November 2017

PLAVICA GOLD PROJECT

Mineral Resource Estimate

REPORT

Golder Associates

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1.0 GEOLOGY

1.1 Exploration History

The project area has been mined since Roman times with evidence of Roman workings across the deposit. The past history of the project is summarised below.

The British Selection Mines company developed two adits and an east-west trending drive beneath the focal area of Roman mining. The mine targeted a potential high-grade vein zone, however the enterprise was closed at the end of the 1930s. The Yugoslav Government and RIK Sileks AD Kratovo joint-venture drilled 100 vertical diamond holes generally targeting areas of Roman mining and the valley to the south of Plavica on a 100 by 100 m grid over an area of 1 km^2, completing approximately 30,000 m of drilling. Most of the holes were drilled south of the ore zones at Plavica and to the north of Maricanski Rid.

Cyprus Amax, in 1997, carried out limited rock chip sampling of the Northern Ridge. Rio Tinto, from 1997 to 2000, drilled four angled diamond holes for a total of 1,028 m with the aim of targeting down-dip extensions of the mineralisation in four ridges namely, Northern, Plavica, Eastern and Maricanski zones. A data review program of all existing Sileks JV data was carried out. A radiometric and magnetic geophysical survey was conducted over an area of ca. 632 km^2. A study of Landsat 7 imagery was undertaken as well as surface sampling and geological mapping. As a result of the program, 39 targets were generated of which areas of known mineralisation were visited during 1998. In 2004, European Minerals drilled five diamond holes, completing around 1,000 m of drilling.

Genesis gained control of the exploration of the project in 2011 and has completed extensive drilling, initially over the Plavica area, extending in 2016/2017 to the Maricanski Rid area on the southern ridge.

1.2 Past Production

Artisanal mining has been conducted on near surface mineralisation from shallow pits since Roman times. Two adits were developed in the 1930s to access the western part of the Plavica deposit at depth.

Mine production figures are not available, however treatment spoil heaps suggest that the tonnage extracted was not significant.

No allowance is made for depletion of the Mineral Resource due to historic and artisanal mining. Given the methods for sampling and estimating mineral resources, this is not considered to be a significant risk, but may have a minor effect on production (resource recovery and productivity) during the early stages of any mine development. In addition, nearly all the material removed by the British was primary material and to the west of the current oxide deposit at Plavica. No previous mining occurred at Maricanski Rid.

1.3 Geological Setting and Mineralisation

1.3.1 Regional Geology

The Kratovo-Zletovo ore district is located within the Miocene age Kratovo-Zletovo volcanic complex, which covers an area of 1,200 km^2. Polymetallic mineralisation is located within this complex in an area of approximately 400 km^2 (Figure 1.1).

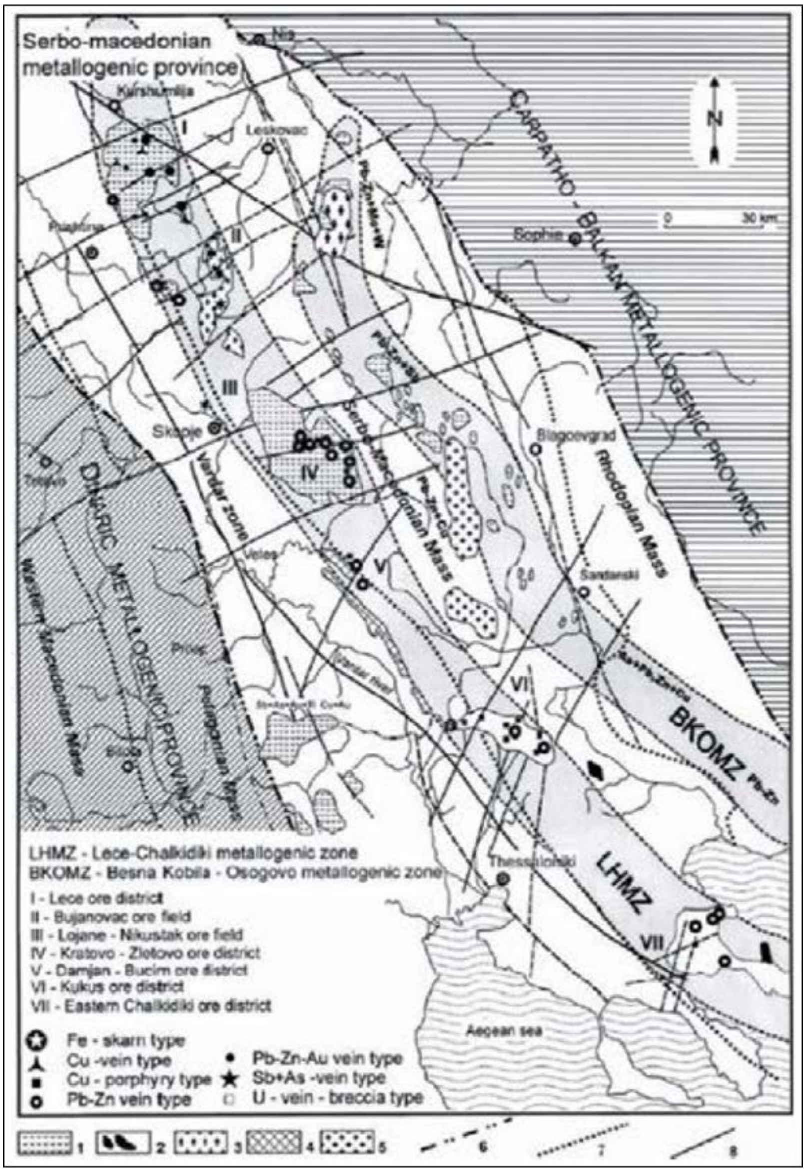


Figure 1.1: Geotectonic and metallogenic map of the Lece-Chalkidiki Zone (source: Ravensgate 2016)

The district is well endowed with vein type lead-zinc mineralisation (e.g. Zletovo and Blizanci deposits), and copper-gold stockwork disseminated mineralisation (e.g. Borovic and Tursko Rudari) in addition to high-sulphidation epithermal gold mineralisation styles (e.g. Plavica and Maricanski Rid). The Kratovo-Zletovo ore district is confined to the Miocene age Probistip Graben which is bounded on its eastern side by a northwest-striking normal fault. The Kratovo-Zletovo volcanic structure and its related polymetallic deposits have been subject of several investigations, such as Ivanov & Denkovski (1978), Stojanov (1980), Serafimovski (1990, 1993), and Serafimovski & Rakic (1998, 1999).

The lithostratigraphy of the Kratovo-Zletovo region is well constrained from geological mapping and exploration drill holes. The volcano-sedimentary sequence in this region is estimated to be greater than 1,000 m in total thickness and are the host rocks to both gold and base metal mineralisation in the area. The host rocks at Plavica have recently been dated (U/Pb) at 27 Million Years old (Miskovic 2015).

1.4 Local and Property Geology

The project area has been the site of much historical mining. The mineralisation had been poorly defined by historic drilling over an area of ca. 1.5 km in length and ca. 500 m in width. The mineralisation has been intersected at a maximum depth of ca. 800 m.

The geology of the Plavica deposit is shown in Figure 1.2, with the Plavica area (at the north) and Maricanski Rid area (at the south) outlines shown in red.

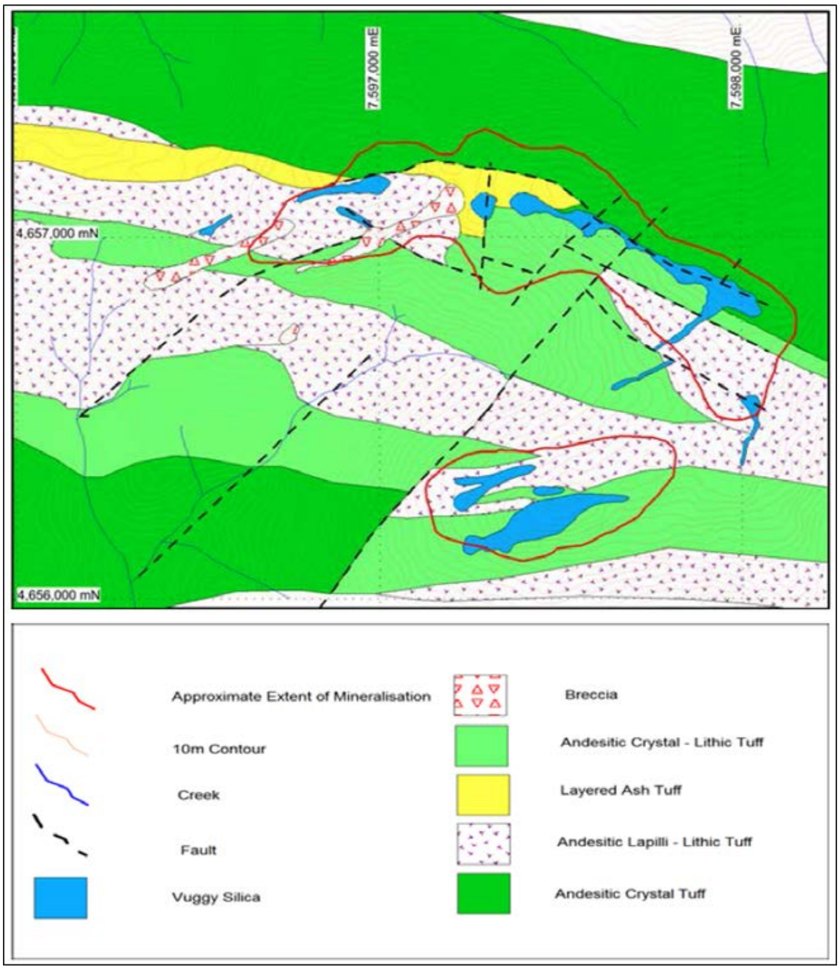


Figure 1.2: Geological map of Plavica deposit area highlighting Plavica and Maricanski Rid areas (source: Ravensgate, 2016)

The Plavica deposit is hosted in a sequence of andesitic volcanics and volcanoclastic material of mixed sub-aerial and sub-aqueous nature which dip approximately 30° to south-southwest. The volcanic stratigraphy is cut by steeply dipping vuggy silica bodies which are up to ca. 500 m long and between ca, 10 and 100 m wide. There are numerous silicified bodies with the largest of these at Plavica (trending east to south-east) and at Maricanski Rid (trending east to north-east). The main geological units of the Plavica area are shown in cross-section (Figure 1.3) and the most important lithologies are listed below:

- Basal andesitic lithic lapilli tuff (LPT);
- Andesitic layered ash tuff (LAT). Much of the gold is hosted within this unit at Plavica, exemplified in Figure 1.4;
- Upper andesitic crystal to crystal – lithic tuff (ACL);

- The northern andesitic crystal tuff that is interpreted to be thrust up against the Layered Ash Tuff prior to mineralisation; and
- The eastern end of the deposit an andesitic lithic-lapilli tuff (LIP) overlies the Crystal Lithic Tuff. This unit is shown in sectional view in Figure 1.5.

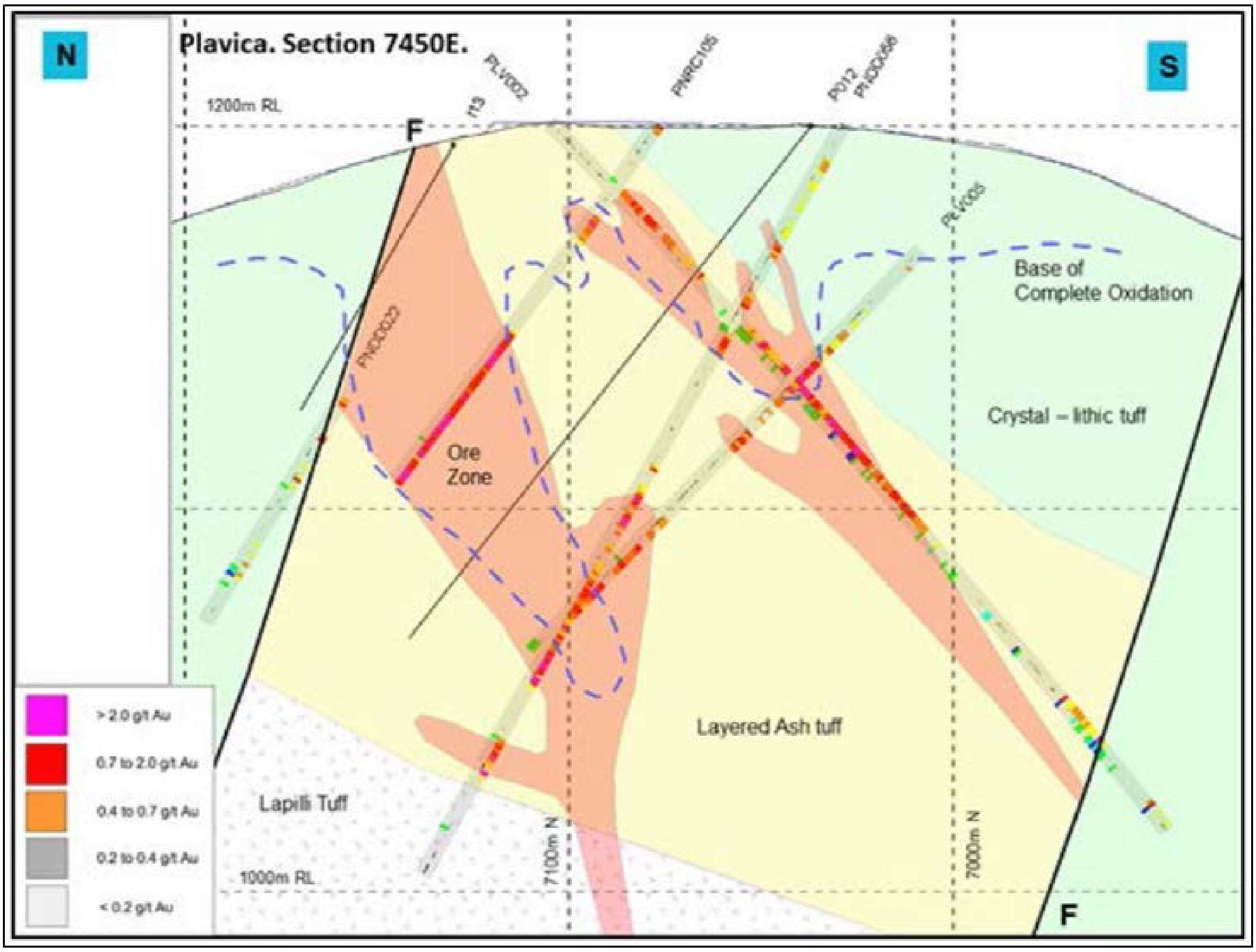


Figure 1.3: Geology schematic interpretation of section 7597450E through the Plavica deposit

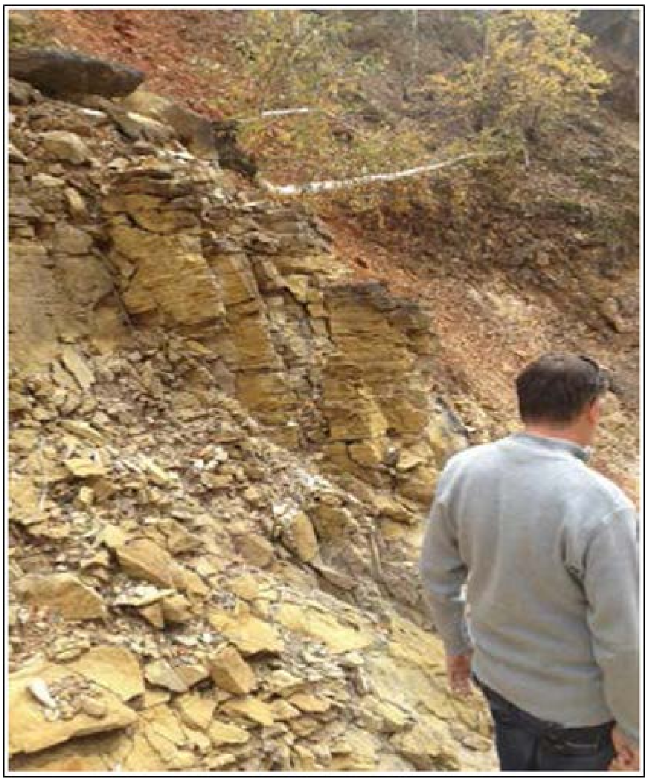


Figure 1.4: Layered Ash Tuff (LAT) outcrop located at the southwest of Plavica

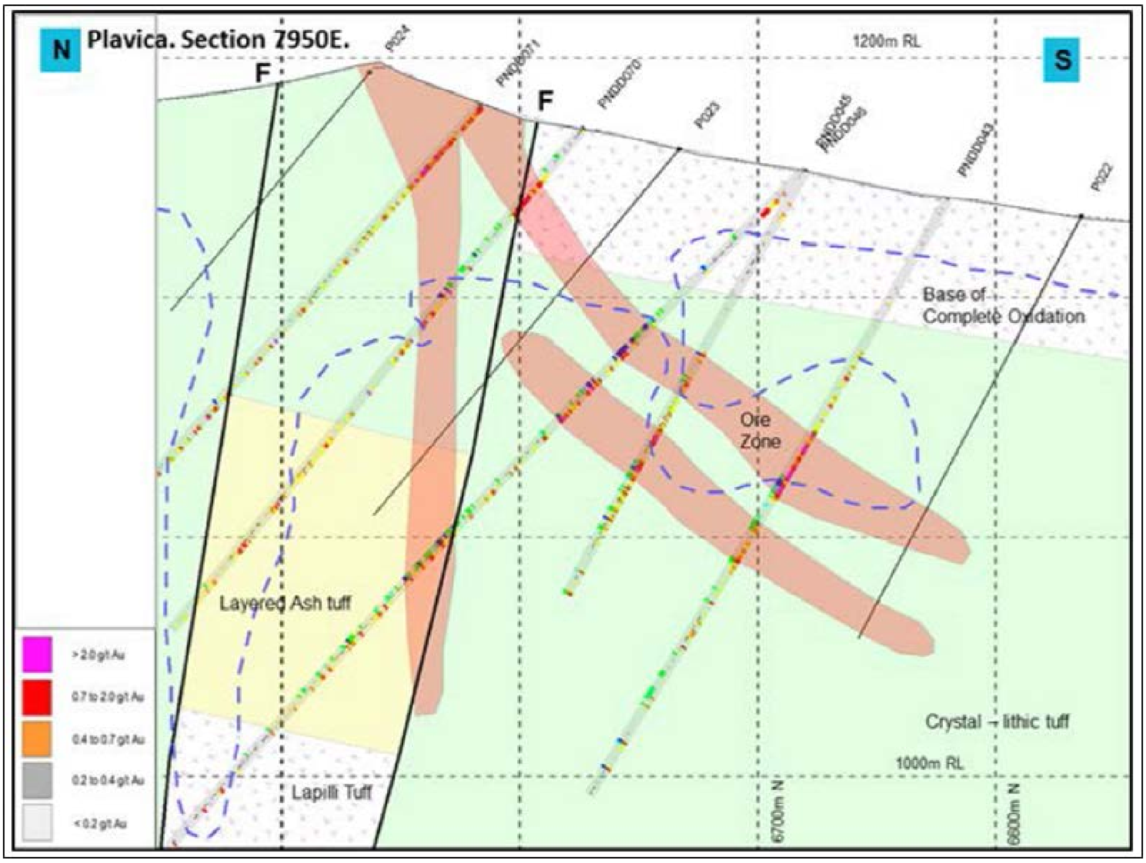


Figure 1.5: Geology schematic interpretation of section 7597950E in the eastern part of Plavica

The mineralisation at the Maricanski Rid area is mostly hosted in sub-vertical vuggy silica bodies that intersect shallowly dipping interbedded lapilli tuffs and crystal lithic tuffs (Figure 1.6). The upper lapilli tuff is coarser grained than the lower unit and exhibits numerous lapilli over 2 cm in size. The geology at Maricanski Rid is fairly continuous between sections. A number of steeply dipping east trending faults dissect the geology. Mineralisation is often controlled by these faults. A number of hydrothermal, diatreme and fault breccias are also commonly intersected in the drilling.

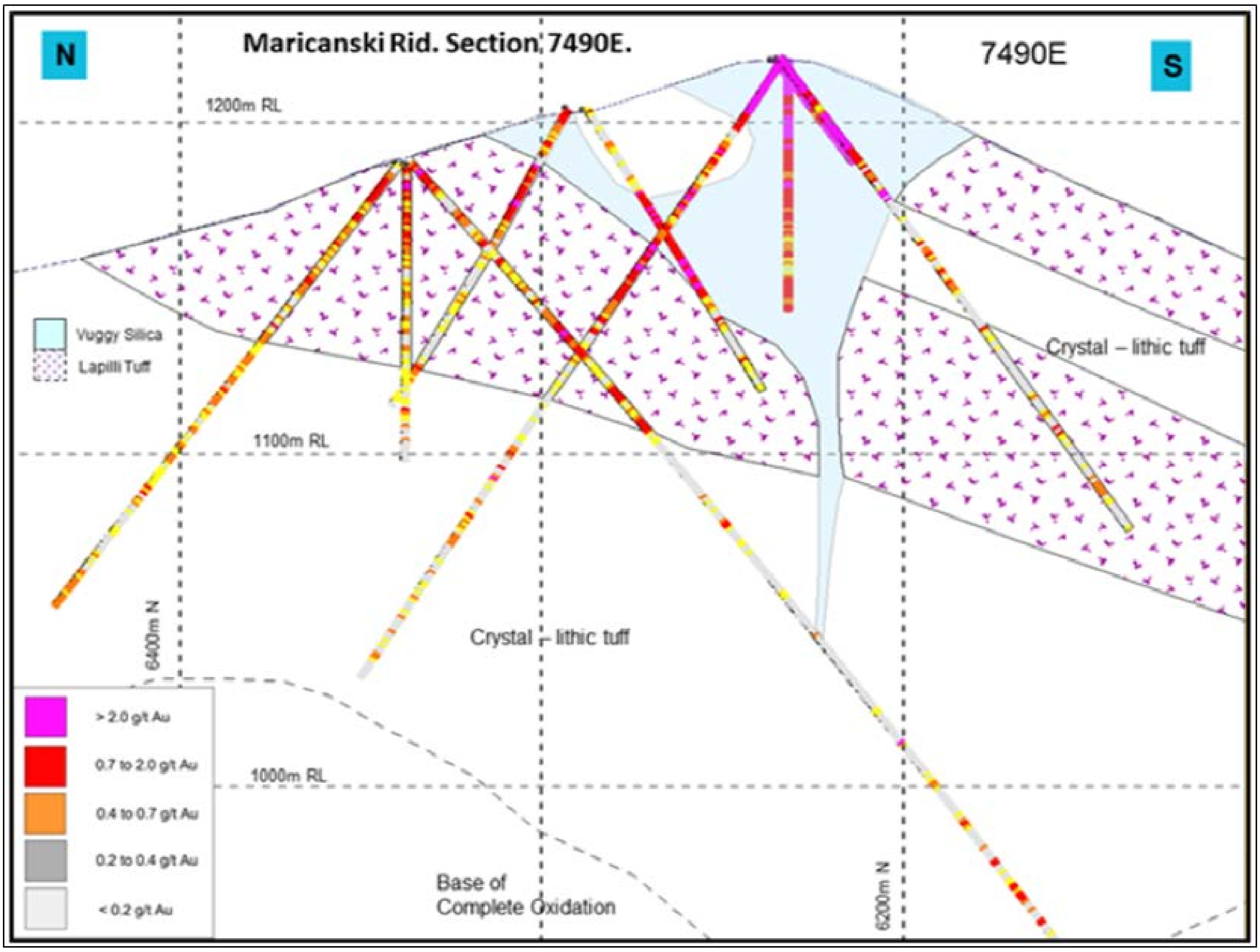


Figure 1.6: Geology schematic interpretation of section 7597490E in the central part of Maricanski Rid

1.5 Mineralisation Styles

Four distinct mineralisation styles are identified at Plavica.

Gold Mineralisation in Vuggy Silica: This type of mineralisation is characteristically high-sulfidation epithermal and is located in all of the silicified ridges at Plavica and Maricanski Rid. The gold is disseminated within the vuggy silica (Figure 1.7) and can extend to ca. 150 m in depth within steeply dipping structures. Most of the high-grade (Au greater than 4 ppm) mineralisation at Plavica and Maricanski Rid is contained within these vuggy silica zones.

Figure 1.7: Vuggy silica from high-grade gold zone, from hole MRDD019

Disseminated Gold Mineralisation: This mineralisation is common throughout both areas. At Plavica there is an abundance of disseminated style gold mineralisation in the layered ash tuff (Figure 1.8). The gold in this unit fill voids in the coarser bands between the finer grained laminated beds. At Maricanski Rid there is disseminated gold both within the lapilli–lithic units and the crystal–lithic units with the latter particularly exhibiting liesegang. The Au grade in these units is generally low.

Figure 1.8: Disseminated mineralisation in Layered Ash Tuff, from hole PNDD004

Enargite-bearing Au Veins: This style of mineralisation is the most common within the primary zone beneath the base of oxidation at Plavica. The mineralisation is characterised by quartz-pyrite-enargite veins (Figure 1.9). These veins probably provided the bulk of the historical gold production from Plavica and Au grades in these areas are generally around 0.5 to 2 ppm Au and often have copper grades over 1% Cu.

Figure 1.9: Massive enargite vein from Plavica

Lead-zinc Bearing Veins: Towards the margins of the Plavica deposit, Pb-Zn bearing veins dominate. Some minor lead-zinc veins also occur in the central parts of Plavica but they are typically small and contain less than 1% Pb and Zn. The lead-zinc mineralisation at the Zletovo mine is confined to banded quartz veins which also contain some minor Au and are most probably a continuation of the veins from the Plavica system.

The Plavica and Maricanski Rid systems have been identified by Genesis to be dominated by classic advanced argillic alteration assemblages. These typically consist of vuggy quartz–pyrite–kaolinite–alunite. Minor dickite has been logged, however pyrophyllite is rare, suggesting that the systems are relatively shallow and therefore formed at low temperatures. The alteration has been dated (K/Ar of Alunite) at 25 Ma which is approximately 2 Ma younger than the host rocks.

The deposit commonly contains the following primary ore minerals: pyrite, enargite, chalcocite, chalcopyrite, sphalerite, galena, bornite, covellite, tetrahedrite and tennantite. Other, rarer minerals found in the primary zone include , luzonite, pyrrhotite, molybdenite, prustite, and digenite (as primary minerals). Gangue minerals comprise quartz, calcite, siderite, magnetite, tourmaline, rhodochrosite and barite.

1.6 Deposit Types

The Plavica deposit is hosted by Oligo-Miocene, calc-alkaline, volcanic rocks. Vein-type and disseminated mineralisation is dominated by pyrite, together with sulphides and sulphosalts of copper, zinc and arsenic. Alteration of the volcanic rocks is intense and consists of advanced argillic alteration in association with massive silica replacement bodies; these overly zones of sericitic alteration. Fluid inclusions and oxygen isotopes suggest that the mineralisation formed at temperatures around 200–250°C from dilute fluids with a mixed magmatic–meteoric provenance. The presence of saline and CO_2-rich fluids suggests the occasional, direct input of magmatic fluid.

Based on the mineralogy, alteration and fluid characteristics, Plavica represents a high sulphidation, epithermal deposit.

1.7 Exploration

The following exploration activities have been carried out by Genesis.

1.7.1 Mapping

Detailed geological mapping was completed in 2014 at a scale of 1:1000. Outcrop is poor over most of the area due to the amount of scree. There is good outcrop in the creeks, however along the ridges the outcrop is confined to the vuggy silica. The interpreted geology of Plavica and Maricanski Rid is compiled mostly from drilling with outcrop used where available. The interpreted geology is shown above in Section 1.5.

1.7.2 Sampling

Rio Tinto collected 3,003 stream sediment samples over their large 1,025 km^2 tenement. The best anomalies were at Plavica with a number of +500 ppb Au values returned through aqua regia assays. Genesis have not conducted any further stream sediment sampling within the Exploitation concession. A total of 3,296 soil samples were collected by Rio Tinto over the tenement on a 200 m × 200 m grid. However, only 171 of these lie in the Plavica Exploitation Licence, covering the western half of the tenement. In 2014 Genesis extended this soil sampling grid to cover the eastern half of the tenement, collecting a further 208 samples. Rio Tinto undertook grid based rock chip sampling over both Plavica and Maricanski Rid. Genesis has collected a total of 135 grab rock chip samples from 2013 to 2016 predominantly away from the highly drilled areas. A number of samples returned values of over 5 g/t Au and a number of these were subsequently drilled.

1.8 Drilling

Drilling of both Reverse Circulation (RC) and diamond drill (DD) holes, completed since 2011, has been undertaken by Spektra Jeotek (Spektra) a Turkish based drilling company. The drill rigs use 3 m drill rods for diamond drilling and 6 m rods for RC. Diamond drilling has employed both PQ and HQ ‘standard tube’ core drilling methods (PQ at 85 mm and HQ at 63.5 mm). RC drilling has been completed using a 5 inch (127 mm) face sampling hammer bit with 4 inch rods. Drill rigs are shown in Figure 1.10 and Figure 1.11.

Figure 1.10: Spektra diamond drill (DD) core rig at Plavica

Figure 1.11: Spektra reverse circulation (RC) rig at Plavica

A total of 503 holes for mineral resource modelling, totalling 113,642 m, have been drilled since the beginning of the exploration activities (Table 1.1). Since 2011 Genesis has drilled 393 holes totalling 78,053 m.

Table 1.1: Summary of Drilling at Plavica, by Company

Company	Hole Type	No. Holes	Metres Drilled
State	DD	84	29,393
Rio Tinto	DD	4	1,028
European Mines	DD	5	903
Matrix/Genesis (2011)	DD	13	2,840
Nassau	DD	2	1,093
	RC	2	332
Genesis (2011)	RC	1	207
Genesis (2012)	DD	3	936
	RC	22	4,490
Genesis (2013)	DD	50	18,547
	RC	96	18,406
Genesis (2015)	DD	41	9,606
Genesis (2016)	DD	58	11,265
	RC	63	7,157
Genesis (2017)	DD	22	3,609
	RC	37	3,830
Sub-total	DD	282	79,220
	RC	*221*	*34,422*
TOTAL		*503*	*113,642*

The historical holes drilled by the State are vertical, however the majority of the modern drill holes are dipping around 60° towards the north, normal to the mineralisation dipping direction at Plavica (Figure 1.12).

Due to the verticality of some structures at Maricanski Rid, some of the drill holes dip towards north and others towards south (Figure 1.13). The drill hole locations are presented Figure 1.14.

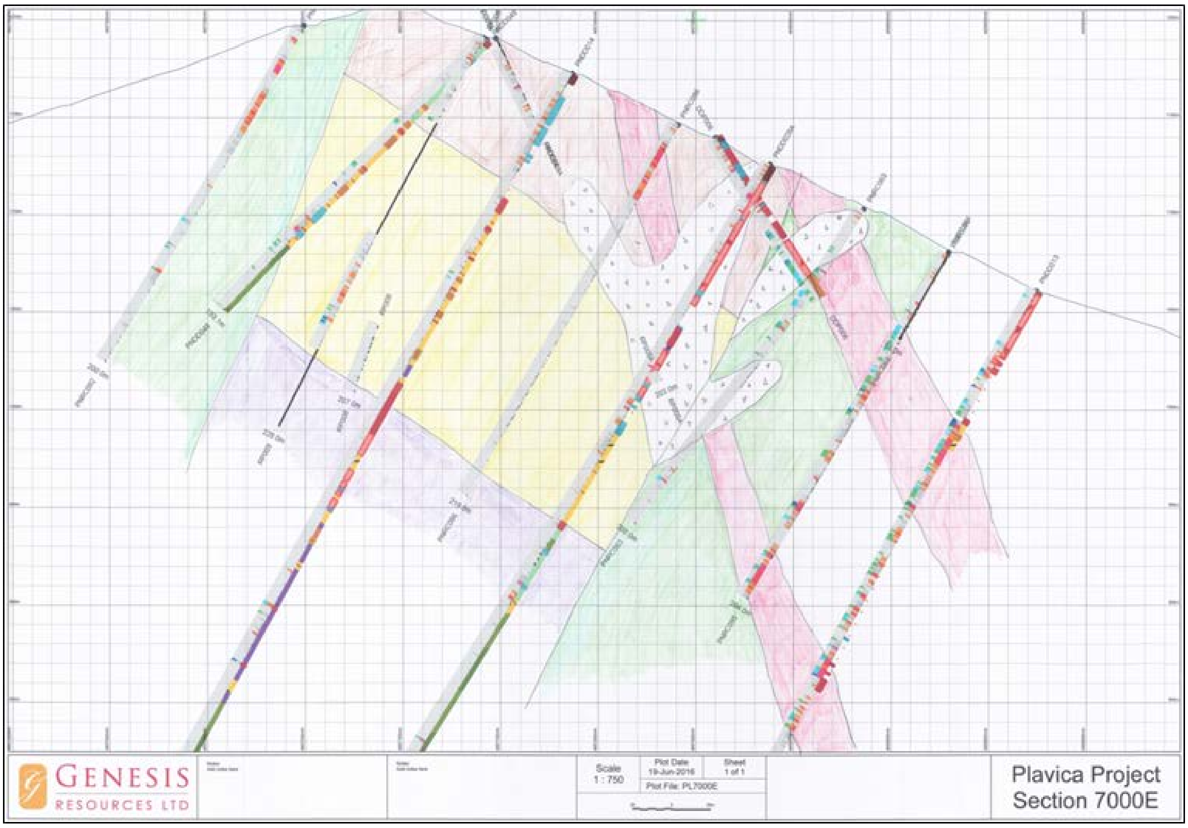


Figure 1.12: Schematic geology section 7597000E at Plavica area

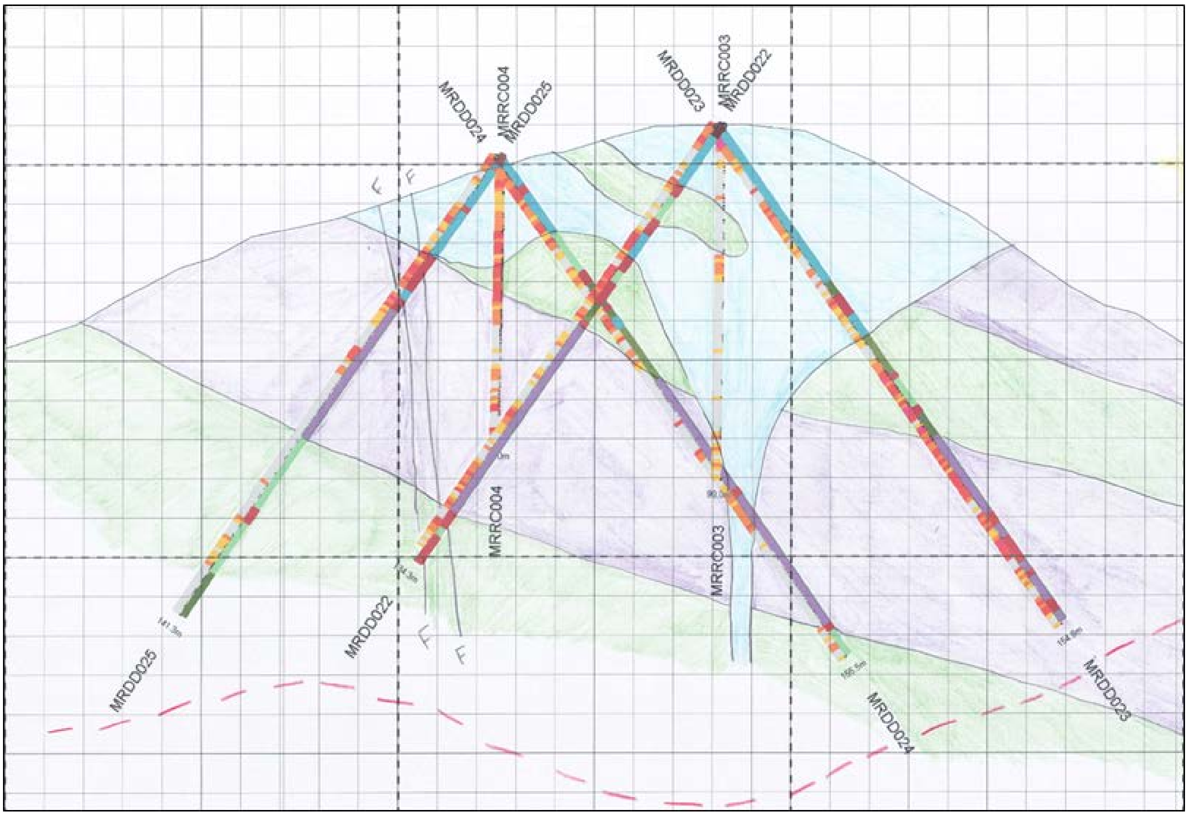


Figure 1.13: Schematic geology section 7597440E at Maricanski Rid area

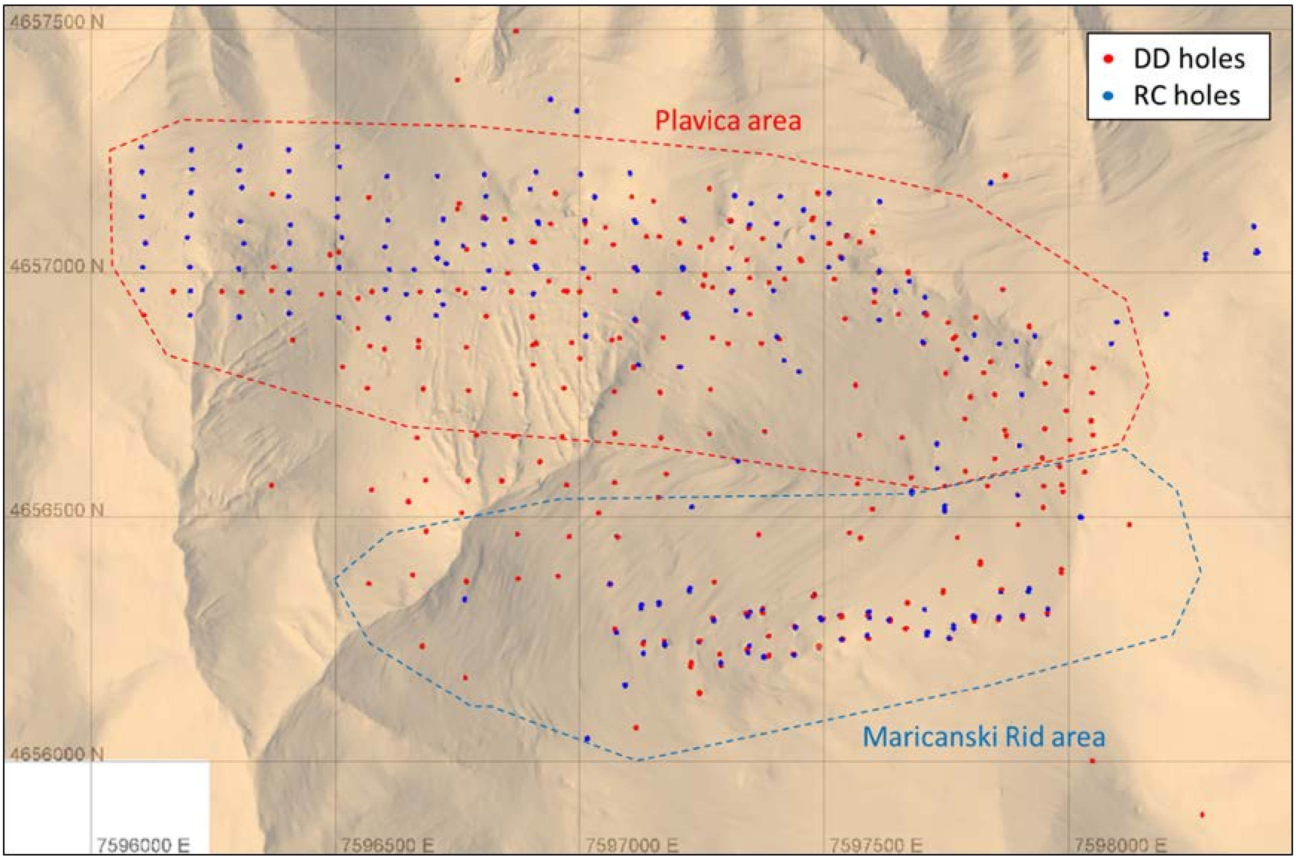


Figure 1.14: Borehole locations highlighting Plavica and Maricanski Rid areas

1.8.1 Diamond Drilling Core Logging and Sampling

The drill core was retrieved from the rig by Genesis field staff. All trays had lids tied down with wire to keep all core in place during transport and lifting onto core racks. At the core shed the trays were put in order, opened and checked. The core was cleaned with water, if dirty, before any marking or logging take place. Care was taken, in broken or soft zones, to not wash any clay or minerals away. The core was placed into V angle iron holders, laid out, joined together and measured (Figure 1.15A). Metre marks were drawn on the core in ink, with orientation lines drawn on the core in lead pencil first. Once several orientation marks (drillers drop orientation spear every run – usually 3 m runs) are lined up accurately and the geologist was satisfied that the core and orientations all fit, the pencil line was redone with permanent marker pen. The line on the core shows the bottom of the borehole. A solid orientation line was drawn when at least three orientation marks lined up with each other and the geologist was confident of the line (Figure 1.15B). A dashed orientation line was drawn when less than three marks lined up, representing some uncertainty about the orientation and signifying that care should be taken when using structural measurements within those intervals.

When the core was solid and no core loss was recorded the procedure was relatively simple and straightforward. In broken / fault zones the core may not be easily removed from the core trays and measurements were done in the tray. If there was core loss the geologist determined where the loss had occurred within the core run and marked the metres accordingly.

Figure 1.15: Drill core marking procedure

After the core was marked up, the geotechnical and drill core recovery logs were completed by geologists. The geotechnical log detailed the drill core run information, block to block recoveries, RQD, hardness and joint / fracture information (number, infill, shape, roughness etc). The recovery log was a metre by metre log that detailed percent recovery. The metre recovery logging was started in late 2015 as it was shown the geotechnical log was not detailing the exact position of any core loss; only that core loss had occurred within a core run. Structural logs were completed for all core. Any discontinuities were measured and detailed within the log (type, shape, roughness, fill etc). Where no orientation lines were present, only alpha measurements were taken, otherwise both alpha and beta measurements were completed. The true dip and dip directions of the structures measurements were processed through Micromine software from the alpha / beta information and plotted.

Geological logging was completed as interval logging rather than metre by metre logging. Lithology, oxidation, mineralisation, texture, alteration, colour, veining, sulphides etc were all recorded and percentages estimated where appropriate. A list of specific codes for all of the above fields was used and validations in data entry tables ensured that no different codes that were not on the list could be entered. A separate graphic log was also completed that gave more freedom and room for descriptions and graphic representations of all aspects of the core. This was also scanned and kept digitally with the other logs.

Prior to 2011 several boreholes were only partially sampled as the geologist did not sample zones that were thought to be barren. These are limited to the boreholes with PLV prefix. Gold mineralisation was not always visually determined so it was possible some zones of mineralisation were missed. Post 2011, all Genesis drill core has been sampled. The sample lengths were usually one metre intervals; the only samples that differ are at the end of the boreholes where intervals may be slightly shorter or longer to adjust to the end of hole depth, and in zones of extreme core loss. The minimum sample length was set at 0.4 m to ensure enough material was available to analyse at the laboratory. This minimum determines how the zones in and around core loss are sampled.

All competent drill core was cut lengthways with an automatic core saw (Corewise type) and placed in pre-numbered calico bags. Intervals of clay and soil at the top of the hole were sampled with a knife, spatula / spoon by hand sampling half of the drilled material. One consistent side of the cut core was taken during sampling and the other half, with the bottom of hole orientation line, was returned to the core trays. All core samples in calico bags were weighed and recorded before being put into larger polyweave bags in preparation for transport to the laboratory.

Drill core photography was completed after all mark up and logging activities had been completed. Photographs were taken with a NIKON D 3300 18-55 MM VR II digital camera firstly as dry core and then as wet core. The camera was fixed to a frame that ensured consistent focal length and size of the photograph. Drill core photos were identifiable by hole number, proposed pad ID, box number, metres down hole, date and either wet or dry (added as digital headboard to photograph). The core was not released for sampling until the digital photographs had been downloaded and checked on computer. Figure 1.16 shows an example of a wet core photograph.

Figure 1.16: Example of typical drill core photography (core is wet)

1.8.2 RC Logging and Sampling

During RC drilling the entire sample was collected directly from the primary drill rig cyclone in woven polyweave bags, at regular 1 m intervals at the drill rig. The sample bags were labelled with borehole number and interval depths. The bulk sample was weighed on scales and recorded before any material was removed from the bag. These samples generally weighed between 25 and 40 kg. The rig cyclone was checked regularly and cleaned thoroughly after every 6 m drill run, or every metre if any water or moisture was present.

If the sample was dry, the entire bag was passed through a 3-tiered riffle splitter; with the crew ensuring that the entire sample fell evenly across the riffles. A sub-sample weighing 3-4 kg (assay split) was collected from the splitter into a pre-numbered calico bag. If the bulk sample was smaller than usual it was passed through the riffle splitter a second time to ensure the calico sample weight was sufficient for the laboratory. A sample tag with the sample number was added to the calico bag in case the number written on the calico bag was unreadable at the laboratory. The remaining sample was called the bulk residue and was returned to the correctly labelled original large polyweave bag and placed in rows on the side of the drill pad. The splitter was thoroughly cleaned using compressed air and was tapped using a rubber mallet after every sample.

If the sample was moist or wet and could not be put through the riffle splitter, the sample was set aside for drying and split at a later stage. If a preliminary sample was required it was sampled with a clean PVC ‘spear’ (50 mm diameter piece of PVC pipe). Samples that were collected with the spear technique are resampled at a later date with the riffle splitter if the assays contain gold mineralisation. The moisture content, sampling technique, weights of bulk residue and calico samples were all recorded on the sampling logs.

Duplicate samples were taken routinely on average every 50 samples (sample numbers ending in 45 and 90). At the end of the borehole, three extra duplicate samples were taken.

These were duplicates of sample intervals expected to be anomalous based on visual observation (i.e. vuggy silica / veining / sulphide content / alteration), and sampled using the same technique as the original (riffle split or spear) and submitted in the same batch. This was done to duplicate the potential higher grade material that may not be captured by the 1 in 50 sampling. Certified standards and blanks were also inserted every 50 samples.

The large bulk residue samples were laid out in order in rows – and samples for the chip board, logging and chip trays were taken from these. Each sample was speared, sieved and washed by the geologist and placed on a large chip board which can display 100 m (Figure 1.17). Once photographed and logged the chips were taken from the board and placed into the appropriate cells of an RC chip tray for reference (Figure 1.18).

The bulk residue bags were folded over and sealed to eliminate the risk of contamination or moisture. These bags were left on the drill site until all assay results had been received. Upon receipt of assay results, anomalous samples greater than 0.5 ppm Au were retrieved and stored.

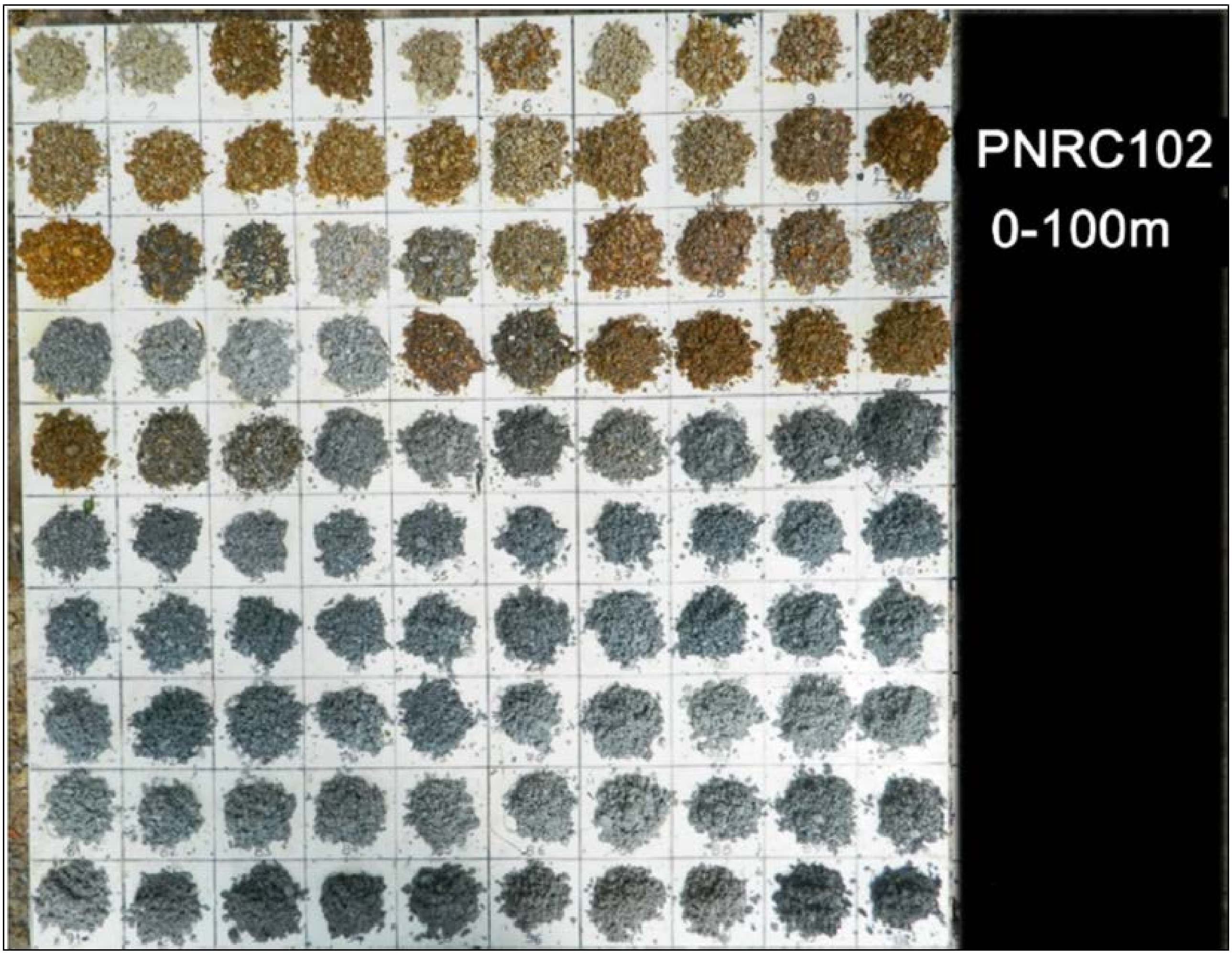


Figure 1.17: Chipboard on drill site with 100 m of chip samples for logging, photograph and filling the plastic reference chip trays

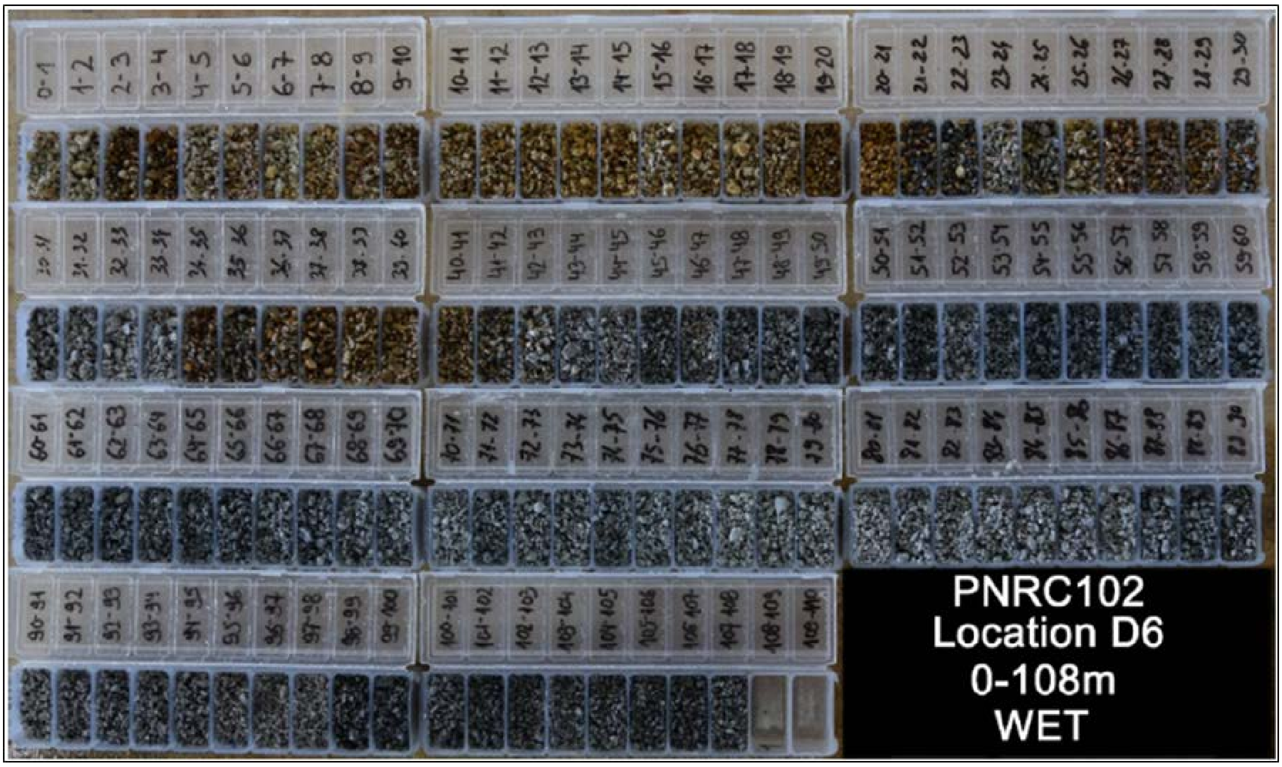


Figure 1.18: Reference chip trays stored at the office after sampling logging completion

1.9 Drilling Recovery

Drilling recovery of RC holes was reviewed by Ravensgate in 2016 for 24,598 samples from 145 holes. The mass of the entire sampling interval return was measured for 6,165 samples showing an average of 23.3 kg considered reasonable for the borehole diameter. A comparison of the sample mass against the sample split mass showed a correlation coefficient of 0.77, demonstrating that sample mass is a good indication of the RC sample recovery. RC Sample mass was also compared to the assay grades to assess the possibility of bias related to samples with low recovery. No correlation was identified between the sample mass and sample grades. Ravensgate concluded that there was no sample bias associated with the RC drilling samples with lower recovery. The core recovery of DD holes was reviewed for 138 holes from 2016 and 2017. The recovery is calculated over the individual sample intervals, after identifying zones of core loss and accounting for end of core run breaks. For the 30,837 samples over 79% demonstrated full recovery and over 98% of samples had a recovery greater than 80% as seen in Figure 1.19.

The core recovery was compared against the gold grades to check for any bias related to sample recovery. The graph (Figure 1.20) shows no bias between gold grades and core recovery.

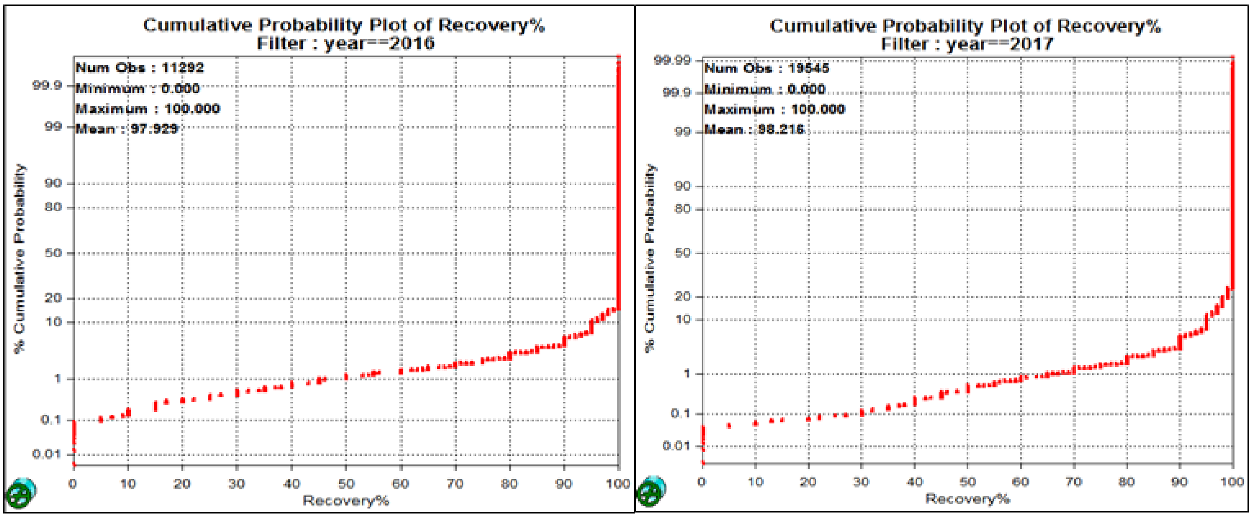


Figure 1.19: DD core recovery of holes drilled during 2016 (left) and 2017 (right)

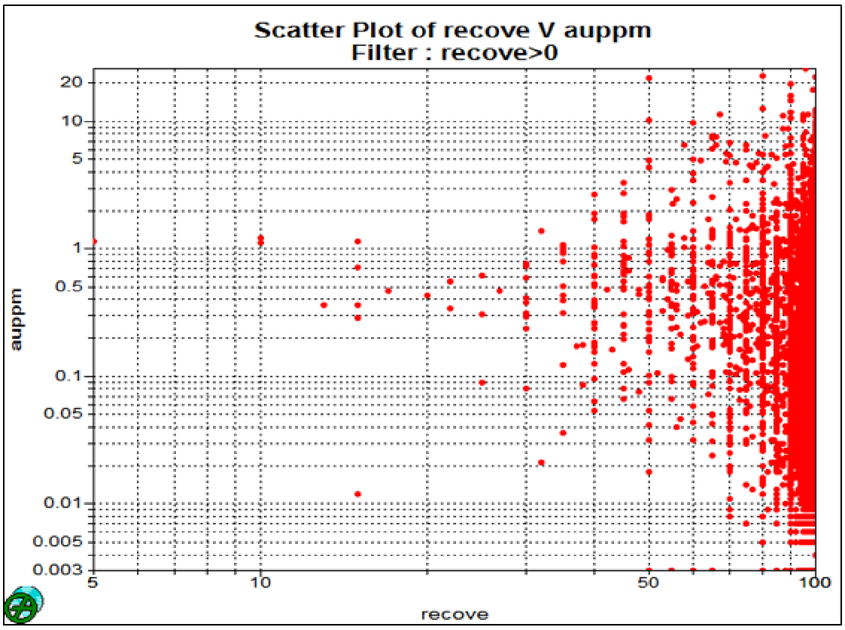


Figure 1.20: Scatter plot showing the correlation between Au grades and core recovery

1.10 Density Measurements

Bulk density measurements of drill core undertaken by Genesis prior to June 2015 were completed using a simple air – water method. This was subsequently deemed to be not appropriate due to the often vuggy and porous nature of some of the core. All core holes drilled post June 2015 had wax density measurements (wax coating – water immersion). A collection of core holes drilled in 2013 (PNDD001 to PNDD0043 and MRDD001 to MRDD005) across the project area were retrieved and redone with the wax density method. Measurements are taken on pieces of core that are around 10 cm long and generally one measurement per tray in un-mineralised 'looking' material (approximately one measurement every 4 m) and two or more per tray in material that is considered to be mineralised (approximately one measurement every 2 m).

In total 11,463 core samples from Plavica and Maricanski Rid were measured by the wax density method.

1.11 Collar Surveys

Borehole collar locations are marked with a concrete block cemented into the ground with a metal tag imprinted with the Hole ID, Depth, Dip and Azimuth of the hole. The collar locations were mostly surveyed within a month of borehole completion using a local survey contractor in GK coordinates. The DGPS equipment used by the local contractor was a Stonex S8-N GNSS, which was accurate to within 2 cm (factory specs). Prior to each surveying campaign, the surveyor picked up the borehole location of several known collars to check the equipment calibration. Sixteen holes were re-surveyed in July 2016 as an audit on the collar survey locations from 2012-2013. The co-ordinates and elevations average between 15-30 cm of difference between the original and check survey. Maximum difference was 1.9 m in easting / northing and 3.6 m in elevation.

A drone photogrammetry survey was completed in early 2017 which provided detailed topography and air photos of the project area. The borehole collar elevations have been adjusted to the new detailed topography surface. Eastings and northings were not changed. Most of the changes were <0.5 m from the DGPS elevations.

1.12 Downhole Surveys

Downhole surveys were completed at 50 m intervals by the State, Rio Tinto, European Minerals and Matrix / Genesis until 2011. All Genesis drilling has completed surveys every 25 m downhole and used Reflex EZ Trac / DeviFlex or Gyro survey tools. Details are tabulated in Table 1.2.

Table 1.2: Summary of Downhole Survey Methods by Campaign

Company/Campaign	No. Holes with only Collar Survey	No. Holes with complete Downhole Survey	Downhole Survey Method	Survey Interval (m)
State	5	79	Unknown	50
Rio Tinto	0	4	Unknown	50
European Mines	0	5	Unknown	50
Matrix/Genesis (2011)	0	13	Reflex EZ Trac	50
Genesis (2012)	5	21	Reflex EZ Trac	25
Genesis (2013)	5	146	Reflex EZ Trac / Gyro	25
Genesis (2015)	0	41	DeviFlex / Gyro	25
Genesis (2016)	9	112	DeviFlex / Gyro	25
Genesis (2017)	2	57	DeviFlex / Gyro	25

1.13 Topography Survey

Topographic data was gathered over an area of approximately 5 km^2 in April / May 2017, covering the Plavica and Maricanski deposits and all the planned infrastructure. Geoinformatika, a local Macedonian Company undertook photogrammetry using a drone at a flying height average of 30 m. They used 13 ground control points. They took 384 images with a focal length of 3.61 mm. The ground resolution was 14.7 cm per pixel. The average point density was 11.5 points per square metre. From this data a DTM, orthophoto and contour images were produced.

1.14 Sample Preparation, Analyses and Security

The information in this section was collected by Ravensgate (2016), Golder's visit to the Site and from Genesis procedures. Genesis undertakes the bulk of the sample preparation activities in its facilities in Probistip. The activities include sample selection, core cutting, sample drying and crushing. Core crushing and final sample preparation steps were undertaken by external testing laboratories.

1.14.1 General Sampling Methodology

The RC sample cuttings were collected from the cyclone into labelled polyweave plastic bags at one metre intervals. The samples were weighed and split using a three tier riffle split (Figure 1.21) to obtain a sub sample of approximately 3 kg for analysis (also see Section 1.9).

Sample weights were recorded from drill hole PNRC097 in the 2012/13 program. Previous sampling reviews (Golder, 2012 and McNamara, 2014) described that a single tier splitter was used for sampling and records than samples taken in 2013 were collected either by cone splitter mounted on the cyclone or triple tier riffle split.

Figure 1.21: RC borehole MRRC008 sample splitting

Diamond core was processed at the Genesis office in Probistip. Core runs were pieced together and the core orientation marked. Lithological and structural logging were completed. Zones of core loss were assessed and core recovery recorded for each one metre sample interval marked on the core. Prior to cutting selected samples were nominated for bulk density measurement. Core was halved using an automatic feed diamond saw. Half core from the right hand side of the hole was collected in pre-numbered calico bags for analysis.

1.14.2 Sample Preparation

After arrival at the laboratory the samples were arranged in order and compared to the site submission forms. Sample numbers and details were added into the SGS Laboratory Management System (SLIM) which generates the necessary paperwork. The program randomly created replicates (5%) second splits (~10%), inserts two certified standards and one blank in each batch as part of the internal QC laboratory process.

All samples were dried at approximately 105°C for twelve hours in calico sample bags. The drill core samples were crushed to 2-4 mm and then split through a 50:50 riffle splitter to reduce the sample volume. One half of the sample was re-bagged, labelled and stored as a coarse reject while the other half proceeded to the

pulverisation stage of preparation. RC samples did not require the coarse crushing and were split through a 50:50 riffle splitter; half was stored as coarse reject and the other half was pulverised.

The split sample was then pulverised for a minimum of five minutes in a LM5 pulverising mill and reduced to 90% passing through a 75 micron screen. Test wet sieving to 75 µm was completed on every 20th sample to monitor the pulp preparation. A 200 g scoop was taken from the bowl and placed in a labelled paper bag (pulp) for assaying. A second scoop was taken from the bowl (400 g) and retained as a duplicate for sample library. Replicate samples were taken from the LM5 bowl and assayed twice. The second split was a same sample taken twice from the LM5 bowl, placed in a separate bag and assayed. Any leftover pulp was discarded.

1.14.3 Assaying

Commercial laboratories were used to assay drill samples. Prior to 2012, samples were analysed at ALS Romania. From 2012 and onwards, samples were sent primarily to SGS in Ankara. For all drilling conducted post Yugoslav state campaign, the following laboratories were used for assaying:

- ZDH and ZCH holes – CONE Geochemical and Bondar Clegg;
- PLV001-009 holes – Unsure of laboratory – Most likely ALS;
- PLV010-022 holes – ALS Romania; and
- All PNDD, PNRC, MRDD and MRRC holes – SGS Ankara (78%) and SGS Bor (22%).

Of the 83,024 samples submitted and assayed, including standards, blanks and duplicates, 96% have been assayed by SGS laboratories.

SGS procedures included each sample analysed for gold by lead collection fire assay with flame AAS determination of gold on a 30 g aliquot. The standard SGS code for this method was Au-FAA313 and detection limits were 5 – 10,000 ppb Au. For assays greater than 10,000 ppb Au, the samples were re-assayed with gravimetric finish (SGS code Au-FAG303) that has detection limits of 0.5 – 3,000 ppm Au.

Multi-element analysis was completed by two different methods. The SGS Ankara laboratory used an ICPAES machine and completed the analyses of 33 elements by four acid digest ICPAES (SGS code ICP40B). The SGS Bor laboratory used an ICPMS machine and completed the analyses of 33 elements by four acid digest ICPMS (SGS code ICPM40B). Both laboratories reported the same elements but the detection limits were slightly different for some elements and are shown below (Table 1.3).

Elements that exceeded the ICP detection ranges were re-analysed using the SGS Ore Grade Four Acid Digest AAS package (AAS42S). The analyses were accomplished by adjusting the sample weight and final solution volume ratio, thus expanding the linear range of the analysis. The elements commonly re-analysed by this method are shown in Table 1.4.

Table 1.3: Multi-element Suites and Detection Limits for SGS Different Methods

Element	Multi-acid Digestion Method (Detection Limits)	
	GE ICP40B (SGS Ankara)	GE ICM40B (SGS Bor)
Ag (ppm)	2 – 100	0.02 – 100
Al (%)	0.01 – 15	0.01 – 15
As (ppm)	3 – 10,000	1 – 10,000
Ba (ppm)	1 – 10,000	1 – 10,000
Be (ppm)	0.5 – 2,500	0.1 – 2,500
Bi (ppm)	5 – 10,000	0.04 – 10,000
Ca (%)	0.01 – 15	0.01 – 15
Cd (ppm)	1 – 10,000	0.02 – 10,000
Co (ppm)	1 – 10,000	0.1 – 10,000
Cr (ppm)	1 – 10,000	1 – 10,000
Cu (ppm)	0.5 – 10,000	0.5 – 10,000
Fe (%)	0.01 – 15	0.01 – 15
K (%)	0.01 – 15	0.01 – 15
La (ppm)	0.5 – 10,000	0.01 – 10,000
Li (ppm)	1 – 10,000	1 – 10,000
Mg (%)	0.01 – 15	0.01 – 15
Mn (ppm)	2 – 10,000	2 – 10,000
Mo (ppm)	1 – 10,000	0.5 – 10,000
Na (%)	0.01 – 15	0.01 – 15
Ni (ppm)	1 – 10,000	0.5 – 10,000
P (%)	0.01 – 15	0.005 – 15
Pb (ppm)	2 – 10,000	0.05 – 10,000
S (%)	0.01 – 5	0.01 – 5
Sb (ppm)	5 – 10,000	0.05 – 10,000
Sc (ppm)	0.5 – 10,000	0.5 – 10,000
Sn (ppm)	10 – 10,000	0.3 – 1,000
Sr (ppm)	0.5 – 10,000	0.5 – 10,000
Ti (%)	0.01 – 15	0.01 – 15
V (ppm)	2 – 10,000	2 – 10,000
W (ppm)	10 – 10,000	0.1 – 10,000
Y (ppm)	0.5 – 10,000	0.1 – 10,000
Zn (ppm)	1 – 10,000	1 – 10,000
Zr (ppm)	0.5 – 10,000	0.5 – 10,000

Table 1.4: Multi-element Suite and Detection Limits for SGS AAS42S Method

Element	Detection Limit
Ag (ppm)	5 – 500
As (%)	0.025 – 5
Cu (%)	0.001 – 50
Fe (%)	0.01 – 40
Mn (%)	0.001 – 5
Pb (%)	0.002 – 2.5
Zn (%)	0.001 – 5

1.14.4 Bulk Density

The dry in-situ bulk density (ISBD) values were derived from 11,463 samples taken from 144 diamond boreholes. Dry bulk density was determined by the water displacement method.

The recent drilling was well spread over the project area and gives good coverage of density data. Only density measurements using the wax coating method were used in the resource estimate. Earlier measurements using cling wrap film were excluded from the dataset (also refer to Section 1.11).

No moisture determinations had been attempted. Bulk density and tonnage were reported on a dry basis.

1.14.5 Confidentiality and Data Security

The drill core was collected from the core rigs twice a day by Genesis field staff. Every core tray had a lid that was secured with four wire ties and loads were limited to 16 core trays to ensure all trays are below the sides of the vehicle tray. RC samples were collected both during and at the end of the shift depending on the progression of drilling. At the end of shift trays were brought back to the Probistip premises with the sampling equipment, chip trays and logs to make sure no samples remain on site overnight. The RC rig operated on single shift and had a security guard at night to secure the rig, equipment, fuel and bulk samples.

All drill samples were processed at the Probistip core shed facility which was an enclosed warehouse within a secure complex monitored by surveillance cameras. RC samples were also checked, weighed, standards and blanks inserted and re-bagged into polyweave sacks ready for transportation. Approximately once a month, or when there were sufficient samples, the closed polyweave sacks containing core and RC samples were loaded onto a contractors truck by Genesis staff. Once loading was complete, the truck sides are closed and locked. The truck travelled to the nearest customs station (depending on which laboratory the samples are travelling to), was inspected by Customs officials, re-closed and locked with a special Customs anti-tamper lock for transport across the borders. Upon arrival in either Turkey (for SGS Ankara laboratory) or Serbia (for SGS Bor laboratory) the truck again went to the Customs Point and was reviewed by officials. The customs lock was removed and replaced with the truck drivers lock which then proceeded to the SGS laboratory where SGS staff took custody of the samples.

1.15 Quality Assurance and Quality Control Program

Genesis presented a document outlining the QA/QC practices, procedures and results of the recent drilling on the Plavica Gold Project, including regular audits and reviews implemented to improve the quality and confidence of the data.

The QA/QC program's objective was to conform to JORC (2012) and to prevent the entry of errors into the database used for resource modelling, while demonstrating that sampling and analytical variances are small and within acceptable limits. The standard procedures were designed to reduce the potential for human error at all levels and ensure consistency in the work.

1.15.1 Standards

The insertion of standard (CRM – certified reference material) samples into the sample preparation and analytical stream is undertaken to monitor laboratory accuracy. Standards are submitted in pulp form and therefore do not pass through the sample preparation stage in the laboratory.

Protocol for submission of standards states that samples are inserted at a rate of 1 in 50 (sample numbers ending in ‘25’ and ‘75’). In a typical SGS batch of around 150 samples, Genesis, on average, submitted three standards within the one laboratory batch.

Standards are pulped material that has been characterised by analysis at a number of laboratories to derive a mean assay and standard deviation for a particular element and assay method. Performance of the assay laboratory was calculated in terms of relative standard deviation away from the known characterised mean of the standard. Genesis has set a limit of ± two standard deviations from the mean of the standard. Any standards reporting outside this range are deemed to fail. Standards are characterised for gold, copper, silver and several for arsenic, lead and zinc. QAQC monitoring has focused on gold but also reviewed copper and silver.

A brief history of standards used at Plavica is presented below:

- Rio Tinto: Believed to have used standards and/or blanks but data was not available. Every 50th sample number was missing from the data suggesting a 1 in 50 standard and/or blank submission;
- European Minerals: No standards or blanks submitted with samples;
- Matrix / Genesis: Drilling from 2011 used 76 standards in 13 drill holes. The standards 65a, 66a, 66a and 67a were analysed; however, no information or certification was available and have not been assessed. Seventy six certified pulp blanks were also submitted;
- Genesis 2012: Corresponding to the “RP” and “DDP” holes. At the time of sample submission no standards were on site – sample numbers for standards allocated but not submitted to laboratory. Forty four coarse blanks submitted; and
- Genesis 2013 to present: Standards in use at Plavica were acquired from OREAS, in Perth Australia. Eight OREAS standards (Table 1.6) have been used amongst the sampling of holes PNDD, PNRC, MRDD, MRRC, and are certified for gold, silver and base metals. Four of the standards are oxide (coloured in brown), four are primary (coloured in blue) and cover a spectrum of grades and ore types.

The number of each standard submitted are presented in Table 1.5.

Table 1.5: Summary of OREAS Standards used in Plavica

Standard	Description from OREAS	Au (ppm)	Cu (%)	Ag (ppm)	As (ppm)	Pb (ppm)	Zn (ppm)	S (%)
OREAS 250	Gold Oxide Ore	0.309	0.00447	0.258	11.8	8.06	82	0.013
OREAS 901	Cu-Au Ore	0.363	0.141	0.439	71	17.4	24	0.036
OREAS 252	Gold Oxide Ore	0.674	0.00494	0.185	16.2	11.8	91	0.019
OREAS 253	Gold Oxide Ore	1.22	0.0077	0.25	5.9	3	103	0.02
OREAS 62E	Au-Ag Ore	9.13	0.0068	9.86	11.5	16.7	71	0.429
OREAS 600	HS Epithermal Ag-Cu-Au Ore	0.2	0.0482	24.8	89	193	615	1.69
OREAS 504	Au-Cu-Mo-Ag-S Ore	1.48	1.137	3.13	6.5	21	113	1.37
OREAS 504b	Porphyry Cu-Au-Mo Ore	1.61	1.11	3.07	10.3	26.2	108	1.31
OREAS 60C	Au-Ag Ore	2.47	0.0073	4.87	20.4	18.7	90	0.86

Table 1.6: Number of Standard Samples Introduced on Assay Batches since 2013

Standard	OREAS description	Ore type	Number of samples used in Plavica
OREAS 250	Gold Oxide Ore	Oxide	106
OREAS 901	Cu-Au Ore		263
OREAS 252	Gold Oxide Ore		131
OREAS 253	Gold Oxide Ore		61
OREAS 62E	Au-Ag Ore		89
OREAS 600	HS Epithermal Ag-Cu-Au Ore	Fresh	132
OREAS 504	Au-Cu-Mo-Ag-S Ore		89
OREAS 504b	Porphyry Cu-Au-Mo Ore		40
OREAS 60C	Au-Ag Ore		80

If two or more standards fell outside two standard deviations of the certified mean, the internal SGS standards were reviewed. Silver and copper were also checked for the standards that are certified for multi-elements. Decisions on the re-assay of a batch were based on the relative performance of the Genesis and SGS internal standards with respect to the potential mineralised content of the batch. During the course of the program, SGS assayed 991 standards in 515 batches. All mineralised batches fell within the limits of acceptance and no batches were re-assayed.

