60001831

Mining District File Summary Sheet

DISTRICT	Rosebud
DIST_NO	4010
COUNTY If different from written on document	Pershing
TITLE If not obvious	Rosebud – Short Shot – White Alps Field Sheets
AUTHOR	Vance R.; Mitchell, P.; Langstaff, G
DATE OF DOC(S)	1998
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7½'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Newmont Gold Co; White Alps; Short Shot; Rosebud Mining Co. LLC
COMMODITY If not obvious	gold; silver
NOTES	Field Sheets; geologic maps; correspondence; property summary; geology; geochemistry handwritten notes NOTE: Many overlays 53p 1 oversized plate

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 7/31/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

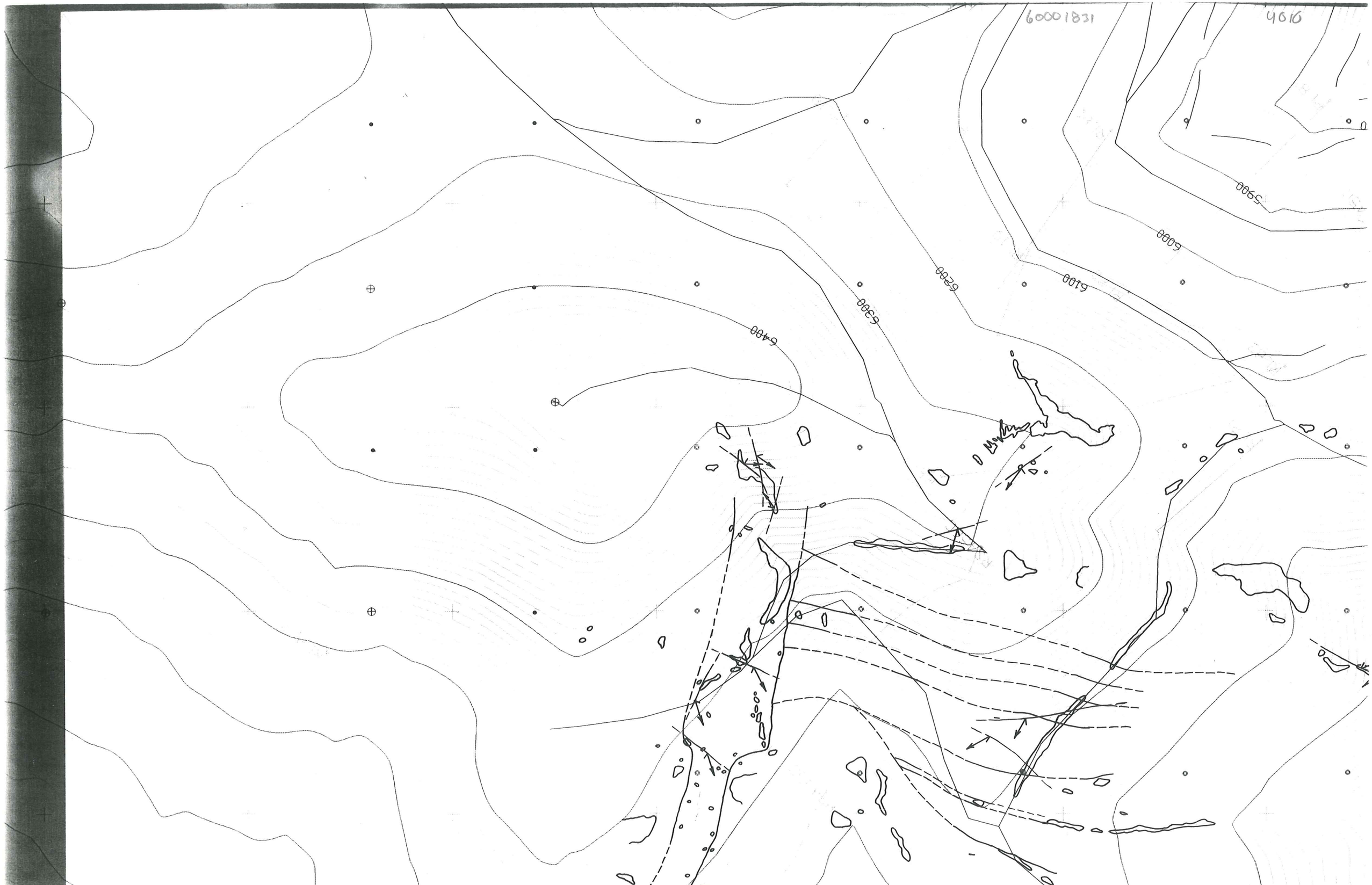
SHORT SHOT - WHITE ALPS

6000 1831

4010

60001831

4010



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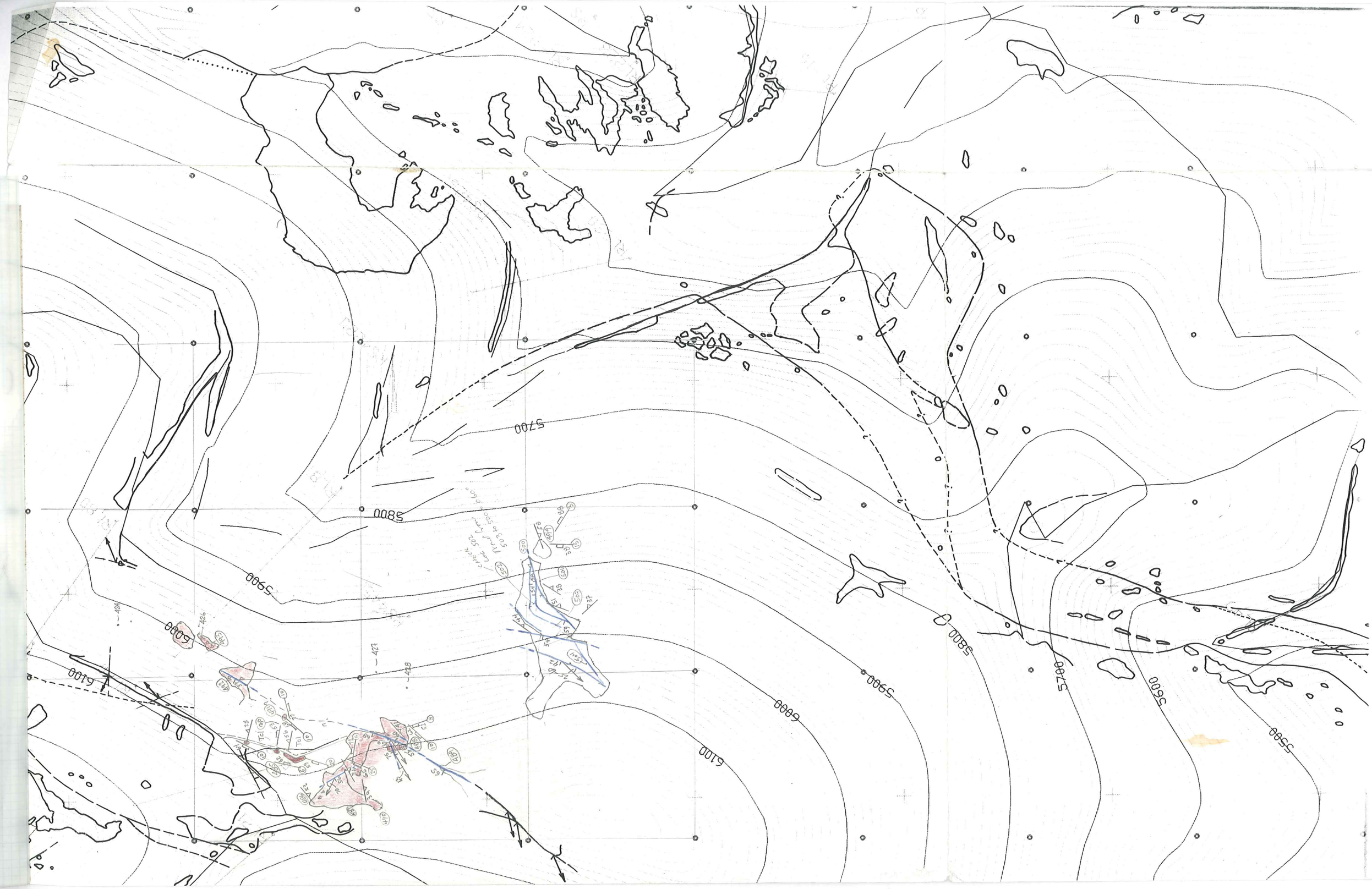
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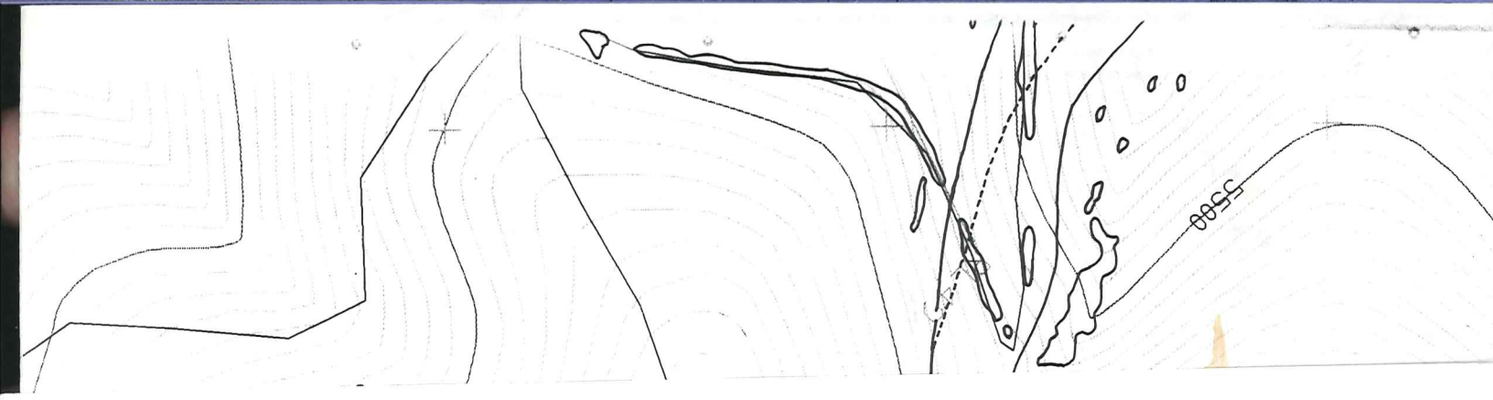
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6400
6300
6200
6100
6000
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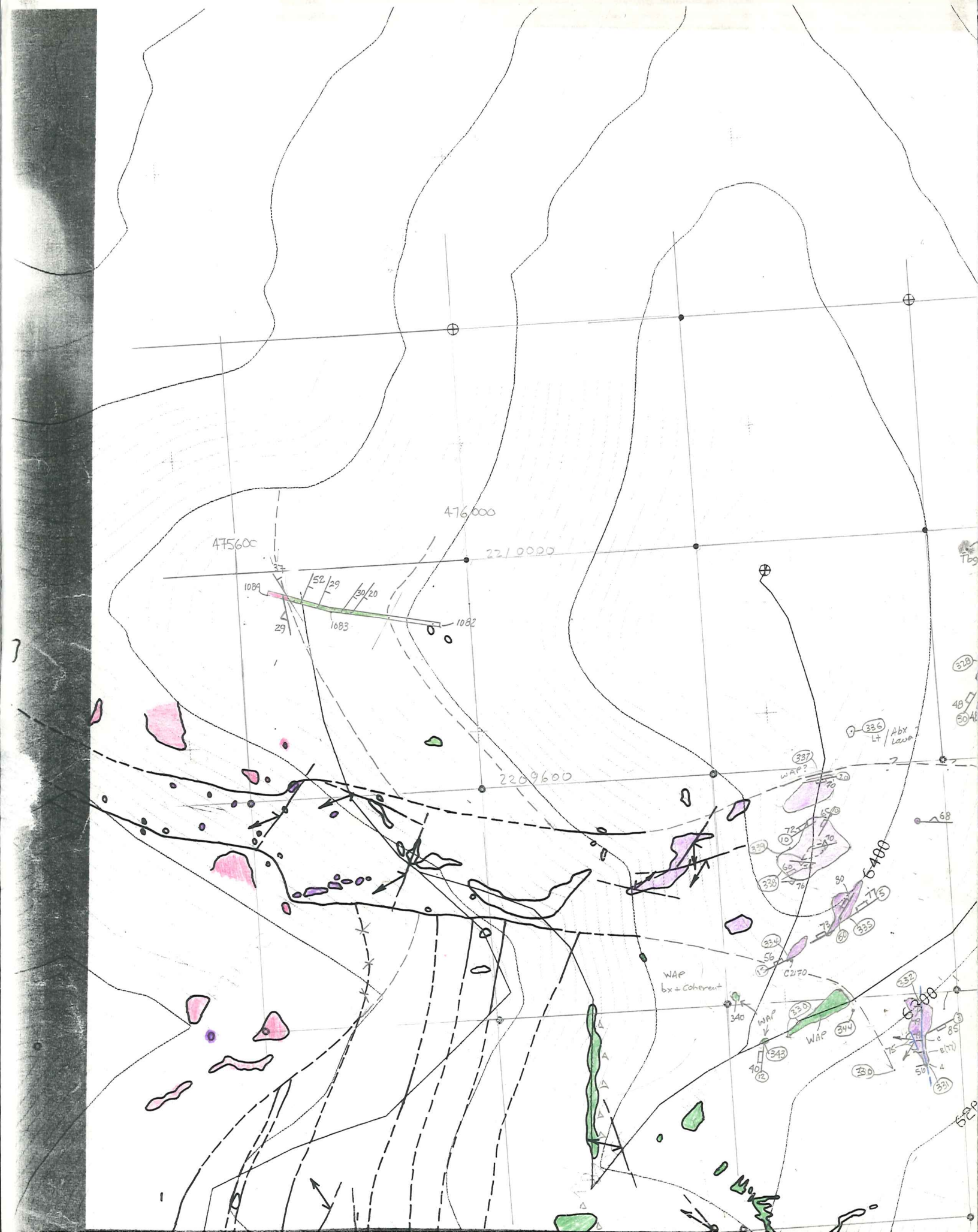
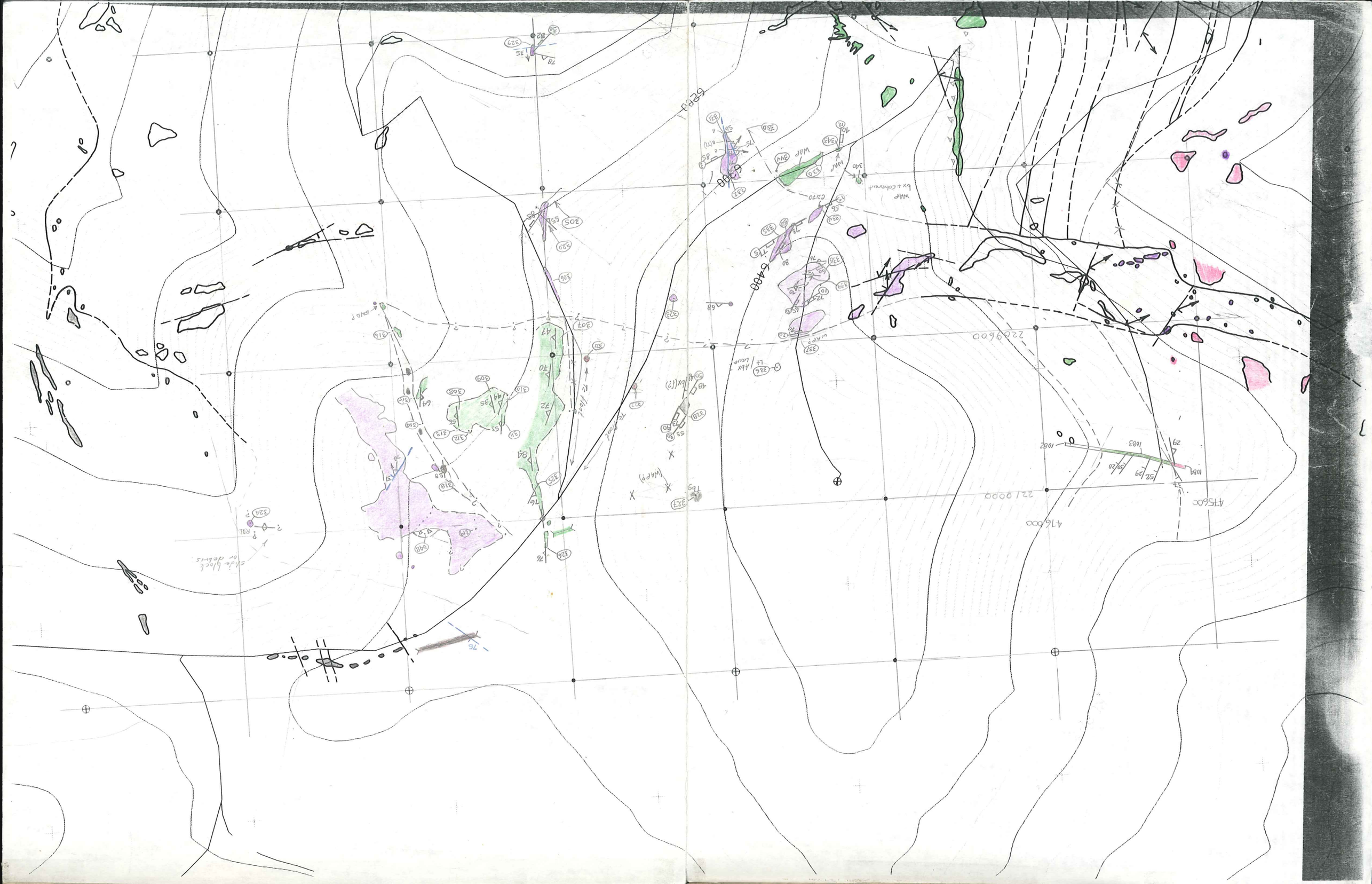
WAP
BUD WAP
WAP
WAP
WAP
RL83
RL80
RL19
RL20
RL81
RL27
RL29


