

Mining District File Summary Sheet

DISTRICT	Rosebud
DIST_NO	4010
COUNTY <small>If different from written on document</small>	Pershing
TITLE <small>If not obvious</small>	Rosebud Drill Hole File - Hole No. RS-490
AUTHOR	D. Schuerl; J. P. Rogowski; V. Reid; K. Allen; B Morris; L. B. Mackedon
DATE OF DOC(S)	2000
MULTI_DIST Y / N? <input checked="" type="radio"/> Y	
Additional Dist Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME <small>(mine, claim &amp; company names)</small>	Rosebud Mine; Rosebud Mining Co. LLC; North Equinox; Hecla Mining Co.
COMMODITY <small>If not obvious</small>	gold; silver
NOTES	drill logs; geology; assay; total depth 1600'  39p.

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: DB 3/20/08  
Initials Date

DB: \_\_\_\_\_  
Initials Date

SCANNED: \_\_\_\_\_  
Initials Date

RS-490

yr 2000

N. Equinox

60000611

4610













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

HOLE NUMBER RS-490  
 PAGE 6 OF 17  
 DATE \_\_\_\_\_  
 LOGGED BY \_\_\_\_\_  
 TOTAL DEPTH \_\_\_\_\_

LOCATION ROSEBUD, NV  
 NORTHING \_\_\_\_\_  
 EASTING \_\_\_\_\_  
 ELEVATION \_\_\_\_\_  
 AZIMUTH \_\_\_\_\_  
 INCLINATION \_\_\_\_\_

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

6/17

FEET	GRAPHIC	BOX TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION												MINERALIZATION								METALLURGY				ANALYTICAL DATA									
						SILICIFICATION					ARGILLIC			PROPYLIC %		POTASSIC %		OXIDATION			VENING		SULFIDES			PY	CPY	MAP	K-SULF	STROM	BART	OXIDE	SULF	ORSON	MOCLRE	FROM	TO	W	Au
5%	15%	+25%	HAZE	CLUST	5%	15%	+25%	TYPE	CLORP	CLORP	K-SPR	ILMNE	5%	15%	+25%	%	TYPE	5%	15%	+25%	%	TYPE	5%	15%	+25%	%	TYPE	OXIDE	SULF	ORSON	MOCLRE	FROM	TO	W	Au	Ag			
400		Flow by	400-480 m.x.ln. ground mass		MH	1																																	
410		Flow by	w/ specularite specks			tr																																	
420		Flow by	Feld. Phytic (see Globo plag & KSO4 - all alt to wt clay) occa let Flow banding some blk Limo			tr																																	
430		Flow by	on fract.		VH	3																																	
440		Flow by				tr																																	
450		Flow by				tr																																	
460		Flow by				1																																	
470		Flow by	see sandstone alt to wt clay			2																																	
480		Flow by				tr																																	
490		Flow by	480-500 pinkish gray vfxln matrix w globof plag & definite clay alt sandstone		H	0																																	
500		Flow by	tr clay alt of phos		H	0																																	

Porphyritic Rhyo if low  
 Gray & Heavy Red  
 Porphyritic Rhyo  
 Gray & Heavy Red  
 Porphyritic Rhyo  
 Gray & Heavy Red

Jarosite  
 siliceous  
 gray sulfide  
 CP in Reddish  
 str.

white  
w/ DIS  
Py

tr  
plag  
phos























WELLBORE NAVIGATION, INC.  
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY  
BY MINIMUM CURVATURE

FOR

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

JOB NUMBER: 29-0588-311

WELL NAME: RS-490

LOCATION: ROSEBUD MINE

SURVEY DATE: 02/13/2000

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

TIE-ON COORDINATES AT: 0 M.D.