Figure 1.22 to Figure 1.30 show the OREAS standards individually plotted over time. The standards show reasonable results with only occasional outliers outside of the two standard deviation upper and lower control limits. The exception being OREAS 504 which shows the last 20-25 assay results outside of acceptable limits. Almost all results were from SGS Bor during the period July to September 2016. The standards OREAS 504 and 504b have similar gold grades (OREAS 504 is 1.48 ppm Au and OREAS 504b is 1.61 ppm Au) and the results from the Bor lab assay were around 1.6 ppm Au, similar to the OREAS 504b. This suggested either the standards in the OREAS 504 box have been mislabelled at source by the manufacturer and are actually OREAS 504b, or the SGS Bor laboratory assayed the standards incorrectly. Unfortunately the standard OREAS 504 could not be further checked as stocks had been diminished and not replaced.

Of the 991 standards submitted to SGS over time there have been five misidentified standards. Four of these were incorrectly entered into the spreadsheets / database, and the other was mixed up when the incorrect standard was put into the calico bag. One of the blanks was mixed with a standard but it is unclear whether this has occurred at the laboratory or if they were mixed when placed into the calico bags. Corrective measures were taken, and occurrences are listed below.

- D22750 standard was called OREAS 250 but is actually OREAS 252;
- RC10150 standard was called OREAS 901 but is actually OREAS 504;
- D05950 standard was called OREAS 60C but is actually OREAS 901;
- D35425 standard was called OREAS 252 but is actually OREAS 250;
- D39375 standard was called OREAS 250 but is actually OREAS 252; and
- RC21525 and RC21500 mixed up. RC21525 is blank, RC21500 is OREAS 504.

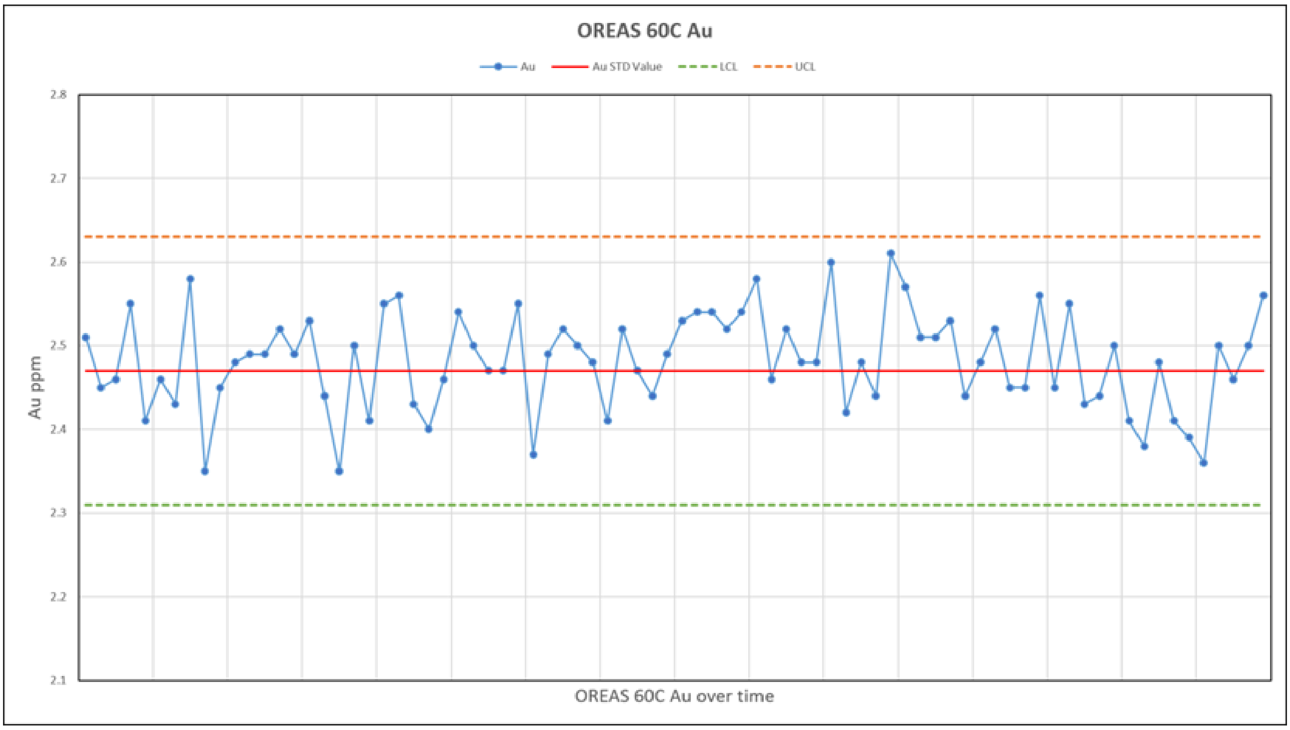


Figure 1.22: Gold assays for standard OREAS 60C over time at SGS

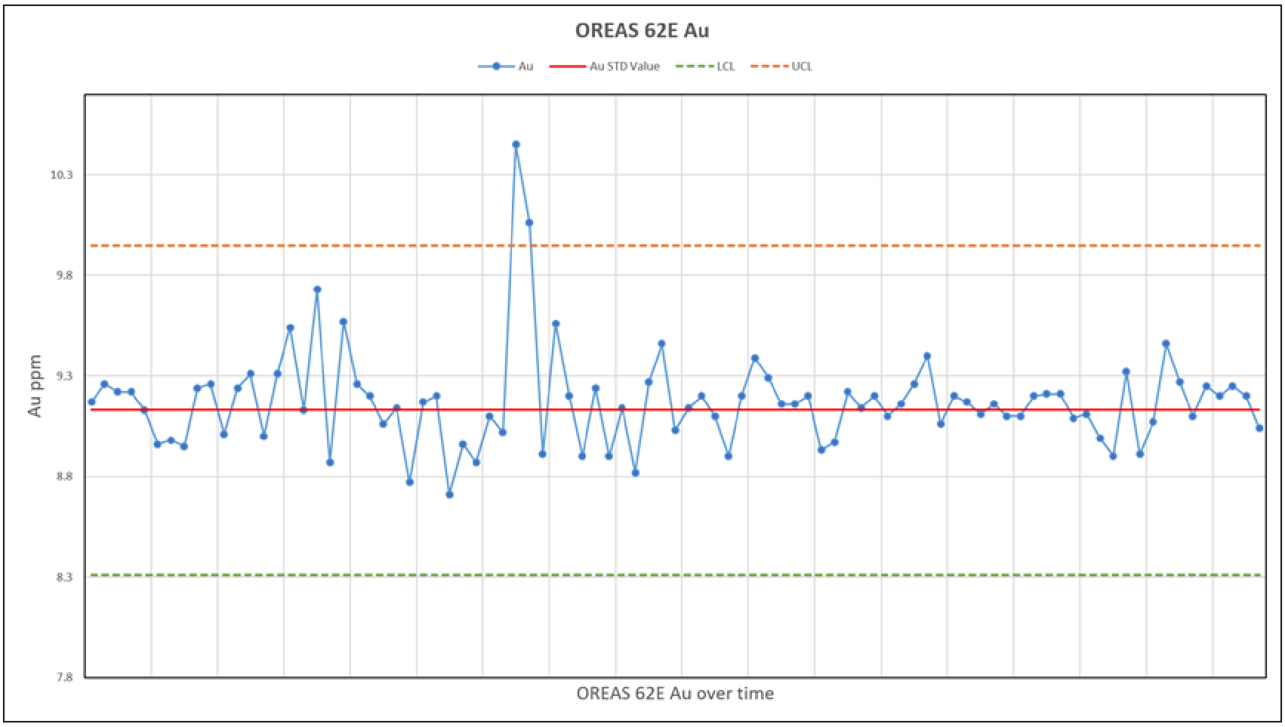


Figure 1.23: Gold assays for standard OREAS 62E over time at SGS

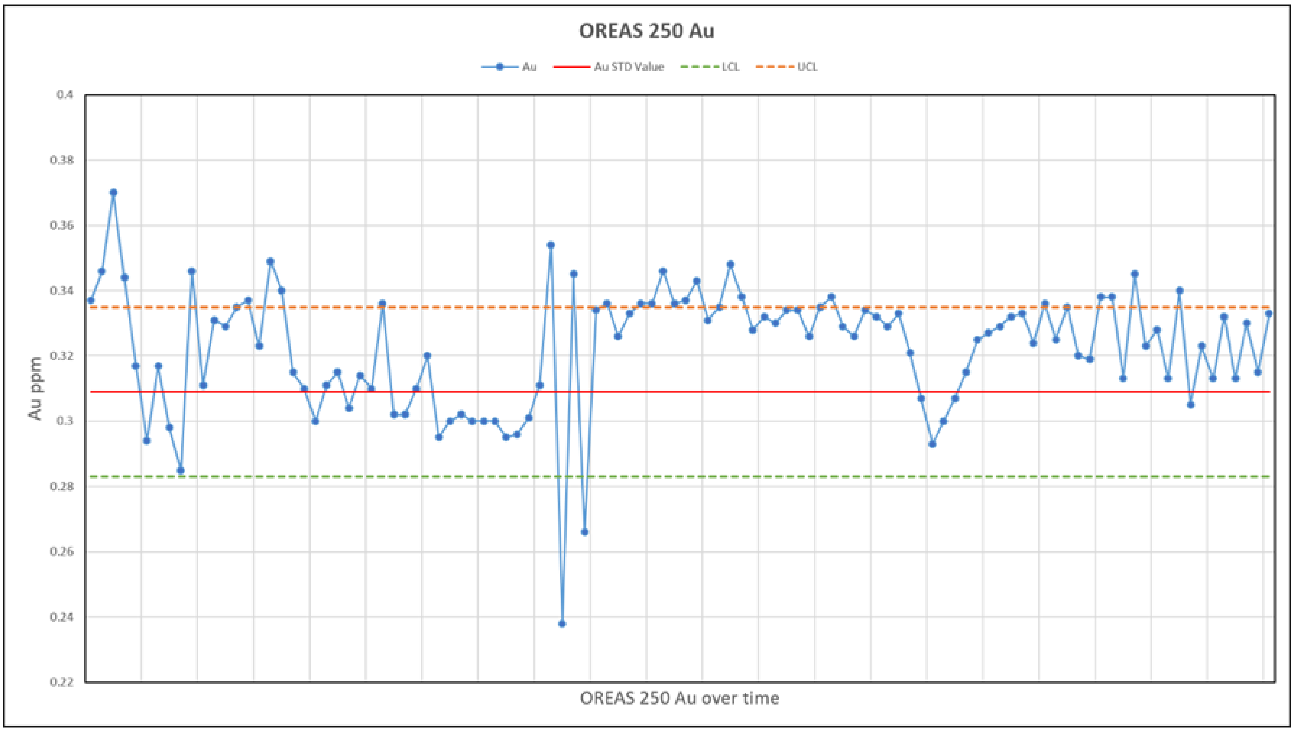


Figure 1.24: Gold assays for standard OREAS 250 over time at SGS

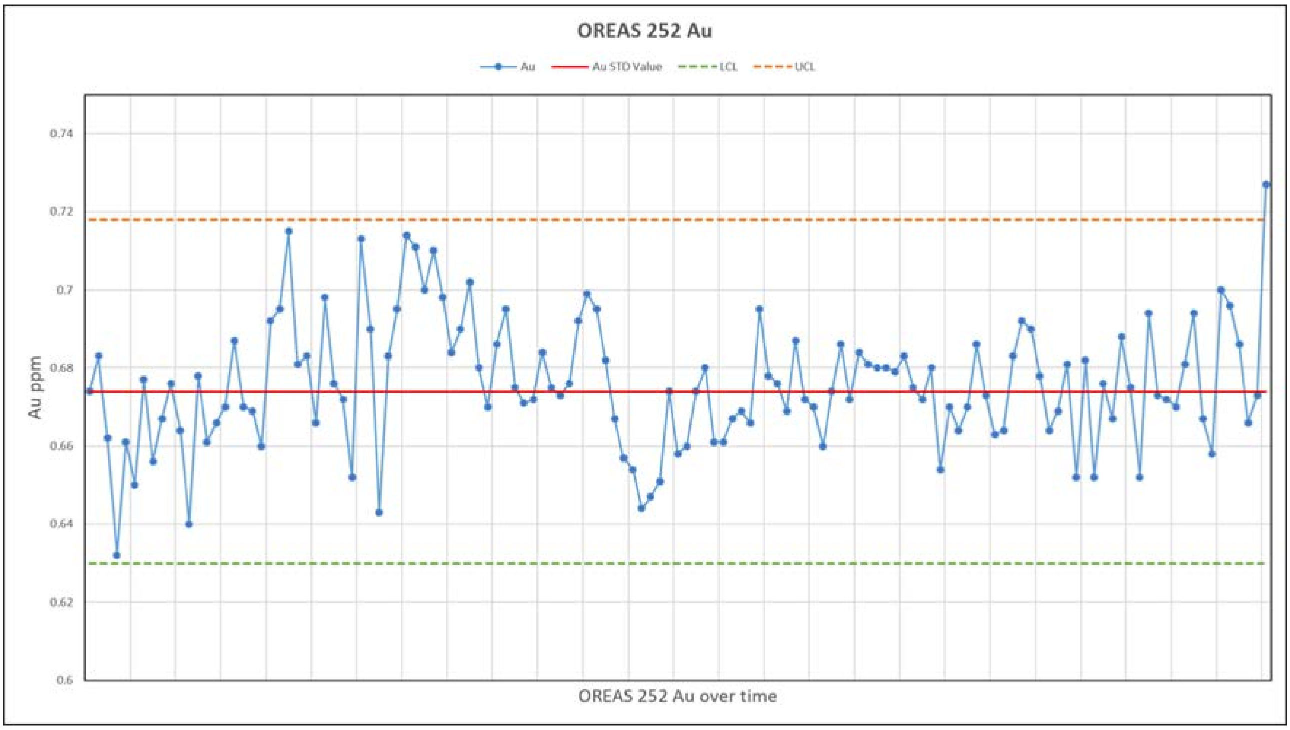


Figure 1.25: Gold assays for standard OREAS 252 over time at SGS

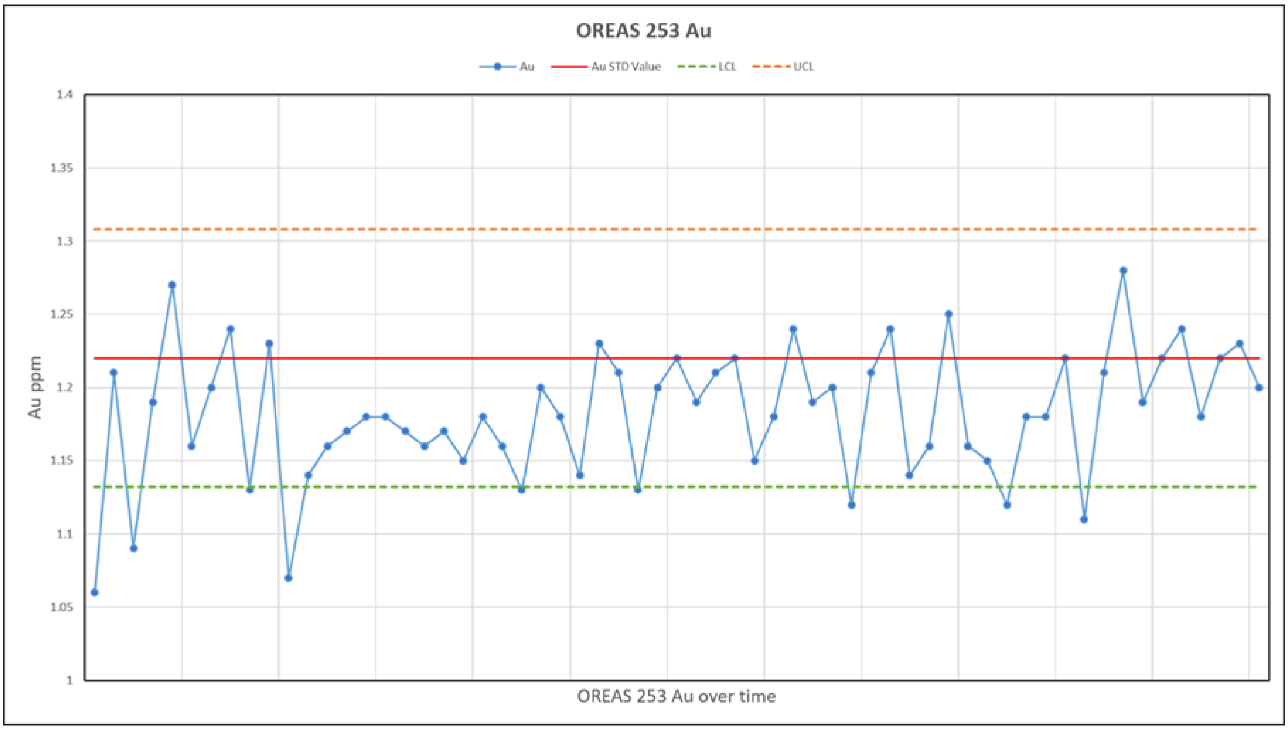


Figure 1.26: Gold assays for standard OREAS 253 over time at SGS

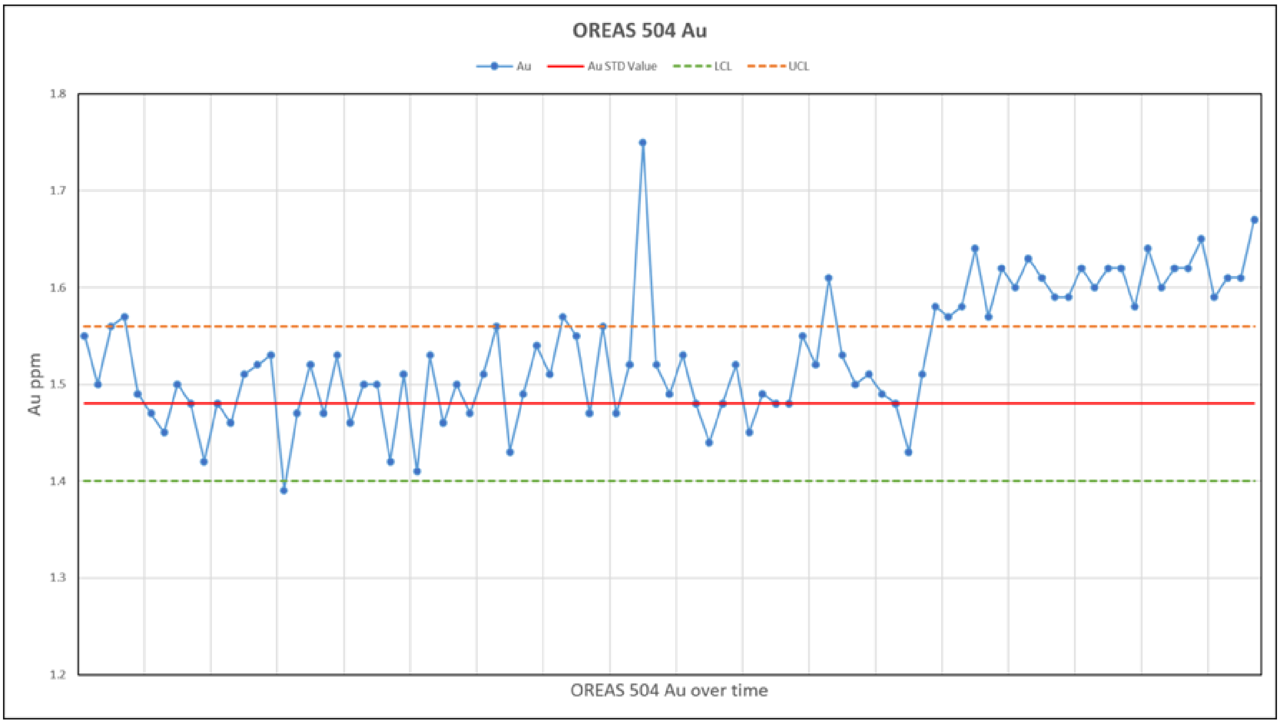


Figure 1.27: Gold assays for standard OREAS 504 over time at SGS

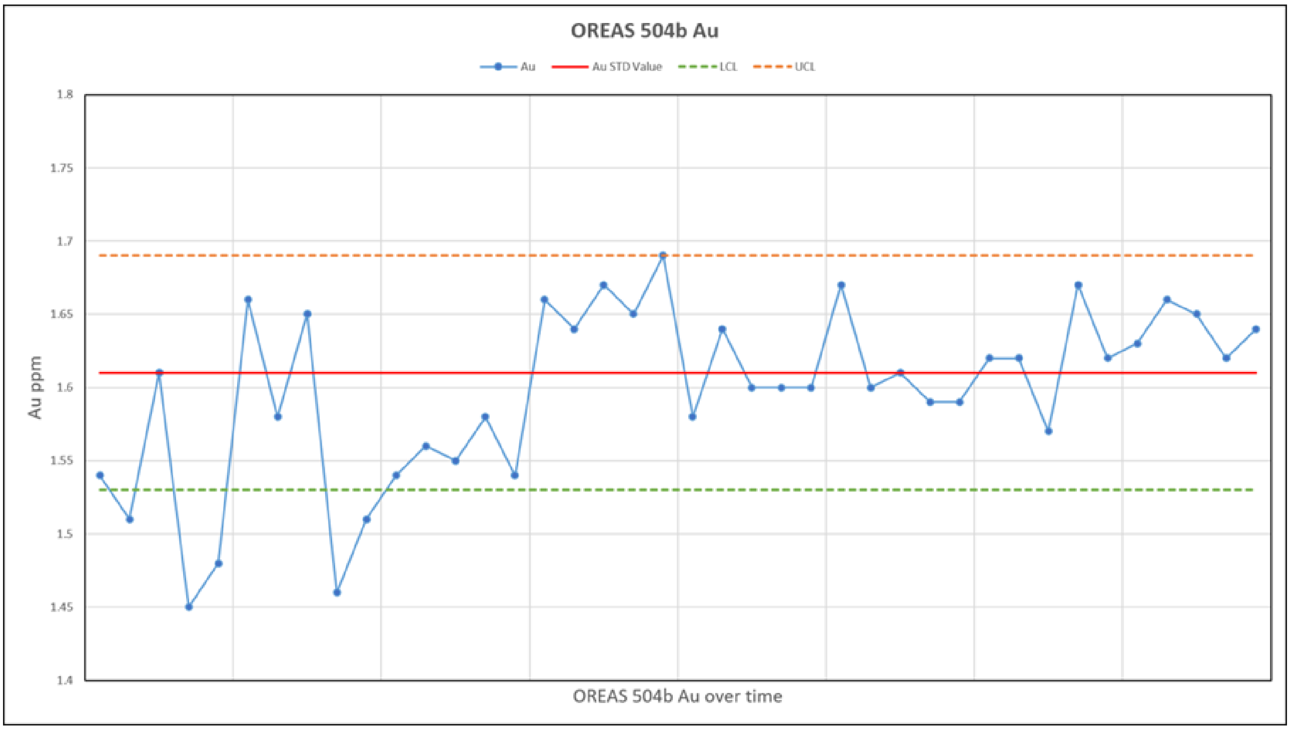


Figure 1.28: Gold assays for standard OREAS 504b over time at SGS

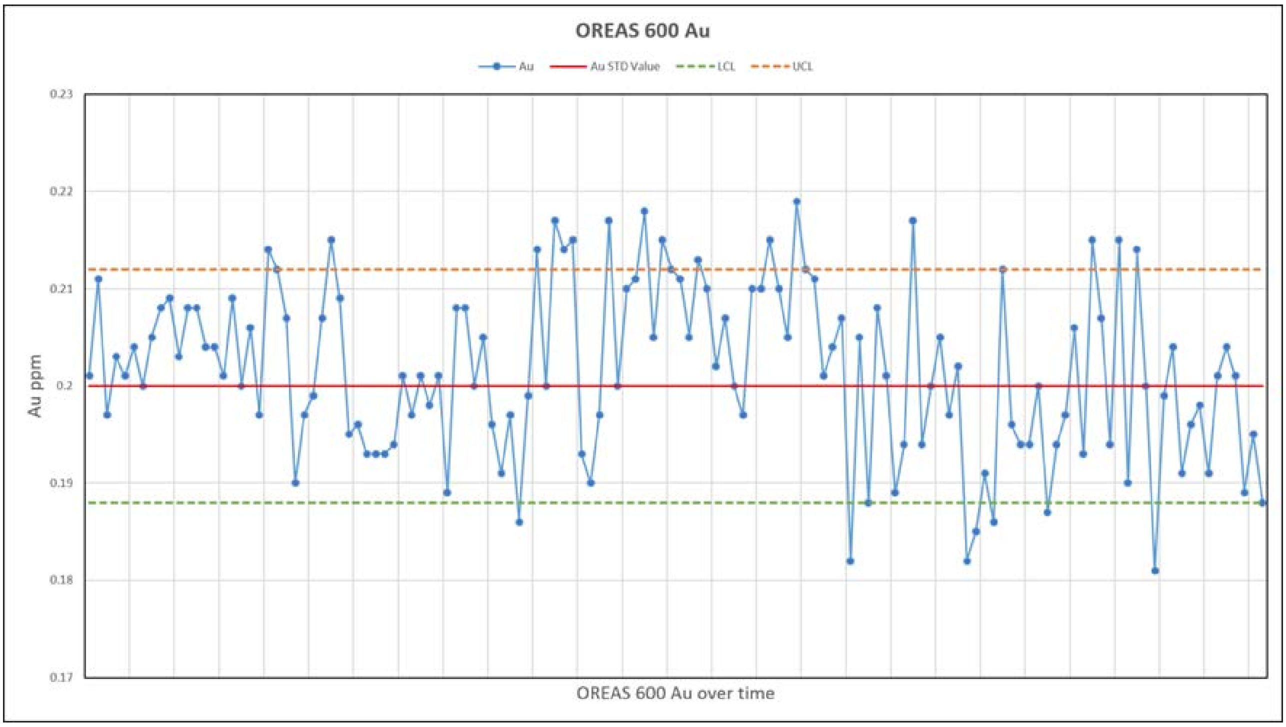


Figure 1.29: Gold assays for standard OREAS 600 over time at SGS

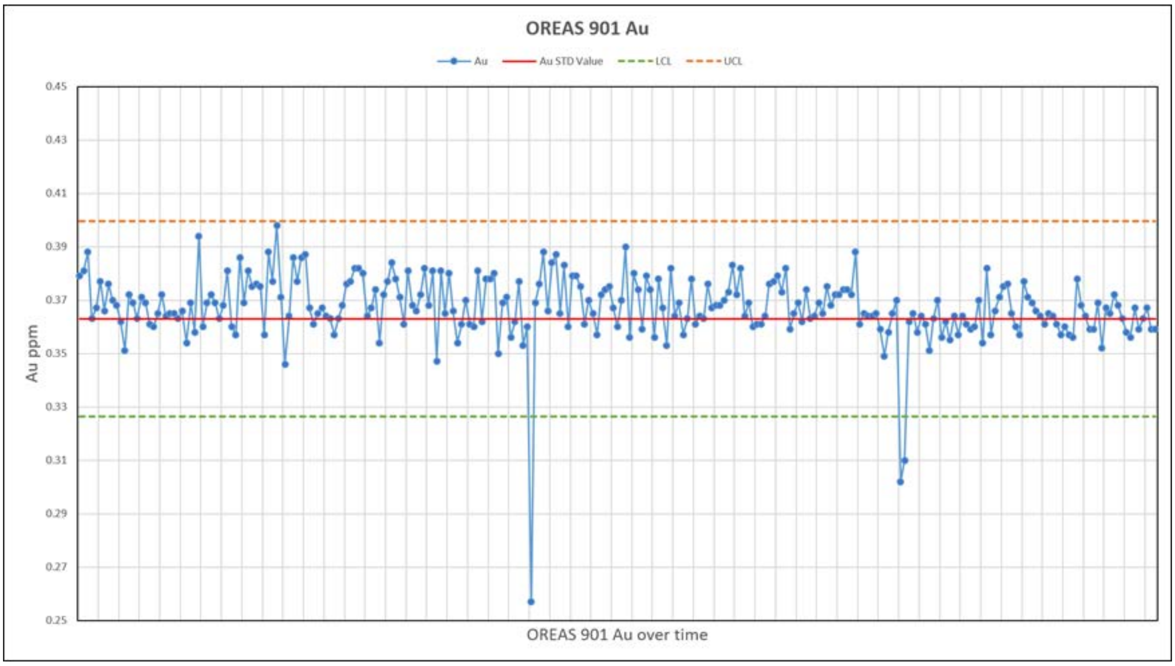


Figure 1.30: Gold assays for standard OREAS 901 over time at SGS

Plots of all standards together for gold, silver and copper are shown in Figure 1.31 to Figure 1.33. The gold plot over time shows some cyclic acceptable variation around the mean for most of the graph except for the period in 2016 where a period of standards varied above the mean. This is due to the issues with OREAS 504 discussed above. Overall there appears to be a slight positive bias to the gold results, however inside the acceptance limits.

The silver plot contains lower number of samples as not all of the standards are certified, and shows more variation above and below the expected mean. The variation was attributed to the detection limits of SGS Ankara for silver (2 ppm lower detection limit and 1 ppm precision). There is an overall slight positive bias to the silver results. The copper results look reasonable with a single outlier removed and most results within 2 SD and no identified bias.

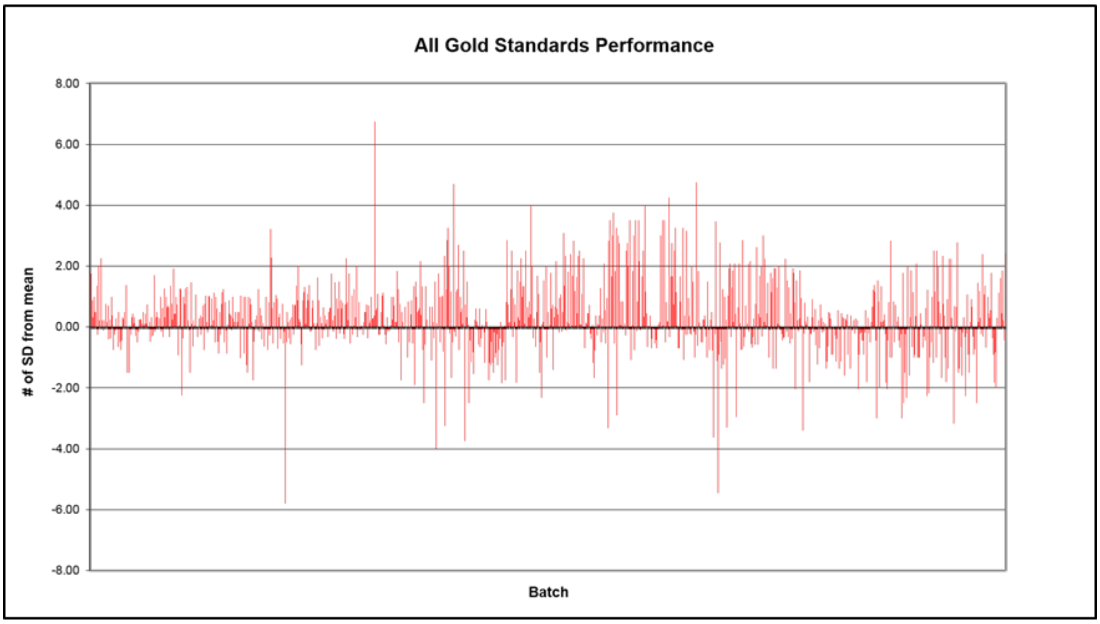


Figure 1.31: Gold assays for all standards together over time at SGS

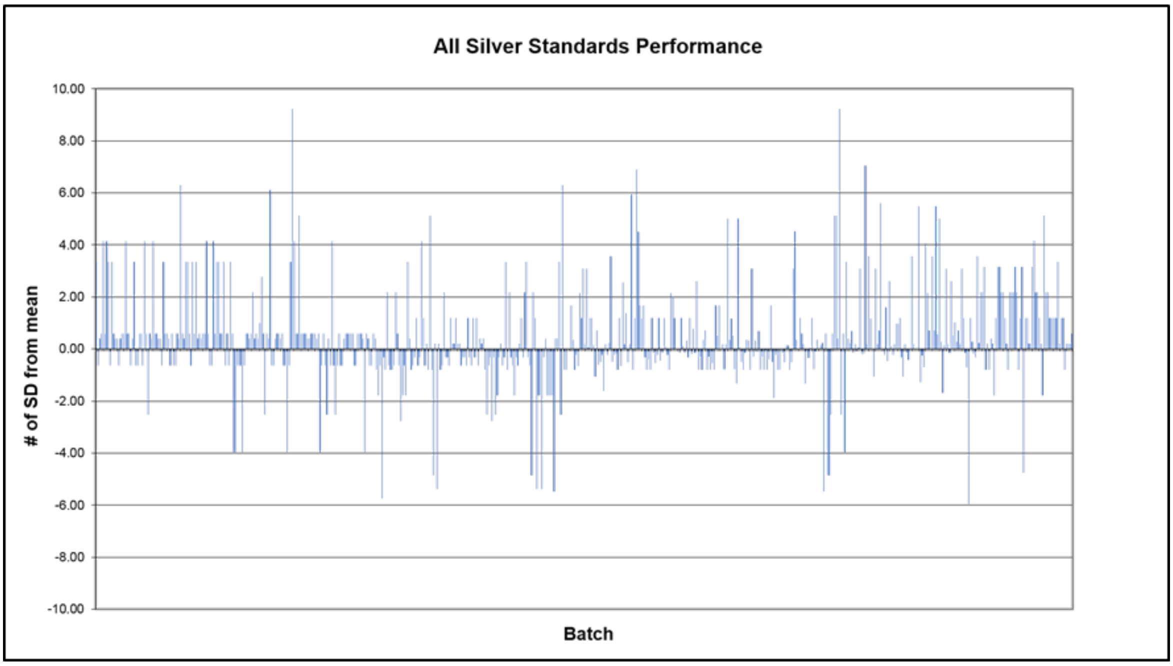


Figure 1.32: Silver assays for all standards together over time at SGS

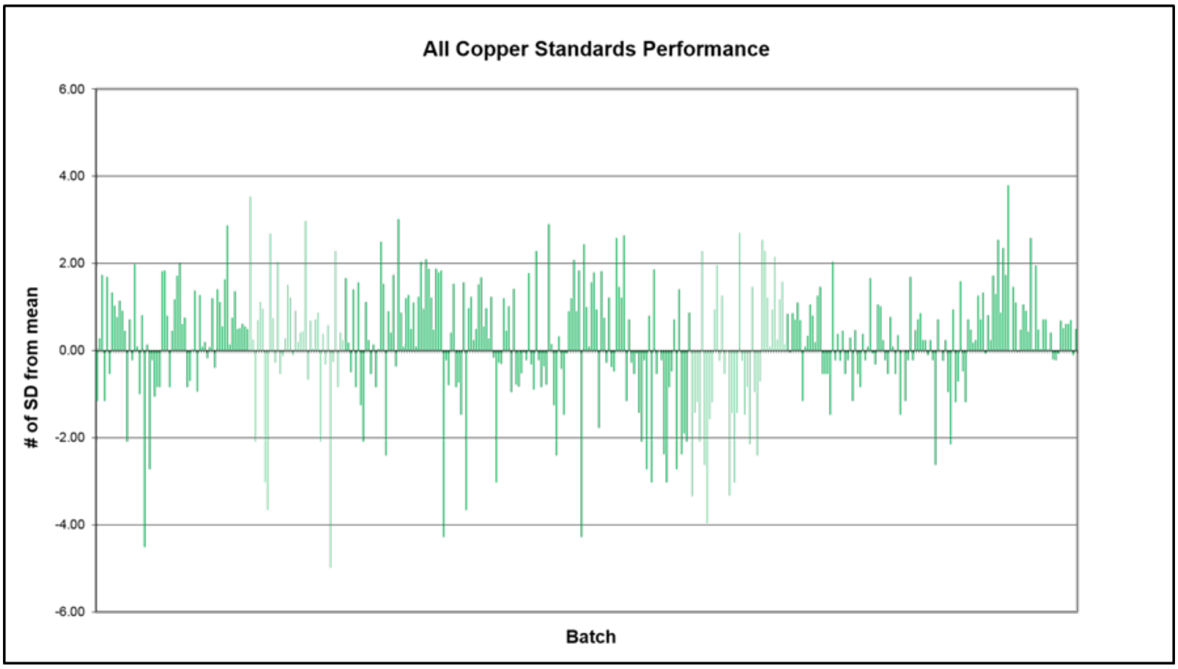


Figure 1.33: Copper assays for all standards together over time at SGS. One outlier (16.7 SD from mean) was removed from the dataset

1.15.2 Blanks

Blank samples were inserted into the sample preparation and analytical stream to help monitor laboratory accuracy. Blank samples were submitted both as coarse material and as pre-packaged certified pulps (same size and weight as the standards). The coarse blanks go through both the preparation and analytical streams of the laboratory and can detect issues in the preparation stage, whereas the certified pulp blanks only test the analytical stream in the same way as standards.

Protocol for submission of blanks states that samples are inserted at a rate of 1 in 50 (sample numbers ending in '50' and '00'). In a typical SGS batch of around 150 samples, Genesis, on average, submitted three blanks within the one laboratory batch. Figure 1.34 shows the plot of all blanks submitted to the SGS laboratories over time. The left side of the plot shows the coarse blank material sourced locally and submitted as 2-3 kg samples. The centre represents the certified pulp blank material used since mid-2015. The expected result shows that the certified blanks have better results, as samples only proceed through the analytical stream at the laboratory whereas the coarse blanks go through the preparation and analytical stream. The pre-2015 coarse blanks returned some anomalous gold values, however it was unclear whether the material was truly barren or there was an issue at the laboratory. The source site was re-checked and minor veins with anomalous gold were found. Since July 2015, certified pulp blanks were used in place of the coarse blanks. Drilling in 2017 used coarse blank marble material from the south of Macedonia (submitted with core samples) and blank andesite from an RC hole west of Plavica (submitted with RC samples).

From the 602 local coarse blanks, 113 returned above the detection limit results. From the 424 certified blanks, 23 returned above detection limit results.

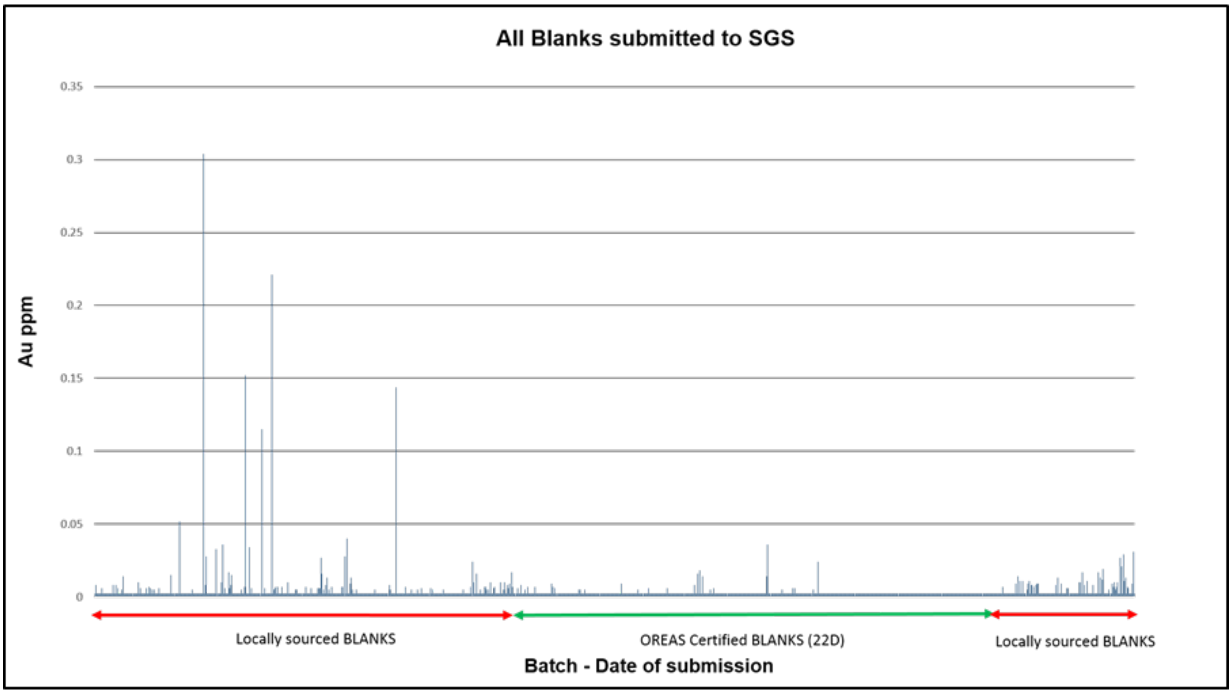


Figure 1.34: Blank results over time at SGS. Red line indicates the locally sourced coarse blank and green line the certified OREAS pulp blank

1.15.3 Duplicates

Genesis submitted field duplicates to test the geological variability, the onsite sampling techniques and monitor the performance of the laboratory. The assay data has been split to show the RC duplicates and the drill core duplicates separately. As the RC samples are essentially crushed / partially pulverised material that is passed through a splitter, the sample is considered more homogeneous and therefore duplicate sampling should show better correlation. Figure 1.35 shows the RC field duplicate data, and Figure 1.36 and Table 1.7 show the relative paired difference plot and statistics. The core duplicates are quarter core samples which may show some geological variability (i.e. veins along core axis, irregular banding, etc.) and therefore not correlate as well as crushed samples. Figure 1.37 shows the core field duplicate data, and Figure 1.38 and Table 1.8 the relative paired difference plot and statistics. The results of the two quarter core samples are combined and averaged in the assay database to avoid the bias and to ensure that all core assays are half core.

The laboratory duplicates tested the sample preparation and analytical stream of the laboratory and were taken after the samples are pulverised in the LM5 machines.

The laboratory duplicates should correlate better than field duplicates as the geological variability is removed by the preparation process. Figure 1.39 plots the SGS laboratory duplicate data, and Figure 1.40 and Table 1.9 show the relative paired difference plot and statistics.

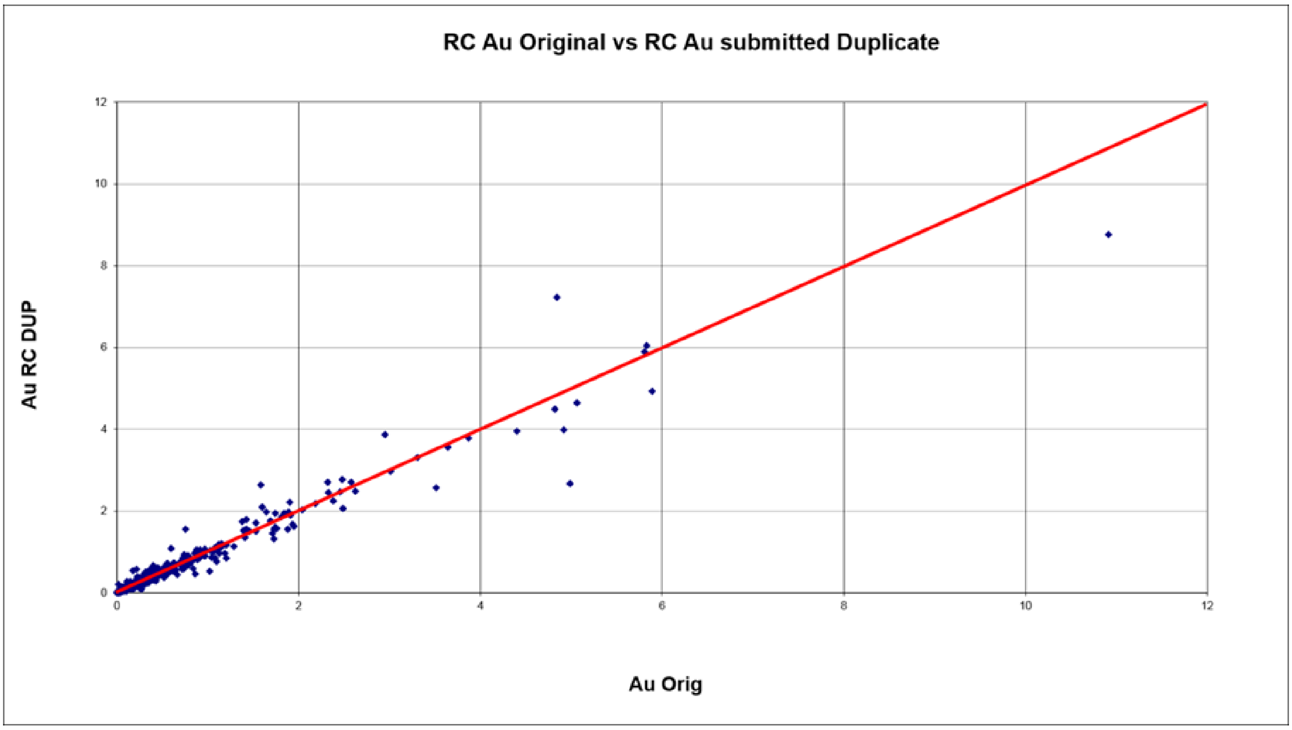


Figure 1.35: Genesis RC field duplicate data versus original gold assay

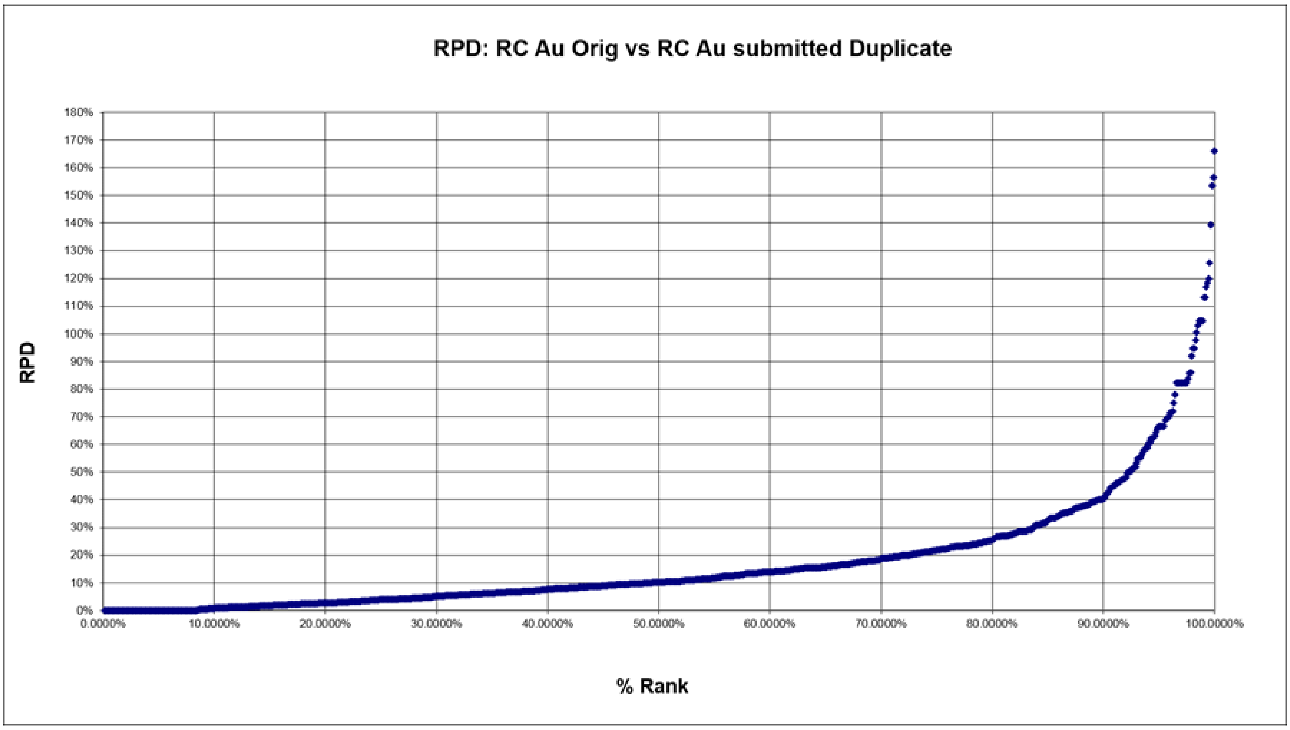


Figure 1.36: RPD plot for Genesis RC field duplicate samples

Table 1.7: Genesis RC Field Duplicate RPD Statistics

Data Selected	928	928
Data Available Mean >1.0		76
Mean	0.41	0.41
Maximum	53.00	58.70
Minimum	0.0025	0.0025
Bias All Data	Bias All Data	-1.46%
Mean if Mean >2.0	5.73	5.76
Bias Mean >2.0	Bias Mean >2.0	-0.52%
Mean if Mean between 1.0 and 2.0	1.41	1.40
Bias Mean between 1.0 and 2.0	Bias Mean >1.0<2.0	0.59%
Mean if Mean <1.0	0.18	0.19
Bias Mean <1.0	Bias Mean <1	-3.35%
	Percent of samples < 15% RPD	63%
	Percent of samples < 10% RPD	49%
90 Percent of the samples are within	40%	RPD

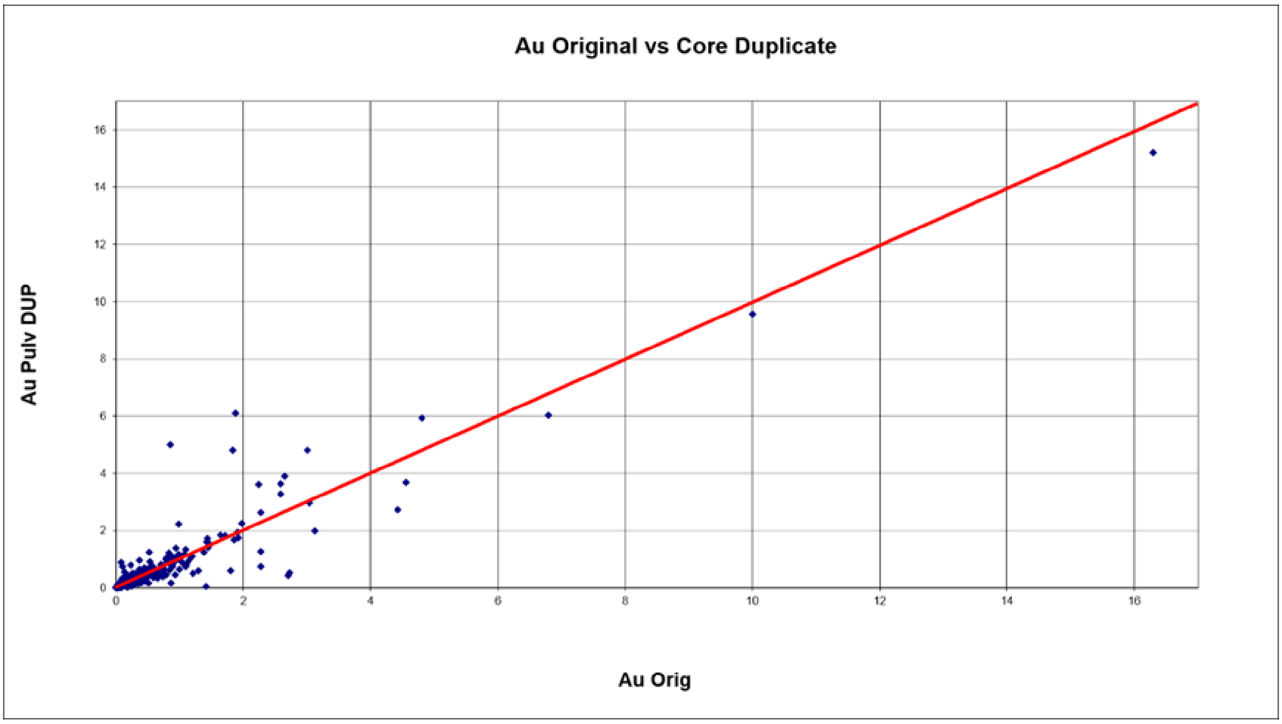


Figure 1.37: Genesis drill core field duplicate versus original gold assay samples

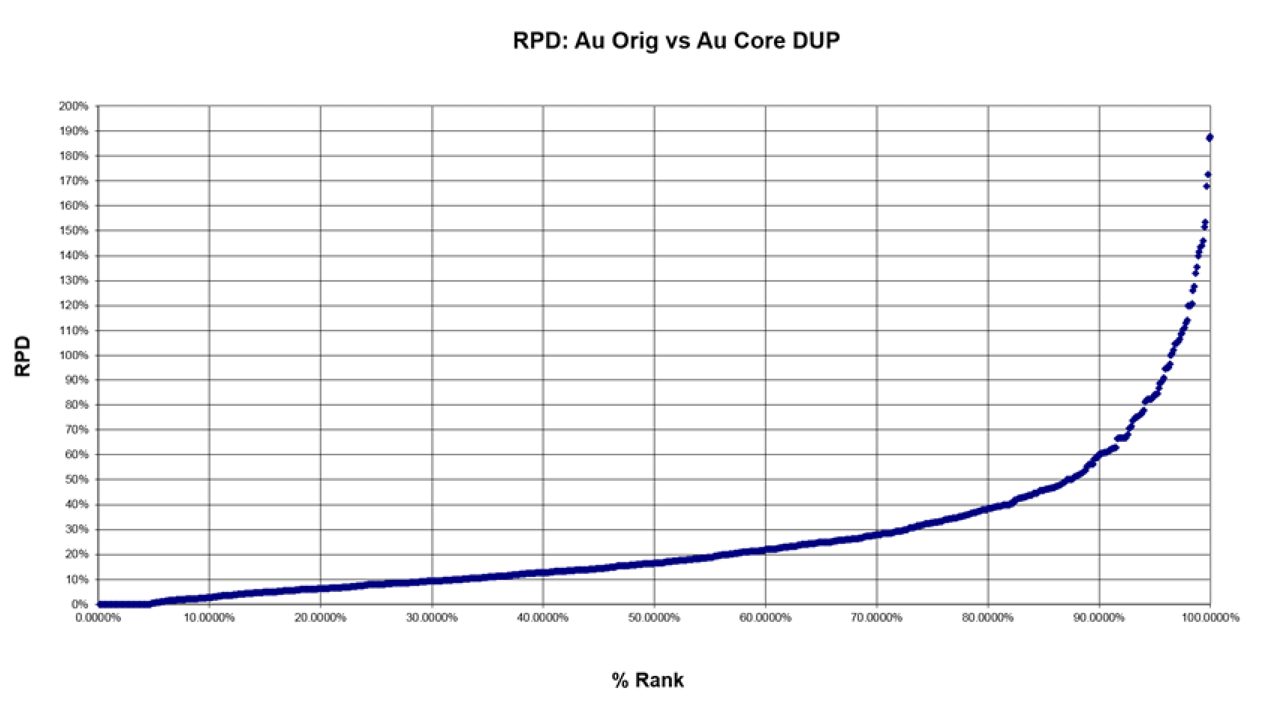


Figure 1.38: RPD plot for Genesis drill core field duplicate samples

Table 1.8: Genesis Drill Core Field Duplicate RPD Statistics

Data Selected	906	906
Data Available Mean >1.0		46
Mean	0.28	0.29
Maximum	16.30	15.20
Minimum	0.0025	0.0025
Bias All Data	Bias All Data	-3.19%
Mean if Mean >2.0	4.36	4.05
Bias Mean >2.0	Bias Mean >2.0	6.93%
Mean if Mean between 1.0 and 2.0	1.41	1.51
Bias Mean between 1.0 and 2.0	Bias Mean >1.0<2.0	-6.94%
Mean if Mean <1.0	0.16	0.17
Bias Mean <1.0	Bias Mean <1	-7.85%
	Percent of samples < 15% RPD	46%
	Percent of samples < 10% RPD	32%
90 Percent of the samples are within	60%	RPD

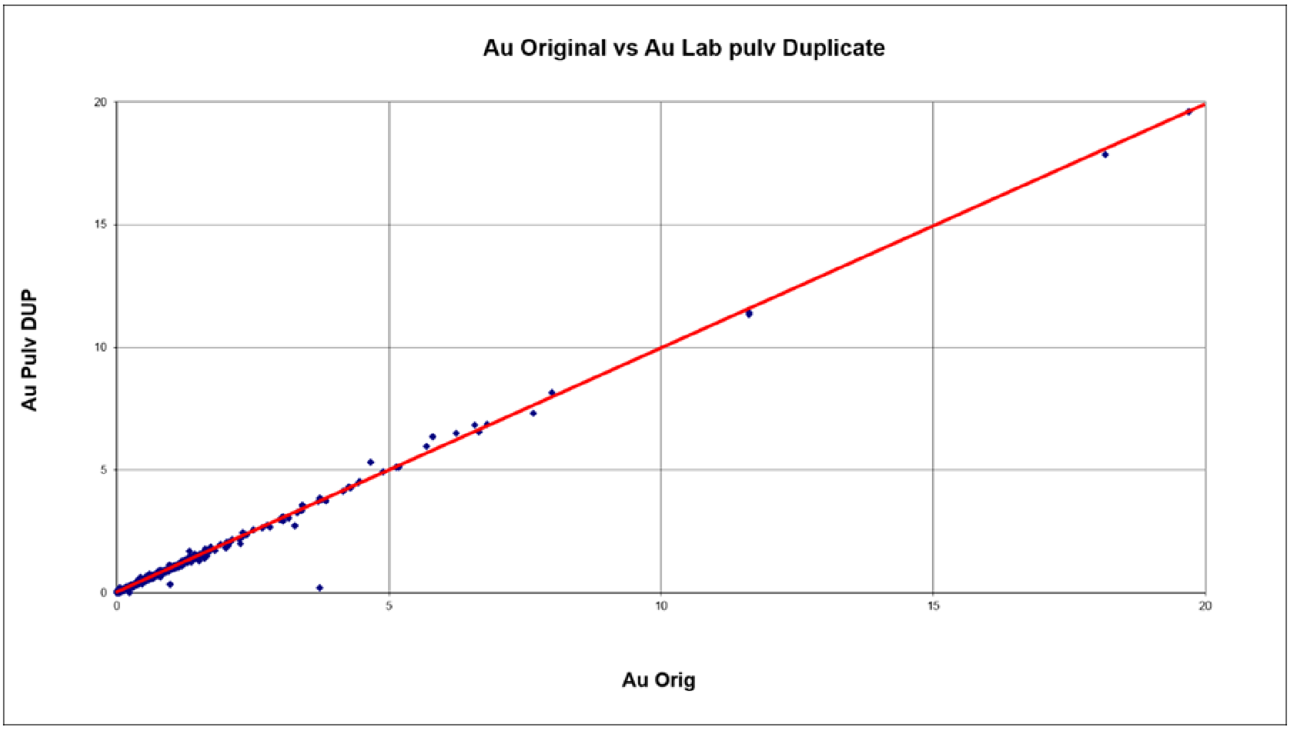


Figure 1.39: SGS laboratory pulverised duplicate data versus the original gold assay sample

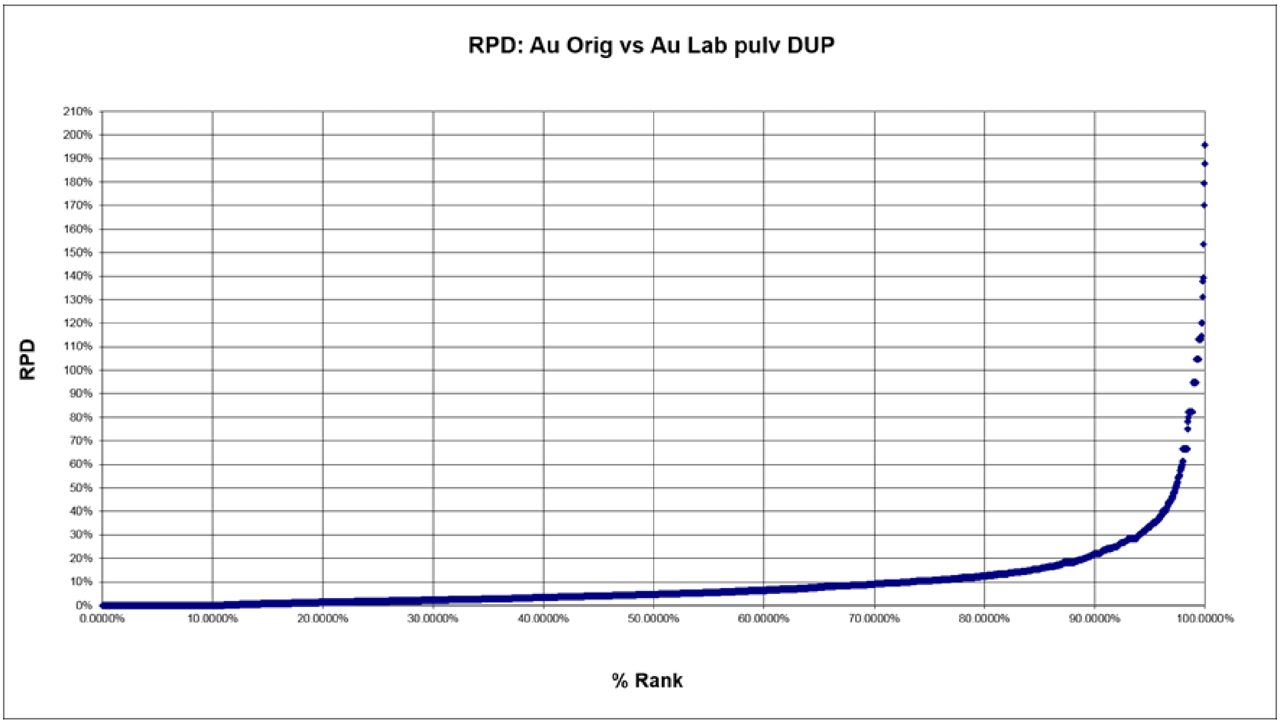


Figure 1.40: RPD plot for SGS pulp duplicate samples

Table 1.9: SGS Laboratory Duplicate RPD Statistics

Data Selected	3021	3021
Data Available Mean >1.0		158
Mean	0.29	0.28
Maximum	19.70	19.60
Minimum	0.0025	0.0025
Bias All Data	Bias All Data	0.47%
Mean if Mean >2.0	4.54	4.48
Bias Mean >2.0	Bias Mean >2.0	1.37%
Mean if Mean between 1.0 and 2.0	1.32	1.32
Bias Mean between 1.0 and 2.0	Bias Mean >1.0<2.0	-0.35%
Mean if Mean <1.0	0.17	0.17
Bias Mean <1.0	Bias Mean <1	0.21%
	Percent of samples < 15% RPD	84%
	Percent of samples < 10% RPD	73%
90 Percent of the samples are within	22%	RPD

1.15.4 Twin Holes

Sixteen twin holes have been completed at the Plavica and Maricanski Rid areas. Ten are DD versus RC, four are DD versus DD and two RC versus RC. Comparison results are presented in Table 1.10 to Table 1.12 as gram metres (metres multiplied by gold grade). The broader assay intervals are considered to be a better comparison of the holes, rather than comparing grades metre by metre as the samples are located up to 7 metres apart due to deviation, etc. Figure 1.41 shows that overall gram metre data results correlate reasonably well. Plots of twins are presented in Figure 1.42 and Figure 1.43 that show the twins reasonably repeat the original hole.

Table 1.10: Twin Holes Comparison – DD versus RC

Drill Holes	DD Au Gram Metres	RC Au Gram Metres
PNDD006 vs PNRC014	9.4	5.9
PNDD035 vs PNRC001A	68.0	78.7
PNDD061 vs PNRC072	8.3	21.6
PNDD032 vs PNRC077A	6.0	6.9
PNDD004 vs PNRC098	93.6	71.3
PNDD062 vs PNRC099	61.8	51.0
PNDD002 vs PNRC100	60.0	66.2
PNDD0016 vs PNRC101	13.4	15.2
PNDD087 vs PNRC106	6.8	7.9
MRDD027 vs PNRC070	15.6	13.6

Table 1.11: Twin Holes Comparison – DD versus DD

Drill Holes	DD Au Gram Metres	RC Au Gram Metres
PNDD003 vs PNDD003A	14.4	24.6
MRDD014 vs MRDD019	221.2	195.8
MRDD041 vs MRDD041A	31.6	26.6
MRDD051 vs MRDD051A	21.5	26.0

Table 1.12: Twin Holes Comparison – RC versus RC

Drill Holes	DD Au Gram Metres	RC Au Gram Metres
MRRC011 vs MRRC011A	21.9	14.9
MRRC043 vs MRRC043A	56.7	46.7

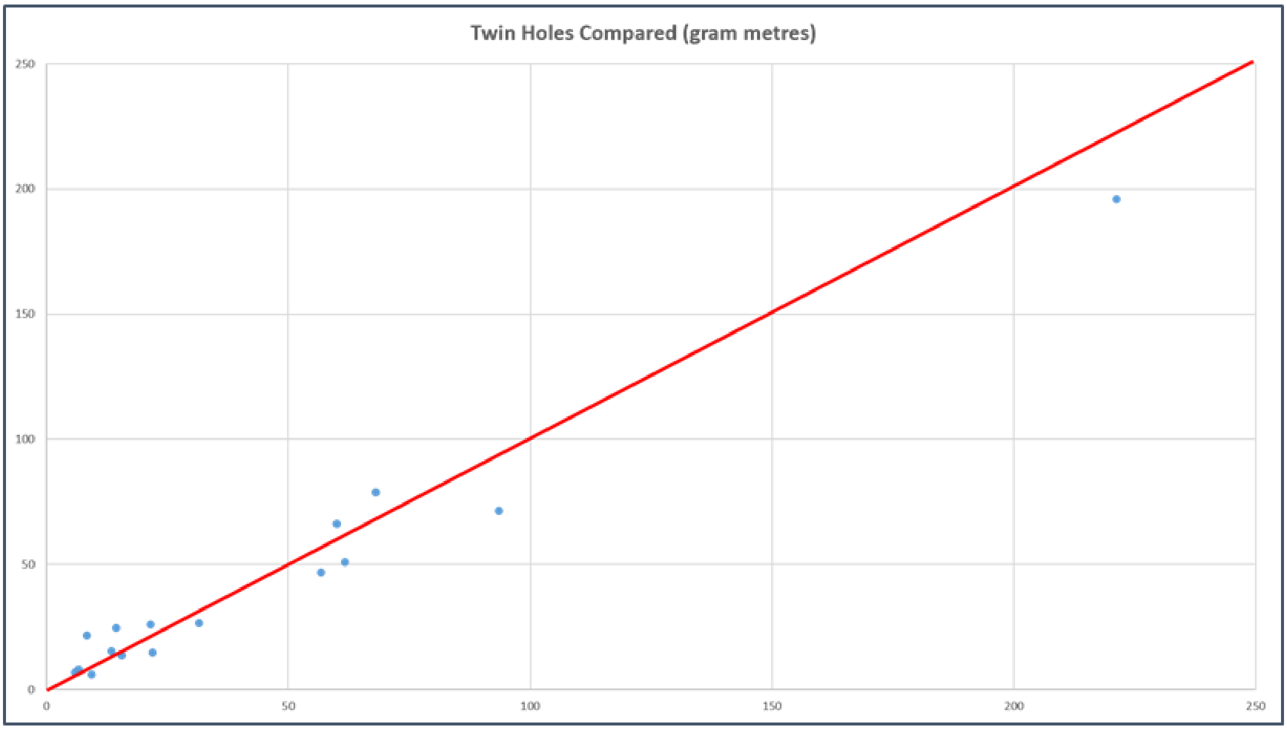


Figure 1.41: Twin holes Au gram metres comparison

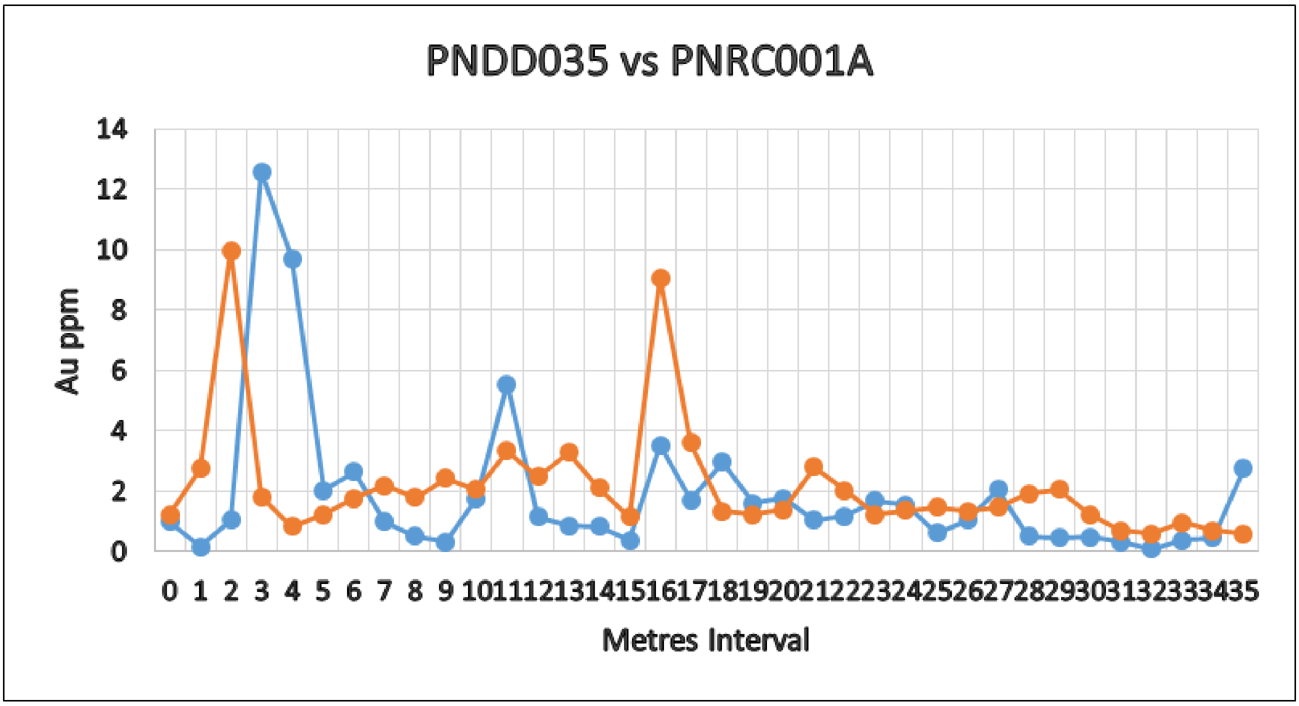


Figure 1.42: Twin holes comparison (DD hole PNDD035 versus RC hole PNRC001A)

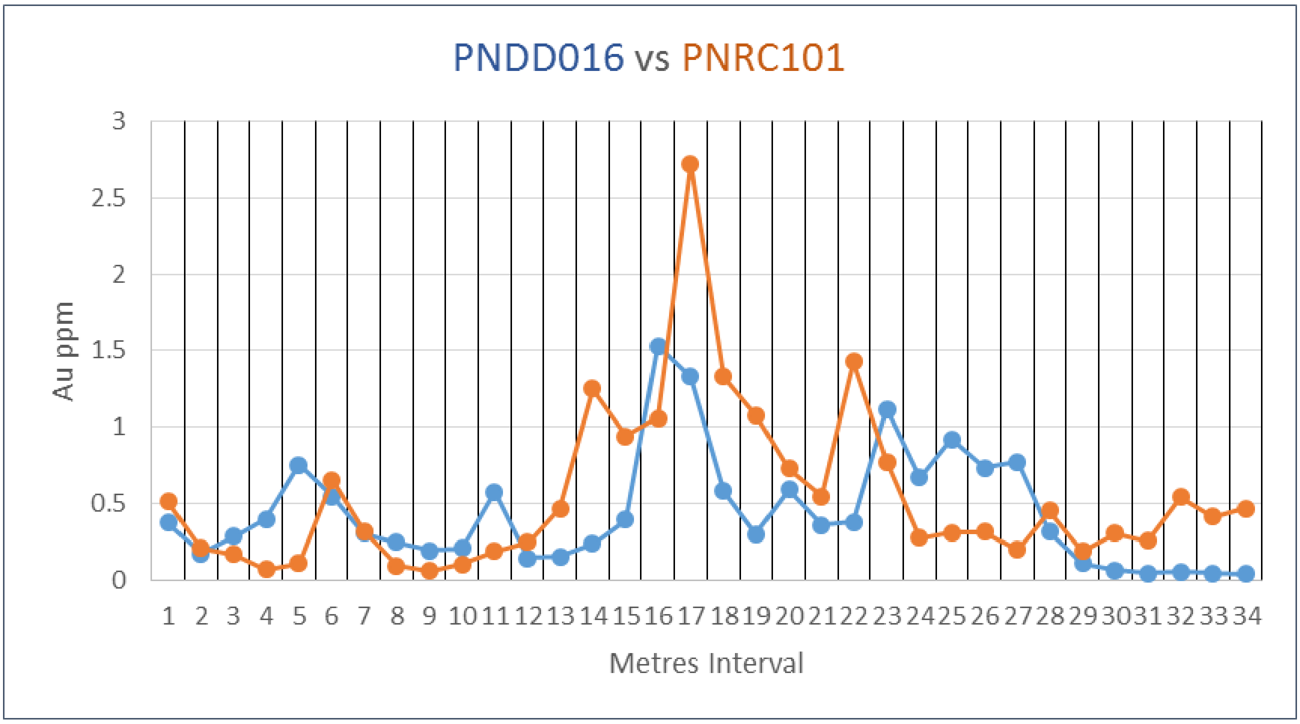


Figure 1.43: Twin holes comparison (DD hole PNDD016 versus RC borehole PNRC101)

1.15.5 Blind Re-submission

Blind re-submissions were used to monitor analytical precision and homogeneity of the pulverised sample, considered to better test the laboratory compared to standards, normally easily identifiable in the laboratory.

Four hundred and eighty pulp samples were re-submitted to the SGS laboratories and analysed with the same gold and multi-element techniques used for the original assays. Samples were re-submitted to the same laboratory as well as retrieved and sent to the SGS sister laboratory. The samples were a spread of RC and DD drill holes from both Plavica and Maricanski Rid areas, and contained oxide, partially oxide and primary material.

The number of samples submitted to each laboratory are:

- 246 pulp samples obtained from SGS Ankara and re-submitted to SGS Ankara laboratory;
- 120 pulp samples obtained from SGS Bor and re-submitted to SGS Ankara laboratory; and
- 114 pulp samples obtained from SGS Ankara and resubmitted to SGS Bor laboratory.

Figure 1.44 shows the gold assay values for the original vs the re-assays. The RPD statistics and plot show there is some small average bias with the original assays returning slightly higher values than the re-assays; particularly for samples greater than 2 ppm Au. For pulp re-assays it is suggested that 90% of the paired population should have less than 20% relative paired difference. Table 1.13 and Figure 1.45 show that 85% of the check samples fall within 20% RPD.

