6000 1968

Mining District File Summary Sheet

DISTRICT	Rosebud
DIST_NO	4010
COUNTY If different from written on document	Pershing
TITLE If not obvious	Rosebud - White Alps Peer Review 1999
AUTHOR	Allen K
DATE OF DOC(S)	1999
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7½'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Hecla Mining Co; White Alps
COMMODITY If not obvious	gold; silver
NOTES	Deposit review; geology; assays; hand written notes; meeting notes 5p

Keep docs at about 250 pages if no oversized maps attached
(for every 1 oversized page (>11x17) with text reduce
the amount of pages by ~25)

SS: DP 9/12/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

Newmont Review Motherlode / WHITE ALPS

6000 1968 Y010

6000196B

HECLA MINING COMPANY

COEUR D'ALENE, IDAHO 83815

BY KDA	DATE 4/27/99	JOB TITLE	
CHK.	DATE		JOB NO.
DWG. NO.		Peer Review @ Newmont OFFICE	DIVISION
			SHEET 1 OF

RANDY -

Intro - Time Line
SB canyon ⟹ NO MORE WORK (however CHANCEBONY TARGET)
Deep Dreamland ⇒ Holly is Relogging ⇒
Valley ⇒ @ A decision Point (Drill targets ⇒ mid to LATE June)
Gator ⇒ MAPPING IN MAY, IP Lines, in mid may, DRILL 2 Holes mid-late
Degistrom ⇒ MAPPING Begins, in mid may by mapping of Gray stles July
White Alps = on schedule

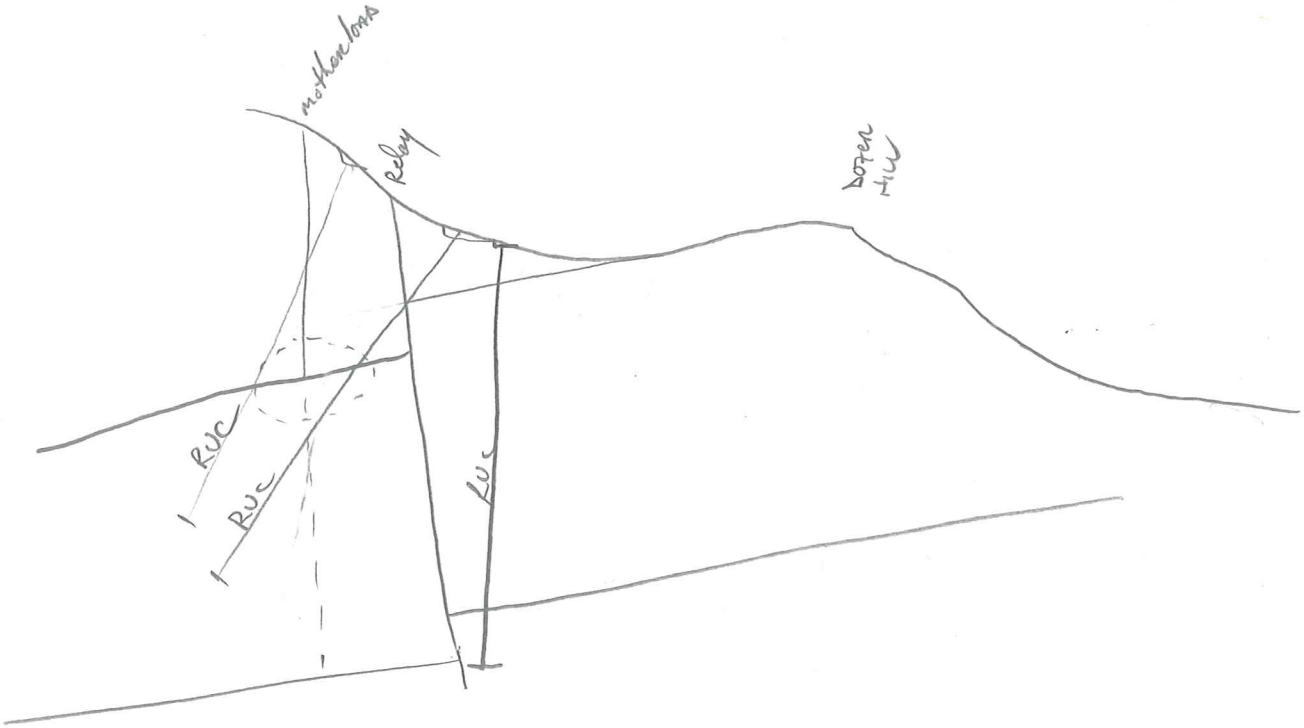
UG- Drilling -

3 weeks- Holly HAS sections Completed at Dream land.
@ that time need to get Together & decide about Drilling

MOTHERLOAD

Pete Rogowski -

WANTS TO DRILL A vertical Hole ON EACH Side of the Relay Fault
& ONE or TWO Angle/vertical Holes at Mother LOAD structure.



