60001417

Mining District File Summary Sheet

DISTRICT	Rosebud
DIST_NO	4010
COUNTY If different from written on document	Pershing
TITLE If not obvious	Rosebud Drill Hole File - Hole No. RL-195C
AUTHOR	K. Kenner; C. Walck; T. Kuhl; N. Whitten
DATE OF DOC(S)	1991
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Coates Drilling, Lac Minerals (USA), Inc; Bondar-Clegg, Inc Chemex Labs, Inc
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 913' handwritten notes 46 p

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: DD 5/20/08
Initials Date
DB: mah
Initials Date
SCANNED:
Initials Date

Revised: 1/22/08

Drill Log RL-195
Rosebud

6000 1417 4010

60001417

LAC MINERALS (U.S.A.) INC.

DRILL LOG SUMMARY SHEET

PROJECT ROSEBUD

HOLE NUMBER RL-195 TOTAL DEPTH 913 LOGGED BY KLK

Date started 6-2-91

Date completed 6-4-91

Initial bearing

Initial inclination vertical

Elevation 5279.4

Collar coordinates:

N 2203952.0

E 481906.5

Contractor: COATES

Drill Type: UDR RIG

Hole Size: HQ

Drilling Conditions:

Footage: Wet / Dry

Comments:

RC -> 355'
CORE -> 355-913'

DOWN HOLE SURVEY INFORMATION

FROM	TO	SURVEY POINT	INCLI-NATION	BEARING	X (Northing)	Y (Easting)	Z (Elevation)
0	200	100'	88.5°	S79W			
200	400	300'	87.7°	S82W			
400	600	500'	86.6°	S87W			
600	800	700'	86.1°	N83W			
800	913	900'	86.1°	N76W			

LAC MINERALS (U.S.A.) INC.
ROSEBUD PROJECT

FINE-GRAINED TUFF
LITHIC LAPILLI TUFF

ARGILLIC
XX SILICIFICATION
OX OXIDIZED
XXXXXX DRUZY QUARTZ
XC CHALCEDONIC QUARTZ
XK STOCKWORK QUARTZ
PPP PROPYLITIZATION
Ca CALCITE

DRILL HOLE RL-195C

Page 1 of 4

LOGGED BY KLK

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	% WASH RECOV
														0-15 could be colluvium 15-48 " be tuffaceous + epic Bedded Bud ?				
	GT	Xc OX							golden orange + green				tR limon replac	0-48' CHOCOLATE FINE GRAINED TUFF.	.006	.05		
05													py	moderatly bleached to buff /tan, weak local / intermittent	.002	.03		
10														epiclastic horizons, intermittent celadonite alt	.025 .015 .020	.13 .14 .13		
15														w-m perv. oxidation-limon poss wk mgo, wk local flesh colored chalcedony	.002	.03		
20														UNS wk argillic clay alt weakly calcareous + poss siderite @ 10-15'	< <	.02 .02		
25														contact may well be gradational into upper	<	<		
30														Bud. poss wk sericite alt 30-48' w/ prominent	<	<		
35														chlorite ± celadonite alt	<	.02		
40															<	.02		
45																		
50														48-115 UPPER BEDDED	.006	.06		
55		Xc HTN							lt-med green w/ mod limonite				± 1% limon replac disseminated py	BUD - LITHIC LAPILLI TUFF precism matrix supported heterolithic clasts are bl sult, to white clay, locally limonitic matrix is buff	< .002	.03 .04		
60														to lt green celadonite alt + clay. v. weak local druzy qtz encap. py, wk local	.002	.03		
65														chalcedony uns. wk fibrous gypsum 45-50 strong white bull	.002	<		
70														qtz weakly oxidized	< <	< .03		
75															.003	.05		
80															.002	.04		
85														↑ argillic clay alt	<	.03		
90															.002 .002	< .03		
95		Xc																
100															<	.03		

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XXXXXX DRUZY QUARTZ
XC CHALCEDONIC QUARTZ
XK STOCKWORK QUARTZ
P P P PROPYLITIZATION
Ca CALCITE

DRILL HOLE RL-195C

Page 2 of 4

LOGGED BY KLK

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	% WASH RECOV
		~ Xc							lt-med green + buff				1-2% diss + vn py	48-115 UPPER BEDDED BUD LLT - continued @ above	<	<		
105														slight ↑ argillic clay alt				
110																		
115	TMb	XXX Ox							buff white golden orange				±2% diss + vn	115-272 TMb - TUFF MARKER BED				
120		X Ox											py	115-130 ↑ strongly oxidized + limonitic clays, 115-120		.03		
125		~ Ox												strong druzy qtz vns w/ limonitic clay fill 120-130 ↓ silicif. ↑ limon clay	< <	.03		
130		~ Ox												130-135 strongly argillic clay alt ↓ FeOx	<	.03		
135		X Ox														<		
140		~							gray white					no oxidation; strong lt gray clay alt.		.04		
145		~ Ox							golden orange + gray					M-strong limonitic clays		.05		
150		~ Ox							white					M-strong clay alt m FeOx		.05		
155		~ Ox												m-w tan clay alt		.04		
160		~ Xk							gray white					115-272 TMb - general description: where not		.03		
165														oxidized TMb is peru bl w/ 2-3% py replaced plagio clase phenos pos wk peru		.03		
170		Ox							+ wk limon					silicification wk druzy qtz encapsulated py vns few v. fine qtz stk wk		<		
175														locally associd fine disseim. sulfides is deep burgundy - v. fine semi translucent mineral	< <	.03		
180															<	.03		
185															< <	<		
190															<	.03		
195															<	.04		
200																		

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LITHIC LAPILLI TUFF

ARGILLIC
XX SILICIFICATION
OX OXIDIZED
XXXXXX DRUZY QUARTZ
XC CHALCEDONIC QUARTZ
XK STOCKWORK QUARTZ
P P P PROPYLITIZATION
Ca CALCITE

DRILL HOLE RL-196C

Page 3 of 4

LOGGED BY KLK

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	% WASH RECOV
	TMb	~XK HTH X							lt gray white				2-3% diss +VN	115-272 TMb continued @ about w/ 2-3% pyrite replac	.003	.03		
Z05													py +poss marca site	w/local translucent burgundy mineral in assoc. w/ py poss wk silicif. wk local white clay	<	<		
Z10													or bladed sulfide					
Z15																		
Z20									+ limon.					[220-255] [probable significant contamination] the oxidation				
Z25									wk limon					present is questionable [wk contaminat]	<?			
Z30														contamination w/lt IS assoc. few 1-3% green upper bud chips	<	.03		
Z35																.03		
Z40									wk limon							.03		
Z45																.03		
Z50														[probable significant contamination]		.03		
Z55																<		
Z60																<		
Z65																.04		
Z70																		
Z75	v v v v v v	celad HTH							flesh + lt green				1-2% diss	272-440.9 LOWER	.003	.04		
Z80	v v v v v v												+ VN py	BEDDED BUD - LITHIC LAPILLI TUFF: heterolithic	.003/<	.04		
Z85									med-dk deep sea green					clasts bl white; clay alt matrix is mod to strong	<	<		
Z90									lt. sage green					celadonite alt + clay alt wk druzy qtz encapsulated pyrite vns	<	<		
Z95									m-dk deep sea green					probable contamination	<	.03		
300															<	<		

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DRILL HOLE RL-195C

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LOGGED BY KLK

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	% WASH RECOV
													1-2% diss +VN	272-440.9 BEDDED LOWER BUD - LITHIC LAPILLI TUFF	.011	.01		
305									m-dk deep sea green					same description as above w/ str. celadonite alt. wk druzy qtz encaps	.007	.03		
310														pyrite veins poss local contamination	.025 / .012 / .011	.05		
315															.007	.03		
320															.003	.03		
325															<	<		
330															.004 / .004	.03 / .03		
335															<	.03		
340									lt sage grn + deep sea green					340-355 ↑ bl which ↑ w/ depth	<	<		
345									"					w/ assoc ↑ argillic clay alt.	<	.03		
350									lt sage to white green						.004	<		
355														TD.				
60																		
65																		
70																		
75																		
80																		
85																		
90																		
95																		
00																		

HOLE # RL-195C LOGGED BY KLK DATE 6-91 PAGE 1 OF 8

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	ALTER.	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
							355-703 SPLIT 703-TD CUT						
							CORE BEGAN @ 355'						
360	85 113 65 96	55° to 60° bedding		1-2% finely diss + VN py + wk local mineral site in VNS		W-M bl M M-S celad	355-440.9 BEDDED BUD LITHIC LAPILLI TUFF predom finely lithic - 2-15mm heterolithic which are predom bl to white; locally lt green to flesh - clay alt matrix is pervasively w-s celadonite altered; clay alt. Locally finer lithic - 2-5mm; elsewhere into class of volc bxa - rarely. Locally wispy texture - due to collapsed pumice frags. Bedding is predom. 60° to C.A weak veining consisting of pyrite or calcite or both appears to be ⊥ to bedding or subparelle to C.A. Total veins ~4-6 every 10'	NO SAMPLE					
370	94	py calc VN ⊥ to bed @ 45-50° + local 0-5° to C.A											
380	101												
							355-357.5 predom. interm. green clay gouge						
							355-372 strong celadonite alt						
390	97						385.6-392 more matrix supported w/ wk ↑ bl						
							403-404.2 volc bxa sized lithics						
							411-418 ↑ veining up to 7/ft composed of calcite + local lt orange clay + py replaced marcasite; all are subparelle to core axis						
400	102												
410	103	0-5° calc VNS											
420	97												

HOLE # RL-195C LOGGED BY KLK DATE 6-91 PAGE 2 OF 8

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	ALTER.
430	97	bedding @60° to C.A VNS ~ 45-55° to CA		± 1% diss tvn py		M bl M ~ W-M celad
440	101	60° 2 VN ACT	38° w/ slicks @30-35° to CA.	2% VN py ± wk diss py wwk VN marca site	60°	M-S bl W-M ~ W celad w x
450	95	50° 10° w/ few @ 90°				
460	92					
470	100	65° VNS		3+% VN py + marca site + chal copy + wk diss py		W bl W ~ S celad w x
480	102	90° qtz py VNS				M bl W-M ~ W-M celad
490	98					

DESCRIPTION

355-440.5 BEDDED BUD LLT
440.5-853.2 LOWER BUD TUFF

LLT - same description @ above

440.9 - 858.3 LOWER BUD TUFF

FINE GRAINED TUFF, pervasively bleached, mottled buff to green to flesh locally tectonically brecciated to speckled vesicular w/ clay ±/OR chalcedony fill weak to locally strong veining throughout details below

440.9 - 467 2 predominant stages of veining
1) fine qtz stkwk veins encapsulating pyrite
2) open spaced vuggy druzy qtz VNS w/ marcasite, local white clay fill
on a finer level are few v. fine Kaolinite veinlets
; a fine stockworking of green celadonite?
; poss - fine fracturing related
~ 3-6 VNS/ft of the py-qtz, druzy qtz VNS
Intermittent tectonic brecciation

467 - 510 2 predom. stages of veining 1) fine qtz stkwk w/ local py ± clay fill 7-12 VNS/ft
2) druzy qtz - open spaced w/ Kaolinite, locally lt orange clay - (oxidized Kaolin.?) with marcasite ± py ± local chalcopyrite fill
~ subparallel to 65° to C.A.
prominent joint sets @ ±65° to CA. w/ chelacdonite ± Kaolin. fill