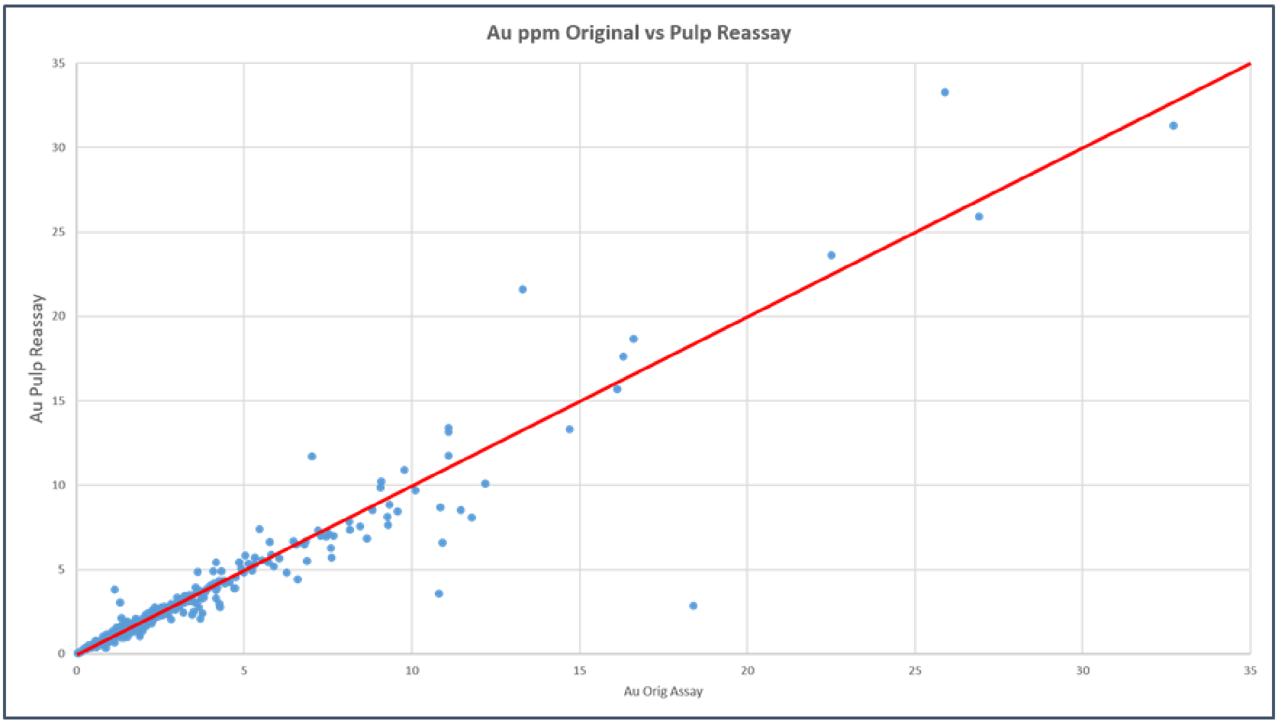


Figure 1.44: Au pulp blind re-submission to SGS laboratories

Table 1.13: RPD Statistics for Pulp Blind Re-submission to SGS Laboratories

Data Selected	480	480
Data Available Mean >1.0		170
Mean	2.61	2.52
Maximum	32.71	33.27
Minimum	0.04	0.04
Bias All Data	Bias All Data	3.39%
Mean if Mean >2.0	5.43	5.19
Bias Mean >2.0	Bias Mean >2.0	4.26%
Mean if Mean between 1.0 and 2.0	1.40	1.39
Bias Mean between 1.0 and 2.0	Bias Mean >1.0<2.0	0.44%
Mean if Mean <1.0	0.50	0.50
Bias Mean <1.0	Bias Mean <1.0	0.46%
	Percent of samples < 15% RPD	78%
	Percent of samples < 10% RPD	63%
90 Percent of the samples are within	25%	RPD

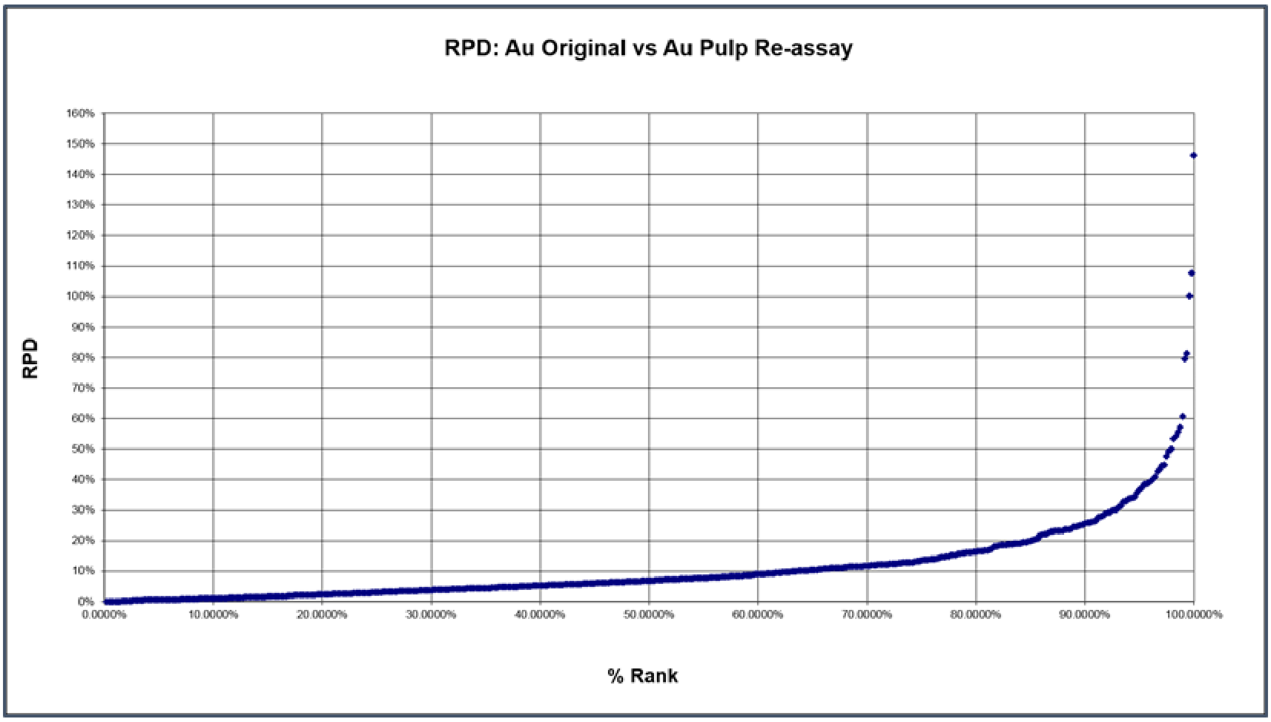


Figure 1.45: Au blind pulp re-submission RPD plot

1.15.6 Pulp Screening / Size Testing

Pulp size testing ensures consistency in sample preparation. Samples are considered acceptable if above 90% passed the 75 µm screen. Only SGS Bor data from July 2016 onwards was available for validation. The internal SGS pulp size testing shows that only 0.4% of the values fell outside the limits of acceptance (Figure 1.46). Genesis has not done any independent pulp size testing.

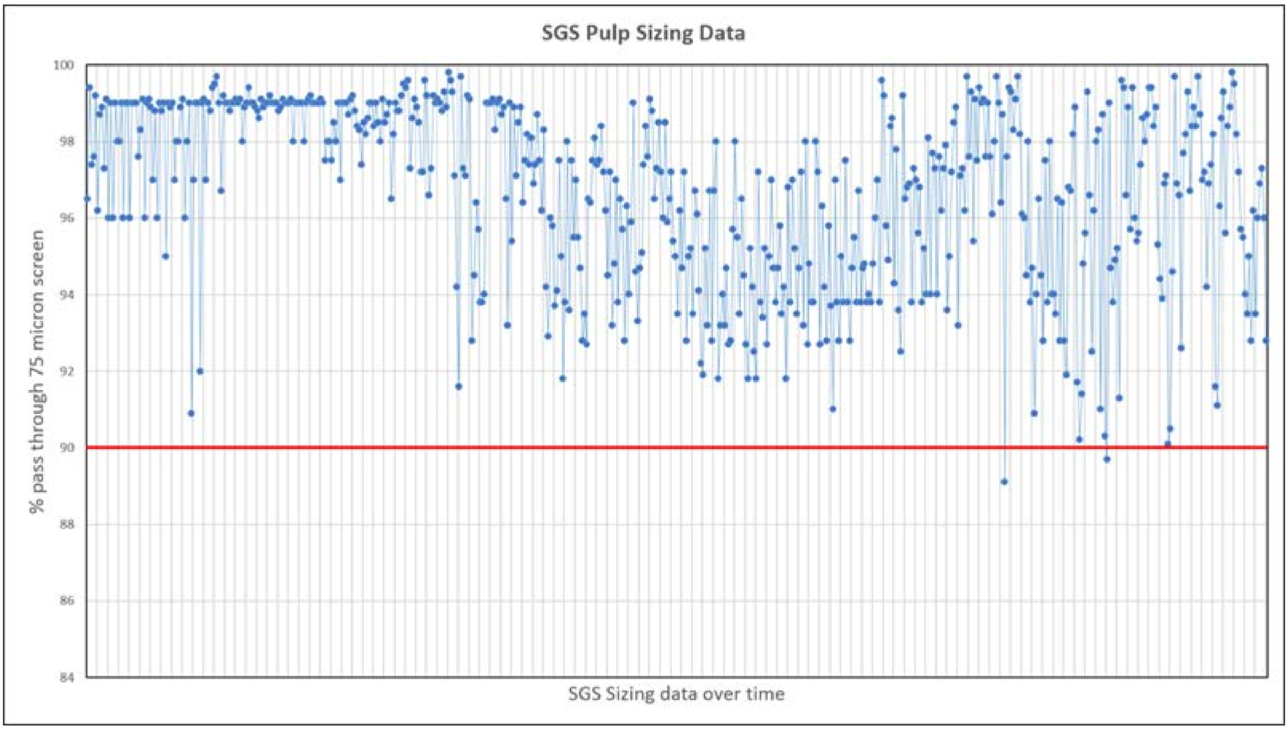


Figure 1.46: SGS Bor size pulp testing. Red line represents the 90% passing mark

1.15.7 Golder Opinion

Whilst there are minor discrepancies associated with certain aspects of the QA/QC programme, they are well within acceptable limits and do not show any particular trends or patterns that would suggest any systematic or procedural issues. The QA/QC programme conducted by Genesis Resources was appropriate and meets industry standards.

In Golder's opinion, the sample preparation and security procedures are acceptable and the data can be relied upon for resource estimation.

1.16 Data Verification

The tasks completed to verify the data used in the mineral resource estimate included a site visit to check data collection, description and storage. An office based data verification was also completed to check data validity and consistency.

1.16.1 Site visit

A site visit was completed by Barry Balding, Senior Geologist (Golder Associates) on 25th and 26th April 2017. Mr Balding was accompanied by:

- James Patterson – Exploration Manager (Genesis Resources); and
- Aaron McLeod – Chief Geologist (Genesis Resources).

The technical tasks completed as part of the data verification included borehole collar location review, geological outcrops, cross-check of geology descriptions and mineralisation assay results against drill core, check of drilling and sampling procedures and adequacy of facilities and equipment.

1.16.2 Borehole Locations

Geology outcrops (Figure 1.47) and drilling locations were inspected during the site visit. Borehole collars are marked with concrete markers (Figure 1.48).

Figure 1.47: Typical outcrop at Plavica

Figure 1.48: Borehole collars marked with concrete markers

1.16.3 Core Logging and Sampling Facilities

Genesis core logging and sampling facilities are located in Probistip, ca. 8.5 km from the Project site. The facilities are located in a secured property and the core shed building (Figure 1.49) is adequate. Sample cutting and preparation are completed with appropriate equipment and benches.

Figure 1.49: Genesis core logging and sampling facilities at Probistip

1.17 Data Verification

1.17.1 Assay Certificates

Genesis provided Golder with assay certificates for all of the assays contained within the database.

Golder checked a proportion of the assay certificates against the values contained within the database. The certificates were selected to provide examples from RC and DD drilling.

1.17.2 Database Validation

The drill hole database was provided to Golder in csv (comma separated) files format. On importation of all the different files into Vulcan, Golder validated the database for consistency. The few inconsistencies identified were discussed with Genesis and corrective actions were taken. The database used in the mineral resource estimate is considered valid and free of errors.

1.18 Mineral Resource Estimate

The mineral resource estimate for the Plavica Gold Project has an effective date of 8th October 2017. The last data included in the estimate was received by Golder on 27th June 2017. The resources have been estimated by Mr Jorge Paulo Peres, MSc, MAusIMM (CP), under the supervison of Richard Gaze, BEng(Hons), MSc MAusIMM (CP).

Statistical and grade continuity analyses were completed to describe the mineralisation and used to develop grade interpolation for the deposit.

The wireframe model was built to isolate the major lithologies and structures and support the domain definition for grade interpolation. Grade estimation was completed using Ordinary Kriging. Golder's estimate was limited to gold and other secondary elements silver, copper, arsenic and sulphur.

Genesis provided a topographic survey as a point file in CSV format, consisting of a Photogrammetry survey. The Mineral Resource classification scheme was developed in accordance with The JORC Code, 2012 Edition guidelines.

In order to demonstrate reasonable prospects for eventual economic extraction of the Mineral Resource, the resource model was optimised using the industry standard Whittle 4X to produce an economic resource open pit shell using an optimistic gold sale price of US$1,875 per troy ounce (i.e. roughly equivalent to 1.5 times current spot price). The economic pit shell was used to constrain the reporting of the Mineral Resource estimate. The use of the economic pit shell utilising an elevated gold price is an industry-recognised method of demonstrating 'reasonable prospects' when ascertaining the eventual economic extraction criteria for determination of the Mineral Resource Estimate. Current project (non-inflated) mining and processing costs are applied to the Whittle optimisation using the aforementioned optimistic gold price. The resulting pit shell demonstrated that a cut-off grade of 0.4 Au ppm produces a positive cashflow scenario. Therefore, the Mineral Resource reporting is constrained to within this pit shell to satisfy economic considerations.

1.18.1 Mineral Resource Database

The mineral resource database comprises 503 boreholes for a total of 113,642 m of drilling. The database consists of collar, assay, survey, lithology, weathering, structures, geotechnical and density files. A summary of the borehole dataset is shown in Table 1.14.

Table 1.14: Summary of Borehole Database

Boreholes	Total
Number of drill holes	503
Metres drilled	113,642
Number of Au assays	78,873
Number of density samples	11,463
Number of lithology records	6,153
Number of weathering records	3,661

1.19 Geology Interpretation

The geology model included the interpretation of the lithology, structures and weathering profile. Genesis carried out the primary field interpretation and produced a local geology map and vertical schematic sections of all drilling sections. Examples are presented in Figure 1.50 to Figure 1.52.

Golder used the Genesis interpretations with minor modifications to improve the 3D fit to create a 3D digital geology model in Vulcan of the lithology, structures and weathering.

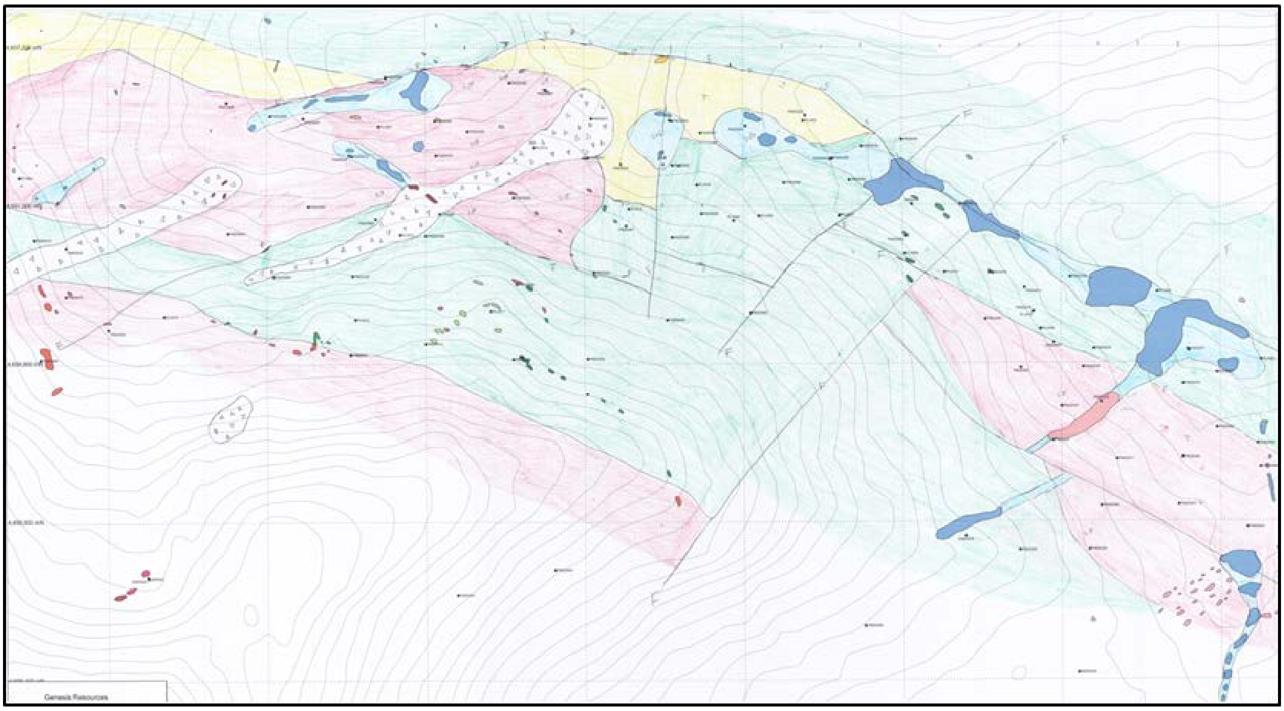


Figure 1.50: Geology and structural map of Plavica (Genesis)

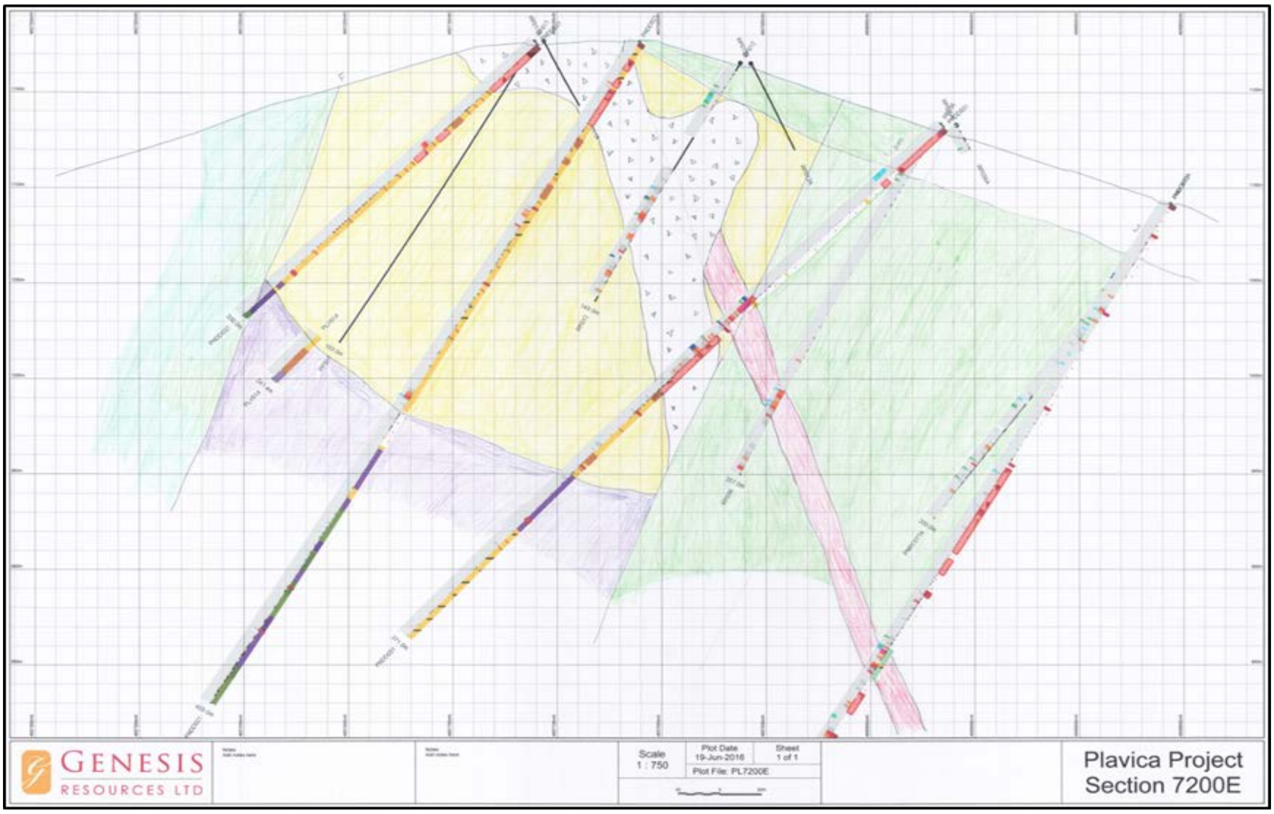


Figure 1.51: Plavica vertical interpretation section 7597200E

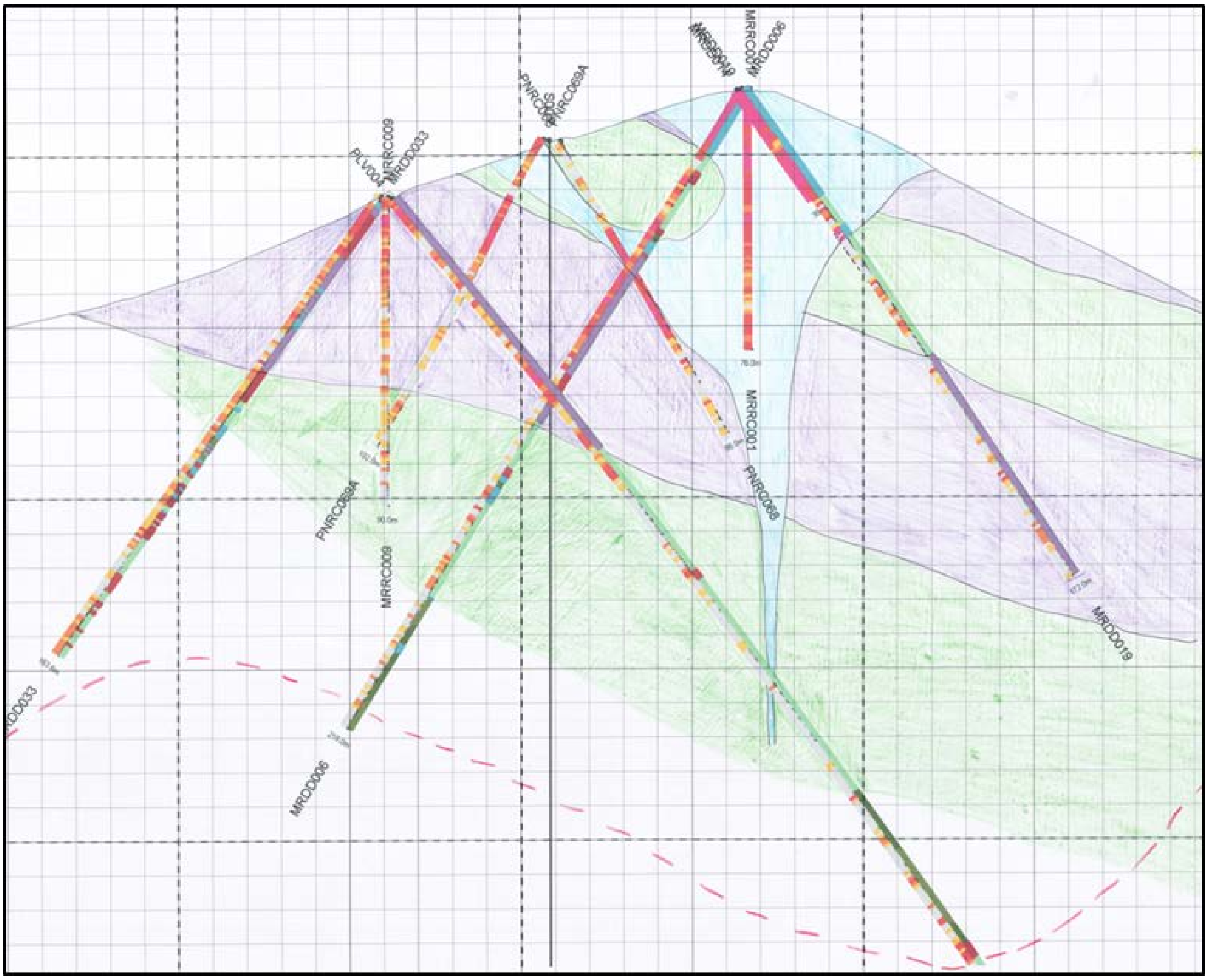


Figure 1.52: Maricanski Rid vertical interpretation section 7597490E

The wireframes for lithology were generated for the main lithologies, following Genesis' interpretation. The lithologies are summarised in Table 1.15.

Table 1.15: Summary of Plavica Lithologies Interpreted in the Resource Model

Code	Lithology Description
LIP	Lapilli lithic tuff
LAT	Layered ash tuff
ACL	Andesitic crystal lithic / lithic tuff
LPN	Andesitic lapilli tuff
BRX	Breccia (mostly diatreme breccia)
HBX	Hydrothermal breccia
SVG	Vuggy silica

Table 1.16: Summary of Plavica Weathering Zones Interpreted in the Resource Model

Code	Weathering Description
OX	Oxidised material
POX	Partially oxidised material
FR	Fresh bed rock

1.20 Exploratory Data Analysis

The borehole raw assay statistics by lithology are shown in Table 1.17. Both RC and DD drilling data were used for the resource estimation. The mineralisation corresponds to the weathered rock including OX and POX material. The SVG seems to be the main lithology carrying gold, followed by all other lithology types showing similar concentration and suggesting the mineralisation is disseminated amongst all lithologies. This is as expected in structurally controlled gold deposits.

Table 1.17: Au (ppm) Raw Assay Statistics by Lithology and Weathering

Lithology	Weathering	No. samples	Min	Max	Mean	Variance
ACL	OX	7 066	0.0025	19.6	0.306	0.380
	POX	9 027	0.0025	53	0.200	0.657
	FRESH	22 900	0.002	30.2	0.135	0.162
BRX	OX	902	0.0025	4.24	0.332	0.286
	POX	1 490	0.0025	29.5	0.227	1.133
	FRESH	3 016	0.0025	31.9	0.198	0.483
HBX	OX	178	0.0025	6.15	0.340	0.554
	POX	113	0.0025	3.87	0.257	0.233
	FRESH	63	0.03	6.97	0.283	0.752
LAT	OX	923	0.0025	11.2	0.349	0.540
	POX	3 153	0.0025	11.1	0.213	0.231
	FRESH	9 264	0.0025	8.32	0.133	0.096
LIP	OX	336	0.00025	1.38	0.176	0.045
	POX	586	0.007	11.6	0.177	0.485
	FRESH	557	0.0025	6.58	0.187	0.314
LPN	OX	4 672	0.0025	7.59	0.362	0.238
	POX	1 440	0.0025	16.13	0.326	0.567
	FRESH	4 116	0.0025	7.21	0.090	0.045
SVG	OX	5 042	0.0025	32.71	0.901	2.576
	POX	1 771	0.0025	17.70	0.663	1.148
	FRESH	2 141	0.0025	76.5	0.676	5.502

1.21 Compositing

Approximately 95% of the assay samples are 1 m (Figure 1.53), followed by small proportions of 2 m and 3 m and residuals of shorter lengths. A composite length of 1 m was selected for grade estimation, broken by lithology and weathering and discarding intervals shorter than 0.5 m or longer than 4.5 m.

The Au composite grade distribution by lithology and weathering is illustrated in Figure 1.54 and Figure 1.55 and a statistical summary of the valid composites are presented in Table 1.18. The complete set of graphs is located in Appendix 1.1.

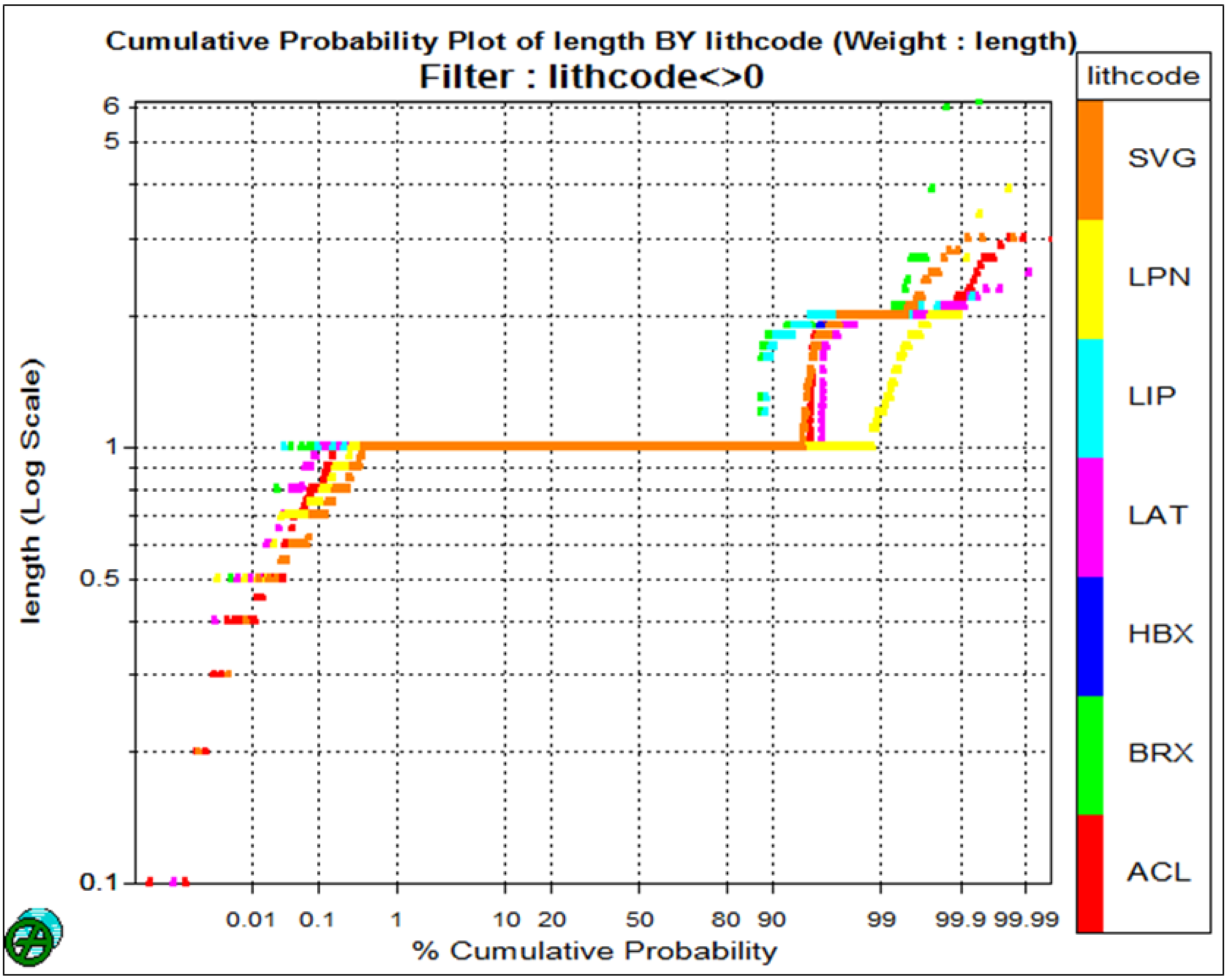


Figure 1.53: Probability plot of sample length by lithology

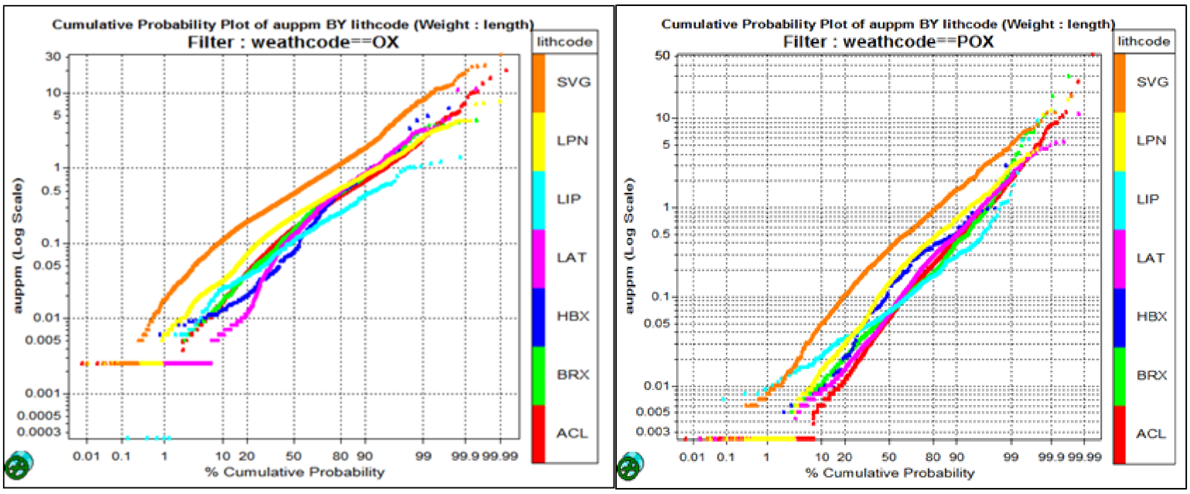


Figure 1.54: Au composites probability plots by lithology in oxide (left) and partially oxide (right) mineralisation

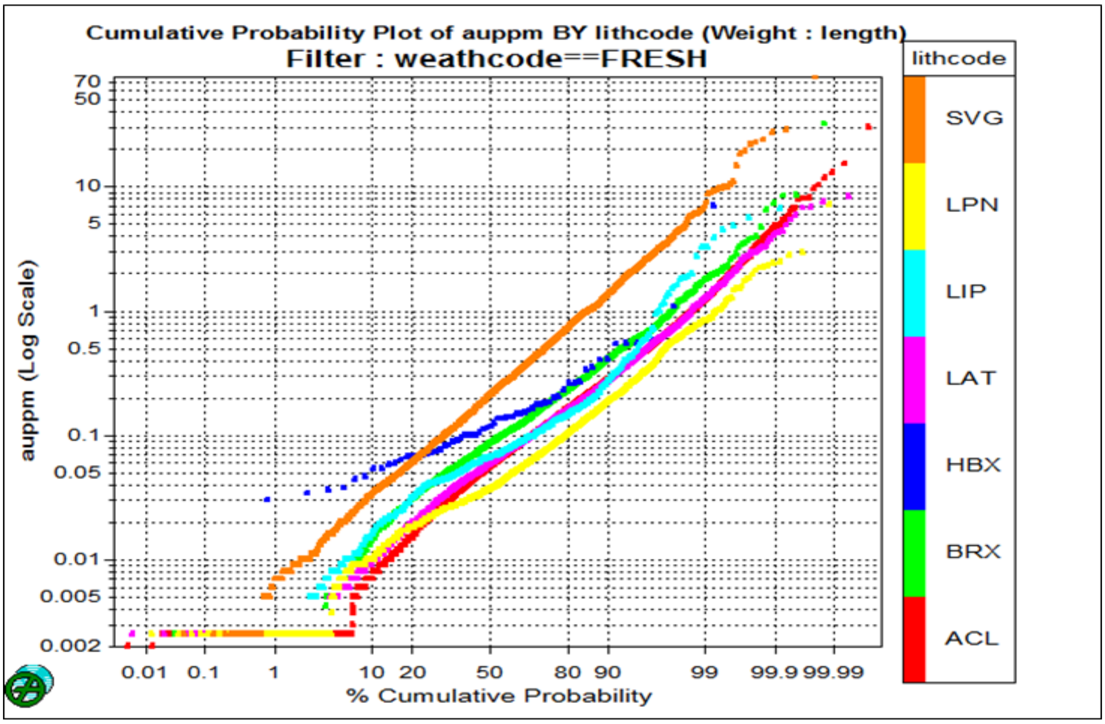


Figure 1.55: Au composites probability plot by lithology in fresh rock

Table 1.18: Au (ppm) Composite Assay Statistics by Lithology and Weathering

Lithology	Weathering	No. samples	Min	Max	Mean	Variance
ACL	OX	7 064	0.0025	19.6	0.306	0.380
	POX	9 026	0.0025	53	0.200	0.657
	FRESH	22 885	0.002	30.2	0.135	0.162
BRX	OX	900	0.0025	4.24	0.331	0.289
	POX	1 490	0.0025	29.5	0.227	1.133
	FRESH	3 016	0.0025	31.9	0.198	0.483
HBX	OX	178	0.0025	6.15	0.340	0.554
	POX	113	0.0025	3.87	0.257	0.233
	FRESH	63	0.03	6.97	0.283	0.752
LAT	OX	923	0.0025	11.2	0.349	0.540
	POX	3 153	0.0025	11.1	0.213	0.231
	FRESH	9 262	0.0025	8.32	0.133	0.096
LIP	OX	336	0.00025	1.38	0.176	0.045
	POX	586	0.007	11.6	0.177	0.485
	FRESH	557	0.0025	6.58	0.187	0.314
LPN	OX	4 672	0.0025	7.59	0.362	0.238
	POX	1 440	0.0025	16.13	0.326	0.567
	FRESH	4 116	0.0025	7.21	0.090	0.045
SVG	OX	5 039	0.0025	32.71	0.901	2.576
	POX	1 771	0.0025	17.70	0.663	1.148
	FRESH	2 141	0.0025	76.5	0.676	5.502

1.22 Estimation Domains

Due to the disseminated nature of the mineralisation within all lithologies and with no particular concentration associated to rock types or zones, a threshold of Au 0.2 ppm was selected to separate the mineralisation from the barren rock background.

Indicator variograms were modelled to validate the mineralisation continuity direction and the results suggested an azimuth of 150º as the major direction of continuity at Plavica with a general plunge of -65° towards south-east, similar to the geology and structures.

The indicator variograms are presented in Figure 1.56 below.

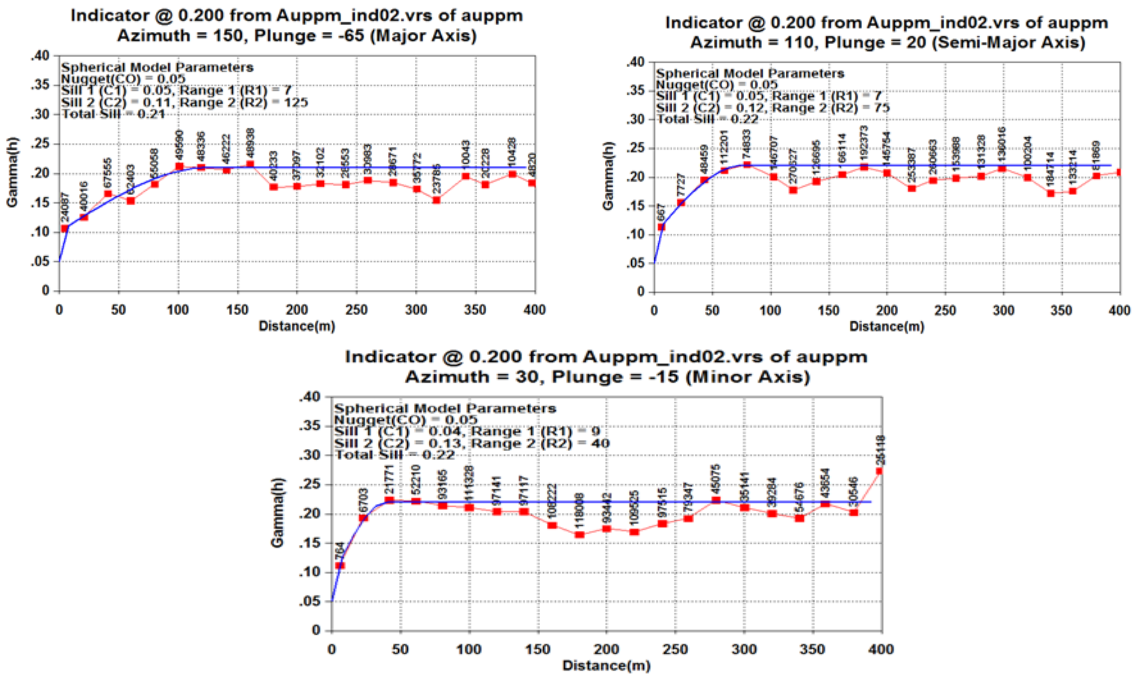


Figure 1.56: Indicator variogram of Au above the cut-off grade of 0.2 ppm

The mineralisation wireframe was created by an Indicator Kriging approach, using the Indicator variogram to define the continuity and extension of the mineralisation envelope within the deposit. Figure 1.57 and Figure 1.58 show examples of the indicator estimation results. The mineralisation wireframe was defined from a grade shell surrounding the areas of probability greater than 35% of being above the indicator cut-off grade of 0.2 Au ppm.

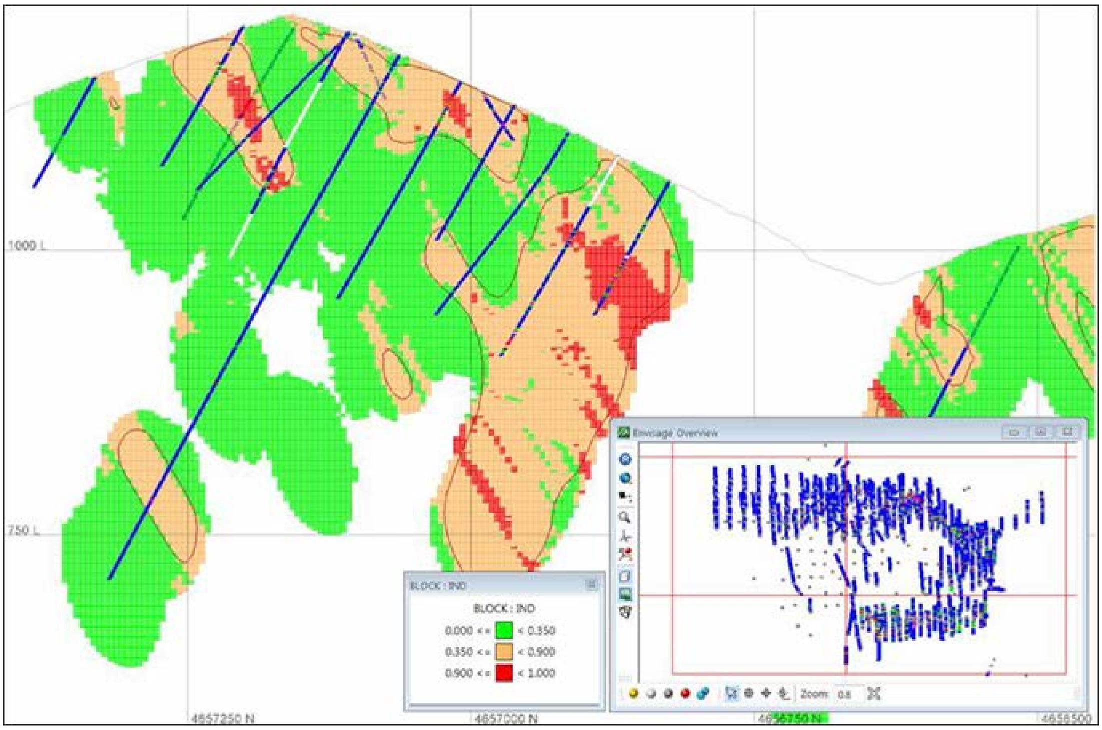


Figure 1.57: Plavica section 7597000E showing the indicator estimation and the mineralisation wireframe contour

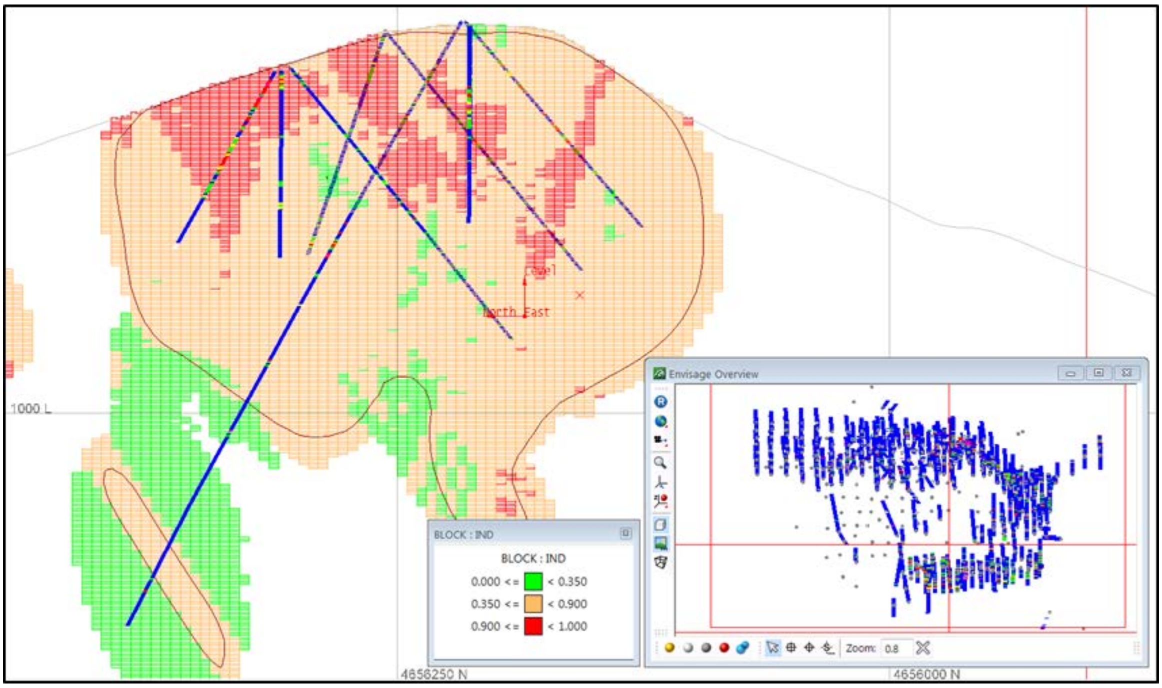


Figure 1.58: Maricanski Rid section 7597380E showing the indicator estimation and the mineralisation wireframe contour

The mineralisation wireframe together with the lithologies and weathering profile formed the basis of the estimation domains (Figure 1.59 and Figure 1.60). A statistical summary of the Au composite grade, inside and outside the mineralisation domains is shown in Table 1.19 and Table 1.20, and illustrated in Figure 1.61. Due to Genesis' proposed mining and processing option, only the weathered material (OX and POX) were appropriate for processing and, therefore, the FRESH zone was excluded from the mineralisation for Mineral Resource reporting purposes however it included in the model for reference purposes.

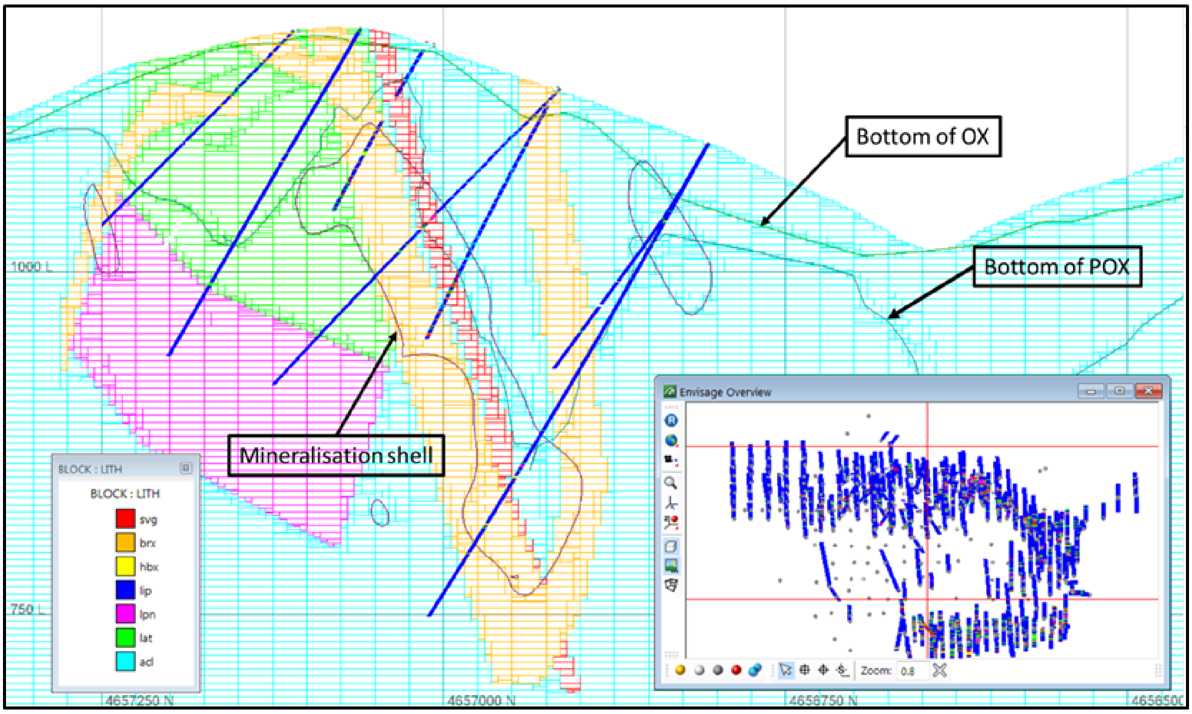


Figure 1.59: Plavica section 7597200E showing geology model blocks and highlighting weathering and mineralisation wireframes

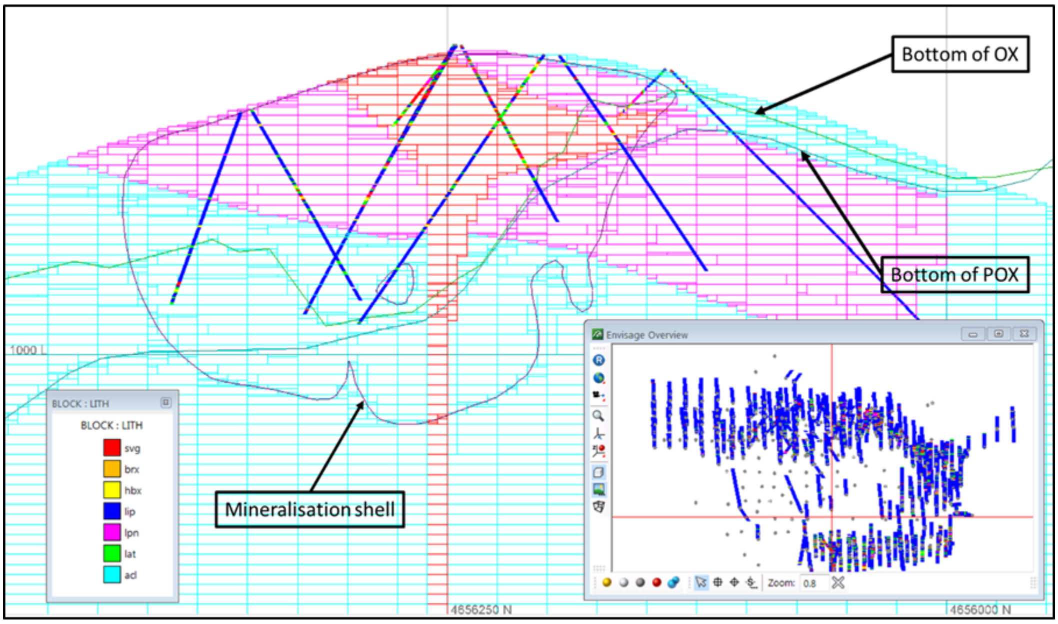


Figure 1.60: Maricanski Rid section 7597230E showing geology model blocks and highlighting weathering and mineralisation wireframes

Table 1.19: Statistics for Au (ppm) inside Indicator Mineralisation Envelope

Lithology	Weathering	No. samples	Min	Max	Mean	Variance
ACL	OX	3 924	0.0025	15.4	0.433	0.469
	POX	3 081	0.0025	53	0.428	1.758
	FRESH	3 976	0.0025	15.2	0.330	0.440
BRX	OX	412	0.0025	4.24	0.544	0.476
	POX	487	0.0025	29.5	0.542	3.291
	FRESH	1 058	0.0025	31.9	0.337	1.099
HBX	OX	142	0.0025	6.15	0.400	0.657
	POX	103	0.0025	3.87	0.278	0.251
	FRESH	18	0.046	6.97	0.610	2.444
LAT	OX	545	0.0025	11.2	0.547	0.813
	POX	1 396	0.0025	11.1	0.375	0.402
	FRESH	1 848	0.0025	8.32	0.289	0.277
LIP	OX	127	0.026	1.38	0.313	0.072
	POX	84	0.042	11.6	0.644	3.144
	FRESH	85	0.027	6.58	0.687	1.513
LPN	OX	3 708	0.0025	7.21	0.414	0.249
	POX	982	0.009	16.13	0.451	0.780
	FRESH	536	0.0025	2.79	0.232	0.079
SVG	OX	4 487	0.0025	32.70	0.928	2.561
	POX	1 442	0.0025	17.70	0.763	1.310
	FRESH	1 209	0.0025	76.5	1.019	9.283

Table 1.20: Statistics for Au (ppm) outside Indicator Mineralisation Envelope

Lithology	Weathering	No. samples	Min	Max	Mean	Variance
ACL	OX	3 140	0.0025	19.6	0.152	0.230
	POX	5 945	0.0025	5.85	0.083	0.054
	FRESH	18 909	0.002	30.20	0.092	0.091
BRX	OX	488	0.0025	2.24	0.144	0.050
	POX	1 003	0.0025	1.5	0.074	0.010
	FRESH	1 958	0.0025	8.56	0.117	0.108
HBX	OX	36	0.006	1.09	0.090	0.047
	POX	10	0.009	0.088	0.040	0.001
	FRESH	45	0.03	0.551	0.152	0.015
LAT	OX	378	0.0025	1.38	0.067	0.019
	POX	1 757	0.0025	4.52	0.084	0.057
	FRESH	7 414	0.0025	6.7	0.092	0.041
LIP	OX	209	0.00025	0.606	0.093	0.010
	POX	502	0.007	1.78	0.103	0.023
	FRESH	472	0.0025	1.99	0.092	0.030
LPN	OX	964	0.0025	7.59	0.163	0.149
	POX	458	0.0025	1.38	0.066	0.019
	FRESH	3 580	0.0025	7.21	0.069	0.037
SVG	OX	552	0.0025	12.6	0.686	2.639
	POX	329	0.0025	3.91	0.234	0.231
	FRESH	932	0.0025	6.35	0.228	0.203

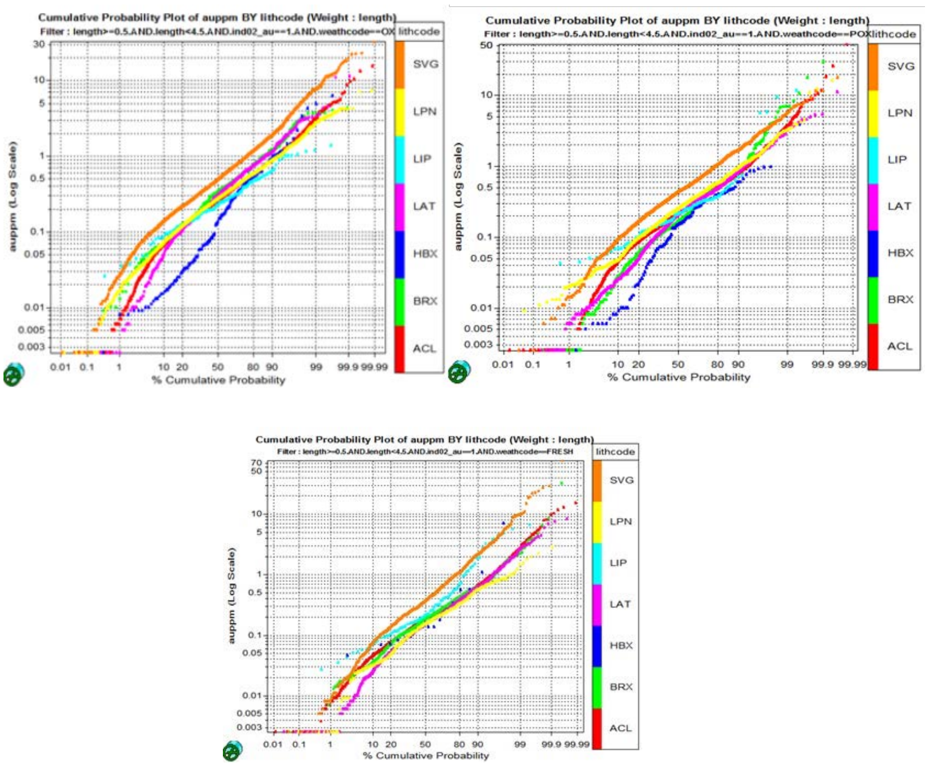


Figure 1.61: Au composites probability plots by lithology in oxide (top left), partially oxide (top right) mineralisation and fresh material (bottom left)

1.23 Bulk Density

Genesis provided 11,463 ISBD sample results from 144 diamond drill holes. The samples were taken from all lithologies within the oxide, partially oxide and fresh weathering zones. Density statistics are summarised in Table 1.21.

The most pronounced density differences are related to the weathering zones (Figure 1.62), while the lithological differences are minor within each zone (Figure 1.63).

Due to the minor difference and sometimes small number of samples between lithologies, the domaining for the estimation of density was defined by the weathering zones.

Table 1.21: Average In-Situ Bulk Density Statistics by Lithology, Weathering and Ore Zones

Zone	Lithology	Weathering Zone					
		OX		POX		FRESH	
		No.	Density	No.	Density	No.	Density
Inside Ore Wireframe	ACL	861	2.04	630	2.26	672	2.48
	LAT	93	2.15	169	2.29	227	2.48
	LPN	961	2.02	246	2.22	84	2.43
	LIP	15	2.10	2	2.39	2	3.10
	HBX	57	2.16	21	2.48	5	2.55
	BRX	69	2.03	33	2.28	110	2.53
	SVG	1 073	2.08	326	2.22	160	2.50
Outside Ore Wireframe	ACL	384	2.06	540	2.36	2 083	2.46
	LAT	9	2.04	118	2.33	816	2.47
	LPN	222	2.06	76	2.21	665	2.40
	LIP	14	2.01	48	2.12	45	2.27
	HBX	16	2.02	4	2.21	13	2.60
	BRX	52	2.02	76	2.25	121	2.42
	SVG	111	2.12	66	2.30	168	2.57

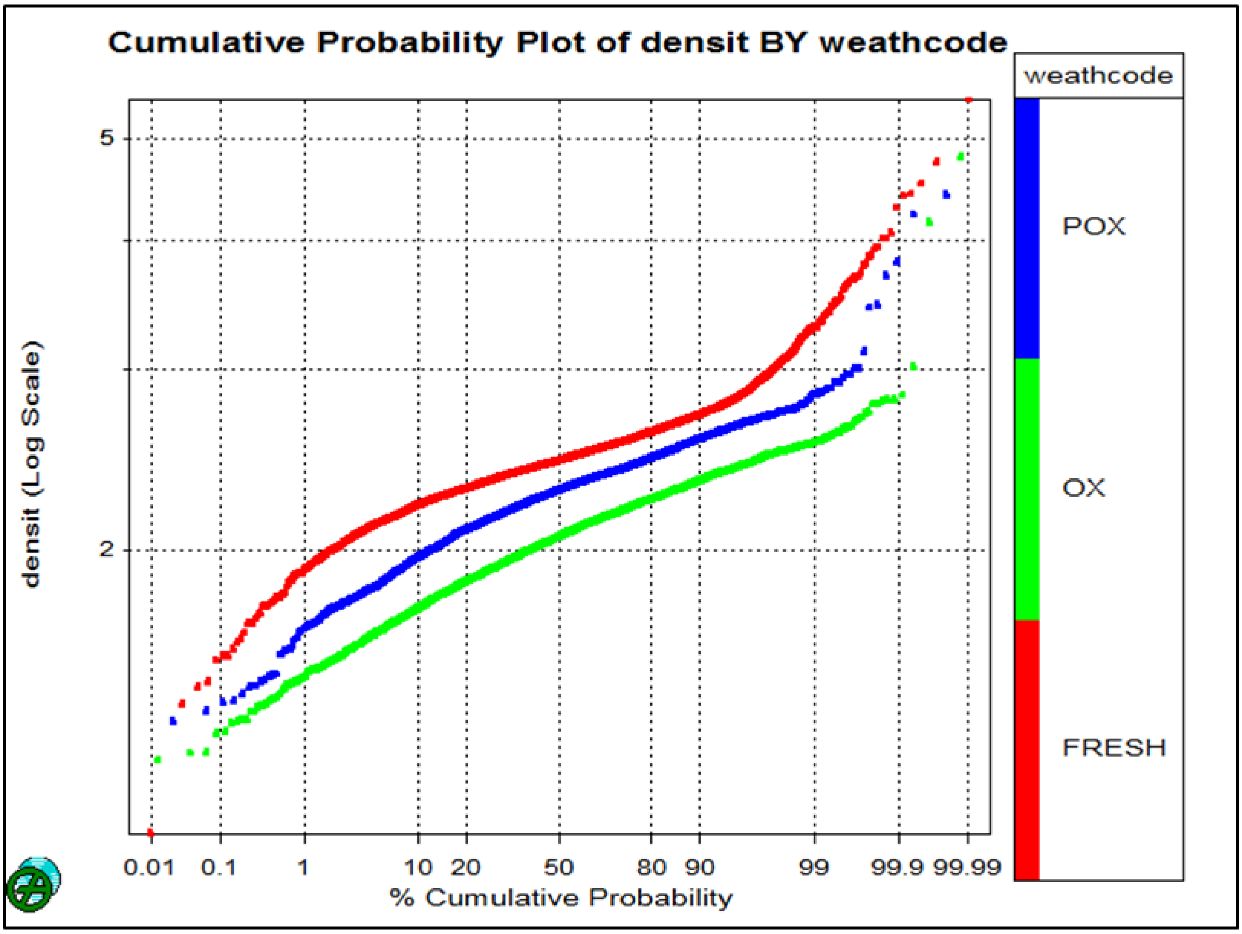


Figure 1.62: Probability plot of ISBD by weathering zones

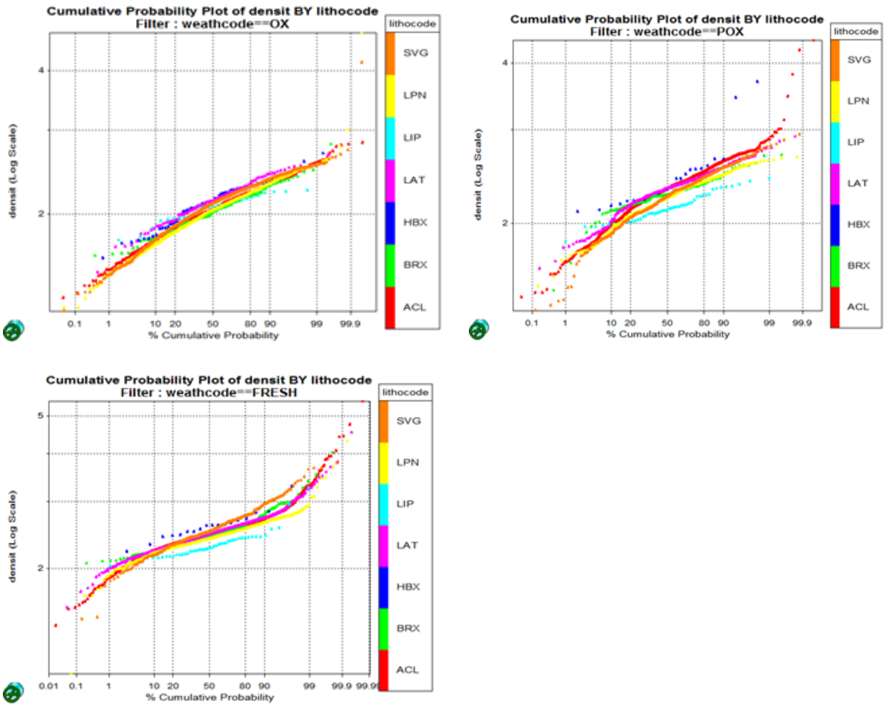


Figure 1.63: Probability plot of ISBD by lithologies within the weathering zones OX (top left), POX (top right) and FRESH (bottom left)

1.24 Variography

Variography was completed in Golder's OBO software. Experimental semi-variograms were produced following the strike and directions from the geology modelling, around azimuth 150 and dipping from 30 to 65 degrees towards southeast. The variograms were modelled for Au (ppm), Ag (ppm), Cu (%), S (%), As (%) and density in the domains defined by the weathering zones (OX, POX and FRESH) within the Mineralisation and Waste material types. Table 1.22 and Table 1.23, and Figure 1.64 to Figure 1.66 present the parameters for Au and density. All variograms and parameters are in located in Appendix 1.3.

Table 1.22: Variogram Parameters for Au (ppm) Estimation Domains for Plavica

Lithology/Zone	Axis	Direction (Azim/Dip)	Nugget	Sill1	Range1 (m)	Sill2	Range2 (m)
SVG – ore	Major	110/-10	0.2	0.3	8	0.5	50
	Semi	30/45		0.2	13	0.62	64
	Minor	10/-45		0.5	4	0.3	41
Other – ore	Major	130/-20	0.2	0.5	7	0.29	54
	Semi	80/60		0.64	6	0.17	50
	Minor	30/-20		0.53	8	0.27	50
SVG – waste	Major	150/-5	0.21	0.12	20	0.66	94
	Semi	50/-65		0.53	14	0.26	75
	Minor	60/25		0.36	21	0.53	37
Other – waste	Major	40/0	0.4	0.22	11	0.38	58
	Semi	130/0		0.22	8	0.37	42
	Minor	0/-90		0.29	4	0.27	30

Table 1.23: Variogram Parameters for Density Estimation Domains for Plavica

Weathering	Axis	Direction (Azim/Dip)	Nugget	Sill1	Range1 (m)	Sill2	Range2 (m)
OX	Major	70/5	0.3	0.44	15	0.27	77
	Semi	160/0		0.44	34	0.26	66
	Minor	70/-85		0.37	8	0.41	50
POX	Major	100/10	0.2	0.55	48	0.25	97
	Semi	170/-55		0.28	9	0.52	50
	Minor	20/-30		0.17	11	0.64	50
FRESH	Major	70/40	0.1	0.44	2	0.46	93
	Semi	150/-15		0.34	62	0.57	136
	Minor	40/-45		0.32	78	0.55	101

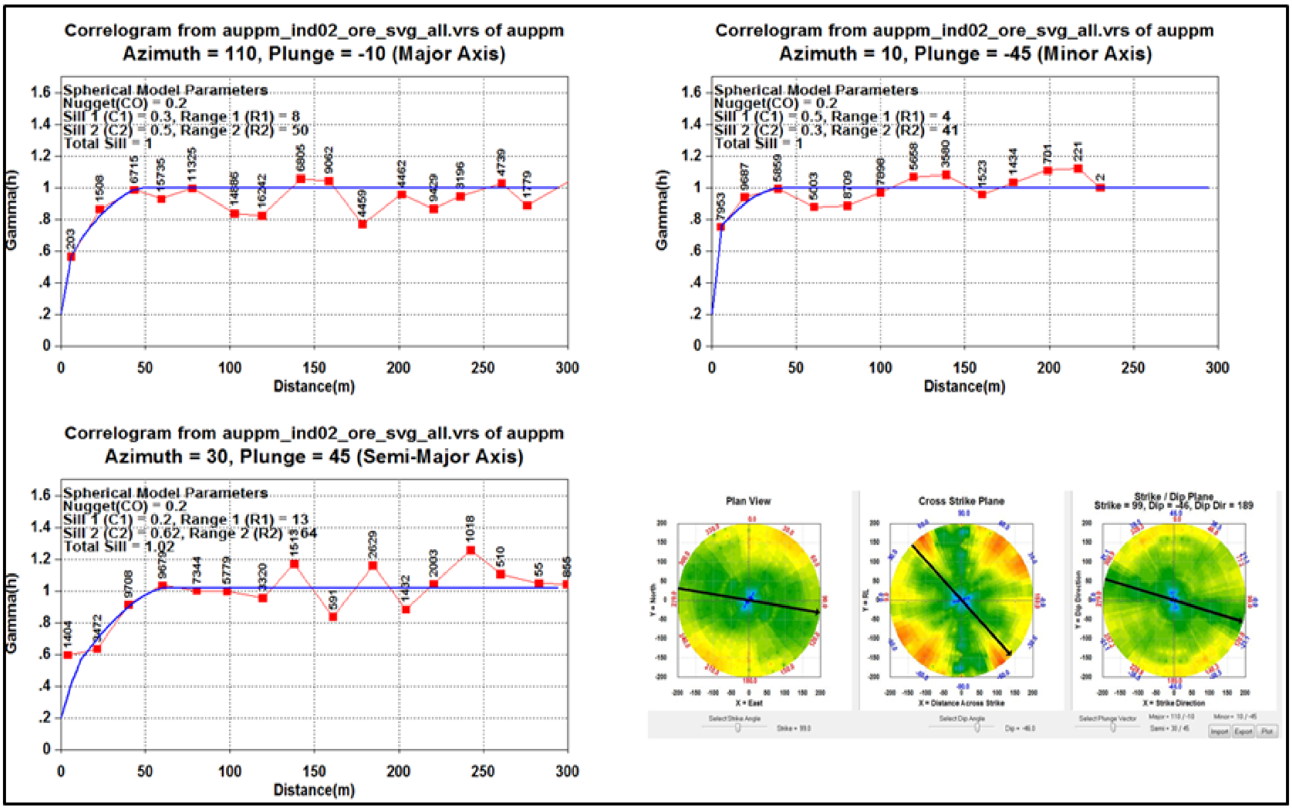


Figure 1.64: Variogram models for Au (ppm) in lithology SVG within the mineralised domain

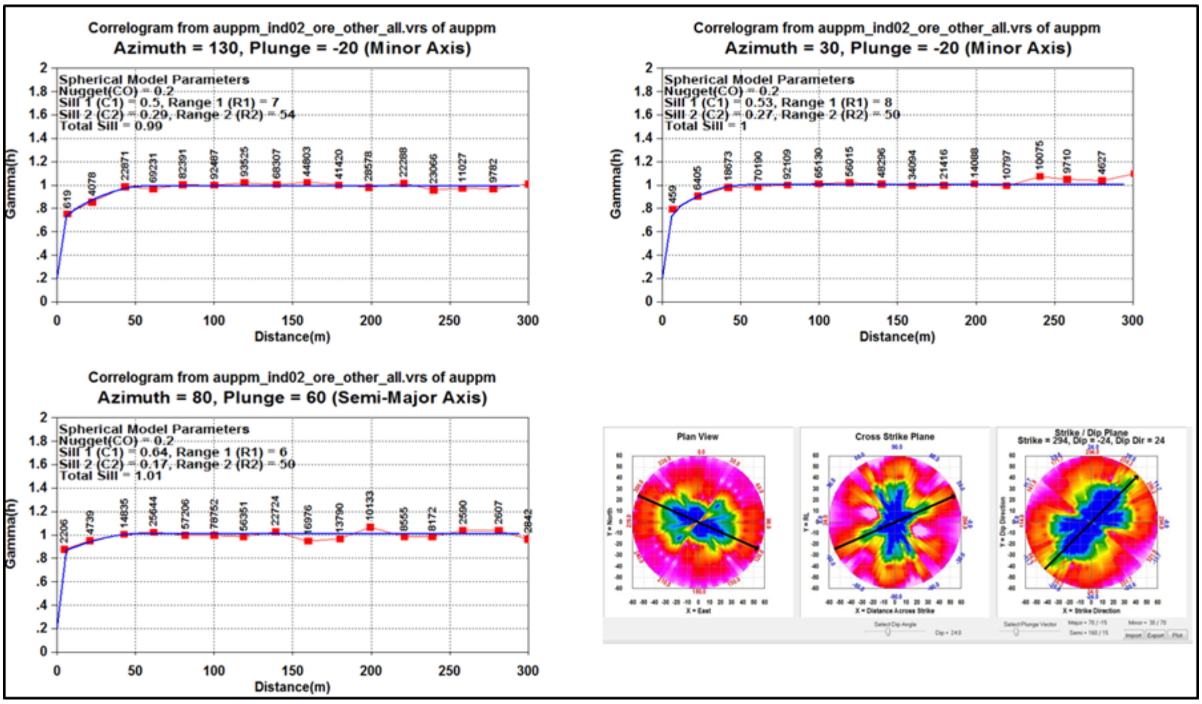


Figure 1.65: Variogram models for Au (ppm) in other lithologies within the mineralised domain

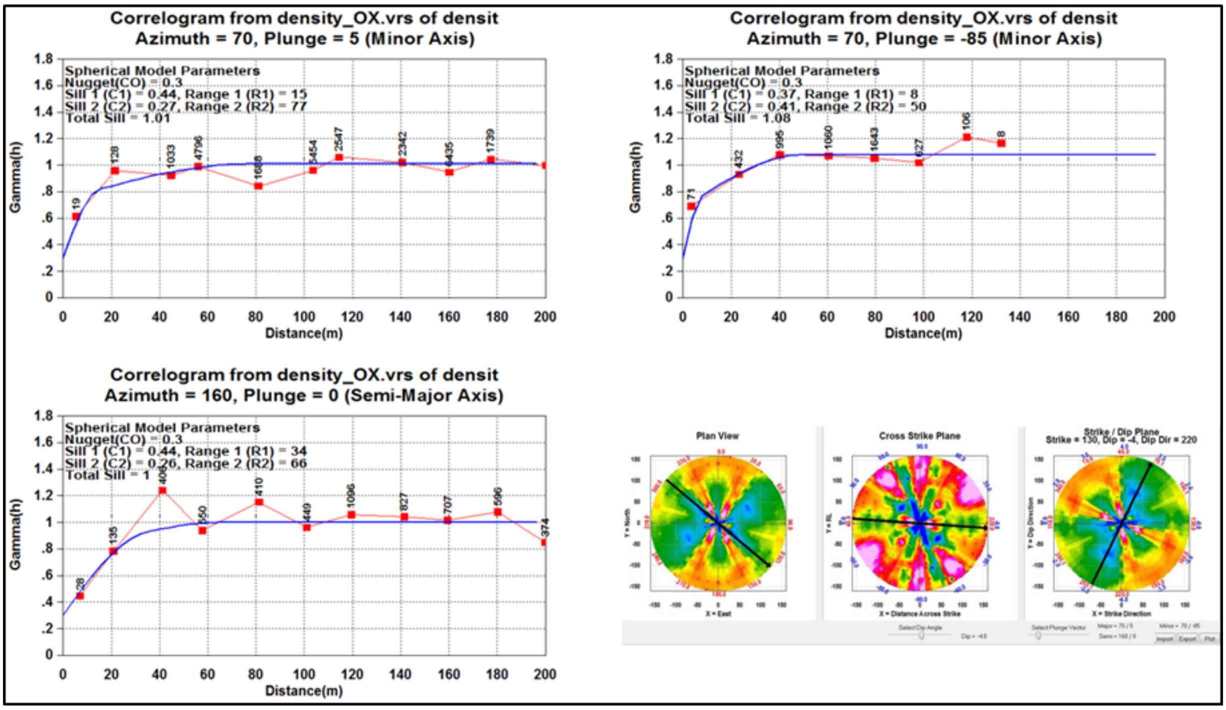


Figure 1.66: Variogram models for Density within the OX material zone

1.25 Block Model

The geological block model was constructed incorporating the lithology and weathering interpretations and the mineralisation shell (Section 1.19). The wireframes and codes assigned to the block model are summarised in Table 1.24. The dimensions of the block model are summarised in Table 1.25.