476000
475600
2210000
2209600
1089
37
52/29
30/20
29
1683
1082
336
Lt / Abx Lava
337
WAP?
20
70
72
65
10
339
70
60
76
338
80
6400
75
335
73
60
334
56
C270
WAP
bx + Coherent
340
WAP
330
WAP
344
343
40
12
332
6200
85
75
E(17)
4
50
330
331
328
48
50
68



ROSEBUD STRATIGRAPHY

GROUP	FORMATION	MEMBER	COMPOSITION
LOWER SULFUR GROUP		ALLUVIUM, ELUVIUM FANGLOMERATE, COLLUVIUM, TALUS	
		CAMEL CONGLOMERATE	
		LACUSTRINE DEPOSITS	?
KAMMA MOUNTAINS VOLCANIC GROUP	CHOCOLATE FORMATION	KAMMA "ANDESITE"	?
		ROSEBUD QUARTZ LATITE	Trachydacite
		BAGER MEMBER	
		CHOCOLATE LAPILLI TUFF	?
		CHOCOLATE LAVAS	Trachydacite
		ROSEBUD MEMBER	
		SOUTH RIDGE LAVAS	
		BUD MEMBER	Rhyolite
		WILD ROSE MEMBER	Alkali Rhyolite
		LBT LAVAS	Trachydacite
		MINE TOS	?
	DOZER FORMATION		Alkali Rhyolite
	OSCAR FORMATION	TCS	
		OSCAR "ANDESITE"	?
		OSCAR MEMBER	?
	BARREL SPRINGS FORMATION	BARREL SPRINGS MEMBER	Rhyolite
		RABBITHOLE RIDGE MEMBER	Rhyodacite
AULD LANG SYNE GROUP	UNDIFFERENTIATED		

Table 1. South Ridge stratigraphy.

Formation	Unit	Composition	Mode of Emplacement
		Alkali Granite	Dome
Chocolate	Badger		Lacustrine and terrestrial volcaniclastic deposits
	Chocolate Peak Alkali Granite	Alkali Rhyolite	Lava flow
	Rosebud Quartz Latite	Quartz Latite	Lava flow and intrusion
			Volcaniclastic and pyroclastic deposits
		Obsidian to cryptocrystalline trachyte Trachyte	Lava flow
		Spherulitic trachyte	Lava flow
			Lacustrine volcaniclastic deposits
			Lahar
		Alkali Granite	Talus breccia
		Alkali Granite	Dome
		Trachyte	Lava flow
			Lacustrine volcaniclastic deposits
		Trachyte	Lava flow
		Lithic-rich, crystal- and pumice-poor trachyte ignimbrite	Ash flow
			Collapse breccia
		Moderately welded trachyte ignimbrite	Ash flow
			Volcaniclastic deposits
		Moderately welded trachyte ignimbrite	Ash flow
			Volcaniclasic deposits
	Wild Rose Trachyte	Spherulitic trachyte Weakly porphyritic trachyte	Lava flow
		Tuffaceous sandstone and siltstone	Tuffaceous siltstone Coarse-grained tuffaceous sandstone
		Aphyric alkali granite	Lacustrine(?) Talus breccia
Dozer		Aphyric alkali granite	Auto breccia
	Dozer	Aphyric alkali granite	Dome
Oscar	Oscar Andesite	Trachyte	Lava flow
TCS			Lahar

WILDROSE QT Latite (LBT?) Tc-like, ~~no phenos~~, SOFT, muddy color
Tr's of Bio, Qt, sani phenos

SOFT, yel-grn, intrusive, 8-9 clay alt
HAS NUMEROUS FRAGS OF WALLROCK

EPICLASTIC / INTRUSIVE CONTACT
IS APPROX

STRONGLY CLAYALT EPICLASTIC

WELDED IGN
HARD (EPICLASTIC)? 8-14" THICK, DRK-Silic or
WELL INDURATED,

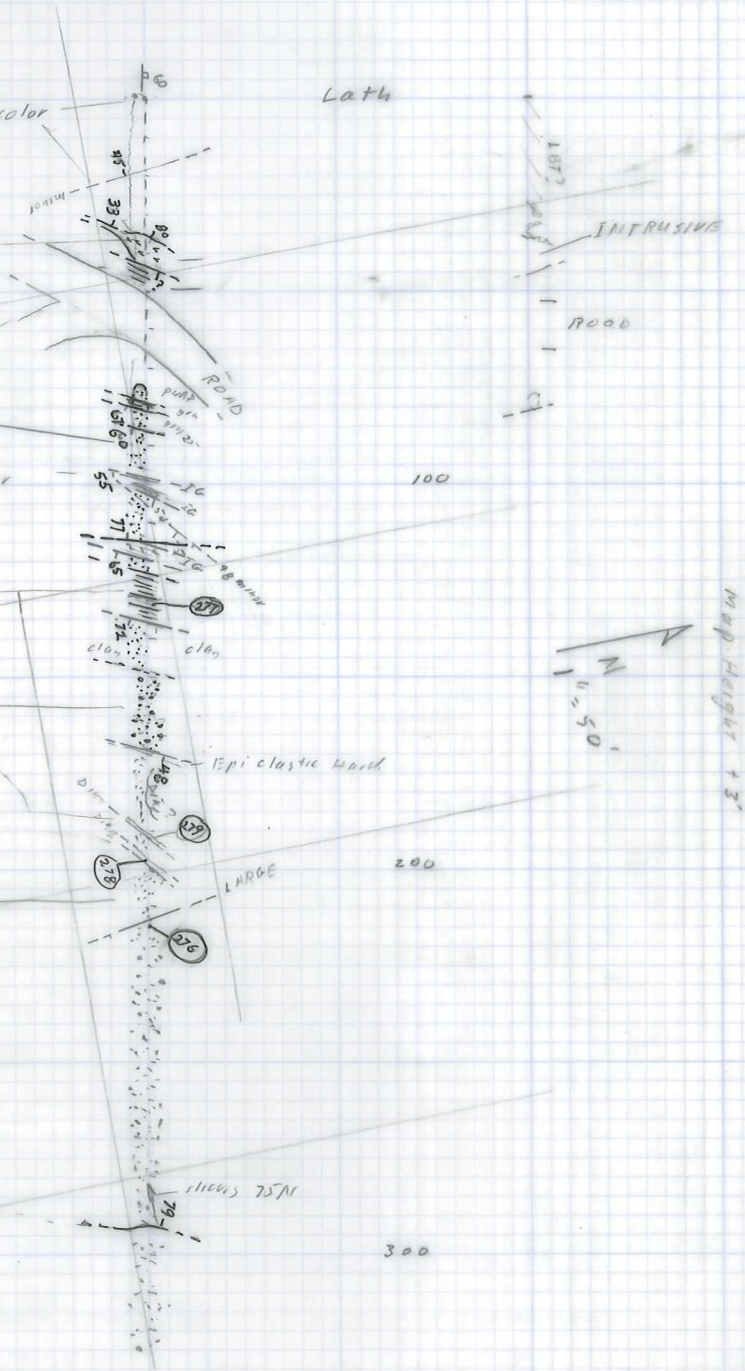
BUD EPICLASTIC - PALE GRN FINER GRN
sandstone

CLAY ALT EPIC w/ PEBB & COBB SIZE
FRAGS

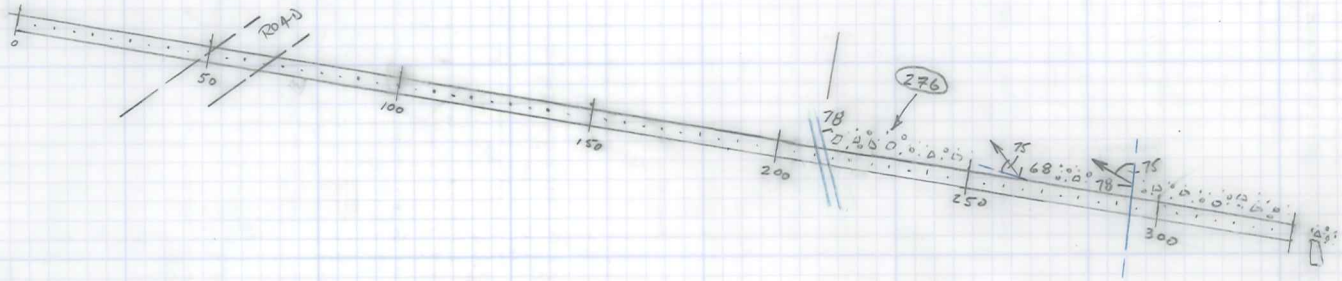
? ROSEBUD QL? DIMES F-XLN BASALT LIKE APPEARANCE
VERY F-XLN MATRIX w/ Bio, smoky & clear Qtz,
Plag & SANI PHENOS

