NORTHERN STAR
RESOURCES LIMITED

Northern Star Kalgoorlie Operations
Fact Sheet

Location and Climate

The Kalgoorlie Operations are located in the Eastern Goldfields near Kalgoorlie-Boulder, located 600km east of Perth in Western Australia, and were acquired by Northern Star Resources Limited (Northern Star) (ASX: NST) in March 2014. The Kalgoorlie Operations employ approximately 400 people, offering a residential lifestyle in Kalgoorlie-Boulder.

The climate is classified as semi-arid with a historic annual rainfall of ~270mm per year. Average maximum temperature in January is 34ºC and for July is 17ºC. Average minimum temperature in January is 18ºC and for July is 5ºC.

Kanowna Belle Operations

Northern Star's Kalgoorlie Operations comprise of two separate mining areas (Kundana and Kanowna Belle) and a common processing plant that is located at the Kanowna Belle Operations.

The Kanowna Belle Operation is 100% owned and operated by Northern Star. The operation includes one underground production mine. The Kanowna Belle mine yields a "Refractory" ore where the gold is not readily available and recoverable in a conventional carbon in pulp (CIP) circuit, and consequently requires additional high intensity processing through a pyro-metallurgical process known as roasting. The processing plant treats ores from both the Kundana and Kanowna Belle Operations through separate processing circuits and produces gold bullion as the final product for both ore types.

There are multiple tenements in the area that make up the Kalgoorlie Operations. These are made up of: 40 mining leases, 7 prospecting licences and 12 miscellaneous licences. The tenements are part of the Kanowna Belle lease. The 4 pastoral leases and 5 Grazing Leases extend over 399,024ha of land.

The Kalgoorlie Regional Gold Tenements are made up of 1 mining lease, 2 Exploration licences, 22 prospecting licences and 2 miscellaneous licences.

The Carbine and North Zuleika Tenements also form part of the Kalgoorlie Operations consisting of 5 mining leases, 14 prospecting licences and 4 miscellaneous licences.

Kundana Operations

The Kundana Mining Operation is a joint venture arrangement between Rand Mining Limited (Rand) (ASX: RND), Tribune Resources Limited (Tribune) (ASX: TBR) and Northern Star. The Kundana Operation is operated by Northern Star. The operation includes three underground producing mines, Raleigh and Rubicon – Hornet as well as a number of new discoveries that are currently under development. The most advanced, being the Pegasus which has recently come into production. All of the Kundana mines yield a "free-milling" ore, where the gold is readily available and recoverable in a conventional CIP circuit.

Kundana comprises of 40 mining leases, 3 exploration licences, 7 prospecting licences and 16 miscellaneous licences.

History of Ownership

Kanowna

Gold discoveries around the Kanowna area date back to the late 1800s, with a bustling town set up just minutes from the present Kanowna Belle Gold Mine. The development of the Kanowna Belle Gold Mine commenced in 1993, initially as an open pit. Underground development commenced in July 1995.

The significant historical events of the Kalgoorlie Operations can be summarised in chronological order as follows:

- 1893: Gold was first discovered at Kanowna. ~0.5 Moz Au were produced in the early part of the twentieth century, primarily from quartz veins including White Feather and Reward 16 Trend, and palaeo channel

deposits, including Moonlight, which itself produced at least 7,000oz Au. From 1911, production became sporadic and declined rapidly before ceasing in 1946.

- In the late 1970s, exploration targeted extensions or repetitions of known vein deposits and palaeo channel mineralisation around Kanowna. Minor success was achieved leading to the development of the open pit mine on the Ballarat and Last Chance vein systems (owned by Delta Gold Ltd 67.5% and Pancontinental Mining Ltd 32.5%) and the formation of the Golden Valley Joint Venture (GVJV, held by Delta Gold Ltd 50% and Peko Gold Ltd 50%) to develop the QED deposit for heap-leach treatment.
- 1982: Delta Gold NL pegged leased in the Kanowna area and explored with a JV partner, Geopeko. The prime target was palaeo channel mineralisation.
- 1989: Production commenced under the Golden Valley Joint Venture, a 50:50 partnership between Peko Gold Ltd/North Gold (WA) Ltd (50 %) and Delta Gold NL (50%). At that time Peko Gold was responsible for the operation of the mine, whilst Delta Gold was responsible for the exploration.
- 1989: a soil sampling program on a 500m by 500m grid delineated a single point anomaly of 100ppb Au above Kanowna Belle. Follow up RAB drilling intersected 8m @ 4.5gpt.
- 1990: Further drilling at Kanowna intersected a 19m @ 17gpt and 12m @ 34gpt in the oxidised supergene zone. Later diamond core drilling intersected 61m @ 26gpt and 25m @ 78gpt. By December 1990, a resource of 2.9 million tonnes @ 4gpt containing 370,000 ounces had been established. The decision was made to proceed with the Kanowna Belle project with North Ltd as the operator and manager.
- 1992: Notification to commence open pit mining at the KB Deposit was issued on the 2 November 1992, with pit excavations commencing on the 30 November 1992.
- 1993: Construction of the Carbon-in-Leach (CIL) Processing Plant (Stage 1) was completed in August 1993 and the first ore-bearing rock was milled later that same month. First gold was poured in September 1993.
- 1994/95: A two-stage fluidised bed roaster to treat refractory ore (i.e. highly sulfidic-bearing ore) was constructed and formed part of the Kanowna Belle Processing facility (Stage 2). A gravity recovery circuit with intensive leach reactor has also been installed as part of ongoing upgrades into the plant for treatment of high grade free milling ore feeds.
- 1995: Work commenced on the underground operations with the construction of the underground portal in June 1995(Stage 3).
- 1998: By November 1998 open pit mining ceased at a depth of 220 m below the surface, with production from the underground operation commencing in July 1998.
- 1999: In October 1999, Delta Gold bought out Peko Gold Ltd to obtain a 100 % ownership of the Kanowna Belle Deposit.
- 2002: In January 2002, Goldfields Ltd merged with Delta Gold Ltd to become Aurion Gold Ltd and were 100% owners.
- 2002: Placer Dome Asia Pacific launches a successful takeover bid for Aurion Gold in May 2002.
- 2006: Barrick Gold successfully acquired the assets after the takeover of Placer Dome.
- 2014: Northern Star acquired the Kalgoorlie Operations from Barrick Gold for A$75M. Northern Star commenced operating the mines on 1 March 2014.

