6000 0622

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-501
AUTHOR	P. Schoorl; J.P. Rogowski; B. Morris; K. Allen; L.E. Mackedon; 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; Hecla Mining Co.; Rosebud Project
COMMODITY If not obvious	gold; silver
NOTES	drill logs; geology; assay; total depth 2100; invoice; geochemistry 79p.

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-501

Dreamland.

~~Gator~~

600006226

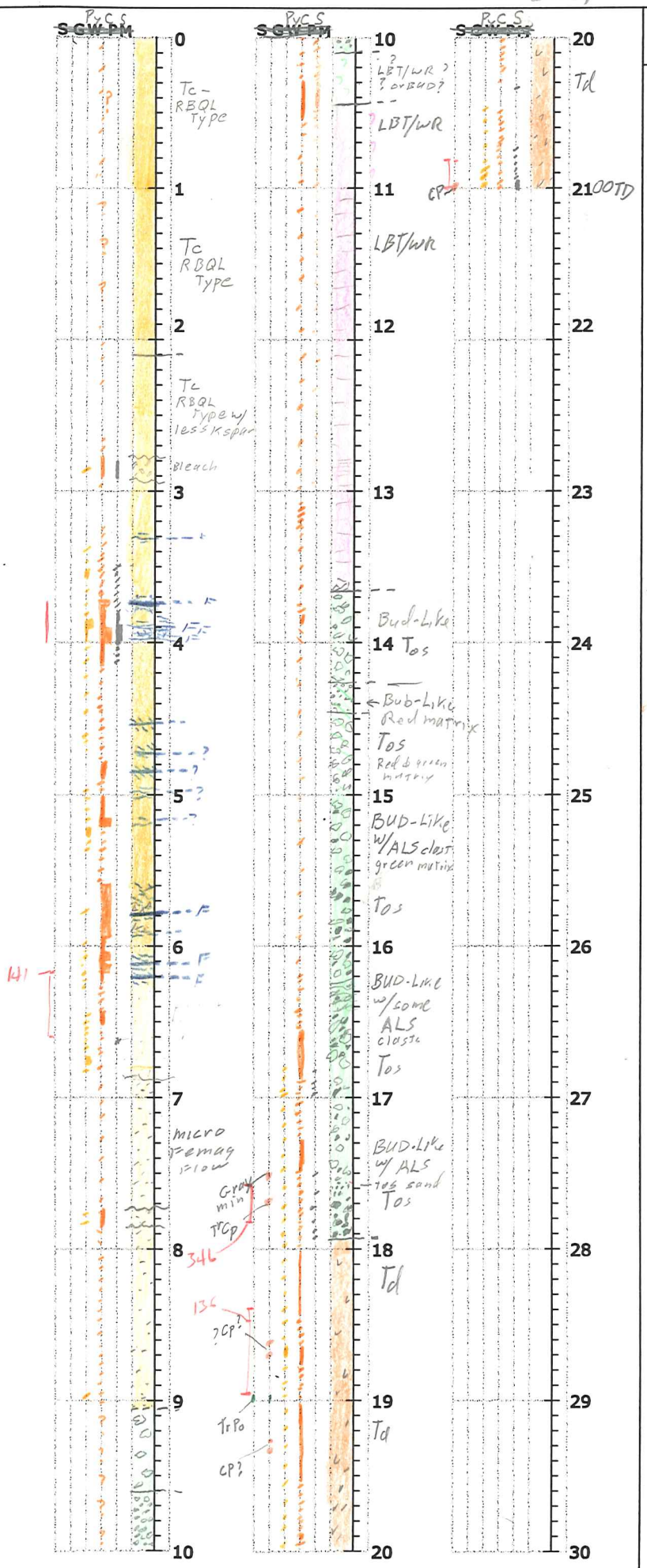
4010

60000621

ROSEBUD MINING COMPANY, LLC.

checking out the core fault directly downdip from E zone & Dozer Hill

HOLE #	RS-5701
START HOLE	15 June 2000
FINISH HOLE	22 June 2000
HOLE TYPE	6" RC
LOGGED BY	Rogowski
BEARING	—
ANGLE	-90°
T.D	2100
PAGE 1 OF	22
SURVEYED TO	Wel-Nav - Vern Reed 1650
COLLAR COORDINATES	
NORTH	2,206,413
EAST	479,631
ELEV	5617
DRILLER	Don Schoor
DRILLING CO.	Eklund



ALTERATION INTENSITY

1 WEAK · 2 MODERATE · 3 STRONG

VERITHIN COLOR

ZH ~~757~~	SILICIFICATION
751	GREEN CLAY
737 ~~747½~~	WHITE CLAY
755	PYRITE
757	MARCASITE

GRAPHIC LOG

VERITHIN COLOR

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

	Tc Porphyrys (RBQL & Gorilla)
	Tc Femag Flow
	CLASTIC Vol & EPI
	LBT/WR Flow
	Td- Dozer Fm

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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

HOLE NUMBER RS 501
PAGE 2 OF 22
DATE 15 June 2000 – 22 June 2000
LOGGED BY Rogowski
TOTAL DEPTH 2100 TD

LOCATION ROSEBUD. NV
NORTHING 2,206,413
EASTING 479,631
ELEVATION 5617
AZIMUTH —
INCLINATION -90°

AREA Dreamland 0-100
DRILLING CO. Eklund - Don Schoerl
RIG TYPE RC
HOLE SIZE 6"
DOWN HOLE SURVEY BY Vern Reed to 1650'

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
0–100		Tc RBQL type Porphyry	0–100 (Tc) (RBQL type) 2 to 4% micro ferrogs <1% bio & occa K-spar in a lt to m. gray granular ground mass. Poss sanidine but not sure. Rarely large Fe mag pseudos	H	Fx in porphyry m-lt gray w/ Hem/Rad-Bim stains

ALTERATION

FEET	SILICIFICATION 5%	15%	+25%	MAGQ	QUARTS	ARGILLIC 5%	15%	+25%	TYPE	CALCITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	%	VIENING TYPE
0–100	0					Tr.?					3							
10											Tr							
20											Tr							
30											0							
40											0							
50											Tr							
60											Tr Feld							
70																		
80											Tr							
90											1							
100	0					Tr.?					1							

MINERALIZATION

FEET	SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	SUBOXE %	BARITE %
0–100				0					
100				0					

METALLURGY

FEET	OXIDE	SULF	OXIDON	MIXDUE
0–100	0% surface			
10	?			
20	?			
30	?			
40	Red Hem only does not look like surface oxidation			

ANALYTICAL DATA

FROM	TO	W	Au	Ag

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
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or % by Vol

HOLE NUMBER RS-501
PAGE 3 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

1-200

3/22

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
100		RBQL type Porphyry	100-200 tc Porp (RBQL type) same as 0-100	H	RBQL type Porphyry + 1-2% in matrix w microfeld + large K-spar
110					
120			Note: matrix may be getting finer x/n with depth		
130					
140					
150					
160					
170					
180					
190					
200				H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MAGQ %	QSTS %	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 %	SILBRITE %	BARITE %	METALLURGY: OXIDE	SULF	OXIDOX	MOLYBE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
100	0					0 tr	tr				1											0														
110																																				
120																																				
130																																				
140																																				
150											1																									
160											tr																									
170											1																									
180											tr																									
190											1																									
200	0					0-tr					tr											0														

Possible ARGILLIC in K spars

Mostly after on Feldspars

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-501
PAGE 4 OF 22
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

4/22

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
200			200-210 tc porp (RBQL type)	H	gray & Red. Brn
210			Same as 0-200 but more Hem stain. Flowbanding		
			→ ? Transitional contact ← @ 210		
220					
230			210 to 280 Similar to above but far less Feld phenos & matrix is finer xln more flow banding Note: would still call this "RBQL type"		Hem Red Brn
240					
250					
260					
270					
280		Blk band			
290					Red Brn | yell & Ovary
300				H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MAJOR	QUARTZ	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VEINING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	SUBORE %	BARITE %	METALLURGY: OXIDE	SULF	DIFFICK	MOLYBE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
200	0					tr					1											0														
210						tr																														
						tr																														
220						Tr																														
						0																														
230																																				
240																																				
											1																									
250											2																									
											1																									
260																																				
270						0																														
						tr					1																									
280						tr					0																									
						1 & 2	wt clay																													
290						1 & 2																0	TV?													
						tr																														
300				H		0					0											0														

Jaro stain & wt clay alt w/silica

Hecla MINING COMPANY

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HOLE NUMBER RS-501
PAGE 5 OF 22
DATE
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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			300-390 definately Tc porphyry (RBQL-type) Alt & py vary (sec calcite)	H	Tc porphyry + Fx/L w/ trace cpx + Hem + Lt grn Jaro + Lt grn Mix Jaro + Lt grn Yell Mix
310					
320				H	
330		Bleached	Clay Alt w/ minor silica still Hard	M H	
				MH	
340				H	
350		Bleached Clay alt			
360					
			← spillite text	H	
370		F	← Jaro & gray gouge	S	
				VS	
380		20-30% wtchy	390-400 Prob RBQL type but N.O.T. sure	S	
				S	
390		F		S	
		F	Grey-Brn gouge	VS	
400		F	"	VS	

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

FEET	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	SELENITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
300				0														
310																		
320				0														
				0														
330				tr														
				tr														
340				0														
				0														
350				tr														
				2	Pale Py C													
360				tr														
				tr														
370				tr-1														
				tr														
380				tr														
				1														
390				3														
				3		Py	H											
400				1-2		Py	H	+C										

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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or % by Vol

HOLE NUMBER RS-501
PAGE 6 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
400			400-415 tc (RBQL type) micro Bxed (Autobx?). Has strong kfl. w/SiO2 in. Bx matrix + pale green clay stgrs.	M H	
410					M T
420			415 to 500. all RBQL type tc porphyry several clay alt areas are bleached Lt gray. Has clay (gouge?) in several areas. Fe mags are Lt green.		Blue Gray
430					Porphyry Lt gray
440					
450			gray gouge		Fx in Blue Gray
460					Lt Gray
470			wt gouge		
480			gray gouge		Blue Gray
490					
500				M H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MAGS	QUARTZ	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	EPIDOTE	POTASSIC % K-SPAR	BIOTITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE
400	1	1	Pervasive of Bx			1-2	wtx					0						
410	1					1-2	Hevil					0						
	1					1-2	green veinlets					2						
420	0					tr						2						
						tr						2						
430												tr						
												1						
440												1						
												2						
450						tr						2						
						1						2						
460												2						
												Tr						
470												2						
						1						1						
480						tr						2						
						2						2						
490						2						2						
						Tr						1						
500						tr						1						

FEET	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYB	ANALYTICAL DATA: FROM	TO	W	Au	Ag
400				tr														
410				tr														
				Tr														
420				0														
				tr														
430				tr	Py A stgrs													
				Tr	Py C													
440				tr	dis Py C													
				Tr														
450				0														
				0														
460				tr														
				/														
470				Tr	one cluster													
				Tr														
480				0														
				0														
490				0														
				0														
500				Tr														

← Drl. green clay stgrs

501

7/22

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-501
PAGE 7 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 5-600
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

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%	VIENNING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SLF %	SLERITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
500		ABx	500–600 TC (RBQL Type)	S	Fxln Ptnss w/ occa porphyry ← white	0					2					2											Tr														
		ABx																																							
510			K-spar phenos < 2mm								2					1											Tr														
		A Bx	Femags 1mm &								2					1											Tr	Py c cubic													
520			num very small.	S							3					1											Tr														
			Gray matrix.	H							1					1											2	Py	Cpy	H											
530			Several areas								1					1											1														
			w/ clay & assuming								1					2											Tr														
540			this is gouge from								1					2											0														
			faults								1					2											0														
550			micro Bx (A Bx)								1					1											0														
			(Auto? Bx) in	H							1					2											0														
560			several areas	S							3					2											0														
		ABx									3					2											0														
570											3					1											0														
		ABx									3					2											Tr														
			← semi spider Bx								3					2											0														
580			Partial spidertext	S							3					1											0														
590			Red gouge	H	Blue gray / white						1					1											0														
				S							3					2											0														
600		ABx		S		0					2					1											Tr														

Pale green clay

501

6-700

8/22

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-501
PAGE 8 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
600		FBx	600-700		
		ABx	similar to above S		
610		ABx	but fewer kspar	S	Ex/n matrix weakly porphyritic white 13 lne gray
		ABx	Prob a diff	H	
620		ABx	porphyry after	S	
		ABx	580 more	H	
630			like a micro		
			Femag flow		
640		ABx			
		ABx			
650		ABx			
		ABx			
660					Lt gray to wt
			← flow bands		
670					
680			Same as above 680 to 700 prob diff flow, not near so many		
690			kspars. Same		microcrystalline
			matrix etc		
700				H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MAJOR	QUARTZ	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VNENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	OXIDOX	MOLYBE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
600						2					1											Tr														
	0					3					3											Tr														
610	0					2					0											Tr														
	0					3					Tr											Tr-1	Py	H												
620						2+S					Tr											Tr														
						1					1											0														
630						1																														
						1																														
640						1																0														
	0					1+2					Tr											Tr														
650	0					1+2					1											Tr-1														
	Tr					1					Tr											1														
660	0					1					1											Tr														
						1					1											Tr														
670						1					2											Tr														
680	0					0					1											0														
						0					1											0														
690						0																0														
700	0					0					1											0														

501

9/22

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-501
PAGE 9 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
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ELEVATION
AZIMUTH
INCLINATION

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

7-800

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MAGNX %	QUARTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CALCITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SLF %	SILBRITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
700			700-800 Tc																																						
			micro Femag	H		0					Tr					Tr										0															
710			flow w/ occa bio													Tr																									
			also v. exp small																																						
720																																									
730																																									
740																																									
750																																									
760																																									
770																																									
											Tr															0														
780			minor flows		sum at mixture						1-2															Tr														
											1-2															Tr														
790											Tr															0														
					maroon																					0														
800				H		0					Tr															0														

micro Femag flow

Hecla MINING COMPANY

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HOLE NUMBER RS-501
PAGE 10 OF 22
DATE
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LOCATION ROSEBUD. NV
NORTHING
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ELEVATION
AZIMUTH
INCLINATION

AREA 8-900
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MAJOR	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%	OXIDATION %	OXIDATION TYPE	VIENING	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SUL %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	OPEOX	MOLSUL	ANALYTICAL DATA: FROM	TO	W	Au	Ag
800		Tv ABx		H		0					1					Tr												0														
			Flow Banded																																							
810																																										
820			800 to 900.													Tv																										
			Tc – micro Fe mag													1																										
830		Fe mag Porphyry Flow	bio porphyry		Fxlm, micro porphyritic Blue gray to Hem macrocrys											2																										
			also has rare													1																										
840			1 mm K spar +																																							
			rare large Fe mag													2																										
850			1 2mm and usually													1																										
			a bright green													1																										
860			K-spar +																																							
			plag in matrix																																							
870			is effer.																																							
		ABx														1																										
		ABx														1																										
880			A?Bx is monolithic													2																										
		ABx	w/ flow matrix													2																										
890		ABx														1																										
		ABx														1												0														
900		ABx	Tc ↑ flow	H		0					1					1												Tr														

501

11/22

Hecla MINING COMPANY

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HOLE NUMBER RS-501
PAGE 11 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 9-1000
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MAGNET %	QUARTZ %	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-SILI %	SILBNITE %	BARITE %	METALLURGY: OXIDE	SULF	OXIDEN	MOLYBE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
900		CLASTIC VOL'S	CLASTIC	S	maroon	0					1-2 ?					1											0														
910			900-905 maroon clastic & tuflow																																						
920			905 to 960 pale green clastic (BUD-Like)																																						
930			usual pale green																																						
940			very soft matrix																																						
			w/ compaction													1																									
950			texture & broken		soft matrix / clastic Pale green											2																									
			black bio. Has													Tr																									
960			Rhyo clasts													0																									
			960 to 1000													0																		← @ 965 has consid microBx. w/ Rel. quartz								
970			Same as above													2																									
			but more clasts													1																									
980			+ a gray to													1																									
			maroon color w/																																						
990			some pale green																																						
																1																									
1000				S	maroon	0					1-2 ?					Tr											0														

501

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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

HOLE NUMBER RS-501
PAGE 12 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

10-1100

12/22

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
1000		CLASTIC	1000-1010 BUD. Like as above	S	CLASTIC Pale green
1010				S	
			1010 to 145	MH	
1020			Prob. LBT/WR but		
		?	is pale green		
1030			in part & could		
			be the lower		
1040		?	part of Bud.		Poss. HSH. VFXLS Maroon & pale green
				MH	
1050				H	
1060			1045 to 1100		
			Very prob. LBT/WR		
1070			Same f. flow band		
			& rare Bio. plane		
1080		Rhyo Flow			Fxln Rhyo Flow Maroon
1090					
1100				H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MATRIX	CLASTS	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CALCITE	CALCITE	POTASSIC % K-FSPR	ALBITE	OXIDATION 5%	15%	+25%	VEINING %	TYPE
1000	0					1					1							
1010						1					1							
1020						1					tr							
1030						2					1							
1040						2					1							
1050						2					1							
1060						1					1							
1070						1					1							
1080						tr					1							
1090																		
1100	0					tr					1							

FEET	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	X-SUL %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1000				0														
1100				0														

Hecla Mining Company — ROSEBUD PROJECT DRILL LOG

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or % by Vol

HOLE NUMBER RS-501
PAGE 13 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

11-1200

13/22

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	SILICIFICATION 5%	ARGILLIC 5%	PROPYLITIC % CHLORITE	PY %
1100–1200		RHYOLITE	1100 - 1200 LBT/WR, Fxln flow bands in part & has very rare black bio phenos. not very altered	H (Hem-Gry-) H	Rhyo; 1=Xln 1=flow banded; Hem - Reddish Brn	0 … 0	Tr … Tr	Tr, Tr, 1, 1, Tr, 1 … 1	0 … 0

Column headings: 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%), VEINING (% · TYPE) · MINERALIZATION: SULFIDES (5% · 15% · +25%), PY %, CPY %, MAR %, K-SUL %, SELENIDE %, BARITE % · METALLURGY (OXIDE · SULF · CARBON · MOGUE) · ANALYTICAL DATA (FROM · TO · W · Au · Ag)

Depth scale: 1100, 1110, 1120, 1130, 1140, 1150, 1160, 1170, 1180, 1190, 1200

Hecla MINING COMPANY
ROSEBUD PROJECT DRILL LOG

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or % by Vol

HOLE NUMBER RS-501
PAGE 14 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA
DRILLING CO. 12-1300
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MAGQ %	QSTS %	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 %	SEBONE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1200		Rhyolite flow	1200–1300 LBT/WR	H	VF oxin w/traces of flow banding	0					Tr				1	95% after from calc veinlets & fract coatings (<2 mm)										0														
1210			Contains rare bio phenos <1 mm																																						
1220			occa see traces of flow banding																																						
1230			calcite occurs on fractures & as small veinlets.																																						
1240			color is Hem/ reddish-Brown																																						
1250			1280 to 1295 has up to 50% gray color and some devit textures																																						
1260																																									
1270																																									
1280															1																										
															Tr																										
1290															2																										
															Tr																										
1300				H		0					Tr				Tr												0														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
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or % by Vol

HOLE NUMBER RS-501
PAGE 15 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

13-1400

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MAGR	QUARTZ	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VEINING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SLF %	SELENITE %	BARITE %	METALLURGY: OXIDE	SULF	OXIDE	MIXTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1300		RHYO-FLOW	1300-1365; LBT/WR same as 12-1300	H	V. FINE Rhyo. FLOW Hem. Reddish Brn	0					Tr				1												0														
1310			@ 1340 change								1				Tr																										
			from Red/Brown								1				1																										
1320			color to more								1				1																										
			gray and more								Tr																														
1330			white devit along								Tr																														
			flow lines																																						
1340																																									
											Tr				1																										
1350											1				2																										
											Tr				1																										
1360											Tr				1																										
			← Yellow-Brown color Tr. cracked & Auto Bx	H	Red & gray						Tr				1																										
1370		CLASTIC-VOL	1365 to 1400	S to	CLASTIC Pulverized & m-gray						Tr				2																										
			BUD-Like clastic	MH							Tr				2																										
1380			soft green almost								1				1																										
			granular matrix w/								1				2																										
1390			hard Rhyo clasts								2				1																										
			Appears to have mono-								1				1																										
1400			lithic clasts. (Usual Brown bio)			0					1				1												0														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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1 = WEAK
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or % by Vol

HOLE NUMBER RS-501
PAGE 16 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 14-1500
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MATRIX	CLASTS	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CALSPAR	CALCITE	POTASSIC % K-SPAR	MUSCVITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	SEBONE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1400			1400 to 1500 BUD-LIKE CLASTICS		CLASTIC Pale Green & Hem Brn	0					tr to 1					1										0														
1410			1400 to 1425 - Rhyo. clasts (mono lithic) and soft, pale green matrix. Rare Blk broken biotite																																						
1420																																									
1430			1425 - 1445 - Reddish Brn & has consid. more clast than above or below (+90%) so much so that it appears to be Rhyo. Matrix is Hem/Red		Pale Green & Hem Brn / Red-Brown																																				
1440																																									
1450																																									
1460			1445 to 1500 similar to 1425 to 1445 but only ± 50% clasts and some pale green matrix near 1500. Do not see ALS clasts but appears to be multi lithic		CLASTIC Reddish Brown & green																																				
1470																																									
1480																																									
1490																																									
1500											Tr-1					1										0														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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

HOLE NUMBER RS-501
PAGE 17 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

15-1600

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MAG	QUARTS	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-SUL %	SILBITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1500		CLASTIC VOL	1500-1600 Bud-	MH	CLASTIC Pale green matrix & gray clasts	0					Tr				2												0														
1510			Like clastic (tos?)												2																										
			multilithic												2																										
1520			Both pale green &												1																										
			Hemred matrix												1																										
1530			Bare bioxl												1																										
															1																										
1540															2																										
															1																										
1550															1																										
1560																																									
			See several ALS																																						
1570			clasts from 1555																																						
			to 1570 and																																						
1580			1595-1600																																						
1590																																									
			ALS clast (tour)																																						
1600				MH		0					Tr				1												0														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
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or % by Vol

HOLE NUMBER RS-501
PAGE 18 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 16-1700
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MAGR	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 %	CPY %	MAR %	K-SUL %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1600		CLASTIC VOL	1600 to 1700 (tos)		CLASTIC Red Brn / Pale Green / Red & Green / Pale green	0					tr					1										0														
1610			CLASTIC, has num								1					1																								
			clasts of ALS																																				
1620			Color varies down								tr																												
			to 1.640 then it								1																												
1630			is all pale green								tr																												
			except for ALS clasts								tr																												
1640			(+/- 1%)								tr																												
			Argillic alt								1																												
1650			increases down								+1																												
			hole.								1																												
1660			Traces of PyH								2					1																							
			after 1.690.								2					2																							
1670			1.625 to 1.640 has								2					2																							
			gray mudstone													2																							
1680			very soft.													1																							
			After 1.650 the													1																							
1690			clasts are alt								2					1										0														
			also (Argillic)			tr					1					0										Tr														
1700						1					1					0										1?	Py	H.												

