60000615

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. RS-494
AUTHOR	D. Schoerl; J.P. Rogowski; B. Morris; K. Allen; L.E. Machedon; V. Reid;
DATE OF DOC(S)	2000
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Mining Co. LLC; Gator; Hecla Mining Co.; Rosebud Project
COMMODITY If not obvious	gold; silver
NOTES	drill logs; geology; assay; total depth 1200'; invoice; geochemistry 63 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: DP 3/21/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

RS-494 yr 2000
GATOR

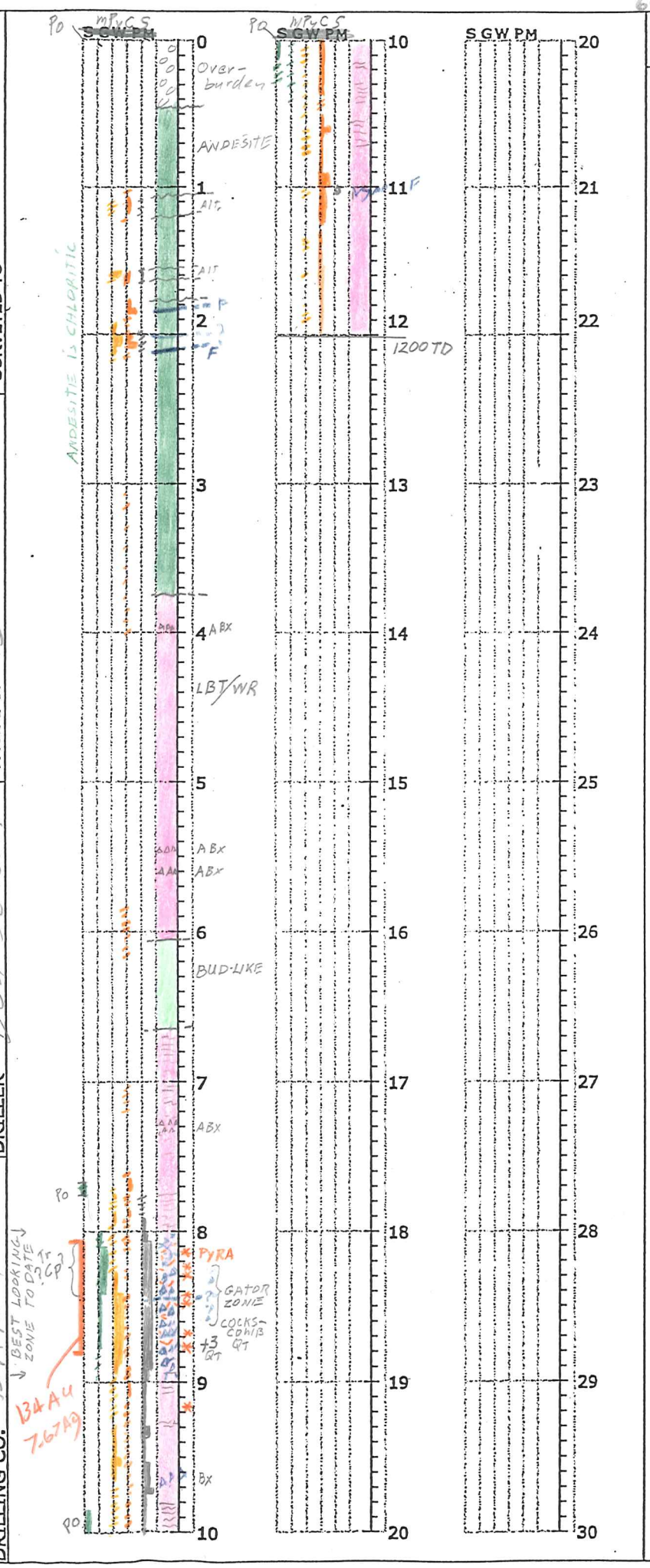
60000615
4010

6000 0615

ROSEBUD MINING COMPANY, LLC.

HOLE #	RS-494
FINISH HOLE	24 Mar 2000
LOGGED BY	Rogowski
T.D	1200 TD
START HOLE	15 Mar 2000
HOLE TYPE	6" RC
BEARING	—
ANGLE	-90°
SURVEYED TO	Wel-Nav 1100
PAGE 1 OF	13
DRILLING CO.	IEK Lund
DRILLER	Don School
COLLAR COORDINATES	
NORTH	2,215,430
EAST	479,075
ELEV	5403

Drilled to Gator obt 400' up gyn from wellhose Sgg. to cut Gator Fault



ALTERATION INTENSITY

1 WEAK	2 MODERATE	3 STRONG

VERITHIN COLOR

737	SILICIFICATION
751	GREEN CLAY
747½	WHITE CLAY
755	PYRITE
757	MARCASITE
Po	Pyrrhotite

GRAPHIC LOG

VERITHIN COLOR

	BRECCIA
741	FAULT 741
	CONTACT
737	QUARTZ VEIN
741½	CALCITE VEIN
747½	CLAY VEIN
755	PYRITE VEIN

	LBT/WR RHYOLITE
	ANDESITE
**	Pyrargyrite
	BUD-LIKE CLASTIC

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
2 = MODERATE
3 = STRONG
or % by Vol

HOLE NUMBER RS-494
PAGE 2 OF 13
DATE 15 Mar 2000 to 24 Mar 2000
LOGGED BY Rogowski
TOTAL DEPTH 1200 TD

LOCATION ROSEBUD, NV
NORTHING 2,215,430
EASTING 479,075
ELEVATION 5403
AZIMUTH
INCLINATION -90°

AREA Gator
DRILLING CO. Eklund
RIG TYPE RC - 6"/75E
HOLE SIZE 6"
DOWN HOLE SURVEY BY Wel-Nav TO 1100'

0-100

2/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MASSIVE %	QUARTZ %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALBITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDENITE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
0			0-45 Colluvium													2											0													
10			mixed dirt & rocks													1																									
			& Tan "soil"													1																									
20			20-30 is white													1																									
		wt	& clayrich													3																									
30		wt														3																									
																3																									
40																2																									
																1											0														
50			45 to 100	MH		0					?0					1											0														
			Andesite - grayish								0?																														
60			green, mxln sanc																																						
			drk green phenos																																						
70			& numerous small															Tr	on fract.																						
			white plag. looks																																						
80			very similar to																																						
			the N. Andesite except																																						
90			plag. is not aligned																																						
			Red (Hem) & yellow		Granular Andesite grayish green																																				
100			staining along fract	MH		0					0?					1											0														

Tr BIO

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
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HOLE NUMBER RS-494
PAGE 3 OF 13
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA Gator
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

1-200 3/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MASSIVE %	SILICIFICATION QUARTZ %	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
100			100-200	mH																																					
		Alt	Andesite sance			0					1					2											0														
110			as 45-100, more	S		tr					2					tr											tr														
	Py		altered & fract.	S		tr					2					tr											1		Py												
120	Py	Alt	sec. wt. clay	S		tr					2					tr											1														
			& Hem. on	mH		0					tr					1											0														
130			fract. also Hem								0					1											1														
			replacing Feld.													1																									
140																2																									
			@ 115, 160 & 200													2																									
150			have Py in prob.			0					0					2											0														
		Alt	struct w/ silic	H		tr					tr					2											tr														
160	Py		& argillic alt	S		1+2		Prob. veinlet			2					1											5														
		Alt		H		0					1					1											1														
170			100-200 Andesite	mH							0					1											0														
			w/ micro. plag	mH							0					1																									
180		Blch	Femag + Bio? phenos	mH							2					2																									
	F		Gray gouge	S							3					1																									
190				mH							1					1											0														
				mH		0					1					2											Tr														
200	Py	F?	Poss struct.	S		Tr+	1				1+2					2											3														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
2 = MODERATE
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or % by Vol

HOLE NUMBER RS-494
PAGE 4 OF 13
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

2-300 4/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MATRIX %	SILICIFICATION CLASTS %	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
200		Py	cubic & octo cubes w/ wt clay & bleached soft	5		1					2					1											6														
		Py	andesite	5		1					3																7														
210		Py		14		Tr					1				2?												Tr														
220			210 to 300 Andesite. Has fewer plag phenos than above & more chlorite alteration. Full is after this hem. Note: may only appear to have fewer plag laths. Alt. masks some of it. Hem is blotchy & I suspect this may be some of the effects from propylitization.			0					Tr																0														
230																																									
240																																									
250																																									
260																																									
270																1																									
																Tr																									
280																1																									
290																																									
300				14		0					Tr					1											0														

ANDESITE

Andesite - an x'line matrix over green

Hem & calcite are probably from propylitization

Propylitic - Definitely chlorite

Hecla MINING COMPANY
ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER: RS-494
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DATE
LOGGED BY
TOTAL DEPTH

LOCATION: ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA: 3-400
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
300		ANDESITE	300 to 375 Andesite	M H	Mxln w a.t.hix intrusive dis areas & hemp
310			same as 2 to 300		
320					
330			white calcite		
340			cemented Bx		
350					
360					
370				M H	
380		Rhyolite	375-300 LBT/WR	H	
390			Rhyo. flow, v.F.xln maroon, + med gray		V.F.xln Flow
400			ABx	H	

ALTERATION

FEET	SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MAJOR %	SILICIFICATION QUARTS %	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE
300	0					Tr				2 1+2 3	1							
310																		
320																		
330																		
340																		
350																		
360																		
370											1							
380											2 1							
390											1							
400	0					Tr					1							

very weak bleaching along fract.
Overall Propylitized Feldspar phenos & Bio have been altered to chlorite

MINERALIZATION

FEET	SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SUL %	STIBNITE %	BARITE %
300				0					
400				0					

METALLURGY

FEET	OXIDE	SULF	CARBON	MOLYBDE
300				
400				

ANALYTICAL DATA

FEET	FROM	TO	W	Au	Ag
300					
400					

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 4-500
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
400		Rhyolite	400-590 LBT/WR Rhyolite gen. not v. erg. alt. but has slight bleaching & a yellow alt. outward from fract. Calcite as very thin coats on fract. Bio. phenos 0.5mm are rare	H	Ex In Flow Margin
410					
420					
430					
440					
450					
460					
470					
480					
490					
500				H	

ALTERATION																						MINERALIZATION								METALLURGY				ANALYTICAL DATA				
SILICIFICATION					ARGILLIC				PROPYLITIC %		POTASSIC %		OXIDATION			VIENING		SULFIDES			PY	CPY	MAR	K-SUL	SULFATE	BARITE	OXIDE	SULF	CARBON	MOCURE	FROM	TO	W	Au	Ag
5%	15%	+25%	MAJPER %	QUARTS %	5%	15%	+25%	TYPE	CHLORITE	CALCITE	K-SPAR	ALUNITE	5%	15%	+25%	%	TYPE	5%	15%	+25%	%	%	%	%	%	%										
0					0 to Tr					Tr											0															
										Tr																										
										Tr																										
0					0 to Tr					Tr											0															

Hecla MINING COMPANY

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LOCATION ROSEBUD, NV
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AZIMUTH
INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

5-600

7/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
500		Rhyolite	500-600 LBT/WR	H	Rhyo 1=low, maroon to m-dk gray; F:x/m Rhyo, m to dk gray
510			similar to 4-500		
			Has a color change		
520			@ 540 - maroon to m-dru gray		
			530-clay stgr.		
530			@535 a radiating emgrn min like mica		
540					
	ABX	ABX	Note: prob. increase in alt. (clay) toward 600.		
550					
560		ABX			
570					
580					
590					
600				H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MAJ QZ %	QZ STS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOCURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
500	0					0					tr											0														
510											tr																									
											tr																									
520											tr																									
											0																									
530											0																									
540											tr																				← yellow min					
550																																				
560											tr																									
											1																									
570											1																									
580						0																														
						tr																														
590						tr					1																									
						1					tr																									
600	0					1					tr											0														

Hecla MINING COMPANY

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LOCATION ROSEBUD, NV
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INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

6-700

8/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MATRIX %	CLASTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLCURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
600			LBT/WR																																						
			600-605 Same	H	Fx/h	0					H	2				1											0														
			605-665																																						
610			BUD-Like	S							1																														
			Pale																																						
			Green waxy to								2																														
620											1	2				1																									
			granular matrix																																						
			w/ rhyo clasts.								1					2																									
630			Broken Bio rare								2																														
											2																														
640											3					2																									
											2					1																									
650											2					1																									
											2					2																									
660											3					2																									
				S							3					2																									
			665 to 715																																						
670			coarse flow banded	MH							1					1																									
			LBT/WR								H	2				1																									
680			mottled pale green								2					1																									
			& reddish gray								3					2																									
690											2					1																									
											1+	2				2																									
700				MH		0					1+	2				2											0														

CLASTIC + BUD-Like

R. hyd lite Flow Banded

Glastic w/ F grn matrix

mx'd Flow bands

Hecla MINING COMPANY

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AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

7-800

9/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
700		Rhyolite	665-715 coarse flow banded mottled wt + Red. Brn	M H	wt & grey
				H	
710				M H	
			715 TO 755 maroon LBT/WR	H	maroon & grey
720			Rhyolite, pale grn. clay alt. in blotches w/wt clay		
730		ABx			
		PBx			
740					
750					
			755-775		
760					
			mag pyrrhotite w/py	M H	tan
770				M H	
			775-800 strong alt Flow band. Rhyo tech	M H	pale green
780			Bx micro Qt vnlets	H	
				H	
790			795 - some vn Qt	H	wt
				H	
800				H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MAGNES %	QUARTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE
700	0					1					Tr							
710	0					1					1							
	0					1					1							
720	0					Tr					1							
730																		
740																		
750																		
760											1							
	0					Tr					2							
770	0					2					2							
	0					2					2							
780	1					1					0							
	1					1												
790	1					1												
	2					1												
800	1					1					0							

FEET	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	AS-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
700				Tr				Po 0										
710				Tr														
				0														
720																		
730																		
740																		
750																		
760								6										
				0				(Po)										
770				1				2										
				1				1										
780				2	Py C	?		0										
				1	Py C	?												
790				1	"	?												
				3	"	?												
800				Tr	"	?		0										

Hecla MINING COMPANY

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HOLE NUMBER RS-494
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LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
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AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

8-900 10/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MAJOR %	QUARTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	OPQ %	MAR %	AS-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
800		Vn By	800 – 880 silicified LBT/WR	VH		2+3					1					0										2	Pyc	1		CP											
810		Vn By	Bx el in part			+3					1															1	Pyc & PyH	1					Dru Qt				← Bru, vuler (Adularia)?				
		Vn Bx	cockscomb Qt cement			+3					1				green is not chlorite				dry gray min w/ stockwork Qt & in Brown silica								1	PyH	3 Large	LST?			Diss Pyr?				← Adu? Fine su				
820		Vn By	ing Bx			+3					tr															1	PyH	3 Large	?							← Adu?				
		Vn By spid By	Em grn in (upper) part			+3					tr								← spider text							2	PyH	3	?			Dru Qt Pyr?				Brownish interval ← Adu?				
830		Vn By	but mostly wt clay		Large Frag	+3					tr								← spider text					Blue coat on Py →		3	PyH Pyc	4	?			Pyr??				← Adu?				
		Vn By	& clear gray Qt			+3					tr															2		3	?			Dru Qt vugs				← wt clay Em grn clay				
840		Dru Qt	PyH & PyC w/ fuzzy		+	+3					0															2		3	?			Dru Qt								
		Vn By	overgroths			+3					0															5		2				Pyr?? gray min								
850		Vn By	810 – Brn Adularia?			+3					1															5		1				spill text Pyr??								
		Vn By	soft wt & green clays			+3					1															5		1												
860		Vn By	Consid Marcasite & Prob CP w/ drk coats on Py		wt & clear Qt gray	+3					tr															4		2				Dru Qt Pyr?								
		Vn By	Brown Qt			+3					1															5		1												
870		Vn By	875 – Blue green Qt & clay			+3					1															4		1				Pyr				gray coat on Py gray min				
		Vn Qt				+3					tr															2	Py Pyc	1		CP		Pyr??								
880		Vn Qt	Note: can't put finger on fault but possibly open			+3					tr															5	Py Pyc HH	2		Tr										
		Vqs				+3					tr															4		tr												
890		Silic LBT	silicified LBT/WR			+3					0															4		tr												
		Silic LBT				3					1															3		tr												
900				VH		3					1					0										1														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
2 = MODERATE
3 = STRONG
or % by Vol

HOLE NUMBER RS-494
PAGE 11 OF 13
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

9-1000

11/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MASSIVE %	SILICIFICATION QUARTZ %	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
900		RHYOLITE Strongly Altered	900-1000 LBT/WR	H	Granular wt to Lt grays	2	gray silica				2					0											Tr														
910			very strong Alta			2	"				1																Tr														
			gray & white			2	"				1																1	PyC													
920			silicification. Has			2	"				1																1	"									one speck				
			a granular text.			2					1																Tr										Pyra				
930						2					1	wt clay																													
			Lower part — 985 to 1000 Has			3					Tr																1														
940			Pyrrhotite laths.			3					Tr																2														
			Saw this as we			2					1																2														
			entered this zone			2					1&2																Tv														
950			also.			2					1&2																2														
						3	wt silica				Tv																4														
960		? Bx ?				3					1																2	r PyC													
						3					Tv																1														
970						+3	← wt	Qt			Tv																Tr														
						2					1&2																1														
980						2					1	trace Blue-green clay?															2	PyC													
						2					1																Tr														
990			Tv Pyrrhotite Laths		wt + Tr Blue-Grey	2					1																1	PyC			Po tr					← micro Lath Pyrrhotite					
						2					1																1	PY C+H			Po tr										
1000				H		2					1&2					0											1	LATH			Po 1										

Hecla MINING COMPANY

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TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
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ELEVATION
AZIMUTH
INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