Kundana

- 1896: Gold was first discovered in the Kundana mining area around 1896 by a prospector named Barker, and by the end of 1896 some 58 miners inhabited the site. When the town was gazetted in 1897, it was decided to use the aboriginal name for the area, Kundana, as the town name.
- 1980: Exploration was conducted across the Kundana mine area by Kalbara Minerals with the development and operation of South Pit.
- 1985: Commenced open pit mining at Kundana, mining the North Pit (now part of the Arctic Open Pit Project) completing a 600m long pit down to an average depth of 50m.
- 1988: A processing plant was established for processing ore from the South Pit, and as the Kundana operations expanded, the plant also received ore from the North, Strzelecki, Kurrawang, Bakers 21 Mile, Bakers North, Rubicon, Raleigh, Arctic and Moonlight deposits.
- 1997: Gilt Edged Mining NL (GEM) entered into a farm-in agreement with Rand and Tribune to farm into their Kundana assets. GEM had the opportunity to earn 51% of the East Kundana project and 25.5% of the West Kundana project by sole funding $5.1 million worth of exploration over a five year period.

- 1998: GEM entered into a sale agreement with Horizon Mining NL to purchase their 50% equity in the West Kundana project.
- 2000: Goldfields launched a campaign to take over GEM shares of Kundana, entering into a partnership with Rand and Tribune in May 2000.
- 2001: Goldfields announced its plan to merge with Delta Gold, which was completed in early 2002 and the collective company was known then as Aurion Gold. With a market capitalisation exceeding A$1 billion, the newly formed company was immediately in the top 100 companies listed on the ASX.
- 2001 – 2004: The Kundana "Raleigh" and "Rubicon" project was mined by open pit.
- 2002: Placer Dome Asia Pacific launched a takeover bid for Aurion Gold with Placer Dome extending its offer nine times over the following five months before being accepted. In November 2002, Placer Dome had reached the compulsory acquisition threshold of 90%, and had acquired 100% of Aurion Gold (and consequently the East Kundana property) by the end of that year.
- 2003: Underground Feasibility Study was completed on the Raleigh Project and in December 2004, the underground decline commenced.
- 2005: In October 2005, Barrick Gold launched a US$9.2 billion bid for Placer Dome. The initial bid was rejected by the Placer Dome Board. Barrick subsequently revised the offer in December 2005 to US$10.4 billion and gained Placer Dome Board support with the acquisition of the company completed in 2006.
- 2006: Underground stoping commenced at Raleigh.
- 2008: The Kundana processing plant was decommissioned and completely dismantled.
- 2010: The Rubicon-Hornet Project commenced. Barminco was awarded the contract and commenced development on 21 March 2011. Hornet Link drive was establish mid in May 2011.
- 2011: The first single boom development cut was taken at Rubicon on 11 August 2011 with first ore tonnes following later that month, with stoping commencing in October 2011.
- 2013: Hornet stoping commenced in January 2013.
- 2014: Northern Star acquired the Kalgoorlie Operations from Barrick Gold for A$75M. Northern Star Resources commenced operations of the mines from 1 March 2014.
- 2014: In April 2014, Northern Star's Mining Services (NSMS) commenced the development of the Pegasus Link Drive with underground stoping of Pegasus anticipated to commence in March 2015.

Geology

Kanowna

Kanowna Belle is located in the Kalgoorlie Terrane (Boorara sub-domain) of the Eastern Goldfields Province. Stratigraphically, the deposit sits in the Black Flag Group which overlies the lower volcanic sequences

The Kanowna Belle deposit is hosted within a series of volcaniclastic sediments ranging in grain size from shale to conglomerates. These rocks are respectively separated into hangingwall and footwall sequences by a major 60° S-SE dipping zone of structural disruption and mineralisation.

The footwall sequence is dominated by the Golden Valley conglomerate, a mafic-dominated unit interbedded with the felsic-dominated Cemetery conglomerate. The hangingwall sequence comprises three main volcaniclastic units, these are the QED rudite, the Lowes sandstone and the Grave Dam grit, which is the dominant unit.

The sequence has been intruded by the Kanowna Belle porphyry, which is granodioritic in composition. At least 70% of the known gold mineralization is hosted by the Kanowna Belle porphyry, with the remaining mineralisation hosted by sedimentary units.

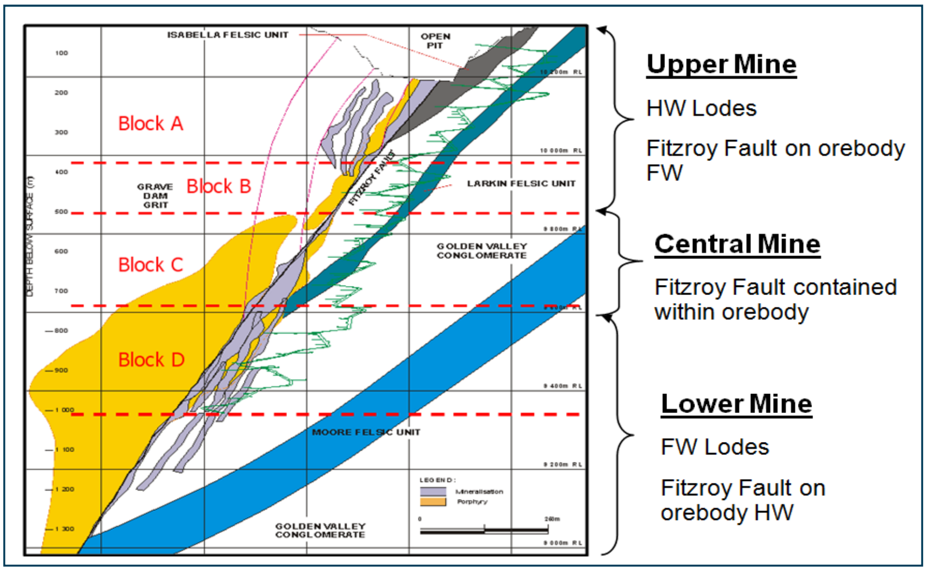


Figure 1: Schematic view of underground ore system and workings

The Kanowna Belle deposit is controlled by the Fitzroy Fault Zone and associated splay structures. The Fitzroy Fault has been interpreted to be a reactivated D1 thrust ramp. These deformation events have been categorized on the Fitzroy Fault into three distinct styles (and thus deformational stages):

- Fitzroy Mylonite
- Fitzroy Shear Zone
- Fitzroy Fault

These events have produced clear structural overprinting relations and have localised the emplacement of the Kanowna Belle porphyry.