A parent cell size of 25 m (X) by 25 m (Y) by 5 m (Z) with minimum sub-cells of 5 m (X) by 5 m (Y) by 1 m (Z) were selected, due to the nature of the mineralisation horizons and to provide adequate resolution of modelled domaining. For estimation purposes the parent cell panel size of 25 m by 25 m by 5 m was selected to respect to the nominal drilling density and help achieve acceptable local estimation quality.

Table 1.24: Wireframes and Codes Assigned to the Block Model

Variable	Wireframe	Value	Description
weath	2017_ACL_shell.00t	3	FRESH Weathering background
	Plavica_Maricanski_2017_POX.00t	2	Partially oxide material
	Plavica_Maricanski_2017_OXIDE.00t	1	Oxide material
	Plavica_Maricanski_FRESH_blob1.00t	3	Isolated spot of fresh rock within ox/pox zone
	Plavica_Maricanski_FRESH_blob2.00t	3	Isolated spot of fresh rock within ox/pox zone
	Plavica_Maricanski_FRESH_blob3.00t	3	Isolated spot of fresh rock within ox/pox zone
	Plavica_Maricanski_FRESH_blob4.00t	3	Isolated spot of fresh rock within ox/pox zone
	Plavica_Maricanski_FRESH_blob5.00t	3	Isolated spot of fresh rock within ox/pox zone
	2017junetopo.00t	0	Reset weathering above topography to 0
lith	2017_ACL_shell.00t	100	ACL lithology
	2017_LAT_solid.00t	200	LAT lithology
	2017_LPN_solid.00t	300	LPN lithology
	2017_LIP_solid.00t	400	LIP lithology
	2017_HBX_shell.00t	500	HBX lithology
	plavica_2017_brx_1.00t to plavica_2017_brx_10.00t	601 To 610	BRX lithology
	2017_svg_01.00t to 2017_svg_59.00t	701 To 759	SVG lithology
	2017junetopo.00t	0	Reset lithology above topography to 0

Table 1.25: Geological Block Model Dimensions

Direction	Origin (m)	Extent (m)	Parent Block Size (m)	Minimum Sub-cell (m)
Easting (X)	7 595 800	2 750	25	5
Northing (Y)	4 655 900	1 800	25	5
RL (Z)	500	9000	5	1

1.26 Interpolation Strategy

The grade interpolation was carried out using Ordinary Kriging (OK) using Maptek Vulcan software. The estimation of Au grades was performed according to the mineralisation domains (Section 1.23) and honoured the distributional differences between major lithologies. Estimation domains are summarised in Table 1.26. Three estimation passes were used to estimate grades to all blocks. The estimation used RC and DD composites. The ellipsoid dimensions were defined based on the variogram ranges and checked on-screen to ensure the selected sizes were appropriate for the corresponding estimations and drilling density. The search ellipsoid dimensions and kriging parameters used for the estimation are summarised in Table 1.27.

Table 1.26: Geological Block Model Dimensions

Variable	Lithology	Mineralisation Zone (1=ore, 0=waste)	Weathering Code		
			Ox	Pox	Fresh
Au (ppm)	SVG	1	1	2	3
Au (ppm)	SVG	0	1	2	3
Au (ppm)	Other	1	1	2	3
Au (ppm)	Other	0	1	2	3
Ag (ppm)	All	1	1	2	3
Ag (ppm)	All	0	1	2	3
As (%)	All	1	1	2	3
As (%)	All	0	1	2	3
Cu (%)	All	1	1	2	3
Cu (%)	All	0	1	2	3
S (%)	All	1	1	2	3
S (%)	All	0	1	2	3
Density	All	-	1	-	-
Density	All	-	-	2	-
Density	All	-	-	-	3

Table 1.27: Estimation Parameters Used for Plavica Resource Estimate

Estimation Parameters	Mineralisation Domain
Estimation Method	OK
Variables Estimated	Au, Ag, As, Cu, S, Density
Search Orientation* (Azimuth, Plunge, Dip)	290, 20, 75
Search Radius × (Pass 1/2/3)	100 m / 250 m / 350 m
Search Radius Y (Pass 1/2/3)	70 m / 200 m / 300 m
Search Radius Z (Pass 1/2/3)	50 m / 100 m / 140 m
Estimation Panel Size (X/Y/Z)	10 m / 10 m / 4 m
Discretisation (X/Y/Z)	5 / 5 / 5
Search Volume Geometry	Ellipsoid
Search Type (Pass 1/2/3)	Unique/ Unique / Unique
Minimum No. of Samples (Pass 1/2/3)	8 / 8 / 6
Maximum No. of Samples (Pass 1/2/3)	32 / 32 / 32
Maximum No. of Samples per Octant (Pass 1/2/3)	3 / 4 / 6
Length-Weighting Used (Y/N)	Y (Field: length)

Notes: * KEY: R1/R2/R3 Search orientations (conventional left hand rule) in local grid
R1 = azimuth rotation clockwise from north
R2 = plunge along R1 direction (+ve = up, -ve = down)
R3 = dip rotation around R1-R2 axis (+ve = anticlockwise, -ve = clockwise)

1.27 Treatment of High Grades

In order to avoid smearing of high-grades across the deposit, spatial restraining was applied during the estimation. This technique allows restraining the impact of high-grade samples by defining a maximum range of influence in which the samples can be selected for estimation (see Table 1.28). Outside of the defined area, the samples are replaced by a maximum acceptable Au grade. Cumulative log-probability plots for Au were examined to assess for population outliers that may impact the grade estimation. These values were identified from the probability plot (Figure 1.67) by observing points of inflection and/or for a tail of high-grade values that depart from the overall distributional trend of the data. The high-grade outliers were spatially restrained in each of the three estimation passes in order to control grade smearing. Details of the restraining parameters are presented in Table 1.28.

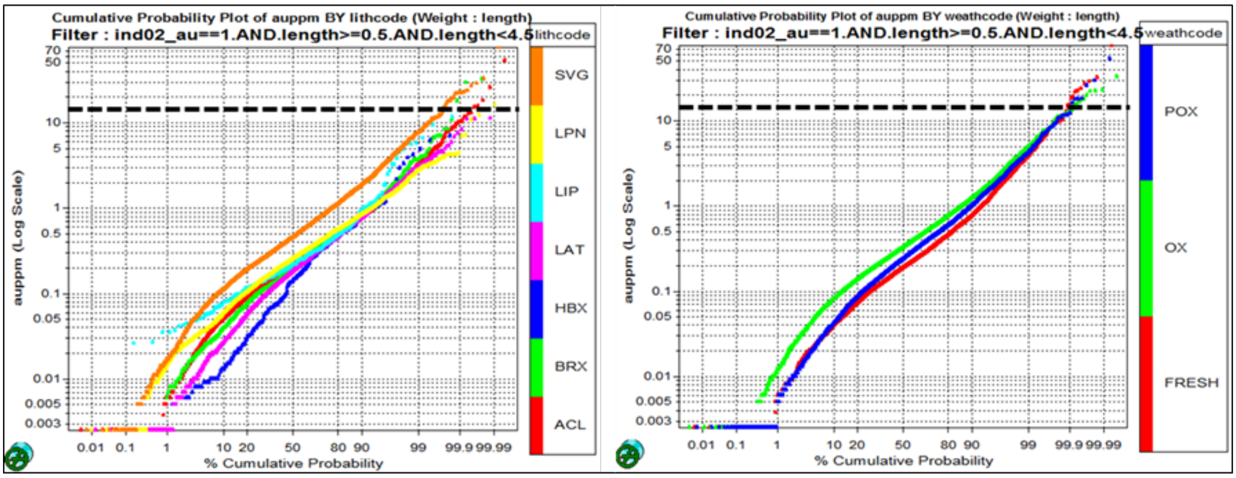


Figure 1.67: Probability plots of Au (ppm) by lithology (left) and weathering (right) highlighting the grade threshold

Table 1.28: High-Grade Threshold and Restraining Grades Applied During Estimation

Domain	High-Grade Threshold (Au ppm)	Spatial Restraining (m)
Inside Mineralisation Zone	15.0	25 m in × by 25 m in Z and 10 in Z
Outside Mineralisation Zone	0.5	25 m in × by 25 m in Z and 10 in Z

1.28 Validation

Statistical and visual assessment of the block model was undertaken to assess successful application of the estimation technique. The block model estimation was validated for conformance of the block average grades against the borehole data using swath plots and reproduction of the declustered point support (1 m composite) data distribution in the OK model.

As a general comment, the validations generally only determine whether the interpolation has performed as expected. Acceptable validation results indicate that the model is a reasonable representation of the data used and the estimation method applied.

1.28.1 Visual Assessment of the Grade Estimates

An on-screen validation between composites and blocks was performed on the model. The on-screen validation process involved comparing block estimates and composite grades in section and plan views. Figure 1.68 to Figure 1.70 show sections through Plavica block model with the drill holes and the estimated block model for Au. Overall drill holes and the block model show acceptable grade conformance.

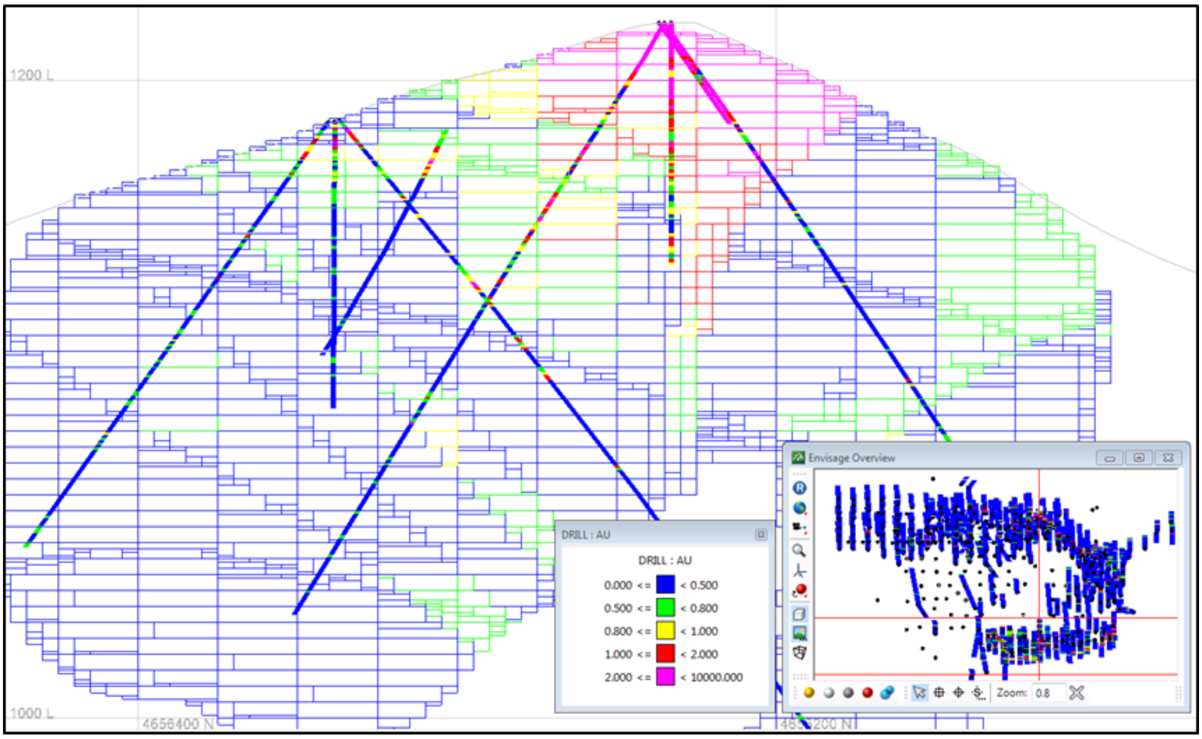


Figure 1.68: Visual assessment of Au grade estimation within Maricanski Rid area (section 7597480)

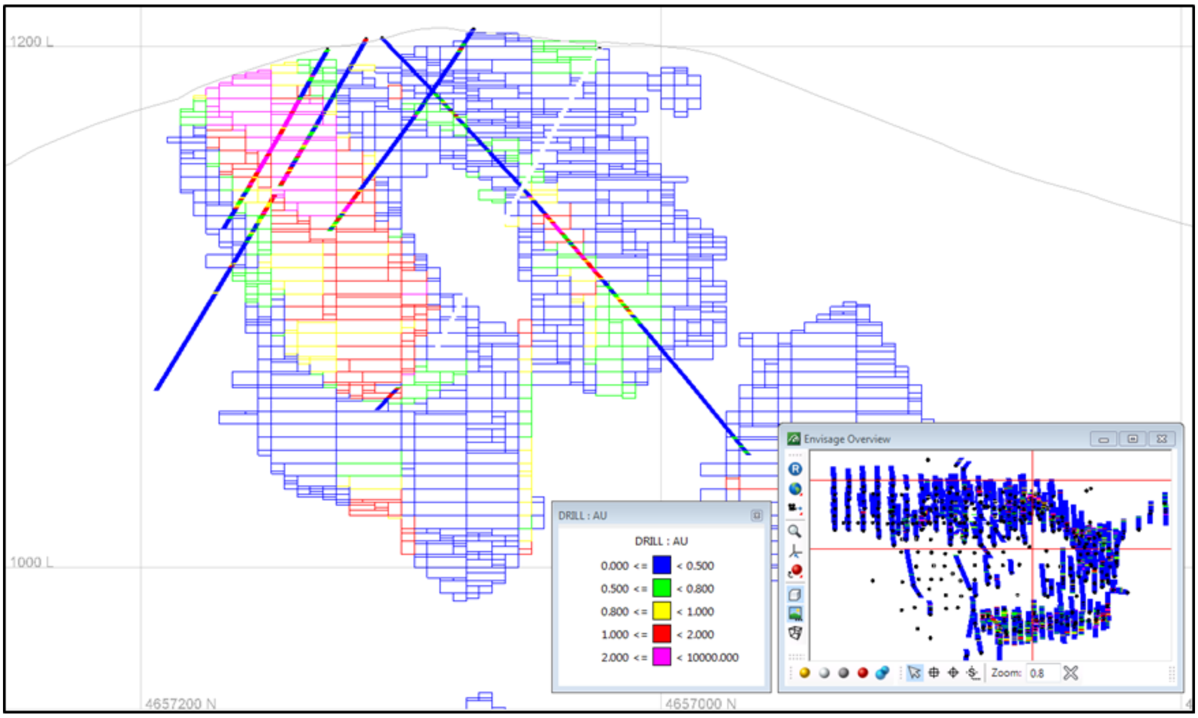


Figure 1.69: Visual assessment of Au grade estimation within Plavica area (section 7597480)

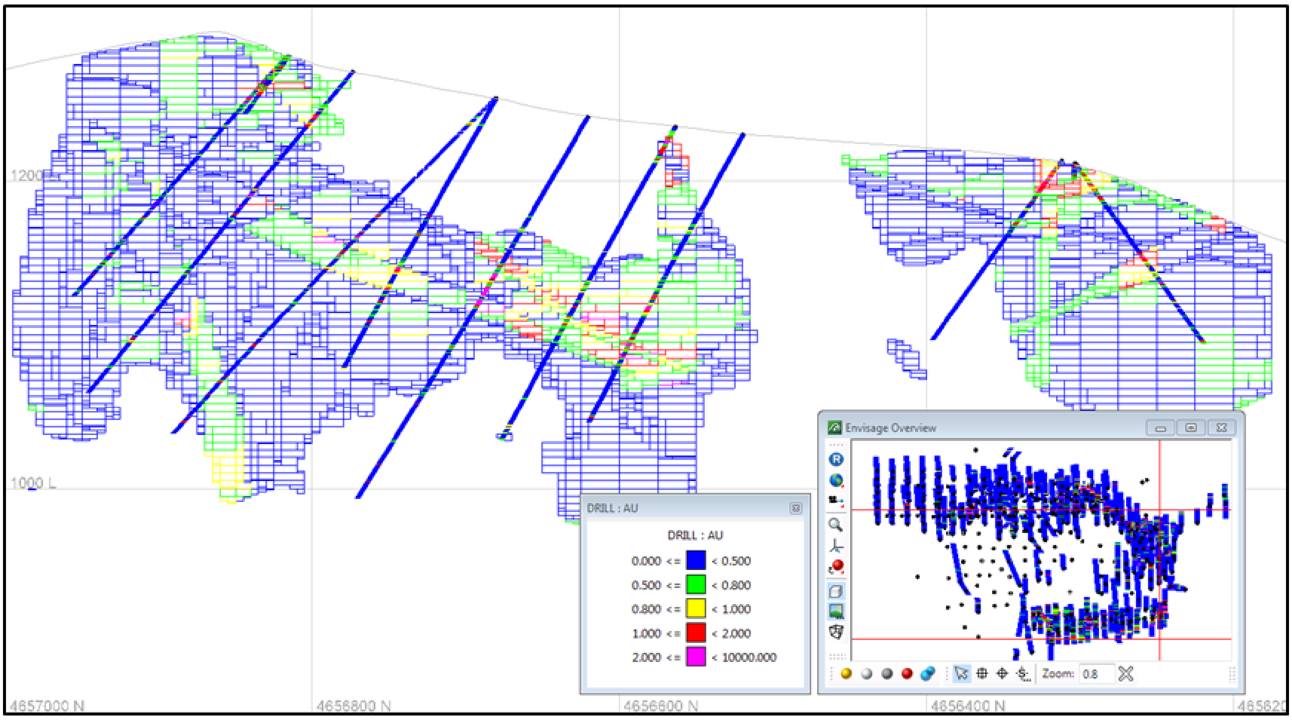


Figure 1.70: Visual assessment of Au grade estimation within the eastern part of the deposit (section 7597950)

1.28.2 Global Statistical Validation

The global estimated mean grade of block model was checked to assess reproduction of the grade of the 1 m composites and to validate for obvious interpolation errors such as incorrect sample selection for estimation of individual domains.

Global statistics were compared between the block model and the declustered composite data. Statistics were compiled for Au by mineralisation block. The analysis provides the following information:

- Checking the reproduction of the mean grade of the composite data in the interpolated model. This is shown by OK/DH (%) and should be between 90–110%, which provides an indication that the kriging estimates are not globally biased; and
- The smoothing effect of the estimation is indicated by the actual variance adjustment ratio, which is the OK block variance divided by the 1 m composite variance.

Comparison between the block and composite statistics in Table 1.29 show that the composites and block statistics show acceptable level of confidence with high-grade restraining applied to the samples (the maximum Au composite grade is restrained to 15 ppm for comparison against the block model). The comparison of domains outside of the mineralisation zone show strong under-estimation of Au grades due to the extreme restraining applied to waste zones to avoid smearing Au grades within the area defined as predominantly unmineralised. The comparison of other variables is located in Appendix 1.4.

Table 1.29: Comparison between Declustered Composite Data and Block Model Statistics for Au

Zone	Area	Lithology	Weathering	Data			Block Model (OK)			OK/DH (%)[1]	f²	Composite		Block Model	
				No.	Mean	Var.	No.	Mean	Var.			Min	Max	Min	Max
inside ore shell	Plavica	SVG	OX	1790	0.91	2.13	11970	0.89	0.38	97.8	0.177	0.0025	15.000	0.138	3.869
			POX	1177	0.76	1.40	11594	0.78	0.28	102.7	0.200	0.003	11.480	0.085	3.535
			FRESH	1160	0.90	3.39	22575	0.82	0.27	90.9	0.081	0.003	15.000	0.091	10.415
		other	OX	2440	0.45	0.65	32375	0.44	0.08	97.2	0.129	0.003	15.000	0.027	3.531
			POX	4114	0.44	1.02	60471	0.43	0.16	96.1	0.158	0.003	15.000	0.012	7.034
			FRESH	6194	0.33	0.48	148744	0.28	0.03	85.4	0.073	0.003	15.000	0.013	4.767
	Maricanski	SVG	OX	2699	0.97	2.46	12901	0.82	0.34	84.6	0.138	0.003	15.000	0.191	6.501
			POX	265	0.64	1.05	3569	0.57	0.07	90.0	0.063	0.015	15.000	0.090	1.728
			FRESH	49	0.52	0.39	1736	0.52	0.06	100.8	0.153	0.008	3.170	0.091	1.090
		other	OX	6420	0.40	0.27	51989	0.42	0.04	103.2	0.142	0.003	13.100	0.027	2.055
			POX	2020	0.37	0.49	34593	0.34	0.03	90.8	0.058	0.003	15.000	0.066	3.004
			FRESH	1330	0.34	0.21	45487	0.30	0.01	88.2	0.066	0.003	5.320	0.040	1.187
Outside ore shell	Plavica	SVG	OX	381	0.34	0.88	5403	0.19	0.01	56.3	0.014	0.003	12.600	0.078	2.735
			POX	321	0.25	0.17	3610	0.09	0.00	36.6	0.028	0.003	3.910	0.010	1.258
			FRESH	919	0.27	0.27	20461	0.13	0.00	47.8	0.018	0.003	6.350	0.018	1.861
		other	OX	3870	0.14	0.13	86343	0.11	0.00	78.2	0.035	0.000	15.000	0.003	2.455
			POX	8855	0.09	0.06	140314	0.07	0.00	79.0	0.035	0.003	5.850	0.003	1.220
			FRESH	28819	0.10	0.05	454721	0.08	0.00	82.4	0.058	0.003	15.000	0.003	5.318
	Maricanski	SVG	OX	172	1.61	7.49	1683	0.30	0.35	19.0	0.046	0.016	11.100	0.057	5.797
			POX	8	0.08	0.00	119	0.13	0.00	157.1	0.174	0.031	0.206	0.103	0.177
			FRESH	13	0.28	0.03	66	0.15	0.00	54.7	0.005	0.204	1.400	0.049	0.197
		other	OX	1347	0.22	0.16	29329	0.16	0.01	71.7	0.048	0.003	7.590	0.010	1.471
			POX	820	0.16	0.09	22148	0.08	0.00	52.4	0.031	0.003	3.800	0.004	0.487
			FRESH	3573	0.11	0.07	103085	0.09	0.00	84.9	0.046	0.002	8.560	0.003	1.227

1.28.3 Swath Plot Validation

Swath plots were used to assess the block model estimates for local bias. The estimates should have a close relationship to the borehole composite data used for estimation. The plots are useful for assessing average grade conformance, and also to detect for any obvious interpolation issues.

The relationship between model and sample panel averages was assessed in the form of scatter plots and Q-Q plots. This allows some assessment of the smoothing effect of the performed interpolation.

The process involved averaging both the blocks and samples in panels of 50 m (X) by 50 m (Y) by 10 m (Z). Conformance of the model and sample average grades was assessed in the form of Easting, Northing and RL swaths of the panel averages.

The swath plots produced for Au in mineralised oxide domains in Plavica and Maricanski areas are shown in Figure 1.71 to Figure 1.74 (other plots are located in Appendix 1.4). Overall, the swath plot validation process show that the block model estimates follow the trend of the 1 m composite grades across the deposit.

From the perspective of conformance of the average model grade to the input data, Golder considers the model to be a satisfactory representation of the current borehole data and an indication that the estimation has performed as expected.

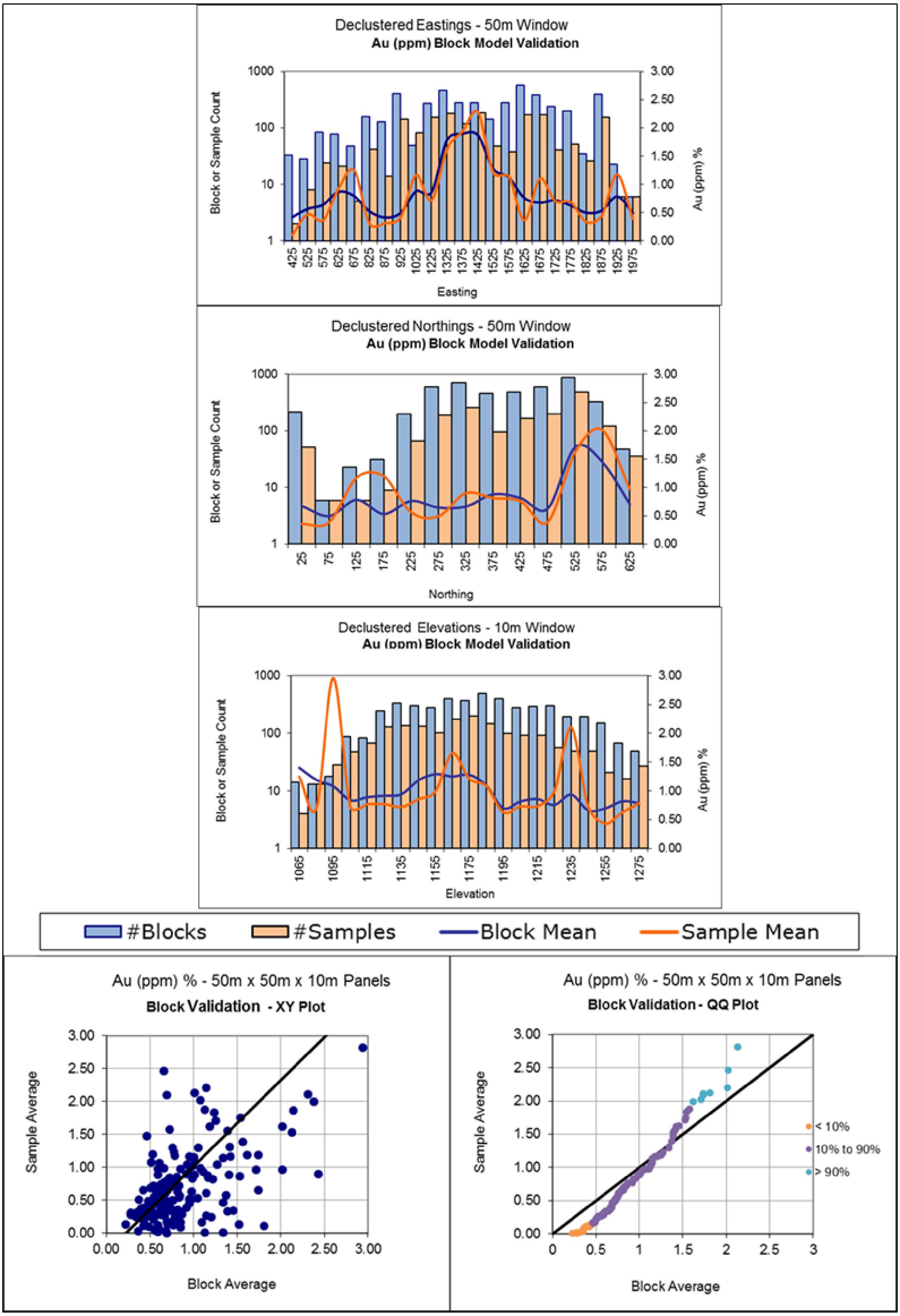


Figure 1.71: Swath plot validations for Au within the SVG oxide mineralisation at Plavica area

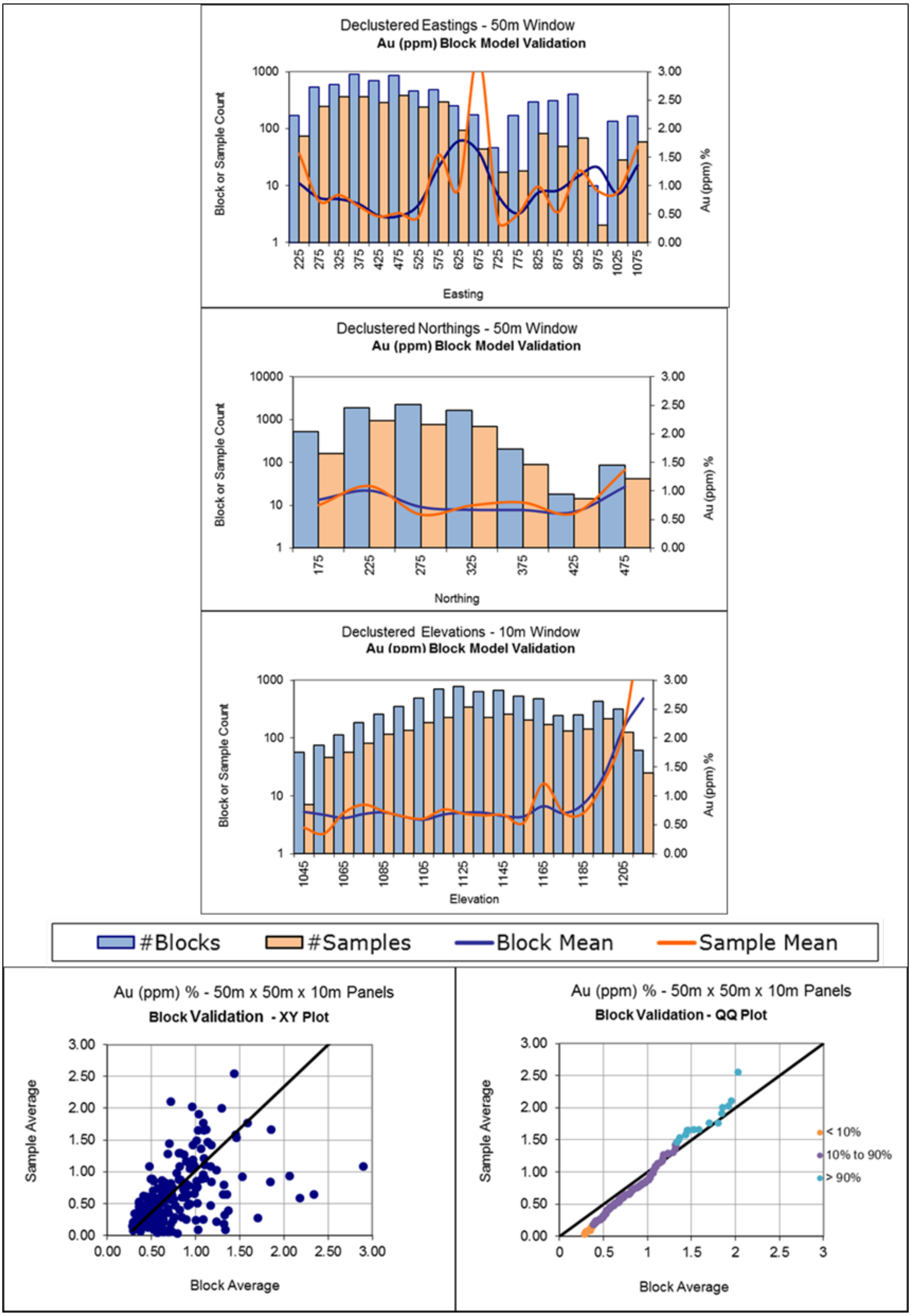


Figure 1.72: Swath plot validations for Au within the SVG oxide mineralisation at Maricanski area

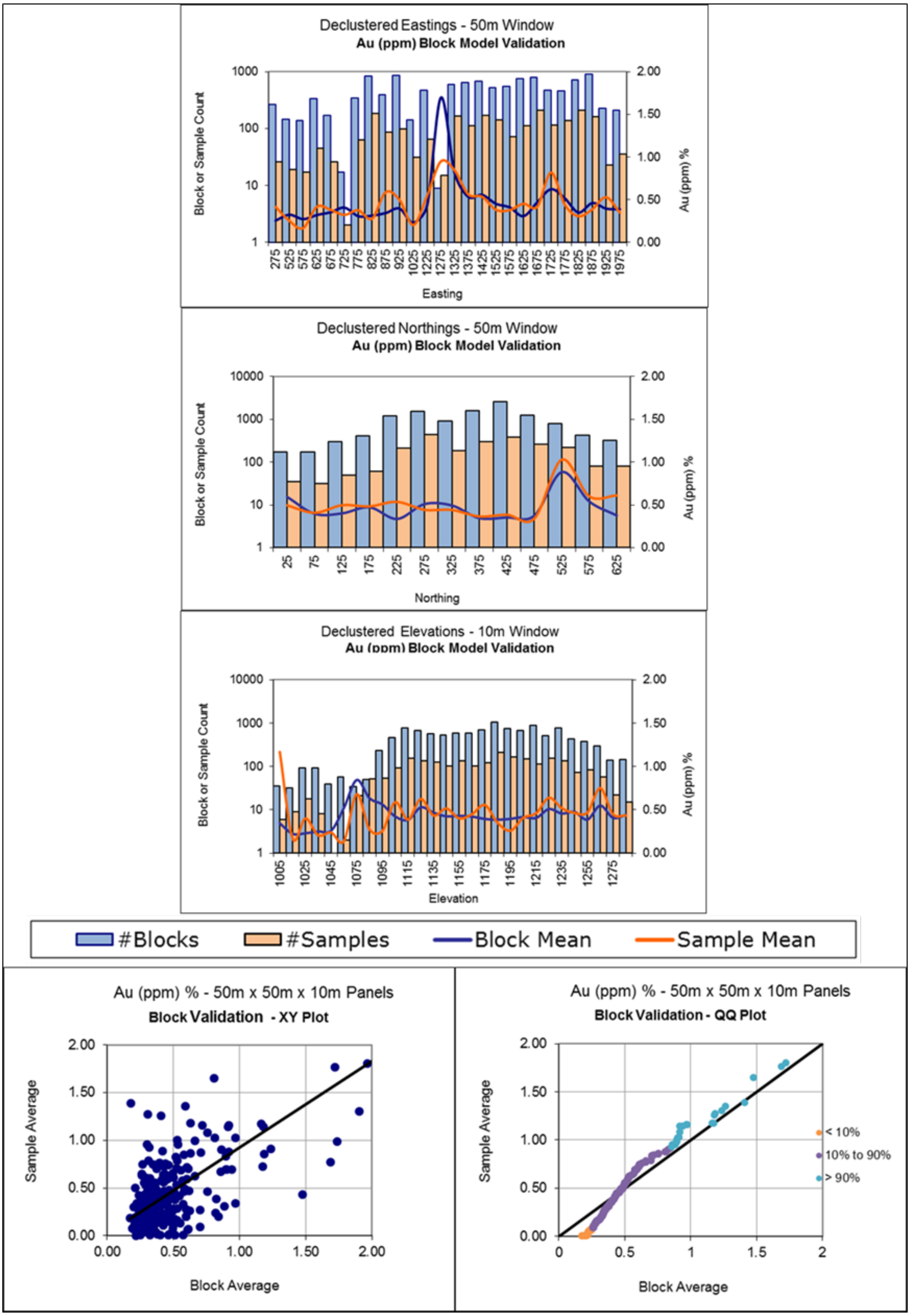


Figure 1.73: Swath plot validations for Au within the other lithologies oxide mineralisation at Plavica area

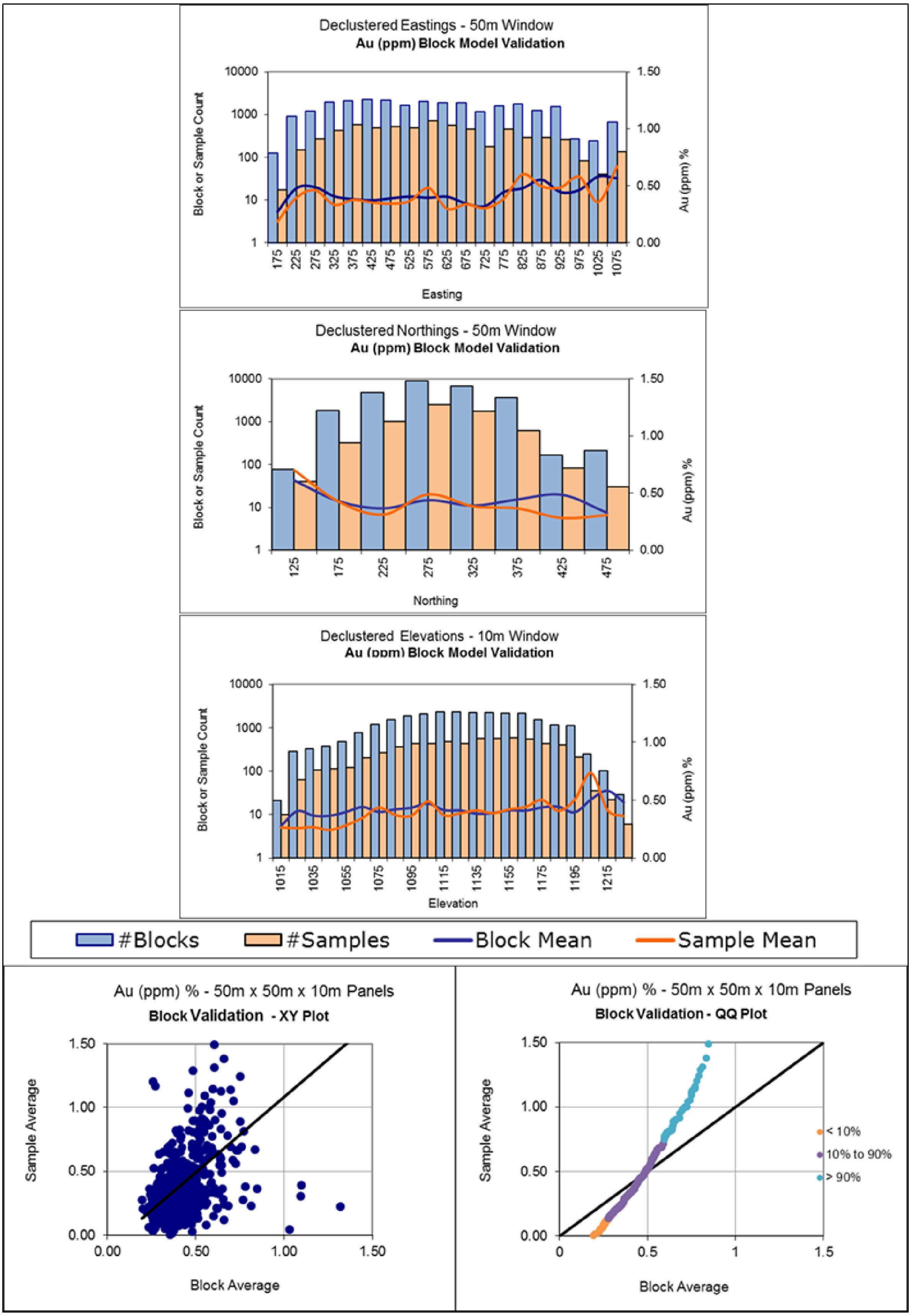


Figure 1.74: Swath plot validations for Au within the other lithologies oxide mineralisation at Maricanski area

1.29 Classification

Mineral Resources were classified in accordance with guidelines provided in the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).

The Mineral Resource estimate was based on a number of factors and assumptions:

- An option study carried out by AMEC Foster Wheeler demonstrated that a Heap Leach (HL) process is financially more beneficial to the project than a Carbon-in-Leach (CIL) process, based on the samples collected for testwork. Under this scenario only oxide (OX) and partially oxide (POX) material qualify as having reasonable prospects for future economic extraction. Therefore only oxide and partially oxide mineralisation is included in the Mineral Resource estimate;
- All of the available borehole data, from Reverse Circulation (RC) and Diamond Drilling (DD), was used in the Mineral Resource estimation except holes drilled by the Yugoslav Government in the 1980’s, which are considered unreliable;
- The mineralisation domain is based on a cut-off grade of 0.2 g/t Au, and was modelled in three dimensions by Golder using an Indicator Kriging approach. The domain was used to flag the sample data and the block model and forms the basis of the statistical analysis and constraining of the grade estimation;
- A topography surface, resulting from a drone survey flown in 2017, was provided by Genesis. Drill collars from old drill campaigns were registered to the new topographic surface;
- Golder reviewed the QAQC data delivered by Genesis and considered it satisfactory for the purposes of resource estimation;
- Statistical and geostatistical analyses were carried out on drilling data composited to 1 m downhole. This included variography to model spatial continuity relationships in the mineralisation domains; and
- The Ordinary Kriging interpolation method was used for the estimation of gold, silver, copper, arsenic, sulphur and in situ bulk density using variogram parameters defined from the geostatistical analyses.

The Mineral Resources have been classified as Measured, Indicated and Inferred based on data density, estimation performance and confidence in geological continuity. The initial classification criteria, applied in a block by block basis, is described below:

- Measured Resources: OX and POX mineralisation zones where:
  - a) Blocks are estimated in the first pass;
  - b) Drill holes average distances is less than 30 m; and
  - c) The slope of regression is greater than 0.5.
- Indicated Resources: OX and POX mineralisation zones where:
  - a) Blocks are estimated in the first pass;
  - b) Drill holes average distances is less than 60 m; and
  - c) The number of drill holes is greater or equal to 3.
- Inferred Resources: Remaining OX and POX mineralisation zones estimated on first or second passes, generally representing zones with discontinuous or low sampling coverage, however with grade extrapolation limited to half of the drill holes distances.

Subsequent refinement of the initial classification was undertaken using generalised classification polygons, to yield more spatially continuous classification categories. The Measured areas are defined by the wireframe “CLASS_Measured.00t”, the Indicated by the wireframe “CLASS_indicated.00t”, and the Inferred zone represented by the remaining blocks with extrapolation limited to half of the nominal drill hole spacing.

Examples of the resource classification are illustrated in Figure 1.75 to Figure 1.77.

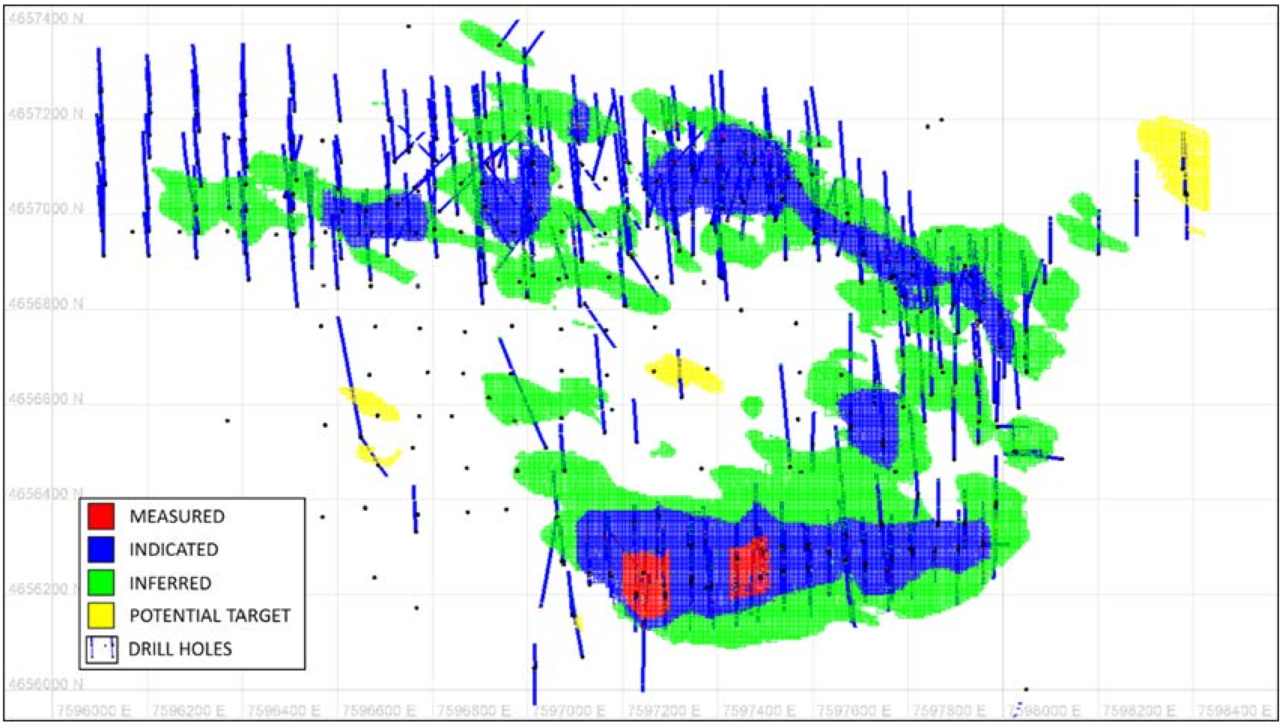


Figure 1.75: Plan view of the Mineral Resource Classification for Plavica and Maricanski Rid

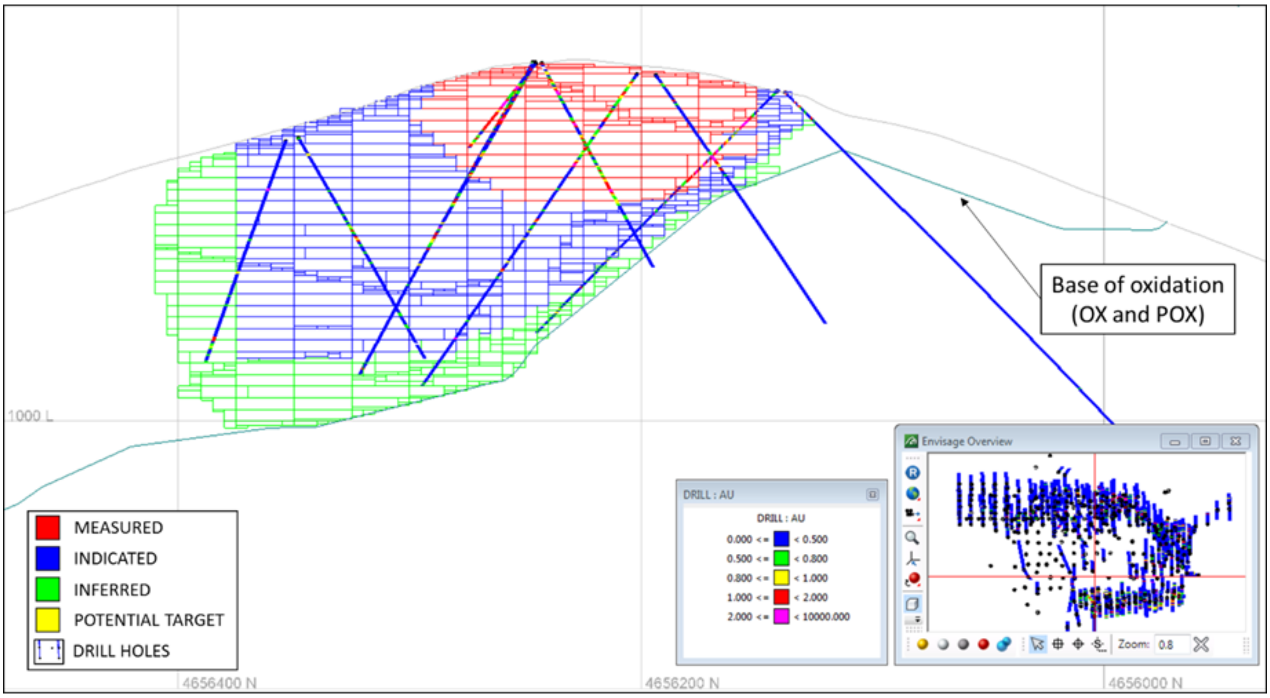


Figure 1.76: Vertical section 7597245E showing the Mineral Resource Classification at Maricanski Rid area

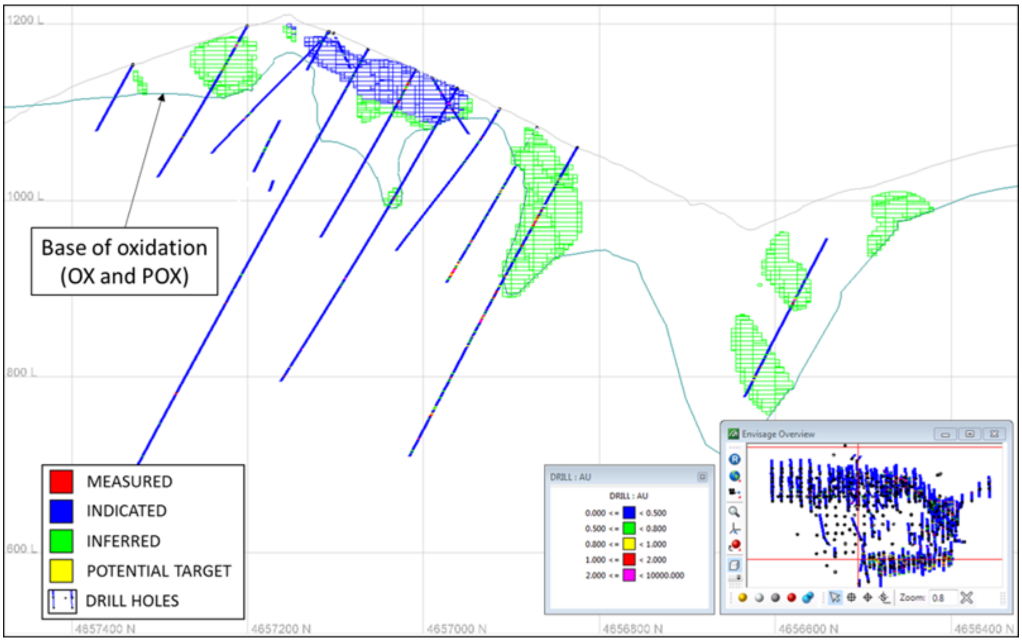


Figure 1.77: Vertical section 7597000E showing the Mineral Resource Classification at Plavica area

1.30 Cut-Off Grade

In order to demonstrate reasonable prospects for eventual economic extraction, the resource model was optimised using the industry standard Whittle 4X to produce an economic resource open pit shell using an optimistic gold sale price of US$1,875 per troy ounce. The economic pit shell was used to constrain the reporting of the Mineral Resource estimate. The use of the economic pit shell utilising an elevated gold price is an industry recognised method of demonstrating 'reasonable prospects' when ascertaining the eventual economic extraction criteria for determination of the Mineral Resource Estimate. Current project (non-inflated) mining and processing costs are applied to the Whittle optimisation using the aforementioned optimistic gold price. The resulting pit shell demonstrated that a cut-off grade of 0.4 Au ppm produces a positive cashflow scenario. Therefore, the Mineral Resource reporting is constrained to within this pit shell to satisfy economic considerations.

Figure 1.78 and Figure 1.79 illustrate the pit shell contour in two separate sections of the deposit.

Material sitting outside of this pit shell has not been included in the Mineral Resource estimate.

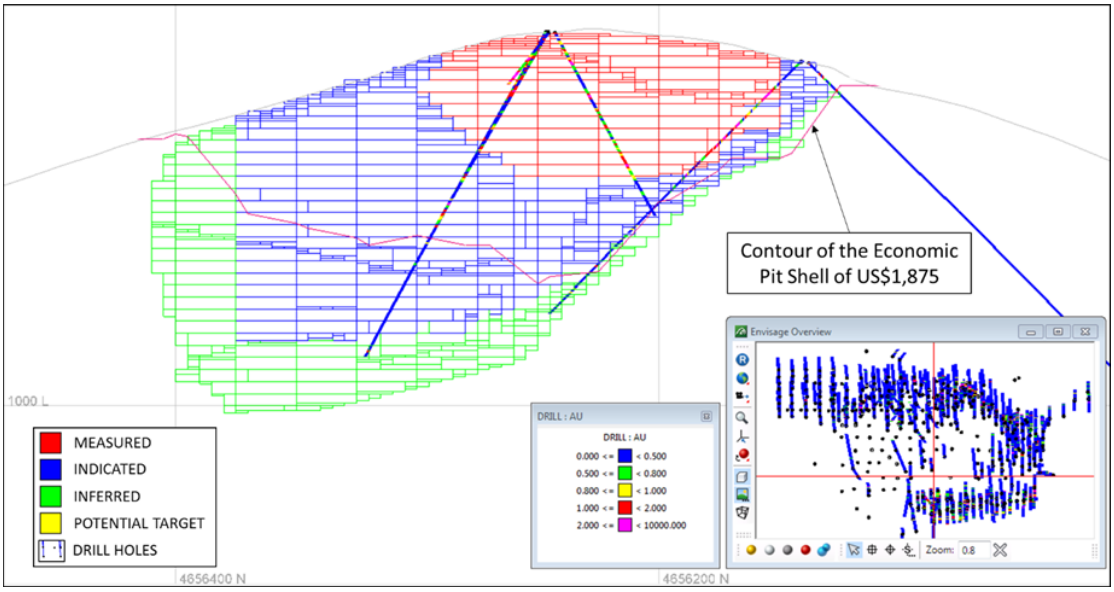


Figure 1.78: Vertical section 7597245E highlighting the economic pit shell limiting the Mineral Resource declaration

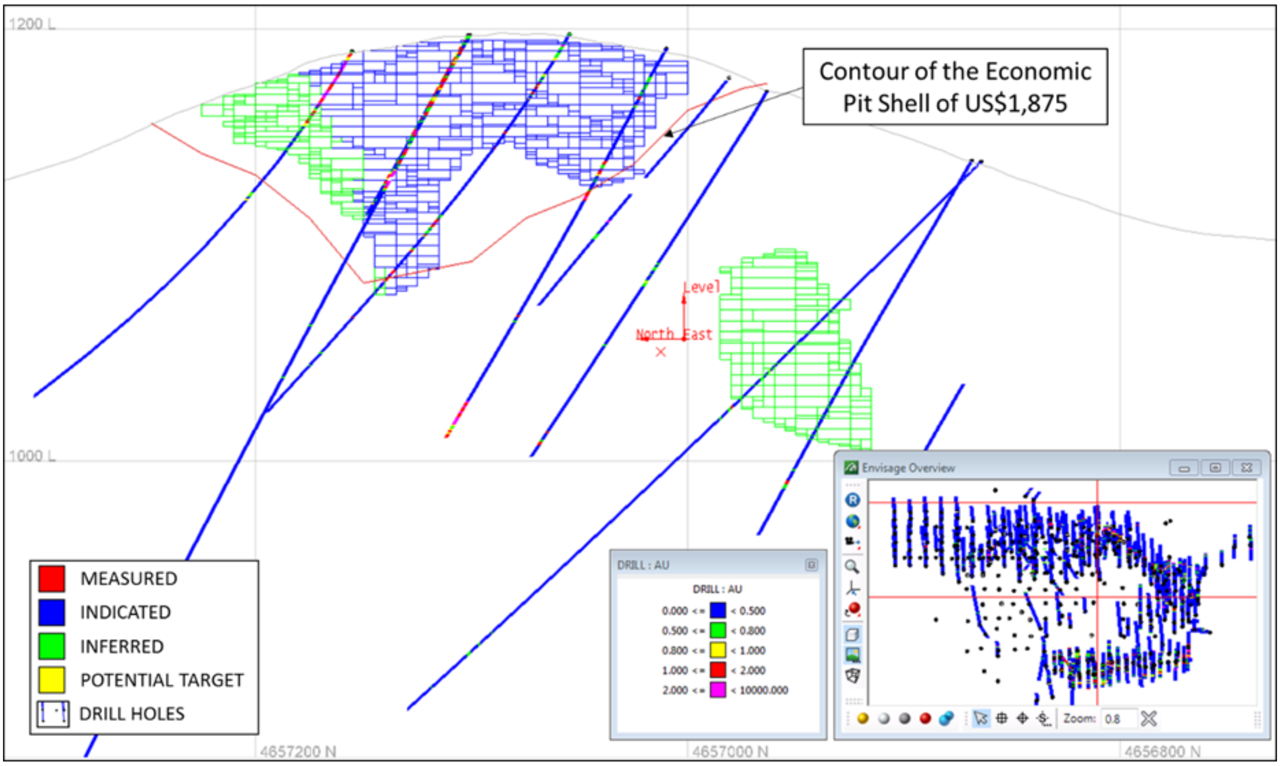


Figure 1.79: Vertical section 7597400E highlighting the economic pit shell limiting the Mineral Resource declaration

1.31 Mineral Resources

The in situ Mineral Resources were classified as Measured, Indicated or Inferred Resources. The classification of Mineral Resources was considered appropriate based on geological confidence criteria and the location and quality of drilling and sampling information. The Mineral Resource Estimate was based on the database available as of 27th June 2017. Mineral Resources are reported from the Ordinary Kriged block model PlavicaMaricanski_2017.bmf in Maptek Vulcan format. Non-mineralised blocks have been estimated but were not classified or reported. The Mineral Resource consists of gold horizons hosted within a volcanic sequence which dips at a shallow angle to the south and is associated with high sulfidation epithermal alteration apparently controlled by steeply dipping structures. The deposit was mined in ancient times by the Romans, but in a scale considered insignificant. Exploration history includes sampling and mining during the 1930s. After a gap, the deposit was targeted by drilling during late 1997 and the beginning of the 2000s.

The Mineral Resource using a gold cut-off grade of 0.4 ppm Au is 37.4 Mt, at an average gold grade of 0.77 ppm Au, for a contained gold content of 926,000 oz. Au and 7,760,000 oz. Ag (Table 1.30). The graph in Figure 1.80 represents the tonnages and grades of the deposit for a range of Au cut-off grades. The information in this statement which relates to the Mineral Resource is based on information compiled under the supervision of Richard Gaze who is a full-time employee of Golder Associates Pty Ltd and a Member of the Australasian Institute of Mining and Metallurgy. Richard Gaze has sufficient relevant experience in the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the JORC Code, 2012 Edition.

Table 1.30: *In Situ* Mineral Resources for Plavica Deposit Using a 0.4 ppm Au Cut-Off Grade within Mineralised Domain

Class	Material Type	Tonnes (Mt)	Au (ppm)	Ag (ppm)	As (ppm)	Cu (ppm)	S (%)
Measured	OX	1.6	1.01	4.73	740	130	2.6
	POX	0.002	0.59	2.28	390	840	4.3
	Sub-total	1.6	1.01	4.73	740	130	2.6
Indicated	OX	15.8	0.76	5.84	690	190	1.8
	POX	3.5	0.78	6.74	570	660	3.4
	Sub-total	19.3	0.76	6.00	670	270	2.1
Inferred	OX	9	0.7	6.61	710	200	2.0
	POX	7.5	0.82	7.83	660	520	3.0
	Sub-total	16.5	0.75	7.16	690	350	2.5
TOTAL	OX	26.4	0.75	6.04	700	190	1.9
	POX	11.0	0.81	7.48	630	570	3.1
	Sub-total	37.4	0.77	6.46	680	300	2.3

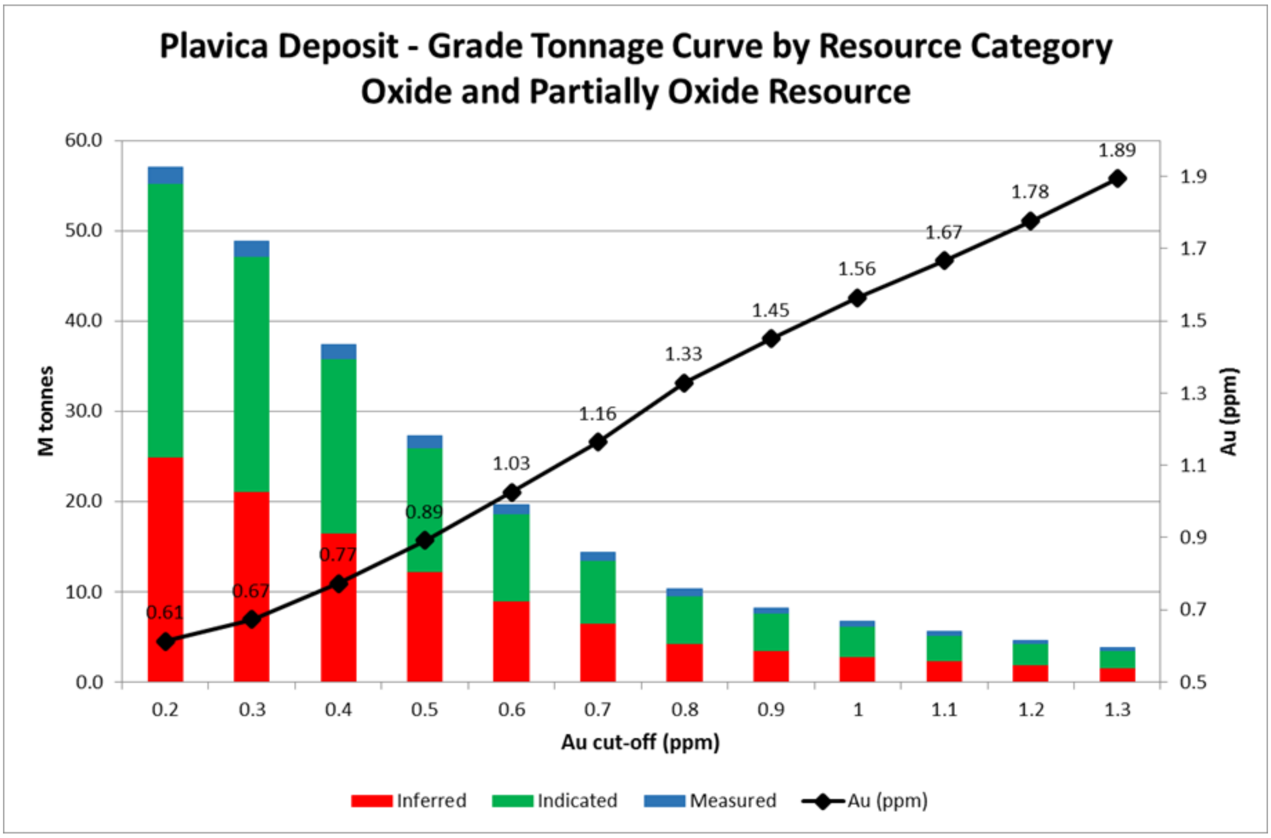


Figure 1.80: Grades and Tonnage curve of Plavica deposit at different Au cut-off grades

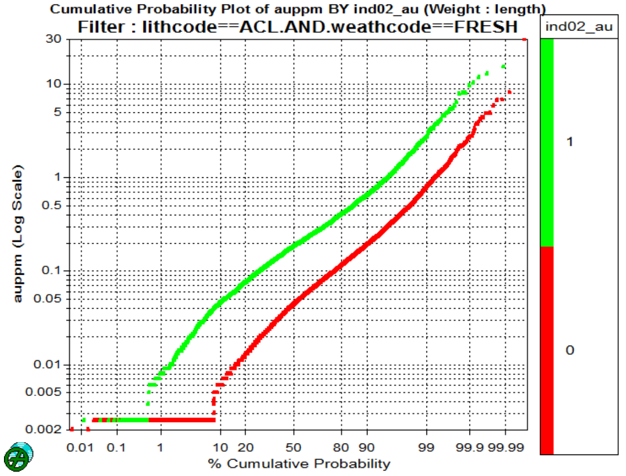
1.32 References

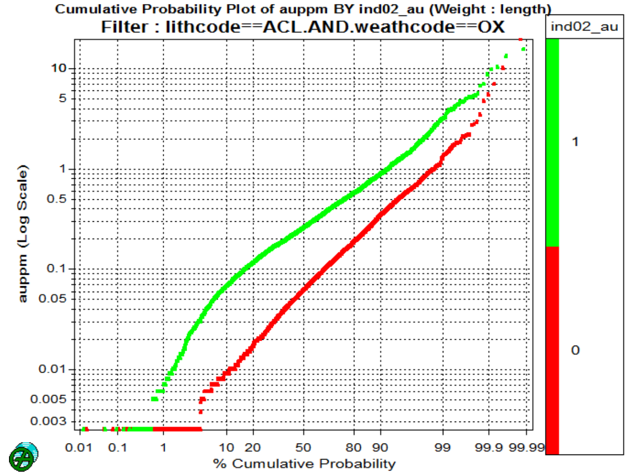
Ravensgate, 2016. *Mineral Resource Estimate Report – Plavica Project, Macedonia*. For Genesis Resources Limited. 30 November 2016.

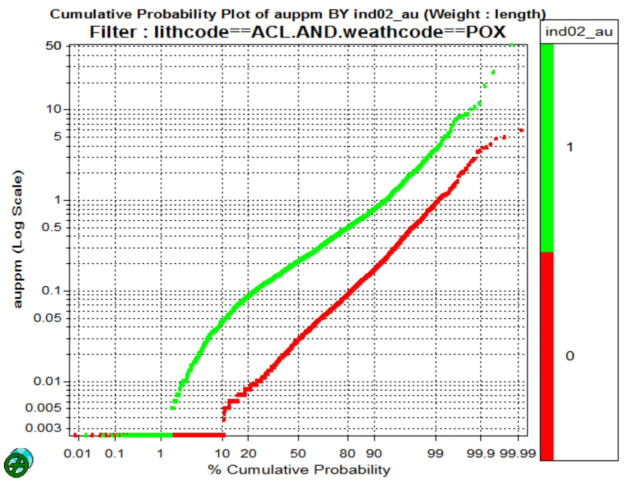
APPENDIX 1.1

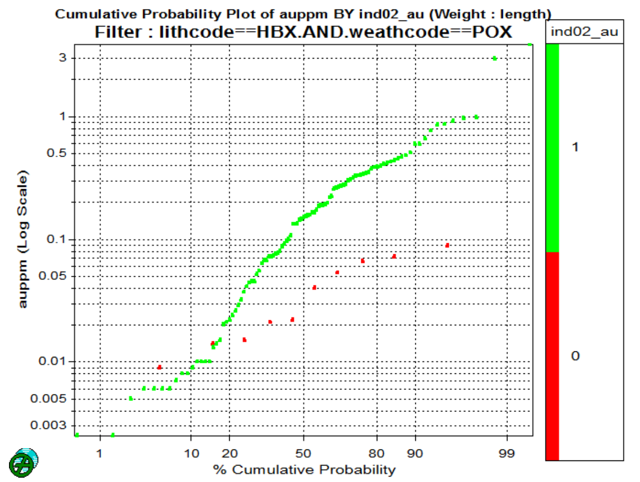
Statistical summary of the valid composites

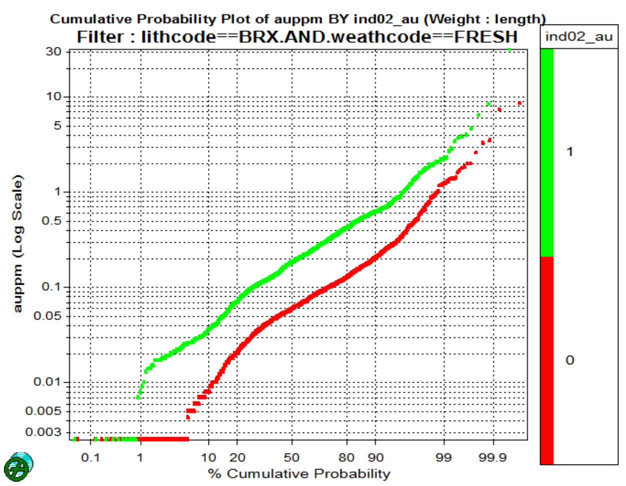
Exploratory Data analysis
Au (ppm) plots

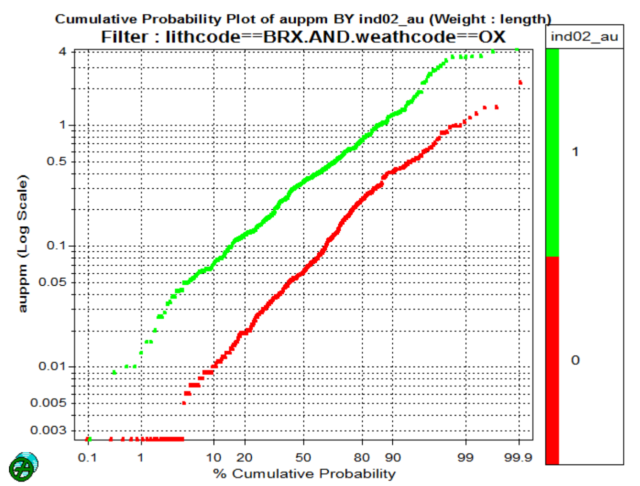




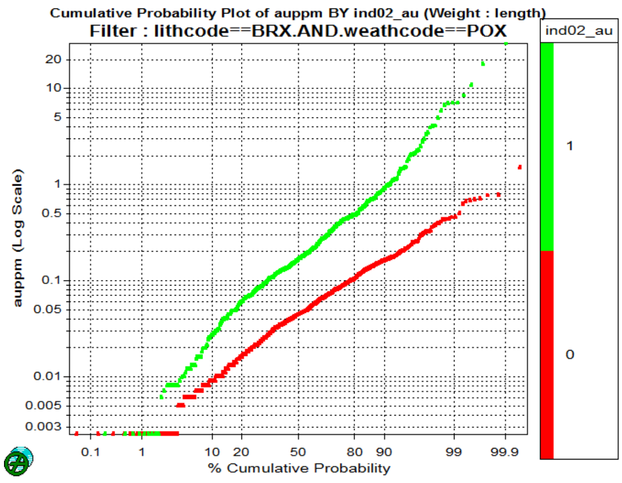


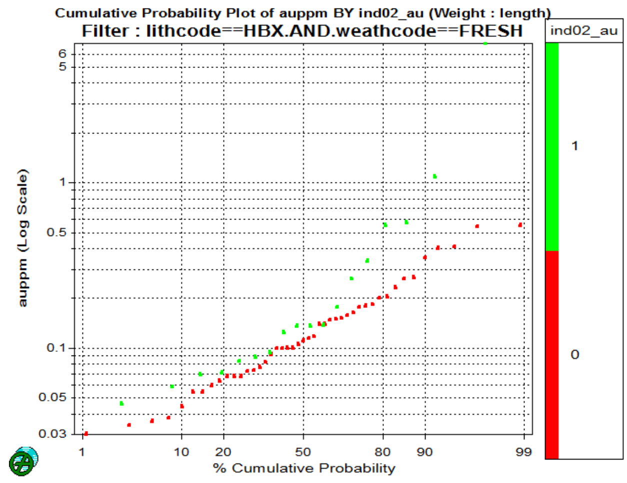


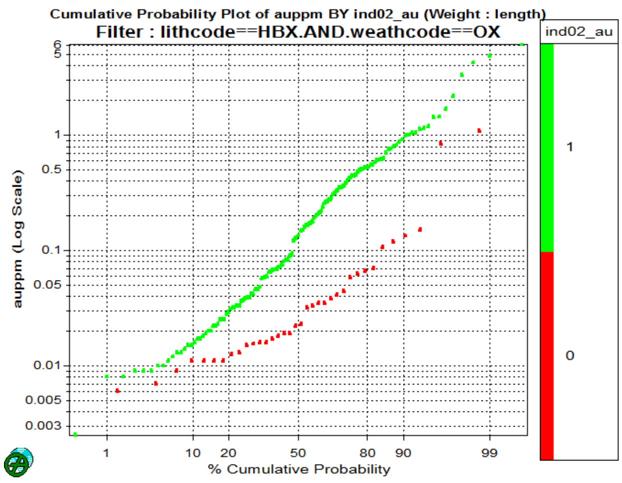


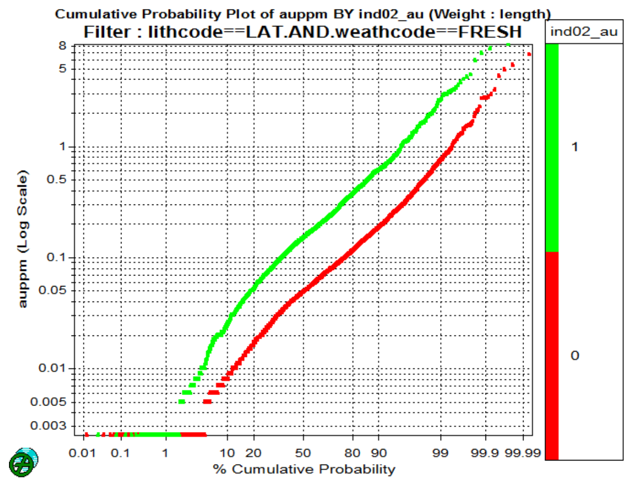


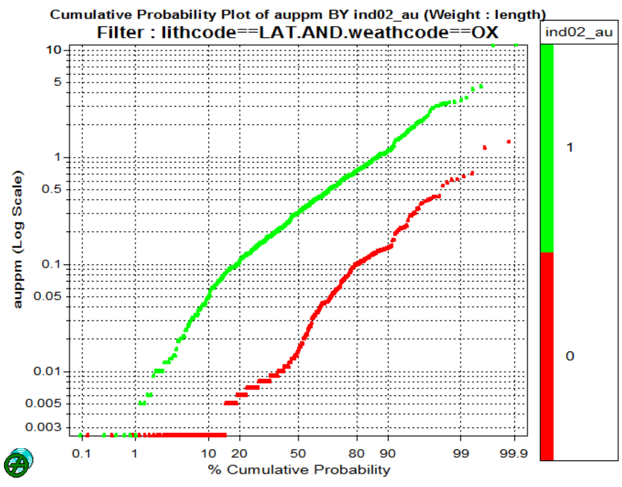
Exploratory Data analysis
Au (ppm) plots

