt grading 1.27 g/t Au and 4.42 g/t Ag, containing 2.8 Moz of gold and 9.9 Moz of silver.
- The Mineral Reserve estimates have been prepared utilizing acceptable estimation methodologies and the classification of Proven and Probable Reserves conforms to CIM definitions.
- The operating data and the supporting documents were prepared using standard industry practices and provide reasonable results and conclusions.
- Recovery and cost estimates are based upon actual operating data and engineering to support a Mineral Reserve statement. Economic analysis using these estimates generates a positive cash flow, which supports a statement of Mineral Reserves.
- The current Lagunas Norte production schedule provides reasonable results and, in RPA’s opinion, meets the requirements for statement of Mineral Reserves. In addition to the Mineral Reserves within the ultimate pit, there are Mineral Resources and potential sulphide resources (as described in the PEA) that represent opportunities for the future.

PROCESS

- RPA confirmed that the procedures used to estimate gold and silver recovery meet industry standards.

- Solution management practices at Lagunas Norte exceed industry standards. Solution recirculation at the leach pad contributes to a positive water balance and higher concentrations of gold in solution to feed the Merrill Crowe cementation process. The water treatment system is effective in handling acid rock drainage (ARD) and in maintaining water quality at discharge.
- In RPA's opinion, the carbon-in-column (CIC) circuit increases solution flow and will be very beneficial in the long term for solution management.

ENVIRONMENTAL CONSIDERATIONS

- The environmental and social practices at Lagunas Norte are very effective and enable Barrick to have a strong "social licence to operate".
- A program of System of Social Management has been instituted and provides employment and training.
- Changes in water discharge criteria may require additional capital expenditures and higher operating costs for long term water treatment.

REFRACTORY PROJECT

- The PEA confirms that the refractory sulphide mineralization has reasonable prospects for eventual economic extraction.
- Operating and capital costs were estimated based on a combination of evaluating processes at similar Barrick operations and obtaining cost quotes for certain capital items. RPA is of the opinion that the estimates are adequate for the PEA study.
- There is insufficient variability testing to assess the flotation performance of the various types of ores and the impact of highly carbonaceous material on CIL. Additional testing is currently in progress and while the testwork is not finalized, no material changes have been identified to date that would invalidate the results of the PEA.
- The economic analysis of the Refractory Project shows an attractive after-tax Net Present Value (NPV) of $224 million at a discount rate of 5% and an internal rate of return (IRR) of 19% under the assumptions set forth in Section 24 including an assumed gold price of $1,300 per ounce. In RPA's opinion, the cash flow model meets industry standards for a PEA study.

RISKS

RPA has not identified any significant risks and uncertainties that could be reasonably expected to affect the reliability or confidence in the exploration information, oxide Mineral Resource, or Mineral Reserve estimates, or associated projected economic outcomes.

Risks associated with the Refractory Project include:

- Metal price fluctuations.
- Preliminary nature of the initial capital cost estimates.

- Sensitivity of economics to possible delays in the project schedule.
- Additional metallurgical variability testing is required.
- Permitting and approvals for the Refractory Project are at an early stage.

Metal price, initial capital cost estimate variance, and project delays are the most significant risks to the economics of the Refractory Project. Barrick has developed a strategy to mitigate these risks as outlined in Section 24.

The primary opportunity that is most likely to increase the economic value of the Refractory Project would be an increase in the estimated Mineral Resource grade. Current diamond drilling of the sulphide orebody could understate the grade by as much as 10% to 20%.

RECOMMENDATIONS

RPA makes the following recommendations:

MINERAL RESOURCE ESTIMATION

- The resource modelling work is very good and no significant procedural changes are warranted.
- The minor overlap between the oxide and sulphide resource estimates is due to the fact that the Refractory Project PEA was finalized after disclosure of the year-end 2014 resources. The overlap will be eliminated for the 2015 year-end estimates.

MINING

- The Life of Mine (LOM) plan is reasonable and Barrick should proceed to implement the plan as presented.

PROCESS

- Continue to conduct routine metallurgical tests to try to improve the accuracy of the calculations used to estimate the recovery of gold and silver.

CAPITAL AND OPERATING COSTS

- The current operating costs are well managed and understood. RPA recommends that Lagunas Norte personnel continue exploring cost reduction alternatives.
- Continue investigating capital cost reduction as the current mining operation will end in 2018.

REFRACTORY PROJECT

- Complete a PFS on the Refractory Project.

- Consider additional RC drilling.
- Additional sampling and metallurgical testing should be undertaken during the next stage of study, including testing of M3BL ores.
- Minimize potential risks associated with the design and operation of dry stack tailings residue disposal with advanced engineering study.
- As part of a future EIA, update the Environmental Management Plan for Lagunas Norte to reflect the new facilities proposed under the Refractory Project.

ECONOMIC ANALYSIS

Under NI 43-101 rules, producing issuers may exclude the information required in this section on properties currently in production, unless the Technical Report includes a material expansion of current production. RPA notes that Barrick is a producing issuer, the Lagunas Norte Mine is currently in production, and a material expansion is not being planned. RPA has performed an economic analysis of the Lagunas Norte Mine using the estimates presented in this report and confirms that the outcome is a positive cash flow that supports the statement of Mineral Reserves.

TECHNICAL SUMMARY

PROPERTY DESCRIPTION AND LOCATION

The Mine is located on the 185 km^2 Alto Chicama property in the La Libertad Region, north-central Peru, approximately 90 km east of the coastal city of Trujillo and 175 km north of Barrick's Pierina Mine. The mine is located at 7º57' S latitude and 78º15' W longitude and lies on the western flank of the Peruvian Andes at an elevation of 4,000 MASL to 4,260 MASL. Access is by public roads from Trujillo for a total driving distance of approximately 150 km.

LAND TENURE

The Alto Chicama property includes four mining concessions (Acumulación Alto Chicama, Los Angeles, Las Lagunas 15, and Las Lagunas 16) totalling 19,182.2760 ha. The Lagunas Norte Mine is located on the Acumulación Alto Chicama mining concession. MBM acquired this concession in December 2002 from Centromin, the Peruvian state mining company, pursuant to an international bid process. Production at Lagunas Norte is subject to 2.51% NSR royalty, payable semi-annually to Activos Mineros on the extraction of gold and all other minerals.

The Acumulación Alto Chicama has no expiry date since it is in exploitation phase. In order to maintain its validity, however, a Validity Fee, of US$3.00/ha, must be paid no later than June 30 each year. Non-fulfillment for two consecutive years results in expiration of a mining concession. The Validity Fee payments for the Alto Chicama property were up to date as of December 2014.

On December 29, 2004, Barrick entered into a Legal Stability Agreement with the Peruvian government, which provides increased certainty with respect to tax, administrative, and exchange stability to MBM for 15 years until December 31, 2020. In January 2015, Barrick made a limited election out of the tax stability provisions included in the Legal Stability Agreement to apply the reduced income tax rates.

MBM controls surface rights totalling 3,778.0798 ha in the mine area, which are sufficient to mine the current reserves.

EXISTING INFRASTRUCTURE

Lagunas Norte infrastructure and services have been designed to support an operation of 63,000 tonnes per day (tpd) of ore to an HLF and a nominal 140,000 tpd of total material mined. Due to the remote location, the property is self-sufficient with regard to the infrastructure needed to support the operation.

Site infrastructure includes the open pit, heap leach pads, crushing facilities, CIC Plant, Merrill Crowe recovery plant, on-site facilities (safety/security/first aid/emergency response building, assay laboratory, plant guard house, dining facilities, and offices), related mine services (truckshop, truck wash facility, warehouse, fuel storage and distribution facilities, reagent storage and distribution facilities), and other facilities to support operations. Permanent accommodations are available for certain Lagunas Norte employees and visitors and are located approximately three kilometres east and downslope of the Lagunas Norte open pit operations at approximately 3,800 MASL.

The water for process and mining consumptive needs is delivered rain captured on two small lakes. There is plenty of water available for consumptive use now and for the future. At Lagunas Norte, a water management group is in place to carry out all dewatering including pumping, distribution, delivery, and disposal. Lagunas Norte has a positive water balance.

Electricity is provided by a private-owned generation company and delivered to Lagunas Norte through a high voltage power line connected to the National Grid in Trujillo.

HISTORY

MBM commenced a field program at Alto Chicama in March 2001, which included geologic mapping, geochemical sampling, and ground geophysics. This work resulted in the identification of targets for drill testing. Drilling commenced in mid-2001 and the initial program identified the Las Lagunas Norte area as justifying detailed follow-up. Subsequent drilling was concentrated in the Las Lagunas Norte area.

On April 2, 2004, the Alto Chicama environmental impact assessment (EIA) received regulatory approval and on April 12, 2004, the Plant Construction Authorization was granted which authorized MBM to construct and install the Alto Chicama process plant and related facilities.

Construction started in 2004 and the first ore was placed on the leach pad in March 2005. First pour was realized in June 2005. In August 2010, the Project received regulatory approval for an EIA amendment, including the expansion of the leach pad facility, expansion of the Waste Rock Facility, construction of a new CIC process plant, construction of a new water treatment system, as well as other ancillary facilities.

As of the end of 2014, the mine has recovered 8.4 Moz of gold and 7.8 Moz of silver from approximately 201 Mt of ore averaging 1.59 g/t Au and 3.6 g/t Ag.

GEOLOGY AND MINERALIZATION

The regional geology is dominated by a thick sequence of Mesozoic marine clastic and carbonate sedimentary rocks, which are bounded to the west by the Mesozoic to Early Tertiary Coastal Batholith and to the east by the Precambrian metamorphic rocks of the Marañón Complex. The Mesozoic sequence has been affected by at least one and possibly two stages of deformation during the Andean Orogeny. The volcanic rocks of the Tertiary Calipuy Group unconformably overlie the Mesozoic rocks.

Mineralization is the result of multiple volcanic and hydrothermal events. It occurs in the southeast portion of the Alto Chicama property and is hosted in both the Tertiary volcanics of the Calipuy Group and the underlying Cretaceous sedimentary rocks of the Chimú Formation. The deposit is locally faulted by relatively steeply dipping structures and is primarily controlled by stratigraphy and lithologic contacts.

The mineralization within the present pit extends for approximately two kilometres in the north-northwest direction by approximately two kilometres in the east-northeast direction and for more than 200 m vertically. Most of the mineralization (75%) occurs as oxide material, with approximately 25% occurring as sulphide material.

A significant characteristic of the Lagunas Norte deposit is the variable carbonaceous content found within the siliclastic sedimentary strata.

EXPLORATION

Field exploration on the Alto Chicama property by MBM commenced in March 2001. Following detailed mapping, geophysical and geochemical surveys, PIMA analysis, and channel sampling, drilling commenced in June 2001. In 2002, environmental, metallurgical, and engineering studies, together with cost estimation and economic analysis, were started, and by January 31, 2003, the first reserve estimate for Lagunas Norte was completed.

Approximately half of the metreage drilled up to 2011 was done in 2002 and included almost entirely diamond drill holes. Since 2007, there has been much more RC drilling after the discovery that the gold grades from core samples were biased low relative to production and to RC samples.

In 2006, resource definition drilling commenced at the satellite deposits of South Extension and Tres Cruces.

MINERAL RESOURCES

The 2014 year-end Measured and Indicated Mineral Resources, exclusive of Mineral Reserves, total 19.4 Mt averaging 0.69 g/t Au and 2.11 g/t Ag and contain 430,000 oz of gold and 1,320,000 oz of silver. In addition, the 2014 year-end Inferred Mineral Resources total 1.6 Mt averaging 0.73 g/t Au and 2.48 g/t Ag and contain 40,000 oz of gold and 120,000 oz of silver. These resources are mostly oxide mineralization that can be processed using the current heap leaching facility.

The June 2015 PEA confirms that the refractory sulphide mineralization has reasonable prospects for eventual economic extraction. The sulphide Measured and Indicated Mineral Resources total 27.7 Mt averaging 2.50 g/t Au and 6.44 g/t Ag and contain 2.2 Moz of gold and 5.7 Moz of silver. In addition, the sulphide Inferred Mineral Resources total 0.3 Mt averaging 1.92 g/t Au and 7.4 g/t Ag and contain 19,000 oz of gold and 74,000 oz of silver.

Most of the modelling work was completed in May 2014 by MBM Senior Resource Geologist Melissa Vasquez, MBM Superintendent of Geology Luis Sanchez, and Senior Geologist Cristobal Valenzuela under the supervision of Barrick Senior Manager, Resource and Reserve Benjamin Sanfurgo. The model was updated with 39 RC drill holes in November 2014.

RPA reviewed the resource assumptions, input parameters, geological interpretation, and block modelling procedures and is of the opinion that the resource modelling work is very good. A significant number of block model iterations were run to fine tune the resource block model estimation parameters. Reconciliation data for 2014 indicate that the resource model overestimates the tonnage by approximately 5%, and underestimates the gold grade by approximately 4% and contained gold ounces by approximately 0% compared to the grade control blast hole model

RPA notes that the modelling procedures include hundreds of interpolation runs, the use of length weighted composites to simulate semi-soft boundaries, multiple interim block sizes, and other advanced and innovative features that collectively result in a very complex, but effective process that is well documented in a step-by-step manner.

RPA is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other issues that could materially affect the Mineral Resource and Mineral Reserve estimates.

MINERAL RESERVES

RPA reviewed the reported resources, production schedules, and cash flow analysis to determine if the resources meet the CIM definitions. Based on this review, it is RPA's assessment that the Measured and Indicated Mineral Resource within the final pit design at Lagunas Norte can be classified as Proven and Probable Mineral Reserves.

The open pit Proven and Probable Reserves, including existing stockpiles scheduled for processing, total 69.7 Mt at 1.27 g/t Au and 4.4 g/t Ag, containing 2.8 Moz of gold and 9.9 Moz of silver as presented in Table 1-3.

MINING METHOD

The Lagunas Norte Mine is a traditional open pit truck/shovel heap leach operation that has been in continuous production since 2005. To date, Lagunas Norte has produced 8.4 Moz of gold and 7.8 Moz of silver.

Open pit mining operations are located on a mountain top with gentle to extreme terrain between elevations of 3,800 MASL and 4,200 MASL. Mining is from a single open pit at a rate of 25 Mt of ore in 2015 and 23 Mt of ore in 2016 and is scheduled to continue through 2017, the final year of open pit operations. Heap leach placement from stockpile will continue for one year after mining ceases, with mine operations concluding in 2018. Most of the ore is crushed prior to placement on the HLF.

The Lagunas Norte ultimate pit measures approximately 2.5 km along strike, typically 0.8 km to 1.2 km across with a surface footprint of approximately 240 ha, and has a maximum depth of approximately 250 m. There are four main areas of development identified within the ultimate pit: Dafne, Josefa, Alexa, and the moraines furthest to the north. The open pit is overlooked by the Shulcahuanca Dome, a sacred feature, and there is an approximate 50 m standoff from the base of the Shulcahuanca Dome for mine planning and operations.

Final arrangement of the Lagunas Norte waste rock facilities is for the continued development of surface dumps surrounding the Lagunas Norte ultimate pit other than to the south-southeast where the HLF is located, resulting in a relatively compact overall footprint.

MINERAL PROCESSING

The recovery process used at Lagunas Norte is a two-stage conventional crushing circuit, followed by heap leaching, and a Merrill Crowe zinc cementation plant and CIC for recovery of the precious metals. The major components of the process are primary crushing, secondary crushing, heap leaching, recovery plant, refinery, and water discharge treatment plant.

The crushing circuit was originally designed to crush 42,000 tpd, but the capacity is permitted to 63,000 tpd. Historically, it was determined that the gold recovery from heap leaching at Lagunas Norte is not overly dependent on crush size, so the size has been increased over time to allow more material to be processed through the crushing circuit. The crushed ore is conveyed to a 2,000 tonne live capacity stockpile, from which it is fed to the secondary crushers. From the secondary crusher, the ore is loaded into haul trucks that transport it to the leach pad. Lime is added to the trucks to raise the pH of the leach solution.

At the leach pad, stacking of the crushed ore is done in 10 m high lifts with assistance from a high precision GPS dozer. Ore classified as contaminated based on the concentration of total carbonaceous material is stacked on a separate area of the leach pad. Some of the contaminated ore is crushed and some is not, depending on the type of ore. Once the cell has been prepared, a drip irrigation system is laid on top of the ore. Cyanide solution is trickled through the pad at the rate of 20 L/m ^{2}/h. After passing through the pad, pregnant solutions are temporarily stored in the pregnant leach solution pond, then pumped to the process plant using vertical turbine pumps at the rate of 2,700 m ^{3}/h. The plant and pumping systems have been modified to increase the flow rate to 3,000 m ^{3}/h, which is adequate to maintain the optimum solution to ore ratio.

The pregnant solution is pumped to the Merrill Crowe zinc cementation recovery plant. The suspended solids are removed in the clarifier and the dissolved oxygen concentration is reduced to less than one part per million by the de-aerator. From the de-aerator the solution passes through a cone where powdered zinc is added and the gold and silver precipitate out of the solution. The precipitate is recovered from the solution using filter presses and put into trays that are placed in mercury retorts. In the retorts, the precipitate is gradually heated so that it dries and the mercury is evaporated, condensed, and recovered under a vacuum system. After retorting, the precipitate is mixed with flux and placed in a smelting furnace. The impurities are removed from the precious metals in the slag and the mixture of gold and silver is recovered as doré. The doré is sent to a refinery outside of the operation for further processing.

Lagunas Norte's water treatment facilities include cyanide destruction plant and acid rock drainage pond and treatment plant. At the time of the site visit, the secondary water treatment plant was being used to further improve the treatment facilities and the quality of the water that is discharged from the property.

At the time of the site visit, the CIC circuit was operating. It processes an average 1,800 m^3/h of solution and accommodates a flow rate of 2,140 m^3/h (design flow). The purpose of the installation is to further increase the solution flow to the leach pad to 4,300 m^3/h. The excess available flow, i.e., 2,000 m^3/h, from the CIC circuit will be used to wash the areas of the leach pad where leaching is completed.

ENVIRONMENTAL, PERMITTING, AND SOCIAL CONSIDERATIONS

Environmental studies at Lagunas Norte are ongoing and conducted as required to support the operation and any projects.

The EIA for the Project was approved in 2004. In August 2010, an amendment to the former EIA was approved which allowed:

- Expansion of the east waste dump
- New leach pad
- New ponds (doubling of size for process leach solution (PLS), process overflow, ARD, and sediment ponds)
- Water treatment plant

A second amendment to the EIA was submitted to authorities in November 2014, which includes the following changes:

- East Waste Dump Expansion
- New areas for Topsoil Stock
- West Waste Dump Optimization
- Pit Expansion
- Leach Pad Expansion (Phase 9)
- Other modifications (auxiliary components)

Permits to discharge from the sedimentation ponds (East and West) and the rotating bio-contactor (RBC) sewage treatment plant at El Sauco expire every two years. Permits for pit dewatering and the trout farm have been approved.

Water monitoring is completed at 31 points in three basins. Groundwater is monitored at ten points and surface water is monitored at 16 points. Mine effluent is monitored at three points and potable water and wastewater are monitored at two points. The data is reported every three months to the mining authority. Air monitoring is required at six points primarily for particulate matter, gases, and noise. Reports are due quarterly. Additional permits are required for hazardous waste disposal, e.g., fire assay cupels, which is done off site by authorized companies. Wildlife is monitored every two years and aquatic life is monitored bi-annually during the operating phase of the mine for internal purposes.

Lagunas Norte is in compliance with the International Organization for Standardization (ISO) 14001 Environmental Management System and the International Cyanide Code. ISO certification is renewed every three years. Cyanide Code audits and renewals are completed every three years.

For year-end 2014, the total closure cost for the Mine was estimated to be a total of US$199.5 million (US$111.0 million for concurrent reclamation, US$56.4 million for final closure, and US$32.1 million for post closure costs) in accordance with the Closure Plan Update approved by regulators in 2011. According to the latest Closure Plan Update approved by regulators in 2015, the total closure cost for the Lagunas Norte Project is now estimated to be US$243.4 million (US$46.9 million for concurrent closure, US$56.1 million for final closure and US$140.4 for post closure costs).

In order to meet new Peruvian environmental water quality standards expected to enter into force in December 2015, various water treatment proposals have been identified and are currently under review. The capital costs for the water treatment will be defined once the technical studies are concluded.

The key social program at Lagunas Norte is an employment initiative designed to train unemployed workers. The focus is on local communities and suppliers and business generation. The Lagunas Norte social and community programs are participative. They encourage representatives from the local communities to take water samples in conjunction with the company employees and to submit them to laboratories of their own choice.

CAPITAL AND OPERATING COST ESTIMATES

Remaining capital costs at Lagunas Norte through 2018 are primarily sustaining capital, which includes mine equipment replacement and leach pad expansion. Total remaining capital costs are US$372 million (Table 1-4). Mine pre-stripping costs were considered an operating cost.

TABLE 1-4 CAPITAL COSTS SUMMARY
Barrick Gold Corporation – Lagunas Norte Mine

Department	Sustaining Capital US$ Millions
Engineered Facilities	160
Sustaining Capital	6
Other	206
Total Capital Expenditures	**372**

Notes:

1. Numbers may not add due to rounding.

Mine operating costs are US$2.20 per tonne of material mined or US$4.58 per tonne of ore mined. Process operating costs are dependent on ore type and processing method and include the heap leach, crushing and conveying, stacking, Merrill Crowe process plant, power, and consumables. Process operating costs for the LOM are US$3.44 per tonne ore processed. General and administrative (G&A) costs average US$1.44 per tonne ore processed over the LOM. The total Mine operating cost is US$9.46 per tonne processed. The adjusted operating cost per ounce of gold production over the LOM is US$497/oz. Total all in sustaining cost (AISC) per ounce, including sustaining capital, over the LOM is US$809/oz.

REFRACTORY PROJECT

The Lagunas Norte Mine currently processes oxide ore through the use of conventional heap leach technologies. The presence of copper-, sulphur-, and/or carbon-rich mineralization limits the effectiveness of the heap leach process in the recovery of contained metals from this type of material. The Refractory Project comprises construction of a 6,000 tpd pressure oxidation (POX) processing facility and associated infrastructure to process material that cannot be treated economically by heap leach. Key components of the new facility include crushing, grinding, flotation, POX, carbon-in-leach (CIL), and dry stack residues handling and disposal. Feed for the facility will come from deepening and extending the existing open pit. The expansion of the open pit will be at a significantly higher stripping ratio than that of the current open pit, requiring an expansion of the current waste rock storage facilities.

The majority of the material to be processed in the Refractory Project will consist of two sulphide ore types, with copper (M3A) and with carbonaceous material (M3BL).

The Refractory Project cash flow model reflects the processing of 27.5 Mt of mineralized material containing 2.2 Moz of gold and 5.7 Moz of silver over a project life of 12 years (2018-2030). After processing, the estimated recoverable metal is 1.9 Moz of gold and 2.2 Moz of silver.

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

MINERAL RESOURCES

The sulphide Measured and Indicated Mineral Resources total 27.7 Mt averaging 2.50 g/t Au and 6.44 g/t Ag and contain 2.2 Moz of gold and 5.7 Moz of silver. In addition, the sulphide Inferred Mineral Resources total 0.3 Mt averaging 1.92 g/t Au and 7.35 g/t Ag and contain 19,000 oz of gold and 74,000 oz of silver.

MINERAL RESERVES

There are presently no Mineral Reserves incorporating refractory material.

MINING

Mining will principally include the deepening of the central and southern portions of the current open pit. Mining is planned to be carried out using the existing mine fleet at a rate of approximately 25 Mt of total material moved per year at a stripping ratio of 4.4:1 (waste: mineralization). As a result of a higher stripping ratio, an expansion of the current waste rock storage facilities will be required.

MINERAL PROCESSING

Some new processing facilities will be constructed and some of the existing plant facilities at Lagunas Norte will be utilized or upgraded for the Refractory Project. The key steps in the Refractory Project process flow sheet include crushing and grinding, flotation, tailings handling and disposal, POX, and CIL. The Merrill Crowe plant will continue to treat the oxide heap leach solution and the pregnant solution, with some modifications related to ARD treatment and cyanide destruction.

ENVIRONMENTAL CONSIDERATIONS

An Environmental Management Plan currently exists for Lagunas Norte, however, the management programs will need to be updated to reflect the new facilities proposed under the Refractory Project. Key environmental aspects of the Refractory Project include: preparation of the Environmental Permit document for early submission, community and government relations, and on-going communications.

CAPITAL AND OPERATING COSTS

The capital cost estimate includes US$496 million for initial capital and US$157 million for sustaining capital, with a total Refractory Project LOM capital cost of US$653 million.

The operating cost estimate comprises US$302 million for mining, US$785 million for processing, and US$281 million for G&A over the Refractory Project LOM.

ECONOMIC ANALYSIS

Considering the Refractory Project on a stand-alone basis, the undiscounted after-tax cash flow totals US$339 million over the mine life. The after-tax Net Present Value (NPV) at a 5% discount rate is US$224 million and the after-tax Internal Rate of Return (IRR) is 19% under the assumptions set forth in Section 24, including a gold price assumption of $1,300 per ounce. Payback occurs after three years in the project life. The project is most sensitive to changes in the gold price, head grade, and recovery.

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

VALUE REALIZATION INITIATIVES

In addition to the Refractory Project, Barrick has recently conducted a technical review of the Lagunas Norte operation with the objective of identifying potential opportunities for cost reductions and revenue enhancement. The opportunities that have been identified so far include:

1. Upgrade sulphide Mineral Resource grade

The Lagunas Norte orebody was drilled using a large percentage of diamond core drill holes. During 2008, it was observed that gold grades from the diamond core holes were biased low relative to production and to RC drill holes. A number of core holes were subsequently twinned with RC holes and confirmed that gold assays from the core holes were significantly understated relative to the RC drill holes and the production blast holes. The reason for the bias is that diamond drilling was washing away the gold bearing fines during the drilling process, while the RC drilling and blast holes were able to collect the fines and properly represent the true grade of the ore. The oxide orebody was re-drilled using RC drill holes and re-modelled. The sulphide portion of the orebody was not drilled with RC drill holes to reduce costs as there was not a plan to mine this material in the LOM plan.

There is an opportunity to drill the sulphide deposit with RC drill holes and potentially upgrade the sulphide grade by as much as 10% to 20%. Additional RC drilling will be needed to twin the existing core holes and ascertain the grade of the sulphide deposit.

2. Revise final pit design to recover deeper resource blocks.

   A review of the reserve pit design was performed in order to evaluate the potential for an optimization to recover ore blocks near the final pit. Final ramp configurations and last bench geometries were adjusted to add extra “ore” blocks. A review for optimization showed an improvement of 0.5 Mt grading 0.567 g/t Au. This change added approximately 10,000 mined ounces. Some Indicated Resource blocks were included in these additional blocks.

3. In-pit waste dumping.

   An area for an in-pit waste dump was identified within the ultimate pit near the Vizcachas area and to the north of the pit. This reduces the capital expenditure for the expansion of the East Waste Dump (Phase 1) located beyond the current dump limits and permits. The design criteria consider a slope of 3:1 with berms of 10 m wide, each 45 m in height, to have an effective slope of 18.5º. This waste dump design follows closure design parameters.

The in-pit waste dump is being implemented and is expected to result in a reduction of capital costs by US$67 million as the new waste dump area would not need preparation (stripping, ditch construction, etc.). Other benefits include the reduction in environmental impact for acid water generation (no new area required).

Some risks include the loss of marginal ore under this new in-pit waste zone. This amounts to approximately 7,500 contained ounces, which are not economic at present metal prices.

4. Implement measures to improve post-operation leach recoveries.

   Incremental gold recovery from residual leach material is being considered post-operation. Irrigation and flushing the leach pad surface and contoured side slopes is assumed to yield in the order of 100,000 oz to 350,000 oz of additional gold production. Gold recovery will be dependent on material permeability and the amount of residual soluble gold.

5. Review sustaining capital requirements

   A review of sustaining capital requirements has shown the potential to reduce these expenditures over the existing mine life by approximately US$7.0 million.

2 INTRODUCTION

Roscoe Postle Associates Inc. (RPA) was retained by Barrick Gold Corporation (Barrick) to prepare an independent Technical Report on the Lagunas Norte Gold Mine (the Mine) in Peru. The purpose of this report is to support the public disclosure of Mineral Resource and Mineral Reserve estimates at the Mine as of December 31, 2014. This Technical Report conforms to National Instrument 43-101 Standards of Disclosure for Mineral Projects.

Barrick is a Canadian publicly traded mining company with a large portfolio of operating mines and projects across five continents. The Lagunas Norte Mine is located in the District of Quiruvilca in the Province of Santiago de Chuco and the Department of La Libertad, in north-central Peru. The mine site is approximately 90 km east of the coastal city of Trujillo.

The Mine is owned and operated by Minera Barrick Misquichilca S.A. (MBM), a wholly-owned Peruvian subsidiary of Barrick. The mine is part of the Alto Chicama property. A 2.51% Net Smelter Return (NSR) royalty is paid to a Peruvian state company, Activos Mineros S.A.C. (Activos Mineros), formerly Centromin Peru S.A. (Centromin). In December 2006, Centromin transferred all of its rights and obligations with respect to the mine to Activos Mineros.

Lagunas Norte is a large open pit, heap leach gold and silver mine in the high Andes Cordillera. Operations include open pit mining of gold-silver ore, crushing, and extraction of precious metals using heap leaching and Merrill Crowe recovery. Since Lagunas Norte started production in March 2005, the mine has recovered 8.4 million ounces (Moz) of gold and 7.8 Moz of silver from approximately 201 million tonnes (Mt) of ore averaging 1.59 g/t Au and 3.6 g/t Ag.

Mining will continue through 2017, including approximately 25 Mt of ore in 2015 and 23 Mt in 2016 and an average of approximately 25 Mt of waste per year. Heap leach placement from stockpile will continue for one year after mining ceases, with mine operations concluding in 2018. Most of the ore is crushed prior to placement on the heap leach facility (HLF).

Barrick has recently completed a study of the potential to mine and process the Lagunas Norte sulphide resources and to extend the life of the operation beyond 2018. The results of a scoping study, or Preliminary Economic Assessment (PEA), of processing the refractory material (Barrick, 2015c) are summarized in Section 24. The PEA study is referred to in this Technical Report as the "Lagunas Norte Refractory Material Mine Life Extension Project" or the "Refractory Project". Work was initiated on a Prefeasibility Study (PFS) in June 2015 to further assess the technical and financial viability and risks associated with the Refractory Project, with completion expected by the end of 2015.

In addition to the Refractory Project, Barrick has recently conducted a technical review of the Lagunas Norte operation with the objective of identifying potential opportunities for cost reductions and revenue enhancement. These opportunities are referred to in this Technical Report as the "Value Realization Initiatives".

SOURCES OF INFORMATION

RPA Principal Geological Engineer Luke Evans, M.Sc., P.Eng., RPA Principal Mining Engineer Hugo Miranda, MBA, P.C., and RPA Principal Metallurgist, Brenna Scholey, P.Eng., visited the mine from January 6 to 7, 2015 and held meetings at the Barrick offices in Trujillo and Lima on January 8 and 9, 2015, respectively. Discussions were held with the following Barrick and MBM personnel:

- Hugo Roman, General Manager of Operations Lagunas Norte
- Angel Vera, Manager of Operations Mine
- Roberto Chumpitazi, Manager of Human Resources
- Aldo Leon, Manager of Environment - EIA
- Joe Pezo, Manager of Process
- Isaias Kleinerman, Manager of Health and Safety
- Manuela Hillenbrand, Manager of Community Relations
- Jesus Yalan, Chief Hydrologist
- Jose Nizama, Manager of Technical Services
- Michael Sanchez, Superintendent of Geology
- Fernando Porras, Superintendent of Engineering
- Percy Maguiña, Superintendent of Metallurgy
- Cesar Espejo, Superintendent of Leaching
- Pedro Bobadilla, Process Plant Superintendent
- Raul Orellana, Manager of Environment
- Kelly Diaz, Senior Supervisor of Environment
- Carlos Diaz, Senior Supervisor of Mining Properties
- Carlos Salguero, Superintendent of Purchasing
- Martin Castro, Senior Cost Supervisor
- Melissa Vasquez, Senior Modelling Geologist
- Augusto Mariscal, Supervisor Ore Control Geologist
- Angela Zapana, Supervisor Modelling Geologist
- Cristhel Becerra, AcQuire Database Administrator
- Mario Poma, Senior Geotechnical Supervisor
- Frank McCann, Barrick Regional Manager, Engineering and Planning

- Benjamin Sanfurgo, Senior Manager of Resource and Reserve Modelling
- Cristian Monroy, Manager of Reserves and Resources
- Cristobal Valenzuela, Senior Modelling Geologist

The Lagunas Norte Mine has been the subject of Technical Reports and resource/reserve technical audits as follows:

- March 2012, NI 43-101 Technical Report, RPA
- March 2009, NI 43-101 Technical Report, Barrick
- May 2008, Reserve Audit, Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA, a predecessor company to RPA)
- April 2006, Reserve Procedure Audit, RPA
- February 2005, Reserve Procedure Audit, RPA
- March, 2003, NI 43-101 Technical Report, Barrick

Mr. Evans reviewed the geology, sampling, assaying, and resource estimate work and is responsible for Sections 2 to 5, 7 to 12, 14, and 23. Mr. Miranda reviewed the mining, reserve estimate, and economics and is responsible for Sections 15, 16, 18, 19, 21, and 22. Ms. Scholey reviewed the metallurgical, environmental, and permitting aspects and is responsible for Sections 13, 17, and 20. The authors share responsibility for Sections 1, 6, 24, 25, 26, and 27 of this Technical Report. RPA would like to acknowledge the excellent cooperation in the transmittal of data by Barrick and MBM personnel.

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

LIST OF ABBREVIATIONS

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

a	annum	kWh	kilowatt-hour
A	ampere	L	litre
bbl	barrels	lb	pound
btu	British thermal units	L/s	litres per second
°C	degree Celsius	m	metre
C$	Canadian dollars	M	mega (million); molar
cal	calorie	m^2	square metre
cfm	cubic feet per minute	m^3	cubic metre
cm	centimetre	µ	micron
cm^2	square centimetre	MASL	metres above sea level
d	day	µg	microgram
dia	diameter	m^3/h	cubic metres per hour
dmt	dry metric tonne	mi	mile
dwt	dead-weight ton	min	minute
°F	degree Fahrenheit	µm	micrometre
ft	foot	mm	millimetre
ft^2	square foot	mph	miles per hour
ft^3	cubic foot	MVA	megavolt-amperes
ft/s	foot per second	MW	megawatt
g	gram	MWh	megawatt-hour
G	giga (billion)	oz	Troy ounce (31.1035g)
Gal	Imperial gallon	oz/st, opt	ounce per short ton
g/L	gram per litre	PEN	Nuevo Sol
Gpm	Imperial gallons per minute	ppb	part per billion
g/t	gram per tonne	ppm	part per million
gr/ft^3	grain per cubic foot	psia	pound per square inch absolute
gr/m^3	grain per cubic metre	psig	pound per square inch gauge
ha	hectare	RL	relative elevation
hp	horsepower	s	second
hr	hour	st	short ton
Hz	hertz	stpa	short ton per year
in.	inch	stpd	short ton per day
in^2	square inch	t	metric tonne
J	joule	tpa	metric tonne per year
k	kilo (thousand)	tpd	metric tonne per day
kcal	kilocalorie	US$ or $	United States dollar
kg	kilogram	USg	United States gallon
km	kilometre	USgpm	US gallon per minute
km^2	square kilometre	V	volt
km/h	kilometre per hour	W	watt
kPa	kilopascal	wmt	wet metric tonne
kVA	kilovolt-amperes	wt%	weight percent
kW	kilowatt	yd3	cubic yard
		yr	year

3 RELIANCE ON OTHER EXPERTS

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

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

For the purpose of this report, RPA has relied on ownership information provided by Barrick. RPA has not researched property title or mineral rights for the Lagunas Norte property and expresses no opinion as to the ownership status of the property.

RPA has relied on Barrick for guidance on applicable taxes, royalties, and other government levies or interests, applicable to revenue or income from Lagunas Norte.

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

4 PROPERTY DESCRIPTION AND LOCATION

LOCATION

The Lagunas Norte Mine site is located on the 185 km^2 Alto Chicama property in the district of Quiruvilca in the Province of Santiago de Chuco, La Libertad Region, north-central Peru, approximately 90 km east of the coastal city of Trujillo and 175 km north of Barrick's Pierina Mine (Figure 4-1). The property is located at 7º57' S latitude and 78º15' W longitude and lies on the western flank of the Peruvian Andes at an elevation of 4,000 MASL to 4,260 MASL.

LAND TENURE

The Alto Chicama mining property encompasses four mining concessions; Acumulación Alto Chicama (formerly Derecho Especial del Estado N° 1, 2 y 3), Los Angeles, Las Lagunas 15 and Las Lagunas 16, totalling 19,182.2760 ha (Table 4-1). In December 2002, MBM acquired the mining concession "Acumulación Alto Chicama" encompassing 18,002.3216 ha from Centromin, the Peruvian state mining company, pursuant to an international bid process. The Lagunas Norte Mine is located on this mining concession. Production at Lagunas Norte is subject to 2.51% NSR royalty, payable semi-annually to Activos Mineros S.A.C. (Activos Mineros), formerly Centromin, on the extraction of gold and all other minerals. Under the terms of agreement with Centromin, MBM paid Centromin an advance contractual royalty of $2 million. In December 2006, Centromin transferred all of its rights and obligations with respect to the mine to Activos Mineros, a state mining company.

The "Los Angeles" mining concession was acquired by MBM from Pan American Silver Peru S.A.C. through a Transference Contract dated June 28, 2004. The "Las Lagunas 15" and "Las Lagunas 16" mining concessions were granted by the Peruvian government on January 30, 2001. The Acumulación Alto Chicama mining concession has no expiry date since it is in exploitation phase. In order to maintain its validity, however, a Validity Fee, of $3.00/ha, must be paid no later than June 30 each year. Non-fulfillment for two consecutive years results in expiration of a mining concession. The Validity Fee payments for the Alto Chicama property were up to date as of December 2014. The Los Angeles, Las Lagunas 15 and 16 mining concessions pay, in addition to the Validity Fee, a Penalty of $20/ha per annum because they are not in production. Non-payment of the Validity Fee and Penalty for two consecutive years results in expiration of a mining concession. The Validity Fee payments for the Alto Chicama property were up to date as of December 2014.

TABLE 4-1 MINING CONCESSIONS
Barrick Gold Corporation – Lagunas Norte Mine

Code	Mining Concession Name	Area (ha)	Effective Area (ha)	Royalty (%)	Title Date
010000204L	Acumulación Alto Chicama	18,002.3216	18,002.3216	2.51	04/10/2004
10204000	Las Lagunas 15	800.0000	534.8316	0	30/01/2001
10204100	Las Lagunas 16	900.0000	572.1228	0	30/01/2001
15005489X01	Los Angeles	72.0000	72.0000	0	01/10/1969
Totals		**19,774.3216**	**19,182.2760**		

On December 29, 2004, Barrick entered into a Legal Stability Agreement with the Peruvian government. The Legal Stability Agreement provides increased certainty with respect to tax, administrative, and exchange stability to MBM, regarding the four mining concessions, for 15 years. The 15 year period commenced as of January 1, 2006 and ends on December 31, 2020. Under the terms of the Legal Stability Agreement which includes tax stability, Barrick is required to pay national and municipal taxes in effect at December 29, 2004 and is subject to a 32% income tax rate instead of the 30% general rate. In December 2014, the Peruvian government enacted certain tax reform measures. Corporate income tax rates will be gradually reduced from 30% in 2014 to 26% for 2019 and future years. The withholding tax on dividends will gradually increase from 4.1% for 2014 to 9.3% for 2019 and future years. In January 2015, Barrick made a limited election out of the tax stability provisions included in the Legal Stability Agreement to apply the reduced income tax rates.

The mining concessions are shown in Figure 4-2. Note that the Las Lagunas 15 and Las Lagunas 16 mining concessions overlap with Acumulación Alto Chicama, so the effective area for the four combined mining concessions is 19,182.2760 ha. MBM controls surface rights totalling 3,778.0798 ha in the mine area and the mine area has a fenced perimeter (Figure 4-2 and Table 4-2). Surface rights are sufficient to mine the current reserves and all reserves lie within MBM controlled lands.

The Acumulación Alto Chicama mining concession, subject to a 2.51% NSR payable semi-annually to Activos Mineros, formerly Centromin, is shown in Figure 4-3.

RPA is not aware of any environmental liabilities on the property. MBM has all required permits to conduct the proposed work on the property. RPA is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the proposed work program on the property.

TABLE 4-2 SURFACE RIGHTS
Barrick Gold Corporation – Lagunas Norte Mine

Count	Number	Name	File	P.E. N°	Area (ha)
1	39818	CUEVA II	SE40286	04063644	0.4609
2	39819	EL PUENTE GRANDE	SE040297	04063655	0.9855
3	21198	SAN JOSE DE PORCON	PR017317	04017211	2.0000
4	21220	SAN JOSE DE PORCON	PR017318	04017212	2.1600
5	41505	VIRA VIRA I	SE039835	04063193	298.7030
6	41506	VIRA VIRA III	SE039839	04063197	87.2315
7	41507	VIRA VIRA II	SE039832	04063190	106.1590
8	41513	PAMPA DEL RAYO	SE039836	04062796	53.6653
9	41514	QUISHUAR I	SE039819	04062797	100.9850
10	41515	LAS PUSHAS	SE039816	04063174	377.7120
11	41516	LAS PEÑAS COLORADAS II	SE039812	04063170	7.3407
12	41517	LAS PEÑAS COLORADAS I	SE039811	04063169	15.4522
13	41518	EL PUENTE GRANDE	SE039810	04063168	1.0264
14	41519	LAS PEÑAS DE GENTE	SE039809	04063167	420.6420
15	41520	LAS TAPADAS	SE039815	04063173	63.7398
16	41521	SHULCAHUANGA	SE039860	04063218	324.1460
17	41522	SHULCAHUANGA	SE039861	04063219	77.5388
18	41523	SHULCAHUANGA	SE039862	04063220	595.4410
19	41524	CALLACUYAN II	SE039821	04063179	57.5634
20	41526	CALLACUYAN II	SE039823	04063181	62.3906
21	41528	CALLACUYAN II	SE039824	04063182	243.9590
22	41536	SAN JOSE DE PORCON	PR022597	04022364	445.3168
23	41537	LA RUBIA		11050070	67.5982
24	U.N.A.	LA RUBIA		11050071	0.5748
25	U.N.A.	SIR GALLAHAD		11050069	12.4890
26		LOTE B	PR022533	04022300	318.0000
27	41883	CRUZ VERDE I	SE039831	04063189	18.1318
28	41885	CRUZ VERDE III		04063187	1.0175
29	U.N.A.	SAN JOSE DE PORCON (U.N.A)	PR022598	04022365	15.6496
Total					**3,778.0798**

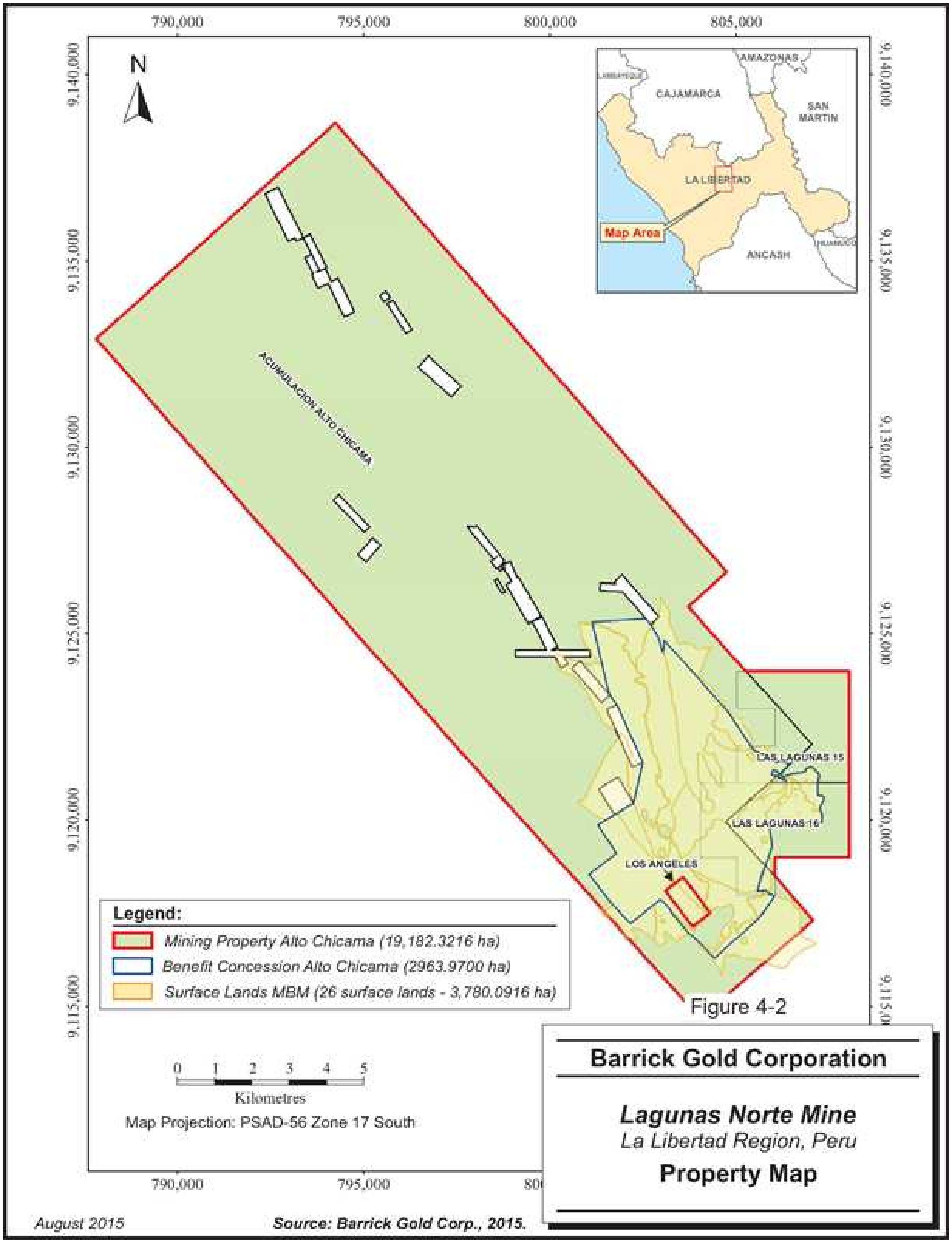
Figure 4-1

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru
Location Map

August 2015

Source: CIA Maps Website, 2015.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795,000
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9,130,000
9,125,000
9,120,000
9,115,000
N
AMAZONAS
CAJAMARCA
SAN MARTIN
LA LIBERTAD
Map Area
ANCASH
ACUMULACION ALTO CHICAMA
LAS LAGUNAS 15
LAS LAGUNAS 16
LOS ANGELES
Legend:
Mining Property Alto Chicama (19,182.3216 ha)
Benefit Concession Alto Chicama (2963.9700 ha)
Surface Lands MBM (26 surface lands - 3,780.0916 ha)
0 1 2 3 4 5
Kilometres
Map Projection: PSAD-56 Zone 17 South
Barrick Gold Corporation
Lagunas Norte Mine
La Libertad Region, Peru
Property Map
August 2015
Source: Barrick Gold Corp., 2015.
Figure 4-2

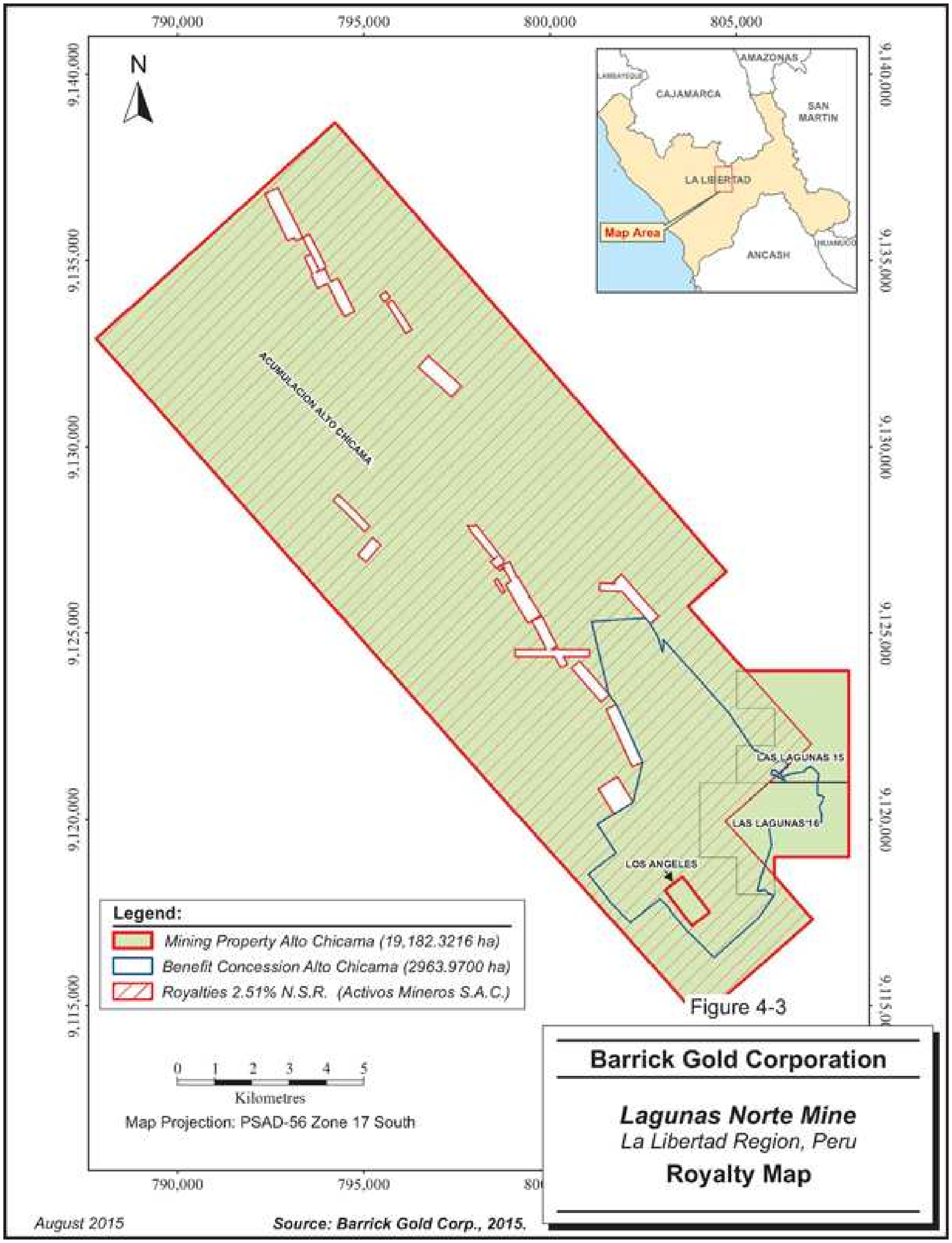


Figure 4-3

Barrick Gold Corporation

Lagunas Norte Mine

La Libertad Region, Peru

Royalty Map

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

ACCESSIBILITY

The Lagunas Norte Mine is accessed from Trujillo, the capital of the La Libertad Region, by driving on a public paved road heading east-northeast from Trujillo to Otuzco for approximately 75 km. At Otuzco, the road splits and an all-season public paved road heads east towards the mine site and beyond. Approximately 7.0 km before the mine site turnoff is the mine airfield, which has a compacted gravel runway approximately 1.6 km long at 4,180 MASL. From the mine site turnoff it is 1.0 km to the main gate at 4,155 MASL. From the main gate it is approximately 3.0 km to the Lagunas Norte open pit and 6.0 km to the camp facilities at 3,800 MASL. The total driving distance from Trujillo is approximately 150 km one way, and it takes four to five hours for a light vehicle to access the mine site in typical driving conditions. Trujillo is serviced by daily commercial flights from Lima.