ASSAYS

Sample No.	% Cu	% Pb	✓ Au	oz/t Au	oz/t Ag
NO SAMPLE					
440-445				.002	<
445-450				<	
450-455				<	
455-460				<	
460-465				.006	.08
465-470				<	.05
470-475				.003	.06
475-480				<	.04
480-485				.010	.07
485-490			.004	<	.04

HOLE # RL-195C LOGGED BY KLK DATE 6-91 PAGE 3 OF 8

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	ALTER.	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	✓ Au	oz/t Au	oz/t Ag
500	100	65° 0 +1% VNS; 80° 0 qtz py VNS		3+% VN py + marc site + chalco py + wk diss py		w bl w ~ M cela	440.9 - 853.2 LBT continued	490-495				.010	.05
								495-500				.004	.04
							510-522 strong open spaced druzy qtz VNS white Kaolinite fill w/ local-mod it butter yellow OXIDATION + xtaline marcasite fill predom. sub parelle to C.A. which cover the length of the interval - it is also riddled w/ fine qtz stkwk; fine amber brown qtz stkwk vnlets ~ ±3 sub parelle VNS/ft Intermittent fine celadonite veins 90°-0° to C.A. ; locally celad w/in qtz py VNS Intermittently crackle fractured w amber brown poss. oxidized chalcedon vein fill w/ fine diss. pyrite	500-505				.006	.09
								505-510				.007	.07
510	97	0-15° +1% VN		3-4% VN marc + py + diss py		M-S bl W-M ~ W X W-M celad		510-515				.006	.08
								515-520				.004	.07
520	99	60° 0°		2% VN marc + py + diss py		W bl W ~ W X M celad	522-533 FGT - ↓ perv. alt. 3-6 VNS/ft weak pyrite ± qtz VNS local Kaolin fill few w/ druzy qtz lining, tinely fractured w/ celadonite fill ± py perv. verigated buff + green	520-525				<	<
								525-530				.002	<
530	97							530-533				.002	.04
				3% + VN py + marc + diss py		S bl M-S ~ W local X	533-538 Riddled w/ fine qtz stkwk STR perv. argillic clay alt. local stkwk appears somewhat opaline w-m vuggy druzy qtz VNS open spaced - filled w/ marcasite + clay weak local clay gouge seams prominent vning 4-6/ft ; riddled locally w/ intense stkwk	533-538				<	.12
540	99	90°		2-3% diss py + VN marc + py + chalco py.		M bl W-M ~ local W X W celad		538-543			.012	<	<
							538-578.5 FGT- intermittent tectonic brecciation, verigated buff to flesh to green local zones silica Flooding - locally w/ assoc bluegreen celad. Prominent vening = py ± qtz + poss local chalcopyrite. touch o' clay locally ~2-3 VNS/ft locally riddled w/ fine celad fractures ; local hairline stkwk qtz	543-548					
550	94	35° 30° py qtz VNS						548-553					
							547-557 ↑ perv. argillic alt (clay) which are green to orange butter-oxidized poss w/ wk secondary Δ ↓ VNS w/in interval	553-558					
560	89												

HOLE # RL-195C LOGGED BY KLK DATE 6-91 PAGE 4 OF 8

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	ALTER.	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	✓ Au	oz/t Au	oz/t Ag
570	101	qtz-chalco vns; 10°; 55				M bl W-M local W X W celad	440.9 – 853.2 LBT (CONTINUED) 568-576 poss. chalcopy. w/in vns ? 571-574 strong crackle fracturing w/ celadonite-clay fill	558-563				.002	<
								563-568				.006	<
								568-573				<	<
								573-578				<	.03
580	99	15°; 35		3% vn + diss py ± marc & chal		W-M bl W-M celad	578.5-584 vesicular Tuff w/ celad + white clay fill w-m veining ~ 3-4 vns/ft composed of qtz, pyrite + local white kaolin. locally w/ str. clay component	578-583				.005	.04
				3-4% diss + vn py + vn marcasite			584-605 FGT - verigated green + buff m-s fracture veining - tight - filled w/ pyrite ± qtz, + celadonite + Kaolinite ~ 5-13 vns/ft few sacroidal qtz marcasite veins w/ vuggy druzy qtz lining filled w/ clay + marcasite ; may possibly contain dk gray Ag mineral locally some banded calcite vns w/ clay layers	583-588				<	.18
590	143	25°						588-593			.020	<	.10
	102	70°; qtz py marc vns						593-598				.056	.03
600	98	±10° OR ±90°				M-S bl W celad	605-613 PEACH - Buff BANDED, VESICULAR ; locally brecciated FGT vesicles filled w/ qtz, celad ± local clay, banded w/ amber brown chalcedony vns containing fine dissem sulfides banding is either ⊥ or ∥ to C.A. locally open spaced - vuggy druzy qtz w/ white clay fill + fine diss sulf. ±12 band vns/ft	598-603				< #	.03
				±4% vn + diss py + marc				603-608				.081	.19
610	99	0°; 65		3% vn py + marc + diss py		S bl W-M W celad local W-M X	*amber brn chalced vns	608-613				.288 #	.58
							613-622 Buff - OFF WHITE FGT w/ mod. celad + clay vn fractures w/ local pyrite fill ~ 3-7 vns/ft w/ local marcasite	613-618				.045	.04
620	105	py celad clay vns; 60-65 stk wk		4% diss + vn py + marc		M X X	622-624.6 Vesicular w/ amber brn chalced. fill w/ ↑ perv. bl local silin'd Δ vns riddled w/ v. fine qtz or celad ± py hairline stkwk	618-623				.006	.13
630				2% or above		W-M bl w celad	624.6-627 pervasively brecciated ; silicified w/ pods o' white Kaolin + orange oxidized clay w/ local marcasite filling vugs ; clasts of specular py	623-628				.289	.63

SiO2 is druzy - vuggy - lining locally, clasts are bl + M-S. clay alt

HOLE # RL-195C LOGGED BY KLK DATE 6-91 PAGE 5 OF 8

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	ALTER.
640	99	15° 90° fract VNS		3% VN py+ marcasite + diss py		M-S bl W-M W celad local W X
650	98	0° 90° STK WK		3-4% VN marcasite + py + diss py		M-S bl W M-S XXX M celad
660	100			+ 3% VN + diss py + VN marcasite		M bl M W celad W. local X
670	102	10 65°				
680	100					
690	101					
700	99	10 50°		2-3% VN py + marcasite + diss py		M-S bl W-M trace celad W X

DESCRIPTION

440.9 - 853.2 LBT CONTINUED

627 - 643.5 Verigated gray & buff FGT verigated streaking ~ 80° to C.A. Moderate fracture veining w/ celadonite, pyrite, kaolin locally oxidized to butter orange. ~ 12-15 vns/ft

643.5 - 659.5 GREEN & BUFF FGT pervasively brecciated & riddled w/ vuggy open spaced druzy qtz stockwork filled w/ white clays which are locally oxidized to butter color & filled w/ marcasite crystals which are irreclesent + wk poss blue green Cu oxide riddled w/ v. fine hairline qtz stkwk w/ local assoc. py ± celad. Clasts are perv bl to clay alt (STR.) SiO2 rich matrix + 2 stgs Δ

659.5 - 690 Tectonically - perv. dry brecciation & locally secondary Δ mottled peach-tan to green 2nd Δ zones are flooded w/ SiO2 pervasive weak veining w/ py, qtz, marcasite, barite, kaolinite fill. ~ 2-4 vns/ft Intermittently riddled w/ fine hairline qtz & local celad stkwk

690 - 729 Pervasively Mottled PEACH FGT weak perv. silicification which varies throughout intermittently tectonically brecciated & weak local secondary Δ. weak to mod veining composed of qtz-pyrite ± clay w/ local druzy qtz w/ vugs filled w/ marcasite + clay. weak local blue green (celad?) hairline vnlets. Overall ~ 4-5 vns/ft

ASSAYS

Sample No.	% Cu	% Pb	✓ Au	oz/t Au	oz/t Ag
628-633				.080	.19
633-638				.125	.10
638-643			.137	.175	.29
643-648				.459	.53
648-653				.168	.62
653-658				.250	.57
658-663				.036	.14
663-668				.007	.94
668-673				.010	.35
673-678				.008	.08
678-683				.029	.18
683-688				.031	.30
688-693				.014	.20
693-698				.026	.13

HOLE # RL-195C LOGGED BY KLK DATE 6-91 PAGE 6 OF 8

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	ALTER.	DESCRIPTION
710	92	15° 70°		2-3% diss tvn tbuck SHOT py + local vn marca		M-S bl W-M ~ W X trace celad	440.9 – 853.2 LBT continued same @ above - 713-724.5 slightly more fracture veining which possibly contributes to the increased golden yellow coloration locally vns >20/ft. Increased fine hairline celadonite stockwork. Rock is more mottled buff w/ hint green to flesh. vns predom 4-5/ft
720	101						
730	100	#1 ±55° #2 0-90° #3 0-25°		3-4% diss tvn py + vn marcasite		M-S bl W-M ~ W celad W X	729-739 FGT w/ strong fracturing mottled lt green + flesh, 3 predom stages of veining 1) qtz ± clay ± py, 2) bluegreen celad ± py ± clay 3) vuggy druzy qtz filled w/ white clay + marcasite. #1 = ~ 3-6 vns/ft #2 = ~ 9-20 vns/ft #3 = ~ 1-2 vns/ft
740	101	15-20° qtz-py clay	FAULT	±3% vn marca + py + tvc diss py		M bl M cel W ~ S X X	739-744 Breccia w/ at least 3 to 4 stages of Δ clasts bl buff to peach argillically alt w/ SiO_2 + celad rich matrix weak druzy vuggy qtz lined clay marcasite vns ~ 1/ft
	102					S bl W celad M ~ M X X	FAULT
750	99	0 90°		2-3% diss tvn py + vn marcasite		M-S bl M ~ W celad W X	744-749.1 PEACH TUFF BRECCIA w/ clasts speckled due to preferential clay alt of feldspar phenos at least 2 stages of Δ appears more @ a vein breccia w/ mixed clay + SiO_2 matrix. Intermittent fine qtz stockwork throughout which bleed off vuggy druzy qtz lined veins filled w/ marcasite, gray clay ± Kaolinite clasts are peach or green, matrix is milky yellow white
760	99						
770							

ASSAYS

Sample No.	% Cu	% Pb	✓ Au	oz/t Au	oz/t Ag
698-703			.075	.091	.16
703-708				.110 / .060 / .079	.28
708-713				.004	.06
713-718				.019	.15
718-723				.033	.10
723-728				.020	.19
728-733				.072 / .037 / .039	.15
733-738				.041 / .039	.26
738-743				.014	.06
743-748			.012	.007	.05
748-753				.010 / .009	.08 / .08
753-758				.009	.06
758-763				.013	.08
763-768				.046	.10