Pale green / Red & Green / Pale green / Red Brn

with silicate

501

17-1800

19/22

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
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or % by Vol

HOLE NUMBER RS-501
PAGE 19 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

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 % CALCITE	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 %	X-SUL %	SEBENE %	CP	METALLURGY: OXIDE	SULF	OPEOX	MOBIL	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1700			1700 to	S		0					1					0											Tr	Gray mix along fract				Py?								
1710			CLASTIC - (Tos)								1					Tr											Tr	"													
			Bad-like except								1					Tr											Tr	couple of clots													
1720			for abundance								1					0											Tr	Py C													
			of ALS clast that								1					0											0														
1730			increase upward								2					Tr											0														
			from 1795								2					1											Tr	clots													
1740		CLASTIC VOL			CLASTIC w/local block						2					Tr											Tr	Py C+ Py ass SiO2 + B xma + tux													
			Py as v.f. xln clots								2					Tr											Tr	clots													
1750						0					1					Tr											Tr	clots													
						Tr					1					Tr											Tr	← In clots						← Tr gray mix							
1760			← Tr Tos. sand			0					1					1											0														
											1					1											Tr	Py C.													
1770											1					1											Tr	Py C+ H													
											1					0											Tr	Py C				Tr		Cp A.							
1780				S		0					1					Tr											0														
		10% ALS CLAST		m H		Tr					1					0											Tr														
1790				m H		Tr					1					1											Tr	Py C													
			NOT A FAULT	m H		Tr					1					1											Tr	Py C													
1800			Td Dozer (white)	m H		Tr				1	1					1										Tr	Py C+A + CD													

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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3 = STRONG
or % by Vol

HOLE NUMBER RS-501
PAGE 20 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MAGR	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%	OXIDATION %	VIENING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SLF %	[redacted] %	CP [redacted] %	METALLURGY: OXIDE	SULF	OXIDE	MOLYBDE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1800			1795 to 1900	H		0					1&2					1											tr	Pyc												
1810			(Td) Dozer Rhyolite																								tr														
			typically Not in																								Tr	La + Ly & Pyc													
1820			Fault contact w/																								tr	Pyc													
			Tos above.													1											tr														
1830			Cream color &													2											tr														
			has consid very													1											Tr														
1840			fine diss cubic													1											tr	La + Ly													
			Py (Pyc)								1&2					1											tr	La + Ly & Pyc	Li	V.c											
1850			1835 to 1870 has								1					1											Tr														
			a pinkish color													tr											tr														
1860			clay alteral													tr											tr					Tr	CpA?								
			but very little													tr											1	Pyc													
1870			silicification													1											tr					tr	CpA?								
											1+2					1											tr														
1880											1					2											tr	Pyc			tr	Po	?							
																1											tr														
1890																1											tr														
																1											tr	Pyc													
1900				H		0					1					1											Tr	Pyc			tr	Po-magnetic								

DOZER RHYOLITE

RHYOLITE — white to light pink

501

19-2000 21/22

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
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3 = STRONG
or % by Vol

HOLE NUMBER RS-501
PAGE 21 OF 22
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD. NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MATRIX %	QLSTS %	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 %	SEBNITE %	BARITE %	METALLURGY: OXIDE	SULF	OXIDOX	MOLYBE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1900			1900-2000 Td																																						
			Dozer	H		0					2					1										tr														
1910			wt to cream color-								2					1																								
		ABx	Fxln rhyolite								2					tr																								
1920		ABx	mod clay alt								2					tr																								
		ABx	& some diss py <1%								2					tr																								
1930		AB									2					tr										tr	—	tr	Cp?											
		ABv									2					tr										tr	—	Poss Cp veinlet												
1940											1					tr										0														
		Qt vnlet	QT vnlet w/Py								2					1										tr	Py	A	Sio2 veinlet											
1950											2					1										1	Py	A												
											2					tr										tr														
1960		ABx									1					tr										tr	Py	H												
		ABx									1					tr										tr														
1970		ABx														1										tr														
											1					tr										tr														
1980											1					tr										tr														
											1					0										1														
1990			drill contam from above								1					2										0														
											2					1										tr														
2000				H		0					1					1										0														

FXln RHYOLITE
WT CREAM

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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

HOLE NUMBER RS-501
PAGE 22 OF 22
DATE
LOGGED BY Rogowski
TOTAL DEPTH 2100. TD

LOCATION ROSEBUD. HV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 20-2100
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MAGN %	QUARTZ %	ARGILLIC 5%	15%	+25%	TYPE	CHLORITE	CALCITE	K-SPAR	INCLINE	PROPHYLIC %	POTASSIC %	OXIDATION 5%	15%	+25%	%	TYPE	VIENING	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	SEBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
2000				H	wt to cream	0					1				0															0														
2010			← SINGLE Frag w/a slick but NO Gouge.			0					1				0																													
2020			2000 to 2100 (Td)			0					1				tr																													
		CBY	Dozer Rhyo.			0					Tr-1				0																													
2030		CBY	f.x/h wt to cream			tr-1					tr																																	
			to Lt gray increasing		GRAY	0					0																																	
2040			in alteration from			0					0				0																													
			2050 toward bottom			0					Tr				tr															0															
2050			of hole			0					1				0															tr	Py	C													
						0					1																			Tr	Py	C													
2060			Occa contam from			0					1																			tr	Bx matrix														
			up hole			0					1																			tr	Wfine disp														
2070					cream	0					+1																			tr															
						tr					1																			Tr	Py	C													
2080						tr					1				0															1	Py	C													
					Lt gray	1					1				1															1															
2090						+1					1				tr															-1															
						+1					1				tr															-1		tr	Latys												
2100			TD-2100'	H		2					1				1															1		1					POSS	G							

American Assay Laboratories

INVOICE

Remit To: P.O. Box 11530
Reno, Nevada 89510
Phone No.: 775-356-0606
Fax No.: 775-356-1413

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

(775) 356-0606

INVOICE NO: SP 0057812-IN
INVOICE DATE: 07/19/00

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-501	KURT ALLEN	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
172	SAMPLES RECEIVED	.00	.00
172	DRY/JAW CRUSH ENTIRE SAMPLE	2.30	395.60
172	"JONES" RIFFLE SPLIT	2.40	412.80
172	FINE MILLING CHARGE	2.00	344.00
172	Au (1 A.T. FIRE ASSAY)	8.25	1,419.00
172	HYDROCHLORIC/NITRIC DIGESTION	2.00	344.00
172	Ag ANALYSES	1.00	172.00
45	MULTI-ELEMENT ICP PACKAGE	13.75	618.75

86-5030-477
~~LAA~~

NET INVOICE:	3,706.15
LESS DISCOUNT:	1,297.15
FREIGHT:	.00
INVOICE TOTAL:	2,409.00

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

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-501 RECEIVED : 26 JUN 2000

No. SAMPLES : 172 REPORTED : 19 JUL 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 SP057812

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 19 JUL 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-501 170	<5		<0.001		<0.5	<0.02
RS-501 320	<5		<0.001		<0.5	<0.02
RS-501 325	<5		<0.001		<0.5	<0.02
RS-501 330	14	16	<0.001	<0.001	3.9	0.11
RS-501 335	8		<0.001		1.2	0.04
RS-501 340	<5		<0.001		0.9	0.03
RS-501 345	<5		<0.001		<0.5	<0.02
RS-501 350	<5		<0.001		<0.5	<0.02
RS-501 355	14		<0.001		14.0	0.41
RS-501 360	<5		<0.001		<0.5	<0.02
RS-501 365	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 370	7		<0.001		<0.5	<0.02
RS-501 375	57		0.002		<0.5	<0.02
RS-501 380	72		0.002		<0.5	<0.02
RS-501 385	95		0.003		1.1	0.03
RS-501 390	78		0.002		1.1	0.03
RS-501 395	48		0.001		0.6	<0.02
RS-501 400	26		<0.001		0.6	<0.02
RS-501 405	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 410	5		<0.001		<0.5	<0.02
RS-501 415	<5		<0.001		<0.5	<0.02
RS-501 420	5		<0.001		<0.5	<0.02
RS-501 425	<5		<0.001		<0.5	<0.02
RS-501 430	6		<0.001		0.5	<0.02
RS-501 435	24		<0.001		1.9	0.06

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
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REFERENCE : RS-501

REPORTED : 19 JUL 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-501 440	28	28	<0.001	<0.001	0.6	<0.02
RS-501 445	<5		<0.001		<0.5	<0.02
RS-501 450	<5		<0.001		<0.5	<0.02
RS-501 455	<5		<0.001		<0.5	<0.02
RS-501 460	7		<0.001		<0.5	<0.02
RS-501 465	<5		<0.001		<0.5	<0.02
RS-501 470	<5	<5	<0.001	<0.001	0.6	<0.02
RS-501 475	<5		<0.001		<0.5	<0.02
RS-501 480	<5		<0.001		<0.5	<0.02
RS-501 485	<5		<0.001		<0.5	<0.02
RS-501 490	<5		<0.001		<0.5	<0.02
RS-501 495	<5		<0.001		<0.5	<0.02
RS-501 500	<5		<0.001		<0.5	<0.02
RS-501 505	<5		<0.001		0.5	<0.02
RS-501 510	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 515	<5		<0.001		<0.5	<0.02
RS-501 520	<5		<0.001		<0.5	<0.02
RS-501 525	26		<0.001		1.3	0.04
RS-501 530	5		<0.001		<0.5	<0.02
RS-501 535	<5		<0.001		<0.5	<0.02
RS-501 540	<5		<0.001		<0.5	<0.02
RS-501 545	<5		<0.001		<0.5	<0.02
RS-501 550	<5		<0.001		<0.5	<0.02
RS-501 555	<5		<0.001		<0.5	<0.02
RS-501 560	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

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REFERENCE : RS-501

REPORTED : 19 JUL 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-501 565	<5		<0.001		<0.5	<0.02
RS-501 570	6		<0.001		<0.5	<0.02
RS-501 575	<5		<0.001		<0.5	<0.02
RS-501 580	28		<0.001		<0.5	<0.02
RS-501 585	8		<0.001		<0.5	<0.02
RS-501 590	<5		<0.001		<0.5	<0.02
RS-501 595	<5		<0.001		<0.5	<0.02
RS-501 600	<5		<0.001		<0.5	<0.02
RS-501 605	7		<0.001		<0.5	<0.02
RS-501 610	5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 615	7		<0.001		<0.5	<0.02
RS-501 620	141		0.004		1.2	0.04
RS-501 625	18		<0.001		<0.5	<0.02
RS-501 630	28	30	<0.001	<0.001	<0.5	<0.02
RS-501 635	12		<0.001		<0.5	<0.02
RS-501 640			SAMPLE NOT RECEIVED			
RS-501 645	6		<0.001		<0.5	<0.02
RS-501 650	12		<0.001		<0.5	<0.02
RS-501 655	21		<0.001		<0.5	<0.02
RS-501 660	28		<0.001		<0.5	<0.02
RS-501 665	8		<0.001		<0.5	<0.02
RS-501 670	8		<0.001		<0.5	<0.02
RS-501 675	17		<0.001		<0.5	<0.02
RS-501 680	10		<0.001		<0.5	<0.02
RS-501 685	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 19 JUL 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-501 690	5		<0.001		<0.5	<0.02
RS-501 695	<5		<0.001		<0.5	<0.02
RS-501 700	<5		<0.001		<0.5	<0.02
RS-501 1605	<5		<0.001		<0.5	<0.02
RS-501 1620			SAMPLE NOT RECEIVED			
RS-501 1625	<5		<0.001		<0.5	<0.02
RS-501 1630	<5		<0.001		<0.5	<0.02
RS-501 1635	22		<0.001		<0.5	<0.02
RS-501 1640	25		<0.001		<0.5	<0.02
RS-501 1645	<5		<0.001		<0.5	<0.02
RS-501 1650	<5		<0.001		<0.5	<0.02
RS-501 1655	<5		<0.001		<0.5	<0.02
RS-501 1660	<5		<0.001		<0.5	<0.02
RS-501 1665	<5		<0.001		<0.5	<0.02
RS-501 1670	<5		<0.001		<0.5	<0.02
RS-501 1675	<5		<0.001		<0.5	<0.02
RS-501 1680	<5		<0.001		<0.5	<0.02
RS-501 1685	<5		<0.001		<0.5	<0.02
RS-501 1690	<5		<0.001		<0.5	<0.02
RS-501 1695	<5		<0.001		<0.5	<0.02
RS-501 1700	<5		<0.001		<0.5	<0.02
RS-501 1705	<5		<0.001		<0.5	<0.02
RS-501 1710	<5		<0.001		<0.5	<0.02
RS-501 1715	<5		<0.001		<0.5	<0.02
RS-501 1720	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
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REFERENCE : RS-501

REPORTED : 19 JUL 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-501 1725	<5		<0.001		<0.5	<0.02
RS-501 1730	<5		<0.001		<0.5	<0.02
RS-501 1735	<5		<0.001		<0.5	<0.02
RS-501 1740	<5		<0.001		<0.5	<0.02
RS-501 1745			SAMPLE NOT RECEIVED			
RS-501 1750	<5		<0.001		<0.5	<0.02
RS-501 1755	<5		<0.001		<0.5	<0.02
RS-501 1760	<5		<0.001		<0.5	<0.02
RS-501 1765	6		<0.001		0.6	<0.02
RS-501 1770	37		0.001		1.9	0.06
RS-501 1775	54		0.002		1.3	0.04
RS-501 1780	108		0.003		1.2	0.04
RS-501 1785	346	358	0.010	0.010	2.3	0.07
RS-501 1790	10		<0.001		0.8	0.02
RS-501 1795	8		<0.001		0.7	0.02
RS-501 1800	61		0.002		2.2	0.06
RS-501 1805	21		<0.001		1.0	0.03
RS-501 1810	11		<0.001		0.8	0.02
RS-501 1815	14		<0.001		0.7	0.02
RS-501 1820	13		<0.001		0.6	<0.02
RS-501 1825	10		<0.001		0.5	<0.02
RS-501 1830	6		<0.001		<0.5	<0.02
RS-501 1835	<5		<0.001		<0.5	<0.02
RS-501 1840	7		<0.001		<0.5	<0.02
RS-501 1845	54		0.002		0.8	0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 19 JUL 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-501 1850	136	118	0.004	0.003	1.2	0.04
RS-501 1855	79		0.002		0.6	<0.02
RS-501 1860	67		0.002		0.6	<0.02
RS-501 1865	95		0.003		0.9	0.03
RS-501 1870	17		<0.001		0.7	0.02
RS-501 1875	14		<0.001		0.8	0.02
RS-501 1880	16		<0.001		0.9	0.03
RS-501 1885	34		<0.001		0.8	0.02
RS-501 1890	36		0.001		0.9	0.03
RS-501 1895	14		<0.001		0.6	<0.02
RS-501 1900	9		<0.001		0.8	0.02
RS-501 1905	5		<0.001		<0.5	<0.02
RS-501 1910	6		<0.001		<0.5	<0.02
RS-501 1915	<5		<0.001		<0.5	<0.02
RS-501 1920	<5		<0.001		<0.5	<0.02
RS-501 1925	<5		<0.001		<0.5	<0.02
RS-501 1930	6		<0.001		<0.5	<0.02
RS-501 1935	40	38	0.001	0.001	<0.5	<0.02
RS-501 1940	16		<0.001		<0.5	<0.02
RS-501 1945	8		<0.001		0.6	<0.02
RS-501 1950	32		<0.001		<0.5	<0.02
RS-501 1955	14		<0.001		0.5	<0.02
RS-501 1960	8		<0.001		0.8	0.02
RS-501 1965	52		0.002		0.9	0.03
RS-501 1970	13		<0.001		1.0	0.03

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

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REFERENCE : RS-501

REPORTED : 19 JUL 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-501 1975	43		0.001		<0.5	<0.02
RS-501 1980	<5		<0.001		<0.5	<0.02
RS-501 1985	<5		<0.001		<0.5	<0.02
RS-501 1990	6		<0.001		0.6	<0.02
RS-501 1995	<5		<0.001		<0.5	<0.02
RS-501 2000	<5		<0.001		<0.5	<0.02
RS-501 2005	12	10	<0.001	<0.001	<0.5	<0.02
RS-501 2010	5		<0.001		0.6	<0.02
RS-501 2015	5		<0.001		0.7	0.02
RS-501 2020	5		<0.001		<0.5	<0.02
RS-501 2025	6		<0.001		<0.5	<0.02
RS-501 2030	<5		<0.001		<0.5	<0.02
RS-501 2035	<5		<0.001		<0.5	<0.02
RS-501 2040	10		<0.001		0.5	<0.02
RS-501 2045	8		<0.001		1.1	0.03
RS-501 2050	8		<0.001		1.3	0.04
RS-501 2055	7		<0.001		0.6	<0.02
RS-501 2060	8		<0.001		<0.5	<0.02
RS-501 2065	<5		<0.001		<0.5	<0.02
RS-501 2070	5		<0.001		<0.5	<0.02
RS-501 2075	<5		<0.001		0.5	<0.02
RS-501 2080	12		<0.001		0.6	<0.02
RS-501 2085			SAMPLE NOT RECEIVED			
RS-501 2090	19		<0.001		0.5	<0.02
RS-501 2095	21		<0.001		0.6	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

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REFERENCE : RS-501

REPORTED : 19 JUL 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-501 2100	30		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

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-501 RECEIVED : 26 JUN 2000

No. SAMPLES : 172 REPORTED : 19 JUL 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 SP057812