Mineralisation at Kanowna Belle occurs in both supergene enriched horizons in the near surface environment (oxidised to transitional material) and at depth in primary fresh rock sulphide hosted gold. The primary mineralisation at Kanowna occurs in discrete 'lodes' or 'shoots'.

Weathering over the Kanowna deposit is typically to a depth of 70m across the deposit, and is characterised by saprolitic clays.

A zone of supergene gold enrichment is located above the Kanowna Belle deposit in a thin variably developed blanket over a 600m by 250m area. The supergene enrichment zone typically occurs 35m above the primary deposit at the transition between completely oxidised and transitional material.

The Lowes Shoot is the main zone of mineralisation in the mine. It hosts 80% of the total resource and is characterised by a consistent ore grade of 4gpt across its width, with areas of higher grade being sub-parallel to the FSZ or the orientation of the regional cleavage. Mineralisation in the Lowes shoot is characterised by micro-fracturing, abundant quartz carbonate-pyrite veins and minor secondary breccias. Quartz-sericite-carbonate-pyrite breccias also occur parallel to major structural zones.

Two overprinting temporally and mineralogically distinct mineralization events are recognized in the Kanowna Belle Deposit:

- An early high level (epizonal) Gold-Telluride mineralisation event
- Later Pyrite associated mineralisation

In the Gold-Telluride phase of mineralisation, gold occurs as blebs of free gold in association with Telluride minerals. The most common telluride minerals observed are Altaite (Lead Telluride), Coloradoite (Mercury Telluride) and Melonite (Nickel Telluride). Texturally the gold-telluride mineralisation occurs as microfracture and microvug infill. Volumetrically, this phase of mineralisation accounts for less than 10% of the gold endowment at Kanowna Belle.

Gold in this mineralisation phase occurs mostly as fine grained (less than 10 microns (µm)) inclusions in pyrite or as very fine grained gold located in arsenic rich growth zones in pyrite. Free gold occurs in minor proportions, and typically occupies D2 extensional sites adjacent to pyrite crystals.

Typical ore assemblages contain 0.5 to 1.5% sulphur and 40ppm arsenic. Kanowna Belle ore is generally refractory, meaning that oxidation (i.e. roasting) is required to maximise gold extraction. The Pyrite associated mineralisation provides the majority of gold produced from the Kanowna Belle Orebody.

Kundana

The Kundana Operation hosts several deposits spatially associated with the Zuleika Shear Zone ('ZSZ'), a NW/SE trending structure stretching more than 250km, separating the Ora Banda and Coolgardie Domains.

Typically, deposits within the 'ZSZ' are comprised of narrow, high grade quartz veins, hosted within smaller shear structures formed at the contacts of the Archaean Greenstone stratigraphies belonging to the two domains.

Strike extents for each of the deposits are controlled by late-stage NNE trending sub-vertical structures, exhibiting varying amounts of dextral offset.

In total, the Kundana area is known to host more than 5Moz of gold, including the deposits Raleigh, Rubicon, Hornet and Pegasus.

The Raleigh deposit is hosted within the Strzelecki Shear, located at the stratigraphic contact between Andesite/Intermediate Volcaniclastics and Gabbro, with varying amounts of interflow sediment.

The main lode comprises a laminated quartz vein up to 2m true width and dipping 70º west, grading on average 55 gpt Au. Gold is typically associated with sphalerite and galena.

The deposit is well defined with drilling showing economic mineralisation extending up to 750m below surface.

The Rubicon, Hornet and Pegasus deposits are all hosted within the K2 Shear, located at the stratigraphic contact between Intermediate Volcaniclastics and the Victorious Basalt, with varying amounts of Centenary Shale.

The main lode comprises several mineralising events which can be distinguished by the presence of laminated or brecciated quartz, and differing amounts of galena, sphalerite, arsenopyrite and pyrrhotite.

Vein grades typically average 25gpt Au for the main lode with the structure varying in thickness from 0.5-4m and dipping 80º west. Several hangingwall lodes with varying orientation have also been identified and exhibit localised ore grades.

All three deposits remain open at depth, with drilling and underground development identifying distinct high grade zones plunging to both the north and south.