TAKEN FROM: COLLAR

WATER CONTACT= 1460'

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

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

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

WELLBORE NAVIGATION, INC.  
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311

WELL NAME: RS-490

INRUN SURVEY  
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R CLOS.	INCL HORZ	BEARING AZIMUTH	COORDINATES LATITUDE	DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION	TEMP. DEG F
0.0	0.00	0.00	0.000	-89.39	257.11	0.00 N	0.00 E	0.00		0.00 AT 000.00		
50.0	49.99	0.16	0.712	-88.91	235.53	0.33 S	0.65 W	1.14	0.57	0.73 AT 243.24		038.70
100.0	99.98	0.78	1.920	-87.97	225.00	1.22 S	1.67 W	1.96	0.98	2.07 AT 233.76		041.06
150.0	149.92	2.27	3.660	-86.73	209.10	3.10 S	2.99 W	2.86	1.43	4.30 AT 224.00		044.46
200.0	199.83	4.70	5.454	-86.29	196.01	5.90 S	4.13 W	1.81	0.91	7.20 AT 215.00		046.01
250.0	249.71	7.61	7.191	-85.94	197.14	9.14 S	5.10 W	0.72	0.36	10.47 AT 209.14		047.52
300.0	299.59	10.86	8.660	-85.81	183.18	12.66 S	5.72 W	2.02	1.01	13.89 AT 204.32		050.19
350.0	349.44	14.44	9.848	-85.54	184.99	16.42 S	5.99 W	0.61	0.30	17.48 AT 200.04		050.52
400.0	399.29	18.18	11.048	-85.45	182.15	20.34 S	6.23 W	0.48	0.24	21.27 AT 197.04		051.74
450.0	449.13	21.99	12.260	-85.38	184.62	24.33 S	6.47 W	0.42	0.21	25.17 AT 194.90		053.29
500.0	498.96	25.89	13.478	-85.23	181.57	28.41 S	6.69 W	0.58	0.29	29.19 AT 193.25		054.63
550.0	548.78	29.91	14.955	-84.92	190.03	32.67 S	7.13 W	1.58	0.79	33.44 AT 192.32		056.11
600.0	598.60	33.83	16.589	-85.33	186.59	36.87 S	7.75 W	1.01	0.50	37.68 AT 191.87		057.49
650.0	648.41	37.81	18.165	-84.85	188.05	41.12 S	8.30 W	0.99	0.50	41.95 AT 191.41		058.81
700.0	698.20	42.07	20.033	-84.47	190.72	45.71 S	9.06 W	0.91	0.45	46.59 AT 191.21		059.96
750.0	747.99	46.37	21.546	-85.01	178.93	50.25 S	9.47 W	2.41	1.21	51.13 AT 190.67		060.95
800.0	797.81	50.47	22.461	-85.36	177.70	54.44 S	9.35 W	0.73	0.36	55.24 AT 189.74		061.67
850.0	847.67	54.03	23.510	-86.08	187.40	58.16 S	9.49 W	2.04	1.02	58.93 AT 189.26		062.70
900.0	897.58	56.87	24.236	-87.14	170.14	61.08 S	9.49 W	2.92	1.46	61.81 AT 188.83		063.58
950.0	947.49	59.80	23.784	-85.93	147.76	63.81 S	8.33 W	3.59	1.79	64.35 AT 187.44		064.44
1000.0	997.43	61.96	22.764	-88.47	120.81	65.65 S	6.81 W	5.59	2.79	66.01 AT 185.92		065.25
1050.0	1047.41	62.94	21.472	-87.78	107.84	66.29 S	5.32 W	1.61	0.81	66.51 AT 184.59		066.05
1100.0	1097.35	64.17	19.554	-87.00	108.73	67.01 S	3.16 W	1.56	0.78	67.08 AT 182.70		067.29
1150.0	1147.29	65.29	17.347	-87.29	095.99	67.55 S	0.74 W	1.39	0.70	67.56 AT 180.63		069.36
1200.0	1197.23	65.74	14.991	-87.14	077.50	67.41 S	1.65 E	1.81	0.91	67.43 AT 178.60		071.02
1250.0	1247.17	65.70	12.499	-87.14	072.24	66.76 S	4.06 E	0.52	0.26	66.88 AT 176.52		072.72
1300.0	1297.12	65.24	10.187	-87.40	056.03	65.74 S	6.19 E	1.62	0.81	66.03 AT 174.62		074.39
1350.0	1347.07	64.50	8.079	-87.48	056.83	64.51 S	8.05 E	0.18	0.09	65.01 AT 172.89		076.11
1400.0	1397.01	63.51	5.907	-87.02	046.39	63.01 S	9.91 E	1.36	0.68	63.78 AT 171.06		077.68
1450.0	1446.93	61.99	3.535	-86.51	040.23	60.95 S	11.83 E	1.23	0.62	62.09 AT 169.01		079.51
1500.0	1496.84	60.42	1.032	-86.70	047.26	58.81 S	13.87 E	0.91	0.46	60.43 AT 166.73		087.98
1520.0	1516.81	59.88	-0.001	-86.62	049.18	58.04 S	14.74 E	0.69	0.14	59.88 AT 165.75		088.11

