Asanko Gold: Resource Estimates Don't Add Up – 90% Downside Potential

Asanko's current market capitalization of US$818M has the Company trading at a multiple of 8.8x our US$0.47/share estimated NAV.

Current resource estimates appear overinflated by a factor of 2x. Asanko's mine performance at Nkran to date appears to have produced less than half of the gold from reserves compared to their Definitive Project Plan ("DPP") feasibility study, and we believe management guidance is suggestive of negative reserve reconciliation for 2016.

Our thesis is based on a detailed review of historical drilling and technical work, the Company's disclosure and guidance, and Resolute Mining's previous experience with mining this asset.

Date	27/06/2016
Tickers	AKG:NYSE AKG:TSX
Last Price (USD)	$4.15
Shares O/S (M)	197
Market Cap	$818
Long Term Debt (M USD)	$150
Working Capital* (M USD)	$19
Enterprise Value (M USD)	$948
Our NAV Estimate (USD)	**$0.47**

**Includes remaining Phase 1 Capex*

Source: Bloomberg, Asanko Gold Filings

- Asanko's mineral reserve estimate implies the ore zones expand dramatically beneath the old Nkran pit. **The previous miner said it was in fact becoming thinner and more discontinuous.**
- Asanko's DPP Whittle analysis suggests they can take the previously mined ~38Mt Nkran pit, mine over 114Mt more along the same ore structures, and the average strip ratio will be less than the previous miner achieved on the first ~38Mt
- In 2000, the previous operator, Resolute Mining restated their gold estimate for the Obotan concessions (including Nkran) 70% lower from 2.4Moz down to only 0.75Moz
- The Company's current resource estimate contains ~6x more gold ounces than the previous miner's stated resources before they forfeited the asset
- We estimate half the gold is present compared to the Company's reserve estimate at Nkran
- To match Nkran's gold reserves, we have to exclude large quantities of barren/NSR drill intercepts from the weighted average grade calculation in our model. In our opinion, this heavily overstates both continuity and grade.
- We do not believe the Nkran bulk sample "validated" reserve grade, as we perceive numerous weaknesses in the pit location selected for the test

Disclosure: K2 & Associates has a short position in the shares of Asanko Gold

K2&ASSOCIATES
INVESTMENT MANAGEMENT INC.

Contents

1. The Unusual History of Nkran's Resource Expansion

1.1 Resolute Mining operates Nkran from 1997 to 2001 – cuts 70% of resource in 2000

The history section in Asanko's technical reports note that in 1998 (a year into operating Nkran), Resolute produced a resource/reserve estimate on their Obotan concessions (which include Nkran) of 2.8 million ounces @1.98g/t, and that in 1999 this estimate "had changed little" to roughly 2.4Moz.

Asanko's technical reports don't include the dramatic decline in stated resources that occurred a year later in 2000 – from 2.4Moz down to 749koz (-70%) disclosed in their 2000 annual report. This decrease in stated resources took place after Resolute, in their 1999 annual report, disclosed:

> *"Mining of the Nkran pit has moved into the fresh rock profile of the orebody. The clearer view of the structures afforded by the fresh rock, together with the on-going results of the ore reserve reconciliation, has facilitated* ***a review of the interpretation and geological model****."*

Later, in their final stages on mining Nkran, their June 2001 quarterly report revealed further evidence of what may have taken place:

> *"Ore reconciliation was below expectations, as ore zones have become thinner and more discontinuous in the final stages of the current Nkran ore body, than predicted by the geological model."*

In Resolute's 2005 annuals, Obotan ounces are stated an additional 21% lower to only 594koz of gold grading 2.78g/t. They forfeited the claims in 2006.

1.2 PMI Gold quadruples their 832koz maiden resource in 2010-2011

After picking up Resolute's forfeited claims, PMI produced a 2010 maiden resource at Nkran of only 10.2Mt @2.53g/t, containing 832koz of gold. The estimate was produced using Resolute's historical dataset of 790 holes at Nkran along with 10 additional PMI holes and was compiled by engineering firm H&S Consulting.

Shortly after publishing the 2010 resource, the company brought in a new CEO and hired a different engineering firm, SRK, to update the resource with an additional 51 drill holes leading to a massive upgrade of the resource estimate. We interpret a majority of PMI's additional holes to have been infill and confirmation drilling:

- Gold ounces increased by a factor of 4.1x: From 0.8moz to 3.4moz
- Tonnage increased by 4.6x: From 10.2Mt to 46.9Mt
- Grade decreased by only 11%: From 2.53g/t to 2.26g/t

PMI ultimately utilized 87 of their drill holes in their Nkran dataset, producing a final resource estimate of 46.9Mt @ 2.26g/t containing 3.4Moz gold before being acquired in a stock transaction that would form what is currently Asanko Gold.

In 2014, Asanko commissioned CJM Consulting and re-estimated Nkran's NI 43-101 resources at 46.1Mt, containing 3.47moz of gold at a grade of 2.34g/t.

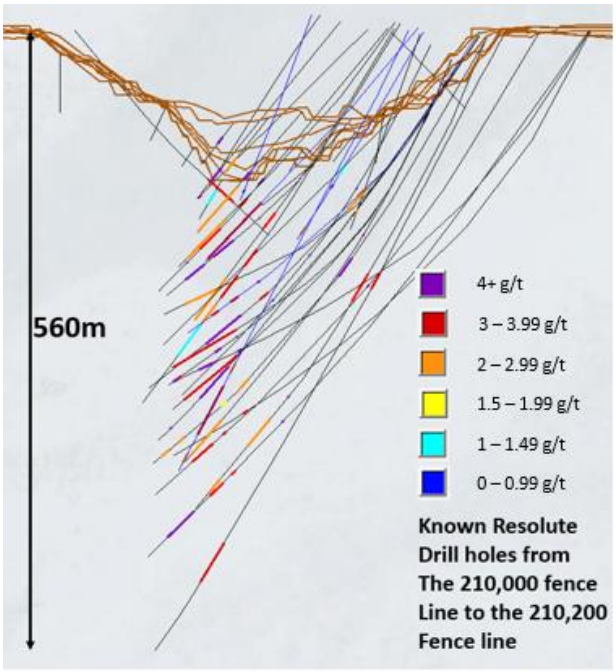
For clarity, Asanko did not perform any drilling of their own in reaching this estimate.

1.2.1 Misconception 1: Resolute did not do much drilling below the pit

We believe that a number of investors are under the impression that the previous miner walked away from Nkran without testing the ore body's extension at depth.

In Figure 1 below, we show a cross section of Resolute drill holes along a 200m strike length that we interpret to be the core of the orebody. Their drilling is considerable and extends to ~560m below surface in the displayed area.

FIGURE 1: CROSS SECTION SHOWING RESOLUTE DRILL HOLES BENEATH THEIR PIT



Data Source: PMI Gold Filings; Asanko Gold Filings; diagram produced by author

1.2.2 Misconception 2: Resolute only mined the oxides at Nkran

Resolute reached the fresh rock in 1999 and continued mining at Nkran into 2001. Figure 2 below shows the historical pit outline extending into the fresh rock (beneath the red line), implying that they had first hand experience at mining sulphide ore at Nkran.

FIGURE 2: PIT TOPOGRAPHY

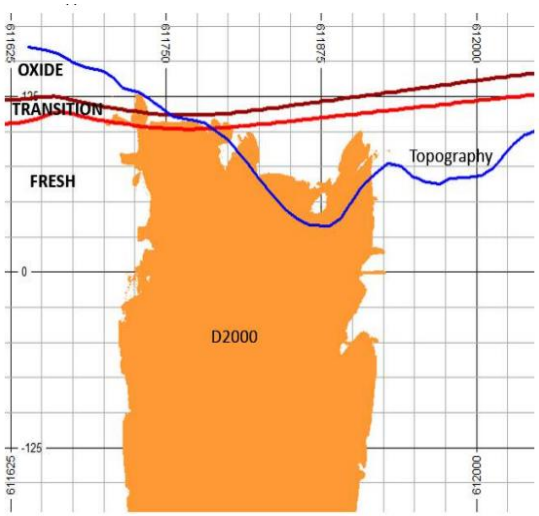


Figure 14-4: Nkran West - East view of Weathering Profile

Source: Asanko Gold Mine – Phase 1 Definitive Project Plan

2. Our Re-Estimation of Contained Gold At Nkran Compared to Asanko's Resource/Reserve Estimates Produces Less Than Half the Gold

Our concerns about Nkran's resource history compelled us to re-estimate Asanko's Resource/Reserve estimates in order to assess their validity. We plotted all the Resolute and PMI drill data we could locate into 11 cross sections along 625m of strike length. We then estimated two separate mineralized shells and calculated weighted average grades for each cross section. Smoothing the calculated area of the shells along strike allowed us to estimate volume, tonnage, grade and contained gold.

Table 1 below compares Asanko's resource estimate with both of our estimates detailed in the next section.

TABLE 1: COMPARISON OF ESTIMATES

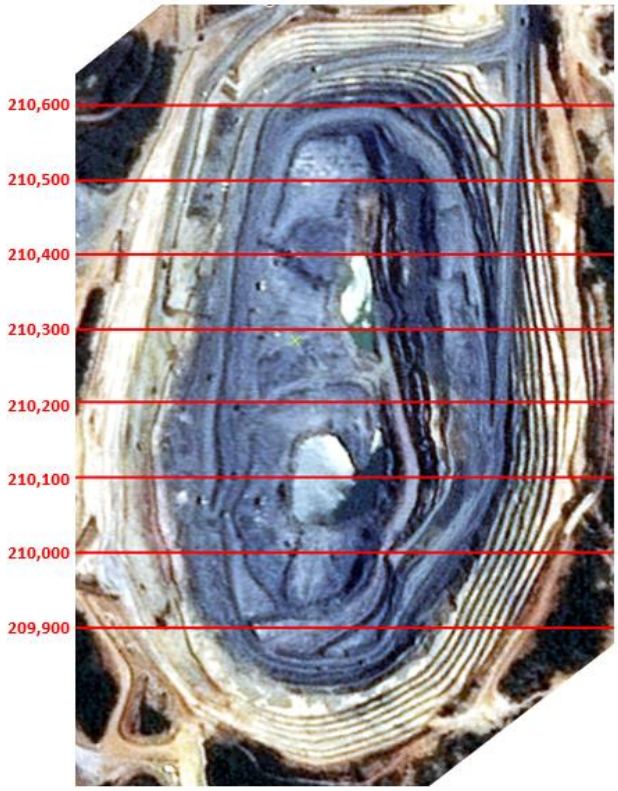
		Nkran Resources	**Our Estimate**		Nkran Reserves	Our Estimate	Difference
			BigShell	SmallShell			
Tonnage	*Mt*	46.1	46.6	29.3	31.2	22.3	-29%
Grade	*g/t Au*	2.34	1.20	1.58	2.21	1.58	-29%
Contained Gold	*Moz Au*	3.5	1.8	1.5	2.2	1.1	-49%

**Assumes a density of 2.7t/m3*

Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; Author estimates

Figure 3 below shows the Nkran Pit as of March 11, 2016 with numbered fence lines overlain for locational reference, as we will refer back to these fence lines in reference to our cross sections.

FIGURE 3: SATELLITE IMAGE OF THE NKRAN PIT SHOWING FENCELINES



Source: Image purchased by author

2.1 Estimate #1: Results from our unconstrained high volume shell "BigShell" raise concern over how Asanko's resource model treats the influence of barren/NSR intercepts

46.6Mt @ 1.2g/t for 1.8Moz of contained gold (47% less gold than the Nkran resource)

Our BigShell estimate follows a crude principle: we outline a large and generally unconstrained shell that doesn't avoid barren/NSR intercepts. We essentially draw an outline around nearly all of the mineralized intercepts without worrying about steering away from internal/external waste (See Pages 9 & 10 for examples)

What we aim to achieve is to draw the maximum shell volume/tonnage to gain an upper estimate of contained gold. Doing this dilutes grade down heavily compared to a smaller more constrained shell because we inevitably pull in a large quantity of extra NSR/barren drill intercepts which weighs down the average grade of the composites, and therefore the shell.

As such, we are only looking to evaluate contained gold, and we go in with the expectation that tonnage will overshoot substantially and grade will undershoot.

Surprisingly, while grades are expectedly low in our results, we do not overshoot on tonnage. To us, this is a red flag.

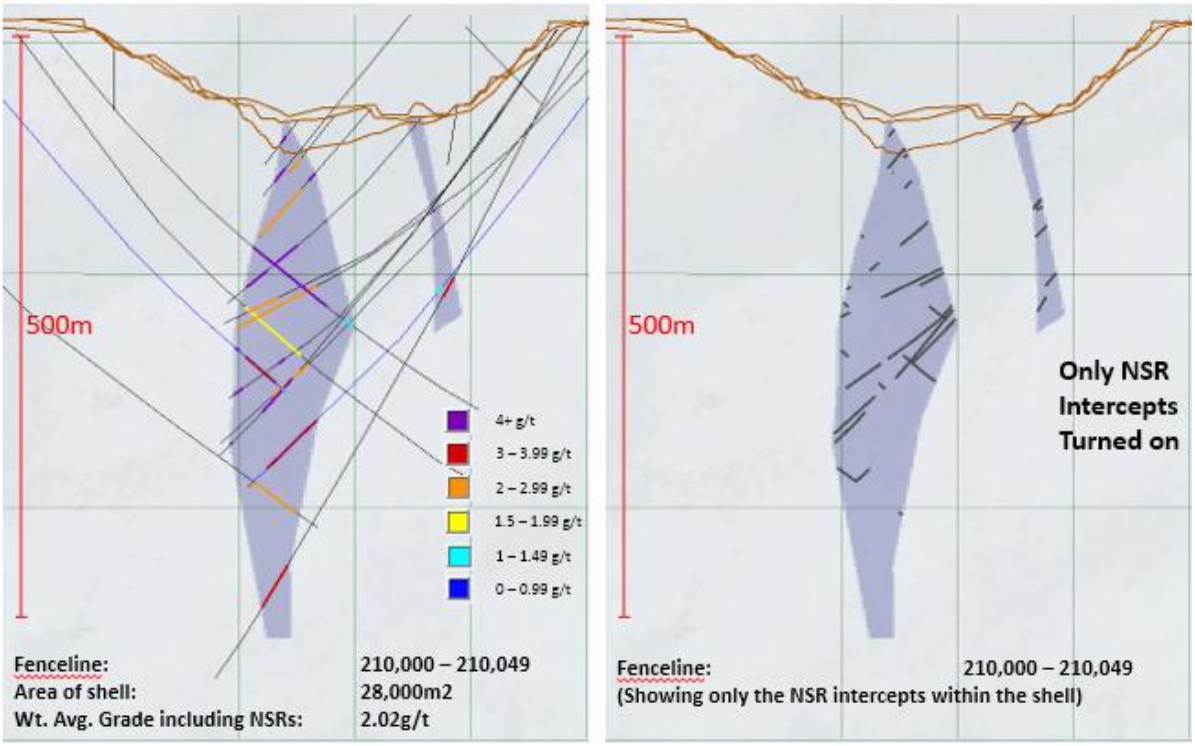
2.1.1 Cross-Sections from our BigShell estimate

Below we show four 50m cross sections covering 200m of strike that encompasses the core of the Nkran orebody. They are some of the strongest sections in the resource.

For comparative purposes, we show each section twice: the left shows the full intercepts with mineralization highlighted while the right shows only the barren/NSR intercepts. We do this to highlight the significant quantities of barren/NSR intercepts we have captured by drawing our shell in this indiscriminately large manner.