HOLE # RL-195C LOGGED BY KLK DATE 6-91 PAGE 7 OF 8

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	ALTER.	DESCRIPTION
780	100	0° 90°		2-3% diss + buck shot + vn py + vn marcasite		M-S bl M W celad WX	440.9 - 853.2 LBT continued 749.1 - 828 PEACH FGT w/ fine pin head (trout like speckles) sized speckled preferrential clay alt feldspar texture. Pervasively fracture veined w/ flesh; green 1/4"-1" selvages w-mod. veining throughout - 2 predom. phases 1) pyrite, celadonite, ± local clay ~ 7-14 vns/ft clays are predom lt green duck butter - waxy alt Kaolin? 2) weak local hydrothermal SiO2 cemented Δ veins w/ pods of white Kaolinite + marcasite which are predom subparcelle to C.A. there are < 1 vn/2-5 ft.
790	99						
800	91						782-795 Intermittent broken rubble zones w/ assoc. increase argillic clay alt. (white Kaolinite) every foot
810	100					S bl	819.5 - 828 strong fracture veining w/ lt green duck butter alt. Kaolin + calcite + celadonite + pyrite ~15-20 vns/ft locally
820	100	20° 85° duck butter vns					817-818 strong chalky butter yellow + white clay + SiO2 micro Δ vns w/ qtz stkwk; micro Δ fill locally w/ py blebs
830	101	25°-35° predom Δ to duck butter vns				M-S bl M W-M celad	828-849 LBT local volc bxa local secondary brecciation w/ m-s dutter butter clay + calcite + marcasite fracture veining w/ local dark amber brown chalcedony bands w/in these veins speckled like a trout due to preferrential clay alt of feldspars, pervasive peach coloration w/ buff - speckles; wk celad (lt green) as selvages on fractures
840							

ASSAYS

Sample No.	% Cu	% Pb	✓ Au	oz/t Au	oz/t Ag
768-773				.018 / .031	.14
773-778				.020 / .025	.10
778-783				.029 / .035	.28
783-788				.092 / .039 / .055	.17
788-793				.026	.12
793-798				.074 / .089 / .133	.41
798-803			.115	.140 / .173 / .177 / .160	.27 / .29
803-808				.040	.07
808-813				.018	.08
813-818				.059	.10
818-823				.048	.04
823-828				.070	.15
828-833				.020	.05
833-838				.162 / .217	.27 / .29

HOLE # RL-195C LOGGED BY KLK DATE 6-91 PAGE 3 OF 8

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	ALTER.
850	104, 77, 97	25°; 70° fract VNS; 65-70° clay VNS	45-50°; 54°; $CaCO_3$ + SiO_2 VNS; 40-45°; 70° or 25-30°	2-3% diss + VN py + VN marcasite; 2-3% marcasite ± py; 1-2% diss py ± electrum; ±2% diss py + marcasite; ±3% diss VN py	54° calcite + green gouge; 40-45°; 70° or 25-30°	M bl W-M XX w celad; M-S bl SXXX W; S M celad; S bl MX XXX; M-S bl W W celad W X
860						FAULT
870	99, 105	0°; 70° clay py VN ± miss.		4-5% diss + VN py + VN marcasite		M S XXX
880	30, 96					
890	98			±3% diss VN py + fine black bladed sulf <1mm		W celad
900	109					
910	910					
913						

DESCRIPTION

440.9 - 853.2 LBT continued

845-849 w/ prominent vein brecciation w/ buff to lt green duck butter clay fill matrix local SiO_2 filling Δ matrix ; same rock type @ that above.

Au dup: .497, .471

SOUTH RIDGE FAULT: 849 - 862.8

849-853.2 @ upper contact ~45-50° to C.A. @ 849' brecciated LBT clasts are angular predom dk tan ; locally green 5-36 mm w/ buff-offwhite clay + SiO_2 mix matrix, s perv. silicification weak local green clay veins ± marcasite ; locally w/ calcite

853.2-858 MIXED green clay gouge - bright lt green w/ intermittent semi massive calcite fine diss sulfide in clay ; poss tr electrum w/ in calcite locally @ 853.2 contact @ ~ 54° to. CA.

858 - 913 DOZER TUFF

858-862 BROKEN RUBBLE w/ strong also bl white clay gouge @ 858 contact is ~ 40-45° to. CA. @ 858-858.1 gray seam of sulfide rich clay (dark gray

862-862.8 Brecciated Dozer - 3-4 stages perv. bl w/ strong SiO_2 cement - perv. silicif. contact may be 70° to CA or 25°-30° to CA. lithics are lt sage green

862.8-913 DOZER TUFF - fine grained pervasively bleached w-m veining throughout ; locally strong weak local vein brecciation poss w-m pervasive silicification. Veins composed of white kaolinite (powdery) + SiO_2 + pyrite + local marcasite + poss local Ag mineral on average ~ 3-8 vns/ft (+ local opaline SiO_2 in vns) + local barite

873-889 fairly strong veining ~ up to 5S/ft w/ prominent dark gray sulfide + druzy qtz lining veins @ those described above. m-s perv. silicif

889-913 prominent buckshot dk gray sulfide + local py

↓ X w/ depth

ASSAYS

Sample No.	% Cu	% Pb	✓ Au	oz/t Au	oz/t Ag
838-843				.085/.082	.19
843-848				.023/.042	.30
848-853			.493	.500/.480	.56
853-854.1				.339/.488	.81
854.1-858				.005/<	<
858-862				.003/<	<
862-867				.006	.03
867-872				.002	.35
872-877				.018	.10
877-882				<	.22
882-887				<	.05
887-892				.009	.08
892-897			.001	<1/<	<1/<
897-902				.002	<
902-907				<	<
907-910				<1/<	<
910-913				<	<1/.03

GEOTECHNICAL LOG

PROJECT: ROSEBUD LOCATION: DOZER LOGGED BY: SAS

HOLE NO.: RL-195C DIP: VERTICAL CORE SIZE: HQ DATE: 6-4-91

1	2	3	4	5	6	7	8	9	10	11
FROM	TO	CORE RUN	RECOVERED CORE	TOTAL LENGTH OF CORE>4"	NO. OF FRACTURES	CORE RECOVERY (%) (4/3 X 100)	R.Q.D. (%) (5/3 X 100)	FRACTURES PER FT. (6/4)	RANGE OR AVERAGE ANGLE OF FRACTURE W.R.T. CORE AXIS	REMARKS
355	360	5'	4.3	2.95	SEE NOTE	86%	59%			NOTE: 355'-358.5' Clay Gouge and ground-
										down core chunks.
360	365	5'	4.35	4.35	3	87	87	0.7	50°-60°	J/TH/R
365	370	5'	4.95	4.95	1	99	99	0.2	55°	VN/TH, FD/CAL, MAR/R
370	375	5'	4.2	4.2	3	84	84	0.7	50-65°	J/TH/R
375	380	5'	4.75	4.35	5	95	87	1.1	40-65°	J/TH/R
380	385	5'	4.85	3.9	4	97	78	0.8	40-50°	J/TH/R
385	390	5'	4.8	4.8	3	96	96	0.8	50-60°	J,VN/TH, FD/CLY, CAL, MAR/R
					1				40°	VN/TH-OP, FD/CAL/R
390	395	5'	4.6	3.75	8	92	75	1.7	50-65°	J/TH/R
395	400	5'	4.95	4.95	3	99	99	0.6	50-70°	J/TH/R
400	405	5'	4.7	4.7	5	94	94	1.1	35-65°	J,VN/TH, FD/CLY, CAL/R
405	410	5'	5.1	5.0	5	102	100	1.0	65-90°	J/TH, FD/CLY/R
410	415	5'	4.9	3.3	14	98	66	3.3	55-60°	J/TH, FD/CLY/R
					2				0-20°	VN/TH-OP, FD/CAL, CLY/R
415	420	5'	4.9	4.55	3	98	91	1.0	50-80°	J/TH, FD/CLY/R
					2				0-20°	VN/TH, FD/CAL, CLY/R
420	425	5'	4.45	3.7	6	89	74	1.3	50-65°	J/TH, FD/CLY/R
425	430	5'	4.9	4.35	6	98	87	1.2	45-80°	J/TH, FD/CLY/R
430	435	5'	4.55	4.4	1	91	88	1.5	25°	J,VN/TH, FD/CLY, CAL/PL, W
					6				35-50°	J/TH, FD/CLY/R
435	440.9	5.9'	5.65	5.65	5	96	96	1.2	45-55°	J/TH, FD/CLY, ± CAL/R
					1				40°	VN/OP, FD/QTZ, ± CLY, ± CAL/PL, SM
					1				55°	J,VN/TH, FD/CLY, CAL/PL, R
										(NOTE: CONTACT Between upper Bedded Bud
										and Lower Bud tuff)
440.9	445	4.1'	4.1	4.1	1	100	100	0.5	30-50°	J/TH-OP, FD/CLY/R
					1				60°	VN/TH, FD/CAL, PY/PL, R
445	450	5'	4.7	4.5	1	94	90	0.6	65°	VN/TH, FD/CLY, CAL/R
					2				50-55°	VN, VG/TH-OP, FD/QTZ, CLY, MAR/R
450	455	5'	4.95	4.95	1	99	99	0.6	65°	J/TH, FD/CLY/R
					2				25-40	VN, VG/TH-OP, FD/QTZ, CLY, MAR/R

GEOTECHNICAL LOG

PROJECT: ROSEBUD LOCATION: DOZER LOGGED BY: SAS

HOLE NO.: RL-195C DIP: VERTICAL CORE SIZE: HQ DATE: 6-4-91

1	2	3	4	5	6	7	8	9	10	11
FROM	TO	CORE RUN	RECOVERED CORE	TOTAL LENGTH OF CORE>4"	NO. OF FRACTURES	CORE RECOVERY (%) (4/3 X 100)	R.Q.D. (%) (5/3 X 100)	FRACTURES PER FT. (6/4)	RANGE OR AVERAGE ANGLE OF FRACTURE W.R.T. CORE AXIS	REMARKS
455	460	5'	4.0	3.75	5	80%	75%	1.5	0-60°	VN,VG/TH-OP,FD/QTZ,CLY,PY,MAR/R
					1				60°	J/TH,FD/CLY/R
460	465	5'	5.0	5.0	1	100	100	0.2	25°	VN,VG/OP,FD/QTZ,MAR,CLY/R
465	470	5'	3.9	2.5	3	78	50	2.6	55-70°	VN,VG/TH-OP,FD/QTZ,CLY,MAR/R
					7				30-40°	J,VN/TH-OP,FD/QTZ,CLY,MAR,PY/PL
470	475	5'	4.6	3.2	11	92	64	3.3	65-70°	J,VN/TH,FD/CLY/PL,SM
					3				25-40°	VN/TH,FD/QTZ,CLY,MAR/PL,R
					1				0-20°	VN/TH,FD/CLY/R
475	480	5'	4.8	4.15	4	96	83	2.1	60°	J/TH,FD/CLY,MAR/PL,SM
					6				20-35°	VN/TH-OP,FD/CLY,PY/R
480	485	5'	4.7	4.35	6	94	87	1.3	30-50°	VN/TH,FD/CLY,QTZ,MAR/R
485	490	5'	4.65	3.25	5	93	65	1.1	0-90°	VN,VG/TH-OP,FD/QTZ,CLY,MAR/R
										NOTE: SMALL CLAY GOUGE AT 487'
490	495	5'	3.75	2.85	4	75	57	1.9	70-75°	J,VN/TH,FD/CLY/PL,SM
					3				0-70°	VN/TH,FD/CLY,QTZ/PL,R
495	500	5'	4.8	3.6	11	96	72	2.3	60-75°	J,VN/TH,FD/CLY,QTZ/PL,R
										NOTE: Broken, Clayey Rubble at 496' and 497.5
500	505	5'	4.45	3.5	7	89	70	2.0	55-75°	J,VN/TH,FD/CLY,QTZ,MAR/PL,R
					2				0-60°	VN,VG/TH-OP,FD/CLY,QTZ,MAR/R
505	510	5'	4.7	3.7	6	94	74	2.1	60-65°	J,VN/TH,FD/CLY,MAR,PY/PL
					4				40-50°	VN,VG/TH-OP,FD/QTZ,CLY,MAR/R
510	515	5'	4.05	3.55	6	81	71	1.5	0-90°	VN,VG/TH-OP,FD/QTZ,CLY,MAR/R
515	520	5'	4.95	4.4	4	99	88	1.2	65-70°	J,VN/TH,FD/CLY/PL
					2				25-35°	VN,VG/TH-OP,FD/CLY,QTZ,PY,MAR/R
520	525	5'	4.3	2.55	5	86	51	2.6	35-65°	VN,VG/TH-OP,FD/QTZ,CLY,PY/R
					3				70-75°	J,VN/TH,FD/CLY/PL,SM
					3				0-20°	J,VN/TH,FD/CLY/R
										NOTE: 523'-525.5' Broken Rubble
525	530	5'	3.8	3.35	1	76	67	0.3	70°	J,VN/TH,FD/CLY/PL
530	535	5'	4.9	3.7	2	98	74	1.6	65°	VN/TH,FD/QTZ,CLY,MAR/PL,R
					6				0-50°	VN,VG/TH-OP,FD/QTZ,CLY,MAR/R