Most consumables and people working at the mine are transported along this route.

CLIMATE

The property is considered to have mountain climate. The air temperature ranges from -4℃ to +16℃, wi th an average daily temperature of 7℃. The recorded seasonal air temperature fluctuations are small. The prevailing wind direction is from the north-northeast to east-northeast. The average wind velocity at Lagunas Norte is 17 km/hr, with a maximum recorded of 51 km/hr. Precipitation at Lagunas Norte occurs primarily in the form of rainfall. Dry, wet, and transitional periods can be distinguished during the year. The dry period is observed from June through August, with the average monthly rainfall less than 40 mm. The driest month is July, with the average monthly rainfall of 20 mm. The wet period is observed from October through April, with the average monthly rainfall greater than 100 mm. The wettest month is March, with the average monthly rainfall of 230 mm. The months of May and September may be classified as transitional, with the average monthly rainfall amounts of 89 mm and 79 mm, respectively. The maximum daily rain on record for the period from 1965 through 2002 is 61 mm. Strong electric storms are frequent during the wet period.

LOCAL RESOURCES

La Libertad Region has a long history of mining activity, and mining suppliers and contractors are locally available. Most of the workforce lives in the nearby towns, Trujillo and Lima.

Lagunas Norte has generally had success in hiring and retaining experienced staff and personnel with good mining expertise, despite tight current labour markets experienced industry-wide. Lagunas Norte also brings local employment opportunities to people from the surrounding communities. Processing and mine facilities operate on a 24-hour, seven days per week schedule, with four crews rotating on a 12-hour, two shift basis with an adequate balance between work and rest time. Most of the maintenance personnel work on the day shift, with a small breakdown crew on the night shift to provide 24-hour coverage. Middle and upper management operate on a five-days-on and two-days-off schedule.

The Mine is supported by the local communities. Barrick has a progressive social policy framework, stressing communication and respect, which is inclusive of the local population as well as employees. Environmental, health and safety, and social responsibilities are the cornerstones of the program.

INFRASTRUCTURE

Lagunas Norte infrastructure and services have been designed to support an operation of 63,000 tpd of ore to a heap leach facility (HLF) and a nominal 140,000 tpd of total material mined. Site infrastructure is discussed in more detail in Section 18. Due to the remote location, the property is self-sufficient with regard to the infrastructure needed to support the operation.

Mine camp facilities are located approximately three kilometres east and downslope of the Lagunas Norte open pit operations at approximately 3,800 MASL. Permanent accommodations are available for certain Lagunas Norte employees and visitors. Contractor accommodations are also provided near the Lagunas Norte accommodations. Site accommodations are sufficient for the Lagunas Norte workforce, contractors, and consultants. RPA was impressed with the camp food, recreation, and accommodation facilities.

Site infrastructure includes the open pit, HLF, crushing facilities, Merrill Crowe recovery plant, on-site facilities (safety/security/first aid/emergency response building, assay laboratory, plant guard house, dining facilities, and offices); related mine services facilities (truckshop, truck wash facility, warehouse, fuel storage and distribution facilities, reagent storage and distribution facilities), and other facilities to support operations.

The water for process and mining consumptive needs is delivered rain captured on two small lakes. There is plenty of water available for consumptive use now and for the future. At Lagunas Norte, a water management group is in place to carry out all dewatering including pumping, distribution, delivery, and disposal. Lagunas Norte has a positive water balance.

Electricity is provided by a private-owned generation company and delivered to Lagunas Norte through a high voltage power line connected to the National Grid in Trujillo.

PHYSIOGRAPHY

The mine area is dominated by rolling hills and rugged mountains with steep-sided valleys. The area is vegetated with natural grasses and small shrubs. Rock outcrops and shallow soils predominate in the valleys. The Mine is located in a region of high seismic activity .

6 HISTORY

MBM executed an Option Contract to acquire the Acumulación Alto Chicama mining concession on February 28, 2001 following an auction held by Centromin. Centromin and MBM signed the Public Deed of the Mining Option Contract on March 28, 2001. The option had a one-year term extendable three times until February 28, 2005, and included minimum exploration investment commitments.

MBM commenced a field program at Alto Chicama in March 2001, which included geologic mapping, geochemical sampling, and ground geophysics. This work resulted in the identification of targets for drill testing. Drilling commenced in mid-2001 and the initial program identified the Las Lagunas Norte area as justifying detailed follow-up. Subsequent drilling was concentrated in the Las Lagunas Norte area.

Pursuant to the mining option contract, MBM exercised its purchase option on December 2, 2002, over the Acumulación Alto Chicama mining concession. The transfer agreement and its Public Deed were executed on December 12, 2002, and MBM's title to the concessions was registered before the Trujillo Public Registry on March 21, 2003.

On April 2, 2004, the Alto Chicama environmental impact assessment (EIA) received regulatory approval by means of Directorate Resolution No. 118-2004-MEM/AAM.

On April 12, 2004, MBM was granted the Plant Construction Authorization by means of Directorate Decree No. 174-2004-MEM-DGM/PDM, which authorized MBM to construct and install the Alto Chicama beneficiation plant and related facilities.

The construction started immediately in 2004. A total amount of US$321 million was invested and during March 2005 the first ore was placed on the leach pad. The first pour was realized in June 2005, ahead of schedule and within budget.

In February 2010, Barrick filed an amendment to the EIA (the First EIA Amendment) which proposed certain modifications to some of the mine facilities at Lagunas Norte. The First EIA Amendment was approved by the environmental mining authority in August 2010. Barrick completed construction and start-up of a CIC plant in 2013 and a new leach pad (Phase 5), secondary treatment plant and operational ponds in 2014. A new reverse osmosis water treatment plant was completed in 2014 and achieved start-up in February 2015.

As of the end of 2014, the mine has recovered 8.4 Moz of gold and 7.8 Moz of silver from approximately 201 Mt of ore averaging 1.59 g/t Au and 3.6 g/t Ag.

7 GEOLOGICAL SETTING AND MINERALIZATION

REGIONAL GEOLOGY

The regional geology is dominated by a thick sequence of Mesozoic marine clastic and carbonate sedimentary rocks, which are bounded to the west by the Mesozoic to Early Tertiary Coastal Batholith and to the east by the Precambrian metamorphic rocks of the Marañón Complex. The Mesozoic sequence has been affected by at least one and possibly two stages of deformation during the Andean Orogeny. The volcanic rocks of the Calipuy Group unconformably overlie the Mesozoic rocks. There are four recognized stages of volcanism in the area:

1. Island arc volcanism in the Lower Jurassic
2. Island arc volcanism in the Lower Cretaceous
3. Plutonism in the Upper Cretaceous and Lower Tertiary
4. Continental volcanism and associated intrusions in the Tertiary

The Jurassic island arc developed 100 km west of the current coastline of Peru. During this time, a marine basin developed between the magmatic arc and the emergent cratonic zone to the east. The Chicama Formation, which consists of shales and bituminous shales and arenites, was deposited in the basin during this period. This formation hosts coal deposits that have been exploited since the early 1900s.

Island arc volcanism continued during the Lower Cretaceous with migration of the arc to the east. Active volcanism resulted in deposition of a thick sequence of volcanic and volcaniclastic rocks. In the Alto Chicama region, the Lower Cretaceous is characterized by deposition of clastic sediments of the Chimú (quartz sandstones intercalated with mudstones) and Carhuaz formations (dirty sandstones interbedded with shales).

The regional geology is shown in Figure 7-1. The Lagunas Norte Mine is on the Alto Chicama property, which is located approximately mid-way between the Pierina gold mine to the south and Yanacocha gold mine to the north.

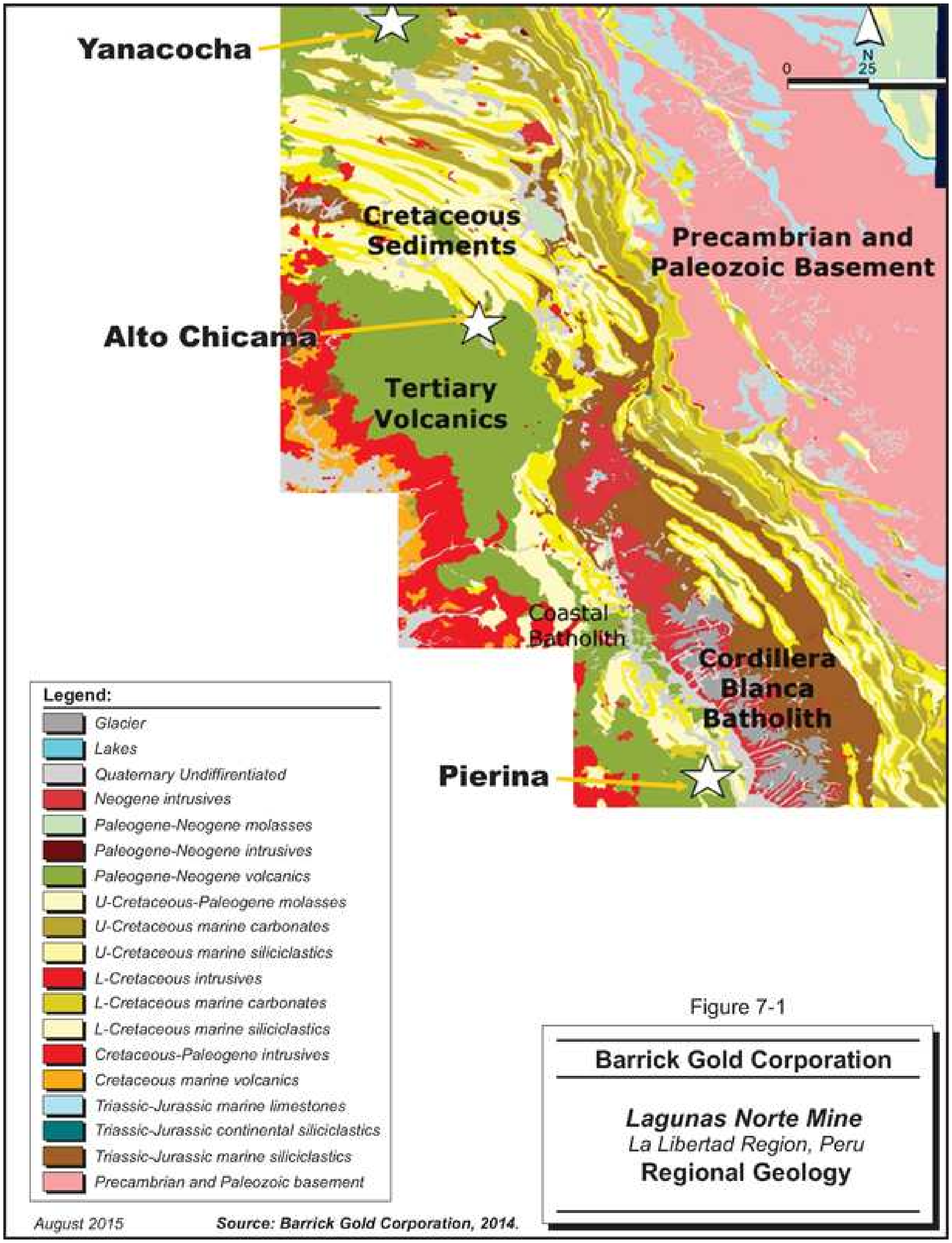


Figure 7-1

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru
Regional Geology

LOCAL GEOLOGY

The local geology consists of sedimentary rocks from the Jurassic to Cretaceous age overlain by younger volcanic rocks. The local stratigraphy and structure is described below and is mostly excerpted from MBM (2009).

STRATIGRAPHY

JURASSIC

Chicama Formation

The Chicama Formation comprises thinly interbedded mudstone, bituminous mudstone, siltstone, and minor sandstone with local intercalations of clay and reworked tuffaceous material. These terrigenous sediments were deposited in a shallow, inland-sea basin flanked to the east by the emerged continent and to the west by a volcanic arc. The sediments eroded from the continental side are mainly quartz sands, while the sediments derived from the volcanic arc are typically clay-rich and tuffaceous material. The shallow, restricted nature of this basin resulted in the development of a reducing environment, which favoured the formation of organic deposits. These organic deposits are present as bituminous and anthracitic material or as coal beds.

CRETACEOUS

Lower Cretaceous

The Lower Cretaceous is characterized by clastic sedimentation in a highly oxygenated open sea environment. To the east, the continent was affected by continuous uplift concurrent with basin subsidence. These conditions resulted in a significant accumulation of detrital sediments. Also, during this period, the island arc to the west of the sedimentary basin was subjected to intense erosion due to a reduction in magmatic activity. This resulted in the formation of a highly oxygenated, open sea environment as opposed to the reducing conditions created by the inland sea during the Jurassic.

Chimú Formation

The Chimú Formation rocks are almost exclusively composed of very clean quartz sand. This formation is characterized by a second order, fining upwards sequence beginning with deposition of coarse, angular, thickly bedded sands followed by upwardly thinning beds of finer sand terminating in clay size material. These rocks have been regionally metamorphosed into highly resistant grey to white quartzite. Coal and mudstone sequences were deposited in associated deltaic environments. The Chimú Formation is the main host rock at the Lagunas Norte deposit.

Santa Carhuaz Formation

The Santa Carhuaz Formation overlies the Chimú and records sediment deposition during a relatively passive tectonic period. The Carhuaz Formation consists of grey, dirty sandstone with a red and purple hue interbedded with grey mudstone. White quartzite beds are interbedded with sandstone and mudstone in the upper portion of this sequence.

Farrat Formation

The Farrat Formation consists of thick, white sandstone beds that commonly display planar cross stratification and locally develop pebble conglomerates. The Farrat Formation is similar to the Chimú Formation, however, the Farrat Formation lacks the coal beds and grey colour observed in the latter.

During the Upper Cretaceous and part of the Lower Tertiary, extensional tectonism facilitated the emplacement of plutons along the length of the coast, culminating in the emplacement of the Coastal Batholith west of the Mine area.

TERTIARY (MIOCENE)

Calipuy Group

During the Tertiary, the magmatic arc migrated further east initiating the onset of continental volcanism and the development of small volcanic arcs oriented in a south-southwest/north-northeast direction. This event resulted in the present day alignment of the volcanic structures of the Calipuy in the area southwest of Huamachuco, east of the deposit area. The Calipuy Group rocks are calc-alkaline in composition and are predominately andesite, with lesser dacite and rhyolite observed. The volcanic structures are predominantly domes or dome complexes.

STRUCTURE

The Mesozoic sequence has been affected by at least one and probably two stages of Early Tertiary deformation during the Andean orogeny (Lewis, 2002). The earlier stage is inferred from a regional angular unconformity between the base of the Calipuy Group (Eocene epoch) and the folded Mesozoic rocks. This deformation event generated northeasterly verging folds and southwest dipping thrust faults (Lewis, 2002). The second stage is inferred from an unconformity within the Calipuy Group at 44 to 40 Ma (Noble et al., 1990). The local geology and stratigraphy is shown in Figure 7-2.

PROPERTY GEOLOGY

A property geology map and generalized stratigraphic column are provided in Figures 7-3 and 7-4. The unit thicknesses in the stratigraphic column are shown for clarity but are not representative of actual thickness.

The round Shulcahuanca Dome is a prominent and sacred topographic feature that is located immediately west of the Lagunas Norte pit. This feature has been preserved for the local communities and restricts the pit wall in this area (Figure 7-5).

Figure 7-6 presents a northwest looking cross-section through the deposit. The deposit area lies within the Chimú Formation, exposed along the northeast limb of an anticlinal fan cored by Chicama Formation rocks. The deposit is locally faulted by relatively steeply dipping structures. The mineralization is primarily controlled by stratigraphy and lithologic contacts; although both high and low angle structures acted as conduits for mineralizing fluids and are important mineralization controls on a local scale.

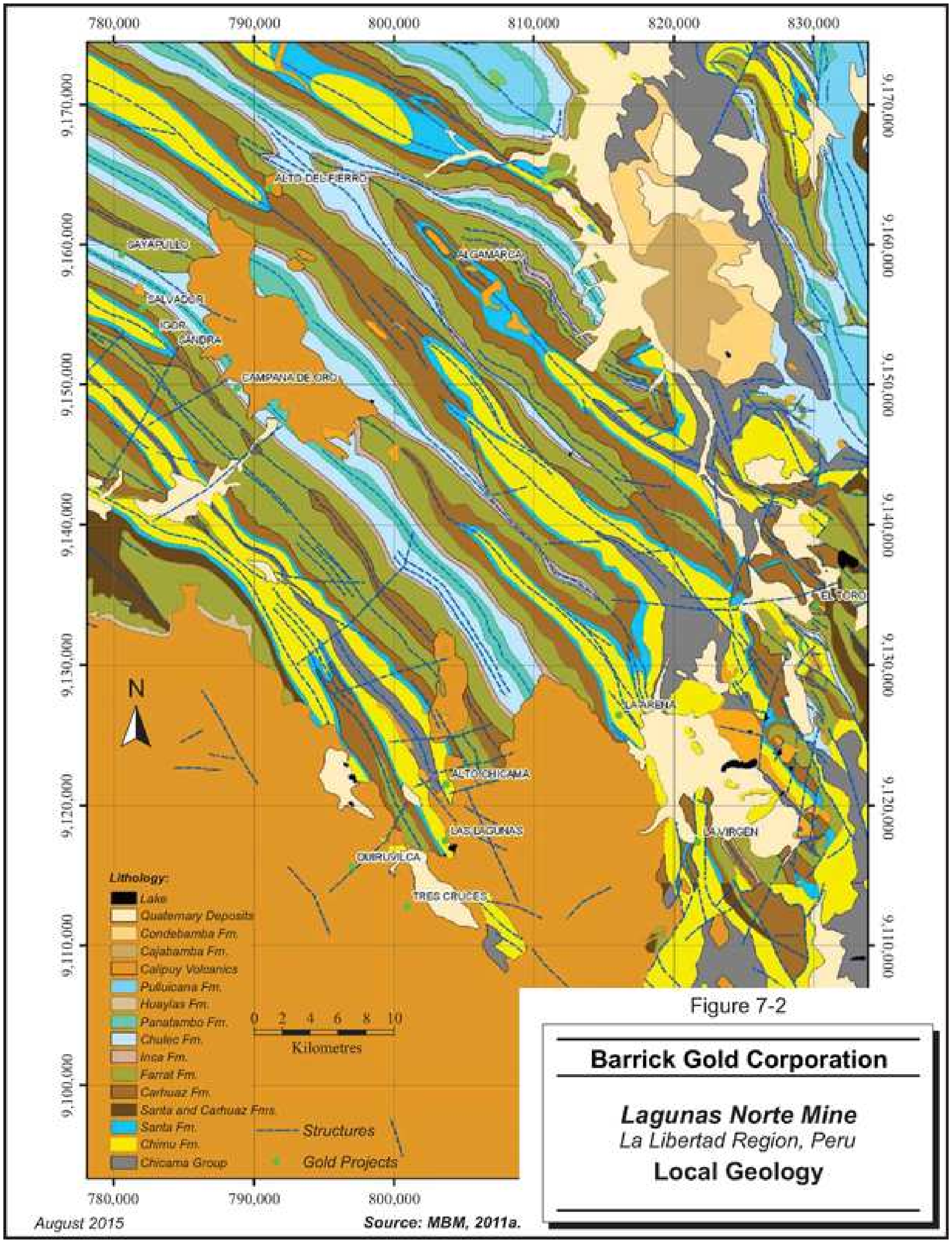
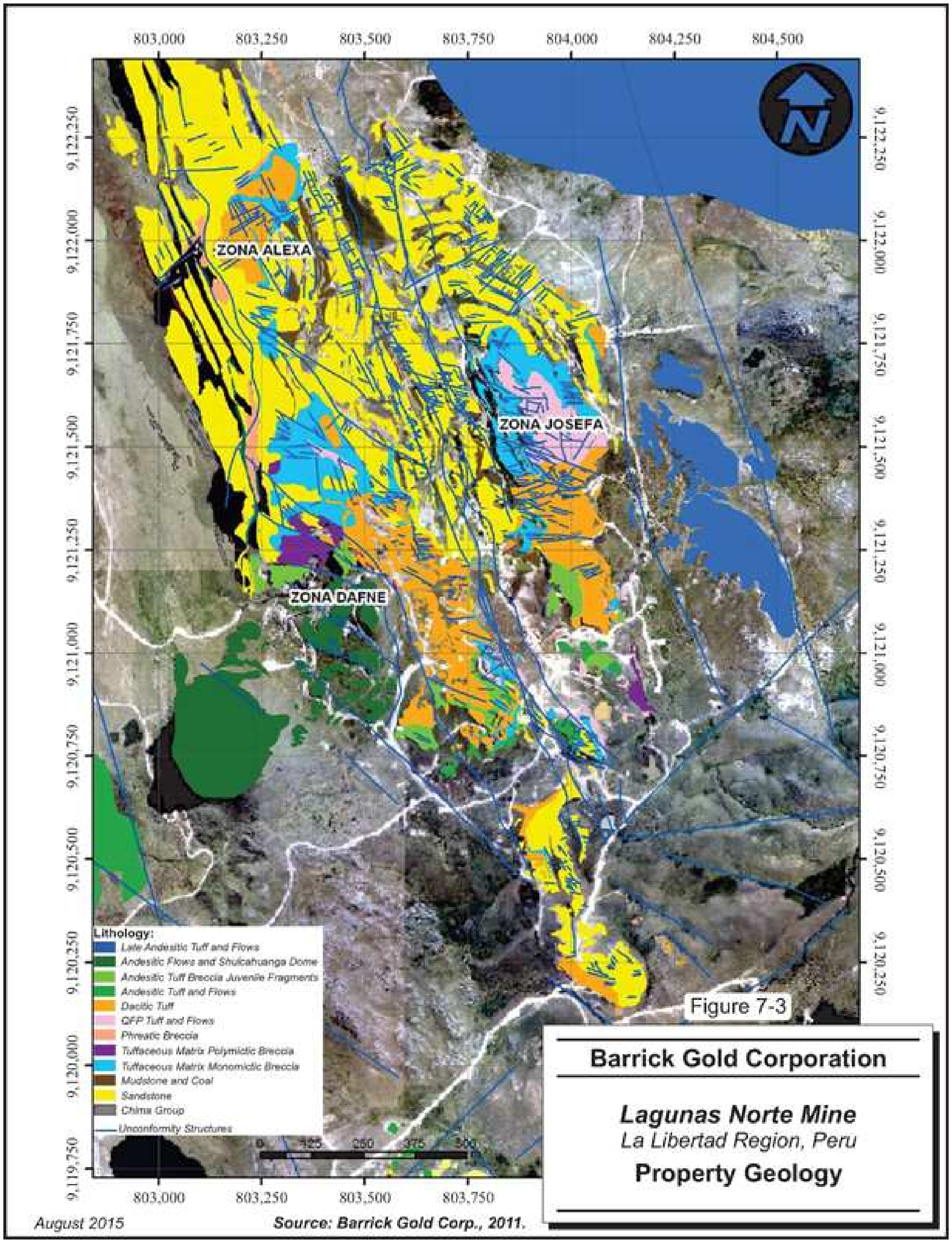


Figure 7-2

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru
Local Geology


803,000
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9,121,250
9,121,000
9,120,750
9,120,500
9,120,250
9,120,000
9,119,750
ZONA ALEXA
ZONA JOSEFA
ZONA DAFNE
N
Lithology:
Late Andesitic Tuff and Flows
Andesitic Flows and Shulcahuanga Dome
Andesitic Tuff Breccia Juvenile Fragments
Andesitic Tuff and Flows
Dacitic Tuff
QFP Tuff and Flows
Phreatic Breccia
Tuffaceous Matrix Polymictic Breccia
Tuffaceous Matrix Monomictic Breccia
Mudstone and Coal
Sandstone
Chimu Group
Unconformity Structures
0 125 250 375 500
Figure 7-3
Barrick Gold Corporation
Lagunas Norte Mine
La Libertad Region, Peru
Property Geology
August 2015
Source: Barrick Gold Corp., 2011.

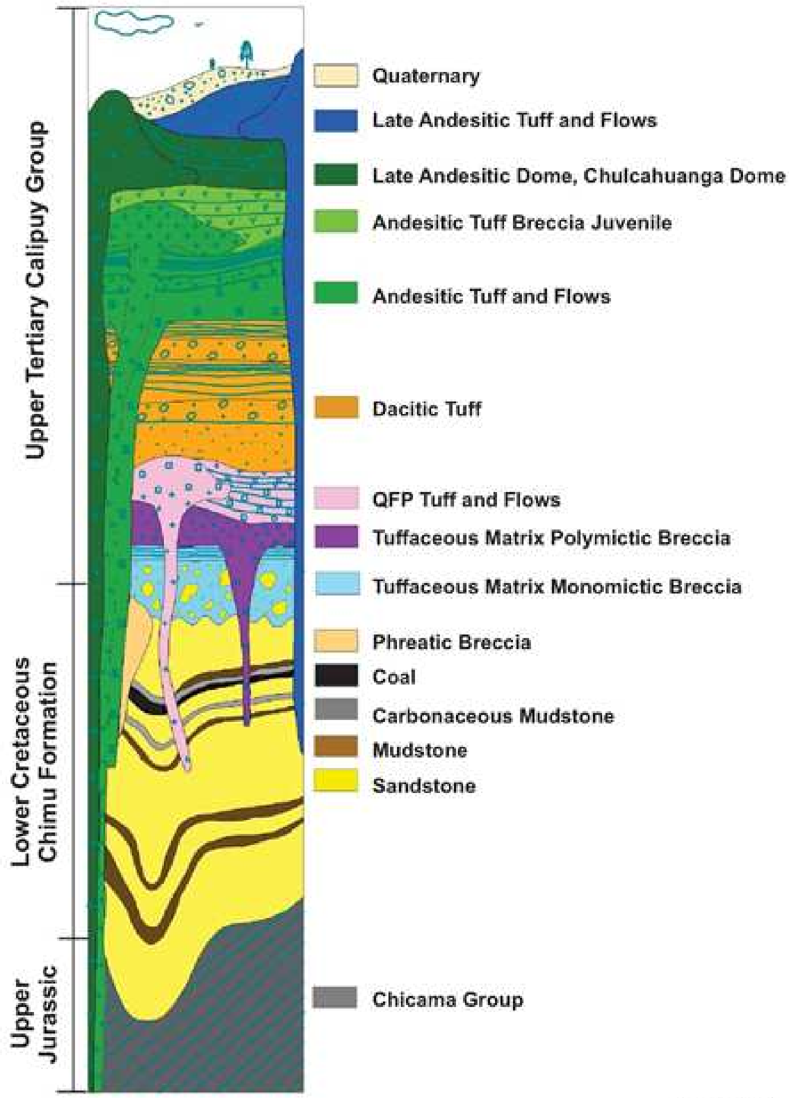


Figure 7-4

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru
Stratigraphic Column

Thickness of units are shown for clarity but are not representative of actual thickness

August 2015

Source: Barrick Gold Corp., 2007.

August 2015

Source: Barrick Gold Corporation, 2015.

Figure 7-5

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru

Shulcahuanca Dome

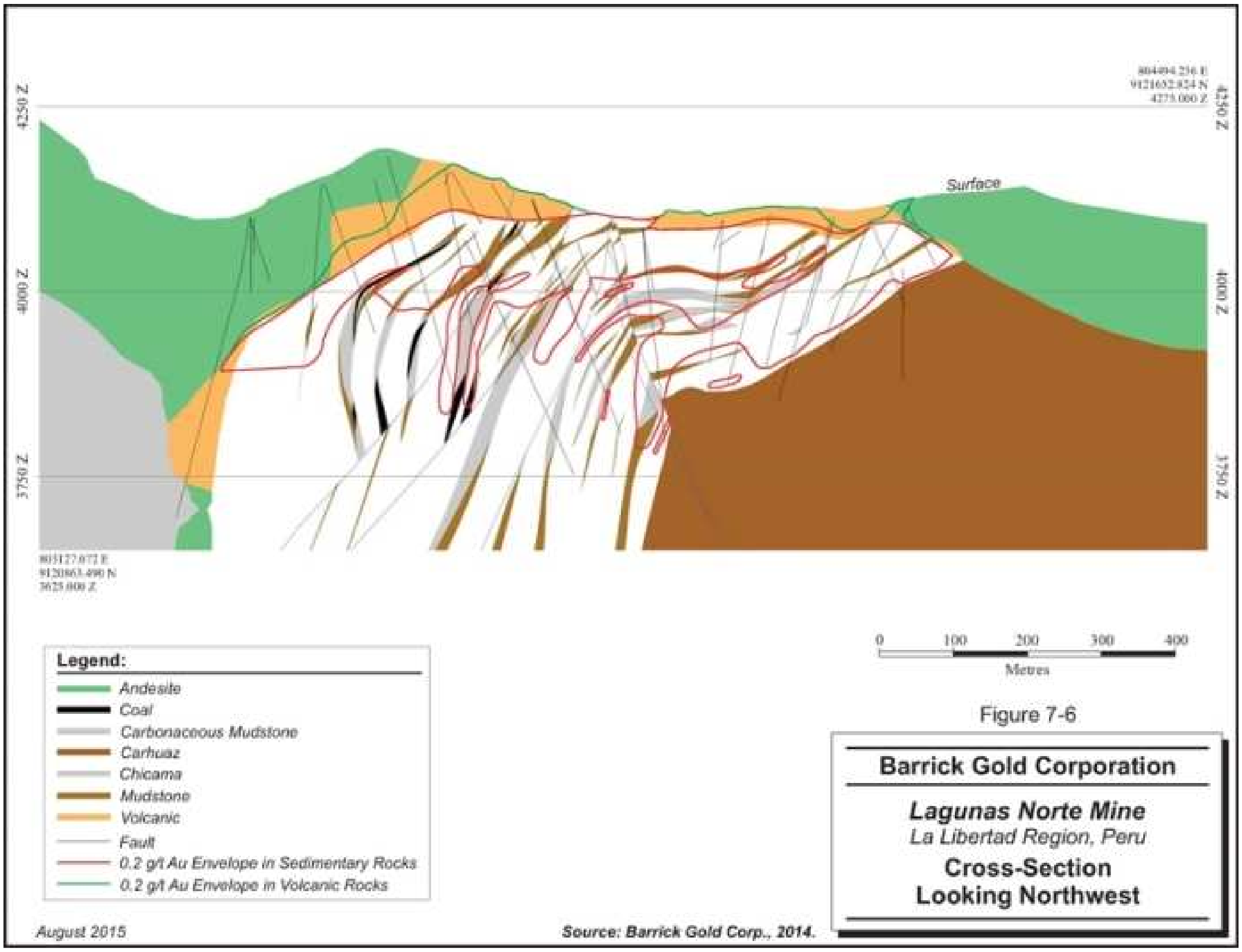


Figure 7-6

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru
Cross-Section
Looking Northwest

MINERALIZATION

The Lagunas Norte mineralization occurs in the southeast portion of the Alto Chicama property. The mineralization is finely disseminated and is hosted mostly by siliclastic sedimentary strata.

The mineralization within the present pit extends for approximately two kilometres in the north-northwest direction by approximately two kilometres in the east-northeast direction and for more than 200 m vertically.

MBM has defined an alteration and mineralization sequence involving up to four distinct stages, including the following;

Stage 1: an early period of massive silicification

Stage 2: intense acid leaching accompanied by finely-disseminated sulphide

Stage 3: deposition of druzy quartz in vugs and open fractures

Stage 4: a second stage of sulphide mineralization with coarse pyrite, enargite, and sulphosalts

Mineralization is the result of multiple volcanic and hydrothermal events. It is hosted in both the Tertiary volcanics of the Calipuy Group and the underlying Cretaceous sedimentary rocks of the Chimú Formation. The alteration associated with the mineralization is typical of a high-sulphidation epithermal environment, characterized by silica (SiO_2), surrounded by alunite [$KAl_3(SO_4)_2(OH)_6$], dickite [$Al_2Si_2O_5(OH)_4$] and pyrophyllite [$Al_2Si_4O_{10}(OH)_2$]. Trace elements typically associated with these deposits include copper, arsenic, barium, bismuth, zinc, lead, and variable amounts of mercury (Silberman and Berger, 1985). The deposit has very low concentrations of carbonate minerals or other potentially acid neutralizing minerals.

There are both stratigraphic and structural controls on the mineralization. Mineralizing fluids ascended along the main fault systems and migrated laterally along stratigraphic contacts in both the sedimentary and volcanic rocks. At least two stages of sulphide mineralization are recognized. The sulphide assemblage comprises mainly pyrite (FeS_2) with lesser amounts of enargite (Cu_3AsS_4) and occurs as replacement structures, veins, and disseminations in volcanic breccias and highly fractured and locally brecciated Chimú sandstones. Most of the mineralization (75%) occurs as oxide material, with approximately 25% occurring as sulphide material. Supergene oxidation has altered a large part of the sulphide assemblage to iron oxides and, to a lesser extent, sulphates. The extent of this oxidation ranges from a few metres to more than 300 m below surface. Approximately 90% of the mineralization is contained within the Chimú sediments and the balance is hosted in the Calipuy volcanic rocks.

The gold grade times thickness contours clearly show the Lagunas Norte deposit is approximately two kilometres by one kilometre wide (Figure 7-7).

DEPOSIT MINERALOGY

Sulphide occurrences are dominantly pyrite and enargite but also include traces of arsenopyrite, chalcopyrite, and covellite, with oxidation and alteration states through to iron oxides, iron sulphates, and elemental copper.

Gold occurs primarily as fine discrete particles in open silicified vugs, fine particles or disseminated gold within iron oxides, in gold-silver electrum, and as fine free gold along fracture surfaces. Silver mineralization is noted as occurring primarily as an electrum with gold, as finely disseminated native silver, or as a solid solution within remnant sulphides. Copper mineralization is present primarily as enargite, with lesser copper associations as chalcopyrite, or oxidized species including native copper.

Carbonaceous mudstones are composed chiefly of pyrophyllite with lesser amounts of quartz and minor amounts of nacrite clay, aluminum oxide and phosphate, and zirconium-bearing silicates. Coal seams typically have the appearance of a moderate-grade coal, with significant preg-robbing potential. Samples of the least sulphidic coal seams (<5% sulphur) with highest grade (>40% total carbonaceous material (TCM)) returned an average 24.9% ash content which far exceeds the 5% average of local informal operations and this represents a potential problem for coal burning furnaces.

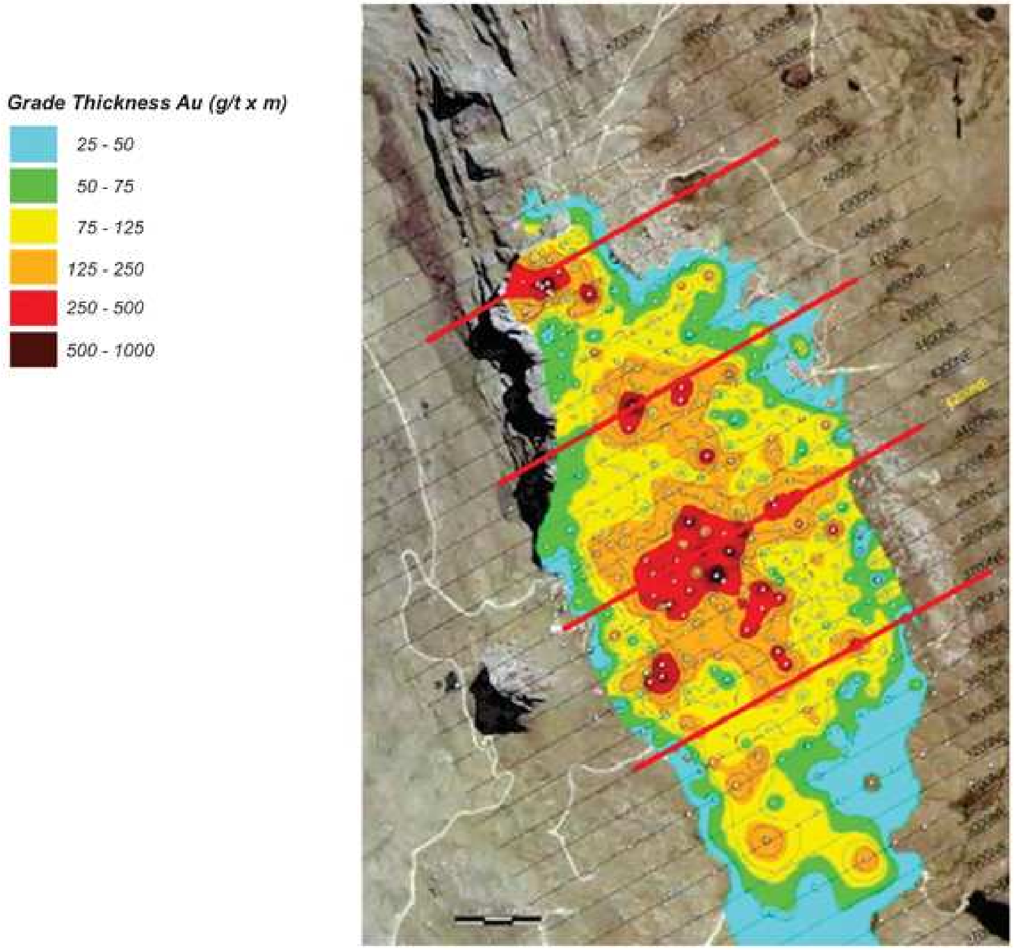


Figure 7-7

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru

Gold Grade Thickness Contours

August 2015

Source: MBM, 2011a.

COAL AND CARBONACEOUS MATERIAL

Uncommon to most gold deposits, the Lagunas Norte deposit overprints both Tertiary volcanic rocks and basement Cretaceous sedimentary rocks, including variably carbonaceous, fine grained sedimentary rocks. Footwall rocks to the Lagunas Norte deposit of both the Chicama and Carhuaz formations are dominated by black carbonaceous mudstones but host no significant amounts of mineralization known to date. As some of the Tertiary volcanic rocks ripped through underlying carbonaceous sedimentary rocks of the Chicama Formation, some of these also carried carbonaceous material in their matrix (finely ground), or as coarser individually distinguishable fragments.

In the geological interpretations on sections and level plans, fine grained sediments, such as mudstones, siltstones, and interbedded sandstones, are grouped together. The Chimú Formation sediments are hence divided up in the geological model as sandstone, non-carbonaceous fine grained units, carbonaceous fine grained units, and coal. Even the narrowest carbonaceous intervals are described in the drill logs to aid the interpretation work.

The carbonaceous content has been described both qualitatively in geologic descriptions and quantitatively in terms of TCM in selected LECO analysis of carbonaceous and potentially carbonaceous rocks.

TCM contents range from over 67% for anthracitic coal down to 0% for non-carbonaceous lithology such as sandstone, which is the dominant lithology at Alto Chicama.

There is a good correlation between rocks described as carbonaceous by Alto Chicama geologists and measured TCM values. Many checks have been done to confirm this and a detailed relogging campaign was carried out so as not to miss significant carbonaceous units.

Although carbonaceous materials do occur adjacent to mineralized rocks, there is little significant gold within the carbonaceous rocks themselves. A few notable exceptions exist to this rule, but generally plots of TCM versus gold content clearly show inverse relationships.

It appears that the same fluids responsible for depositing the gold mineralization probably destroyed or leached out carbonaceous material from fine grained sedimentary rocks as part of the alteration process. Therefore, the best mineralized zones have the least amount of associated carbonaceous materials. Conversely, at depth where mineralization becomes more structurally controlled, there is an increase in the abundance of carbonaceous units.

MATERIAL CLASSIFICATION

The results of metallurgical testwork indicate that the metal recovery of the materials at Alto Chicama decreases with increased carbonaceous material content and/or increased content of sulphur or copper. The aforementioned materials are therefore referred to as “contaminants”.

CARBONACEOUS MATERIAL

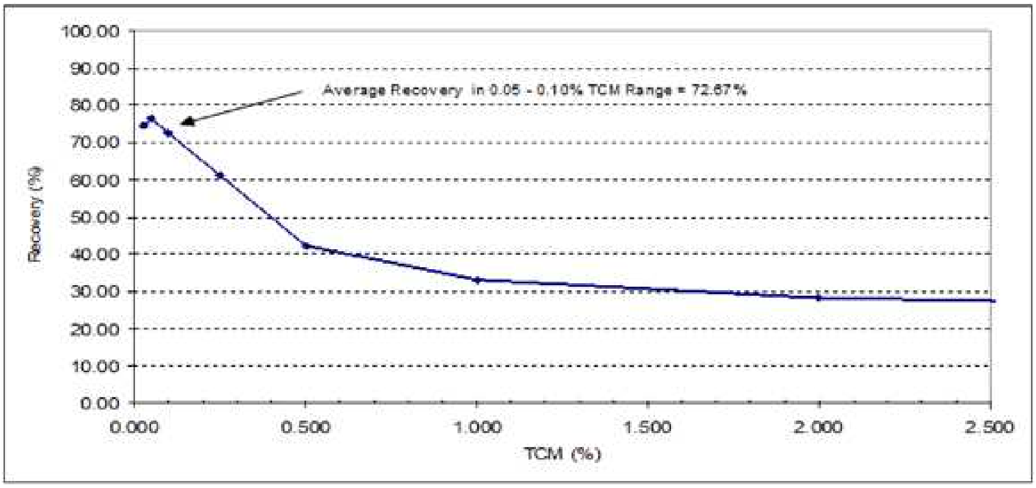
Carbonaceous material, as defined by TCM data, has been collected in many campaigns at Alto Chicama in order to improve the geometallurgical model and has been demonstrated by metallurgists to have a strong preg-robbing effect on gold-rich sodium-cyanide leaching. To evaluate this effect, sampling of carbonaceous lithologies for analysis of TCM, for recovery and for preg-robbing potential has been carried out to date on thousands of samples covering potentially carbonaceous intervals within the pit.