10 - 1100

12/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
1000		LBT/WR RHYOLITE	1000-1100 LBT/WR white to 1015 then has the very pale bluish green down to 1100. That is prob clay alt & not chlorite Pyrrhotite from 1000 to 1030 has some flow banding. Has micro specks that appear to be Qt.	mH	Rhyolite white Granular - Fx In, If low Banded white & pale green
1010					
1020					
1030					
1040					
1050					
1060					
1070					
1080					
1090					
1100				mH	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MAJ/EX %	QZ STS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE
1000	2					2					0							
1010	1					2					Tr							
	1					2					tr							
1020	tr					2					1							
	1					2												
1030	1 & 2					2												
	1					2					1							
1040	2					1					Tr							
	2					1												
1050	1					2												
	Tr					2												
1060	tr					2 & 3												
	1					2					tr							
1070	Tr & 1					2					1							
	1					2					1							
1080	tr					2					tr							
	tr					2					tr							
1090	tr					2					tr							
	0					2 & 3					tr							
1100	0					2 & 3					0							

Pale green color - prob Clay alt

FEET	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	AC-SUL %	SULFATE %	~~BARITE %~~	METALLURGY: OXIDE	SULF	OXSUL	MIXCORE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1000				1		tr			Po 1					Pyrite				
1010				2		tr			1									
				2		tr			1									
1020				2		tr			tr									
				tr		tr			tr									
1030				tr	Py 1+	tr			tr									
				1		tr			0									
1040				1		tr												
				tr		0			0									
1050				1														
				tr → 0														
1060				0														
				0														
1070				1 → veinlets														
				tr														
1080				0														
				0														
1090				0														
				0														
1100				0														

Hecla MINING COMPANY

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LOGGED BY
TOTAL DEPTH 1200 TD

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

11 - 1200

13/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MATRIX %	SILICIFICATION QUARTZ %	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	AC-SUL %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1100		? Vn lets ?	1100 to 1105 – Poss Bxed & silicified struct. some gray silic	H	Patchy light ground	1+	2				1+	2																													
																											tr														
1110						0*																					0														
			1100 to 1200			0					2																														
1120			LBT/WR, pale			0					2																														
			green & strongly			tr					1+2																														
1130			flow banded after								1+2																														
			1120																								0														
1140			Has a pale green																								tr														
			color after 1120																								tr														
1150			that is prob. clay																								0														
			& not chlorite.																								0														
1160																											tr														
																											0														
1170																											0														
																											0														
1180																1											tr														
																2											tr														
1190																1											tr														
																1											0														
1200			1200 TD	H		tr					1+2					1											0														

LBT/WR – RHYOLITE

Flow Banded Rhyolite

Pale Green color appears to be clay but could be chlorite

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056733

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-494 RECEIVED : 25 MAR 2000

No. SAMPLES : 241 REPORTED : 7 APR 2000

MAIN SAMPLE TYPE : DRILL CUTTINGS

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

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PROVISIONAL REPORT SP056733

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-494 0000-0005	8		<0.001		<0.5	<0.02
RS-494 0005-0010	8		<0.001		<0.5	<0.02
RS-494 0010-0015	14	15	<0.001	<0.001	<0.5	<0.02
RS-494 0015-0020	10		<0.001		<0.5	<0.02
RS-494 0020-0025	9		<0.001		<0.5	<0.02
RS-494 0025-0030	8		<0.001		<0.5	<0.02
RS-494 0030-0035	<5		<0.001		<0.5	<0.02
RS-494 0035-0040	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0040-0045	<5		<0.001		<0.5	<0.02
RS-494 0045-0050	<5		<0.001		<0.5	<0.02
RS-494 0050-0055	<5		<0.001		<0.5	<0.02
RS-494 0055-0060	<5		<0.001		<0.5	<0.02
RS-494 0060-0065	<5		<0.001		<0.5	<0.02
RS-494 0065-0070	<5		<0.001		<0.5	<0.02
RS-494 0070-0075	8		<0.001		<0.5	<0.02
RS-494 0075-0080	5		<0.001		<0.5	<0.02
RS-494 0080-0085	<5		<0.001		<0.5	<0.02
RS-494 0085-0090	<5		<0.001		<0.5	<0.02
RS-494 0090-0095	<5		<0.001		<0.5	<0.02
RS-494 0095-0100	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0100-0105	<5		<0.001		<0.5	<0.02
RS-494 0105-0110	9		<0.001		<0.5	<0.02
RS-494 0110-0115	8		<0.001		<0.5	<0.02
RS-494 0115-0120	12		<0.001		<0.5	<0.02
RS-494 0120-0125	17		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-494 0125-0130	<5		<0.001		<0.5	<0.02
RS-494 0130-0135	<5		<0.001		<0.5	<0.02
RS-494 0135-0140	<5		<0.001		<0.5	<0.02
RS-494 0140-0145	<5		<0.001		<0.5	<0.02
RS-494 0145-0150	<5		<0.001		<0.5	<0.02
RS-494 0150-0155	26		<0.001		<0.5	<0.02
RS-494 0155-0160	39		0.001		<0.5	<0.02
RS-494 0160-0165	<5		<0.001		<0.5	<0.02
RS-494 0165-0170	<5		<0.001		<0.5	<0.02
RS-494 0170-0175	7		<0.001		<0.5	<0.02
RS-494 0175-0180	<5		<0.001		<0.5	<0.02
RS-494 0180-0185	<5		<0.001		<0.5	<0.02
RS-494 0185-0190	<5		<0.001		<0.5	<0.02
RS-494 0190-0195	<5		<0.001		<0.5	<0.02
RS-494 0195-0200	90		0.003		<0.5	<0.02
RS-494 0200-0205	205	208	0.006	0.006	<0.5	<0.02
RS-494 0205-0210	46		0.001		<0.5	<0.02
RS-494 0210-0215	45	50	0.001	0.001	<0.5	<0.02
RS-494 0215-0220	15		<0.001		<0.5	<0.02
RS-494 0220-0225	<5		<0.001		<0.5	<0.02
RS-494 0225-0230	<5		<0.001		<0.5	<0.02
RS-494 0230-0235	<5		<0.001		<0.5	<0.02
RS-494 0235-0240	<5		<0.001		<0.5	<0.02
RS-494 0240-0245	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0245-0250	<5		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-494 0250-0255	<5		<0.001		<0.5	<0.02
RS-494 0255-0260	<5		<0.001		<0.5	<0.02
RS-494 0260-0265	<5		<0.001		<0.5	<0.02
RS-494 0265-0270	<5		<0.001		<0.5	<0.02
RS-494 0270-0275	<5		<0.001		<0.5	<0.02
RS-494 0275-0280	<5		<0.001		<0.5	<0.02
RS-494 0280-0285	150		0.004		<0.5	<0.02
RS-494 0285-0290	<5		<0.001		<0.5	<0.02
RS-494 0290-0295	<5		<0.001		<0.5	<0.02
RS-494 0295-0300	<5		<0.001		<0.5	<0.02
RS-494 0300-0305	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0305-0310	<5		<0.001		<0.5	<0.02
RS-494 0310-0315	<5		<0.001		<0.5	<0.02
RS-494 0315-0320	<5		<0.001		<0.5	<0.02
RS-494 0320-0325	<5		<0.001		<0.5	<0.02
RS-494 0325-0330	<5		<0.001		<0.5	<0.02
RS-494 0330-0335	<5		<0.001		<0.5	<0.02
RS-494 0335-0340	5		<0.001		<0.5	<0.02
RS-494 0340-0345	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0345-0350	<5		<0.001		<0.5	<0.02
RS-494 0350-0355	<5		<0.001		<0.5	<0.02
RS-494 0355-0360	<5		<0.001		<0.5	<0.02
RS-494 0360-0365	<5		<0.001		<0.5	<0.02
RS-494 0365-0370	<5		<0.001		<0.5	<0.02
RS-494 0370-0375	<5		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-494 0375-0380	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0380-0385	<5		<0.001		<0.5	<0.02
RS-494 0385-0390	<5		<0.001		<0.5	<0.02
RS-494 0390-0395	<5		<0.001		<0.5	<0.02
RS-494 0395-0400	<5		<0.001		<0.5	<0.02
RS-494 0400-0405	<5		<0.001		<0.5	<0.02
RS-494 0405-0410	<5		<0.001		<0.5	<0.02
RS-494 0410-0415	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0415-0420	<5		<0.001		<0.5	<0.02
RS-494 0420-0425	<5		<0.001		<0.5	<0.02
RS-494 0425-0430	10		<0.001		<0.5	<0.02
RS-494 0430-0435	6		<0.001		<0.5	<0.02
RS-494 0435-0440	11		<0.001		<0.5	<0.02
RS-494 0440-0445	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0445-0450	<5		<0.001		<0.5	<0.02
RS-494 0450-0455	<5		<0.001		<0.5	<0.02
RS-494 0455-0460	<5		<0.001		<0.5	<0.02
RS-494 0460-0465	<5		<0.001		<0.5	<0.02
RS-494 0465-0470	<5		<0.001		<0.5	<0.02
RS-494 0470-0475	<5		<0.001		<0.5	<0.02
RS-494 0475-0480	<5		<0.001		<0.5	<0.02
RS-494 0480-0485	<5		<0.001		<0.5	<0.02
RS-494 0485-0490	<5		<0.001		<0.5	<0.02
RS-494 0490-0495	<5		<0.001		<0.5	<0.02
RS-494 0495-0500	<5		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-494 0500-0505	<5		<0.001		<0.5	<0.02
RS-494 0505-0510	<5		<0.001		<0.5	<0.02
RS-494 0510-0515	<5		<0.001		<0.5	<0.02
RS-494 0515-0520	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0520-0525	<5		<0.001		<0.5	<0.02
RS-494 0525-0530	<5		<0.001		<0.5	<0.02
RS-494 0530-0535	<5		<0.001		<0.5	<0.02
RS-494 0535-0540	<5		<0.001		<0.5	<0.02
RS-494 0540-0545	<5		<0.001		<0.5	<0.02
RS-494 0545-0550	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0550-0555	<5		<0.001		<0.5	<0.02
RS-494 0555-0560	<5		<0.001		<0.5	<0.02
RS-494 0560-0565	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0565-0570	<5		<0.001		<0.5	<0.02
RS-494 0570-0575	<5		<0.001		<0.5	<0.02
RS-494 0575-0580	<5		<0.001		<0.5	<0.02
RS-494 0580-0585	<5		<0.001		<0.5	<0.02
RS-494 0585-0590	<5		<0.001		<0.5	<0.02
RS-494 0590-0595	<5		<0.001		<0.5	<0.02
RS-494 0595-0600	<5		<0.001		<0.5	<0.02
RS-494 0600-0605	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0605-0610	<5		<0.001		<0.5	<0.02
RS-494 0610-0615	<5		<0.001		<0.5	<0.02
RS-494 0615-0620	<5		<0.001		<0.5	<0.02
RS-494 0620-0625	<5		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-494 0625-0630	<5		<0.001		<0.5	<0.02
RS-494 0630-0635	<5		<0.001		<0.5	<0.02
RS-494 0635-0640	<5		<0.001		<0.5	<0.02
RS-494 0640-0645	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0645-0650	<5		<0.001		<0.5	<0.02
RS-494 0650-0655	<5		<0.001		<0.5	<0.02
RS-494 0655-0660	<5		<0.001		0.5	<0.02
RS-494 0660-0665	<5		<0.001		0.5	<0.02
RS-494 0665-0670	<5		<0.001		0.5	<0.02
RS-494 0670-0675	<5		<0.001		<0.5	<0.02
RS-494 0675-0680	12		<0.001		<0.5	<0.02
RS-494 0680-0685	<5		<0.001		<0.5	<0.02
RS-494 0685-0690	<5		<0.001		<0.5	<0.02
RS-494 0690-0695	<5		<0.001		<0.5	<0.02
RS-494 0695-0700	<5		<0.001		<0.5	<0.02
RS-494 0700-0705	<5		<0.001		<0.5	<0.02
RS-494 0705-0710	<5		<0.001		<0.5	<0.02
RS-494 0710-0715	<5		<0.001		<0.5	<0.02
RS-494 0715-0720	<5		<0.001		<0.5	<0.02
RS-494 0720-0725	<5		<0.001		<0.5	<0.02
RS-494 0725-0730	<5		<0.001		0.5	<0.02
RS-494 0730-0735	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0735-0740	<5		<0.001		<0.5	<0.02
RS-494 0740-0745	<5		<0.001		<0.5	<0.02
RS-494 0745-0750	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056733

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

REPORTED : 7 APR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-494 0750-0755	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0755-0760	<5		<0.001		<0.5	<0.02
RS-494 0760-0765	<5		<0.001		<0.5	<0.02
RS-494 0765-0770	<5		<0.001		<0.5	<0.02
RS-494 0770-0775	60		0.002		1.6	0.05
RS-494 0775-0780	94	96	0.003	0.003	4.4	0.13
RS-494 0780-0785	32		<0.001		0.6	<0.02
RS-494 0785-0790	62		0.002		1.3	0.04
RS-494 0790-0795	104		0.003		9.1	0.27
RS-494 0795-0800	42		0.001		2.1	0.06
RS-494 0800-0805	42		0.001		1.7	0.05
RS-494 0805-0810	50		0.001		2.3	0.07
RS-494 0810-0815	85		0.002		1.9	0.06
RS-494 0815-0820	151		0.004		2.4	0.07
RS-494 0820-0825	93		0.003		1.5	0.04
RS-494 0825-0830	138	140	0.004	0.004	9.8	0.29
RS-494 0830-0835	96		0.003		7.1	0.21
RS-494 0835-0840	74		0.002		6.1	0.18
RS-494 0840-0845	96		0.003		4.2	0.12
RS-494 0845-0850	123		0.004		2.9	0.08
RS-494 0850-0855	102		0.003		2.1	0.06
RS-494 0855-0860	142		0.004		3.7	0.11
RS-494 0860-0865	100		0.003		12.6	0.37
RS-494 0865-0870	86		0.003		4.0	0.12
RS-494 0870-0875	281		0.008		34.2	1.00

$\frac{174\#}{13} = 134ppb$ 0.004oz

65 feet.

$\frac{99.7}{13} = 7.67oz$

65' 0.32oz/t

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056733

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

REPORTED : 7 APR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-494 0875-0880	260	234	0.008	0.007	9.1	0.27
RS-494 0880-0885	70		0.002		2.1	0.06
RS-494 0885-0890	34		<0.001		<0.5	<0.02
RS-494 0890-0895	44		0.001		1.2	0.04
RS-494 0895-0900	43		0.001		1.0	0.03
RS-494 0900-0905	37		0.001		1.4	0.04
RS-494 0905-0910	39		0.001		1.0	0.03
RS-494 0910-0915	32		<0.001		0.6	<0.02
RS-494 0915-0920	31		<0.001		0.6	<0.02
RS-494 0920-0925	54		0.002		0.6	<0.02
RS-494 0925-0930	22		<0.001		0.5	<0.02
RS-494 0930-0935	31	36	<0.001	0.001	0.7	0.02
RS-494 0935-0940	45		0.001		0.6	<0.02
RS-494 0940-0945	38		0.001		0.5	<0.02
RS-494 0945-0950	30		<0.001		<0.5	<0.02
RS-494 0950-0955	38		0.001		0.7	0.02
RS-494 0955-0960	36		0.001		0.7	0.02
RS-494 0960-0965	47	43	0.001	0.001	1.2	0.04
RS-494 0965-0970	49		0.001		1.0	0.03
RS-494 0970-0975	17		<0.001		0.5	<0.02
RS-494 0975-0980	34		<0.001		1.1	0.03
RS-494 0980-0985	46		0.001		0.5	<0.02
RS-494 0985-0990	48		0.001		0.7	0.02
RS-494 0990-0995	72		0.002		2.1	0.06
RS-494 0995-1000	44		0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056733

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

REPORTED : 7 APR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-494 1000-1005	40		0.001		<0.5	<0.02
RS-494 1005-1010	18	14	<0.001	<0.001	<0.5	<0.02
RS-494 1010-1015	18		<0.001		<0.5	<0.02
RS-494 1015-1020	9		<0.001		<0.5	<0.02
RS-494 1020-1025	10		<0.001		<0.5	<0.02
RS-494 1025-1030	29		<0.001		<0.5	<0.02
RS-494 1030-1035	6		<0.001		<0.5	<0.02
RS-494 1035-1040	7		<0.001		<0.5	<0.02
RS-494 1040-1045	7		<0.001		<0.5	<0.02
RS-494 1045-1050	8		<0.001		<0.5	<0.02
RS-494 1050-1055	6	6	<0.001	<0.001	<0.5	<0.02
RS-494 1055-1060	<5		<0.001		<0.5	<0.02
RS-494 1060-1065	5		<0.001		<0.5	<0.02
RS-494 1065-1070	6		<0.001		<0.5	<0.02
RS-494 1070-1075	5		<0.001		<0.5	<0.02
RS-494 1075-1080	<5		<0.001		<0.5	<0.02
RS-494 1080-1085	<5		<0.001		<0.5	<0.02
RS-494 1085-1090	<5		<0.001		<0.5	<0.02
RS-494 1090-1095	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 1095-1100	9		<0.001		<0.5	<0.02
RS-494 1100-1105	22		<0.001		<0.5	<0.02
RS-494 1105-1110	<5		<0.001		<0.5	<0.02
RS-494 1110-1115	<5		<0.001		<0.5	<0.02
RS-494 1115-1120	<5		<0.001		<0.5	<0.02
RS-494 1120-1125	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056733

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

REPORTED : 7 APR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-494 1125-1130	<5		<0.001		<0.5	<0.02
RS-494 1130-1135	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 1135-1140	<5		<0.001		<0.5	<0.02
RS-494 1140-1145	20		<0.001		<0.5	<0.02
RS-494 1145-1150	<5		<0.001		<0.5	<0.02
RS-494 1150-1155	<5		<0.001		<0.5	<0.02
RS-494 1155-1160	<5		<0.001		<0.5	<0.02
RS-494 1160-1165	7		<0.001		<0.5	<0.02
RS-494 1165-1170	8		<0.001		<0.5	<0.02
RS-494 1170-1175	5		<0.001		<0.5	<0.02
RS-494 1175-1180	12		<0.001		<0.5	<0.02
RS-494 1180-1185	<5		<0.001		0.5	<0.02
RS-494 1185-1190	<5		<0.001		<0.5	<0.02
RS-494 1190-1195	<5		<0.001		<0.5	<0.02
RS-494 1195-1200	<5		<0.001		<0.5	<0.02
89596	1965	2000	0.057	0.058	30.1	0.88