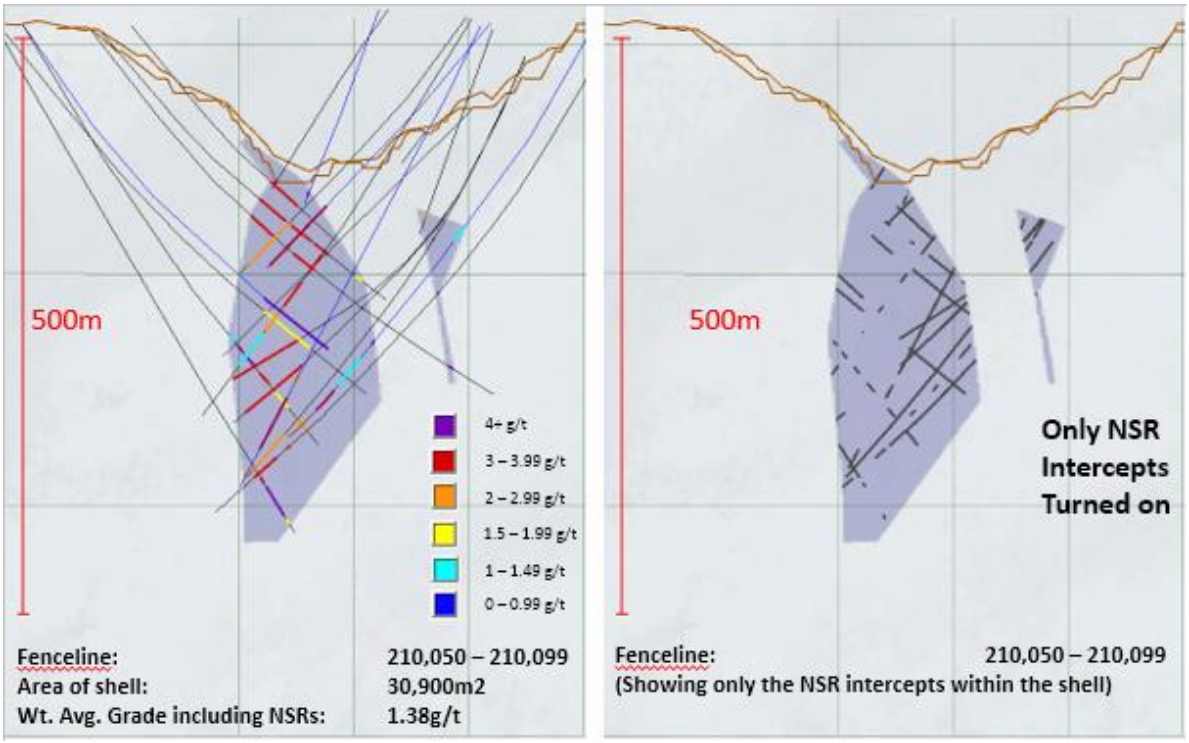
Note: Hole curvatures are based on Asanko/PMI images where available. Blue drill traces refer to holes where curvature has been estimated without supporting imagery. Weighted average grade for each cross section has been calculated as the length weighted average grade of all intercepts within our estimated shells. The cut-off methodology of our drill data differs slightly from the resource estimate. Our source data is available at the following link: www.asankoreport.com

FIGURE 4: SECTION 210,000 – 210,049



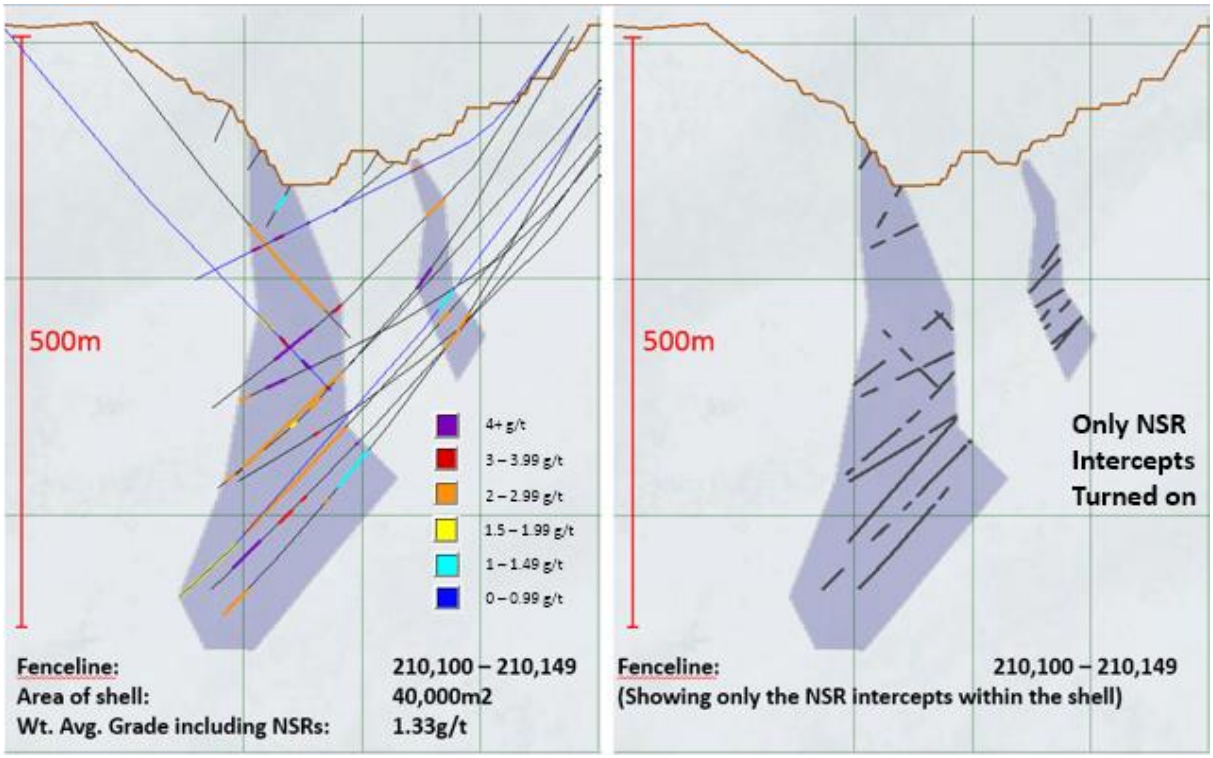
Data Source: PMI Gold Filings; diagram produced by author

FIGURE 5: SECTION 210,050 – 210,099:



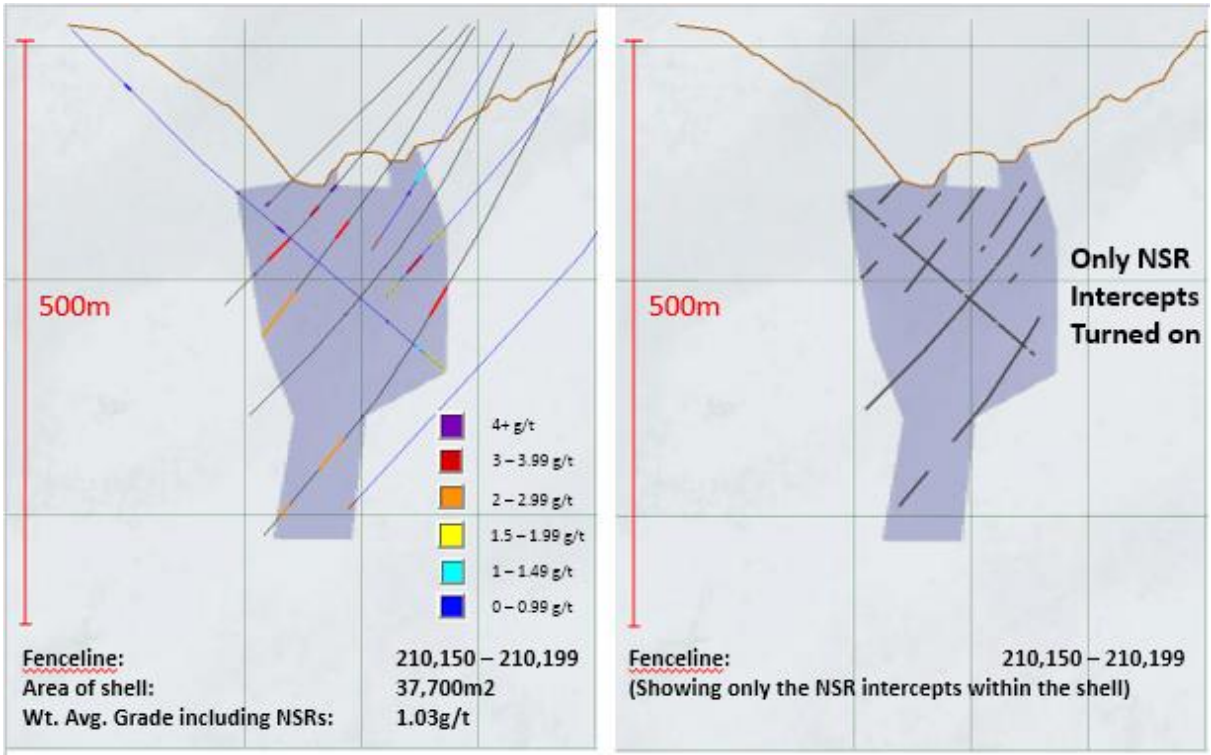
Data Source: PMI Gold Filings; diagram produced by author

FIGURE 6: SECTION 210,100 – 210.149:



Data Source: PMI Gold Filings; diagram produced by author

FIGURE 7: SECTION 210,150 – 210,199:



Data Source: PMI Gold Filings; diagram produced by author

2.1.2 The results suggest that the weighted average grade of Asanko's Nkran resource must be significantly less influenced by zero grade/NSR intercepts than our estimate

Table 2 below shows the substantially lower grade and gold ounces produced in our BigShell estimate compared to the Nkran resource.

TABLE 2: COMPARISON OF ASANKO'S RESOURCE VS OUR BIGSHELL ESTIMATE

		Asanko's Nkran Resource Estimate	BigShell	% Difference
Tonnage	*Mt*	46.1	46.6	1%
Grade	*g/t Au*	2.3	1.2	-49%
Contained Gold	*Moz Au*	3.47	1.80	-48%
*Assumes a density of 2.7t/m3				

Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; Author estimates

What amazes us, and what we aim to show in these cross sections is threefold:

1. Our BigShell is roughly the same average size as Asanko's block model shell per section, since we end up with similar tonnage estimates. We expect the shapes to differ as our guiding principle is crude, but the size should be similar on average.

2. We see no way to reshape these shells in any manner that maintains their average size without producing a very low estimate of weighted average grade. Typically speaking:
    - We have drawn our shell to the approximate outer limits of where we see mineralization in the drill results
    - Therefore, we don't see how we can reshape the shells, keeping their area constant, while reducing the influence of NSR/barren intercepts meaningfully (we do test the impact of drawing a more constrained shell in our SmallShell estimate next).

3. Our gold estimate is roughly 50% lower than the Company's resource estimate. If tonnage is similar, then the only way for us to estimate twice the gold is to double our grade. Our grade is influenced by two things, mineralized intercepts, as well as barren/NSR intercepts that dilute their weighted average grade. Since we can't change our mineralized intercepts materially, our only way to double grade and gold is to reduce the influence of barren/NSR intercepts. Essentially, we need to find a way to draw a shell this large while avoiding or excluding the zeros. We don't see how this is achievable.

This is a major red flag for us when evaluating a resource, and it raises significant doubt as to whether the Nkran resource estimate has accounted for barren/NSR intercepts in proportion with what reality can yield. To test whether our BigShell results are confounded by some unforeseen consequence of their rough design, we drew a smaller, more constrained shell and re-ran the numbers.

2.2 Estimate #2: Our more constrained shell ("SmallShell") estimate produces results that are consistent with our BigShell

29.3Mt @ 1.58g/t for 1.49Moz of contained gold (57% less gold than the Nkran resource)

To test the robustness of our BigShell results we ran a second, more constrained shell, "SmallShell". In this estimate we tried to capture significant mineralized intercepts while avoiding significant NSR intercepts where we could easily do so. The results corresponded with our BigShell estimate, this time producing 57% less gold than the Nkran resource.

We also overlaid a final pit shell profile to compare SmallShell to Nkran's mineral reserve estimate and, once again, we came up heavily short on contained gold within the planned pit, 1.1Moz vs. the 2.2Moz Nkran reserve estimate.

To be conservative, we used the approximate pit shell profile from the broadest, deepest section of the final pit design across the entire strike length.

2.2.1 Results from our SmallShell estimate compared to the Nkran resource estimate

We estimated 29.3Mt at 1.58g/t for 1.49Moz contained gold, 57% less gold than the Nkran resource. Compared to BigShell, the 35% decrease in estimated tonnage due to constraining the shell is offset by 32% higher estimated grade, and therefore only results in a 15% decrease in contained gold.

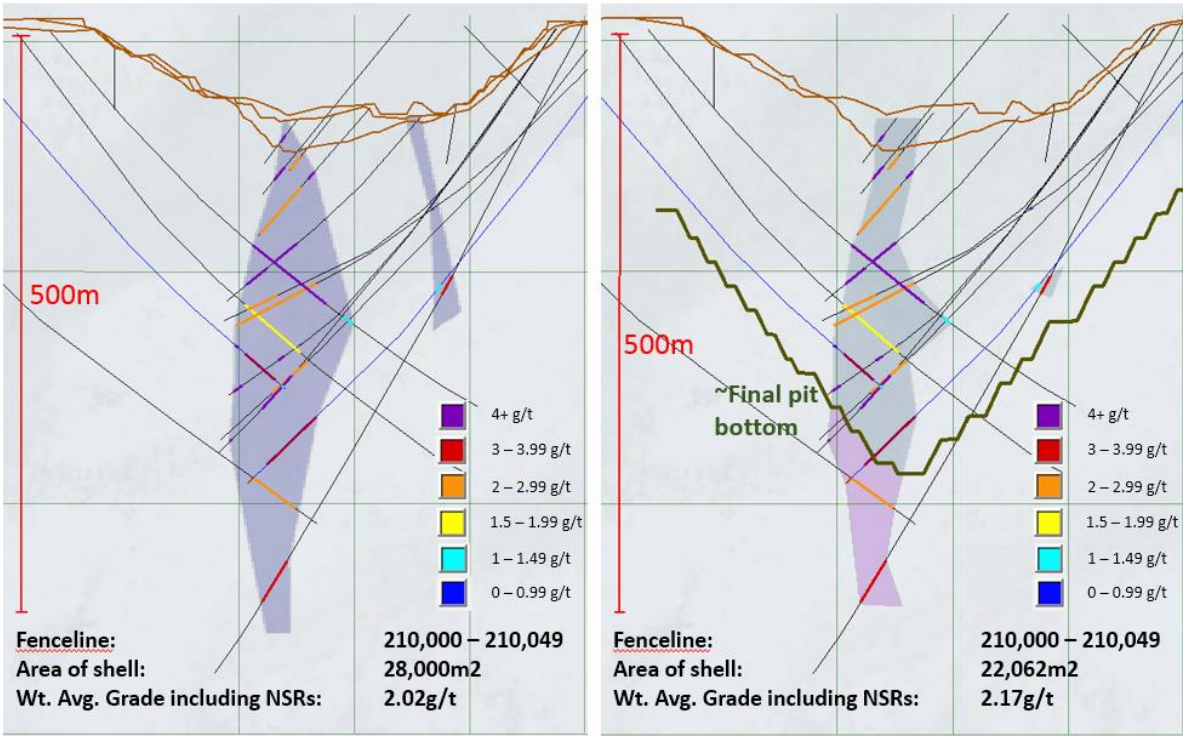
2.2.2 Results from our SmallShell estimate compared to Nkran's reserve estimate

When overlaying an estimate of Asanko's final pit outline onto our shell, we arrive at 22.3Mt at 1.58g/t for 1.1mmoz gold potentially contained in the final Nkran pit. This is 50% less than the Company's current reserve estimate for Nkran. This is also the basis used for our NAV estimate in Section 7.