Recovery is simply a measure of what percent of the gold is extracted by cyanide-leach from the original sample. Preg-robbing potential has been measured with several “spike” tests consisting of adding a fixed amount of gold to a cyanide leach test and measuring how much gold remains in the solution. If the recoverable gold plus the fixed amount added remains in solution the sample is not considered to be preg-robbing. If on the other hand there is less gold than the fixed amount added plus the recoverable amount, the percent robbed is calculated by determining the amount that is missing as a fraction of the amount that should have remained in solution.

Based on analysis at Alto Chicama, it could be argued that up to 6% preg-robbing potential values based on “spike” tests are not significant as samples in the low preg-robbing range are almost as likely to return up to 6% more gold as they are of returning with 6% less gold. At 10% preg-robbing, the values become somewhat significant. Hence, samples are not considered to be “significantly” preg-robbing if they return values under 10% (MBM, 2009).

The effect of TCM on recovery is obvious when TCM analysis is plotted against recovery as shown on Figure 7-8.

FIGURE 7-8 TCM VERSUS GOLD RECOVERY



From MBM (2009)

The average recovery drops sharply somewhere after 0.1% TCM, stabilizing around a 30% recovery above approximately 1.0% TCM. Ongoing testwork by the mine metallurgical group suggests that no significant preg-robbing occurs for materials with less than 0.2% TCM.

COPPER AND SULPHIDES

Copper and sulphides are presented as contaminants as a result of their affinity for cyanide absorption and acid rock drainage (ARD) potential. Assays for copper and Leco S% are used to determine the classification of material contaminated with these minerals.

WASTE

With respect to the classification of waste, LECO S% limits have been set to segregate potentially acid generating (PAG) waste from non-acid generating (NAG) waste to ensure that all PAG material is deposited in the waste rock facility (WRF), whose drainage is collected in the collection pond and treated in the adsorption-desorption and refining (ADR) plant.

Coal was originally planned to be stockpiled separately, with a constantly rotating inventory, reflecting the assumed use of this product in some possible economic or social manner.

However, high carbonaceous materials with acceptable amounts of sulphur and ash content have not been encountered in significant mining widths to serve this propose.

MATERIAL CLASSIFICATION SYSTEM

Materials with acceptable levels of contaminants are crushed and processed in the Clean Heap Leach Facility (CHLF), while those with elevated contaminant levels are processed as run-of-mine (ROM) in a Single Pass Heap Leach Facility (SPHLF) where the effect of the contaminants on the recovery of metal can be minimized.

The specific metallurgical classification system for the various ore and waste material types is shown in Table 7-1.

TABLE 7-1 MATERIAL CLASSIFICATION
Barrick Gold Corporation – Lagunas Norte Mine

Material	Type	Description	Destination	Au (g/t)	TCM (%)	S 2- (%)	Cu (ppm)	Au Rec (%)	Code
Ore	M1	Clean oxide	Crusher, Leach Pad, Stockpile	0.400	< 0.1	< 0.25	—	82.9%	11
Ore	M1_LG	Clean oxide	Crusher, Leach Pad, Stockpile	0.239	< 0.1	< 0.25	—	82.9%	11
Ore	M1A	Clean with little sulphides	Crusher, Leach Pad, Stockpile	0.238	< 0.1	≥ 0.25 & < 0.40	< 350	76.5%	12
Ore	M2AL	Slightly carbonaceous	Single pass, Crusher, Stockpile	0.253	≥ 0.1 & < 0.2	< 0.25	—	72.9%	19
Ore	M2AH	Carbonaceous material	Single pass, Crusher, Stockpile	0.378	≥ 0.2 & < 0.5	< 0.25	—	64.1%	20
Ore	M3	With sulphides	Single pass, Crusher, Stockpile	0.287	< 0.10	≥ 0.40	< 350	67.0%	16
Ore	M3A	With sulphides and copper	Single pass, Crusher, Stockpile	0.947	< 0.10	≥ 0.25	≥ 350	21.2%	17
Ore	M3B_Low	With sulphides and TCM	Single pass, Crusher, Stockpile	0.873	≥ 0.1 & < 0.5	≥ 0.25	—	30.0%	18
ROM	M2B	Highly carbonaceous	Single pass, Stockpile	0.861	≥ 0.5 & < 1.5	< 0.25	—	43.0%	15
ROM	M3B_Mid	With sulphides and TCM	Single pass, Stockpile	0.751	≥ 0.5 & < 1.5	≥ 0.25	—	31.7%	21
Waste	M3BH	Highly carbonaceous	Stockpile (Material for CIL)	0.700	≥ 1.5	≥ 0.25	—	29.8%	22
ROM	Mor_Clean*	Clean Colluvial	Leach Pad	0.274	< 0.1	< 0.25	—	73.2%	13
ROM	Mor_Cont*	Colluvial with sulphides and carbonaceous material	Single pass	0.375	≥ 0.0 & < 1.5	≥ 0.25 & < 1.65	—	61.7%	14
ROM	Mor_Clean	Clean Colluvial	Leach Pad	0.237	< 0.1	< 0.25	—	73.2%	13
ROM	Mor_Cont	Colluvial with sulphides and carbonaceous material	Single pass	0.331	≥ 0.0 & < 1.5	≥ 0.25 & < 1.65	—	61.7%	14
Waste	D1	Non-acid generator	Dumps, Construction, Ballast			<0.1			51
Waste	D2	Potential acid generator	Dumps			>=0.1			52
Waste	D3	Carbonaceous	Dumps						53

8 DEPOSIT TYPES

Lagunas Norte differs from many other large high-sulphidation epithermal gold deposits of the Andes in that a majority of the known resource is contained within Cretaceous siliciclastic sedimentary rocks, and a relatively small portion is within the Tertiary volcanic sequence that is the primary host elsewhere (e.g., Yanacocha, Pierina). The main host rock sequence at Lagunas Norte consists of quartz sandstones and subordinate interlayered mudstone, siltstone, and carbon-rich siltstone, correlated with the Lower Cretaceous Chimú Formation (Lewis, 2002).

Another significant characteristic of the Lagunas Norte deposit is the variable carbonaceous content found within the siliclastic sedimentary strata.

9 EXPLORATION

Field exploration on the Alto Chicama property by MBM commenced in March 2001. Following detailed mapping, geophysical and geochemical surveys, PIMA analysis, and channel sampling, drilling commenced in June 2001. Details on the field exploration surveys are not discussed because they are not relevant now that the mine is in production. By mid-September 2002, 298 holes had been drilled and twelve drill rigs were active. By the end of December 2002, 452 holes had been completed for a total of 113,338 m of drilling. Most of the Lagunas Norte area was diamond drilled on a grid of approximately 50 m by 100 m (or 72 m average spacing). In 2002, environmental, metallurgical, and engineering studies, together with cost estimation and economic analysis, were started, and by January 31, 2003, the first reserve estimate for Lagunas Norte was completed.

Drilling has been concentrated principally in the Lagunas Norte area, in the southeast portion of the Alto Chicama property. First pass reconnaissance exploration was completed outside Lagunas Norte over the Alto Chicama land holdings in 2004. The principal exploration targets defined and drill tested by MBM were the South Extension and Tres Cruces deposits, both located southwest of the current deposit (Figure 9-1). The Lagunas Norte oxide resource estimate includes mineralization at the South Extension.

In 2006, resource definition drilling commenced at the satellite deposits of South Extension and Tres Cruces. The infill drill program confirmed and upgraded the continuity of wide spaced mineralization for both prospects. Focus of the 2007 perimeter exploration projects was to expand both the mineralized strike extent and to infill the existing wider spaced intersections for confirmation of mineralization continuity.

Figure 9-1

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru
Satellite Deposits

August 2015 *Source: Barrick Gold Corp., 2015.*

10 DRILLING

The drill hole database has 993 diamond drill holes (DDH) totalling 184,184 m and 685 reverse circulation (RC) drill holes totalling 70,980 m (Table 10-1). Approximately 72% of the drill holes are DDH and the balance are RC. Overall, 1,678 drill holes totalling 255,164 m and comprising 193,088 samples were completed from 2001 to 2014 (Table 10-2).

TABLE 10-1 DDH AND RC DRILLING DETAILS
Barrick Gold Corporation – Lagunas Norte Mine

Year	DDH Holes	DDH Metres	DDH Samples	RC Holes	RC Metres	RC Samples
2001	17	2,715	2,127	—	—	—
2002	438	109,074	80,489	21	1,847	1,434
2003	273	48,517	36,544	35	3,425	1,945
2004	37	5,640	4,645	13	509	302
2005	10	837	716	—	—	—
2006	72	3,145	1,998	16	1,701	1,691
2007	26	1,063	—	68	6,778	6,982
2008	25	994	—	311	24,177	21,600
2009	19	3,487	1,883	—	—	—
2010	11	701	320	27	3,785	3,576
2011	14	2,229	1,577	78	9,261	7,339
2012	47	5,319	2,567	57	10,059	7,883
2013	4	464	—	10	2,110	856
2014	—	—	—	49	7,328	6,614
Totals	**993**	**184,184.14**	**132,866**	**685**	**70,980.07**	**60,222**

TABLE 10-2 DRILLING SUMMARY
Barrick Gold Corporation – Lagunas Norte Mine

Description	DDH & RC Holes	DDH & RC Metres	DDH & RC Samples
Grand Total	1,678	255,164.2	193,088

Over half of the metreage drilled up to 2014 was done in 2002 and 2003 and comprises almost entirely DDHs (Figure 10-1). Since 2007, there has been much more RC drilling relative to diamond drilling after the discovery that the gold grades from core samples were biased low relative to production and to RC samples. After recognizing that the DDH results are less reliable and generally understate the actual gold grade, Barrick began a program of re-drilling

DDH with RC holes and this has led to significant improvements in the production reconciliation results.

Drill hole collars have been surveyed and downhole surveys have been completed with a number of survey instruments, including mostly Sperry Sun and some Maxibor II up to approximately 2008, GyroSmart and MultiSmart in 2009, DeviFlex in 2010, and a Reflex gyroscopic instrument in 2011. Since 2011, GyroSmart was used. Most of the DDH have HQ size core and a number of holes were completed with NQ diameter rods to facilitate hole completion. Average core recovery is in excess of 95%.

Both core and RC holes are logged for lithology, stratigraphy, basic structural data, and sample recovery. The degree of alteration (argillization, silicification, carbon content, etc.) and the content of various elements, like pyrite and carbonaceous material, are also recorded. The core drilling is interpreted for more detailed structural data and to measure faults and bedding angles as well as rock mechanic properties (RMR) and core recoveries whenever possible. This data is entered directly into a geological database from handheld computers using standardized rock codes and descriptive information and is used for the interpretation of the geology, structure and alteration, as well as for the modelling of the mineralized zones.

The typical spacing for DDH holes is approximately 60 m, with lengths generally ranging from 200 m to 350 m. The RC drill holes are spaced approximately 50 m apart and the RC hole lengths vary from approximately 100 m to 200 m. The mineralized zones display variable dip, and holes are mostly drilled with steep dips, generally from -65° to -85°. Drill section lines are oriented at N60°E with holes drilled parallel to the sections. The drill holes are shown in Figure 10-2.

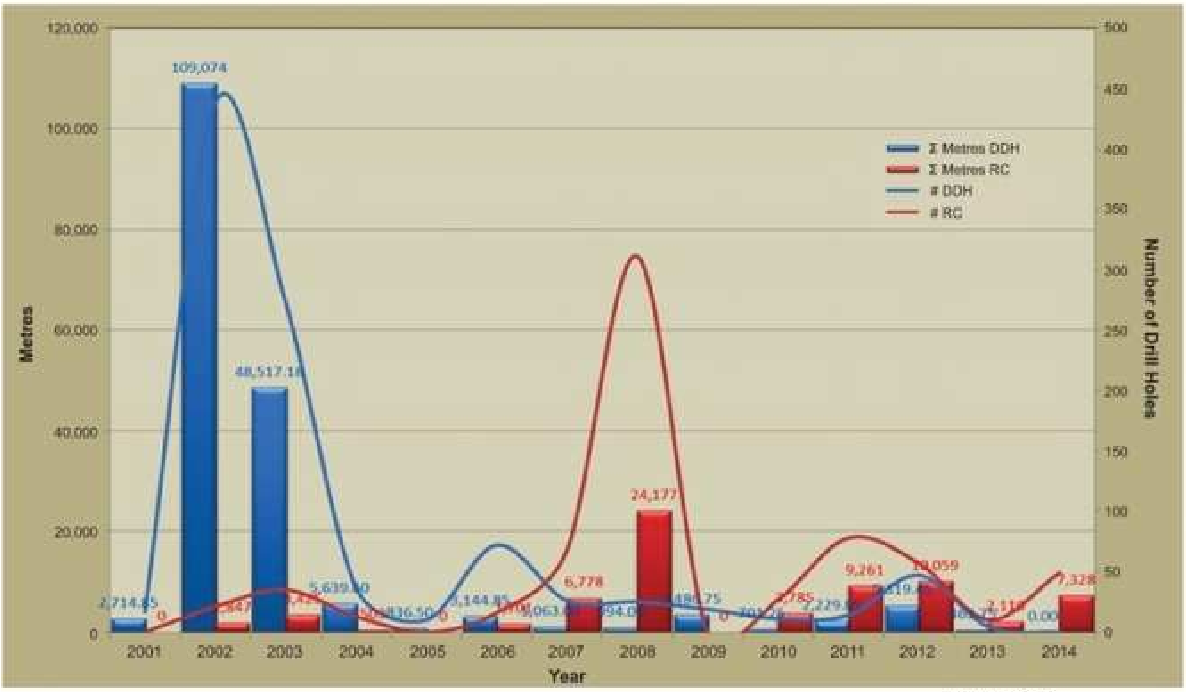


Figure 10-1

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru

DDH and RC Drilling by Year

August 2015

Source: Barrick Gold Corporation, 2015.

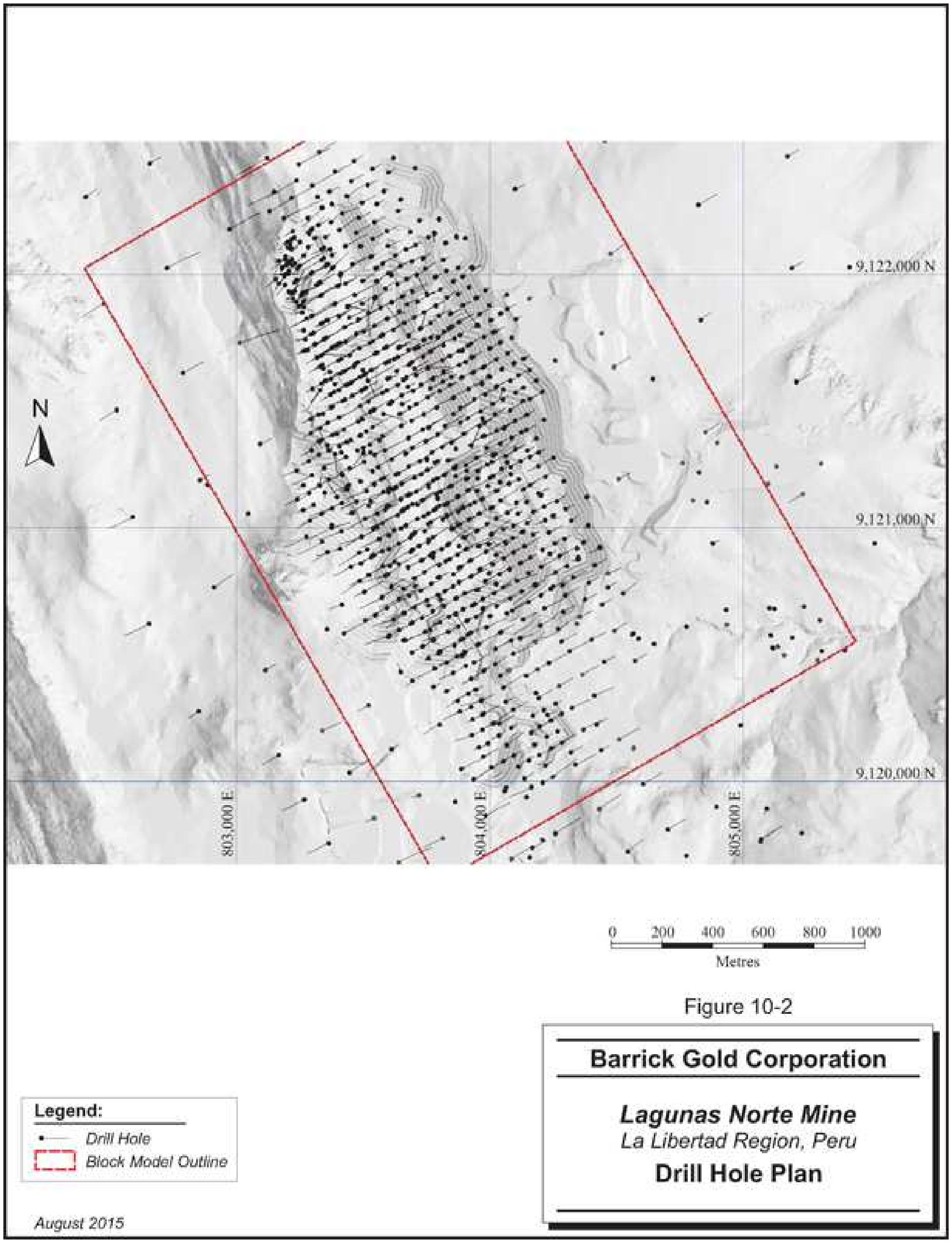


Figure 10-2

Barrick Gold Corporation

Lagunas Norte Mine

La Libertad Region, Peru

Drill Hole Plan

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

SAMPLING METHOD AND APPROACH

DIAMOND DRILL CORE

All core samples are tagged, bagged, sealed in sample bags, and forwarded to the sample preparation laboratory. Core is placed in metal trays at the drill site and transported to the core room where it is sorted, photographed, and examined for rock quality designation (RQD). The sample lengths are selected to honour both gross geological units and obvious geological features. Core sample lengths varied from 0.12 m to 8.1 m, with an average sample length of approximately 1.3 m. Sampled core is sawn into equal halves. One half is placed in a sample bag and the other half remains in the core box, which is stored in a secure location on site.

REVERSE CIRCULATION SAMPLES

All the chips from the drilling are collected and sent to the assay laboratory, except for a handful that are placed in a chip tray for geological logging. The samples are collected in either one or two metre intervals, and are identified with the hole number and the distance from the collar. The RC samples are approximately 35 kg to 40 kg. They are usually assayed for Au and for LECO (sulphur, sulphide, TCM, total carbon, total sulphur, CO_3, and arsenic).

BLAST HOLE SAMPLES

Cuttings from each blast hole are sampled and analyzed for grade and contaminant constituents (sulphur or carbon). The Lagunas Norte technical department has carried out extensive testing and evaluation of blast hole sampling methods and techniques and has developed a set of documented procedures for the entire process. The current sampling method involves cutting a cross-sectional sample through the cone of cuttings with the collected 6 kg to 10 kg sample bagged and tagged and logged using a digital palm pilot data collection system. Blast hole sampling locations are surveyed using a GPS system.

The data collected from the logging of the sample, the laboratory analysis, and the blast hole survey are incorporated directly into the acQuire grade control database system. The data are ultimately used to develop a grade control model for estimation of grades and material classification according to ore characteristics into digging polygons. Each polygon contains a single material type designation based on gold grade, carbonaceous content, and sulphur content.

The polygons are staked out on the mining bench and flagged according to material type. As excavation operations progress, the material that is loaded and hauled from each polygon and material type is tracked through the dispatch system through to its ultimate disposition location (crusher, stockpile, ROM leach pad, or waste dump).

RPA is of the opinion that the core, RC, and blast hole sampling procedures at Lagunas Norte are reasonable.

SAMPLE PREPARATION, ANALYSES AND SECURITY

SAMPLE PREPARATION

ALS Chemex installed a sample preparation laboratory at the Alto Chicama field camp in 2002 and performed all gold assays at its commercial laboratory in Lima. The sampling, sample preparation, and quality control procedures at the site have been reviewed and approved independently (Smee, 2002). Dr. Smee also conducted unannounced audits of the ALS Chemex laboratory in Lima in May 2002 and February 2003 and concluded that the facility is well-designed and well-operated. Dr. Smee recommended additions to the existing quality control procedures being used at the laboratory in May 2002 and all his recommendations were implemented (MBM, 2009).

Since the mine laboratory was commissioned in 2005, samples were prepared both on-site as well as off-site at commercial laboratories. The same sample preparation protocols were followed. ALS Chemex has been the primary laboratory except in mid-2009 and 2010 when SGS became the primary laboratory and ALS Chemex was switched to the secondary laboratory. Since 2014, Certimin S.A. has been the secondary laboratory.

Samples are first counted and checked against the sample submission sheet. The samples are dried and weighed and are then crushed to 70% passing two millimetres and split to approximately 800 g in a Jones riffle splitter. The entire 800 g split is pulverized to 85% passing 200 mesh in an LM-2 pulverizer. A 250 g to 300 g split of the pulverized pulp is shipped to the laboratory for analysis. All remaining crusher rejects and pulverized pulps are retained at site and stored. The pulverizer is cleaned with barren quartz and coarse and fine sieve tests are carried out on a regular basis.

ASSAYING

The exploration samples are sent to a commercial laboratory and the fire assay gold determinations use 30 g aliquots with atomic absorption spectrometer (AAS) finish. For results greater than 5 g/t Au, a second fire assay using a gravimetric finish is performed. The exploration samples are analyzed for gold, silver, copper, TCM, total sulphur, sulphide sulphur (S_2), arsenic, and mercury. Sulphate sulphur is calculated.

The blast hole samples are analyzed at the mine laboratory using a 30 g aliquot with an AAS finish. Results greater than 5 g/t Au are rerun using a gravimetric finish. A one gram sample is dissolved in two acids and AAS is used for silver and copper. An Eltra CS-2000 generates the sulphur and carbon results automatically. All production blast holes drilled in zones modelled as ore are sampled for gold, silver, and copper as well as for sulphur and carbon. Samples with greater than 0.1% sulphur are reanalyzed for sulphide sulphur and samples with greater than 0.05% carbon are reanalyzed for TCM. In material that is clearly waste, only one in four drill holes are assayed for gold and total sulphur. Holes that may contain ore or are near ore are sampled as if they were ore.

SAMPLE SECURITY

The core is logged and cut by MBM personnel within the secure Lagunas Norte mine site complex. Drill core is moved from the drill rig to the core shack by MBM personnel. Geological data recorded on the handheld computers is reviewed, field checked if necessary, and then uploaded to the main server at the end of every shift. Samples are delivered by MBM personnel to the sample preparation on-site or off-site facilities where the laboratory assumes sample custody.

MBM has tight database security protocols for the acQuire exploration and blast hole databases that control the level of access to authorized users. The acQuire database is backed up on a regular basis. The GVMapper logging software has full security levels controlled by the Database Administrator.

QUALITY ASSURANCE AND QUALITY CONTROL

MBM has very good quality control (QC) and quality assurance (QA) procedures that include the regular insertion of in-house standards, blanks, field duplicates, reject duplicates, and pulp replicates. In addition, pulps are sent to external laboratories on a regular basis. MBM has had QA/QC procedures in place since drilling commenced in 2001. In mid-2002, following a full audit of the Alto Chicama Project's sampling, analytical, and reporting procedures, Dr. Barry Smee implemented improvements to the QA/QC procedures.

A follow-up audit was conducted in July 2003 by Lynda Bloom of Analytical Solutions Ltd. The scope of this audit included a review of sampling, sample preparation, assaying, and quality control procedures. Ms. Bloom concluded that the sampling, sample preparation, and assaying procedures used for the Lagunas Norte drill core samples met or exceeded industry standards (Bloom, 2003).

The approximate insertion rates for exploration samples are summarized in Table 11-1. The actual insertion rates vary slightly by year and sample type. The QC insertion rates for blast hole samples sent to the Lagunas Norte laboratory also have similarly high levels, particularly when the large numbers of samples analyzed are considered.

TABLE 11-1 QC INSERTION RATES
Barrick Gold Corporation – Lagunas Norte Mine

Description	Approximate Insertion Rate
Standards	5%
Blanks	5%
Pulp Replicates	2%
Reject Duplicates	2%
Field Duplicates	3%
Sieve Tests (on rejects and pulps)	3%
External pulp replicates (more blanks and standards sent as well)	5%

Smee (2010) completed an independent review of the QC results from 2007 to 2010. The gold precision for field, reject, and pulp duplicates was approximately ±17%, ±8%, and ±7%, respectively, at 0.2 g/t Au. The external check assays compiled annually from 2007 to 2010 revealed no significant biases. The 2010 results indicated that the SGS gold assays were slightly higher than those at ALS Chemex and the certified reference material (CRM) results confirmed that the SGS gold assays had a minor positive bias.

Barrick personnel use a number of control charts and graphs to closely monitor the QA/QC results and reanalyses are periodically requested. The insertion rates and results are well documented and reveal no significant biases or precision problems.

RPA is of the opinion that the QA/QC procedures are very good and exceed standard industry practice. Reduction in the QC insertion rates, particularly for the blast hole samples, might be warranted.

In RPA's opinion, the sample preparation, analyses, and security are reasonable and appropriate.

12 DATA VERIFICATION

Smee (2003) used signed assay certificates to verify 15,600 assays in the database over a two day period and found only one error.

In 2007, MBM exported all of the collar coordinates in acQuire and verified them with the hard copy data available in the hard copy files. A small number of errors were found and corrected (Gómez, 2011). In 2007, all of the Sperry Sun photographic discs were reread and compared with the downhole survey values in acQuire. A small number of errors and invalid tests were found and corrected (Gómez, 2011).

In 2007, Scott Wilson RPA did some database spot checks and found no errors.

In 2009, MBM used the electronic assays certificates to check 7,902 assays, which represented approximately 5% of the assays in the acQuire database from 2001 to 2008 (Zapana, 2009). A relatively small number of errors were found including six samples that still had 10 g/t Au overlimit values that had not been replaced with the gravimetric finish reassays. Other errors were related to inconsistent handling of below detection limit values, reanalyses, and other minor inconsequential discrepancies.

Smee (2010) chose eleven drill holes at random from 2007 to 2010 and checked 1,410 samples for database entry errors by comparing the original assay certificates against the acQuire data. No significant errors were found. A minor problem related to not updating some 5 g/t Au and 10 g/t Au overlimit values with the follow-up gravimetric fire assay results was noted. Smee (2010) also noted that some of the drill hole hard copy folders were incomplete and that some of the assay certificates were only available as .csv files and not signed .pdf files. MBM subsequently requested and has now received signed .pdf assay certificates directly from the assay laboratories for most of the assays.

In 2011, MBM checked a minimum of 5% of the collar coordinate and downhole survey data in acQuire for 2008 to 2011 drill holes (Becerra 2011a and 2011b). Overall, MBM has checked 19% of the drill hole collar coordinates and downhole surveys for this time period (Table 12-1). In 2014, MBM also checked the assays for 1,926 samples in 13 drill holes and found no errors (Becerra, 2014).

TABLE 12-1 2008 TO 2014 DATA VERIFICATION
Barrick Gold Corporation – Lagunas Norte Mine

Year	Total Holes	Collars Checked	Percent of Collars Checked	Downhole Surveys Checked	Percent of Surveys Checked
2008	336	21	6%	21	6%
2009	19	9	47%	8	42%
2010	38	10	26%	10	26%
2011	82	11	13%	11	13%
2012	104	61	59%	61	59%
2013	14	0	0%	0	0%
2014	49	13	27%	13	27%
Totals	**642**	**125**	**19%**	**124**	**19%**

The ultimate validation of the reliability of the exploration drill hole database is provided by the good reconciliation between the resource model and production.

RPA used a number of data validation queries in Access and Vulcan and did some visual checks and found essentially no database validation problems, which is remarkable considering the database size. RPA is of the opinion that the drill hole database is valid and acceptable for resource estimation.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

Metallurgical testing was completed prior to the start-up of Lagunas Norte and metallurgical recovery calculations were developed at that time. Lagunas Norte is continuously and routinely testing the ore that is being mined using column leach tests and bottle roll tests in the on-site metallurgical laboratory.

The gold recovery is forecast using a set of formulae outlined by Steve Haggarty and Rodolfo Espinel in a 2004 memo that are routinely updated using the information generated from the testwork. On December 2014, the model was updated based on the results from column tests performed between 2006 and 2013. The estimated gold extraction for clean oxide ore is based upon grade-recovery relationships for clean oxide ore that is crushed. The formula is:

$$\%\ Au\ Extraction = 1.726\,x^3 - 14.89\,x^2 + 39.90\,x + 60.36$$

$$x = \text{Au (g/t)}$$

There are 15 ore types that are classified based on gold grade (Au, g/t), total carbonaceous material (TCM, %), sulphur (S^{2-} and S Tot, %), and copper concentration (Cu, ppm). They are defined in Table 13-1. Separate processing of the M3A and M3B_Low (also referred to as M3BL) ore types are being considered in the Refractory Project, which is presented in greater detail in Section 24. RPA is not aware of any processing factors or deleterious elements that could have a significant effect on potential economic extraction.

TABLE 13-1 ORE TYPES
Barrick Gold Corporation – Lagunas Norte Mine

Type	Definition	Au (g/t)	TCM (%)	S^{2-} (%)	Cu (ppm)
M1	Clean oxide	≥ 0.40	< 0.10	< 0.25	—
M1_LG	Clean oxide	≥ 0.239	< 0.10	< 0.25	—
M1A	Clean with little sulphides	≥ 0.238	< 0.10	≥ 0.25 & < 0.40	< 350
M2AL	Slightly carbonaceous	≥ 0.253	≥ 0.10 & < 0.20	< 0.25	—
M2AH	Carbonaceous material	≥ 0.378	≥ 0.20 & < 0.50	< 0.25	—
M3	With sulphides	≥ 0.288	< 0.10	≥ 0.40	< 350
M3A	With sulphides and copper	≥ 0.947	< 0.10	≥ 0.25	≥ 350
M3B_Low	With sulphides and TCM	≥ 0.873	≥ 0.10 & < 0.50	≥ 0.25	—
M2B	Highly carbonaceous	≥ 0.861	≥ 0.50 & < 1.50	< 0.25	—
M3B_Mid	With sulphides and TCM	≥ 0.751	≥ 0.50 & < 1.50	≥ 0.25	—
M3BH	Highly carbonaceous	≥ 0.700	≥ 1.50	≥ 0.25	—

Type	Definition	Au (g/t)	TCM (%)	S TOT (%)	Cu (ppm)
Moraines_Clean*	Clean Colluvial	≥ 0.274	< 0.10	< 0.25	—
Moraines_Contaminated*	Colluvial with sulphides and carbonaceous material	≥ 0.375	< 1.50	≥ 0.25 & < 1.65	—
Moraines_Clean	Clean Colluvial	≥ 0.237	< 0.10	< 0.25	—
Moraines_Contaminated	Colluvial with sulphides and carbonaceous material	≥ 0.331	< 1.50	≥ 0.25 & < 1.65	—

Notes:

- TCM – total carbonaceous material
- Moraines sent to stock before leach pad
- Updated August 2014 by F. Porras

Revised metallurgical models have been updated by the Process Department for specific material types based on testwork undertaken since 2004, with updated algorithms issued in subsequent memoranda (Vidarte, 2008a, 2008b, 2009; Bobadilla, 2012; Barrick, 2014c; Maguiña, 2014). The Process Department maintains the backup justification of the new algorithms. RPA is of the opinion that the recovery equations are reasonable and they are updated on a regular basis based on actual production data.

A summary of the current algorithms utilized for the Au and Ag recovery calculations is presented with source documentation for the algorithms presented (Table 13-2).

TABLE 13-2 METALLURGICAL MODEL RECOVERABLE RECOVERY ALGORITHMS
Barrick Gold Corporation – Lagunas Norte Mine

Type	Algorithm	Source
Gold		
CHLF - Crushed		
M1	= AuR	December 2014
M1_LG	= AuR	December 2014
M1A	See Appendix I	May 2014
M2AL		
$0.5 \geq Au_{(g/t)}$	$= (0.5740 - 0.7300 * TCM_{(\%)}) * Au_{(g/t)}$	August 2009
$0.5 < Au_{(g/t)} \leq 4.0$	$= (0.7200 + 0.0498 * Au_{(g/t)} - 0.7358 * TCM_{(\%)}) * Au_{(g/t)}$	December 2008
$4.0 \leq Au_{(g/t)}$	$= (0.9200 - 0.7358 * TCM_{(\%)}) * Au_{(g/t)}$	December 2008
Mor_Clean - ROM		
$0.15 < Au_{(g/t)} \leq 0.30$	$= Au_{(g/t)} * (-216.66 * Au_{(g/t)}^4 + 242.29 * Au_{(g/t)}^3 - 106.88 * Au_{(g/t)}^2 + 23.24 * Au_{(g/t)} - 1.48)$	April 2012
$0.3 < Au_{(g/t)} \leq 1.7$	$= Au_{(g/t)} * (-9.257 * Au_{(g/t)}^4 + 50.71 * Au_{(g/t)}^3 - 103.87 * Au_{(g/t)}^2 + 92.819 * Au_{(g/t)} + 44.448) / 100)$	April 2012
$Au_{(g/t)} > 1.7$	$= Au_{(g/t)} * 0.7348$	April 2012
SPHLF – Crushed		
M3	See Appendix I	May 2014
M3A	= 0.4 * AuR	April 2004
M2AH		
$4.0 > Au_{(g/t)}$	$= (0.7200 + 0.0498 * Au_{(g/t)} - 0.7358 * TCM_{(\%)}) * Au_{(g/t)}$	August 2009
$4.0 \leq Au_{(g/t)}$	$= (0.9200 - 0.7358 * TCM_{(\%)}) * Au_{(g/t)}$	August 2009
M3B_Low	= 0.4 * AuR	April 2004
Mor_Cont - ROM		
$0.15 < Au_{(g/t)} \leq 0.30$	$= Au_{(g/t)} * (-216.66 * Au_{(g/t)}^4 + 242.29 * Au_{(g/t)}^3 - 106.88 * Au_{(g/t)}^2 + 23.24 * Au_{(g/t)} - 1.48$	April 2012
$0.3 < Au_{(g/t)} \leq 0.7$	$= Au_{(g/t)} - (80.404 + 21.766 * Au_{(g/t)} - 291.26 * S_{Total} + 299.35 * S^{2-}_{(\%)}) / 100)$	April 2012
$Au_{(g/t)} > 0.7$	= Au(g/t) * 0.5588	
SPHLF – ROM		
M2B	= 0.5 * AuR	April 2004
M3B_Mid	= 0.4 * AuR	April 2004
Silver (1)		
CHLF - Crushed		
M1	$= 0.3 * Ag_{(g/t)}$	April 2004
M1_LG	$= 0.3 * Ag_{(g/t)}$	April 2004
M1A	$= 0.3 * Ag_{(g/t)}$	April 2004
M2AL		
$0.5 \geq Au_{(g/t)}$	$= 0.15 * Ag_{(g/t)}$	April 2004
$0.5 < Au_{(g/t)} \leq 4.0$	$= 0.15 * Ag_{(g/t)}$	April 2004
$4.0 \leq Au_{(g/t)}$	$= 0.15 * Ag_{(g/t)}$	April 2004

Type	Algorithm	Source
SPHLF – Crushed		
M3	= 0.075 * Ag (g/t)	April 2004
M3A	= 0.075 * Ag (g/t)	April 2004
M2AH		
4.0 > Au (g/t)	= 0.1375 * Ag (g/t)	April 2004
4.0 ≤ Au (g/t)	= 0.1375 * Ag (g/t)	April 2004
M3B_Low	= 0.075 * Ag (g/t)	April 2004
SPHLF – ROM		
M2B	= 0.125 * Ag (g/t)	April 2004
M3B_Mid	= 0.075 * Ag (g/t)	April 2004

Notes:

$AuR = 1.726\,x^3 - 14.89\,x^2 + 39.90\,x + 60.36$

(1) Moraine Ag recoveries are defined by ore type classification and not separately as for Au recovery where lithology is the defining issue

ACCURACY OF RECOVERY ESTIMATES

RPA has reviewed the budgeted recovery, based on the recovery calculations, and the actual recovery for the past three years. The data is shown in Table 13-3.

TABLE 13-3 EVALUATION OF RECOVERY
Barrick Gold Corporation – Lagunas Norte Mine

	2012	2013	2014
Au Estimated Recovery	81.56%	82.06%	81.91%
Au Actual Recovery	81.95%	82.10%	82.15%
Variance	0.47%	0.05%	0.29%
Ag Estimated Recovery	26.06%	25.17%	27.19%
Ag Actual Recovery	34.03%	42.04%	28.29%
Variance	30.60%	67.02%	4.01%

Based on the data, RPA confirms that the formulae used to estimate gold and silver recovery meet industry standards, however, RPA recommends that Barrick continue to conduct routine metallurgical tests to try to improve the accuracy of the calculations.

VALUE REALIZATION INITIATIVES

INCREMENTAL HEAP LEACH RECOVERY

Incremental gold recovery from residual leach material is being considered post-operation. Irrigation and flushing the leach pad surface and contoured side slopes is assumed to yield approximately 100,000 oz to 350,000 oz of additional gold production from 9,000,000 oz of gold contained in clean ore and recovered over five years (2018–2022). Gold recovery will be dependent on material permeability and the amount of residual soluble gold.

Solution management would require coordination with the Environmental group for reclamation readiness planning. Additional drilling and sampling of residue from Leach Pad 1 and 2 is expected to cost approximately $1 million. Multi-disciplinary review of this activity and a long term plan considering solution management and transition into reclamation is needed.

14 MINERAL RESOURCE ESTIMATE

SUMMARY

Table 14-1 summarizes Mineral Resources exclusive of Mineral Reserves as of December 31, 2014, based on a $1,400/oz gold price. The 2014 year-end Measured and Indicated Mineral Resources total 19.4 Mt averaging 0.69 g/t Au and 2.11 g/t Ag and contain 430,000 oz of gold and 1,320,000 oz of silver. In addition, the 2014 year-end Inferred Mineral Resources total 1.6 Mt averaging 0.74 g/t Au and 2.5 g/t Ag and contain 40,000 oz of gold and 120,000 oz of silver. The resources in Table 14-1 are mostly oxide mineralization that can be processed using the current heap leaching facility.

TABLE 14-1 OXIDE MINERAL RESOURCES – DECEMBER 31, 2014
Barrick Gold Corporation – Lagunas Norte Mine

	Tonnage	Grade		Contained Metal	
Category	(Mt)	(g/t Au)	(g/t Ag)	(Moz Au)	(Moz Ag)
Measured	1.3	0.75	2.26	0.03	0.10
Indicated	18.1	0.68	2.10	0.40	1.22
Total Measured and Indicated	**19.4**	**0.69**	**2.11**	**0.43**	**1.32**
Inferred	1.6	0.73	2.48	0.04	0.12

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. Mineral Resources are estimated as at December 31, 2014 using a gold price of US$1,400 per ounce and a silver price of US$19 per ounce.
3. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
4. Mineral Resources are estimated at gold cut-off grades that vary by material type from 0.184 g/t to 0.858 g/t.
5. Mineral Resources are exclusive of Mineral Reserves.
6. Numbers may not add due to rounding.

Based on a PEA by Barrick dated June 2015 and discussed in Section 24, RPA concurs with Barrick that some of the refractory sulphide mineralization at Lagunas Norte has reasonable prospects for eventual economic extraction if a new grinding-flotation-autoclave processing facility is installed. Table 14-2 summarizes the refractory resources that have been incorporated into the PEA in Section 24. The effective date for the refractory resource estimate is December 31, 2014 and RPA notes that there is a minor overlap between the oxide and sulphide resource estimates that totals approximately 74,000 ounces of gold, which, in RPA's view, is insignificant as it represent approximately 3% of the total combined oxide and sulphide resource.

TABLE 14-2 REFRACTORY PROJECT MINERAL RESOURCES – DECEMBER 31, 2014
Barrick Gold Corporation – Lagunas Norte Mine

Category	Tonnage (Mt)	Grade (g/t Au)	Grade (g/t Ag)	Contained Metal (Moz Au)	Contained Metal (Moz Ag)
Within Pit Design					
Measured	1.2	2.60	6.51	0.10	0.25
Indicated	21.2	2.54	5.90	1.73	4.02
Measured and Indicated	22.4	2.55	5.93	1.83	4.27
Inferred	0.3	1.92	7.35	0.02	0.07
Heap Leach Stockpile					
Indicated	5.3	2.29	8.59	0.39	1.46

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated as at December 31, 2014 based on a gold price of US$1,400 per ounce and a silver price of US$24 per ounce.
3. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
4. Mineral Resources are estimated at gold cut-off grades that vary by material type from approximately 0.48 g/t to 1.00 g/t.
5. Gold recovery as a result of the PEA is expected to reach an average of 90%.
6. The “Within Pit Design” material includes 2.013 Mt of Measured and Indicated Resources grading 1.15 g/t Au and containing 74,000 ounces of gold that are already reported in Table 14-1.
7. The “Heap Leach Stockpile” material is expected to be reclaimed from the existing leach facility and re-processed through the new Refractory Project processing facility.
8. Numbers may not add due to rounding.

Silver recoveries are very low at Lagunas Norte, so silver is not considered for the resource and reserve cut-off grades. The resource internal gold cut-off grades vary depending on the material type.

Most of the modelling work was completed in May 2014 by MBM Senior Resource Geologist Melissa Vasquez, MBM Superintendent of Geology Luis Sanchez, and Senior Geologist Cristobal Valenzuela under the supervision of Barrick Senior Manager, Resource and Reserve Benjamin Sanfurgo (Barrick, 2014a). The block model was updated with 39 RC drill holes in November 2014 (Barrick, 2014b).

RPA reviewed the resource assumptions, input parameters, geological interpretation, and block modelling procedures and is of the opinion that the Mineral Resource estimate is appropriate for the style of mineralization and that the resource model is reasonable and acceptable to support the 2014 year-end Mineral Resource and Mineral Reserve estimates. The Qualified Person for the resource estimate is Luke Evans, M.Sc., P.Eng.

RPA is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other issues that could materially affect the Mineral Resource and Mineral Reserve estimates.

GEOLOGICAL MODELS

The Lagunas Norte Geology Department has developed a very good understanding of the Lagunas Norte geology. Geological models were constructed to provide geologic control for grade estimation and to provide parameters for mine planning. Geology models for lithological and geostructural domains were built using Leapfrog software. The ten main faults have also been modelled. Interpretations were previously made by mine geology personnel on a set of 51 cross sections spaced 50 m apart and oriented at N60°E. The sect ional interpretations were checked and adjusted on 47 benches spaced ten metres apart. The previous Vulcan geology models were used to guide the Leapfrog work. Diamond drill holes, RC holes, blast holes, and pit mapping were used in Leapfrog to create 3D geological wireframes. The geological wireframes were inspected by mine personnel and minor revisions were made locally. The geological modelling work for the current resource model was completed in April 2014 and updated with 39 holes in November 2014.

Wireframes were built for the main lithology and geostructural domain zones are listed in Tables 14-3 and 14-4, respectively. These wireframes were used to assign codes to the block model.

TABLE 14-3 LITHOLOGY CODES
Barrick Gold Corporation – Lagunas Norte Mine

Code	Description
1	Volcanic (Volc)
2	Andesite (And)
3	Carhuaz
4	Chicama
5	Sandstone (SS)
6	Mudstone (MS)
7	Carbonaceous Mudstone (CBMS)
8	Coal (Coal)
9	Overburden (Ovb)
10	Moraine

TABLE 14-4 GEOSTRUCTURAL CODES
Barrick Gold Corporation – Lagunas Norte Mine

Code	Description
1	GS1 (Azimuth: 150, dip: -25)
2	GS2 (Azimuth: 150, dip: -30)
3	GS3 (Azimuth: 150, dip: -30)
4	GS4 (Azimuth: 150, dip -30)
5	GS5 (Azimuth: 165, dip: -60)
6	GS6 (Azimuth: 155, dip: -35)
7A	GS7A (Azimuth: 160, dip: -55)
7B	GS7B (Azimuth: 160, dip: -80)
9A	GS9A (Azimuth: 160, dip: -30)
9B	GS9B (Azimuth: 160, dip: -85)
10A	GS10A (Azimuth: 185, dip: -60)
10B	GS10B (Azimuth: 150, dip: -65)

The lithological and geostructural domains models are shown in Figures 14-1 and 14-2, respectively. Some of the geostructural domains have sub-horizontal boundaries so they are not visible in Figure 14-2.