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 11530
Reno, NV 89510
Telephone
(702) 356-0606
Fax
(702) 356-1413

Tucson Office
2775 E. Ganley
Tucson, AZ 85706
Telephone
(520) 294-8078
Fax
(520) 294-6352

Elko Office
2320 Last Chance Rd.
Nevada 89801
Box 2908
Elko, NV 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

Zacatecas Office
Telephone/Fax
011-52-49-234530

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: Rosebud Mining, LLC

Address: PO Box 2610

City Winnemucca State NV Zip 89446

Telephone Number: (775) 623-6912 Fax Number: (775) 623-6967

Project Name: Wildrose East Purchase Order Number:

Date Submitted: 24 Mar 00 Number of Samples: 240

RESULTS REPORTED IN: ppm [ ] ppb [✓] opt [✓]

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
Drill Hole RS-494	RC	Au+Ag - Use Rosebud Exploration
0 - 1200		Protocol Sample Prep + Assay
NOTE: Please make up 20 ft. composits of the		
pulps for ICP + Se		Trace Elements
1 (one) Pulp - Rosebud		
Production Standard		
@ end of Run		

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month

[X] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

Kurt Allen
PO Box 2610
Winnemucca, NV 89446

Results to:

Kurt Allen

— Same —

Comments:

CLIENT FILE COPY

American Assay Laboratories

INVOICE

Remit To: P.O. Box11530
Reno, Nevada 89510
Phone NO.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431-5902

(775) 356-0606

INVOICE NO: SP 0056733-IN
INVOICE DATE: 05/02/00

INVOICE TO:
THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
RS-494	WILDROSE EAST	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
241	SAMPLES RECEIVED	.00	.00
1	NO PREPARATION REQUIRED	.00	.00
240	DRY/JAW CRUSH ENTIRE SAMPLE	2.30	552.00
240	ROTARY SPLIT	2.40	576.00
240	RING/PUCK MILL	2.00	480.00
241	Au (1 A.T. FIRE ASSAY)	8.00	1,928.00
241	HYDROCHLORIC/NITRIC DIGESTION	2.00	482.00
241	Ag ANALYSES	1.00	241.00
240	COMPOSITE CHARGE	1.25	300.00
61	MULTI-ELEMENT ICP PACKAGE	13.75	838.75

86-2510-477
KM

NET INVOICE:	5,397.75
LESS DISCOUNT:	1,889.21
FREIGHT:	.00
INVOICE TOTAL:	3,508.54

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-494 RECEIVED : 25 MAR 2000

No. SAMPLES : 241 REPORTED : 1 MAY 2000

MAIN SAMPLE TYPE : DRILL CUTTINGS

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

REPORTED : 1 MAY 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0000-0005	8		<0.001		<0.5	<0.02
RS-494 0005-0010	8		<0.001		<0.5	<0.02
RS-494 0010-0015	14	15	<0.001	<0.001	<0.5	<0.02
RS-494 0015-0020	10		<0.001		<0.5	<0.02
RS-494 0020-0025	9		<0.001		<0.5	<0.02
RS-494 0025-0030	8		<0.001		<0.5	<0.02
RS-494 0030-0035	<5		<0.001		<0.5	<0.02
RS-494 0035-0040	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0040-0045	<5		<0.001		<0.5	<0.02
RS-494 0045-0050	<5		<0.001		<0.5	<0.02
RS-494 0050-0055	<5		<0.001		<0.5	<0.02
RS-494 0055-0060	<5		<0.001		<0.5	<0.02
RS-494 0060-0065	<5		<0.001		<0.5	<0.02
RS-494 0065-0070	<5		<0.001		<0.5	<0.02
RS-494 0070-0075	6		<0.001		<0.5	<0.02
RS-494 0075-0080	5		<0.001		<0.5	<0.02
RS-494 0080-0085	<5		<0.001		<0.5	<0.02
RS-494 0085-0090	<5		<0.001		<0.5	<0.02
RS-494 0090-0095	<5		<0.001		<0.5	<0.02
RS-494 0095-0100	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0100-0105	<5		<0.001		<0.5	<0.02
RS-494 0105-0110	9		<0.001		<0.5	<0.02
RS-494 0110-0115	8		<0.001		<0.5	<0.02
RS-494 0115-0120	12		<0.001		<0.5	<0.02
RS-494 0120-0125	17		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0125-0130	<5		<0.001		<0.5	<0.02
RS-494 0130-0135	<5		<0.001		<0.5	<0.02
RS-494 0135-0140	<5		<0.001		<0.5	<0.02
RS-494 0140-0145	<5		<0.001		<0.5	<0.02
RS-494 0145-0150	<5		<0.001		<0.5	<0.02
RS-494 0150-0155	26		<0.001		<0.5	<0.02
RS-494 0155-0160	39		0.001		<0.5	<0.02
RS-494 0160-0165	<5		<0.001		<0.5	<0.02
RS-494 0165-0170	<5		<0.001		<0.5	<0.02
RS-494 0170-0175	7		<0.001		<0.5	<0.02
RS-494 0175-0180	<5		<0.001		<0.5	<0.02
RS-494 0180-0185	<5		<0.001		<0.5	<0.02
RS-494 0185-0190	<5		<0.001		<0.5	<0.02
RS-494 0190-0195	<5		<0.001		<0.5	<0.02
RS-494 0195-0200	90		0.003		<0.5	<0.02
RS-494 0200-0205	205	208	0.006	0.006	<0.5	<0.02
RS-494 0205-0210	46		0.001		<0.5	<0.02
RS-494 0210-0215	45	50	0.001	0.001	<0.5	<0.02
RS-494 0215-0220	15		<0.001		<0.5	<0.02
RS-494 0220-0225	<5		<0.001		<0.5	<0.02
RS-494 0225-0230	<5		<0.001		<0.5	<0.02
RS-494 0230-0235	<5		<0.001		<0.5	<0.02
RS-494 0235-0240	<5		<0.001		<0.5	<0.02
RS-494 0240-0245	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0245-0250	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0250-0255	<5		<0.001		<0.5	<0.02
RS-494 0255-0260	<5		<0.001		<0.5	<0.02
RS-494 0260-0265	<5		<0.001		<0.5	<0.02
RS-494 0265-0270	<5		<0.001		<0.5	<0.02
RS-494 0270-0275	<5		<0.001		<0.5	<0.02
RS-494 0275-0280	<5		<0.001		<0.5	<0.02
RS-494 0280-0285	150		0.004		<0.5	<0.02
RS-494 0285-0290	<5		<0.001		<0.5	<0.02
RS-494 0290-0295	<5		<0.001		<0.5	<0.02
RS-494 0295-0300	<5		<0.001		<0.5	<0.02
RS-494 0300-0305	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0305-0310	<5		<0.001		<0.5	<0.02
RS-494 0310-0315	<5		<0.001		<0.5	<0.02
RS-494 0315-0320	<5		<0.001		<0.5	<0.02
RS-494 0320-0325	<5		<0.001		<0.5	<0.02
RS-494 0325-0330	<5		<0.001		<0.5	<0.02
RS-494 0330-0335	<5		<0.001		<0.5	<0.02
RS-494 0335-0340	5		<0.001		<0.5	<0.02
RS-494 0340-0345	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0345-0350	<5		<0.001		<0.5	<0.02
RS-494 0350-0355	<5		<0.001		<0.5	<0.02
RS-494 0355-0360	<5		<0.001		<0.5	<0.02
RS-494 0360-0365	<5		<0.001		<0.5	<0.02
RS-494 0365-0370	<5		<0.001		<0.5	<0.02
RS-494 0370-0375	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0375-0380	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0380-0385	<5		<0.001		<0.5	<0.02
RS-494 0385-0390	<5		<0.001		<0.5	<0.02
RS-494 0390-0395	<5		<0.001		<0.5	<0.02
RS-494 0395-0400	<5		<0.001		<0.5	<0.02
RS-494 0400-0405	<5		<0.001		<0.5	<0.02
RS-494 0405-0410	<5		<0.001		<0.5	<0.02
RS-494 0410-0415	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0415-0420	<5		<0.001		<0.5	<0.02
RS-494 0420-0425	<5		<0.001		<0.5	<0.02
RS-494 0425-0430	10		<0.001		<0.5	<0.02
RS-494 0430-0435	6		<0.001		<0.5	<0.02
RS-494 0435-0440	11		<0.001		<0.5	<0.02
RS-494 0440-0445	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0445-0450	<5		<0.001		<0.5	<0.02
RS-494 0450-0455	<5		<0.001		<0.5	<0.02
RS-494 0455-0460	<5		<0.001		<0.5	<0.02
RS-494 0460-0465	<5		<0.001		<0.5	<0.02
RS-494 0465-0470	<5		<0.001		<0.5	<0.02
RS-494 0470-0475	<5		<0.001		<0.5	<0.02
RS-494 0475-0480	<5		<0.001		<0.5	<0.02
RS-494 0480-0485	<5		<0.001		<0.5	<0.02
RS-494 0485-0490	<5		<0.001		<0.5	<0.02
RS-494 0490-0495	<5		<0.001		<0.5	<0.02
RS-494 0495-0500	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

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REFERENCE : RS-494

REPORTED : 1 MAY 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0500-0505	<5		<0.001		<0.5	<0.02
RS-494 0505-0510	<5		<0.001		<0.5	<0.02
RS-494 0510-0515	<5		<0.001		<0.5	<0.02
RS-494 0515-0520	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0520-0525	<5		<0.001		<0.5	<0.02
RS-494 0525-0530	<5		<0.001		<0.5	<0.02
RS-494 0530-0535	<5		<0.001		<0.5	<0.02
RS-494 0535-0540	<5		<0.001		<0.5	<0.02
RS-494 0540-0545	<5		<0.001		<0.5	<0.02
RS-494 0545-0550	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0550-0555	<5		<0.001		<0.5	<0.02
RS-494 0555-0560	<5		<0.001		<0.5	<0.02
RS-494 0560-0565	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0565-0570	<5		<0.001		<0.5	<0.02
RS-494 0570-0575	<5		<0.001		<0.5	<0.02
RS-494 0575-0580	<5		<0.001		<0.5	<0.02
RS-494 0580-0585	<5		<0.001		<0.5	<0.02
RS-494 0585-0590	<5		<0.001		<0.5	<0.02
RS-494 0590-0595	<5		<0.001		<0.5	<0.02
RS-494 0595-0600	<5		<0.001		<0.5	<0.02
RS-494 0600-0605	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0605-0610	<5		<0.001		<0.5	<0.02
RS-494 0610-0615	<5		<0.001		<0.5	<0.02
RS-494 0615-0620	<5		<0.001		<0.5	<0.02
RS-494 0620-0625	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

REPORTED : 1 MAY 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0625-0630	<5		<0.001		<0.5	<0.02
RS-494 0630-0635	<5		<0.001		<0.5	<0.02
RS-494 0635-0640	<5		<0.001		<0.5	<0.02
RS-494 0640-0645	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0645-0650	<5		<0.001		<0.5	<0.02
RS-494 0650-0655	<5		<0.001		<0.5	<0.02
RS-494 0655-0660	<5		<0.001		0.5	<0.02
RS-494 0660-0665	<5		<0.001		0.5	<0.02
RS-494 0665-0670	<5		<0.001		0.5	<0.02
RS-494 0670-0675	<5		<0.001		<0.5	<0.02
RS-494 0675-0680	12		<0.001		<0.5	<0.02
RS-494 0680-0685	<5		<0.001		<0.5	<0.02
RS-494 0685-0690	<5		<0.001		<0.5	<0.02
RS-494 0690-0695	<5		<0.001		<0.5	<0.02
RS-494 0695-0700	<5		<0.001		<0.5	<0.02
RS-494 0700-0705	<5		<0.001		<0.5	<0.02
RS-494 0705-0710	<5		<0.001		<0.5	<0.02
RS-494 0710-0715	<5		<0.001		<0.5	<0.02
RS-494 0715-0720	<5		<0.001		<0.5	<0.02
RS-494 0720-0725	<5		<0.001		<0.5	<0.02
RS-494 0725-0730	<5		<0.001		0.5	<0.02
RS-494 0730-0735	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0735-0740	<5		<0.001		<0.5	<0.02
RS-494 0740-0745	<5		<0.001		<0.5	<0.02
RS-494 0745-0750	<5		<0.001		<0.5	<0.02

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ANALYSIS REPORT SP056733

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0750-0755	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0755-0760	<5		<0.001		<0.5	<0.02
RS-494 0760-0765	<5		<0.001		<0.5	<0.02
RS-494 0765-0770	<5		<0.001		<0.5	<0.02
RS-494 0770-0775	60		0.002		1.6	0.05
RS-494 0775-0780	94	96	0.003	0.003	4.4	0.13
RS-494 0780-0785	32		<0.001		0.6	<0.02
RS-494 0785-0790	62		0.002		1.3	0.04
RS-494 0790-0795	104		0.003		9.1	0.27
RS-494 0795-0800	42		0.001		2.1	0.06
RS-494 0800-0805	42		0.001		1.7	0.05
RS-494 0805-0810	50		0.001		2.3	0.07
RS-494 0810-0815	85		0.002		1.9	0.06
RS-494 0815-0820	151		0.004		2.4	0.07
RS-494 0820-0825	93		0.003		1.5	0.04
RS-494 0825-0830	138	140	0.004	0.004	9.8	0.29
RS-494 0830-0835	96		0.003		7.1	0.21
RS-494 0835-0840	74		0.002		6.1	0.18
RS-494 0840-0845	96		0.003		4.2	0.12
RS-494 0845-0850	123		0.004		2.9	0.08
RS-494 0850-0855	102		0.003		2.1	0.06
RS-494 0855-0860	142		0.004		3.7	0.11
RS-494 0860-0865	100		0.003		12.6	0.37
RS-494 0865-0870	86		0.003		4.0	0.12
RS-494 0870-0875	281		0.008		34.2	1.00

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ANALYSIS REPORT SP056733

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0875-0880	260	234	0.008	0.007	9.1	0.27
RS-494 0880-0885	70		0.002		2.1	0.06
RS-494 0885-0890	34		<0.001		<0.5	<0.02
RS-494 0890-0895	44		0.001		1.2	0.04
RS-494 0895-0900	43		0.001		1.0	0.03
RS-494 0900-0905	37		0.001		1.4	0.04
RS-494 0905-0910	39		0.001		1.0	0.03
RS-494 0910-0915	32		<0.001		0.6	<0.02
RS-494 0915-0920	31		<0.001		0.6	<0.02
RS-494 0920-0925	54		0.002		0.6	<0.02
RS-494 0925-0930	22		<0.001		0.5	<0.02
RS-494 0930-0935	31	36	<0.001	0.001	0.7	0.02
RS-494 0935-0940	45		0.001		0.6	<0.02
RS-494 0940-0945	38		0.001		0.5	<0.02
RS-494 0945-0950	30		<0.001		<0.5	<0.02
RS-494 0950-0955	38		0.001		0.7	0.02
RS-494 0955-0960	36		0.001		0.7	0.02
RS-494 0960-0965	47	43	0.001	0.001	1.2	0.04
RS-494 0965-0970	49		0.001		1.0	0.03
RS-494 0970-0975	17		<0.001		0.5	<0.02
RS-494 0975-0980	34		<0.001		1.1	0.03
RS-494 0980-0985	46		0.001		0.5	<0.02
RS-494 0985-0990	48		0.001		0.7	0.02
RS-494 0990-0995	72		0.002		2.1	0.06
RS-494 0995-1000	44		0.001		<0.5	<0.02

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ANALYSIS REPORT SP056733

American Assay Laboratories

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REPORTED : 1 MAY 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 1000-1005	40		0.001		<0.5	<0.02
RS-494 1005-1010	18	14	<0.001	<0.001	<0.5	<0.02
RS-494 1010-1015	18		<0.001		<0.5	<0.02
RS-494 1015-1020	9		<0.001		<0.5	<0.02
RS-494 1020-1025	10		<0.001		<0.5	<0.02
RS-494 1025-1030	29		<0.001		<0.5	<0.02
RS-494 1030-1035	6		<0.001		<0.5	<0.02
RS-494 1035-1040	7		<0.001		<0.5	<0.02
RS-494 1040-1045	7		<0.001		<0.5	<0.02
RS-494 1045-1050	8		<0.001		<0.5	<0.02
RS-494 1050-1055	6	6	<0.001	<0.001	<0.5	<0.02
RS-494 1055-1060	<5		<0.001		<0.5	<0.02
RS-494 1060-1065	5		<0.001		<0.5	<0.02
RS-494 1065-1070	6		<0.001		<0.5	<0.02
RS-494 1070-1075	5		<0.001		<0.5	<0.02
RS-494 1075-1080	<5		<0.001		<0.5	<0.02
RS-494 1080-1085	<5		<0.001		<0.5	<0.02
RS-494 1085-1090	<5		<0.001		<0.5	<0.02
RS-494 1090-1095	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 1095-1100	9		<0.001		<0.5	<0.02
RS-494 1100-1105	22		<0.001		<0.5	<0.02
RS-494 1105-1110	<5		<0.001		<0.5	<0.02
RS-494 1110-1115	<5		<0.001		<0.5	<0.02
RS-494 1115-1120	<5		<0.001		<0.5	<0.02
RS-494 1120-1125	<5		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 1125-1130	<5		<0.001		<0.5	<0.02
RS-494 1130-1135	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 1135-1140	<5		<0.001		<0.5	<0.02
RS-494 1140-1145	20		<0.001		<0.5	<0.02
RS-494 1145-1150	<5		<0.001		<0.5	<0.02
RS-494 1150-1155	<5		<0.001		<0.5	<0.02
RS-494 1155-1160	<5		<0.001		<0.5	<0.02
RS-494 1160-1165	7		<0.001		<0.5	<0.02
RS-494 1165-1170	8		<0.001		<0.5	<0.02
RS-494 1170-1175	5		<0.001		<0.5	<0.02
RS-494 1175-1180	12		<0.001		<0.5	<0.02
RS-494 1180-1185	<5		<0.001		0.5	<0.02
RS-494 1185-1190	<5		<0.001		<0.5	<0.02
RS-494 1190-1195	<5		<0.001		<0.5	<0.02
RS-494 1195-1200	<5		<0.001		<0.5	<0.02
89596	1965	2000	0.057	0.058	30.1	0.88