American Assay Laboratories

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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-501 170	<5		<0.001		<0.5	<0.02
RS-501 320	<5		<0.001		<0.5	<0.02
RS-501 325	<5		<0.001		<0.5	<0.02
RS-501 330	14	16	<0.001	<0.001	3.9	0.11
RS-501 335	8		<0.001		1.2	0.04
RS-501 340	<5		<0.001		0.9	0.03
RS-501 345	<5		<0.001		<0.5	<0.02
RS-501 350	<5		<0.001		<0.5	<0.02
RS-501 355	14		<0.001		14.0	0.41
RS-501 360	<5		<0.001		<0.5	<0.02
RS-501 365	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 370	7		<0.001		<0.5	<0.02
RS-501 375	57		0.002		<0.5	<0.02
RS-501 380	72		0.002		<0.5	<0.02
RS-501 385	95		0.003		1.1	0.03
RS-501 390	78		0.002		1.1	0.03
RS-501 395	48		0.001		0.6	<0.02
RS-501 400	26		<0.001		0.6	<0.02
RS-501 405	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 410	5		<0.001		<0.5	<0.02
RS-501 415	<5		<0.001		<0.5	<0.02
RS-501 420	5		<0.001		<0.5	<0.02
RS-501 425	<5		<0.001		<0.5	<0.02
RS-501 430	6		<0.001		0.5	<0.02
RS-501 435	24		<0.001		1.9	0.06

AMERICAN ASSAY LABORATORIES

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PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 19 JUL 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-501 440	28	28	<0.001	<0.001	0.6	<0.02
RS-501 445	<5		<0.001		<0.5	<0.02
RS-501 450	<5		<0.001		<0.5	<0.02
RS-501 455	<5		<0.001		<0.5	<0.02
RS-501 460	7		<0.001		<0.5	<0.02
RS-501 465	<5		<0.001		<0.5	<0.02
RS-501 470	<5	<5	<0.001	<0.001	0.6	<0.02
RS-501 475	<5		<0.001		<0.5	<0.02
RS-501 480	<5		<0.001		<0.5	<0.02
RS-501 485	<5		<0.001		<0.5	<0.02
RS-501 490	<5		<0.001		<0.5	<0.02
RS-501 495	<5		<0.001		<0.5	<0.02
RS-501 500	<5		<0.001		<0.5	<0.02
RS-501 505	<5		<0.001		0.5	<0.02
RS-501 510	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 515	<5		<0.001		<0.5	<0.02
RS-501 520	<5		<0.001		<0.5	<0.02
RS-501 525	26		<0.001		1.3	0.04
RS-501 530	5		<0.001		<0.5	<0.02
RS-501 535	<5		<0.001		<0.5	<0.02
RS-501 540	<5		<0.001		<0.5	<0.02
RS-501 545	<5		<0.001		<0.5	<0.02
RS-501 550	<5		<0.001		<0.5	<0.02
RS-501 555	<5		<0.001		<0.5	<0.02
RS-501 560	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 19 JUL 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-501 565	<5		<0.001		<0.5	<0.02
RS-501 570	6		<0.001		<0.5	<0.02
RS-501 575	<5		<0.001		<0.5	<0.02
RS-501 580	28		<0.001		<0.5	<0.02
RS-501 585	8		<0.001		<0.5	<0.02
RS-501 590	<5		<0.001		<0.5	<0.02
RS-501 595	<5		<0.001		<0.5	<0.02
RS-501 600	<5		<0.001		<0.5	<0.02
RS-501 605	7		<0.001		<0.5	<0.02
RS-501 610	5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 615	7		<0.001		<0.5	<0.02
RS-501 620	141		0.004		1.2	0.04
RS-501 625	18		<0.001		<0.5	<0.02
RS-501 630	28	30	<0.001	<0.001	<0.5	<0.02
RS-501 635	12		<0.001		<0.5	<0.02
RS-501 640			SAMPLE NOT RECEIVED			
RS-501 645	6		<0.001		<0.5	<0.02
RS-501 650	12		<0.001		<0.5	<0.02
RS-501 655	21		<0.001		<0.5	<0.02
RS-501 660	28		<0.001		<0.5	<0.02
RS-501 665	8		<0.001		<0.5	<0.02
RS-501 670	8		<0.001		<0.5	<0.02
RS-501 675	17		<0.001		<0.5	<0.02
RS-501 680	10		<0.001		<0.5	<0.02
RS-501 685	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 19 JUL 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-501 690	5		<0.001		<0.5	<0.02
RS-501 695	<5		<0.001		<0.5	<0.02
RS-501 700	<5		<0.001		<0.5	<0.02
RS-501 1605	<5		<0.001		<0.5	<0.02
RS-501 1620			SAMPLE NOT RECEIVED			
RS-501 1625	<5		<0.001		<0.5	<0.02
RS-501 1630	<5		<0.001		<0.5	<0.02
RS-501 1635	22		<0.001		<0.5	<0.02
RS-501 1640	25		<0.001		<0.5	<0.02
RS-501 1645	<5		<0.001		<0.5	<0.02
RS-501 1650	<5		<0.001		<0.5	<0.02
RS-501 1655	<5		<0.001		<0.5	<0.02
RS-501 1660	<5		<0.001		<0.5	<0.02
RS-501 1665	<5		<0.001		<0.5	<0.02
RS-501 1670	<5		<0.001		<0.5	<0.02
RS-501 1675	<5		<0.001		<0.5	<0.02
RS-501 1680	<5		<0.001		<0.5	<0.02
RS-501 1685	<5		<0.001		<0.5	<0.02
RS-501 1690	<5		<0.001		<0.5	<0.02
RS-501 1695	<5		<0.001		<0.5	<0.02
RS-501 1700	<5		<0.001		<0.5	<0.02
RS-501 1705	<5		<0.001		<0.5	<0.02
RS-501 1710	<5		<0.001		<0.5	<0.02
RS-501 1715	<5		<0.001		<0.5	<0.02
RS-501 1720	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 19 JUL 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-501 1725	<5		<0.001		<0.5	<0.02
RS-501 1730	<5		<0.001		<0.5	<0.02
RS-501 1735	<5		<0.001		<0.5	<0.02
RS-501 1740	<5		<0.001		<0.5	<0.02
RS-501 1745			SAMPLE NOT RECEIVED			
RS-501 1750	<5		<0.001		<0.5	<0.02
RS-501 1755	<5		<0.001		<0.5	<0.02
RS-501 1760	<5		<0.001		<0.5	<0.02
RS-501 1765	6		<0.001		0.6	<0.02
RS-501 1770	37		0.001		1.9	0.06
RS-501 1775	54		0.002		1.3	0.04
RS-501 1780	108		0.003		1.2	0.04
RS-501 1785	346	358	0.010	0.010	2.3	0.07
RS-501 1790	10		<0.001		0.8	0.02
RS-501 1795	8		<0.001		0.7	0.02
RS-501 1800	61		0.002		2.2	0.06
RS-501 1805	21		<0.001		1.0	0.03
RS-501 1810	11		<0.001		0.8	0.02
RS-501 1815	14		<0.001		0.7	0.02
RS-501 1820	13		<0.001		0.6	<0.02
RS-501 1825	10		<0.001		0.5	<0.02
RS-501 1830	6		<0.001		<0.5	<0.02
RS-501 1835	<5		<0.001		<0.5	<0.02
RS-501 1840	7		<0.001		<0.5	<0.02
RS-501 1845	54		0.002		0.8	0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 19 JUL 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-501 1850	136	118	0.004	0.003	1.2	0.04
RS-501 1855	79		0.002		0.6	<0.02
RS-501 1860	67		0.002		0.6	<0.02
RS-501 1865	95		0.003		0.9	0.03
RS-501 1870	17		<0.001		0.7	0.02
RS-501 1875	14		<0.001		0.8	0.02
RS-501 1880	16		<0.001		0.9	0.03
RS-501 1885	34		<0.001		0.8	0.02
RS-501 1890	36		0.001		0.9	0.03
RS-501 1895	14		<0.001		0.6	<0.02
RS-501 1900	9		<0.001		0.8	0.02
RS-501 1905	5		<0.001		<0.5	<0.02
RS-501 1910	6		<0.001		<0.5	<0.02
RS-501 1915	<5		<0.001		<0.5	<0.02
RS-501 1920	<5		<0.001		<0.5	<0.02
RS-501 1925	<5		<0.001		<0.5	<0.02
RS-501 1930	6		<0.001		<0.5	<0.02
RS-501 1935	40	38	0.001	0.001	<0.5	<0.02
RS-501 1940	16		<0.001		<0.5	<0.02
RS-501 1945	8		<0.001		0.6	<0.02
RS-501 1950	32		<0.001		<0.5	<0.02
RS-501 1955	14		<0.001		0.5	<0.02
RS-501 1960	8		<0.001		0.8	0.02
RS-501 1965	52		0.002		0.9	0.03
RS-501 1970	13		<0.001		1.0	0.03

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 19 JUL 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-501 1975	43		0.001		<0.5	<0.02
RS-501 1980	<5		<0.001		<0.5	<0.02
RS-501 1985	<5		<0.001		<0.5	<0.02
RS-501 1990	6		<0.001		0.6	<0.02
RS-501 1995	<5		<0.001		<0.5	<0.02
RS-501 2000	<5		<0.001		<0.5	<0.02
RS-501 2005	12	10	<0.001	<0.001	<0.5	<0.02
RS-501 2010	5		<0.001		0.6	<0.02
RS-501 2015	5		<0.001		0.7	0.02
RS-501 2020	5		<0.001		<0.5	<0.02
RS-501 2025	6		<0.001		<0.5	<0.02
RS-501 2030	<5		<0.001		<0.5	<0.02
RS-501 2035	<5		<0.001		<0.5	<0.02
RS-501 2040	10		<0.001		0.5	<0.02
RS-501 2045	8		<0.001		1.1	0.03
RS-501 2050	8		<0.001		1.3	0.04
RS-501 2055	7		<0.001		0.6	<0.02
RS-501 2060	8		<0.001		<0.5	<0.02
RS-501 2065	<5		<0.001		<0.5	<0.02
RS-501 2070	5		<0.001		<0.5	<0.02
RS-501 2075	<5		<0.001		0.5	<0.02
RS-501 2080	12		<0.001		0.6	<0.02
RS-501 2085			SAMPLE NOT RECEIVED			
RS-501 2090	19		<0.001		0.5	<0.02
RS-501 2095	21		<0.001		0.6	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057812

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 19 JUL 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-501 2100	30		<0.001		<0.5	<0.02

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: _____ Purchase Order Number: _____

Date Submitted: 5/23/00 Number of Samples: 172

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

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
Drill Hole RS-501	cuttings	Au + Ag Use Rosebud
[redacted]		exploration
320 to 700		
1620 to 2100		
1 Pulp		

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

PROVISIONAL REPORT SP057812

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-501 RECEIVED : 26 JUN 2000

No. SAMPLES : 172 REPORTED : 6 JUL 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.

07/06/2000 09:45 7753561413 AMERICAN ASSAY LABS PAGE 01
7753561413

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 6 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 170	<5		<0.001			
RS-501 320	<5		<0.001			
RS-501 325	<5		<0.001			
RS-501 330	14	16	<0.001	<0.001		
RS-501 335	8		<0.001			
RS-501 340	<5		<0.001			
RS-501 345	<5		<0.001			
RS-501 350	<5		<0.001			
RS-501 355	14		<0.001			
RS-501 360	<5		<0.001			
RS-501 365	<5	<5	<0.001	<0.001		
RS-501 370	7		<0.001			
RS-501 375	57		0.002			
RS-501 380	72		0.002			
RS-501 385	95		0.003			
RS-501 390	78		0.002			
RS-501 395	48		0.001			
RS-501 400	26		<0.001			
RS-501 405	<5	<5	<0.001	<0.001		
RS-501 410	5		<0.001			
RS-501 415	<5		<0.001			
RS-501 420	5		<0.001			
RS-501 425	<5		<0.001			
RS-501 430	6		<0.001			
RS-501 435	24		<0.001			

07/06/2000 09:46 7753561413 AMERICAN ASSAY LABS PAGE 01
7753561413

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 6 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 440	28	28	<0.001	<0.001		
RS-501 445	<5		<0.001			
RS-501 450	<5		<0.001			
RS-501 455	<5		<0.001			
RS-501 460	7		<0.001			
RS-501 465	<5		<0.001			
RS-501 470	<5	<5	<0.001	<0.001		
RS-501 475	<5		<0.001			
RS-501 480	<5		<0.001			
RS-501 485	<5		<0.001			
RS-501 490	<5		<0.001			
RS-501 495	<5		<0.001			
RS-501 500	<5		<0.001			
RS-501 505	<5		<0.001			
RS-501 510	<5	<5	<0.001	<0.001		
RS-501 515	<5		<0.001			
RS-501 520	<5		<0.001			
RS-501 525	26		<0.001			
RS-501 530	5		<0.001			
RS-501 535	<5		<0.001			
RS-501 540	<5		<0.001			
RS-501 545	<5		<0.001			
RS-501 550	<5		<0.001			
RS-501 555	<5		<0.001			
RS-501 560	<5		<0.001			

07/06/2000 09:46 7753561413 AMERICAN ASSAY LABS PAGE 02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 6 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 565	<5		<0.001			
RS-501 570	6		<0.001			
RS-501 575	<5		<0.001			
RS-501 580	28		<0.001			
RS-501 585	8		<0.001			
RS-501 590	<5		<0.001			
RS-501 595	<5		<0.001			
RS-501 600	<5		<0.001			
RS-501 605	7		<0.001			
RS-501 610	5	<5	<0.001	<0.001		
RS-501 615	7		<0.001			
RS-501 620	141		0.004			
RS-501 625	18		<0.001			
RS-501 630	28	30	<0.001	<0.001		
RS-501 635	12		<0.001			
RS-501 640			SAMPLE NOT RECEIVED			
RS-501 645	6		<0.001			
RS-501 650	12		<0.001			
RS-501 655	21		<0.001			
RS-501 660	28		<0.001			
RS-501 665	8		<0.001			
RS-501 670	8		<0.001			
RS-501 675	DTF		DTF			
RS-501 680	10		<0.001			
RS-501 685	<5		<0.001			

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 6 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 690	5		<0.001			
RS-501 695	<5		<0.001			
RS-501 700	<5		<0.001			
RS-501 1605	<5		<0.001			
RS-501 1620			SAMPLE NOT RECEIVED			
RS-501 1625	<5		<0.001			
RS-501 1630	<5		<0.001			
RS-501 1635	DTF		DTF			
RS-501 1640	25		<0.001			
RS-501 1645	<5		<0.001			
RS-501 1650	<5		<0.001			
RS-501 1655	<5		<0.001			
RS-501 1660	<5		<0.001			
RS-501 1665	<5		<0.001			
RS-501 1670	<5		<0.001			
RS-501 1675	<5		<0.001			
RS-501 1680	<5		<0.001			
RS-501 1685	<5		<0.001			
RS-501 1690	<5		<0.001			
RS-501 1695	<5		<0.001			
RS-501 1700	<5		<0.001			
RS-501 1705	<5		<0.001			
RS-501 1710	<5		<0.001			
RS-501 1715	<5		<0.001			
RS-501 1720	<5		<0.001			

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 6 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 1725	<5		<0.001			
RS-501 1730	<5		<0.001			
RS-501 1735	<5		<0.001			
RS-501 1740	<5		<0.001			
RS-501 1745			SAMPLE NOT RECEIVED			
RS-501 1750	<5		<0.001			
RS-501 1755	<5		<0.001			
RS-501 1760	<5		<0.001			
RS-501 1765	6		<0.001			
RS-501 1770	37		0.001			
RS-501 1775	54		0.002			
RS-501 1780	108		0.003			
RS-501 1785	346	358	0.010	0.010		
RS-501 1790	10		<0.001			
RS-501 1795	8		<0.001			
RS-501 1800	61		0.002			
RS-501 1805	21		<0.001			
RS-501 1810	11		<0.001			
RS-501 1815	14		<0.001			
RS-501 1820	13		<0.001			
RS-501 1825	10		<0.001			
RS-501 1830	6		<0.001			
RS-501 1835	<5		<0.001			
RS-501 1840	7		<0.001			
RS-501 1845	54		0.002			

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 6 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 1850	136	118	0.004	0.003		
RS-501 1855	79		0.002			
RS-501 1860	67		0.002			
RS-501 1865	95		0.003			
RS-501 1870	17		<0.001			
RS-501 1875	14		<0.001			
RS-501 1880	16		<0.001			
RS-501 1885	34		<0.001			
RS-501 1890	36		0.001			
RS-501 1895	14		<0.001			
RS-501 1900	9		<0.001			
RS-501 1905	5		<0.001			
RS-501 1910	6		<0.001			
RS-501 1915	<5		<0.001			
RS-501 1920	<5		<0.001			
RS-501 1925	<5		<0.001			
RS-501 1930	6		<0.001			
RS-501 1935	DTF		DTF			
RS-501 1940	16		<0.001			
RS-501 1945	8		<0.001			
RS-501 1950	32		<0.001			
RS-501 1955	14		<0.001			
RS-501 1960	8		<0.001			
RS-501 1965	52		0.002			
RS-501 1970	13		<0.001			

RS-501 2100	30	<0.001

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 6 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 1975	43		0.001			
RS-501 1980	<5		<0.001			
RS-501 1985	<5		<0.001			
RS-501 1990	6		<0.001			
RS-501 1995	<5		<0.001			
RS-501 2000	<5		<0.001			
RS-501 2005	12	10	<0.001	<0.001		
RS-501 2010	5		<0.001			
RS-501 2015	5		<0.001			
RS-501 2020	5		<0.001			
RS-501 2025	6		<0.001			
RS-501 2030	<5		<0.001			
RS-501 2035	<5		<0.001			
RS-501 2040	10		<0.001			
RS-501 2045	8		<0.001			
RS-501 2050	8		<0.001			
RS-501 2055	7		<0.001			
RS-501 2060	8		<0.001			
RS-501 2065	<5		<0.001			
RS-501 2070	5		<0.001			
RS-501 2075	<5		<0.001			
RS-501 2080	12		<0.001			
RS-501 2085			SAMPLE NOT RECEIVED			
RS-501 2090	19		<0.001			
RS-501 2095	21		<0.001			

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

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

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

501

CLIENT REFERENCE No: RS-501 RECEIVED : 26 JUN 2000

No. SAMPLES : 172 REPORTED : 10 JUL 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. Page : 1

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 10 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 170	<5		<0.001		<0.5	<0.02
RS-501 320	<5		<0.001		<0.5	<0.02
RS-501 325	<5		<0.001		<0.5	<0.02
RS-501 330	14	16	<0.001	<0.001	3.9	0.11
RS-501 335	8		<0.001		1.2	0.04
RS-501 340	<5		<0.001		0.9	0.03
RS-501 345	<5		<0.001		<0.5	<0.02
RS-501 350	<5		<0.001		<0.5	<0.02
RS-501 355	14		<0.001		14.0	0.41
RS-501 360	<5		<0.001		<0.5	<0.02
RS-501 365	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 370	7		<0.001		<0.5	<0.02
RS-501 375	57		0.002		<0.5	<0.02
RS-501 380	72		0.002		<0.5	<0.02
RS-501 385	95		0.003		1.1	0.03
RS-501 390	78		0.002		1.1	0.03
RS-501 395	48		0.001		0.6	<0.02
RS-501 400	26		<0.001		0.6	<0.02
RS-501 405	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 410	5		<0.001		<0.5	<0.02
RS-501 415	<5		<0.001		<0.5	<0.02
RS-501 420	5		<0.001		<0.5	<0.02
RS-501 425	<5		<0.001		<0.5	<0.02
RS-501 430	6		<0.001		0.5	<0.02
RS-501 435	24		<0.001		1.9	0.06