COARSE ASH TUFF, OLIVE GREEN
Bio Rich

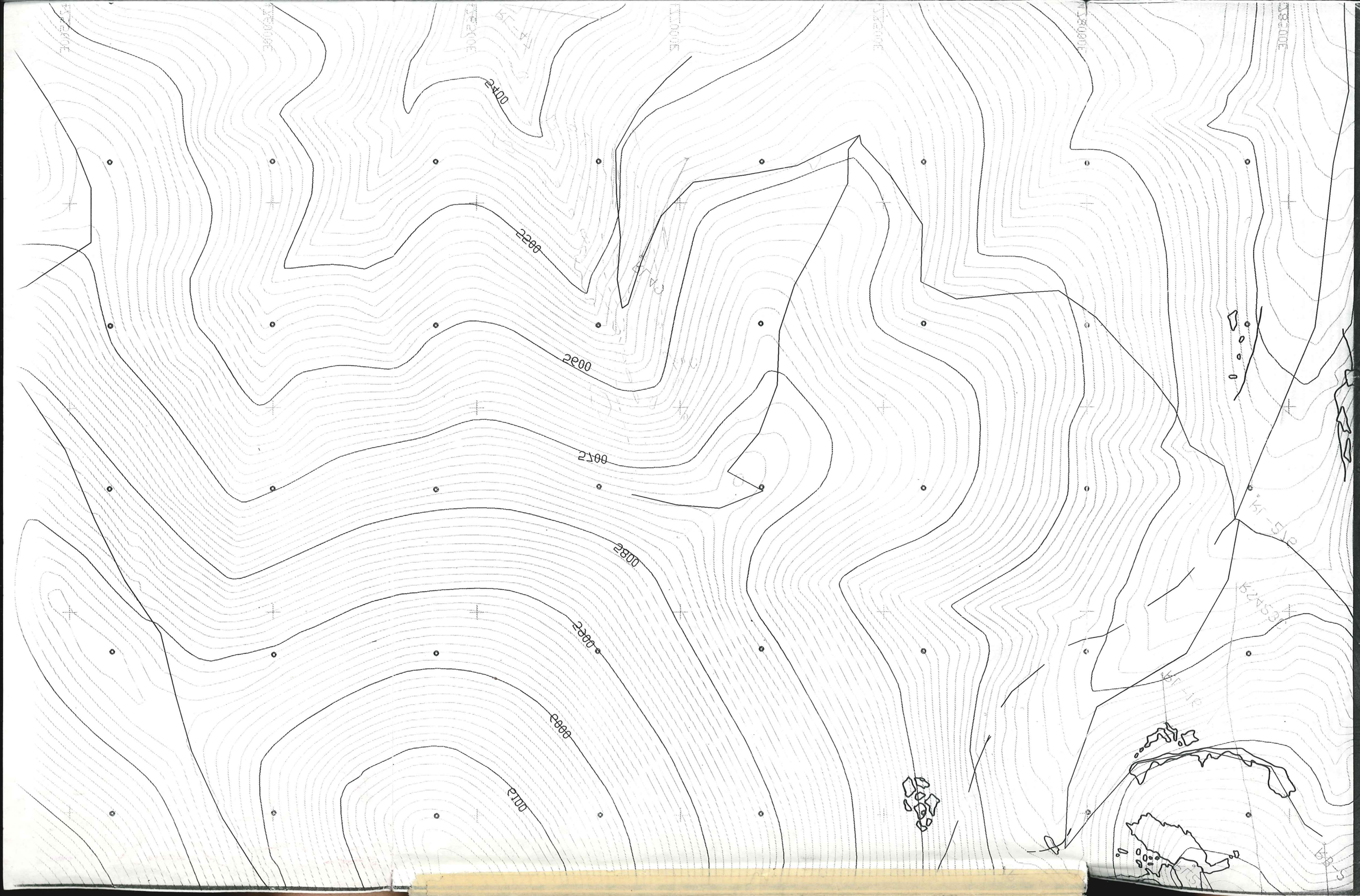
LITHIC RICH TUFF, PALE GREEN, ~~PROB~~ POSS IGN.
FINE ASH SIZE MATRIX Frags lapilli size



WT. ALPS TRENCH
ROSE BUD
1" = 50'


0
50
ROAD
100
150
200
78
276
75
68
78
75
250
300

Hole No.	JK contact	Surveyed Depth	Incl.	Vert Depth	Elev of Collar	Elev of JK
RS-406	1668'	1626.5' @ 1650'	70°	1643'	5381	3738
RS-408	2257'	1993' @ 2000'	83°	2248'	5464	3216
RS-424	2286'	2146.5' @ 2250'	77°	2182'	5450	3268
RS-423	2214'	2025.5' @ 2200'	67°	2038'	5356	3318
RS-421	1664'	1634.5' @ 1650'	76°	1648'	5280	3632
RS-425	2395'	2396' @ 2400	86°	2391'	5650	3259
RS-407	1415'	none	~90°	1410'	5177	3767
RS-410	1118	1099 @ 1100'	86°	1117'	5347	4230
RS-415	968	949 @ 950'	87°	967'	5309	4342
RS-418	1040	999 @ 1000'	88°	1039'	5328	4289
RS-401	2365	2247.5' @ 2250'	88°	2362	5710	3348
RS-446	3026	2997.6 @ 3000'	88°	3024	6110	3086
RS-448	1105	1095.1 @ 1100'	84°	1100	5335	4235
RS-449	1047	999.5 @ 1000'	87°	1046	5655	4309
RS-451	1165				5725	4560
RS-452	967	948 @ 950'	84°	985	5345	4360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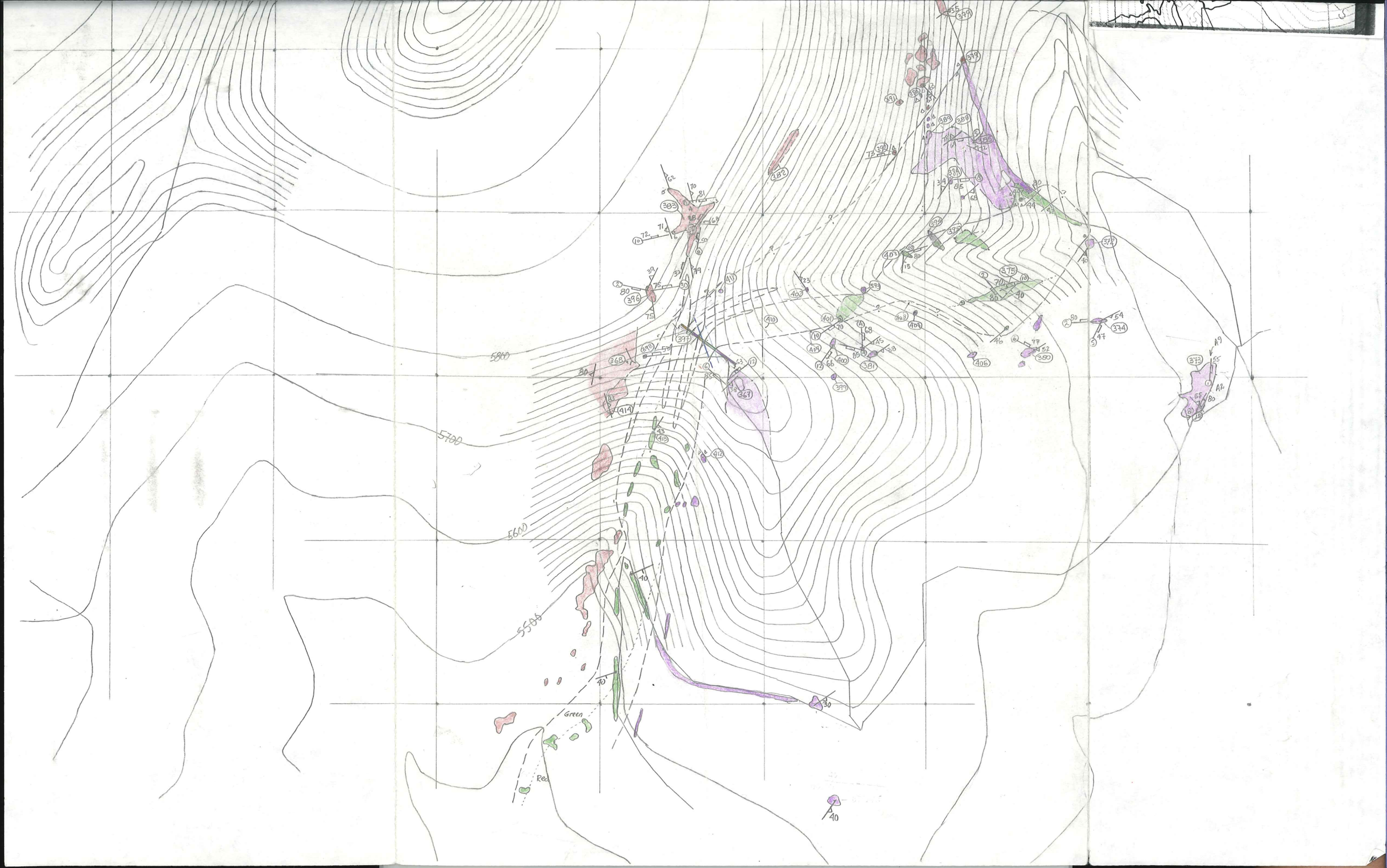
2200
2000
2100
2800
2900
2000
2700

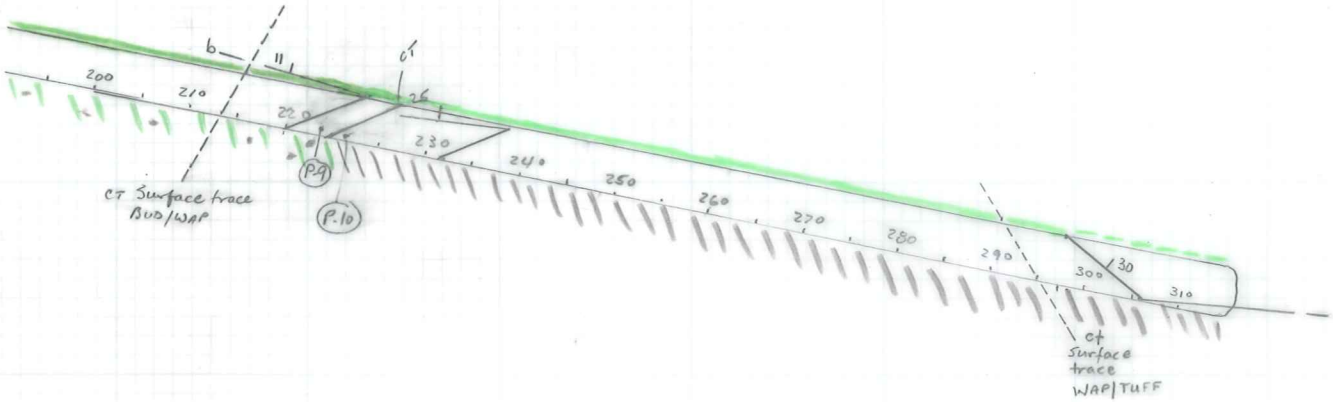

5800
5700
5600
5500
Green
Red

WEST

UPPER SHORT SHOT TRENCH

N

EAST



WEST

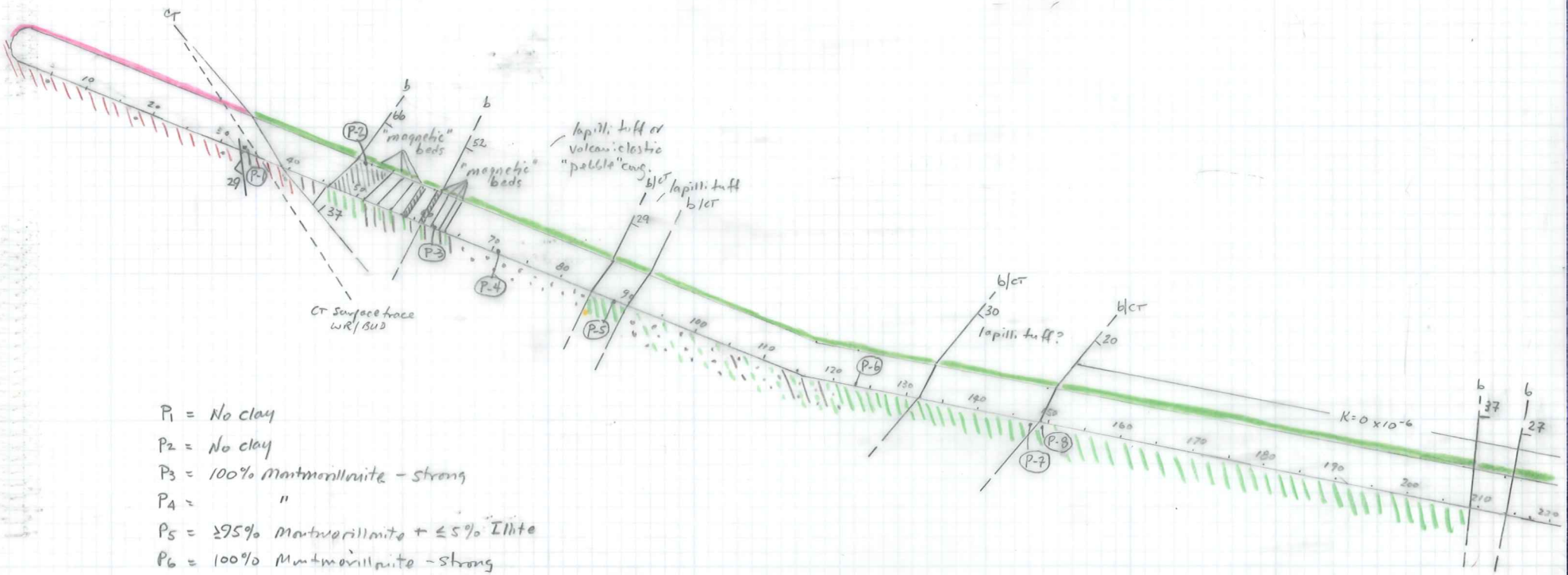
UPPER SHORT SHOT TRENCH

N

EAST

— strong
- - - med
. . . weak

— hematite
— white/grey "clay" = Kaolinite ± gypsum
— green "clay" = montmorillonite



P1 = No clay

P2 = No clay

P3 = 100% Montmorillonite - strong

P4 = "

P5 = ≥95% Montmorillonite + ≤5% Illite

P6 = 100% Montmorillonite - strong

P7 = "

P8 = "