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ANALYSIS REPORT SP056733

American Assay Laboratories

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HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-494 RECEIVED : 25 MAR 2000

No. SAMPLES : 241 REPORTED : 1 MAY 2000

MAIN SAMPLE TYPE : DRILL CUTTINGS

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

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PROJECT : ROSEBUD
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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0000-0005	8		<0.001		<0.5	<0.02
RS-494 0005-0010	8		<0.001		<0.5	<0.02
RS-494 0010-0015	14	15	<0.001	<0.001	<0.5	<0.02
RS-494 0015-0020	10		<0.001		<0.5	<0.02
RS-494 0020-0025	9		<0.001		<0.5	<0.02
RS-494 0025-0030	8		<0.001		<0.5	<0.02
RS-494 0030-0035	<5		<0.001		<0.5	<0.02
RS-494 0035-0040	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0040-0045	<5		<0.001		<0.5	<0.02
RS-494 0045-0050	<5		<0.001		<0.5	<0.02
RS-494 0050-0055	<5		<0.001		<0.5	<0.02
RS-494 0055-0060	<5		<0.001		<0.5	<0.02
RS-494 0060-0065	<5		<0.001		<0.5	<0.02
RS-494 0065-0070	<5		<0.001		<0.5	<0.02
RS-494 0070-0075	6		<0.001		<0.5	<0.02
RS-494 0075-0080	5		<0.001		<0.5	<0.02
RS-494 0080-0085	<5		<0.001		<0.5	<0.02
RS-494 0085-0090	<5		<0.001		<0.5	<0.02
RS-494 0090-0095	<5		<0.001		<0.5	<0.02
RS-494 0095-0100	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0100-0105	<5		<0.001		<0.5	<0.02
RS-494 0105-0110	9		<0.001		<0.5	<0.02
RS-494 0110-0115	8		<0.001		<0.5	<0.02
RS-494 0115-0120	12		<0.001		<0.5	<0.02
RS-494 0120-0125	17		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0125-0130	<5		<0.001		<0.5	<0.02
RS-494 0130-0135	<5		<0.001		<0.5	<0.02
RS-494 0135-0140	<5		<0.001		<0.5	<0.02
RS-494 0140-0145	<5		<0.001		<0.5	<0.02
RS-494 0145-0150	<5		<0.001		<0.5	<0.02
RS-494 0150-0155	26		<0.001		<0.5	<0.02
RS-494 0155-0160	39		0.001		<0.5	<0.02
RS-494 0160-0165	<5		<0.001		<0.5	<0.02
RS-494 0165-0170	<5		<0.001		<0.5	<0.02
RS-494 0170-0175	7		<0.001		<0.5	<0.02
RS-494 0175-0180	<5		<0.001		<0.5	<0.02
RS-494 0180-0185	<5		<0.001		<0.5	<0.02
RS-494 0185-0190	<5		<0.001		<0.5	<0.02
RS-494 0190-0195	<5		<0.001		<0.5	<0.02
RS-494 0195-0200	90		0.003		<0.5	<0.02
RS-494 0200-0205	205	208	0.006	0.006	<0.5	<0.02
RS-494 0205-0210	46		0.001		<0.5	<0.02
RS-494 0210-0215	45	50	0.001	0.001	<0.5	<0.02
RS-494 0215-0220	15		<0.001		<0.5	<0.02
RS-494 0220-0225	<5		<0.001		<0.5	<0.02
RS-494 0225-0230	<5		<0.001		<0.5	<0.02
RS-494 0230-0235	<5		<0.001		<0.5	<0.02
RS-494 0235-0240	<5		<0.001		<0.5	<0.02
RS-494 0240-0245	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0245-0250	<5		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0250-0255	<5		<0.001		<0.5	<0.02
RS-494 0255-0260	<5		<0.001		<0.5	<0.02
RS-494 0260-0265	<5		<0.001		<0.5	<0.02
RS-494 0265-0270	<5		<0.001		<0.5	<0.02
RS-494 0270-0275	<5		<0.001		<0.5	<0.02
RS-494 0275-0280	<5		<0.001		<0.5	<0.02
RS-494 0280-0285	150		0.004		<0.5	<0.02
RS-494 0285-0290	<5		<0.001		<0.5	<0.02
RS-494 0290-0295	<5		<0.001		<0.5	<0.02
RS-494 0295-0300	<5		<0.001		<0.5	<0.02
RS-494 0300-0305	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0305-0310	<5		<0.001		<0.5	<0.02
RS-494 0310-0315	<5		<0.001		<0.5	<0.02
RS-494 0315-0320	<5		<0.001		<0.5	<0.02
RS-494 0320-0325	<5		<0.001		<0.5	<0.02
RS-494 0325-0330	<5		<0.001		<0.5	<0.02
RS-494 0330-0335	<5		<0.001		<0.5	<0.02
RS-494 0335-0340	5		<0.001		<0.5	<0.02
RS-494 0340-0345	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0345-0350	<5		<0.001		<0.5	<0.02
RS-494 0350-0355	<5		<0.001		<0.5	<0.02
RS-494 0355-0360	<5		<0.001		<0.5	<0.02
RS-494 0360-0365	<5		<0.001		<0.5	<0.02
RS-494 0365-0370	<5		<0.001		<0.5	<0.02
RS-494 0370-0375	<5		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0375-0380	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0380-0385	<5		<0.001		<0.5	<0.02
RS-494 0385-0390	<5		<0.001		<0.5	<0.02
RS-494 0390-0395	<5		<0.001		<0.5	<0.02
RS-494 0395-0400	<5		<0.001		<0.5	<0.02
RS-494 0400-0405	<5		<0.001		<0.5	<0.02
RS-494 0405-0410	<5		<0.001		<0.5	<0.02
RS-494 0410-0415	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0415-0420	<5		<0.001		<0.5	<0.02
RS-494 0420-0425	<5		<0.001		<0.5	<0.02
RS-494 0425-0430	10		<0.001		<0.5	<0.02
RS-494 0430-0435	6		<0.001		<0.5	<0.02
RS-494 0435-0440	11		<0.001		<0.5	<0.02
RS-494 0440-0445	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0445-0450	<5		<0.001		<0.5	<0.02
RS-494 0450-0455	<5		<0.001		<0.5	<0.02
RS-494 0455-0460	<5		<0.001		<0.5	<0.02
RS-494 0460-0465	<5		<0.001		<0.5	<0.02
RS-494 0465-0470	<5		<0.001		<0.5	<0.02
RS-494 0470-0475	<5		<0.001		<0.5	<0.02
RS-494 0475-0480	<5		<0.001		<0.5	<0.02
RS-494 0480-0485	<5		<0.001		<0.5	<0.02
RS-494 0485-0490	<5		<0.001		<0.5	<0.02
RS-494 0490-0495	<5		<0.001		<0.5	<0.02
RS-494 0495-0500	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

REPORTED : 1 MAY 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0500-0505	<5		<0.001		<0.5	<0.02
RS-494 0505-0510	<5		<0.001		<0.5	<0.02
RS-494 0510-0515	<5		<0.001		<0.5	<0.02
RS-494 0515-0520	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0520-0525	<5		<0.001		<0.5	<0.02
RS-494 0525-0530	<5		<0.001		<0.5	<0.02
RS-494 0530-0535	<5		<0.001		<0.5	<0.02
RS-494 0535-0540	<5		<0.001		<0.5	<0.02
RS-494 0540-0545	<5		<0.001		<0.5	<0.02
RS-494 0545-0550	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0550-0555	<5		<0.001		<0.5	<0.02
RS-494 0555-0560	<5		<0.001		<0.5	<0.02
RS-494 0560-0565	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0565-0570	<5		<0.001		<0.5	<0.02
RS-494 0570-0575	<5		<0.001		<0.5	<0.02
RS-494 0575-0580	<5		<0.001		<0.5	<0.02
RS-494 0580-0585	<5		<0.001		<0.5	<0.02
RS-494 0585-0590	<5		<0.001		<0.5	<0.02
RS-494 0590-0595	<5		<0.001		<0.5	<0.02
RS-494 0595-0600	<5		<0.001		<0.5	<0.02
RS-494 0600-0605	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0605-0610	<5		<0.001		<0.5	<0.02
RS-494 0610-0615	<5		<0.001		<0.5	<0.02
RS-494 0615-0620	<5		<0.001		<0.5	<0.02
RS-494 0620-0625	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

REPORTED : 1 MAY 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0625-0630	<5		<0.001		<0.5	<0.02
RS-494 0630-0635	<5		<0.001		<0.5	<0.02
RS-494 0635-0640	<5		<0.001		<0.5	<0.02
RS-494 0640-0645	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0645-0650	<5		<0.001		<0.5	<0.02
RS-494 0650-0655	<5		<0.001		<0.5	<0.02
RS-494 0655-0660	<5		<0.001		0.5	<0.02
RS-494 0660-0665	<5		<0.001		0.5	<0.02
RS-494 0665-0670	<5		<0.001		0.5	<0.02
RS-494 0670-0675	<5		<0.001		<0.5	<0.02
RS-494 0675-0680	12		<0.001		<0.5	<0.02
RS-494 0680-0685	<5		<0.001		<0.5	<0.02
RS-494 0685-0690	<5		<0.001		<0.5	<0.02
RS-494 0690-0695	<5		<0.001		<0.5	<0.02
RS-494 0695-0700	<5		<0.001		<0.5	<0.02
RS-494 0700-0705	<5		<0.001		<0.5	<0.02
RS-494 0705-0710	<5		<0.001		<0.5	<0.02
RS-494 0710-0715	<5		<0.001		<0.5	<0.02
RS-494 0715-0720	<5		<0.001		<0.5	<0.02
RS-494 0720-0725	<5		<0.001		<0.5	<0.02
RS-494 0725-0730	<5		<0.001		0.5	<0.02
RS-494 0730-0735	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0735-0740	<5		<0.001		<0.5	<0.02
RS-494 0740-0745	<5		<0.001		<0.5	<0.02
RS-494 0745-0750	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

REPORTED : 1 MAY 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0750-0755	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 0755-0760	<5		<0.001		<0.5	<0.02
RS-494 0760-0765	<5		<0.001		<0.5	<0.02
RS-494 0765-0770	<5		<0.001		<0.5	<0.02
RS-494 0770-0775	60		0.002		1.6	0.05
RS-494 0775-0780	94	96	0.003	0.003	4.4	0.13
RS-494 0780-0785	32		<0.001		0.6	<0.02
RS-494 0785-0790	62		0.002		1.3	0.04
RS-494 0790-0795	104		0.003		9.1	0.27
RS-494 0795-0800	42		0.001		2.1	0.06
RS-494 0800-0805	42		0.001		1.7	0.05
RS-494 0805-0810	50		0.001		2.3	0.07
RS-494 0810-0815	85		0.002		1.9	0.06
RS-494 0815-0820	151		0.004		2.4	0.07
RS-494 0820-0825	93		0.003		1.5	0.04
RS-494 0825-0830	138	140	0.004	0.004	9.8	0.29
RS-494 0830-0835	96		0.003		7.1	0.21
RS-494 0835-0840	74		0.002		6.1	0.18
RS-494 0840-0845	96		0.003		4.2	0.12
RS-494 0845-0850	123		0.004		2.9	0.08
RS-494 0850-0855	102		0.003		2.1	0.06
RS-494 0855-0860	142		0.004		3.7	0.11
RS-494 0860-0865	100		0.003		12.6	0.37
RS-494 0865-0870	86		0.003		4.0	0.12
RS-494 0870-0875	281		0.008		34.2	1.00

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

REPORTED : 1 MAY 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 0875-0880	260	234	0.008	0.007	9.1	0.27
RS-494 0880-0885	70		0.002		2.1	0.06
RS-494 0885-0890	34		<0.001		<0.5	<0.02
RS-494 0890-0895	44		0.001		1.2	0.04
RS-494 0895-0900	43		0.001		1.0	0.03
RS-494 0900-0905	37		0.001		1.4	0.04
RS-494 0905-0910	39		0.001		1.0	0.03
RS-494 0910-0915	32		<0.001		0.6	<0.02
RS-494 0915-0920	31		<0.001		0.6	<0.02
RS-494 0920-0925	54		0.002		0.6	<0.02
RS-494 0925-0930	22		<0.001		0.5	<0.02
RS-494 0930-0935	31	36	<0.001	0.001	0.7	0.02
RS-494 0935-0940	45		0.001		0.6	<0.02
RS-494 0940-0945	38		0.001		0.5	<0.02
RS-494 0945-0950	30		<0.001		<0.5	<0.02
RS-494 0950-0955	38		0.001		0.7	0.02
RS-494 0955-0960	36		0.001		0.7	0.02
RS-494 0960-0965	47	43	0.001	0.001	1.2	0.04
RS-494 0965-0970	49		0.001		1.0	0.03
RS-494 0970-0975	17		<0.001		0.5	<0.02
RS-494 0975-0980	34		<0.001		1.1	0.03
RS-494 0980-0985	46		0.001		0.5	<0.02
RS-494 0985-0990	48		0.001		0.7	0.02
RS-494 0990-0995	72		0.002		2.1	0.06
RS-494 0995-1000	44		0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
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REFERENCE : RS-494

REPORTED : 1 MAY 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 1000-1005	40		0.001		<0.5	<0.02
RS-494 1005-1010	18	14	<0.001	<0.001	<0.5	<0.02
RS-494 1010-1015	18		<0.001		<0.5	<0.02
RS-494 1015-1020	9		<0.001		<0.5	<0.02
RS-494 1020-1025	10		<0.001		<0.5	<0.02
RS-494 1025-1030	29		<0.001		<0.5	<0.02
RS-494 1030-1035	6		<0.001		<0.5	<0.02
RS-494 1035-1040	7		<0.001		<0.5	<0.02
RS-494 1040-1045	7		<0.001		<0.5	<0.02
RS-494 1045-1050	8		<0.001		<0.5	<0.02
RS-494 1050-1055	6	6	<0.001	<0.001	<0.5	<0.02
RS-494 1055-1060	<5		<0.001		<0.5	<0.02
RS-494 1060-1065	5		<0.001		<0.5	<0.02
RS-494 1065-1070	6		<0.001		<0.5	<0.02
RS-494 1070-1075	5		<0.001		<0.5	<0.02
RS-494 1075-1080	<5		<0.001		<0.5	<0.02
RS-494 1080-1085	<5		<0.001		<0.5	<0.02
RS-494 1085-1090	<5		<0.001		<0.5	<0.02
RS-494 1090-1095	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 1095-1100	9		<0.001		<0.5	<0.02
RS-494 1100-1105	22		<0.001		<0.5	<0.02
RS-494 1105-1110	<5		<0.001		<0.5	<0.02
RS-494 1110-1115	<5		<0.001		<0.5	<0.02
RS-494 1115-1120	<5		<0.001		<0.5	<0.02
RS-494 1120-1125	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056733

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-494

REPORTED : 1 MAY 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-494 1125-1130	<5		<0.001		<0.5	<0.02
RS-494 1130-1135	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-494 1135-1140	<5		<0.001		<0.5	<0.02
RS-494 1140-1145	20		<0.001		<0.5	<0.02
RS-494 1145-1150	<5		<0.001		<0.5	<0.02
RS-494 1150-1155	<5		<0.001		<0.5	<0.02
RS-494 1155-1160	<5		<0.001		<0.5	<0.02
RS-494 1160-1165	7		<0.001		<0.5	<0.02
RS-494 1165-1170	8		<0.001		<0.5	<0.02
RS-494 1170-1175	5		<0.001		<0.5	<0.02
RS-494 1175-1180	12		<0.001		<0.5	<0.02
RS-494 1180-1185	<5		<0.001		0.5	<0.02
RS-494 1185-1190	<5		<0.001		<0.5	<0.02
RS-494 1190-1195	<5		<0.001		<0.5	<0.02
RS-494 1195-1200	<5		<0.001		<0.5	<0.02
89596	1965	2000	0.057	0.058	30.1	0.88

AMERICAN ASSAY LABORATORIES
AAL 03-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	30	0.01	0.5	3	1	0.1	0.01	.01	1	1	0.2	0.01	0.5	10	0.01	1	0.01	2	0.1	0.01	1	0.001	0.3	0.2	0.4	1	0.2	2	0.01	0.2	5	1	2	1

5.0 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR Al, B, Ba, Ca, Co, Cr, Fe, K, La, Mg, Mn, Na, Ni, P, Sr, Th, Ti, U, V AND W.
ORGANIC SOLUTION EXTRACTION AND ULTRASONIC ICP FOR Ag, As, Bi, Cd, Cu, Ga, Mo, Pb, Sb, Se, Te AND Tl.
Hg BY COLD VAPOR AAS.