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 10 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 440	28	28	<0.001	<0.001	0.6	<0.02
RS-501 445	<5		<0.001		<0.5	<0.02
RS-501 450	<5		<0.001		<0.5	<0.02
RS-501 455	<5		<0.001		<0.5	<0.02
RS-501 460	7		<0.001		<0.5	<0.02
RS-501 465	<5		<0.001		<0.5	<0.02
RS-501 470	<5	<5	<0.001	<0.001	0.6	<0.02
RS-501 475	<5		<0.001		<0.5	<0.02
RS-501 480	<5		<0.001		<0.5	<0.02
RS-501 485	<5		<0.001		<0.5	<0.02
RS-501 490	<5		<0.001		<0.5	<0.02
RS-501 495	<5		<0.001		<0.5	<0.02
RS-501 500	<5		<0.001		<0.5	<0.02
RS-501 505	<5		<0.001		0.5	<0.02
RS-501 510	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 515	<5		<0.001		<0.5	<0.02
RS-501 520	<5		<0.001		<0.5	<0.02
RS-501 525	26		<0.001		1.3	0.04
RS-501 530	5		<0.001		<0.5	<0.02
RS-501 535	<5		<0.001		<0.5	<0.02
RS-501 540	<5		<0.001		<0.5	<0.02
RS-501 545	<5		<0.001		<0.5	<0.02
RS-501 550	<5		<0.001		<0.5	<0.02
RS-501 555	<5		<0.001		<0.5	<0.02
RS-501 560	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

CLIENT : HECLA MINING COMPANY
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REFERENCE : RS-501

REPORTED : 10 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 565	<5		<0.001		<0.5	<0.02
RS-501 570	6		<0.001		<0.5	<0.02
RS-501 575	<5		<0.001		<0.5	<0.02
RS-501 580	28		<0.001		<0.5	<0.02
RS-501 585	8		<0.001		<0.5	<0.02
RS-501 590	<5		<0.001		<0.5	<0.02
RS-501 595	<5		<0.001		<0.5	<0.02
RS-501 600	<5		<0.001		<0.5	<0.02
RS-501 605	7		<0.001		<0.5	<0.02
RS-501 610	5	<5	<0.001	<0.001	<0.5	<0.02
RS-501 615	7		<0.001		<0.5	<0.02
RS-501 620	141		0.004		1.2	0.04
RS-501 625	18		<0.001		<0.5	<0.02
RS-501 630	28	30	<0.001	<0.001	<0.5	<0.02
RS-501 635	12		<0.001		<0.5	<0.02
RS-501 640			SAMPLE NOT RECEIVED			
RS-501 645	6		<0.001		<0.5	<0.02
RS-501 650	12		<0.001		<0.5	<0.02
RS-501 655	21		<0.001		<0.5	<0.02
RS-501 660	28		<0.001		<0.5	<0.02
RS-501 665	8		<0.001		<0.5	<0.02
RS-501 670	8		<0.001		<0.5	<0.02
RS-501 675	17		<0.001		<0.5	<0.02
RS-501 680	10		<0.001		<0.5	<0.02
RS-501 685	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

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PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 10 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 690	5		<0.001		<0.5	<0.02
RS-501 695	<5		<0.001		<0.5	<0.02
RS-501 700	<5		<0.001		<0.5	<0.02
RS-501 1605	<5		<0.001		<0.5	<0.02
RS-501 1620			SAMPLE NOT RECEIVED			
RS-501 1625	<5		<0.001		<0.5	<0.02
RS-501 1630	<5		<0.001		<0.5	<0.02
RS-501 1635	22		<0.001		<0.5	<0.02
RS-501 1640	25		<0.001		<0.5	<0.02
RS-501 1645	<5		<0.001		<0.5	<0.02
RS-501 1650	<5		<0.001		<0.5	<0.02
RS-501 1655	<5		<0.001		<0.5	<0.02
RS-501 1660	<5		<0.001		<0.5	<0.02
RS-501 1665	<5		<0.001		<0.5	<0.02
RS-501 1670	<5		<0.001		<0.5	<0.02
RS-501 1675	<5		<0.001		<0.5	<0.02
RS-501 1680	<5		<0.001		<0.5	<0.02
RS-501 1685	<5		<0.001		<0.5	<0.02
RS-501 1690	<5		<0.001		<0.5	<0.02
RS-501 1695	<5		<0.001		<0.5	<0.02
RS-501 1700	<5		<0.001		<0.5	<0.02
RS-501 1705	<5		<0.001		<0.5	<0.02
RS-501 1710	<5		<0.001		<0.5	<0.02
RS-501 1715	<5		<0.001		<0.5	<0.02
RS-501 1720	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

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PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 10 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 1725	<5		<0.001		<0.5	<0.02
RS-501 1730	<5		<0.001		<0.5	<0.02
RS-501 1735	<5		<0.001		<0.5	<0.02
RS-501 1740	<5		<0.001		<0.5	<0.02
RS-501 1745			SAMPLE NOT RECEIVED			
RS-501 1750	<5		<0.001		<0.5	<0.02
RS-501 1755	<5		<0.001		<0.5	<0.02
RS-501 1760	<5		<0.001		<0.5	<0.02
RS-501 1765	6		<0.001		0.6	<0.02
RS-501 1770	37		0.001		1.9	0.06
RS-501 1775	54		0.002		1.3	0.04
RS-501 1780	108		0.003		1.2	0.04
RS-501 1785	346	358	0.010	0.010	2.3	0.07
RS-501 1790	10		<0.001		0.8	0.02
RS-501 1795	8		<0.001		0.7	0.02
RS-501 1800	61		0.002		2.2	0.06
RS-501 1805	21		<0.001		1.0	0.03
RS-501 1810	11		<0.001		0.8	0.02
RS-501 1815	14		<0.001		0.7	0.02
RS-501 1820	13		<0.001		0.6	<0.02
RS-501 1825	10		<0.001		0.5	<0.02
RS-501 1830	6		<0.001		<0.5	<0.02
RS-501 1835	<5		<0.001		<0.5	<0.02
RS-501 1840	7		<0.001		<0.5	<0.02
RS-501 1845	54		0.002		0.8	0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

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REFERENCE : RS-501

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 1850	136	118	0.004	0.003	1.2	0.04
RS-501 1855	79		0.002		0.6	<0.02
RS-501 1860	67		0.002		0.6	<0.02
RS-501 1865	95		0.003		0.9	0.03
RS-501 1870	17		<0.001		0.7	0.02
RS-501 1875	14		<0.001		0.8	0.02
RS-501 1880	16		<0.001		0.9	0.03
RS-501 1885	34		<0.001		0.8	0.02
RS-501 1890	36		0.001		0.9	0.03
RS-501 1895	14		<0.001		0.6	<0.02
RS-501 1900	9		<0.001		0.8	0.02
RS-501 1905	5		<0.001		<0.5	<0.02
RS-501 1910	6		<0.001		<0.5	<0.02
RS-501 1915	<5		<0.001		<0.5	<0.02
RS-501 1920	<5		<0.001		<0.5	<0.02
RS-501 1925	<5		<0.001		<0.5	<0.02
RS-501 1930	6		<0.001		<0.5	<0.02
RS-501 1935	40	38	0.001	0.001	<0.5	<0.02
RS-501 1940	16		<0.001		<0.5	<0.02
RS-501 1945	8		<0.001		0.6	<0.02
RS-501 1950	32		<0.001		<0.5	<0.02
RS-501 1955	14		<0.001		0.5	<0.02
RS-501 1960	8		<0.001		0.8	0.02
RS-501 1965	52		0.002		0.9	0.03
RS-501 1970	13		<0.001		1.0	0.03

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

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REFERENCE : RS-501

REPORTED : 10 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 1975	43		0.001		<0.5	<0.02
RS-501 1980	<5		<0.001		<0.5	<0.02
RS-501 1985	<5		<0.001		<0.5	<0.02
RS-501 1990	6		<0.001		0.6	<0.02
RS-501 1995	<5		<0.001		<0.5	<0.02
RS-501 2000	<5		<0.001		<0.5	<0.02
RS-501 2005	12	10	<0.001	<0.001	<0.5	<0.02
RS-501 2010	5		<0.001		0.6	<0.02
RS-501 2015	5		<0.001		0.7	0.02
RS-501 2020	5		<0.001		<0.5	<0.02
RS-501 2025	6		<0.001		<0.5	<0.02
RS-501 2030	<5		<0.001		<0.5	<0.02
RS-501 2035	<5		<0.001		<0.5	<0.02
RS-501 2040	10		<0.001		0.5	<0.02
RS-501 2045	8		<0.001		1.1	0.03
RS-501 2050	8		<0.001		1.3	0.04
RS-501 2055	7		<0.001		0.6	<0.02
RS-501 2060	8		<0.001		<0.5	<0.02
RS-501 2065	<5		<0.001		<0.5	<0.02
RS-501 2070	5		<0.001		<0.5	<0.02
RS-501 2075	<5		<0.001		0.5	<0.02
RS-501 2080	12		<0.001		0.6	<0.02
RS-501 2085			SAMPLE NOT RECEIVED			
RS-501 2090	19		<0.001		0.5	<0.02
RS-501 2095	21		<0.001		0.6	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057812

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PROJECT : ROSEBUD
REFERENCE : RS-501

REPORTED : 10 JUL 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-501 2100	30		<0.001		<0.5	<0.02

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:	SP57812
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-501 320	72	0.53	2.5	0.6	2	75.80	< .02	0.24	0.13	0.60	4	9.41	2.16	2.2	46	0.27	27	0.03	765	1.81	0.023	3.3	0.041	19.42	0.01	2.27	1.1	0.3	26.1	< .02	10.4	0.017	< .02	2.5	12	1.4	37.1
RS-501 340	142	0.9	7.8	0.6	1	63.90	< .02	0.73	0.28	1.00	4.4	8.2	2.41	4.1	61	0.46	28.6	0.04	4607	1.91	0.033	3.4	0.042	18.98	0.04	2.65	1.9	0.4	88.2	< .02	11.1	0.017	0.03	1.9	8	2.5	60.4
RS-501 360	180	1.02	16.9	0.6	< 1	45.60	< .02	0.26	0.09	1.10	4.3	11.38	2.03	4.1	92	0.47	28.7	0.03	1323	1.49	0.018	2.9	0.043	23.63	0.37	2.51	1.4	0.5	15.8	< .02	10.3	< .001	0.05	1.4	6	0.5	124.8
RS-501 380	435	0.71	14.7	61	< 1	10.90	< .02	0.18	0.05	1.10	3.4	8.02	2.24	2.5	121	0.38	24.5	0.02	53	1.77	0.005	2.7	0.033	24.51	2.9	14.19	0.8	4.5	23.9	< .02	9.4	< .001	0.44	1.4	2	0.6	36.9
RS-501 400	591	1.02	23.0	30.9	< 1	50.30	< .02	0.27	0.18	1.50	4.2	8.12	2.33	3.9	80	0.46	25.7	0.03	137	2.14	0.013	4.2	0.044	24.97	2.86	7.34	0.9	2.5	22.7	< .02	10.4	< .001	0.24	1.8	3	0.9	85.2
RS-501 420	266	0.47	1.6	1.6	1	36.40	< .02	1.01	0.09	0.60	3.8	6.12	1.98	2.2	81	0.33	27.5	0.03	743	0.68	0.032	2.7	0.042	16.8	0.06	1.53	1.1	0.2	53.4	< .02	10.9	0.012	0.02	1.8	6	0.7	51.9
RS-501 440	562	1.74	18.5	10.7	2	111.80	< .02	0.36	0.1	1.70	3.9	7.58	2.5	8.1	41	0.66	26.2	0.04	664	4.74	0.066	3.1	0.044	17.48	0.94	6.68	1.7	1.9	35.5	< .02	10	< .001	0.08	2.2	2	0.4	88.6
RS-501 460	448	1.26	17.3	16.7	< 1	53.10	< .02	0.48	0.08	1.30	3.2	8.3	2.07	5.6	26	0.52	25.2	0.04	387	0.52	0.033	2	0.043	16.33	0.96	4.84	1.1	1.5	40.7	< .02	10	< .001	0.07	1.9	< 2	0.3	70.6
RS-501 480	145	0.53	7.4	1.2	1	27.60	< .02	0.88	0.08	0.90	3.9	5.49	1.57	2.4	28	0.28	22.1	0.03	721	0.47	0.025	2.7	0.042	16.62	0.37	1.07	1.2	0.3	54.8	< .02	9.1	0.004	0.02	1.8	2	0.3	47.4
RS-501 500	167	0.5	3.9	0.6	< 1	28.80	0.02	0.78	0.05	1.00	4.4	6.55	1.99	2.3	64	0.23	26.9	0.03	499	0.63	0.032	2.9	0.043	17.72	0.29	2.09	1	0.3	58.1	< .02	10.7	0.006	0.03	1.3	5	0.6	48.9
RS-501 520	168	0.84	5.4	2	< 1	27.30	< .02	0.41	0.12	1.50	4.6	8.65	2.22	3.8	73	0.29	27.7	0.04	638	0.99	0.039	3.6	0.043	18.14	0.62	2.41	1.2	0.4	49.6	< .02	10.7	< .001	0.03	0.8	5	0.4	78.4
RS-501 540	139	0.5	1.8	0.2	1	98.20	0.04	1.11	0.07	0.60	4.1	6.21	2.05	2.3	66	0.26	26.2	0.03	630	1.32	0.031	16.2	0.036	14.39	0.04	1.96	1.2	0.2	75.4	< .02	10.8	0.017	0.02	1.8	7	1.2	36.6
RS-501 560	176	0.5	1.7	1.1	< 1	31.40	< .02	1.69	0.09	0.50	4.4	5.01	2.04	2.1	15	0.26	28	0.04	837	1.25	0.031	7.9	0.041	15.89	0.02	2.54	1.6	0.2	100.9	< .02	10.9	0.022	< .02	2.4	9	1.3	22
RS-501 580	462	0.72	24.9	40.1	1	37.30	< .02	0.56	0.14	0.50	3.1	5.63	3.64	2.6	121	0.32	19	0.04	473	1.2	0.018	7	0.042	24.66	4.31	13.66	0.9	8.8	64.6	< .02	7.7	< .001	0.2	1.7	3	0.4	28.7
RS-501 600	197	0.70	3.9	1.6	1	18.50	0.02	1.2	0.06	0.80	3.1	5.68	1.66	2.5	57	0.27	27.8	0.04	902	0.92	0.026	6.9	0.042	22.44	0.37	3.67	1.1	0.1	89.2	< .02	11	0.001	0.03	0.9	4	0.5	41.3
RS-501 620	1052	0.85	72.3	109.1	< 1	20.00	< .02	0.3	0.13	2.10	3.1	8.29	2.54	3.3	80	0.32	25.6	0.04	68	3.86	0.017	8.2	0.047	27.12	3.16	11.58	0.9	9	68.5	< .02	10.1	0.001	0.16	1.1	2	0.2	75.6
RS-501 650	300	1.34	25.1	23.9	3	51.60	< .02	0.57	0.04	1.80	2.9	8.28	2.54	6	124	0.44	23.8	0.05	383	1.82	0.043	23.6	0.039	44.99	1.15	4.02	1.2	1.3	65.1	< .02	9.3	0.004	0.08	1.2	6	0.2	97.4
RS-501 660	549	0.68	65.6	24.3	< 1	36.80	< .02	0.75	0.08	1.50	3.7	10.55	2.26	2.6	77	0.23	23.9	0.04	522	2.92	0.031	20.1	0.041	50.44	1.55	8.82	0.6	2.5	76.7	< .02	8.9	< .001	0.14	2.3	5	0.4	91.6
RS-501 680	147	0.84	16.8	4.2	< 1	53.20	< .02	1.32	0.16	1.60	3.4	6.57	1.81	3.6	126	0.31	27.4	0.06	1231	0.95	0.037	18.2	0.044	34.21	0.65	3.43	1.6	0.6	82.2	< .02	10.1	< .001	0.06	1.4	5	0.4	77.9
RS-501 700	121	0.69	3.0	1.7	< 1	120.50	< .02	0.68	0.28	0.90	3.4	6.61	2.04	3.4	160	0.35	28.6	0.04	746	1.21	0.056	24.3	0.043	26.62	0.21	1.71	1.6	0.1	58.2	< .02	11.3	0.013	0.05	1.9	7	0.7	78.4
RS-501 1630	123	1.31	2.8	9	1	214.50	0.25	2.36	0.3	1.10	1.7	3.49	2.23	3.7	13	0.41	18.8	0.14	924	0.6	0.038	4.5	0.026	23.65	0.11	0.78	0.9	0.2	355.6	< .02	5.5	0.002	0.15	1.4	10	0.3	39.7
RS-501 1640	473	1.53	56.6	22.3	< 1	160.20	0.82	1.44	0.37	1.10	1.6	2.75	2.09	5.1	41	0.71	19.1	0.11	579	1.15	0.04	6.9	0.023	27.1	1.42	4.65	0.8	4.8	239.3	< .02	4.2	0.001	0.39	1	5	< .2	62.2
RS-501 1660	126	0.91	2.1	0.4	1	173.70	1.08	3.8	0.38	1.20	3.7	3.44	1.39	2.8	11	0.38	29.8	0.09	1574	2.31	0.037	4.6	0.03	25.05	0.09	0.51	0.8	0.1	274.7	< .02	5.5	0.002	0.14	1.2	4	< .2	51.1
RS-501 1680	111	0.89	2.3	< .2	< 1	185.90	0.27	1.57	0.36	1.40	4.3	2.89	1.18	3.4	8	0.41	30.4	0.09	587	2.03	0.052	5.1	0.033	21.39	0.07	0.39	0.7	0.1	131.5	< .02	5.6	0.008	0.18	0.7	2	< .2	36.3
RS-501 1700	163	0.7	7.2	0.5	2	868.00	0.3	0.28	0.81	1.90	10.7	3.34	1.27	3.4	14	0.33	37.9	0.05	231	4.3	0.051	12.7	0.017	17.17	0.12	1	0.7	0.6	76.6	< .02	8.8	0.004	0.16	0.8	6	0.2	51.3
RS-501 1720	209	0.81	7.6	7.2	< 1	1165.30	0.37	1.03	0.4	2.70	8.7	4.18	1.47	3.2	30	0.34	36.4	0.09	395	3.66	0.05	10.9	0.028	25.07	0.16	1.3	1.1	0.6	163.7	< .02	8.4	0.003	0.16	1.1	9	0.3	47.9
RS-501 1740	100	0.88	4.8	4.1	< 1	361.70	0.29	1.21	0.47	3.30	11.3	5.3	1.16	3.9	31	0.45	37.3	0.07	448	2.64	0.061	15	0.045	18.94	0.08	0.56	1.4	0.8	132.2	< .02	6.6	0.003	0.2	0.9	7	0.2	46.3
RS-501 1760	226	0.85	6.2	4.3	1	300.90	0.96	1.41	0.35	0.30	4.1	3.14	1.32	3	15	0.47	28.5	0.05	701	1.55	0.041	4.2	0.011	29.35	0.51	1.04	0.7	1	144.1	< .02	6.2	0.002	0.19	0.8	2	< .2	37.3
RS-501 1780	846	0.56	36.2	52.7	< 1	309.90	1.12	0.97	0.47	0.90	4.1	6.03	1.09	1.9	72	0.33	30.7	0.05	476	4.05	0.031	4.1	0.009	28.75	0.59	2.22	0.6	6	161.7	0.12	9	0.002	0.18	1.1	3	0.3	76.6
RS-501 1800	1333	1.08	33.4	52.2	1.0	112.70	5.3	1.6	0.8	2.20	11.2	10.27	2.06	4.5	142	0.49	28.3	0.07	862	2.18	0.043	14.4	0.056	46.54	1.56	1.62	1.4	2.9	150.4	0.02	6.4	< .001	0.17	2.5	5	0.3	125.2
RS-501 1820	266	0.62	18.6	13.8	2	92.1	0.17	1.54	0.14	0.3	5.9	2.3	0.97	2	11	0.32	41.2	0.04	507	1.23	0.033	5.9	0.011	29.02	0.41	0.61	0.8	1	144.8	< .02	10	0.002	0.07	0.4	2	< .2	31.4
RS-501 1840	155	0.65	6.9	7	1	177.8	0.15	1.28	0.15	0.4	5.8	2.18	1.03	1.8	5	0.3	41.3	0.05	509	1.72	0.028	6.9	0.01	26.82	0.3	0.68	0.5	0.5	162.5	< .02	9.3	< .001	0.07	0.6	3	< .2	18.6
RS-501 1860	429	0.91	125.9	59.8	< 1	159.9	0.44	1.41	0.23	1	4.9	8.79	2.14	2.6	19	0.37	28.2	0.11	564	1.09	0.019	10	0.013	31.37	1.24	4.44	0.7	10.4	171.7	< .02	7.1	0.005	0.1	0.9	5	0.6	29.5
RS-501 1880	565	0.97	12.3	13.7	< 1	218	0.12	3.9	0.27	0.6	2.9	2.4	1.58	3.3	40	0.35	29.7	0.1	1443	0.88	0.017	4.5	0.01	36.41	0.66	4.58	0.7	1.9	394.2	< .02	6.9	0.003	0.09	0.6	3	0.3	68.4
RS-501 1900	385	1.19	11	4.3	< 1	130.4	0.2	1.72	0.23	0.6	3.7	3.87	2.8	5.4	60	0.43	23.8	0.08	875	0.97	0.041	5.6	0.011	38.44	1.31	2.3	1.2	0.8	166.8	< .02	5.9	0.003	0.13	0.7	3	0.3	111.1