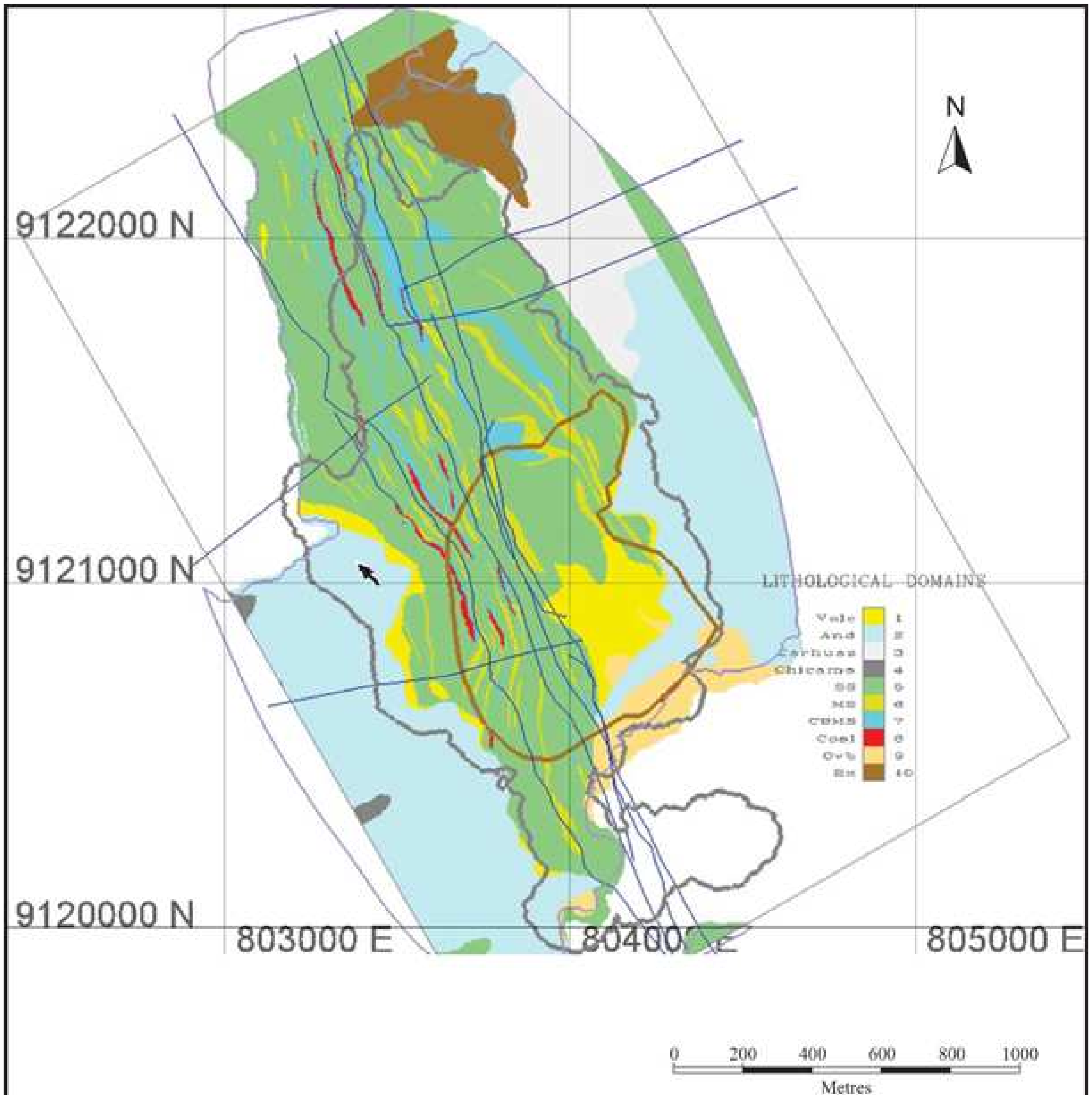


Figure 14-1

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru

Lithological Domains on 4,050 m Bench

August 2015

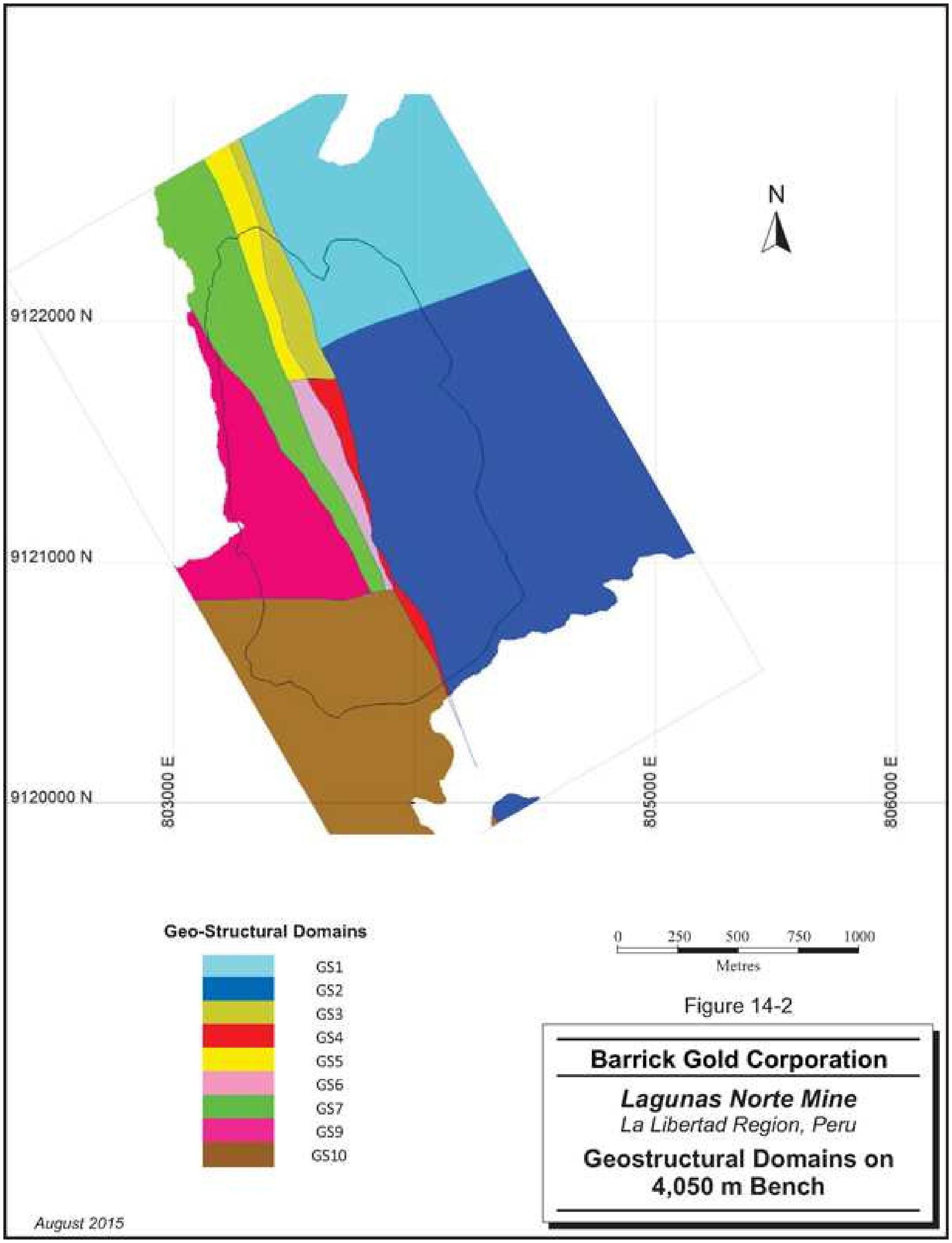


Figure 14-2

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru

Geostructural Domains on 4,050 m Bench

GEOLOGICAL DOMAINS

The main mineralization controls are the lithology and the structural domains. Approximately 85% of the gold is contained within the Chimú sediments and the remaining 15% of the gold is hosted in the Calipuy volcanic rocks. Alteration has a secondary mineralization control and is very local. Alteration was not modelled.

GRADE DOMAINS

The drill hole and blasthole data were used to build gold envelopes in Vulcan from 0.15 g/t Au and 1.0 g/t Au bench contours spaced 10 m apart. In addition, four separate grade indicator envelopes were also created. The 0.15 g/t Au and 1.0 g/t Au indicator envelopes were used to expand the manually constructed gold envelopes locally along strike and down dip. The two higher grade indicator envelopes were used to improve and better control block interpolation in higher grade areas. This resulted in five grade domains and they were used to assign codes to the block model (Table 14-5). The Very High Grade Domain areas are too small to show in Figure 14-3.

TABLE 14-5 GRADE DOMAIN CODES
Barrick Gold Corporation – Lagunas Norte Mine

Code	Description
0	Low (<0.15 g/t Au)
1	Normal (0.15 to 1.0 g/t Au)
2	Medium (1.0 to 5.0 g/t Au)
3	High (>5.0 g/t Au)
4	Very High (>10.0 g/t Au)

Barrick has applied an innovative approach to calibrate the resource block model with the production reconciliation data. In general, the resource block model has had a tendency to understate gold grades due to the known negative bias from diamond drill samples. In order to offset this effect, some of the indicator probabilities were reduced to 30% or 40% for some lithologies in a number of the indicator grade envelopes. In addition, the probabilities used to define the composites used to interpolate the blocks related to the 1.0 g/t Au and 5.0 g/t Au indicator envelopes were reduced to 45%. Finally, a combination of hard and semi-soft boundary conditions were developed that generally allowed high grade composites to influence lower grade domains but not vice versa. Tonnage grade curve comparisons with the grade control model confirmed that this approach works well.

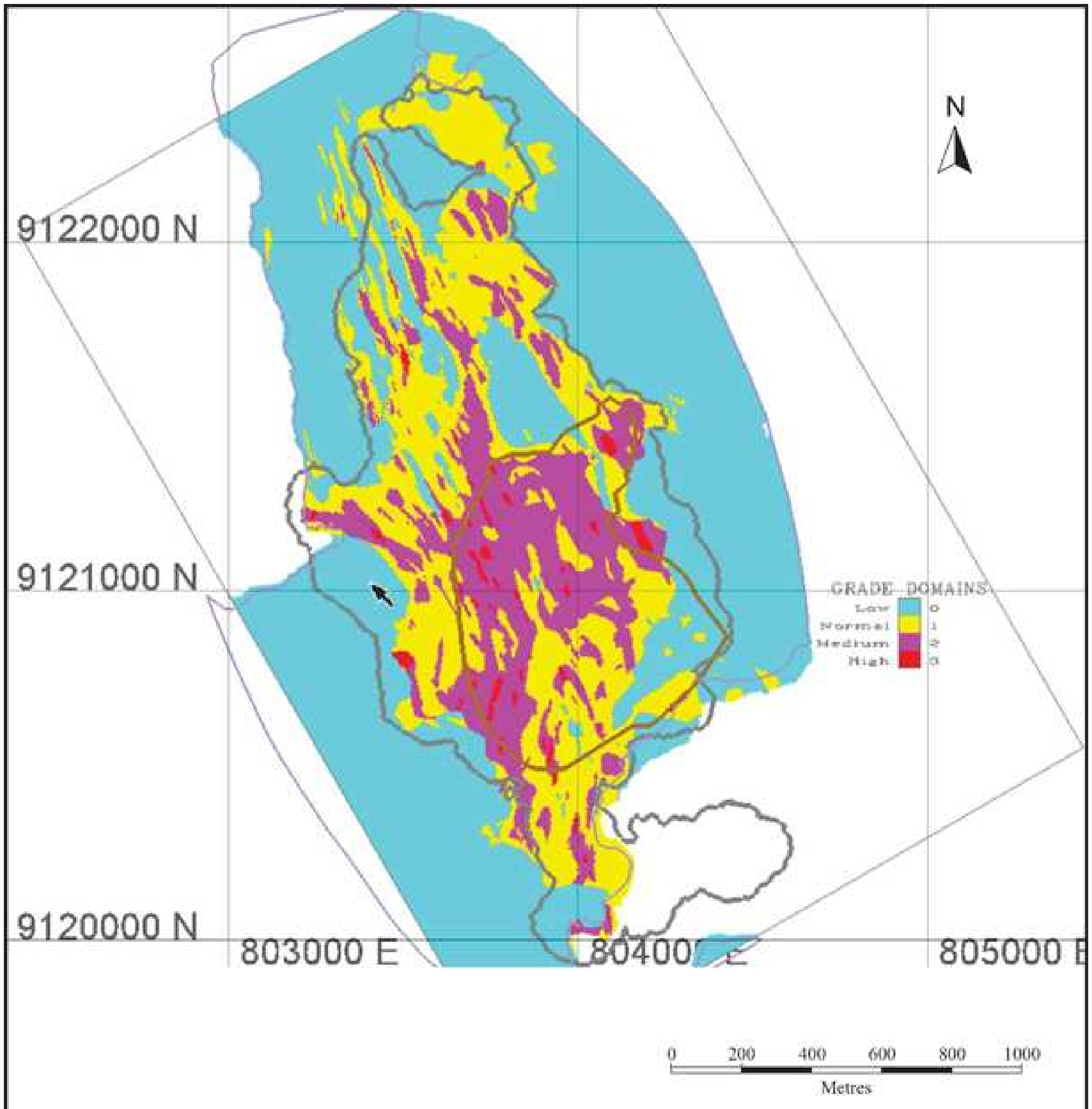


Figure 14-3

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru

Grade Domains on 4,050 m Bench

DENSITY DATA

Core density is determined using a Digital Core Model (DCM) developed by CODELCO Chile and Geovectra. The system has been audited by both company personnel and external consultants, and results are consistent with pre-existing density measurements determined by conventional (ASTM) methods. Approximately half of the sampled cores (72,000 m) have *Módulo Digital de Testigos* (MDT) density values. The procedure for density determination is as follows:

1. The core is cleaned, dried, and placed in specially designed weighing trays of consistent and predetermined weight, containing approximately 4.5 m of core. Core recovery is again measured at the time of density determination.
2. The sample tray is suspended over the tank, and the weight of the tray in air is recorded, using a calibrated balance. The tray is then lowered into a tank containing water of a measured density for a short period of time. The weight of the tray in water is recorded, as is the nature and relative abundance of bubbles effusing from the core.
3. All of the measurements (weights, recovery, lithology, and "porosity factor" for correction) are entered into the DCM database, and a corrected density is calculated for each tray.

CUT-OFF GRADES

The resource cut-off grades are based on a $1,400/oz gold price and the cost, recovery, and other parameters discussed in the reserve section. The cut-off grade estimates vary by material type (Table 14-6). In general, all Clean Heap Leach Facility (CHLF) ores mined are sent to the crusher for size reduction and processing in the CHLF phases. In addition, Single Pass Heap Leach Facility (SPHLF) ores with TCM < 0.5% are also delivered to the crusher for size reduction prior to being deposited in the SPHLF phases, thereby permitting an increase in metal recovery over ROM material. SPHLF ores with TCM ≥ 0.5% are sent to the SPHLF as ROM in an attempt to minimize preg-robbing effects of the ore.

TABLE 14-6 RESOURCE INTERNAL CUT-OFF GRADES
Barrick Gold Corporation – Lagunas Norte Mine

Ore Type	Internal Cut-Off g/t Au
Clean Heap Leach Facility	
M1	0.400
M1_LG	0.185
M1A	0.184
M2AL	0.193
Mor_Clean	0.211
Single Pass Heap Leach Facility	
M2AH	0.290
M2B	0.640
M3	0.229
M3A	0.858
M3B_Low	0.698
M3B_Mid	0.561
Mor_Cont	0.284

The resource cut-off grade estimate details are very well documented in Porras (2014). The resource internal gold cut-off grades range from 0.184 g/t to 0.858 g/t depending on the material type.

ASSAY STATISTICS AND CAPPING OF HIGH GRADES

The assay statistics for gold by lithology are summarized in Figure 14-4 and Table 14-7. The assays for 212,217 m of drilling average 0.56 g/t Au and have a very high coefficient of variation (CV) equal to 6.8. Approximately 55% of the assays are situated in sandstone and average 0.58 g/t Au.

Lagunas Norte capped high Au, Ag, Cu, TCM, S, As, and Hg assays prior to compositing based on experience, production reconciliation results, checking for high grade spatial continuity, and examining log probability plots of the assays for the main lithology types. The log probability plot for all of the gold assays is shown in Figure 14-5 and the gold capping levels applied to each lithology are listed in Table 14-7. The gold capping levels range from 7 g/t for andesite to 65 g/t for sandstone and mudstone. The approximate amount of gold removed by capping is 4.0% for sandstone.

RPA concurs with the capping levels selected by Lagunas Norte. Very high grade blast hole gold grades are very rare but when encountered, they are capped to 50 g/t.

FIGURE 14-4 GOLD ASSAYS BOX PLOT

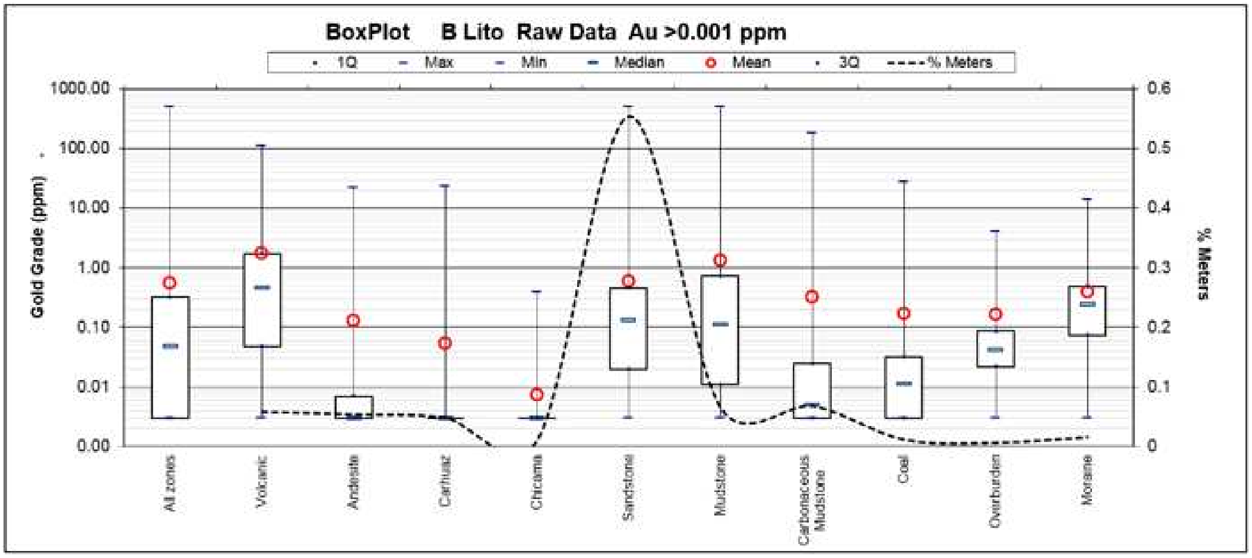
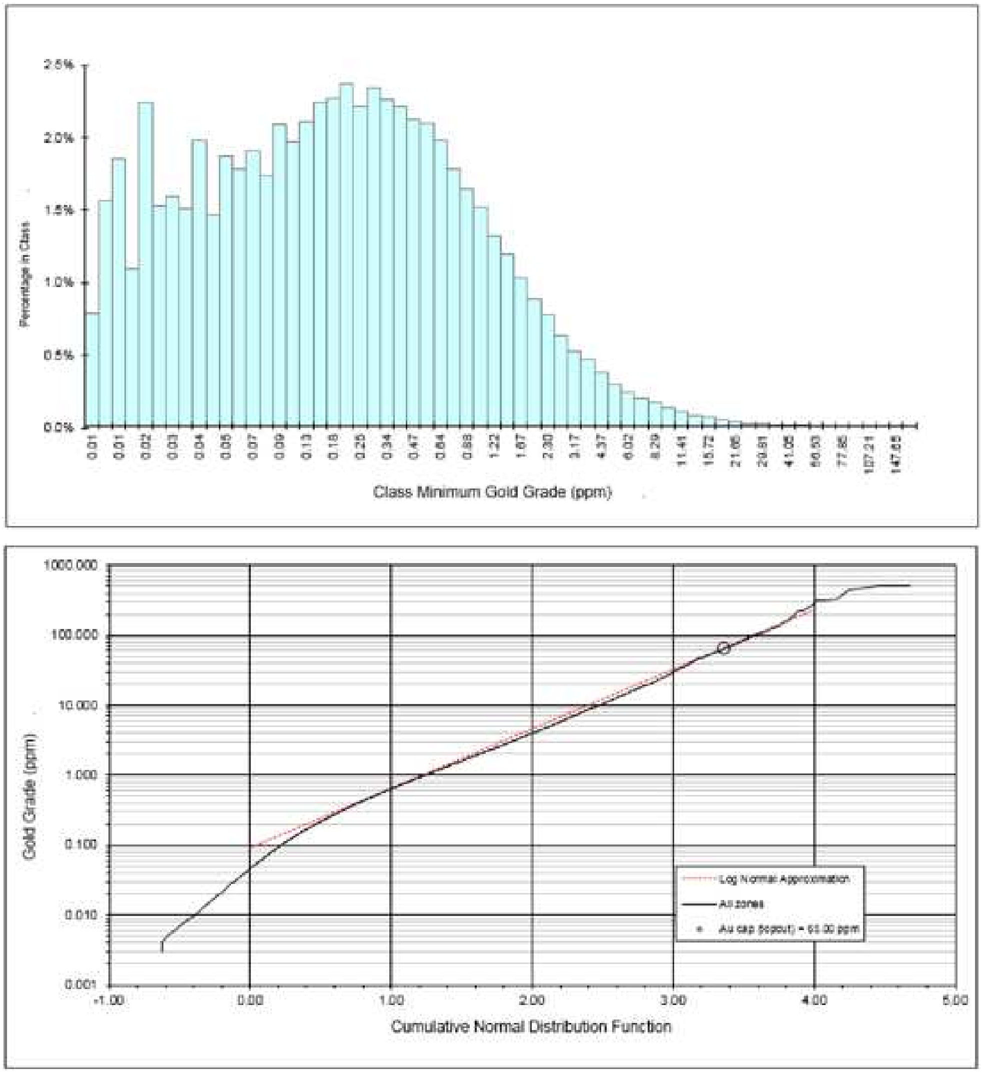


TABLE 14-7 AU CAPPING LEVELS
Barrick Gold Corporation – Lagunas Norte Mine

Description	Code	Metres	% Metres	Gold Grade (g/t) Mean	Std.Dev	Min	Max	CV	Gold Cap Cap	CV Capped	GT Lost	Percentile
All zones		212,217		0.56	3.80	0.003	505.9	6.8	65.0	4.3	4.7%	99.96%
Volcanic	1	12,375	5.8%	1.75	4.14	0.003	110.0	2.4	35.0	2.0	2.4%	99.76%
Andesite	2	11,525	5.4%	0.13	0.79	0.003	22.1	6.0	7.0	4.5	9.3%	99.70%
Carhuaz	3	10,308	4.9%	0.05	0.63	0.003	23.8	11.9	7.0	7.4	19.2%	99.82%
Chicama	4	2,270	1.1%	0.01	0.02	0.003	0.4	2.4	0.01	0.5	41.7%	88.28%
Sandstone	5	117,533	55.4%	0.58	3.60	0.003	502.0	6.2	65.0	3.8	4.0%	99.96%
Mudstone	6	13,908	6.6%	1.34	8.83	0.003	505.9	6.6	65.0	3.5	11.5%	99.79%
Carbonaceous Mudstone	7	14,516	6.8%	0.32	3.65	0.003	186.3	11.3	30.0	5.5	19.2%	99.85%
Coal	8	2,535	1.2%	0.17	1.09	0.003	27.4	6.4	30.0	6.4	0.0%	100.00%
Overburden	9	1,420	0.7%	0.16	0.42	0.003	4.1	2.6	12.0	2.6	0.0%	100.00%
Moraine	10	3,369	1.6%	0.39	0.69	0.003	14.0	1.7	5.0	1.3	3.1%	99.8%

FIGURE 14-5 ASSAY CUMULATIVE FREQUENCY DISTRIBUTION – GOLD



COMPOSITES

Drill hole sample data were composited into five metre lengths starting at the drill hole collars. No geology breaks were applied in the compositing.

Approximately nine percent of the total composites that are located in portions of diamond drill holes that are within five metres from RC holes were excluded. In 2008, MBM twinned a number of DDH with RC drill holes and confirmed that the DDH gold grades were significantly understated relative to the RC and blast holes (Gómez, 2008).

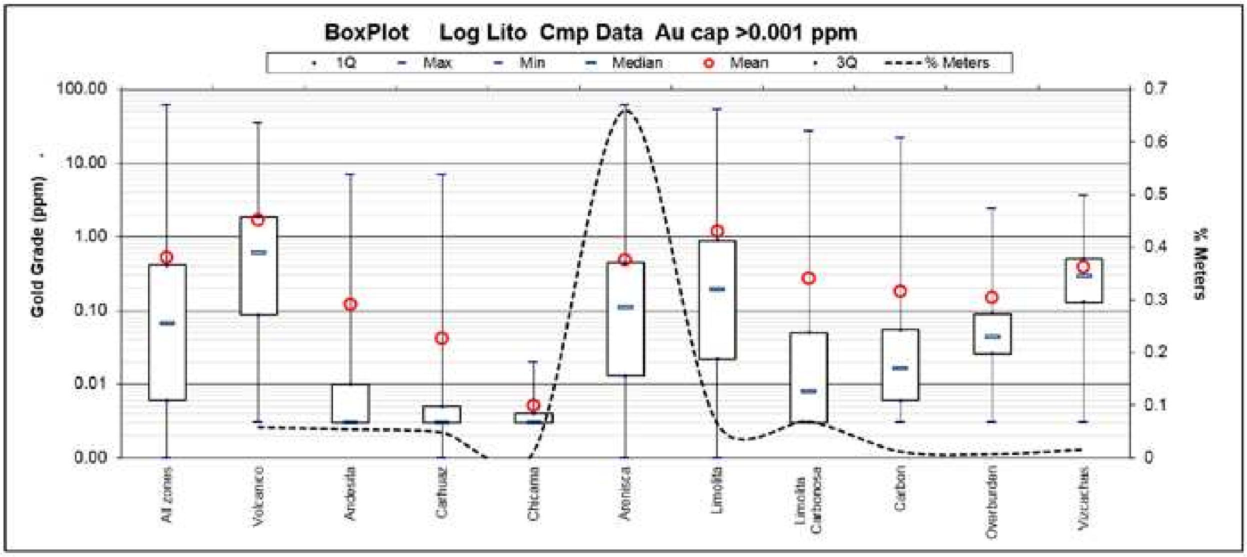
The composite statistics for each lithology are summarized in Table 14-8 and shown in Figure 14-6.

The relative abundance of composites in each lithology is also summarized in Table 14-8. For example, 66.0% of the composites occur in sandstone rocks with a block model lithology code equal to 5 and 5.8% of the composites are in volcanic rocks with a block model lithology code equal to 1.

TABLE 14-8 GOLD COMPOSITE STATISTICS BY LITHOLOGY
Barrick Gold Corporation – Lagunas Norte Mine

Description	Code	Metres	% Metres	Mean (g/t Au)	Std.dev (g/t Au)	Min (g/t Au)	Max (g/t Au)	CV
All zones		213,748		0.525	1.82	0.001	61.9	3.5
Volcanic	1	12,431	5.8%	1.687	2.96	0.003	35.0	1.8
Andesite	2	11,581	5.4%	0.121	0.52	0.003	7.0	4.3
Carhuaz	3	10,307	4.8%	0.042	0.34	0.001	7.0	8.1
Chicama	4	2,265	1.1%	0.005	0.00	0.003	0.0	0.9
Sandstone	5	141,047	66.0%	0.475	1.60	0.001	61.9	3.4
Mudstone	6	14,075	6.6%	1.167	3.49	0.001	53.2	3.0
Carbonaceous Mudstone	7	14,693	6.9%	0.275	1.47	0.003	26.8	5.3
Coal	8	2,543	1.2%	0.181	1.10	0.003	21.6	6.1
Overburden	9	1,442	0.7%	0.150	0.31	0.003	2.4	2.1
Moraine	10	3,364	1.6%	0.384	0.40	0.003	3.6	1.0

FIGURE 14-6 GOLD COMPOSITES BOX PLOT



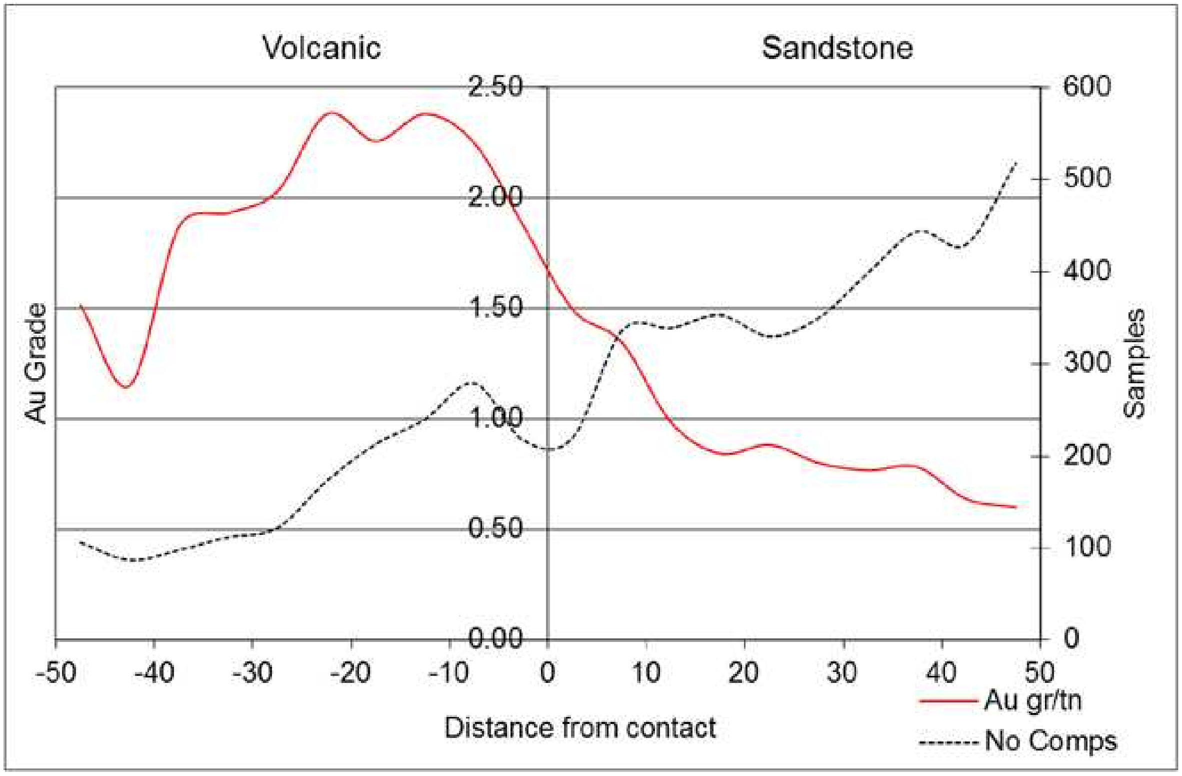
CONTACT PLOT ANALYSIS

Contact plots were generated for Au, Ag, Cu, TCM, and S values to explore the relationship between the grade variable when moving from one geological domain to another. One of the results showed that the volcanic rocks with the sedimentary rocks were hard boundaries.

The contact plots are constructed with Vulcan software. Vulcan searches for data with a given lithology code and then for data with another specified lithology code and groups the grades according to the distance between the two points. This allows for a graphical representation of the grade trends away from a "contact." If average grades are reasonably similar near a boundary and then diverge as distance from the contact increases, then the particular boundary should probably not be used as a grade constraint ("soft"). If the averages are distinctly different across a boundary, then the boundary may be important in constraining the grade estimation ("hard"). An example of a contact plot with a hard boundary is shown in Figure 14-7.

Domains with hard boundaries were interpolated separately and domains with soft boundaries were combined during grade interpolation.

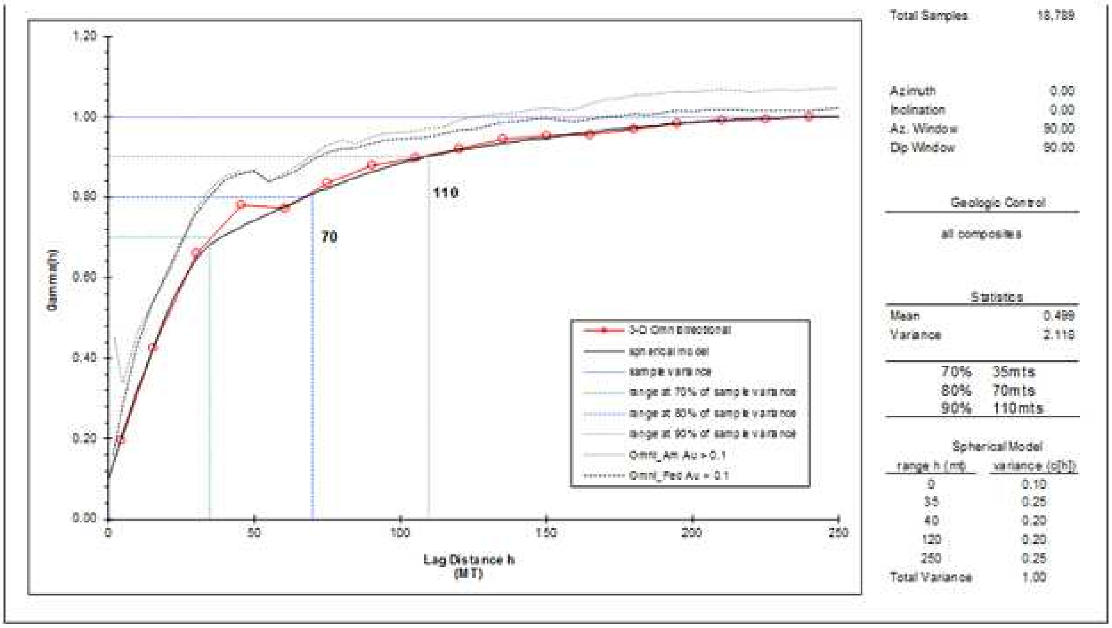
FIGURE 14-7 GOLD CONTACT PLOT FOR VOLCANIC AND SANDSTONE ROCKS



VARIOGRAPHY

Lagunas Norte built a number of omni-directional correlograms and indicator variograms using the composites for each lithological domain. The range of the indicator variogram was used in the search parameters. The resulting indicator variogram for five metre composites greater than 0.2 g/t Au is shown in Figure 14-8.

FIGURE 14-8 LAGUNAS NORTE GOLD INDICATOR VARIOGRAM



RESOURCE ESTIMATION METHODOLOGY

The step by step resource estimation methodology is well described in Barrick (2014a). The Vulcan T shell file (adch1114.csh) provides an excellent record of all the steps done in Vulcan to build the resource block model.

The Lagunas Norte mineral resource model extends from 802,400 m to 805,445 m east, 9,119,600 m to 9,122,974 m north, and 3,750 m to 4,300 m in elevation. The 5 m high by 5 m by 5 m block model is populated directly with the lithology, structural domains, and 3D grade envelopes and a separate script is run to assign grade domain codes.

The capped assays were composited into five metre lengths. Composites for Au, Ag, Cu, TCM, Total Sulphur (S_T), Sulphide Sulphur (S_2), As, Hg, and gold recovery (Aurec) were created. The composite lithology, grade domain, and geological domain codes are back-flagged from the block model.

Lagunas Norte used multiple pass inverse distance squared (ID^2) to interpolate Au, Ag, Cu, TCM, S_2, S_T, Aurec, and density for all domains. A Sulphate Sulphur (SO_4) model was built from the S_T and S_2 models. The As and Hg estimation procedures are not discussed in this report.

GOLD ESTIMATION

Gold estimation parameters were developed for each of the grade domains. Length-weighted composites are used. Weighted boundaries using 0.1 and 1 values in the composite length fields were used to simulate semi-hard boundaries. These semi-hard boundaries were used for some passes between some grade domains to allow composites in higher grade domains influence lower grade domains but not vice versa. The 0.1 value was selected after repeated comparisons with production reconciliation data. RPA concurs with this innovative approach that helps compensate for the low gold grade bias in core samples.

The search ellipsoids for gold are generally horizontal pancakes for lithological domains 1, 2, 3, 4, 9, and 10 and sub-horizontal to sub-vertical pancakes oriented at 150° to 185° with a range of dips (-25° to -80°) for lithological domains 5, 6, 7, and 8. The search orientations vary for each lithological and for each geostructural domain within the Chimú sedimentary rocks. The longest radii are 180 m by 180 m by 90 m for the final pass and the shortest pass radii are 35 m by 35 m by 10 m for the third pass radii. The longest radii to define resources are 90 m by 90 m by 30 m, which were used in the fourth pass. The fifth and sixth passes were run to define category 4 material to assist with exploration targeting.

There are six ID^2 passes used for each of grade domain within each lithological domain and within each structural domain. The first one is the general box pass, which is based on 2.5 m by 2.5 m by 2.5 m distances and a minimum of one composite and the last pass is the fill pass, which is based on 180 m by 180 m by 90 m radii and a minimum of one composite and a maximum of five composites, with a maximum of one composite per hole.

The second passes use a minimum of two composites and a maximum of three composites, with a maximum of one composite per hole resulting in a minimum two hole requirement. The second pass radii are the distances defined by 80% of the omni-directional sill. The third pass radii (35 m by 35 m by 10 m) are the distances defined by 60% of the omni-directional sill. The third pass uses a minimum of one composite and a maximum of three composites, with a maximum of one composite per hole. This pass is sometimes referred to as the “donut” pass because it populates the blocks around drill holes that were not interpolated during the second pass. The fourth pass radii (90 m by 90 m by 30 m) are the distances defined by approximately the range at 90% of the omni-directional sill. The fourth passes use a minimum of two composites and a maximum of three composites with a maximum of one composite per hole. The fifth pass radii (120 m by 120 m by 40 m) are longer than the fourth pass radii. The fifth pass uses a minimum of one composite and a maximum of five composites with a maximum of one composite per hole. This pass was run only for the Low and Normal grade domains (codes 0 and 1).

The multi-pass interpolation parameters are summarized in Table 14-9.

TABLE 14-9 GOLD ESTIMATION PARAMETERS
Barrick Gold Corporation – Lagunas Norte Mine

Pass	Mineralization Domain	Search Radii (m)			Lithology Domain	Structural Domain	Search Direction (°)			Composites			Class
		Major	Inter.	Minor			Major	Inter.	Minor	Min	Max	Max/DH	
1	All	2.5	2.5	2.5	All	All	150	0	0	1	99	99	1
2	All	60	60	20	1,2,3,4,9,10	1,2,3,4,5,6,7,8,9,10	150	0	0	2	3	1	2
2	All	60	60	20	5,6,7,8	1	150	0	-25	2	3	1	2
2	All	60	60	20	5,6,7,8	2	150	0	-30	2	3	1	2
2	All	60	60	20	5,6,7,8	3	150	0	-50	2	3	1	2
2	All	60	60	20	5,6,7,8	4	150	0	-50	2	3	1	2
2	All	60	60	20	5,6,7,8	5	165	0	-60	2	3	1	2
2	All	60	60	20	5,6,7,8	6	155	0	-35	2	3	1	2
2	All	60	60	20	5,6,7,8	7,8,1	160	0	-55	2	3	1	2
2	All	60	60	20	5,6,7,8	7,8,2	160	0	-80	2	3	1	2
2	All	60	60	20	5,6,7,8	9,1	160	0	-30	2	3	1	2
2	All	60	60	20	5,6,7,8	9,2	160	0	-85	2	3	1	2
2	All	60	60	20	5,6,7,8	10,1	185	0	-60	2	3	1	2
2	All	60	60	20	5,6,7,8	10,2	150	0	-65	2	3	1	2
3	All	35	35	10	1,2,3,4,9,10	1,2,3,4,5,6,7,8,9,10	150	0	0	1	3	1	2
3	All	35	35	10	5,6,7,8	1	150	0	-25	1	3	1	2
3	All	35	35	10	5,6,7,8	2	150	0	-30	1	3	1	2
3	All	35	35	10	5,6,7,8	3	150	0	-50	1	3	1	2
3	All	35	35	10	5,6,7,8	4	150	0	-50	1	3	1	2
3	All	35	35	10	5,6,7,8	5	165	0	-60	1	3	1	2
3	All	35	35	10	5,6,7,8	6	155	0	-35	1	3	1	2
3	All	35	35	10	5,6,7,8	7,8,1	160	0	-55	1	3	1	2
3	All	35	35	10	5,6,7,8	7,8,2	160	0	-80	1	3	1	2
3	All	35	35	10	5,6,7,8	9,1	160	0	-30	1	3	1	2
3	All	35	35	10	5,6,7,8	9,2	160	0	-85	1	3	1	2
3	All	35	35	10	5,6,7,8	10,1	185	0	-60	1	3	1	2
3	All	35	35	10	5,6,7,8	10,2	150	0	-65	1	3	1	2
4	All	90	90	30	1,2,3,4,9,10	1,2,3,4,5,6,7,8,9,10	150	0	0	2	3	1	3
4	All	90	90	30	5,6,7,8	1	150	0	-25	2	3	1	3
4	All	90	90	30	5,6,7,8	2	150	0	-30	2	3	1	3
4	All	90	90	30	5,6,7,8	3	150	0	-50	2	3	1	3
4	All	90	90	30	5,6,7,8	4	150	0	-50	2	3	1	3
4	All	90	90	30	5,6,7,8	5	165	0	-60	2	3	1	3
4	All	90	90	30	5,6,7,8	6	155	0	-35	2	3	1	3
4	All	90	90	30	5,6,7,8	7,8,1	160	0	-55	2	3	1	3
4	All	90	90	30	5,6,7,8	7,8,2	160	0	-80	2	3	1	3
4	All	90	90	30	5,6,7,8	9,1	160	0	-30	2	3	1	3
4	All	90	90	30	5,6,7,8	9,2	160	0	-85	2	3	1	3
4	All	90	90	30	5,6,7,8	10,1	185	0	-60	2	3	1	3
4	All	90	90	30	5,6,7,8	10,2	150	0	-65	2	3	1	3
5	Low, Normal	120	120	40	1,2,3,4,9,10	1,2,3,4,5,6,7,8,9,10	150	0	0	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	1	150	0	-25	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	2	150	0	-30	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	3	150	0	-50	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	4	150	0	-50	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	5	165	0	-60	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	6	155	0	-35	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	7,8,1	160	0	-55	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	7,8,2	160	0	-80	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	9,1	160	0	-30	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	9,2	160	0	-85	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	10,1	185	0	-60	1	5	1	4
5	Low, Normal	120	120	40	5,6,7,8	10,2	150	0	-65	1	5	1	4
6	All	180	180	90	1,2,3,4,9,10	1,2,3,4,5,6,7,8,9,10	150	0	0	1	5	1	4
6	All	180	180	90	5,6,7,8	1	150	0	-25	1	5	1	4
6	All	180	180	90	5,6,7,8	2	150	0	-30	1	5	1	4
6	All	180	180	90	5,6,7,8	3	150	0	-50	1	5	1	4
6	All	180	180	90	5,6,7,8	4	150	0	-50	1	5	1	4
6	All	180	180	90	5,6,7,8	5	165	0	-60	1	5	1	4
6	All	180	180	90	5,6,7,8	6	155	0	-35	1	5	1	4
6	All	180	180	90	5,6,7,8	7,8,1	160	0	-55	1	5	1	4
6	All	180	180	90	5,6,7,8	7,8,2	160	0	-80	1	5	1	4
6	All	180	180	90	5,6,7,8	9,1	160	0	-30	1	5	1	4
6	All	180	180	90	5,6,7,8	9,1	160	0	-85	1	5	1	4
6	All	180	180	90	5,6,7,8	10,1	185	0	-60	1	5	1	4

6	All	180	180	90	5,6,7,8	10,1	150	0	-65	1	5	1	4

GOLD RECOVERY GRADE ESTIMATE

A gold recovery model was created using primarily bottle roll recovery tests as well as the extensive cyanide amenability (CNA) database. In 2014, 523 Quick Leach Test (QLT) results were added to the database. Overall, there is over 18,000 m of samples with gold recovery data available. Indicators were used to create two recovery domains (high recovery > 50%, and low recovery <50%). Length-weighted composites are used. Recoveries were calculated within each domain by estimating head grades and recovered grades.

The search ellipsoids for recoveries are generally horizontal pancakes for lithological domains 1, 2, 3, 4, 9, and 10 and sub-horizontal to sub-vertical pancakes oriented at 150° to 185° with a range of dips (-25° to -80°) for lithological domains 5, 6, 7, and 8. The search orientations vary for each lithological domain and for each geostructural domain located within the Chimú sedimentary rocks. The longest radii are 300 m by 300 m by 300 m for the second pass and the shortest pass radii are 150 m by 150 m by 75 m for the first pass.

There are two ID^2 passes used for each of the gold recovery domains within each lithological domain and within each geostructural domain. The first pass radii are the distances defined by the approximate range of the omni-directional sill and the second pass radii are double of the first pass radii. Both passes use a minimum of three composites and a maximum of nine composites, with a maximum of two composites per hole.

To compare the estimation, a second recovery value was derived from a polynomial curve based mostly on bottle roll results. Whenever both values were within ±12% of each other, the polynomial calculation was kept; otherwise the interpolated result was used.

SILVER GRADE ESTIMATE

Indicators were used to create two silver grade domains (high grade > 0.6 g/t, and low grade < 0.6 g/t). Length-weighted composites were used.

There were five ID^2 passes used including the 2.5 m by 2.5 m by 2.5 m first pass box search. Each pass was run on ten different geostructural groupings. The search ellipsoids for silver are generally horizontal pancakes for lithological domains 1, 2, 3, 4, 9, and 10 and pancakes with variable dips for lithological domains 5, 6, 7, and 8 depending on the structural domain.

The longest radii are 250 m by 220 m by 180 m for the final pass and the shortest pass radii, excluding the box search, are 20 m by 20 m by 10 m for the “donut” third pass.

All passes use a minimum of two composites and a maximum of three composites with a maximum of one composite per hole, with the exception of the box search and the third pass where the minimum is decreased to one composite.

A restricted search of 30 m by 30m by 5 m was implemented for silver values greater than 50 g/t.

COPPER ESTIMATE

Copper is considered as a contaminant because it has a negative impact on the gold recovery. An indicator at 80 ppm was created to generate the copper grade domains (high grade >80 ppm Cu and low grade <80 ppm Cu). In addition, two main copper zones defined by the oxide-sulphide limit (oxide and sulphide) were used as hard boundaries for all lithology codes except 9 and 10. Length-weighted composites were used. A multi-pass ID^2 approach was used to interpolate the copper values based on search orientations and radii that were customized to the various lithology, structure, redox, and grade groupings. Overall, 96 interpolation runs were carried out. This includes the box search run followed by five passes, each with 19 runs.

TOTAL CARBONACEOUS MATERIAL ESTIMATE

TCM is considered as a contaminant because it has a negative impact on the metallurgical recovery. It has a strong preg-robbing effect on gold-rich sodium cyanide leaching. There is a good correlation between rocks described as carbonaceous (lithology codes: 7 and 8) and measured TCM values.

Two estimations were completed, on one metre and five metre blocks. Length-weighted composites were used. The one metre estimation was generated for the carbonaceous rocks (codes 7 and 8) and the mudstone (code 6) using one metre blocks with original length uncapped assays. The five metre estimation was generated for the other lithologies using five metre blocks and five metre composites.

For the one metre estimation, 2% TCM and 0.1% TCM indicators were used to define low, medium, and high grade TCM grade domains. The search ellipsoids for TCM vary for each lithological domain and for each geostructural domain. Two ID ^{2} passes were used for the combined medium and high grade domains for lithology domains 7 and 8 and two ID ^{2} passes were run separately for the low and medium each grade domains within lithology domain 6. All passes are run with customized search ellipsoid directions for each lithological domain within each geostructural domain.