⊛ Drill Rig Here During 2nd Week in May.

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BY	DATE	JOB TITLE	JOB NO.
CHK.	DATE		DIVISION
DWG. NO.			SHEET 2 OF

WHITE ALPS -

Surface Geo Petern
Rock Geochem
Existing Drill Holes
Assays to date (GT maps)
Resistivity / chargability
1:1200 scale cross-sections
Recommendations & Discussions

Geology

White Alps Porphyry ? Sits Between (can be mineralized? White Alps) Bud & Chocolate.

Kamma Andesite = Glomeroporphyritic Andesite ⇒ Pete thinks it's the BMB

(East zone - Pete thinks he has seen
BMB - Kamma Andesite (1)
East ⇒ BMB - Rosebud Quartz Latite (2)
in the East zone.

the White Alps structure ⇒ we don't know which way it dips or strikes. Because you can put any strike & dip on it you like.

Surface Geochem

Silver geochem ⇒ overall impression of mine is that N30 ish E
Gold, Sb, Hg
Arsenic, SE
that appears to follow the mine sequence strike in outcrop

Geophysics

using Resistivity Geophysical Techniques & cross-sections of resistivity by Nigel for (Geological interpretations).

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BY LDA	DATE 4/27/99	JOB TITLE	JOB NO.
CHK.	DATE		DIVISION
DWG. NO.			SHEET 3 OF

CROSS - SECTIONS

RANDY - states that the EAST - west structures ARE EXTENSION JOINTS WHICH ARE mineralized.

RANDY Recommends 2 or 4 Vertical Holes SE of the WHITE ALPS.

- Sections ARE @ 1" = 100'

- wildrose => LBT IS REALATIVELY THICK => 2,000 + feet.

- #1900 NW — Proposed Hole A - Purpose is to find out Dip of structure defined by Resistivity (Nigels Lineament) & to find out about other High-Angle Structure

  BLOCK of Highest Resistivity & silicification.

- #2100 NW — RANDY LIKES Proposed Hole B - Purpose is to also find out Dip of structure defined by Resistivity (Nigel's Lineament) & to chase Act & MIN IN RL 19 & RL 80

- #2300 NW — Proposed Hole C

- 2500 NW — Hole RS-446 - high silver Hole => Not Proposing to DRILL LOWER ZONE

- 2700 NW — RANDY LIKES Proposed Hole D - Purpose is to continue to check the Resistivity Lineament.

RANDY Proposes DRILLING Hole # B & D first then Regroup &

White Alps Peer Review: April 27, 1999

GEOLOGY

Target Concept The primary target at White Alps is a structurally controlled, high-grade underground-minable gold-silver deposit. Several major faults were intersected in previous drill holes; some are low- to moderate-angle as seen in the core tails. The stratigraphy, fault geometry, and structural setting are poorly understood, given that only two deep holes (RS-446, RS-456) have been drilled and all of the shallow holes are RC. Resistivity shows strong lineaments in plan and interpreted sections, but correlation with RC holes is difficult.

HYDROTHERMAL ALTERATION

Type and Intensity Moderate to strong silicification is widespread in outcrops and roadcuts. Argillization is weak to strong at the surface, consistent with high-level epithermal alteration. White Alps occurs at the intersection of a major NE-trending fault zone (Schoolbus Canyon fault) and an ENE extensional joint set. The latter contains steeply dipping silica-clay-FeOx filled fractures, and is mapped from the southern edge of Dreamland north to the backside of White Alps knob and east to RL-18. Alteration intensity down hole is weak to strong, consisting of silicification, argillization, and pyritization. Some holes show strongest alteration in the hanging wall of faults, whereas others show strongest alteration in the footwall.

GEOCHEMISTRY

Surface Geochemistry

Rock

Many rock chip samples contain 0.01-0.5 ppm Au, and 5 contain 0.5-1.0 ppm. A dozen Ag values are >1 ppm. The NW side of White Alps has 15 rocks with Ag > 5 ppm. Strong Se values occur in silicified outcrops in the NE part of the target area. Hg is high, Sb is spotty high, and a few As values are >50 ppm.

Soil

Many are > 50 ppb Au; Sb is moderate (10-50 ppm); several Se are 1-5 ppm; As and Ag are generally low; Hg is spotty with several 0.5-1 ppm.