GEOTECHNICAL LOG

PROJECT: ROSEBUD LOCATION: DOZER LOGGED BY: SAS

HOLE NO.: RL-195C DIP: VERTICAL CORE SIZE: HQ DATE: 6-5-91

1	2	3	4	5	6	7	8	9	10	11
FROM	TO	CORE RUN	RECOVERED CORE	TOTAL LENGTH OF CORE>4"	NO. OF FRACTURES	CORE RECOVERY (%) (4/3 X 100)	R.Q.D. (%) (5/3 X 100)	FRACTURES PER FT. (6/4)	RANGE OR AVERAGE ANGLE OF FRACTURE W.R.T. CORE AXIS	REMARKS
535	540	5'	4.8	4.0	2	96%	80%	0.4	35-70°	VN,VG/TH-OP,FD/QTZ,CLY,PY/R
										NOTE: 536'-536.5' STRONGLY ARGILLIZED.
540	545	5'	4.3	4.25	1	86	85	0.7	60°	J,VN/TH,FD/CLY,PY,QTZ/PL
					2				25-40	VN,VG/TH-OP,FD/QTZ,CLY/R
545	550	5'	5.25	3.6	5	105	72	1.0	5-60°	VN,VG/TH-OP,FD/CLY,QTZ,PY/R
										NOTE: 547-548.5' STRONGLY ARGILLIZED
550	555	5'	2.8	1.25	3	56	25	1.1	0-30°	VN/TH,FD/CLY,PY/R
										NOTE: 550.5'-554' Broken and Loosely Clay-Cemented Rubble.
555	560	5'	5.15	3.85	8	103	77	1.6	50-80°	J,VN/TH,FD/CLY/R
										NOTE: 557.5'-558' Broken Rubble; 559'-559.5' Broken, Sandy Rubble.
560	565	5'	2.9	2.9	2	58	58	1.4	50-55°	VN/TH-OP,FD/QTZ,MAR,CLY/PL,R
					2				35-70°	J,VN/TH,FD/CLY/PL
565	570	5'	5.25	4.15	3	105	83	0.8	55°	J,VN/TH,FD/CLY,PY,CAL/PL-R
					1				0-10°	VN/TH,FD/CLY,PY,CAL/R
										NOTE: 567'-567.5'; Clay Gouge
570	575	5'	4.8	4.5	1	96	90	0.2	5-10°	J/TH/R
575	580	5'	4.8	4.8	1	96	96	0.2	55°	VN/TH,FD/CLY,CAL,PY/R
580	585	5'	5.1	4.8	6	102	96	1.2	30-40°	VN/TH-OP,FD/CLY,CAL,QTZ/R
585	590	5'	4.6	4.6	2	92	92	0.7	55-75°	J,VN/TH,FD/CLY/PL
					1				30°	VN,VG/OP,FD/QTZ,CLY,MAR,PY/PL,R
590	595	5'	5.3	4.0	8	106	80	2.5	30-90°	VN,VG/TH-OP,FD/QTZ,CLY,PY,MAR/R
					5				30-60°	J,VN/TH,FD/CLY/PL
										NOTE: SOME BROKEN RUBBLE AT 592' and 593.5'
595	600	5'	4.85	3.5	9	97	70	2.1	20-75°	J,VN/TH,FD/CLY,CAL/PL
					1				25-30°	J,VN/OP/CAL,CLY/PL
600	605	5'	4.9	4.35	7	98	87	1.6	50-85°	J,VN/TH,FD/CLY,CAL/PL
					1				0-10°	J,VN/TH,FD/CLY,CAL/PL
605	610	5'	4.55	4.2	7	91	82	2.4	55-85°	J,VN/TH,FD/CLY,CAL/PL
					4				10-45°	VN/TH-OP/CLY,CAL,MAR/R
610	615	5'	4.8	4.05	2	96	81	1.5	45-70°	VN/TH,FD/CLY/R
					5				45-50°	J,VN/TH,FD/CLY/PL

GEOTECHNICAL LOG

PROJECT: ROSEBUD LOCATION: DOZER LOGGED BY: SAS

HOLE NO.: RL-195C DIP: VERTICAL CORE SIZE: HQ DATE: 6-5-91

1	2	3	4	5	6	7	8	9	10	11
FROM	TO	CORE RUN	RECOVERED CORE	TOTAL LENGTH OF CORE>4"	NO. OF FRACTURES	CORE RECOVERY (%) (4/3 X 100)	R.Q.D. (%) (5/3 X 100)	FRACTURES PER FT. (6/4)	RANGE OR AVERAGE ANGLE OF FRACTURE W.R.T. CORE AXIS	REMARKS
615	620	5'	4.2	2.3	14	84	46	3.3	5-70°	VN/TH,FD/QTZ,CLY,MAR/R
										NOTE: 618'-619.5' Broken Rubble
620	625	5'	4.9	3.0	8	98	60	2.4	40-60°	VN/TH,FD/CLY,CAL/PL,R
					4				25-70°	VN,VG/TH-OP,FD/QTZ,CLY,MAR/R
625	630	5'	3.7	2.2	3	74	44	2.4	0-90°	VN,VG/TH-OP,FD/QTZ,CLY,MAR/R
					6				0-65°	J,VN/TH,FD/CLY/PL
630	635	5'	5.1	3.45	5	102	69	1.8	0-35°	VN/TH,FD/QTZ,CLY,PY/R
					1				60°	J,VN/TH,FD/CLY,QTZ/PL
					3				40-65°	VN,VG/TH-OP,FD/QTZ,CLY,MAR/R
635	640	5'	5.0	4.4	6	100	88	1.2	70-75°	J,VN/TH,FD/CLY,MAR,PY/PL
										NOTE: 639.8'-644' is Mostly Broken Rubble
640	645	5'	3.1	1.5	8	62	30	3.5	70-80°	J,VN/TH,FD/CLY,PY/PL
					3				0-55°	VN,VG/TH-OP,FD/CLY,QTZ,PY/R
645	650	5'	4.8	4.35	5	96	87	1.5	70-80°	J,VN/TH-OP,FD/CLY,QTZ,PY/PL
					2				65-70°	VN,VG/TH-OP,FD/QTZ,CLY,PY/R
										NOTE: 648'-650' Rock is very vuggy, filled w/
										QTZ, CLY, MAR, PY
650	655	5'	4.9	3.5	11	98	70	2.2	20-40°	VN,VG/TH-OP,FD/QTZ,CLY/R
655	660	5'	4.2	4.2	1	84	84	0.2	25°	VN,VG/TH-OP,FD/QTZ,CLY,MAR/R
660	665	5'	4.65	3.7	4	93	74	1.3	15-40°	VN/TH-OP,FD/QTZ,CLY,PY/R
					2				65-85°	J,VN/TH,FD/CLY,QTZ,PY/PL
665	670	5'	4.4	2.95	8	88	59	2.0	0-40°	VN/TH,FD/QTZ,CLY,PY/R
					1				50°	J/TH/PL-R
670	675	5'	4.85	4.05	4	97	81	1.6	40-60°	VN/TH,FD/QTZ,PY,CLY/R
					4				25-50°	VN,VG/TH-OP,FD/QTZ,CLY,PY/R
675	680	5'	4.6	4.6	3	92	92	0.9	40-50°	J/TH,FD/CLY/R
					1				25-35°	VN,VG/TH-OP,FD/QTZ,CLY,PY/R
680	685	5'	5.0	3.75	3	100	75	0.6	0-90°	VN,VG/TH-OP,FD/QTZ,CLY/R
										NOTE: 680'-681' Broken Rubble
685	690	5'	4.85	4.85	2	97	97	0.4	0-90°	VN,VG/TH-OP,FD/QTZ,CLY,MAR/R
690	695	5'	5.0	5.0	1	100	100	0.2	20°	VN/TH,FD/QTZ,PY/R
695	700	5'	4.45	4.45	1	89	89	0.2	30°	VN/TH,FD/QTZ,PY/R

GEOTECHNICAL LOG

PROJECT: ROSEBUD LOCATION: DOZER LOGGED BY: SAS PAGE 5 OF 6

HOLE NO.: RL-195C DIP: VERTICAL CORE SIZE: HQ DATE: 6-5-91

1	2	3	4	5	6	7	8	9	10	11
FROM	TO	CORE RUN	RECOVERED CORE	TOTAL LENGTH OF CORE>4"	NO. OF FRACTURES	CORE RECOVERY (%) (4/3 X 100)	R.Q.D. (%) (5/3 X 100)	FRACTURES PER FT. (6/4)	RANGE OR AVERAGE ANGLE OF FRACTURE W.R.T. CORE AXIS	REMARKS
700	705	5'	4.95	4.95	3	99%	99	0.6	15-30°	VN/TH, FD/QTZ, PY, MAR/R
705	710	5'	3.8	3.8	4	76	76	1.1	10-65°	VN/TH, FD/QTZ, CLY, PY, MAR/R
710	715	5'	4.9	4.6	3	98	92	1.2	35-60°	VN/TH, FD/QTZ, MAR, CLY/PL, R
					3				25-35°	VN, VG/TH-OP, FD/QTZ, CLY, MAR/R
715	720	5'	4.55	4.1	8	91	82	1.8	0-60°	VN/TH, FD/QTZ, CLY, MAR/R
720	725	5'	5.1	4.5	4	102	90	0.8	0-35°	VN/TH, FD/QTZ, CLY, MAR/R
725	730	5'	4.35	4.15	4	87	83	0.9	40-60°	VN/TH, FD/QTZ, CLY, MAR/PL, R
730	735	5'	5.0	4.3	4	100	86	1.2	65-75°	VN/TH, FD/CLY, QTZ, MAR/PL, R
					2				0-40°	VN, VG/TH-OP, FD/CLY, QTZ, MAR/R
735	740	5'	4.7	4.7	3	94	94	0.9	50-85°	J, VN/TH, FD/CLY/PL, R
					1				55°	VN/TH-OP, FD/CLY, QTZ, PY/R
740	745	5'	5.0	4.8	7	100	96	1.4	0-90°	VN, VG/TH-OP, FD/QTZ, CLY, MAR/R
745	750	5'	4.95	4.55	1	99	91	1.6	5-50°	VN, VG/TH-OP, FD/QTZ, CLY, MAR/R
					7				60-80°	VN/TH, FD/CLY, MAR/PL, W
750	755	5'	5.0	5.0	10	100	100	2.4	30-80°	VN/TH, FD/CLY, QTZ, MAR, PY/PL, W
					2				0-30°	VN, VG/TH-OP, FD/CLY, QTZ, MAR, PY/R
755	760	5'	4.25	3.9	10	85	78	2.4	0-85	VN/TH-OP, FD/CLY, QTZ, PY/R
760	765	5'	5.0	3.9	9	100	78	1.8	25-55°	VN/TH, FD/CLY, QTZ, PY/PL, R
765	770	5'	4.3	3.0	14	86	60	3.3	30-80°	VN/TH, FD/CLY, QTZ, MAR/R
770	775	5'	5.0	3.6	8	100	72	1.6	5-65°	VN/TH, FD/CLY, MAR/R
775	780	5'	4.35	4.35	4	87	87	0.9	0-50°	VN/TH, FD/CLY, MAR/R
780	785	5'	4.85	3.1	16	97	62	3.3	20-65°	VN, VG/TH-OP, FD/CLY, QTZ, MAR/R
785	790	5'	3.6	1.95	15	72	39	4.2	0-70°	VN, VG/TH-OP, FD/QTZ, CLY, MAR/R
790	795	5'	4.7	2.1	14	94	42	3.0	0-85°	VN, ±VG/TH, FD/CLY, QTZ, MAR/R
										NOTE: Zones of Broken Rubble 791.5'-794'
										Small Clay Gouge At 792'
795	800	5'	3.5	3.5	2	70	70	0.9	55°	VN/TH, FD/CLY, MAR/PL
					1				0-5°	VN/TH, FD/CLY, MAR/PL
800	805	5'	5.2	3.0	3	104	60	2.5	0-40°	VN, VG/TH-OP, FD/QTZ, CLY, MAR/R
					10				0-65°	VN/TH, FD/CLY, MAR, PY/R
805	810	5'	4.25	2.9	10	85	58	2.4	10-55°	VN/TH, FD/CLY, CAL, PY, MAR/PL, R