2.2.3 Comparing cross sections from our BigShell to our SmallShell for illustrative purposes

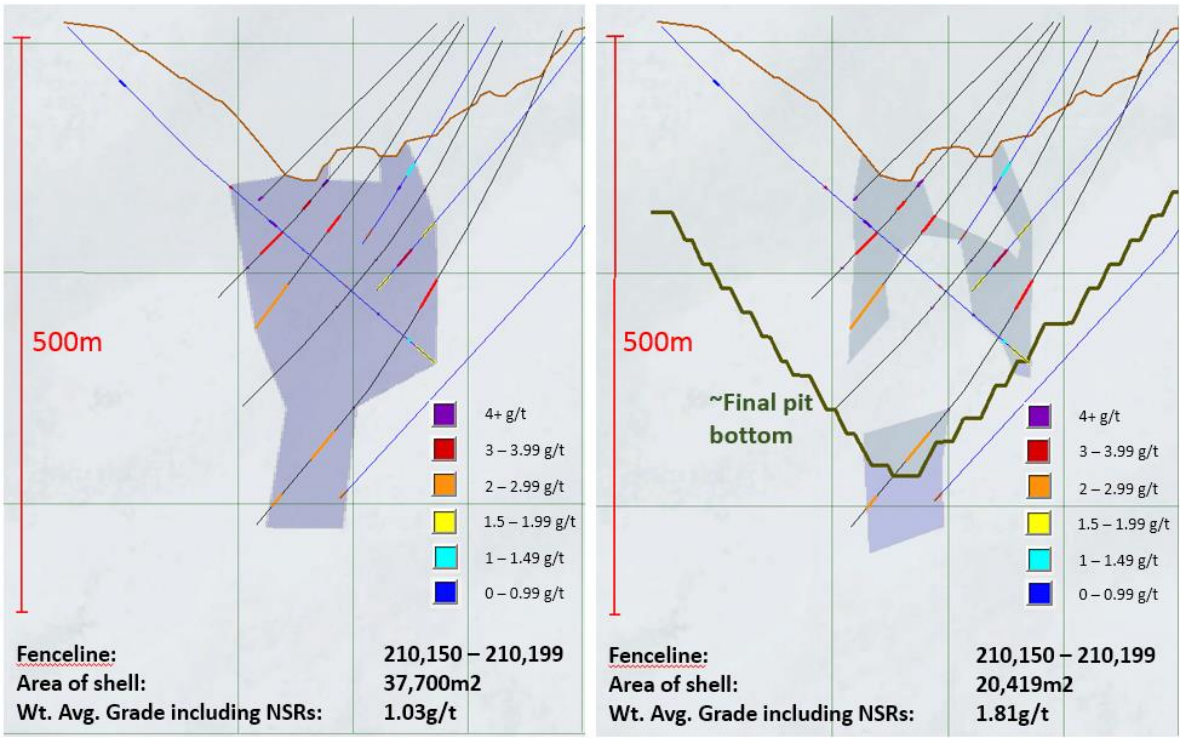
The pictures below show two of the cross sections from our drill model (all other sections are included in the appendix). The diagram on the left shows the outline of our 46Mt BigShell described above. The diagram on the right shows our SmallShell. One should note that in each case, our SmallShell has a higher grade in a smaller area, as we attempt to limit the tonnage being ascribed to areas with barren drill hole intercepts.

FIGURE 8: SECTION 210,000 – 210,049:



Data Source: PMI Gold Filings; diagram produced by author

FIGURE 9: SECTION 210,150 – 210,199:



Data Source: PMI Gold Filings; diagram produced by author

2.2.4 Conclusions

There is a clear discrepancy between contained gold in our estimates compared to Asanko's Nkran resource/reserve estimates. We can model lower tonnages at increasingly higher grades, or larger tonnages at increasingly lower grades, but contained gold calculations remain a relative constant at roughly 50% of Asanko's estimates.

This tonnage & grade trade-off is important to recognize, as it speaks to how investors should be evaluating the mine performance and, ultimately, if our thesis is accurate. We address this relationship in the next section (Section 3). In Section 4 thereafter, we will walk through supporting evidence of an overestimate from within the Nkran technical reports.

3. How to Evaluate Whether Our Thesis Is Accurate

3.1 We expect that total gold mined will consistently underperform compared to the mine plan

Investors should focus on total gold mined, not tonnage or grade in isolation.

The central point to understand is that we believe Nkran can be mined at reserve grades, but that tonnage will suffer, or vice versa. There is a trade-off between the two input variables in the equation: tonnage x grade = gold mined, and so it is the product, gold, that we need to focus on.

In order to evaluate total gold mined, we benchmark it against total material mined and the gold that should be extracted along with it according to the DPP mine plan schedule.

Our logic is simple. Early stage miners may deviate from their mine plan, but not in a way that is expected to result in less gold per tonne of total material moved. When their balance sheet is tightest, they will deviate towards more gold (and cash flow) rather than less.

Table 3 below shows how much gold Asanko should extract from the pit in relation to the total material mined out of the pit according to the DPP.

TABLE 3: CONTAINED GOLD MINED IN RELATION TO TOTAL MATERIAL EXTRACTED

By March 31st, Asanko had mined 28Mt of material from the pit, and should therefore have extracted 75koz of contained gold according to the DPP

Total Material Mined	Mt	18	20	22	24	26	28	30	33	35	37	39	41	43	45	46	48
Total Gold Mined	Koz	12	18	32	45	58	75	91	118	146	168	193	220	246	274	301	317

Data Source: Asanko Gold Mine – Phase 1 feasibility study; table produced by author

We estimate Asanko has actually mined ~46koz from 28Mt of total material mined at March 31st, 2016 (detailed later in the report). This is ~49% less gold compared vs DPP mine plan figure of ~75koz.

We estimate, however, that ~17koz have come from inferred resources which are not included in the table above. This indicates to us that they have only mined ~29koz of reserve gold from 28Mt, which is 61% behind Mine Plan.

We recommend investors utilize the above table to track Asanko's mine performance in terms of total gold mined.

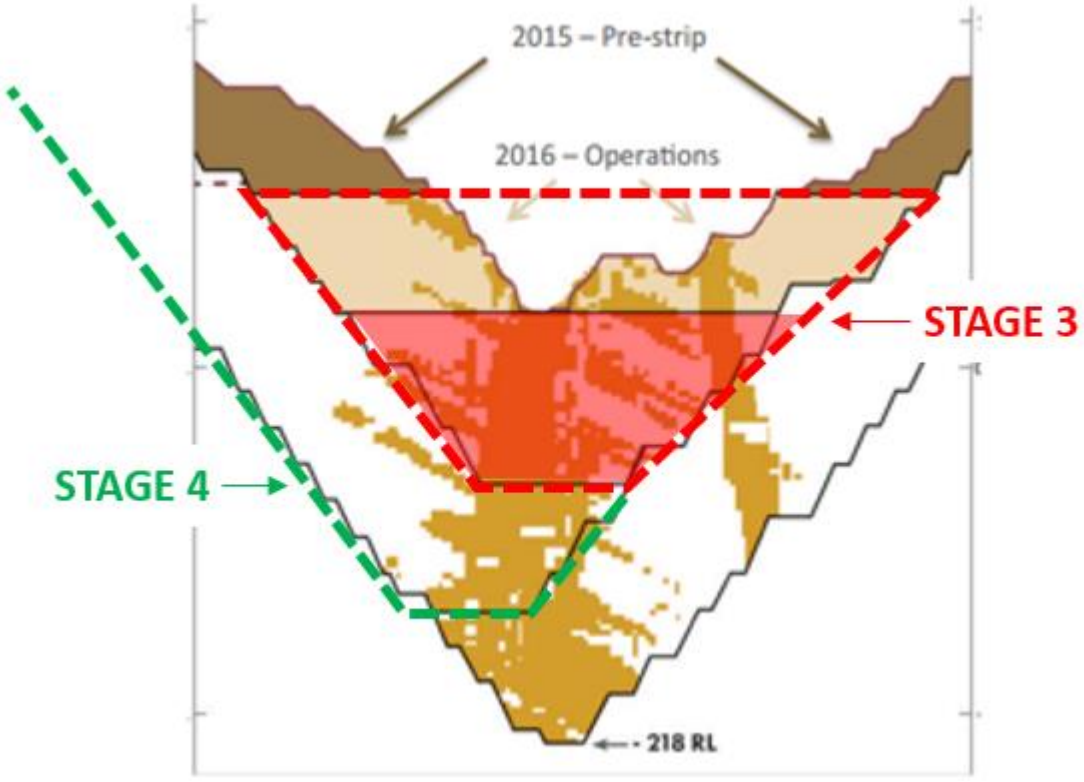
3.2 Short-term mitigation options for Asanko that will support our thesis

Per our understanding of the DPP:

- Stage 3 (outlined in red in Figure 10) is supposed to represent the main ore source for Nkran until late 2020.
- The red-shaded portion of Stage 3 is supposed to be mined down at an average rate of only ~2 vertical meters/month. (~99 vertical m / ~4 years)
- Stage 4 (outlined in green below) is a large, concurrent West wall pushback that is supposed to provide access to deeper zones in the future.
- Stage 4 substantially commences in 2016, and in 2017 ~1.5x more material is mined from the Stage 4 pushback vs. Stage 3.

We think of Stage 3 as a "piggy bank" that is supposed to be gradually accessed to finance major pushbacks/satellite developments. The option likely exists for the Company to instead reach deeper into the Stage 3 "piggy bank" to support the present at the expense of the future. If we witness this unfolding, it will be a clear nod in our view that the future of Nkran has been deemed compromised.

FIGURE 10: CROSS SECTION SHOWING STAGE 3 & 4



Source: Asanko Gold Filings; annotations by author

3.3 Avoid focusing on production figures: The difference between mill production and mine performance through 2016

3.3.1 Asanko is supposed to mine significantly more ore than they process through 2016, so they only need a relatively small portion to reconcile to meet production for the year

Asanko was supposed to mine through 3.9Mt of reserve ore by the end of 2016, but only process 2.5Mt (58% less ore processed than mined)

In other words, Asanko should only need ~58% of their ore tonnage to reconcile in order to meet their DPP production target of 187koz gold production, the bar is set low.

We should note that even with this built-in buffer, Asanko is only guiding for 140 – 155koz production in 2016, 13% - 25% below the DPP respectively. Asanko is both milling and mining faster than mine plan, experiencing higher recoveries, and likely mining deeper, which should all be additional factors helping them to substantially exceed DPP production in 2016.

Given these considerations, what might appear to be a small guidance downgrade vs. the DPP is actually a large scale miss in our view.

3.3.2 Asanko should be high-grading their stockpile buffer in 2016

Head grades at the mill should be significantly higher than mined grades in 2016.

In Asanko's DPP, mined grade averages 2.17g/t through 2016, but feed grade averages 19% higher at 2.58g/t. Asanko's head grades at the mill should be around this ~2.6g/t level once commissioned, not the DPP mined average of 2.17g/t through 2016, or the long-term average reserve grade.

With substantially more ore planned to be mined than processed through 2016, the Company should be selectively running their best material through the mill. The goal is to get money out faster and optimize payback.

4. Supporting Evidence of an Inflated Resource

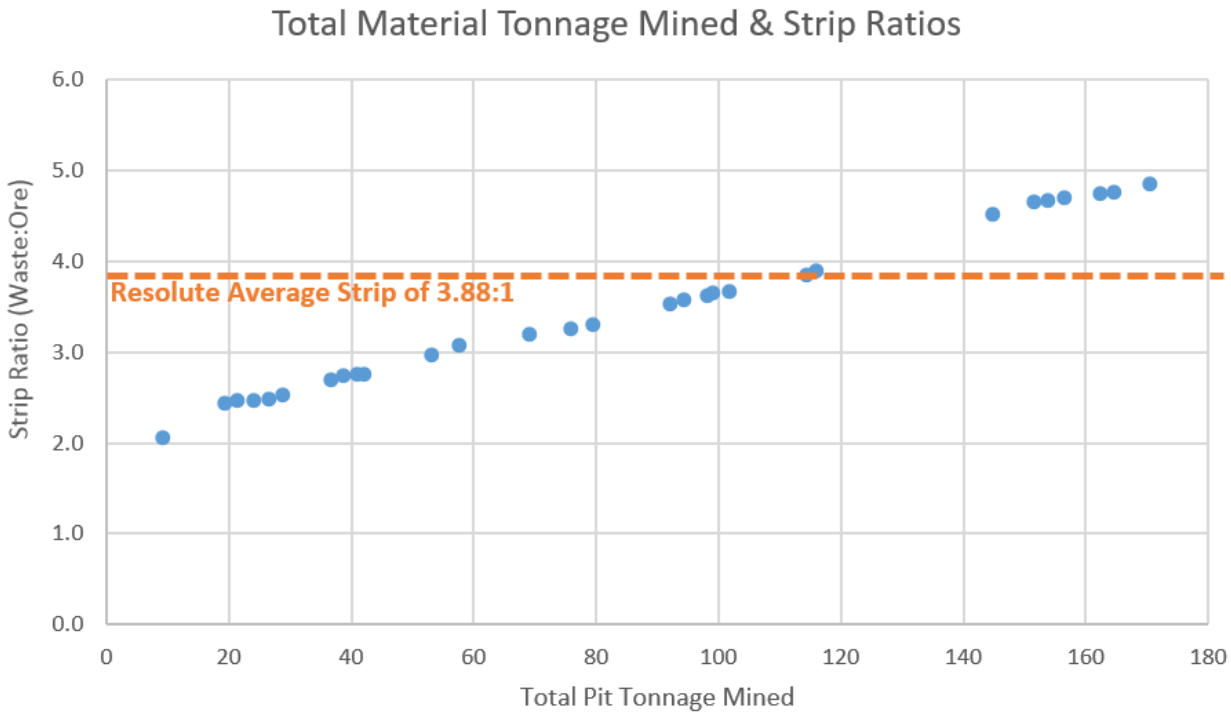
A resource overstatement of the magnitude we have estimated would have to leave substantial fingerprints behind in the Company's technical documents. Given that our shell analysis has its limitations, we reviewed Asanko's NI 43-101 technical reports to see if various contained estimates would corroborate or refute our thesis, and found numerous significant examples in support of our critical view.

4.1 Asanko is mining deeper than Resolute, but expecting lower strip ratios

Resolute achieved a total strip ratio of 3.88:1 waste:ore over the 5 years that they mined Nkran, extracting 38Mt of material from the pit. By continuing to mine the same vertical ore body, we expect the strip ratio to simply increase from where Resolute left off.

Asanko's Whittle pit analysis, however, shows a significant decrease in the strip ratio. Figure 4 below shows a scatter plot of the Whittle pits ranging from 9Mt to 170Mt, with a dotted line at Resolute's average strip ratio. *(Note that we are using Resolute's **average** strip ratio, not their ending marginal strip ratio which should have been even higher.)*

FIGURE 11: SCATTER PLOT OF ASANKO'S WHITTLE PITS



Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; Graph produced by author

How can Asanko mine an additional 114Mt expansion of Resolute's 38Mt pit at a lower average strip ratio? In our opinion, this appears to be entirely unfeasible. Ore tonnage per vertical meter would have to increase dramatically directly beneath the pit for this to occur. This would require much higher continuity or a major lateral expansion of the ore body. This appears to be directly contradicted by the previous miner's July 2001 quarterly statement that "Ore reconciliation was

below expectations, as ore zones have become thinner and more discontinuous in the final stages of the current Nkran ore body, than predicted by the geological model."

4.2 Visual comparisons of Asanko's block model do not appear to reconcile with drill data

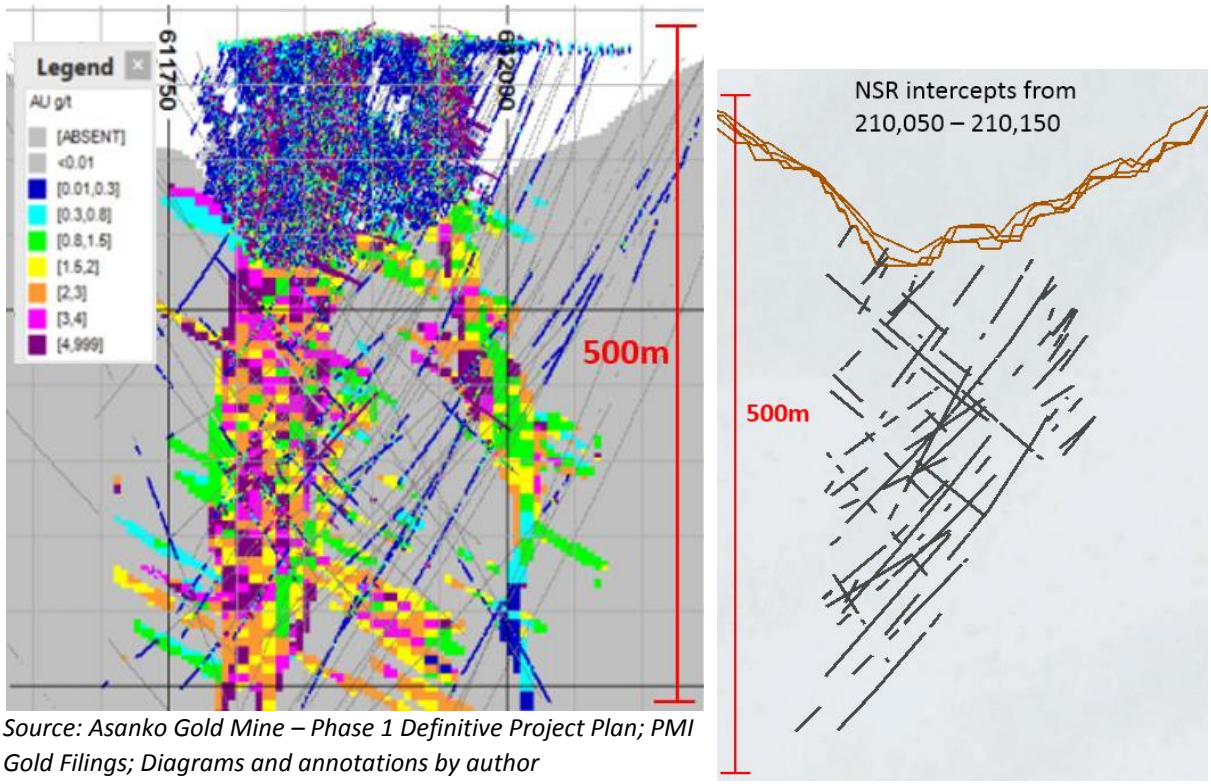
The significant continuity assumptions and apparent low influence of zero grade intercepts can be visually presented in cross section and plan view

4.2.1 Barren drill holes piercing high grade ore blocks

In our image below, we show only the zero/NSR intercepts within our Nkran drilling database that existed within our mineralized shell. We display these zero/NSR intercepts along a 100m strike length that we believe encompasses the majority of Asanko's block model image below.