The first passes use a minimum of one composite and a maximum of 15 composites and a maximum of three composites by drill hole. The first pass radii were 25 m by 25m by 5 m for lithology domain 6 medium grade and 200 m by 200 m by 40 m for lithology domains 7 and 8. The second passes use a minimum of one composite and a maximum of 21 composites with a maximum of three composite per drill hole. The second pass radii are 500 m by 500 m by 500 m for lithology domain 6 low grade and for lithology domains 7 and 8. The second pass radii are 50 m by 50 m by 10 m for lithology domain 6 medium grade.

For the five metre estimation, there are two ID ^{2} passes used for each lithological domain and for each geostructural domain in the Chimú sedimentary rocks. Also, there are two ID ^{2} fill passes with longer radii in each lithological domain with no restriction by structural domain to populate all of the blocks.

The first passes use a minimum of two composite and a maximum of seven composites and a maximum of two composites by drill hole. The first pass radii are 25 m by 25 m by 5 m. The second pass uses a minimum of three composites and a maximum of 12 composites with a maximum of two composite per drill hole. The second pass radii are 100 m by 100 m by 35 m. The third passes use a minimum of three composite and a maximum of 15 composites and a maximum of two composites by drill hole. The third pass radii are 200 m by 200 m by 70 m and no structural domain restrictions. The fourth pass radii are 400 m by 400 m by 300 m, have no structural domain restrictions, were run only for the sedimentary rocks (5, 6, 7, and 8), and the minimum number of composites was reduced to one.

Mudstone, carbonaceous mudstone, and coal wireframes were populated into a 1 m high by 1 m by 1 m block model. Then, they were reblocked to five metre blocks based on their majority percentages. The TCM grades values, estimated in the one metre block model, were reblocked into the 5 m high by 5 m by 5 m based on tonnage weighting from the original block grades. Dilution was incorporated into the five metre block model combining the estimated five metre TCM values with the estimated one metre TCM values that were reblocked into the five metre block model. The final diluted TCM values are based on percentages of carbonaceous rocks and the estimated TCM values from both models. The final TCM grades in the five metre blocks are diluted with the background TCM values of the sandstone.

TOTAL SULPHUR AND SULPHIDE SULPHUR ESTIMATE

Total sulphur (S) and sulphide sulphur (S^{2-}) are considered as a contaminant because they have a negative impact on the metallurgical recovery. Since the carbonaceous rocks carry much higher S and S^{2-} grades than sandstone, a diluted S and S^{2-} grade is calculated for each block using an approach similar to that developed to estimate TCM grades. Sulphate sulphur grades are calculated from the S and S^{2-} grades.

Two estimation processes were carried out, on one metre and five metre blocks. Length-weighted composites were used. The one metre estimations were generated for the carbonaceous rocks using one metre blocks and the original length assays. Five metre estimations were generated for the other lithologies using five metre blocks with five metre composites.

For the one metre estimation, the search ellipsoids for S and S^{2-} vary for each lithology and structural domain. There are three inverse distance cubed (ID^3) passes used for each lithology domain and within each structural domain. The third pass is not restricted by structural domain.

The first pass 120 m by 120 m by 40 m radii uses a minimum of three composite and a maximum of 11 composites and a maximum of two composite by drill hole. The second pass 60 m by 60 m by 20 m radii and a minimum of one composite and a maximum of five composites and a maximum of two composite by drill hole. The third pass uses a minimum of three composites and a maximum of 21 composites with a maximum of two composites per drill hole. The third pass radii are 240 m by 240 m by 80 m radii.

For the five metre estimation, an indicator at one percent was created to generate the S^{2-} high and low grade domains. The S^{2-} high and low grade domains, which were based on a 0.50 indicator probability, were used for the S interpolation as well. Weighted boundaries using 0.2 and 1 values in the composite length fields were used to generate semi-hard boundaries.

For the five metre estimation, the search ellipsoids for S and S^{2-} vary for each lithology and structural domain. There are five ID^3 passes used for each lithology domain within each structural domain.

The first pass box search and the fifth long radii fill pass do not have restrictions by geostructural domain. The second pass use a minimum of two composite and a maximum of three composites and a maximum of one composite by drill hole. The second pass 120 m by 120 m by 40 m radii are the distances defined by approximately the range of the omni-directional sill. The third pass uses a minimum of one composite and a maximum of three composites with a maximum of one composite per drill hole. The third pass 50 m by 50 m by 20 m radii are the distances defined by approximately the range at 90% of the omni-directional sill. The fourth pass use a minimum of one composite and a maximum of three composites and a maximum of one composite by drill hole. The fourth pass radii are 240 m by 240 m by 80 m and use a minimum of two composites and a maximum of three composites and a maximum of one composite by drill hole. The fifth pass radii are 500 m by 500 m by 160 m and use a minimum of one composite and a maximum of three composites and a maximum of one composite by drill hole.

The 1 m high by 1 m by 1 m blocks are reblocked into the 5 m high by 5 m by 5 m blocks. The reblocked S^{2-} and S grades are assigned based on tonnes weighting from the original block grades. Then, the diluted S^{2-} and S grades are calculated based on percentages of carbonaceous rocks and the estimated S^{2-} and S values. Dilution was incorporated into the five metre block model combining the estimated five metre block S^{2-} and S values with the estimated one metre block S^{2-} and S values (reblocked into the five metre block model). The final diluted S^{2-} and S values are based on percentages of carbonaceous rocks and the estimated S^{2-} and S values from both models.

DENSITY ESTIMATE

Lithology domains based on logged lithology codes were used as the main estimation domains. Length-weighted composites were used. Only composite density values that were within plus or minus two standard deviations of the density means were used. For the carbonaceous rocks, composites with less than 35% carbonaceous material were excluded. Default density values were assigned to all blocks with no interpolated densities (Table 14-10).

TABLE 14-10 TONNAGE FACTORS
Barrick Gold Corporation – Lagunas Norte Mine

Rock Type	Main Model (t/m³)
Volcanic	2.48
Andesite	2.48
Carhuaz & Chicama	2.647
Sandstone, Mudstone, and Carbonaceous Mudstone	2.587
Coal	2.439
Overburden	2.376
Moraine (10)	2.00

The search orientations vary for each lithological domain and for each geostructural domain.

There is an ID ^{2} pass used for each lithological domain and for each geostructural domain. It uses a minimum of five composites and a maximum of 13 composites and a maximum of two composites per drill hole. The search radii are 200 m by 200 m by 200 m.

REBLOCKING TO FINAL RESOURCE MODEL

The 5 m by 5 m by 5 m blocks are reblocked into the final resource model, which has 10 m by 10 m by 10 m blocks. The reblocked grades are assigned based on tonnage weighting the original block grades and the geology and other codes are assigned based on majority rules. Over time, Lagunas Norte has developed a sophisticated multi-pass interpolation process that works well. RPA is of the opinion that the Lagunas Norte resource estimation methodology is reasonable and acceptable.

RESOURCE ESTIMATE VALIDATION

Lagunas Norte has validated the resource block model using six separate validation procedures. The results are provided in Barrick (2014a) and some examples of the validation results are included below.

1. Visual inspection of block and composite values on sections and plans
2. Reconciliation with the ore control model
3. Block versus composite statistics
4. ID versus Nearest Neighbour (NN) and polygonal swath plots
5. ID versus NN global means

MBM and RPA visually compared the composite and block grades on plans and sections and found that they correlate very well spatially (Figure 14-9).

The reconciliation data for 2014 indicate that the resource model overestimates the tonnage by approximately 5%, and underestimates the gold grade by approximately 4% and contained gold ounces by approximately 0% compared to the grade control blast hole model (Table 14-11). The positive gold reconciliation variance of approximately 20% in the past has been eliminated due mostly to infill RC drilling and to procedural improvements to the resource model. In RPA's opinion, the resource model reconciles very well with the grade control model.

TABLE 14-11 2014 RECONCILIATION RESULTS
Barrick Gold Corporation – Lagunas Norte Mine

	2014 Grade Control					2014 Resource Model				
Month	Tonnes	Au (g/t)	Au (oz)	Ag (g/t)	Ag (oz)	Tonnes	Au (g/t)	Au (oz)	Ag (g/t)	Ag (oz)
Jan	2,110,323	1.00	68,178	3.12	211,533	2,224,605	0.84	60,209	2.79	199,520
Feb	1,729,652	0.85	47,373	3.49	194,194	1,945,003	0.92	57,259	3.34	208,912
Mar	2,015,732	1.06	68,615	4.55	294,580	2,188,662	0.85	59,465	3.67	257,984
Apr	1,935,867	1.22	76,054	4.86	302,361	2,104,630	1.02	68,909	3.81	257,600
May	2,138,567	0.92	63,596	4.21	289,552	2,460,190	0.93	73,322	4.04	319,484
Jun	2,257,089	1.03	75,084	4.18	303,371	2,472,451	0.90	71,165	3.93	312,125
Jul	2,461,779	0.97	77,134	4.79	379,507	2,766,218	0.98	86,881	4.56	405,677
Aug	2,476,565	0.99	78,454	4.16	331,548	2,381,119	1.06	81,383	4.49	343,427
Sep	2,106,280	1.00	67,658	4.32	292,640	2,021,573	1.02	66,118	3.63	235,642
Oct	2,273,444	1.27	92,976	5.47	399,903	2,282,162	1.19	87,136	4.45	326,213
Nov	2,757,010	1.27	112,796	5.08	450,302	2,740,334	1.42	124,850	3.89	343,111
Dec	2,521,847	1.06	86,247	3.89	315,734	2,483,144	1.02	81,550	4.23	337,852
Totals	**26,784,155**	**1.06**	**914,165**	**4.37**	**3,765,226**	**28,070,092**	**1.02**	**918,249**	**3.93**	**3,547,549**
Percent Differences						**-5%**	**4%**	**0%**	**11%**	**6%**

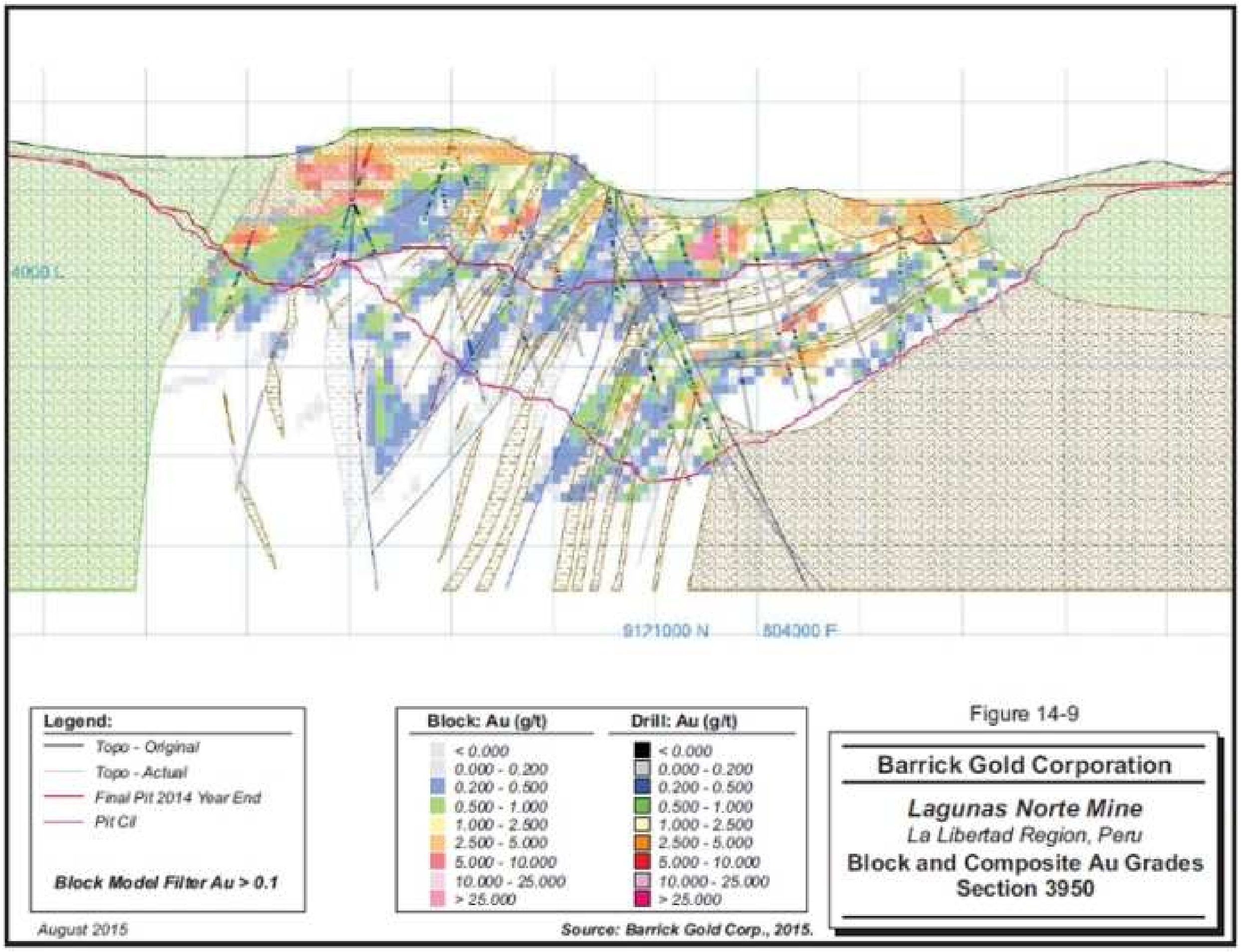


Figure 14-9

Barrick Gold Corporation

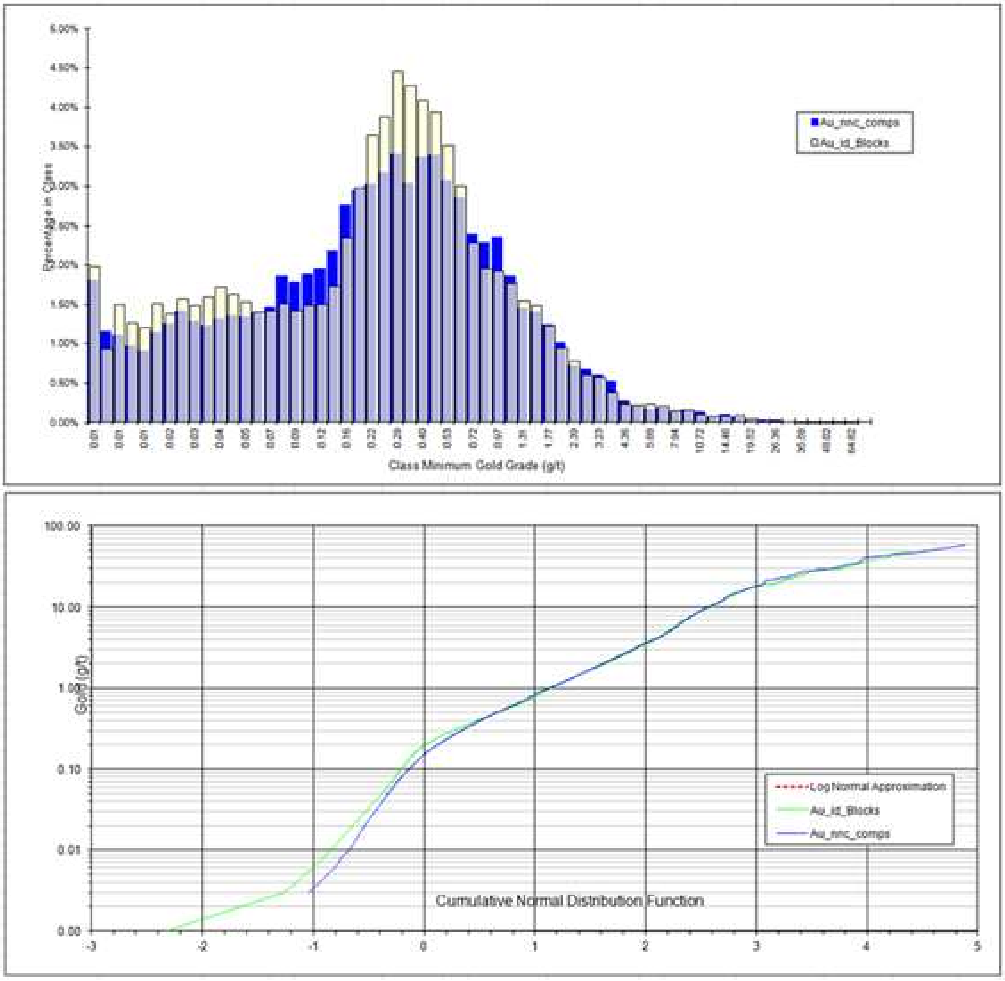
Lagunas Norte Mine

La Libertad Region, Peru

Block and Composite Au Grades Section 3950

Graphs that compare the composite and block gold grades show that the two populations have similar distributions with not much grade smoothing evident (Figure 14-10). The composites and blocks for the main lithology domains generally have similar gold means and grade distributions (MBM, 2014). The block means are generally slightly lower, which is normal.

FIGURE 14-10 GOLD BLOCK VERSUS COMPOSITE GRAPHS



The NN and current gold block models have very similar swath plots, again indicating very little grade smoothing (Figures 14-11 and 14-12).

FIGURE 14-11 GOLD SWATH PLOT BY EASTINGS

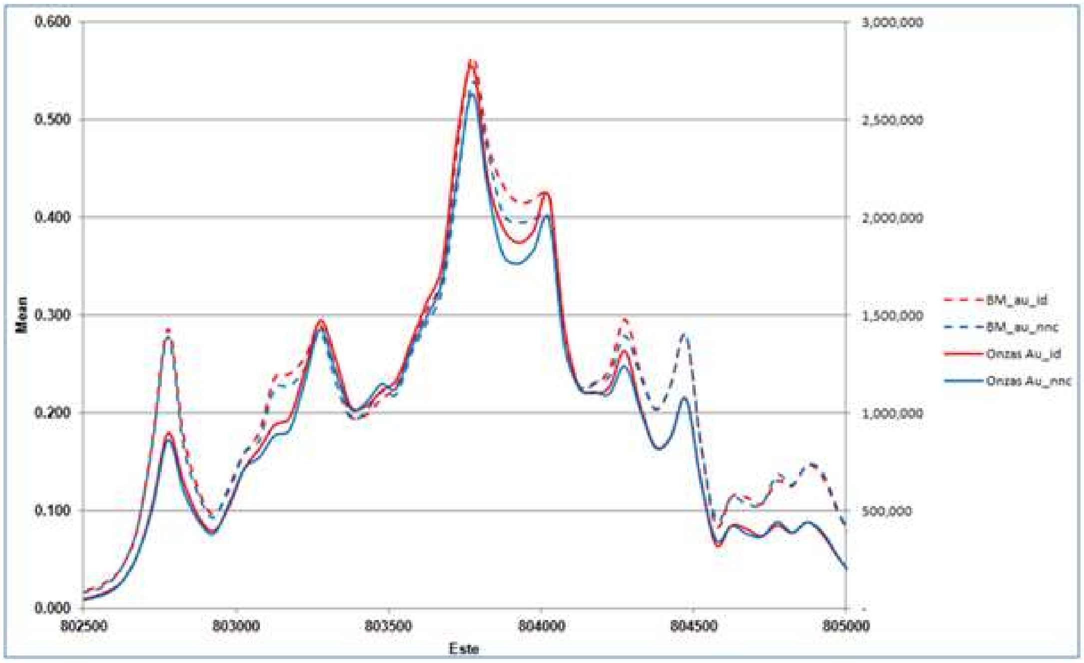
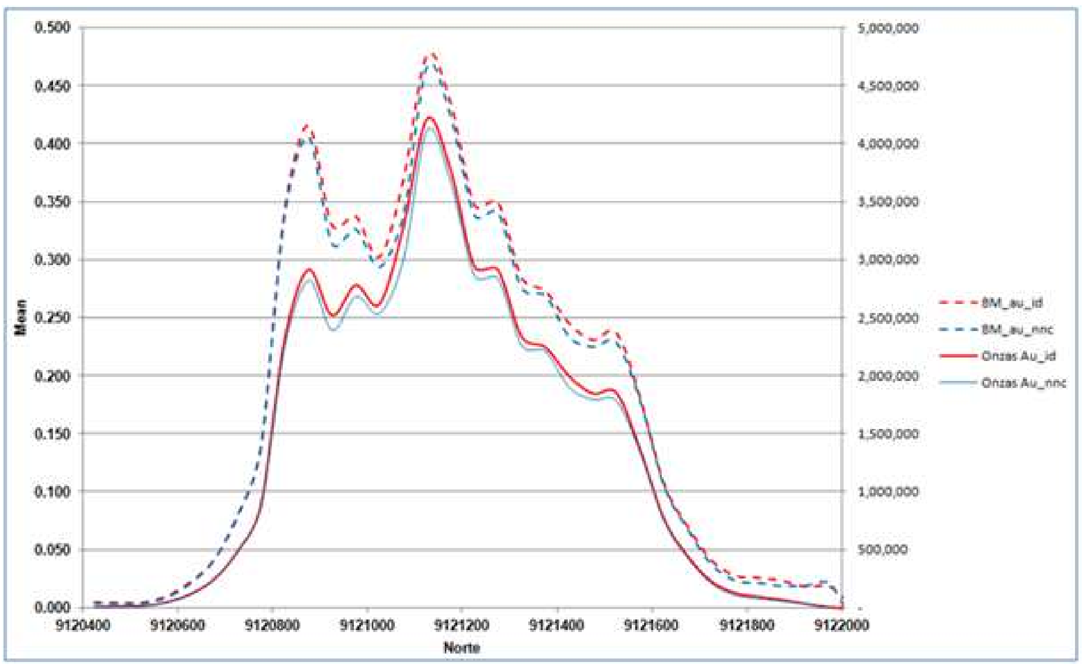


FIGURE 14-12 GOLD SWATH PLOT BY NORTHINGS



RESOURCE CLASSIFICATION

The classification criteria are based on distances from composites to block centroids and the number of holes. The 35 m, 60 m, and 90 m distances correspond to the ranges at approximately 60%, 80%, and 90% of the omni-directional correlogram sill, respectively. Figure 14-8 shows the omni-directional correlogram. In RPA's opinion, constraining the classification runs by the structural domains is very good practice. This means that composites located one side of a fault cannot influence the classification of a block located on the other side.

Measured Mineral Resources:

- Blocks containing a 10 m composite (based on a separate 10 m cube box search classification pass using 10 m composites).

Indicated Mineral Resources:

- Supported by composites from two holes situated within 60 m of a block or by composites from one drill hole within 35 m of a block.

Inferred Mineral Resources:

- Supported by composites from two holes situated within 90 m of a block.

Categories assigned to each block were post-processed to reduce isolated blocks enveloped in a different category and produce more continuous areas with similar classification categories. It is RPA's opinion that the application of a classification category clean-up script is best practice. RPA's view is that the Inferred classification criteria are conservative. Overall, RPA's opinion is that the MBM classification criteria are reasonable and slightly conservative.

VALUE REALIZATION INITIATIVES

UPGRADE SULPHIDE GRADE

The Lagunas Norte orebody was drilled using a large percentage of diamond core drill holes. During 2008, it was observed that gold grades from the diamond core holes were biased low relative to production and to RC drill holes. The site twinned a number of core holes with RC holes and confirmed that the core holes were significantly understated relative to the RC drill holes and the production blast holes. The reason for the bias is that diamond drilling was washing away the gold bearing fines during the drilling process while the RC drilling and blast holes were able to collect the fines and properly represent the true grade of the ore. The oxide orebody was re-drilled using RC drill holes and re-modelled. The sulphide portion of the orebody was not drilled with RC drill holes to reduce costs and there was not a plan to mine this material in the LOM plan.

There is an opportunity to drill the sulphide deposit with RC drill holes and potentially upgrade the sulphide grade by as much as 10% to 20%. Additional RC drilling will be needed to twin the existing core holes and ascertain the grade of the sulphide deposit.

15 MINERAL RESERVE ESTIMATE

The resource estimates discussed in Section 14 were prepared using industry standard methods and provide an acceptable representation of the deposit. The resource blocks include dilution so no additional dilution and a 100% mine extraction factor were applied to convert the Measured and Indicated Mineral Resource blocks situated in the ultimate pit design into Proven and Probable Mineral Reserves, respectively. RPA reviewed the reported resources, production schedules, and cash flow analysis to determine if the resources meet CIM (2014), to be classified as reserves. Based on this review, it is RPA's assessment that the Measured and Indicated Mineral Resource within the final pit design at Lagunas Norte can be classified as Proven and Probable Mineral Reserves.

The open pit Proven and Probable Reserves, including existing stockpiles scheduled for processing and inventory, total 69.7 Mt at 1.26 g/t Au and 4.4 g/t Ag, containing 2.8 Moz of gold and 9.9 Moz of silver as presented in Table 15-1.

TABLE 15-1 MINERAL RESERVES – DECEMBER 31, 2014
Barrick Gold Corporation – Lagunas Norte Mine

Category	Tonnage (Mt)	Au (g/t)	Ag (g/t)	Contained Metal (Moz Au)	Contained Metal (Moz Ag)
Proven	3.0	1.30	5.05	0.1	0.5
Probable	52.6	1.21	4.75	2.1	8.0
Stockpiles	12.1	1.47	3.56	0.6	1.4
Inventory	2.0	1.27	0.00	0.1	0.0
Proven & Probable	**69.7**	**1.27**	**4.42**	**2.8**	**9.9**

Notes:

1. CIM definitions were followed for Mineral Reserves.
2. Mineral Reserves are estimated at a variable cut-off grade based on process cost, recovery, and profit. The cut-off grades vary from approximately 0.235 g/t Au to 1.093 g/t Au.
3. Mineral Reserves are estimated as at December 31, 2014 using an average long-term gold price of US$1,100 per ounce, US$17 per ounce silver, and an US$/PEN exchange rate of 2.8.
4. The Mineral Reserve estimate includes inventory.
5. Numbers may not add due to rounding.

RPA is not aware of any mining, metallurgical, infrastructure, permitting, or other relevant factors that could materially affect the Mineral Reserve estimate.

16 MINING METHODS

SUMMARY OF MINING OPERATIONS

The Lagunas Norte Mine is a traditional open pit truck/shovel heap leach operation that has been in continuous operation since 2005. Table 16-1 summarizes the production history through December 2014. To date, Lagunas Norte has produced 8.4 Moz of gold and 7.8 Moz of silver.

TABLE 16-1 LAGUNAS NORTE PRODUCTION HISTORY
Barrick Gold Corporation – Lagunas Norte Mine

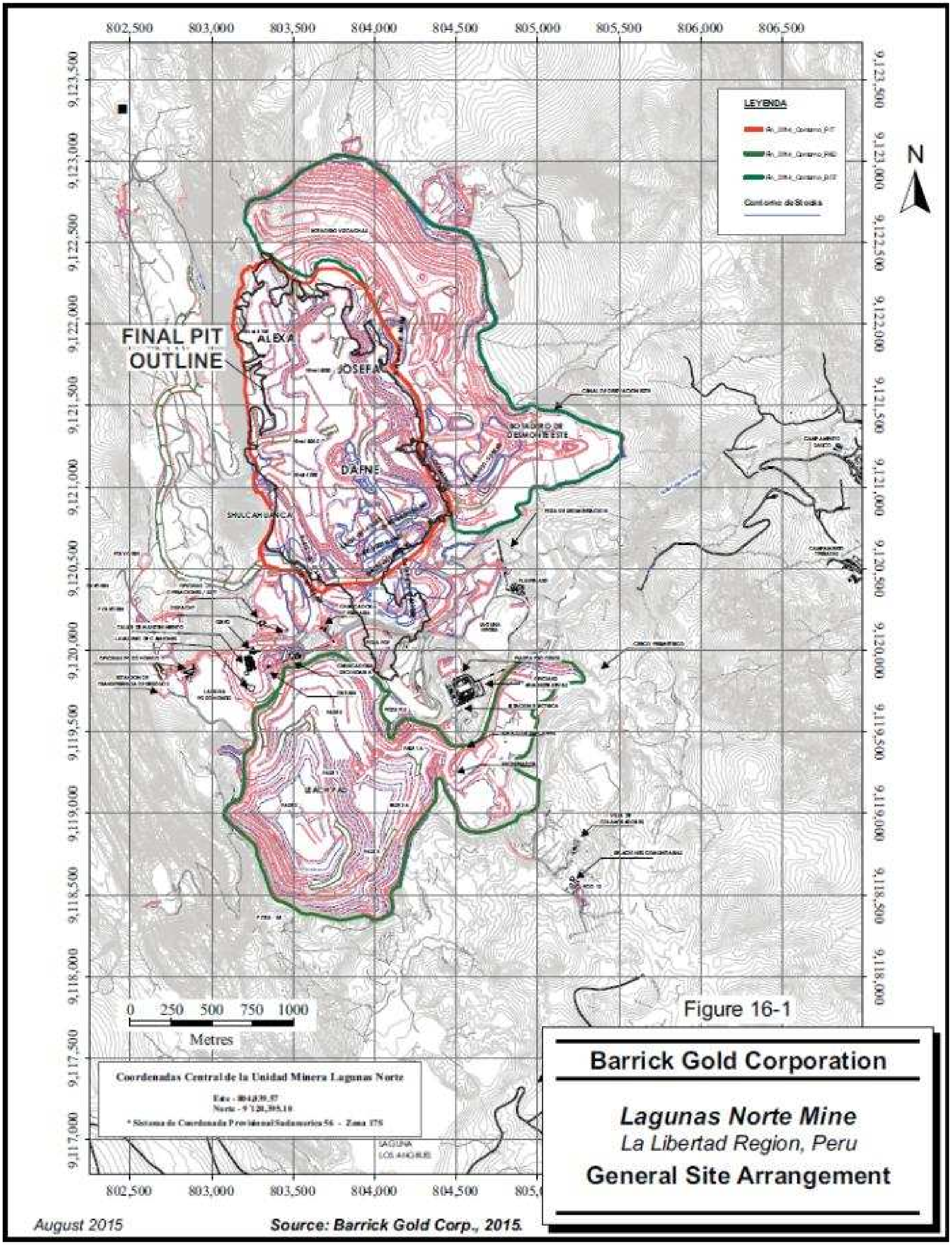
	Ore Placed					Production		Waste	Total	Strip
Year	(Mt)	(g/t Au)	(g/t Ag)	(Moz Au)	(Moz Ag)	(Moz Au)	(Moz Ag)	(Mt)	(Mt)	Ratio
2005	12.5	2.03	1.0	0.82	0.40	0.55	0.1	8.0	20.5	0.6
2006	19.4	2.26	2.10	1.41	1.28	1.08	0.4	5.2	24.7	0.3
2007	19.6	2.16	3.70	1.37	2.32	1.09	0.8	3.0	22.7	0.2
2008	22.9	1.87	3.50	1.38	2.57	1.17	1.2	1.6	24.5	0.1
2009	23.0	1.66	5.20	1.23	3.84	1.01	0.9	1.7	24.7	0.1
2010	20.0	1.35	4.10	0.87	2.64	0.81	0.8	5.3	25.3	0.3
2011	19.4	1.47	4.20	0.91	2.60	0.76	1.0	7.6	27.0	0.4
2012	20.5	1.26	3.95	0.83	2.61	0.75	0.9	9.1	29.6	0.4
2013	21.1	1.06	3.02	0.72	2.05	0.61	0.9	10.0	31.1	0.5
2014	22.1	0.99	4.32	0.70	3.07	0.58	1.9	23.3	45.4	1.1
Total	**200.5**	**1.59**	**3.63**	**10.25**	**23.38**	**8.41**	**7.8**	**74.8**	**275.5**	**0.4**

Notes:

1. Numbers may not add due to rounding.

Open pit mining operations are located on a mountain top with gentle to extreme terrain between elevations of 3,800 MASL and 4,200 MASL. Production is from a single open pit and is scheduled to be complete in 2017, followed by one additional year of stockpile rehandle. This requires the excavation of 113 Mt of material over the next three years.

Figure 16-1 presents the general site layout of Lagunas Norte.


FINAL PIT OUTLINE
ALEXA
JOSEFA
DAFNE
LEYENDA
N
0 250 500 750 1000
Metres
Coordenadas Central de la Unidad Minera Lagunas Norte
Figure 16-1
Barrick Gold Corporation
Lagunas Norte Mine
La Libertad Region, Peru
General Site Arrangement
August 2015
Source: Barrick Gold Corp., 2015.

The Lagunas Norte ultimate pit measures approximately 2.5 km along strike, typically 0.8 km to 1.2 km across with a surface footprint of approximately 240 ha, and has a maximum depth of approximately 250 m. The open pit is overlooked by the Shulcahuanca Dome (Figure 7-5), rising 200 m above the west wall pit rim with a base diameter of approximately 350 m and slopes of over 70 º facing the open pit. There is an approximate 50 m standoff from the base of the Shulcahuanca Dome for mine planning and operations.

There are four main areas of development identified within the ultimate pit: Dafne, Josefa, Alexa, and the moraines furthest to the north. The Shulcahuanca directly overlooks the Dafne area where the ultimate pit will be at its deepest. The Alexa area is to the northwest, north of the Shulcahuanca. Mining benches in Alexa form a north-south striking plateau with the pit wall stepping down on the east side and a steep natural rock face on the west side. The current vertical exposure to the west is up to 185 m, with the top 50 m in slopes typically between 60 º and 80 º. The moraines consist of gold bearing deposits of free digging material.

Final arrangement of the Lagunas Norte waste rock facilities (WRF) is for the continued development of surface dumps surrounding the Lagunas Norte ultimate pit other than to the south-southeast where the HLF is located, resulting in a relatively compact overall footprint.

Processing is based on two adjacent heap leach pads designed to merge into a single HLF. Various ore types both crushed and ROM are delivered to the HLF by haul truck. Solution from the HLF is pumped to the Merrill Crowe process facilities for production of gold bars with silver credits. The HLF is located starting less than 0.5 km south of the existing pit limits. Final HLF dimensions are up to 1.7 km north-south and up to 1.7 km east-west, for an ultimate footprint of approximately 280 ha.

Over 90% of remaining reserves are scheduled for crushing to a P_{80} of -50 mm prior to placement on the HLF as this offers a higher profit margin than ROM placement. The crushing facilities are located at the south end of the open pit, approximately 200 m from the existing pit rim and haul ramp exit. After crushing, the ore is stored in an overhead bin for loadout to the production fleet haul trucks. The haul trucks deliver the ore to the HLF for placement. The current haul distance is approximately 1.0 km uphill to the top of the existing HLF, followed by an increment of 0.5 km to 1.5 km to the destination.

Mining will continue through 2017 at a rate of 25 Mt in 2015 and 23 million tonnes in 2016 and an average of approximately 25 Mt of waste per year over the same two years. Heap leach placement from stockpile will continue for one year after mining ceases, with mine operations concluding in 2018.

The current mine life and production schedule is based on the Mineral Reserve statement in Section 15 of this report. Therefore, the potential exists for Inferred Mineral Resources within the ultimate pit to be included in the production schedule reported as waste, as they currently do not meet the economic and mining requirements to be categorized as Mineral Reserves.

MINE DESIGN

Lagunas Norte is a typical truck/shovel open pit operation with a fleet of 184 tonne payload rigid frame haul trucks combined with diesel powered face shovel excavators and front end loaders as the primary loading equipment. Haul trucks are also utilized to transport ROM ore directly to the HLF and crushed ore to the HLF for stacking. A fleet of large diesel powered blast hole rigs are employed for production drilling of blast patterns.

The Mineral Resource model, described in Section 14 of this report, is exported from Vulcan software and imported into Q'Pit Ltd.'s Q'Pit software (Q'Pit). The mine model is prepared in Q'Pit, applying metallurgical recoveries based on material types, calculating potential block revenue, and defining slope sectors based on geotechnical domains in the model. The mine model is exported from Q'Pit and imported into GEOVIA's Whittle 4.X software (Whittle) for open pit optimization using the Lerchs-Grossmann algorithm. Pit shells generated by Whittle are imported into Q'Pit for mine design, Life of Mine (LOM) production scheduling, and Mineral Reserve reporting.

There are 12 different material type classifications for ore at Lagunas Norte, along with multiple classifications for waste material, some of which is designated for potential future processing using other process methods and therefore stockpiled separately as waste. In addition, waste material is identified as non-acid generating (NAG) or potentially acid generating (PAG) in order to determine destination.

The 12 material type classifications for ore are a function of gold grade, carbon content (TCM), sulphur content, and copper content; each has a set of defined metallurgical properties with recoveries and operating costs. Material type classification is based primarily on logging and analysis of production blast hole cuttings.

In general, the ore is considered to be clean or contaminated depending on the quantity of TCMs and sulphur present, with ore being considered contaminated if it is preg-robbing in the HLF. Table 16-2 presents a detailed breakdown of the 12 ore material type classifications. In addition, the average metallurgical gold recovery for each ore type is presented based on the year-end 2014 cut-off grade report for the current reserves.

TABLE 16-2 ORE TYPE CLASSIFICATION
Barrick Gold Corporation – Lagunas Norte Mine

Ore Type	g/t Au	TCM %	S %	ppm Cu	Au Process Recovery
M1: crush, clean	>= 0.40	< 0.10	< 0.25	—	82.04%
M1_LG: crush, clean	< 0.40	< 0.10	< 0.25	—	82.04%
M1A: crush, clean	—	< 0.10	<0.40	< 350	76.69%
M2AL: crush, clean	—	≥ 0.10 & < 0.20	< 0.25	—	73.45%
M3: crush, sulphide	—	< 0.10	≥ 0.40	< 350	66.80%
M3A: crush, sulphide	—	< 0.10	≥ 0.25	≥ 350	20.94%
M2AH: crush, low TCM	—	≥ 0.20 & < 0.50	< 0.25	—	63.44%
M2B: ROM, contaminated	—	≥ 0.50 & < 1.50	< 0.25	—	44.40%
M3B_Low: crush, contaminated	—	≥ 0.10 & < 0.50	≥ 0.25	—	29.06%
M3B_Mid: ROM, contaminated	—	≥ 0.50 & < 1.50	≥ 0.25	—	32.50%
MoCl: ROM, clean	—	< 0.10	< 0.25	—	73.35%
MoCo: ROM, contaminated	—	≥ 0.0 & < 1.50	≥ 0.25 & < 1.65	—	62.45%

Notes:

1. For the g/t Au column the prevailing cut-off grade overrides all entries as the minimum gold grade required to be considered as ore, otherwise there are no restrictions for gold.
2. A '-' symbol in the ppm Cu column indicates that there are no restrictions for copper.
3. All ore types with TCM ≥ 1.5% are not considered as Mineral Reserves due to low gold/silver recovery and preg-robbing properties.

Clean ore is designated for the clean heap leach facility (CHLF), while contaminated ore is designated for the single pass heap leach facility (SPHLF). Both the CHLF and the SPHLF are located within the single footprint of the HLF. The overall weighted gold recovery is 83% for CHLF ores and 49% for SPHLF.

In general, all CHLF ore is sent to the crusher prior to HLF placement. In addition, SPHLF ores with TCM < 0.5% are sent to the crusher prior to HLF placement permitting an increase in metal recovery over ROM placement, whereas SPHLF ores with TCM ≥ 0.5% are sent to the HLF without crushing.

Table 16-3 presents the parameters used for developing the mine model and running the open pit optimizations in Whittle. The overall gold and silver recovery is presented for the Mineral Reserve statement grades. Actual gold and silver recovery is calculated on a block by block basis dependent on ore type (see Table 16-2) and grade.

TABLE 16-3 MINE OPTIMIZATION PARAMETERS
Barrick Gold Corporation – Lagunas Norte Mine

Input Parameter	Units	Value
Revenue Factors		
Au Price	US$/oz	1,100.00
Ag Price	US$/oz	17.00
Au Pay Factor	%	100
Ag Pay Factor	%	100
Exchange Rate	PEN:US$	2.8
Selling Costs		
Refining	US$/oz	3.115
Royalty	%	2.51
Pit Slopes (Inter-ramp) by Rocktype		
By Zone	degrees	Variable
Mining Parameters		
Mining Reference Cost	US$/t moved	2.402
Re-handle: M1_LG ores	US$/t moved	0.707
Re-handle: Colluvial ores	US$/t moved	0.861
Mining Recovery	%	100
Mining Dilution	%	0
Processing Parameters		
Au Recovery, Overall	%	63
Ag Recovery, Overall	%	21
Process Cost, CHLF Ore	US$/t crushed	2.83
Process Cost, SPHLF Ore	US$/t crushed	4.07
Process Cost, SPHLF Ore	US$/t ROM	3.37
Heap Leach, Placement	US$/t processed	0.697
Heap Leach, Re-handle	US$/t moved	0.838
Heap Leach Expansion	US$/t processed	2.815
G&A Cost	US$/t processed	1.444

Input Parameter	Units	Value
Operating Assumptions		
HLF Placement Rate	tpd	63,000
Average Specific Gravity	t/m^3	2.54
Diesel, FOB Site	US$/L	1.05
Explosives, Average FOB Site	US$/kg	0.744
Cyanide, FOB Site	US$/kg	2.754
Lime, FOB Site	US$/kg	0.16
Electricity, FOB Site	US$/kWhr	0.069

The Whittle optimizations are run at gold prices between US$900/oz and $1,400/oz for use in pit phase selection for production sequencing and to test sensitivity to pit limits at higher gold prices. The cash optimum pit at US$1,100/oz gold is selected for use in the ultimate pit design.

Mining cost is an average of all tonnes moved based on a detailed LOM operating cost estimate with cost sensitivities run up to ± 20%. No mining recovery or mining dilution is assumed in the Whittle optimization as this is factored into the resource model by a combination of block size selection and continuity of the mineralization. In some instances, diluting material will grade above the cut-off grade but will not be considered ore due to TCM content. Mining factor assumptions are verified through good reconciliation performance of the resource model to the ore control model and dispatch reporting.

Mining of the Shulcahuanca outcrop is not permitted. In order to deal with this and still produce an optimized open pit result, the cost of mining blocks within the restricted Shulcahuanca area are adjusted to force the optimum pit boundaries to work around the restricted area.

A separate process cost is applied to CHLF and SPHLF ore types as SPHLF ores require a greater quantity of consumables. All ore types placed are charged a heap leach placement cost which is variable over the LOM dependent on the haulage profile for the given period. SPHLF ores are charged a rehandle cost as spent material is relocated to another area of the HLF once the leach cycle has completed, in order to allow for placement of the next batch of SPHLF ore. Heap leach expansion costs are applied to all ore processed as an operating cost, along with general and administrative (G&A) costs.

The HLF placement rate is the legal limit for placement based on Lagunas Norte's operating permits; this includes all material placed whether crushed or ROM. The LOM production schedule considers crushing at 54,000 tpd plus 8,000 tpd of ROM contaminated ore placement.

Cut-off grades for reporting Mineral Reserves are calculated utilizing the following formula:

COG=[(Cp+Hle+Hlp+Cga)/((YAu*(SPAu-TRAu)+(YAg*(SPAg-TRAg))*(1-CR))]*31.1035

Where, COG = internal (breakeven in-pit) gold equivalent cut-off grade (g/t)

Cp = processing cost ($/t processed)
Hle = heap leach expansion cost ($/t processed)
Hlp = heap leach placement cost ($/t processed)
Cga = general and administrative cost ($/t processed)
YAu = gold metal recovery (fraction)
YAg = silver metal recovery (fraction)
SPAu = gold metal selling price ($/oz)
SPAg = silver metal selling price ($/oz)
TR = metal treatment charges/refinery charges (TC/RC) and transport cost ($/oz)
CR = Centromin Royalty (fraction)

Table 16-4 details internal cut-off grades for each ore material type. Both resource and reserve cut-off grade estimate details for Lagunas Norte are very well documented in Porras (2015).

TABLE 16-4 INTERNAL CUT-OFF GRADES, MINE RESERVES
Barrick Gold Corporation – Lagunas Norte Mine

Ore Type	Internal Cut-Off g/t Au
M1: crush, clean	0.40
M1_LG: crush, clean	0.24
M1A: crush, clean	0.23
M2AL: crush, clean	0.25
M3: crush, sulphide	0.29
M3A: crush, sulphide	1.09
M2AH: crush, low TCM	0.37
M2B: ROM, contaminated	0.82
M3B_Low: crush, contaminated	0.89
M3B_Mid: ROM, contaminated	0.72
MoCl_ROM, clean	0.27
MoCo_ROM, contaminated	0.36

Notes:

1. Cut-off grades are calculated for the 2014 Mid/End-Year Cut-off Grade Report.

In addition to the mine reserve cut-off grades used for production scheduling, a floating cut-off grade is employed in daily operations, which is updated every three months or as required to better reflect the current gold price market. Mineralized material which falls between the mine reserve cut-off and floating cut-off is dispatched to the HLF as long as it is not displacing higher grade ores or upsetting the CHLF – SPHLF balance, in which case it would be dispatched to a stockpile.

Ultimate pit design is based on the optimum cash pit shell from Whittle at US$1,100/oz gold. Additional pit shells are used as guides to design pit phases leading up to the ultimate pit, in order to maximize Mine Net Present Value (NPV) while maintaining a practical mine sequence and production schedule. Pit designs, long term production scheduling, and reserve reporting are completed in Q'Pit. Pit mid-bench lines are digitized in Q'Pit, honouring the Whittle pit shell outline and all pit wall slope constraints, and include haulage ramps.

In RPA's opinion, the ultimate pit design honours the Whittle optimum pit shell, except for a few minor areas where access ramps are required or walls need to be smoothed out for operability.

Detailed mine design parameters are presented in Table 16-5. Pit wall slopes vary based on structural domain, as per recommendations provided by Piteau Engineering Latin America S.A.C. (Piteau) discussed later in this section.

TABLE 16-5 MINE DESIGN PARAMETERS
Barrick Gold Corporation – Lagunas Norte Mine

Parameter	Units	Value
Haul Road Width	m	30
Haul Road Gradient, Maximum	%	10
Mining Bench Height	m	10
Safety Berm Width, Highwall	m	8 – 12.9
Bench Face Angle, Highwall	degrees	60 - 80
Inter-ramp Slope Angle, Highwall	degrees	36 - 52

The 30 m haul road width design includes a single shoulder berm and water collection ditch.

RPA has reviewed the pit designs and is of the opinion that they follow good engineering practice. All phases are designed with sufficient room to allow for operations, and roads and ramps have been delineated.