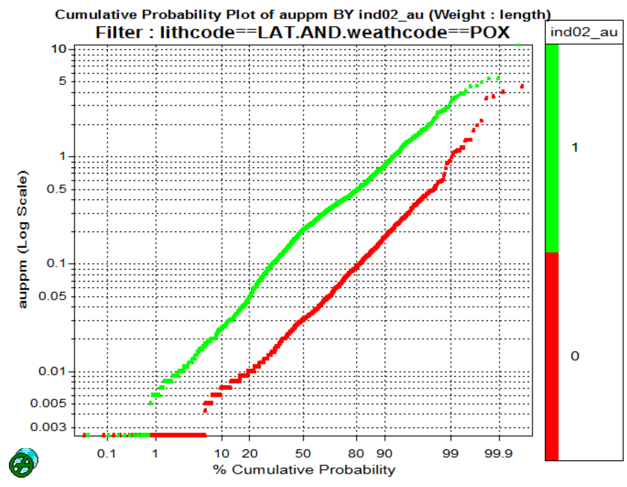




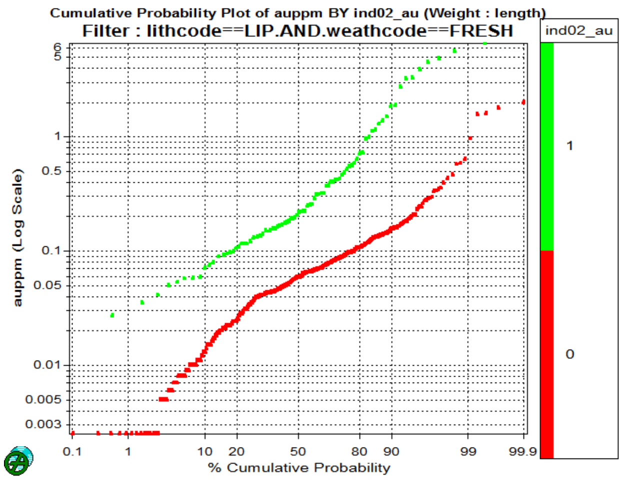


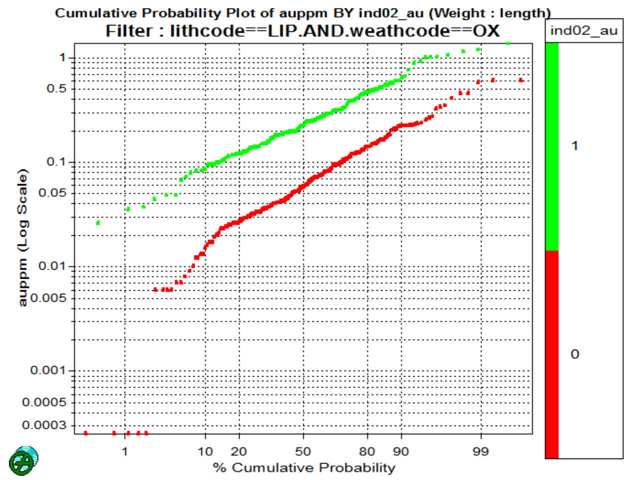


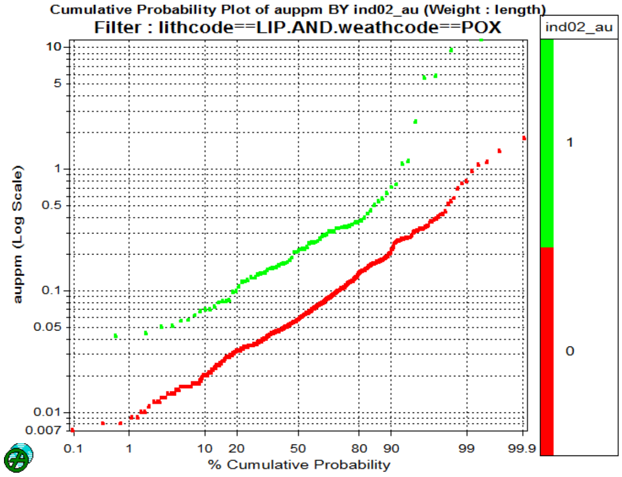


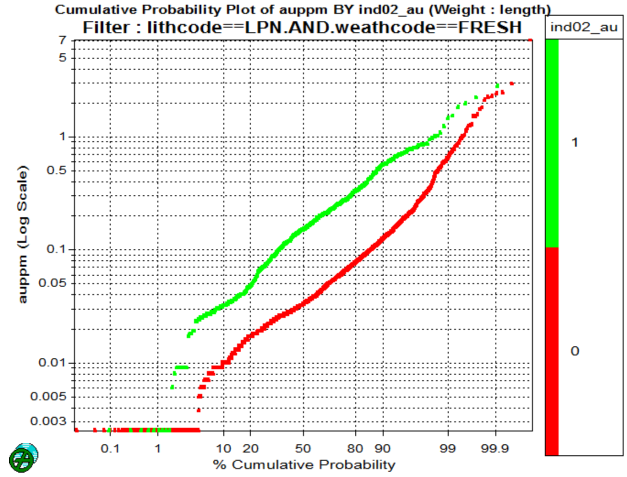


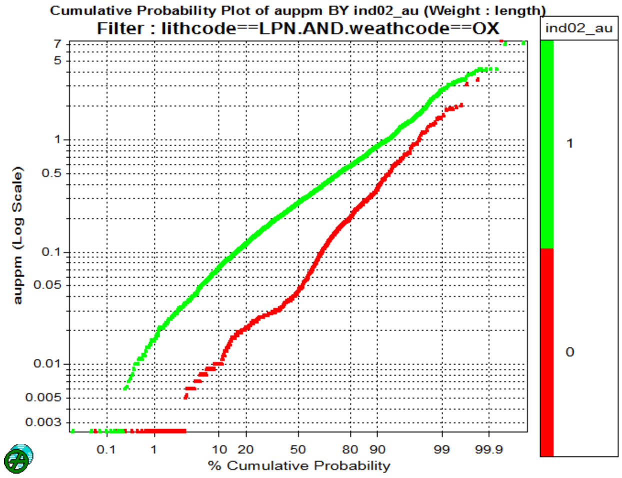
Exploratory Data analysis
Au (ppm) plots

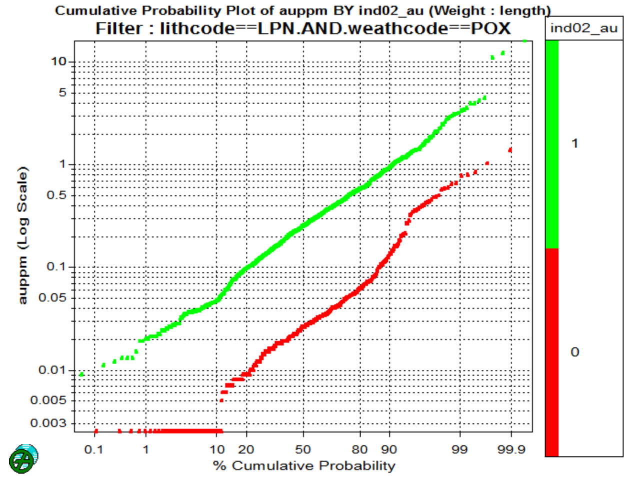




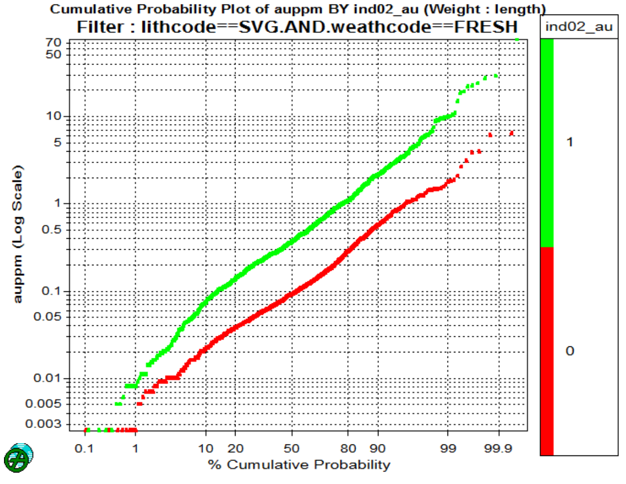


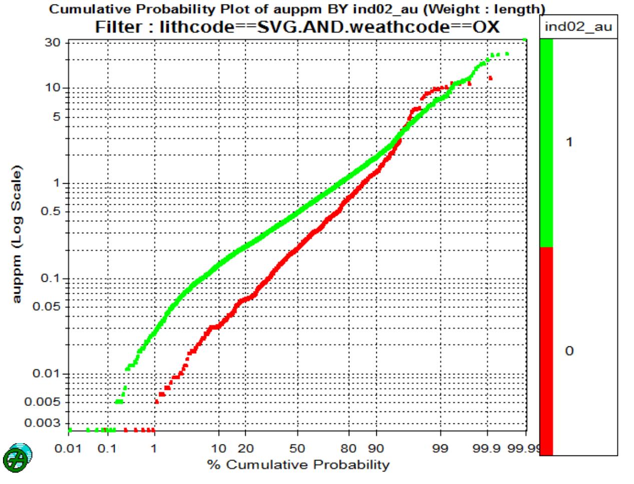


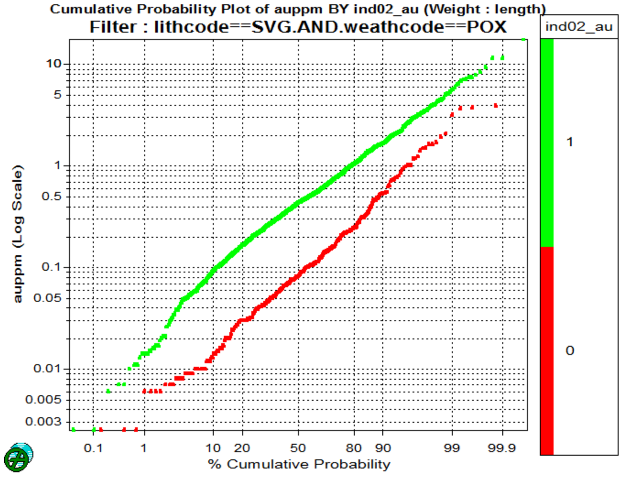


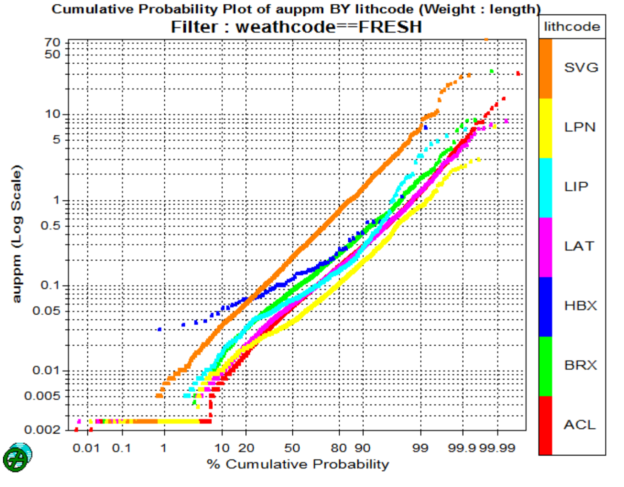


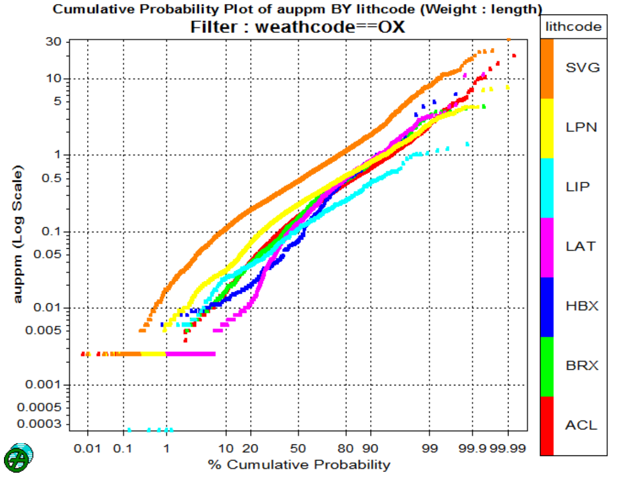
Exploratory Data analysis
Au (ppm) plots

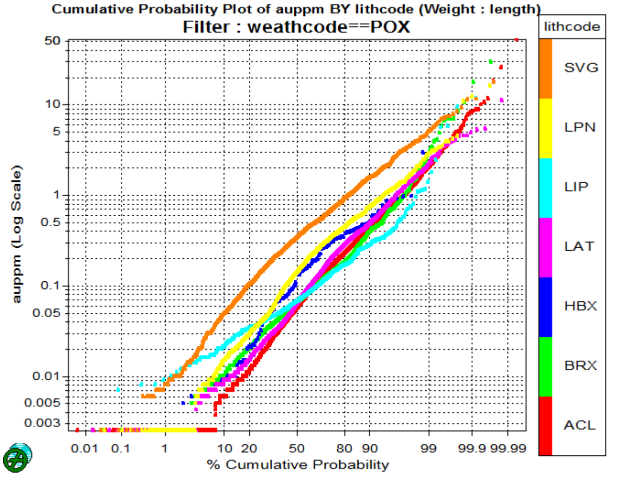












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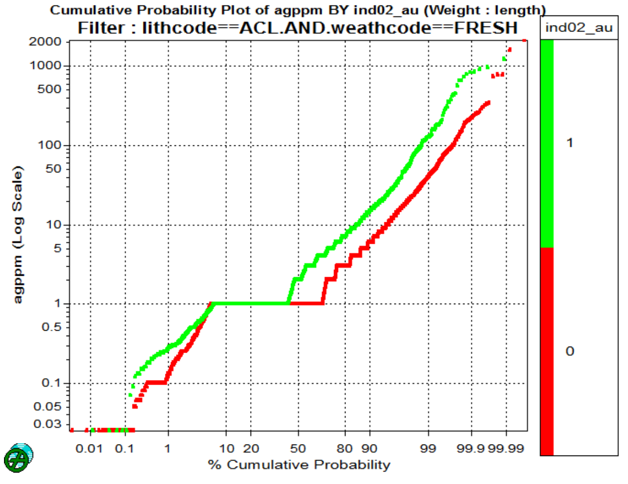

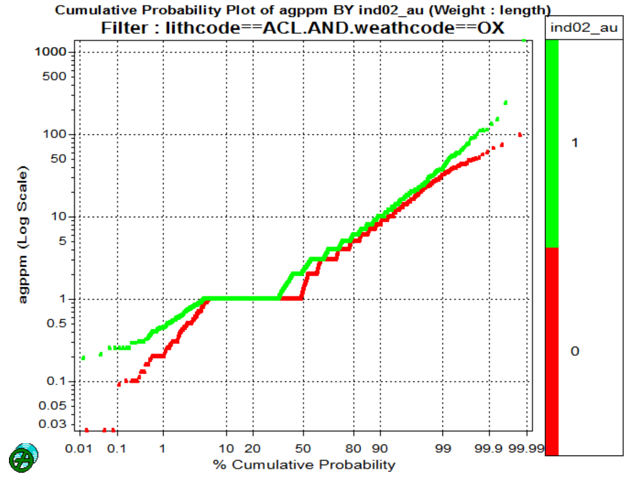

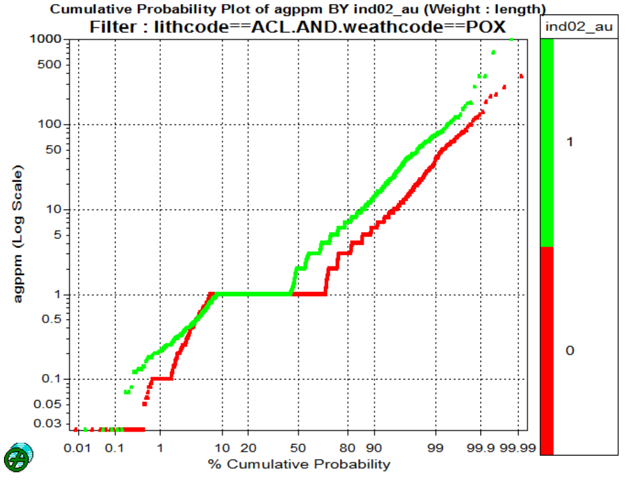

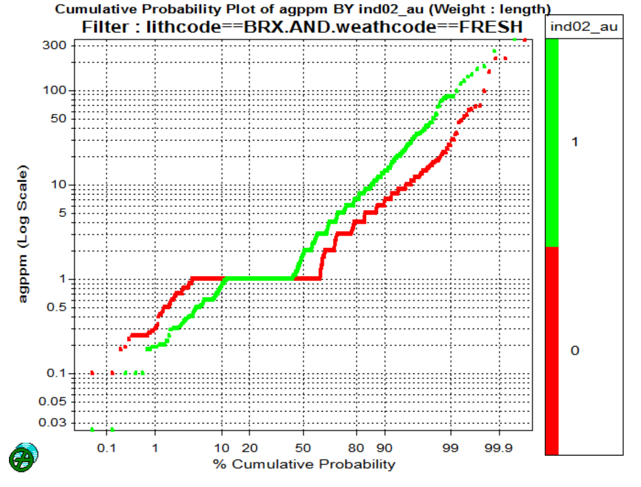

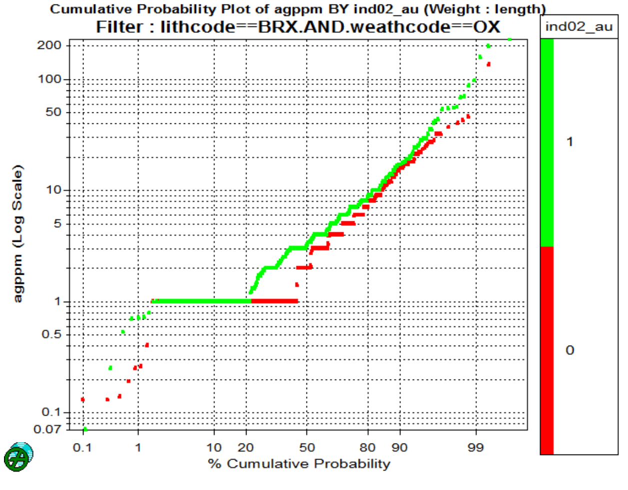

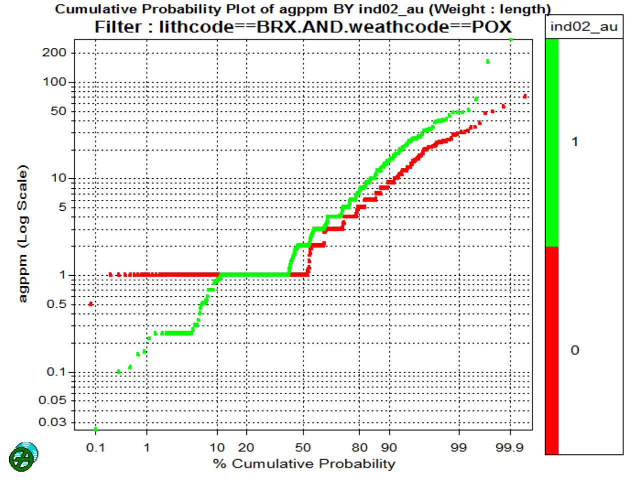

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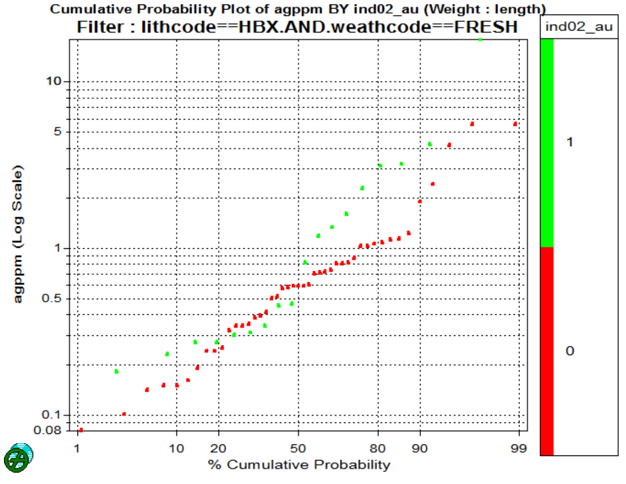

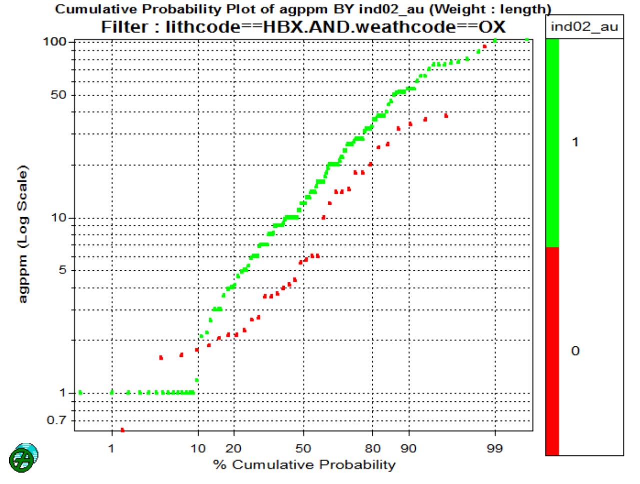

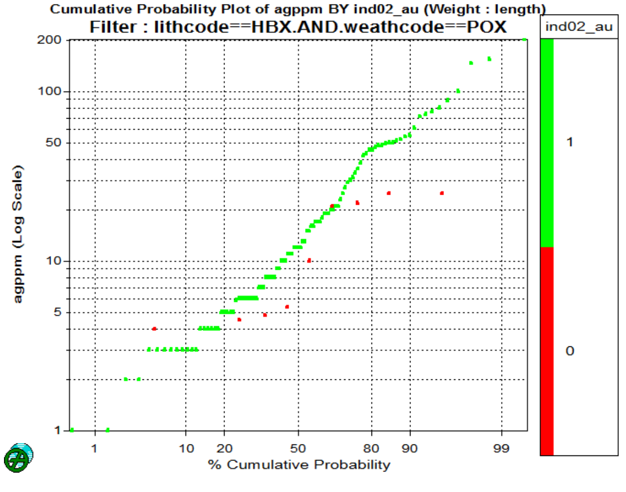

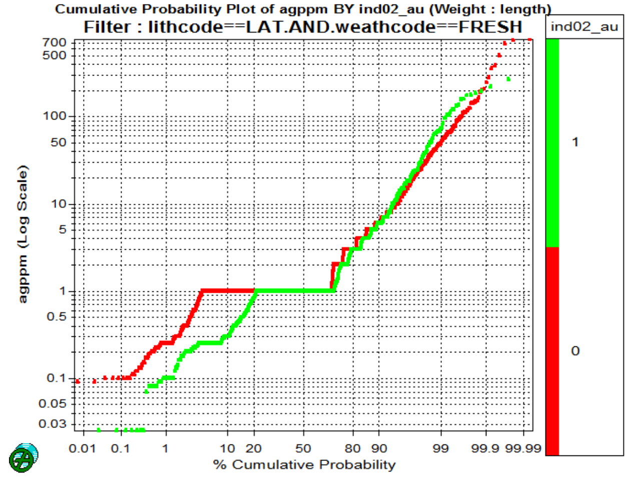

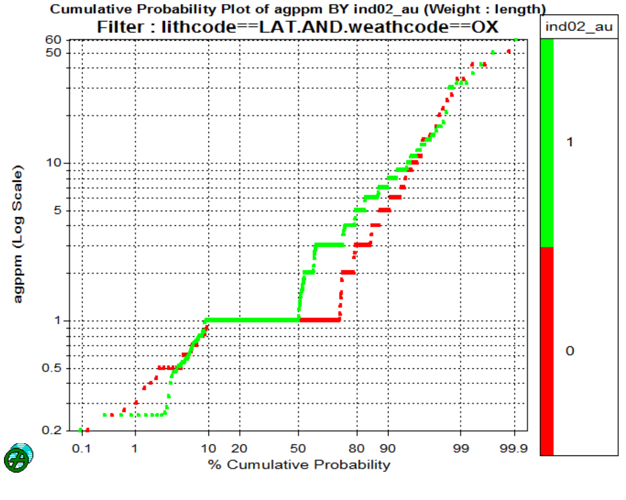

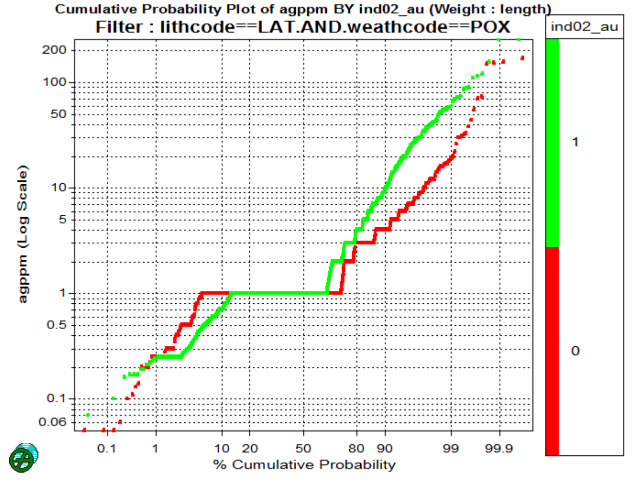

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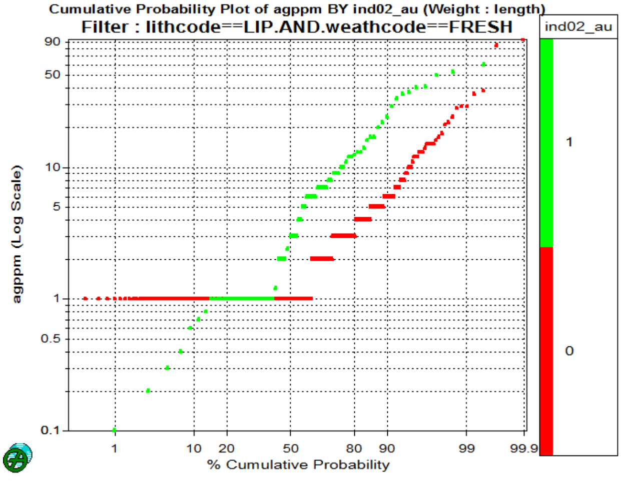

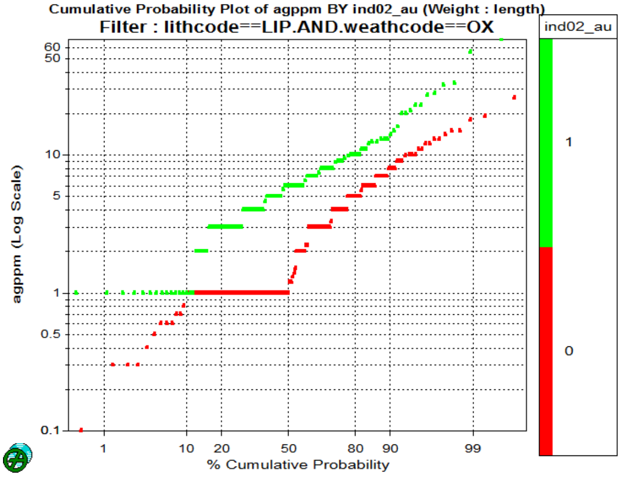

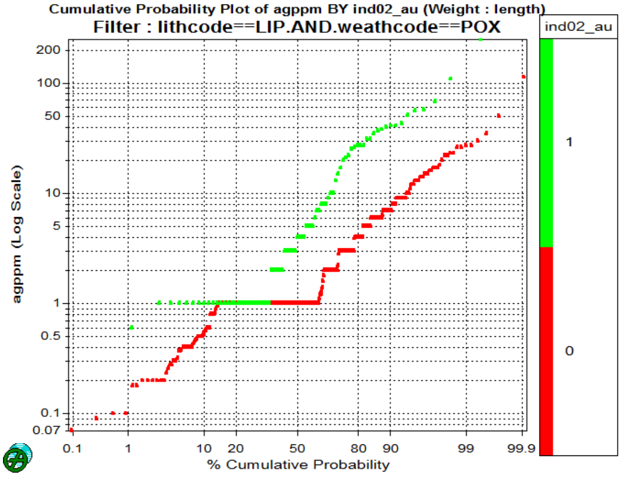

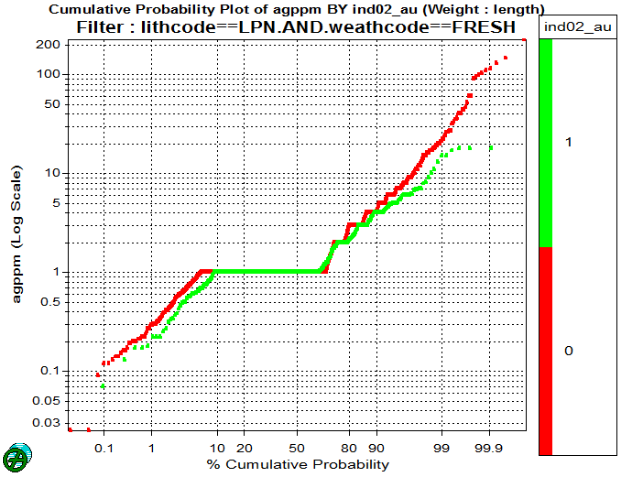

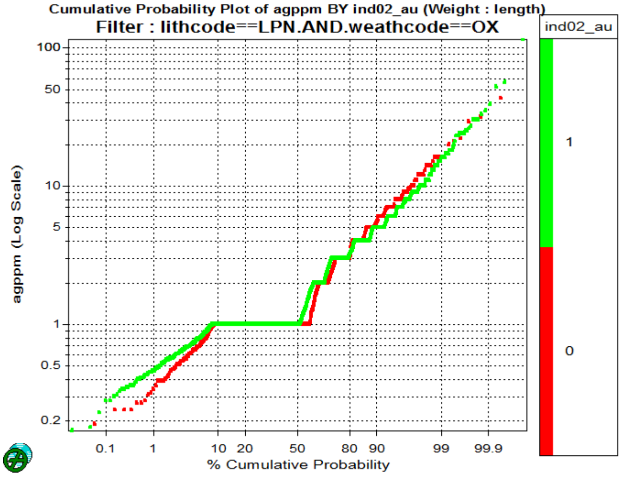

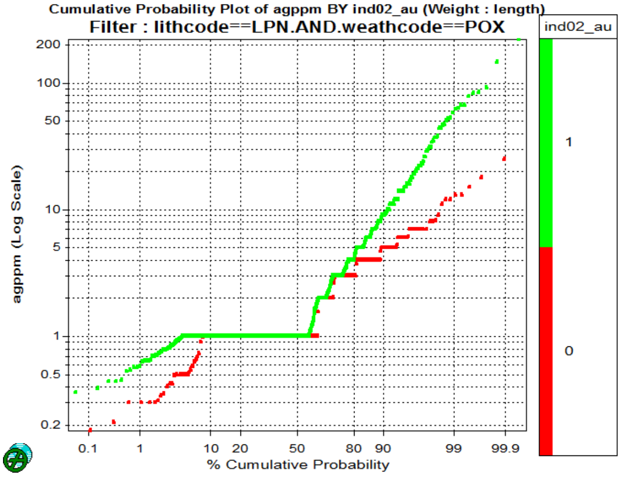

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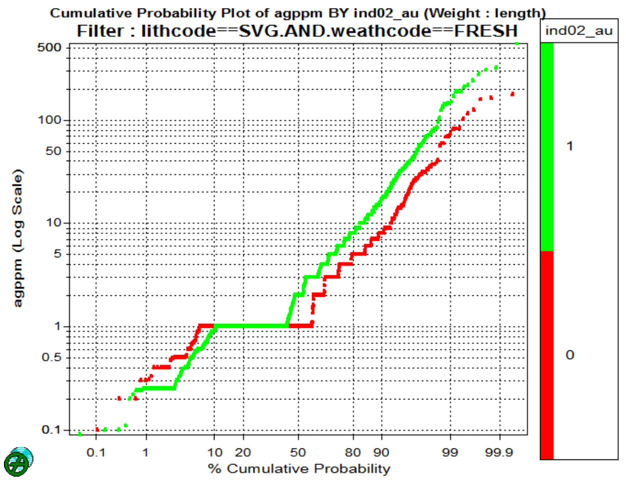

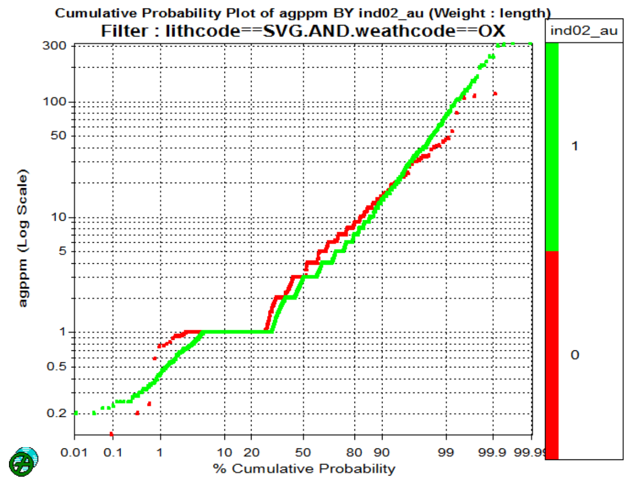

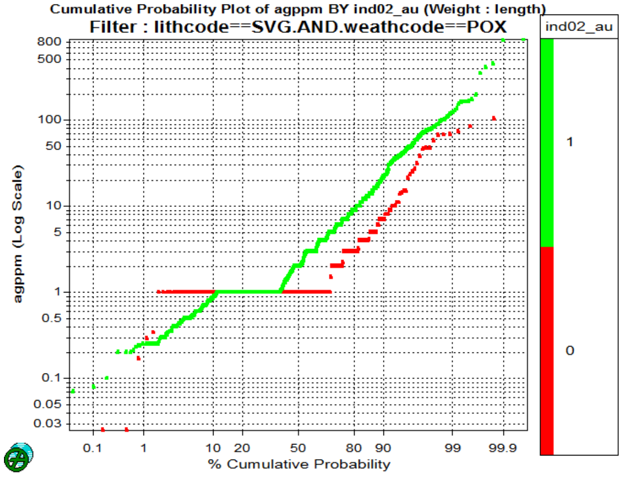

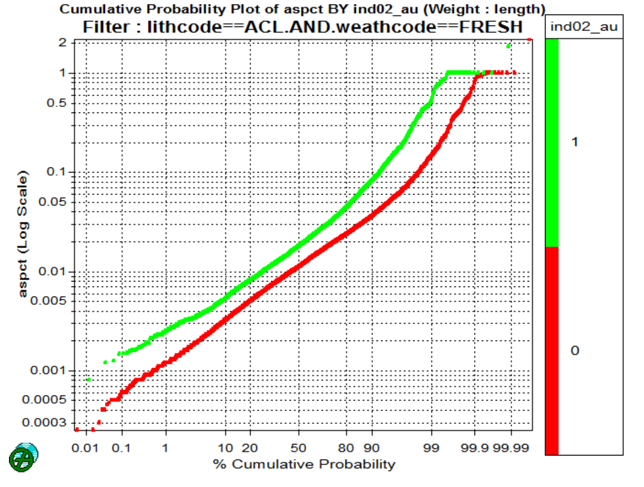

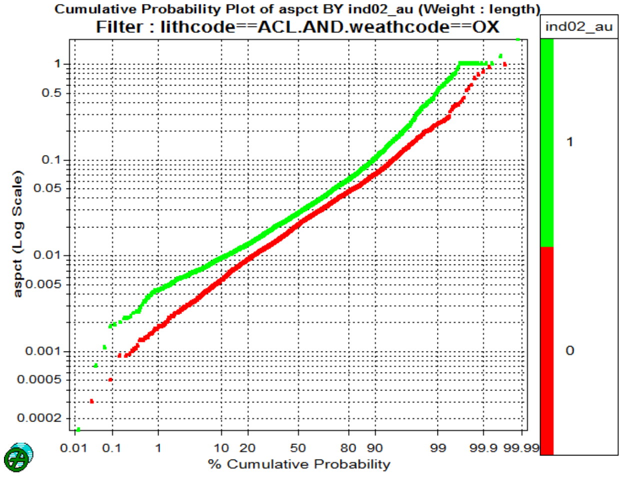

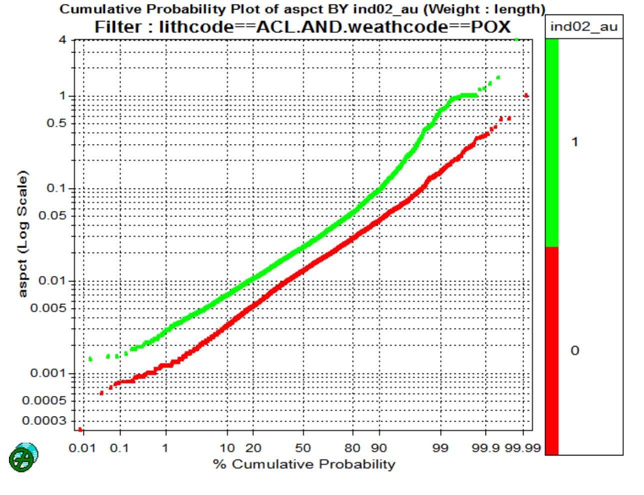

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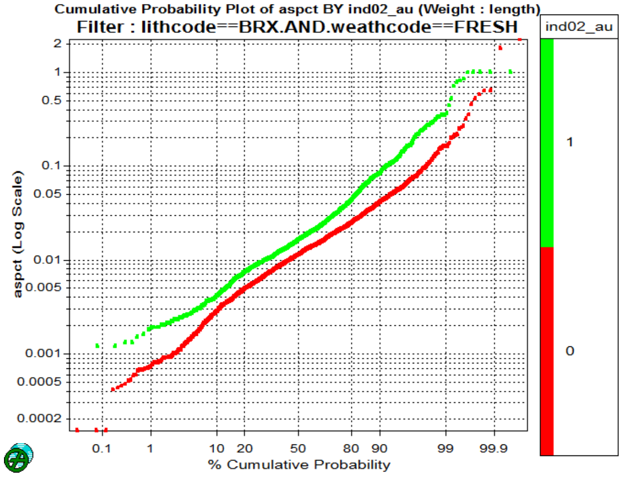

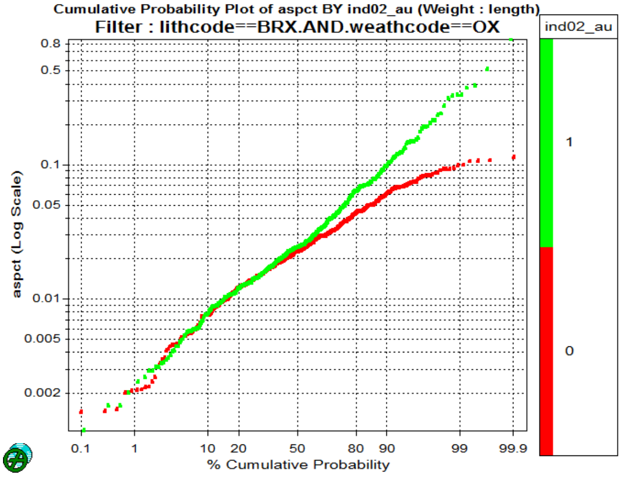

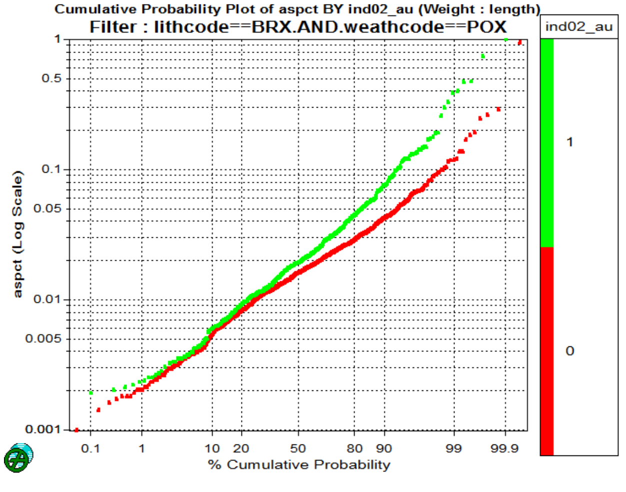

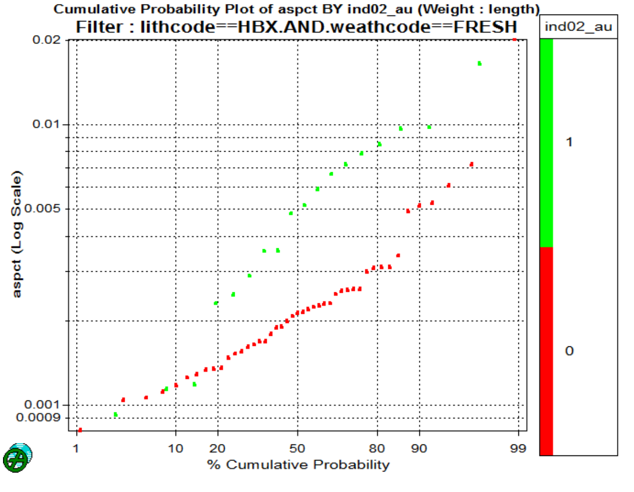

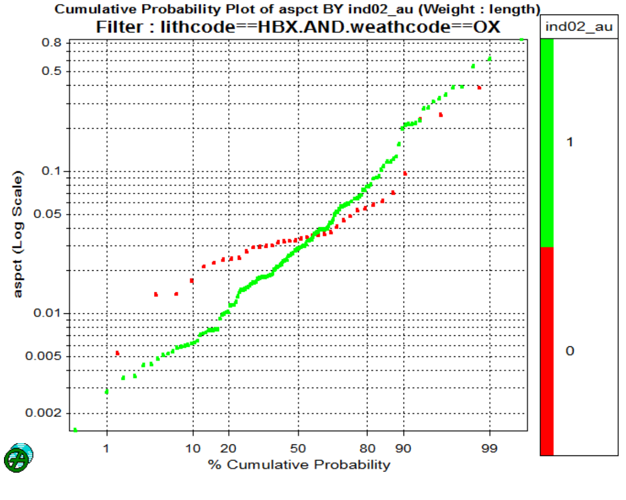

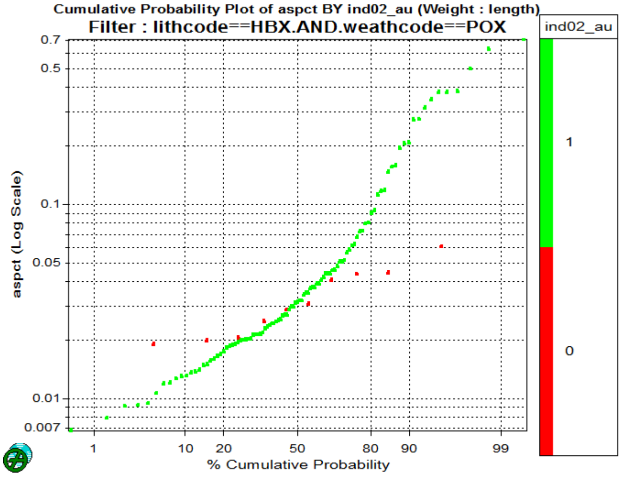

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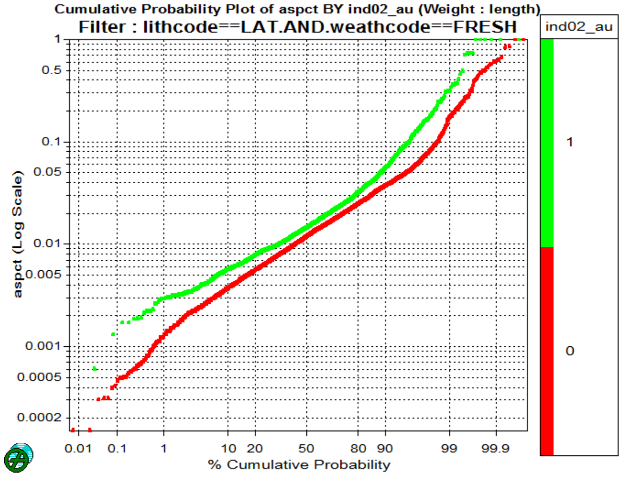
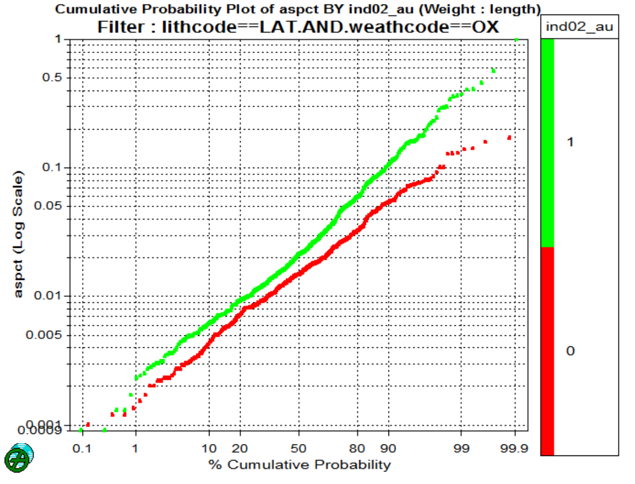
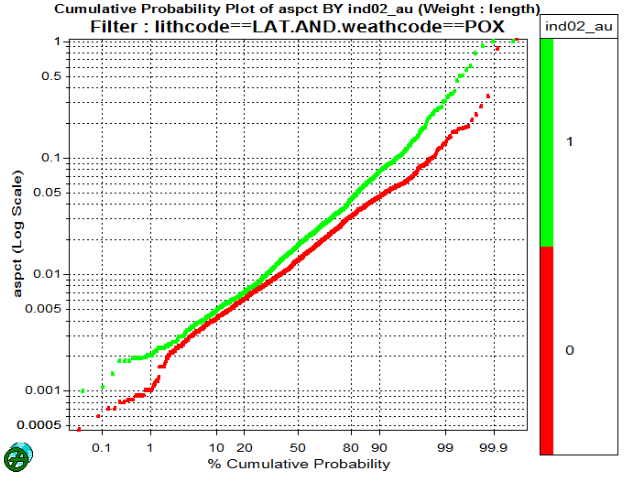
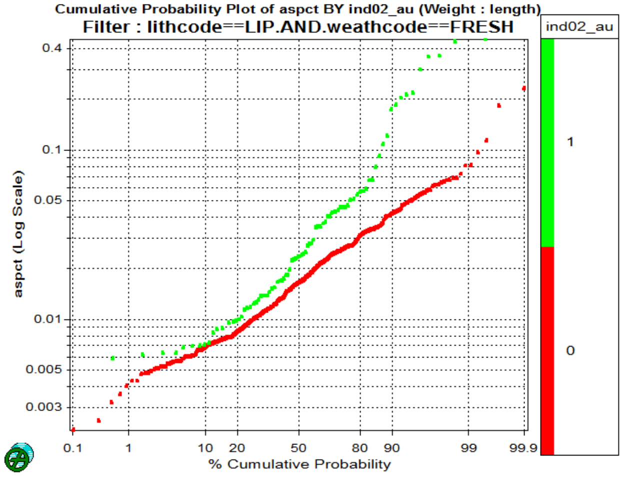
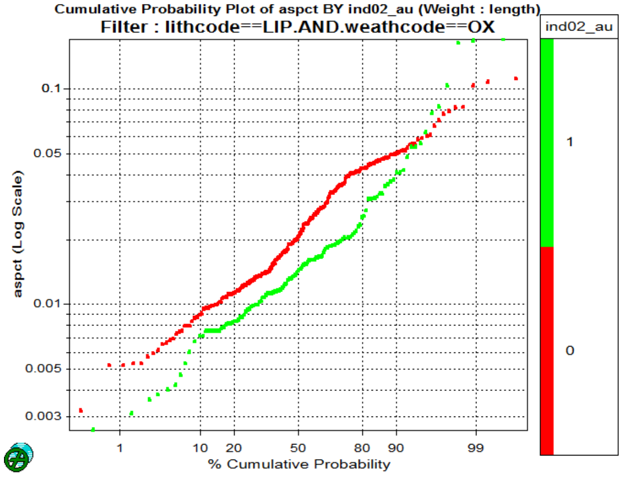
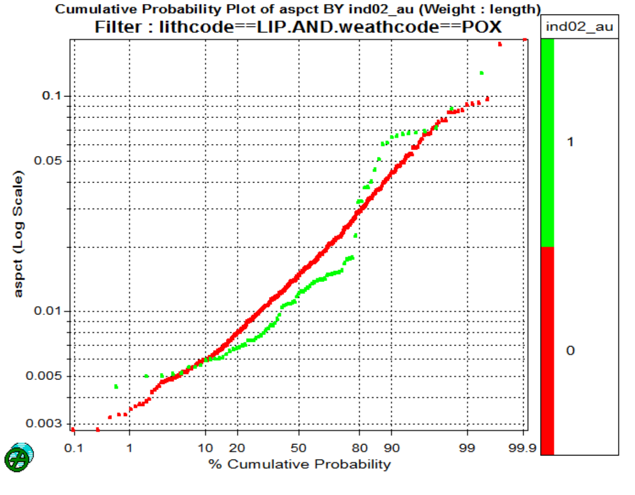




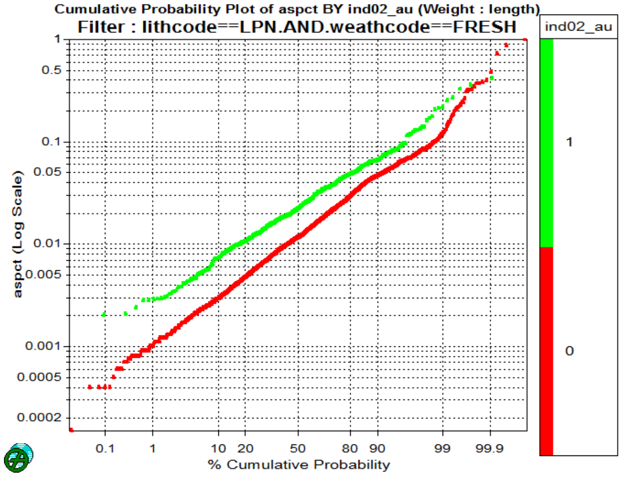


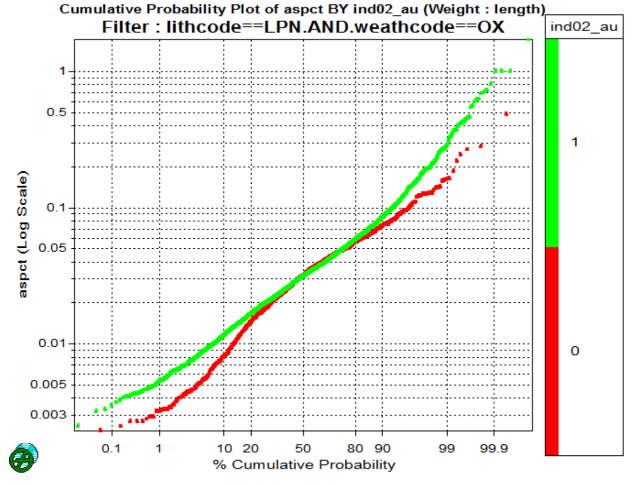


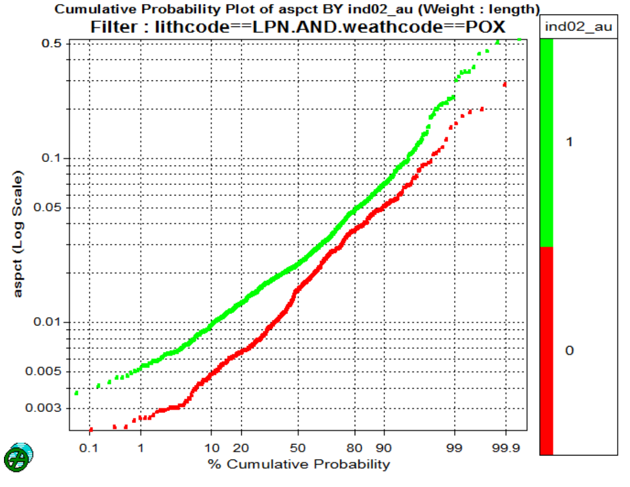


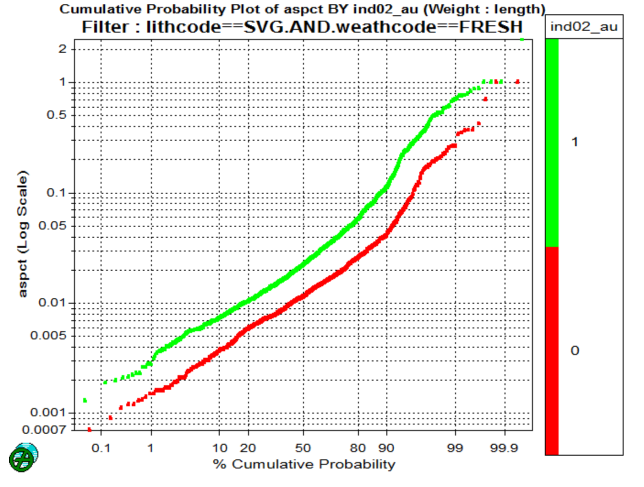


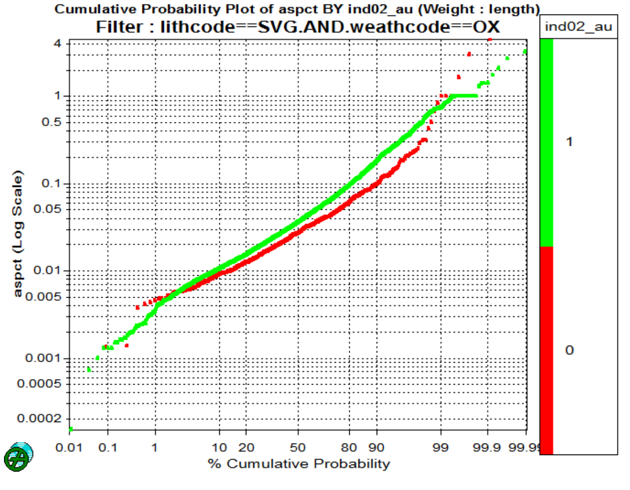
Exploratory Data Analysis
Contaminants

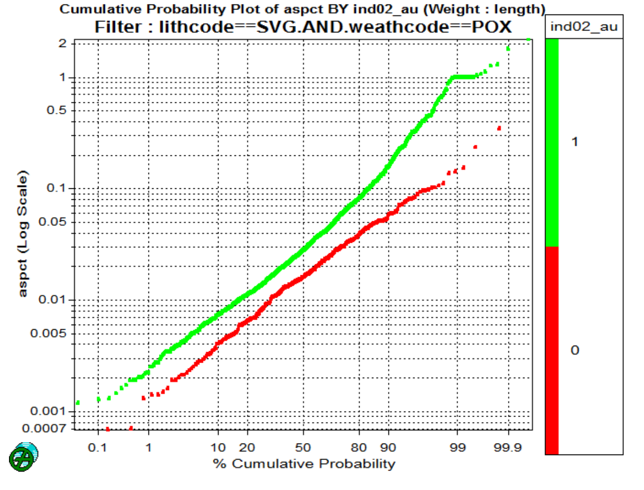












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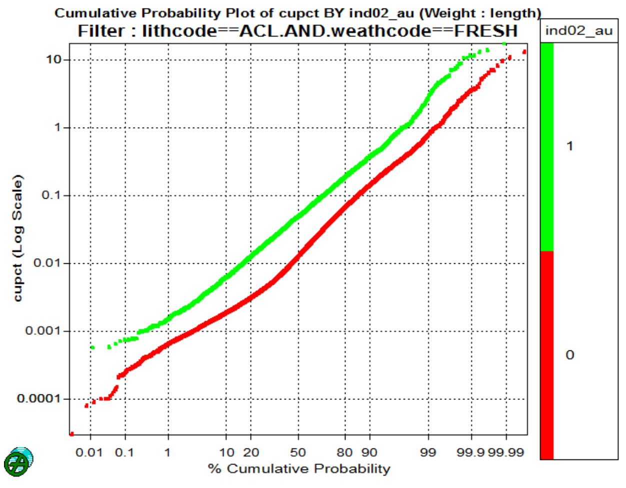

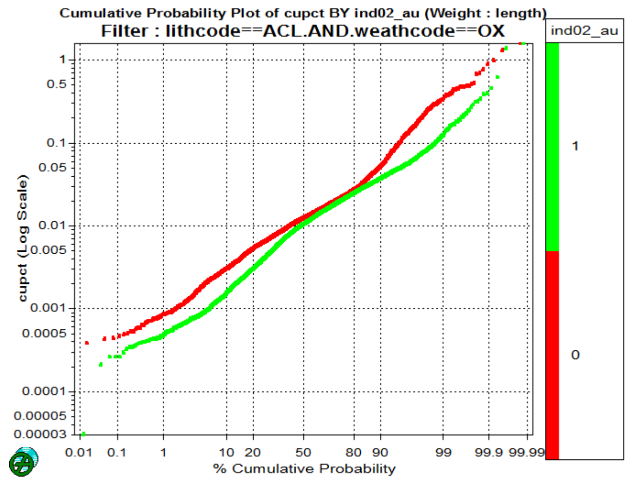

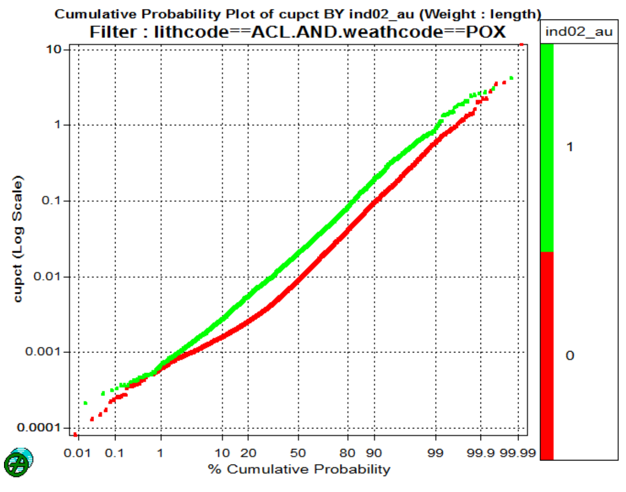

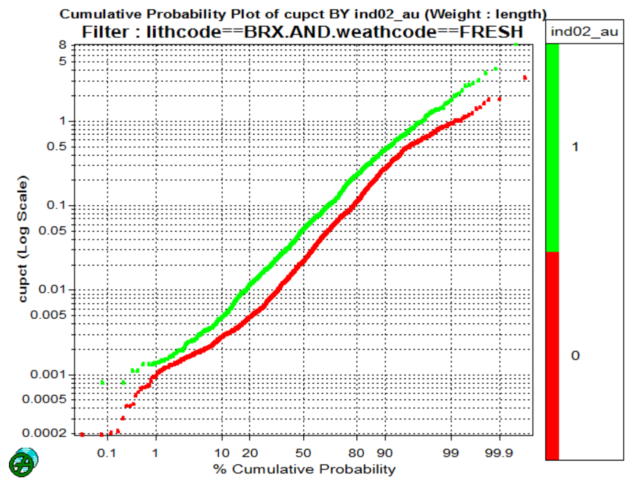

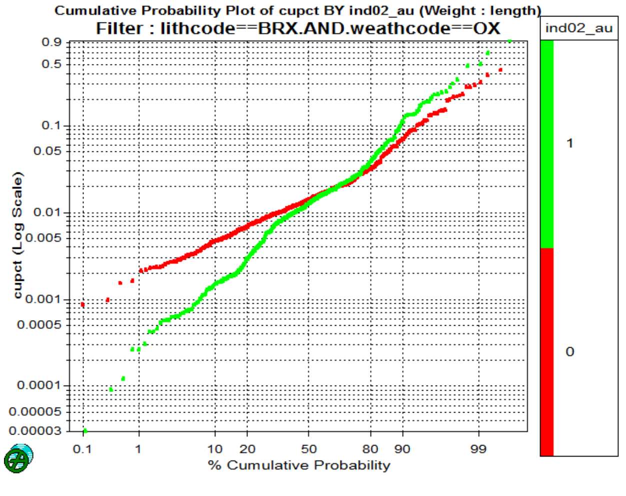

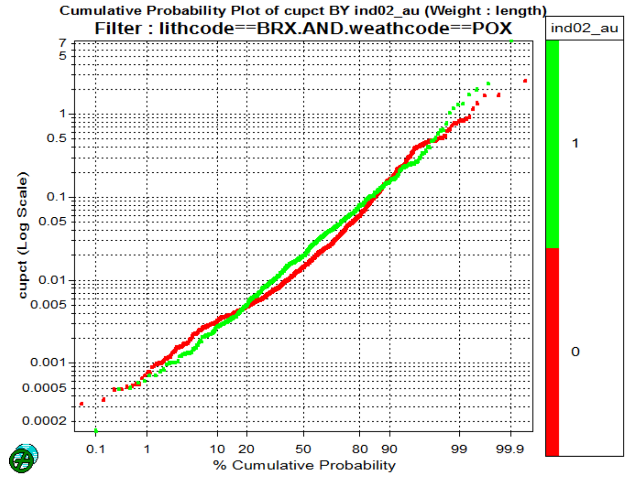

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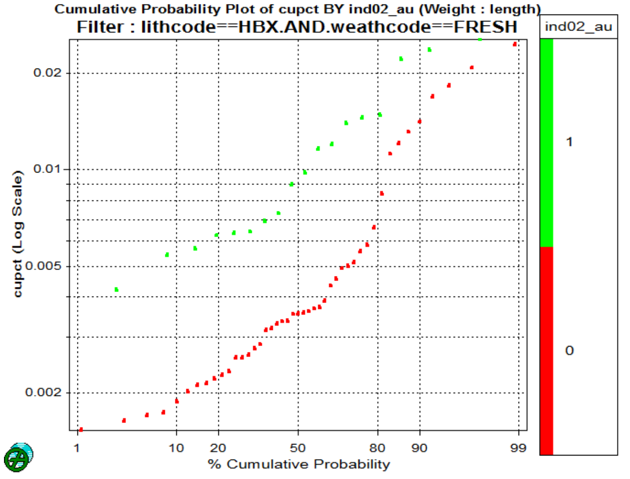

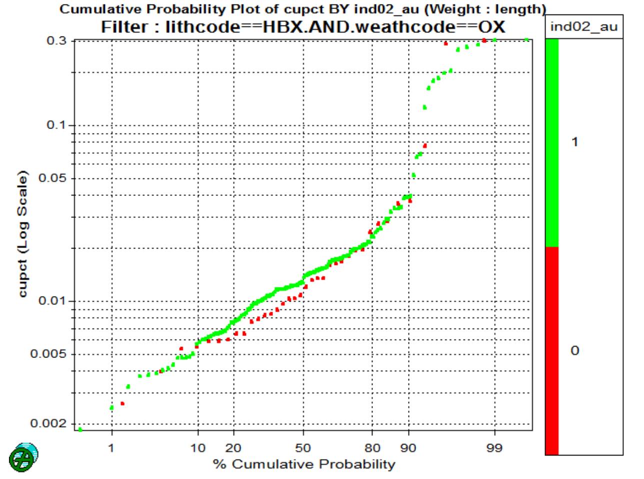

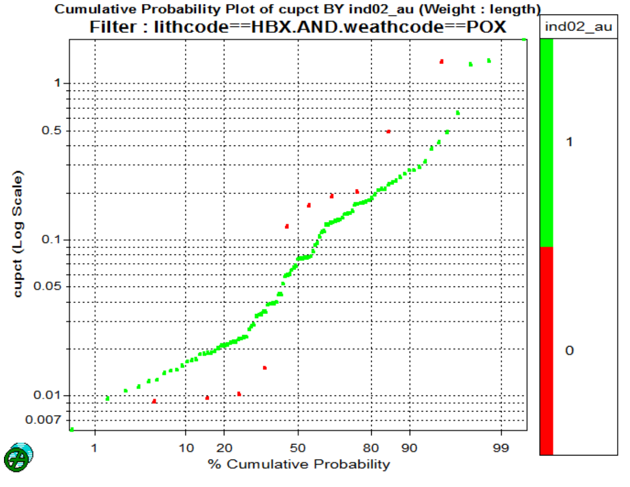

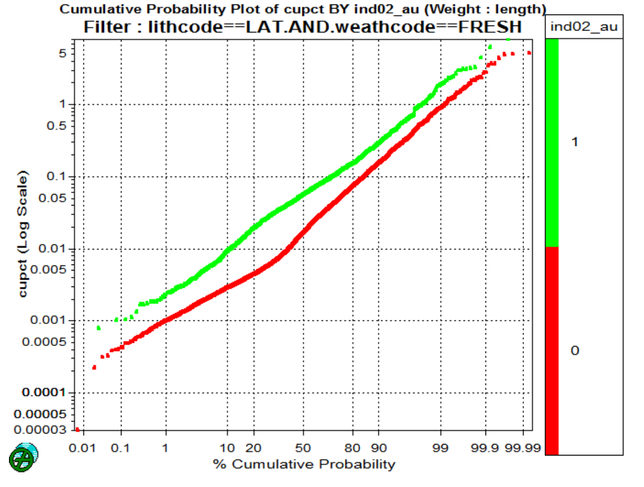

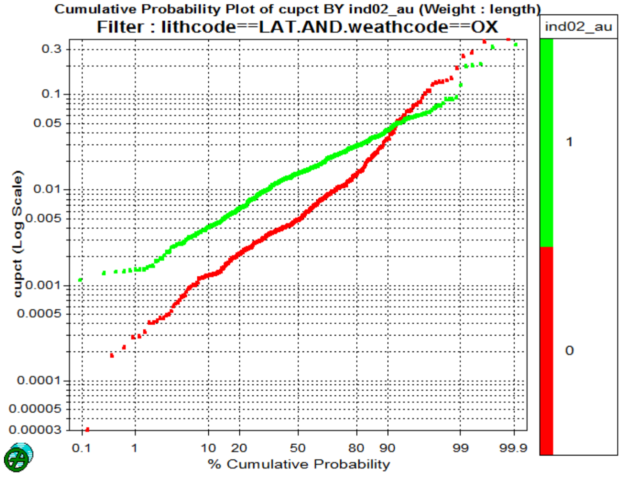

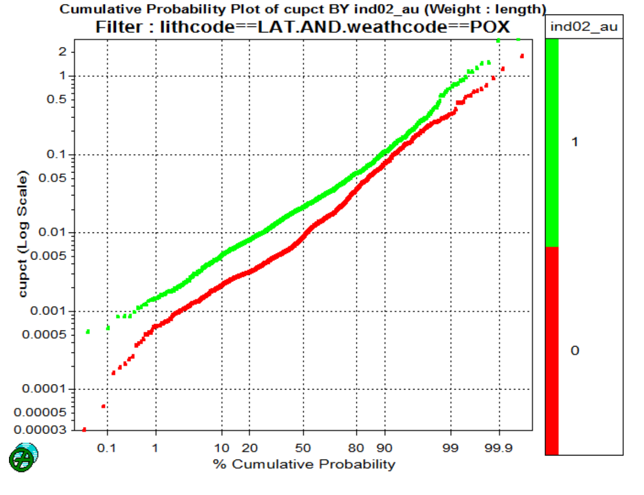

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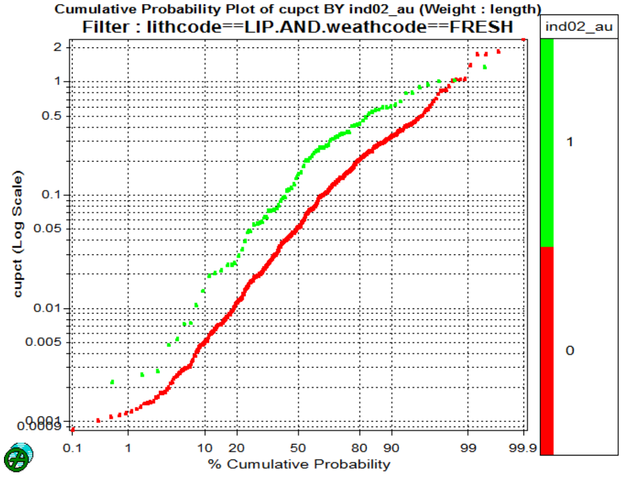

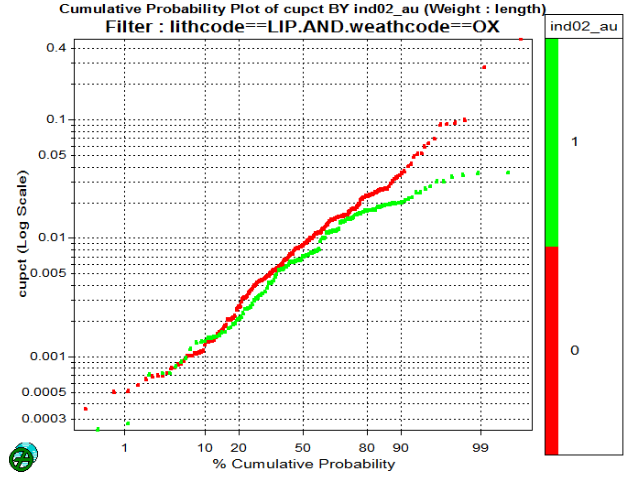

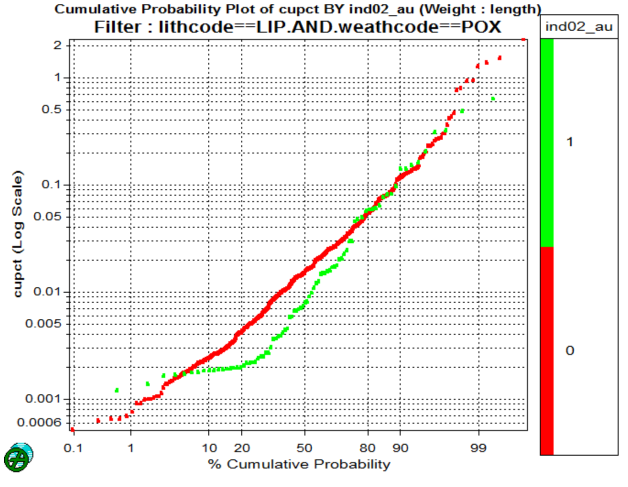

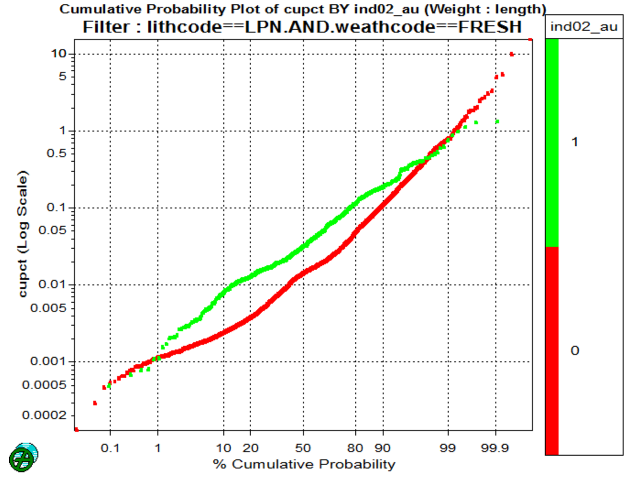

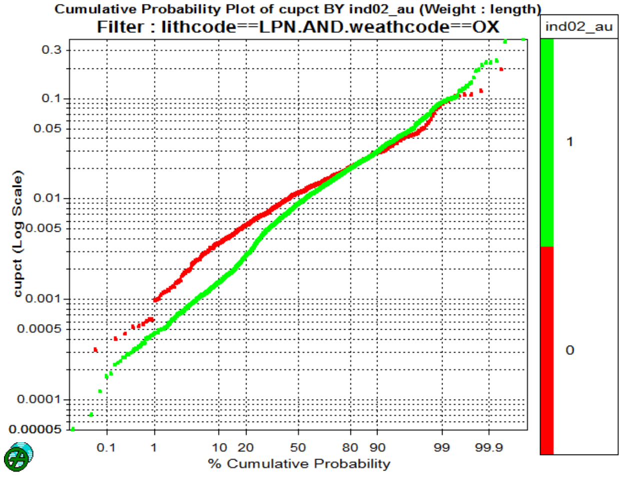

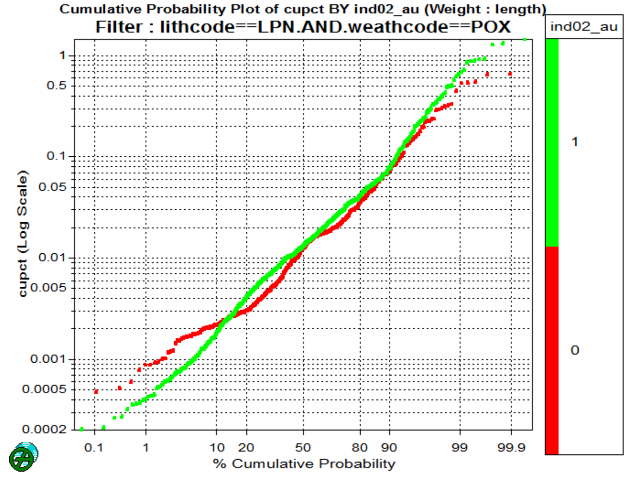

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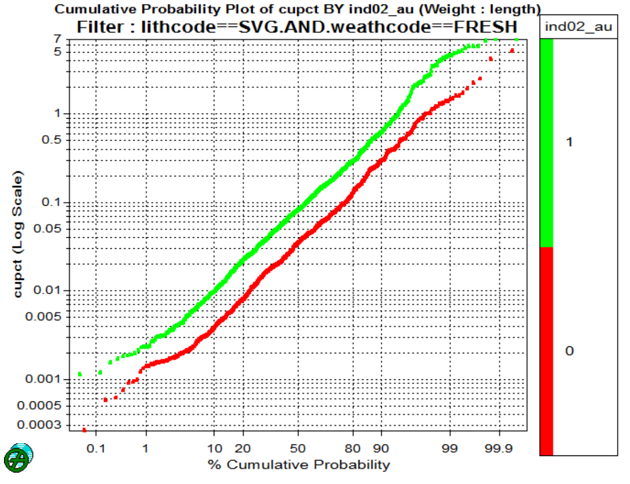

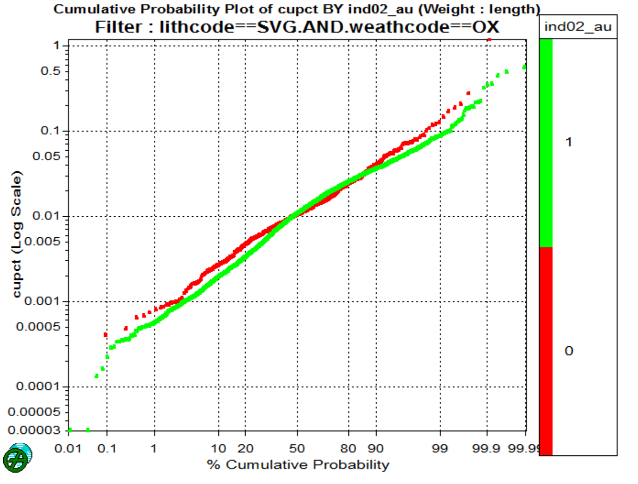

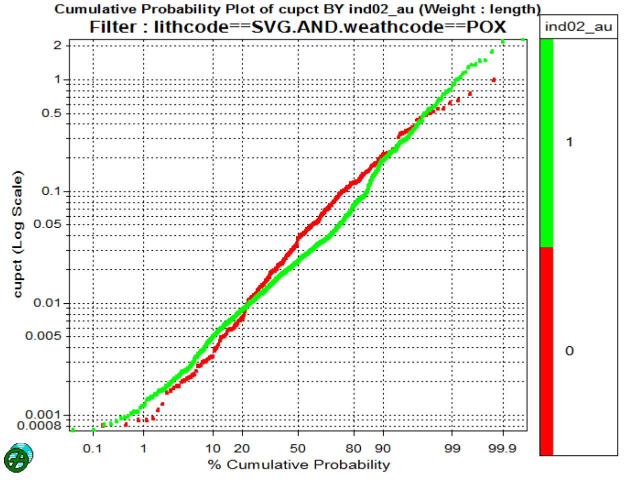

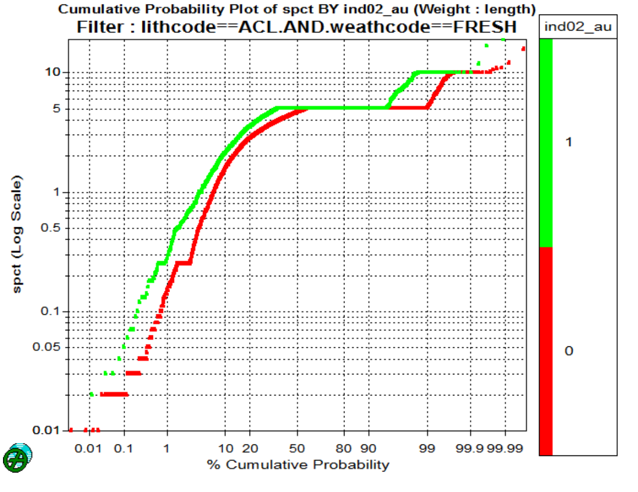

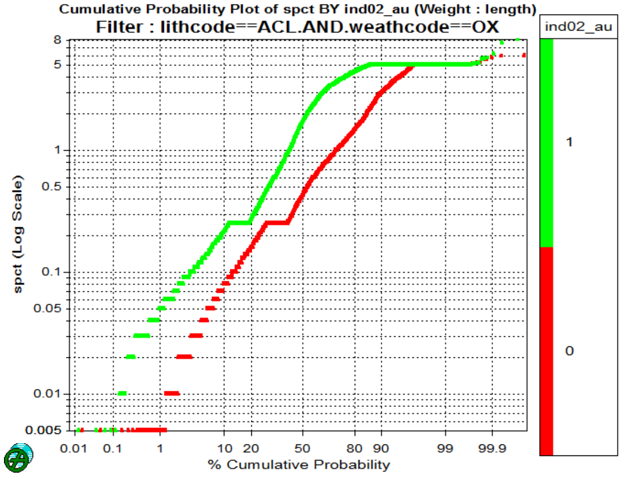

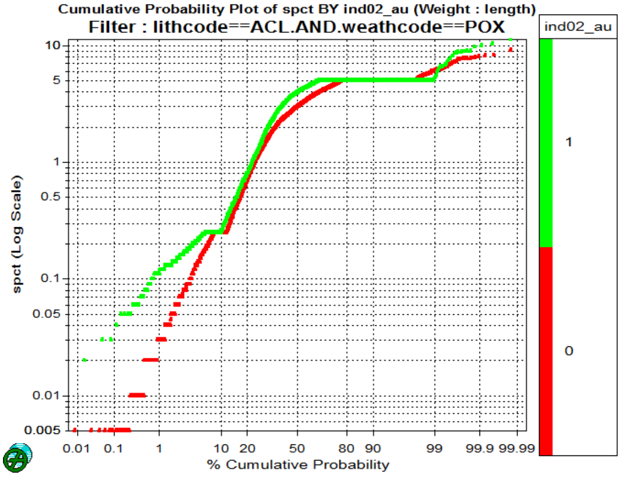

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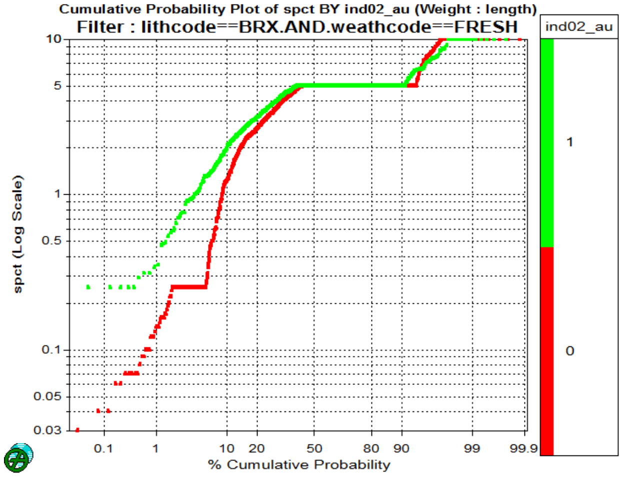