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (775) 356-0606
FAX: (775) 356-1413

CLIENT: HECLA MINING CO.
CLIENT REF: KURT ALLEN
AAL REF: SP56733
METHOD: AAL03-0

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-494 0000-0020	176	1.11	16.1	9.8	9	158.50	0.2	0.39	0.2	4.70	10.5	19.76	2.87	5.2	678	0.23	26.8	0.22	485	3.44	0.063	9.6	0.044	55.08	0.08	5.87	2.1	0.6	59.2	< .02	11.8	0.032	0.22	2.2	27	0.8	72.6
RS-494 0020-0040	83	1.29	12.8	5.4	2	230.20	0.11	4.59	0.36	5.90	11.8	22.55	2.84	5.5	525	0.15	24.3	0.2	1022	4.38	0.045	12	0.099	87.78	0.55	3.67	3	0.5	124.9	0.03	7.5	0.018	0.15	3	54	0.8	100
RS-494 0040-0060	49	1.13	4.8	2.5	< 1	73.60	0.48	3.19	0.29	6.50	6.8	11.29	2.6	4.8	123	0.12	25	0.26	1103	1.67	0.032	4	0.093	41.06	0.14	1.7	3	0.2	100.8	0.02	7.1	0.01	0.07	2.6	37	0.6	95.2
RS-494 0060-0080	53	0.98	3.2	2.1	< 1	68.90	0.12	2.02	0.23	7.20	7.5	10.07	3.13	3.5	29	0.12	21.6	0.31	1152	1.83	0.039	2.9	0.086	15.85	0.05	0.46	3.9	< .1	67.6	0.02	6.2	0.046	0.04	2.6	44	0.6	94.6
RS-494 0080-0100	58	0.99	3.0	2	< 1	70.40	0.11	2.22	0.22	7.20	7	14.55	3.01	3.8	39	0.12	22.3	0.31	1100	1.98	0.04	3.4	0.088	16.31	0.06	0.69	4	< .1	80.6	< .02	6	0.045	0.04	2.7	43	0.5	94.3
RS-494 0100-0120	71	0.74	8.8	5.9	< 1	63.50	0.03	1.07	0.22	7.70	8	13.95	3.39	3.4	312	0.09	22.4	0.17	1190	1.58	0.026	4.1	0.099	15.17	1.77	14.87	3.4	1.1	38.6	< .02	6.5	0.025	0.15	1.6	30	1	90.5
RS-494 0120-0140	74	0.9	3.4	2.7	< 1	60.70	0.03	2.26	0.22	7.10	8.2	12.35	3.14	3.7	87	0.12	20.1	0.32	1153	1.65	0.038	3.5	0.091	10	0.38	4.12	3.8	0.4	70.7	0.02	5.7	0.029	0.07	2.1	37	0.4	91.4
RS-494 0140-0160	88	0.87	11.5	10.2	< 1	142.50	0.04	2.44	0.4	7.40	7.9	12.22	3.36	3.6	205	0.12	20.4	0.28	1195	1.9	0.036	3.7	0.09	24.09	1.01	5.31	3.9	0.7	75.2	0.02	5.6	0.033	0.15	2.1	38	0.4	92.8
RS-494 0160-0180	60	0.88	2.3	2.5	< 1	65.90	0.05	3.15	0.28	7.30	4	9.57	2.93	4.2	59	0.12	21.2	0.27	1613	1.73	0.041	3.2	0.099	27.53	0.15	1.85	3.8	0.2	89.2	< .02	5.6	0.041	0.05	2	44	0.6	98.6
RS-494 0180-0200	118	0.95	10.8	20.2	< 1	101.10	0.09	2.64	0.25	7.70	6.5	9.18	2.94	4.6	237	0.12	22.9	0.27	1991	12.78	0.037	3.8	0.095	38.41	0.61	4.5	3.4	0.9	91.2	< .02	5.9	0.026	0.13	2.1	39	0.6	110.5
RS-494 0200-0220	176	0.8	59.9	71.8	< 1	54.10	< .02	1.52	0.24	8.20	5	9.32	4.41	5.4	618	0.11	20.7	0.31	786	5.48	0.028	3.7	0.099	11.4	3.91	10.88	2.4	4.8	57.6	< .02	4.6	0.016	0.32	1.6	27	0.7	91.9
RS-494 0220-0240	64	1.07	1.7	5	1	76.70	< .02	0.9	0.25	7.50	7.8	9.06	3.6	4	13	0.21	17.9	0.89	852	2.92	0.078	3.2	0.091	5.03	0.04	0.63	3.5	0.2	52.6	< .02	4.1	0.086	0.06	1.7	51	0.4	96
RS-494 0240-0260	38	1.01	1.6	2.5	2	101.90	0.02	0.99	0.23	7.50	7.3	9.98	3.67	3.9	21	0.26	18.2	0.73	872	2.72	0.1	3.5	0.088	6.38	0.06	0.34	3.3	0.3	59.1	< .02	4.4	0.089	0.08	1.9	49	0.3	93.7
RS-494 0260-0280	44	0.9	2.3	1	2	79.20	0.02	0.98	0.16	7.60	7.5	10.82	3.71	3.7	25	0.19	19	0.71	928	2.67	0.074	3.8	0.09	6.67	0.04	0.37	3.3	0.2	61.2	0.02	4.9	0.08	0.08	2.1	49	0.3	94
RS-494 0280-0300	93	1.10	2.9	26	1	74.20	< .02	1.4	0.26	7.40	6.6	14.56	3.85	4.2	12	0.16	19.9	0.69	970	2.38	0.082	3.7	0.087	5.67	0.04	0.38	3.5	0.2	79.3	0.02	5	0.073	0.05	2.3	46	0.4	96.2
RS-494 0300-0320	56	1.16	2.1	2.9	< 1	43.40	0.02	1.61	0.19	7.50	2.3	6.89	3.13	6.4	16	0.09	20.4	0.45	975	2.72	0.047	1.8	0.086	6.07	0.02	0.51	3.5	0.2	92.8	< .02	5.9	0.059	0.04	2.9	48	0.6	93.2
RS-494 0320-0340	85	1.21	1.9	1.7	< 1	32.70	0.04	2.25	0.27	8.30	5.3	5.5	2.81	6.9	10	0.12	26	0.31	931	1.51	0.046	1.8	0.094	6.78	0.02	0.52	3.6	0.1	136.9	< .02	7	0.033	0.05	2.9	42	0.5	93.4
RS-494 0340-0360	73	1.27	2.3	1.5	< 1	38.30	0.06	2.26	0.18	6.40	3.6	4.49	3.09	5.8	7	0.13	25	0.23	1027	1.44	0.041	1.3	0.089	6.78	0.01	0.79	3.3	0.1	137.8	< .02	6.5	0.029	0.04	2.4	43	0.4	99.3
RS-494 0360-0380	58	0.85	2.6	1.6	< 1	44.80	0.04	1.62	0.15	5.70	3.9	7.62	3.11	4.4	17	0.13	19.9	0.16	1692	2.57	0.066	2.1	0.074	4.85	0.01	1.08	3.3	0.2	92.7	< .02	7.1	0.078	0.05	2.7	30	0.5	93.4
RS-494 0380-0400	53	0.96	3.3	1.4	< 1	50.00	< .02	1.12	0.16	2.80	1.3	5.47	2.75	5.7	11	0.16	22.3	0.17	917	1.42	0.066	1.3	0.05	6.84	0.01	1.76	1.6	0.2	95.5	< .02	10.5	0.045	0.05	1.4	7	0.6	82.1
RS-494 0400-0420	44	0.9	5.4	1.3	3	58.30	< .02	0.78	0.2	3.30	3.6	5.88	2.92	5.7	5	0.19	20.8	0.18	903	1.29	0.081	1.7	0.047	6.22	0.01	0.7	1.7	0.2	77.1	< .02	11.5	0.031	0.07	1	6	0.7	76.3
RS-494 0420-0440	44	0.79	5.6	3.1	5	76.00	0.06	0.55	0.12	3.70	6.5	15.08	3.62	5.4	11	0.27	19.6	0.17	769	2.22	0.095	4.3	0.046	6.06	0.01	1.45	1.7	0.2	63.8	< .02	11.8	0.046	0.12	1.2	8	0.8	75
RS-494 0440-0460	50	0.66	4.6	1.8	5	77.50	0.08	0.55	0.11	3.70	9.2	23.86	3.97	4.7	10	0.27	20.1	0.17	824	2.61	0.075	5.4	0.044	6.4	0.01	1.31	1.6	0.3	49.7	< .02	12	0.051	0.13	1.7	9	0.8	77.2
RS-494 0460-0480	44	0.57	6.1	11.4	2	70.10	0.09	0.62	0.12	3.40	4.6	17.79	3.84	4.2	11	0.21	22.5	0.11	726	2.91	0.088	4.7	0.041	9.21	0.02	1	1.3	0.3	60.2	< .02	10.6	0.049	0.08	1.5	9	0.7	80.5
RS-494 0480-0500	47	0.51	5.3	5.2	2	62.90	0.11	0.41	0.09	3.30	4.9	18.9	3.8	3.7	6	0.22	22.5	0.09	515	2.62	0.092	4.9	0.038	9.38	< .01	0.72	1	0.2	55.5	< .02	9.4	0.05	0.08	1.3	9	0.8	78.5
RS-494 0500-0520	56	0.65	2.6	2.8	1	118.10	0.05	0.4	0.1	3.10	3.6	11.34	3.31	5	< 5	0.27	24.1	0.12	400	2.48	0.12	3.2	0.042	10.74	< .01	0.59	1.1	< .1	72.3	< .02	7.9	0.057	0.11	1.4	8	0.7	80.7
RS-494 0520-0540	79	0.74	1.6	1.7	1	171.90	0.15	0.39	0.22	4.40	5.4	20.52	3.92	5.2	8	0.28	20.9	0.18	664	3.36	0.147	6	0.045	7.42	< .01	0.69	1.2	< .1	72.3	< .02	6	0.064	0.11	1.8	11	0.7	82.3
RS-494 0540-0560	68	0.92	2.7	1.4	1	101.60	0.28	0.84	0.15	3.90	4.1	13.16	2.99	4.8	15	0.32	29.4	0.22	854	2.65	0.11	4	0.055	11.99	< .01	0.59	1.1	0.1	121.7	0.02	7.1	0.027	0.13	2.1	10	0.3	78.4
RS-494 0560-0580	74	0.92	5.4	1.6	< 1	89.10	0.62	0.79	0.15	3.00	3.8	8.49	2.67	4.8	10	0.39	30.8	0.19	662	2.29	0.089	2.4	0.048	15.47	< .01	0.75	0.8	< .1	113.3	0.03	6.9	0.024	0.16	2	7	0.3	76.3
RS-494 0580-0600	84	0.9	3.8	1.5	1.0	116.70	0.2	0.71	0.16	2.30	5.4	8.4	2.65	5.2	9	0.42	31	0.14	402	2.31	0.078	2.9	0.045	15.87	< .01	0.71	0.8	0.1	94	< .02	8	0.031	0.17	2	8	0.3	78.9
RS-494 0600-0620	92	0.94	2	1	1	219.9	0.58	1.14	0.14	2.1	5.1	12.27	2.56	3.4	< 5	0.32	29.9	0.22	684	2.14	0.053	3.9	0.042	12.22	< .01	0.41	0.5	< .1	245.9	0.02	5.2	0.005	0.11	1.2	3	0.2	63.1
RS-494 0620-0640	102	1.02	2.1	1.2	< 1	92.8	0.26	1.55	0.18	2.8	3.4	7.09	2.14	4.9	< 5	0.38	38.9	0.18	630	1.97	0.052	2.3	0.062	16.57	< .01	0.59	0.7	< .1	141.3	< .02	6.2	0.008	0.14	1.6	5	0.3	65.5
RS-494 0640-0660	87	0.93	1.5	1	< 1	82.6	0.19	1.48	0.13	1.5	2.9	7.07	1.65	4.2	10	0.41	43.6	0.14	662	1.96	0.049	1.7	0.031	32.48	< .01	0.5	0.6	< .1	116.4	0.02	6.5	0.008	0.13	1.1	2	0.3	61.7
STANDARD DS2	224	1.71	58.3	193.3	< 1	150.3	10.33	0.54	9.84	12.2	158.1	127.15	3.1	6.2	223	0.16	15.3	0.61	833	14.15	0.032	35.7	0.085	31.81	0.05	9.34	2.7	2.2	28	1.8	3.6	0.093	1.79	18.4	73	6.4	160.3
RS-494 0660-0680	122	0.87	1.8	2.9	< 1	92.7	0.72	2.19	0.38	2	2.5	7.11	1.63	3.7	16	0.38	37.8	0.12	720	1.94	0.05	1.5	0.053	24.15	11.67	1.38	0.4	0.3	128.1	0.03	5.1	0.008	0.16	1.7	2	0.2	53.3

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CLIENT: HECLA MINING CO.
CLIENT REF: KURT ALLEN
AAL REF: SP56733
METHOD: AAL03-0

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-494 0680-0700	94	0.82	1	1.9	< 1	68	0.17	2.09	0.22	2.4	1.5	4.51	1.63	3.6	39	0.34	35.2	0.1	552	1.54	0.044	0.7	0.055	20.12	9.62	1.06	0.4	0.2	127	0.02	4.9	0.009	0.11	1.3	2	0.2	83
RS-494 0700-0720	93	0.65	1.3	0.8	< 1	133.3	0.12	1.57	0.18	1.6	2.4	7.15	1.84	3.2	11	0.36	35.3	0.06	488	2.42	0.053	1.4	0.048	20.38	7.99	0.7	0.4	0.1	95.7	0.02	6.3	0.03	0.09	1.2	3	0.5	65.8
RS-494 0720-0740	88	0.62	1.3	1.1	< 1	110.8	0.06	2.3	0.15	1.8	3.1	5.62	1.98	2.9	28	0.31	32.2	0.07	744	2.87	0.041	1	0.049	15.83	8.74	0.66	0.5	< .1	132.5	< .02	5.4	0.028	0.08	1.2	3	0.3	71
RS-494 0740-0760	82	0.77	0.9	0.8	< 1	113.6	0.08	2.06	0.19	2.8	3.7	5.94	1.98	3.3	27	0.34	32.6	0.12	811	2.65	0.046	1.4	0.052	17.2	7.63	0.83	0.5	0.1	114.5	< .02	5.7	0.02	0.11	1.2	3	0.2	71.9
RS-494 0760-0780	1471	0.86	35.6	36.1	< 1	95.7	0.1	1.9	0.2	5.7	4.2	7.18	2.66	3.1	103	0.39	17.2	0.1	1396	3.24	0.016	1.2	0.045	18.82	6.59	12.04	0.4	3.9	99.7	< .02	2.9	0.001	0.57	0.6	2	0.2	92.3
RS-494 0780-0800	2698	0.64	58	43.9	< 1	101	0.88	0.24	0.12	2.7	2.9	9.28	2.37	2.1	152	0.39	17.9	0.02	147	2.48	0.011	1.8	0.043	18.84	7.97	9.9	0.3	7	39.8	< .02	3.9	0.001	0.49	0.4	2	0.3	71.3
RS-494 0800-0820	1806	0.61	90.2	54.2	< 1	109.3	0.71	0.14	0.13	2.3	5.1	14.1	2.77	2.5	564	0.32	16.4	0.02	134	3.92	0.01	3	0.019	13.38	8.13	8.76	0.4	4.9	32.8	< .02	4.2	0.001	0.4	0.6	3	0.4	59.1
RS-494 0820-0840	8537	0.38	132.6	74.2	< 1	35.2	0.1	0.27	0.17	2.3	6.6	17.3	3.33	1.7	715	0.19	12.4	0.02	142	4.46	0.009	3.9	0.029	14.16	9.14	10.54	0.2	5.6	33.1	< .02	3.4	< .001	0.34	0.5	5	0.8	64.8
RS-494 0840-0860	3708	0.48	134.7	92	2	42.8	0.07	0.17	0.11	2.9	7.5	18.49	3.18	2	255	0.24	14.6	0.02	136	3.76	0.011	3.8	0.038	14.9	11.19	13.56	0.3	9.7	36.3	0.05	4	< .001	0.56	0.6	4	0.4	63.8
RS-494 0860-0880	18352	0.49	282.5	104	< 1	62.3	0.1	0.11	0.16	2	10.6	33.07	3.49	2.4	220	0.25	12.2	0.02	190	4.56	0.009	6.4	0.014	14.51	3.97	22.15	0.4	14.2	28.1	0.05	2.8	< .001	0.35	0.5	6	0.6	44.7
RS-494 0880-0900	979	0.29	89.4	33	< 1	142.4	0.35	0.09	0.25	0.6	6	17.44	2.23	1.2	272	0.21	18.5	0.01	103	2.54	0.008	2.9	0.004	17.93	2.61	5.85	0.2	5.9	28.6	0.03	5.1	< .001	0.26	0.5	3	0.2	63.2
RS-494 0900-0920	631	1.11	11.7	17.2	< 1	46	0.07	0.07	0.12	0.4	4.3	9.47	1.56	3.9	332	0.49	22.5	0.02	95	1.96	0.011	2.5	0.003	19.19	3.79	3.32	0.3	2.7	24	< .02	7.3	0.001	0.19	0.8	2	0.2	58.6
RS-494 0920-0940	656	0.41	14.6	18.6	< 1	22.8	0.05	0.08	0.07	0.6	6.1	13.97	2.1	1.6	437	0.28	22.2	0.01	114	2.76	0.01	3.8	0.003	16.15	3.93	4.85	0.2	2.2	26.3	0.02	7.7	< .001	0.29	0.9	3	0.2	53.8
RS-494 0940-0960	591	0.28	18.8	20.7	< 1	104.9	0.02	0.08	0.09	0.5	6.5	10.1	1.98	0.9	238	0.23	22.3	0.01	85	3.32	0.009	3.3	0.004	22.01	3.91	4.54	0.2	4	26.5	< .02	7.7	< .001	0.21	1.1	2	0.2	54.4
RS-494 0960-0980	553	0.26	33.4	21.5	< 1	18.2	0.02	0.08	0.05	0.4	3.1	8.44	1.75	0.9	127	0.22	21.9	0.01	80	4.48	0.009	2.8	0.003	18.57	3.62	3.77	0.2	4.2	26.7	< .02	7.6	< .001	0.14	1	2	0.2	54.4
RS-494 0980-1000	1778	0.29	46.2	34.4	< 1	40.3	< .02	0.08	0.08	0.3	2	5.71	1.65	1.1	531	0.26	25.2	0.01	65	2.4	0.009	1.9	0.003	18.08	4.07	33.89	0.2	6.6	26.7	< .02	9.3	< .001	1.48	1.3	2	0.2	54.7
RS-494 1000-1020	264	0.44	5.1	8.7	< 1	21	< .02	0.7	0.1	0.3	4.2	5.03	1.46	1.9	38	0.33	30.2	0.01	541	1.5	0.019	1.7	0.004	21.04	7.38	2.4	0.3	1.7	48	< .02	10.7	< .001	0.19	2.6	< 2	< .2	71.2
RS-494 1020-1040	216	0.69	5	4.7	< 1	17.2	< .02	0.74	0.08	0.3	4	5.93	1.58	3.4	29	0.4	32.4	0.02	671	1.37	0.035	1.8	0.005	19.11	7.79	1.55	0.4	0.9	50.5	< .02	11.6	< .001	0.13	3.4	2	< .2	73.5
RS-494 1040-1060	118	0.63	2.3	1.7	< 1	16.5	< .02	0.73	0.07	0.2	3.2	4.59	1.24	4	19	0.35	41.6	0.02	765	1.04	0.044	1.1	0.005	21.88	8.19	0.67	0.6	0.4	47.5	< .02	13.9	0.001	0.09	1.5	< 2	< .2	69.1
RS-494 1060-1080	133	0.57	5.4	3.2	< 1	13.8	< .02	0.61	0.08	0.3	2.3	4.25	1.16	3.5	19	0.34	45.8	0.02	622	1.09	0.043	1.2	0.006	21.23	8.59	0.94	0.5	0.8	47.9	< .02	14.9	0.001	0.09	1.7	2	< .2	65.4
RS-494 1080-1100	215	0.61	5	2.4	< 1	15.1	< .02	0.6	0.09	0.3	2.8	4.3	1.21	3.9	18	0.33	45.6	0.02	987	1.01	0.038	1.2	0.006	24.79	8.23	1.03	0.5	0.7	43.1	< .02	14.8	< .001	0.09	1.8	< 2	< .2	69.1
RS-494 1100-1120	192	0.64	6.1	3.1	< 1	20.2	< .02	0.43	0.1	0.5	4.6	5.65	1.35	4.2	26	0.33	48.6	0.02	1014	1.47	0.042	1.5	0.006	31.65	8.6	0.88	0.6	0.7	41.1	< .02	14.9	0.001	0.09	2	< 2	< .2	80
RS-494 1120-1140	119	0.73	1.8	0.4	< 1	16.3	< .02	0.44	0.09	0.6	3.2	7.26	1.58	5.4	15	0.34	50.9	0.02	1158	1.27	0.059	1.6	0.007	26.08	10.18	0.57	0.7	0.3	37.5	< .02	16.4	0.001	0.08	1.7	< 2	0.2	75.3
RS-494 1140-1160	200	0.56	3.8	4.6	< 1	12.7	< .02	0.67	0.11	0.8	7.9	12.99	1.72	3.2	37	0.32	40.9	0.02	686	2.27	0.051	3.1	0.005	24.24	9.12	0.59	0.4	0.4	56.5	< .02	14	0.001	0.09	2.3	3	0.2	66.8
RS-494 1160-1180	229	0.79	11.8	5.9	< 1	15.7	0.02	0.53	0.1	0.6	6.8	18.67	1.38	4.5	30	0.43	42.4	0.02	690	1.98	0.052	2.4	0.005	22.96	9.3	1.04	0.5	1.1	48.1	< .02	14.7	0.001	0.13	2.2	2	0.2	69.2
RS-494 1180-1200	160	0.81	2.9	1.2	1	12.8	< .02	0.44	0.12	0.8	6.7	9.21	1.4	4.9	22	0.43	44.8	0.02	708	2.01	0.06	2	0.005	21.01	8.84	0.63	0.5	0.5	52.5	< .02	15.2	0.001	0.12	2.6	2	0.2	70.9
89596 N S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD DS2	237	1.75	60.5	207.9	4	154.7	11.26	0.55	9.98	12.3	164.7	130.68	3.16	6.4	232	0.17	17.3	0.61	841	14.93	0.033	36.5	0.093	32.46	7.87	9.77	2.8	2.3	29.8	1.85	3.9	0.098	1.85	19.1	76	6.6	162.2