P9 = "

P10 = rock = 100% Kaolinite - Strong
White Spots = 100% Gypsum = monomineralic

> Association = Kaolinite - gypsum

N

Trench D1

D1-1 = PIMA SAMPLE

weak greenish clay = strong Montmorillonite

weak white clay = w/moderate kaolinite

moderate hematite

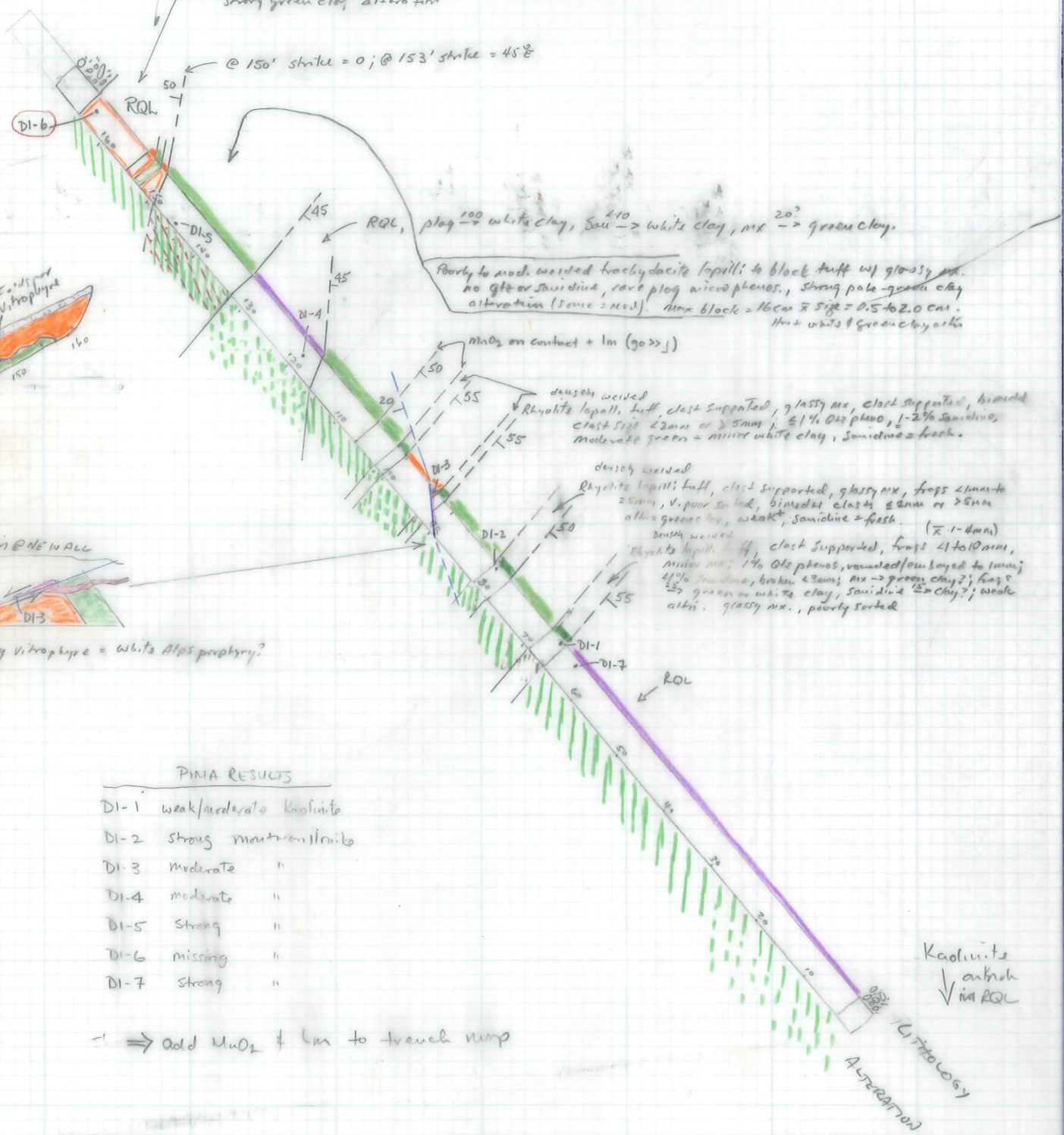
Densely welded rhyolite lapilli tuff

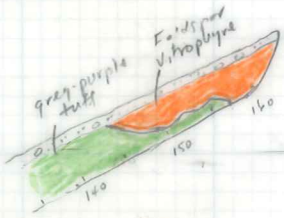
Poorly welded rhyolite lapilli tuff

Kirk & Charlie found Sanidine

Feldspar vitrophyre; 20% euhedral-subhedral pl ≈ 1-2mm; no qtz, biotite = trace?
strong green clay alteration

@ 150' strike = 0; @ 153' strike = 45°E





D1-3 = plag vitrophyre = White Alps porphyry?

PIMA RESULTS

D1-1	weak/moderate	Kaolinite
D1-2	strong	montmorillonite
D1-3	moderate	"
D1-4	moderate	"
D1-5	strong	"
D1-6	missing	"
D1-7	strong	"

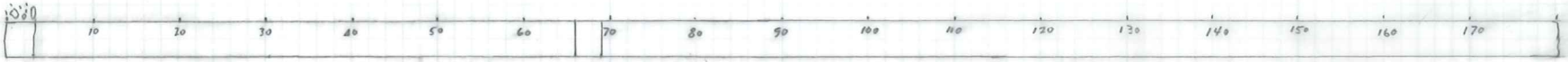
⇒ add MnO_2 & lm to trench map

	North	East	Elev.	
1088	2210033	477182	6287.823	TRENCH
1087	2210044	477220.1	6281.22	TRENCH
1080	2208920	475396.7	6078.47	TRENCH
1079	2208912	475437	6082.256	TRENCH
1078	2208903	475471.2	6085.36	TRENCH
1086	2208506	476369.8	6183.344	TRENCH
1085	2208455	476473.5	6167.339	TRENCH
1077	2208848	475722.9	6133.958	TRENCH
1084	2209958	475648.4	6256.706	TRENCH
1083	2209924	475758.3	6262.477	TRENCH
1082	2209885	475944.4	6310.025	TRENCH
1090	2210311	477575.9	6227.789	TRENCH
1089	2210280	477441	6226.171	TRENCH

SE

NW

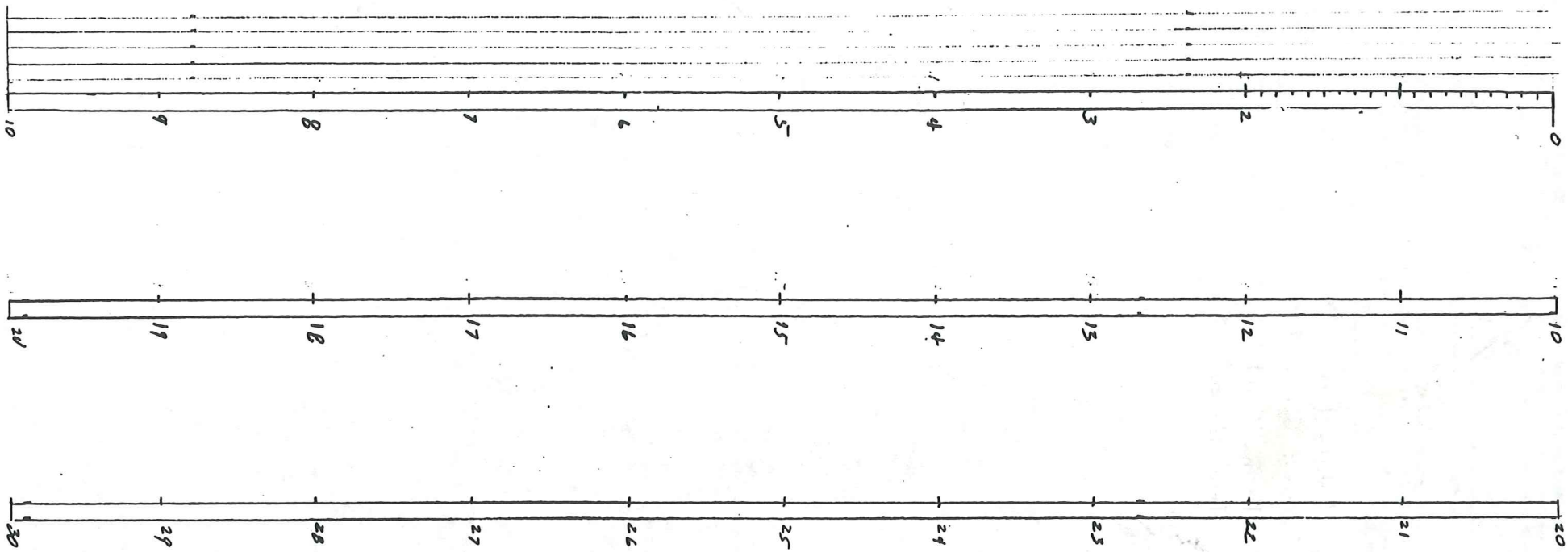
TRENCH ≈ 320°

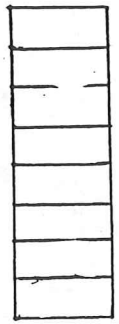


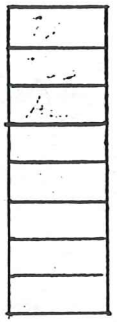
Qal	Lemon Yellow	735½
Qc/Qoa	Goldenrod	755
Tlb	Light Peach	757
Tbg	Warm Grey	734½ = Sienna Brown
Tct	Tuscon Red	746½
Tbud	Apple Green	738½
Tlbt	Process Red	743½
Tos	Aquamarine	737½ = brown — Tgaccentrate = Purple?
Td	Orange	737 lavender
Toscar	Olive Green	739½
ALS	Cool Grey	747½

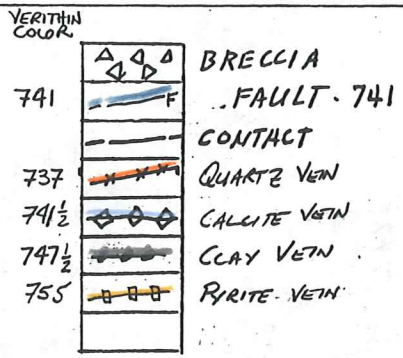
W4P	Dahila Purple	752	= True Green
KA	Grass Green	738	= solid
RQL	Parma Violet	742½	~~Dark~~ orange
LP	True Green	751	~~orange~~ aquamarine

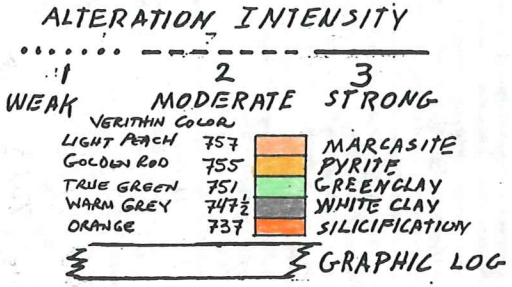
Sienna Brown = Badger











	COLLAR COORDINATES	START HOLE	FINISH HOLE	LOGGED BY
	NORTH			
	EAST	HOLE TYPE	SURVEYED TO	
	ELEV			
DRILLING CO.	DRILLER	BEARING	ANGLE	T.D

ROSEBUD MINING COMPANY, LLC

PAGE 1 of

HOLE#

741 — Faults

737 — Quartz veins, silicification → Silicification 0-9

734½ — Argillic

741½ — Calcite

738½ — Epidote

739 — green PHYLLOSILICATE

755 — pyrite | massive

746 Limonite - boxwork □ leached
dark brown • present

744 — red chalcopyrite

turcan red = hematite s - specularite

S8

solid

6-8

7-9 = Jasperoid

4-7 = strong silicification

1-3 = weak silicification

0

P
M
H

1 — station w/notes

2845 R

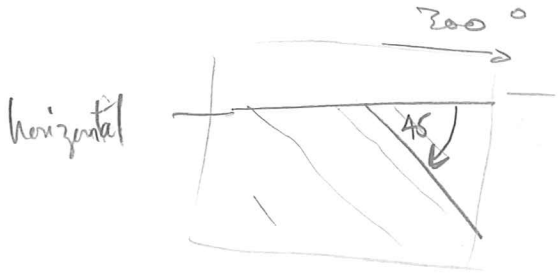
Samples
V vein (only)
R rock-chip
G grab
F float