It is not apparent to us that these zero/NSR intercepts are appropriately represented in Asanko's Nkran block model in the image below:

FIGURE 12: ASANKO'S BLOCK MODEL VS ZERO GRADE INTERCEPTS IN OUR MODEL

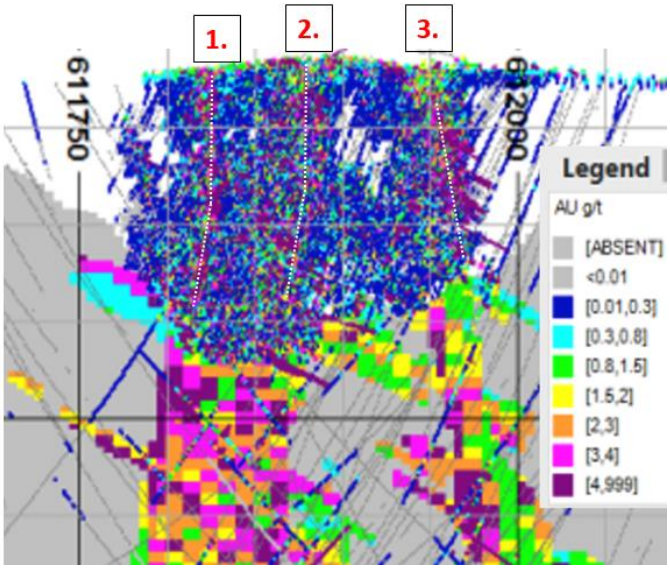


Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; PMI Gold Filings; Diagrams and annotations by author

4.2.2 Block model continuity vs Resolute's mining results

In the cross section block model image below we can see what we perceive to be a clear visual example of the sudden increase in assumed continuity within Asanko's reserve block model compared to what Resolute actually mined.

FIGURE 13: CONTINUITY SIGNIFICANTLY INCREASES IMMEDIATELY BELOW THE PIT IN ASANKO'S MODEL



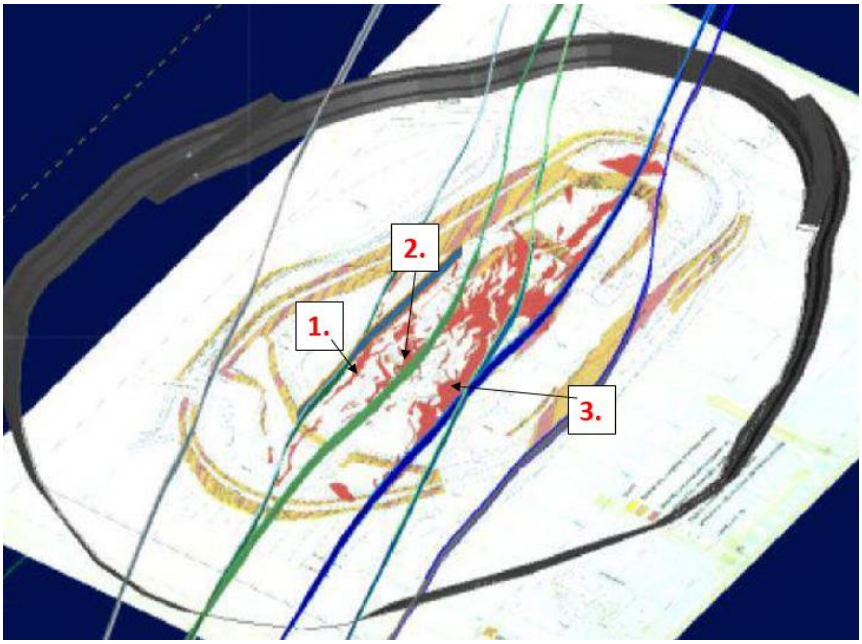
Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; annotations by author

Notice that in Resolute's model within the old pit, there appears to be three distinct trends of high grade mineralization along the structures, with predominantly waste rock (dark blue) in between (we've highlighted the perceived structures with dotted white lines and numbered them 1., 2. and 3). Yet, immediately beneath the old pit where we transition from Resolute's model to Asanko's reserve block model, we see that Asanko's block model interprets broad high-grade mineralization spanning the full width of the controlling structures with virtually no apparent internal waste blocks.

4.2.3 Block model continuity in plan view

In Figure 14 below we've numbered the structures from the cross section in Figure 13 above, and identified them as depicted in Resolute's historical grade control plan maps. Once again we can see clearly that Resolute interpreted the areas in 1 and 2 to be thin, sinuous ore bodies.

FIGURE 14: PLAN VIEW OF RESOLUTE'S INTERPRETATION VS ASANKO'S GEOLOGICAL DOMAINS

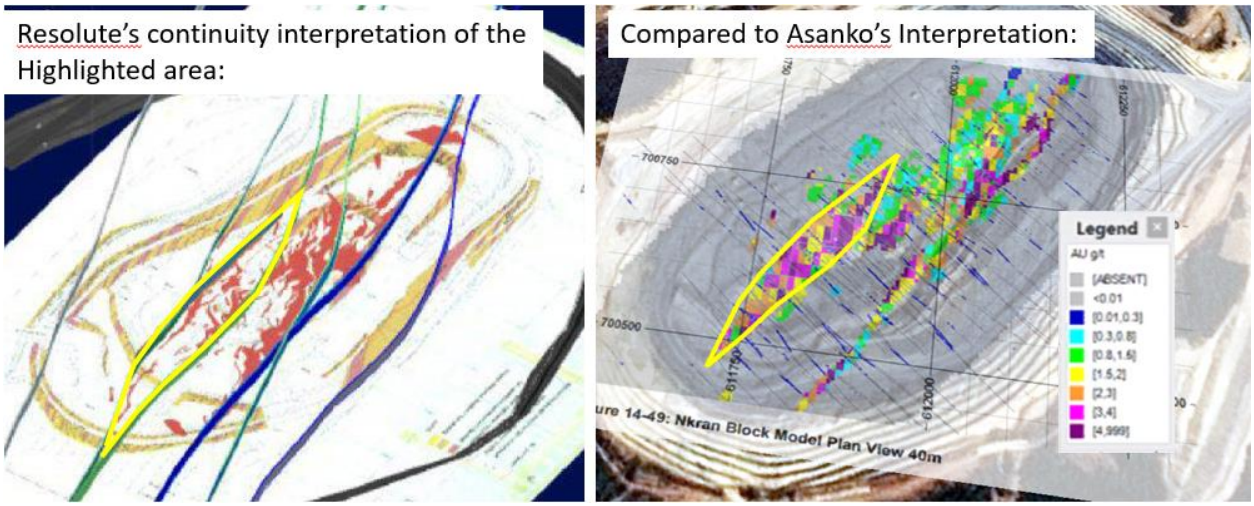


Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; annotations by author

Now let's compare Resolute's interpretation in their plan view grade control model to Asanko's interpretation of the same domain.

The difference in assumed continuity between Resolute's historical experience and Asanko's reserve estimate for the same area (outlined in yellow in both images in Figure 15) is equally apparent in plan view as it is in cross section.

FIGURE 15: PLAN VIEW OF RESOLUTE'S INTERPRETATION VS ASANKO'S BLOCK MODEL



Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; annotations by author

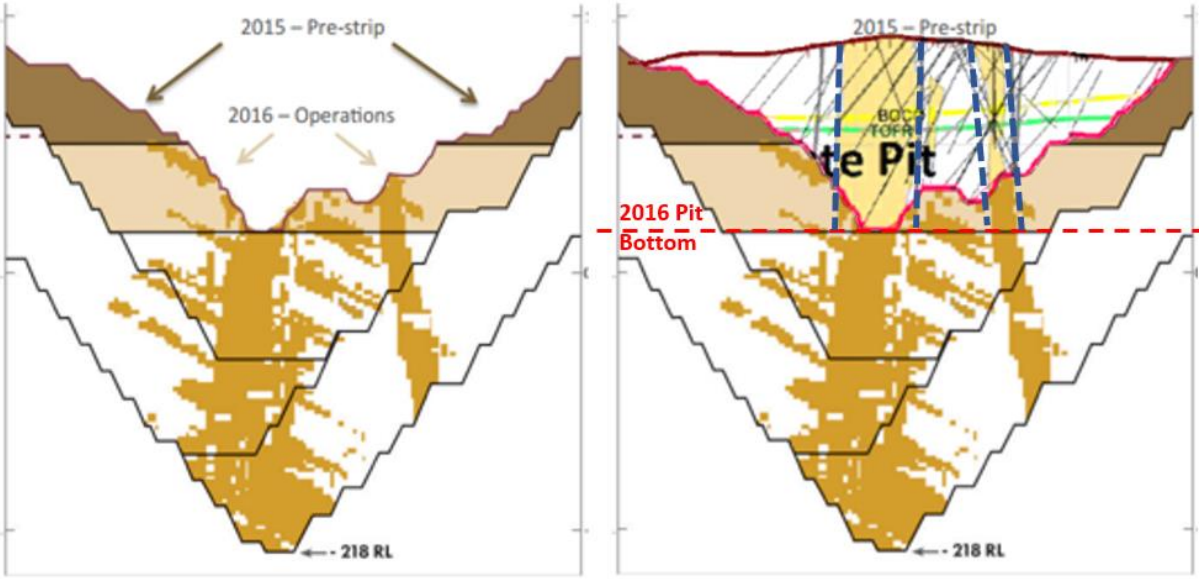
In essence, Asanko's reserve estimate may have taken a domain where Resolute appears to have interpreted the mineralization as scattered and discontinuous, and reinterpreted it as a continuous pillar of high grade mineralization filling the domain.

4.3 Asanko's 2016 expectations appear overblown compared to what Resolute achieved

Asanko's DPP contemplates mining 274koz of contained gold by 2016YE, approximately 42% of what Resolute mined out of their entire pit over 5 years

Compare the proportion of the main ore structures (outlined by blue dotted lines in the image on the right) that remain intact down to the DPP 2016 pit bottom level, vs. what was already mined out by Resolute.

FIGURE 16: OVERLAY OF THE ORE BODY IN RESOLUTE'S PIT ONTO ASANKO'S MINING SCHEDULE



Source: Asanko Gold Filings; annotations and edits by author

- By 2016YE, Asanko's DPP calls for 274koz of contained gold to be mined out down to the red dotted line in the image above on the right
- Resolute mined a total of ~650koz of contained gold out of the pit (assuming 90% recovery).
- We find it difficult to believe that Asanko can mine 42% of what Resolute mined in total, as there appears to be substantially less than 42% of the main structures remaining down to the 2016 DPP level vs. what was mined out already.
- We evaluated this possibility along the full strike of the pit and reached the same conclusion

5. Reserve Reconciliation Will Be the Ultimate Test

It appears that the company's decrease in annual production guidance is the first sign of reserve expectations being tempered. The actual results up to the end of Q1 2016, combined with management's guidance for the remainder of 2016, suggests at least a negative 36% gold reconciliation. The calculations are broken down below into 3 steps.

5.1 Step 1: Comparing actual results to date vs DPP – up to March 31st, 2016

Through Q1 2016, we estimate that actual gold reconciliation has lagged the Definitive Project Plan (DPP) by 50%. Additionally, the Q4 2015 MD&A states that a majority of the 0.9Mt of ore mined by the end of February (implying at least 450kt) was from the inferred category, and was not included in the mine plan. Therefore, we have to adjust the actual results by removing inferred tonnes to perform a reserve reconciliation estimate in Table 4 & 6 below.

TABLE 4: COMPARISON OF THE ACTUAL RESULTS TO THE DPP SCHEDULE.

		Totals up to March 31st, 2016				
		Actual Results	Inferred Resources	**Adjusted Actuals**	**DPP**	
Ore Mined	*kt*	1,215	-450	**765**	**818**	
Grade Mined	*g/t*	1.2	1.2	**1.2**	**2.2**	
Contained Gold	***koz***	**46.2**	**-17.1**	**29.1**	**58.7**	***50% less than plan***
Ore on Stockpile	*kt*			**590**	**511**	
Ore Processed	*kt*			625	307	
Head Grade	*g/t*			1.06	2.58	
Recovery	*%*			72%	89%	
Gold Produced	***koz***			**15.3**	**22.7**	

Data Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; Company Disclosures, table produced by author

5.2 Step 2: 2016 Guidance vs the DPP – April 1st, 2016 to December 31st, 2016

Comparing the company's 2016 guidance to the DPP appears to forecast negative reconciliation of 33%. Additionally, it is our understanding that Nkran is being mined faster than the DPP schedule.

Through company press releases and discussions with management, Nkran 2016 forecasts are as follows:

- Q2 production: 35-40koz
- H2 production: 90-100koz
- Throughput: 275ktpm (2,475kt for 3 quarters)*
- 92.5% Recovery
- 1.3Mt stockpile by year end*
- 28.9Mt material moved in 2016 (vs 24.9Mt in DPP)*

** From Discussions with Management*

With this information we can calculate the following:

- Tonnes ore mined = Ore processed + Ore stockpiled
- Implied grade = (Gold Production/Recovery)/ore processed
- We assume that the grade mined is equal to the grade processed for Q2 and H2

The ~4Mt of extra material moved from the Nkran pit by the end of 2016 is very important. This essentially puts the company 3 months ahead in the mining schedule (up to the end of March 2017) according to the DPP. This exercise should yield an additional 844kt ore at 2.11g/t according to the Nkran schedule for Q1 2017. The Schedule Adjustment in Table 5 & 6 below is therefore necessary:

TABLE 5: COMPARISON OF ASANKO'S GUIDANCE TO THE DPP SCHEDULE.

		April 1st, 2016 to December 31st, 2016				
		Guidance	DPP	Schedule Adjustment	**Adjusted DPP**	
Ore Mined	*kt*	**3,185**	3,107	844	**3,951**	
Grade Mined	*g/t*	**1.8**	2.15	2.11	**2.1**	
Contained Gold	*koz*	**182.3**	215	57.3	**272.0**	***33% less than plan***
Ore on Stockpile	*kt*	**1,300**	1,406		**2,250**	
Ore Processed	*kt*	2,475	2,212		2,212	
Head Grade	*g/t*	**1.78**	2.58		**2.58**	***31% less than plan***
Recovery	*%*	94%	89%		89%	
Gold Produced	***koz***	**132.5**	**163.3**		**163.3**	

Data Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; Company Disclosures, table produced by author

5.3 Step 3: Combined Total Reserve Reconciliation

Table 6 below combines the analysis above and suggest a 36% negative contained gold reconciliation in reserves.

TABLE 6: ESTIMATED RESERVE RECONCILIATION UP TO DECEMBER 31ST, 2016

	Actual + Guidance	DPP
Up to Q1 2016		
Tonnes mined	1,215	818
Grade	1.2	2.23
Contained Gold	46.2	58.7
Reserve Adjustment for Inferred resources	*-17.1*	
Actual Implied Gold Reserves	29.1	58.7
Adjusted Reconciliation	*50%*	*100%*
Guidance (Q2 + H2)		
Tonnes mined	3,185	3,107
Grade	1.8	2
Contained Gold	182	215
3 month schedule adjustment		*57.3*
Actual Implied Gold Reserves	182	272.0
Adjusted Reconciliation	*67%*	*100%*
Total		
Total Contained Gold Reserves at 2016 year end	**211.4**	**330.8**
Total Implied gold reserve reconciliation	**64%**	**100%**

Data Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; Company Disclosures, table produced by author

These numbers are theoretical and we understand it takes intimate knowledge of the mine plan to confirm these conclusions. With the limited disclosures on stockpile tonnage and grade, certain assumptions are necessary, but unless the company is materially deviating from the mine plan or experiencing negative reserve reconciliation, we see no reason to have a margin of error this large.