AMERICAN ASSAY LABORATORIES
AAL 03-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	30	0.01	0.5	3	1	0.1	0.01	.01	1	1	0.2	0.01	0.5	10	0.01	1	0.01	2	0.1	0.01	1	0.001	0.3	0.2	0.4	1	0.2	2	0.01	0.2	5	1	2	1

5.0 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR Al, B, Ba, Ca, Co, Cr, Fe, K, La, Mg, Mn, Na, Ni, P, Sr, Th, Ti, U, V AND W.
ORGANIC SOLUTION EXTRACTION AND ULTRASONIC ICP FOR Ag, As, Bi, Cd, Cu, Ga, Mo, Pb, Sb, Se, Te AND Tl.
Hg BY COLD VAPOR AAS.

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CLIENT: HECLA MINING CO.
CLIENT REF: KURT ALLEN
AAL REF: SP56733
METHOD: AAL03-0

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-494 0000-0020	176	1.11	16.1	9.8	9	158.50	0.2	0.39	0.2	4.70	10.5	19.76	2.87	5.2	678	0.23	26.8	0.22	485	3.44	0.063	9.6	0.044	55.08	0.08	5.87	2.1	0.6	59.2	< .02	11.8	0.032	0.22	2.2	27	0.8	72.6
RS-494 0020-0040	83	1.29	12.8	5.4	2	230.20	0.11	4.59	0.36	5.90	11.8	22.55	2.84	5.5	525	0.15	24.3	0.2	1022	4.38	0.045	12	0.099	87.78	0.55	3.67	3	0.5	124.9	0.03	7.5	0.018	0.15	3	54	0.8	100
RS-494 0040-0060	49	1.13	4.8	2.5	< 1	73.60	0.48	3.19	0.29	6.50	6.8	11.29	2.6	4.8	123	0.12	25	0.26	1103	1.67	0.032	4	0.093	41.06	0.14	1.7	3	0.2	100.8	0.02	7.1	0.01	0.07	2.6	37	0.6	95.2
RS-494 0060-0080	53	0.98	3.2	2.1	< 1	68.90	0.12	2.02	0.23	7.20	7.5	10.07	3.13	3.5	29	0.12	21.6	0.31	1152	1.83	0.039	2.9	0.086	15.85	0.05	0.46	3.9	< .1	67.6	0.02	6.2	0.046	0.04	2.6	44	0.6	94.6
RS-494 0080-0100	58	0.99	3.0	2	< 1	70.40	0.11	2.22	0.22	7.20	7	14.55	3.01	3.8	39	0.12	22.3	0.31	1100	1.98	0.04	3.4	0.088	16.31	0.06	0.69	4	< .1	80.6	< .02	6	0.045	0.04	2.7	43	0.5	94.3
RS-494 0100-0120	71	0.74	8.8	5.9	< 1	63.50	0.03	1.07	0.22	7.70	8	13.95	3.39	3.4	312	0.09	22.4	0.17	1190	1.58	0.026	4.1	0.099	15.17	1.77	14.87	3.4	1.1	38.6	< .02	6.5	0.025	0.15	1.6	30	1	90.5
RS-494 0120-0140	74	0.9	3.4	2.7	< 1	60.70	0.03	2.26	0.22	7.10	8.2	12.35	3.14	3.7	87	0.12	20.1	0.32	1153	1.65	0.038	3.5	0.091	10	0.38	4.12	3.8	0.4	70.7	0.02	5.7	0.029	0.07	2.1	37	0.4	91.4
RS-494 0140-0160	88	0.87	11.5	10.2	< 1	142.50	0.04	2.44	0.4	7.40	7.9	12.22	3.36	3.6	205	0.12	20.4	0.28	1195	1.9	0.036	3.7	0.09	24.09	1.01	5.31	3.9	0.7	75.2	0.02	5.6	0.033	0.15	2.1	38	0.4	92.8
RS-494 0160-0180	60	0.88	2.3	2.5	< 1	65.90	0.05	3.15	0.28	7.30	4	9.57	2.93	4.2	59	0.12	21.2	0.27	1613	1.73	0.041	3.2	0.099	27.53	0.15	1.85	3.8	0.2	89.2	< .02	5.6	0.041	0.05	2	44	0.6	98.6
RS-494 0180-0200	118	0.95	10.8	20.2	< 1	101.10	0.09	2.64	0.25	7.70	6.5	9.18	2.94	4.6	237	0.12	22.9	0.27	1991	12.78	0.037	3.8	0.095	38.41	0.61	4.5	3.4	0.9	91.2	< .02	5.9	0.026	0.13	2.1	39	0.6	110.5
RS-494 0200-0220	176	0.8	59.9	71.8	< 1	54.10	< .02	1.52	0.24	8.20	5	9.32	4.41	5.4	618	0.11	20.7	0.31	786	5.48	0.028	3.7	0.099	11.4	3.91	10.88	2.4	4.8	57.6	< .02	4.6	0.016	0.32	1.6	27	0.7	91.9
RS-494 0220-0240	64	1.07	1.7	5	1	76.70	< .02	0.9	0.25	7.50	7.8	9.06	3.6	4	13	0.21	17.9	0.89	852	2.92	0.078	3.2	0.091	5.03	0.04	0.63	3.5	0.2	52.6	< .02	4.1	0.086	0.06	1.7	51	0.4	96
RS-494 0240-0260	38	1.01	1.6	2.5	2	101.90	0.02	0.99	0.23	7.50	7.3	9.98	3.67	3.9	21	0.26	18.2	0.73	872	2.72	0.1	3.5	0.088	6.38	0.06	0.34	3.3	0.3	59.1	< .02	4.4	0.089	0.08	1.9	49	0.3	93.7
RS-494 0260-0280	44	0.9	2.3	1	2	79.20	0.02	0.98	0.16	7.60	7.5	10.82	3.71	3.7	25	0.19	19	0.71	928	2.67	0.074	3.8	0.09	6.67	0.04	0.37	3.3	0.2	61.2	0.02	4.9	0.08	0.08	2.1	49	0.3	94
RS-494 0280-0300	93	1.10	2.9	26	1	74.20	< .02	1.4	0.26	7.40	6.6	14.56	3.85	4.2	12	0.16	19.9	0.69	970	2.38	0.082	3.7	0.087	5.67	0.04	0.38	3.5	0.2	79.3	0.02	5	0.073	0.05	2.3	46	0.4	96.2
RS-494 0300-0320	56	1.16	2.1	2.9	< 1	43.40	0.02	1.61	0.19	7.50	2.3	6.89	3.13	6.4	16	0.09	20.4	0.45	975	2.72	0.047	1.8	0.086	6.07	0.02	0.51	3.5	0.2	92.8	< .02	5.9	0.059	0.04	2.9	48	0.6	93.2
RS-494 0320-0340	85	1.21	1.9	1.7	< 1	32.70	0.04	2.25	0.27	8.30	5.3	5.5	2.81	6.9	10	0.12	26	0.31	931	1.51	0.046	1.8	0.094	6.78	0.02	0.52	3.6	0.1	136.9	< .02	7	0.033	0.05	2.9	42	0.5	93.4
RS-494 0340-0360	73	1.27	2.3	1.5	< 1	38.30	0.06	2.26	0.18	6.40	3.6	4.49	3.09	5.8	7	0.13	25	0.23	1027	1.44	0.041	1.3	0.089	6.78	0.01	0.79	3.3	0.1	137.8	< .02	6.5	0.029	0.04	2.4	43	0.4	99.3
RS-494 0360-0380	58	0.85	2.6	1.6	< 1	44.80	0.04	1.62	0.15	5.70	3.9	7.62	3.11	4.4	17	0.13	19.9	0.16	1692	2.57	0.066	2.1	0.074	4.85	0.01	1.08	3.3	0.2	92.7	< .02	7.1	0.078	0.05	2.7	30	0.5	93.4
RS-494 0380-0400	53	0.96	3.3	1.4	< 1	50.00	< .02	1.12	0.16	2.80	1.3	5.47	2.75	5.7	11	0.16	22.3	0.17	917	1.42	0.066	1.3	0.05	6.84	0.01	1.76	1.6	0.2	95.5	< .02	10.5	0.045	0.05	1.4	7	0.6	82.1
RS-494 0400-0420	44	0.9	5.4	1.3	3	58.30	< .02	0.78	0.2	3.30	3.6	5.88	2.92	5.7	5	0.19	20.8	0.18	903	1.29	0.081	1.7	0.047	6.22	0.01	0.7	1.7	0.2	77.1	< .02	11.5	0.031	0.07	1	6	0.7	76.3
RS-494 0420-0440	44	0.79	5.6	3.1	5	76.00	0.06	0.55	0.12	3.70	6.5	15.08	3.62	5.4	11	0.27	19.6	0.17	769	2.22	0.095	4.3	0.046	6.06	0.01	1.45	1.7	0.2	63.8	< .02	11.8	0.046	0.12	1.2	8	0.8	75
RS-494 0440-0460	50	0.66	4.6	1.8	5	77.50	0.08	0.55	0.11	3.70	9.2	23.86	3.97	4.7	10	0.27	20.1	0.17	824	2.61	0.075	5.4	0.044	6.4	0.01	1.31	1.6	0.3	49.7	< .02	12	0.051	0.13	1.7	9	0.8	77.2
RS-494 0460-0480	44	0.57	6.1	11.4	2	70.10	0.09	0.62	0.12	3.40	4.6	17.79	3.84	4.2	11	0.21	22.5	0.11	726	2.91	0.088	4.7	0.041	9.21	0.02	1	1.3	0.3	60.2	< .02	10.6	0.049	0.08	1.5	9	0.7	80.5
RS-494 0480-0500	47	0.51	5.3	5.2	2	62.90	0.11	0.41	0.09	3.30	4.9	18.9	3.8	3.7	6	0.22	22.5	0.09	515	2.62	0.092	4.9	0.038	9.38	< .01	0.72	1	0.2	55.5	< .02	9.4	0.05	0.08	1.3	9	0.8	78.5
RS-494 0500-0520	56	0.65	2.6	2.8	1	118.10	0.05	0.4	0.1	3.10	3.6	11.34	3.31	5	< 5	0.27	24.1	0.12	400	2.48	0.12	3.2	0.042	10.74	< .01	0.59	1.1	< .1	72.3	< .02	7.9	0.057	0.11	1.4	8	0.7	80.7
RS-494 0520-0540	79	0.74	1.6	1.7	1	171.90	0.15	0.39	0.22	4.40	5.4	20.52	3.92	5.2	8	0.28	20.9	0.18	664	3.36	0.147	6	0.045	7.42	< .01	0.69	1.2	< .1	72.3	< .02	6	0.064	0.11	1.8	11	0.7	82.3
RS-494 0540-0560	68	0.92	2.7	1.4	1	101.60	0.28	0.84	0.15	3.90	4.1	13.16	2.99	4.8	15	0.32	29.4	0.22	854	2.65	0.11	4	0.055	11.99	< .01	0.59	1.1	0.1	121.7	0.02	7.1	0.027	0.13	2.1	10	0.3	78.4
RS-494 0560-0580	74	0.92	5.4	1.6	< 1	89.10	0.62	0.79	0.15	3.00	3.8	8.49	2.67	4.8	10	0.39	30.8	0.19	662	2.29	0.089	2.4	0.048	15.47	< .01	0.75	0.8	< .1	113.3	0.03	6.9	0.024	0.16	2	7	0.3	76.3
RS-494 0580-0600	84	0.9	3.8	1.5	1.0	116.70	0.2	0.71	0.16	2.30	5.4	8.4	2.65	5.2	9	0.42	31	0.14	402	2.31	0.078	2.9	0.045	15.87	< .01	0.71	0.8	0.1	94	< .02	8	0.031	0.17	2	8	0.3	78.9
RS-494 0600-0620	92	0.94	2	1	1	219.9	0.58	1.14	0.14	2.1	5.1	12.27	2.56	3.4	< 5	0.32	29.9	0.22	684	2.14	0.053	3.9	0.042	12.22	< .01	0.41	0.5	< .1	245.9	0.02	5.2	0.005	0.11	1.2	3	0.2	63.1
RS-494 0620-0640	102	1.02	2.1	1.2	< 1	92.8	0.26	1.55	0.18	2.8	3.4	7.09	2.14	4.9	< 5	0.38	38.9	0.18	630	1.97	0.052	2.3	0.062	16.57	< .01	0.59	0.7	< .1	141.3	< .02	6.2	0.008	0.14	1.6	5	0.3	65.5
RS-494 0640-0660	87	0.93	1.5	1	< 1	82.6	0.19	1.48	0.13	1.5	2.9	7.07	1.65	4.2	10	0.41	43.6	0.14	662	1.96	0.049	1.7	0.031	32.48	< .01	0.5	0.6	< .1	116.4	0.02	6.5	0.008	0.13	1.1	2	0.3	61.7
STANDARD DS2	224	1.71	58.3	193.3	< 1	150.3	10.33	0.54	9.84	12.2	158.1	127.15	3.1	6.2	223	0.16	15.3	0.61	833	14.15	0.032	35.7	0.085	31.81	0.05	9.34	2.7	2.2	28	1.8	3.6	0.093	1.79	18.4	73	6.4	160.3
RS-494 0660-0680	122	0.87	1.8	2.9	< 1	92.7	0.72	2.19	0.38	2	2.5	7.11	1.63	3.7	16	0.38	37.8	0.12	720	1.94	0.05	1.5	0.053	24.15	11.67	1.38	0.4	0.3	128.1	0.03	5.1	0.008	0.16	1.7	2	0.2	53.3