GEOTECHNICAL LOG

859-861

PROJECT: ROSEBUD LOCATION: DOZER LOGGED BY: JAS

HOLE NO.: RL-195C DIP: VERTICAL CORE SIZE: HQ DATE: 6-6-91

1	2	3	4	5	6	7	8	9	10	11
FROM	TO	CORE RUN	RECOVERED CORE	TOTAL LENGTH OF CORE>4"	NO. OF FRACTURES	CORE RECOVERY (%) (4/3 X 100)	R.Q.D. (%) (5/3 X 100)	FRACTURES PER FT. (6/4)	RANGE OR AVERAGE ANGLE OF FRACTURE W.R.T. CORE AXIS	REMARKS
810	815	5'	5.15	3.4	12	103%	68%	2.3	25-80°	VN/TH, FD/CLY, QTZ, MAR/PL-R
815	820	5'	4.0	3.3	10	80	66	2.5	5-90°	VN/TH-OP, FD/CLY, QTZ, PY, MAR/PL-R
820	825	5'	4.9	2.2	15	98	44	3.1	20-70°	VN/TH-OP, FD/CLY, CAL/PL-R
825	830	5'	4.2	3.45	6	84	69	1.4	30-60°	VN/TH-OP, FD/CLY, CAL, PY, MAR/PL, R
830	835	5'	5.0	5.0	7	100	100	1.4	15-70°	VN/TH-OP, FD/CLY, CAL, MAR/PL-R
835	840	5'	4.7	4.15	4	94	83	0.9	30-75°	VN/TH-OP, FD/CLY, CAL/R
840	845	5'	4.75	4.0	10	95	80	2.1	30-60°	VN/TH-OP, FD/CLY, CAL/R
845	850	5'	3.9	1.9	8	78	38	3.3	30-65°	VN/TH-OP, FD/CLY/PL-R
					5				50-60°	VN/TH, FD/CLY/R
850	853	3'	3.0	3.0	1	100	100	0.3	55°	F/TH, FD/CLY/W
853	854.1	1.1'	1.1	0.0	5	100	0	4.5	45-55°	F, J/TH, FD/CLY/W
854.1	858	3.9'	3.1	1.2	10	79	31	3.2	60-65°	VN/TH, FD/CLY, CAL/R
858	860	2.0'	1.3	0.0	3	65	0	2.3	45-70°	VN/TH, FD/CLY/R
860	865	5'	4.1	2.1	6	82	42	1.5	45-60°	VN/TH, FD/CLY/R
										NOTES: 853'-854.1' Clay-Gouge Shear Zone.
										854.1'-858' CAL, w/some cly veins.
										858', Contact, Lower Bud Tuff and "Dozer" F.G.T.
										859'-861' Broken Rubble
865	870	5'	4.9	4.25	9	98	85	1.8	10-80°	VN/TH, FD/QTZ, CLY, PY/PL-R
870	875	5'	4.7	4.5	6	94	90	1.3	5-60°	VN/TH, FD/QTZ, CLY, PY/PL-R
875	880	5'	4.6	4.6	8	92	92	1.7	0-65°	VN/TH, FD/QTZ, CLY/PL-R
880	885	5'	4.65	3.6	3	93	72	1.9	50-80°	VG/TH-OP, FD/QTZ, CLY/R
					6				20-75	VN/TH, FD/QTZ, CLY/R
										NOTE: 881'-882' Broken Rubble
885	890	5'	3.8	2.55	9	76	51	2.4	0-75°	VN, VG/TH-OP, FD/QTZ, CLY, BAR/R
										Note: 888.5' Clay Gouge
890	895	5'	3.95	3.2	5	79	64	1.3	20-65°	VN/TH, FD/CLY, QTZ/R
895	900	5'	5.0	2.9	12	100	58	2.4	10-65°	VN/TH, FD/QTZ, CLY, MAR, PY/R
900	905	5'	4.55	3.45	1	91	69	1.8	5-10°	VN/TH, FD/QTZ, CLY/R
					7				55-85°	VN/TH, FD/CLY, QTZ, PY/R
905	910	5'	4.95	3.7	8	99	74	1.6	5-75°	J, VN/TH, FD/QTZ, CLY, MAR/R
910	913	3'	2.6	1.65	8	87	55	3.1	60-85°	J, VN/TH, FD/CLY, MAR/PL-R

T.D. 913'

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RL195
0-355

Geochemical Lab Report

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

JUN 19 1991

REPORT: R91-11054.4 (COMPLETE)

REFERENCE INFO: RL195 0-685

CLIENT: LAC MINERALS (USA) INC.
PROJECT: ROSEBUD

SUBMITTED BY: WALCK
DATE PRINTED: 18-JUN-91

ORDER	ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Au DUP Gold Duplicate	11	0.002 OPT		Fire Assay
2	Au Gold	74	0.002 OPT		Fire Assay
3	AG DUP AG DUPLICATE	8	0.02 OPT		Fire Assay
4	AG DUP AG DUPLICATE	1	0.02 OPT		Fire Assay
5	Ag Silver	74	0.02 OPT		Fire Assay
6	AU Dup Gold Duplicate	2	0.002 OPT		Fire Assay

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
Z OTHER DRILL TYPES	71	2 -150	71	CRUSH,PULVERIZE -150	71
P PREPARED PULP	3	4 AS REC'D	3	OVERWEIGHT/LBS	186
				AS RECEIVED, NO SP	3

REPORT COPIES TO: MS. CYNDIE WALCK
MR. TIM KUHL
MR. TIM KUHL

INVOICE TO: MR. TIM KUHL

Nicole Nitten

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

REPORT: R91-11054.4 (COMPLETE)

DATE PRINTED: 18-JUN-91
PROJECT: ROSEBUD

STANDARD NAME	ELEMENT UNITS	Au DUP OPT	Au OPT	AG DUP OPT	AG DUP OPT	Ag OPT	AU Dup OPT
PD SYN STD AU/AG		-	0.039	-	-	0.40	-
PD SYN STD AU/AG		-	0.039	-	-	0.40	-
Number of Analyses		-	2	-	-	2	-
Mean Value		-	0.0390	-	-	0.400	-
Standard Deviation		-	0.00000	-	-	0.0000	-
Accepted Value		-	0.040	-	-	0.40	-
ANALYTICAL BLANK		-	<0.002	-	-	<0.02	-
ANALYTICAL BLANK		-	<0.002	-	-	<0.02	-
Number of Analyses		-	2	-	-	2	-
Mean Value		-	0.0010	-	-	0.010	-
Standard Deviation		-	0.00000	-	-	0.0000	-
Accepted Value		-	0.002	-	-	0.02	-

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RL195c
440-703

BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

JUN 26 1991

REPORT: R91-11056.4 (COMPLETE)

REFERENCE INFO: RL195 440-703

CLIENT: LAC MINERALS (USA) INC.
PROJECT: ROSEBUD

SUBMITTED BY: KENNER
DATE PRINTED: 24-JUN-91

ORDER	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Au	Gold	54	0.002 OPT		Fire Assay
2	Ag	Silver	54	0.02 OPT	MULT ACID TOT DIG	Atomic Absorption

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
D DRILL CORE	52	2 -150	52	CRUSH,PULVERIZE -150	50
P PREPARED PULP	2	4 AS REC'D	2	AS RECEIVED, NO SP	2

NOTES: # indicates ERRATIC RESULTS

REMARKS: #ERRATIC RESULTS OBSERVED ON THE FOLLOWING:
RL-195 598-603--.007 OPT.
RL-195 608-613--.125 AND .212 OPT.
RL-195 688-693--.008 AND .014 OPT.
****CORRECTED REPORT****
SAMPLES RL195 643-648 AND 678-683 WERE
INITIALLY REPORTED ON R91-11056.4 UNDER RL194
DUPLICATED SAMPLES. INTERVAL 643-438 WAS MARKED
HOLE RL194 WHEREAS INTERVAL 678-683 WAS MARKED
HOLE RL195.

REPORT COPIES TO: MR. TIM KUHL
MR. TIM KUHL
MS. KRISTIN KENNER

INVOICE TO: MR. TIM KUHL

Nicole Whitten

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Geochemical Lab Report

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 24-JUN-91

REPORT: R91-11056.4 (COMPLETE)

PROJECT: ROSEBUD

STANDARD NAME	ELEMENT UNITS	Au OPT	Ag OPT
AU ASSAY STD		0.152	-
Number of Analyses		1	-
Mean Value		0.1520	-
Standard Deviation		-	-
Accepted Value		0.150	-
ANALYTICAL BLANK		<0.002	-
Number of Analyses		1	-
Mean Value		0.0010	-
Standard Deviation		-	-
Accepted Value		0.002	-
GEO TRACE STD1(1989)		-	1.06
GEO TRACE STD1(1989)		-	1.12
Number of Analyses		-	2
Mean Value		-	1.088
Standard Deviation		-	0.0444
Accepted Value		-	1.05
AG ASSAY		-	2.93
AG ASSAY		-	3.00
Number of Analyses		-	2
Mean Value		-	2.965
Standard Deviation		-	0.0552
Accepted Value		-	3.03
AU ASSAY STD		0.015	-
Number of Analyses		1	-
Mean Value		0.0150	-
Standard Deviation		-	-
Accepted Value		0.015	-

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

JUN 26 1991

REPORT: R91-11056.4 (COMPLETE)

REFERENCE INFO: RL195 440-703

CLIENT: LAC MINERALS (USA) INC.
PROJECT: ROSEBUD

SUBMITTED BY: KENNER
DATE PRINTED: 24-JUN-91

ORDER	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Au	Gold	54	0.002 OPT		Fire Assay
2	Ag	Silver	54	0.02 OPT	MULT ACID TOT DIG	Atomic Absorption

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
D DRILL CORE	52	2 -150	52	CRUSH,PULVERIZE -150	50
P PREPARED PULP	2	4 AS REC'D	2	AS RECEIVED, NO SP	2

NOTES: # indicates ERRATIC RESULTS

REMARKS: #ERRATIC RESULTS OBSERVED ON THE FOLLOWING:
RL-195 598-603--.007 OPT.
RL-195 608-613--.125 AND .212 OPT.
RL-195 688-693--.008 AND .014 OPT.
****CORRECTED REPORT****
SAMPLES RL195 643-648 AND 678-683 WERE
INITIALLY REPORTED ON R91-11056.4 UNDER RL194
DUPLICATED SAMPLES. INTERVAL 643-438 WAS MARKED
HOLE RL194 WHEREAS INTERVAL 678-683 WAS MARKED
HOLE RL195.