9 Jasp
7-8 strong
4-6 mod
1-3 weak
0

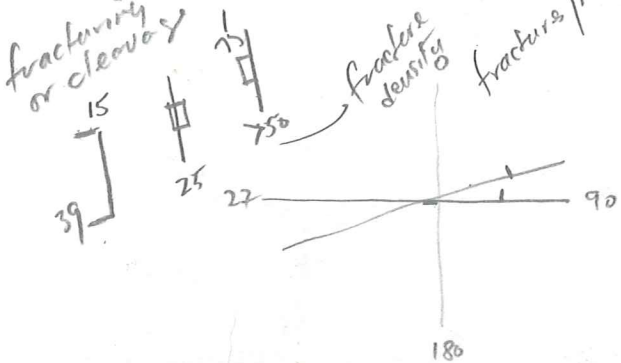
vein / stockwork
S stockwork

Strike + dip
300, 50 W ; rake 300 @ 45

Rake



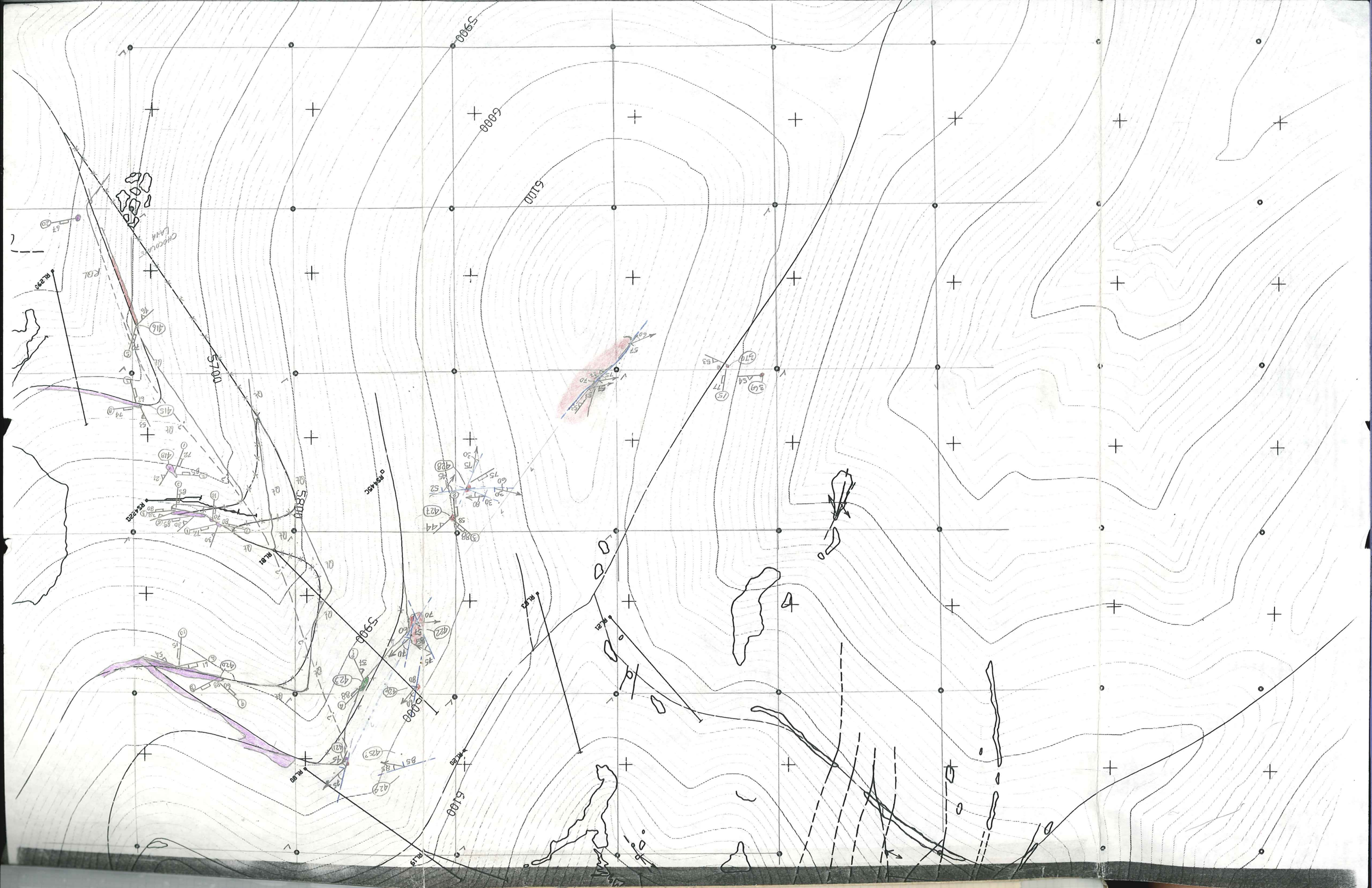
fracturing or cleavage



flow-banding or foliation

30 bedding

6200
6100
6000
5900
5800
5700
5600
65
47
35
50
13
62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6000
6100
5700
5800
5900
6000
6100
Rl.29b
Rl.28
Rl.27
Rl.26
Rl.25
Rl.24
Rl.23
Rl.22
Rl.21
Rl.20
Rl.19
Rl.18
Rl.17
Rl.16
Rl.15
Rl.14
Rl.13
Rl.12
Rl.11
Rl.10
Rl.9
Rl.8
Rl.7
Rl.6
Rl.5
Rl.4
Rl.3
Rl.2
Rl.1
Chipoque Lava
Rl.29a
Rl.28a
Rl.27a
Rl.26a
Rl.25a
Rl.24a
Rl.23a
Rl.22a
Rl.21a
Rl.20a
Rl.19a
Rl.18a
Rl.17a
Rl.16a
Rl.15a
Rl.14a
Rl.13a
Rl.12a
Rl.11a
Rl.10a
Rl.9a
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Rl.7a
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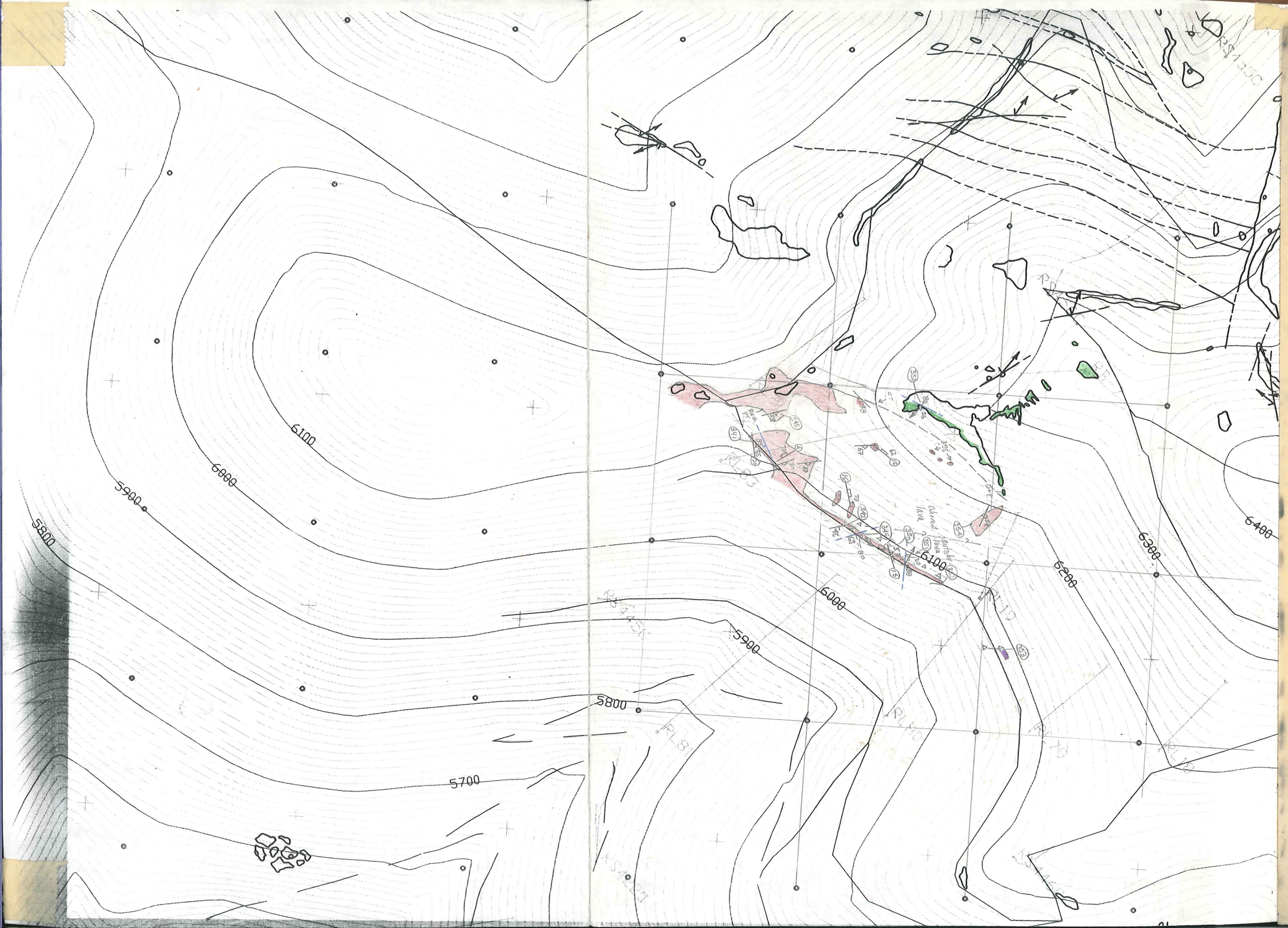
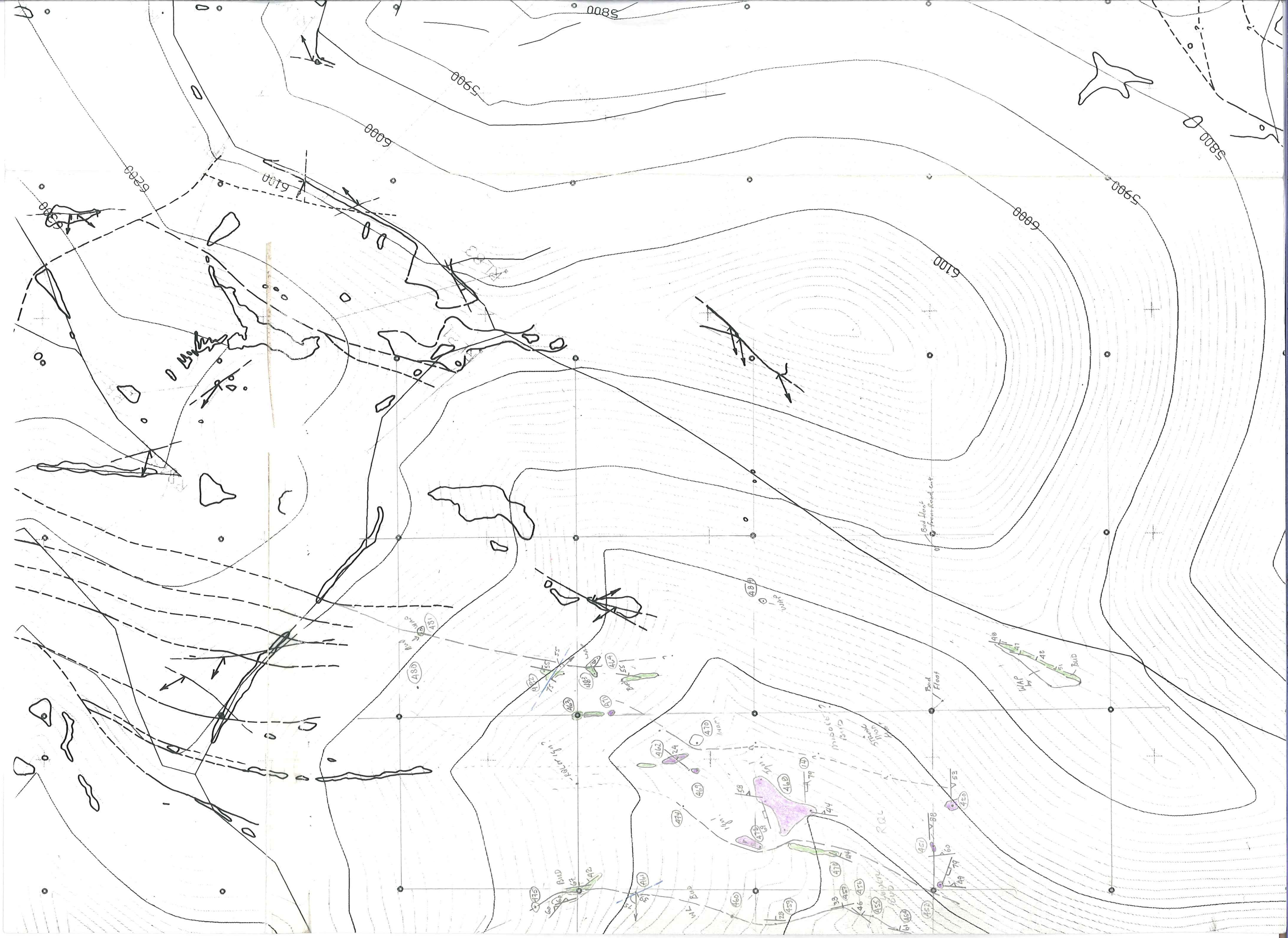
Rl.4a
Rl.3a
Rl.2a
Rl.1a


6100
6000
5900
5800
5700
6100
6000
5900
5800
6400
6300
6200
6100
Chert lava
Pumice lava
RA 135C
RA 145C
RA 145A
RA 145B


5800
5900
6000
6100
6200
5800
5900
6000
6100
Bud float from road cut
Bud Float
481
480
482
55
75
55
WAP
483
464
Bud
55
463
471
WAP
470
462
24
Roof of ign?
469
474
ign
472
69
468
58
44
14
79
Middle? Bud
Strong brec hor
RQL
451
88
60
79
49
450
53
452
454
455
456
457
Lower Bud
46
33
61
473
44
459
28
460
WL Bud
461
30
51
475
60
60
67
42
Bud
WAP bx
48
47
48
51
Bud

6400
6300
6200
6100
6000


RL227
Qc
38
40
43
67
KA
RQL
302
45
15
67
304
5Arg
5Arg
50
82
37
303
79
5Arg
5Arg
Qc
5Arg
68
50
50
6400
6300
6200
6100
RB-7
RL18
RL79
RS346C
RL19
RL80

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**	
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.