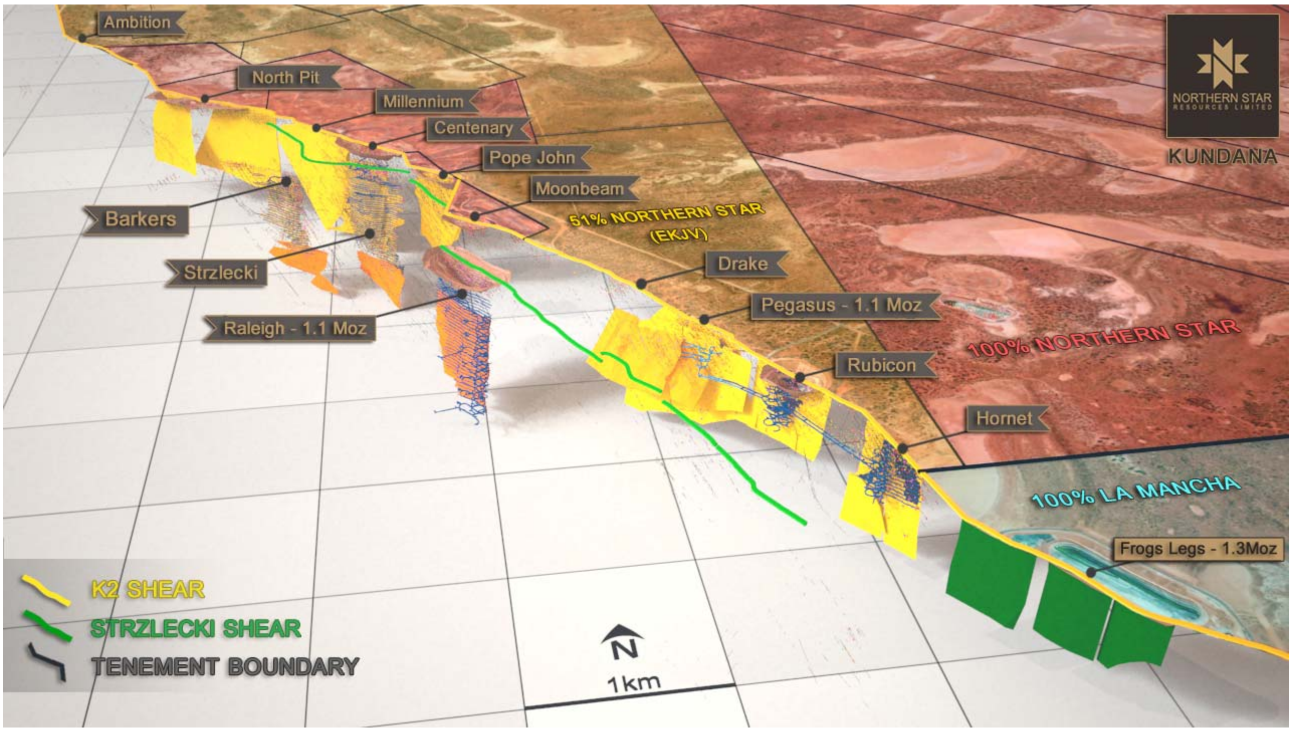


Figure 2: Schematic showing the location of Kundana mines and major geological features

Mining Operations

Kanowna Belle

The Kanowna Belle gold deposit is mined by longhole stoping and underhand longhole bench stoping with paste fill methods. This mining method was selected to minimise the impact of mining induced stress on the underground operations through the use of geotechnical driven mining sequences and a fill system integral in the mining cycle.

The mining method used at Kanowna Belle underground is called longhole open stoping (LHOS). Mining of the LHOS commences with the development of drives (tunnels) on each level and the sides of these are supported by cement grouted roof bolts, mesh and shotcrete. These drives delineate the boundary of the stope. Each LHOS is 15-30m wide, up to 50m long and 120m high. Depending on size each stope may contain between 20,000 to 50,000 tonnes of ore.

Since the commencement of the Kanowna Belle underground mine, the total production has been 33.2Mt @ 4.58gpt for 4.89Moz (as at EOM January 2015).

The Kanowna Belle gold mine has been extracted down to a depth of 1,278m below surface with a possible extension into lower E block, and further development of the TROY and SIMs load located higher in the mine.

All mining operations are operated by NSMS, excluding diamond drilling which is contracted. The mining fleet currently consists of:

- 2 x Sandvik D07 Development Drills
- 1 x Atlas Copco SIMBA L6C Production Drill
- 1 x Atlas Copco SIMBA H356 Production Drill
- 3 x CAT 2900 Loaders
- 1 x CAT 1700 Loader
- 5 x CAT 775E Dump Trucks
- 4 x CAT AD55 Dump Trucks
- 2 x CAT 82H IT
- 1 x CAT 82G IT
- 1 x Orica Hypercharge Maxiloader 1100 Charging Unit

Kundana

Kundana also employs the method of underhand long hole bench stoping with paste fill similar to that of the Kanowna Belle operation. This method is used to ensure that high extraction rates of the orebody are achieved as the orebody can grade from 5.0gpt to +31gpt plus. This mining method also assists with minimising any future stress impact on the operation.

Ore drives are mined along the strike of the orebody following the high grade laminated quartz vein. Once the strike ore drive is completed a vertical rise is established and extraction of the ore between two levels is commenced. The ore body is significantly narrower that the Kanowna Belle ore body with stope widths typically in the order of 1.0m to 2.5m wide (see Figure 5). Once a stope panel has been mined, typically 15-18m along strike a paste fill barricade is erected and the stope void is backfilled with paste fill (reconstituted mine tailings, sand, cement and water). The paste fill is reticulated from surface via steel pipe work and delivered in to the stope as a thick slurry. Over a period of 1-2 days the paste fill cures and hardens which then allows the next stope void to be extracted. This process continues until the entire level has been mined out.

The Kundana operations currently consist of four underground ore bodies. The Raleigh ore body is accessed form the Raleigh pit with underground stoping occurring at +650m below surface. The other three orebodies, Rubicon, Hornet and Pegasus, are accessed from the Rubicon pit and portal with stoping occurring between 200m and 400m below surface.

All current operations are part of the East Kundana Joint Venture, which is 51% owned by Northern Star.

All mining operations are operated by NSMS excluding diamond drilling which is contracted. The mining fleet currently consists of:

- 2 x Tamrock Axera D421 Twin Boom jumbos
- 1 x Tamrock Axera 7-260 Twin Boom jumbo
- 2 x Tamrock Axera 5-140 Single Boom jumbos
- 1 x Tamrock Solo 5-5V production Drill
- 1 x Atlas Copco Simba M7C production drill
- 1 x Atlas Copco Simba H1257 production drill
- 2 x Caterpillar R2900G loaders
- 3 x Caterpillar R1700G loaders
- 3 x Caterpillar R1300G loaders
- 3 x Sandvik TH663 haul trucks
- 2 x Normet Charmec 6605B charge-up units
- 3 x JCB service vehicles

