# **Princess Louise Evaluation:- Resource comparison between grade control and exploration drill**.

The area assessed lay between 6985N to 70650N and from natural surface (~1150RL) to 1010RL. This area was drilled on 25m spaced section by exploration and was followed up with grade control drilling at 10m spaced sections. The base of effective grade control coverage is the 1130RL or 20m vertical depth. The results of the exploration drilling and grade control drilling were independently interpreted on section, wire-framed and modeled to assess the comparison between the two sets of drilling.

The Reported Resource for Princess Louise dated June 2003 is based on both the exploration and grade control drilling data. The resource comparison study carried out utilized the entire grade control drilling data set and a subset of the exploration drilling data which is within the study area.

The results of the exercise are tabulated below.

Princess Louise: Com	parison between Grade C	ontrol drilling and Ex	ploration Drilling Models

Grade Control Model			Exploration Model			Variance (GC to EXP)					
bench	tonnes	grade	oz	bench	tonnes	grade	oz	bench	tonnes	grade	oz
1150 - 1145	9386	2.16	652	1150 - 1145	893	1.91	55	1150 - 1145	8493	0.25	597
1145 - 1140	12560	2.06	832	1145 - 1140	2220	1.69	121	1145 - 1140	10340	0.37	711
1140 - 1135	9360	1.94	584	1140 - 1135	4440	1.98	283	1140 - 1135	4920	-0.04	301
1135 - 1130	10320	1.93	640	1135 - 1130	7260	2.2	514	1135 - 1130	3060	-0.27	127
TOTAL	41626	2.02	2708		14813	2.04	972		26813	-0.02	1736

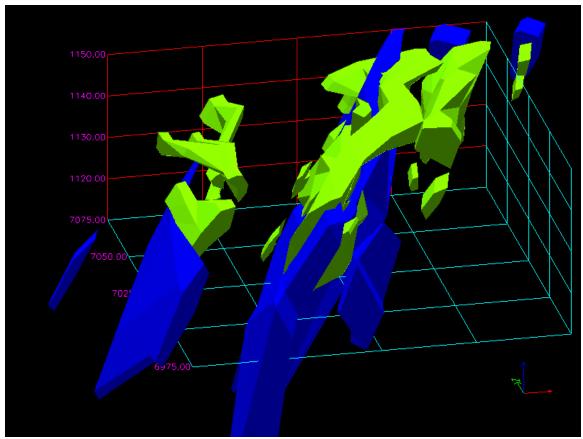
Table 1 results;

- The grade control model indicates a significantly higher tonnes; +26,813 tonnes.
- Exploration model grade is marginally higher; +0.02g/t.
- The net effect is that the grade control model shows 1700 oz more total gold within the comparison area.
- The main reason for the tonnage increase in the grade control model is that the grade control drilling provides a more effective drilling coverage in testing the top 20m mineralized zone. Grade control drilling has identified flat laying surface enriched cap and has outlined a significant footwall pod which was tested by only one exploration drill hole. It is expected that with depth the grade control will compare closer with the exploration data as mining will be below the enriched surface cap and the coverage across the mineralized zone by the exploration drilling at depth is much more uniform. Also as the pit is developed the grade control drilling will be confined to the pit area testing the interpreted ore zones based on exploration data.
- All ore is oxide, the depth of weathering averages 30 to 35m. There is potential of supergene enrichment at the oxide fresh interface. Some of the exploration holes show broad intercepts with higher grade gold values when interesting this horizon.

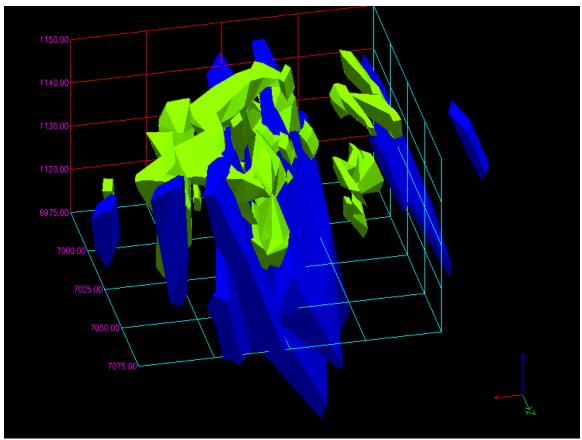
#### Parameters

- Area of review between 6975N and 7075N.
- Exploration drilling on 25m section intervals from 6975N to 7075N, the drill hole spacing on section varies from 8 to 30m. Drilled to a depth of 125m below surface.
- Grade control drilling on 10m section intervals from 6990N to 7060N. The hole spacing on sections 6990N, 7000N, 7020N, 7040N, 7060N are 8m. On sections 7010N, 7030N, 7050N the hole are spaced at 4m intervals. All holes were drilled to 24m depth.
- The block modeling algorithm was ID<sup>2</sup>. The block model was rotated 20°NE, the average strike of the deposit within the test area. The ellipsoidal search parameters differed between the two block models allowing a greater search radius when using exploration data. The lower grade cut-off used in the interpretations was at 0.5g/t Au. A top-cut of 10G/T Au was applied to both models.
- The models were built from 1150RL (natural surface) to 1110RL, with effective coverage by grade control drilling to the 1130RL.