GROUND CONDITIONS/SLOPE STABILITY

The geotechnical analysis to develop slope design parameters for Lagunas Norte was completed by Piteau originally in 2010, with the most recent work completed in March 2013. Piteau developed the feasibility-level geotechnical design criteria for Lagunas Norte in 2003. The 2013 work updated the final pit slope analysis for the final pit available at that time (Ultimate Pit 2020).

Table 16-6 summarizes the current inter-ramp slope design recommendations for Lagunas Norte. Ranges for the inter-ramp slope angle (IRA), bench face angle (BFA), and catch berm width (CBW) are provided to cover each domain sector excluding footwall slopes. All design sectors are based on double benching to 20 m except for two, which are based on 10 m single bench height.

TABLE 16-6 SUMMARY OF PITEAU INTER-RAMP SLOPE DESIGN RECOMMENDATIONS
Barrick Gold Corporation – Lagunas Norte Mine

Highwall Structural Domain	IRA (°)	BFA (°)	CBW (m)
KCW-U	40 – 48	60 – 70	10.7 – 12.9
KCW-L	43 – 47	60 – 70	10.0 – 12.1
KCE-U	36 – 52	60 – 80	8.0 – 12.9
KCE-L	43 – 50	60 – 75	10.0 – 12.6
AND-E	46 – 50	70 – 75	11.4 – 12.6
AND-SW	36 – 45	60 – 70	8.0 – 12.7
VOLC-W	43 – 52	65 – 80	10.7 – 12.1
VOLCANICS	41 – 48	60 – 70	10.7 – 12.1
OVERBURDEN	Maximum Overall Slope Angle of 30 degrees		

Table 16-7 summarizes the applicable footwall slope design recommendations for Lagunas Norte, based on expected domain sectors. In general, the BFA is set to follow the bedding dip angle, with bench height increasing as the bedding dip angle decreases.

TABLE 16-7 SUMMARY OF FOOTWALL SLOPE DESIGN RECOMMENDATIONS
Barrick Gold Corporation – Lagunas Norte Mine

Range of Bedding Dip (°)	Bench Height m	IRA degrees	BFA degrees	CBW m
Non – Carbonaceous Sandstone & Siltstone				
0-30	20	59	90	12
31-50	40	27.6-42.6	31.0-50.0	10
51-80	20	37.6-55.9	51.0-80.0	10
81-90	20	52.8-59.0	81.0-90.0	12
Carbonaceous Sandstone, Mudstone & Coal Measures				
0-20	10	45	90	12
21-40	40	19.3-34.7	21.0-40.0	10
41-55	20	31.2-39.8	41.0-55.0	10
56-70	20	38.1-46.1	56.0-70.0	12
71-90	20	43.8-55.0	71.0-90.0	14

Figure 16-2 presents a plan view of the slope domains on the Lagunas Norte ultimate pit.

As part of the overall water management plan, pit slopes require depressurization, which is achieved through a combination of vertical and horizontal dewatering wells, and control of surface water.

RPA is of the opinion that the work completed by Piteau was of an appropriate scope and the pit design is based on reasonable engineering analysis and assumptions.

A sophisticated system of manual and automated data collection equipment has been installed at Lagunas Norte for monitoring pit wall activity. In addition to a network of prisms, piezometers, and extensometers, a radar system and photogrammetry are used in high risk zones, such as on the northeast wall.

In 2014, Anddes Asociados S.A.C. (Anddes) reviewed the pit slope stability, leach pad stability, and waste dump stability. The overall pit stability safety factors are above the minimum required, however, some local pit failures may occur and close monitoring and additional cleaning work will be required at bench level. The waste dump and leach pad review presented in Anddes (2014) shows adequate safety factors.

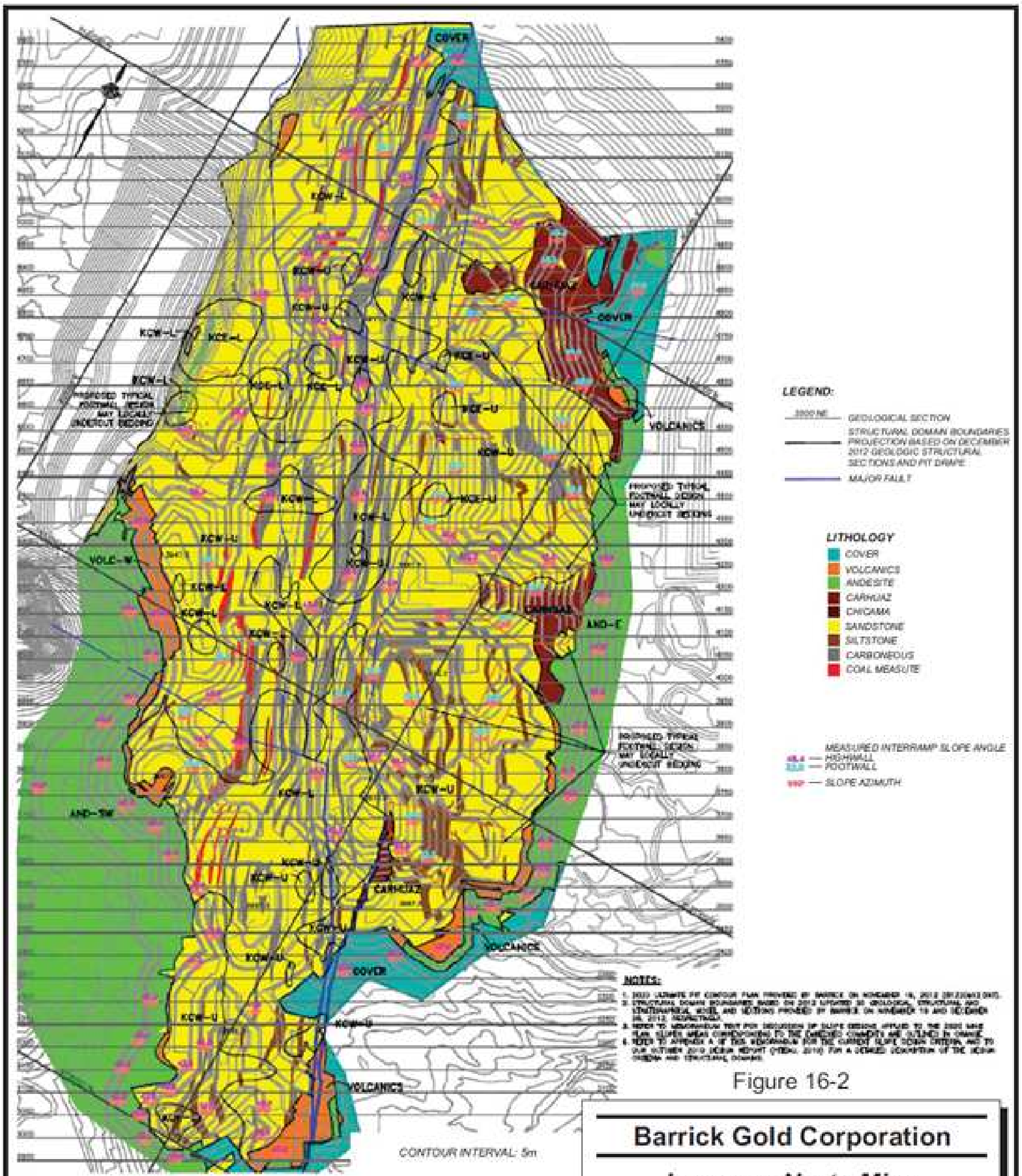


Figure 16-2

Barrick Gold Corporation

Lagunas Norte Mine

La Libertad Region, Peru

Final Pit Slope Domains in Plan

August 2015

Source: Piteau Associates, 2013.

PRODUCTION SCHEDULE

Only Mineral Resources with classification of Measured or Indicated can be converted to Proven or Probable Mineral Reserves for production scheduling. A mine production schedule was developed from the mine design that targets the permitted limit for heap leach placement of ore at Lagunas Norte of 70,000 tpd as of December 2014. During the last two years of open pit mining operations in 2015 and 2016, ore placed on the HLF is, respectively, 25 Mtpa and 23 Mtpa, the majority of which is crushed prior to placement. This is followed by one additional year of production from stockpiles. Total ore plus waste mining over this period averages approximately 50 Mtpa (137,000 tpd). Table 16-8 summarizes the open pit mine production schedule by year.

TABLE 16-8 MINE PRODUCTION SCHEDULE
Barrick Gold Corporation – Lagunas Norte Mine

	Open Pit Mine Production Schedule							
Year	(Mt)	(g/t Au)	(g/t Ag)	(Moz Au)	(Moz Ag)	Waste (Mt)	Total (Mt)	Strip Ratio
2015	25.23	1.05	3.72	0.85	3.02	25.15	50.38	1.0
2016	22.91	1.27	5.37	0.94	3.95	25.87	48.78	1.1
2017	7.46	1.63	6.46	0.39	1.55	6.44	13.89	0.9
Totals	**55.60**	**1.22**	**4.77**	**2.18**	**8.52**	**57.45**	**113.05**	**1.0**

Notes:

1. Numbers may not add due to rounding.

During regular mining operations and as part of the LOM plan, short term and long term stockpiles are utilized. Low grade CHLF ores are stockpiled during times when crusher capacity is fully utilized by higher grade CHLF ores. Similarly, SPHLF ores are stockpiled when required to prevent displacement of better quality CHLF ores and to minimize preg-robbing issues. Last, potentially economic mineralization with TCM ≥ 1.5% is also stockpiled for potential future processing via other methods such as the Refractory Project; these stockpiles are not included in the statement of reserves and are not processed in the current LOM production schedule. Table 16-9 summarizes the HLF placement schedule by year, which includes production from both open pit operations and stockpile reclaim.

TABLE 16-9 HEAP LEACH PLACEMENT SCHEDULE
Barrick Gold Corporation – Lagunas Norte Mine

	Heap Leach Placement Schedule					Recovery		Recoverable Metal	
Year	(Mt)	(g/t Au)	(g/t Ag)	(Moz Au)	(Moz Ag)	Au (%)	Ag (%)	(Moz Au)	(Moz Ag)
2015	22.8	1.00	3.61	0.7	2.6	84	31	0.6	0.8
2016	22.9	1.09	4.40	0.8	3.2	66	31	0.5	1.0
2017	19.1	1.60	5.62	1.0	3.4	45	31	0.4	1.1
2018	5.0	1.94	4.78	0.3	0.8	40	31	0.1	0.2
Totals	**69.7**	**1.26**	**4.5**	**2.8**	**10.1**	**59**	**31**	**1.7**	**3.2**

Notes:

1. Numbers may not add due to rounding.

The difference between totals for Tables 16-8 and 16-9 represents the stockpile inventory at the start of 2014, which is approximately 14.1 Mt at 1.45 g/t Au.

WASTE ROCK

Waste rock from Lagunas Norte open pit mining operations is stored starting just past the ultimate pit rim extending from the southeast along the eastern edge and to the north forming one continuous WRF with a total footprint of approximately 200 ha. Elevations range from approximately 4,000 MASL to 4,200 MASL, with individual dump faces typically less than 50 m vertical.

To the east and southeast, the WRF is referred to as Botadero de Desmonte Este. The southern face of this area, which extends approximately 1,000 m east of the ultimate pit rim, is currently final and in the process of being reclaimed with new vegetation in place.

Heading north, the WRF wraps around the eastern rim of the ultimate pit and is currently active. At the far north end of the ultimate pit is the Botadero Vizcachas WRF which will extend approximately 800 m north of the ultimate pit rim. This area is the footprint of current mining operations in the moraines area. Once moraine stripping is complete, this area will be backfilled as part of the final WRF layout.

In addition to the WRF identified above, a relatively small, approximately 10 ha, low grade stockpile is developed during mining of the Alexa area of the pit. During blasting operations on the Alexa plateau, some material is cast to the western free face resulting in a build-up of low grade NAG material on the side of this slope. This material is currently not in the LOM production schedule, however, will be considered for processing at the end of the mine life dependent on market conditions. In the original mine plan feasibility study, this area was referred to as the west waste facility, and had a significantly greater footprint than the current mine plan.

Approximately 75% to 80% of waste material destined for the WRF is considered PAG. As part of the water management plan, a series of water diversion and collection ditches are constructed, allowing for the collection of PAG drainage so that it can be treated at the water treatment plant prior to discharge.

Above cut-off grade material with TCM ≥ 1.5%, thus currently considered waste, is stockpiled within the WRF footprint in the event a new process flow sheet is enacted that can profitably extract the gold from this material.

Sufficient waste rock storage capacity exists within the WRF and ultimate pit backfill to support the mine production schedule and Mineral Reserve statement.

A comprehensive WRF geotechnical report was prepared by Piteau in 2009 for the current arrangement.

HEAP LEACH FACILITY

The development of the original Lagunas Norte site in 2005 considered mineral reserves of 116 Mt with Phase 0 to 4 leach pad stacking capacity constrained to an ultimate 179 Mt. Exploration efforts since then have increased the mineral reserves requiring the construction of an adjacent Phase 5 to 9 leach pad that will be constructed in segments to accommodate process tonnage for the extended LOM.

The footprint of the final HLF design is approximately 300 ha starting at approximately 4,000 MASL. The maximum bench elevation is approximately 4,270 m, built up with bench intervals of 10 m.

A comprehensive HLF geotechnical report was prepared by Golder (2004), and has been revised for the expanded footprint.

MINE EQUIPMENT

Lagunas Norte is a typical truck/shovel open pit operation, with all major production equipment furnished with GPS and dispatch systems. For production scheduling, equipment horsepower is de-rated for the operating elevations.

The current haul truck fleet consists of 184 tonne payload. Some haul trucks are assigned to hauling crushed ore from the overhead ore bin to the HLF on a daily basis as required.

Loading operations are conducted using a variety of diesel powered machines for production, including hydraulic shovel and front end loaders.

Mine mobile equipment production rates were reviewed with availability and utilization to see if mining production rates and costs are appropriate. RPA is of the opinion that the equipment productivities for the production fleet are appropriate. The current mine equipment fleet is listed in Table 16-10, along with major support equipment.

TABLE 16-10 MINE EQUIPMENT FLEET
Barrick Gold Corporation – Lagunas Norte Mine

Equipment	Manufacturer	Current 2014
Haul Truck, 730E	Komatsu	19
Haul Truck, 785C	Caterpillar	4
Face Shovel, PC4000	Komatsu	2
Wheel Loader, WA1200	Komatsu	3
Drill, SKS 12	Reedrill	4
Drill, DMM2	Ingersoll Rand	1
Drill, ECM-370	Ingersoll Rand	1
Drill, Ranger 700	Sandvik	1
Track Dozer, D375A	Komatsu	7
Motor Grader, GD825A	Komatsu	4
Backhoe, PC300LC	Komatsu	4
Backhoe, PC750	Komatsu	1
Backhoe, WB140	Komatsu	1
Wheel Loader, WA500	Komatsu	1
Wheel Dozer, WD600	Komatsu	3
Water Truck, 330M	Komatsu	2
Utility Trucks, 20t	—	5

MANPOWER

Lagunas Norte operates on a 24-hour per day, 365 days per year schedule. For most operating positions, there are four work crews with two on site at any time working two 12-hour shifts per day, 14 days on followed by 14 days off.

Mining operating manpower is based on approximately four operators for each operating position. Mining manpower for operations, maintenance including process maintenance, and technical services in 2014 was 754 employees.

MINE INFRASTRUCTURE

Lagunas Norte has all necessary infrastructure for a large open pit mine operation in a remote location at high altitude. Mining related infrastructure includes a truck shop, truck wash facility, warehouse, fuel storage and distribution facility, explosives storage and magazine sites, and electrical power distribution and substations to support construction and mine operations.

VALUE REALIZATION INITIATIVES

PIT OPTIMIZATION

A review of the reserve pit design was performed in order to evaluate the potential for an optimization to recover ore blocks near the final pit. Final ramp configurations and last bench geometries were adjusted to add extra “ore” blocks. A review for optimization showed an improvement of 0.5 Mt grading 0.567 g/t Au. This change added approximately 10,000 mined ounces. Some Indicated Resource blocks were included in these additional blocks.

IN-PIT WASTE DUMP

An area for the waste dump was identified within the ultimate pit near the Vizcachas area and to the north of the pit. This reduced the capital expenditure for the expansion of the East Waste Dump (Phase 1) located beyond the current dump limits and permits. The design criteria consider a slope of 3:1 with berms of 10 m wide each 45 m in height to have an effective slope of 18.5º. This waste dump design follows closure design parameters.

The in-pit waste dump is being implemented and is expected to reduce capital costs by $67 million as the new waste dump area would not need preparation (stripping, ditch construction, etc.).

Other benefits include the reduction in environmental impact for acid water generation (no new area required).

Some risks include the loss of marginal ore under this new in-pit waste zone. This material amounts to approximately 7,500 contained ounces, which is not economic at present metal prices.

17 RECOVERY METHODS

PROCESS DESCRIPTION

The recovery process used at Lagunas Norte is a two-stage conventional crushing circuit, followed by heap leaching, and a Merrill Crowe zinc cementation plant and CIC for recovery of the precious metals. The major components of the process are:

- Primary crushing
- Secondary crushing
- Heap leaching
- Recovery plant
- Refinery
- Water discharge treatment plant

A simplified process flow sheet is provided in Figure 17-1.

CRUSHING CIRCUIT

The crushing circuit was originally designed to crush 42,000 tpd, but the capacity is permitted to 63,000 tpd. Historically, it was determined that the gold recovery from heap leaching at Lagunas Norte is not overly dependent on crush size so the size has been increased over time to allow more material to be processed through the crushing circuit. Haul trucks dump ore directly into the gyratory crusher. A rock breaker is available to break large rocks at the mouth of the primary crusher. The ore is discharged through an apron feeder onto belt conveyor number one which conveys it to a 2,000 tonne live capacity stockpile.

From the stockpile the ore is fed to the secondary crushers by conveyor belt number two. A splitter divides the feed into two parallel lines. Each line has a double deck screen. Oversize material passes to an MP800 secondary crusher which reduces the size to 80 percent passing (P_{80}) approximately 50 mm. The product from each line is delivered to belt conveyors number three and number four, which in turn deliver the crushed ore to conveyor belt number five. Finally, the material is stored in the 1,000 tonne live capacity ore bin. From the bin the crushed ore is loaded into haul trucks that transport the ore to the leach pad. Lime is added to the trucks to raise the pH of the leach solution.

HEAP LEACH PAD

The leach pad stacking plan is developed by the leach department and the Technical Services department at Lagunas Norte. Stacking of the crushed ore is done in 10 m high lifts. A high precision GPS dozer assists in the stacking operation by pushing the material over the edge of the surface while maintaining a level surface and preventing excessive segregation of the material. After completing the stacking of one cell, the surface is ripped using dozers to scarify the upper layer that has been compacted by the operation of the haul trucks on the leach pad during material placement.

Contaminated ore is stacked on a separate area of the leach pad. Some of the contaminated ore is crushed and some is not, depending on the type of ore.

Once the cell has been prepared, a drip irrigation system is laid on top of the ore. Cyanide solution is trickled through the pad at the average rate of 10 to 20 L/m^2/h during the leach cycle and depending on the ore type. Due to the net positive water balance, raincoats are used to reduce the amount of water entering the processing circuits. After passing through the pad, pregnant solutions are collected from under the raincoats and are temporarily stored in the pregnant leach solution (PLS) pond. Each pad has its own PLS pond and pumping system and the solution from the PLS ponds can be pumped to the Merrill Crowe and/or the carbon-in-column (CIC) plant. The plant and pumping systems of the Merrill Crowe plant have been modified so a portion of the pregnant solution as well as solution collected in the sediment ponds is recirculated to the leach pad to increase the flow rate to 3,000 m^3/h, which is adequate to maintain the optimum solution to ore ratio or to keep the water balance under control.

Water that flows from the surface of the raincoats is collected in one of six raincoat ponds. Samples of the water are collected and analysed from weak acid dissociable (WAD) cyanide. If the WAD cyanide concentration is less than 0.1 ppm, the water can be discharged from the property without further treatment.

RECOVERY PLANT

The CIC desorption solution is pumped and mixed with the PLS prior to feeding the Merrill Crowe zinc cementation recovery plant. The suspended solids are removed in the clarifier and the dissolved oxygen concentration is reduced to less than one part per million by the de-aerator. From the de-aerator the solution passes through a cone where powdered zinc is added. In the zinc cementation process, the zinc is exchanged into the solution and the gold and silver precipitate out of the solution. The precipitate is recovered from the solution using filter presses, and the barren solution is stored in a tank. Cyanide and anti-scalant are added to the barren solution and it is recirculated to the leach pad via the process overflow pond (POP).

REFINING

The precipitate that is recovered in the filter presses is put into trays that are placed in mercury retorts. In the retorts, the precipitate is gradually heated so the precipitate dries and the mercury is evaporated, condensed, and recovered under a vacuum system. The mercury is collected and stored or transported in special containers, according to international standards.

After retorting, the precipitate is mixed with flux and placed in a smelting furnace. The impurities are removed from the precious metals in the slag and the mixture of gold and silver is recovered as doré. The doré is transported to a refinery outside of the operation for further processing.

WATER TREATMENT PLANT

CYANIDE DESTRUCTION

In the event that the water balance results in a surplus inventory of solution in the system, it is necessary to divert a certain quantity of barren solution to the cyanide destruction plant. Cyanide destruction at Lagunas Norte utilizes sodium metabisulphate and air to create a strongly oxidizing sulphur dioxide (SO_2)/air mixture, which is catalyzed by copper in solution or added as copper sulphate. Free cyanide and WAD cyanide are oxidized to form cyanate ions, which are later degraded to carbon dioxide (CO_2) and soluble ammonia. The plant is designed to destroy 117 kg/h WAD cyanide equivalent to approximately 600 m^3/h of barren solution containing less than 195 ppm as WAD cyanide.

ACID ROCK DRAINAGE

In the event acid rock drainage (ARD) is generated from the east WRF, the solutions will be temporarily stored in the ARD pond. From the ARD pond the solution is pumped to an oxidation tank and then to a pH regulation tank. Suspended solids are separated in a clarifier. The sludge from the clarifier is stored in sludge ponds that were built for this purpose. The Botadero Este (BDE) acid rock drainage treatment plant is currently capable of treating a flow of 1,500 m^3/h. All acid water generated by the operation is collected from the perimeter of the east dump and leach pad and treated.

WATER DISCHARGE

The effluent from the ARD plant at a pH of approximately 3.5 is mixed with the detoxified solution from the cyanide destruction circuit at a pH of approximately 9.2. Lime is added to increase the pH to greater than 8.7, which causes additional metals to be removed from the water by precipitation. Finally, the pH is reduced to a pH of approximately 7.0 by the addition of sulphuric acid and the water is stored in a polishing pond until assays can be completed to confirm that it meets water quality standards required for discharge from the property. After the water quality is confirmed the water is discharged.

SECONDARY TREATMENT PLANT

A secondary water treatment plant is used to further improve the treatment facilities and the quality of the water that is discharged from the property.

CARBON-IN-COLUMN PLANT

The CIC plant began operation in August 2013 and processes an average 1,800 m^3/h of solution and accommodates a flow rate of 2,140 m^3/h (design flow). The purpose of the installation is to further increase the solution flow to the leach pad to 4,300 m^3/h. The excess available flow, i.e., 2,000 m^3/h, from the CIC circuit will be used to wash the areas of the leach pad where leaching is completed.

ENERGY AND WATER REQUIREMENTS

ENERGY

The Lagunas Norte mine site is presently supplied at 138 kV from the Peruvian National grid through the Trujillo Norte substation (Barrick, 2015c). The existing mine substation, Alto Chicama, is located approximately 100 km from the Trujillo Norte substation and is connected by a dedicated 138 kV power line to the Trujillo Norte substation. An existing utility substation is also located within 40 km of the mine at Motil and is connected by a dedicated 138 kV power line to the Trujillo Norte substation.

The Lagunas Norte mine site has a connected load of approximately 15 MVA. Based on power measurements from meter devices installed at Alto Chicama and Trujillo Norte substations, the mean power requirement is close to 11.5 MVA.

WATER

The Lagunas Norte operation currently uses two fresh water sources (Barrick, 2015c): Laguna Negra and the fresh water reservoir (Pozo Hondo). Laguna Negra is included in the current site-wide water balance as a management pond for non-contact runoff. The water balance accounts for all water entering or discharging from Laguna Negra and calculates the storage. During the rainy season when excess stream flow is available and as needed, water from Laguna Negra may be pumped to the fresh water reservoir to augment the fresh water supply.

Due to effective solution management practices, a high net positive water balance is being maintained at the site.

RPA is of the opinion that Lagunas Norte's requirements for energy and water are currently being met and are assessed regularly. Projected requirements for energy and water under the Refractory Project are described in detail in Section 24.

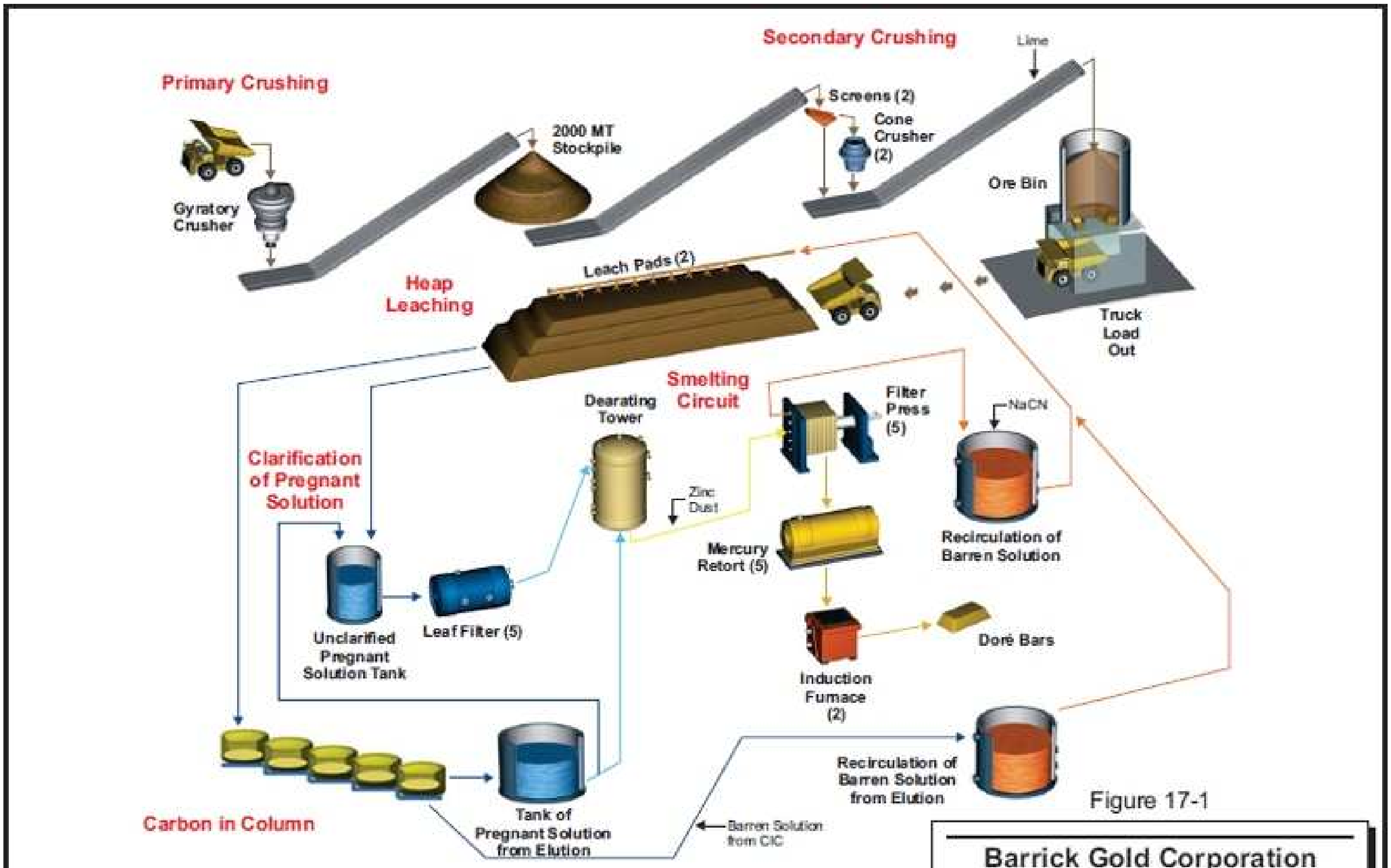


Figure 17-1

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru

Simplified Process Flow Sheet

August 2015 *Source: Barrick Gold Corp., 2015.*

18 PROJECT INFRASTRUCTURE

Lagunas Norte infrastructure and services have been designed to support an operation of 63,000 tpd of ore to a HLF and a nominal 140,000 tpd of total material mined. Due to the remote location, the property is self-sufficient with regard to the infrastructure needed to support the operation.

ACCESS

The Lagunas Norte mine site is located approximately 90 km east northeast of Trujillo, the capital of La Libertad Region, Peru, and also the closest major population and commercial centre. Trujillo is located just above sea level on the Pacific Ocean coastline. Access to Lagunas Norte begins by public paved road heading east northeast from Trujillo along the road to Otuzco for approximately 75 km. At this point the road splits and an all-season public paved road heads east towards the mine-site and beyond. Approximately 7 km before the mine-site turnoff is the mine airfield, which has a compacted gravel runway approximately 1.6 km long at 4,180 MASL. From the mine-site turnoff it is 1.0 km to the main gate at 4,155 MASL. From the main gate it is approximately 3.0 km to the Lagunas Norte open pit, and 6.0 km to the camp facilities at 3,800 MASL. The total route distance from Trujillo is approximately 150 km one way, and takes four to five hours for a light vehicle in typical driving conditions.

Most consumables are transported along this route by truck, as well as persons whom work at the mine in buses.

MINE SITE FACILITIES

The mine and HLF are located at the mine site at elevations between 3,800 MASL and 4,200 MASL. Also, located in the same vicinity are the crushing facilities and Merrill Crowe recovery plant, on-site facilities (safety/security/first aid/emergency response building, assay laboratory, plant guard house, dining facilities, and offices); related mine services facilities (truckshop, truck wash facility, warehouse, fuel storage and distribution facilities, reagent storage and distribution facilities), and other facilities to support operations.

ACCOMMODATIONS

Mine camp facilities are located approximately three kilometres east and downslope of the Lagunas Norte open pit operations at approximately 3,800 MASL. Permanent accommodations are available for certain Lagunas Norte employees and visitors. Contractor accommodations are also provided near the Lagunas Norte accommodations. Site accommodations are sufficient for the Lagunas Norte workforce, contractors, and consultants.

WATER

The water for process and mining consumptive needs is from rain captured in two small lakes. There is plenty of water available for consumptive use now and for the future. At Lagunas Norte, a water management group is in place to carry out all dewatering including pumping, distribution, delivery, and disposal. Lagunas Norte has a positive water balance.

ELECTRICAL

Electricity is provided by a privately owned generation company and delivered to Lagunas Norte through a high voltage power line that is connected to the national grid in Trujillo.

BUILDINGS AND FACILITIES

The main facilities are:

- Access roads
- Open pit and haul roads
- East potentially acid generating (PAG) waste rock facilities
- Temporary ore stockpiles for net acid generating (NAG) and PAG
- Primary crusher, secondary crusher, and ore bin
- Freshwater reservoir, Pozo Hondo and Laguna Negra reservoir
- Heap leach facility, pregnant solution pond, process water overflow pond (POP)
- East sedimentation pond, west sedimentation pond
- Merrill Crowe plant; barren solution treatment plant
- ARD collection pond; ARD treatment plant; polishing pond
- Sewage treatment plants
- Truck maintenance and truck wash
- Warehouse and administration buildings
- Miscellaneous storage facilities, fuel storage

- Explosives magazine
- Fresh water supply and distribution system, potable water treatment and distribution
- Power supply and distribution
- Incinerator
- Security gatehouse

COMMUNICATIONS

The mine site has a communication network of telephones and licensed UHF radio repeaters within the Main Pit mining area and village facilities. Outside these areas, communication is by means of UHF CB radio, satellite phone, and cellular phone.

19 MARKET STUDIES AND CONTRACTS

MARKETS

Gold and silver are the principal commodities at Lagunas Norte and are freely traded, at prices that are widely known, so that prospects for sales of any production are virtually assured. Prices are usually quoted in US dollars per troy ounce.

CONTRACTS

Lagunas Norte has a contract for the sale of gold and silver doré to Barrick International (Barbados) Corp. (BIBC). BIBC has a doré refining contract with Argor Heraeus S.A., a metal refining company. Under these contracts, Lagunas Norte sells to BIBC all the gold and silver doré produced by the mine at market prices determined on the basis of spot prices for gold and silver (as established by the London Bullion Market Association the business day preceding the date of shipment) minus transportation costs, insurance, refining, processing, and other charges paid to the refinery.

Currently, there are no forward sales or hedging for gold. In the case of silver, a contract is in place whereby Silver Wheaton (Caymans) Ltd. purchases 100% of the silver produced from Lagunas Norte for US$3.90/oz. This contract expires on the earlier of i) April 1, 2018 and ii) the date on which Barrick satisfies the requirements of a completion guarantee on its Pascua-Lama Project.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

ENVIRONMENTAL STUDIES

Environmental studies are ongoing and conducted as required to support the operation and any projects. RPA is not aware of any known environmental issues that could materially impact Lagunas Norte's ability to operate.

PROJECT PERMITTING

Table 20-1 lists the Environmental Permits and the Main Operational Permits for the Mine and the respective approval dates (Barrick, 2015a). The environmental impact assessment (EIA) for the Mine was approved in 2004. In August 2010, an amendment to the former EIA was approved which allowed:

- Expansion of the east waste dump
- New leach pad
- New ponds – doubling of size for PLS, POP, ARD, sediment ponds
- Water treatment plant

A second amendment to the EIA was submitted to authorities in November 2014, which includes the following changes:

- East Waste Dump Expansion
- New areas for Topsoil Stock
- West Waste Dump Optimization
- Pit Expansion
- Leach Pad Expansion (Phase 9)
- Other modifications (auxiliary components)

The proposed modifications would extend the life of the Mine until 2023 and reschedule closure activities until 2028. However, the submitted schedule could be adjusted based on the gold price or other strategic decisions made by Barrick.

TABLE 20-1 SUMMARY OF MAJOR ENVIRONMENTAL AND MAIN OPERATIONAL PERMITS
Barrick Gold Corporation – Lagunas Norte Mine

Permits	Approval Date
EIA 2003	April 2, 2004
EIA Modification 2010	August 6, 2010
First Technical Report	November 18, 2013
Second Technical Report	February 13, 2014
Closure Plan	August 19, 2009
Closure Plan Update	November 10, 2011
Closure Plan 2 nd Update	March 18, 2015
Operation Permit	June 14, 2005
Capacity expansion from 42,000 tpd to 63,000 tpd	January 3, 2006
Expansion of the Leach pad – Phase 4C (Operation)	June 8, 2012
Carbon in Column Plant	August 26, 2013
Expansion of the Leach Pad – Phase 5A & 5B (Operation)	April 14, 2014
	June 20, 2014
Expansion of the Leach Pad – Phase 6 (Construction)	August 11, 2014
Water Licence Amendment	December 2, 2014

Other material permits including a Water Quality Standards Adequacy Plan are currently under review by the environmental authorities.

Permits to discharge from the sedimentation ponds (East and West) and the rotating bio-contactor (RBC) sewage treatment plant at El Sauco expire every two years. The permits for pit dewatering and the trout farm have been approved.

Table 20-2 lists the Water Permits for the Mine and the approval and expiration dates (Barrick, 2015a). Water monitoring at 31 points in three basins (Chuyugal, Perejil, and Caballo Moro) is required. Groundwater is monitored at ten points and surface water is monitored at 16 points. Mine effluent is monitored at three points and potable water and wastewater are monitored at two points. The data is reported every three months to the Mining Authority. The main discharge point from the property is quebrada (valley) Laguna Negra. Additional points are monitored in order to help evaluate the water management practices at Lagunas Norte. Figure 20-1 shows the various locations of the environmental monitoring stations.

TABLE 20-2 SUMMARY OF WATER PERMITS
Barrick Gold Corporation – Lagunas Norte Mine

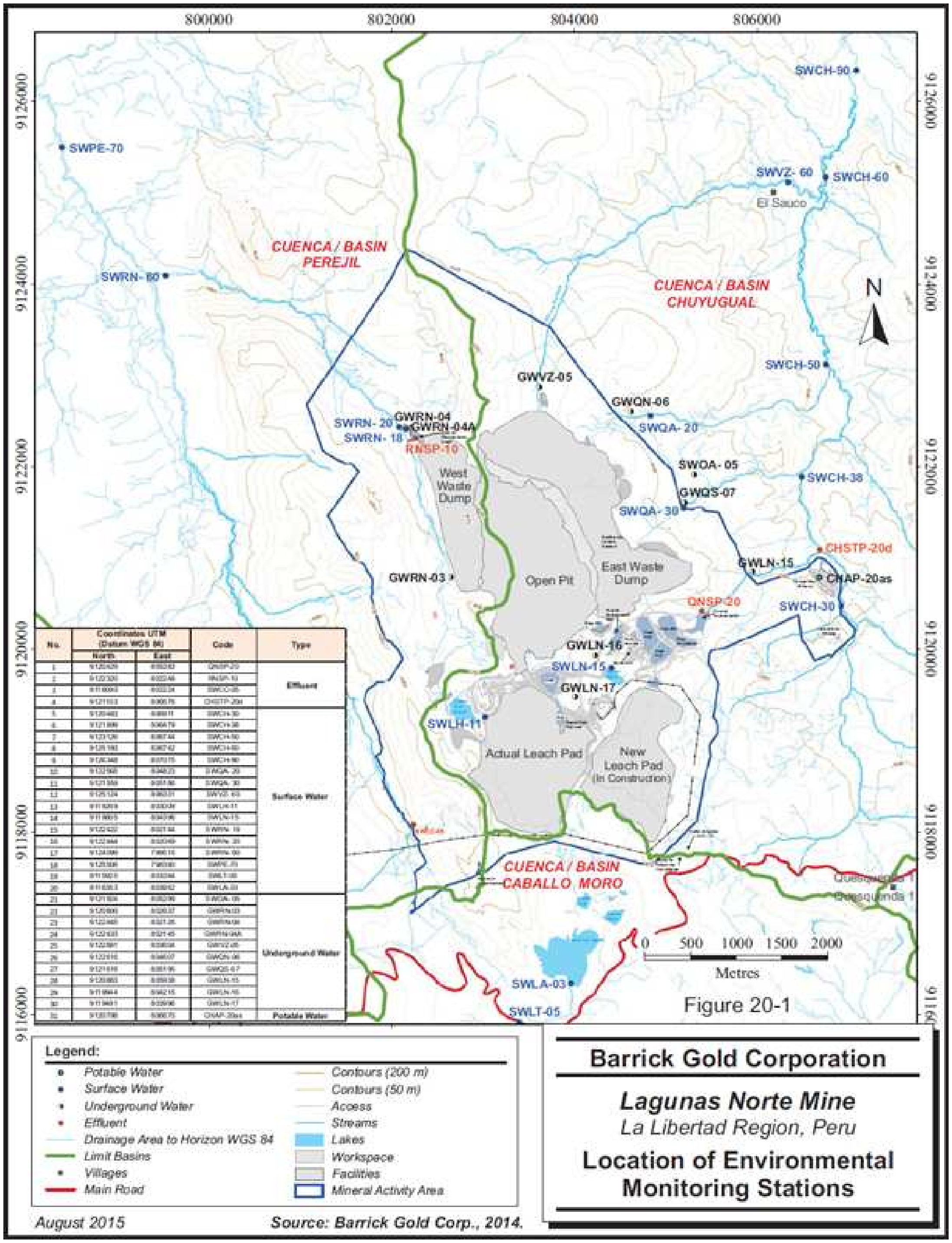
Permits	Approval Date	Expiration Date
Water License	March 28, 2005 December 2, 2014	Until the end of mine life
Main effluent discharge authorization (Laguna Negra stream)	January 6, 2014 November 12, 2014	November 8, 2016
Effluent discharge authorization (West side)	September 8, 2011 January 16, 2012 November 7, 2013	September 16, 2017
Effluent discharge authorization (Camp sewage)	October 12, 2011 January 17, 2012 November 7, 2013	October 21, 2017
Authorization for pit dewatering	September 26, 2013 March 28, 2014	March 27, 2016

Air monitoring is required at six points primarily for particulate matter, gases, and noise. Reports are due quarterly. Additional permits are required for hazardous waste disposal, e.g., fire assay cupels, which is done off site by authorized companies. Wildlife is monitored every two years and aquatic life is monitored every six months during the operating phase of the mine for internal purposes.

Lagunas Norte is in compliance in all material respects with the International Organization for Standardization (ISO) 14001 Environmental Management System and the International Cyanide Code. ISO certification is renewed every three years and the last ISO audit was conducted in October 2012. Maintenance audits are conducted by ISO annually and an audit was recently completed in November 2014. Cyanide Code audits and renewals were completed in September 2013 and are required every three years.

According to Peruvian regulations, an update of the Closure Plan is required to be submitted to the Ministry of Energy and Mines within a period of a year after the approval of an environmental certificate. For Lagunas Norte, the next Closure Plan update is required to be submitted before July 14, 2016, one year after the July 14, 2015 approval of the second amendment to the EIA.

In order to meet the new Peruvian environmental water quality standards which will enter into force in December 2015, various water treatment proposals have been identified and are currently under review. The capital costs for the water treatment will be defined once the technical studies are concluded.


800000
802000
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9126000
9124000
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9118000
9116000
SWCH-90
SWPE-70
SWVZ- 60
SWCH-60
El Sauco
CUENCA / BASIN
PEREJIL
SWRN- 60
CUENCA / BASIN
CHUYUGUAL
N
SWCH-50
GWVZ-05
GWQN-06
SWRN- 20
GWRN-04
GWRN-04A
SWRN- 18
RNSP-10
SWQA- 20
SWQA- 05
SWCH-38
West
Waste
Dump
GWQS-07
SWQA- 30
CHSTP-20d
GWLN-15
East Waste
Dump
GWRN-03
Open Pit
CHAP-20as
QNSP-20
SWCH-30
GWLN-16
SWLN-15
GWLN-17
SWLH-11
Actual Leach Pad
New
Leach Pad
(In Construction)
CUENCA / BASIN
CABALLO MORO
0 500 1000 1500 2000
Metres
SWLA-03
SWLT-05
Figure 20-1
Legend:
Potable Water
Surface Water
Underground Water
Effluent
Drainage Area to Horizon WGS 84
Limit Basins
Villages
Main Road
Contours (200 m)
Contours (50 m)
Access
Streams
Lakes
Workspace
Facilities
Mineral Activity Area
Barrick Gold Corporation
Lagunas Norte Mine
La Libertad Region, Peru
Location of Environmental
Monitoring Stations
August 2015
Source: Barrick Gold Corp., 2014.

RECLAMATION

A reclamation and closure plan is required by the Mine. Financial guarantees to cover the costs of closure are required annually. The costs are based on the area of the faces and the total cost is divided by the number of years remaining in the Mine life to calculate an annual cost. For the year-end 2014, the total closure cost was estimated by Lagunas Norte to be a total of US$199.5 million in accordance with the Closure Plan Update approved by regulators in 2011. This included US$111.0 million for concurrent reclamation, US$56.4 million for final closure and US$32.1 million for post closure costs. According to the latest Closure Plan Update approved by the regulators in 2015, the total closure cost for Lagunas Norte is now estimated to be US$243.4 million (US$46.9 million for concurrent closure, US$56.1 for final closure and US$140.4 million for post closure costs). A guarantee in the amount of US$53.3 million has been provided for the benefit of the Ministry of Energy and Mines (MINEM) in connection with the Closure Plan. The difference between the current Closure Plan and the 2011 Closure Plan is a result of the additional areas being reclaimed and the costs associated with water treatment.

SOCIAL OR COMMUNITY REQUIREMENTS

The key social program at Lagunas Norte is an employment initiative designed to train unemployed workers. The focus is on local communities and suppliers and business generation. El Sauco is the closest community. A local company, primarily employing residents from El Sauco, has been established to employ the residents of the town. The majority of the workers are employed in the camp to assist with cooking and cleaning.

The Lagunas Norte social and community programs are participative. They encourage representatives from the local communities to take water samples in conjunction with company employees and with government involvement and to submit them to laboratories of their own choice. Lagunas Norte also utilizes a grievance mechanisms (GM) system where questions or doubts about the mining practices are encouraged. All inquiries will be answered or operations will be asked to provide answers or specialists will be retained to provide the appropriate answers.

Barrick works with the local government to provide irrigation infrastructure for agricultural activities and assistance with productivity improvements in agriculture, such as cattle farming and product diversity. The Mine's forestry program has also helped to cover a land area of approximately 1,500 ha.

A System of Social Management program has been instituted and includes:

1. Employment.
2. Internal Training Program (with 26 participants) where high potential candidates are identified for employment. To date, ten individuals have been identified and hired at the Mine.
3. Contractors – 42 individuals are currently in the training program.
4. Training students undertaking post-secondary education (university or college) – tuition assistance is provided to students and after three to five years, the best candidates are selected for potential hire.

With respect to health matters, there is an agreement with the government to assist doctors and nurses in providing services and medical equipment in rural areas.

A government assisted program is helping in the management of approximately 200 illegal miners operating outside of the Mine's surface rights.

21 CAPITAL AND OPERATING COSTS

CAPITAL COSTS

Remaining capital costs at Lagunas Norte are primarily sustaining capital, which includes mine equipment replacement and leach pad expansion. Total remaining capital costs are $372 million. Mine pre-stripping capital has been treated as an operating cost for the purposes of this Technical Report. Mine site exploration capital has been excluded as that capital should be expended against future mineral resources. Capital costs are in Q4 2014 US dollars, and assume an exchange rate of 2.8 PEN to the US dollar. Table 21-1 shows the capital expenditure schedule.

TABLE 21-1 CAPITAL COSTS SUMMARY
Barrick Gold Corporation – Lagunas Norte Mine

Department	Sustaining Capital US$ Millions
Engineered Facilities	160
Sustaining Capital	6
Other	206
Total Capital Expenditures	**372**

Notes:

1. Numbers may not add due to rounding.

OPERATING COSTS

Lagunas Norte has been in production since 2005. Operating costs are tracked and well understood. Operating costs are based on Q4 2014 costs and assume an exchange rate of 2.8 PEN to the US dollar.

Mine operating costs are a nominal $2.20 per tonne of material mined or $4.58 per tonne of ore mined. Unit mine operating costs for Lagunas Norte are presented in Table 21-2.