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: SP57812
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
STANDARD DS2	262	1.67	53.7	219.4	2	140.2	10.39	0.51	10.06	11.4	150.3	127.16	2.95	5.9	226	0.16	15.7	0.57	770	13.88	0.031	34	0.088	33.92	0.04	8.61	2.9	2.4	27.9	1.86	3.5	0.089	1.79	18.2	75	6.9	157
RS-501 1920	81	1.09	1.4	0.4	3	153.2	0.08	1.09	0.09	0.6	4.2	2.43	1.61	4.1	25	0.48	50.8	0.1	703	0.8	0.046	6.9	0.01	20.56	0.13	0.92	1	0.2	136.4	< .02	10.9	0.003	0.07	0.5	2	< .2	54.7
RS-501 1940	132	1.17	2.5	4.5	2	195.8	0.1	0.58	0.11	0.4	4.4	1.94	1.88	3.9	81	0.45	41.4	0.08	787	0.76	0.015	5.7	0.01	22.54	0.83	1.04	0.9	0.5	110.2	< .02	8.7	0.002	0.19	0.6	2	0.4	72.5
RS-501 1960	312	1.2	3.6	5.2	3	77.4	0.14	0.75	0.13	0.6	5.8	2.82	2.28	4.1	90	0.48	32.6	0.07	581	0.89	0.015	5.6	0.009	31.43	2.08	1.69	0.8	1.8	99	< .02	7.1	0.003	0.16	0.5	2	0.4	122.8
RS-501 1980	141	0.85	2.2	3.2	1	208.9	0.09	1.1	0.18	0.4	4.6	2.54	2.63	2.9	109	0.37	39	0.09	1436	1.08	0.017	7.7	0.009	27.72	0.84	1.78	0.9	1.1	142.1	< .02	8.9	0.002	0.11	1.4	2	0.4	109.1
RS-501 2000	171	0.68	2.6	1.1	1	339.4	0.21	1.03	0.15	0.4	3.1	2.13	1.86	2	72	0.26	37.1	0.07	856	0.65	0.015	5.2	0.012	27.19	0.48	1.24	0.8	0.4	150.5	< .02	8.6	0.003	0.06	0.6	3	0.3	75
RS-501 2020	182	1.18	1.8	0.3	1	281.6	0.13	2.39	0.3	0.8	2.9	2	2.34	3.5	33	0.4	34.3	0.12	1541	0.63	0.037	6.3	0.015	23.23	0.19	0.56	1.2	< .1	252.5	0.02	8.7	0.006	0.08	1	7	0.3	47.2
RS-501 2040	155	1.01	1.4	0.9	4	158.9	0.13	1.66	0.12	0.4	5.1	2.17	1.47	4	21	0.47	51.8	0.08	697	1.12	0.065	5.9	0.011	19.94	0.08	0.83	0.8	0.2	153.8	< .02	12.3	0.013	0.07	0.7	2	0.6	36
RS-501 2060	199	0.8	2	1.3	3	124.9	0.07	0.77	0.22	0.6	4.6	2.53	1.38	3.4	28	0.42	53.9	0.06	624	1.01	0.057	8	0.013	19.94	0.12	0.38	1	0.4	113.4	< .02	12.1	0.003	0.04	16.4	2	0.4	87.6
RS-501 2080	443	0.7	9.2	11.9	2	257.9	0.13	1.25	0.14	0.5	11.7	4.21	1.89	3.1	16	0.28	42.6	0.04	596	2.47	0.047	11.5	0.011	27.28	0.63	0.97	0.8	0.8	124.1	< .02	11.7	0.004	0.06	0.6	3	0.4	43.5
RS-501 2100	323	0.71	99.3	28.5	4	257.7	0.09	1.18	0.09	0.4	9.5	2.64	1.47	2.5	21	0.34	48.4	0.06	595	2.64	0.026	8.4	0.012	27.34	0.84	1.51	0.6	7.2	138.5	< .02	12.3	0.003	0.07	1.2	2	0.3	61.8
STANDARD DS2	264	1.69	63.1	189.4	3	152.9	10.33	0.53	10.18	11	158.8	128.51	3.09	5.9	240	0.15	16.1	0.61	842	14	0.03	35.5	0.089	31.31	0.03	8.55	3	2.1	28.4	1.89	3.9	0.095	1.75	19.2	74	6.8	166

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:	SP57812
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-501 320	72	0.53	2.5	0.6	2	75.80	< .02	0.24	0.13	0.60	4	9.41	2.16	2.2	46	0.27	27	0.03	765	1.81	0.023	3.3	0.041	19.42	0.01	2.27	1.1	0.3	26.1	< .02	10.4	0.017	< .02	2.5	12	1.4	37.1
RS-501 340	142	0.9	7.8	0.6	1	63.90	< .02	0.73	0.28	1.00	4.4	8.2	2.41	4.1	61	0.46	28.6	0.04	4607	1.91	0.033	3.4	0.042	18.98	0.04	2.65	1.9	0.4	88.2	< .02	11.1	0.017	0.03	1.9	8	2.5	60.4
RS-501 360	180	1.02	16.9	0.6	< 1	45.60	< .02	0.26	0.09	1.10	4.3	11.38	2.03	4.1	92	0.47	28.7	0.03	1323	1.49	0.018	2.9	0.043	23.63	0.37	2.51	1.4	0.5	15.8	< .02	10.3	< .001	0.05	1.4	6	0.5	124.8
RS-501 380	435	0.71	14.7	61	< 1	10.90	< .02	0.18	0.05	1.10	3.4	8.02	2.24	2.5	121	0.38	24.5	0.02	53	1.77	0.005	2.7	0.033	24.51	2.9	14.19	0.8	4.5	23.9	< .02	9.4	< .001	0.44	1.4	2	0.6	36.9
RS-501 400	591	1.02	23.0	30.9	< 1	50.30	< .02	0.27	0.18	1.50	4.2	8.12	2.33	3.9	80	0.46	25.7	0.03	137	2.14	0.013	4.2	0.044	24.97	2.86	7.34	0.9	2.5	22.7	< .02	10.4	< .001	0.24	1.8	3	0.9	85.2
RS-501 420	266	0.47	1.6	1.6	1	36.40	< .02	1.01	0.09	0.60	3.8	6.12	1.98	2.2	81	0.33	27.5	0.03	743	0.68	0.032	2.7	0.042	16.8	0.06	1.53	1.1	0.2	53.4	< .02	10.9	0.012	0.02	1.8	6	0.7	51.9
RS-501 440	562	1.74	18.5	10.7	2	111.80	< .02	0.36	0.1	1.70	3.9	7.58	2.5	8.1	41	0.66	26.2	0.04	664	4.74	0.066	3.1	0.044	17.48	0.94	6.68	1.7	1.9	35.5	< .02	10	< .001	0.08	2.2	2	0.4	88.6
RS-501 460	448	1.26	17.3	16.7	< 1	53.10	< .02	0.48	0.08	1.30	3.2	8.3	2.07	5.6	26	0.52	25.2	0.04	387	0.52	0.033	2	0.043	16.33	0.96	4.84	1.1	1.5	40.7	< .02	10	< .001	0.07	1.9	< 2	0.3	70.6
RS-501 480	145	0.53	7.4	1.2	1	27.60	< .02	0.88	0.08	0.90	3.9	5.49	1.57	2.4	28	0.28	22.1	0.03	721	0.47	0.025	2.7	0.042	16.62	0.37	1.07	1.2	0.3	54.8	< .02	9.1	0.004	0.02	1.8	2	0.3	47.4
RS-501 500	167	0.5	3.9	0.6	< 1	28.80	0.02	0.78	0.05	1.00	4.4	6.55	1.99	2.3	64	0.23	26.9	0.03	499	0.63	0.032	2.9	0.043	17.72	0.29	2.09	1	0.3	58.1	< .02	10.7	0.006	0.03	1.3	5	0.6	48.9
RS-501 520	168	0.84	5.4	2	< 1	27.30	< .02	0.41	0.12	1.50	4.6	8.65	2.22	3.8	73	0.29	27.7	0.04	638	0.99	0.039	3.6	0.043	18.14	0.62	2.41	1.2	0.4	49.6	< .02	10.7	< .001	0.03	0.8	5	0.4	78.4
RS-501 540	139	0.5	1.8	0.2	1	98.20	0.04	1.11	0.07	0.60	4.1	6.21	2.05	2.3	66	0.26	26.2	0.03	630	1.32	0.031	16.2	0.036	14.39	0.04	1.96	1.2	0.2	75.4	< .02	10.8	0.017	0.02	1.8	7	1.2	36.6
RS-501 560	176	0.5	1.7	1.1	< 1	31.40	< .02	1.69	0.09	0.50	4.4	5.01	2.04	2.1	15	0.26	28	0.04	837	1.25	0.031	7.9	0.041	15.89	0.02	2.54	1.6	0.2	100.9	< .02	10.9	0.022	< .02	2.4	9	1.3	22
RS-501 580	462	0.72	24.9	40.1	1	37.30	< .02	0.56	0.14	0.50	3.1	5.63	3.64	2.6	121	0.32	19	0.04	473	1.2	0.018	7	0.042	24.66	4.31	13.66	0.9	8.8	64.6	< .02	7.7	< .001	0.2	1.7	3	0.4	28.7
RS-501 600	197	0.70	3.9	1.6	1	18.50	0.02	1.2	0.06	0.80	3.1	5.68	1.66	2.5	57	0.27	27.8	0.04	902	0.92	0.026	6.9	0.042	22.44	0.37	3.67	1.1	0.1	89.2	< .02	11	0.001	0.03	0.9	4	0.5	41.3
RS-501 620	1052	0.85	72.3	109.1	< 1	20.00	< .02	0.3	0.13	2.10	3.1	8.29	2.54	3.3	80	0.32	25.6	0.04	68	3.86	0.017	8.2	0.047	27.12	3.16	11.58	0.9	9	68.5	< .02	10.1	0.001	0.16	1.1	2	0.2	75.6
RS-501 650	300	1.34	25.1	23.9	3	51.60	< .02	0.57	0.04	1.80	2.9	8.28	2.54	6	124	0.44	23.8	0.05	383	1.82	0.043	23.6	0.039	44.99	1.15	4.02	1.2	1.3	65.1	< .02	9.3	0.004	0.08	1.2	6	0.2	97.4
RS-501 660	549	0.68	65.6	24.3	< 1	36.80	< .02	0.75	0.08	1.50	3.7	10.55	2.26	2.6	77	0.23	23.9	0.04	522	2.92	0.031	20.1	0.041	50.44	1.55	8.82	0.6	2.5	76.7	< .02	8.9	< .001	0.14	2.3	5	0.4	91.6
RS-501 680	147	0.84	16.8	4.2	< 1	53.20	< .02	1.32	0.16	1.60	3.4	6.57	1.81	3.6	126	0.31	27.4	0.06	1231	0.95	0.037	18.2	0.044	34.21	0.65	3.43	1.6	0.6	82.2	< .02	10.1	< .001	0.06	1.4	5	0.4	77.9
RS-501 700	121	0.69	3.0	1.7	< 1	120.50	< .02	0.68	0.28	0.90	3.4	6.61	2.04	3.4	160	0.35	28.6	0.04	746	1.21	0.056	24.3	0.043	26.62	0.21	1.71	1.6	0.1	58.2	< .02	11.3	0.013	0.05	1.9	7	0.7	78.4
RS-501 1630	123	1.31	2.8	9	1	214.50	0.25	2.36	0.3	1.10	1.7	3.49	2.23	3.7	13	0.41	18.8	0.14	924	0.6	0.038	4.5	0.026	23.65	0.11	0.78	0.9	0.2	355.6	< .02	5.5	0.002	0.15	1.4	10	0.3	39.7
RS-501 1640	473	1.53	56.6	22.3	< 1	160.20	0.82	1.44	0.37	1.10	1.6	2.75	2.09	5.1	41	0.71	19.1	0.11	579	1.15	0.04	6.9	0.023	27.1	1.42	4.65	0.8	4.8	239.3	< .02	4.2	0.001	0.39	1	5	< .2	62.2
RS-501 1660	126	0.91	2.1	0.4	1	173.70	1.08	3.8	0.38	1.20	3.7	3.44	1.39	2.8	11	0.38	29.8	0.09	1574	2.31	0.037	4.6	0.03	25.05	0.09	0.51	0.8	0.1	274.7	< .02	5.5	0.002	0.14	1.2	4	< .2	51.1
RS-501 1680	111	0.89	2.3	< .2	< 1	185.90	0.27	1.57	0.36	1.40	4.3	2.89	1.18	3.4	8	0.41	30.4	0.09	587	2.03	0.052	5.1	0.033	21.39	0.07	0.39	0.7	0.1	131.5	< .02	5.6	0.008	0.18	0.7	2	< .2	36.3
RS-501 1700	163	0.7	7.2	0.5	2	868.00	0.3	0.28	0.81	1.90	10.7	3.34	1.27	3.4	14	0.33	37.9	0.05	231	4.3	0.051	12.7	0.017	17.17	0.12	1	0.7	0.6	76.6	< .02	8.8	0.004	0.16	0.8	6	0.2	51.3
RS-501 1720	209	0.81	7.6	7.2	< 1	1165.30	0.37	1.03	0.4	2.70	8.7	4.18	1.47	3.2	30	0.34	36.4	0.09	395	3.66	0.05	10.9	0.028	25.07	0.16	1.3	1.1	0.6	163.7	< .02	8.4	0.003	0.16	1.1	9	0.3	47.9
RS-501 1740	100	0.88	4.8	4.1	< 1	361.70	0.29	1.21	0.47	3.30	11.3	5.3	1.16	3.9	31	0.45	37.3	0.07	448	2.64	0.061	15	0.045	18.94	0.08	0.56	1.4	0.8	132.2	< .02	6.6	0.003	0.2	0.9	7	0.2	46.3
RS-501 1760	226	0.85	6.2	4.3	1	300.90	0.96	1.41	0.35	0.30	4.1	3.14	1.32	3	15	0.47	28.5	0.05	701	1.55	0.041	4.2	0.011	29.35	0.51	1.04	0.7	1	144.1	< .02	6.2	0.002	0.19	0.8	2	< .2	37.3
RS-501 1780	846	0.56	36.2	52.7	< 1	309.90	1.12	0.97	0.47	0.90	4.1	6.03	1.09	1.9	72	0.33	30.7	0.05	476	4.05	0.031	4.1	0.009	28.75	0.59	2.22	0.6	6	161.7	0.12	9	0.002	0.18	1.1	3	0.3	76.6
RS-501 1800	1333	1.08	33.4	52.2	1.0	112.70	5.3	1.6	0.8	2.20	11.2	10.27	2.06	4.5	142	0.49	28.3	0.07	862	2.18	0.043	14.4	0.056	46.54	1.56	1.62	1.4	2.9	150.4	0.02	6.4	< .001	0.17	2.5	5	0.3	125.2
RS-501 1820	266	0.62	18.6	13.8	2	92.1	0.17	1.54	0.14	0.3	5.9	2.3	0.97	2	11	0.32	41.2	0.04	507	1.23	0.033	5.9	0.011	29.02	0.41	0.61	0.8	1	144.8	< .02	10	0.002	0.07	0.4	2	< .2	31.4
RS-501 1840	155	0.65	6.9	7	1	177.8	0.15	1.28	0.15	0.4	5.8	2.18	1.03	1.8	5	0.3	41.3	0.05	509	1.72	0.028	6.9	0.01	26.82	0.3	0.68	0.5	0.5	162.5	< .02	9.3	< .001	0.07	0.6	3	< .2	18.6
RS-501 1860	429	0.91	125.9	59.8	< 1	159.9	0.44	1.41	0.23	1	4.9	8.79	2.14	2.6	19	0.37	28.2	0.11	564	1.09	0.019	10	0.013	31.37	1.24	4.44	0.7	10.4	171.7	< .02	7.1	0.005	0.1	0.9	5	0.6	29.5
RS-501 1880	565	0.97	12.3	13.7	< 1	218	0.12	3.9	0.27	0.6	2.9	2.4	1.58	3.3	40	0.35	29.7	0.1	1443	0.88	0.017	4.5	0.01	36.41	0.66	4.58	0.7	1.9	394.2	< .02	6.9	0.003	0.09	0.6	3	0.3	68.4
RS-501 1900	385	1.19	11	4.3	< 1	130.4	0.2	1.72	0.23	0.6	3.7	3.87	2.8	5.4	60	0.43	23.8	0.08	875	0.97	0.041	5.6	0.011	38.44	1.31	2.3	1.2	0.8	166.8	< .02	5.9	0.003	0.13	0.7	3	0.3	111.1

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:	SP57812
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
STANDARD DS2	262	1.67	53.7	219.4	2	140.2	10.39	0.51	10.06	11.4	150.3	127.16	2.95	5.9	226	0.16	15.7	0.57	770	13.88	0.031	34	0.088	33.92	0.04	8.61	2.9	2.4	27.9	1.86	3.5	0.089	1.79	18.2	75	6.9	157
RS-501 1920	81	1.09	1.4	0.4	3	153.2	0.08	1.09	0.09	0.6	4.2	2.43	1.61	4.1	25	0.48	50.8	0.1	703	0.8	0.046	6.9	0.01	20.56	0.13	0.92	1	0.2	136.4	< .02	10.9	0.003	0.07	0.5	2	< .2	54.7
RS-501 1940	132	1.17	2.5	4.5	2	195.8	0.1	0.58	0.11	0.4	4.4	1.94	1.88	3.9	81	0.45	41.4	0.08	787	0.76	0.015	5.7	0.01	22.54	0.83	1.04	0.9	0.5	110.2	< .02	8.7	0.002	0.19	0.6	2	0.4	72.5
RS-501 1960	312	1.2	3.6	5.2	3	77.4	0.14	0.75	0.13	0.6	5.8	2.82	2.28	4.1	90	0.48	32.6	0.07	581	0.89	0.015	5.6	0.009	31.43	2.08	1.69	0.8	1.8	99	< .02	7.1	0.003	0.16	0.5	2	0.4	122.8
RS-501 1980	141	0.85	2.2	3.2	1	208.9	0.09	1.1	0.18	0.4	4.6	2.54	2.63	2.9	109	0.37	39	0.09	1436	1.08	0.017	7.7	0.009	27.72	0.84	1.78	0.9	1.1	142.1	< .02	8.9	0.002	0.11	1.4	2	0.4	109.1
RS-501 2000	171	0.68	2.6	1.1	1	339.4	0.21	1.03	0.15	0.4	3.1	2.13	1.86	2	72	0.26	37.1	0.07	856	0.65	0.015	5.2	0.012	27.19	0.48	1.24	0.8	0.4	150.5	< .02	8.6	0.003	0.06	0.6	3	0.3	75
RS-501 2020	182	1.18	1.8	0.3	1	281.6	0.13	2.39	0.3	0.8	2.9	2	2.34	3.5	33	0.4	34.3	0.12	1541	0.63	0.037	6.3	0.015	23.23	0.19	0.56	1.2	< .1	252.5	0.02	8.7	0.006	0.08	1	7	0.3	47.2
RS-501 2040	155	1.01	1.4	0.9	4	158.9	0.13	1.66	0.12	0.4	5.1	2.17	1.47	4	21	0.47	51.8	0.08	697	1.12	0.065	5.9	0.011	19.94	0.08	0.83	0.8	0.2	153.8	< .02	12.3	0.013	0.07	0.7	2	0.6	36
RS-501 2060	199	0.8	2	1.3	3	124.9	0.07	0.77	0.22	0.6	4.6	2.53	1.38	3.4	28	0.42	53.9	0.06	624	1.01	0.057	8	0.013	19.94	0.12	0.38	1	0.4	113.4	< .02	12.1	0.003	0.04	16.4	2	0.4	87.6
RS-501 2080	443	0.7	9.2	11.9	2	257.9	0.13	1.25	0.14	0.5	11.7	4.21	1.89	3.1	16	0.28	42.6	0.04	596	2.47	0.047	11.5	0.011	27.28	0.63	0.97	0.8	0.8	124.1	< .02	11.7	0.004	0.06	0.6	3	0.4	43.5
RS-501 2100	323	0.71	99.3	28.5	4	257.7	0.09	1.18	0.09	0.4	9.5	2.64	1.47	2.5	21	0.34	48.4	0.06	595	2.64	0.026	8.4	0.012	27.34	0.84	1.51	0.6	7.2	138.5	< .02	12.3	0.003	0.07	1.2	2	0.3	61.8
STANDARD DS2	264	1.69	63.1	189.4	3	152.9	10.33	0.53	10.18	11	158.8	128.51	3.09	5.9	240	0.15	16.1	0.61	842	14	0.03	35.5	0.089	31.31	0.03	8.55	3	2.1	28.4	1.89	3.9	0.095	1.75	19.2	74	6.8	166