6. Current Operational Difficulties

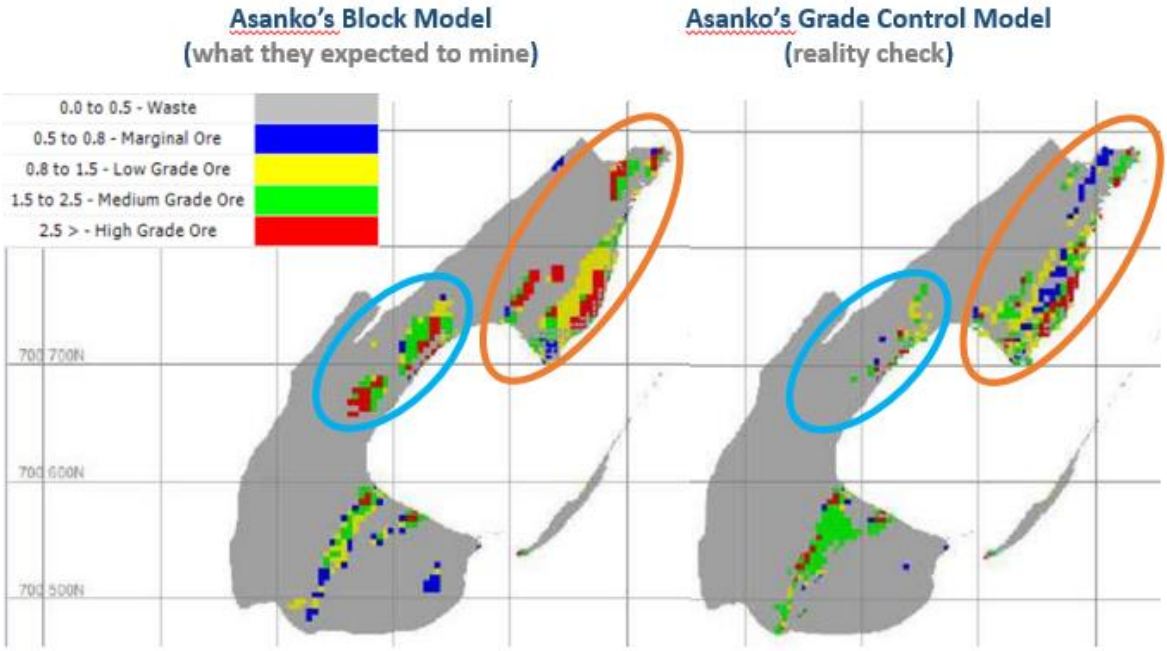
We feel it necessary to address our disagreements with the Company narrative.

6.1 We don't believe grade underperformance is due to dilution

By our estimates, Asanko's reserve grade mined is 45% below mine plan (1.2g/t vs 2.2g/t). For dilution to be the culprit, we would need to see reserve tonnage coming in 82% higher than mine plan to offset lower grades and arrive at the same quantity of contained gold. However, based on our analysis above, we estimate that reserve tonnage is also below mine plan.

To see how both tonnage and grade can be underperforming in tandem, consider the Company image below from their May 11 Technical presentation, providing a glance into bench reconciliation issues:

FIGURE 17: RESERVE MODEL VS GRADE CONTROL MODEL



Source: Asanko Gold Filings; annotations and edits by author

- In the blue encircled area above, reconciliation looks very poor. Here we estimate 92% less high grade blocks by surface area have reconciled compared to Asanko's reserve block model
- In the area encircled in orange above, reconciliation again looks quite poor. Here we estimate 58% less high grade blocks by surface area have reconciled compared to Asanko's reserve block model

If Asanko were to mine the reserve blocks as predicted by the DPP within the blue and orange encircled areas above, they would almost certainly incur substantial waste dilution. However, this would not be a result of external waste mining leading to dilution, but rather the overestimation of high grade ore.

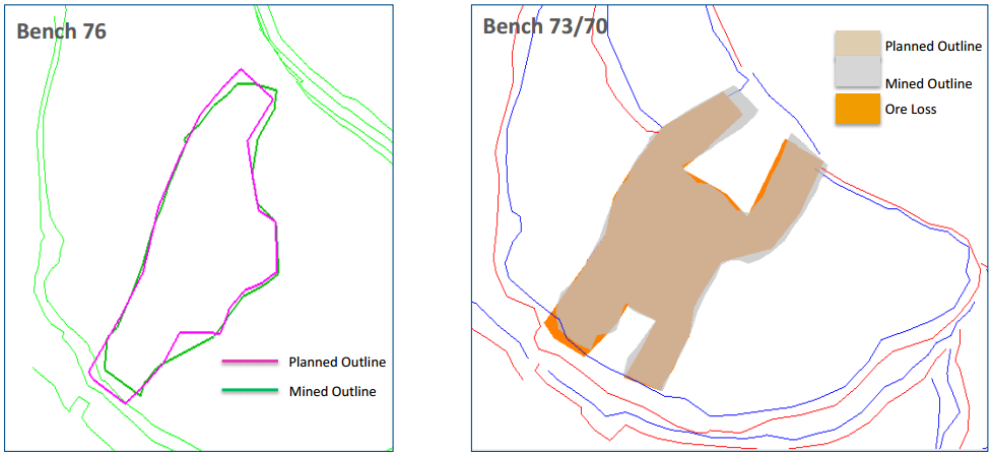
Therefore, dilution appears to be the effect of missing grade, not the cause.

6.2 We don't believe reserve grade is validated by the 54kt bulk sample

We would like to draw the reader's attention to where exactly this grade control bulk sample was taken:

- The test was performed on benches 70/73 & 76, all from the same apparent location in the south of the pit:

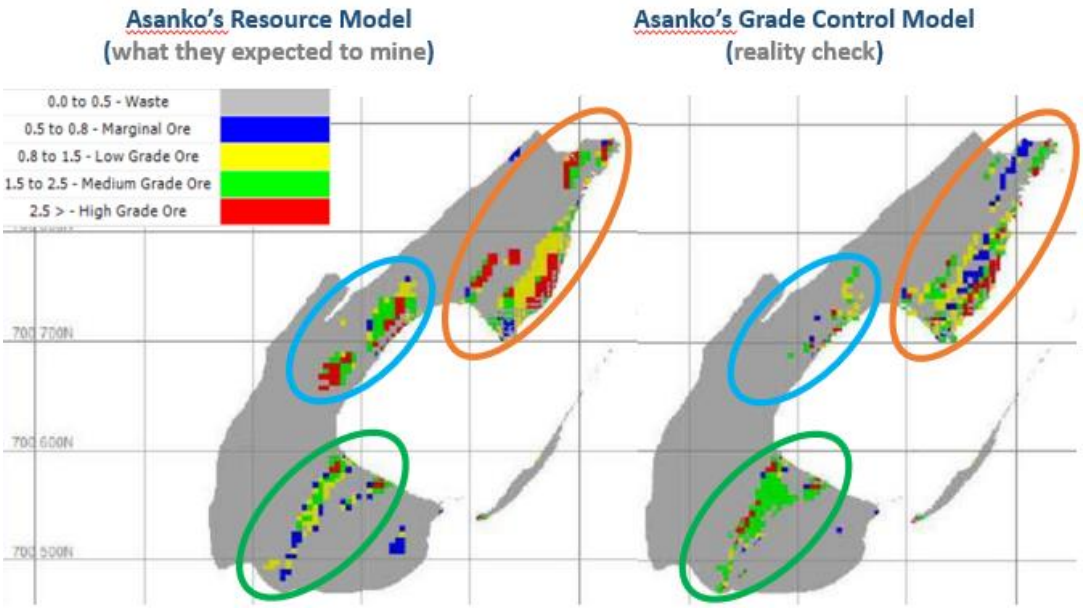
FIGURE 18: GRADE CONTROL BULK TEST AREA



Source: Asanko Gold Filings; annotations and edits by author

Recall this image from earlier showing bench reconciliation between the resource/reserve model and Asanko's grade control model:

FIGURE 19: RESERVE MODEL VS GRADE CONTROL MODEL



Source: Asanko Gold Filings; annotations and edits by author

- This image above is from bench 66, only 4m-10m below the levels Asanko performed their bulk test on

- The areas circled in blue and orange appear to reconcile very poorly, and had these areas of the pit been selected for the bulk "grade control/dilution test", we believe the results would have been quite poor
- Instead, Asanko appears to have only performed their bulk test on the area of the pit circled in green where reconciliation appears to have been slightly positive
- As the image below shows, this area was estimated in the mineral reserve estimate to contain a grade of only 1.63g/t, well below the average grade of 2.17 the DPP predicted for 2015 and 2016.

FIGURE 20: RESERVE RECONCILIATION BULK TEST

	MRE	GC Model Estimate	Actual Mined	Actual Measured Plant Feed	Variance: Reserve to Plant Feed
Contained gold (g/t)	1.63	1.77	1.76	1.70	4%

Source: Asanko Gold Filings; annotations and edits by author

Based on these observations, we are not comfortable with extrapolating the results of this test into the entire reserve model.

6.3 Excess mill capacity should not be putting strain on Nkran

As detailed earlier in the report and displayed in Figure 21 below, the DPP mine plan scheduled for 55% more reserve ore to be mined than processed through 2016. This rises to 72% more when adding the approximate minimum (~0.45Mt) ore tonnage mined from inferred zones to date. A mill producing at 10% above mine plan should not be straining a mine that is supposed to be mining between 55% - 72% excess ore through 2016, unless there are large scale issues at the mine site.

FIGURE 21: DPP MINE SCHEDULE

Years 2015 - 2021

	2015	2016	2017	2018	2019	2020	2021
Ore mined ('000t)	230	3,704	3,123	3,319	3,000	2,951	2,850
Grade mined (g/t)	2.44	2.15	2.22	2.15	2.30	2.28	2.23
Waste ('000t)	19,761	21,254	21,928	21,152	20,993	23,179	22,754
Strip ratio (w:o)	86.05	5.74	7.02	6.37	7.00	7.86	7.98
Plant feed ('000t)	-	2,538	3,000	3,000	3,000	3,000	3,000
Feed grade (g/t)	-	2.58	2.27	2.15	2.30	2.27	2.20
Recovery (%)	-	88.89	92.66	92.34	92.63	92.62	92.60
Gold produced (oz)	-	187,429	202,624	191,131	205,500	202,711	196,273

3.9Mt Reserve Ore Mined vs. only 2.5Mt processed to YE 2016

Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; annotations by author

7. Financial Analysis

An analysis using our estimated SmallShell returns a NAV/share of $0.47 using $1,300/oz gold and a 5% discount rate. We also determine that the company entered Q2 with approximately $20M in working capital and do not expect to generate cash flow from operations until July (Q3).

7.1 NAV Analysis

We use our Smallshell estimate as the basis of our NAV calculation. Recall:

- 22.3Mt @ 1.58g/t for 1.1Moz contained gold
- Versus Asanko's Reserve estimate of 31Mt at 2.2g/t for 2.2Moz

Keep in mind, our mineral shell analysis is only on the Nkran pit which makes up 85% of Asanko's reserves in phase 1. Our NAV analysis gives full value for the satellite deposits and is included in the Phase 1 NPV – as we have not yet evaluated the possibility of resource overestimation in these areas. We do not ascribe any value to Phase 2. We believe the final decision to advance Phase 2 is contingent on the successful execution of Phase 1. Our thesis suggests this is unlikely.

TABLE 7: NAV SUMMARY

All in USD	**NAV Summary**
Assumed Grade (g/t)	1.58
Asanko Phase 1	$211,214,351
ITM instruments (<$3 strike)	$16,577,654
Working Capital*	$19,260,000
LT Debt	-$150,000,000
NAV	**$97,052,005**
Shares	196,996,000
ITM Instruments	10,265,450
Phase 1 NAV/share	$0.47

**Includes funds commited to Phase1 capex,*
does not include current portion of long term deb
Data Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; Table by author

The NAV analysis leaves room for error as we are only provided with average production cost numbers over the life of mine. The main assumptions include:

- *22.3mt Nkran reserve at 1.5g/t for 1.1moz contained gold*
- *No consideration for dilution or mining recovery*
- *2.3mt average annual ore mined from Nkran from 2017 to 2024*
- *3mtpa mill throughput (250kt monthly)*
- *$1,300/oz gold price*
- *132koz average annual production*
- *$3.77/t mining cost*
- *$13/t processing cost*

- *approximately $16mm/year G&A costs*
- *$49mm LOM sustaining capital*
- *92.5% recoveries*
- *5% royalty and 90% asset ownership factored in*
- *5% discount rate*

Figure 22 below shows our valuation model's sensitivity to the gold price. According to our valuation, we would need to see gold prices in excess of US$2,000/oz to justify the current market value.

FIGURE 22: NAV SENSITIVITY VERSUS GOLD PRICE

Data Source: Asanko Gold Mine – Phase 1 Definitive Project Plan; Bloomberg; Table and estimates by author;

7.2 Liquidity

We estimate the Company had an effective working capital balance of negative $11.3mm on March 31, 2016, when accounting for the $22.1mm in remaining phase 1 capex and the current portion of debt (shown in Table 8). This is a precarious financial situation to be in during the ramp up phase. We expect this was the main reason for the renegotiation of the credit facility with Red Kite to defer debt payments for 2 years. Removing the current portion of debt leaves the Company with $19mm in working capital.

TABLE 8: BREAKDOWN OF ASANKO'S EFFECTIVE WORKING CAPITAL AT 31 MARCH, 2016, AND FOLLOWING DEBT DEFERRAL

Working Capital as of	3/31/16	Debt deferral
Cash	$67,800	$67,800
Receivables	$5,582	$5,582
Inventories	$14,657	$14,657
Prepaid expenses	$1,421	$1,421
Current Assets	**$89,460**	**$89,460**
Accounts payable	$48,100	$48,100
Current portion of Debt	$30,600	
Current Liabilities	**$78,700**	**$48,100**
Working Capital	**$10,760**	**$41,360**
Remaining Phase 1 Capex	$22,100	$22,100
Effective Working Capital	**-$11,340**	**$19,260**

Source: Asanko Gold Q1 2016 Financials and MD&A; Table by author

Given the company's guidance of positive cash flow from operations only commencing in July (Figure 22 below), we expect the $20M in working capital to decrease even further during Q2.

FIGURE 23: EXCERPT FROM Q1 2016 FINANCIALS

> and the current portion of long-term debt of $30.6 million to be settled in the next 12 months (note 8). The Company expects to generate positive cash flow from operations commencing in July 2016, which would be available to meet future long-term debt obligations.

Source: Asanko Gold Q1 2016 Financials and MD&A

7.3 Feasibility study sensitivities

The feasibility study uses a base case gold price scenario of $1,300/oz gold to arrive at an NPV(5%) of US$412mm. The sensitivity tables in the report show that the project is most sensitive to the price of gold – with the NPV(5%) decreasing approximately US$106mm for every US$100/oz drop in the gold price. See the table below from the feasibility study.

FIGURE 24: PROJECT NPV SENSITIVITY TO GOLD PRICE AND DISCOUNT RATE

	Discount Rate					
Price US$ Gold/oz	3%	5%	6%	7%	8%	IRR
1,100	261,394	200,576	173,980	149,587	127,177	16.0%
1,200	380,964	306,894	274,467	244,704	217,341	21.1%
1,300	500,079	412,695	374,410	339,250	306,910	25.9%
1,400	619,172	518,476	474,332	433,777	396,459	30.4%
1,500	738,254	624,246	574,243	528,292	485,998	34.7%
1,600	857,327	730,008	674,146	622,801	575,530	38.9%

Data Source: Asanko Gold Mine – Phase 1 Definitive Project Plan

In the table above, we can see that a 15% drop in the gold price ($1,300 to $1,100) wipes out just over half of the project NPV at a 5% discount rate.

Consider this: Holding other parameters constant, a % change in negative gold reconciliation will have the same impact on project economics as a % drop in gold price. Both impact the top line proportionally. Therefore, we can use the table above to demonstrate the NPV sensitivity of the Phase 1 DPP to overestimates in contained gold. A 30% negative gold reconciliation (which is very likely based on our analysis), will push the NPV(5%) into negative territory, keeping all other project parameters constant.