REPORT COPIES TO: MR. TIM KUHL
MR. TIM KUHL
MS. KRISTIN KENNER

INVOICE TO: MR. TIM KUHL

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Geochemical Lab Report

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 24-JUN-91

REPORT: R91-11056.4 (COMPLETE)

PROJECT: ROSEBUD

SAMPLE NUMBER	ELEMENT UNITS	Au OPT	Ag OPT
D2 RL-195 440-445		0.002	<0.02
D2 RL-195 445-450		<0.002	<0.02
D2 RL-195 450-455		<0.002	<0.02
D2 RL-195 455-460		<0.002	<0.02
D2 RL-195 460-465		0.006	0.08
D2 RL-195 465-470		<0.002	0.05
D2 RL-195 470-475		0.003	0.06
D2 RL-195 475-480		<0.002	0.04
D2 RL-195 480-485		0.010	0.07
D2 RL-195 485-490		<0.002	0.04
D2 RL-195 490-495		0.010	0.05
D2 RL-195 495-500		0.004	0.04
D2 RL-195 500-505		0.006	0.09
D2 RL-195 505-510		0.007	0.07
D2 RL-195 510-515		0.006	0.08
D2 RL-195 515-520		0.004	0.07
D2 RL-195 520-525		<0.002	<0.02
D2 RL-195 525-530		0.002	<0.02
D2 RL-195 530-533		0.002	0.04
D2 RL-195 538-543		<0.002	<0.02
P4 BA-99		<0.002	<0.02
D2 RL-195 543-548		<0.002	<0.02
D2 RL-195 548-553		<0.002	<0.02
D2 RL-195 553-558		<0.002	<0.02
D2 RL-195 558-563		0.002	<0.02
D2 RL-195 563-568		0.006	<0.02
D2 RL-195 568-573		<0.002	<0.02
D2 RL-195 573-578		<0.002	0.03
D2 RL-195 578-583		0.005	0.04
D2 RL-195 583-588		<0.002	0.18
D2 RL-195 588-593		<0.002	0.10
D2 RL-195 593-598		0.056	0.03
D2 RL-195 598-603		<0.002#	0.03
D2 RL-195 603-608		0.081	0.19
D2 RL-195 608-613		0.288#	0.58
D2 RL-195 613-618		0.045	0.04
D2 RL-195 618-623		0.006	0.13
D2 RL-195 623-628		0.289	0.63
D2 RL-195 628-633		0.080	0.19
D2 RL-195 633-638		0.125	0.10
D2 RL-195 638-643		0.175	0.29
D2 RL-195 643-648***		0.459	
P4 BA-100		0.018	0.10
D2 RL-195 648-653		0.168	0.62
D2 RL-195 653-658		0.250	0.57
D2 RL-195 658-663		0.036	0.14
D2 RL-195 663-668		0.007	0.94
D2 RL-195 668-673		0.010	0.35
D2 RL-195 673-678		0.008	0.08
D2 RL-195 678-683***		0.029	
D2 RL-195 683-688		0.031	0.30
D2 RL-195 688-693		0.014#	0.20
D2 RL-195 693-698		0.026	0.13
D2 RL-195 698-703		0.041	0.16

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PROJECT: ROSEBUD

STANDARD NAME	ELEMENT UNITS	Au OPT	Ag OPT
AU ASSAY STD		0.152	-
Number of Analyses		1	-
Mean Value		0.1520	-
Standard Deviation		-	-
Accepted Value		0.150	-
ANALYTICAL BLANK		<0.002	-
Number of Analyses		1	-
Mean Value		0.0010	-
Standard Deviation		-	-
Accepted Value		0.002	-
GEO TRACE STD1(1989)		-	1.06
GEO TRACE STD1(1989)		-	1.12
Number of Analyses		-	2
Mean Value		-	1.088
Standard Deviation		-	0.0444
Accepted Value		-	1.05
AG ASSAY		-	2.93
AG ASSAY		-	3.00
Number of Analyses		-	2
Mean Value		-	2.965
Standard Deviation		-	0.0552
Accepted Value		-	3.03
AU ASSAY STD		0.015	-
Number of Analyses		1	-
Mean Value		0.0150	-
Standard Deviation		-	-
Accepted Value		0.015	-

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Geochemical Lab Report

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

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REPORT: R91-11056.4 (COMPLETE)

PROJECT: ROSEBUD

SAMPLE NUMBER	ELEMENT UNITS	Au OPT	Ag OPT
RL-195 470-475		0.003	0.06
Duplicate		0.005	0.06
RL-195 480-485		0.010	0.07
Prep Duplicate		0.011	0.10
RL-195 520-525		<0.002	<0.02
Duplicate		<0.002	
RL-195 558-563		0.002	<0.02
Duplicate			<0.02
RL-195 578-583		0.005	0.04
Duplicate		0.011	
RL-195 628-633		0.080	0.19
Duplicate		0.093	
RL-195 648-653		0.168	0.62
Duplicate			0.53
RL-195 688-693		0.014#	0.20
Duplicate		0.029	
RL-195 698-703		0.041	0.16
Prep Duplicate		0.054	0.16

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702 (359-9330)

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BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

RL195C
440-703

Geochemical Lab Report

JUL 1 1991

LAC MINERALS (USA) INC.
MR. TIM KUHN
1395 GREG STREET #107
SPARKS, NV
89431

Corrected Report

Bondar-Clegg, Inc.
625 Spice Island Dr.
Building 1, Unit A
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702 (359-9330)

BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

REPORT: R91-11056.4 (COMPLETE)

REFERENCE INFO: RL195 440-703

CLIENT: LAC MINERALS (USA) INC.
PROJECT: ROSEBUD

SUBMITTED BY: KENNER
DATE PRINTED: 25-JUN-91

ORDER	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Au	Gold	54	0.002 OPT		Fire Assay
2	Ag	Silver	54	0.02 OPT	MULT ACID TOT DIG	Atomic Absorption

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
D DRILL CORE	52	2 -150	52	CRUSH,PULVERIZE -150	50
P PREPARED PULP	2	4 AS REC'D	2	AS RECEIVED, NO SP	2

NOTES: # indicates ERRATIC RESULTS

REMARKS: #ERRATIC RESULTS OBSERVED ON THE FOLLOWING:
RL-195 598-603--.007 OPT.
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HOLE RL195.

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PROJECT: ROSEBUD

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D2 RL-195 445-450		<0.002	<0.02
D2 RL-195 450-455		<0.002	<0.02
D2 RL-195 455-460		<0.002	<0.02
D2 RL-195 460-465		0.006	0.08
D2 RL-195 465-470		<0.002	0.05
D2 RL-195 470-475		0.003	0.06
D2 RL-195 475-480		<0.002	0.04
D2 RL-195 480-485		0.010	0.07
D2 RL-195 485-490		<0.002	0.04
D2 RL-195 490-495		0.010	0.05
D2 RL-195 495-500		0.004	0.04
D2 RL-195 500-505		0.006	0.09
D2 RL-195 505-510		0.007	0.07
D2 RL-195 510-515		0.006	0.08
D2 RL-195 515-520		0.004	0.07
D2 RL-195 520-525		<0.002	<0.02
D2 RL-195 525-530		0.002	<0.02
D2 RL-195 530-533		0.002	0.04
D2 RL-195 538-543		<0.002	<0.02
P4 BA-99		<0.002	<0.02
D2 RL-195 543-548		<0.002	<0.02
D2 RL-195 548-553		<0.002	<0.02
D2 RL-195 553-558		<0.002	<0.02
D2 RL-195 558-563		0.002	<0.02
D2 RL-195 563-568		0.006	<0.02
D2 RL-195 568-573		<0.002	<0.02
D2 RL-195 573-578		<0.002	0.03
D2 RL-195 578-583		0.005	0.04
D2 RL-195 583-588		<0.002	0.18
D2 RL-195 588-593		<0.002	0.10
D2 RL-195 593-598		0.056	0.03
D2 RL-195 598-603		<0.002#	0.03
D2 RL-195 603-608		0.081	0.19
D2 RL-195 608-613		0.288#	0.58
D2 RL-195 613-618		0.045	0.04
D2 RL-195 618-623		0.006	0.13
D2 RL-195 623-628		0.289	0.63
D2 RL-195 628-633		0.080	0.19
D2 RL-195 633-638		0.125	0.10
D2 RL-195 638-643		0.175	0.29
D2 RL-195 643-648***		0.459	0.53
P4 BA-100		0.018	0.10
D2 RL-195 648-653		0.168	0.62
D2 RL-195 653-658		0.250	0.57
D2 RL-195 658-663		0.036	0.14
D2 RL-195 663-668		0.007	0.94
D2 RL-195 668-673		0.010	0.35
D2 RL-195 673-678		0.008	0.08
D2 RL-195 678-683***		0.029	0.18
D2 RL-195 683-688		0.031	0.30
D2 RL-195 688-693		0.014#	0.20
D2 RL-195 693-698		0.026	0.13
D2 RL-195 698-703		0.041	0.16

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Geochemical Lab Report

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 25-JUN-91

REPORT: R91-11056.4 (COMPLETE)

PROJECT: ROSEBUD

STANDARD NAME	ELEMENT UNITS	Au OPT	Ag OPT
AU ASSAY STD		0.152	-
Number of Analyses		1	-
Mean Value		0.1520	-
Standard Deviation		-	-
Accepted Value		0.150	-
ANALYTICAL BLANK		<0.002	-
Number of Analyses		1	-
Mean Value		0.0010	-
Standard Deviation		-	-
Accepted Value		0.002	-
GEO TRACE STD1(1989)		-	1.06
GEO TRACE STD1(1989)		-	1.12
Number of Analyses		-	2
Mean Value		-	1.088
Standard Deviation		-	0.0444
Accepted Value		-	1.05
AG ASSAY		-	2.93
AG ASSAY		-	3.00
Number of Analyses		-	2
Mean Value		-	2.965
Standard Deviation		-	0.0552
Accepted Value		-	3.03
AU ASSAY STD		0.015	-
Number of Analyses		1	-
Mean Value		0.0150	-
Standard Deviation		-	-
Accepted Value		0.015	-

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SAMPLE NUMBER	ELEMENT UNITS	Au OPT	Ag OPT
RL-195 470-475		0.003	0.06
Duplicate		0.005	0.06
RL-195 480-485		0.010	0.07
Prep Duplicate		0.011	0.10
RL-195 520-525		<0.002	<0.02
Duplicate		<0.002	
RL-195 558-563		0.002	<0.02
Duplicate			<0.02
RL-195 578-583		0.005	0.04
Duplicate		0.011	
RL-195 628-633		0.080	0.19
Duplicate		0.093	
RL-195 648-653		0.168	0.62
Duplicate			0.53
RL-195 688-693		0.014#	0.20
Duplicate		0.029	
RL-195 698-703		0.041	0.16
Prep Duplicate		0.054	0.16

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RL195C
703-913

Geochemical Lab Report

JUL 1 1991

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

REPORT: R91-11139.4 (COMPLETE)

REFERENCE INFO: RL195C 703-913

CLIENT: LAC MINERALS (USA) INC.
PROJECT: ROSEBUD

SUBMITTED BY: KENNER
DATE PRINTED: 28-JUN-91

ORDER	ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Au Gold	46	0.002 OPT		Fire Assay
2	Au DUP Gold Duplicate	19	0.002 OPT		Fire Assay
3	AU Dup Gold Duplicate	6	0.002 OPT		Fire Assay
4	Au Dup AU DUPLICATE	2	0.002 OPT		Fire Assay
5	Ag Silver	46	0.02 OPT	MULT ACID TOT DIG	Atomic Absorption
6	AG DUP AG DUPLICATE	5	0.02 OPT		Fire Assay

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
D DRILL CORE	44	2 -150	44	CRUSH,PULVERIZE -150	44
P PREPARED PULP	2	4 AS REC'D	2	AS RECEIVED, NO SP	2

REMARKS: =RESULTS BEING CHECKED.