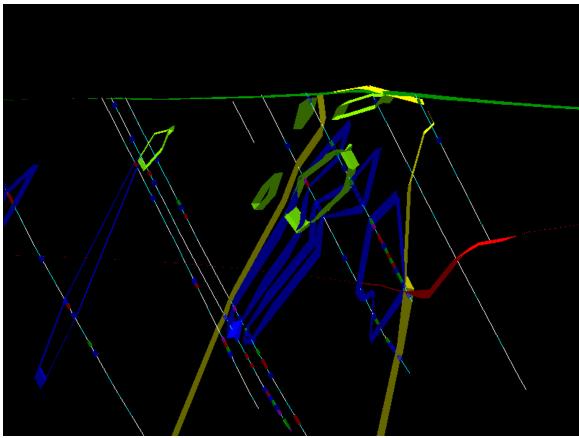
Below are a series of 3D and cross-sectional views to highlight the differences between the two interpretations based on the exploration and grade control drilling sets. In each view the blue is based on exploration drilling, the light green outlines is based on grade control, the red surface (cross-sections only) shows the interface between the oxide and fresh horizon and the dark green (cross-sections only) surface shows natural surface. The main greywacke mineralized host unit is shown in yellow.



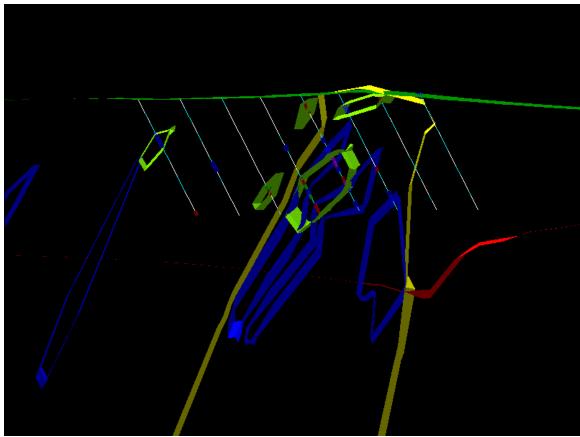
Showing the wire-frame interpretations; blue is based on exploration drilling, light green is grade control drilling. The wire-framed grade control interpreted ore body is flatter near surface which may be related to surface supergene enrichment. Also highlights the significant footwall ore pod indicated by grade control drilling. Looking north, along strike.



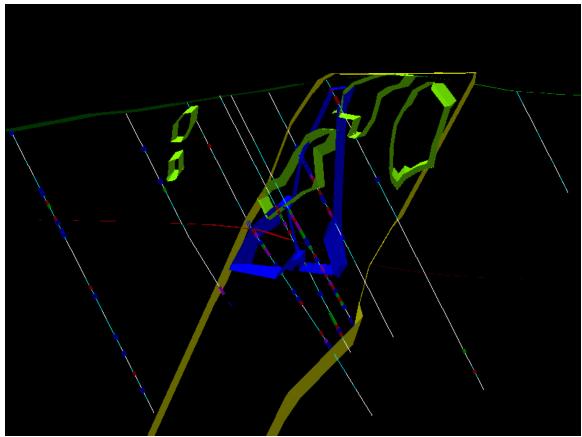
Looking south along strike, showing the flatter and poddy nature of the interpreted grade control results.



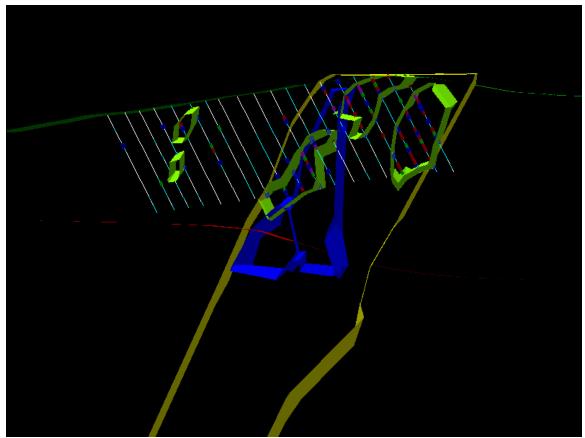
Section 7000N, showing the exploration drilling (4m window). Red surface indicates the base of oxide. Shows best development of mineralization is within the greywacke host unit.



Section 7000N, showing the grade control drilling. Hole spacing at 8m, and drilled to 24m depths. Indicates that a depleted zone may occur below a weakly mineralized thin flat laying surface pod and the main ore zone developing at depth.