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: SP57812
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-501 320	72	0.53	2.5	0.6	2	75.80	< .02	0.24	0.13	0.60	4	9.41	2.16	2.2	46	0.27	27	0.03	766	1.81	0.023	3.3	0.041	19.42	0.01	2.27	1.1	0.3	26.1	< .02	10.4	0.017	< .02	2.5	12	1.4	37.1
RS-501 340	142	0.9	7.6	0.6	1	63.90	< .02	0.73	0.28	1.00	4.4	8.2	2.41	4.1	61	0.46	28.6	0.04	4607	1.91	0.033	3.4	0.042	18.98	0.04	2.65	1.9	0.4	88.2	< .02	11.1	0.017	0.03	1.8	8	2.5	60.4
RS-501 360	180	1.02	16.9	0.6	< 1	46.60	< .02	0.26	0.09	1.10	4.3	11.38	2.03	4.1	92	0.47	28.7	0.03	1323	1.49	0.018	2.9	0.043	23.63	0.37	2.51	1.4	0.5	15.8	< .02	10.3	< .001	0.05	1.4	6	0.5	124.6
RS-501 380	435	0.71	14.7	61	< 1	10.90	< .02	0.18	0.05	1.10	3.4	8.02	2.24	2.5	121	0.38	24.5	0.02	53	1.77	0.006	2.7	0.033	24.51	2.9	14.19	0.8	4.5	23.9	< .02	9.4	< .001	0.44	1.4	2	0.6	36.9
RS-501 400	591	1.02	23.0	30.9	< 1	50.30	< .02	0.27	0.16	1.50	4.2	8.12	2.33	3.9	80	0.46	25.7	0.03	137	2.14	0.013	4.2	0.044	24.97	2.86	7.34	0.9	2.5	22.7	< .02	10.4	< .001	0.24	1.8	3	0.9	85.2
RS-501 420	266	0.47	1.6	1.6	1	36.40	< .02	1.01	0.09	0.60	3.8	6.12	1.98	2.2	81	0.33	27.5	0.03	743	0.68	0.032	2.7	0.042	16.8	0.06	1.53	1.1	0.2	53.4	< .02	10.9	0.012	0.02	1.8	6	0.7	51.9
RS-501 440	562	1.74	18.5	10.7	2	111.80	< .02	0.36	0.1	1.70	3.9	7.58	2.5	8.1	41	0.66	26.2	0.04	664	4.74	0.006	3.1	0.044	17.49	0.94	6.68	1.7	1.9	35.5	< .02	10	< .001	0.06	2.2	2	0.4	88.6
RS-501 460	448	1.26	17.3	16.7	< 1	53.10	< .02	0.48	0.08	1.30	3.2	8.3	2.07	6.6	28	0.52	25.2	0.04	367	0.52	0.033	2	0.043	16.33	0.96	4.84	1.1	1.5	40.7	< .02	10	< .001	0.07	1.9	< 2	0.3	70.6
RS-501 480	145	0.53	7.4	1.2	1	27.60	< .02	0.88	0.08	0.90	3.9	5.49	1.57	2.4	26	0.28	22.1	0.03	721	0.47	0.026	2.7	0.042	16.62	0.37	1.07	1.2	0.3	54.8	< .02	9.1	0.004	0.02	1.8	2	0.3	47.4
RS-501 500	167	0.5	3.9	0.6	< 1	28.80	0.02	0.76	0.05	1.00	4.4	6.55	1.99	2.3	64	0.23	26.9	0.03	499	0.63	0.032	2.9	0.043	17.72	0.29	2.09	1	0.3	58.1	< .02	10.7	0.006	0.03	1.3	5	0.6	48.9
RS-501 520	168	0.84	5.4	2	< 1	27.30	< .02	0.41	0.12	1.50	4.6	8.65	2.22	3.6	73	0.29	27.7	0.04	638	0.99	0.039	3.5	0.043	18.14	0.62	2.41	1.2	0.4	49.6	< .02	10.7	< .001	0.03	0.8	5	0.4	78.4
RS-501 540	139	0.5	1.8	0.2	1	96.20	0.04	1.11	0.07	0.60	4.1	6.21	2.05	2.3	66	0.26	26.2	0.03	630	1.32	0.031	16.2	0.036	14.39	0.04	1.96	1.2	0.2	76.4	< .02	10.8	0.017	0.02	1.8	7	1.2	36.6
RS-501 560	176	0.5	1.7	1.1	< 1	31.40	< .02	1.69	0.09	0.50	4.4	5.01	2.04	2.1	15	0.26	28	0.04	637	1.25	0.031	7.9	0.041	15.89	0.02	2.54	1.6	0.2	100.9	< .02	10.9	0.022	< .02	2.4	9	1.3	22
RS-501 580	462	0.72	24.9	40.1	1	37.30	< .02	0.56	0.14	0.50	3.1	5.63	3.84	2.6	121	0.32	19	0.04	473	1.2	0.018	7	0.042	24.66	4.31	13.06	0.9	3.6	64.6	< .02	7.7	< .001	0.2	1.7	3	0.4	28.7
RS-501 600	197	0.70	3.9	1.6	1	18.50	0.02	1.2	0.06	0.80	3.1	5.68	1.66	2.5	57	0.27	27.8	0.04	902	0.92	0.026	6.9	0.042	22.44	0.37	3.67	1.1	0.1	89.2	< .02	11	0.001	0.03	0.9	4	0.5	41.3
RS-501 620	1052	0.85	72.3	109.1	< 1	20.00	< .02	0.3	0.13	2.10	3.1	8.29	2.54	3.3	80	0.32	25.6	0.04	68	3.86	0.017	8.2	0.047	27.12	3.16	11.58	0.9	9	68.5	< .02	10.1	0.001	0.16	1.1	2	0.2	75.6
RS-501 640	390	1.34	25.1	23.9	3	51.80	< .02	0.57	0.04	1.80	2.9	8.28	2.54	6	124	0.44	23.8	0.05	383	1.82	0.043	23.6	0.039	44.99	1.15	4.02	1.2	1.3	65.1	< .02	9.3	0.004	0.08	1.2	6	0.2	97.4
RS-501 660	549	0.68	65.6	24.3	< 1	36.80	< .02	0.75	0.08	1.50	3.7	10.55	2.26	2.6	77	0.23	23.9	0.04	522	2.92	0.031	20.1	0.041	50.44	1.55	8.82	0.6	2.5	76.7	< .02	8.9	< .001	0.14	2.3	5	0.4	91.6
RS-501 680	147	0.84	16.8	4.2	< 1	53.20	< .02	1.32	0.16	1.60	3.4	6.57	1.81	3.6	126	0.31	27.4	0.06	1231	0.95	0.037	16.2	0.044	34.21	0.65	3.43	1.6	0.6	82.2	< .02	10.1	< .001	0.06	1.4	5	0.4	77.9
RS-501 700	121	0.69	3.0	1.7	< 1	120.50	< .02	0.68	0.28	0.90	3.4	6.61	2.04	3.4	160	0.35	28.6	0.04	746	1.21	0.056	24.3	0.043	26.62	0.21	1.71	1.6	0.1	58.2	< .02	11.3	0.013	0.05	1.9	7	0.7	78.4
RS-501 1630	123	1.31	2.8	9	1	214.50	0.25	2.36	0.3	1.10	1.7	3.49	2.23	3.7	13	0.41	16.8	0.14	924	0.6	0.038	4.5	0.026	23.65	0.11	0.78	0.9	0.2	355.6	< .02	5.5	0.002	0.15	1.4	10	0.3	39.7
RS-501 1640	473	1.53	56.6	22.3	< 1	160.20	0.82	1.44	0.37	1.10	1.6	2.75	2.09	5.1	41	0.71	19.1	0.11	578	1.15	0.04	6.9	0.023	27.1	1.42	4.65	0.8	4.8	239.3	< .02	4.2	0.001	0.39	1	5	< .2	62.2
RS-501 1660	126	0.91	2.1	0.4	1	173.70	1.08	3.8	0.38	1.20	3.7	3.44	1.39	2.8	11	0.38	29.8	0.09	1574	2.31	0.037	4.6	0.03	25.05	0.09	0.51	0.8	0.1	274.7	< .02	5.5	0.002	0.14	1.2	4	< .2	51.1
RS-501 1680	111	0.89	2.3	< .2	< 1	165.90	0.27	1.57	0.36	1.40	4.3	2.89	1.18	3.4	8	0.41	30.4	0.09	587	2.03	0.052	6.1	0.033	21.39	0.07	0.39	0.7	0.1	131.5	< .02	5.6	0.008	0.18	0.7	2	< .2	36.3
RS-501 1700	163	0.7	7.2	0.5	2	868.00	0.3	0.28	0.81	1.90	10.7	3.34	1.27	3.4	14	0.33	37.9	0.05	231	4.3	0.061	12.7	0.017	17.17	0.12	1	0.7	0.6	78.6	< .02	8.8	0.004	0.16	0.8	6	0.2	51.3
RS-501 1720	209	0.81	7.6	7.2	< 1	1165.30	0.37	1.03	0.4	2.70	8.7	4.18	1.47	3.2	30	0.34	36.4	0.09	396	3.66	0.06	10.9	0.028	25.07	0.16	1.3	1.1	0.6	163.7	< .02	8.4	0.003	0.16	1.1	9	0.3	47.9
RS-501 1740	100	0.68	4.8	4.1	< 1	361.70	0.29	1.21	0.47	3.30	11.3	5.3	1.16	3.9	31	0.45	37.3	0.07	449	2.64	0.061	15	0.045	18.94	0.06	0.56	1.4	0.8	132.2	< .02	6.6	0.003	0.2	0.9	7	0.2	46.3
RS-501 1760	226	0.85	6.2	4.3	1	300.90	0.96	1.41	0.35	0.30	4.1	3.14	1.32	3	15	0.47	28.5	0.05	701	1.55	0.041	4.2	0.011	29.35	0.51	1.04	0.7	1	144.1	< .02	6.2	0.002	0.19	0.8	2	< .2	37.3
RS-501 1780	846	0.56	36.2	52.7	< 1	309.90	1.12	0.97	0.47	0.90	4.1	6.03	1.09	1.9	72	0.33	30.7	0.05	476	4.05	0.031	4.1	0.009	28.76	0.59	2.22	0.6	6	161.7	0.12	9	0.002	0.18	1.1	3	0.3	76.6
RS-501 1800	1333	1.08	33.4	52.2	1.0	112.70	5.3	1.6	0.6	2.20	11.2	10.27	2.06	4.5	142	0.48	28.3	0.07	862	2.18	0.043	14.4	0.056	46.54	1.56	1.62	1.4	2.9	150.4	0.02	6.4	< .001	0.17	2.5	5	0.3	125.2
RS-501 1820	266	0.62	18.6	13.8	2	92.1	0.17	1.54	0.14	0.3	5.9	2.3	0.97	2	11	0.32	41.2	0.04	507	1.23	0.033	5.9	0.011	29.02	0.41	0.61	0.8	1	144.8	< .02	10	0.002	0.07	0.4	2	< .2	31.4
RS-501 1840	155	0.65	6.9	7	1	177.6	0.15	1.28	0.15	0.4	5.8	2.16	1.03	1.8	5	0.3	41.3	0.05	509	1.72	0.028	6.9	0.01	26.82	0.3	0.68	0.5	0.5	162.5	< .02	9.3	< .001	0.07	0.6	3	< .2	18.6
RS-501 1860	429	0.91	125.9	59.8	< 1	169.9	0.44	1.41	0.23	1	4.9	8.79	2.14	2.6	19	0.37	28.2	0.11	564	1.09	0.019	10	0.013	31.37	1.24	4.44	0.7	10.4	171.7	< .02	7.1	0.005	0.1	0.9	5	0.6	29.5
RS-501 1880	565	0.97	12.3	13.7	< 1	216	0.12	3.9	0.27	0.6	2.9	2.4	1.58	3.3	40	0.35	29.7	0.1	1443	0.88	0.017	4.5	0.01	38.41	0.66	4.58	0.7	1.9	394.2	< .02	6.9	0.003	0.09	0.6	3	0.3	68.4
RS-501 1900	385	1.19	11	4.3	< 1	130.4	0.2	1.72	0.23	0.6	3.7	3.87	2.8	5.4	60	0.43	23.6	0.06	875	0.97	0.041	5.6	0.011	38.44	1.31	2.3	1.2	0.8	166.8	< .02	5.9	0.003	0.13	0.7	3	0.3	111.1

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: SP57812
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
STANDARD DS2	282	1.67	53.7	219.4	2	140.2	10.39	0.51	10.06	11.4	150.3	127.16	2.95	5.9	226	0.16	15.7	0.57	770	13.88	0.031	34	0.088	33.92	0.04	8.61	2.9	2.4	27.9	1.86	3.5	0.089	1.79	18.2	75	6.9	157
RS-501 1920	81	1.09	1.4	0.4	3	153.2	0.08	1.09	0.09	0.6	4.2	2.43	1.61	4.1	25	0.48	50.8	0.1	703	0.8	0.048	6.9	0.01	20.66	0.13	0.92	1	0.2	136.4	< .02	10.9	0.003	0.07	0.5	2	< .2	54.7
RS-501 1940	132	1.17	2.5	4.5	2	195.8	0.1	0.58	0.11	0.4	4.4	1.94	1.88	3.9	81	0.45	41.4	0.08	787	0.76	0.015	5.7	0.01	22.54	0.83	1.04	0.9	0.5	110.2	< .02	8.7	0.002	0.19	0.6	2	0.4	72.5
RS-501 1960	312	1.2	3.6	5.2	3	77.4	0.14	0.75	0.13	0.6	5.8	2.82	2.28	4.1	90	0.48	32.6	0.07	581	0.89	0.018	5.6	0.009	31.43	2.06	1.69	0.8	1.8	96	< .02	7.1	0.003	0.16	0.5	2	0.4	122.8
RS-501 1980	141	0.85	2.2	3.2	1	206.9	0.09	1.1	0.18	0.4	4.6	2.54	2.63	2.9	109	0.37	39	0.09	1436	1.06	0.017	7.7	0.009	27.72	0.84	1.78	0.9	1.1	142.1	< .02	8.9	0.002	0.11	1.4	2	0.4	109.1
RS-501 2000	171	0.68	2.6	1.1	1	339.4	0.21	1.03	0.15	0.4	3.1	2.13	1.86	2	72	0.28	37.1	0.07	856	0.65	0.015	5.2	0.012	27.19	0.48	1.24	0.8	0.4	150.6	< .02	8.6	0.003	0.06	0.6	3	0.3	75
RS-501 2020	182	1.18	1.8	0.3	1	281.6	0.13	2.39	0.3	0.8	2.9	2	2.34	3.5	33	0.4	34.3	0.12	1541	0.63	0.037	6.3	0.015	23.23	0.19	0.56	1.2	< .1	252.5	0.02	8.7	0.006	0.08	1	7	0.3	47.2
RS-501 2040	155	1.01	1.4	0.9	4	158.9	0.13	1.66	0.12	0.4	5.1	2.17	1.47	4	21	0.47	51.8	0.08	697	1.12	0.065	5.9	0.011	19.94	0.08	0.83	0.8	0.2	153.8	< .02	12.3	0.013	0.07	0.7	2	0.6	36
RS-501 2060	199	0.8	2	1.3	3	124.9	0.07	0.77	0.22	0.6	4.6	2.53	1.38	3.4	28	0.42	53.9	0.06	624	1.01	0.057	8	0.013	19.94	0.12	0.38	1	0.4	113.4	< .02	12.1	0.003	0.04	16.4	2	0.4	87.6
RS-501 2080	443	0.7	9.2	11.9	2	257.9	0.13	1.25	0.14	0.5	11.7	4.21	1.89	3.1	16	0.28	42.6	0.04	596	2.47	0.047	11.5	0.011	27.28	0.63	0.97	0.8	0.8	124.1	< .02	11.7	0.004	0.06	0.6	3	0.4	43.5
RS-501 2100	323	0.71	99.3	28.5	4	257.7	0.09	1.18	0.09	0.4	9.5	2.64	1.47	2.5	21	0.34	48.4	0.06	595	2.64	0.026	8.4	0.012	27.34	0.84	1.51	0.6	7.2	138.5	< .02	12.3	0.003	0.07	1.2	2	0.3	61.8
STANDARD DS2	264	1.69	63.1	169.4	3	152.9	10.33	0.53	10.18	11	158.6	128.51	3.09	5.9	240	0.15	16.1	0.61	842	14	0.03	36.5	0.089	31.31	0.03	8.55	3	2.1	28.4	1.89	3.9	0.095	1.75	19.2	74	6.8	166

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

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

JOB NUMBER: 29-0588-311

WELL NAME: RS-501 / VS 035.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 06/19/2000

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: 125.00

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

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

PROJECTED F/1625' T/1700'.