PRELIMINARY REPORT

REPORT COPIES TO: MR. TIM KUHL
MR. TIM KUHL
MS. KRISTIN KENNER

INVOICE TO: MR. TIM KUHL

Nicole Witten

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PROJECT: ROSEBUD

STANDARD NAME	ELEMENT UNITS	Au OPT	Au DUP OPT	AU Dup OPT	Au Dup OPT	Ag OPT	AG DUP OPT
ANALYTICAL BLANK		<0.002	-	-	-	-	-
ANALYTICAL BLANK		<0.002	-	-	-	-	-
Number of Analyses		2	-	-	-	-	-
Mean Value		0.0010	-	-	-	-	-
Standard Deviation		0.000000	-	-	-	-	-
Accepted Value		0.002	-	-	-	-	-
AU ASSAY STD		0.153	-	-	-	-	-
Number of Analyses		1	-	-	-	-	-
Mean Value		0.1530	-	-	-	-	-
Standard Deviation		-	-	-	-	-	-
Accepted Value		0.150	-	-	-	-	-
GEO TRACE STD1(1989)		-	-	-	-	1.10	-
GEO TRACE STD1(1989)		-	-	-	-	1.03	-
Number of Analyses		-	-	-	-	2	-
Mean Value		-	-	-	-	1.065	-
Standard Deviation		-	-	-	-	0.0443	-
Accepted Value		-	-	-	-	1.05	-
AG ASSAY		-	-	-	-	3.05	-
AG ASSAY		-	-	-	-	2.96	-
Number of Analyses		-	-	-	-	2	-
Mean Value		-	-	-	-	3.006	-
Standard Deviation		-	-	-	-	0.0612	-
Accepted Value		-	-	-	-	3.03	-

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Geochemical Lab Report

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DATE PRINTED: 18-JUN-91
PROJECT: ROSEBUD

SAMPLE NUMBER	ELEMENT UNITS	Au DUP OPT	Au OPT	AG DUP OPT	AG DUP OPT	Ag OPT	AU Dup OPT
Z2 RL-195 0-5			0.006			0.05	
Z2 RL-195 5-10			0.002			0.03	
Z2 RL-195 10-15		0.025	0.025	0.13	0.14	0.13	0.026
Z2 RL-195 15-20			0.002			0.03	
Z2 RL-195 20-25		<0.002	<0.002	0.02		0.02	
Z2 RL-195 25-30			<0.002			<0.02	
Z2 RL-195 30-35			<0.002			<0.02	
Z2 RL-195 35-40			<0.002			0.02	
Z2 RL-195 40-45			<0.002			0.02	
Z2 RL-195 45-50			0.006			0.06	
Z2 RL-195 50-55			<0.002			0.03	
Z2 RL-195 55-60			0.002			0.04	
Z2 RL-195 60-65			0.002			0.03	
Z2 RL-195 65-70			0.002			<0.02	
Z2 RL-195 70-75		<0.002	<0.002	0.03		<0.02	
Z2 RL-195 75-80			0.003			0.05	
Z2 RL-195 80-85			0.002			0.04	
Z2 RL-195 85-90			<0.002			0.03	
Z2 RL-195 90-95		0.002	0.002			0.05	
Z2 RL-195 95-100			<0.002			0.03	
P4 BA-10			0.036			0.16	
Z2 RL-195 100-105			<0.002			<0.02	
Z2 RL-195 105-110			<0.002			<0.02	
Z2 RL-195 110-115			<0.002			<0.02	
Z2 RL-195 115-120			<0.002			<0.02	
Z2 RL-195 120-125			<0.002			0.03	
Z2 RL-195 125-130		<0.002	<0.002	0.03		0.03	
Z2 RL-195 130-135			<0.002			0.03	
Z2 RL-195 135-140			<0.002			<0.02	
Z2 RL-195 140-145			<0.002			0.04	
Z2 RL-195 145-150			<0.002			0.05	
Z2 RL-195 150-155			<0.002			0.05	
Z2 RL-195 155-160			<0.002			0.04	
Z2 RL-195 160-165			<0.002			0.03	
Z2 RL-195 165-170			<0.002			0.03	
Z2 RL-195 170-175			<0.002			<0.02	
Z2 RL-195 175-180		<0.002	<0.002	0.03		0.03	
Z2 RL-195 180-185			<0.002			0.03	
Z2 RL-195 185-190		<0.002	<0.002			<0.02	
Z2 RL-195 190-195			<0.002			0.03	

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PROJECT: ROSEBUD

SAMPLE NUMBER	ELEMENT UNITS	Au DUP OPT	Au OPT	AG DUP OPT	AG DUP OPT	Ag OPT	AU Dup OPT
Z2 RL-195 195-200			<0.002			0.04	
P4 BA-11			0.033			0.14	
Z2 RL-195 200-205			0.003			0.03	
Z2 RL-195 205-210			<0.002			<0.02	
Z2 RL-195 210-215			<0.002			<0.02	
Z2 RL-195 215-220			<0.002			<0.02	
Z2 RL-195 220-225			<0.002			<0.02	
Z2 RL-195 225-230		<0.002	<0.002	0.03		<0.02	
Z2 RL-195 230-235			<0.002			0.03	
Z2 RL-195 235-240			<0.002			0.03	
Z2 RL-195 240-245			<0.002			0.03	
Z2 RL-195 245-250			<0.002			0.03	
Z2 RL-195 250-255			<0.002			0.03	
Z2 RL-195 255-260			<0.002			<0.02	
Z2 RL-195 260-265			<0.002			<0.02	
Z2 RL-195 265-270			<0.002			0.04	
Z2 RL-195 270-275			0.003			0.04	
Z2 RL-195 275-280		<0.002	0.003	0.04		0.04	
Z2 RL-195 280-285			<0.002			<0.02	
Z2 RL-195 285-290			<0.002			<0.02	
Z2 RL-195 290-295			<0.002			0.03	
Z2 RL-195 295-300			<0.002			<0.02	
P4 BA-12			0.078			0.07	
Z2 RL-195 300-305			0.011			0.04	
Z2 RL-195 305-310			0.007			0.03	
Z2 RL-195 310-315		0.016	0.025			0.05	0.011
Z2 RL-195 315-320			0.007			0.03	
Z2 RL-195 320-325			0.003			0.03	
Z2 RL-195 325-330			<0.002			<0.02	
Z2 RL-195 330-335		0.004	0.004	0.03		0.03	
Z2 RL-195 335-340			<0.002			0.03	
Z2 RL-195 340-345			<0.002			<0.02	
Z2 RL-195 345-350			<0.002			0.03	
Z2 RL-195 350-355			0.004			<0.02	

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DATE PRINTED: 24-JUN-91

REPORT: R91-11056.4 (COMPLETE)

PROJECT: ROSEBUD

SAMPLE NUMBER	ELEMENT UNITS	Au OPT	Ag OPT
D2 RL-195 440-445		0.002	<0.02
D2 RL-195 445-450		<0.002	<0.02
D2 RL-195 450-455		<0.002	<0.02
D2 RL-195 455-460		<0.002	<0.02
D2 RL-195 460-465		0.006	0.08
D2 RL-195 465-470		<0.002	0.05
D2 RL-195 470-475		0.003	0.06
D2 RL-195 475-480		<0.002	0.04
D2 RL-195 480-485		0.010	0.07
D2 RL-195 485-490		<0.002	0.04
D2 RL-195 490-495		0.010	0.05
D2 RL-195 495-500		0.004	0.04
D2 RL-195 500-505		0.006	0.09
D2 RL-195 505-510		0.007	0.07
D2 RL-195 510-515		0.006	0.08
D2 RL-195 515-520		0.004	0.07
D2 RL-195 520-525		<0.002	<0.02
D2 RL-195 525-530		0.002	<0.02
D2 RL-195 530-533		0.002	0.04
D2 RL-195 538-543		<0.002	<0.02
P4 BA-99		<0.002	<0.02
D2 RL-195 543-548		<0.002	<0.02
D2 RL-195 548-553		<0.002	<0.02
D2 RL-195 553-558		<0.002	<0.02
D2 RL-195 558-563		0.002	<0.02
D2 RL-195 563-568		0.006	<0.02
D2 RL-195 568-573		<0.002	<0.02
D2 RL-195 573-578		<0.002	0.03
D2 RL-195 578-583		0.005	0.04
D2 RL-195 583-588		<0.002	0.18
D2 RL-195 588-593		<0.002	0.10
D2 RL-195 593-598		0.056	0.03
D2 RL-195 598-603		<0.002#	0.03
D2 RL-195 603-608		0.081	0.19
D2 RL-195 608-613		0.288#	0.58
D2 RL-195 613-618		0.045	0.04
D2 RL-195 618-623		0.006	0.13
D2 RL-195 623-628		0.289	0.63
D2 RL-195 628-633		0.080	0.19
D2 RL-195 633-638		0.125	0.10
D2 RL-195 638-643		0.175	0.29
D2 RL-195 643-648***		0.459	—
P4 BA-100		0.018	0.10
D2 RL-195 648-653		0.168	0.62
D2 RL-195 653-658		0.250	0.57
D2 RL-195 658-663		0.036	0.14
D2 RL-195 663-668		0.007	0.94
D2 RL-195 668-673		0.010	0.35
D2 RL-195 673-678		0.008	0.08
D2 RL-195 678-683***		0.029	—
D2 RL-195 683-688		0.031	0.30
D2 RL-195 688-693		0.014#	0.20
D2 RL-195 693-698		0.026	0.13
D2 RL-195 698-703		0.041	0.16