8. Concluding Remarks

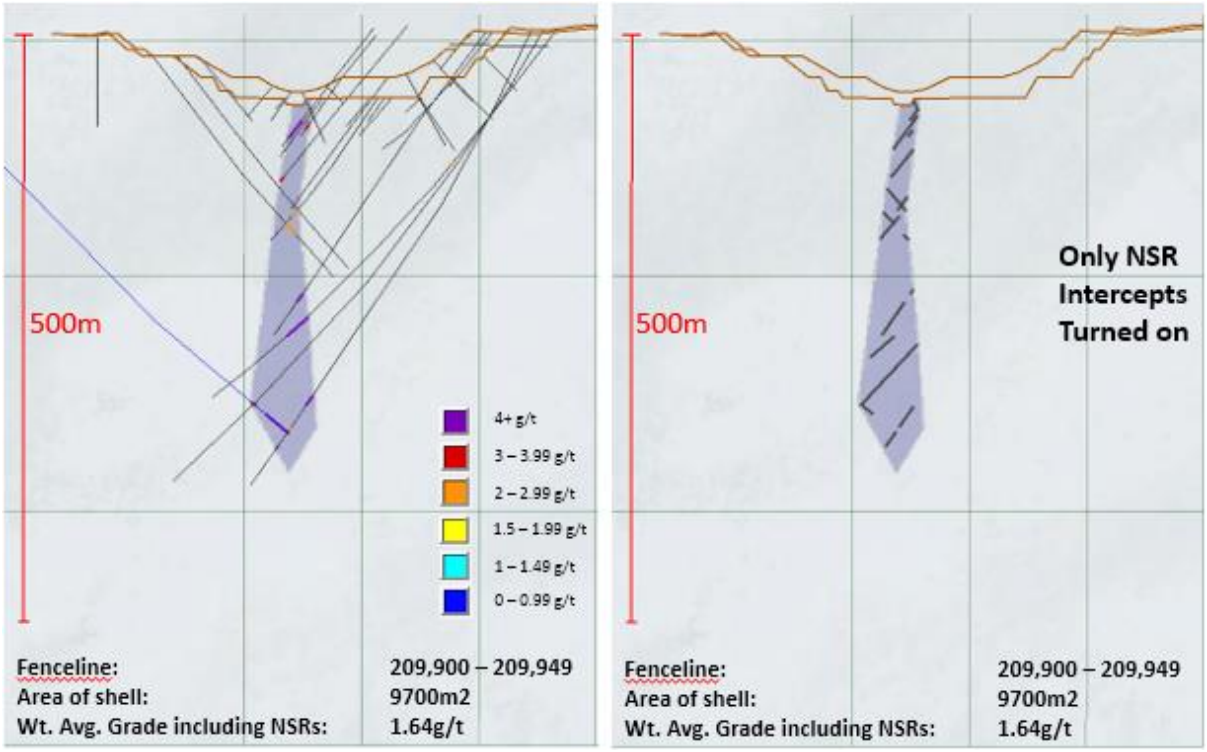
Dissecting a mine is complex, but they tend to reveal the truth in fairly short order as long as basic continuous disclosures are provided and monitored in their appropriate context, namely:

- Total material mined
- Ore tonnage and grade mined
- Ore tonnage and head grade processed
- Stockpile tonnage and grade
- Information on any material deviations from Mine Plan

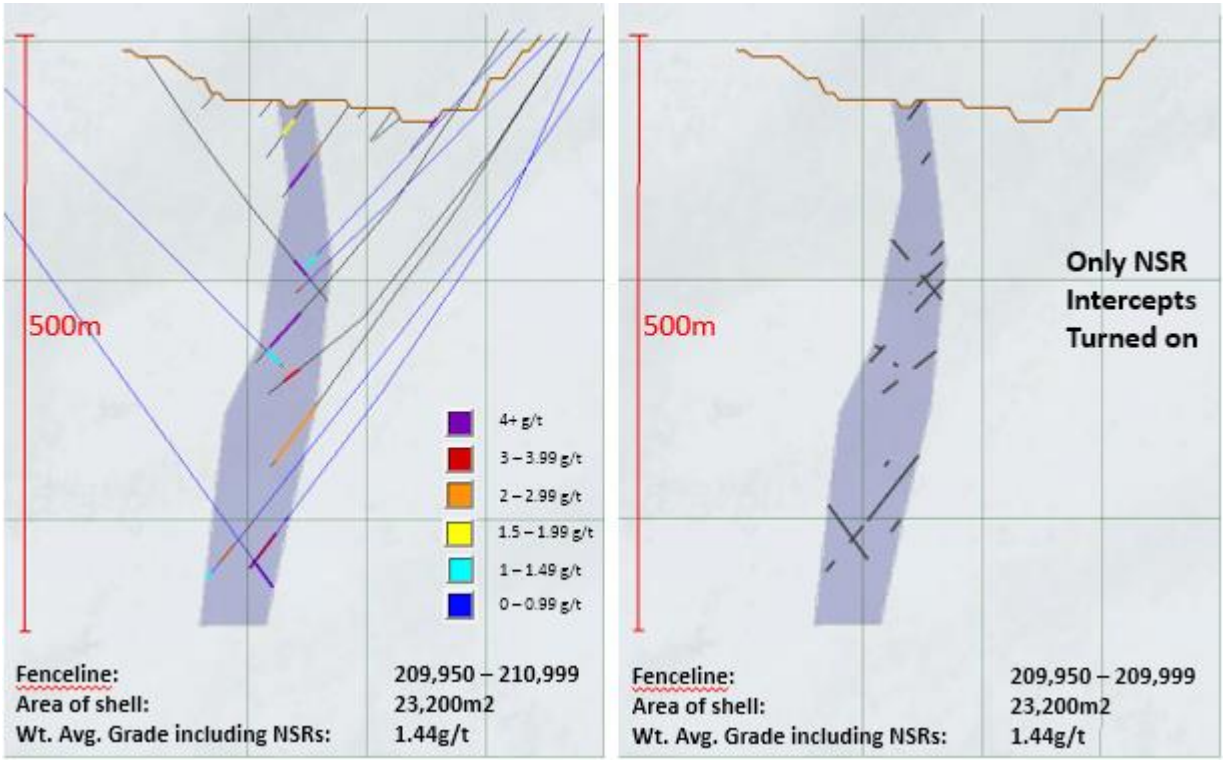
We expect our thesis to largely play out over several quarters to come. We believe the Company has numerous buffers/levers at their disposal to prop-up near-term production numbers; however, the scale of the resource overestimate that we perceive suggests that, even if they pull from these options, the Company will still struggle to match their DPP. We believe this divide will increasingly widen as time progresses.

9. Appendix A: BigShell Sections

SECTION 209,900 -209,949

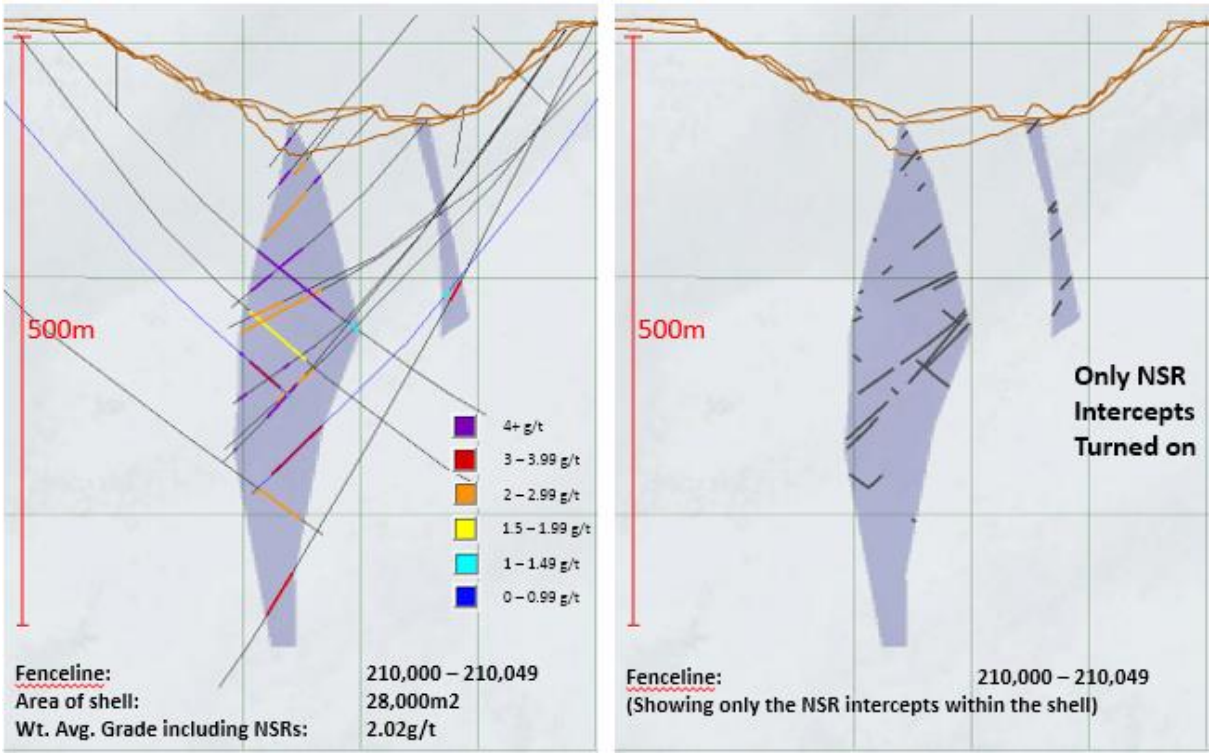


SECTION 209,950 – 209,999

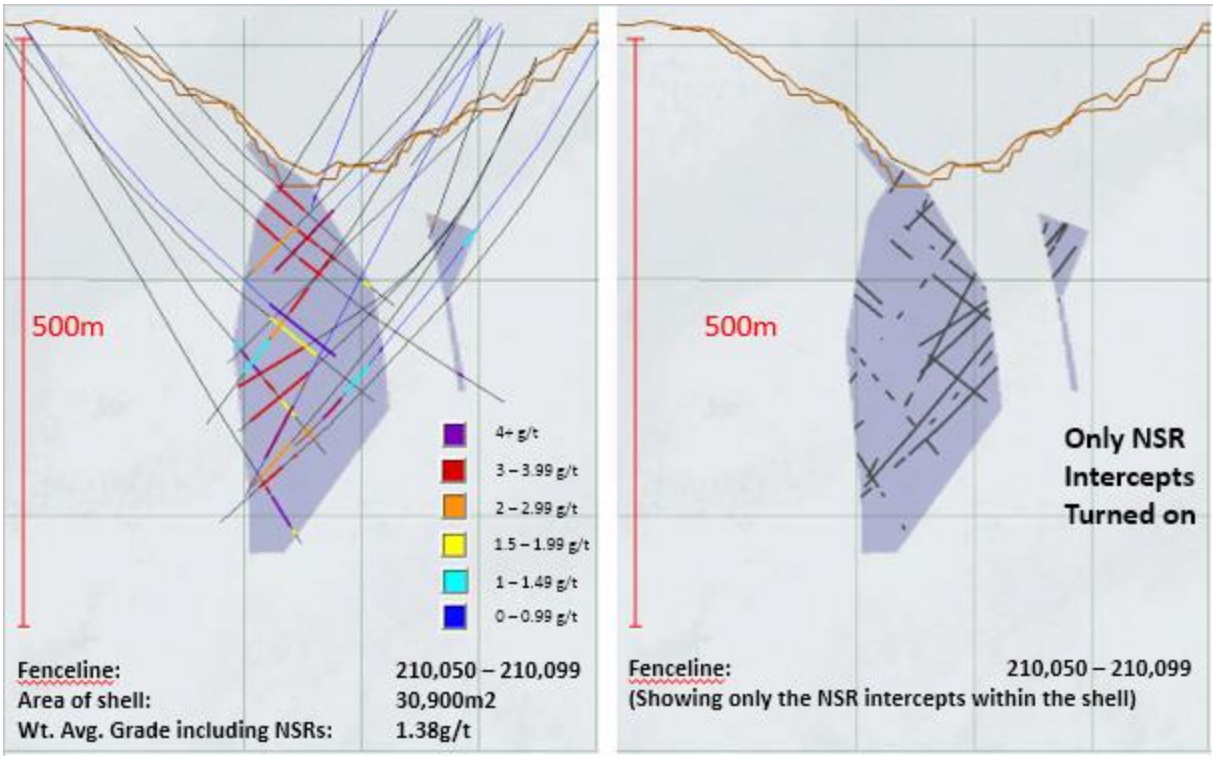


K2&ASSOCIATES
INVESTMENT MANAGEMENT INC.

SECTION 210,000 – 210,049

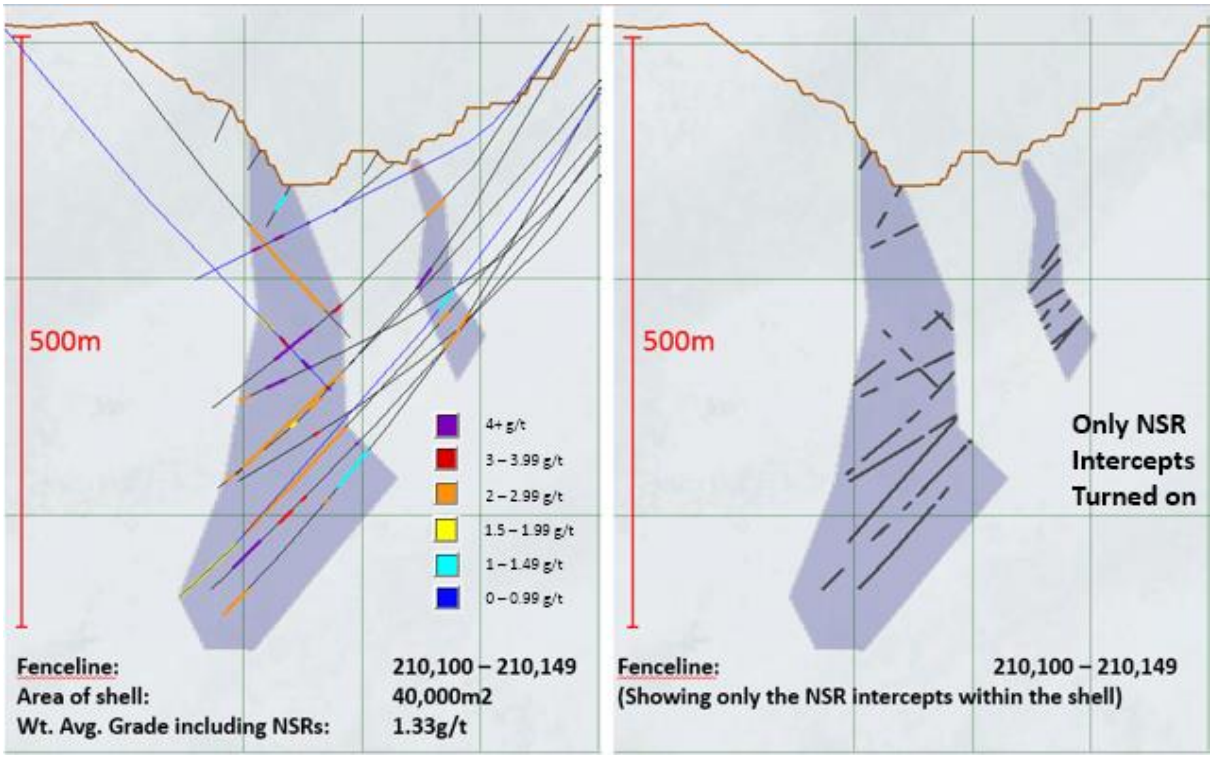


SECTION 210,050 – 210,099

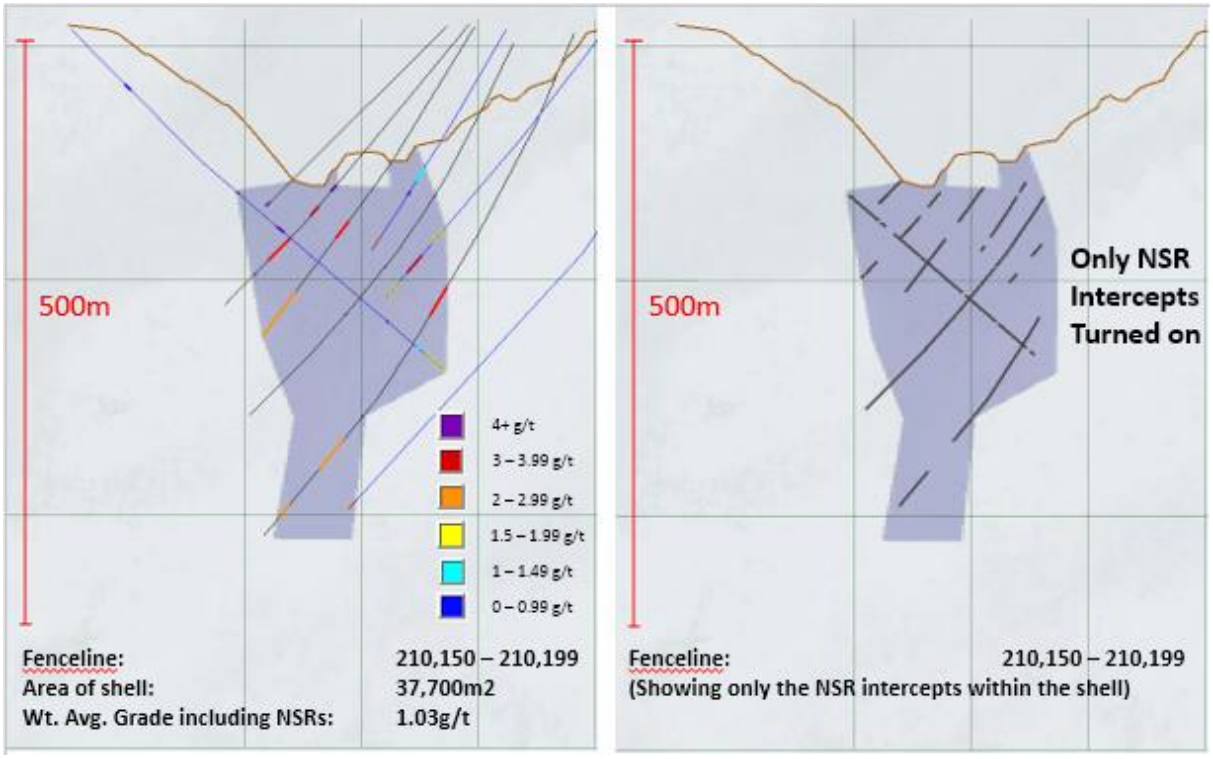


K2&ASSOCIATES
INVESTMENT MANAGEMENT INC.