\*\*\*\*\*  
 \* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF \*  
 \* 1520.0 FEET EQUALS 59.88 FEET AT 165.75 \*  
 \*\*\*\*\*

SP

SUBMITTAL FORM



American Assay Laboratories

Company: Rosebud Mining, LLC

Address: PO Box 2610

City Winnemucca State NV Zip 89446

Telephone Number: (775) ~~776~~<sup>623</sup>-6912 Fax Number: (775) ~~776~~<sup>623</sup>-6967

Project Name: Wildrose South Purchase Order Number: \_\_\_\_\_

Date Submitted: 13 Feb 2000 Number of Samples: 320

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

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

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
Drill Hole RS-490 0 to 1600	RC	AutAg-Use Rosebud Exploration protocol sample prept assays
<u>NOTE: Please make up 20 foot composites of the pulp for ICP + Se trace elements</u>		
<u>1 (one) Pulp - Rosebud Production standard @ end of run</u>		

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:  
Kurt Allen  
PO Box 2610  
Winnemucca NV 89446

Results to:  
Kurt Allen  
Same

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month

[X] Return COD after one month

Comments:

**PROVISIONAL REPORT SP056109**

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-490 RECEIVED : 16 FEB 2000

No. SAMPLES : 321 REPORTED : 7 MAR 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 SPO56109**

CLIENT : HECLA MINING COMPANY  
 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 0000-0005	5	6	<0.001	<0.001	<0.5	<0.02
RS-490 0005-0010	<5		<0.001		<0.5	<0.02
RS-490 0010-0015	<5		<0.001		<0.5	<0.02
RS-490 0015-0020	<5		<0.001		<0.5	<0.02
RS-490 0020-0025	<5		<0.001		<0.5	<0.02
RS-490 0025-0030	<5		<0.001		<0.5	<0.02
RS-490 0030-0035	<5		<0.001		<0.5	<0.02
RS-490 0035-0040	13		<0.001		<0.5	<0.02
RS-490 0040-0045	15		<0.001		<0.5	<0.02
RS-490 0045-0050	55		0.002		3.5	0.10
RS-490 0050-0055	<5		<0.001		<0.5	<0.02
RS-490 0055-0060	<5		<0.001		<0.5	<0.02
RS-490 0060-0065	<5		<0.001		<0.5	<0.02
RS-490 0065-0070	<5		<0.001		<0.5	<0.02
RS-490 0070-0075	<5		<0.001		<0.5	<0.02
RS-490 0075-0080	<5		<0.001		<0.5	<0.02
RS-490 0080-0085	<5		<0.001		<0.5	<0.02
RS-490 0085-0090	<5		<0.001		<0.5	<0.02
RS-490 0090-0095	14		<0.001		<0.5	<0.02
RS-490 0095-0100	59		0.002		<0.5	<0.02
RS-490 0100-0105	<5		<0.001		<0.5	<0.02
RS-490 0105-0110	<5		<0.001		<0.5	<0.02
RS-490 0110-0115	<5		<0.001		<0.5	<0.02
RS-490 0115-0120	<5		<0.001		<0.5	<0.02
RS-490 0120-0125	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