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Geochemical Lab Report

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SAMPLE NUMBER	ELEMENT UNITS	Au OPT	Au DUP OPT	AU Dup OPT	Au Dup OPT	Ag OPT	AG DUP OPT
D2 RL195C 703 708		0.110	0.069	0.074		0.28	
D2 RL195C 708 713		0.004				0.06	
D2 RL195C 713 718		0.019				0.15	
D2 RL195C 718 723		0.033				0.10	
D2 RL195C 723 728		0.020				0.19	
D2 RL195C 728 733		0.072	0.037	0.039		0.15	
D2 RL195C 733 738		0.041	0.039			0.26	
D2 RL195C 738 743		0.014				0.06	
D2 RL195C 743 748		0.007				0.05	
D2 RL195C 748 753		0.010	0.009			0.08	0.08
D2 RL195C 753 758		0.009				0.06	
D2 RL195C 758 763		0.013				0.08	
D2 RL195C 763 768		0.046				0.10	
D2 RL195C 768 773		0.018	0.031			0.14	
D2 RL195C 773 778		0.020	0.025			0.10	
D2 RL195C 778 783		0.029	0.035			0.28	
D2 RL195C 783 788		0.092	0.039	0.055		0.17	
D2 RL195C 788 793		0.026				0.12	
D2 RL195C 793 798		0.074	0.089	0.133		0.41	
D2 RL195C 798 803		0.140	0.173	0.177	0.160	0.27	0.29
P4 BA 24		0.048				0.04	
D2 RL195C 803 808		0.040				0.07	
D2 RL195C 808 813		0.018				0.08	
D2 RL195C 813 818		0.059				0.10	
D2 RL195C 818 823		0.048				0.04	
D2 RL195C 823 828		0.070				0.15	
D2 RL195C 828 833		0.020				0.05	
D2 RL195C 833 838		0.162	0.217			0.27	0.29
D2 RL195C 838 843		0.085	0.082			0.19	
D2 RL195C 843 848		0.023	0.042			0.38	
D2 RL195C 848 853		0.500	0.480			0.56	
D2 RL195C 853 854.1		0.539	0.488	0.497	0.471	0.81	
D2 RL195C 854.1 858		0.005	<0.002			<0.02	
D2 RL195C 858 862		0.003	<0.002			<0.02	
D2 RL195C 862 867		0.006				0.03	
D2 RL195C 867 872		0.002				0.35	
D2 RL195C 872 877		0.018				0.10	
D2 RL195C 877 882		<0.002				0.22	
D2 RL195C 882 887		<0.002				0.05	
D2 RL195C 887 892		0.009				0.08	

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SAMPLE NUMBER	ELEMENT UNITS	Au OPT	Au DUP OPT	AU Dup OPT	Au Dup OPT	Ag OPT	AG DUP OPT
D2 RL195C 892 897		<0.002	<0.002			<0.02	<0.02
P4 BA 25		0.034				0.25	
D2 RL195C 897 902		0.002				<0.02	
D2 RL195C 902 907		<0.002				<0.02	
D2 RL195C 907 910		<0.002	<0.002			<0.02	
D2 RL195C 910 913		<0.002				<0.02	0.03

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SAMPLE NUMBER	ELEMENT UNITS	Au DUP OPT	Au OPT	AG DUP OPT	AG DUP OPT	Ag OPT	AU Dup OPT
RL-195 90-95		0.002	0.002			0.05	
Prep Duplicate			<0.002			0.03	
RL-195 335-340			<0.002			0.03	
Prep Duplicate			<0.002			0.03	

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SAMPLE NUMBER	ELEMENT UNITS	Au OPT	Ag OPT
RL-195 470-475		0.003	0.06
Duplicate		0.005	0.06
RL-195 480-485		0.010	0.07
Prep Duplicate		0.011	0.10
RL-195 520-525		<0.002	<0.02
Duplicate		<0.002	
RL-195 558-563		0.002	<0.02
Duplicate			<0.02
RL-195 578-583		0.005	0.04
Duplicate		0.011	
RL-195 628-633		0.080	0.19
Duplicate		0.093	
RL-195 648-653		0.168	0.62
Duplicate			0.53
RL-195 688-693		0.0144	0.20
Duplicate		0.029	
RL-195 698-703		0.041	0.16
Prep Duplicate		0.054	0.16

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RL195C 748 753		0.010	0.009			0.08	0.08
Duplicate						0.08	
RL195C 798 803		0.140	0.173	0.177	0.160	0.27	0.29
Prep Duplicate		0.160	0.160	0.025		0.29	
RL195C 833 838		0.162	0.217			0.27	0.29
Duplicate						0.29	
RL195C 907 910		<0.002	<0.002			<0.02	
Prep Duplicate		<0.002				<0.02	
RL195C 910 913		<0.002				<0.02	0.03
Duplicate						0.03	

Chemex Labs Inc.

Analytical Chemists * Geochemists * Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-5395

To: LAC MINERALS U.S.A. INC

1395 GREG ST., STE 107
SPARKS, NEVADA
89431

Project :
Comments: ATTN: BOB THOMAS CC: GARFIELD MACVEIGH

Page Number :1
Total Pages :1
Certificate Date: 14-JUN-91
Invoice No. : I9116170
P.O. Number :

CERTIFICATE OF ANALYSIS A9116170

SAMPLE DESCRIPTION	PREP CODE		Au oz/T									
RL-194 045-050	205	272	0.002									
RL-194 095-100	205	272	0.001									
RL-194 145-150	205	272	0.026									
RL-194 195-200	205	272	0.001									
RL-194 245-250	205	272	0.001		Equinox							
RL-194 295-300	205	272	0.002									
RL-194 345-350	205	272	0.003									
RL-194 663-668	205	294	0.001									
RL-194 707-712	205	294	0.009									
RL-194 758-763	205	294	0.004									
RL-194 855-860	205	294	0.003									
RL-195 045-050	205	272	0.003									
RL-195 095-100	205	273	0.001									
RL-195 145-150	205	272	0.002									
RL-195 195-200	205	272	0.002		LAC-							
RL-195 245-250	205	272	0.001									
RL-195 295-300	205	294	0.025									
RL-195 345-350	205	294	0.001									
RL-195 485-490	205	272	0.004									
RL-195 538-543	205	272	0.012									
RL-195 588-593	205	272	0.020									
RL-195 638-643	205	272	0.137									
RL-195 698-703	205	272	0.075									

CERTIFICATION: Vandia M. Adam

Chemex Labs Inc.

Analytical Chemists * Geochemists * Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-5395

To: LAC MINERALS U.S.A. INC

1395 GREG ST., STE 107
SPARKS, NEVADA
89431

Project : ROSEBUD
Comments: ATTN: TIM KUHL

Page Number :1
Total Pages :1
Certificate Date: 28-JUN-91
Invoice No. :19116753
P.O. Number :

CERTIFICATE OF ANALYSIS A9116753

SAMPLE DESCRIPTION	PREP CODE		Au oz/T
RL-181 765-770	208	294	0.005
RL-181 815-820	208	294	0.015
RL-181 865-870	208	294	0.010
RL-181 915-920	208	294	0.010
RL-182 045-050	208	294	0.002
RL-182 095-100	208	294	0.002
RL-182 145-150	208	294	0.001
RL-182 195-200	208	294	0.003
RL-182 245-250	208	294	0.005
RL-182 295-300	208	294	0.003
RL-182 350-355	208	294	0.005
RL-182 400-405	208	294	0.005
RL-182 450-455	208	294	0.006
RL-182 500-505	208	294	0.006
RL-182 550-555	208	294	0.016
RL-182 600-605	208	294	0.005
RL-182 650-655	208	294	0.216
RL-182 700-705	208	294	0.009
RL-182 750-755	208	294	0.002
RL-195 748-753	208	294	0.012
RL-195 798-803	208	294	0.115
RL-195 848-853	208	294	0.493
RL-195 892-897	208	294	0.001
RL-196 045-050	208	294	0.002
RL-196 095-100	208	294	0.002
RL-196 145-150	208	294	0.002
RL-196 195-200	208	294	0.001
RL-196 245-250	208	294	0.001

LAC

CERTIFICATION: Sandra M Adam

Chemex Labs Inc.

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994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-5395

To: LAC MINERALS U.S.A. INC

1395 GREG ST., STE 107
SPARKS, NEVADA
89431

Project : 75350
Comments: ATTN: TIM KUHL

Certificate Date: 22-JUL-91
Invoice No. : I9118188
P.O. Number :

CERTIFICATE OF ANALYSIS A9118188

SAMPLE DESCRIPTION	PREP CODE		Au FA oz/T									
RL195 658-663	214	227	0.048									
RL195C 758-763	214	227	0.007									
RL195C 763-768	214	227	0.018									
RL195C 768-773	214	227	0.052									
RL195C 773-778	214	227	0.019									
RL195C 778-783	214	227	0.038									
RL195C 783-788	214	227	0.043									
RL195C 788-793	214	227	0.028									
RL195C 793-798	214	227	0.056									
RL195C 798-803	214	227	0.170									
RL195C 803-808	214	227	0.014			24						
RL195C 808-813	214	227	0.021			~~24~~ LAC						
RL195C 813-818	214	227	0.048									
RL195C 818-823	214	227	0.041	LAC								
RL195C 823-828	214	227	0.077			7 Eg						
RL195C 828-833	214	227	0.022									
RL195C 833-838	214	227	0.170									
RL195C 838-843	214	227	0.076									
RL195C 843-848	214	227	0.015									
RL195C 848-853	214	227	0.493									
RL195C 853-854.1	214	227	0.466									
RL196C 458-463.7	214	227	0.270									
RL196C 463.7-469	214	227	0.040									
RL196C 469-474	214	227	0.082									
RL196C 474-478	214	227	0.039	Eg								
RL196C 478-482	214	227	0.033									
RL196C 482-487.5	214	227	0.182									
RL196C487.5491.5	214	227	0.053									
D2 PREP REP 0009	214	227	0.010									
D2 PREP REP 0026	214	227	0.002	LAC								
Z2 PREP REP 0125	214	227	0.005									

CERTIFICATION: [signature]

Chemex Labs Inc.

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To: LAC MINERALS U.S.A. INC

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Project : 75350
Comments: ATTN: TIM KUHL

Certificate Date: 22-JUL-91
Invoice No. : I9118188
P.O. Number :

CERTIFICATE OF ANALYSIS A9118188

SAMPLE DESCRIPTION	PREP CODE		Au FA oz/T
RL191 680-685	214	227	0.168
RL191 685-690	214	227	0.100
RL191 690-695	214	227	0.183
RL191 695-700	214	227	0.171
RL191 700-705	214	227	0.026
RL191 705-710	214	227	0.083
RL191 710-715	214	227	0.016
RL191 715-720	214	227	0.034
RL192 538-543	214	227	0.034
RL192 543-548	214	227	0.102
RL192 548-553	214	227	0.047
RL192 553-558	214	227	0.185
RL192 558-563	214	227	0.637
RL192 563-568	214	227	0.656
RL192 568-573	214	227	0.360
RL192 573-578	214	227	0.310
RL192 578-583	214	227	0.055
RL194 773-778	214	227	0.085
RL194 778-783	214	227	0.106
RL194 783-788	214	227	0.145
RL194 788-793	214	227	0.144
RL194 793-798	214	227	0.077
RL194 798-803	214	227	0.022
RL194 803-807	214	227	0.022
RL194 807-810	214	227	0.011
RL194 810-815	214	227	0.015
RL194 815-820	214	227	0.118
RL195 588-593	214	227	0.021
RL195 593-598	214	227	0.004
RL195 598-603	214	227	0.002
RL195 603-608	214	227	0.121
RL195 608-613	214	227	0.224
RL195 613-618	214	227	0.035
RL195 618-623	214	227	0.006
RL195 623-628	214	227	0.324
RL195 628-633	214	227	0.085
RL195 633-638	214	227	0.071
RL195 638-643	214	227	0.136
RL195 648-653	214	227	0.177
RL195 653-658	214	227	0.311

27 EG
13 LAC

CERTIFICATION: _____