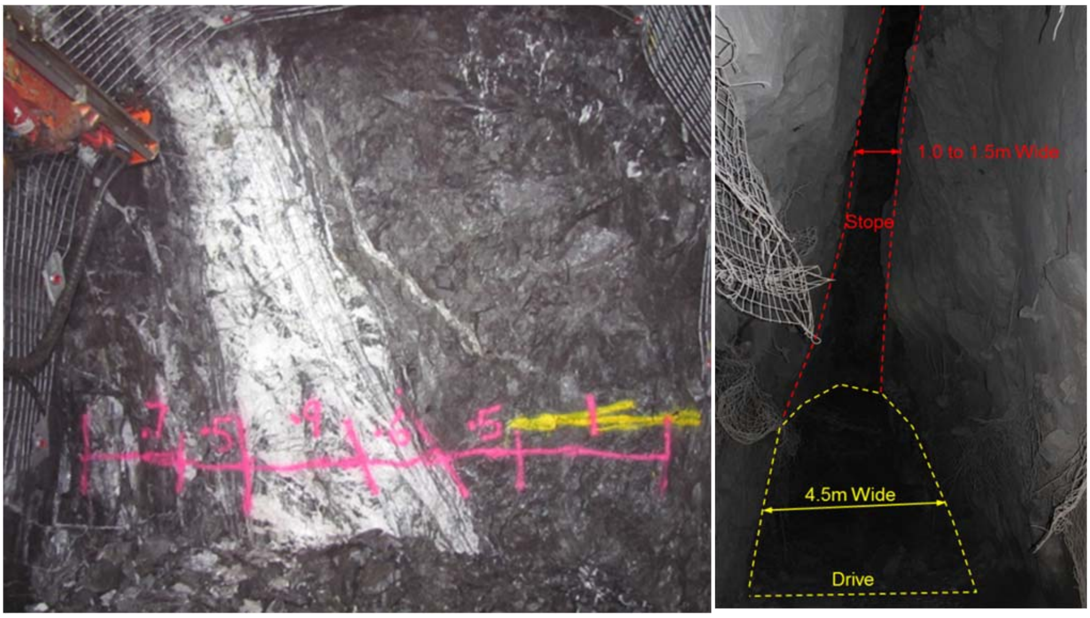


Figure 3: Narrow vein development face and stoping at Kundana

Process Operations

The Kanowna Belle processing plant is a complex and versatile plant that includes separate circuits for processing free-milling and refractory gold ores. The plant has undergone incremental capacity increases since its initial construction and now has an annual throughput capacity of 1.88Mtpa. Processing at the current rate of ~1.2Mtpa of underground ore affords the processing plant the ability to substantially increase production should the need arise.

The crushing and grinding circuits are common for the free milling and refractory circuits.

The crushing circuit is a simple single stage circuit with a 240t capacity ROM bin feeding a Jaques double toggle 60x48 (185kw) crusher at a 420tph crushing capacity. The crushed ore, nominally minus 125mm reports to a 20,000t partially-covered coarse ore stockpile with a live capacity of about 1,000t.

This product is then reclaimed by an apron feeder and two vibrating feeders located under the stockpile and discharged onto a conveyor belt. The crushed ore is then conveyed to the grinding circuit.

The grinding circuit comprises an ANI Products 7.32m x 3.35m SAG mill operating in closed circuit with a Metso Nordberg HP200 recycle cone crusher and an ANI Products 4.72m x 7.01m Ball mill in closed circuit with cyclones. The SAG mill has a grate discharge and is steel lined, while the Ball mill has a trommel screen discharge and is rubber lined. The SAG mill has a variable speed drive with a range of 10 to 12 rpm, while the Ball mill has a fixed speed drive at 14.3 rev/min (75% of critical). The installed power for the SAG and Ball mills is 2,850kW. The grinding circuit throughput is currently around 160 – 190tph however it can be increased to 230tph if needed.

Pre-leach classification is achieved using a hydro-cyclone classifier circuit consisting of a cluster of 18 x 250mm cyclones that are fed from a central distributor. Only eight to nine of the cyclones are operated at any one time depending on volume of slurry in the milling circuit. Three of the cyclones in the cluster are dedicated to feed the Knelson gravity concentrator during the free milling ore campaigns. The cyclones are operated at a feed pressure of 110-130kpa.

For the free milling ore, the cyclone overflow stream reports directly (via a vibrating trash screen) to a 17m diameter high rate thickener. For the refractory ore, the cyclone overflow reports to the flotation circuit and the flotation tailings stream (Scavenger Tails) reports directly to the thickener. The duty of the thickener is to increase the density of the slurry stream prior to feeding the leaching circuit.

The thickened slurry is pumped to the leaching and adsorption circuit where the recoverable gold is extracted by cyanidation. The cyanidation circuit is a traditional CIP circuit that consists of three leach tanks and six subsequent adsorption tanks. Oxygen is injected into the first two leach tanks by injection down the agitator shaft and also by injection into a Multimix Injector system installed within a pumped, recirculating slurry stream. Oxygen is injected into the third leaching tank via a single oxygen lance located beneath the lower impeller on the agitator. Oxygen is supplied from a BOC managed pressure swing adsorption (PSA) plant on site (2tpd of oxygen) and supplemented from a backup liquid oxygen (LOX) cryogenic storage bullet of ~27.5kL storage capacity.

The slurry residence time in the CIP circuit is ~32 hours. Tank sizes vary across the circuit as a consequence of the 2007 circuit expansion project. The first two leach tanks (installed as part of the 2007 Expansion) have a working volume of ~1,400m^3.each. The subsequent three tanks have working volumes of ~750m^3 each and the final four tanks have working volumes of ~520m^3 each. The total amount of activated carbon distributed across the adsorption tanks is ~70t. The tails slurry from the CIP circuit is pumped directly to the in pit TSF ~3km from the process plant. Decant water from the TSF is dosed with hydrogen peroxide to destroy residual cyanide prior to being pumped back to the processing plant for re-use.

Loaded carbon is pumped from the first adsorption tank in daily batches. Gold is then recovered from the carbon using a process called elution. The Kanowna Belle elution circuit is based on the Split Anglo-American Research Laboratories (AARL) elution process in which the gold laden carbon is first acid washed, and then eluted in a stainless steel elution column using hot (120ºC) caustic cyanide solution.