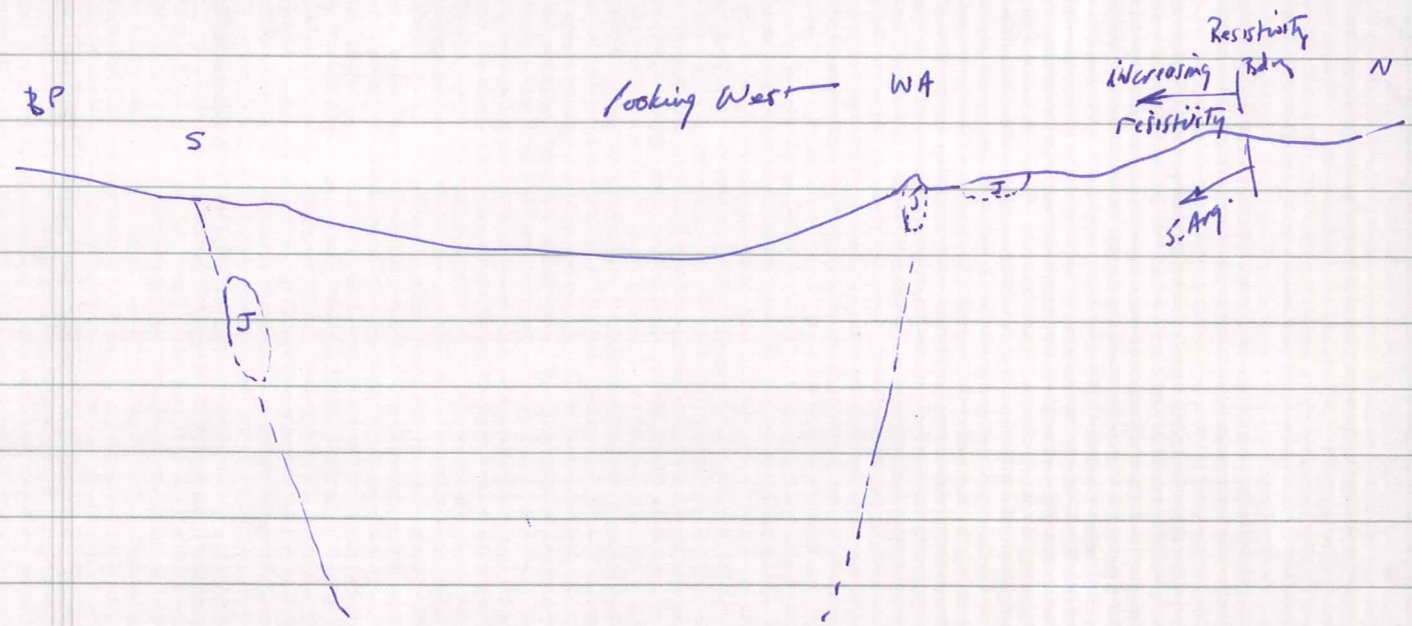
Rosebud Meeting 27-4-99

MOTHER LODE = 3 holes ; 1 Vertical, 2 angle

Jim R. will only be out at Rosebud for two more days.

II. White Alps

1. White Alps Structure

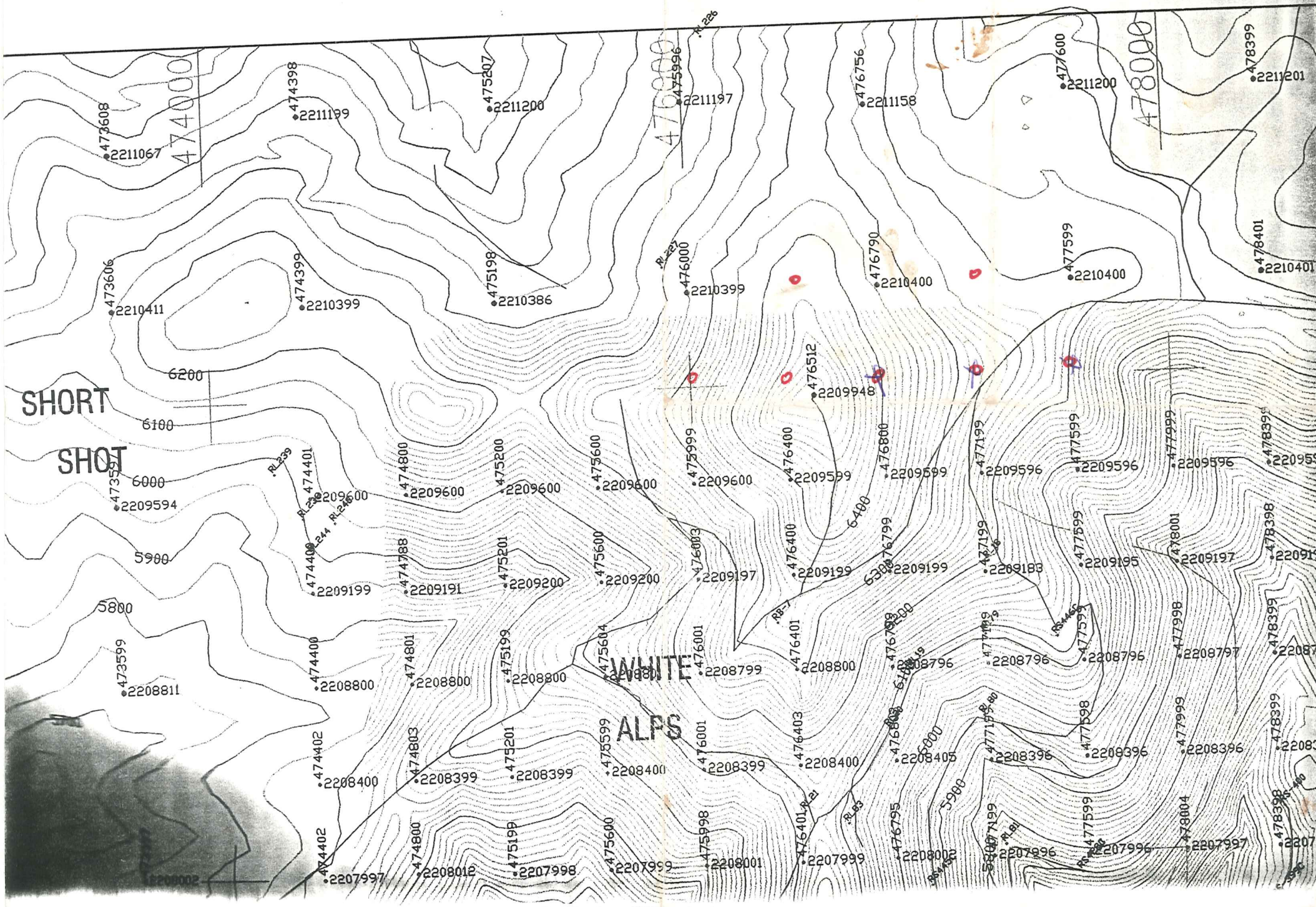


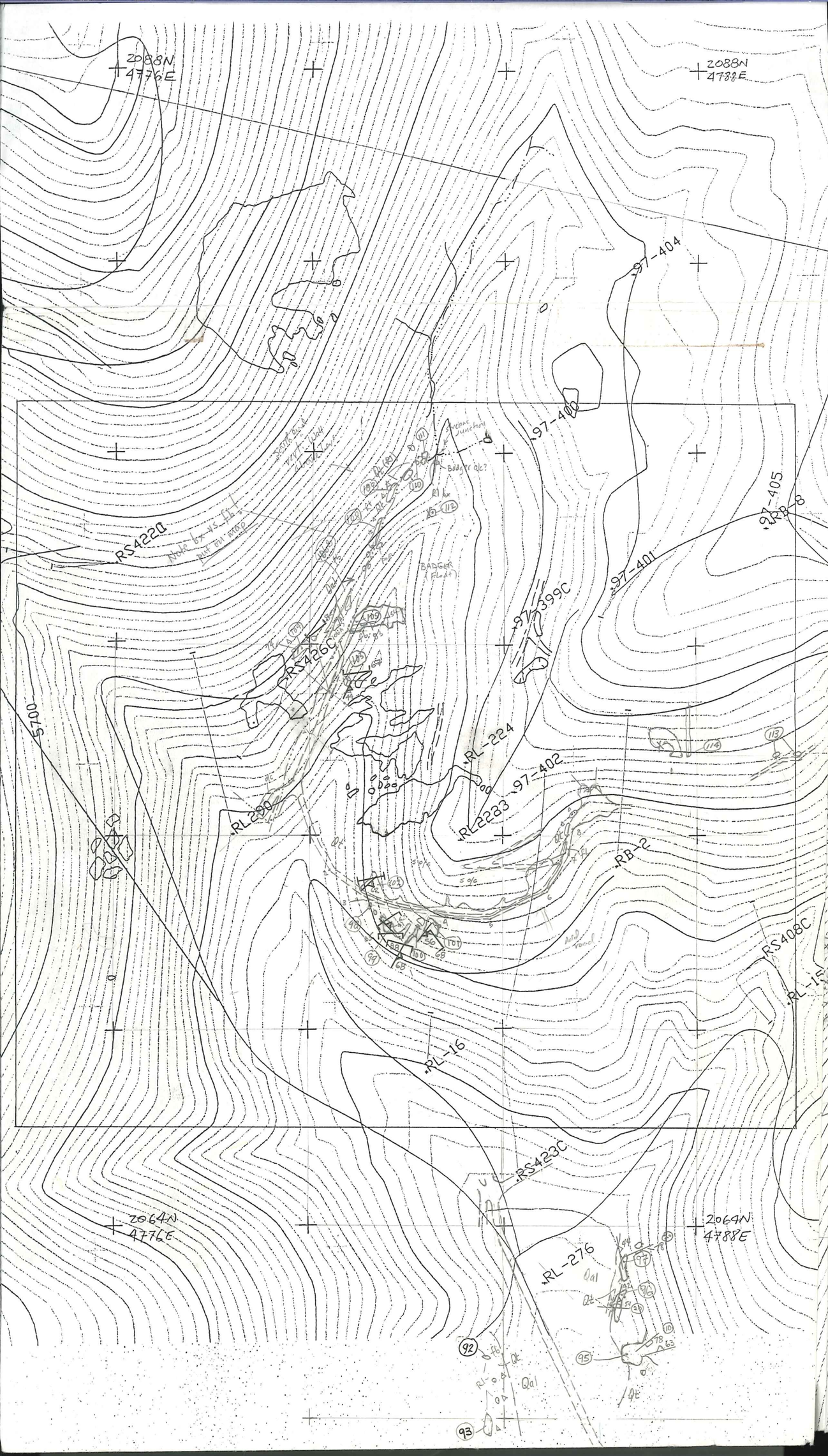
$40 to 60K/hole Two holes to begin with

Drilling E or NE (070°) structures

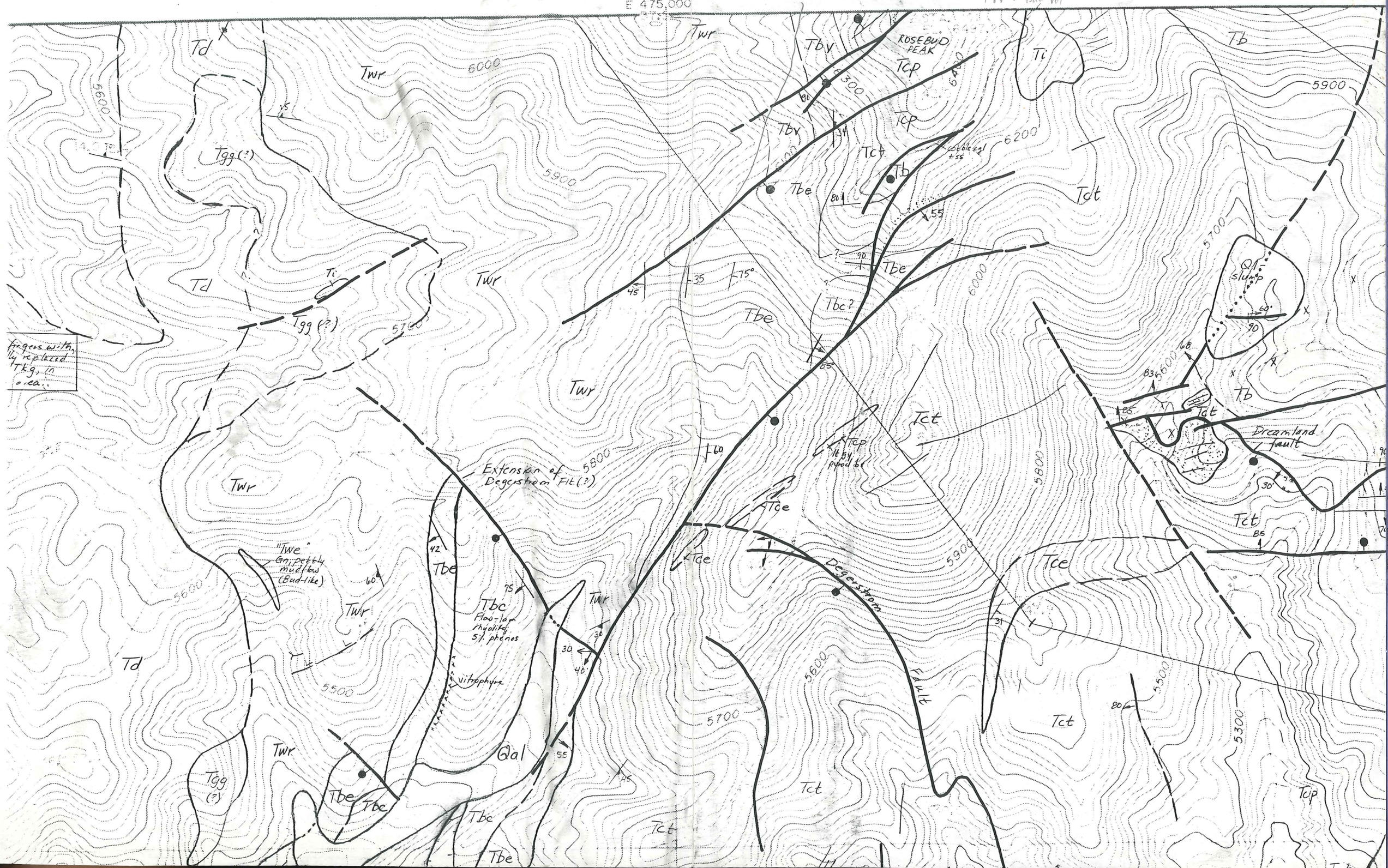
Is there a Cave Fault somewhere at depth