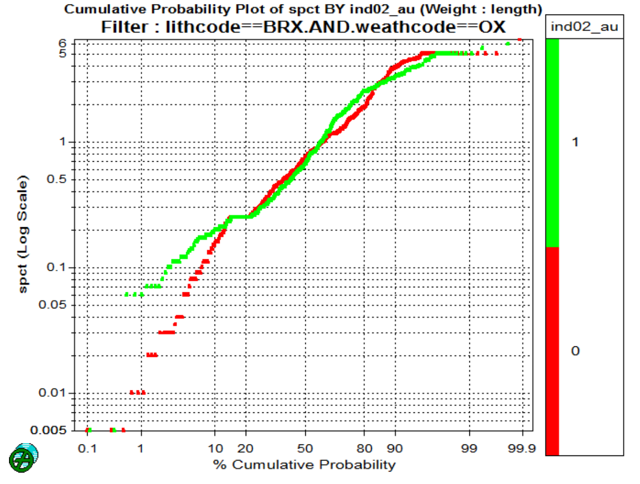

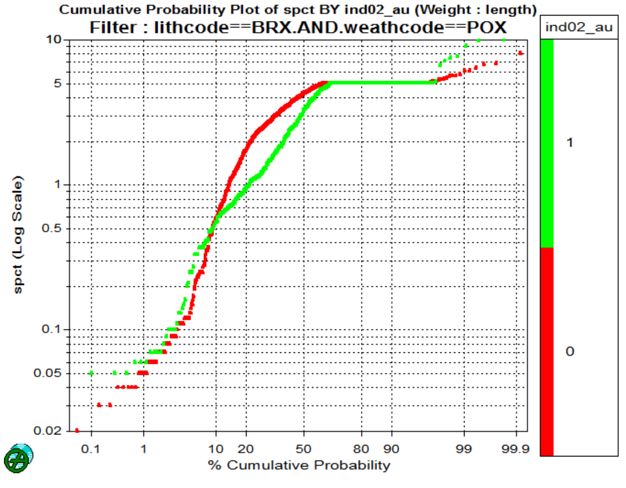

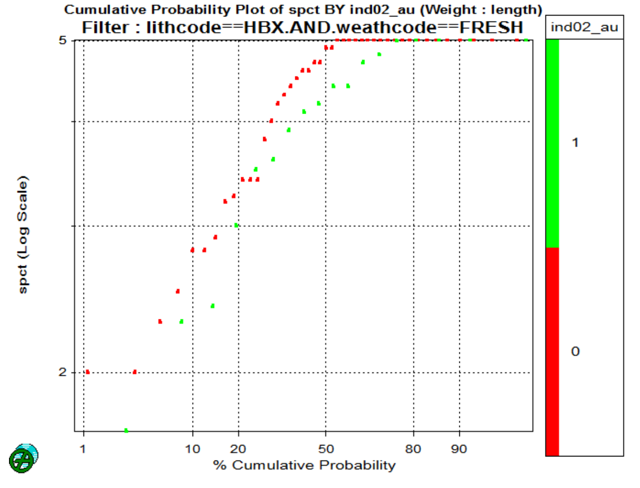

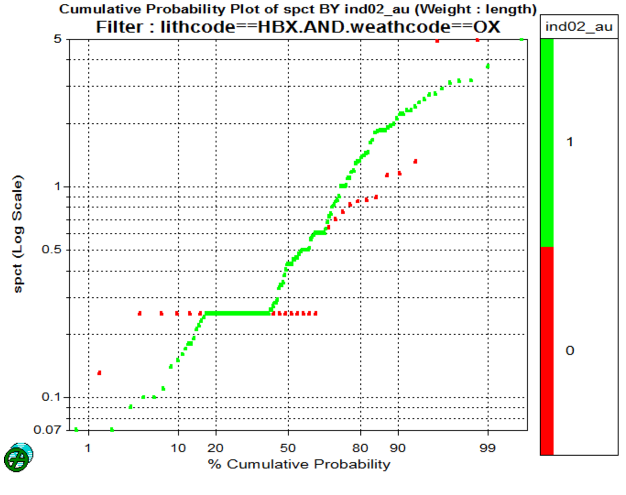

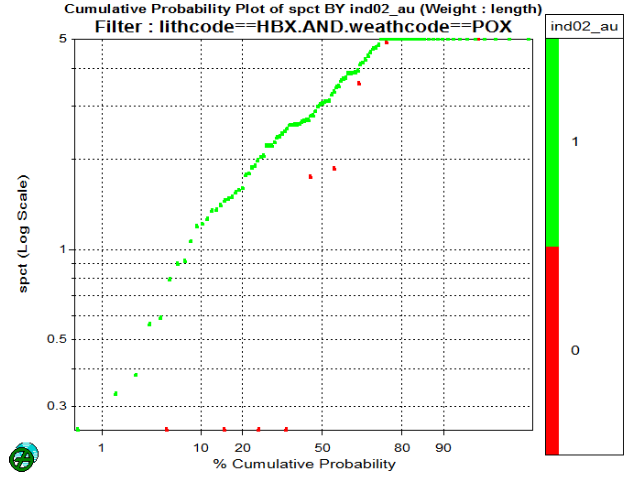

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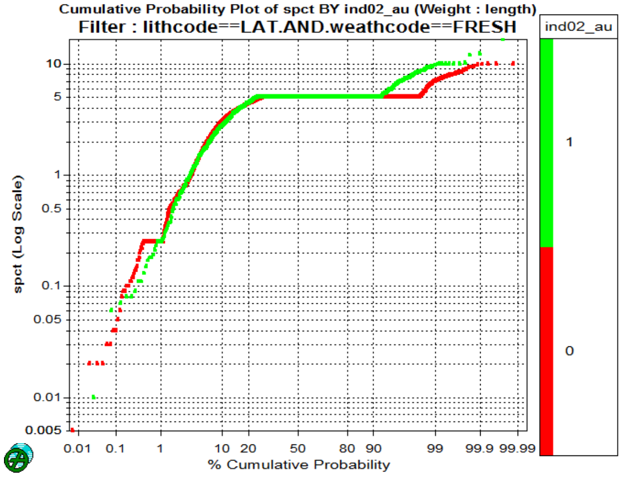

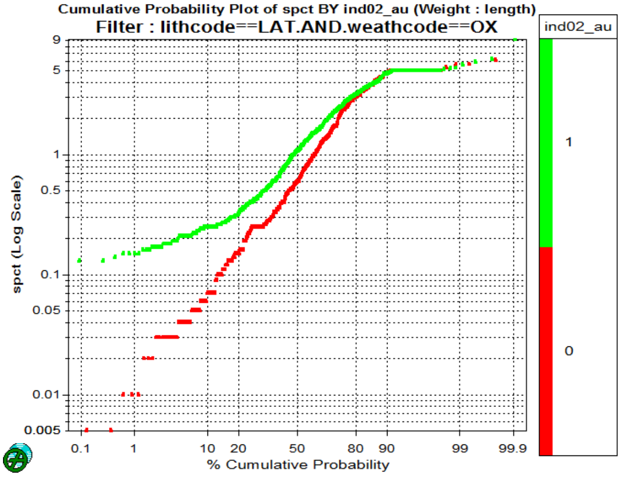

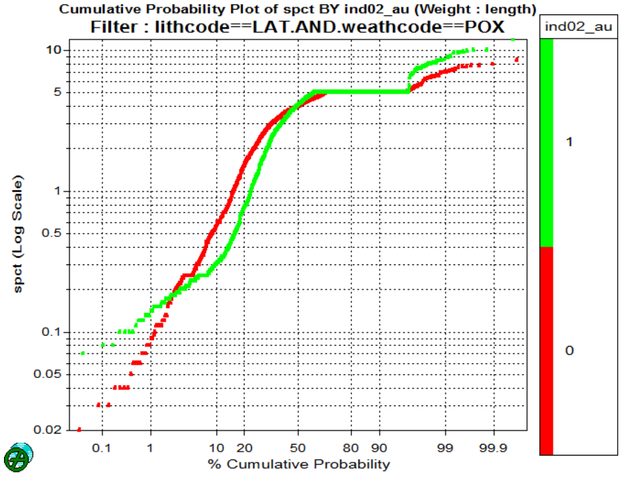

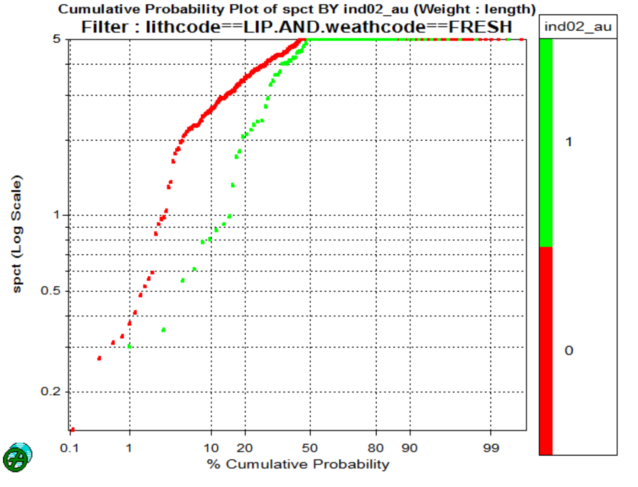

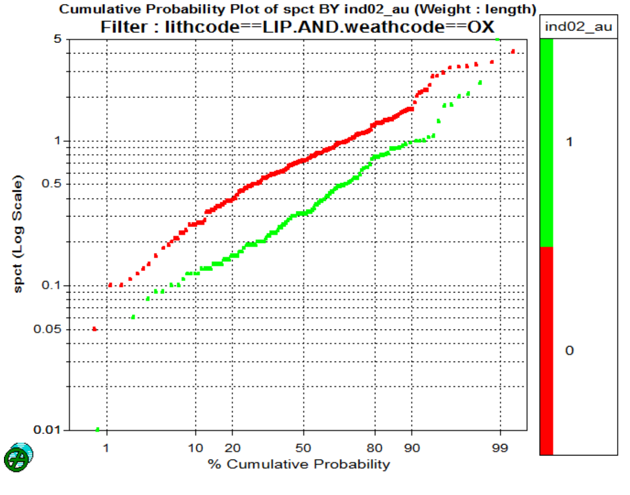

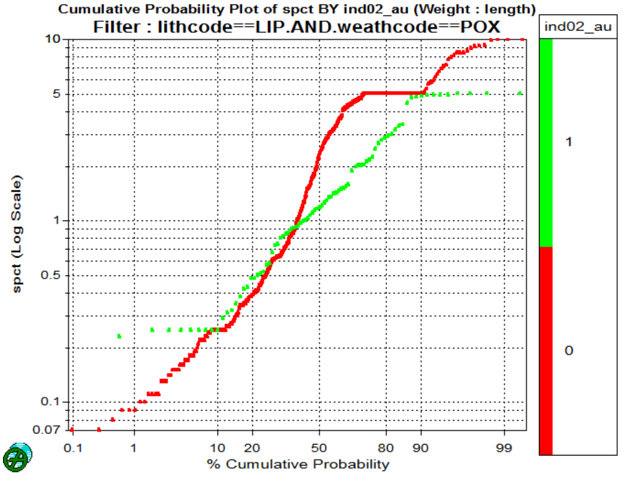

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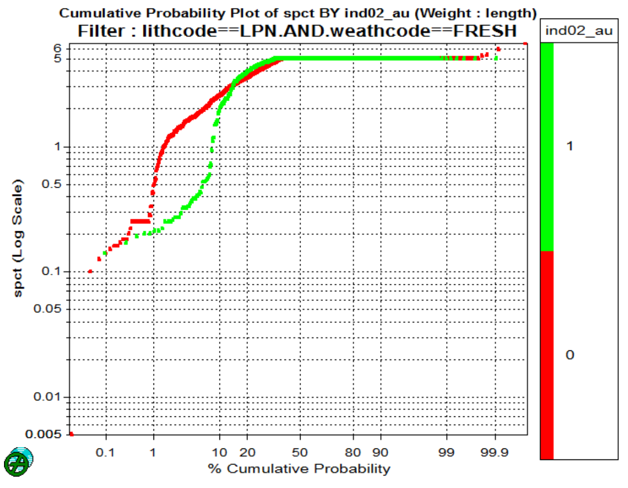

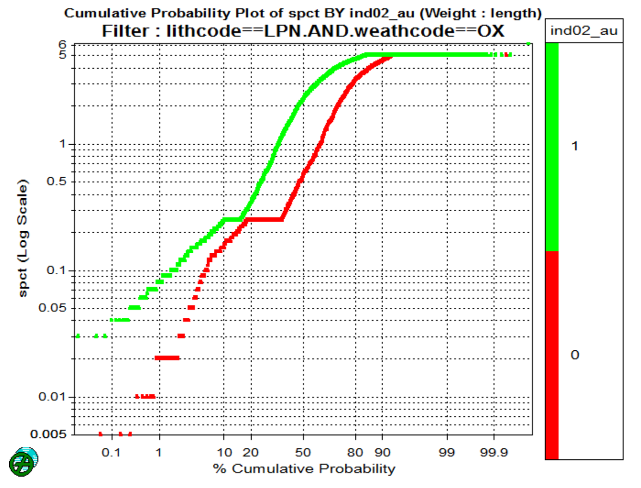

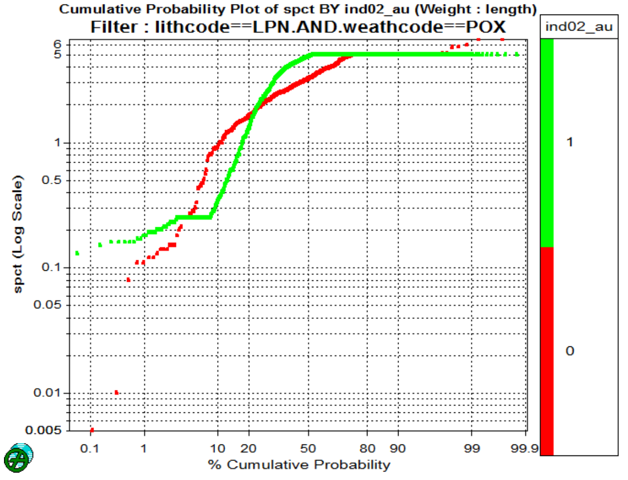

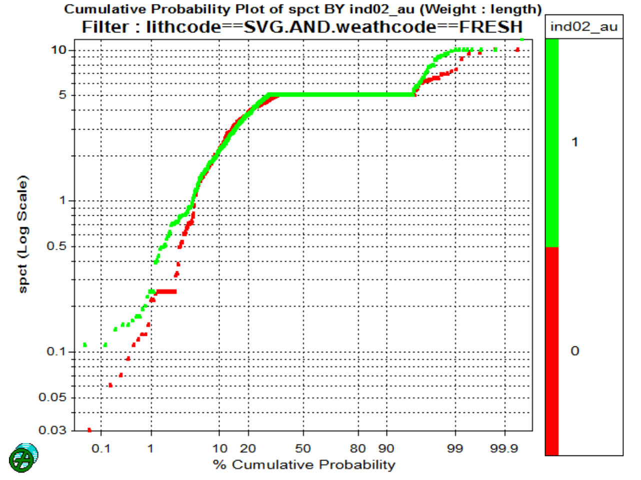

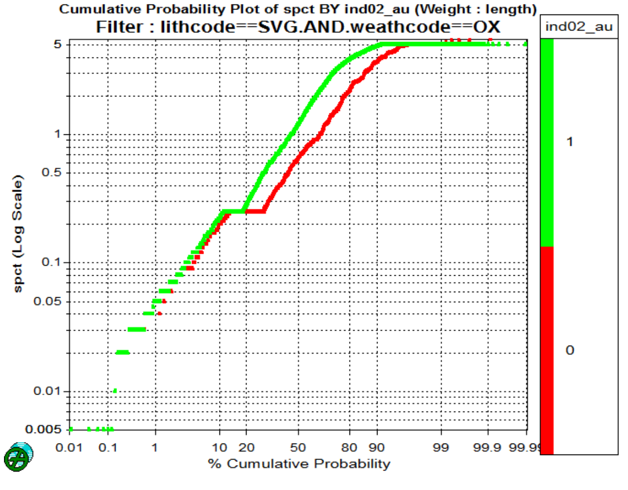

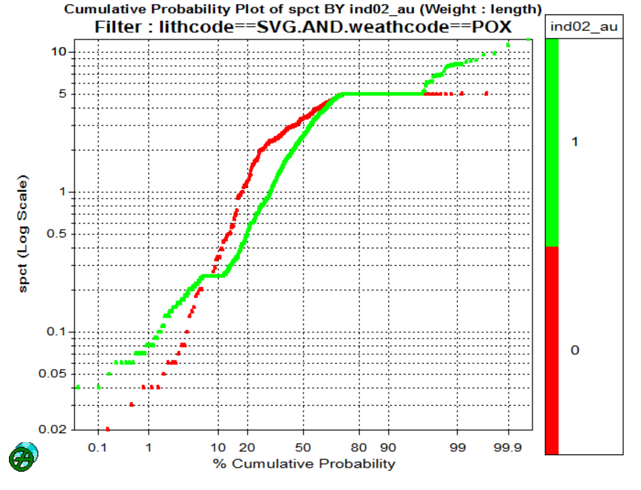

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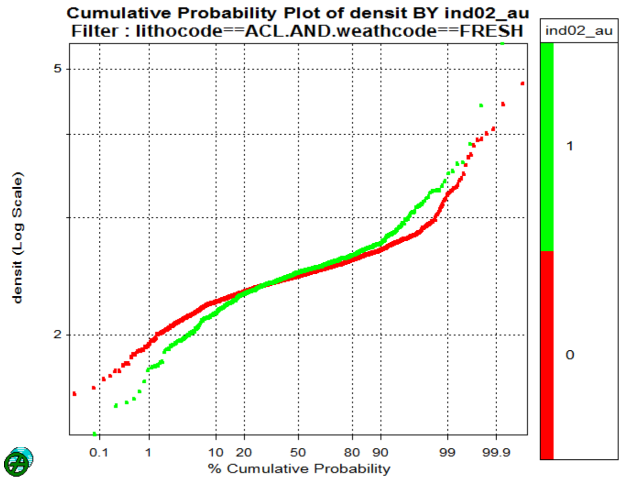

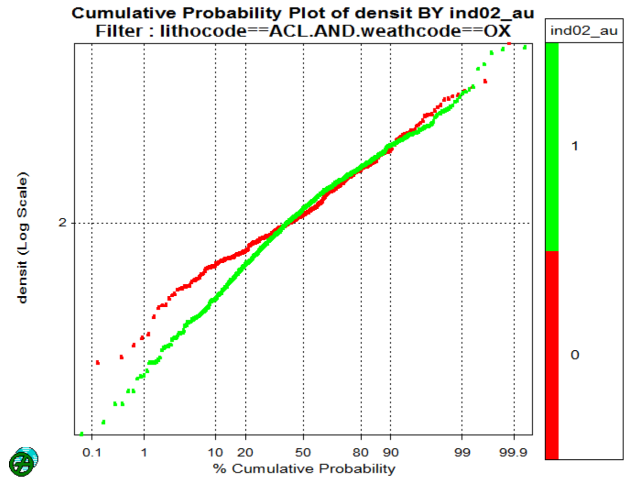

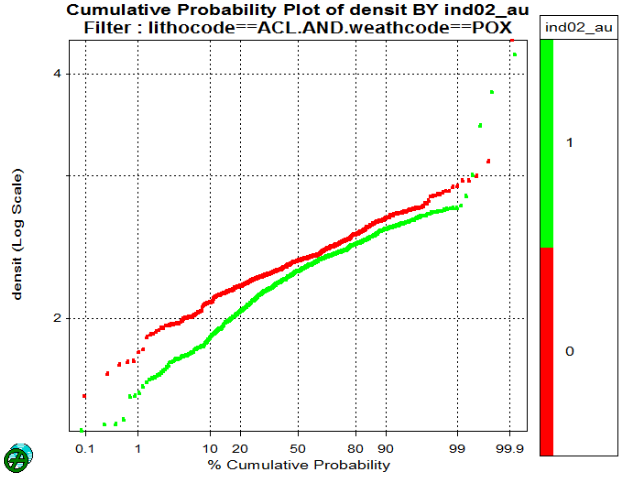

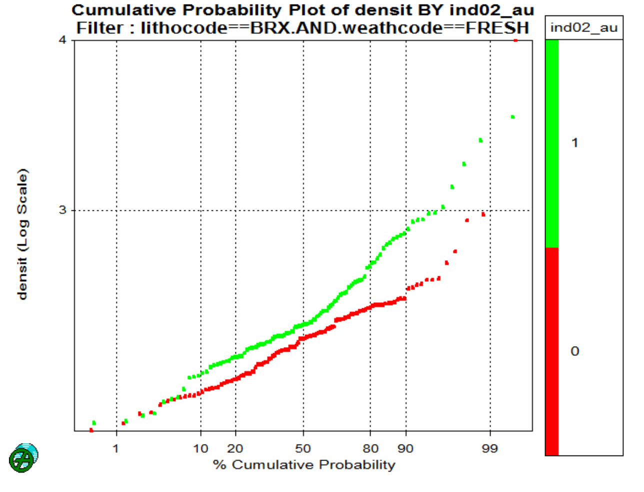

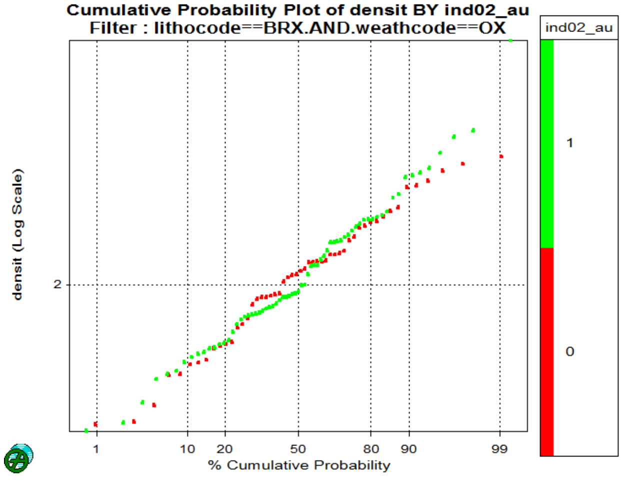

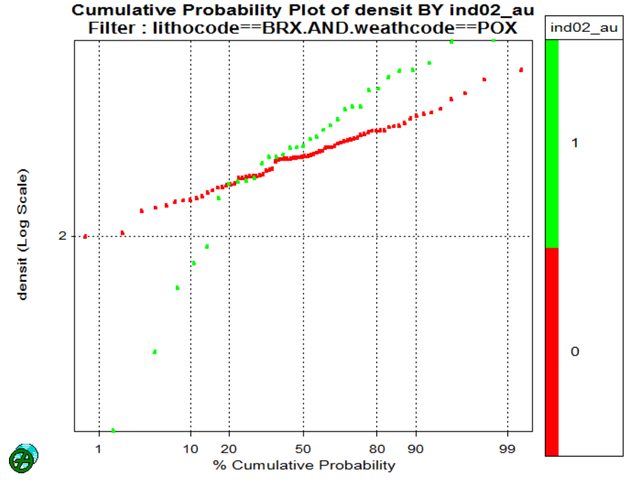

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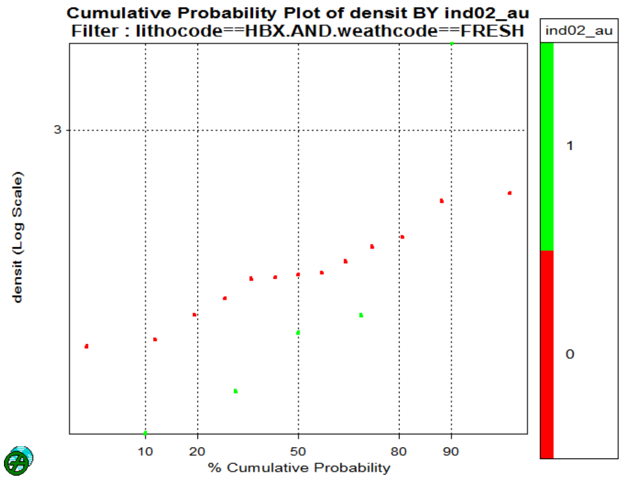

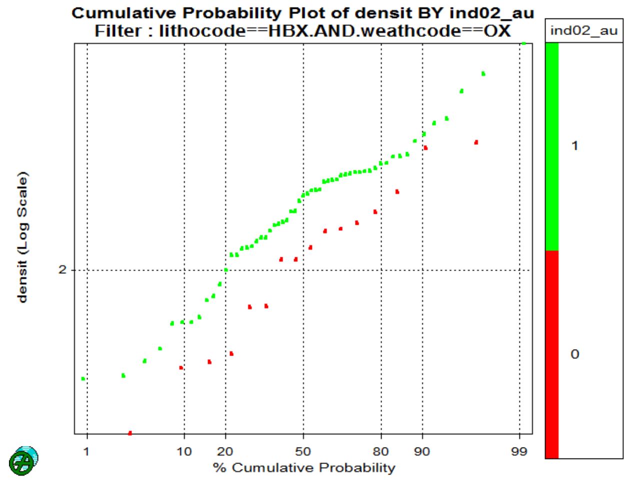

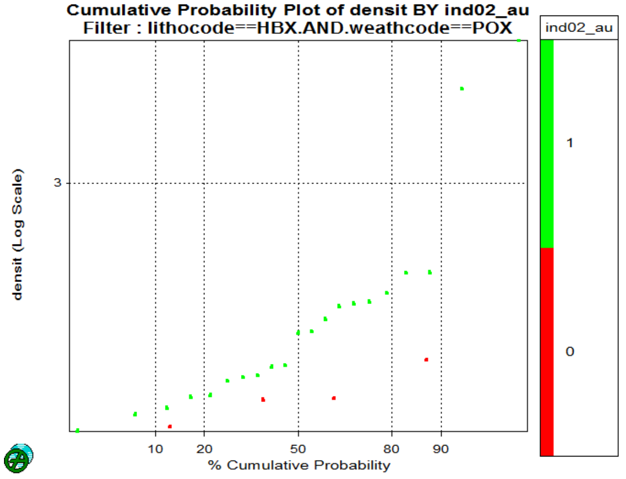

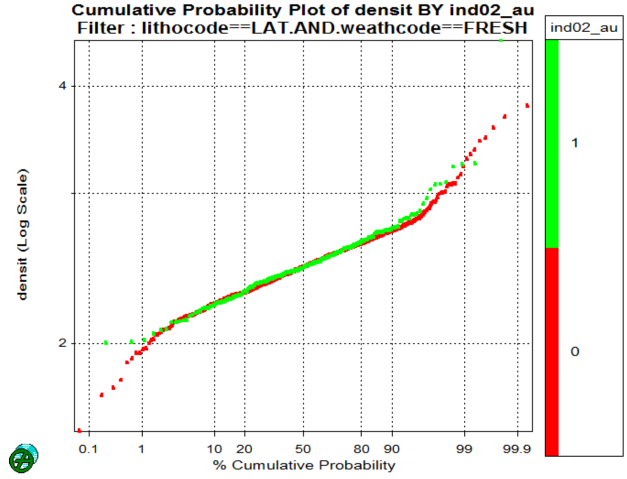

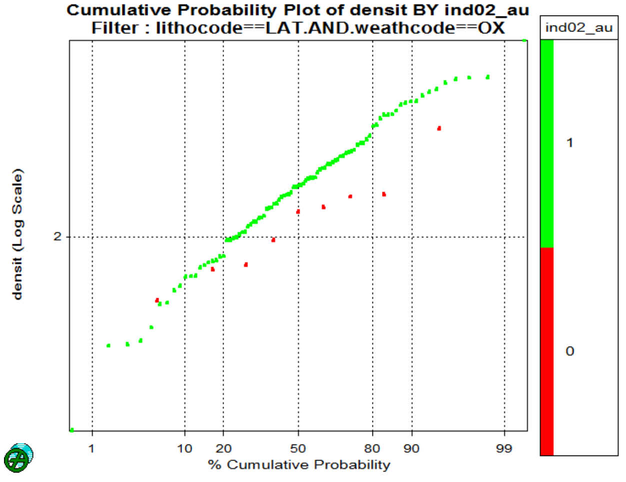

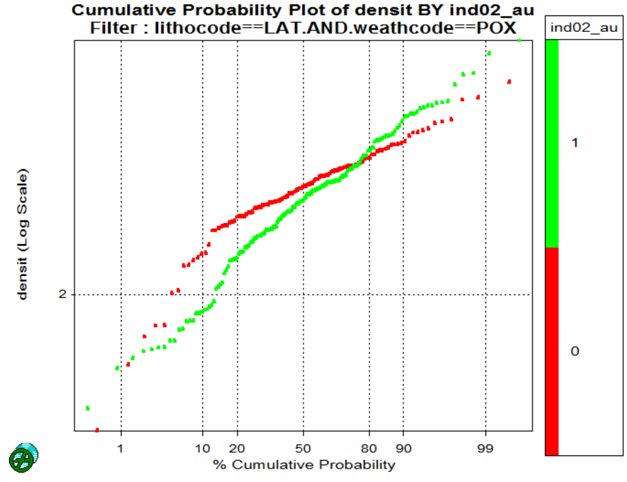

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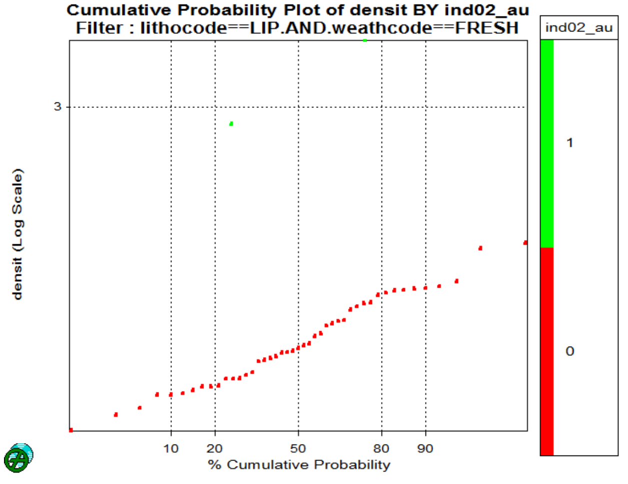

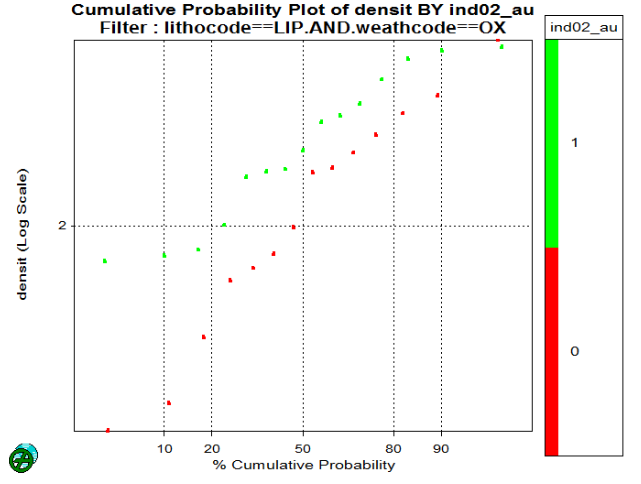

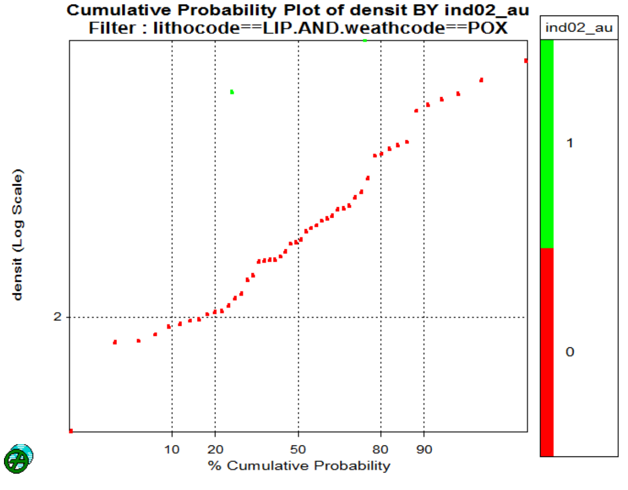

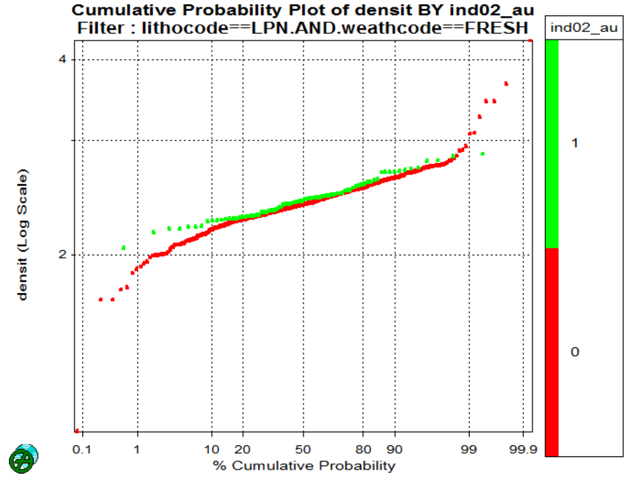

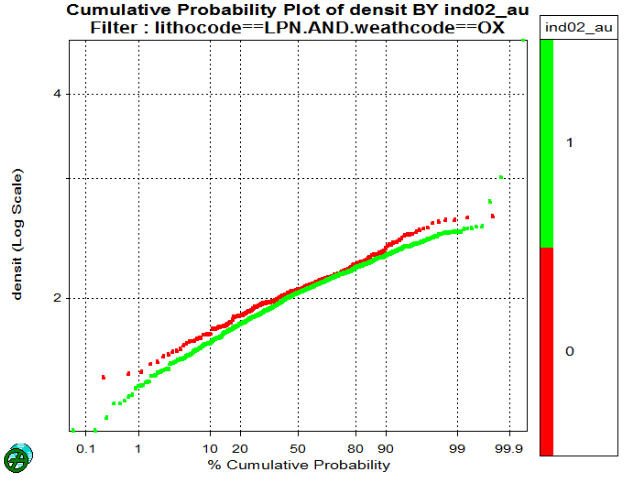

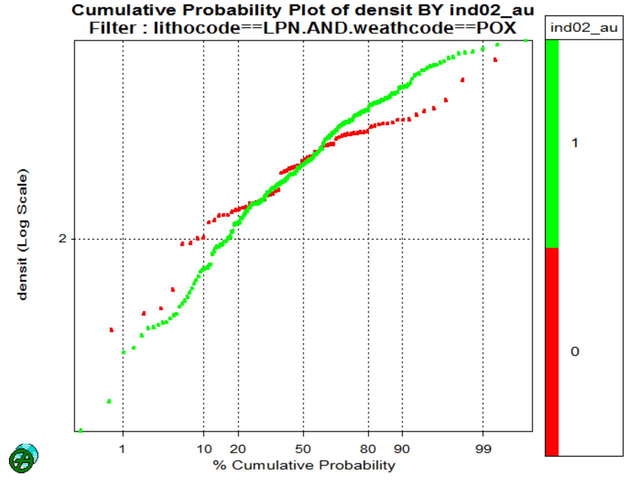

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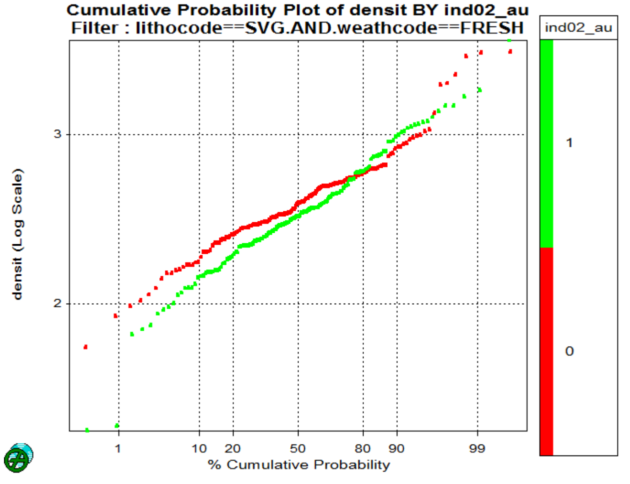

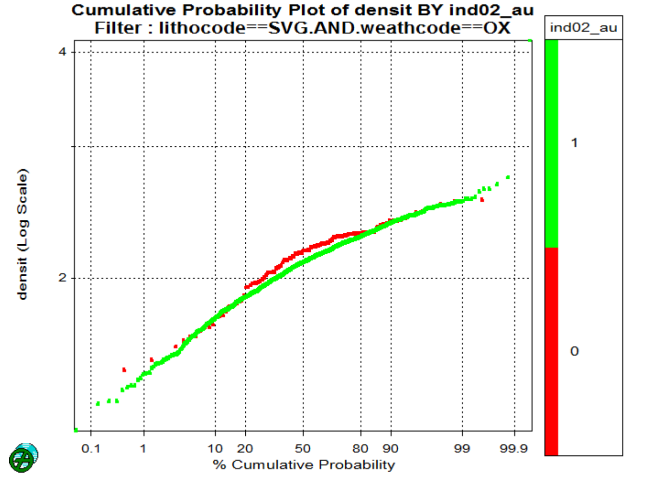

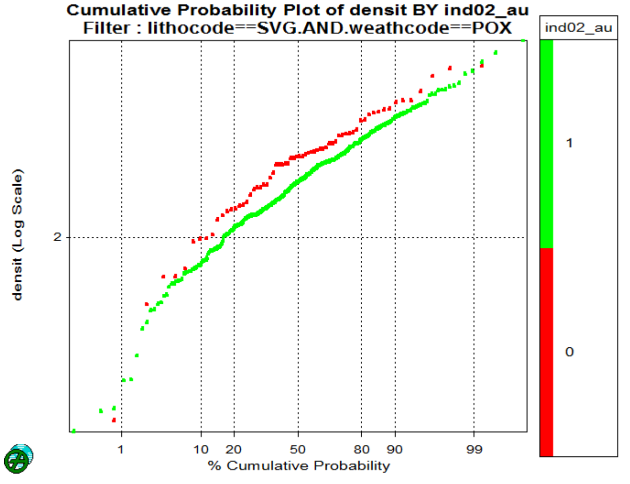

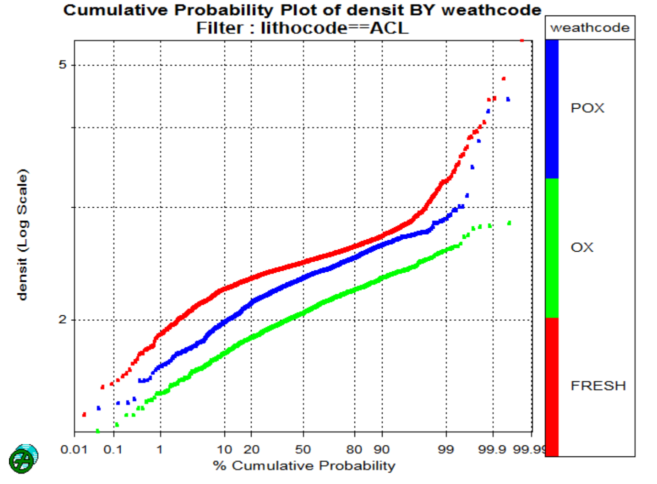

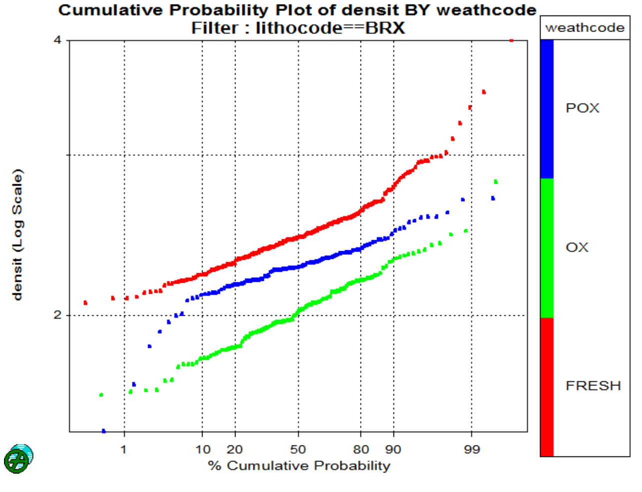

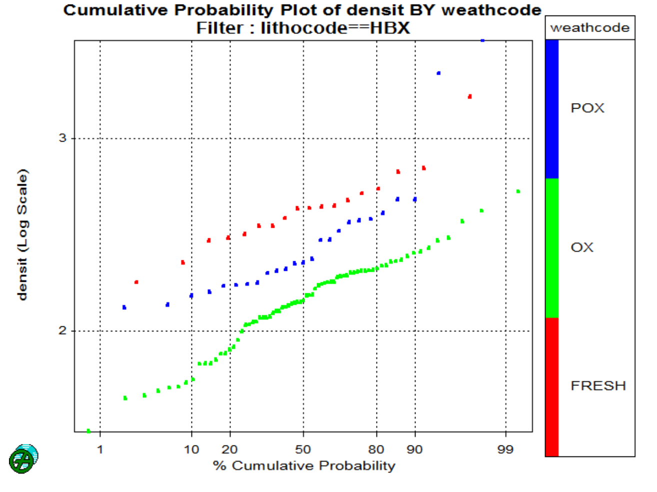

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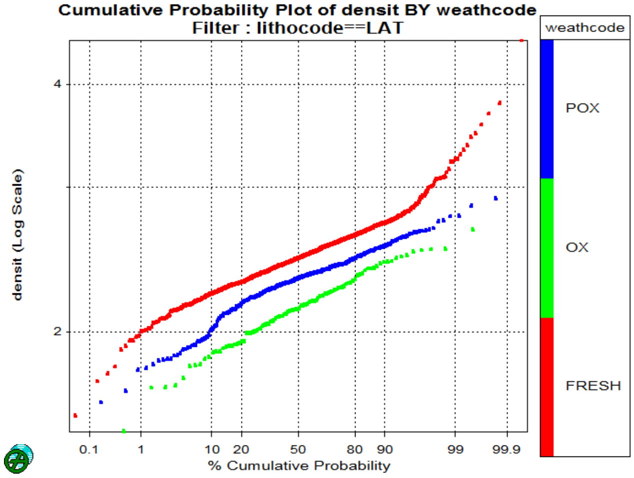
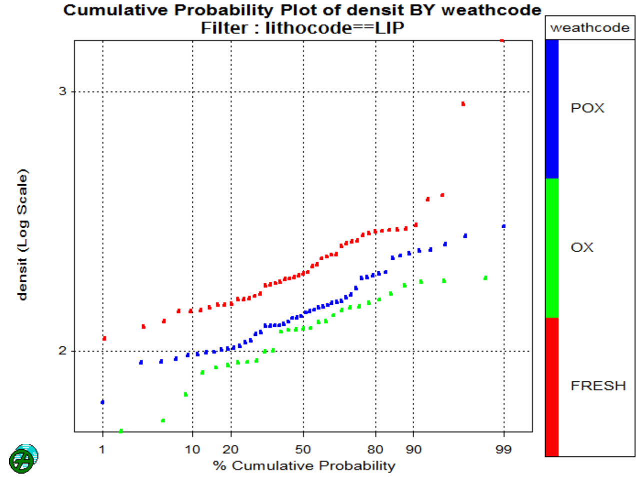
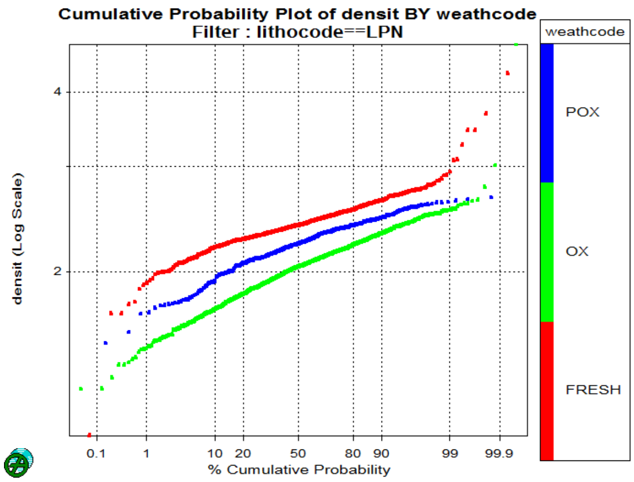
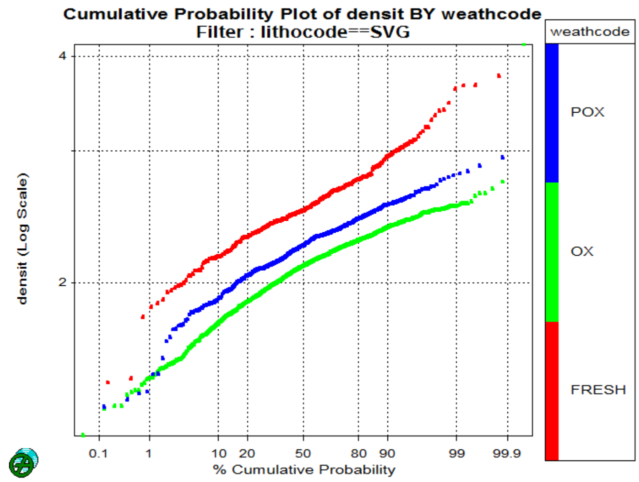
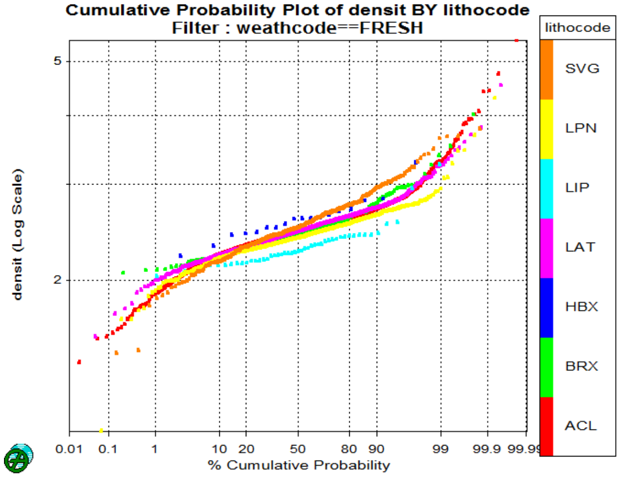
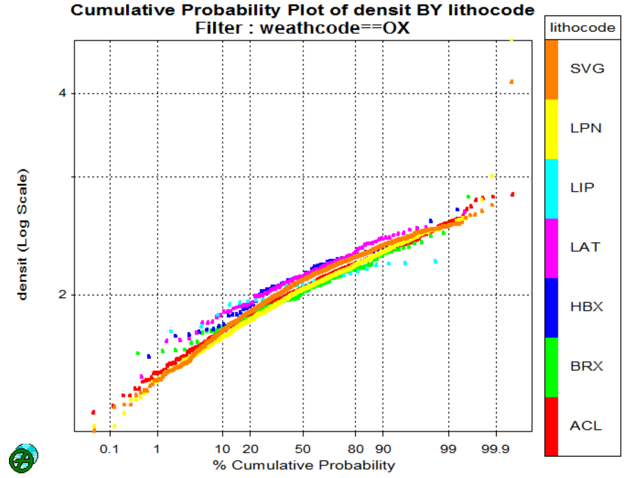




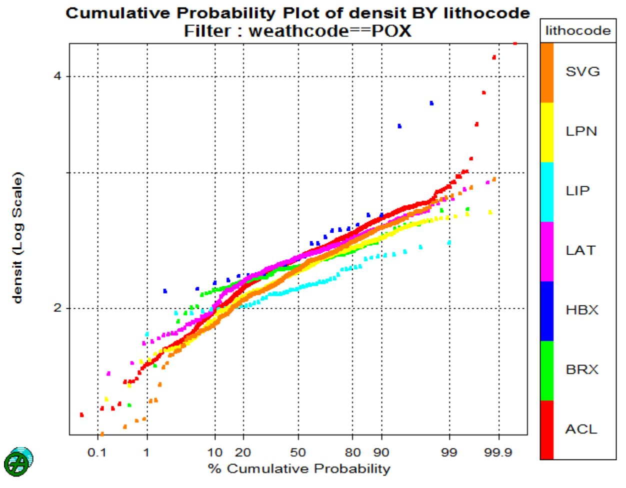


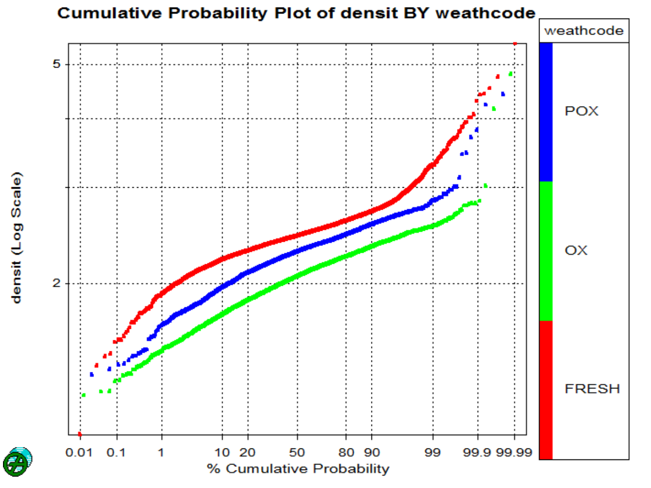






Exploratory Data Analysis
Density

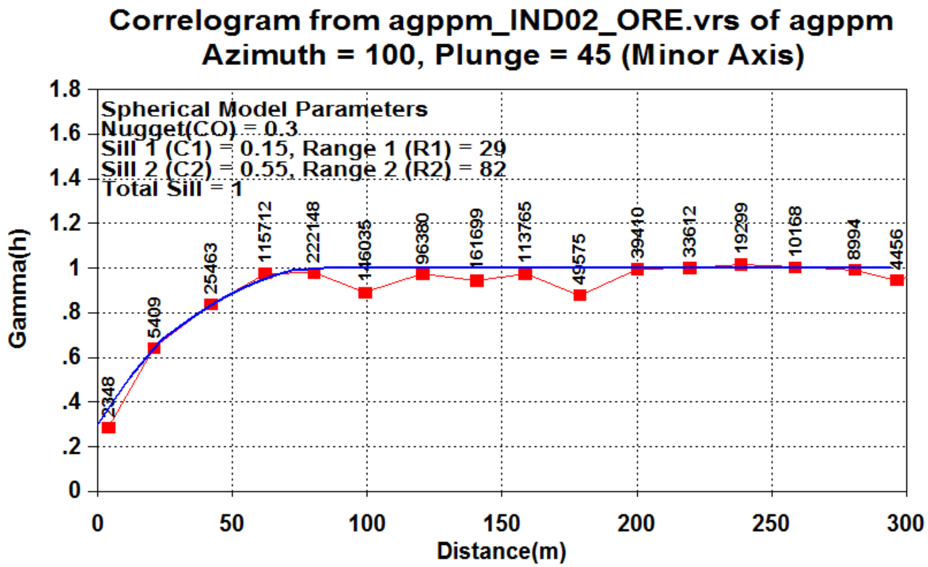


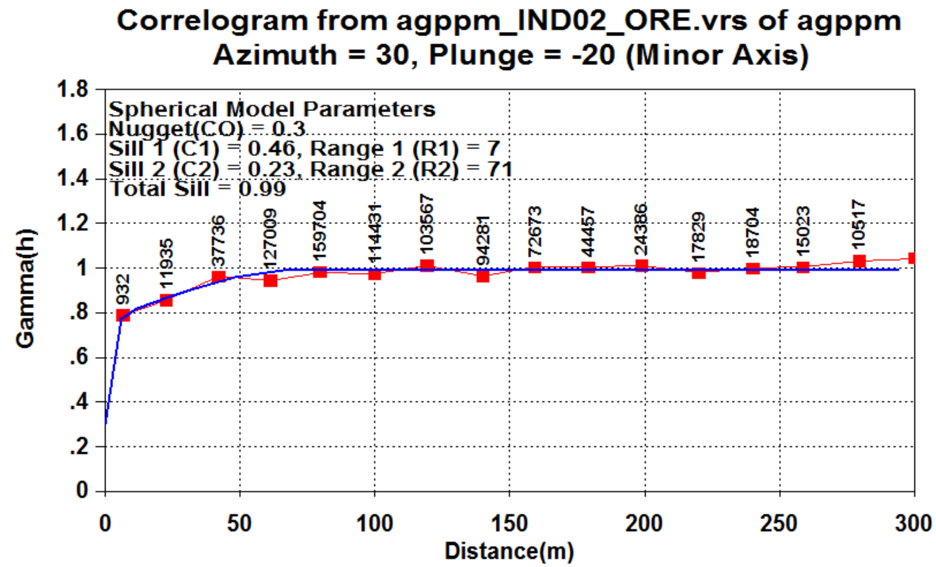


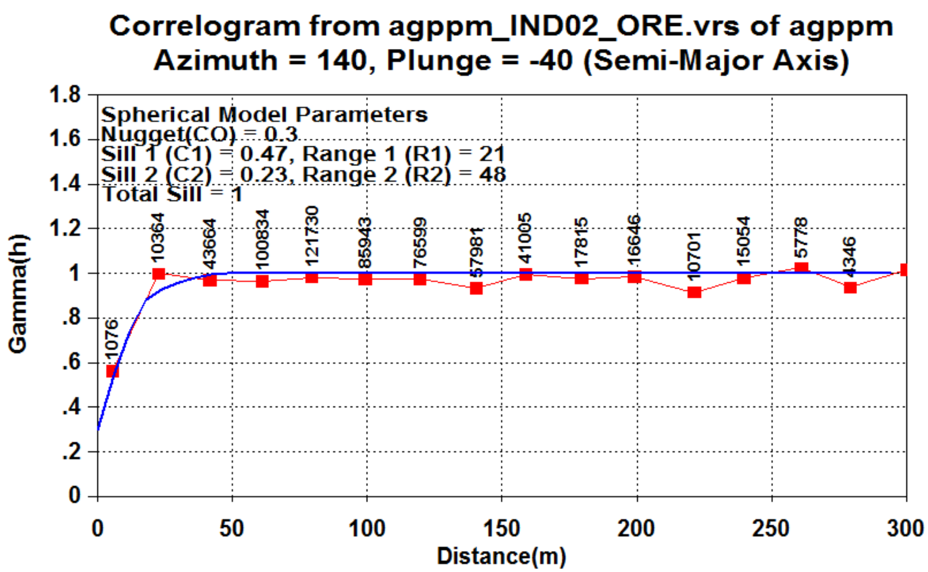
APPENDIX 1.2

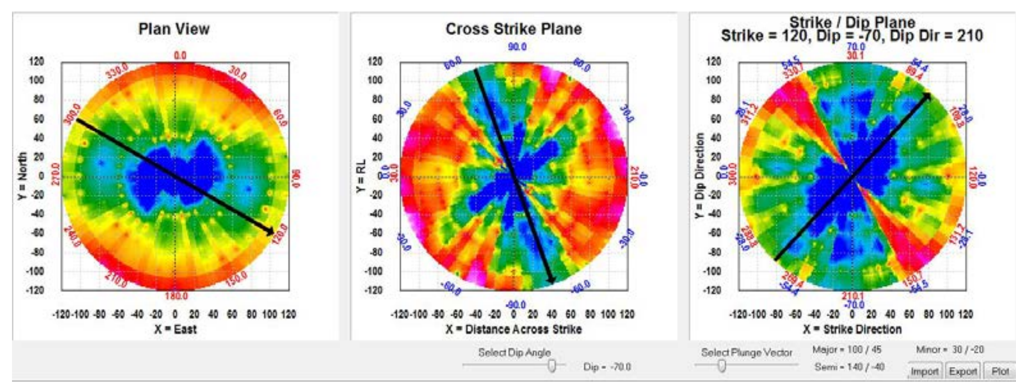
Variograms

PLAVICA
Variograms

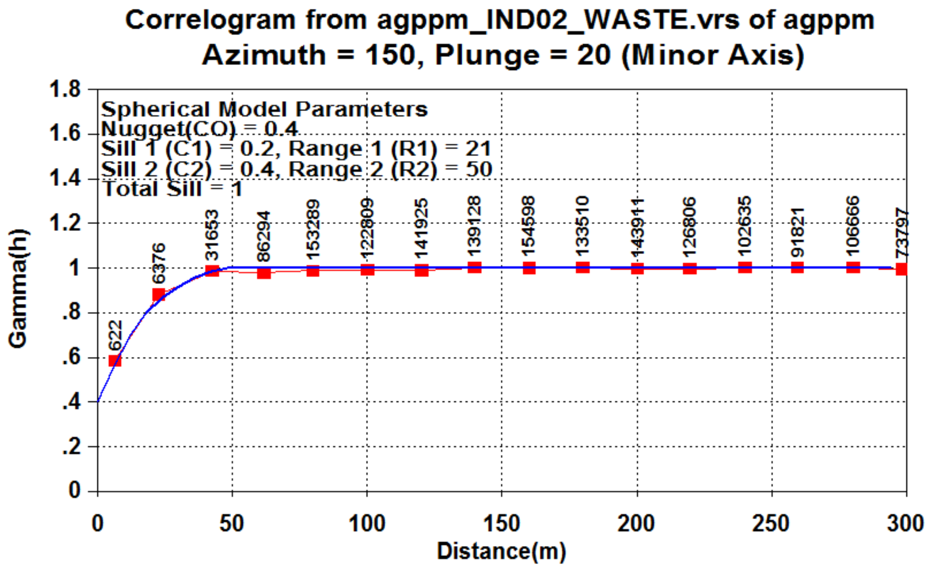


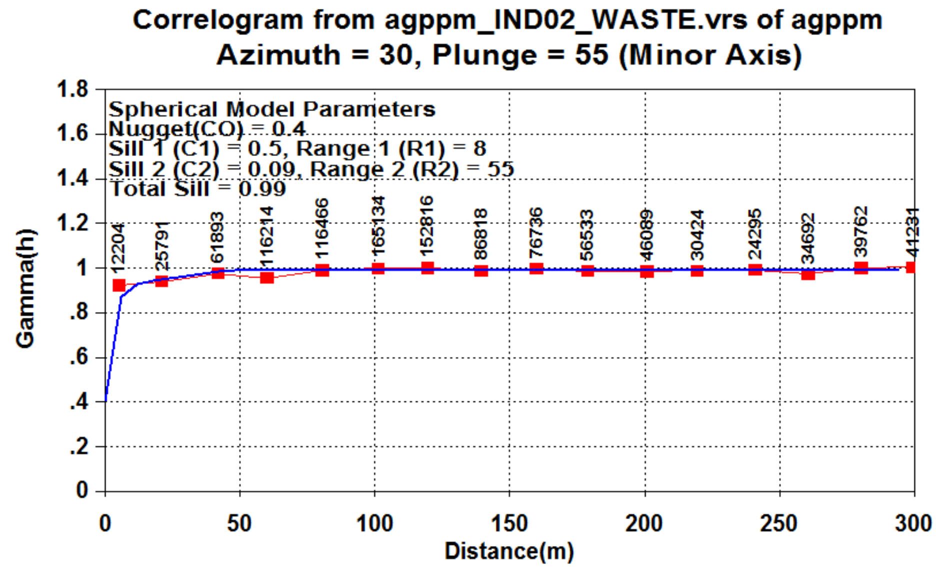


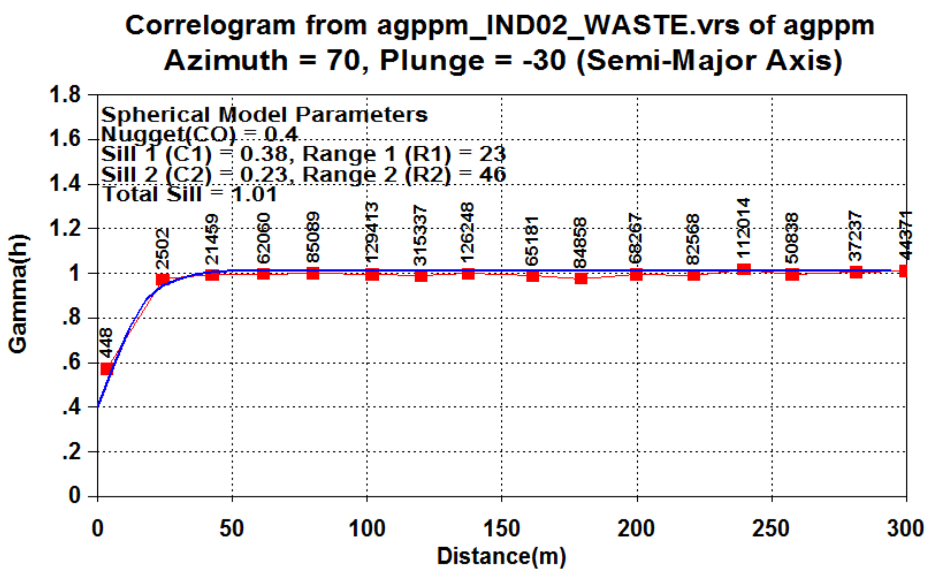


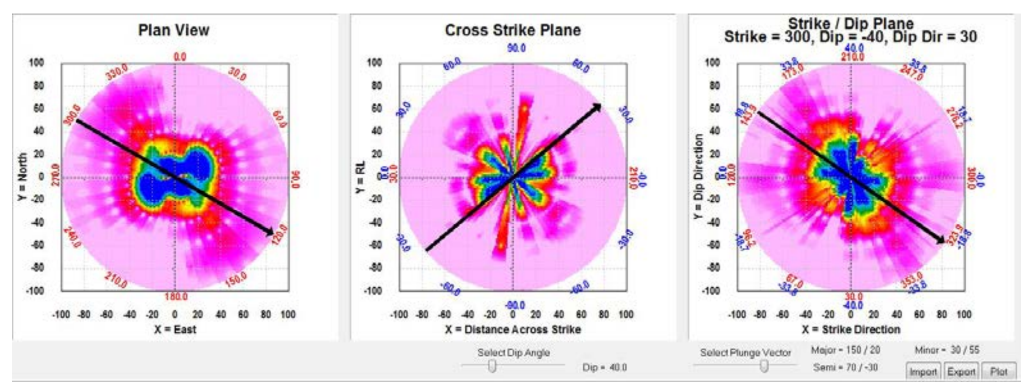


PLAVICA
Variograms

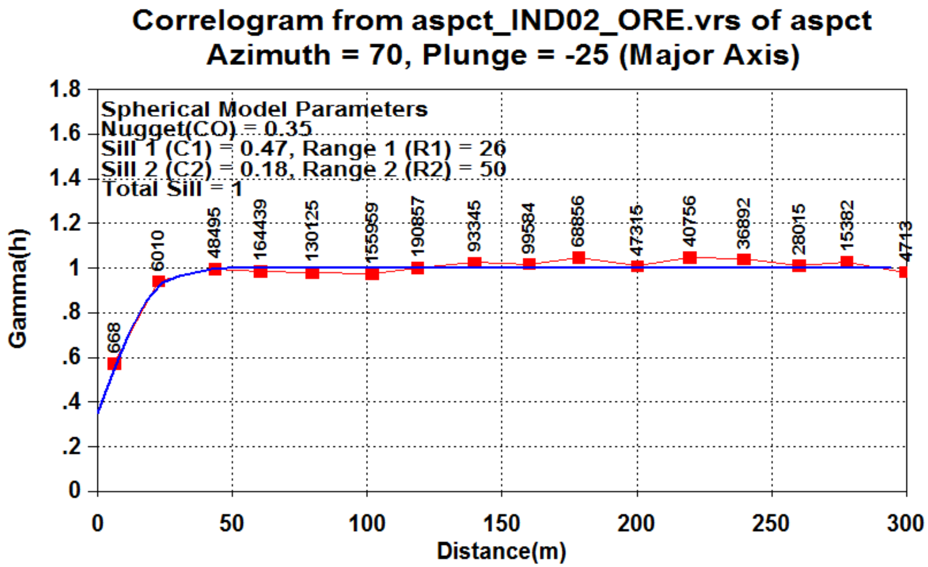


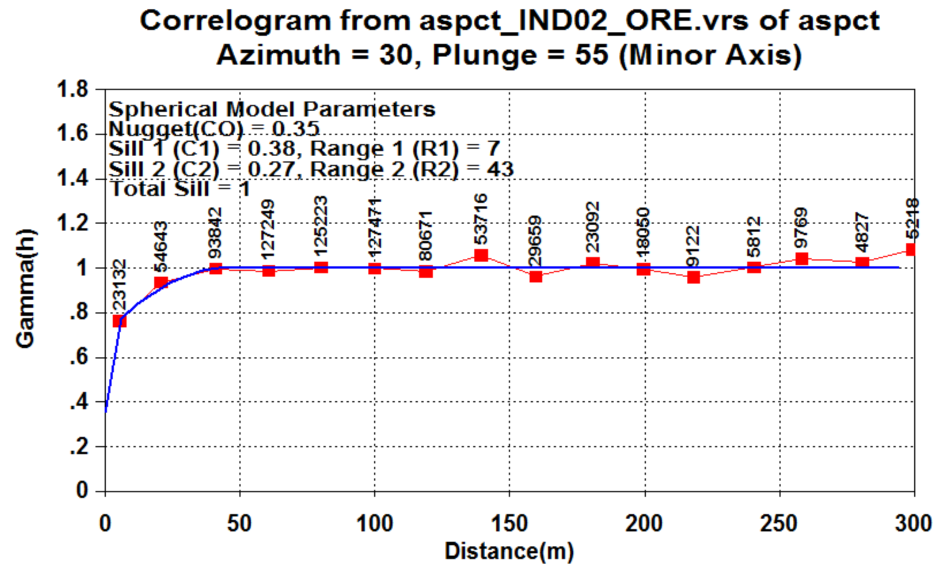


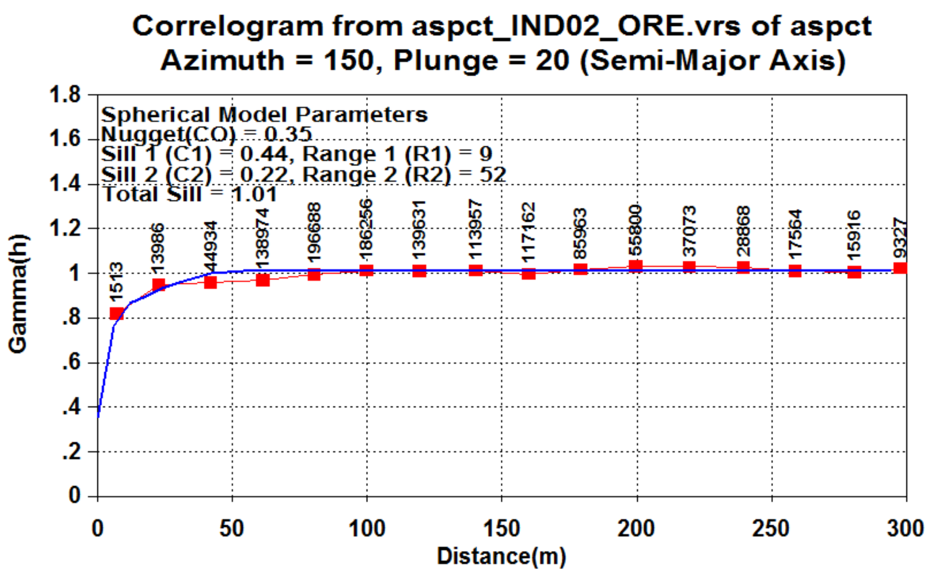


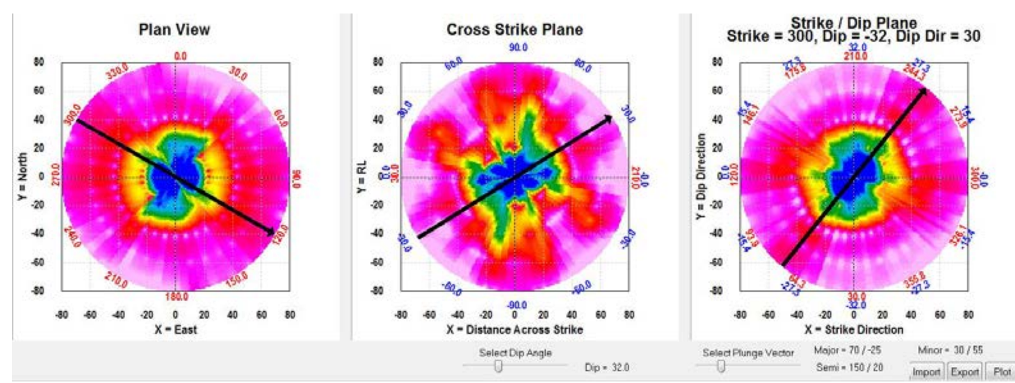


PLAVICA
Variograms



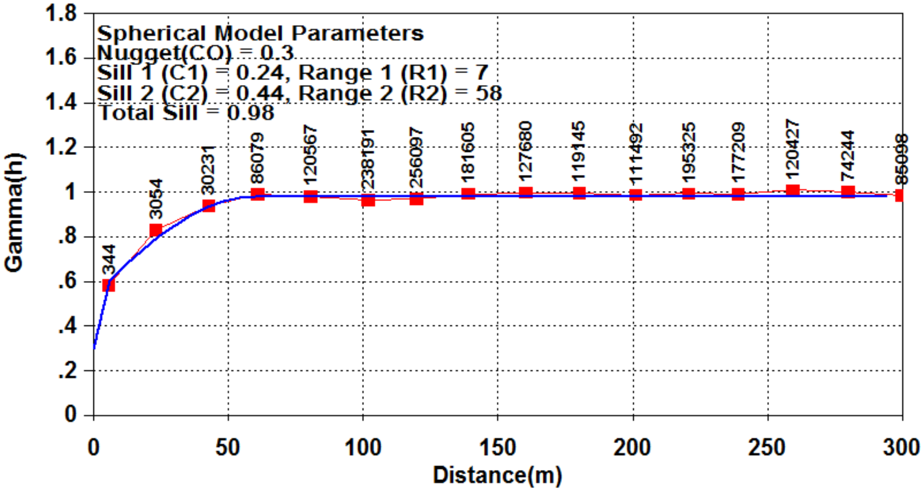




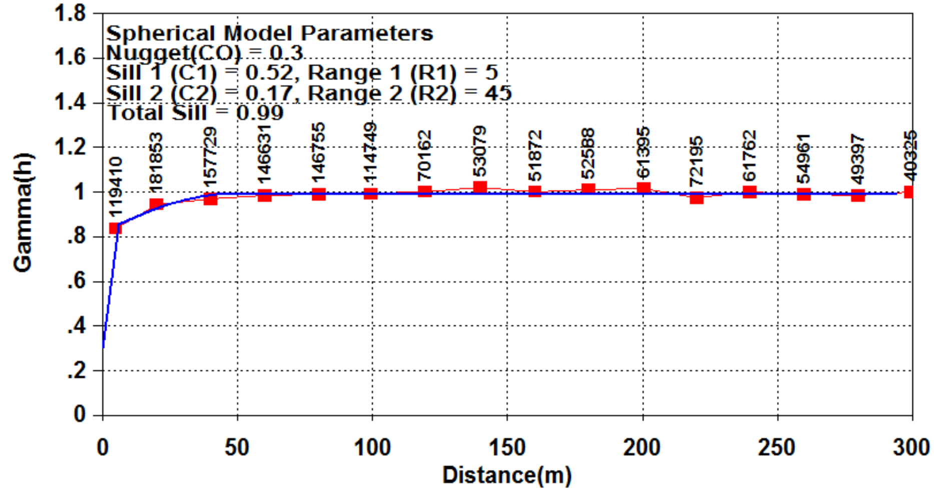


PLAVICA
Variograms

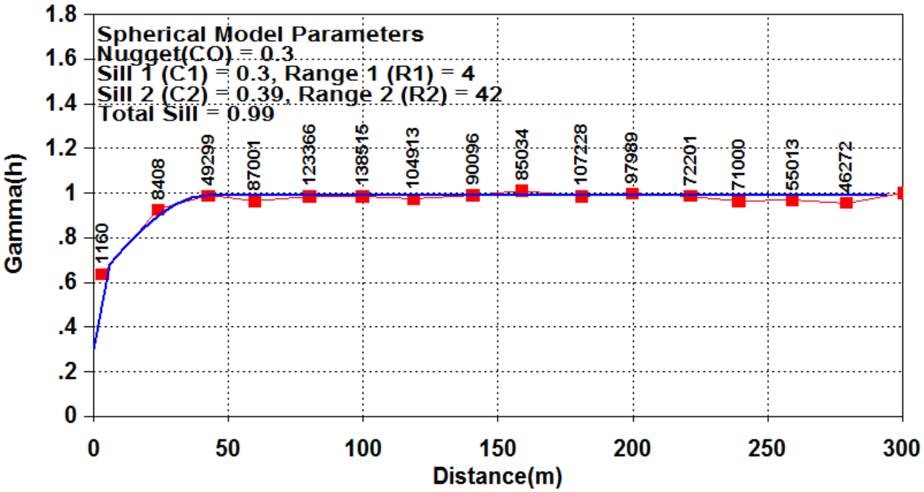
Correlogram from aspct_IND02_WASTE.vrs of aspct
Azimuth = 120, Plunge = 0 (Minor Axis)