The gold bearing eluate produced from the desorption process (pregnant solution) is then circulated through electrowinning cells for ~12 hours. During this stage gold is electrowon onto cathodes of steel wool. The barren solution remaining at the end of the electrowinning cycle is then returned to the first leach tank to fully utilise the cyanide and caustic remaining in the solution.

The gold bearing steel wool is removed from the electrowinning cells, oxidized in a calcining oven and smelted directly with fluxes in a gas-fired furnace. The smelt produces a vitreous slag containing all the base metals and impurities along with gold doré bars that contain ~70-85% gold and 15-30% silver.

The electrowinning, calcination and smelting processes are all performed inside a high security gold room.

For the free milling ores, the cyclone underflow stream from the three dedicated gravity circuit cyclones reports to a 1.8m wide by 4.2m long horizontal vibrating screen with 2.4mm by 15mm apertures to reject oversize material prior to feeding the Knelson Concentrator. The Knelson Concentrator is a KC-XD48 model designed for throughputs between 200 and 400tph, with a bowl that rotates at speeds up to 500rpm. The oversize from the screen as well as the Knelson's tailings is pumped back to the cyclone underflow distribution box. The Knelson Concentrator circuit is designed to produce up to 3,000kg of gravity concentrate per day at ~2% gold content by mass.

Gravity concentrate from the Knelson Concentrator is transferred in batches to a ConSep ACACIA Model CS2000 intensive leaching reactor to dissolve most of the gravity recovered gold. A concentrated caustic and cyanide solution (30% w/w NaCN) is heated to around 35°C and circulated through the concentrate bed for ~12 hours. The gold bearing solution is transferred to a storage tank for circulation through electrowinning cells for ~12 hours. The gold is recovered from the wool and processed in a similar manner to that from the CIP elution circuit described above. The residual solids are then fluidised and pumped back into the mill discharge hopper. Up to 80% of the gold in the free milling ores can be recovered in the gravity circuit.

For the refractory ores, a portion of the cyclone underflow stream is directed to a flash flotation cell for recovery of rapidly floating sulphide particles. Concentrate from the flash flotation cell is further processed to reject misreporting gangue material and to upgrade the sulphide concentration of the material. Tailings from the Flash Flotation cell are directed to the ball mill feed for further grinding. Concentrate from the flash flotation circuit reports to final concentrate product.

For the Refractory ores, the cyclone overflow reports (via a 1.5m x 4.8m trash screen) into two conditioning tanks to allow adequate mixing with flotation chemicals. The conditioned pulp is then pumped to a 3.25m x 17m rougher flotation column. The rougher concentrate reports to the final concentrate product and the flotation tailings stream reports to a multi stage scavenger circuit to maximise gold and sulphur recovery. Concentrate from the scavenger circuit is reprocessed in two stages to reject misreporting gangue material and to upgrade the sulphide concentration of the concentrate. The reprocessed concentrate from the scavenger circuit reports to final concentrate product, which is pumped to the concentrate thickener and then to the roasting circuit.

To ensure effective operation of the flotation circuit, three different types of flotation reagents are used in the Kanowna Belle flotation circuit. A "collector" is added to react with the gold bearing mineral (pyrite) to enhance its flotation characteristics. The collector used at Kanowna Belle is Potassium Amyl Xanthate (PAX). Two different "modifier" chemicals are added. Guar Gum to supress the naturally floating gangue minerals and copper sulphate to enhance the action of the PAX collector on the sulphide mineral surface. "Frothers" are added to reduce the surface tension and form a stable froth on top of the slurry in order for concentrate to be formed and subsequently removed from the flotation unit.

The final concentrate from the flotation circuit reports to a 10m conventional thickener where it is thickened and pumped to the filtration section of the refractory plant. Two $30m^2$ ceramic disc filters are used to wash the concentrate in order to remove chlorides from the slurry. The filter cake produced is repulped with fresh water and pumped to one of two roaster feed tanks.

Concentrate slurry is pumped from the roaster feed tanks into a two stage, fluidised bed roaster at 5–7tph. Partial roasting occurs at about 580°C in the first reactor and the oxidation is completed at about 650°C in the second reactor. The calcine produced in the roasting process is cooled in a screw conveyor and quenched with water in a tank. Gases produced in the reactors are cleaned of particles in three stages. A gas cooler initially removes the coarse calcine particles and an electrostatic precipitator collects the ultra-fine calcine particles. The gas stream is further cooled via air dilution to about 90°C, where arsenic trioxide solidifies and is subsequently collected in the arsenic bag house. The cleaned gas stream containing air and sulphur dioxide then exits from the top of a 120m fibre glass stack.

The roasting process makes the concentrate particles porous by burning off the sulphur and arsenic that surrounds the very fine gold particles. The porosity permits cyanide leaching and recovery of the otherwise occluded gold particles.

The quenched calcine slurry, at ~50°C, is thickened in a 4.0m diameter conventional thickener to about 45% solids The thickened slurry is pumped to the calcine leaching and adsorption circuit where the recoverable gold is extracted by cyanidation and adsorbed onto activated carbon. The calcine leaching circuit is a CIP circuit. It is separate to the main CIP circuit and is very much smaller. The calcine CIP circuit consists of an 80m^3 tank where lime is added to neutralise the acidic nature of the calcine slurry, followed by an 80m^3 leach tank where cyanide is added. Slurry then flows through a series of seven mechanically agitated adsorption tanks (2 x 80m^3, 5 x 48m^3) wherein gold in solution is adsorbed onto activated carbon. Calcine tailings slurry is pumped to the head of the conventional CIP circuit to assist with further gold recovery.

Oxygen is injected into the first four tanks in the CIP circuit via an oxygen lance located beneath the lower impeller on the agitator. Oxygen is supplied from the BOC managed oxygen plant. Retention time in the calcine circuit varies considerably with respect to roaster operation, but is typically within 48 to 60 hours.

Loaded carbon is pumped from adsorption tank 1 into a loaded carbon hopper on a daily basis. The loaded calcine circuit carbon is transferred periodically (6 tonne batches, once or twice per week) to the elution circuit at the conventional CIP plant. Gold recovered from the calcine circuit carbon in the elution circuit is kept separate from that recovered from carbon in the conventional CIP circuit. Carbon from the calcine circuit is kept separate from carbon from the conventional CIP circuit.