****
****
*** 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-501 / VS 035.00

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
0.0	0.00	0.00	0.000	-90.00	000.00	0.00 N	0.00 E	0.00		0.00	AT 000.00
50.0	50.00	-0.24	-0.528	-88.67	010.57	0.57 N	0.11 E	2.66	1.33	0.58	AT 010.57
100.0	99.98	-0.72	-1.617	-88.60	011.62	1.74 N	0.34 E	0.15	0.07	1.77	AT 010.93
150.0	149.95	-1.64	-2.983	-87.59	354.98	3.38 N	0.37 E	2.28	1.14	3.40	AT 006.19
200.0	199.90	-3.08	-4.865	-86.97	359.59	5.75 N	0.27 E	1.31	0.66	5.76	AT 002.64
250.0	249.83	-4.68	-6.932	-87.03	354.80	8.36 N	0.14 E	0.52	0.26	8.37	AT 000.95
300.0	299.76	-5.76	-9.300	-86.79	024.96	10.92 N	0.61 E	3.25	1.62	10.94	AT 003.21
350.0	349.68	-6.26	-12.135	-86.61	025.15	13.53 N	1.83 E	0.36	0.18	13.65	AT 007.71
400.0	399.59	-6.93	-15.010	-86.61	018.75	16.27 N	2.93 E	0.76	0.38	16.53	AT 010.22
450.0	449.51	-7.36	-17.751	-86.97	034.15	18.76 N	4.15 E	1.86	0.93	19.22	AT 012.48
500.0	499.46	-7.26	-19.883	-88.12	043.66	20.45 N	5.46 E	2.43	1.22	21.17	AT 014.95
550.0	549.44	-7.20	-21.380	-88.42	029.55	21.64 N	6.37 E	1.04	0.52	22.56	AT 016.39
600.0	599.43	-7.00	-22.496	-88.84	066.87	22.44 N	7.17 E	1.93	0.96	23.56	AT 017.72
650.0	649.42	-6.34	-23.387	-88.61	075.59	22.79 N	8.22 E	0.60	0.30	24.23	AT 019.84
700.0	699.40	-5.46	-24.301	-88.49	081.47	23.04 N	9.46 E	0.38	0.19	24.91	AT 022.33
750.0	749.38	-4.59	-25.294	-88.47	071.05	23.35 N	10.75 E	0.55	0.28	25.71	AT 024.71
800.0	799.36	-3.78	-26.443	-88.30	069.73	23.83 N	12.07 E	0.35	0.17	26.71	AT 026.87
850.0	849.34	-3.16	-27.927	-87.95	047.35	24.69 N	13.43 E	1.61	0.80	28.11	AT 028.54
900.0	899.28	-3.41	-30.320	-86.37	018.78	26.80 N	14.59 E	4.15	2.08	30.51	AT 028.57
950.0	949.17	-4.48	-33.347	-86.26	012.52	29.89 N	15.46 E	0.83	0.42	33.65	AT 027.35
1000.0	999.09	-5.76	-35.864	-87.24	002.04	32.68 N	15.85 E	2.28	1.14	36.32	AT 025.88
1050.0	1049.06	-6.66	-37.205	-89.06	358.75	34.29 N	15.89 E	3.64	1.82	37.80	AT 024.86
1100.0	1099.06	-6.93	-37.649	-89.73	019.48	34.82 N	15.92 E	1.39	0.69	38.28	AT 024.57
1150.0	1149.06	-6.88	-38.288	-88.78	044.04	35.31 N	16.33 E	1.96	0.98	38.90	AT 024.82
1200.0	1199.04	-6.96	-39.639	-88.07	023.63	36.46 N	17.03 E	1.79	0.89	40.25	AT 025.04
1250.0	1249.00	-7.87	-41.381	-87.29	355.84	38.41 N	17.29 E	2.69	1.35	42.12	AT 024.23
1300.0	1298.94	-9.58	-43.082	-87.16	344.28	40.78 N	16.86 E	1.15	0.57	44.13	AT 022.47
1350.0	1348.88	-11.50	-44.484	-87.37	337.56	43.04 N	16.09 E	0.77	0.38	45.95	AT 020.50
1400.0	1398.83	-13.42	-45.737	-87.38	338.78	45.16 N	15.24 E	0.11	0.06	47.67	AT 018.65
1450.0	1448.78	-15.41	-46.920	-87.30	332.73	47.28 N	14.29 E	0.58	0.29	49.39	AT 016.81
1500.0	1498.70	-17.90	-47.970	-86.50	324.19	49.56 N	12.85 E	1.84	0.92	51.20	AT 014.54
1550.0	1548.62	-20.67	-48.771	-86.86	317.65	51.81 N	11.04 E	1.04	0.52	52.97	AT 012.03
1600.0	1598.54	-23.38	-49.237	-86.84	311.91	53.74 N	9.09 E	0.63	0.32	54.51	AT 009.60
1650.0	1648.46	-26.18	-49.537	-86.69	310.34	55.60 N	6.96 E	0.35	0.17	56.03	AT 007.14

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311 WELL NAME: RS-501 / VS 035.00