TABLE 21-2 MINE OPERATING COSTS
Barrick Gold Corporation – Lagunas Norte Mine

Mine Department	Units	Cost
Drill	US$/t moved	0.22
Blast	US$/t moved	0.30
Load	US$/t moved	0.42
Haul	US$/t moved	0.58
Support	US$/t moved	0.36
Mine Overhead	US$/t moved	0.26
Subtotal	US$/t moved	**2.13**
Rehandle, Clean Ores	US$/t rehandle	0.71
Rehandle, Contaminated Ores	US$/t rehandle	0.86
Total LOM Costs	**US$/t moved**	**2.20**
	US$/t ore mined	**4.58**

Notes:

1. Numbers may not add due to rounding.

Process operating costs are dependent on ore type and processing method and include the heap leach, crushing and conveying, stacking, Merrill Crowe process plant, power, and consumables. Process operating costs for the LOM are $3.44 per tonne ore processed. Unit process operating costs for Lagunas Norte are presented in Table 21-3.

TABLE 21-3 PROCESS OPERATING COSTS
Barrick Gold Corporation – Lagunas Norte Mine

Process Department	Units	Cost
Crush & Convey	US$/t processed	0.72
Leach Pad	US$/t processed	1.10
Process Plant	US$/t processed	1.25
Overhead	US$/t processed	0.10
Subtotal, All Ore	US$/t processed	3.17
Subtotal, CHLF Ore	US$/t CHLF	2.83
Subtotal, SPHLF Ore – Crush	US$/t SPHLF-Crush	2.31
Subtotal, SPHLF Ore – ROM	US$/t SPHLF-ROM	4.07
Dynamic Pad Rehandle	US$/t rehandle	0.84
Heap Leach, Placement	US$/t processed	0.70
Total LOM Costs	**US$/t process**	**3.44**

Notes:

1. Numbers may not add due to rounding.

G&A include all management salaries, camp operating costs, access road operating costs, contractors and consultants, and environmental, health and safety costs. Administrative costs average $1.44 per tonne ore processed over the LOM. Unit operating costs are presented in Table 21-4.

TABLE 21-4 G&A COSTS
Barrick Gold Corporation – Lagunas Norte Mine

Department	Units	Cost
General Site Management	US$/t processed	0.11
Camp	US$/t processed	0.33
Site Overhead	US$/t processed	0.91
Other	US$/t processed	0.10
Total LOM Costs	**US$/t processed**	**1.44**

Notes:

1. Numbers may not add due to rounding.

All-in unit operating costs for Lagunas Norte are US$9.46 per tonne processed.

The adjusted operating cost per ounce of gold production over the LOM is US$497/oz. Total all in sustaining cost (AISC) per ounce, including sustaining capital, over the LOM is US$809/oz.

MANPOWER

Lagunas Norte mine site manpower is approximately 1,688 people. Direct Lagunas Norte mine site employees are approximately 754 plus there are 934 contractors and consultants. The breakdown of mine site manpower by area is provided in Table 21-5.

TABLE 21-5 MINE SITE MANPOWER
Barrick Gold Corporation – Lagunas Norte Mine

Department	Count
Mine	290
Technical Services	30
Maintenance	181
Process	120
General	133
Subtotal, Direct	**754**
Contractors	934
Total Mine Site	**1,688**

Notes:

1. Numbers may not add due to rounding.

Major contracts currently in place at site are for the moraines earthwork operations, foundation preparation for the HLF expansion project, operation of the camp facilities, site security and logistics services, and assorted maintenance contracts.

VALUE REALIZATION INITIATIVES

SUSTAINING CAPITAL REDUCTION

A review of sustaining capital requirements has shown the potential to reduce these expenditures over the existing mine life by approximately US$7.0 million

22 ECONOMIC ANALYSIS

Under NI 43-101 rules, producing issuers may exclude the information required in Section 22 Economic Analysis on properties currently in production, unless the Technical Report includes a material expansion of current production. RPA notes that Barrick is a producing issuer, the Lagunas Norte Mine is currently in production, and a material expansion is not being planned. RPA has performed an economic analysis of the Lagunas Norte Mine using the estimates presented in this report and confirms that the outcome is a positive cash flow that supports the statement of Mineral Reserves.

23 ADJACENT PROPERTIES

MBM controls a large land area adjacent Lagunas Norte. There are no adjacent properties that are relevant to this report.

24 OTHER RELEVANT DATA AND INFORMATION

REFRACTORY PROJECT PRELIMINARY ECONOMIC ASSESSMENT

Barrick has recently completed a study of the potential to mine and process the Lagunas Norte sulphide resources and to extend the life of the operation beyond 2018 (Lagunas Norte Sulphide Project Scoping Study – May 28, 2015). The results of the Scoping Study, or Preliminary Economic Assessment (PEA), are presented in this section as they are considered to be of material importance through the potential extension of the mine life by 12 years beyond current Mineral Reserve life. The project is referred to as the "Refractory Project".

The Lagunas Norte Mine currently processes oxide ore through the use of conventional heap leach technologies. The presence of copper-, sulphur-, and/or carbon-rich mineralization limits the effectiveness of the heap leach process in the recovery of contained metals from this type of material. The Refractory Project comprises construction of a 6,000 tpd pressure oxidation (POX) processing facility and associated infrastructure to process material that cannot be treated economically by heap leach. The existing primary crusher will be part of the project. Key components of the new facility include additional crushing stages, grinding, flotation, POX, carbon-in-leach (CIL), and dry stack residues handling and disposal. Feed for the facility will come from deepening and extending the existing open pit. The expansion of the open pit will be at a higher stripping ratio than that of the current open pit, requiring an expansion of the current waste rock storage facilities.

The majority of the material to be processed in the Refractory Project will consist of the M3A and M3BL sulphide ores (see Section 7 Geological Setting and Mineralization and Section 13 Mineral Processing and Metallurgical Testing).

The Refractory Project cash flow model reflects the processing of 27.5 Mt of mineralized material containing 2.2 Moz of gold and 5.7 Moz of silver over a project life of 12 years. After processing, the estimated recoverable metal is 1.9 Moz of gold and 2.2 Moz of silver.

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

GEOLOGY

The geological setting of Lagunas Norte is described in full detail in Section 7 of this report.

MINERALIZATION

As discussed in Section 7, gold occurs primarily as fine discrete particles in open silicified vugs, as fine particles or disseminated within iron oxides, in gold-silver electrum, and as fine free gold along fracture surfaces. Silver mineralization is noted as occurring primarily as an electrum with gold, as finely disseminated native silver, or as a solid solution within remnant sulphides. Copper mineralization is present primarily as enargite, with lesser copper associations as chalcopyrite, or oxidized species including native copper. Sulphide occurrences are dominantly pyrite and enargite but also include in traces arsenopyrite, chalcopyrite, and covellite, with oxidation and alteration states through to iron oxides, iron sulphates and elemental copper. The main ore types to be processed in the Refractory Project are M3A and M3BL (see Table 7-1).

MINERAL RESOURCE ESTIMATE

Table 24-1 summarizes the Refractory Project Mineral Resources exclusive of Mineral Reserves as of December 31, 2014, based on a $1,400 per ounce gold price.

TABLE 24-1 REFRACTORY PROJECT MINERAL RESOURCES AS OF DECEMBER 31, 2014
Barrick Gold Corporation – Lagunas Norte Mine

Category	Tonnage (Mt)	Grade (g/t Au)	Grade (g/t Ag)	Contained Metal (Moz Au)	Contained Metal (Moz Ag)
Within Pit Design					
Measured	1.2	2.60	6.51	0.10	0.25
Indicated	21.2	2.54	5.90	1.73	4.02
Measured and Indicated	**22.4**	**2.55**	**5.93**	**1.83**	**4.27**
Inferred	0.3	1.92	7.35	0.02	0.07
Heap Leach Stockpile					
Indicated	5.3	2.29	8.59	0.39	1.46

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated as at December 31, 2014 based on a gold price of US$1,400 per ounce and $24 per ounce silver.
3. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
4. Mineral Resources are estimated at gold cut-off grades that vary by material type from approximately 0.48 g/t to 1.00 g/t.
5. Gold recovery as a result of the PEA is expected to reach an average of 90%.
6. The “Within Pit Design” material includes 2.013 Mt of Measured and Indicated Resources grading 1.15 g/t Au and containing 74,000 ounces of gold that are already reported in Table 14-1.
7. The “Heap Leach Stockpile” material is expected to be reclaimed from the existing leach facility and re-processed through the new Refractory Project processing facility.
8. Numbers may not add due to rounding.

RPA is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other issues that could materially affect the Mineral Resource and Mineral Reserve estimates.

MINERAL RESERVE ESTIMATE

There are no Mineral Reserves in the Refractory Project.

MINING OPERATIONS

The increased recovery from the Refractory Project will result principally in the deepening of the central and southern portions of the current open pit. The expansion of the open pit is at a significantly higher stripping ratio than that of the current open pit, requiring an expansion of the current waste rock storage facilities.

Mining is planned to be carried out using the existing mine fleet at a rate of approximately 25 Mt of total material moved per year at a LOM average stripping ratio of 4.4:1 (waste:mineralization).

The economically mineable part of the resource was evaluated using Whittle, based on metal prices of $1,400/oz gold and $24/oz silver, as well as capital, operating, and metallurgical information presented within this section. The Whittle shell was used as the basis for the final pit design presented in Figures 24-1 and 24-2.

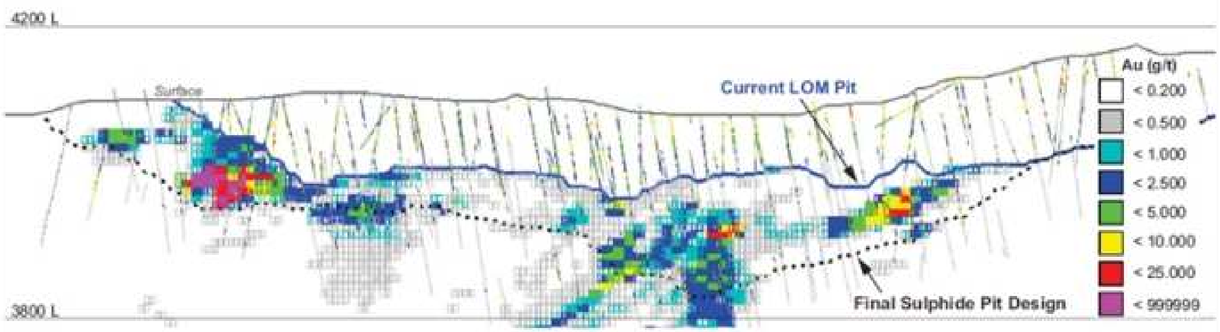


Figure 24-1

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru

Cross Section of Final Pit Design

August 2015

Source: Barrick Gold Corp., 2015.

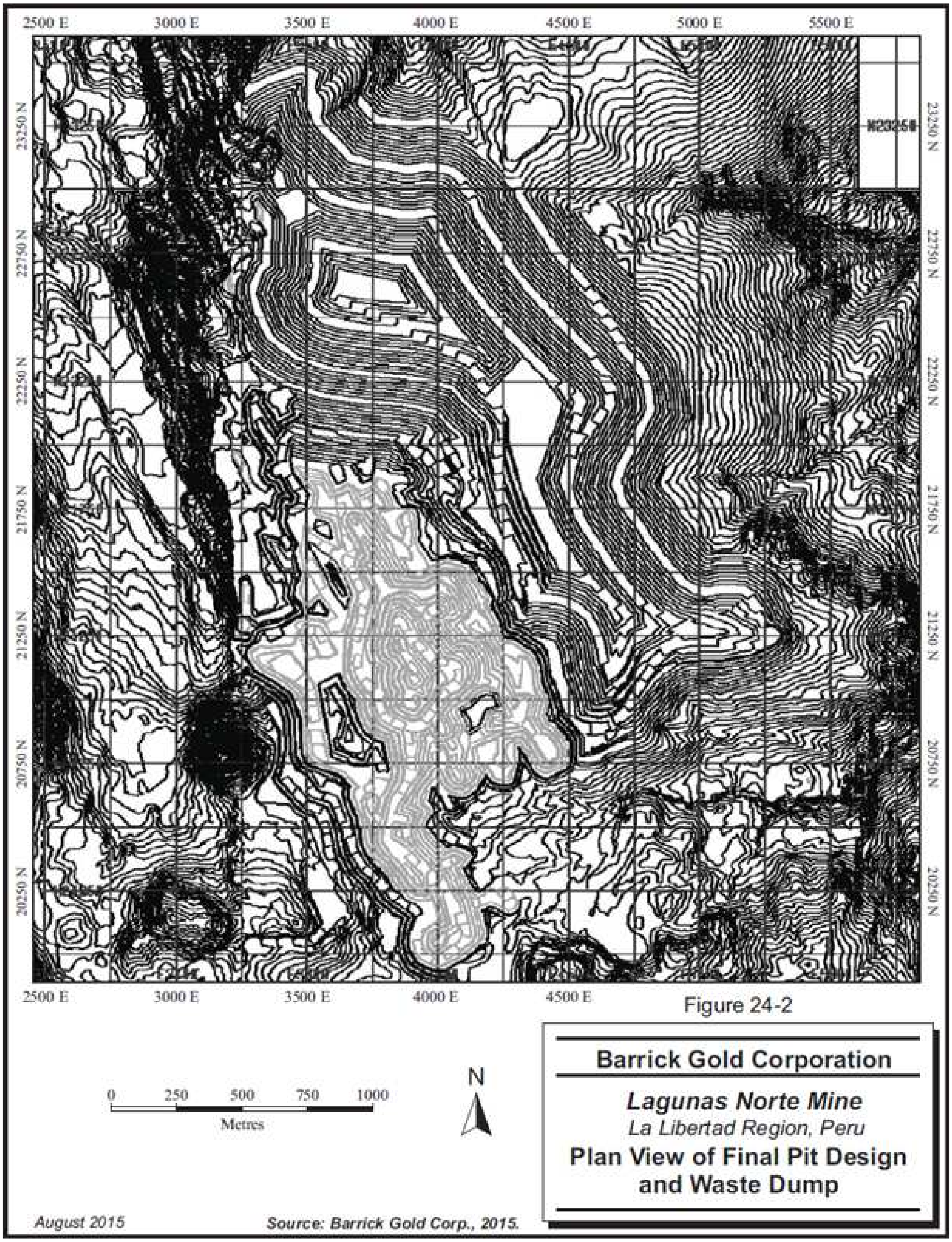


Figure 24-2

Barrick Gold Corporation

Lagunas Norte Mine

La Libertad Region, Peru

Plan View of Final Pit Design and Waste Dump

MINE DESIGN

Table 24-2 presents the parameters used for developing the Refractory Project mine model and running the open pit optimizations in Whittle. The Refractory Project fixed and variable costs applied in the pit optimizations are different from the processing costs used in the Refractory Project cash flow. RPA recommends that for the next project stage, updated costs be used for pit optimization.

TABLE 24-2 REFRACTORY PROJECT MINE OPTIMIZATION PARAMETERS
Barrick Gold Corporation – Lagunas Norte Mine

Input Parameter	Units	Value
Revenue Factors		
Au Price	US$/oz	1,400
Ag Price	US$/oz	24.00
Au Pay Factor	%	100
Ag Pay Factor	%	100
Mine Cost		
Mineralized Material Cost (Case 1)	$/t	2.54
Waste Cost (Case 1)	$/t	2.54
Mineralized Material Cost (Case 2)	$/t	2.54
Waste Cost (Case 2)	$/t	2.54
Mineralized Material from Leach Single Pass to Process - HL	$/t	0.93
Mineralized Material from Leach Pad to Process – POX	$/t	0.99
Mineralized Material from Single Pass to Process - POX	$/t	0.93
Process Cost		
Heap Leach Variable Costs		
LCH – M1	$/t	2.70
LCH – M1 Low Grade	$/t	2.71
LCH – M1A	$/t	2.89
LCH – M2AL	$/t	2.98
LCH – M2AH*	$/t	4.03
LCH – M2B*	$/t	8.43
LCH – M2B High TCM	$/t	7.44
LCH – M3	$/t	3.25
LCH – M3A	$/t	3.55
LCH – M3B Low TCM*	$/t	4.71
LCH – M3B Medium TCM*	$/t	3.89
LCH – M3B High TCM	$/t	2.90
Refractory Project – Fixed Costs	$000/year	20,512
Refractory Project – Variable Costs	$/t	9.85

Input Parameter	Units	Value
Refractory Project – Sulphur Variable Costs	$/t per % S	4.93
Heap Leach Placement	$/t	0.73
Mineralized Material Feed to Process Plant	$/t	0.73
Heap Leach Expansion	$/t	1.61
Dry Stack Transport	$/t	0.73
Social Cost	$/t	0.12
Additional Closure cost	$/t	0.189

* (this cost includes rehandle on Dynamic pad)

G&A		
G&A Fixed	$000/year	15,850
G&A Variable	$/t Processed	0.77
Sales	$/oz Au Recovered	3.33
Royalty	%	2.51
Profit Share	%	8.00
Tax Rate	%	32.00
Tax Rate after 2020	%	30.00
World Gold Council Fees	$/oz Au Recovered	2.00

A summary of the leach and POX material is presented Table 24-3.

TABLE 24-3 SUMMARY OF LEACH AND REFRACTORY MATERIAL IN REFRACTORY PROJECT PLAN
Barrick Gold Corporation – Lagunas Norte Mine

Process Details	Units	Value
Leach to Process		
Tonnage	‘000 tonnes	5,222
Gold Grade	g/t	1.03
Silver Grade	g/t	3.66
Contained Gold	koz	167
Contained Silver	koz	595
Recoverable Gold	koz	78
Recoverable Silver	koz	110
Flotation - POX - CIL to Process		
Tonnage	‘000 tonnes	22,324
Leco S^{2-}	%	2.52
Gold Grade	g/t	2.95
Silver Grade	g/t	7.35
Contained Gold	koz	2,050
Contained Silver	koz	5,105
Gold Recovery	%	90.00

Process Details	Units	Value
Silver Recovery	%	40.00
Recoverable Gold	koz	1,843
Recoverable Silver	koz	2,041
Total Mineralized Material to Process		
Tonnage	'000 tonnes	27,546
Gold Grade	g/t	2.50
Silver Grade	g/t	6.44
Contained Gold	koz	2,217
Contained Silver	koz	5,700
Gold Recovery	%	87
Silver Recovery	%	38
Recoverable Gold	koz	1,921
Recoverable Silver	koz	2,152

GEOTECHNICAL CONSIDERATIONS

The original slope design criteria for the purposes of mine design was developed by Piteau Engineering Latin America S.A.C. (Piteau) and outlined in a report entitled "Alto Chicama Project – Geotechnical Assessments and Design Criteria for Proposed Open Pit Slopes" (February 2004). These design criteria were updated by Piteau based upon updated geologic interpretations, inclusion of new information, and actual behaviour of exposed slopes and documented in a report entitled "2477-2010 Slope Design Criteria Update Report" (February 2011).

For the Leach-Only Scenario, the slope design criteria issued in February 2011 are at a feasibility study level of confidence. Although the same geotechnical model encompasses the Leach-POX Scenario open pit limit and has been utilized in this study for design purposes, further geotechnical information at depth below the Leach-Only Scenario open pit limit is required to elevate the design criteria to the Prefeasibility Study (PFS) level of confidence.

Geotechnical domains utilized for expansion of the open pit are those currently used for the Lagunas Norte Mine. As the pit expands significantly to depth, an update of the geotechnical domains and their properties, including hydrological conditions, will be required during future studies.

METALLURGY

The main ore types to be processed via the Refractory Project (M3A and M3BL) were subdivided into several categories, based on $\%S^{2-}$ contained and the Au grade (g/t). Each ore type classification requires a specific stockpile to facilitate feed blending. Materials with acceptable levels of constituents are crushed and processed in the Clean Heap Leach Facility (CHLF), while materials with elevated levels of constituents are processed as ROM in a Single Pass Heap Leach Facility (SPHLF). The ore classifications and levels of constituents are shown in Table 24-4.

TABLE 24-4 ORE TYPES TO REFRACTORY PROCESS
Barrick Gold Corporation – Lagunas Norte Mine

Material Type	Definition	Basis
HS – High Sulphur MS – Medium Sulphur LS – Low Sulphur	High sulphur = greater than 6%S Medium sulphur = 3%S to 6%S Low sulphur = less than 3%S	Sulphur content (%)
HG – High Grade MG – Medium Grade LG – Low Grade LLG – Near Cut-off Grade	High grade = greater than 4.0 g/t Au Medium grade = 2.0 g/t Au to 4.0 g/t Au Low grade = 1.5 g/t Au to 2.0 g/t Au Near cut-off grade = 1.0 g/t Au to cut-off grade	Au grade (g/t)

Metallurgical testwork was conducted on the Lagunas Norte sulphide mineralized material to support development of a process flow sheet. The process selected is comprised of grinding, flotation, cycloning, POX, CIL, and use of cycloned and filtered tails as a dry stack cover.

SAMPLING AND MINERALOGICAL ANALYSIS

Collection of M3A material for mineralogical investigations and metallurgical testing was carried out by Barrick in 2014. An initial batch of samples (Puntos 1, 2A, 2B, 4, and 5) were collected from select sites on an exposed block on the southeast side of the pit using a backhoe. The mineralized material samples were loaded by hand into drums (the fines were not collected) for shipment to AuTec Innovative Extractive Solutions Ltd. (AuTec), formerly Barrick Technology Centre in Vancouver, British Columbia, for blending and metallurgical testing.

Table 24-5 shows analytical data on the M3A mineralized material collected from Lagunas Norte. The M3A mineralized material samples are low in organic carbon content and high in sulphur and copper content. The mineralogy of the M3A mineralized material is primarily orthoquartzites, where the silica (quartz) has recrystallized to form a strong bond between quartz grains, resulting in a hard and very abrasive mineralized material. Sulphide mineralization is found along fractures and is observed within cavities or occurs as disseminated pyrite.

TABLE 24-5 ANALYTICAL DATA ON LAGUNAS NORTE M3A MATERIAL
Barrick Gold Corporation – Lagunas Norte Mine

Punto	Au ppm	Ag ppm	%TCM	%C	$\%S_{total}$	$\%S$ as SO_4^{2-}	Cu ppm
1	2.075	19.30		0.02	5.16	0.06	5138
2A	1.390	2.30	0.01	0.04	1.13	0.06	686
2B	1.100	2.30	0.01	0.03	1.54	0.02	724
4A	1.340	7.00	0.01	0.02	1.09	0.01	2211
5	2.420	17.10	0.01	0.02	9.17	0.07	898

METALLURGICAL TESTING

Comminution Testing

The five M3A samples were submitted for comminution testing in early 2015. The comminution testwork program consisted of JK Rotary Breakage Tester (JKRBT) testing (results given as Axb), Bond ball mill grindability testing (results given as BWi), and Bond abrasion testing (results given as Ai). Comminution test results are summarized in Table 24-6. As reported in the Refractory Project Scoping Study, the results of testing on the five M3A samples showed the following:

- Samples were classified as moderately hard with respect to resistance to impact breakage (low Axb value).
- Samples have moderate hardness based on the Bond BWi values.
- Samples are very abrasive based on the Bond Ai values.

TABLE 24-6 AVERAGE COMMINUTION TEST RESULTS
Barrick Gold Corporation – Lagunas Norte Mine

Sample ID	Axb	BWi (kWh/t)	Ai (g)
Punto 1	47.1	13.5	0.7484
Punto 2A	40.2	14.2	0.7853
Punto 2B	50.4	15.1	0.8440
Punto 4A	46.5	16.4	0.8192
Punto 5		14.6	1.0192
Average	46.0	14.8	0.8432

Flotation/POX/CIL Testing

The focus of the flotation testwork was to develop a flotation flow sheet to maximize gold recovery and allow for a disposable tail. The flotation tails will be cycloned and the cyclone underflow will be treated as a final tail. The flotation concentrate will be combined with the cyclone overflow as final concentrate for POX. A disposable tail will consist of flotation tails with less than 0.1 g/t to 0.2 g/t of recoverable gold achieved from CIL processing. For optimal heat balance in POX, a sulphide content of 5% to 6% in concentrate was targeted.

Kinetics testing consisted of 20 minutes of sulphide flotation followed by five minutes of oxide flotation on each individual mineralized material sample and on blended mineralized material. Reagent testing confirmed selection and optimized dosages of the following:

- Addition of copper sulphate as an activator and sodium silicate as a dispersant in grinding was effective in achieving a P_{80} of 120 µm for flotation.
- Potassium Amyl Xanthate (PAX) was used as a sulphide collector.
- A407 was used as a gold promoter.
- A6493 was used as an oxide collector.
- Methyl Isobutyl Carbinol (MIBC) and DF250 were applied as a mixed frother.

Greater than 97% sulphide recovery by flotation was achieved for all the Punto mineralized material tested and gold recovery was generally higher than 90%, with the exception of Punto 2A which had a low gold recovery (72%) and high gold tail (0.45 g/t). Fine grinding to a P_{80} of 20 µm did not improve flotation gold recovery. This suggests that gold grains locked within sulphides or other minerals could be sub-micron and/or invisible solution gold.

Laboratory batch POX tests were carried out at 215°C to 218°C at a residence time of 60 minutes. A standard CIL leach with a residence time of 24 hours was applied to the POX discharge. POX-CIL treatment on the combined concentrate from flotation and cycloning resulted in 97% to 99% gold extraction. Figure 24-3 illustrates the flotation-POX-CIL test results from individual mineralized material samples (without cyclones) and the blended mineralized material samples (with cyclones). Mineralized material blending to ensure the feed is close to the design target of 3% sulphides has allowed the use of cyclones to enhance recovery.

FIGURE 24-3 FINAL GOLD RECOVERY FOR INDIVIDUAL MINERALIZED MATERIAL AND BLENDED MINERALIZED MATERIAL

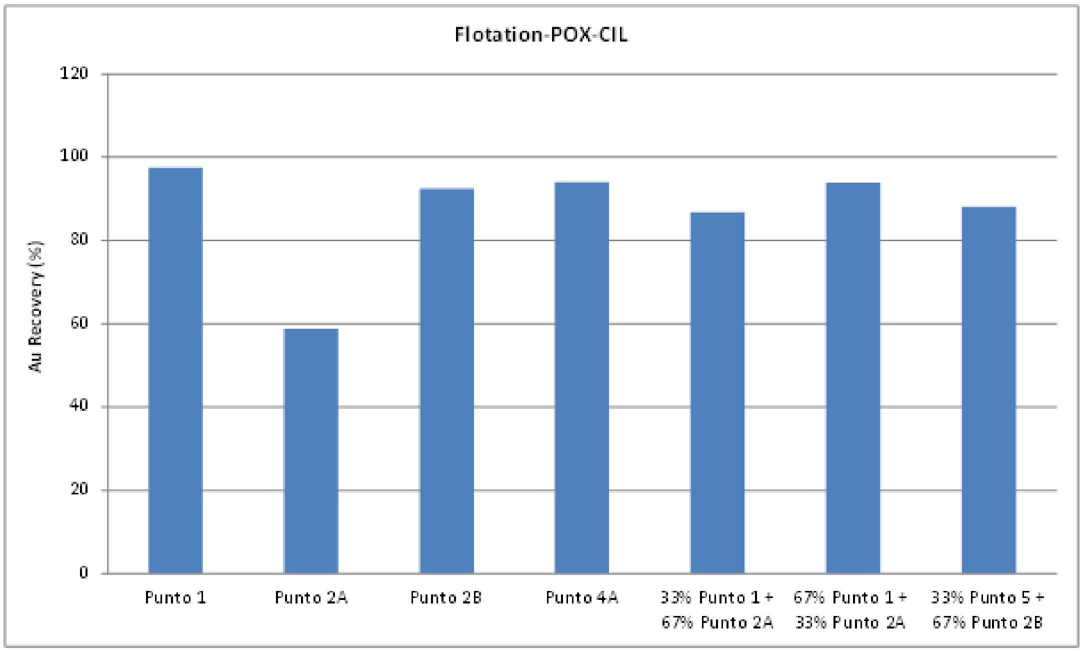


Table 24-7 shows the gold recovery formulas used in the block model. As reported in the Refractory Project Scoping Study, the metallurgical results achieved to date appear to be consistent with these estimates, however, additional testing is required to confirm mineralized material variability. Flotation conditions, reagent additions, and cyclone operating parameters should be optimized to provide a consistent feed to POX.

TABLE 24-7 REFRACTORY PROJECT RECOVERY FORMULAS
Barrick Gold Corporation – Lagunas Norte Mine

	Formulas
POX/CIL Gold	
$3.5 \leq Au_{(g/t)}$	$= min(max((-0.0105 * Au_{(g/t)}^2 + 0.065 * Au_{(g/t)} + 0.8146), 0.90), 0.92) * Au_{(g/t)}$
$0.0 \leq Au_{(g/t)} \leq 3.5$	$= min(max((-0.0105 * Au_{(g/t)}^2 + 0.065 * Au_{(g/t)} + 0.8146), 0.83), 0.92) * Au_{(g/t)}$
Post-Leach Material	$= min(max((-0.0029 * Au_{(g/t)}^2 + 0.053 * Au_{(g/t)} + 0.7034), 0.72), 0.90) * Au_{(g/t)}$
POX/CIL Silver	
All Mineralized Material	$= 0.40 * Ag_{(g/t)}$
Post-Leach Material	$= 0.40 * Ag_{(g/t)}$

Filtration and Thickening Tests

Bench scale filtration tests were conducted on the AuTec flotation gold tailings samples by CEC Mining Systems Corp. (CECMS) in Vancouver, British Columbia, in April 2015. Tailings samples provided to CECMS contained approximately 50% solids. CECMS evaluated the liquid-solid separation characteristics of ceramic disc-vacuum filtration and provided recommendations for filtration equipment arrangement (sizing and configuration). Good filtration rates were observed in testing and consistency in filter cake moistures (average 11.5 wt.%) was achieved without the use of filter aids such as flocculant/coagulant. Consistency in filter cake moisture will be important when considering the stacking characteristics of this material for tailings placement.

In general, metallurgical testing appeared to be limited to samples of M3A ore. RPA recommends that testing of the M3BL ore also be conducted during the next study phase, to better understand the characteristics and performance of the main ore types to be treated under the Refractory Project.

PROCESS FLOWSHEET

Figure 24-4 shows the simplified process flow sheet for the Refractory Project Scoping Study. Some new processing facilities will be constructed and some of the existing plant facilities at Lagunas Norte will be utilized or upgraded for the Refractory Project. The process description is largely taken from the Refractory Project Scoping Study (Barrick, 2015c).

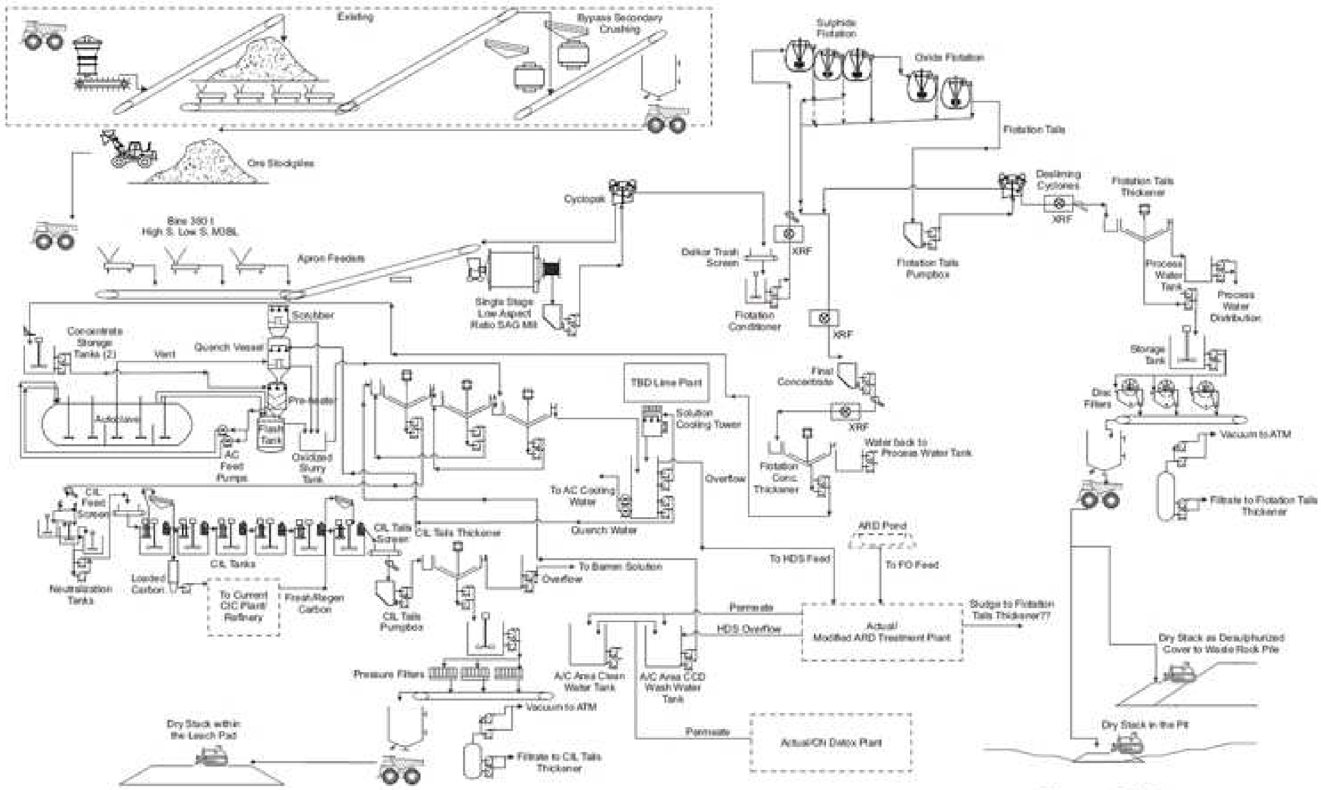


Figure 24-4

Barrick Gold Corporation

Lagunas Norte Mine

La Libertad Region, Peru

Simplified Process Flow Sheet for Refractory Project Scoping Study

August 2015

Source: Barrick Gold Corp., 2015.

CRUSHING AND GRINDING

The sulphide mineralized material is mined and sent to the primary crusher. The secondary crusher is bypassed, so the crusher operation needs to operate in batch mode. Mineralized material accumulates in the bin and is transferred to trucks, which are loaded and directed to stockpile locations. Mineralized material is reclaimed using a LIFO methodology and delivered to 400 tonne hoppers. Fine adjustment of the sulphur in feed is made by blending the materials from each hopper to obtain a sulphur grade of 2% to 4% feeding the flotation plant. Mineralized material is ground to a P_{80} of 120 µm using a single stage semi-autogenous grinding (SAG) mill. The mill discharge slurry is screened before flotation conditioning with copper sulphate and flotation collectors.

FLOTATION

The flotation circuit consists of rougher-scavenger tank cells and an oxide collector reagent is added midway to ensure all the mixed particles are treated. The sulphide concentrate produced in flotation is expected to contain 8% S to 9% S. The flotation tails are sent to a single stage cyclone for recovery of the 22 µm particles in the overflow stream. The cyclone underflow is sent to a thickener, while the cyclone overflow combines with the sulphide concentrate. It is important that the final concentrate grade be within the optimum range of 5.5% S to 8% S for feeding the autoclave.

RESIDUES HANDLING AND DISPOSAL

The desulphurized flotation residues are sent to the flotation tails thickener. Material accumulates in a surge tank with a residence time of approximately 12 hours before filtration using disc filters. The filter cake contains approximately 11% moisture and is diverted to a loading bin after filtration. The filter cake is loaded in haul trucks and is sent to the waste rock pile to be used as cover material.

PRESSURE OXIDATION

The flotation concentrate is delivered to concentrate surge tanks and the slurry is sent to the autoclave preheater. If the sulphur content of the feed slurry is below 5.5%, the slurry will need to be reheated in the preheaters. If slurry reheating is not required, then the material is directed to the autoclave feed pump. The feed slurry is pumped into the autoclave where gaseous oxygen is injected below the agitator blades to ensure complete oxygen distribution during mixing. Oxygen is supplied by a 450 tpd cryogenic oxygen plant. The reaction in the autoclave is exothermic and cooling water is used to protect the vessel from overheating and excessive pressure. The oxidized slurry is discharged into a flash vessel, where the slurry is returned to the boiling point in temperature and atmospheric pressure. Steam from the flash vessel is quenched in a tank with Counter Current Decantation (CCD) No. 1 overflow solution and cleaned using a venturi scrubber. The scrubber off-gas is water vapour enriched with oxygen. The oxidized slurry is gravity fed to a three stage CCD circuit. The CCD No. 1 solution is cooled in a cooling tower before being sent to the flash vessel. The washed slurry from CCD No. 3 is directed to lime neutralization.

CARBON-IN-LEACH

The neutralized slurry following POX is directed to CIL. The carbon is accumulated and directed to CIC stripping, acid wash, and kiln regeneration. The pregnant solution from CIL processing is directed to the existing Merrill Crowe precipitation plant and refinery. The CIL tails are sent to thickening and pressure filtration. The resulting filter cake is stored in a bin and loaded in haul trucks for deposition as cover material on the closed heap leach area.

EXISTING OPERATIONS

Existing unit operations of the process plant will remain largely unchanged. The Merrill Crowe plant will continue to treat the oxide heap leach solution and the pregnant solution, however, the following modifications as identified during the study will need to be made:

- Spare capacity of the high-density sludge (HDS) circuit of the ARD treatment plant will be used as a neutralization circuit.
- Spare capacity of the cyanide detox plant will be used for solution cyanide destruction.
- The scoping study assumes that a new lime plant will be added to match the requirements in POX neutralization, however, the PFS will evaluate whether the existing lime plant can be upgraded instead.

RESIDUES DISPOSAL

Since the flotation tails contain very little sulphur (less than 0.03%) and is 100% quartz (based on XRD analysis), the current concept is to use desulphurized flotation tails as an alternative cover material to the clay planned for use in the closure plan. Due to water accessibility, topographic limitations, and environmental concerns, Barrick has indicated that filtered flotation tails may be the preferential residues management strategy for the Refractory Project. Geochemical and geotechnical investigations have been undertaken and the results will determine the amenability of flotation tails as a substitute for clay as cover material for waste rock.

The plan is also to use filtered CIL tails as a cover material and in flat areas of the heap leach piles. Since this material will contain residual cyanide, use of filtered CIL tails over these areas will require confinement.

INFRASTRUCTURE

The Refractory Project will utilize existing infrastructure. A 6,000 tpd POX processing facility is proposed to process material that cannot be treated economically by heap leach. The existing primary crusher will be part of the project. Key components of the new facility include additional crushing stages, grinding, flotation, POX, CIL, and dry stack residues handling and disposal.

MINE DEWATERING

At present, it is predicted that mining will require a dewatering program. The open pit will be advanced below the groundwater as the model predicts. According to Piteau (2003), the best estimate for the required rate of groundwater extraction to dewater the open pit in advance of mining is approximately 12 L/s for the south pit area and 2 L/s for the north pit area. Piteau’s updated model (2009) predicts that the maximum pit inflow will be approximately 26 L/s and will occur in 2015, during the wet season. After that period, inflows will display a declining trend, as subsequent pit excavation will advance into a rock mass with lower permeability. It is anticipated that water coming from the pit dewatering program will be directed to the ARD plant, as it is anticipated that the water will have a low pH and will contain metals.

POWER

The Lagunas Norte mine site is presently supplied at 138 kV from the Peruvian National grid.

The Lagunas Norte mine site has a connected load close to 15 MVA. According to the power measurements, the mean power is approximately 11.5 MVA, with a range between 7.5 MVA and 14.5 MVA.

The proposed Refractory Project power requirements are approximately 45 MVA including the water treatment project, the concentrator plant (coarse mineralized material storage, milling, flotation, flotation tails filtration, and reagents), and the POX gold leach recovery plant (POX and associated oxygen plant, CCD washing, CIL, and CIL tails filtration). A second transmission line is not required.

WATER MANAGEMENT

The Refractory Project new process plant will be fully integrated with the current plant and water supply infrastructure and facilities. Water requirements will not increase from the Refractory Project extension, as all of the process water is coming from permeate produced from cyanide detoxification and ARD treatment plants. The reverse osmosis (RO) capacity ahead of the ARD treatment plant is expected to be increased to maintain the ratio of HDS discharge to permeate and amended to meet the ECA Category 3 regulations with respect to sulphate, calcium, and manganese.

ENVIRONMENTAL ASPECTS

An Environmental Management Plan currently exists for Lagunas Norte, however, the management programs need to be updated to reflect the new facilities under the Refractory Project.

Preparation of the EIA document for early submission is a key aspect of the Refractory Project. The first phase of the EIA submittal will include preparing baseline data, updating models, and preparing the project description document. Since Lagunas Norte has been in operation for some time, there is a large amount of baseline data available. It is expected that the baseline conditions and monitoring programs would remain the same, as a tailings pond is not being considered. Updated information is required to provide a good basis for comparison of the new plant.

Impacts due to modifications from the Refractory Project plant will need to be addressed through formal assessment and include the following:

- Hydrology
- Air emissions
- Community related issues
- Noise
- Water
- Vibrations
- Hazardous wastes
- Energy consumption

Community and government relations and on-going communications are important considerations with respect to the Refractory Project. The disposal of process residues as a dry stack cover over the waste rock piles and the heap leach pads is a preferred management strategy. A detailed communication plan for the project will need to be defined as the project advances in study, to address the impacts, benefits, water and energy consumption, and socio-economics associated with the extension of the life of the mine.

Estimated closure costs have been adjusted, since the Refractory Project will defer certain remediation activities while mining operations continue, and the Refractory Project will also produce process residues that can be used as alternate cover materials. The general assumptions and the updated closure cost estimate have been included in the project financial analysis.

CAPITAL COST ESTIMATE

Each circuit of the proposed POX processing facility and associated infrastructure was evaluated against historical costs of similar circuits at operations including Pueblo Viejo, Jabal Sayid, and Buzwagi. Additionally, recent quotes were obtained for certain equipment or circuits, as appropriate. Historical costs were factored to consider the expected scale and complexity of the Refractory Project and were escalated to 2015 US dollars. A contingency of 35% is included to reflect the scoping stage of the estimate.

The capital cost estimate for the Refractory Project comprises $496 million for initial capital and $157 million for sustaining capital, with a total LOM capital cost of $653 million as shown in Table 24-8.

TABLE 24-8 REFRACTORY PROJECT CAPITAL COSTS SUMMARY
Barrick Gold Corporation – Lagunas Norte Mine

Area	Cost US$ Millions
POX Plant	215
Indirects Costs	115
Subtotal	**330**
Escalation	9
Contingency (35%)	115
Total	**454**
Waste Dump and ARD Plant	42

Area	Cost US$ Millions
Total Initial Capital	**496**
Sustaining Capital	157
Total Capital Expenditures	**653**

Cost estimates are related solely to the Refractory Project as a stand-alone operation and exclude costs stated in the current LOM plan.

OPERATING COST ESTIMATE

The operating cost estimate for the Refractory Project comprise $302 million for mining, $785 million for processing, and $281 million for G&A over the LOM as shown in Table 24-9. LOM unit costs are presented in Table 24-10.

TABLE 24-9 REFRACTORY PROJECT LOM OPERATING COSTS
Barrick Gold Corporation – Lagunas Norte Mine

Area	Units	Cost
Mining	US$ Millions	302
Processing	US$ Millions	785
G&A	US$ Millions	281
Total	US$ Millions	**1,368**

TABLE 24-10 REFRACTORY PROJECT UNIT OPERATING COSTS
Barrick Gold Corporation – Lagunas Norte Mine

Area	Units	Cost
Mining	US$/t moved	2.30
	US$/t processed	10.98
Processing	US$/t processed	28.49
G&A	US$/t processed	10.20
Total	**US$/t processed**	**49.67**

Mine operating costs are based on historical performance and include consideration of mining depth and re-handling for the Refractory Project. These unit costs include operation and maintenance costs.

Processing costs are based on a combination of actual site costs at Lagunas Norte and Barrick's experience at other existing mines using a similar process flow sheet.

G&A costs are based on 50% fixed costs and 50% variable costs with respect to yearly manpower numbers. Using the 2015 figure of $30 million, future years are calculated using the following formula:

Fixed G&A: $30 million x 50% = $15 million

Variable G&A: $30 million x 50% x (year headcount / 2015 headcount)

G&A: Fixed G&A + Variable G&A

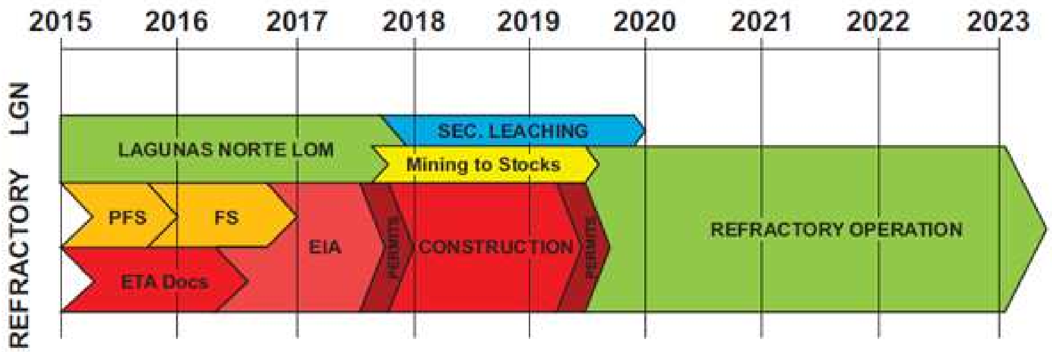
MANPOWER

Manpower requirements are expected to decline as Lagunas Norte transitions from the current oxide mine to the Refractory Project. Manpower reduction would mainly occur in the mining department, which reflects the mining rate reduction from 50 Mt per year in the current operation to 25 Mt per year for the Refractory Project.

PROJECT EXECUTION PLAN

A preliminary Refractory Project schedule has been developed and is shown in Figure 24-5. It will form the basis for a more detailed schedule in the PFS study.

The project critical path is driven by the EIA submission in June 2016 and its approval by Q3 2017, followed by construction to be completed by the middle of 2019. The PFS must be concluded by the end of 2015 and the FS and EIA final documents must be completed by mid to late 2016 in order to meet the schedule. Given that the EIA approval process will take approximately 12 to 15 months, engineering and ordering of long lead equipment must occur starting in 2017 and prior to permit issue.



August 2015

Source: Barrick Gold Corp., 2015.