Set these 7 today




2088N
4776E
2088N
4788E
97-404
97-400
97-405
RB-8
97-401
97-399C
RS422C
RS426C
BADGER FLAT
RL-224
RL2233
97-402
RL280
RB-2
RS408C
RL-15
RL-16
RS423C
RL-276
2064N
4776E
2064N
4788E
5700
Qal


Badger vbx/cong
Badger vbx/cong
Qt
CULTURAL BDRY
Discovery DRAINLAND #1
Cultural Bdry
Red s/oc f f
brown
DH
CT Red-Brown (N) & Brown (S) Qt
s/oc?
wk popcorn texture
o/c = rock bare
CULTURAL BDRY
RS-425
SURVEY MARK
EDGE OF SHEET
2072N 4792E
2072 4096
2072N 4800E
2072N 4804
NWRA-95V
NWRA-94V
RS-443
2068N 4792E
2068N 4800E
2068N 4804E


Tbe = Bud Epi
Tbv = Bud Vol
E 475,000
ROSEBUD PEAK
Td
Twr
Tbv
Tcp
Ti
Tb
5900
6000
6300
6400
5900
Tgg(?)
Tbv
Tct
Tb
cobbles+ss
6200
Tbe
Tct
55
80
90
Td
Ti
Tgg(?)
5700
Twr
45
35
75°
Tbe
Tbc?
Tbe
Ql slump
69°
90
fingers with, lly replaced Tkg, in area
Twr
85
6000
68
83
85
Tb
Tct
Dreamland fault
Tcp
lt gy ppod bx
5800
Tct
Twr
Extension of Degerstrom Flt(?)
5800
60
30°
"Twe" Gn; pebbly mudflow (Bud-like)
60
42
Tbe
Tce
Tce
5900
Tct
85
5600
Twr
75
Tbc
Flow-lam rhyolite, 5% phenos
Twr
30
30
40
Degerstrom
Tce
31
Td
5500
vitrophyre
5600
Fault
5700
5500
80
Tct
5300
Qal
55
45
Twr
Tgg (?)
Tbe
Tbc
Tbc
Tct
Tct
Tcp
Tbe

NEWMONT GOLD COMPANY

GEOLOGY DEPARTMENT
WINNEMUCCA EXPLORATION

Telephone: (702) 625-5600
Facsimile: (702) 625-5655
861 West 6th Street
Winnemucca, Nevada 89445

MEMORANDUM

October 31, 1998

TO: **RANDY VANCE**

FROM: **PETER MITCHELL**

SUBJECT: **OCTOBER MONTHLY REPORT**

cc: Rick Lisle, Kurt Allen, George Langstaff, Pete Rogowski, File

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ROSEBUD

Prospect Development

White Alps and Short Shot

Surface mapping in the White Alps-Short Shot area is nearly complete, but only the southwest trench has been mapped. The remaining two trenches, the road cut between the White Alps-Brown Palace saddle and drill site RS-446, and the surface between RS-446, -447, 456 and Rosebud Peak will be mapped during November. An alteration overlay will be completed in December after thin section, PIMA and x-ray diffraction data are collected.

Figures 1 and 2 show the trends and down-dip projections of the major geologic units exposed on the surface. Areas of intense silicification (jasperoid) and those with strong to intense argillization are shown on the cross section. Figure 3 is a schematic rendition of the geology exposed in the road cut ~400 feet south of the line of section. The geology shown in figures 1 and 2 is an interpretation of the details in Figure 3 combined with the geology of the southwestern trench (Fig. 4). The units exposed at White Alps and Short Shot include volcaniclastic, pyroclastic and effusive deposits. Because of the occurrence of welded(?) ignimbrite horizons within the "bedded" sequence and the basal contact of these units with "planar laminated" trachytic lava(?), these rocks probably are correlative with the western South Ridge section (Table 1).

+ what ?

The most significant difference between my interpretation of the White Alps-Short Shot geology is the recognition of a major and several minor dikes of Rosebud Quartz Latite, and the lack of significant faulting. There appears to be one major fault (White Alps) in the area, although no single

one

fault plane exist to connect the jasperoid bodies (Fig. 1). The White Alps "fault" appears to be a north-northeast-trending zone overprinted by strong to intense east-northeast- to east-trending, north-dipping jointing. It is likely that the west-northwest-trending Rosebud Quartz Latite dike occupies a major tectonic zone, and the strongly developed jointing north of the White Alps probably reflects the lateral extent of this zone. The timing between the White Alps fault zone and the easterly-trending fracture system is not clear and warrants additional evaluation. Because the White Alps fault zone and zone of intense jointing are variably silicified and locally form jasperoid bodies, tectonism apparently predates hydrothermal alteration and mineralization.

South Ridge

In September, Peter Rogowski and I collected several rock-chip samples during a reconnaissance traverse through the *South Kamma* prospect which occupies the southeastern corner of South Ridge. During this traverse we noted that silicification extends northward from the large zone of strong silicification and jasperoid outcrops for more than 3,000 feet. Silicification, which diminishes progressively northward, occurs as pervasive alteration in the south to millimeter-scale replacement along bedding planes in the north. Argillization is present, but is less intense than in the western portions of South Ridge and north of the Rosebud mine. Detectible gold was present in only two samples, with a maximum of 400 ppb, but all of the samples contained detectable As and Sb, and all but one contained detectable Se. Mercury and molybdenum were also present in several of the samples.

The rocks exposed on the south-central portion of South Ridge (*Rosebud Canyon*) are intensely argillized over large areas, and the two samples that I collected contained anomalously high trace elements (As, Sb, Se, Hg) and one contained detectable (350 ppb) gold. Favorable host (LBT- and Dozer-like) rocks are present, as are minor through going(?) faults and fracture zones. Because previous exploration in this area was apparently limited to reconnaissance-style geologic mapping and rock-chip sampling, and minor soil sampling, additional geologic mapping and geochemical sampling is needed to identify drilling targets.

At the *Vertex* prospect on the Western end of South Ridge, Peter Rogowski has found the geology to be much more complicated than previously mapped. He has identified several dike-like intrusions, multiple "Dozer" units separated by erosional surfaces, and auriferous(?), black-matrix (pyritic) hydrothermal breccias. Where drill hole 96-395 intersected one of these black-matrix breccias, the interval assayed 0.04 ounce per ton gold. Most of the western end of South Ridge is weakly argillized, and there are small silicified zones on the northern side.

The results of preliminary geologic mapping and geochemical sampling in the South Kamma, "North Rosebud Canyon" and Vertex prospects have bolstered my enthusiasm for ardently prospecting South Ridge. As discussed in our meeting with Dave Groves, it is important that we augment the soil and rock-chip sampling programs completed during previous exploration on South Ridge. It is important that we sample all of South Ridge as soon as possible. I would like to use Holly McLaughlin (*Geotemps*) to help Peter Rogowski and me sample and map South Ridge, and will contact her to see if she is available in November and December.

District Evaluation

Stratigraphy

The Rosebud stratigraphy is complex in detail, but on a district-scale it appears to be a relatively simple repetition of effusive volcanism followed by erosion, lacustrine and subaerial sedimentation, and pyroclastic eruption (Table 1). Following the guidelines set out by Dr. Mahood during her visit earlier this month, Peter Rogowski and I are formulating a district-wide stratigraphy for the Rosebud area. Some individual units, particularly the ignimbrites, may occur throughout the district, but many lithologies have a more limited distribution. To circumvent correlation problems between the less extensive units, our revised stratigraphy is base on packages of rocks that represent specific geologic environments (sequence stratigraphy) with a relatively extensive spatial distribution. We plan to have a preliminary version of the revised stratigraphy completed before the end of the year. The preliminary stratigraphy for South Ridge is shown in Table 1.

Structural Geology

Our understanding of the interrelationship between faults, joint swarms, hydrothermal alteration and precious metal mineralization within the Rosebud district is insufficient to aid in the delineation of drilling targets. Discontinuous "fault" planes with well developed slickensides are common throughout the district, but with the exception of the South Ridge, Cave and White Alps structures, I have found little evidence to support the existence of many of the faults shown on our predecessors geologic maps. I think that it is important to increase our understanding the structural geology of the Rosebud district as quickly as possible. To do this I would like to contract Dr. Tom Westervelt for two to three weeks. This should be enough time for Dr. Westervelt to review the structural setting of the Rosebud mine, evaluate specific structural problems already identified, and develop the rudiments of a structural exploration model.

MISCELLANEOUS

Time Distribution

During October my time was divided between field work (59%), Winnemucca office (16%), staff meetings (6%), Newmont administration (6%) and Mill Canyon (3%). Days off accounted for 16% of the month. Field work included geologic mapping at Short Shot (6 days), White Alps (6 days) and South Kamma (1 day), and distict stratigraphic evaluation (5 days).

Fuel Useage

I took 157.3 gallons of unleaded gasoline from the Rosebud fueling station during October.

START_OF_REPORT 1.0

#NAME? Company Data

Company:	Newmont
Office:	WINNEMUCCA, NEVADA
Batch No.:	
Geologist:	VANCE,R
Project:	ROSEBUD
Project Code:	
Submittal Date:	12-Oct-98

#NAME? Laboratory Data

Laboratory name:	Chemex Labs
Samples submitted at:	Sparks, Nevada
Date samples received:	12-Oct-98
Lab batch ID:	A9833427
X-ref. batch ID:	
Samples prepped at:	Sparks, Nevada
Seive units:	Tyler mesh
Number of samples:	7
Number of variables:	11
Report number:	A9833427
Report version:	96
Report type:	CERTIFIED
Report date:	23-Oct-98

Element	or	compou	nd name:	Au	Au	Ag	As	Cu	Mo	Hg	Pb	Sb	Zn	Se
Samples	an	alyzed	at:	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouv
Laborat	ory	method	code:	99	1700	6	13	2	3	20	4	22	5	16
Analyti	cal	sample	weight(g):	30.000	30.0000	1.0	1.	1.	1.	1.	1.	2.0	1.	2.0
Reporti	ng	units:	ppm oz/ton	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm		
Convers	ion	factor	to PPM:	1.0000	34.2857	1.0000	1.0000	1.0000	1.0000	0.0010	1.0000	1.0000	1.0000	1.0000
Lower d	ete	ction l	imit:	0.005	0.0005	0.2	1.	1.	1.	10.	1.	0.2	1.	0.2
Upper d	ete	ction l	imit:	10.000	20.0000	100.0	10000.	10000.	1000.	99999.	10000.	1000.0	10000.	100.0
Primary	di	gestion	:	FIRE-ASSAY	FIRE-ASSAY	AQ digestion	AQ digestion	AQ digestion	AQ digestion	HNO3-HCL	AQ digestion	HCL-KCLO3	AQ digestion EX	
Seconda	ry	leach,	extraction or delivery:											
Analyti	cal	method	:	FA+AAS finish	CALCULATION	AAS	AAS	AAS	AAS	AAS	AAS	AAS	AAS	AAS

START_OF_ASSAY_DATA

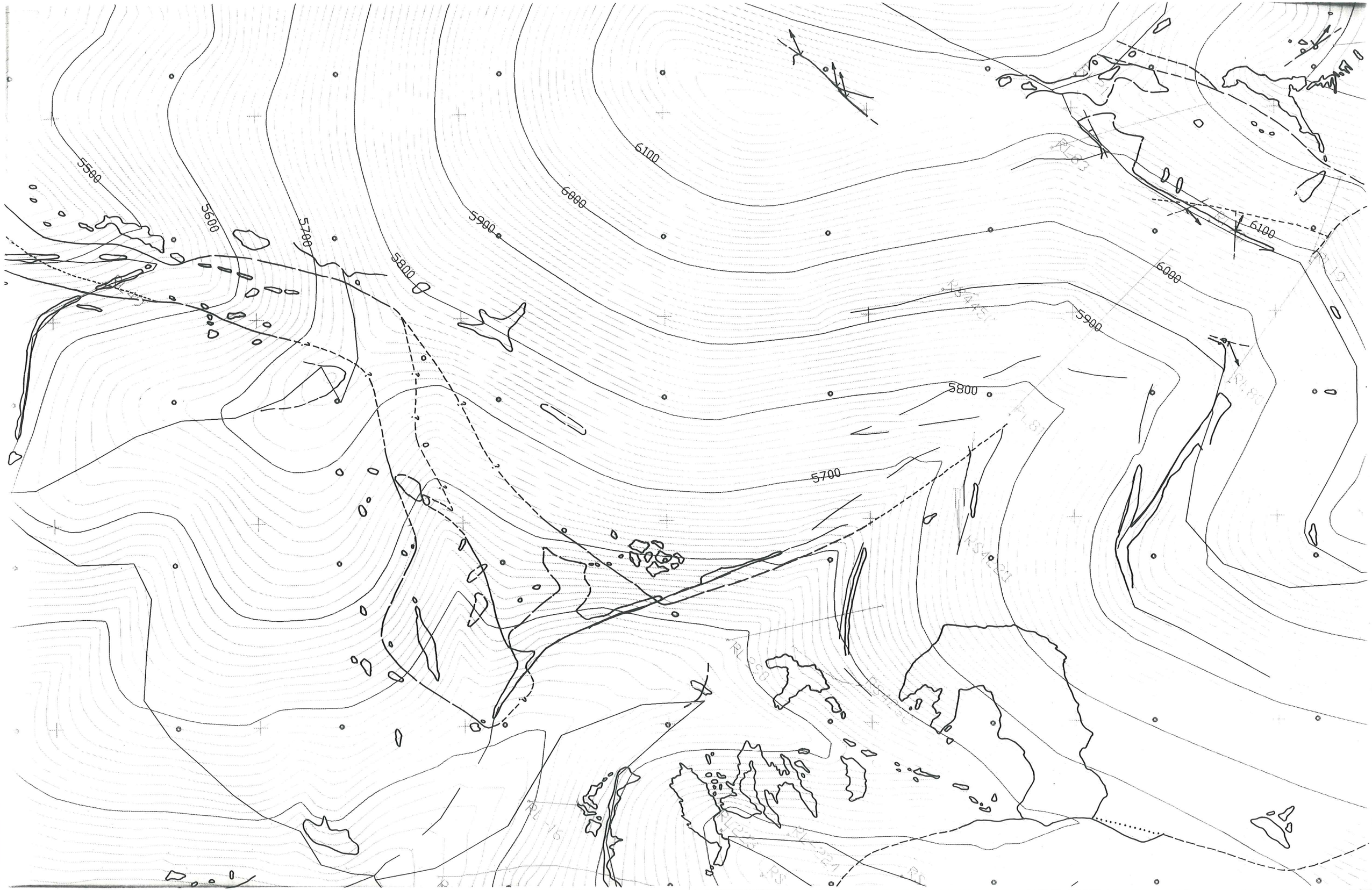
Sample ID	R	Type	Size-1	S	ize	d -2	Tem	ry p U	Primary prep	Secondary prep	Au		Ag	As	Cu	Mo	Hg	Pb	Sb	Zn	Se
NWRA-66	ROCK		90%		-1	50	6	0 C	OTHER	RING-CR	.005<	.0005<	.2<	1	3	1<	10<	14	.8	37	.5
NWRA-67	ROCK		90%		-1	50	6	0 C	OTHER	RING-CR	.040	.0012	.2<	98	4	1	10	19	6.2	66	3.6
NWRA-68	ROCK		90%		-1	50	6	0 C	OTHER	RING-CR	.005<	.0005<	.2<	5	16	13	130	9	.2	57	.6
NWRA-71	ROCK		90%		-1	50	6	0 C	OTHER	RING-CR	.005<	.0005<	.2<	5	5	1<	10<	5	.2	63	1.0
NWRA-73	ROCK		90%		-1	50	6	0 C	OTHER	RING-CR	.005<	.0005<	.2<	1	4	1<	10<	4	.2	67	.6
NWRA-74	ROCK		90%		-1	50	6	0 C	OTHER	RING-CR	.005<	.0005<	.2<	10	4	1<	980	5	7.4	5	1.2
NWRA-75	ROCK		90%		-1	50	6	0 C	OTHER	RING-CR	.005<	.0005<	.2<	3	6	2	10	13	.4	44	.2<