Drill Hole Geochemistry

A series of narrow but significant structurally controlled veins with sub-economic Au-Ag values were intersected in the first deep hole drilled at White Alps. The highest values occur along silicified veins and clay-sulfide veins. The highest silver assays in all holes to date (RS-446) occur in the footwall of an alteration contact (Bud epiclastics above LBT)

that is interpreted as a silicified fault. These mineralized structures are approaching Au-Ag values seen around the Rosebud deposits, and they may represent leakage from nearby deposits.

Table 1 shows significant drill intercepts, with the highest values in bold.

Table 1. Significant drill intercepts, White Alps.

Drill Hole	Interval (ft)	Depth (ft)	Au oz/st	Ag oz/st	Comment	Trace elements
RL-18	**10**	**275-285**	**0.021**	**1.87**	hole lost at 465	none available
RL-19	5	20-25	0.016	0.25	hole lost at 445	none available
	5	75-80	0.013	0.52		
	15	120-135	0.016	1.13		
	20	**195-215**	**0.052**	**1.04**	**incl 10' of 0.075 Au** — SiO2 gossan bx w/in Fault.	
RL-20	5	150-155	0.01	1.24	625' T.D.	none available
	5	375-380	0.011	0.5		
	5	395-400	0.016	0.36		
RL-21	5	550-555	0.015	<0.10	645' T.D.	none available
	5	560-565	0.012	<0.10		
	5	570-575	0.011	<0.10		
RL-79	5	260-265	0.012	0.13	705' T.D.	none available
	10	290-300	0.011	0.89		
	15	490-505	0.014	1.47		
RL-80	5	265-270	0.01	0.77	675' T.D.	none available
	5	295-300	0.012	1.11		
RL-81	Nil				805' T.D.	none available
RL-83	5	410-415	0.01	<0.10	815' T.D.	
RS-446						
precollar	1100		Detectable		Cumulative intervals	
	0.8	1756.2-1757.0	**0.037**	**32.85**	pyrarg + cp	314 As, 1140 Sb, 218 Se, 1.47 Hg
	2.4	1759.7-1762.1	0.011	**3.52**	pyrarg + cp + stib	
	2.3	1766.8-1769.1	**0.024**	**16.8**	py-ba-clay-Si	592 As, 351 Sb, 201 Se
	0.7	1817.7-1818.4	0.006	**7.15**	black silica	
	4.6	1883.2-1887.8	0.009	**4.44**		
	1.5	1887.8-1889.3	0.017	**8.42**	Si-gouge-gray-sulfidic	168 As, 65 Sb, 31 Se
	1.0	2339.4-2340.4	0.015	0.32	Sulfidic slfd bxa	342 As, 70 Sb,118 Se
RS-456	1.5	2373.7-2375.2	0.006	**2.13**		145 As, 18 Sb, 22 Se

The strongest mineralized drill holes are RS-446, RL-19, RL-20, RL-79, and RL-80. (Mineralized is defined as the longest and most intense intervals of silicified, pyritized, and argillized rock with anomalous gold and silver)

GEOPHYSICS

Resistivity High anomaly (>150 ohm-m). Resistivity defines N15E and N70W linear features. Resistivity highs correlate fairly well with subcropping silicified bodies, but their geometries at depth are somewhat contradictory. LAC's shallower drill holes intersected strongly silicified and pyritic rock, which appears to be fault-bounded on several sections.

Recommendations

DRILL HOLES Four drill sites are proposed (A, B, C, D.) **B** and **D** are recommended for drilling in this phase, and follow-ups will be contingent on results from these two holes. **B** and **D** are approximately 460 and 420 feet respectively from RS-446. Site B is in the hanging wall of the main White Alps structure down dip of RL-19 and RL-80. Both will penetrate the elevations of the strongest geochemistry in previous holes (about 4000 feet elevation). These two holes, when used in conjunction with RS-446, should provide adequate information to determine whether angle holes are justified during a second phase.

Site	Depth	Target
A	1400 rc + 600 core	HW of RL-20, down dip of White Alps
B	1450 rc + 550 core	HW of RL-19 and RL-80
C	1400 rc + 600 core	HW of RL-79
D	1600 rc + 500 core	HW of RL-18 and silica-Au-Ag-As-Se in bedrock

COST TO FIRST DECISION POINT $40,000 to 60,000 each ($80-120K)

2 deep holes (both vertical). These additional holes are needed to provide (1) offsets to mineralization in RS-446, (2) constraints on the structural setting, and (3) geochemical vectors towards higher grades.