Figure 24-5

Barrick Gold Corporation

Lagunas Norte Mine
La Libertad Region, Peru

Project Execution Plan
High Level Schedule

ECONOMIC ANALYSIS

The Project is considered on the assumption that the development will be concurrent with continued production from the current LOM set out in this report.

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

There are no Mineral Reserves estimated for the Refractory Project.

A cash flow projection has been generated from the LOM production schedule and capital and operating cost estimates. A summary of the key criteria is provided below. All costs are in US dollars (US$).

REVENUE

- Average of 6,000 tpd processing Refractory Project material; 2,700 tpd heap leach material.
- LOM head grade: 2.50 g/t Au.
- Refractory Project recovery averaging 90% for gold and 40% for silver; heap leach recovery of 46% for gold and 18% for silver.
- Transportation and refining as per existing agreements.
- Metal price: $1,300/oz Au and $16.00/oz Ag.
- Revenue is recognized at the time of production.
- Production: 2 Moz.

COSTS

- Pre-production period: five years (2015 to 2019).
- Additional mine life (beyond current LOM plan): 12 years
- Mine life capital totals $653 million, including pre-production capital of $496 million and $157 million of sustaining capital.
- Average operating cost over the mine life is $49.67 per tonne milled.

TAXATION AND ROYALTIES

- 2.51% NSR
- profit sharing of 8%
- a tax rate of 28% in 2015 decreasing to 26% in 2019 onwards
- the Refractory Project is expected to utilize unused tax depreciation credits that would otherwise exist at the end of the current Lagunas Norte LOM.

CASH FLOW ANALYSIS

Considering the Project on a stand-alone basis, the undiscounted after-tax cash flow totals $339 million over the mine life.

Pre-tax Internal Rate of Return (IRR): 19%
Pre-tax Net Present Value at 5%: $245 million
Pre-tax NPV at 10%: $125 million

After-tax Internal Rate of Return (IRR): 19%
After-tax Net Present Value at 5%: $224 million
After-tax NPV at 10%: $113 million

Payback period: 3 years

The Refractory Project production schedule and material source schedule are shown in Tables 24-11 and 24-12. Table 24-13 summarizes the Refractory Project after-tax cash flow.

TABLE 24-11 REFRACTORY PROJECT PRODUCTION SCHEDULE
Barrick Gold Corporation – Lagunas Norte Mine

Year	Leach Feed (000 tonnes)	Au g/t	Ag g/t	Refractory Feed (000 tonnes)	Au (g/t)	Ag (g/t)	Total Feed (000 tonnes)
2015							—
2016							—
2017	741	0.91	2.96	—	—	—	741
2018	878	1.24	3.58	—	—	—	878
2019	1,234	1.13	2.97	349	13.00	9.51	1,583
2020	1,602	0.80	4.84	1,705	7.85	8.92	3,307
2021	759	0.97	2.12	2,151	5.41	9.44	2,910
2022	9	0.99	15.80	2,194	2.99	7.09	2,203
2023				2,190	2.34	7.49	2,190
2024				2,196	2.45	9.96	2,196
2025				2,190	1.95	6.95	2,190
2026				2,190	1.83	6.04	2,190
2027				2,190	1.47	5.62	2,190
2028				2,196	1.13	4.82	2,196
2029				2,196	1.14	5.33	2,196
2030				576	1.14	5.33	576
Total	**5,222**	**0.99**	**3.55**	**22,324**	**2.86**	**7.11**	**27,546**

TABLE 24-12 REFRACTORY PROJECT PRODUCTION SCHEDULE – MATERIAL SOURCE
Barrick Gold Corporation – Lagunas Norte Mine

Year	Refractory from Mine (000 tonnes)	Refractory from Leach Stockpile (000 tonnes)	Total Refractory (000 tonnes)	Leach (000 tonnes)	Total (000 tonnes)
2015					
2016					
2017				741	741
2018				878	878
2019	349		349	1,234	1,583
2020	1,705		1,705	1,602	3,307
2021	2,151		2,151	759	2,910
2022	2,194		2,194	9	2,203
2023	1,357	833	2,190		2,190
2024	345	1,851	2,196		2,196
2025	1,084	1,106	2,190		2,190
2026	680	1,510	2,190		2,190
2027	2,190		2,190		2,190
2028	2,196		2,196		2,196
2029	2,196		2,196		2,196
2030	576		576		576
Total	**17,023**	**5,300**	**22,324**	**5,222**	**27,546**

TABLE 24-13 CASH FLOW SUMMARY
Barrick Gold Corporation - Lagunas Norte Mine - PEA Refractory Project

	UNITS	TOTAL	2015 Year 1	2016 Year 2	2017 Year 3	2018 Year 4	2019 Year 5	2020 Year 6	2021 Year 7	2022 Year 8	2023 Year 9	2024 Year 10	2025 Year 11	2026 Year 12	2027 Year 13	2028 Year 14	2029 Year 15	2030 Year 16	2031+
MINING																			
Material Mined																			
Ore Direct to Process	tonne '000	5,222	—	—	741	878	1,234	1,602	759	9	—	—	—	—	—	—	—	—	
Ore to Direct to Stockpile	tonne '000	17,023	—	—	1,926	4,290	3,741	1,481	5,190	395	—	—	—	—	—	—	—	—	
Waste	tonne '000	97,401	—	—	14,173	16,915	20,303	22,368	19,463	4,178	—	—	—	—	—	—	—	—	
Total Mined	tonne '000	119,646	—	—	16,840	22,084	25,278	25,450	25,412	4,582	—	—	—	—	—	—	—	—	
PROCESSING																			
Process Feed	'000 tonnes	27,546	—	—	741	878	1,583	3,307	2,910	2,203	2,190	2,196	2,190	2,190	2,190	2,196	2,196	576	
Au	g/t	2.50			0.91	1.24	3.75	4.43	4.25	2.98	2.34	2.45	1.95	1.83	1.47	1.13	1.14	1.14	
Ag	g/t	6.44			2.96	3.58	4.41	6.94	7.54	7.12	7.49	9.96	6.95	6.04	5.62	4.82	5.33	5.33	
Contained Au	oz	2,216,976	—	—	21,692	34,914	190,937	471,437	398,016	210,996	164,693	172,908	137,501	129,046	103,727	79,807	80,250	21,050	
Contained Ag	oz	5,699,964	—	—	70,612	101,047	224,619	738,312	704,908	504,509	527,162	703,543	489,376	425,087	395,706	340,447	376,006	98,629	
Recovery Leach																			
Au	%	48.06	0.00	0.00	55.17	41.36	41.57	55.28	43.91	74.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Ag	%	17.80	0.00	0.00	22.30	18.28	14.18	21.10	11.70	25.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Recovery PMR																			
Au	%	89.43	0.00	0.00	0.00	0.00	90.00	90.15	90.36	90.89	90.03	90.00	89.70	89.71	88.87	87.56	87.58	87.58	
Ag	%	39.98	0.00	0.00	0.00	0.00	40.00	40.00	40.00	40.00	40.00	40.00	39.91	39.90	40.00	40.00	40.00	40.00	
Recovery Leach																			
Au	oz	78,411	—	—	11,966	14,440	18,672	22,695	10,427	211	—	—	—	—	—	—	—	—	
Ag	oz	110,754	—	—	15,744	18,467	16,702	52,622	6,064	1,156	—	—	—	—	—	—	—	—	
Recovery PMR																			
Au	oz	1,842,866	—	—	—	—	131,425	387,980	338,172	191,521	148,273	155,612	123,344	115,764	92,179	69,877	70,283	18,436	
Ag	oz	2,041,002	—	—	—	—	42,735	195,551	261,235	199,984	210,863	281,416	195,316	169,601	158,279	136,174	150,398	39,450	
Total Recovered																			
Au	**oz**	**1,921,277**	**—**	**—**	**11,966**	**(7,998)**	**150,097**	**410,675**	**348,599**	**191,732**	**148,273**	**155,612**	**123,344**	**115,764**	**92,179**	**69,877**	**70,283**	**40,874**	
Ag	**oz**	**2,151,757**	**—**	**—**	**15,744**	**18,467**	**59,437**	**248,173**	**267,298**	**201,140**	**210,863**	**281,416**	**195,316**	**169,601**	**158,279**	**136,174**	**150,398**	**39,450**	
REVENUE																			
Metal Prices	**Input Units**																		
Au	US$/oz Au	$ 1,300.00	$1,200	$1,250	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	
Ag	US$/oz Ag	$ 16.00	$ 16	$ 16	$ 16	$ 16	$ 16	$ 16	$ 16	$ 16	$ 16	$ 16	$ 16	$ 16	$ 16	$ 16	$ 16	$ 16	
Au Sold (Incremental)		1,921,278	—	$ —	$11,966	$ (23,308)	$143,890	$386,675	$348,600	$219,042	$166,480	$155,612	$123,344	$115,764	$ 92,179	$ 69,877	$ 70,283	$40,874	
Au Gross Revenue (Incremental)	US$ Millions	$ 2,498	$ —	$ —	$ 16	$ (30)	$ 187	$ 503	$ 453	$ 285	$ 216	$ 202	$ 160	$ 150	$ 120	$ 91	$ 91	$ 53	
OPERATING COST																			
Mining	US$/t moved	$ 2.30	$ —	$ —	$ 2.15	$ 2.15	$ 2.27	$ 2.35	$ 2.38	$ 2.98	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	
	US$/t processed	$ 10.98	$ —	$ —	$ 48.84	$ 54.08	$ 36.26	$ 18.11	$ 20.78	$ 6.21	$ 1.74	$ 2.00	$ 1.81	$ 1.92	$ 1.53	$ 1.53	$ 1.53	$ 1.53	
Processing	US$/t processed	$ 28.49	$ —	$ —	$ 3.65	$ 3.69	$ 27.76	$ 23.03	$ 28.03	$ 35.49	$ 33.76	$ 33.71	$ 32.14	$ 28.66	$ 33.19	$ 27.39	$ 27.14	$ 44.34	
G&A	US$/t processed	$ 10.20	$ —	$ —	$ —	$ 17.05	$ 14.91	$ 7.14	$ 8.91	$ 11.76	$ 9.88	$ 9.86	$ 9.88	$ 9.88	$ 9.88	$ 9.86	$ 9.86	$ 26.66	
Total Direct Unit Operating Cost	US$/t processed	$ 49.67	$ —	$ —	$ 52.49	$ 74.82	$ 78.94	$ 48.28	$ 57.71	$ 53.46	$ 45.39	$ 45.57	$ 43.84	$ 40.46	$ 44.60	$ 38.77	$ 38.52	$ 72.54	
Mining (Open Pit)	US$ Millions	$ 302	$ —	$ —	$ 36	$ 47	$ 57	$ 60	$ 60	$ 14	$ 4	$ 4	$ 4	$ 4	$ 3	$ 3	$ 3	$ 1	
Total Processing	US$ Millions	$ 785	$ —	$ —	$ 3	$ 3	$ 44	$ 76	$ 82	$ 78	$ 74	$ 74	$ 70	$ 63	$ 73	$ 60	$ 60	$ 26	
G&A	US$ Millions	$ 281	$ —	$ —	$ —	$ 15	$ 24	$ 24	$ 26	$ 26	$ 22	$ 22	$ 22	$ 22	$ 22	$ 22	$ 22	$ 15	
Sub-Total Direct Mining Expenses	US$ Millions	$ 1,368	$ —	$ —	$ 39	$ 66	$ 125	$ 160	$ 168	$ 118	$ 99	$ 100	$ 96	$ 89	$ 98	$ 85	$ 85	$ 42	
Refining & Freight	US$ Millions	$ 6	$ —	$ —	$ 0	$ (0)	$ 0	$ 1	$ 1	$ 1	$ 1	$ 1	$ 0	$ 0	$ 0	$ 0	$ 0	0	
Silver Credits	US$ Millions	$ (34)	$ —	$ —	$ (0)	$ 5	$ (1)	$ (4)	$ (4)	$ (3)	$ (3)	$ (5)	$ (3)	$ (3)	$ (3)	$ (2)	$ (2)	(6)	
Profit Sharing	US$ Millions	$ 20	$ 0	$ 0	$ (2)	$ (7)	$ —	$ 14	$ 7	$ 2	$ 2	$ 3	$ 0	$ —	$ —	$ —	$ —	—	
Sub-Total Cash Operating Cost	US$ Millions	$ 1,360	$ 0	$ 0	$ 37	$ 63	$ 124	$ 171	$ 172	$ 117	$ 99	$ 99	$ 93	$ 86	$ 95	$ 83	$ 82	$ 36	
Royalties		$ 63	$ —	$ —	$ 0	$ (1)	$ 5	$ 13	$ 11	$ 7	$ 6	$ 5	$ 4	$ 4	$ 3	$ 2	$ 2	$ 1	
Total Cash Cost	US$ Millions	$ 1,424	$ 0	$ 0	$ 37	$ 62	$ 129	$ 184	$ 184	$ 124	$ 104	$ 104	$ 98	$ 90	$ 99	$ 86	$ 85	$ 38	
Adjusted Operating Cost	$/oz	$ 741					$ 898	$ 475	$ 527	$ 567	$ 627	$ 672	$ 791	$ 779	$ 1,069	$ 1,224	$ 1,206	$ 924	
Other Costs																			
Closure (Incremental)	US$ Millions	$ (3)	$ (2)	$ (2)	$ (4)	$ (9)	$ (5)	$ (4)	$ (26)	$ (18)	$ (19)	$ (21)	$ (18)	$ (3)	$ (3)	$ (3)	$ (1)	$ (1)	$ 137
Social development	US$ Millions	$ 52	$ —	$ —	$ —	$ —	$ 5	$ 6	$ 6	$ 5	$ 4	$ 4	$ 4	$ 4	$ 4	$ 4	$ 4	$ 2	
Environment	US$ Millions	$ (82)	$ —	$ —	$ (6)	$ (29)	$ (33)	$ (40)	$ —	$ 10	$ 8	$ —	$ —	$ —	$ —	$ —	$ —	$ 7	
Regional Business Unit	US$ Millions	$ 73	$ —	$ —	$ —	$ —	$ 7	$ 7	$ 7	$ 7	$ 6	$ 6	$ 6	$ 6	$ 6	$ 6	$ 6	$ 4	
World Gold Council fees	US$ Millions	$ 4	$ —	$ —	$ —	$ —	$ 0	$ 1	$ 1	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	
Sub-Total Other Cost	**US$ Millions**	**$ 45**	**$ (2)**	**$ (2)**	**$ (10)**	**$ (39)**	**$ (26)**	**$ (31)**	**$ (13)**	**$ 3**	**$ 0**	**$ (11)**	**$ (8)**	**$ 8**	**$ 7**	**$ 7**	**$ 9**	**$ 13**	**$ 137**
Total Operating Cost	**US$ Millions**	**$ 1,468**	**$ (1)**	**$ (2)**	**$ 27**	**$ 24**	**$ 103**	**$ 153**	**$ 171**	**$ 128**	**$ 104**	**$ 94**	**$ 90**	**$ 98**	**$ 106**	**$ 93**	**$ 94**	**$ 51**	**$ 137**
Operating Cashflow	US$ Millions	$ 1,029	$ 1	$ 2	$ (12)	$ (54)	$ 84	$ 350	$ 282	$ 157	$ 112	$ 108	$ 71	$ 53	$ 14	$ (2)	$ (2)	$ 2	$ (137)
CAPITAL COST																			
Initial Capital Cost	**US$ Millions**	**$ 496**	**$ 5**	**$ 41**	**$ 205**	**$ 171**	**$ 75**	**$ —**	**$ —**	**$ —**	**$ —**	**$ —**	**$ —**	**$ —**	**$ —**	**$ —**	**$ —**	**$ —**	**$ —**
Sustaining	US$ Millions	$ 157	$ —	$ —	$ —			$ 59	$ 16	$ 9	$ 9	$ 9	$ 9	$ 9	$ 9	$ 9	$ 9	$ 9	
Total Capital Cost	**US$ Millions**	**$ 653**	**$ 5**	**$ 41**	**$ 205**	**$ 171**	**$ 75**	**$ 59**	**$ 16**	**$ 9**	**$ 9**	**$ 9**	**$ 9**	**$ 9**	**$ 9**	**$ 9**	**$ 9**	**$ 9**	**$ —**
CASH FLOW																			
Net Pre-Tax Cashflow	US$ Millions	$ 376	$ (3)	$ (39)	$ (216)	$ (225)	$ 9	$ 291	$ 266	$ 148	$ 103	$ 99	$ 61	$ 43	$ 5	$ (11)	$ (11)	$ (7)	$ (137)
Cumulative Pre-Tax Cashflow	US$ Millions		$ (3)	$ (42)	$ (258)	$ (483)	$ (475)	$ (184)	$ 83	$ 230	$ 333	$ 433	$ 494	$ 538	$ 543	$ 531	$ 520	$ 513	
Taxes	US$ Millions	$ 38	$ 1	$ (0)	$ (10)	$ (27)	$ —	$ 24	$ 25	$ 6	$ 8	$ 11	$ 1	$ —	$ —	$ —	$ —	$ —	$ —
After-Tax Cashflow	US$ Millions	$ 339	$ (4)	$ (39)	$ (206)	$ (198)	$ 9	$ 266	$ 242	$ 142	$ 95	$ 88	$ 61	$ 43	$ 5	$ (11)	$ (11)	$ (7)	$ (137)
Cumulative After-Tax Cashflow	US$ Millions		$ (4)	$ (42)	$ (249)	$ (447)	$ (438)	$ (172)	$ 70	$ 212	$ 307	$ 395	$ 456	$ 500	$ 505	$ 494	$ 482	$ 476	
All-In Sustaining Cost	**US$/oz**	**$ 846**					$ 718	$ 548	$ 536	$ 625	$ 682	$ 662	$ 802	$ 925	$ 1,246	$ 1,459	$ 1,462	$ 1,462	**$ —**
All-In Cost	**US$/oz**	**$ 1,104**																	
PROJECT ECONOMICS																			
Pre-Tax IRR	%	19.1%																	
Pre-tax NPV at 5%																			

discounting	US$ Millions	$ 245			
Pre-tax NPV at 10% discounting	US$ Millions	$ 125			
Pre-tax NPV at 15% discounting	US$ Millions	$ 43			
After-Tax IRR	%	18.8%			
After-Tax NPV at 5% discounting	US$ Millions	$ 224			
After-Tax NPV at 10% discounting	US$ Millions	$ 113			
After-tax NPV at 15% discounting	US$ Millions	$ 38			

SENSITIVITY ANALYSIS

After-tax sensitivity analyses were prepared considering changes in the head grade, metallurgical recovery, gold price, operating costs, and capital costs. The Refractory Project cash flow is most sensitive to changes in the gold price, head grade, and recovery. The sensitivities are shown in Table 24-14 and Figure 24-6.

TABLE 24-14 SENSITIVITY ANALYSIS TABLE
Barrick Gold Corporation – Lagunas Norte Mine

Factor	Head Grade (g/t Au)	NPV at 5% (M$)
0.80	1.99	-14
0.90	2.24	113
1.00	**2.49**	224
1.10	2.74	330
1.20	2.99	435

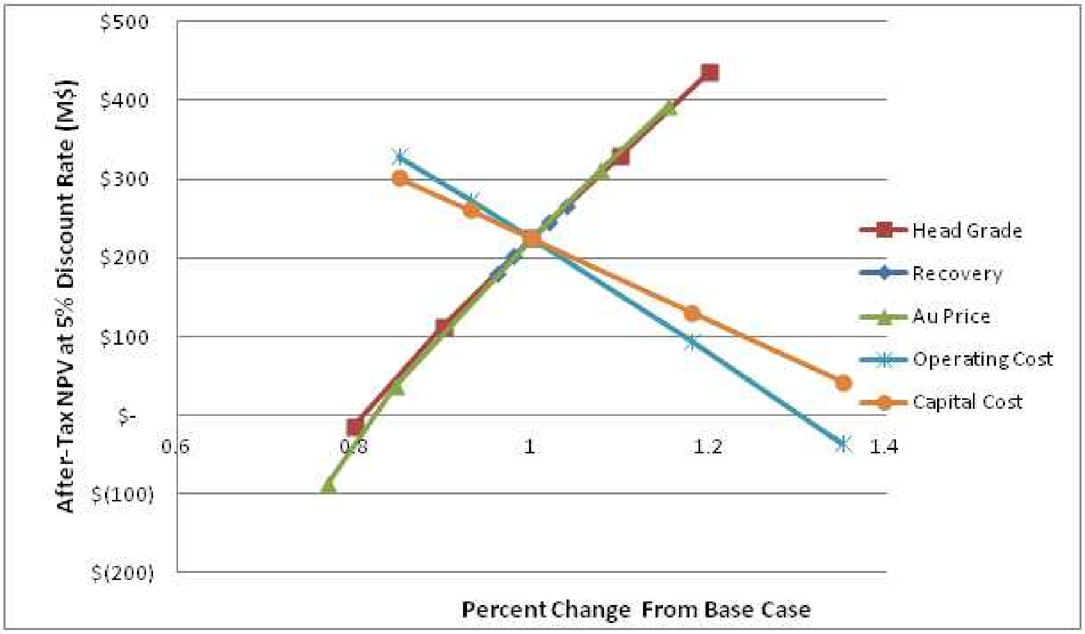
Factor	Recovery (%)	NPV at 5% (M$)
0.96	86	180
0.98	88	203
1.00	**89**	224
1.02	91	246
1.04	93	267

Factor	Au Price ($)	NPV at 5% (M$)
0.77	1,000	-87
0.85	1,100	37
1.00	**1,300**	224
1.08	1,400	310
1.15	1,500	393

Factor	Operating Cost (M$)	NPV at 5% (M$)
0.85	1,156	329
0.93	1,265	274
1.00	1,360	224
1.18	1,605	95
1.35	1,836	-35

Factor	Capital Cost (M$)	NPV at 5% (M$)
0.85	555	302
0.93	607	261
1.00	653	224
1.18	770	131
1.35	881	43

FIGURE 24-6 SENSITIVITY ANALYSIS CHART



RISKS ASSOCIATED WITH THE REFRACTORY PROJECT

The most significant risks to the economics of the Refractory Project are metal price, initial capital costs, and project delays.

The most likely cause of potential initial capital cost variance is a change in the technical design of the POX facility and other infrastructure as the Refractory Project is currently at a scoping level of study. Some mitigating factors to the initial capital cost variance risk include:

- Construction productivity for Peru mining projects in general, and specifically at Lagunas Norte, has been high relative to other geographies. Furthermore, Peru has contractors that have experience at similar projects, and more particularly at the Pueblo Viejo project in the Dominican Republic.
- Barrick has extensive technical expertise with the proposed technology and managing similar projects, such as the recent innovative Thiosulfate technology circuit at Goldstrike in 2014/15 and bringing the Pueblo Viejo mine into production in 2013, which also deploys an autoclave pressure oxidation process.
- A 35% contingency has been included in the initial capital cost estimate to account for the technical and cost uncertainties that will be better understood with the PFS.

Project economics are also sensitive to potential delays in the project schedule. Some mitigating factors to the project delay risk include:

- The project team has completed the PEA and has received the stage-gate approval of Barrick's investment committee to proceed to the PFS phase. Part of the scoping stage-gate was to not only review the technical and economic merits of the project but also ensure that legal, environmental, and permitting approvals are properly considered, planned, and scheduled.
- Barrick has developed a clear project execution plan schedule, as outlined in Figure 24-5.

OPPORTUNITIES ASSOCIATED WITH THE REFRACTORY PROJECT

The primary opportunity that is considered most likely to increase the economic value of the project would be an increase in the estimated Mineral Resource grade.

The Lagunas Norte orebody was drilled using a large percentage of diamond core drill holes. During 2008, it was observed that gold grades from the diamond core holes were biased low relative to production and to RC drill holes. The site twinned a number of core holes with RC holes and confirmed that the core holes were significantly understated relative to the RC drill holes and the production blast holes. The reason for the bias is that diamond drilling was washing away the gold bearing fines during the drilling process while the RC drilling and blast holes were able to collect the fines and properly represent the true grade of the ore. The oxide orebody was re-drilled using RC drill holes and re-modelled. The sulphide portion of the orebody was not drilled with RC drill holes to reduce costs as there was not a plan to mine this material in the existing LOM plan.

Additional RC drilling will be needed to twin the existing core holes and better understand the grade of the sulphide deposit of the Refractory Project.

25 INTERPRETATION AND CONCLUSIONS

Based on the site visit and subsequent review, RPA offers the following conclusions:

MINERAL RESOURCE ESTIMATION

- The 2014 year-end Measured and Indicated Mineral Resources, exclusive of Mineral Reserves, total 19.4 Mt averaging 0.69 g/t Au and 2.11 g/t Ag and contain 430,000 oz of gold and 1,320,000 oz of silver. In addition, the 2014 year-end Inferred Mineral Resources total 1.6 Mt averaging 0.73 g/t Au and 2.48 g/t Ag and contain 40,000 oz of gold and 120,000 oz of silver. These resources are mostly oxide mineralization that can be processed using the current heap leaching facility.
- The Refractory Project Measured and Indicated Mineral Resources total 27.7 Mt averaging 2.50 g/t Au and 6.44 g/t Ag and contain 2.2 Moz of gold and 5.7 Moz of silver. In addition, the sulphide Inferred Mineral Resources total 0.3 Mt averaging 1.92 g/t Au and 7.35 g/t Ag and contain 19,000 oz of gold and 74,000 oz of silver. These resources are mostly sulphide mineralization.
- Mineral Resource estimates have been prepared utilizing acceptable estimation methodologies. The classification of Measured, Indicated, and Inferred Resources, conforms to CIM definitions.
- The current drill hole database is reasonable for supporting a resource model for use in Mineral Resource and Mineral Reserve estimation.
- The methods and procedures utilized by MBM at the Lagunas Norte Mine to gather geological, geotechnical, assaying, density, and other information are reasonable and meet generally accepted industry standards. Standard operating protocols are well documented and updated on a regular basis for most of the common tasks. MBM developed and implemented its own LIMS for the mine laboratory. The mine carries out regular comparisons with blast hole data, previous models, and production reconciliation results to calibrate and improve the resource modelling procedures.
- Exploration and development sampling and analysis programs use standard practices, providing generally reasonable results. The resulting data can effectively be used for the estimation of Mineral Resources and Mineral Reserves.
- The modelling procedures include hundreds of interpolation runs, the use of length weighted composites to simulate semi-soft boundaries, multiple interim block sizes, and other advanced features that collectively result in a very complex process that is well documented in a step-by-step manner.
- The positive gold reconciliation variance of approximately 20% in the past has been eliminated due mostly to infill RC drilling and to procedural improvements to the resource model. RC drilling on the Refractory Project sulphide resource could lead to higher grades than currently estimated based on diamond drilling.

- Overall, RPA is of the opinion that MBM has conducted very high quality work that exceeds industry practice.

MINING AND MINERAL RESERVES

- The 2014 year-end Proven and Probable Reserves, including existing stockpiles scheduled for processing and inventory, total 69.7 Mt grading 1.27 g/t Au and 4.42 g/t Ag, containing 2.8 Moz of gold and 9.9 Moz of silver.
- The Mineral Reserve estimates have been prepared utilizing acceptable estimation methodologies and the classification of Proven and Probable Reserves conforms to CIM definitions.
- The operating data and the supporting documents were prepared using standard industry practices and provide reasonable results and conclusions.
- Recovery and cost estimates are based upon actual operating data and engineering to support a Mineral Reserve statement. Economic analysis using these estimates generates a positive cash flow, which supports a statement of Mineral Reserves.
- The current Lagunas Norte production schedule provides reasonable results and, in RPA's opinion, meets the requirements for statement of Mineral Reserves. In addition to the Mineral Reserves within the ultimate pit, there are Mineral Resources and potential sulphide resources (as described in the PEA) that represent opportunities for the future.

PROCESS

- RPA confirmed that the procedures used to estimate gold and silver recovery meet industry standards.
- Solution management practices at Lagunas Norte exceed industry standards. Solution recirculation at the leach pad contributes to a positive water balance and higher concentrations of gold in solution to feed the Merrill Crowe cementation process. The water treatment system is effective in handling ARD and in maintaining water quality at discharge.
- In RPA's opinion, the CIC circuit increases solution flow and will be very beneficial in the long term for solution management.

ENVIRONMENTAL CONSIDERATIONS

- The environmental and social practices at Lagunas Norte are very effective and enable Barrick to have a strong "social licence to operate".
- A program of System of Social Management has been instituted and provides employment and training.
- Changes in water discharge criteria may require additional capital expenditures and higher operating costs for long term water treatment.

REFRACTORY PROJECT

- The PEA confirms that the refractory sulphide mineralization has reasonable prospects for eventual economic extraction.
- Operating and capital costs were estimated based on a combination of evaluating processes at similar Barrick operations and obtaining cost quotes for certain capital items. RPA is of the opinion that the estimates are adequate for the PEA study.
- There is insufficient variability testing to assess the flotation performance of the various types of ores and the impact of highly carbonaceous material on CIL. Additional testing is currently in progress and while the testwork is not finalized, no material changes were identified to date that would invalidate the results of the PEA.
- The economic analysis of the Refractory Project shows an attractive after-tax Net Present Value (NPV) of $224 million at a discount rate of 5% and an internal rate of return (IRR) of 19% under the assumptions set forth in Section 24 including an assumed gold price of $1,300 per ounce. In RPA's opinion, the cash flow model meets industry standards for a PEA study.

RISKS

RPA has not identified any significant risks and uncertainties that could be reasonably expected to affect the reliability or confidence in the exploration information, oxide Mineral Resource, or Mineral Reserve estimates, or associated projected economic outcomes.

Risks associated with the Refractory Project include:

- Metal price fluctuations.
- Preliminary nature of the initial capital cost estimates.
- Sensitivity of the economics to possible delays in project schedule.
- Additional metallurgical variability testing is required.
- Permitting and approvals for the Refractory Project are at an early stage.

Metal price, initial capital cost estimate variance and project delays are the most significant of the risks to the economics of the Refractory Project. Barrick has developed a strategy to mitigate these risks as outlined in Section 24.

The primary opportunity that is most likely to increase the economic value of the Refractory Project would be an increase in the estimated Mineral Resource grade. Current diamond drilling of the sulphide orebody could understate the grade by as much as 10% to 20%.

26 RECOMMENDATIONS

RPA makes the following recommendations:

MINERAL RESOURCE ESTIMATION

- The resource modelling work is very good and no significant procedural changes are warranted.
- The minor overlap between the oxide and sulphide resource estimates is due to the fact that the Refractory Project was finalized after disclosure of the year-end 2014 resources. The overlap will be eliminated for the 2015 year-end estimates.

MINING

- The LOM plan is reasonable and Barrick should proceed to implement the plan as presented.

PROCESS

- Continue to conduct routine metallurgical tests to try to improve the accuracy of the calculations used to estimate the recovery of gold and silver.

CAPITAL AND OPERATING COSTS

- The current operating costs are well managed and understood. RPA recommends that Lagunas Norte personnel continue exploring cost reduction alternatives.
- Continue investigating capital cost reduction as the current mining operation will end in 2018.

REFRACTORY PROJECT

- Complete a PFS on the Refractory Project.
- Consider additional RC drilling.
- Additional sampling and metallurgical testing should be undertaken during the next stage of study, including testing of M3BL ores.
- Minimize potential risks associated with the design and operation of dry stack tailings residue disposal with advanced engineering study.
- As part of a future EIA, update the Environmental Management Plan for Lagunas Norte to reflect the new facilities proposed under the Refractory Project.

27 REFERENCES

Anddes Asociados S.A.C., 2014, Estudio de Estabilidad Física del Pad de Lixivación, Botadero y Tajo, Tajo Dafne, Alexa y Josefa, Mina Lagunas Norte, Preparado para: Minera Barrick Misquichilca S.A., Junio 2014.

Barrick, 2014a, Interpretacion Geologica, Modelamiento y Estimacion de Recursos Lagunas Norte, Internal Report Prepared by Melissa Vasquez, Angela Zapana, Benjamin Sanfurgo, Cristobal Valenzuela, Report Dated July 2014, 154 p.

Barrick, 2014b, Untitled Report on Lagunas Norte Resource Model Update, Internal Report Prepared by Melissa Vasquez, Angela Zapana, Benjamin Sanfurgo, Cristobal Valenzuela, Report Dated November 2014, 13 p.

Barrick, 2014c, Modelo Dinámico Metalúrgico de Extracción de Oro para Minerales Sedimentarios M3 Sulfurados de Minera Barrick Misquichilca – Lagunas Norte, MBM Internal Report, May 2014, 22 p.

Barrick, 2015a, Lagunas Norte Permitting and EIA, internal Presentation (January 2015).

Barrick, 2015b, Lagunas Norte – ARD Capex Reduction, Technical Assessment for RPA – Tier 3, LN-PEA-TIER3-1, Rev. 0, internal report, July 15, 2015.

Barrick, 2015c, Barrick Development System, Lagunas Norte Sulphide Project Scoping Study, internal report, June 19, 2015.

Barrick, 2015d, Lagunas Norte – PMR Reprocessing of Incremental Sulfides, Technical Assessment for RPA – Tier 3 PEA, internal report, July 15, 2015.

Becerra, C., 2014a, Reporte Validación de Leyes de Sondajes 2014, Internal MBM Memorandum Dated December 2014, 17 p.

Becerra, C., 2014b, Reporte Validación de Coordenadas Finales Sondajes 2014, Internal MBM Memorandum Dated December 2014, 3 p.

Becerra, C., 2014c, Reporte Validación de Survey Sondajes 2014, Internal MBM Memorandum Dated December 2014, 14 p.

Becerra, C., 2012a, Validación Coordenadas Finales Sondajes 2012, Internal MBM Memorandum Dated February 2013, 3 p.

Becerra, C., 2012b, Reporte Validación de Survey Sondajes 2012, Internal MBM Memorandum Dated February 2013, 1 p.

Becerra, C., 2011a, Validación Coordenadas Finales Sondajes 2008, 2009, 2010, and 2011, Internal MBM Memorandum Dated November 2011, 8 p.

Becerra, C., 2011b, Reporte Validación de Survey Sondajes 2008, 2009, 2010, and 2011, Internal MBM Memorandum Dated November 2011, 40 p.

Bloom, L. Analytical Solutions Ltd. (2003): Review of Sample Preparation, Assay and Quality Control Procedures, Alto Chicama Project, Peru, July 2003.

Bobadilla, P., 2012, Memo to Edwin Zegarra and José Vidarte, Modelo de recuperación de Ore para el mineral de Vizcacha – Lagunas Norte, April 24, 2012.

CIM, 2014, CIM Definition Standards - For Mineral Resources and Mineral Reserves, Prepared by the CIM Standing Committee on Reserve Definitions, Adopted by CIM Council on May 10, 2014, 9 p.

Garcia, Esteban, 2011, 2011 Mid/End-Year Cut-Off Grade Report, Lagunas Norte Mine, Barrick Gold Corporation, June 2011, 21 p.

Garcia, Esteban, 2009, The Lagunas Norte Mine Technical Report, La Libertad Region, Peru, Minera Barrick Misquichilca S.A., March, 2009, 119 p.

Garcia, W.V., 2009, Geology of the Milagros Project, Alto Chicama District, La Libertad, Peru, Colorado School of Mines master of Science Thesis, 162 p.

Golder Associates Inc. and Golder Associates Peru S.A., 2004, Technical and Economic Evaluation Volume III of IV Heap Leach Facility Design, Report by Golder Associates, March 2004, 77 p.

Gómez, Paul, 2011, Validación de datos históricos Lagunas Norte, Internal MBM Memorandum Dated November 26, 2011, 1 p.

Gómez, Paul, 2008, Lagunas Norte Perforacion en Banco 4,050, Internal PowerPoint Presentation “upgrading Test.ppt” Dated March 2008, 30 slides.

Haggarty, S. and Espinel, R., 2004, Au and Ag Extraction Estimates for Revised 2Q 2004 LOM Planning, memo to Frank McCann, April 8, 2004,

Hill, Alan R.; Davidson, Alexander J., 2003, The Alto Chicama Property Department of La Libertad, Peru, Technical Report, March, 2003, 52 p.

Lewis Geoscience Services Inc., 2002, Structural Geology and Ore Controls of the Lagunas Norte Deposit, Alto Chicama Project, Cajamarca, Peru, November 16, 2002, 48 p.

Magiña, P., 2014, Memo to Joe Pezo, Extracción del mineral M1 Chancado y ROM, December 18, 2014.

Minera Barrick Misquichilca, 2011a, Lagunas Norte Resource Estimation Report by Paul Gómez, Melissa Vasquez, and Hugo Rios, November 2011, 144 p.

Minera Barrick Misquichilca, 2011b, Reporte LOM Mantenimiento LGN, November 7, 2011, 7 p.

Minera Barrick Misquichilca, 2011c, Ore Control_LN_Katia.ppt, Internal PowerPoint Presentation Dated November 29, 2011, 31 Slides.

Minera Barrick Misquichilca, 2011d, Resumen_Collar_LN.xlsx, Excel file Dated November 26, 2011 by Melissa Vasquez.

Minera Barrick Misquichilca, 2011e, Reporte Trimestral QA-QC Blastholes, Enero-Marzo 2011, Minas Lagunas Norte, Internal Memorandum Dated April 10, 2011 by Jose Azan, 39 p.

Minera Barrick Misquichilca, 2011f, Reporte Trimestral QA-QC Blastholes, Abril-Junio 2011, Minas Lagunas Norte, Internal Memorandum Dated July 3, 2011 by Jose Azan, 39 p.

Minera Barrick Misquichilca, 2011g, Reporte Preliminar QA-QC 2011, Minas Lagunas Norte, Internal Memorandum Dated November 2011 by Geology Department, 51 p.

Minera Barrick Misquichilca, 2010, Reporte Final QA-QC 2010, Minas Lagunas Norte, Internal Memorandum Dated May 2010 by Geology Department, 65 p.

Minera Barrick Misquichilca, 2009, Reporte Final QA/QC DDH EXPIT June 2009, Minas Lagunas Norte, Internal Memorandum Dated June 21, 2009 by Geology Department, 54 p.

Piteau Engineering Latin America S.A.C., 2010, Alto Chicama Project, Lagunas Norte Mine - 2010 Open Pit Slope Design Update, Report by Piteau Engineering Latin America S.A.C., October 2010, 455 p.

Piteau Engineering Latin America S.A.C., 2009, Review of East Dump Design and Proposed North Expansion, Lagunas Norte Mine, Report by Piteau Engineering Latin America S.A.C., June 17, 2009, 316 p.

Piteau Engineering Latin America S.A.C., 2004, Alto Chicama Project – Geotechnical Assessments and Design Criteria for Proposed Open Pit Slopes, February 2004.

Porras, Fernando, 2014, Year-End Cut-Off grade Report Lagunas Norte Mine, Internal Barrick Report Dated January 2015, 20 p.

Rios, Hugo, 2005, El Yacimiento Epitermal de Oro de Alta Sulfuracion de Alto Chicama, Controles de Mineralizacion y Modelo Genetico Preliminar, National University of Engineering, Lima Peru, Geological Engineering Thesis, 88 p.

RPA, 2012, Technical Report on the Lagunas Norte Mine, La Libertad Region, Peru, a NI 43-101 Technical Report prepared by Evans, L., Ehasoo, G., and Altman, K.A., for Barrick Gold Corporation, March 16, 2012, 156 p.

RPA, 2006, Review of Mineral Reserve Estimation Procedures, April 10, 2006, 52 p.

RPA, 2005, Review of Mineral Reserve Estimation Procedures, February 7, 2005, 38 p.

Scott Wilson RPA, 2008, Report on an Audit of Mineral Reserves at the Lagunas Norte Mine, Peru, May 10, 2008, 93 p.

Smee and Associates Consulting Ltd., 2010, A Review of Quality Control Data Lagunas Norte Resource Drilling, Alto Chicama Area, Peru, December 2010, 42 p.

Smee and Associates Consulting Ltd., 2008, A Review of Quality Control Methods, Quality Control Data, Field Measurements and Drill Core Sampling Protocol, Tres Cruces Project, Alto Chicama Area, Peru, March 2008, 45 p.

Smee and Associates Consulting Ltd., 2002, Quality Control and Sampling Procedures, Alto Chicama Project, Peru, May 2002, 45 p.

SNC-Lavalin Engineers and Constructors Inc. (2002): Minera Barrick Misquichilco S.A., Centromin Study, November 2002.

Vidarte, J., 2008a, Memo to Jaime Polar and Wesley Ubillus, Extraction M3, May 2008.

Vidarte, J., 2008b, Memo to Jaime Polar and Wesley Ubillus, Extraction M2AL, M3B, December 23, 2008.

Vidarte, J., 2009, Memo to Jaime Polar and Wesley Ubillus, Modelo de Extracciones de Oro para los Minerales M1, M3, M2AL, M2AH, y M3B, December 20, 2009.

Zapana, Angela, 2009, Reporte de Validacion de Leyes – 5% Base de Datos de Lagunas Norte, MBM Internal Memorandum Dated June 2009, 15 p.

28 DATE AND SIGNATURE PAGE

This report titled "Technical Report on the Lagunas Norte Mine, La Libertad Region, Peru" and dated August 31, 2015, was prepared and signed by the following authors:

(Signed & Sealed) " *Luke Evans* "

Dated at Toronto, ON
August 31, 2015

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

(Signed & Sealed) " *Hugo Miranda* "

Dated at Lakewood, CO
August 31, 2015

Hugo Miranda, MBA, P.C.
Principal Mining Engineer

(Signed & Sealed) " *Brenna Scholey* "

Dated at Toronto, ON
August 31, 2015

Brenna Scholey, P.Eng.
Principal Metallurgist

29 CERTIFICATE OF QUALIFIED PERSON

LUKE EVANS

I, Luke Evans, M.Sc., P.Eng., as an author of this report titled "Technical Report on the Lagunas Norte Mine, La Libertad Region, Peru" prepared for Barrick Gold Corporation, and dated August 31, 2015, do hereby certify that:

1. I am Executive Vice President, Geology and Mineral Resources, and Principal Geologist with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.
2. I am a graduate of University of Toronto, Ontario, Canada, in 1983 with a Bachelor of Science (Applied) degree in Geological Engineering and Queen's University, Kingston, Ontario, Canada, in 1986 with a Master of Science degree in Mineral Exploration.
3. I am registered as a Professional Engineer in the Province of Ontario (Reg. #90345885). I have worked as a professional geological engineer for over 28 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Consulting Geological Engineer specializing in resource and reserve estimates, audits, technical assistance, and training since 1995.
   - Review and report as a consultant on numerous exploration and mining projects around the world for due diligence and regulatory requirements.
   - Senior Project Geologist in charge of exploration programs at several gold and base metal mines in Quebec.
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I visited the Lagunas Norte Mine from January 6 to 7, 2015 and held meetings at the Barrick offices in Trujillo and Lima on January 8 and 9, 2015, respectively.
6. I am responsible for the preparation of Sections 2 to 5, 7 to 12, 14, and 23 and collaborated with my co-authors on Sections 1, 6, 24, 25, 26, and 27 of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
8. I have previously prepared an audit of the 2008 year-end resource and reserve estimates, and a NI 43-101 Technical Report on the property dated March 16, 2012.
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

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

Dated this 31 st day of August, 2015

(Signed & Sealed) “ *Luke Evans* ”

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

HUGO MIRANDA

I, Hugo M. Miranda, P.C., as an author of this report titled "Technical Report on the Lagunas Norte Mine, La Libertad Region, Peru" prepared for Barrick Gold Corporation, and dated August 31, 2015, do hereby certify that:

1. I am Principal Mining Engineer with RPA (USA) Ltd. of 143 Union Boulevard, Suite 505, Lakewood, Colorado, USA 80228.
2. I am a graduate of the Santiago University of Chile, with a B.Sc. degree in Mining Engineering in 1993, and Santiago University, with a Masters of Business Administration degree in 2004.
3. I am registered as a Competent Person of the Chilean Mining Commission (Registered Member #0031). I have worked as a mining engineer for a total of 19 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Principal Mining Engineer - RPA in Colorado. Review and report as a consultant on mining operations and mining projects. Mine engineering including mine plan and pit optimization, pit design and economic evaluation.
   - Mine Planning Chief, El Tesoro Open Pit Mine - Antofagasta Minerals in Chile
   - Open Pit Planning Engineer, Radomiro Tomic Mine, CODELCO – Chile.
   - Open Pit Planning Engineer, Andina Mine, CODELCO - Chile.
   - Principal Mining Consultant – Pincock, Allen and Holt in Colorado, USA. Review and report as a consultant on numerous development and production mining projects.
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I visited the Lagunas Norte Mine from January 6 to 7, 2015 and held meetings at the Barrick offices in Trujillo and Lima on January 8 and 9, 2015, respectively.
6. I am responsible for Sections 15, 16, 19, 21, and 22 and collaborated with my co-authors on Sections 1, 6, 24, 25, 26, and 27 of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
8. I have had no prior involvement with the property that is the subject of the Technical Report.
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated this 31 st day of August, 2015

(Signed & Sealed) " ***Hugo Miranda*** **"**

Hugo M. Miranda, P.C.

BRENNA SCHOLEY

I, Brenna J.Y. Scholey, P.Eng., as an author of this report titled "Technical Report on the Lagunas Norte Mine, La Libertad Region, Peru" prepared for Barrick Gold Corporation, and dated August 31, 2015, do hereby certify that:

1. I am Principal Metallurgist with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave., Toronto, ON, M5J 2H7.
2. I am a graduate of The University of British Columbia in 1988 with a B.A.Sc. degree in Metals and Materials Engineering.
3. I am registered as a Professional Engineer in the Province of Ontario (Reg. #90503137) and British Columbia (Reg. #122080). I have worked as a metallurgist for a total of 25 years since my graduation. My relevant experience for the purpose of the Technical Report is:
    - Reviews and reports as a metallurgical consultant on a number of mining operations and projects for due diligence and regulatory requirements.
    - Senior Metallurgist/Project Manager on numerous base metals and precious metals studies for an international mining company.
    - Management and operational experience at several Canadian and U.S. milling, smelting and refining operations treating various metals, including copper, nickel, and precious metals.
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I visited the Lagunas Norte Mine from January 6 to 7, 2015 and held meetings at the Barrick offices in Trujillo and Lima on January 8 and 9, 2015, respectively.
6. I am responsible for preparation of Sections 13, 17, and 20 and collaborated with my co-authors on Sections 1, 6, 24, 25, 26, and 27 of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
8. I have had no prior involvement with the property that is the subject of the Technical Report.
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 31 st day of August, 2015

(Signed & Sealed) "*Brenna Scholey*"

Brenna J.Y. Scholey, P.Eng.