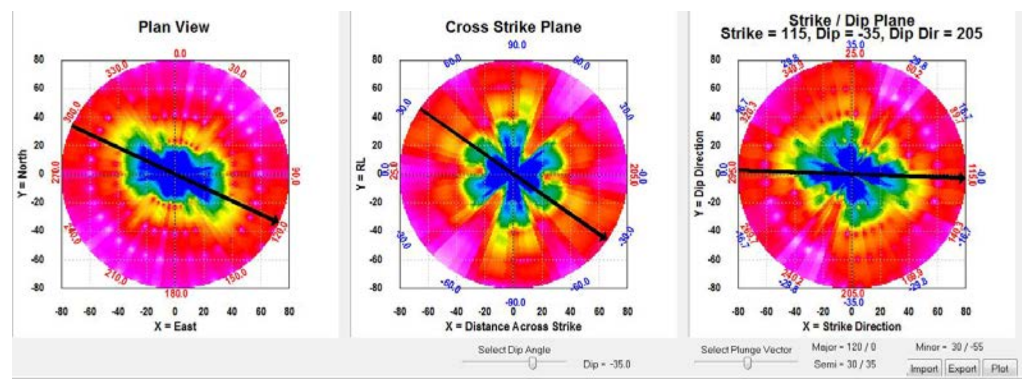


Correlogram from aspct_IND02_WASTE.vrs of aspct
Azimuth = 30, Plunge = -55 (Minor Axis)



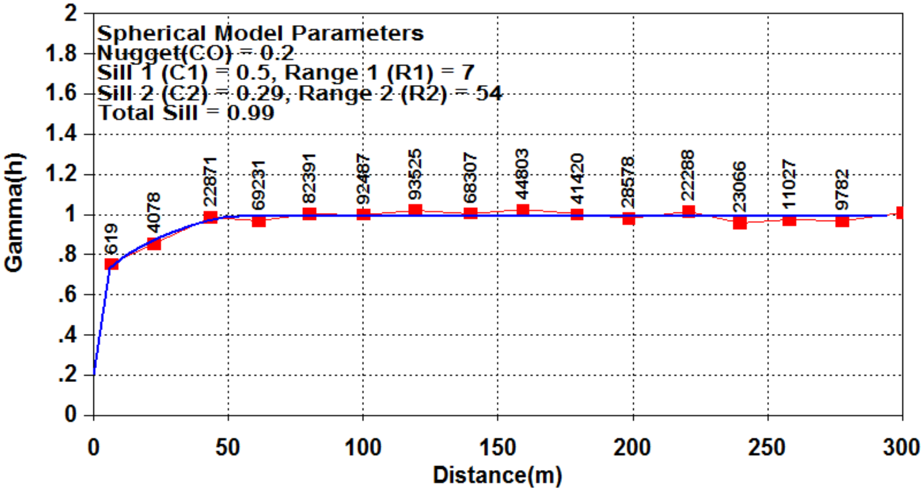
Correlogram from aspct_IND02_WASTE.vrs of aspct
Azimuth = 30, Plunge = 35 (Semi-Major Axis)



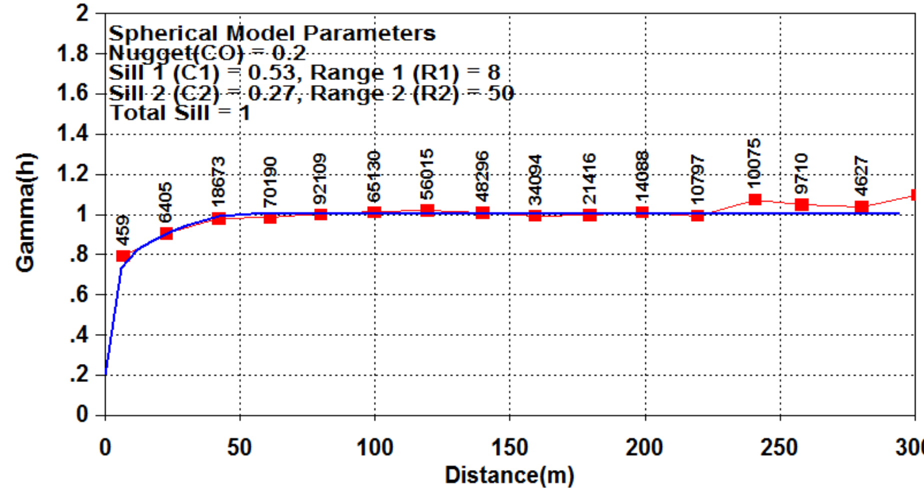


PLAVICA
Variograms

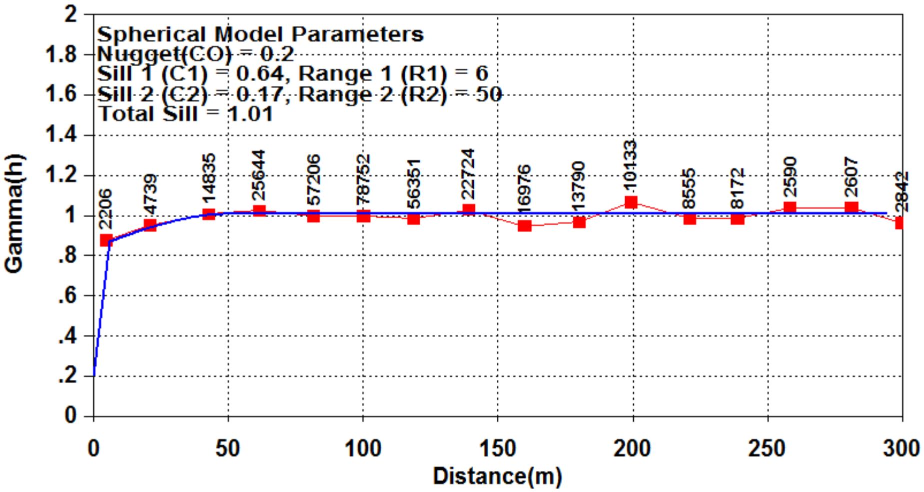
Correlogram from auppm_ind02_ore_other_all.vrs of auppm
Azimuth = 130, Plunge = -20 (Minor Axis)

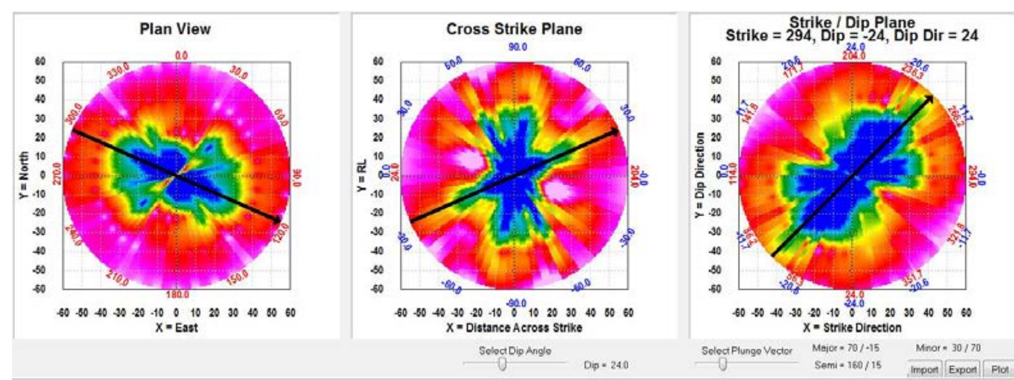


Correlogram from auppm_ind02_ore_other_all.vrs of auppm
Azimuth = 30, Plunge = -20 (Minor Axis)



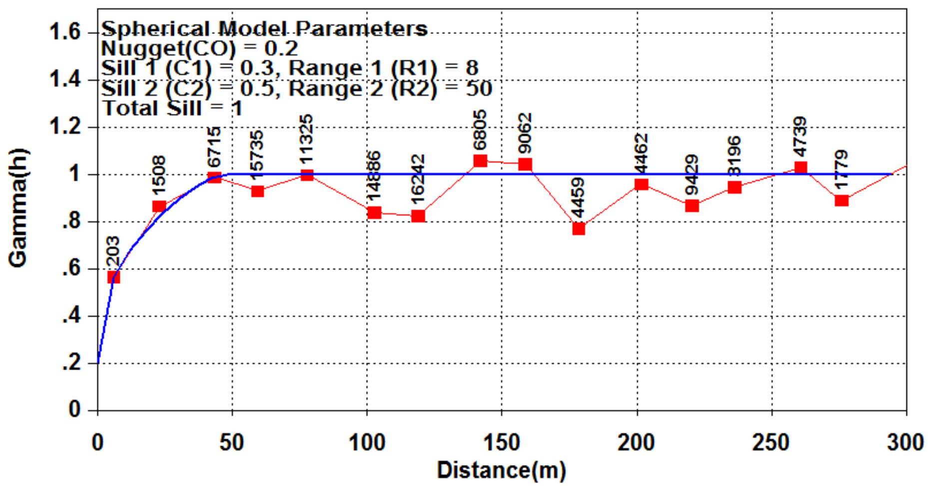
Correlogram from auppm_ind02_ore_other_all.vrs of auppm
Azimuth = 80, Plunge = 60 (Semi-Major Axis)



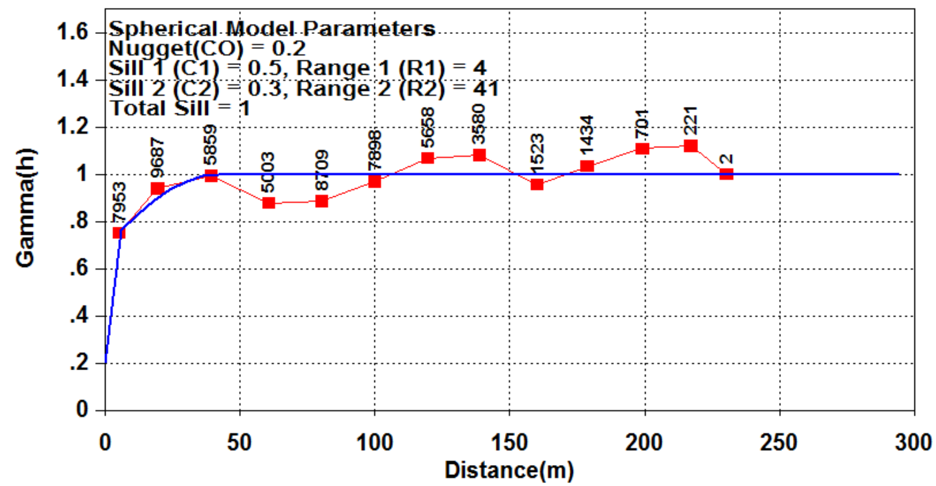


PLAVICA
Variograms

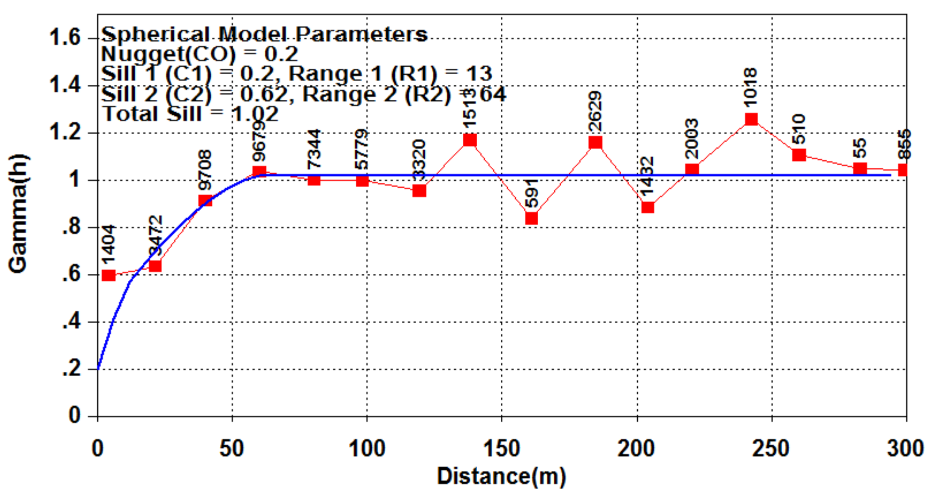
Correlogram from auppm_ind02_ore_svg_all.vrs of auppm
Azimuth = 110, Plunge = -10 (Major Axis)

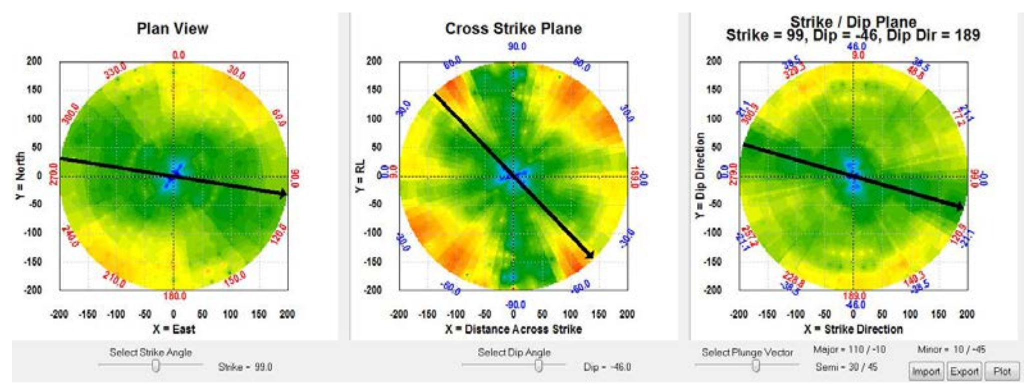


Correlogram from auppm_ind02_ore_svg_all.vrs of auppm
Azimuth = 10, Plunge = -45 (Minor Axis)

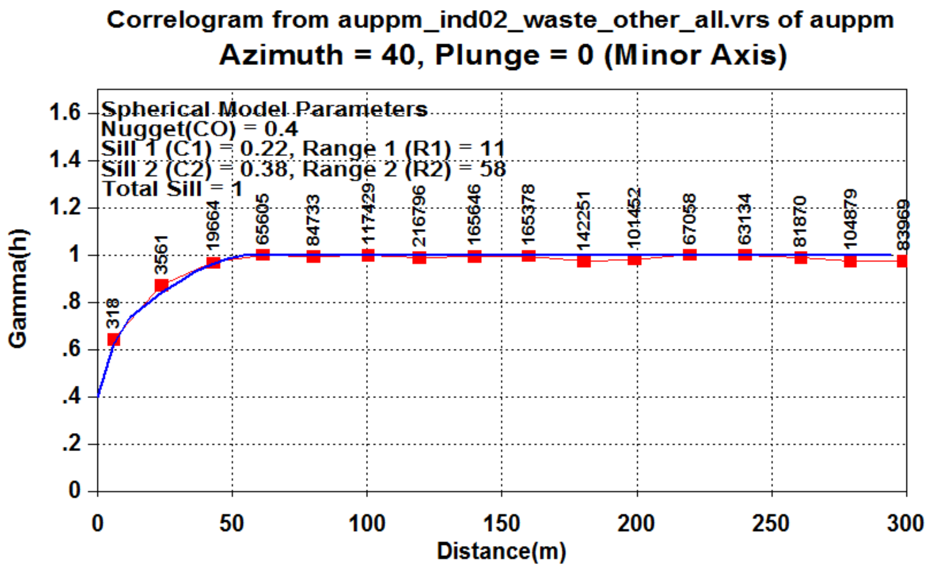


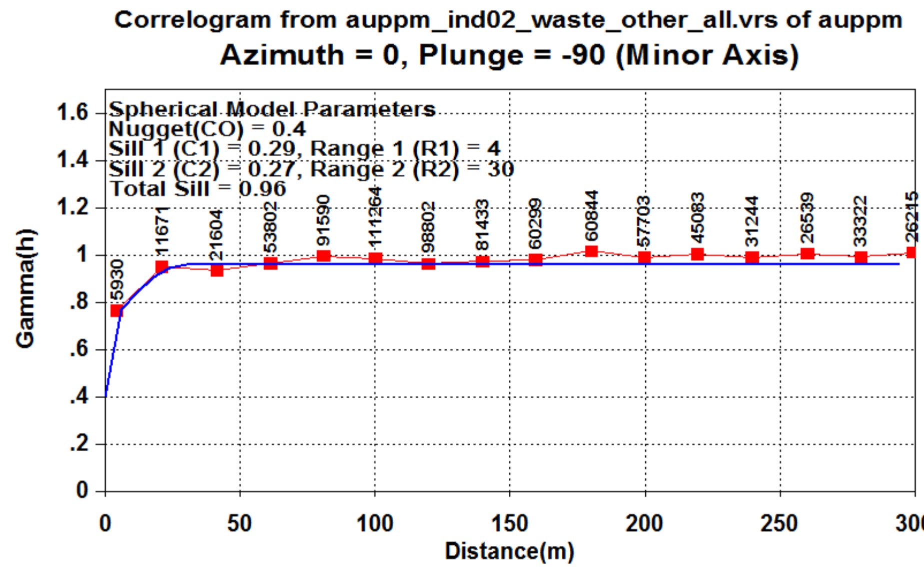
Correlogram from auppm_ind02_ore_svg_all.vrs of auppm
Azimuth = 30, Plunge = 45 (Semi-Major Axis)

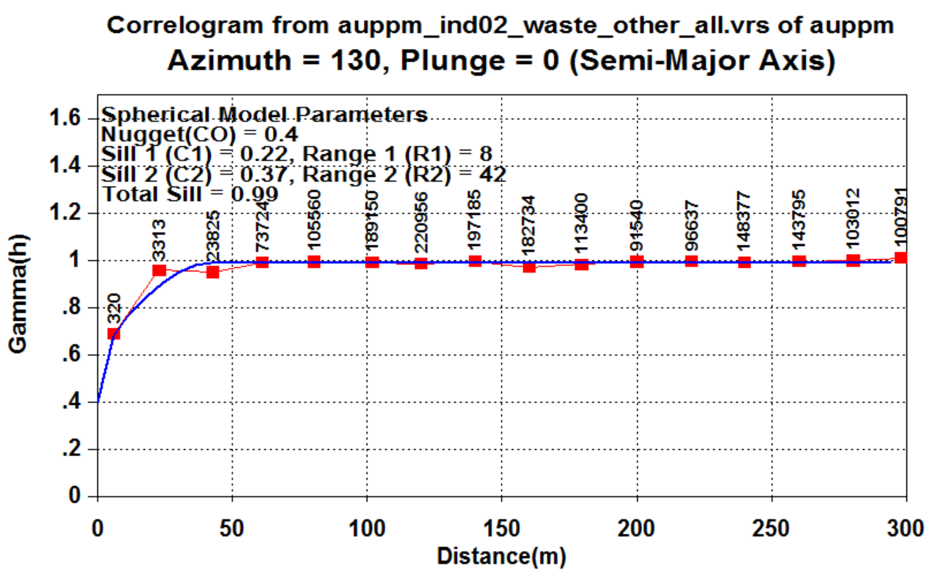


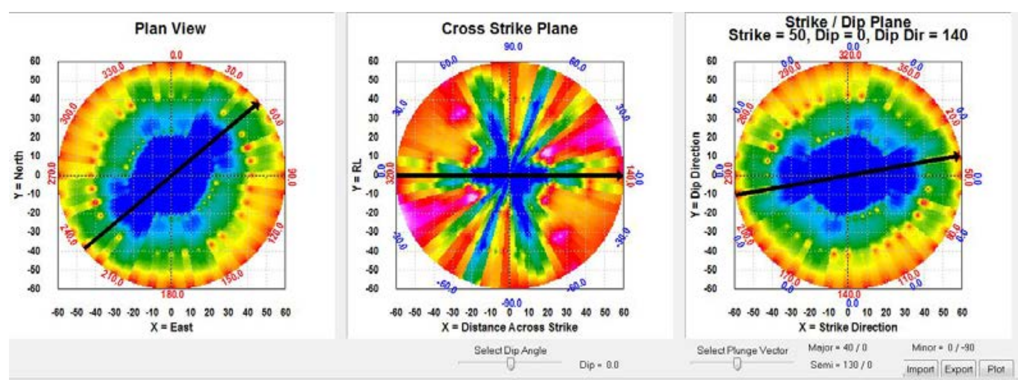


PLAVICA
Variograms



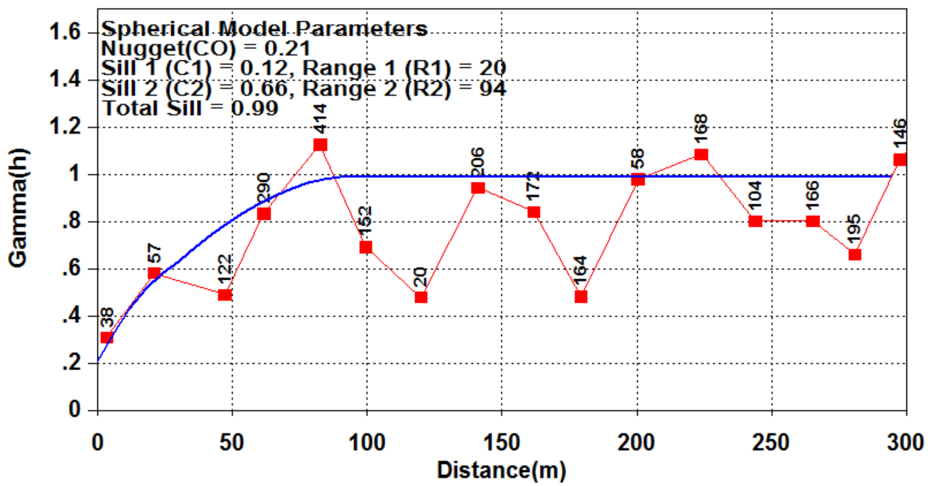




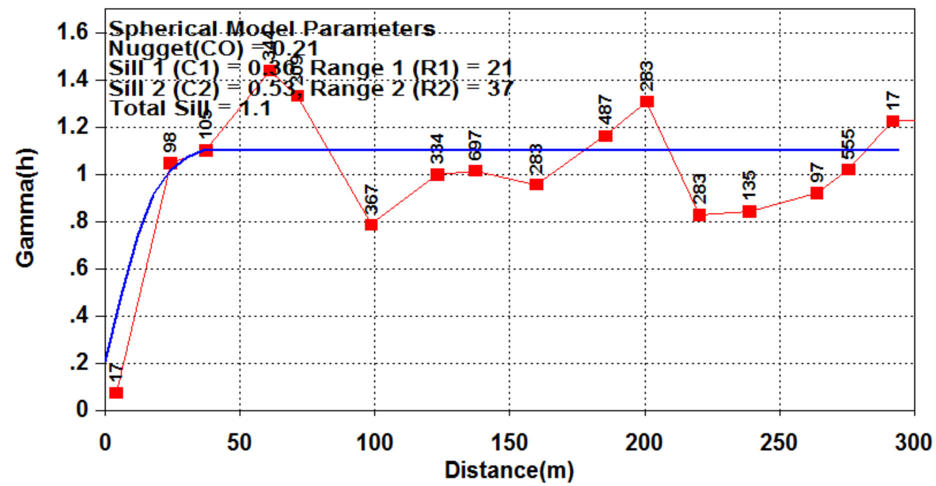


PLAVICA
Variograms

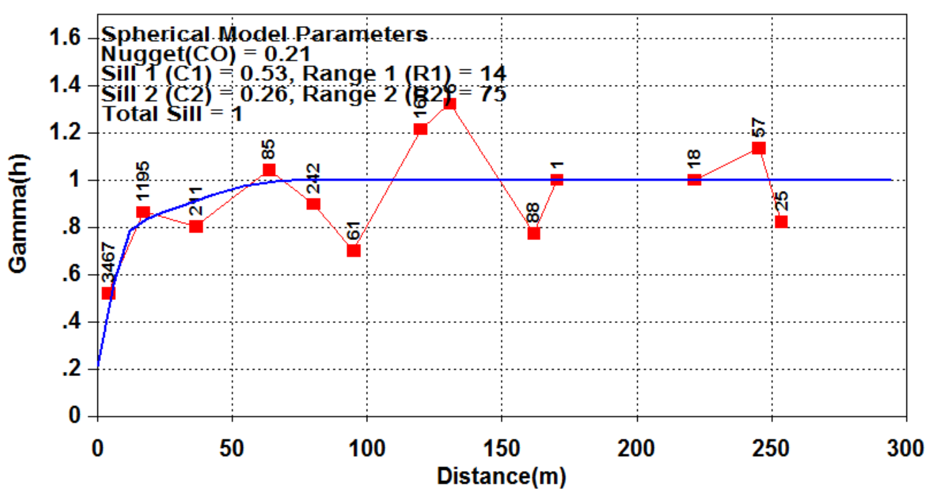
Correlogram from auppm_ind02_waste_svg_all.vrs of auppm
Azimuth = 150, Plunge = -5 (Minor Axis)

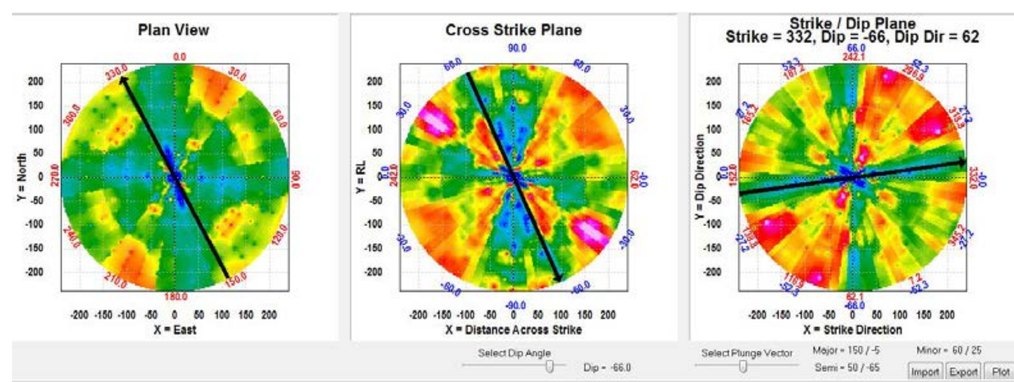


Correlogram from auppm_ind02_waste_svg_all.vrs of auppm
Azimuth = 60, Plunge = 25 (Minor Axis)

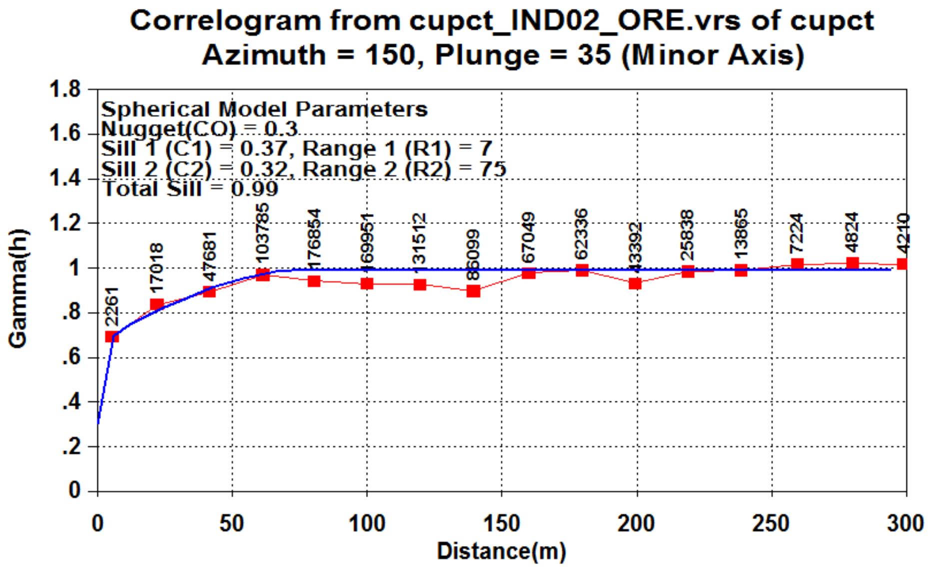


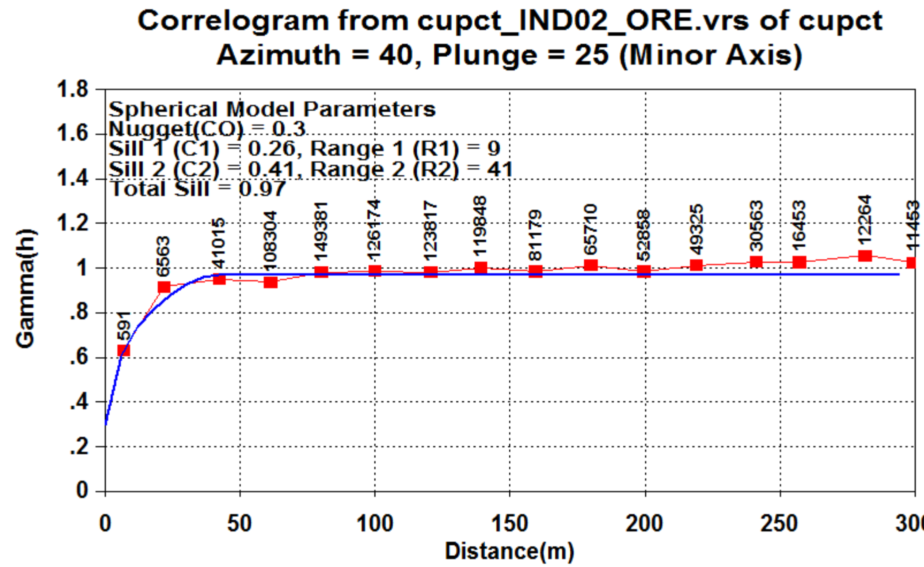
Correlogram from auppm_ind02_waste_svg_all.vrs of auppm
Azimuth = 50, Plunge = -65 (Semi-Major Axis)

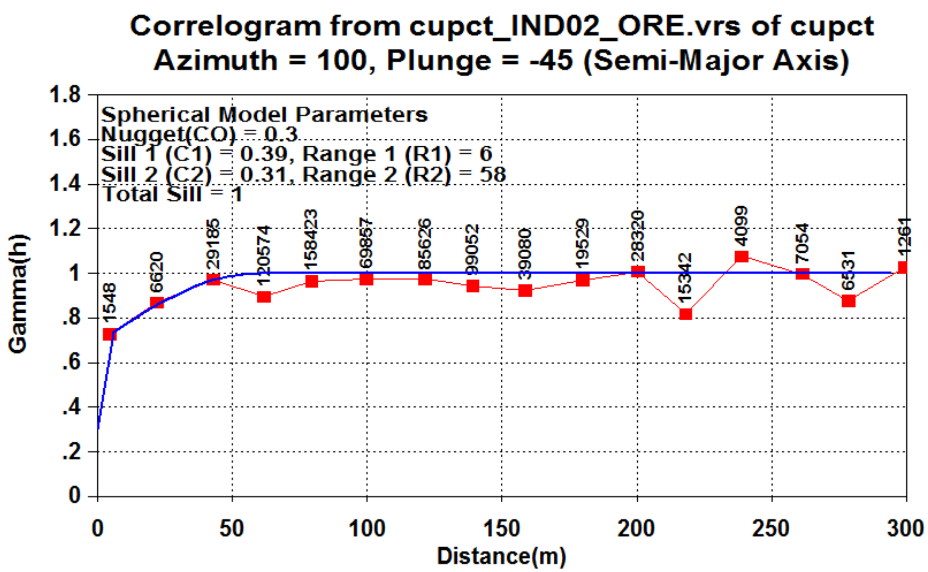


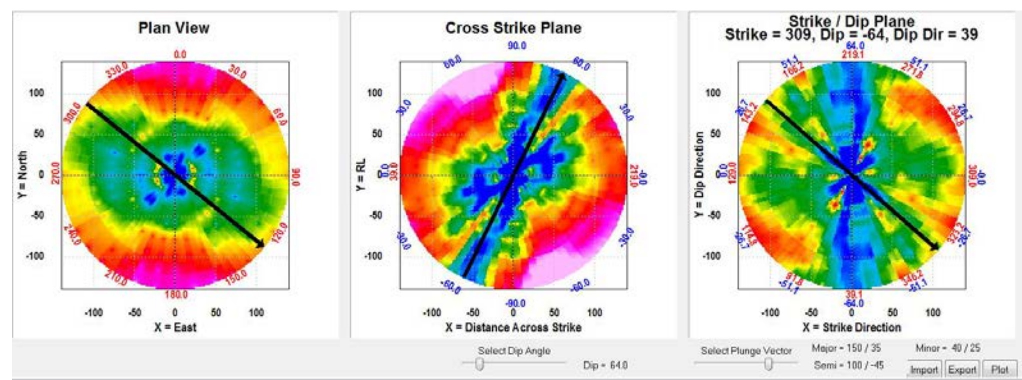


PLAVICA
Variograms

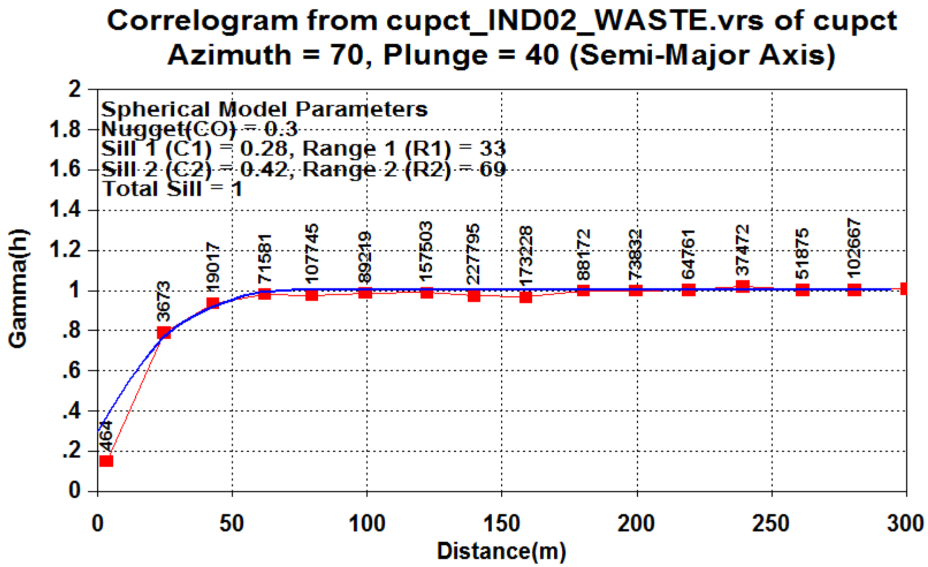


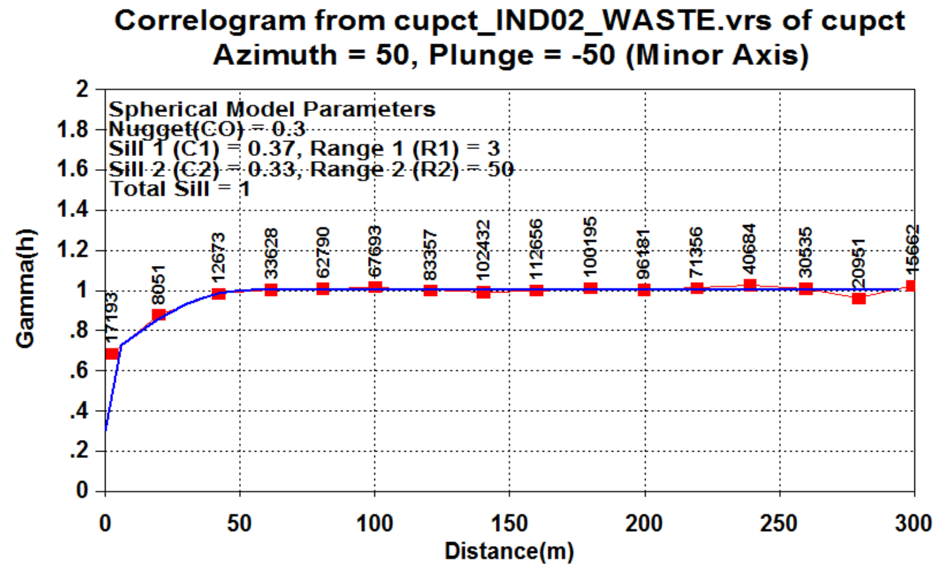


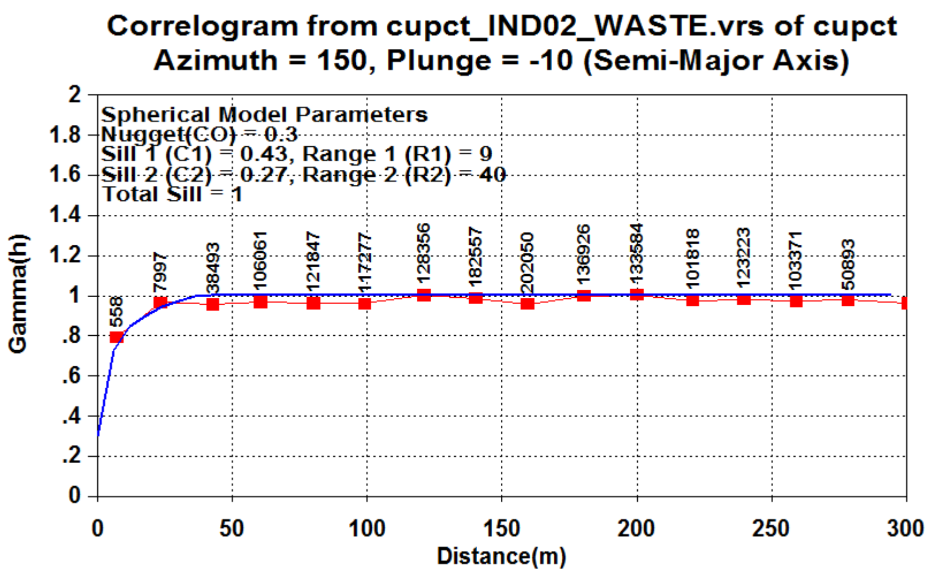


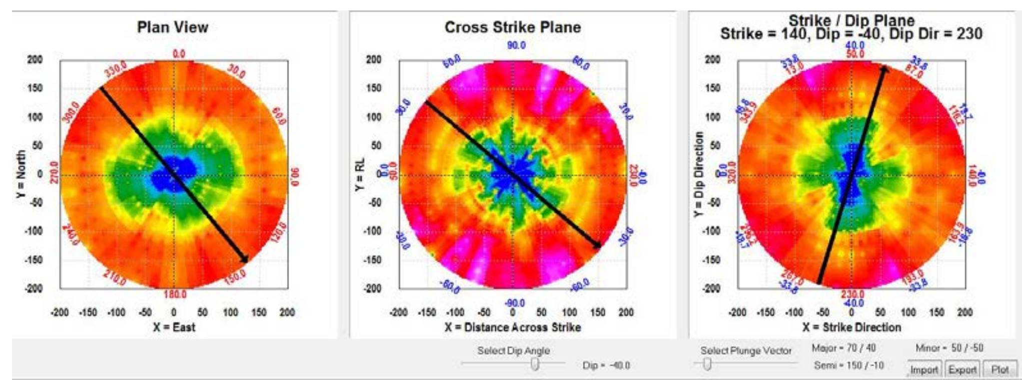


PLAVICA
Variograms

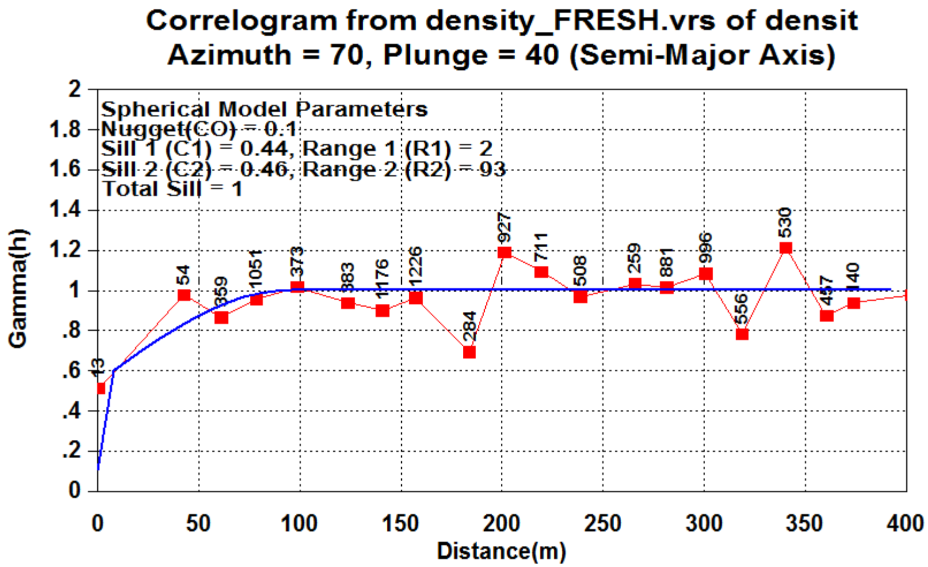


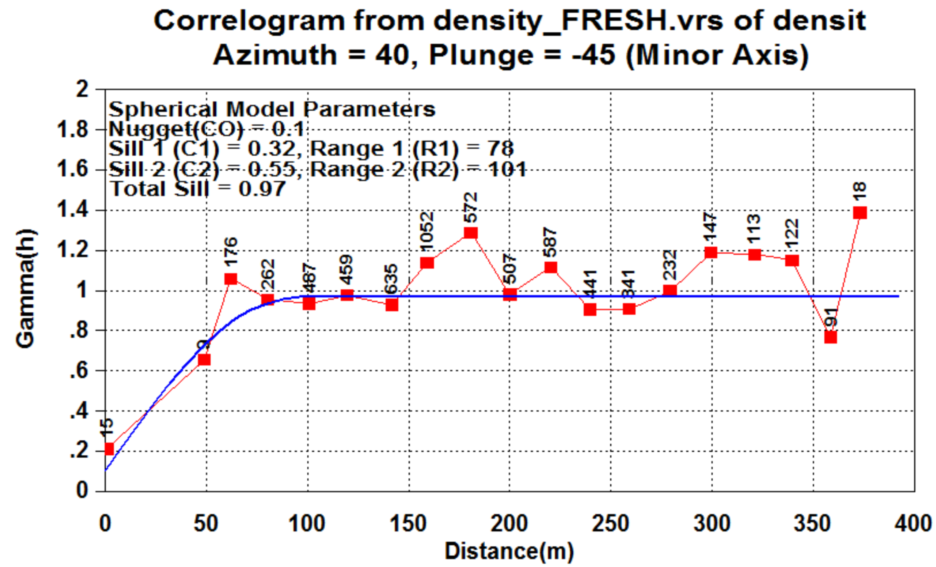


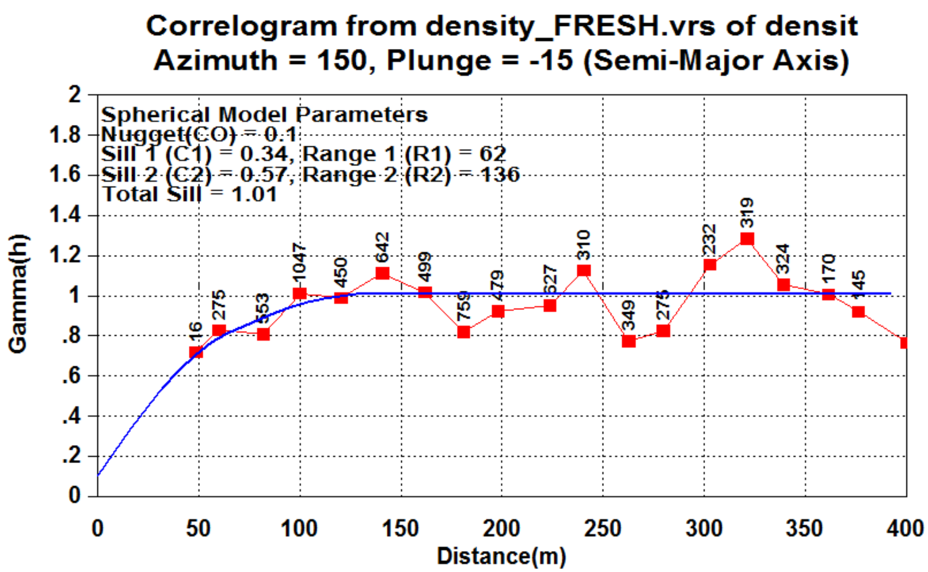


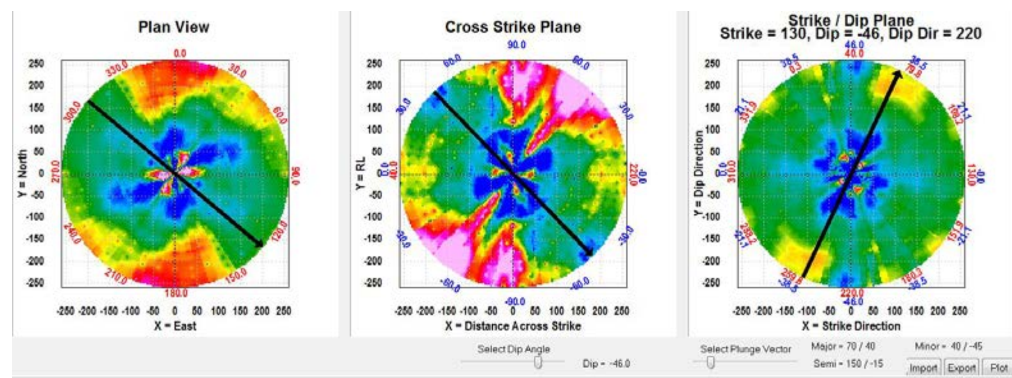


PLAVICA
Variograms

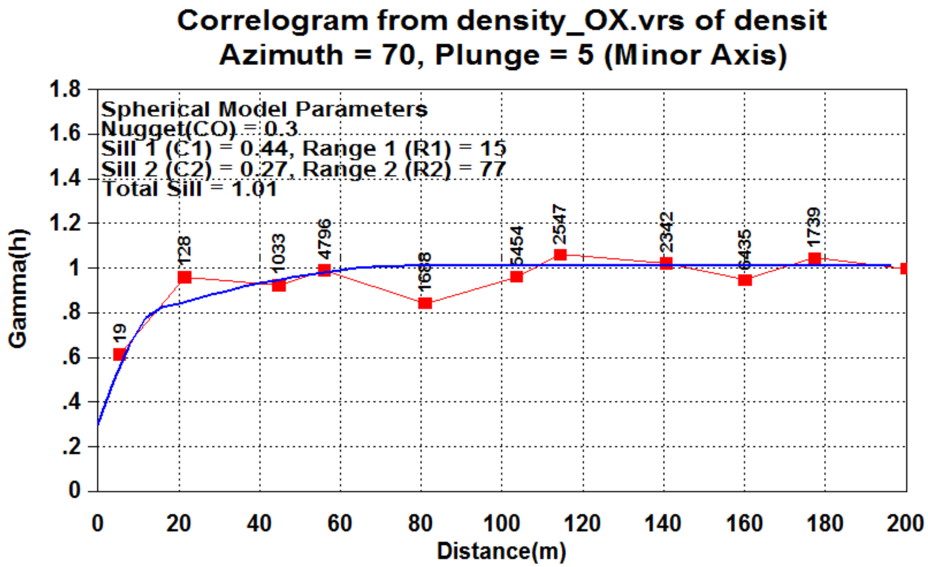


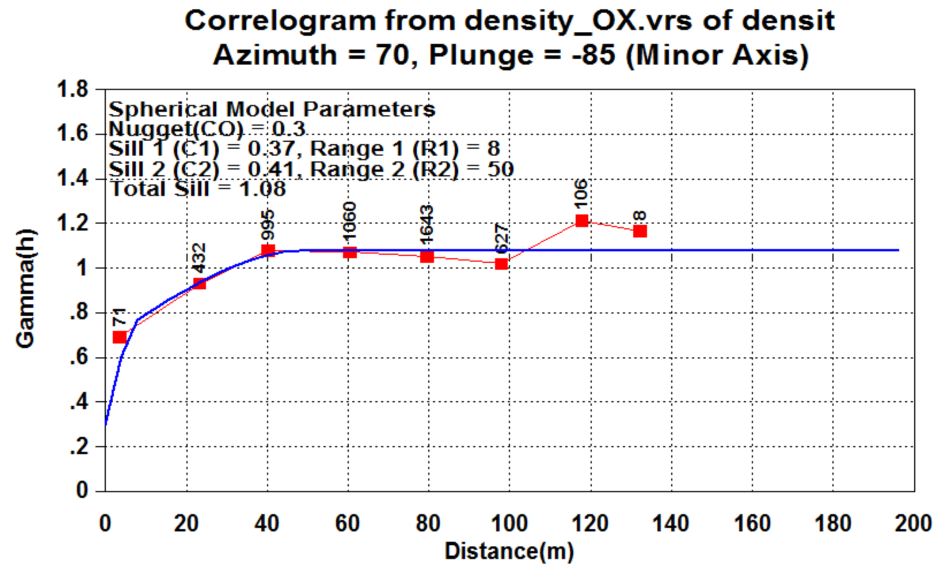


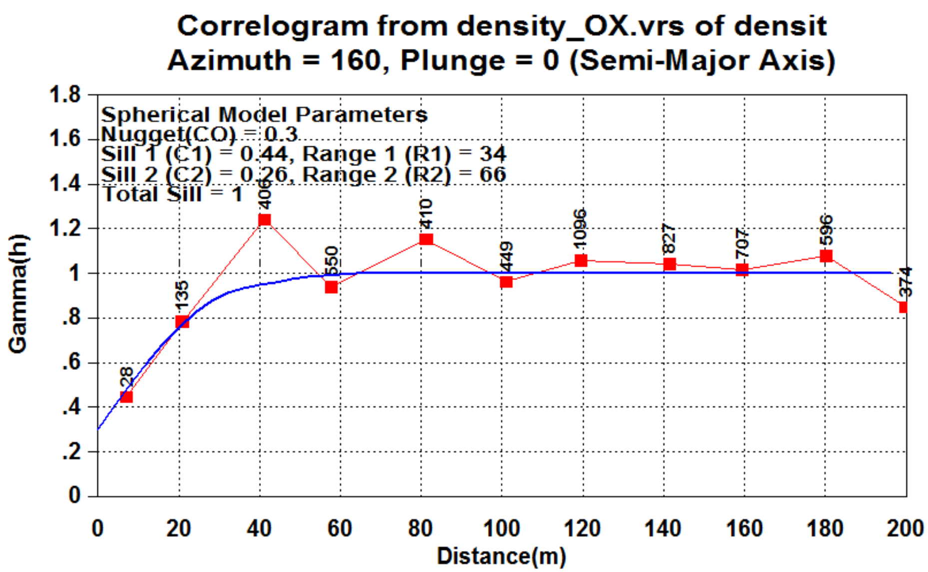


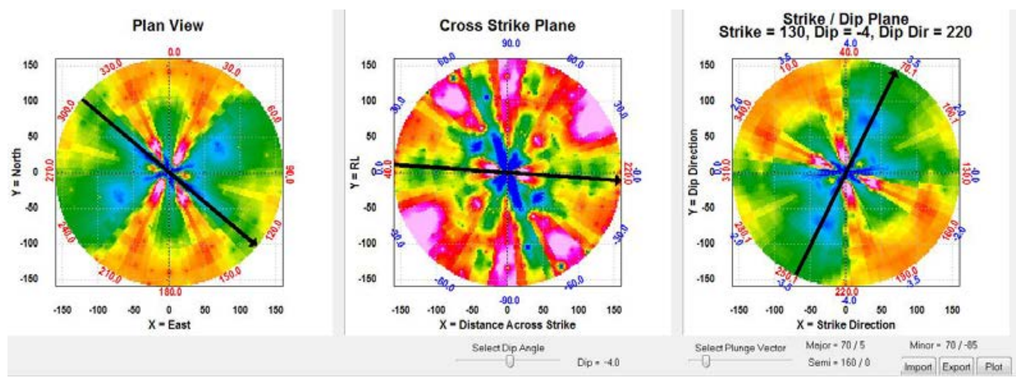


PLAVICA
Variograms

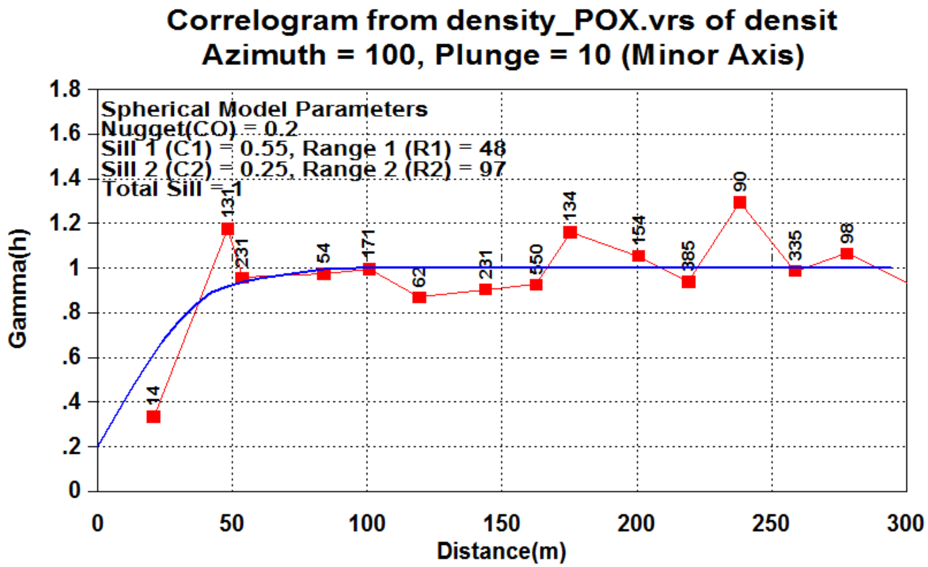


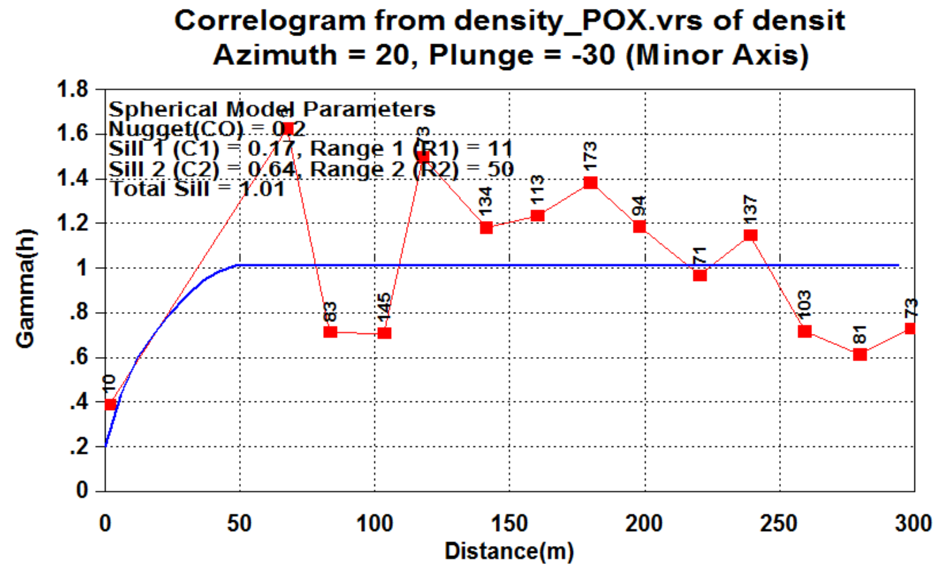


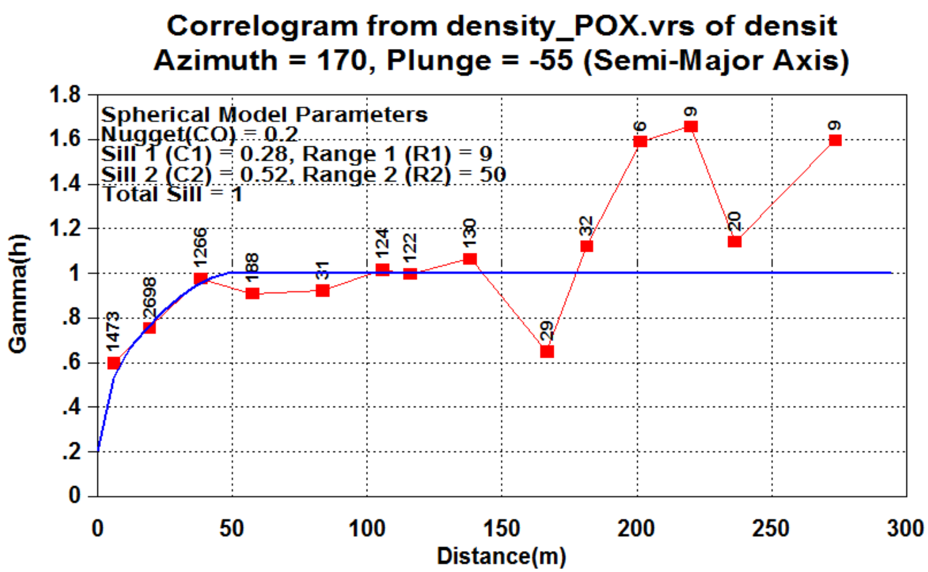


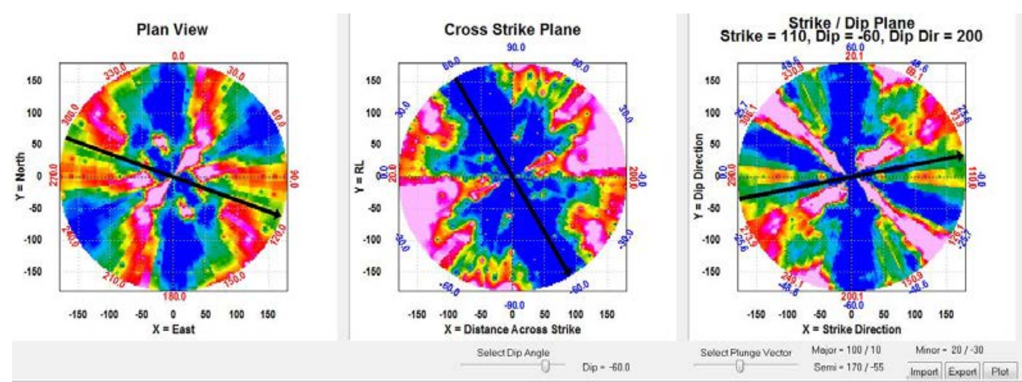


PLAVICA
Variograms



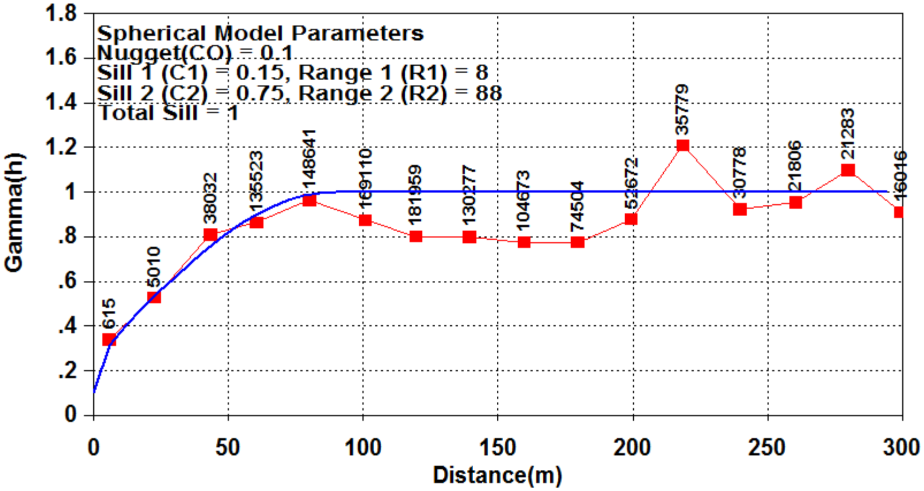




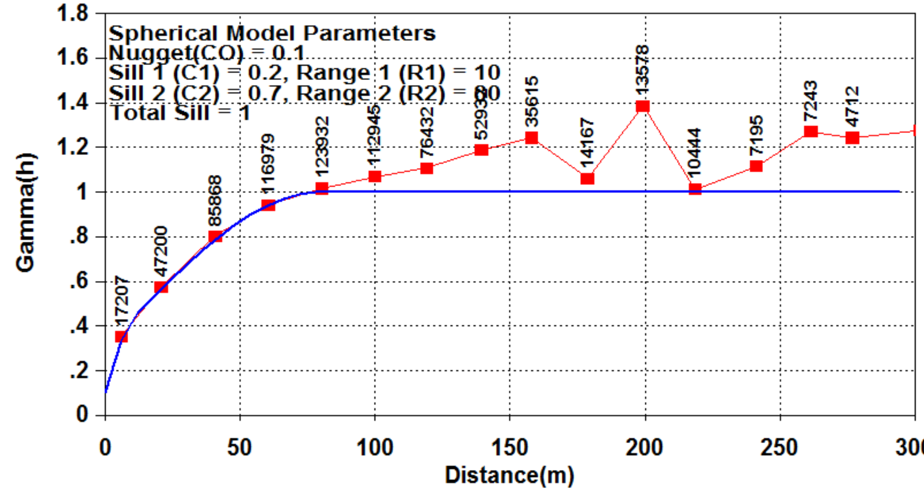


PLAVICA
Variograms

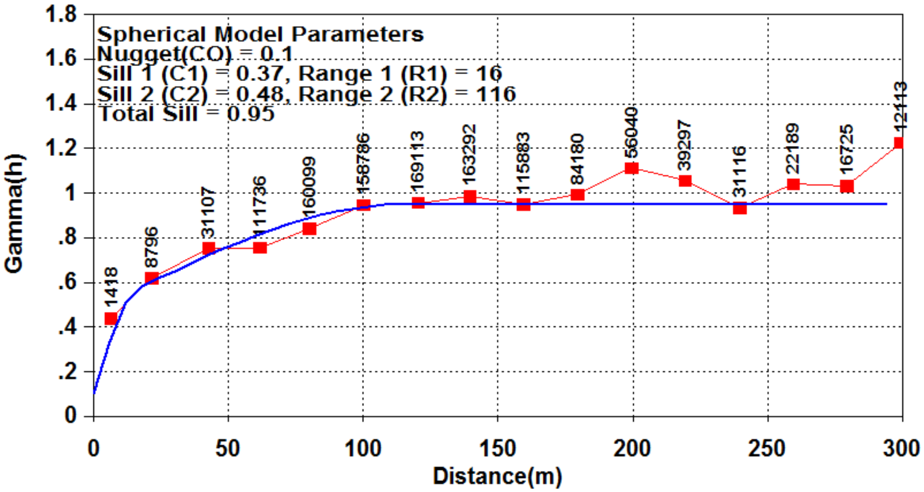
Correlogram from spct_IND02_ORE.vrs of spct
Azimuth = 50, Plunge = -15 (Minor Axis)

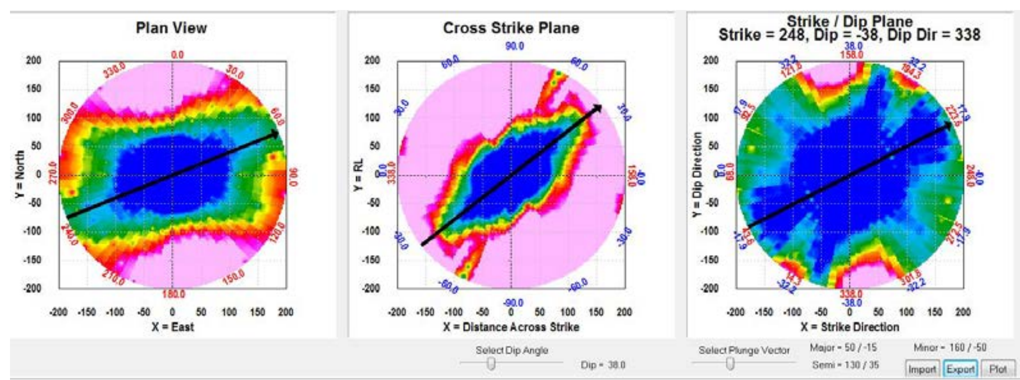


Correlogram from spct_IND02_ORE.vrs of spct
Azimuth = 160, Plunge = -50 (Minor Axis)

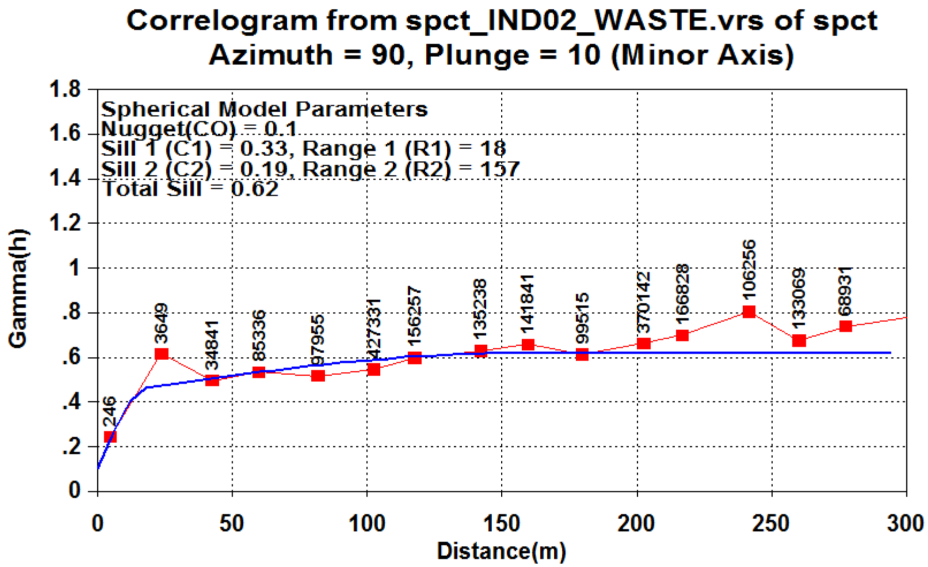


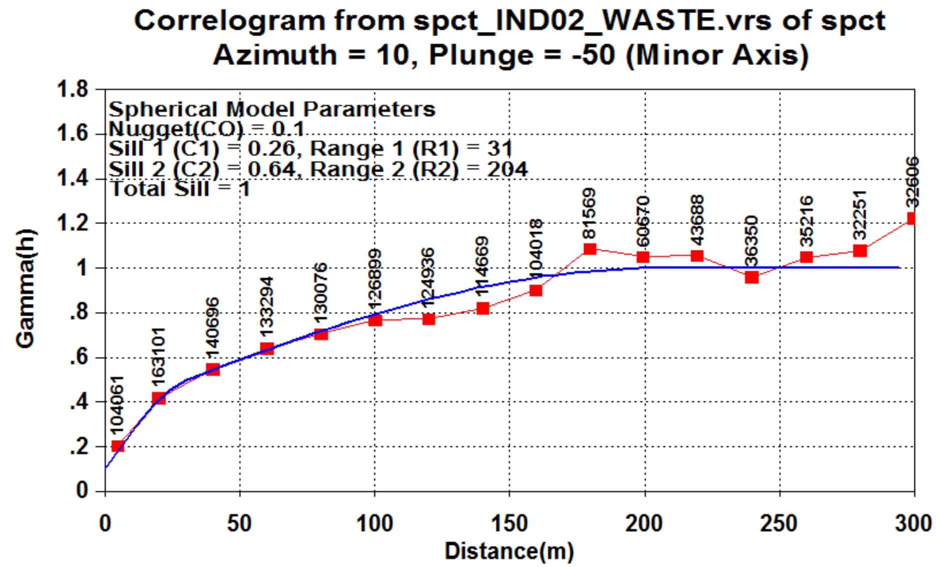
Correlogram from spct_IND02_ORE.vrs of spct
Azimuth = 130, Plunge = 35 (Semi-Major Axis)

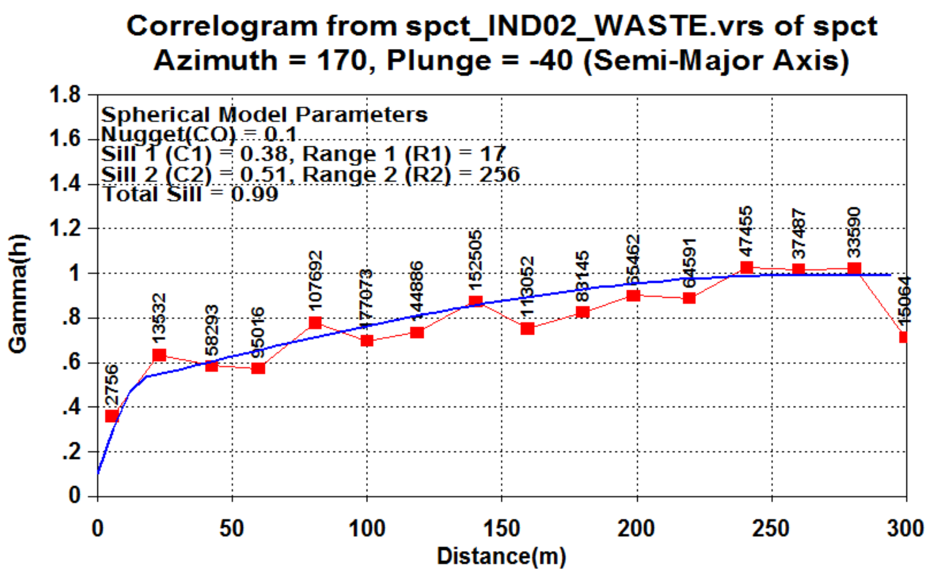


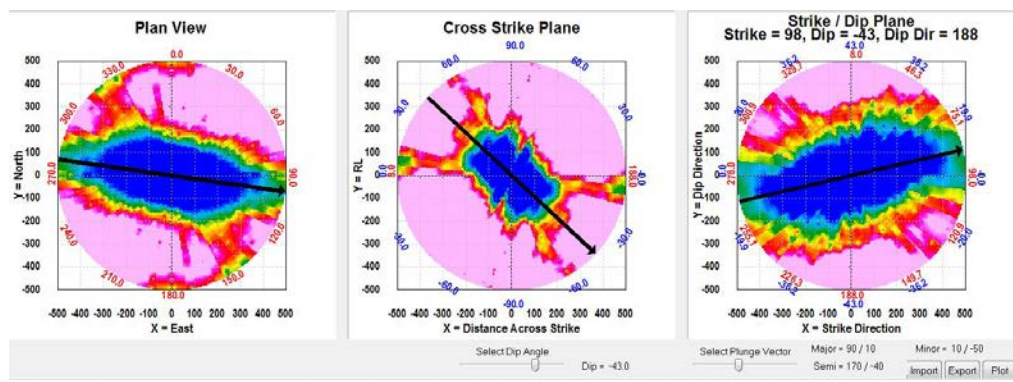


PLAVICA
Variograms









APPENDIX 1.3

Global statistical validation – comparison of variables

PLAVICA DEPOSIT - MACEDONIA																
Variable	Zone	Deposit area	Lithology	Weathering	Data (declustered)			Block Model (OK)			*OK/DH(%)*[1]	*f*[2]	Composite		Block Model	
					No.	Mean	Var.	No.	Mean	Var.			*Min*	*Max*	*Min*	*Max*
Au (ppm)	inside ore shell	Plavica	SVG	OX	1790	0.91	2.13	11970	0.89	0.38	97.8	0.177	0.0025	15.000	0.138	3.869
				POX	1177	0.76	1.40	11594	0.78	0.28	102.7	0.200	0.003	11.480	0.085	3.535
				FRESH	1160	0.90	3.39	22575	0.82	0.27	90.9	0.081	0.003	15.000	0.091	10.415
			other	OX	2440	0.45	0.65	32375	0.44	0.08	97.2	0.129	0.003	15.000	0.027	3.531
				POX	4114	0.44	1.02	60471	0.43	0.16	96.1	0.158	0.003	15.000	0.012	7.034
				FRESH	6194	0.33	0.48	148744	0.28	0.03	85.4	0.073	0.003	15.000	0.013	4.767
		Maricanski	SVG	OX	2699	0.97	2.46	12901	0.82	0.34	84.6	0.138	0.003	15.000	0.191	6.501
				POX	265	0.64	1.05	3569	0.57	0.07	90.0	0.063	0.015	15.000	0.090	1.728
				FRESH	49	0.52	0.39	1736	0.52	0.06	100.8	0.153	0.008	3.170	0.091	1.090
			other	OX	6420	0.40	0.27	51989	0.42	0.04	103.2	0.142	0.003	13.100	0.027	2.055
				POX	2020	0.37	0.49	34593	0.34	0.03	90.8	0.058	0.003	15.000	0.066	3.004
				FRESH	1330	0.34	0.21	45487	0.30	0.01	88.2	0.066	0.003	5.320	0.040	1.187
	Outside ore shell	Plavica	SVG	OX	381	0.34	0.88	5403	0.19	0.01	56.3	0.014	0.003	12.600	0.078	2.735
				POX	321	0.25	0.17	3610	0.09	0.00	36.6	0.028	0.003	3.910	0.010	1.258
				FRESH	919	0.27	0.27	20461	0.13	0.00	47.8	0.018	0.003	6.350	0.018	1.861
			other	OX	3870	0.14	0.13	86343	0.11	0.00	78.2	0.035	0.000	15.000	0.003	2.455
				POX	8855	0.09	0.06	140314	0.07	0.00	79.0	0.035	0.003	5.850	0.003	1.220
				FRESH	28819	0.10	0.05	454721	0.08	0.00	82.4	0.058	0.003	15.000	0.003	5.318
		Maricanski	SVG	OX	172	1.61	7.49	1683	0.30	0.35	19.0	0.046	0.016	11.100	0.057	5.797
				POX	8	0.08	0.00	119	0.13	0.00	157.1	0.174	0.031	0.206	0.103	0.177
				FRESH	13	0.28	0.03	66	0.15	0.00	54.7	0.005	0.204	1.400	0.049	0.197
			other	OX	1347	0.22	0.16	29329	0.16	0.01	71.7	0.048	0.003	7.590	0.010	1.471
				POX	820	0.16	0.09	22148	0.08	0.00	52.4	0.031	0.003	3.800	0.004	0.487
				FRESH	3573	0.11	0.07	103085	0.09	0.00	84.9	0.046	0.002	8.560	0.003	1.227
Ag (ppm)	inside ore shell	Plavica	SVG	OX	1790	10.17	461.17	11970	7.69	123.88	75.6	0.269	0.220	320.000	0.771	167.573
				POX	1177	11.33	1930.22	11594	7.25	144.80	63.9	0.075	0.000	869.000	0.438	312.914
				FRESH	1160	11.75	1270.68	22575	6.95	112.84	59.1	0.089	0.000	552.000	0.459	142.699
			other	OX	2440	8.07	1250.71	32375	8.14	67.80	100.8	0.054	0.000	1391.000	0.599	193.422
				POX	4114	8.77	486.80	60471	9.32	122.26	106.2	0.251	0.025	366.000	0.438	312.914
				FRESH	6194	8.09	1624.63	148744	9.43	629.60	116.5	0.388	0.000	1229.500	0.252	299.816
		Maricanski	SVG	OX	2699	5.19	149.23	12901	4.37	27.77	84.0	0.186	0.200	318.000	0.815	48.420
				POX	265	9.72	298.33	3569	4.44	63.75	45.7	0.214	0.070	163.000	0.816	207.573
				FRESH	49	8.85	187.87	1736	6.17	26.37	69.7	0.140	1.000	71.000	1.000	30.581
			other	OX	6420	3.55	53.54	51989	4.17	22.53	117.4	0.421	0.170	150.000	0.782	59.189
				POX	2020	4.10	553.94	34593	3.35	31.55	81.7	0.057	0.130	1014.000	0.773	232.282
				FRESH	1330	4.55	130.05	45487	4.02	19.03	88.4	0.146	0.130	157.000	0.714	45.899
	Outside ore shell	Plavica	SVG	OX	381	6.71	114.04	5403	4.12	8.84	61.3	0.078	0.000	111.000	0.704	26.346
				POX	321	4.07	158.44	3610	3.53	7.30	86.7	0.046	0.000	103.000	0.503	20.520
				FRESH	919	4.45	190.13	20461	3.64	19.63	81.9	0.103	0.000	175.000	0.442	63.763
			other	OX	3870	3.36	34.48	86343	3.52	7.78	105.0	0.226	0.000	135.000	0.245	26.401
				POX	8855	2.64	54.97	140314	2.74	10.82	104.1	0.197	0.000	271.000	0.209	54.770
				FRESH	28819	3.27	471.01	454721	2.92	21.42	89.3	0.045	0.000	2132.000	0.257	228.053
		Maricanski	SVG	OX	172	6.74	131.58	1683	3.77	3.85	55.9	0.029	0.750	116.000	1.000	9.510
				POX	8	1.00	0.00	119	2.15	1.71	215.0	#DIV/0!	1.000	1.000	1.000	4.903
				FRESH	13	4.92	4.10	66	1.92	1.39	38.9	0.339	0.470	8.000	1.093	9.021
			other	OX	1347	3.50	22.15	29329	3.80	5.15	108.6	0.232	0.270	43.000	0.748	17.036
				POX	820	4.09	273.77	22148	2.52	2.50	61.7	0.009	0.140	368.000	0.716	30.566