**PROVISIONAL REPORT SP056109**

CLIENT : HECLA MINING COMPANY  
 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 0125-0130	<5		<0.001		<0.5	<0.02
RS-490 0130-0135	<5		<0.001		<0.5	<0.02
RS-490 0135-0140	<5		<0.001		<0.5	<0.02
RS-490 0140-0145	<5		<0.001		<0.5	<0.02
RS-490 0145-0150	<5		<0.001		<0.5	<0.02
RS-490 0150-0155	<5		<0.001		<0.5	<0.02
RS-490 0155-0160	<5		<0.001		<0.5	<0.02
RS-490 0160-0165	<5		<0.001		0.7	0.02
RS-490 0165-0170	<5		<0.001		2.4	0.07
RS-490 0170-0175	<5		<0.001		<0.5	<0.02
RS-490 0175-0180	<5		<0.001		<0.5	<0.02
RS-490 0180-0185	<5		<0.001		<0.5	<0.02
RS-490 0185-0190	<5		<0.001		0.5	<0.02
RS-490 0190-0195	<5		<0.001		<0.5	<0.02
RS-490 0195-0200	<5		<0.001		<0.5	<0.02
RS-490 0200-0205	<5		<0.001		<0.5	<0.02
RS-490 0205-0210	<5		<0.001		<0.5	<0.02
RS-490 0210-0215	<5		<0.001		<0.5	<0.02
RS-490 0215-0220	<5		<0.001		<0.5	<0.02
RS-490 0220-0225	<5		<0.001		<0.5	<0.02
RS-490 0225-0230	<5		<0.001		<0.5	<0.02
RS-490 0230-0235	<5		<0.001		<0.5	<0.02
RS-490 0235-0240	<5		<0.001		<0.5	<0.02
RS-490 0240-0245	<5		<0.001		<0.5	<0.02
RS-490 0245-0250	<5		<0.001		<0.5	<0.02

## AMERICAN ASSAY LABORATORIES

**PROVISIONAL REPORT SP056109**

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 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 0250-0255	<5		<0.001		<0.5	<0.02
RS-490 0255-0260	40		0.001		0.8	0.02
RS-490 0260-0265	<5		<0.001		<0.5	<0.02
RS-490 0265-0270	<5		<0.001		<0.5	<0.02
RS-490 0270-0275	<5		<0.001		<0.5	<0.02
RS-490 0275-0280	<5		<0.001		<0.5	<0.02
RS-490 0280-0285	<5		<0.001		<0.5	<0.02
RS-490 0285-0290	<5		<0.001		<0.5	<0.02
RS-490 0290-0295	<5		<0.001		<0.5	<0.02
RS-490 0295-0300	<5		<0.001		<0.5	<0.02
RS-490 0300-0305	23		<0.001		<0.5	<0.02
RS-490 0305-0310	126	138	0.004	0.004	<0.5	<0.02
RS-490 0310-0315	56		0.002		0.6	<0.02
RS-490 0315-0320	42	50	0.001	0.001	<0.5	<0.02
RS-490 0320-0325	5		<0.001		<0.5	<0.02
RS-490 0325-0330	39		0.001		<0.5	<0.02
RS-490 0330-0335	51		0.001		0.6	<0.02
RS-490 0335-0340	41		0.001		<0.5	<0.02
RS-490 0340-0345	9	16	<0.001	<0.001	<0.5	<0.02
RS-490 0345-0350	<5		<0.001		<0.5	<0.02
RS-490 0350-0355	<5		<0.001		<0.5	<0.02
RS-490 0355-0360	51		0.001		<0.5	<0.02
RS-490 0360-0365	82	87	0.002	0.003	<0.5	<0.02
RS-490 0365-0370	28		<0.001		<0.5	<0.02
RS-490 0370-0375	5	6	<0.001	<0.001	<0.5	<0.02