Section 7050N, showing exploration drilling results. Results indicate a broad steeply dipping mineralized zone. Exploration drilling has not fully tested the near surface extent of the mineralized unit. Wire-framing and modeling of the exploration data carried out from surface to 1110RL.



Section 7050N, showing grade drilling results, holes spacing at 4m, and drilled to 24m. Grade control drilling indicates a significant near surface ore pods not identified by the widely spaced exploration drilling.

### Summary of the results

- 1. Both exploration and grade control indicate that the best mineralization is developed within the interpreted greywacke unit.
- 2. Exploration drilling indicates a relatively continuous and robust mineralized unit which is generally broader in the oxide horizon but best develops from 10m below surface. The dip based on exploration is moderately west dipping in the oxide steepening in the fresh.
- 3. Interpretation of the mineralization based on grade control drilling shows that the ore zones may be poddy in nature but still well developed. Drilling also indicates that a flattish slightly gold enriched surface cap is developed within the mineralized greywacke unit. On some sections there is a suggestion of gold depletion below the surface cap below which the developed ore pods are moderate west dipping.
- 4. The ore tonnes are upgraded significantly with the more closely spaced grade control drilling program. Grade drilling has outlined a continuous footwall ore pod within the mineralized greywacke unit which was tested by one exploration hole.

#### Recommendations

- 1. Grade control drilling should be the main resource/reserve development tool testing the near surface mineralization within the host greywacke unit.
- 2. Exploration data should be used to identify the oxide mineralizing trends within the greywacke unit to plan pre-mining grade control programs. Exploration drilling has identified near surface mineralization from 6600N to 7350N; a 750m strike extent. The currant resource model is between 6900N to 7070N, 170m strike
- 3. Grade control drilling should be staged with other drilling programs initially testing the near surface higher grade oxide intersections indicated by exploration drilling. The drilling program should be modified dependent on the results received. This may generate a series of shallow pits along the strike extent of the interpreted Princess Louise mineralized zone.
- 4. The grade control drilling should be planned at sufficient detail to test for and prepare grade control plans to mine the ore body and test for a likely super gene gold enrichment.
- 5. Initial grade drill holes if planned to 24m should be down-hole surveyed to check for deviation as this could cause both a situation ore loss and increased dilution. If the previous drill holes are accessible a series of them should also be checked for any down-hole deviation.
- 6. Mine designs should be flexible enough to allow economical cut-backs if the inpit grade control identifies unexpected high grade ore pods within the oxide horizon.
- 7. Grade control drilling may identify high-grade plunging shoots which may require additional exploration drilling.

## <u>Results and Recommendations of the North Point / Princess Louise Evaluation; -</u> <u>Resource Model Comparison Study Between Exploration and Grade Control</u> <u>Drilling Data</u>

When comparing the top 20m from surface, results of the resource study between the exploration data and grade control data show that the grade control drilling has a positive effect for the two deposits. In both cases the grade control drilling has a positive effect on the in situ tonnes with the average grade being the same at Princess Louise or significantly higher (+.44g/t) at North Point. At North Point where 24m and 39m grade control holes were drilled, indications from the grade control drilling are that the ore tonnes may drop off from 15m below surface.

Note that both exploration drilling and grade control drilling data were used in establishing the Reported Resources for North Point and Princess Louise.

1. Staged grade control drilling should be utilized to test the shallow open pit mine reserves along the strike extent of both North Point and Princess Louise.

- 2. Grade control drilling has indicated there is significant upside within both deposits. Both show an increase in ore tonnes in the top 20m of the grade control models; 26,800t for Princess Louise, 7,100 tonnes for North Point. In North Point the results of grade control drilling testing to 30m vertical depth indicates a decrease in ore tonnes from 15m vertical depth. The tonnage decrease is 16% between 15 to 20m and 34% between 20 to 25m levels. This is partially due to poorer coverage by grade control drilling below 20m.
- 3. The gold grade for Princess Louise based on the grade control model is the same as generated from the exploration drilling. For North Point grade control drilling indicates a significant increase in the expected grade, 0.44g/t. At North Point the increase in gold grade is also evident with the deeper grade control drilling.
- 4. Both deposits are open along there respective strike extents and have good potential for finding addition surface or near surface resources. Mining may occur as a series of shallow oxide pits from 20 to 50m deep. This should not deter from testing for deeper fresh resources. Drilling at both deposits indicates significant high-grade intersections at depth. These zones may be opened up by grade control drilling and shallow oxide pits.
- 5. Both deposits occur within the same host lithological unit, a mineralized greywacke. There is a strike potential of 3.5 km of favorable host between Princess Louise in the south-west to North Point in the north. Mapping of the mineralized host greywacke unit should be carried out to identify the strike extent and the likelihood of additional surface mineable resources. A small pit to the south of North Point was identified and mined during the early 1990's (by Henry Walker or Dominion).
- 6. Parallel mineralized structures have been identified by drilling at both North Point and Princess Louise. Although generally smaller in tonnage potential these zones should be followed up if mining commences as they could become economical viable.