Due to the proximity of the Kanowna Belle plant to the township of Kalgoorlie-Boulder, a majority of the process samples are prepared and dispatched to commercial laboratories in Kalgoorlie-Boulder for analysis. The Kanowna Belle site laboratory conducts sulphur analyses on refractory ore sample streams, solution analyses for process streams and physical measurements of process streams. In addition, the Kanowna Belle laboratory conducts geotechnical testing of mine fill (paste) samples for both of the underground operations that supply the mill.

Tailings Storage Facilities

The Kanowna Belle operation maintains two active Tailings Storage Facilities. The main facility, which receives the process plant tailings, is an in-pit tailings facility (In-pit TSF) and covers ~20ha. The secondary facility, which receives waste streams from the underground paste fill plant, is a two cell, paddock style TSF (TSF1) and covers ~50ha. A third TSF facility, a paddock style TSF (~22.5ha) which historically received calcine CIP circuit tailings, is no longer in use.

The In-pit TSF was commissioned in 2007 and is nearing the end of its service. Decant water is recovered from the in-pit TSF and returned to the process plant for reuse in the mill. Deposition of process plant tailings into TSF1 ceased in 2008.

Numerous monitoring bores are installed to monitor seepage around the TSFs. Constant operational and environmental monitoring maintains the TSFs within the regulatory conditions at all times.

Support Infrastructure

Kanowna

Office facilities have been established at several locations around the site, as follows:

- Main site offices: Located just southwest of the Processing Plant. The main site offices occupy a total area of 1.7ha and consist of 10 buildings (combined area of 5,500m^2), and associated parking areas and footpaths.
- Plant offices: One building located within the Processing Plant site.
- Geology offices: One building and an associated parking, located within the Geology laydown area.
- HV workshop offices: located ~600m north of the Kanowna Belle pit.

The main office facility also includes a laboratory for analysing core samples, and communications towers. Domestic wastewater from the office and administration facilities is pumped into the Calcine Dam for disposal.

Workshop facilities have been established for the repair and maintenance of mine equipment, as follows:

- Main workshop/store: Located just north of the Main Site Offices and west of the Processing Plant. The main areas consist of a main workshop/stores building, outdoor storage, and associated parking and laydown areas.

- LV workshop
- HV workshop
- Force workshop

Hydrocarbons and chemicals for maintenance are stored at the workshops. As such, the workshop catchment areas are separated from general storm water interaction and native surface water catchment areas. Waste water from the workshop areas is treated onsite by an oil separator prior to reuse for dust suppression or pumped into the processing plant.

The Kanowna Belle underground Paste Plant accepts tailings material from the Kanowna Belle processing plant (~30% of all tailings produced) and produces a hard-setting material used to backfill and stabilise the underground workings. The paste plant occupies an area of ~1.0ha, including the vehicle access drives.

One 12,000m^3 process water dam is located on the Kanowna Belle tenement, just east of the ore stockpile. The dam is constructed with 3.5m high earth embankments, and is fully lined with a polyethylene liner. The dam receives water from the mine, water dams, processing plant, Red Hill Surface Pond and TSF return; bore fields, and Calcine Dam return. It stores water for eventual use within the processing plant.

Two raw water dams are located just north of the process water dam. The dams are constructed with 4m high earth embankments, are fully lined with polyethylene liners, and hold a total combined volume of ~40,000m^3. Water is supplied to the dam from the raw water (fresh water) pipeline, and is used as process water within the processing plant.

Two fuel storage facilities have been established on site at Kanowna Belle. The main fuel storage area is located on the surface near the HV workshop. This facility is used for the bulk storage of hydrocarbons, and as the primary fuelling station for mine site vehicles. Another fuel storage area is located on the south end of the processing plant area, and is used as a secondary light vehicle fuelling station.

A washdown bay is located between the heavy vehicle and light vehicle workshops. The area is used for washing mine site vehicles, and consists of water storage tanks, pumping equipment, a concrete washdown pad, and a drainage water collection facility.

The site weather station is located along the eastern project boundary, ~200m northeast of the raw water dams. It consists of a 15m sensor tower and a small portable equipment shed, located within a fenced-in area of ~750m^2.

Two core yards have been established at Kanowna Belle for the storage of exploration drilling cores.

Power is supplied to the site by Western Power via an overhead 33kV line. Several substations and a network of buried power lines distribute power within the site. The main substation and transformers are located near the core yard.

Kundana

An office facility has been established just to the south of the ROM Pad and former processing plant and consists of office work spaces, crib rooms, ablution facilities and communications tower.

A stores facility has been established adjacent to the offices. This facility consists of a 1,800m^2 enclosed storage shed, a 1,600m^2 outdoor storage area.

The earthmoving contractors operate out of a workshop complex located in the northern portion of the site.

Adjacent to the Kundana site offices is a light vehicle workshop and closer to the Raleigh pit there is a heavy vehicle workshop used to service all Kundana mobile machinery and equipment.

Closer to the Kundana Rubicon Pit there is a current vacant office building that was occupied by a mining contractor during the development of Rubicon-Hornet underground, service workshop area and parking facilities.

A core yard has been established for the storage of exploration drilling cores.

Laydown areas have been established around the mine site for temporary storage of equipment during normal mining and contractor operations. Each of the laydown areas consist of an open, compacted area of

soil used for temporary outdoor storage. There are no permanent structures or utility connections in these areas.

Electricity is supplied to the original workshop area from the east by an overhead 440V line. An additional 440V overhead line supplies the office areas.