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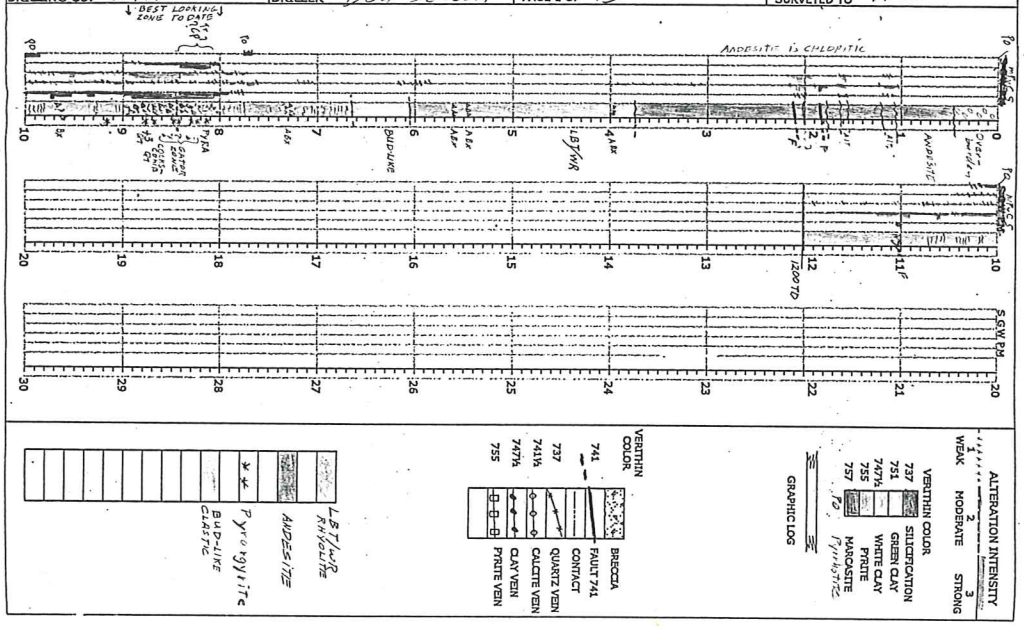
CLIENT: HECLA MINING CO.
CLIENT REF: KURT ALLEN
AAL REF: SP56733
METHOD: AAL03-0

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-494 0680-0700	94	0.82	1	1.9	< 1	68	0.17	2.09	0.22	2.4	1.5	4.51	1.63	3.6	39	0.34	35.2	0.1	552	1.54	0.044	0.7	0.055	20.12	9.62	1.06	0.4	0.2	127	0.02	4.9	0.009	0.11	1.3	2	0.2	83
RS-494 0700-0720	93	0.65	1.3	0.8	< 1	133.3	0.12	1.57	0.18	1.6	2.4	7.15	1.84	3.2	11	0.36	35.3	0.06	488	2.42	0.053	1.4	0.048	20.38	7.99	0.7	0.4	0.1	95.7	0.02	6.3	0.03	0.09	1.2	3	0.5	65.8
RS-494 0720-0740	88	0.62	1.3	1.1	< 1	110.8	0.06	2.3	0.15	1.8	3.1	5.62	1.98	2.9	28	0.31	32.2	0.07	744	2.87	0.041	1	0.049	15.83	8.74	0.66	0.5	< .1	132.5	< .02	5.4	0.028	0.08	1.2	3	0.3	71
RS-494 0740-0760	82	0.77	0.9	0.8	< 1	113.6	0.08	2.06	0.19	2.8	3.7	5.94	1.98	3.3	27	0.34	32.6	0.12	811	2.65	0.046	1.4	0.052	17.2	7.63	0.83	0.5	0.1	114.5	< .02	5.7	0.02	0.11	1.2	3	0.2	71.9
RS-494 0760-0780	1471	0.86	35.6	36.1	< 1	95.7	0.1	1.9	0.2	5.7	4.2	7.18	2.66	3.1	103	0.39	17.2	0.1	1396	3.24	0.016	1.2	0.045	18.82	6.59	12.04	0.4	3.9	99.7	< .02	2.9	0.001	0.57	0.6	2	0.2	92.3
RS-494 0780-0800	2698	0.64	58	43.9	< 1	101	0.88	0.24	0.12	2.7	2.9	9.28	2.37	2.1	152	0.39	17.9	0.02	147	2.48	0.011	1.8	0.043	18.84	7.97	9.9	0.3	7	39.8	< .02	3.9	0.001	0.49	0.4	2	0.3	71.3
RS-494 0800-0820	1806	0.61	90.2	54.2	< 1	109.3	0.71	0.14	0.13	2.3	5.1	14.1	2.77	2.5	564	0.32	16.4	0.02	134	3.92	0.01	3	0.019	13.38	8.13	8.76	0.4	4.9	32.8	< .02	4.2	0.001	0.4	0.6	3	0.4	59.1
RS-494 0820-0840	8537	0.38	132.6	74.2	< 1	35.2	0.1	0.27	0.17	2.3	6.6	17.3	3.33	1.7	715	0.19	12.4	0.02	142	4.46	0.009	3.9	0.029	14.16	9.14	10.54	0.2	5.6	33.1	< .02	3.4	< .001	0.34	0.5	5	0.8	64.8
RS-494 0840-0860	3708	0.48	134.7	92	2	42.8	0.07	0.17	0.11	2.9	7.5	18.49	3.18	2	255	0.24	14.6	0.02	136	3.76	0.011	3.8	0.038	14.9	11.19	13.56	0.3	9.7	36.3	0.05	4	< .001	0.56	0.6	4	0.4	63.8
RS-494 0860-0880	18352	0.49	282.5	104	< 1	62.3	0.1	0.11	0.16	2	10.6	33.07	3.49	2.4	220	0.25	12.2	0.02	190	4.56	0.009	6.4	0.014	14.51	3.97	22.15	0.4	14.2	28.1	0.05	2.8	< .001	0.35	0.5	6	0.6	44.7
RS-494 0880-0900	979	0.29	89.4	33	< 1	142.4	0.35	0.09	0.25	0.6	6	17.44	2.23	1.2	272	0.21	18.5	0.01	103	2.54	0.008	2.9	0.004	17.93	2.61	5.85	0.2	5.9	28.6	0.03	5.1	< .001	0.26	0.5	3	0.2	63.2
RS-494 0900-0920	631	1.11	11.7	17.2	< 1	46	0.07	0.07	0.12	0.4	4.3	9.47	1.56	3.9	332	0.49	22.5	0.02	95	1.96	0.011	2.5	0.003	19.19	3.79	3.32	0.3	2.7	24	< .02	7.3	0.001	0.19	0.8	2	0.2	58.6
RS-494 0920-0940	656	0.41	14.6	18.6	< 1	22.8	0.05	0.08	0.07	0.6	6.1	13.97	2.1	1.6	437	0.28	22.2	0.01	114	2.76	0.01	3.8	0.003	16.15	3.93	4.85	0.2	2.2	26.3	0.02	7.7	< .001	0.29	0.9	3	0.2	53.8
RS-494 0940-0960	591	0.28	18.8	20.7	< 1	104.9	0.02	0.08	0.09	0.5	6.5	10.1	1.98	0.9	238	0.23	22.3	0.01	85	3.32	0.009	3.3	0.004	22.01	3.91	4.54	0.2	4	26.5	< .02	7.7	< .001	0.21	1.1	2	0.2	54.4
RS-494 0960-0980	553	0.26	33.4	21.5	< 1	18.2	0.02	0.08	0.05	0.4	3.1	8.44	1.75	0.9	127	0.22	21.9	0.01	80	4.48	0.009	2.8	0.003	18.57	3.62	3.77	0.2	4.2	26.7	< .02	7.6	< .001	0.14	1	2	0.2	54.4
RS-494 0980-1000	1778	0.29	46.2	34.4	< 1	40.3	< .02	0.08	0.08	0.3	2	5.71	1.65	1.1	531	0.26	25.2	0.01	65	2.4	0.009	1.9	0.003	18.08	4.07	33.89	0.2	6.6	26.7	< .02	9.3	< .001	1.48	1.3	2	0.2	54.7
RS-494 1000-1020	264	0.44	5.1	8.7	< 1	21	< .02	0.7	0.1	0.3	4.2	5.03	1.46	1.9	38	0.33	30.2	0.01	541	1.5	0.019	1.7	0.004	21.04	7.38	2.4	0.3	1.7	48	< .02	10.7	< .001	0.19	2.6	< 2	< .2	71.2
RS-494 1020-1040	216	0.69	5	4.7	< 1	17.2	< .02	0.74	0.08	0.3	4	5.93	1.58	3.4	29	0.4	32.4	0.02	671	1.37	0.035	1.8	0.005	19.11	7.79	1.55	0.4	0.9	50.5	< .02	11.6	< .001	0.13	3.4	2	< .2	73.5
RS-494 1040-1060	118	0.63	2.3	1.7	< 1	16.5	< .02	0.73	0.07	0.2	3.2	4.59	1.24	4	19	0.35	41.6	0.02	765	1.04	0.044	1.1	0.005	21.88	8.19	0.67	0.6	0.4	47.5	< .02	13.9	0.001	0.09	1.5	< 2	< .2	69.1
RS-494 1060-1080	133	0.57	5.4	3.2	< 1	13.8	< .02	0.61	0.08	0.3	2.3	4.25	1.16	3.5	19	0.34	45.8	0.02	622	1.09	0.043	1.2	0.006	21.23	8.59	0.94	0.5	0.8	47.9	< .02	14.9	0.001	0.09	1.7	2	< .2	65.4
RS-494 1080-1100	215	0.61	5	2.4	< 1	15.1	< .02	0.6	0.09	0.3	2.8	4.3	1.21	3.9	18	0.33	45.6	0.02	987	1.01	0.038	1.2	0.006	24.79	8.23	1.03	0.5	0.7	43.1	< .02	14.8	< .001	0.09	1.8	< 2	< .2	69.1
RS-494 1100-1120	192	0.64	6.1	3.1	< 1	20.2	< .02	0.43	0.1	0.5	4.6	5.65	1.35	4.2	26	0.33	48.6	0.02	1014	1.47	0.042	1.5	0.006	31.65	8.6	0.88	0.6	0.7	41.1	< .02	14.9	0.001	0.09	2	< 2	< .2	80
RS-494 1120-1140	119	0.73	1.8	0.4	< 1	16.3	< .02	0.44	0.09	0.6	3.2	7.26	1.58	5.4	15	0.34	50.9	0.02	1158	1.27	0.059	1.6	0.007	26.08	10.18	0.57	0.7	0.3	37.5	< .02	16.4	0.001	0.08	1.7	< 2	0.2	75.3
RS-494 1140-1160	200	0.56	3.8	4.6	< 1	12.7	< .02	0.67	0.11	0.8	7.9	12.99	1.72	3.2	37	0.32	40.9	0.02	686	2.27	0.051	3.1	0.005	24.24	9.12	0.59	0.4	0.4	56.5	< .02	14	0.001	0.09	2.3	3	0.2	66.8
RS-494 1160-1180	229	0.79	11.8	5.9	< 1	15.7	0.02	0.53	0.1	0.6	6.8	18.67	1.38	4.5	30	0.43	42.4	0.02	690	1.98	0.052	2.4	0.005	22.96	9.3	1.04	0.5	1.1	48.1	< .02	14.7	0.001	0.13	2.2	2	0.2	69.2
RS-494 1180-1200	160	0.81	2.9	1.2	1	12.8	< .02	0.44	0.12	0.8	6.7	9.21	1.4	4.9	22	0.43	44.8	0.02	708	2.01	0.06	2	0.005	21.01	8.84	0.63	0.5	0.5	52.5	< .02	15.2	0.001	0.12	2.6	2	0.2	70.9
89596 N S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD DS2	237	1.75	60.5	207.9	4	154.7	11.26	0.55	9.98	12.3	164.7	130.68	3.16	6.4	232	0.17	17.3	0.61	841	14.93	0.033	36.5	0.093	32.46	7.87	9.77	2.8	2.3	29.8	1.85	3.9	0.098	1.85	19.1	76	6.6	162.2

ROSEBUD MINING COMPANY, LLC.		START HOLE 15 Mar 2000	FINISH HOLE 24 Mar 2000	HOLE # RS-494
Drilled @ Gator obt 400' up cyn from wildrose Spg. to cut Gator Fault	COLLAR COORDINATES	HOLE TYPE 6" RC	LOGGED BY Rogowski	
	NORTH 2,215,430	BEARING —	ANGLE -90°	T.D 1200
	EAST 479,075			
	ELEV 5403			
DRILLING CO. EKlund	DRILLER Don School	PAGE 1 OF 13	SURVEYED TO Wel-Nav 1100	



WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* HECLA MINING COMPANY *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-494 / VS 000.00

LOCATION: ROSEBUD / GATOR

SURVEY DATE: 03/23/2000

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

TIE-ON COORDINATES AT: 0 M.D.
TAKEN FROM: COLLAR

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 090.00
WATER CONTACT= 625'

****
****** DEPTH MEASURED IN FEET *******
****

COMMENTS: **** EKLUND ****
** DON SCHOORL **

****
****
*** THIS DIRECTIONAL SURVEY REPORT IS ****
** CORRECT TO THE BEST OF MY KNOWLEDGE ***
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
**
**
** **********
** COMPANY REPRESENTATIVE **
****
****

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311 WELL NAME: RS-494 / VS 000.00

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL HORZ	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION	TEMP. DEG F
0.0	0.00	0.00	0.000	-89.45	141.32	0.00 N	0.00 E	0.00		0.00	AT 000.00	
50.0	50.00	0.03	0.212	-89.73	258.01	0.21 S	0.03 E	1.43	0.71	0.21	AT 170.69	073.69
100.0	100.00	-0.25	-0.113	-89.11	334.03	0.11 N	0.25 W	1.73	0.87	0.27	AT 294.24	073.07
150.0	149.99	-0.47	-0.882	-89.03	352.94	0.88 N	0.47 W	0.63	0.32	1.00	AT 331.81	072.32
200.0	199.98	-0.43	-1.665	-89.14	014.45	1.67 N	0.43 W	0.72	0.36	1.72	AT 345.49	071.27
250.0	249.98	-0.32	-2.434	-89.07	001.90	2.43 N	0.32 W	0.42	0.21	2.46	AT 352.42	070.26
300.0	299.97	-0.62	-3.364	-88.61	329.83	3.36 N	0.62 W	1.56	0.78	3.42	AT 349.64	069.94
350.0	349.95	-1.44	-4.580	-88.01	322.83	4.58 N	1.44 W	1.27	0.63	4.80	AT 342.50	069.64
400.0	399.91	-2.69	-5.953	-87.73	313.45	5.95 N	2.69 W	0.89	0.45	6.53	AT 335.70	069.54
450.0	449.87	-4.22	-7.382	-87.46	312.45	7.38 N	4.22 W	0.55	0.27	8.50	AT 330.22	069.11
500.0	499.81	-5.94	-8.954	-87.20	312.47	8.95 N	5.94 W	0.52	0.26	10.75	AT 326.43	068.89
550.0	549.75	-7.90	-10.609	-86.92	308.19	10.61 N	7.90 W	0.71	0.36	13.23	AT 323.33	068.63
600.0	599.67	-10.11	-12.170	-86.87	302.36	12.17 N	10.11 W	0.64	0.32	15.82	AT 320.29	068.44
650.0	649.60	-12.50	-13.558	-86.78	297.88	13.56 N	12.50 W	0.53	0.26	18.44	AT 317.32	073.17
700.0	699.51	-15.15	-14.802	-86.51	292.71	14.80 N	15.15 W	0.81	0.41	21.18	AT 314.34	076.55
750.0	749.42	-18.12	-15.336	-86.41	268.06	15.34 N	18.12 W	3.03	1.51	23.74	AT 310.25	078.01
800.0	799.33	-21.10	-15.505	-86.71	278.87	15.50 N	21.10 W	1.43	0.71	26.18	AT 306.31	078.28
850.0	849.26	-23.63	-16.465	-86.93	303.52	16.47 N	23.63 W	2.75	1.37	28.80	AT 304.87	082.05
900.0	899.18	-25.68	-18.164	-86.93	315.78	18.16 N	25.68 W	1.31	0.66	31.46	AT 305.27	084.59
950.0	949.11	-27.69	-20.061	-86.73	311.07	20.06 N	27.69 W	0.66	0.33	34.19	AT 305.92	085.15
1000.0	999.01	-30.05	-22.012	-86.24	308.24	22.01 N	30.05 W	1.04	0.52	37.25	AT 306.22	085.61
1050.0	1048.88	-32.67	-24.507	-85.44	318.14	24.51 N	32.67 W	2.14	1.07	40.84	AT 306.88	086.29
1100.0	1098.72	-35.16	-27.725	-85.20	326.14	27.72 N	35.16 W	1.39	0.69	44.78	AT 308.26	088.21