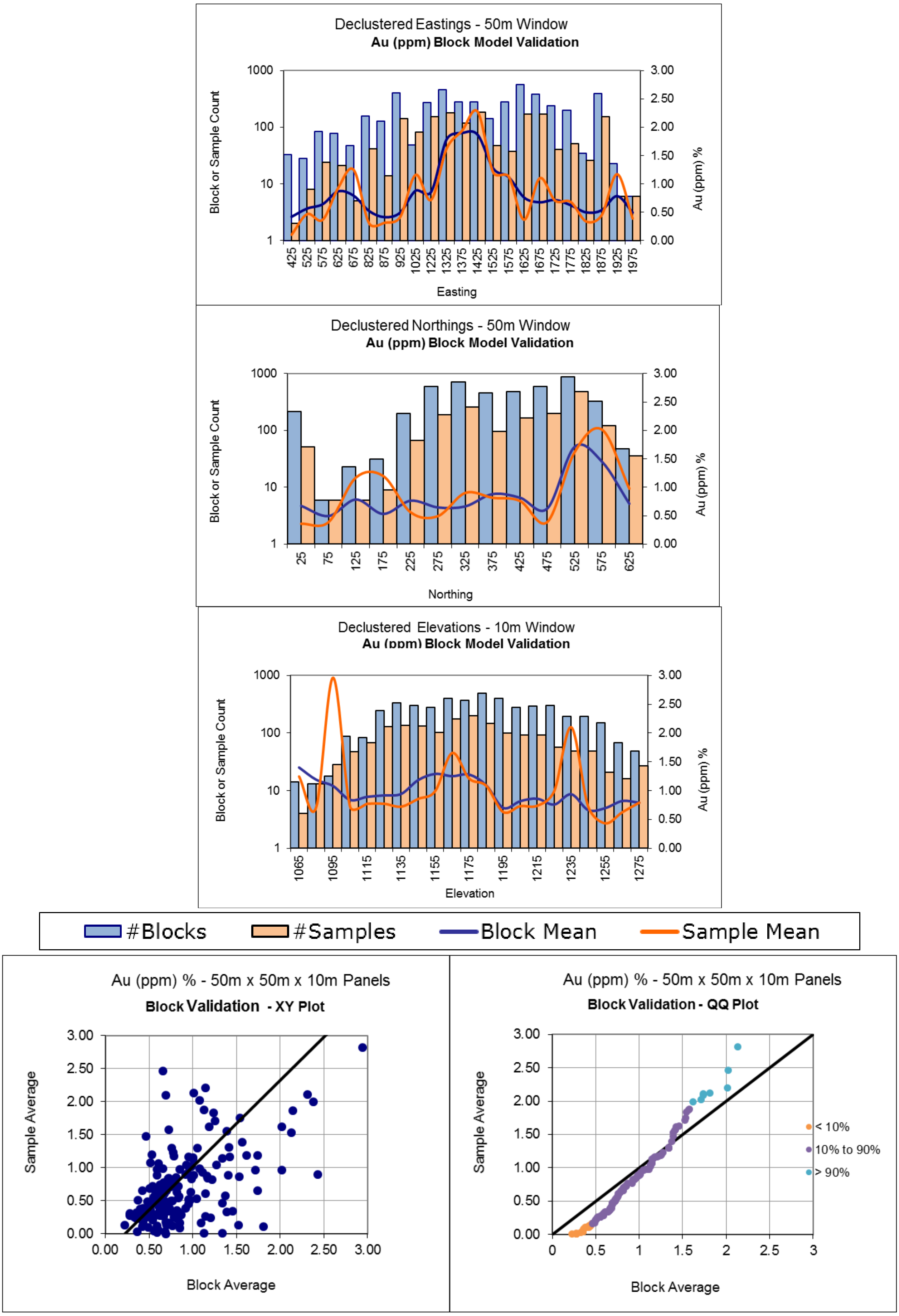
				FRESH	3573	4.06	278.93	103085	4.83	91.83	118.9	0.329	0.100	278.000	0.100	254.097
As (%)	inside ore shell	Plavica	SVG	OX	1790	0.080	0.02	11970	0.063	0.00	79.7	0.129	0.001	1.410	0.006	0.330
				POX	1177	0.084	0.03	11594	0.059	0.00	69.8	0.135	0.000	2.200	0.004	0.505
				FRESH	1160	0.061	0.02	22575	0.037	0.00	60.9	0.048	0.000	2.468	0.005	0.498
			other	OX	2440	0.058	0.01	32375	0.061	0.00	105.3	0.213	0.000	1.000	0.005	0.460
				POX	4114	0.057	0.03	60471	0.055	0.00	96.2	0.107	0.001	4.100	0.003	0.874
				FRESH	6194	0.041	0.01	148744	0.039	0.00	94.7	0.105	0.000	1.870	0.004	0.531
		Maricanski	SVG	OX	2699	0.072	0.02	12901	0.060	0.00	83.5	0.121	0.000	3.250	0.005	0.768
				POX	265	0.065	0.01	3569	0.038	0.00	58.3	0.035	0.001	1.000	0.007	0.401
				FRESH	49	0.038	0.00	1736	0.030	0.00	78.6	0.133	0.006	0.241	0.010	0.107
			other	OX	6420	0.047	0.01	51989	0.053	0.00	111.7	0.217	0.000	1.820	0.005	0.509
				POX	2020	0.036	0.00	34593	0.033	0.00	94.0	0.087	0.002	1.000	0.006	0.401
				FRESH	1330	0.034	0.01	45487	0.033	0.00	98.0	0.070	0.003	1.000	0.007	0.293
	Outside ore shell	Plavica	SVG	OX	381	0.068	0.08	5403	0.032	0.00	46.8	0.008	0.000	4.520	0.005	0.835
				POX	321	0.029	0.00	3610	0.025	0.00	87.2	0.077	0.000	0.343	0.005	0.089
				FRESH	919	0.029	0.00	20461	0.020	0.00	68.5	0.042	0.000	1.000	0.002	0.138
			other	OX	3870	0.033	0.00	86343	0.032	0.00	98.1	0.252	0.000	0.980	0.001	0.835
				POX	8855	0.020	0.00	140314	0.020	0.00	101.6	0.098	0.000	1.050	0.002	0.171
				FRESH	28819	0.019	0.00	454721	0.018	0.00	97.9	0.102	0.000	2.250	0.001	0.430
		Maricanski	SVG	OX	172	0.052	0.01	1683	0.052	0.00	99.8	0.062	0.009	0.837	0.015	0.115
				POX	8	0.016	0.00	119	0.018	0.00	112.7	0.345	0.006	0.038	0.009	0.032
				FRESH	13	0.072	0.01	66	0.027	0.00	38.1	0.013	0.010	0.239	0.014	0.050
			other	OX	1347	0.039	0.00	29329	0.035	0.00	91.9	0.161	0.002	0.601	0.003	0.223
				POX	820	0.029	0.00	22148	0.034	0.00	117.1	0.706	0.001	0.206	0.002	0.165
				FRESH	3573	0.025	0.00	103085	0.036	0.00	144.2	0.429	0.000	1.000	0.002	0.470
Cu (%)	inside ore shell	Plavica	SVG	OX	1790	0.019	0.00	11970	0.021	0.00	109.0	0.275	0.000	0.561	0.001	0.172
				POX	1177	0.105	0.05	11594	0.058	0.00	55.6	0.089	0.000	2.290	0.003	0.906
				FRESH	1160	0.338	0.64	22575	0.198	0.06	58.5	0.086	0.000	7.000	0.006	2.660
			other	OX	2440	0.025	0.00	32375	0.021	0.00	83.7	0.049	0.000	1.570	0.001	0.190
				POX	4114	0.103	0.09	60471	0.095	0.02	93.1	0.198	0.000	7.660	0.001	1.147
				FRESH	6194	0.185	0.35	148744	0.165	0.04	88.8	0.112	0.000	17.800	0.004	4.533
		Maricanski	SVG	OX	2699	0.014	0.00	12901	0.013	0.00	91.0	0.205	0.000	0.318	0.002	0.070
				POX	265	0.030	0.00	3569	0.041	0.00	133.9	0.489	0.001	0.989	0.003	0.461
				FRESH	49	0.192	0.09	1736	0.105	0.00	54.4	0.043	0.002	1.210	0.012	0.342
			other	OX	6420	0.015	0.00	51989	0.014	0.00	96.5	0.165	0.000	0.388	0.002	0.111
				POX	2020	0.048	0.02	34593	0.043	0.00	90.1	0.104	0.000	2.490	0.002	0.535
				FRESH	1330	0.114	0.06	45487	0.106	0.00	92.3	0.071	0.000	6.240	0.005	1.436
	Outside ore shell	Plavica	SVG	OX	381	0.017	0.00	5403	0.018	0.00	106.4	0.726	0.000	0.274	0.003	0.314
				POX	321	0.098	0.02	3610	0.064	0.00	65.3	0.190	0.000	0.974	0.007	0.667
				FRESH	919	0.126	0.08	20461	0.115	0.02	90.9	0.199	0.000	5.150	0.002	2.834
			other	OX	3870	0.025	0.00	86343	0.023	0.00	89.9	0.123	0.000	1.590	0.001	0.329
				POX	8855	0.049	0.03	140314	0.061	0.01	125.2	0.238	0.000	11.800	0.001	2.244
				FRESH	28819	0.064	0.06	454721	0.063	0.01	98.7	0.110	0.000	15.400	0.001	3.717
		Maricanski	SVG	OX	172	0.025	0.01	1683	0.013	0.00	53.2	0.008	0.000	1.200	0.005	0.102
				POX	8	0.016	0.00	119	0.033	0.00	211.4	1.048	0.003	0.055	0.008	0.072
				FRESH	13	0.254	0.05	66	0.109	0.00	42.8	0.066	0.002	0.618	0.039	0.252
			other	OX	1347	0.016	0.00	29329	0.014	0.00	91.0	0.073	0.000	0.515	0.002	0.101
				POX	820	0.034	0.01	22148	0.073	0.01	214.4	0.391	0.001	2.231	0.004	0.435
				FRESH	3573	0.107	0.41	103085	0.168	0.10	157.7	0.253	0.000	10.900	0.001	3.911
				OX	1790	1.23	1.79	11970	1.20	0.58	97.1	0.323	0.005	5.010	0.063	4.810

S (%)	inside ore shell	Plavica	SVG	POX	1177	2.42	3.81	11594	2.89	1.62	119.2	0.426	0.000	12.450	0.331	7.422
				FRESH	1160	4.46	1.97	22575	4.37	0.91	98.0	0.462	0.000	11.810	0.450	8.015
			other	OX	2440	1.30	2.20	32375	1.26	0.66	96.9	0.299	0.000	9.170	0.063	4.810
				POX	4114	2.98	3.83	60471	3.19	1.59	107.1	0.416	0.050	11.930	0.180	7.422
				FRESH	6194	4.35	2.76	148744	4.35	0.86	100.1	0.311	0.000	19.030	0.371	10.901
		Maricanski	SVG	OX	2699	2.07	3.19	12901	2.37	1.59	114.6	0.499	0.005	5.010	0.072	4.761
				POX	265	2.62	3.32	3569	3.23	1.28	123.6	0.386	0.080	5.010	0.601	5.010
				FRESH	49	4.13	2.34	1736	4.55	0.26	110.2	0.110	0.620	5.010	2.006	5.010
			other	OX	6420	2.49	3.50	51989	2.38	1.33	95.5	0.381	0.005	6.240	0.070	4.956
				POX	2020	3.35	3.67	34593	3.55	1.52	105.7	0.414	0.020	6.250	0.287	5.010
				FRESH	1330	4.54	1.32	45487	4.46	0.40	98.3	0.300	0.030	5.010	1.571	5.010
	Outside ore shell	Plavica	SVG	OX	381	1.06	1.50	5403	0.90	0.26	85.1	0.175	0.000	5.010	0.056	3.467
				POX	321	3.15	2.75	3610	3.47	1.03	110.1	0.374	0.000	5.060	0.526	6.498
				FRESH	919	4.23	2.05	20461	4.49	0.65	106.1	0.318	0.000	10.010	0.876	7.858
			other	OX	3870	0.88	1.20	86343	0.94	0.56	106.5	0.465	0.000	6.550	0.024	4.644
				POX	8855	2.94	3.32	140314	2.66	1.44	90.5	0.434	0.000	10.010	0.042	7.507
				FRESH	28819	4.04	2.21	454721	3.96	1.17	98.2	0.529	0.000	10.920	0.127	8.999
		Maricanski	SVG	OX	172	2.16	3.67	1683	1.99	1.43	92.2	0.390	0.080	5.520	0.152	4.517
				POX	8	1.49	4.03	119	3.74	0.45	251.3	0.111	0.040	5.010	2.066	4.575
				FRESH	13	4.58	1.87	66	4.49	0.07	98.1	0.035	0.250	5.010	3.949	4.889
			other	OX	1347	1.33	2.43	29329	1.01	0.53	75.7	0.220	0.005	5.960	0.061	4.636
				POX	820	3.71	3.64	22148	2.70	1.40	72.8	0.384	0.005	7.870	0.008	5.549
				FRESH	3573	3.96	2.99	103085	4.41	1.12	111.6	0.375	0.000	15.600	0.017	9.785

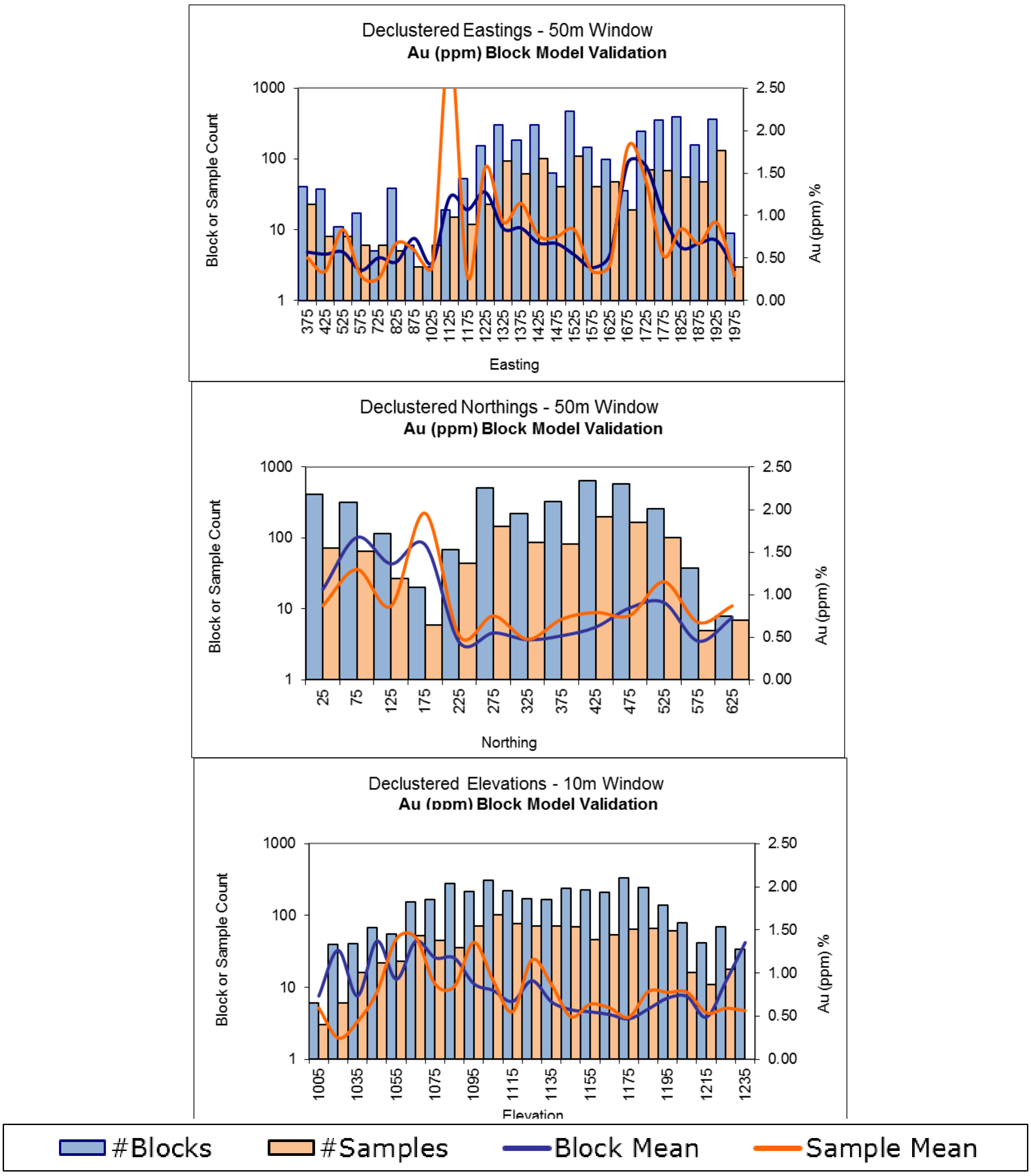
APPENDIX 1.4

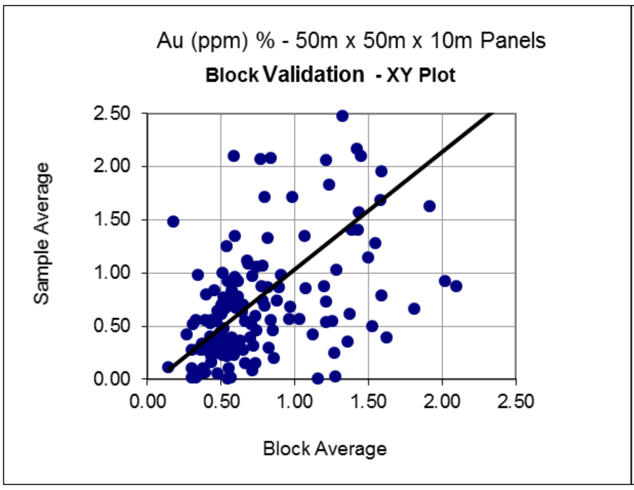
Swath plots

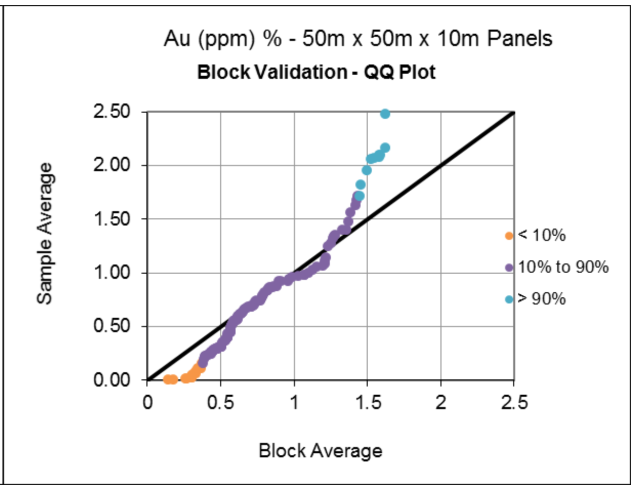
PLAVICA
Au (ppm) – Ore – SVG - Oxide



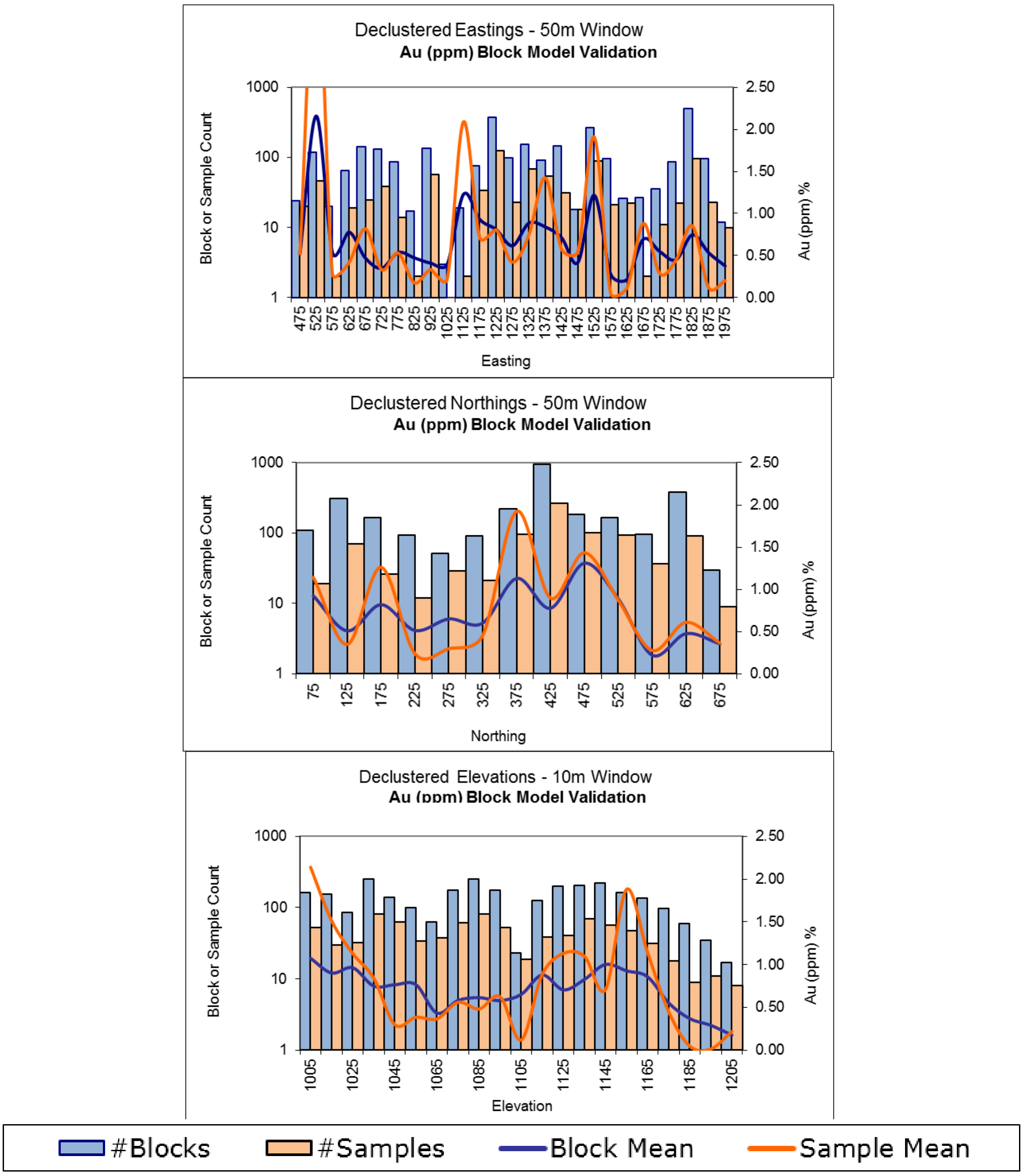
PLAVICA
Au (ppm) – Ore – SVG – Partially Oxide

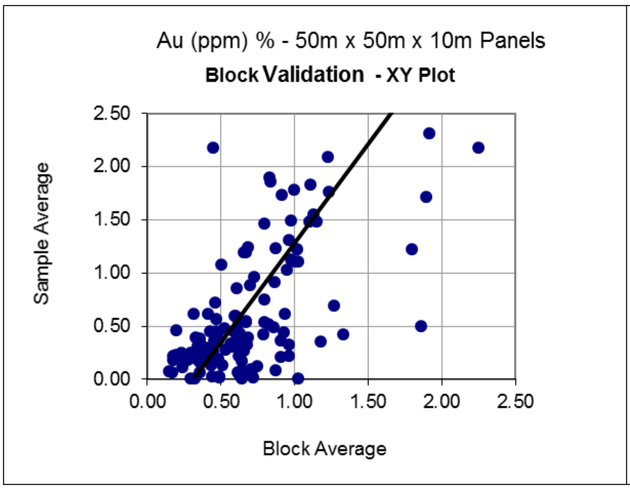


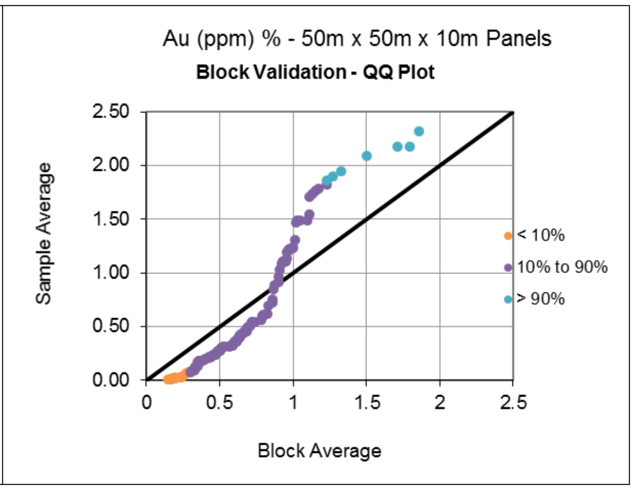




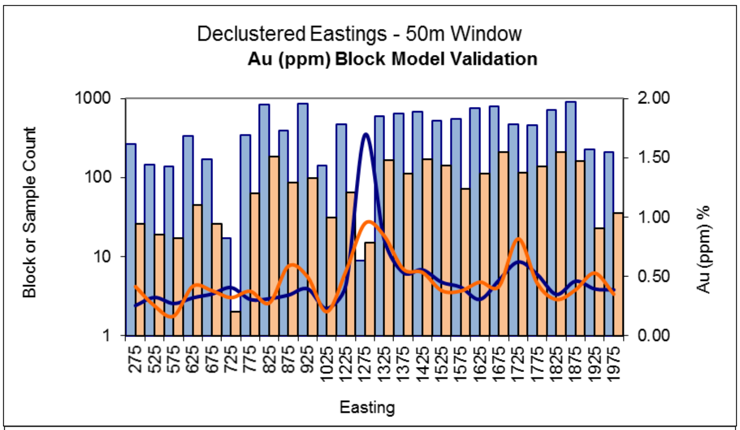
PLAVICA
Au (ppm) – Ore – SVG - Fresh

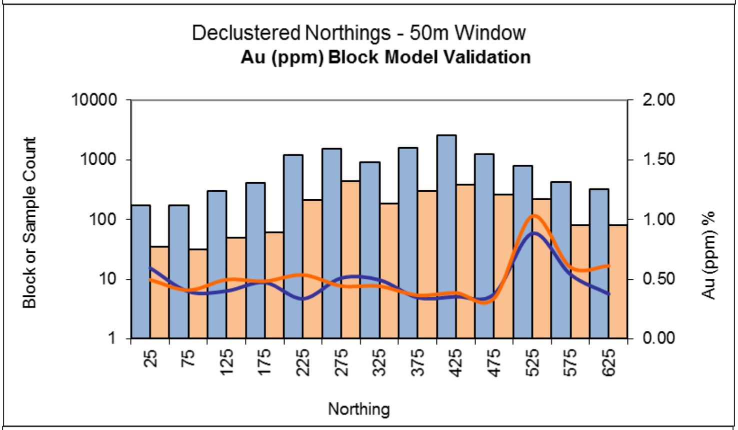


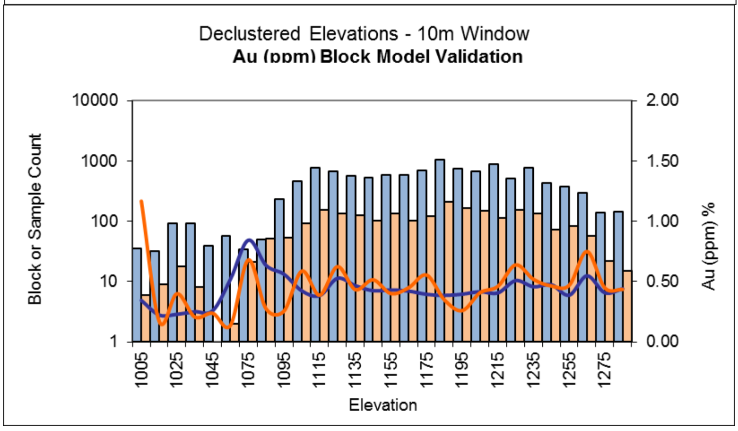


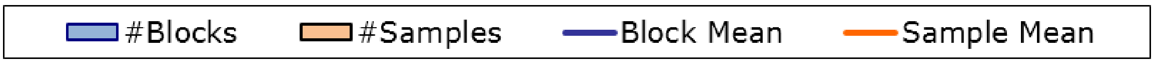


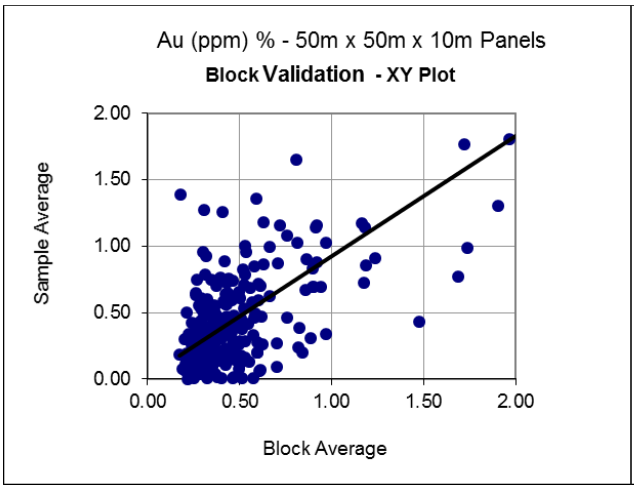
PLAVICA
Au (ppm) – Ore – other - Oxide

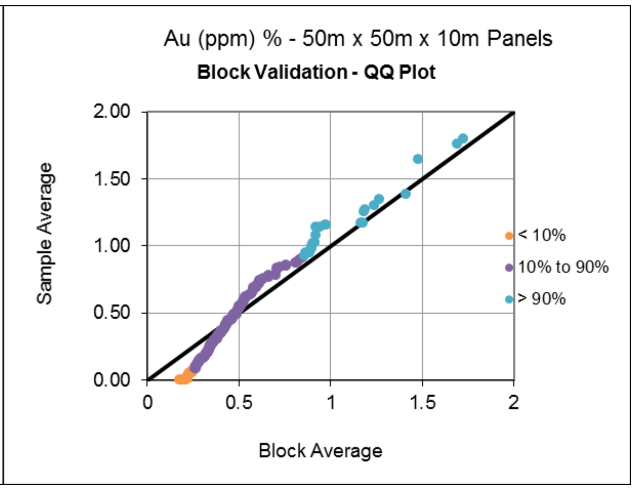




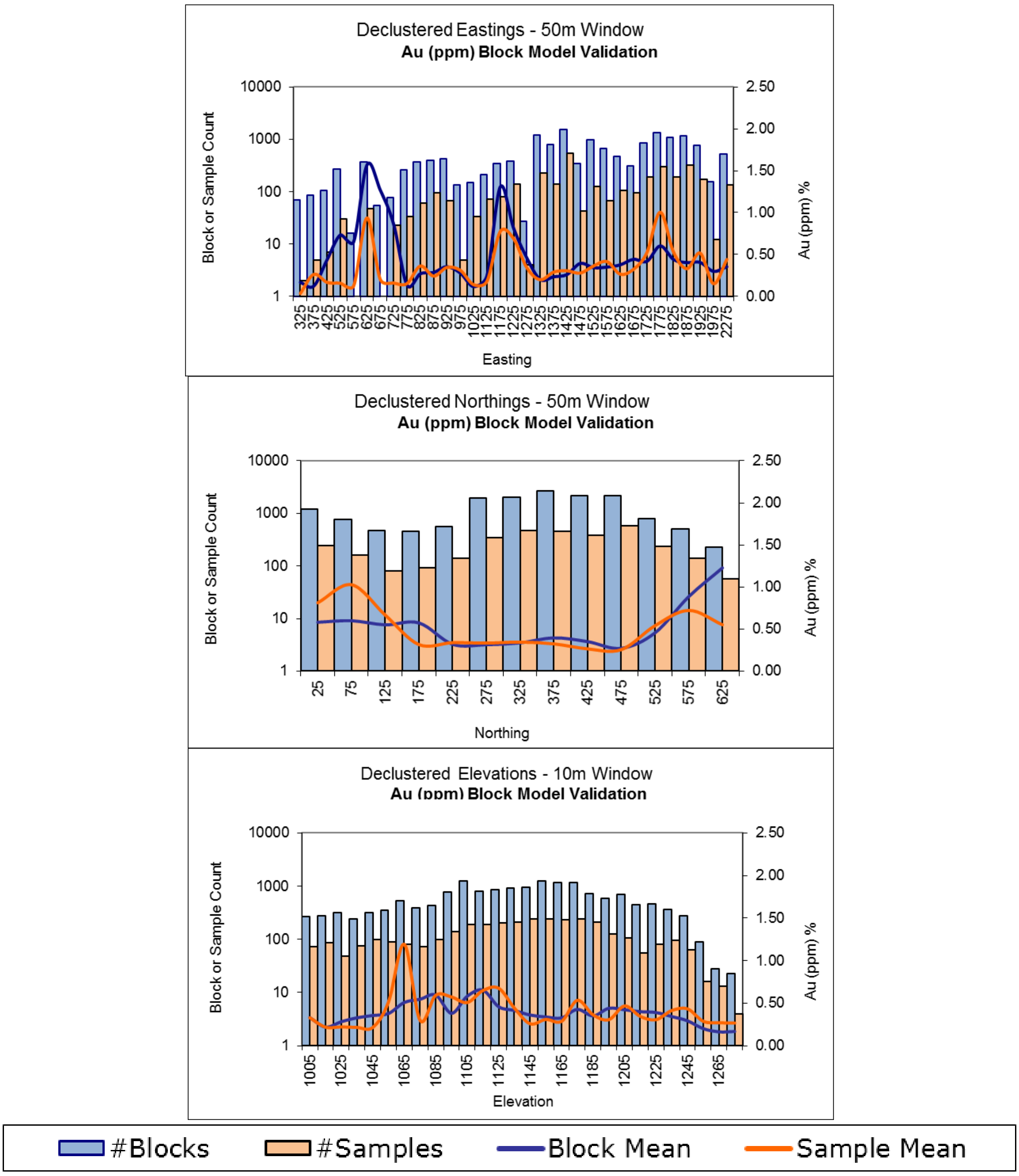


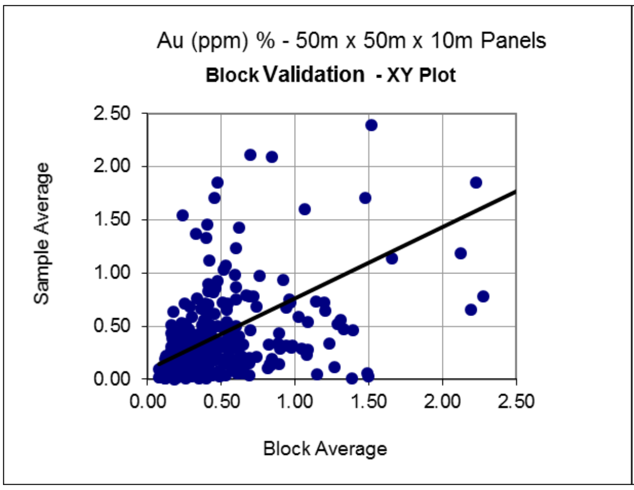


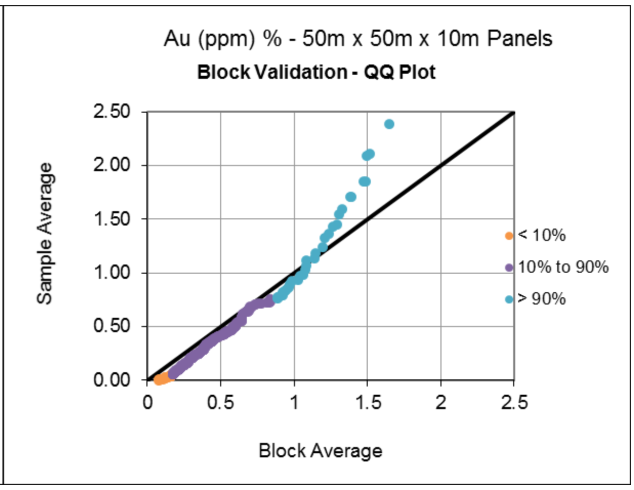




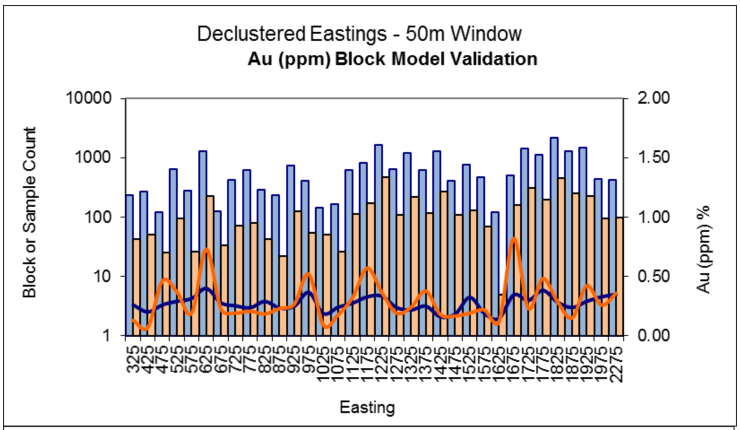
PLAVICA
Au (ppm) – Ore – other – Partially Oxide

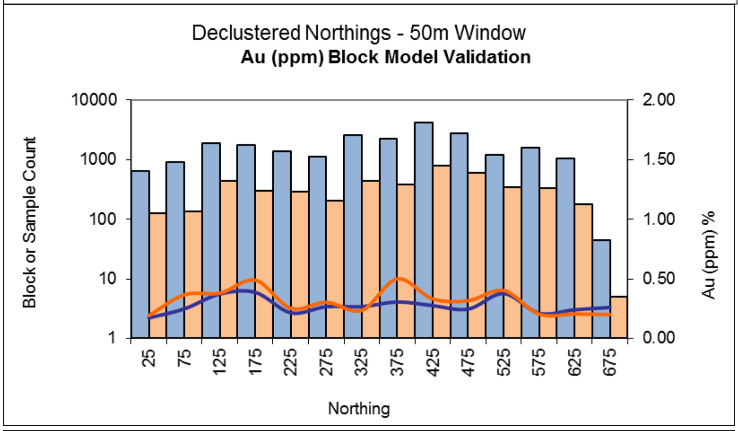


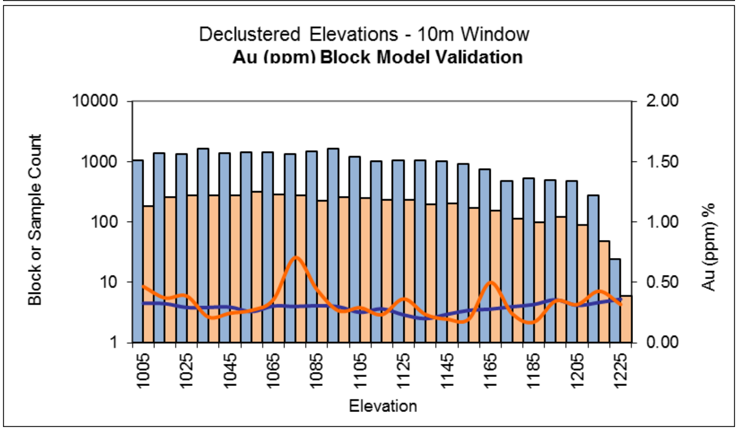


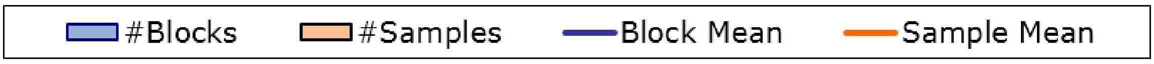


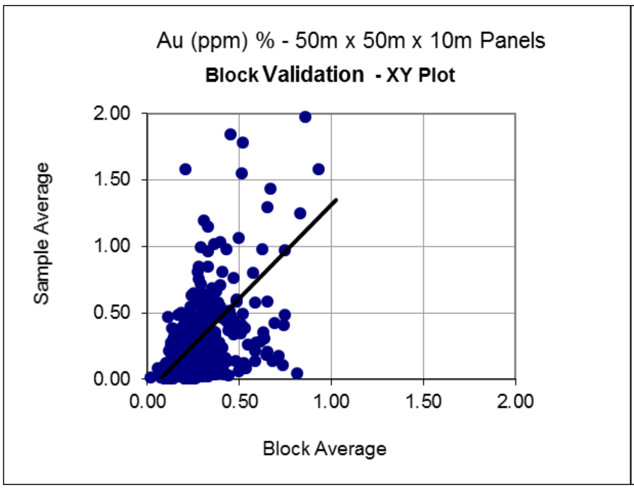
PLAVICA
Au (ppm) – Ore – other - Fresh

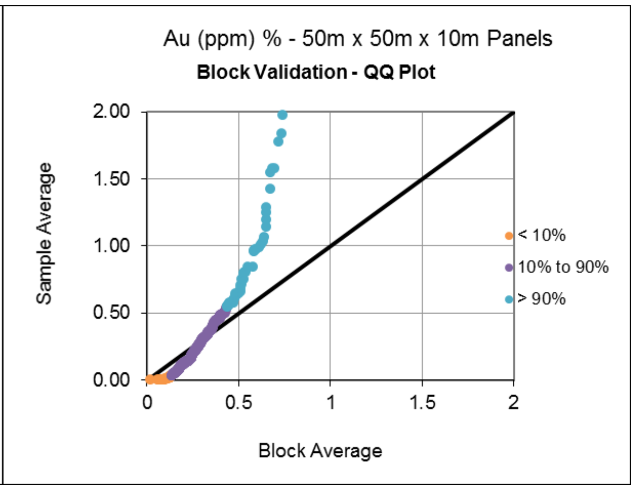




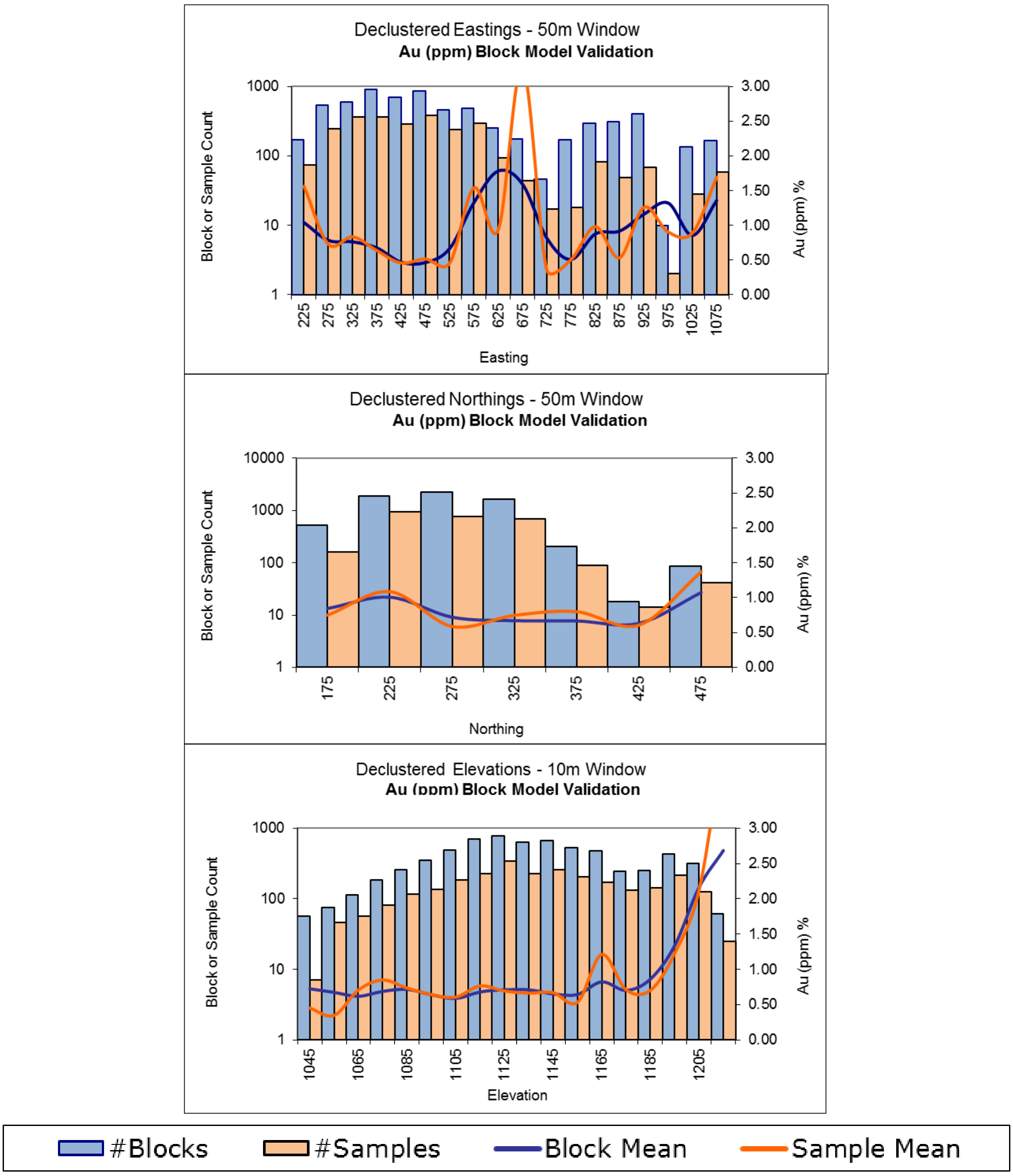


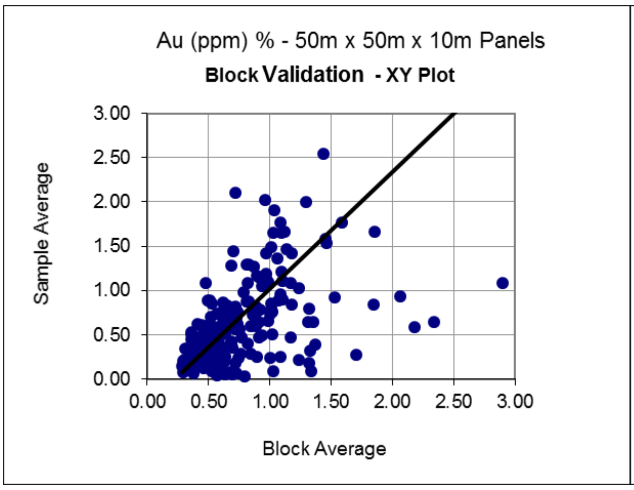


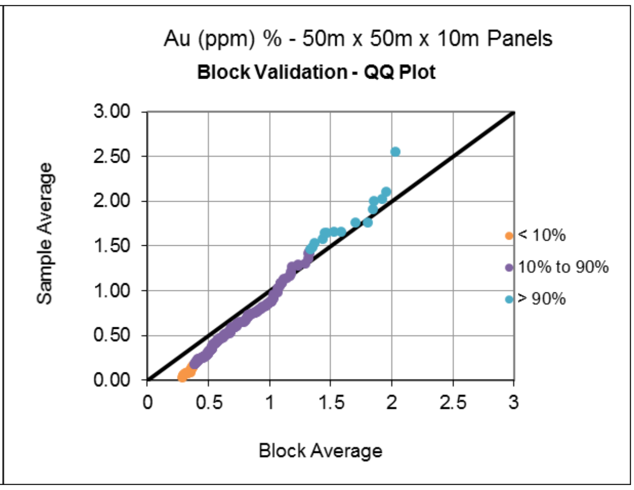




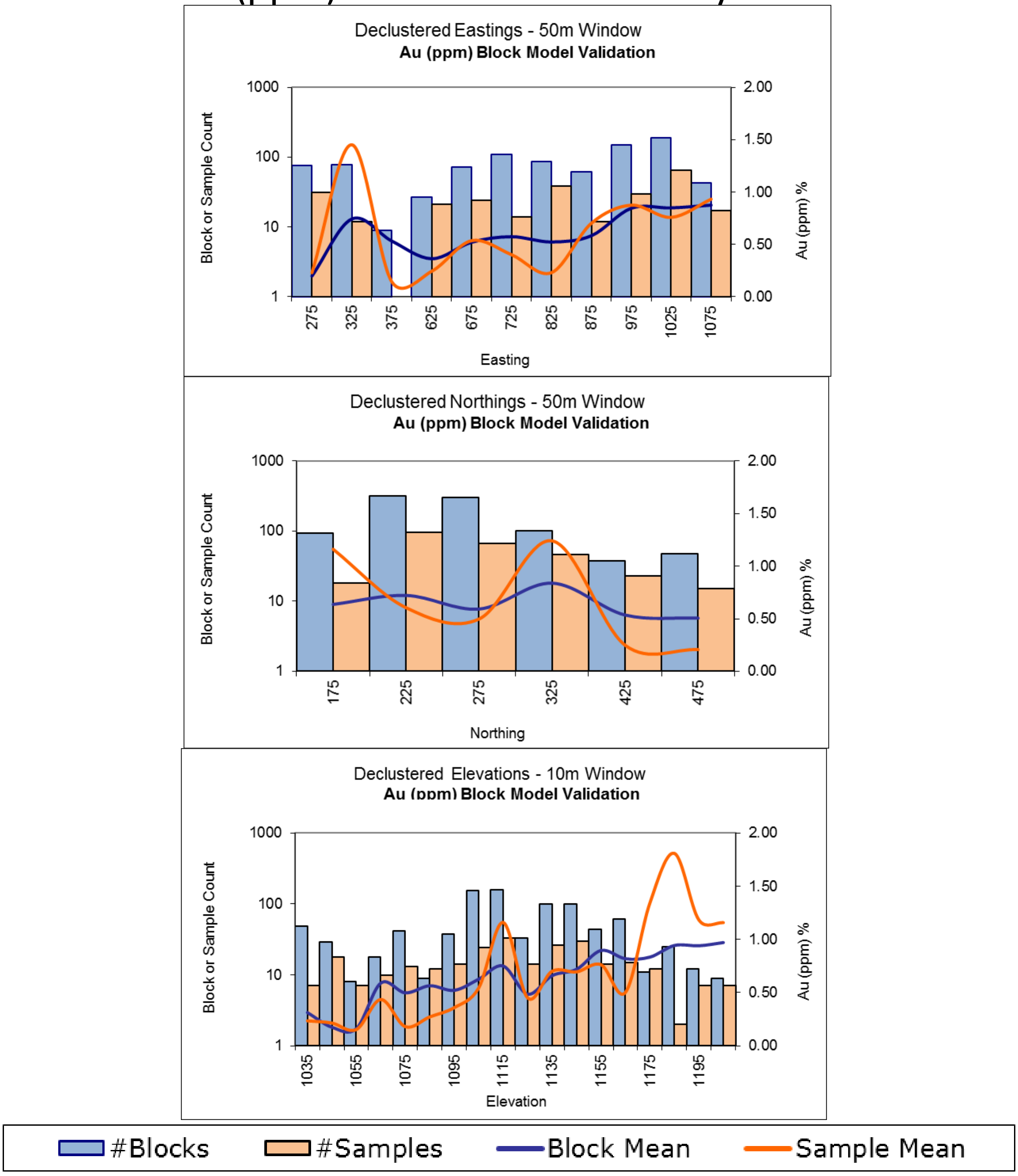
MARICANSKI
Au (ppm) – Ore – SVG - Oxide

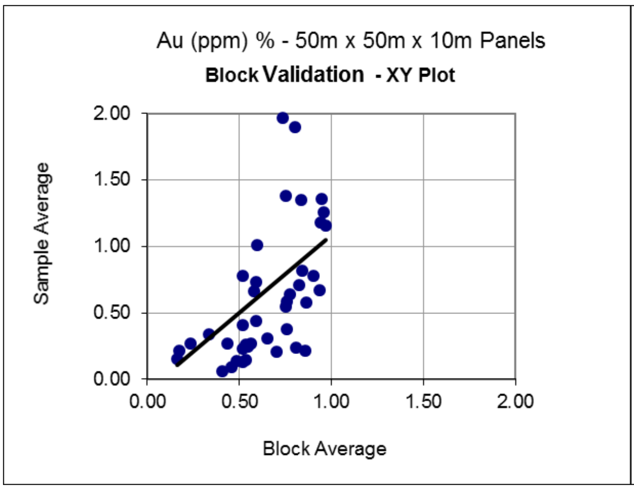


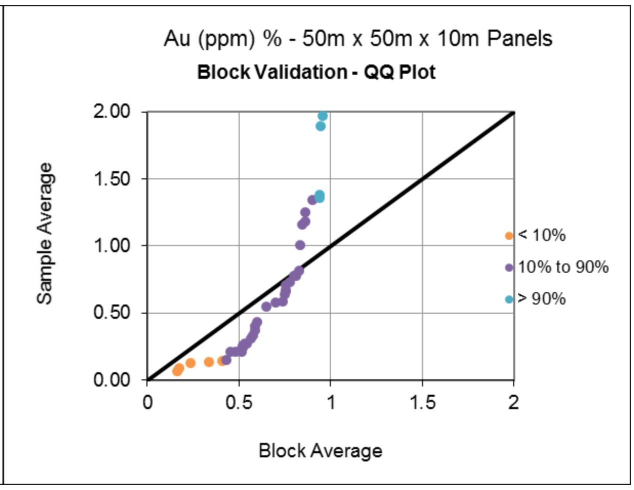




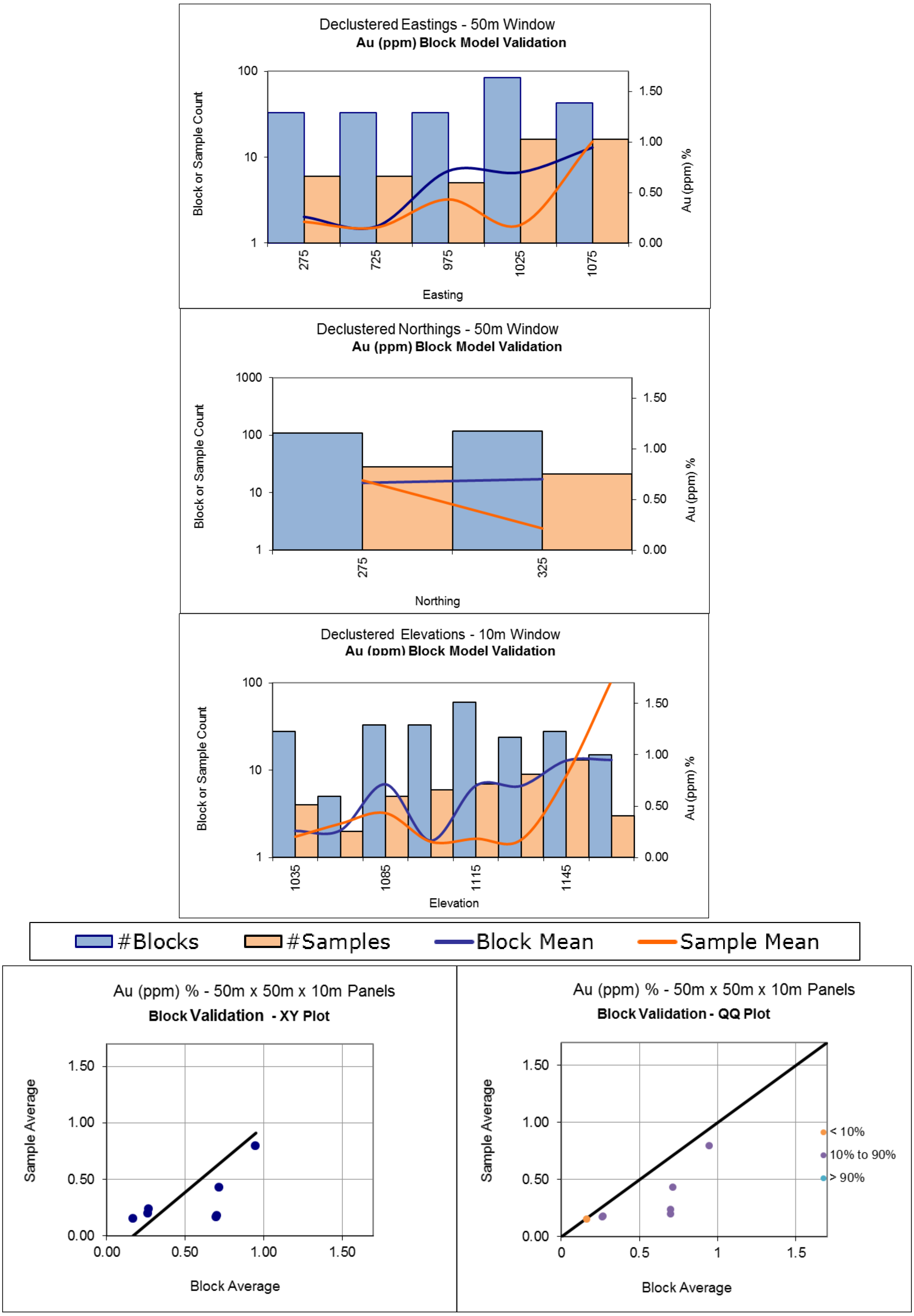
MARICANSKI
Au (ppm) – Ore – SVG – Partially Oxide



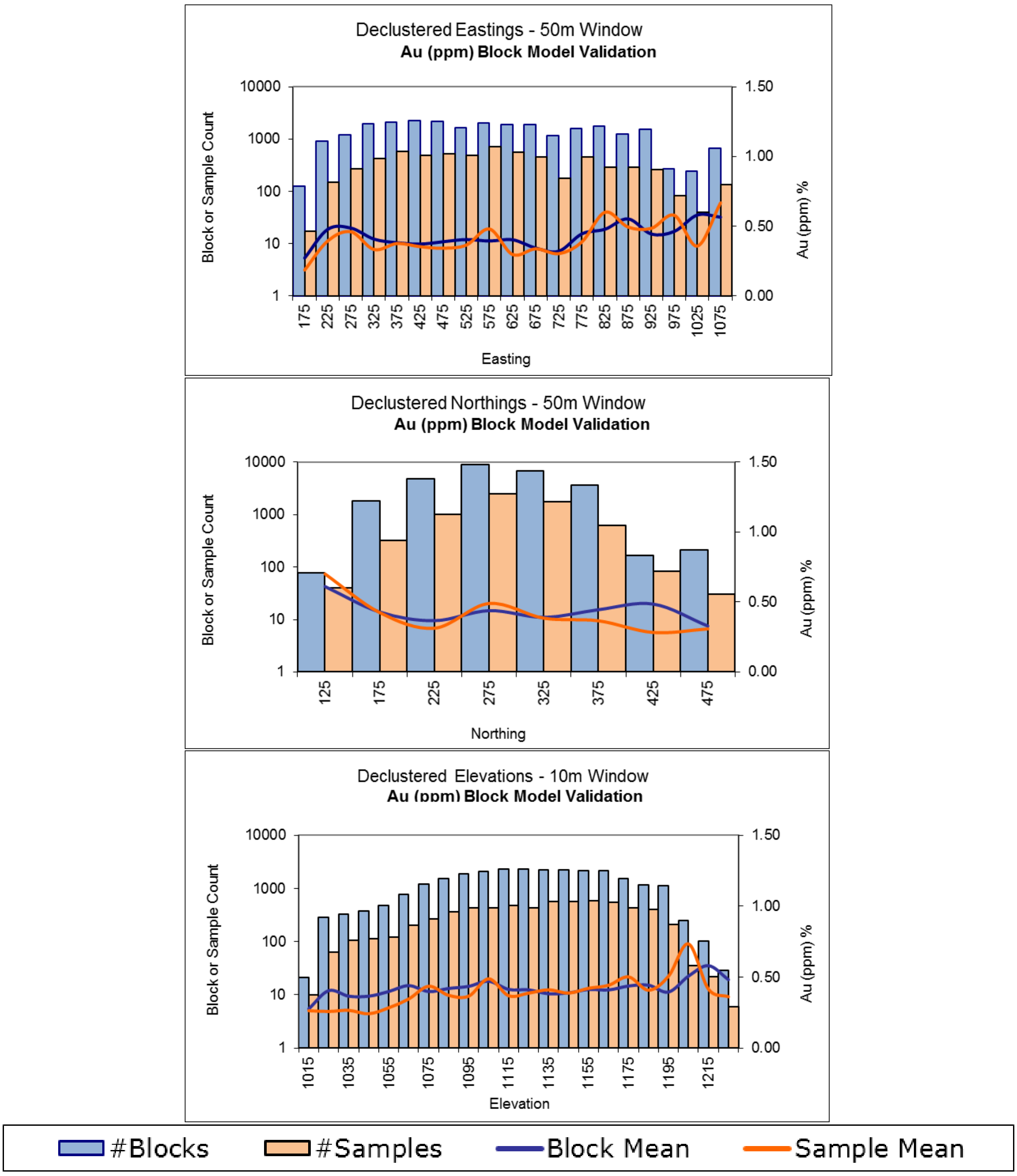


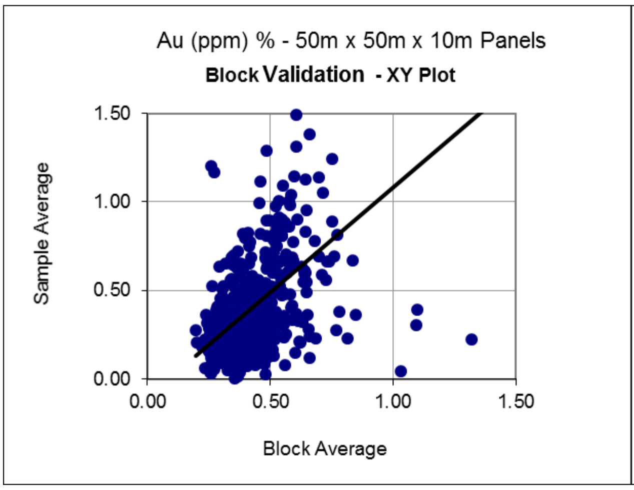


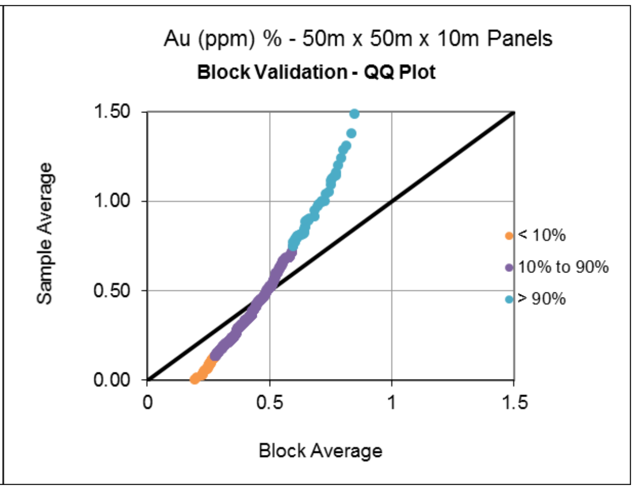
MARICANSKI
Au (ppm) – Ore – SVG - Fresh



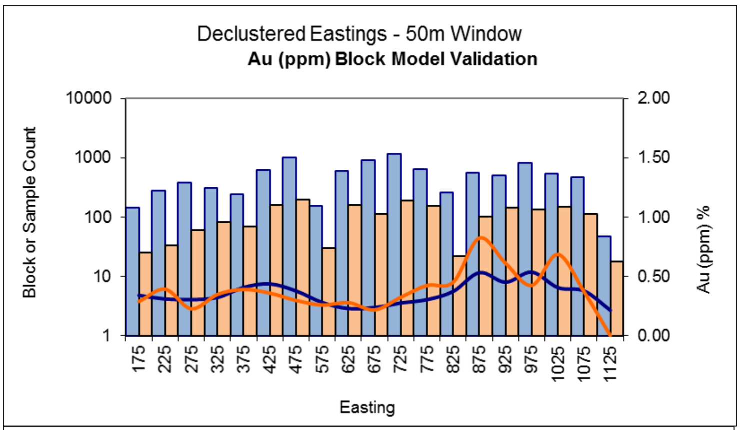
MARICANSKI
Au (ppm) – Ore – other - Oxide

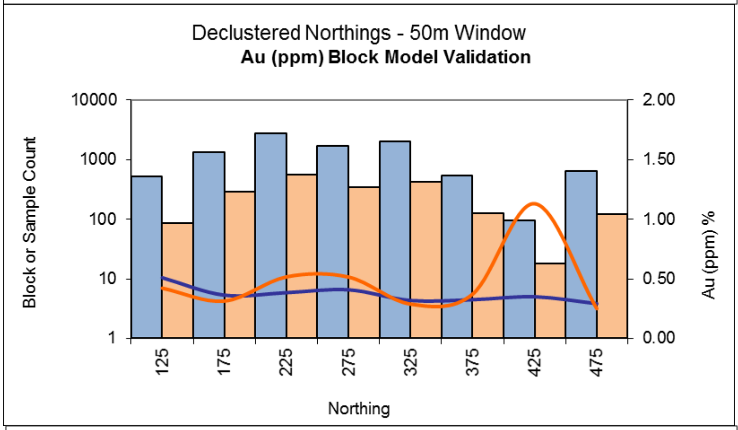


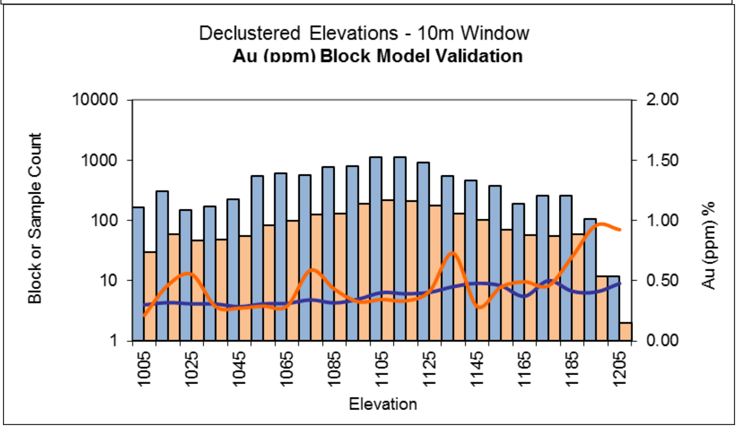


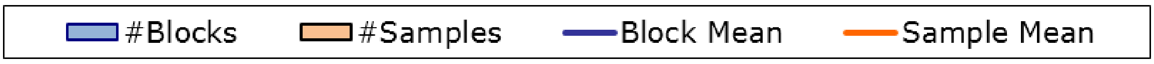


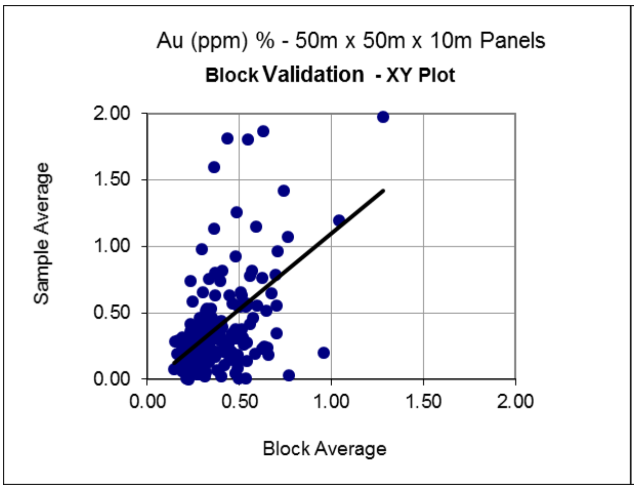
MARICANSKI
Au (ppm) – Ore – other – Partially Oxide

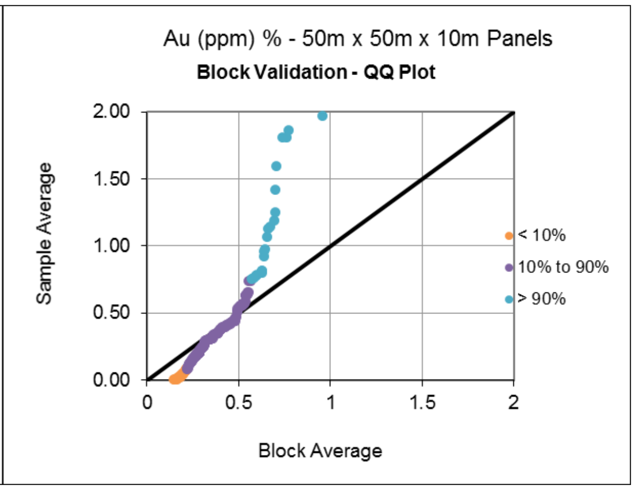




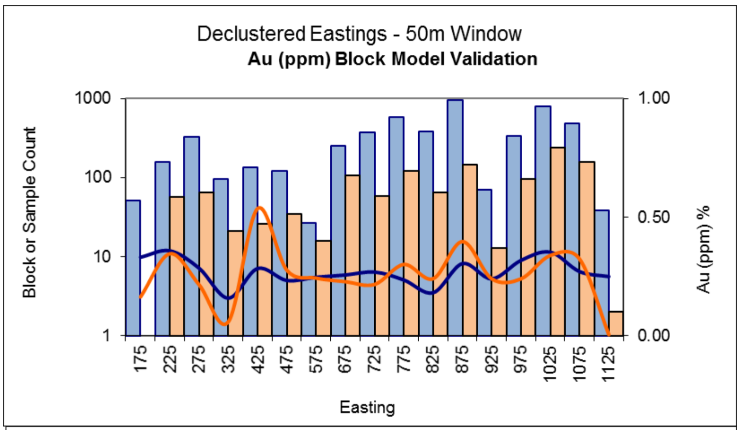


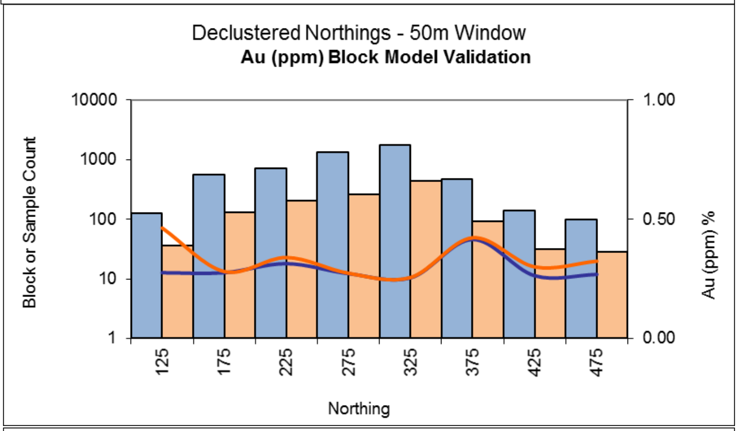


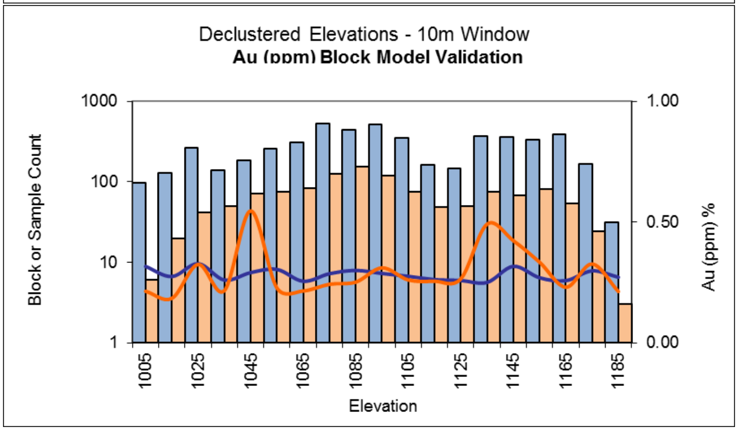


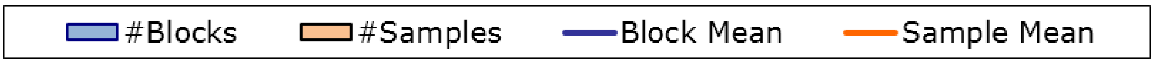


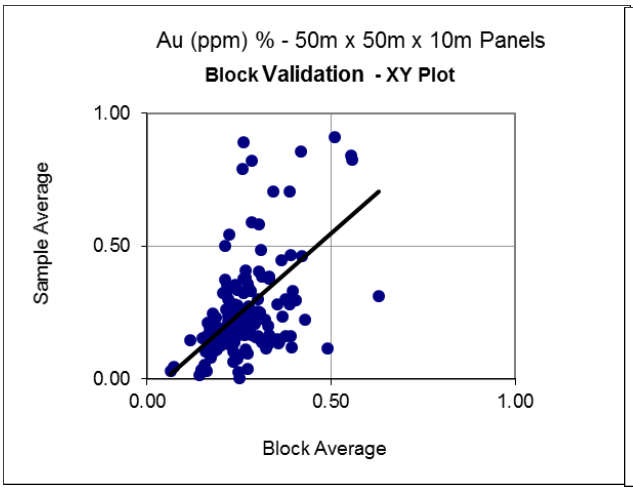
MARICANSKI
Au (ppm) – Ore – other - Fresh

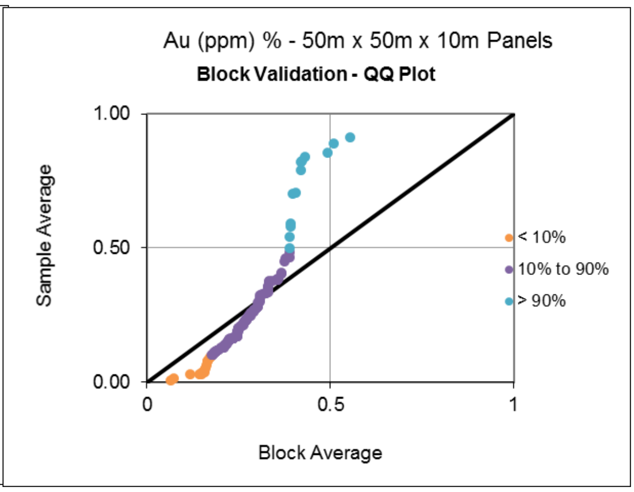












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Africa	+ 27 11 254 4800
Asia	+ 86 21 6258 5522
Australasia	+ 61 3 8862 3500
Europe	+ 44 1628 851851
North America	+ 1 800 275 3281
South America	+ 56 2 2616 2000

solutions@golder.com
www.golder.com

Golder Associates (UK) Ltd
20 Eastbourne Terrace
London
W2 6LG
UK
T: [+44] (0) 20 7423 0940

Golder Associates