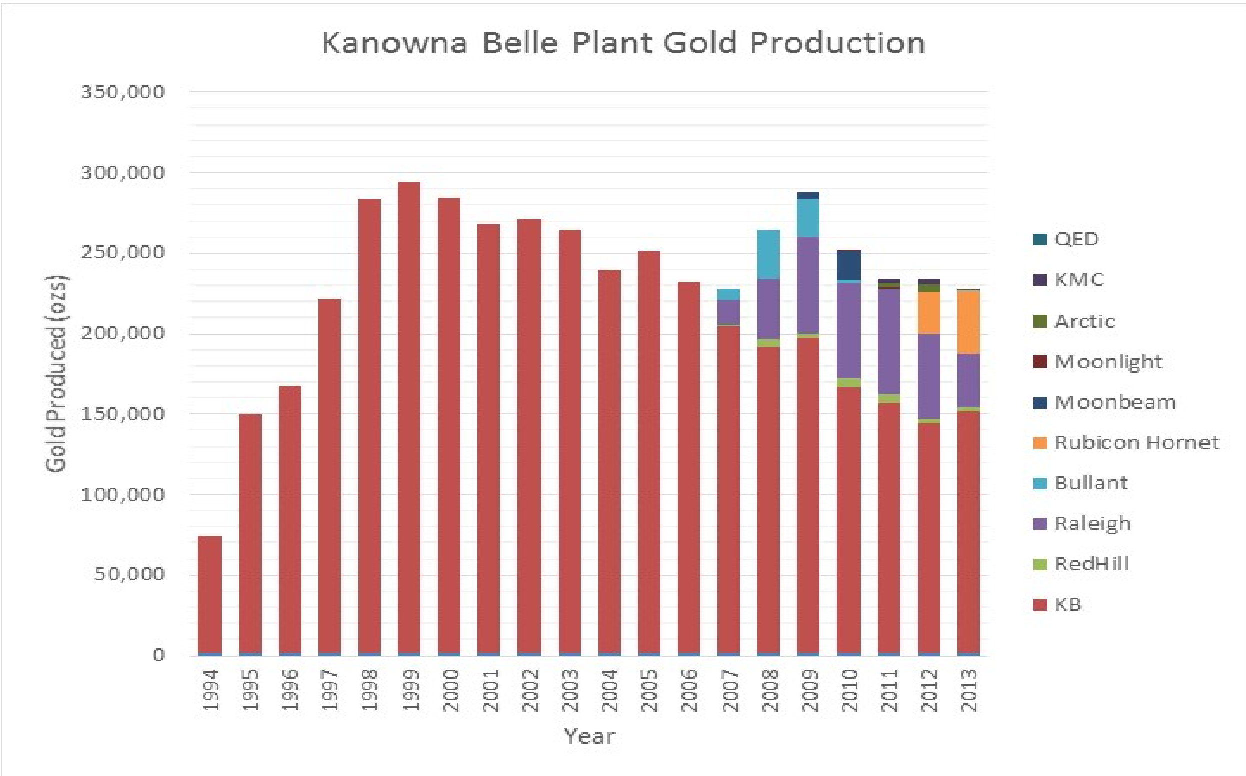
Occupational Health and Safety

Kalgoorlie utilises Northern Star's safety program and management systems, which include detailed standards and procedures. Together, these programs and systems form the cornerstone of safety at Northern Star, ensuring that employees have the tools they need to work safely.

The Company also strives to ensure employees are fit to conduct their work in a safe manner. With this goal in mind, Northern Star conduct a series of health assessments and run a number of awareness programs throughout the year to promote fitness at work and at home.

Northern Star Kalgoorlie has a well-resourced emergency response team which is staffed from volunteers across the organisation.

Summary of Previous Production (1994 -2013)



- Total 1994 to Dec 2013, 32.5Mt @ 4.6gpt for 4.8Mozs
- Estimated Gold production from plant data (several companies). Smoothing due to mix of financial and calendar years.
- EKJV processing figures in 2013 shown as Barrick part only.

Year	2010	2011	2012	2013	Total
KB – Ore (Mt)	1.2	1.2	1.3	1.0	4.7
KB – Ore (g/t)	4.7	4.5	3.8	4.6	4.4
KB – Ore (ozs)	183,000	174,000	164,000	150,000	671,000
EKJV – Ore (Mt)	0.4	0.3	0.4	0.4	1.5
EKJV – Ore (g/t)	11.9	13.4	11.8	10.8	12.0
EKJV – Ore (ozs)	136,000	132,000	164,000	147,000	579,000
Total Ore (Mt)	1.6	1.5	1.7	1.4	6.2
Total Ore (g/t)	6.2	6.3	6.0	6.6	6.3
Total Ore (ozs)	319,000	306,000	328,000	297,000	1,250,000

- Estimated mine production from Barrick source.
- EKJV mining figures shown as 100%

Year	2010	2011	2012	2013	Total
KB Ore (Mt)	1.2	1.3	1.4	1.1	5.0
KB Ore (g/t)	4.8	4.1	3.6	4.3	4.1
KB Recovery (%)	89	89	88	88	89
KB Ore (ozs)	168,000	153,000	143,000	134,000	598,000
Other Ore (Mt)	0.5	0.4	0.4	0.4	1.7
Other Ore (g/t)	5.6	6.7	8.1	6.8	6.3
Other Recovery (%)	93	92	93	95	93
Other Ore (ozs)	83,000	77,000	88,000	75,000	323,000
Total Ore (Mt)	1.7	1.7	1.8	1.5	6.7
Total Ore (ozs)	251,000	230,000	231,000	209,000	921,000

- Estimated processing production from Barrick source.
- Other is Free Milling Ore from EKJV, Open Pits, KMC and LG stockpiles
- Processing data shows 100% of EKJV

Closure and Reclamation

The Kalgoorlie Operations includes a number of distinct operational areas, these being the underground mines and their associated infrastructure; the Kanowna Belle, Raleigh and Rubicon open pits and associated waste rock landform and the central mineral processing facility with associated logistical support infrastructure.

The site has undergone numerous changes of ownership in its operating history and accordingly has been subjected to progressive rehabilitation to various internal reclamation standards. The mining operations have been approved under the Mining Act 1978 and as such the Department of Mines and Petroleum (DMP) require, as per the tenement conditions, that the existing Kanowna Belle and Kundana Mine Closure Plans be submitted in accordance with the DMP (2011) Guidelines for Preparing Mine Closure Plans. The Kalgoorlie Operations Mine Closure Plans for Kanowna and Kundana were submitted and approved by the DMP.

For further information, please contact:

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