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*  1100.0 FEET EQUALS    44.78   FEET AT   308.26           *
*                          ********                         *
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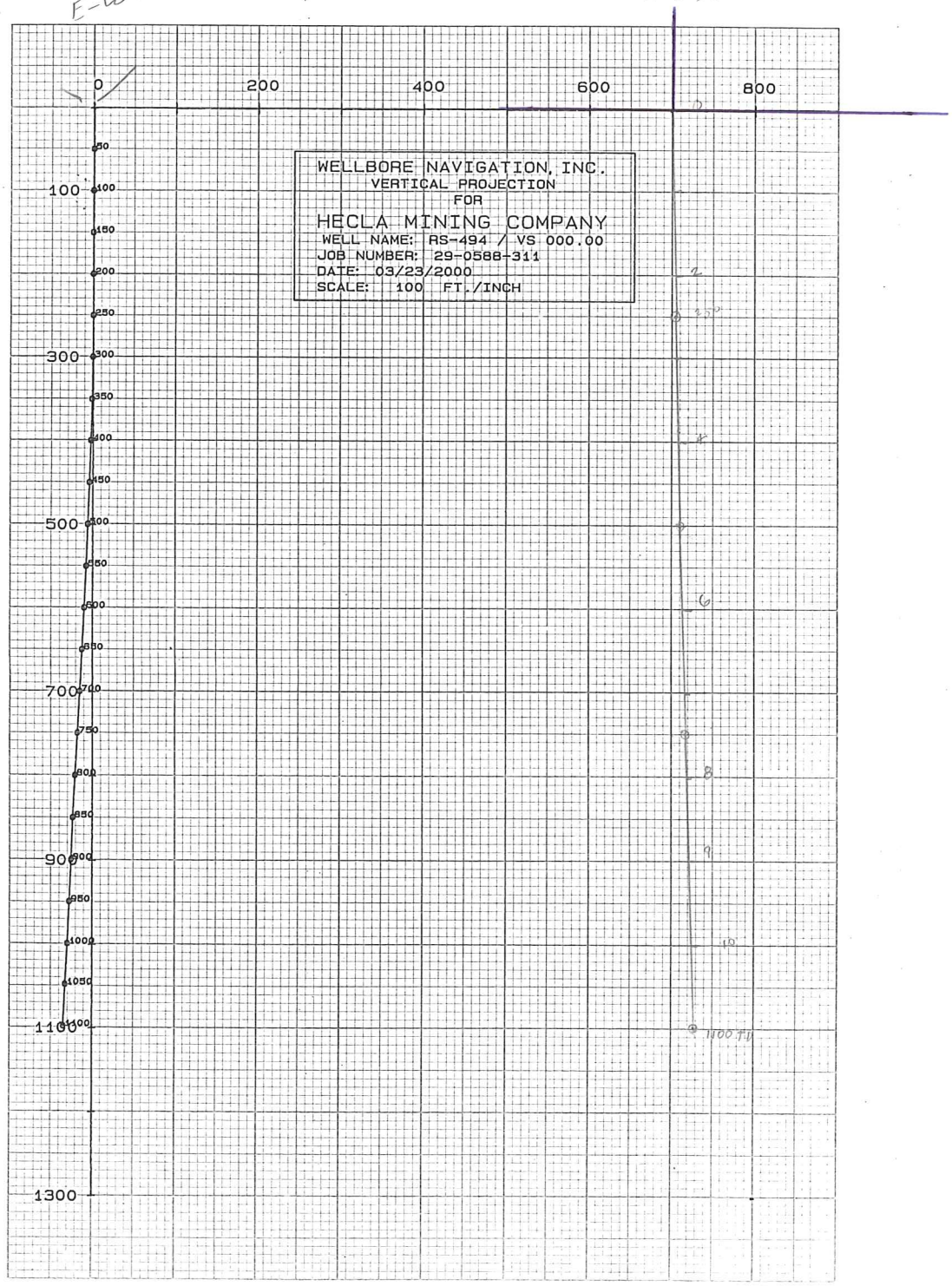
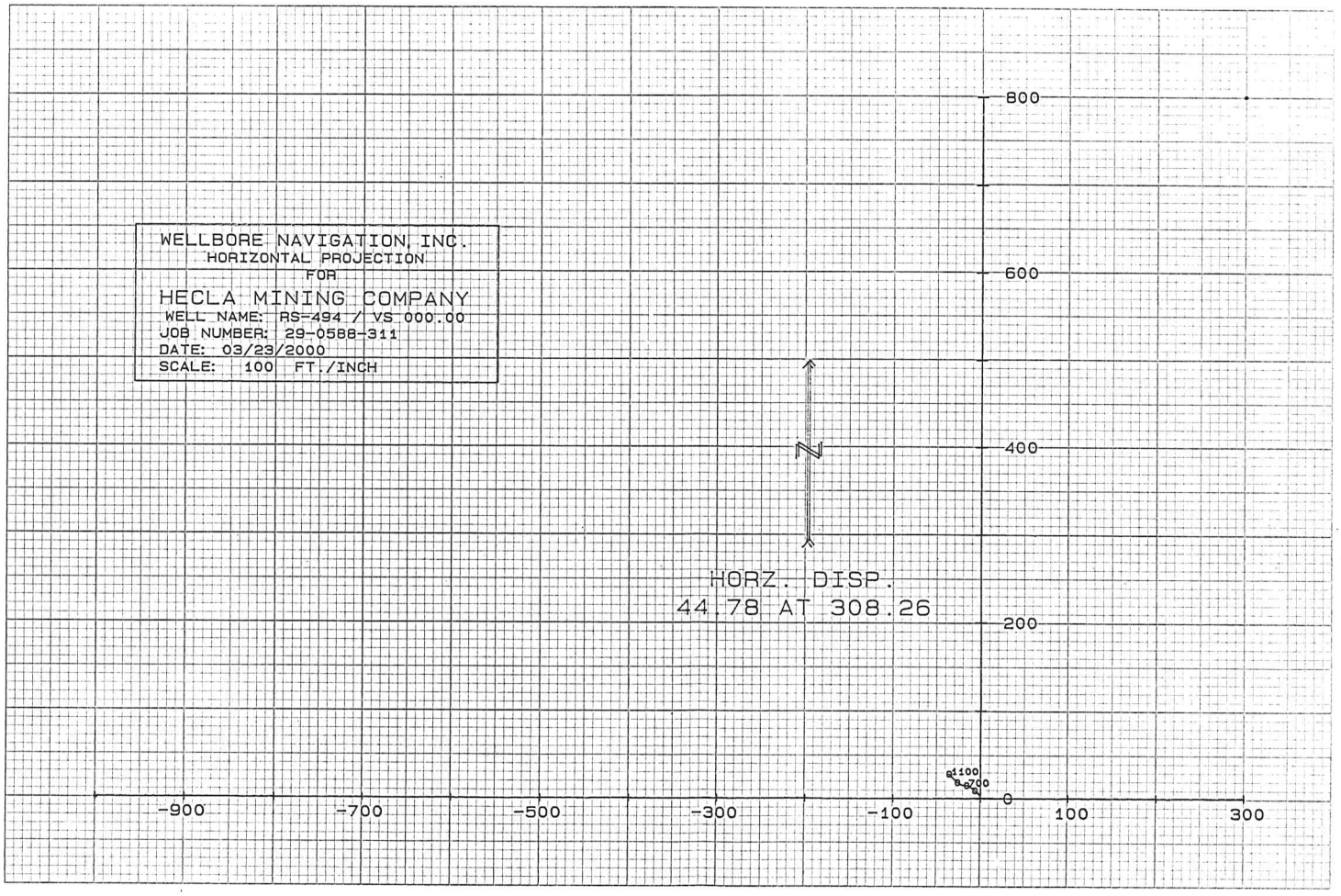
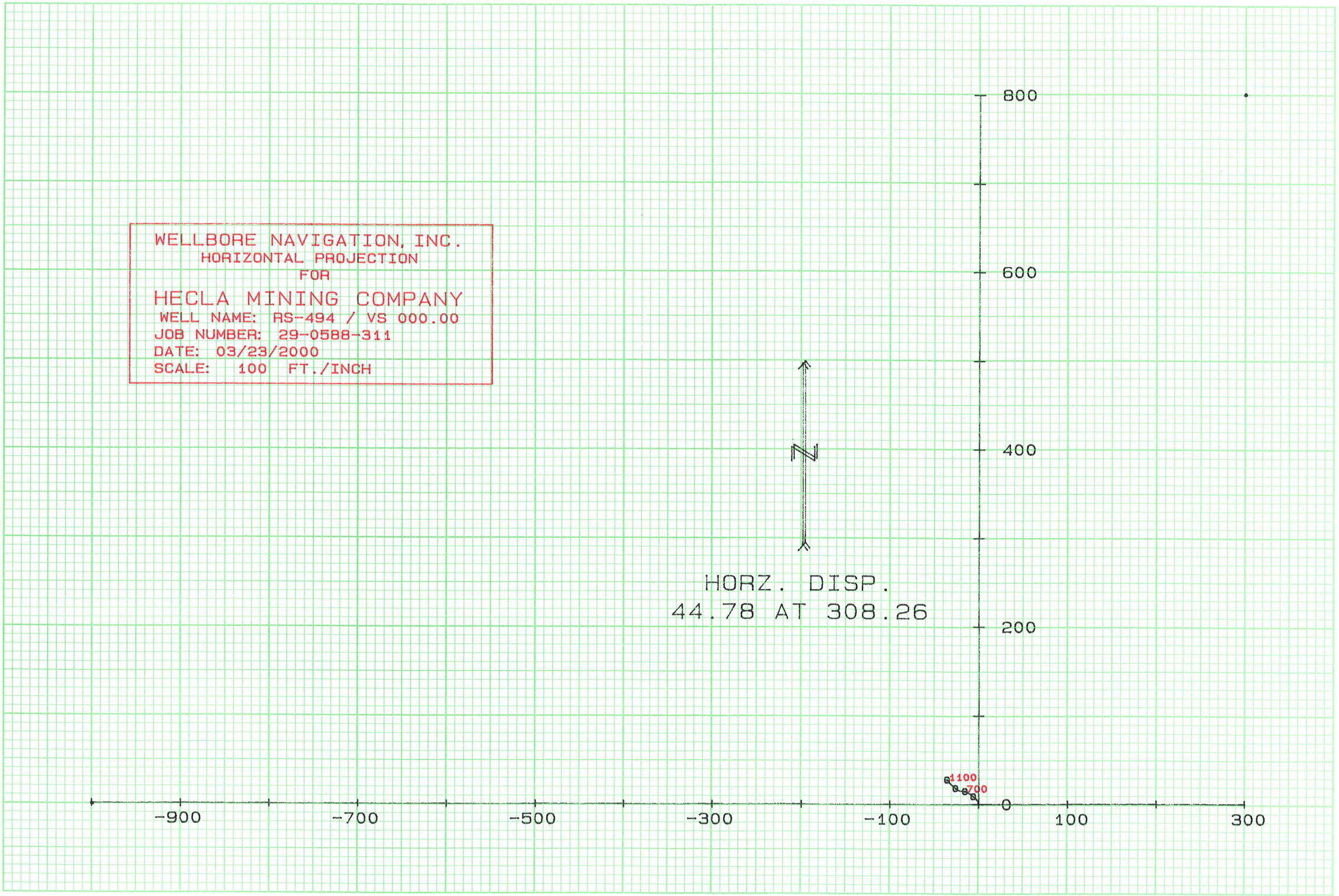
Look-N
E-W sec

STARLIGHT PRINTING (801) 467-2041

Look W.
N-S sec




WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR
HECLA MINING COMPANY
WELL NAME: RS-494 / VS 000.00
JOB NUMBER: 29-0588-311
DATE: 03/23/2000
SCALE: 100 FT./INCH
N
HORZ. DISP.
44.78 AT 308.26
800
600
400
200
0
1100
700
-900
-700
-500
-300
-100
100
300



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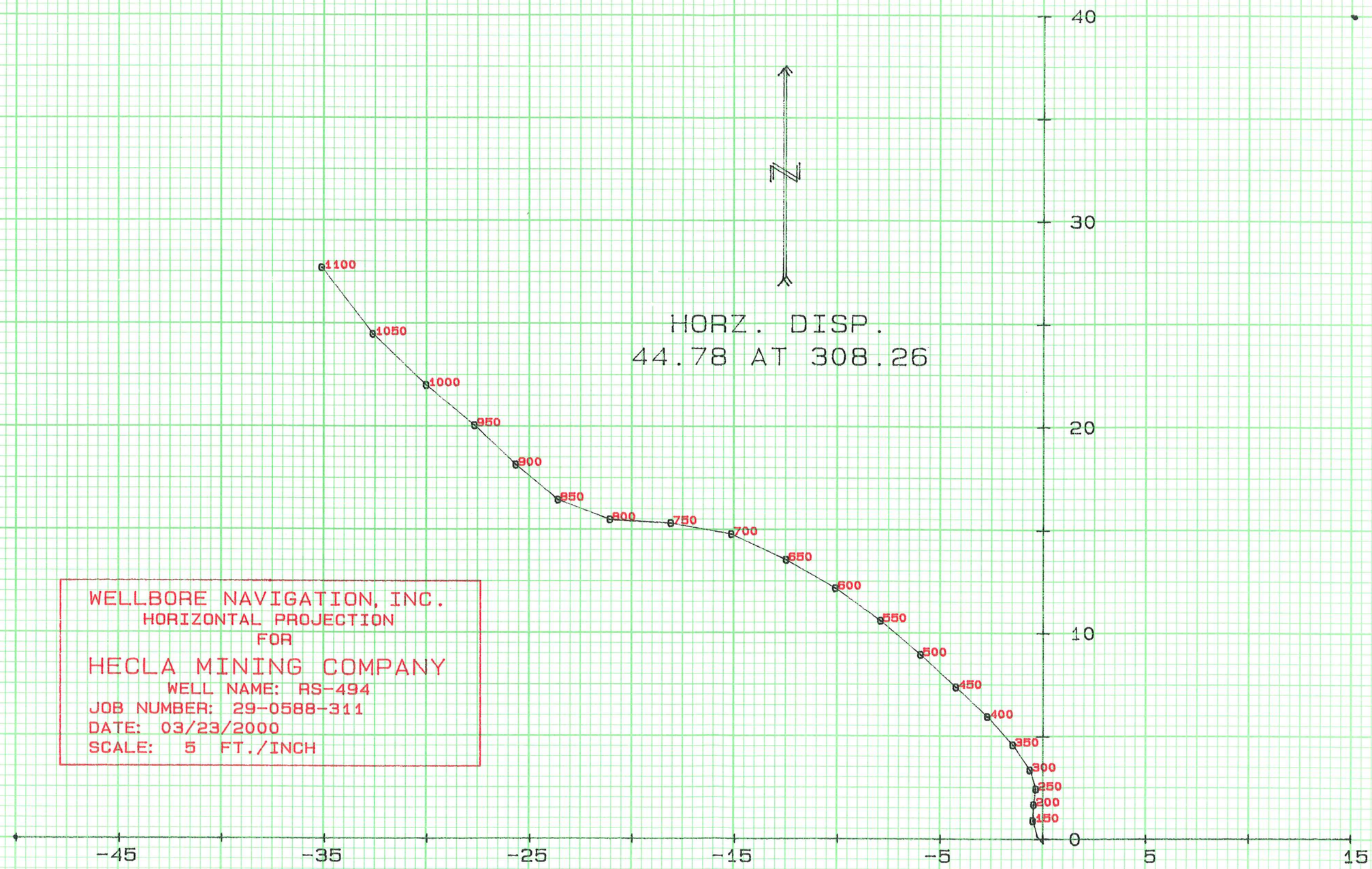
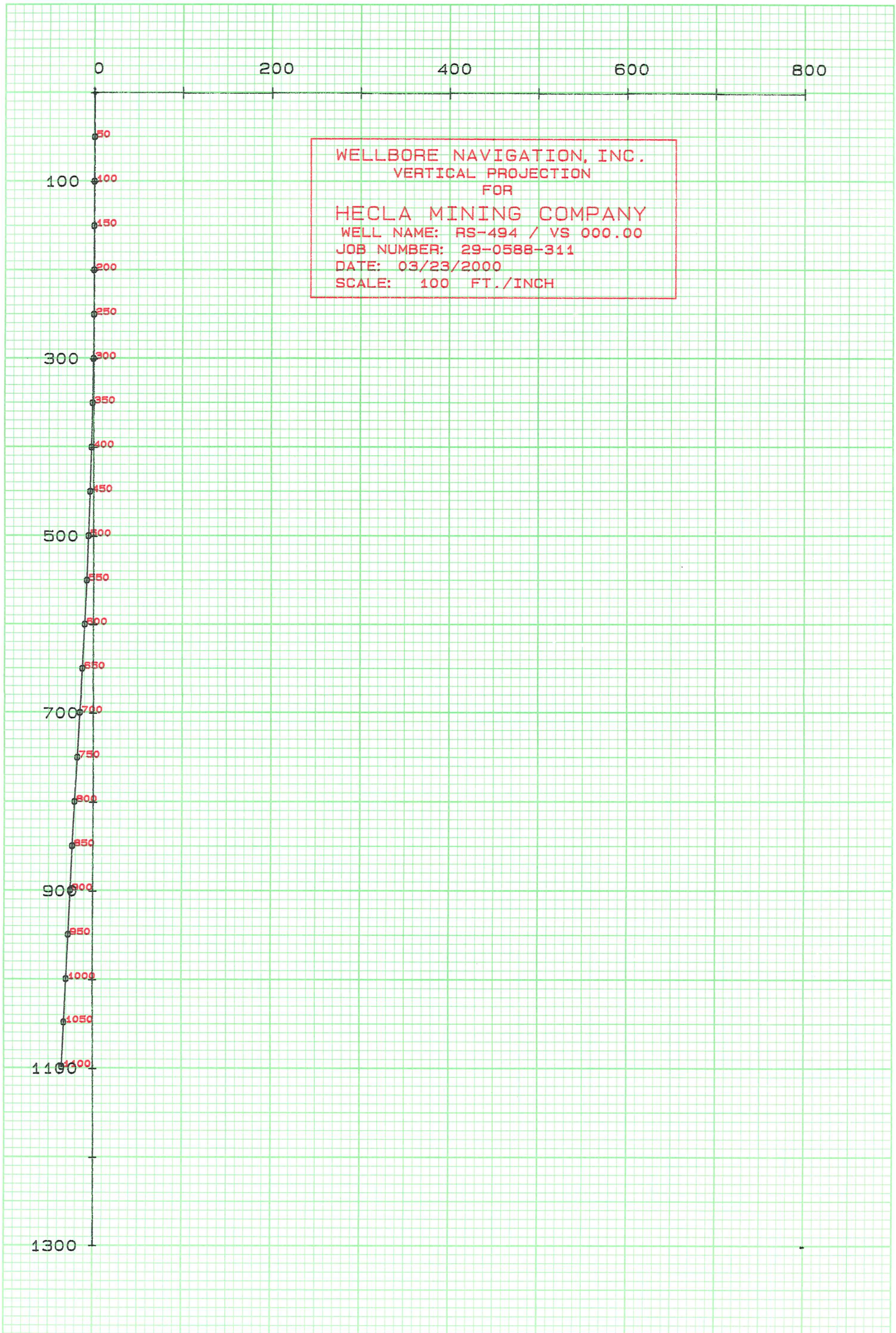


WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR
HECLA MINING COMPANY
WELL NAME: RS-494
JOB NUMBER: 29-0588-311
DATE: 03/23/2000
SCALE: 5 FT./INCH

STARLIGHT PRINTING (801) 467-2841

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