## PROVISIONAL REPORT SP056109

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 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 0375-0380	<5		<0.001		<0.5	<0.02
RS-490 0380-0385	28		<0.001		0.6	<0.02
RS-490 0385-0390	30		<0.001		0.6	<0.02
RS-490 0390-0395	30		<0.001		0.7	0.02
RS-490 0395-0400	<5		<0.001		<0.5	<0.02
RS-490 0400-0405	11		<0.001		<0.5	<0.02
RS-490 0405-0410	<5		<0.001		<0.5	<0.02
RS-490 0410-0415	13	12	<0.001	<0.001	<0.5	<0.02
RS-490 0415-0420	20	22	<0.001	<0.001	<0.5	<0.02
RS-490 0420-0425	20		<0.001		<0.5	<0.02
RS-490 0425-0430	129	148	0.004	0.004	1.9	0.06
RS-490 0430-0435	306		0.009		1.4	0.04
RS-490 0435-0440	220	221	0.006	0.006	1.0	0.03
RS-490 0440-0445	137		0.004		0.6	<0.02
RS-490 0445-0450	218		0.006		0.9	0.03
RS-490 0450-0455	330	335	0.010	0.010	2.6	0.08
RS-490 0455-0460	324		0.009		2.8	0.08
RS-490 0460-0465	36		0.001		<0.5	<0.02
RS-490 0465-0470	10		<0.001		<0.5	<0.02
RS-490 0470-0475	86		0.003		1.0	0.03
RS-490 0475-0480	8		<0.001		<0.5	<0.02
RS-490 0480-0485	10		<0.001		<0.5	<0.02
RS-490 0485-0490	6		<0.001		<0.5	<0.02
RS-490 0490-0495	<5		<0.001		<0.5	<0.02
RS-490 0495-0500	<5		<0.001		<0.5	<0.02

## AMERICAN ASSAY LABORATORIES

## PROVISIONAL REPORT SP056109

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 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 0500-0505	<5		<0.001		<0.5	<0.02
RS-490 0505-0510	<5		<0.001		<0.5	<0.02
RS-490 0510-0515	<5		<0.001		<0.5	<0.02
RS-490 0515-0520	<5		<0.001		<0.5	<0.02
RS-490 0520-0525	5		<0.001		<0.5	<0.02
RS-490 0525-0530	<5		<0.001		<0.5	<0.02
RS-490 0530-0535	<5		<0.001		<0.5	<0.02
RS-490 0535-0540	45	38	0.001	0.001	0.5	<0.02
RS-490 0540-0545	6		<0.001		0.5	<0.02
RS-490 0545-0550	8		<0.001		<0.5	<0.02
RS-490 0550-0555	82		0.002		0.5	<0.02
RS-490 0555-0560	8		<0.001		<0.5	<0.02
RS-490 0560-0565	<5		<0.001		<0.5	<0.02
RS-490 0565-0570	<5		<0.001		<0.5	<0.02
RS-490 0570-0575	<5		<0.001		<0.5	<0.02
RS-490 0575-0580	13		<0.001		<0.5	<0.02
RS-490 0580-0585	15		<0.001		<0.5	<0.02
RS-490 0585-0590	5		<0.001		<0.5	<0.02
RS-490 0590-0595	6		<0.001		<0.5	<0.02
RS-490 0595-0600	44		0.001		0.6	<0.02
RS-490 0600-0605	7		<0.001		<0.5	<0.02
RS-490 0605-0610	<5		<0.001		<0.5	<0.02
RS-490 0610-0615	<5		<0.001		<0.5	<0.02
RS-490 0615-0620	24	28	<0.001	<0.001	<0.5	<0.02
RS-490 0620-0625	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

**PROVISIONAL REPORT SP056109**

CLIENT : HECLA MINING COMPANY  
 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 0625-0630	<5		<0.001		<0.5	<0.02
RS-490 0630-0635	<5		<0.001		<0.5	<0.02
RS-490 0635-0640	<5		<0.001		<0.5	<0.02
RS-490 0640-0645	<5		<0.001		<0.5	<0.02
RS-490 0645-0650	6		<0.001		<0.5	<0.02
RS-490 0650-0655	35	27	0.001	<0.001	<0.5	<0.02
RS-490 0655-0660	50	42	0.001	0.001	0.5	<0.02
RS-490 0660-0665	32	20	<0.001	<0.001	<0.5	<0.02
RS-490 0665-0670	10		<0.001		<0.5	<0.02
RS-490 0670-0675	8		<0.001		<0.5	<0.02
RS-490 0675-0680	<5		<0.001		<0.5	<0.02
RS-490 0680-0685	5		<0.001		<0.5	<0.02
RS-490 0685-0690	6		<0.001		<0.5	<0.02
RS-490 0690-0695	10		<0.001		<0.5	<0.02
RS-490 0695-0700	8		<0.001		<0.5	<0.02
RS-490 0700-0705	6		<0.001		<0.5	<0.02
RS-490 0705-0710	5		<0.001		<0.5	<0.02
RS-490 0710-0715	<5		<0.001		<0.5	<0.02
RS-490 0715-0720	5		<0.001		<0.5	<0.02
RS-490 0720-0725	<5		<0.001		<0.5	<0.02
RS-490 0725-0730	6		<0.001		<0.5	<0.02
RS-490 0730-0735	5		<0.001		<0.5	<0.02
RS-490 0735-0740	5		<0.001		<0.5	<0.02
RS-490 0740-0745	7		<0.001		<0.5	<0.02
RS-490 0745-0750	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