SECTION 210,100 – 210,149

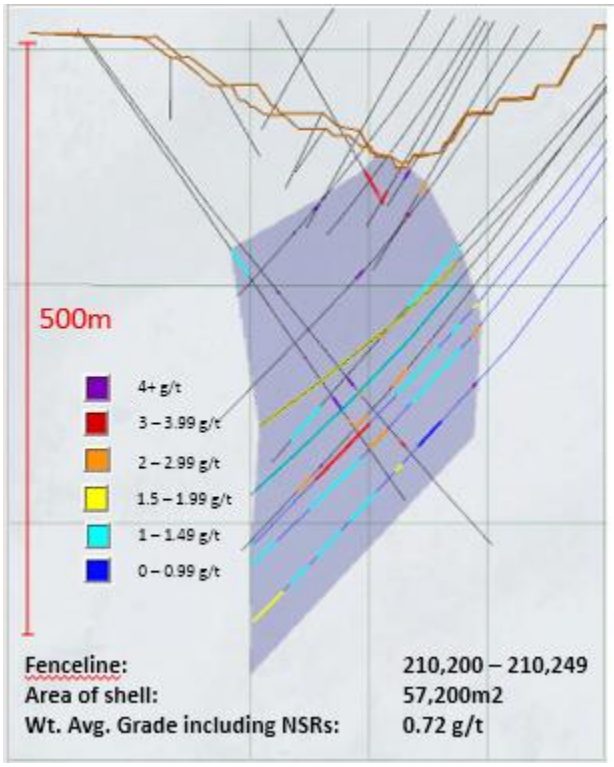


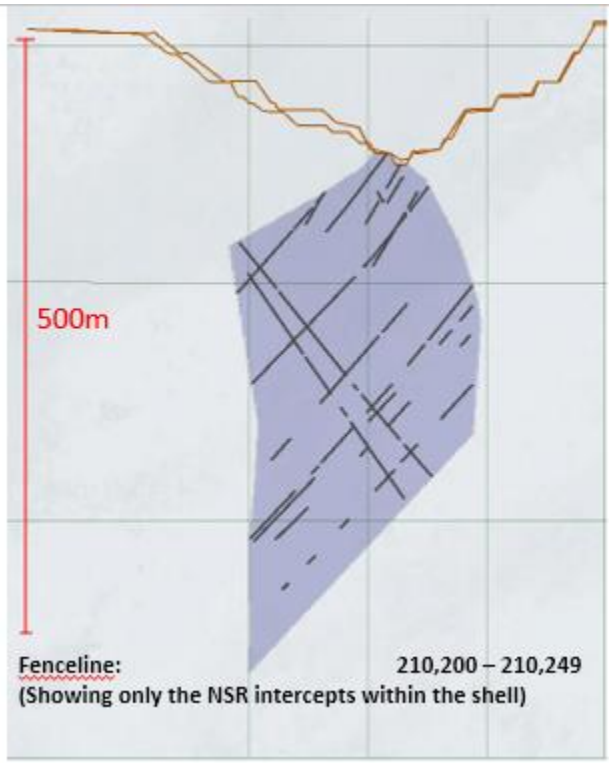
SECTION 210,150 – 210,199



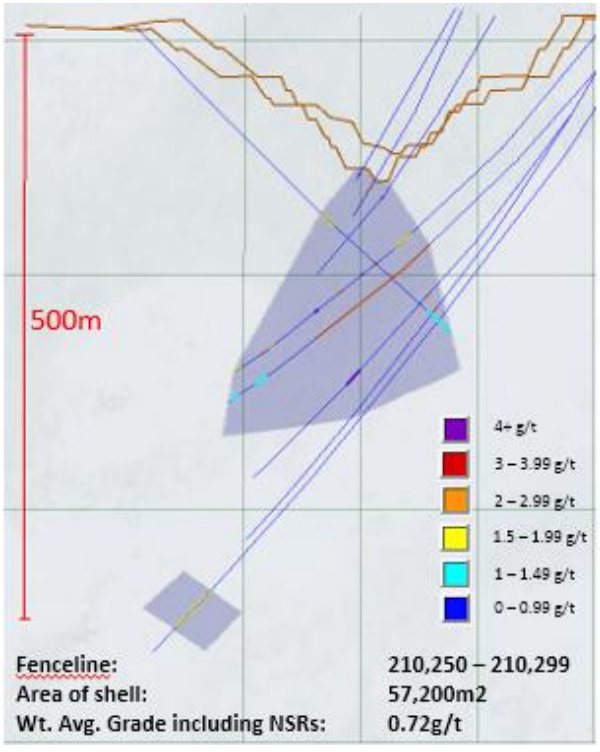
K2&ASSOCIATES
INVESTMENT MANAGEMENT INC.

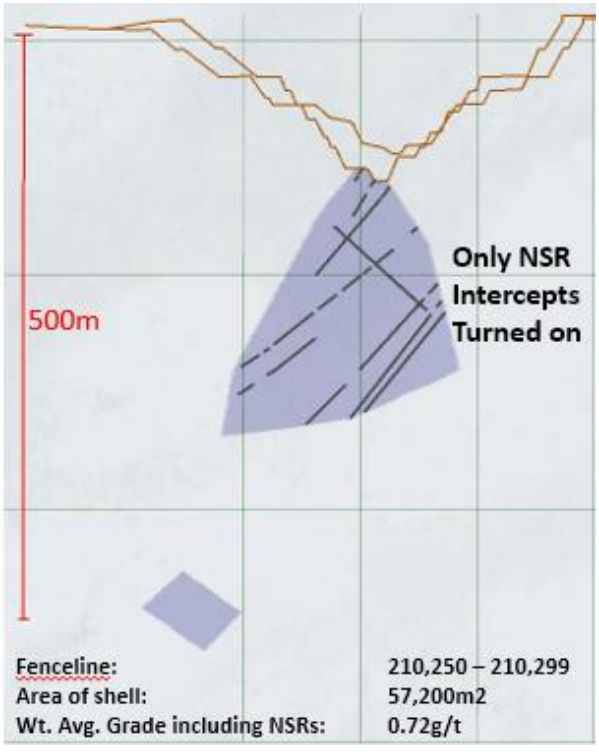
SECTION 210,200 -210,249





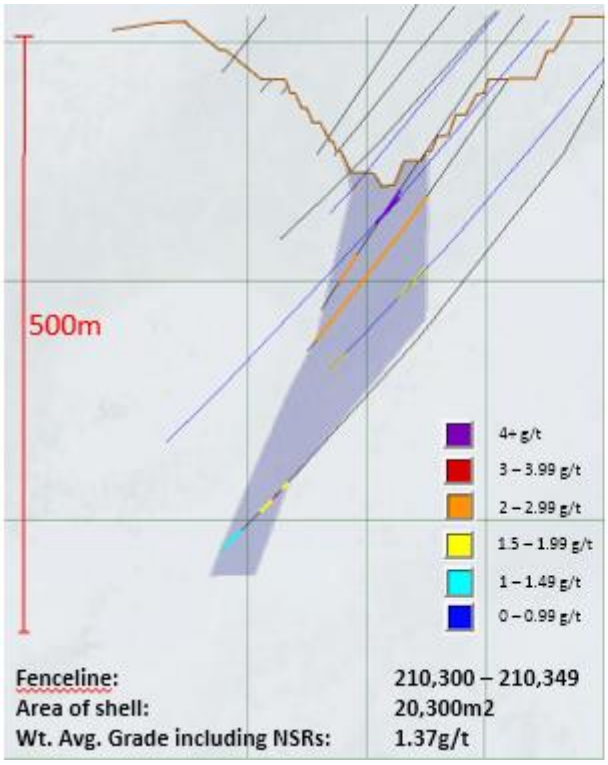
SECTION 210,250 – 210,300

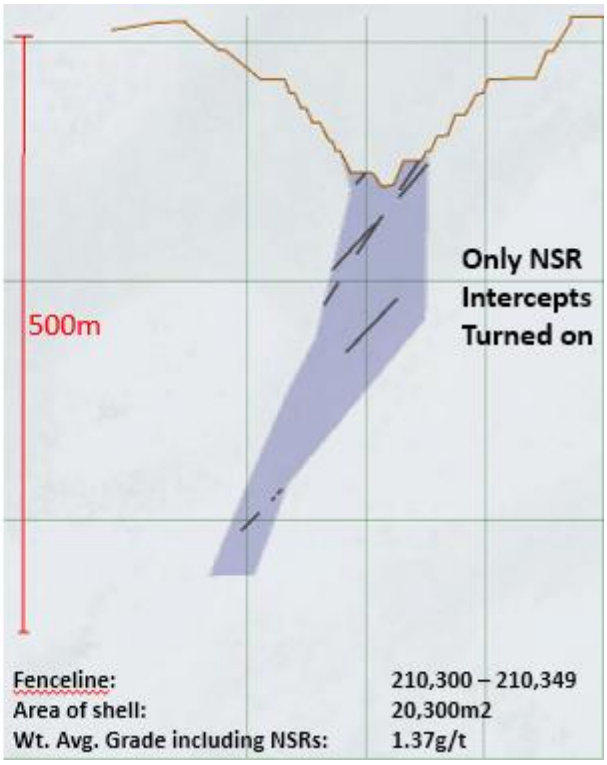




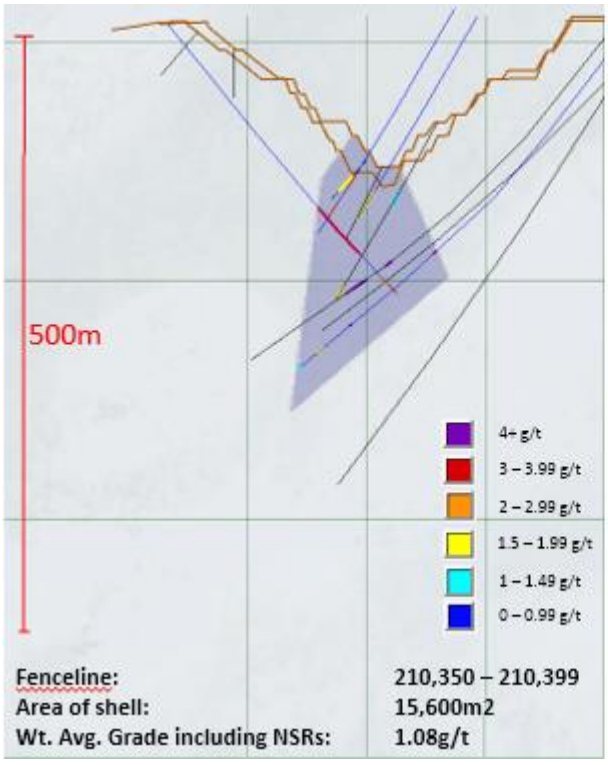
K2&ASSOCIATES
INVESTMENT MANAGEMENT INC.