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
1700.0	1698.38	-29.05	-49.817	-86.71	310.82	57.47 N	4.78 E	0.07	0.03	57.67	AT 004.75

```
*************************************************************
*                          ********                         *
*       THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF         *
*                          ********                         *
*  1700.0 FEET EQUALS      57.67    FEET AT   004.75        *
*                          ********                         *
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WELNAV

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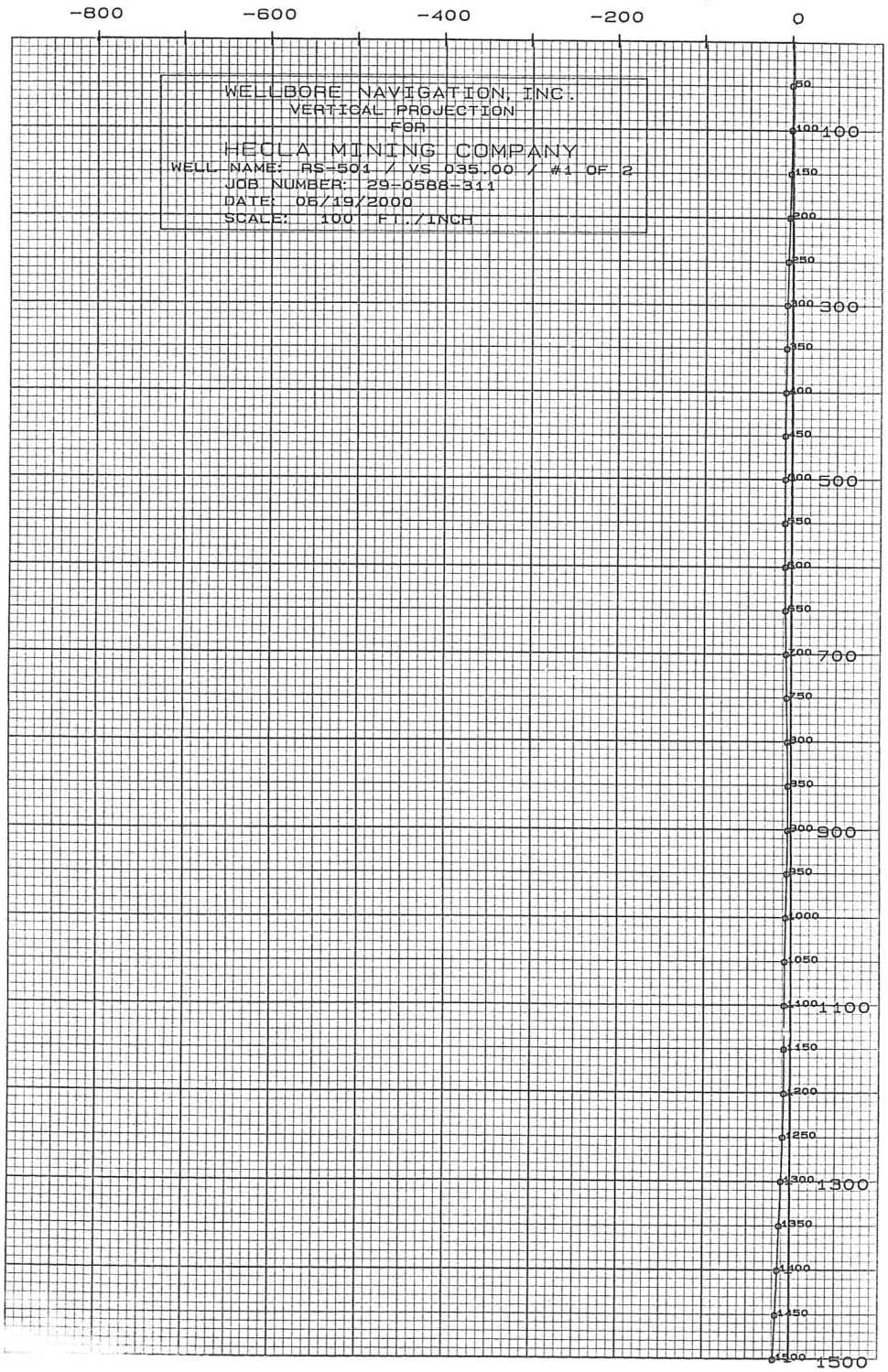

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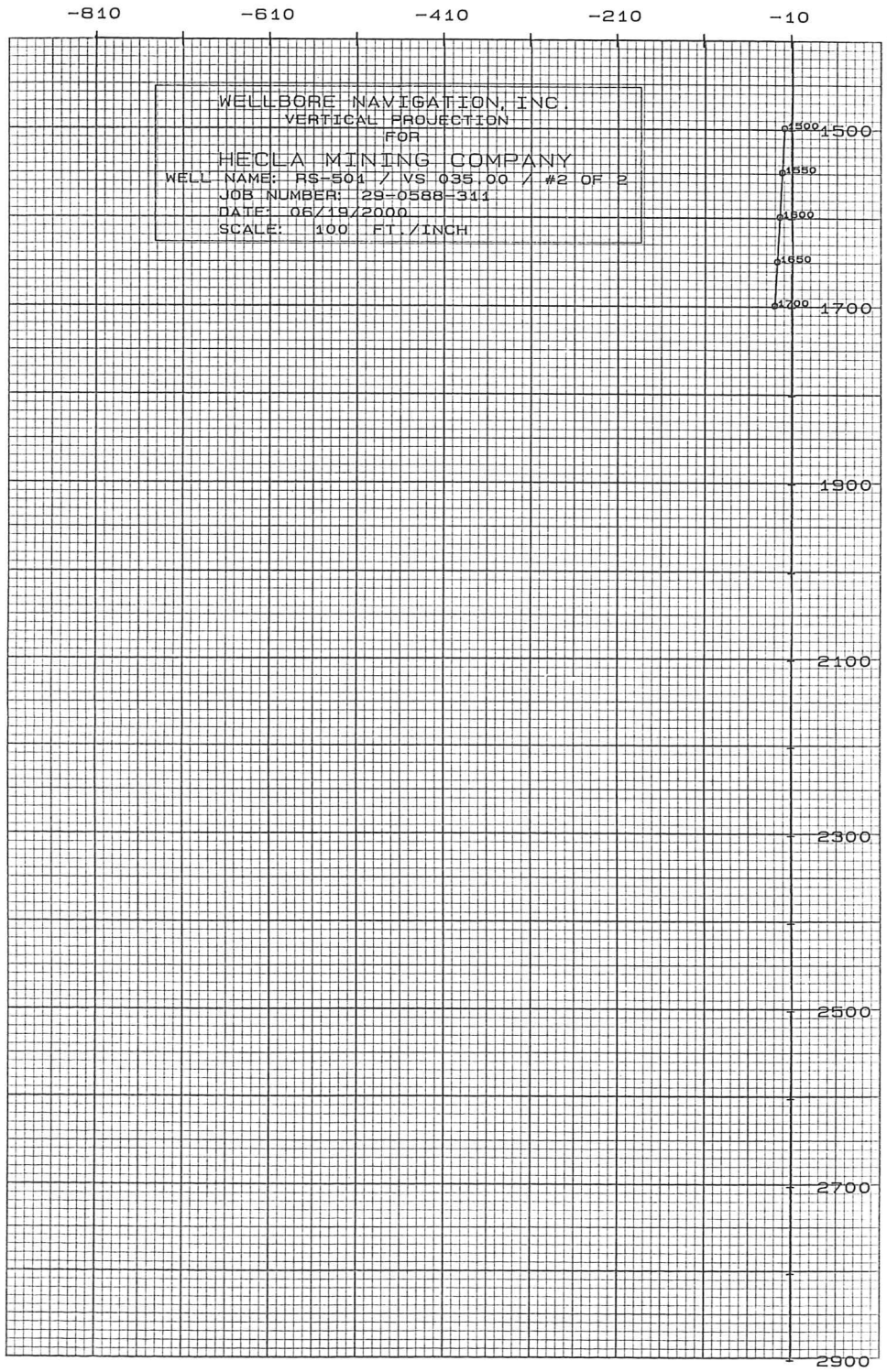

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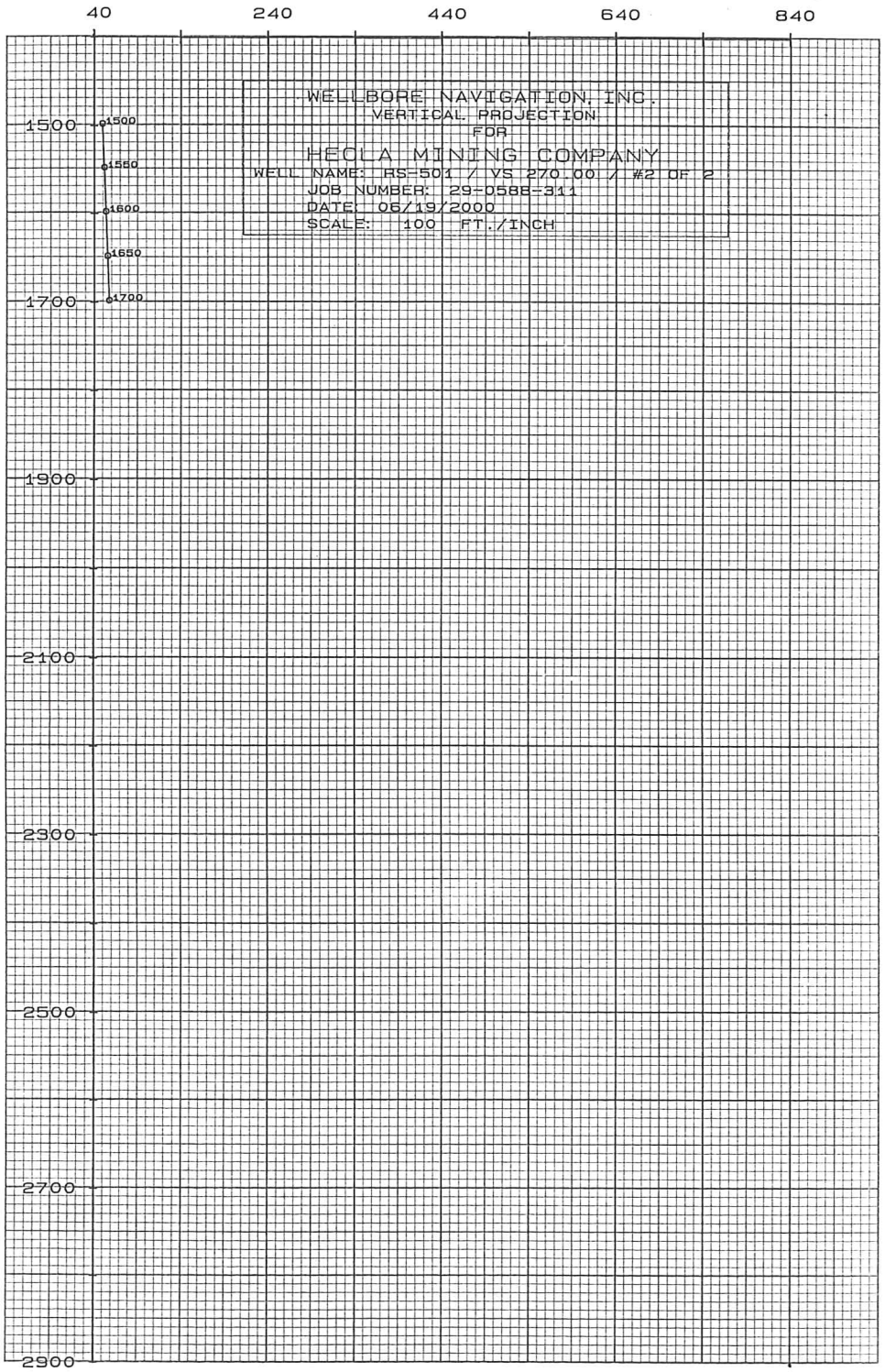

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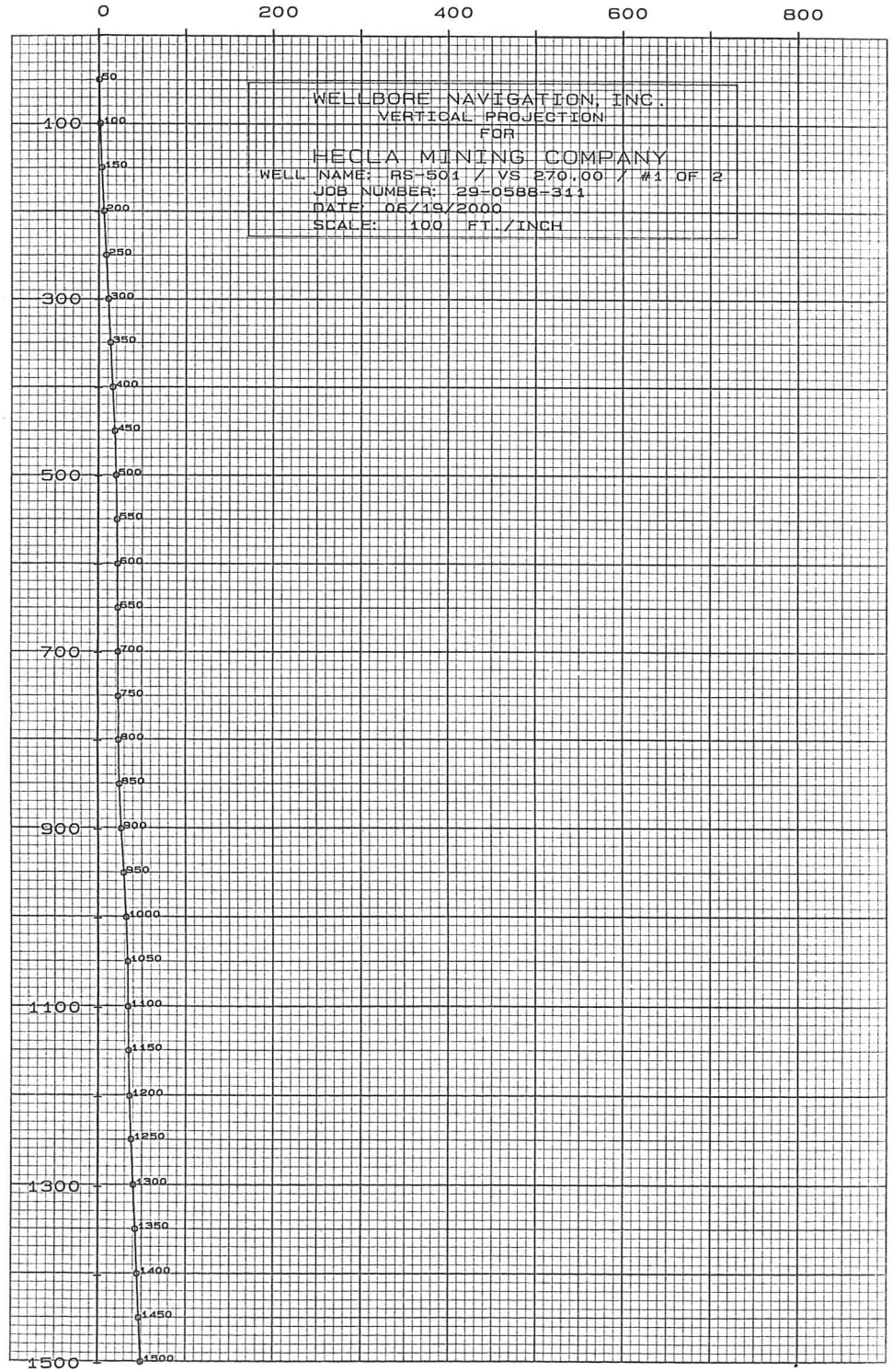

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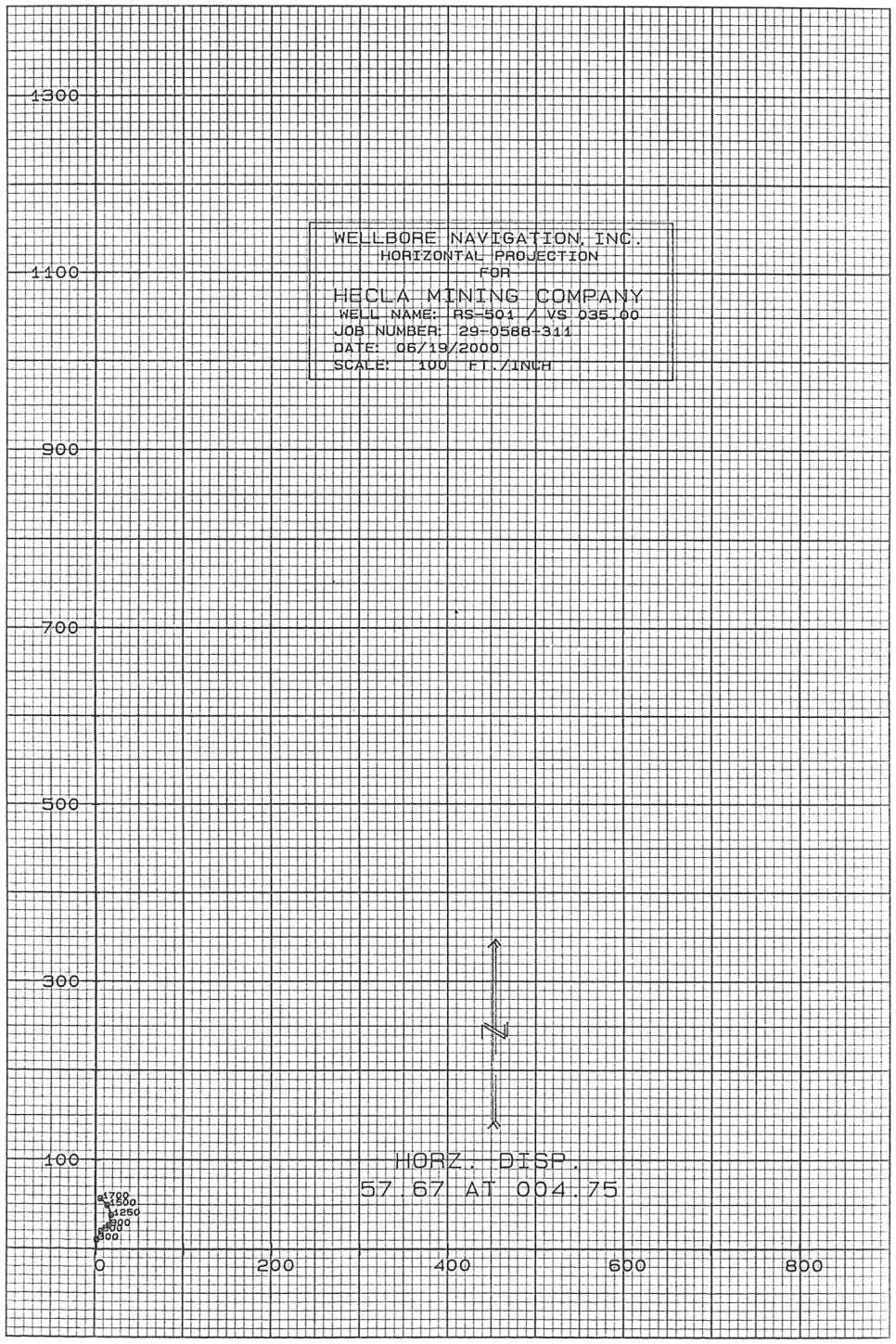

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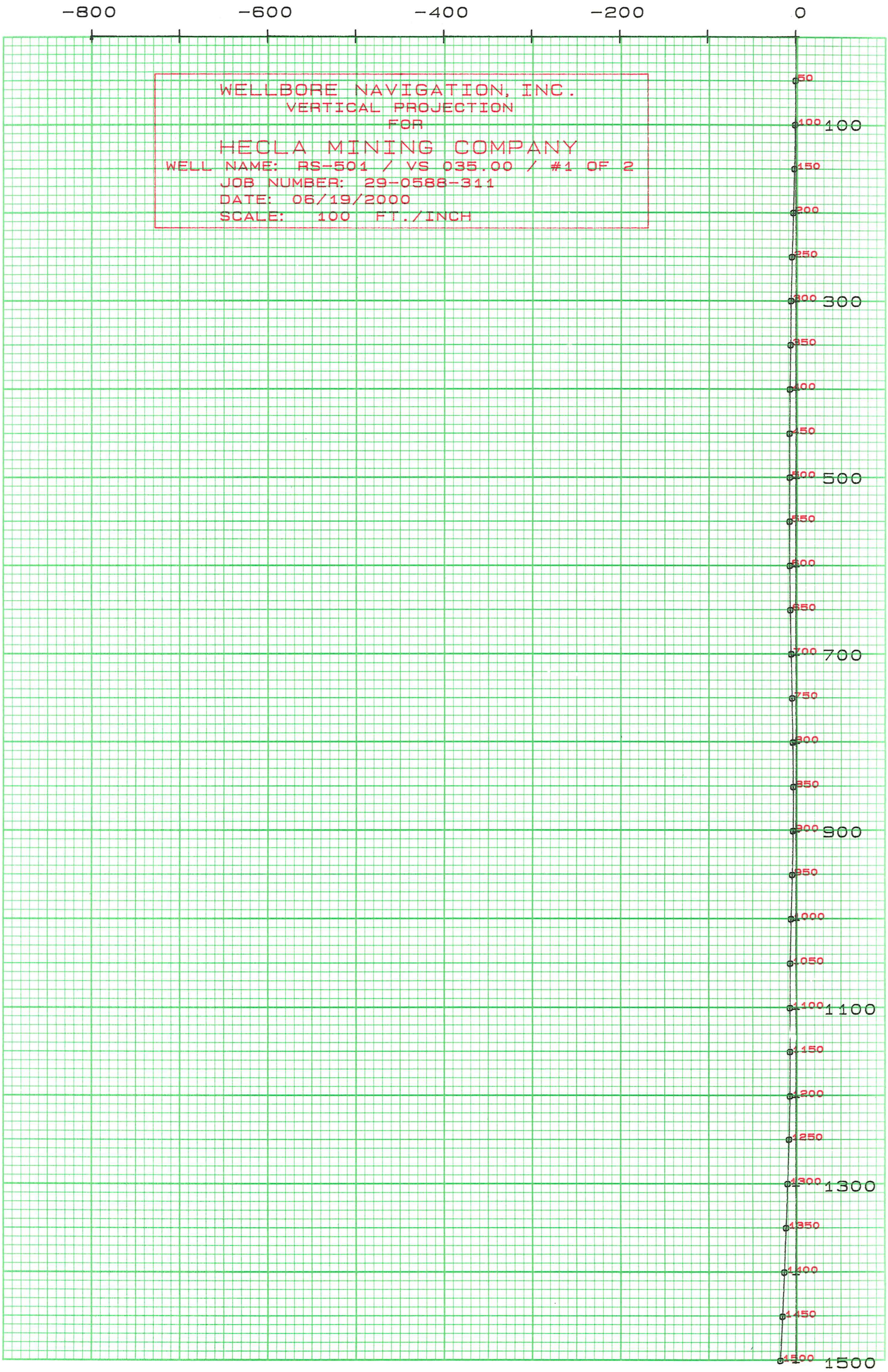

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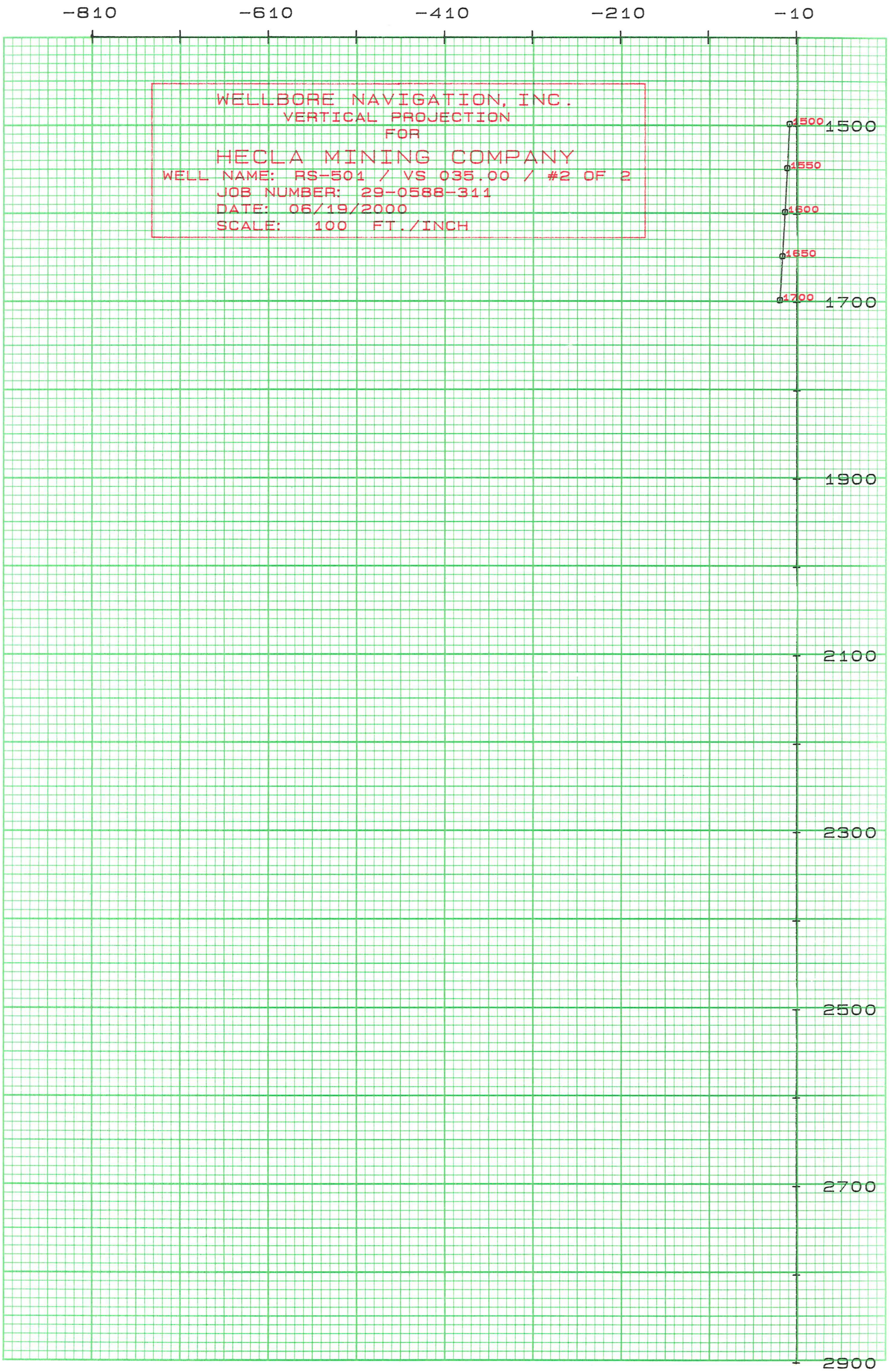

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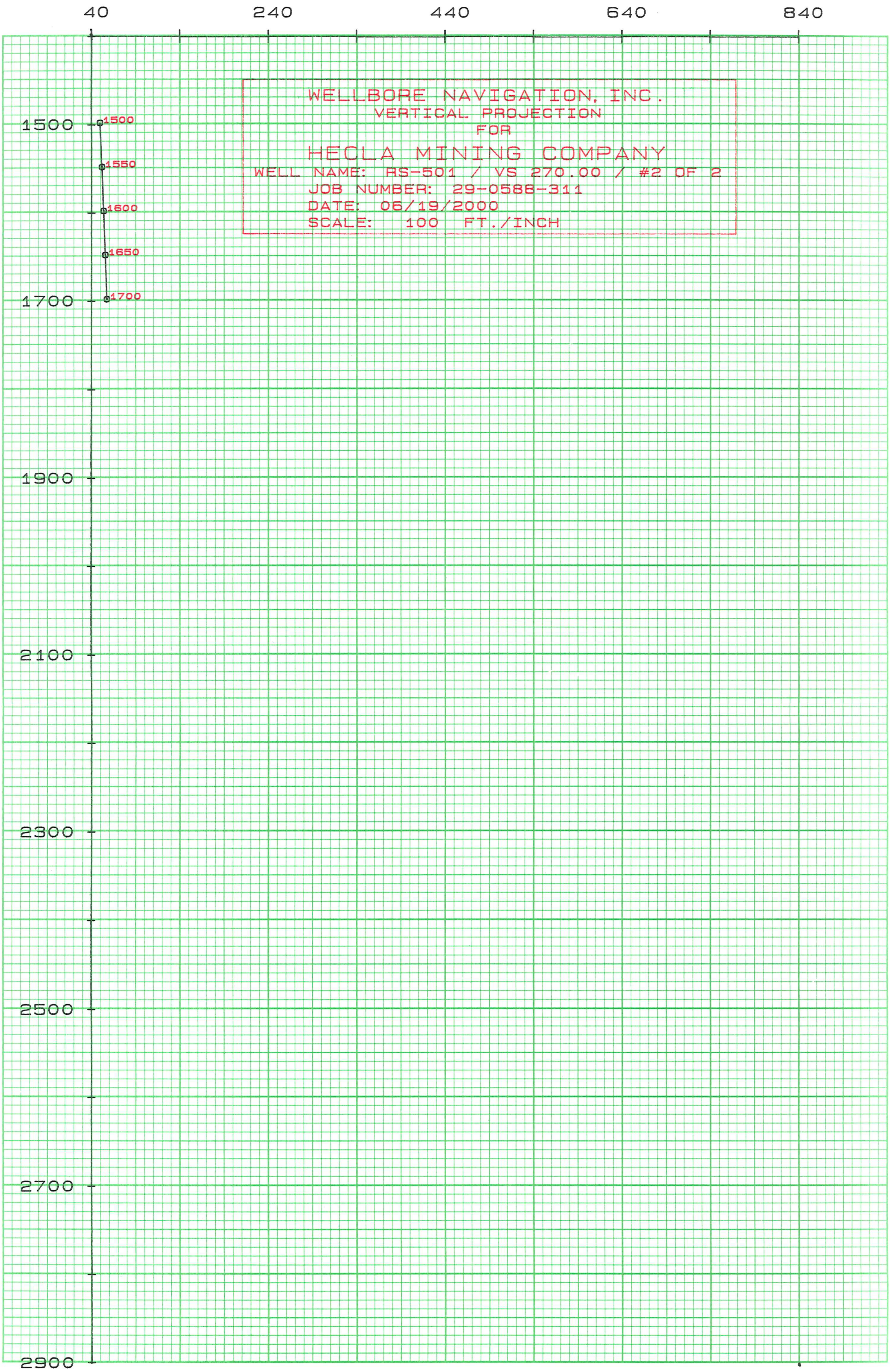

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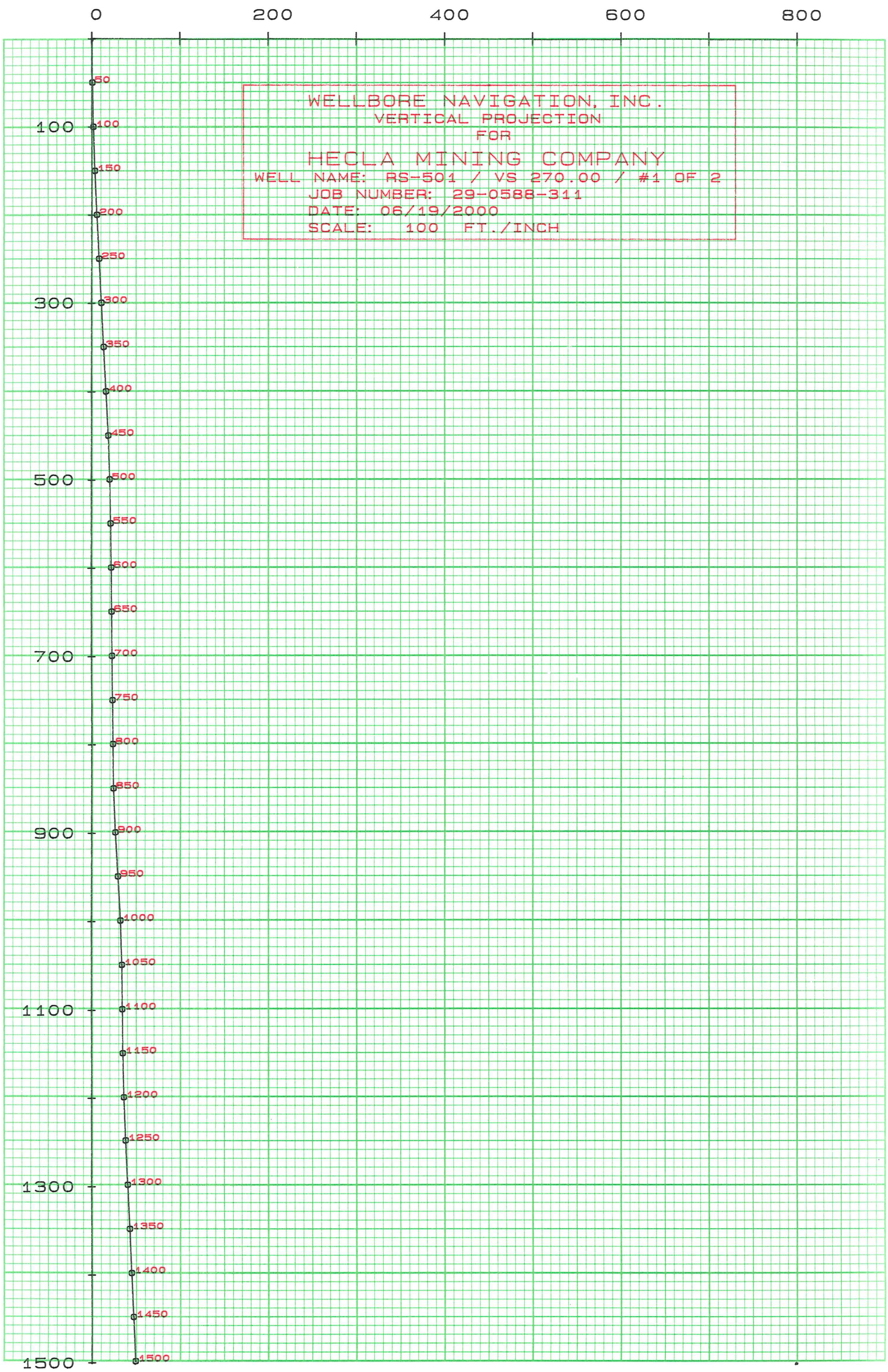
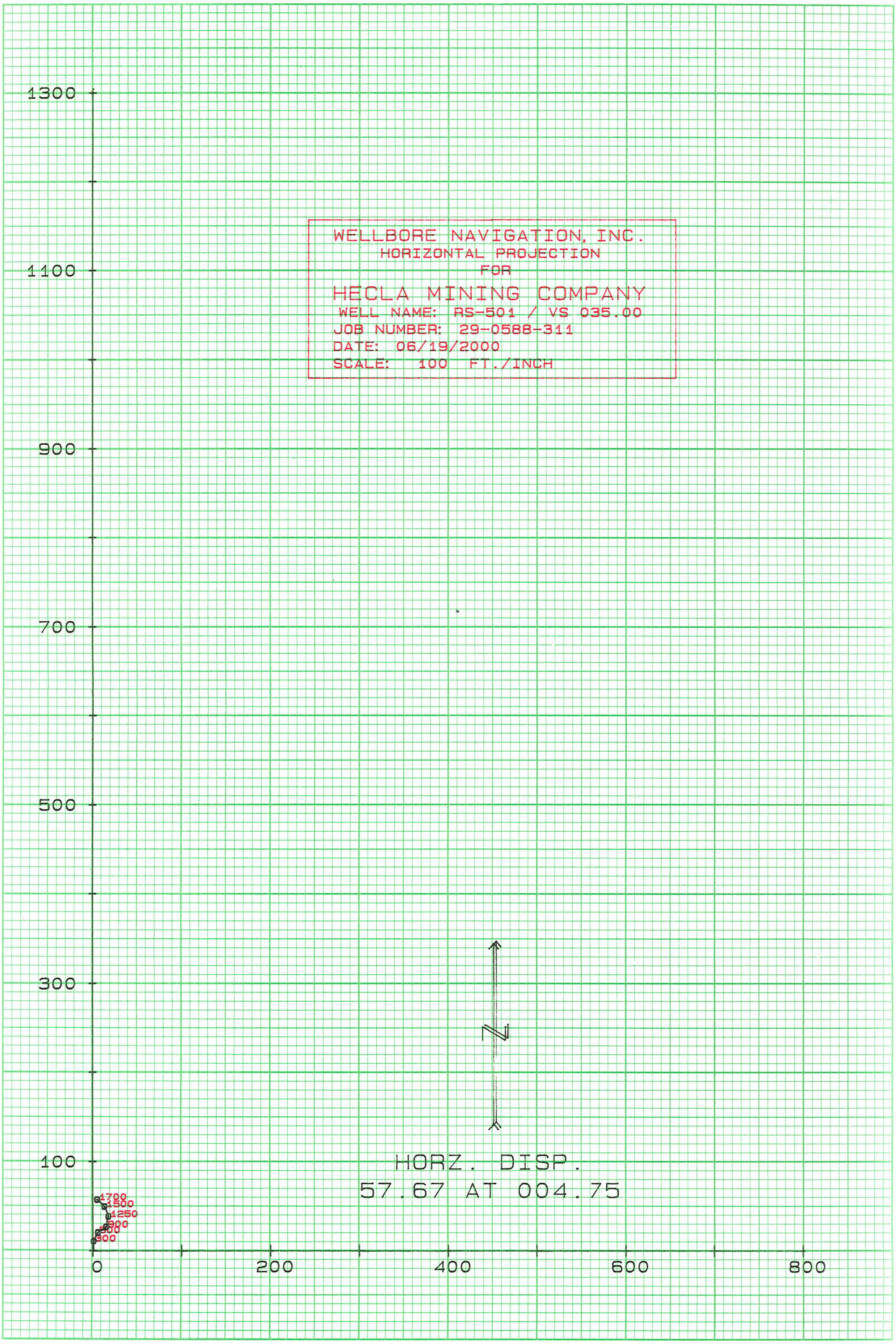
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