END_OF_ASSAY_DATA

START_OF_FOOTNOTES

END_OF_FOOTNOTES

END_OF_REPORT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Newmont Gold Co. - Rosebud
Winnemucca, Nevada

Memorandum

To: George Langstaff
Peter Mitchell

Date: November 5, 1998

Fr: Randy Vance -RBV

Subj: Availability of Routine Reports

There are several periodic reports available to you as a way to keep abreast of Rosebud developments. I do not routinely distribute these to you directly, but you are, of course, welcome to read them on a regular basis. Each report is filed within a week or so after I receive/complete them:

1. Newmont Gold Monthly Report, (by RBV) completed by the 1st of the month.
   Distributed to Winnemucca staff by Janice.
2. Rosebud Mining Company LLC Monthly Report, (RBV)
   Similar to #1, except I expand and elaborate on specific points of interest to Hecla staff. This report is filed in the file cabinet in the Rosebud exploration trailer in the white binder labeled "1997-1998 monthly reports". It is usually completed by the 10th of the month.
3. Monthly Development Drilling Report, by Kurt Allen
   Summarizes the recent assays of development drilling reports, and the host lithology. Filed in the top drawer of the Rosebud file cabinet in a file folder, and in the Winnemucca office file. Written on the 1st of the month when drilling.
4. Rosebud Mine Monthly Report, by Ron Clayton and Staff.
   Details on the mine/mill operations and production. Includes report # 2 above. Filed in the Winnemucca files under Geology, 1998 Hecla Monthly Report. Usually completed by the 12th of the month.
5. Management Committee Meeting Minutes, by Hecla.
   Contains the minutes of management committee meetings, held about every 2 ½ to 3 months at rotating locations. Includes discussions of operational problems, and results, plans, and overheads of exploration developments. Filed in the Winnemucca files under Geology, 1998 Management Committee Meetings.

GEMS Job Request Form
for Drill Hole Collar Location Maps

NEL/NGC COMPUTER SERVICES

Date Completed: _____
Hours: _____
No. of Plots: _____

GEMS Date Received: _____

Requested by: P. MITCHELL
Date: 24-9-98
Project: Rosebud
Date needed: Oct. 1, 1998

MAX Northing: 2201950N Ft.

MIN Easting: 475500E Ft.

MAX Easting: 485500E Ft.

MIN - Z

MIN Northing: 2200060N

origin
475,500 - 2,200,060

Height 6000'
Length 10177.04
Az 79.1750

Scale to plot map at: 1" = 2400 Ft.
Grid line spacing HEIGHT: 500' Ft. LENGTH: 500' Ft. light grey
Coordinate Grid System: State Plane West
Convert to another grid? YES:____ NO:____ GRID: _____
Show downhole trace? YES:____ NO:____

Color Coding: _____ None _____ Depth _____ GXT (Located at) _____ Collar
_____ Downhole

	Current	Change To
Black	0 - 250'	
Blue	250 - 500'	
Green	500 - 1000'	
Red	1000' - +	
Brown	None	
Magenta	None	
Purple	None	
Orange	None	

Other Information: Cross Section with drill hole traces (if there are any)
Search width ±200 feet of section line

*** P

PLEASE MAKE SURE COORDINATE GRID SY
PLEASE MAKE SURE ALL COLLAR AND DO NTO GEMS.
IF BENCHES ARE NEEDED, PLEASE SPECIFY
IF GRADE THICKNESS IS NEEDED, PLEASE S

Are the above parameters ok?
Use Section form for Sections.

Craig

Previewed on Iris and approved by: _____

GEMS Job Request Form
for Drill Hole Cross Sections

NEL/NGC COMPUTER SERVICES

Date Completed: _____
Hours: _____

GEMS Date Received: _____ No. of Plots: _____

Requested by: _____ Date: _____
Project: _____ Date needed: _____

Length of Section: _____ Ft. 4.5"

Height of Section: _____ Ft.

STRIKE OF SECTION			TITLE AREA Please Specify:
East (Looking North):	90		
North (Looking West):	0		
West (Looking South):	270		
South (Looking East):	180		
Other:	_____	(i.e. N20E)	

Origin

Bottom Elevation: _____

Origin: _____ N _____ E (If oblique sections, please attach sheet listing additional origins)

Coordinate Grid System: _____

Alternate Grid: Yes: ____ No: ____ IF YES,

Alternate Grid Origin: _____ E _____ N _____ Azimuth

Alternate Grid Title: _____

Limit to project holes on section: _____ Ft. (On either side of the section)

Scale along length: 1" = _____ Ft. Scale along height: 1" = _____ Ft.

Grid line spacing along length: _____ Ft. Lines: ____ Ties: ____ Crosses: ____

Grid line spacing along height: _____ Ft. Lines: ____ Ties: ____ Crosses: ____

Alternate Grid line spacing along length: _____ Ft. Lines: ____ Ties: ____ Crosses: ____

Alternate Grid line spacing along height: _____ Ft. Lines: ____ Ties: ____ Crosses: ____

Check Values to Plot:

____ 5' or ____ 20': "PREF" Au
____ 5' or ____ 20': FIRE Au
____ 5' or ____ 20': AA Au
____ 5' or ____ 20': AA / FIRE Ratios
____ 5' or ____ 20': LITHOLOGY (Please specify below)
____ 5' or ____ 20': GEOCHEM (Please specify below)

Lithology: _____

Geochem: _____

Lower limit for values: _____

Please specify color coding and cutoffs:

Cutoff	Color
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Available Colors
Black
Blue
Green
Red
Brown
Magenta
Purple
Orange

DIG Shape files (Please specify file location)

DIG file: _____ Color: _____

DIG file: _____ Color: _____

Other information or attach 2nd sheet:

*** REMEMBER ***

PLEASE MAKE SURE COORDINATE GRID SYSTEM IS SPECIFIED.
IF LITHOLOGY IS REQUESTED, PLEASE SPECIFY WHAT IS NEEDED.
PLEASE MAKE SURE ALL COLLAR AND DOWNHOLE SURVEYS HAVE BEEN ENTERED INTO GEMS.

Previewed on Iris and approved by: _____ Date: _____

Rosebud
X-section (2 E-W)

2201950N
485500 E

2200060N
475500E

Elevation

Thorium

Uranium

Potassium

K/Th — can you do this ratio

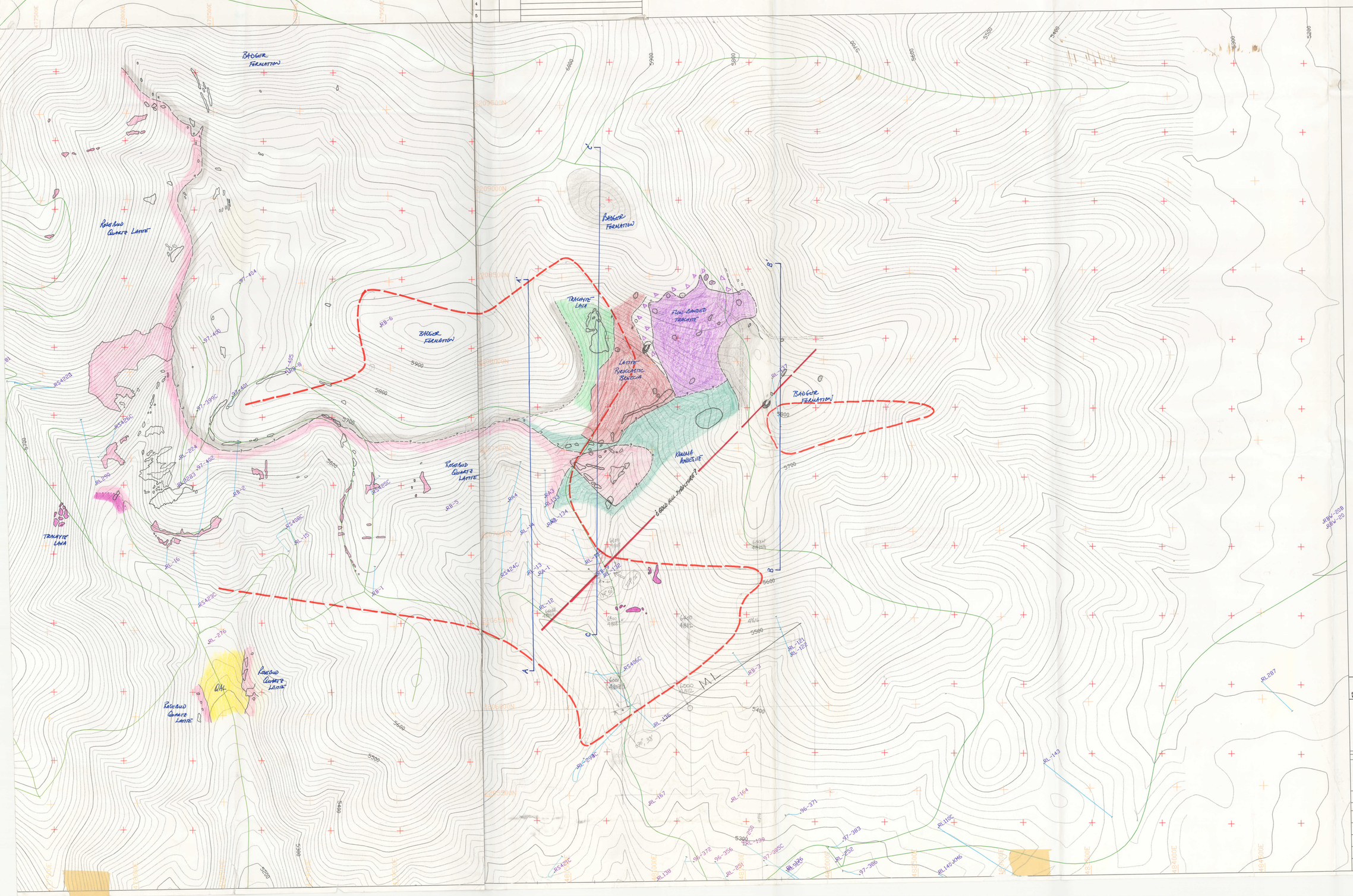
Gravity

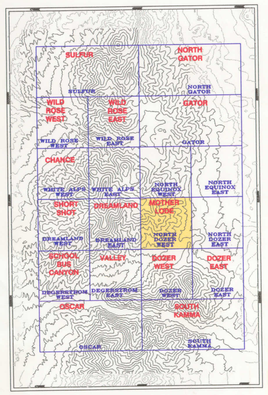
Magnetics

Resistivity - if data are available

Chargeability - if data are available

No	DATE	MADE BY	DESCRIPTION
1			
2			
3			
4			
5			





1990 LAC SHEETS (blue)

ANOMALOUS SOIL CHEMISTRY (Au, As, Ag, Sb, Hg, Se)

NEWMONT GOLD COMPANY

561 West 6th. Street
Winnemucca Nv.

Telephone (702) 623-5495
Fax (702) 623-5666

MOTHER LODE

PERSHING COUNTY , NEVADA.

GEOLOGIST	DRAWN BY	MODIFY BY	PLOT DATE	DRAWING FILE
R. VANCE	B. Alarcon		May 14 1998	N_dot_w.dwg

SCALE: 1"=200' 1:2400

0 200 400 600

Newmont Gold Company

MAP REVISIONS

No	DATE	MADE BY	DESCRIPTION
1			
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