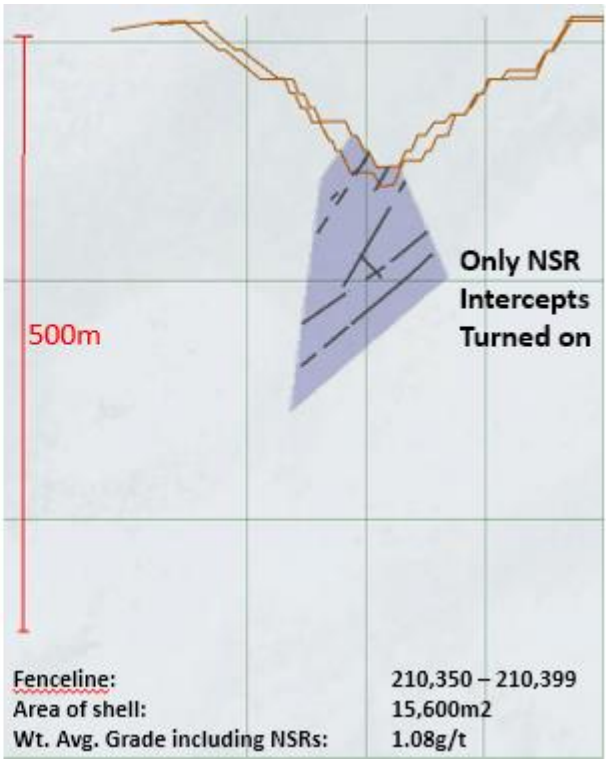
SECTION 210,300 – 210,349



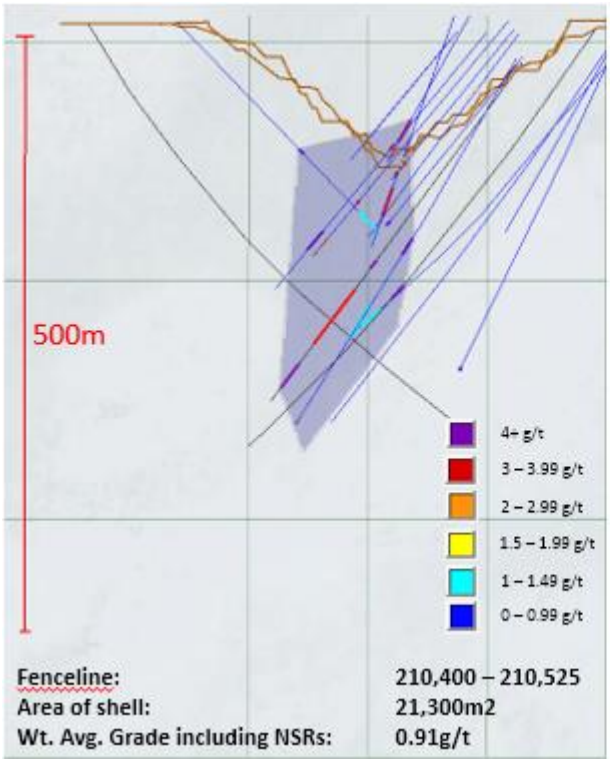


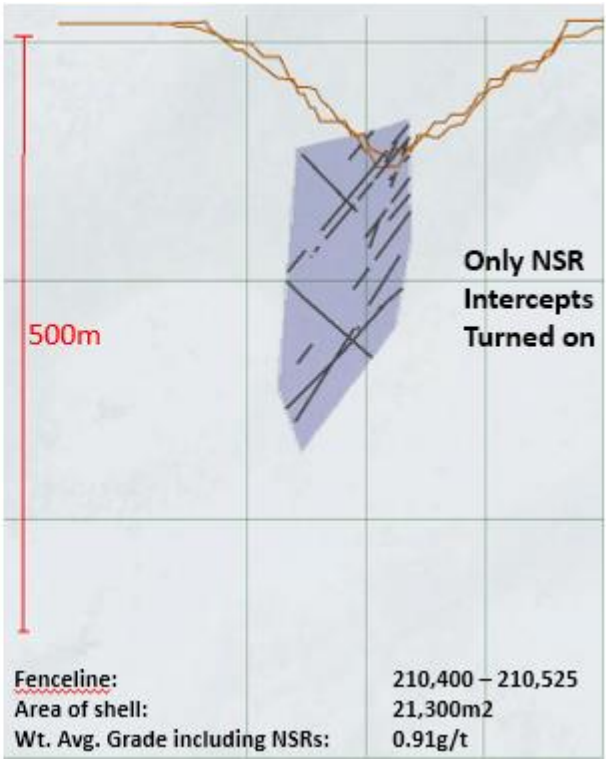
SECTION 210,350 – 210,399





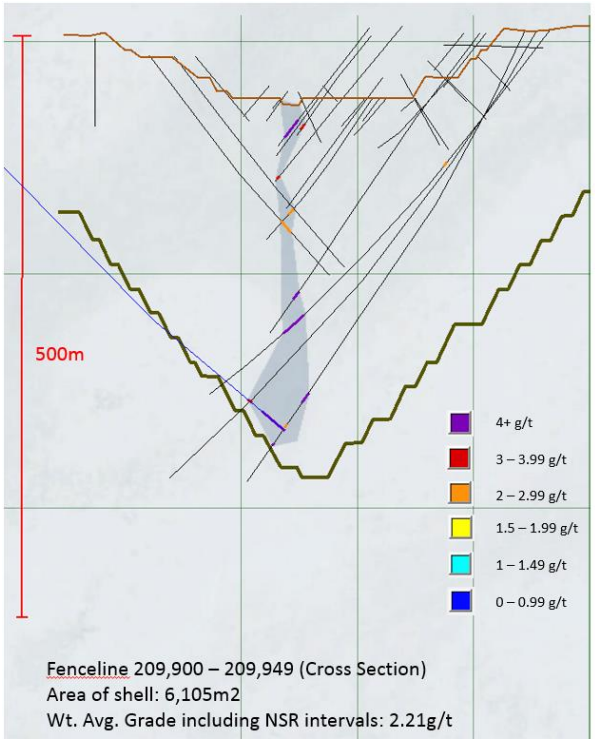
SECTION 210,350 – 210,399

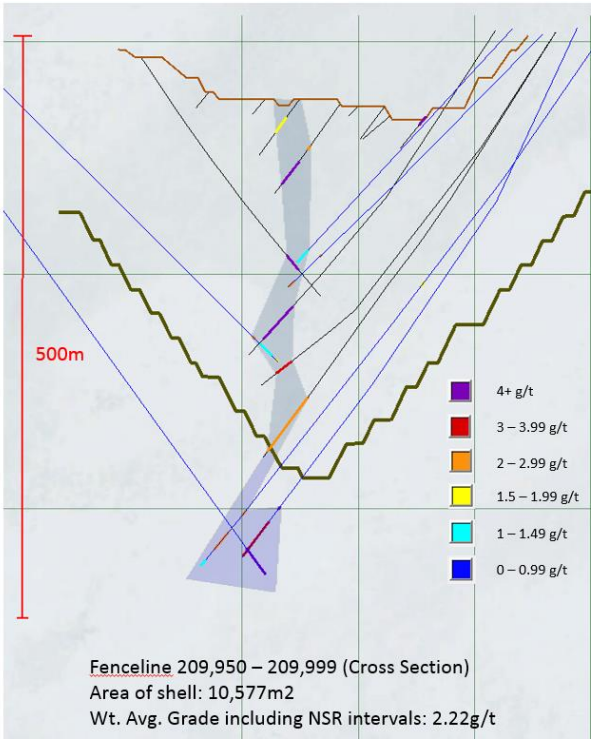




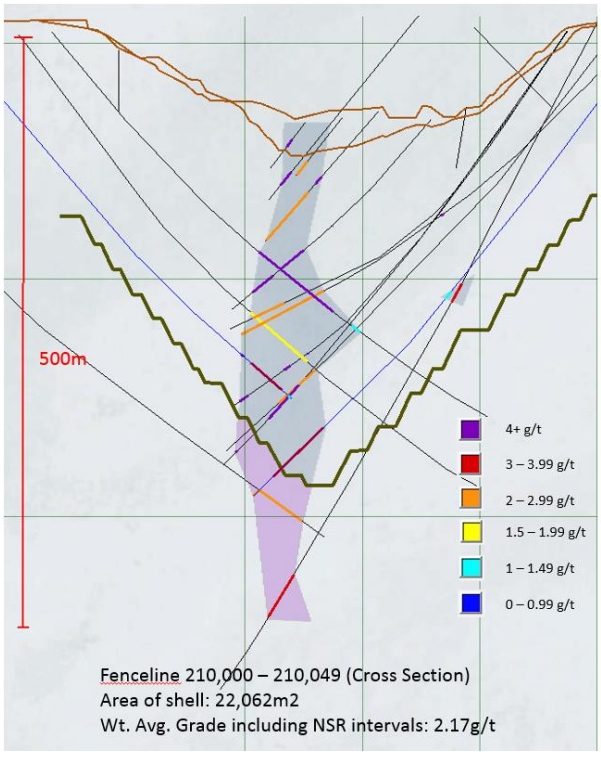
10. Appendix B: SmallShell Sections

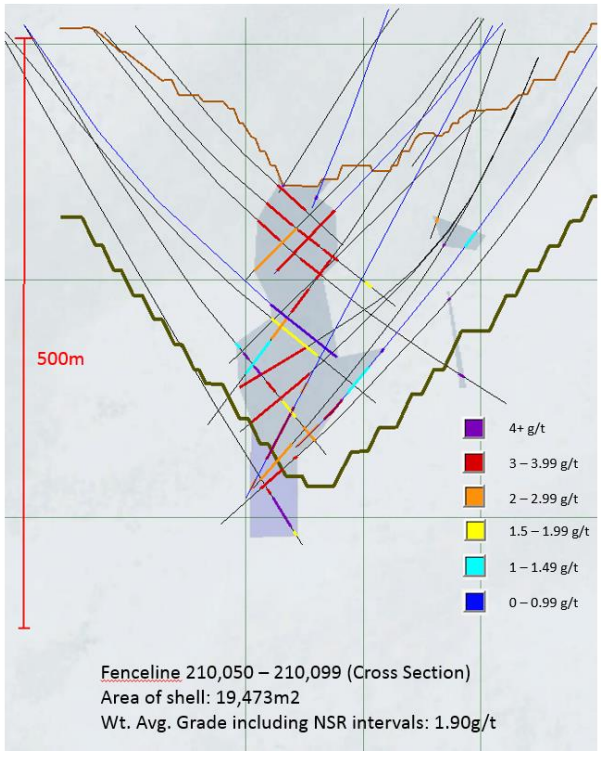
Sections 209,900 – 209,999



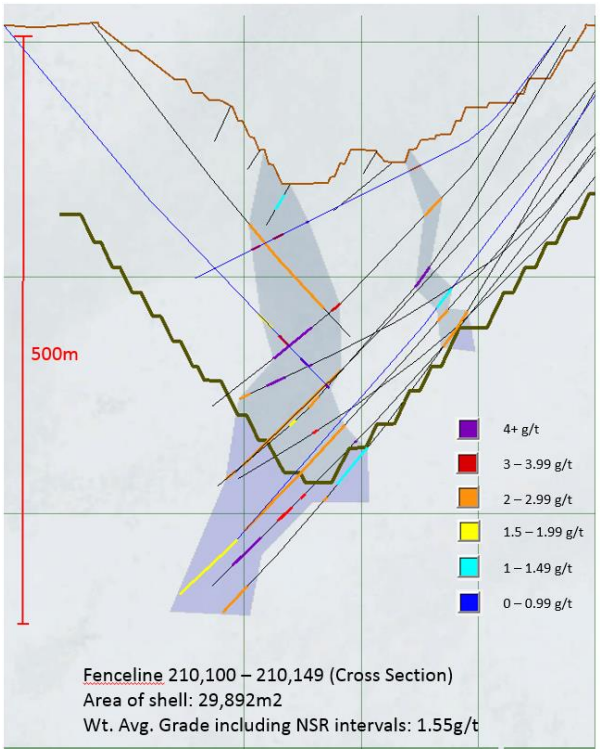


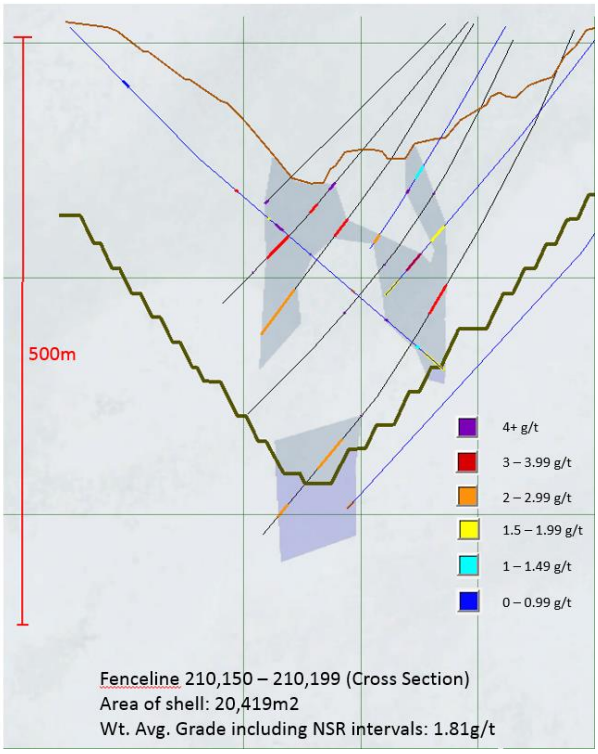
Sections 210,000 – 210,099



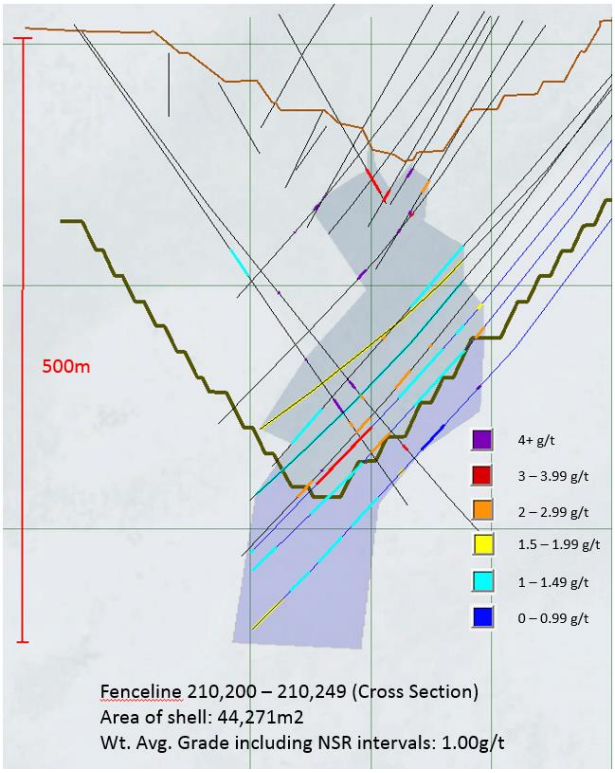


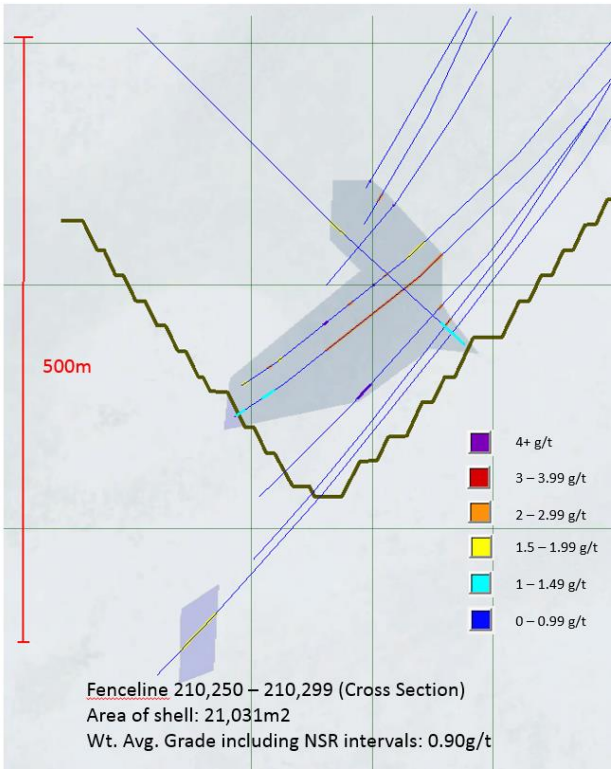
Sections 210,100 – 210,199



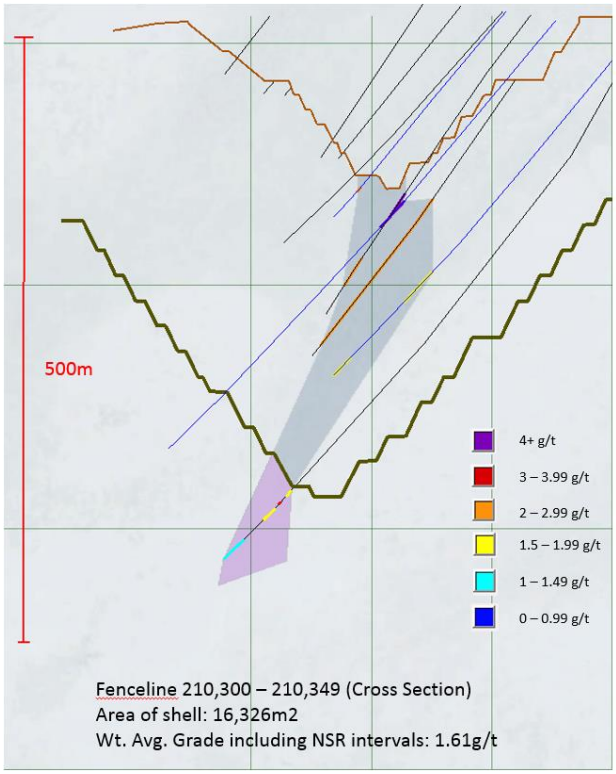


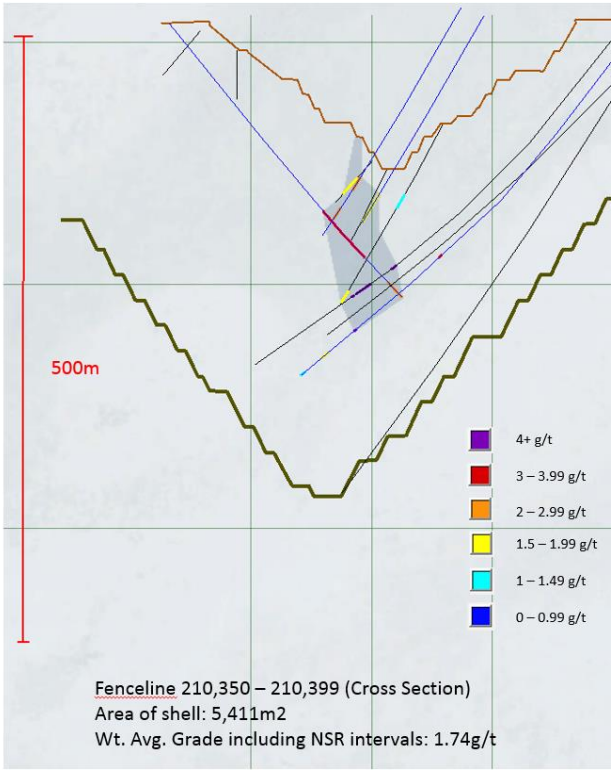
Sections 210,200 – 210,299





Sections 210,300 – 210,399





Sections 210,400 – 210,525