**PROVISIONAL REPORT SP056109**

CLIENT : HECLA MINING COMPANY  
 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 0750-0755	<5		<0.001		<0.5	<0.02
RS-490 0755-0760	<5		<0.001		<0.5	<0.02
RS-490 0760-0765	<5		<0.001		<0.5	<0.02
RS-490 0765-0770	<5		<0.001		<0.5	<0.02
RS-490 0770-0775	5		<0.001		<0.5	<0.02
RS-490 0775-0780	<5		<0.001		<0.5	<0.02
RS-490 0780-0785	5		<0.001		<0.5	<0.02
RS-490 0785-0790	6		<0.001		<0.5	<0.02
RS-490 0790-0795	6		<0.001		<0.5	<0.02
RS-490 0795-0800	<5	6	<0.001	<0.001	<0.5	<0.02
RS-490 0800-0805	10		<0.001		<0.5	<0.02
RS-490 0805-0810	7		<0.001		<0.5	<0.02
RS-490 0810-0815	<5		<0.001		<0.5	<0.02
RS-490 0815-0820	<5		<0.001		<0.5	<0.02
RS-490 0820-0825	<5		<0.001		<0.5	<0.02
RS-490 0825-0830	6	<5	<0.001	<0.001	<0.5	<0.02
RS-490 0830-0835	7		<0.001		<0.5	<0.02
RS-490 0835-0840	<5		<0.001		<0.5	<0.02
RS-490 0840-0845	<5		<0.001		<0.5	<0.02
RS-490 0845-0850	<5		<0.001		<0.5	<0.02
RS-490 0850-0855	<5		<0.001		<0.5	<0.02
RS-490 0855-0860	<5		<0.001		<0.5	<0.02
RS-490 0860-0865	<5		<0.001		<0.5	<0.02
RS-490 0865-0870	6		<0.001		<0.5	<0.02
RS-490 0870-0875	67	75	0.002	0.002	<0.5	<0.02

AMERICAN ASSAY LABORATORIES

**PROVISIONAL REPORT SP056109**

CLIENT : HECLA MINING COMPANY  
 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 0875-0880	61		0.002		<0.5	<0.02
RS-490 0880-0885	83		0.002		0.7	0.02
RS-490 0885-0890	54		0.002		0.6	<0.02
RS-490 0890-0895	124		0.004		0.8	0.02
RS-490 0895-0900	61		0.002		<0.5	<0.02
RS-490 0900-0905	20		<0.001		<0.5	<0.02
RS-490 0905-0910	90	100	0.003	0.003	0.8	0.02
RS-490 0910-0915	68		0.002		0.8	0.02
RS-490 0915-0920	40		0.001		<0.5	<0.02
RS-490 0920-0925	<5		<0.001		<0.5	<0.02
RS-490 0925-0930	<5		<0.001		<0.5	<0.02
RS-490 0930-0935	<5		<0.001		<0.5	<0.02
RS-490 0935-0940	7		<0.001		<0.5	<0.02
RS-490 0940-0945	8	12	<0.001	<0.001	<0.5	<0.02
RS-490 0945-0950	103		0.003		0.5	<0.02
RS-490 0950-0955	126	136	0.004	0.004	0.9	0.03
RS-490 0955-0960	159	170	0.005	0.005	1.6	0.05
RS-490 0960-0965	161		0.005		1.4	0.04
RS-490 0965-0970	105		0.003		0.8	0.02
RS-490 0970-0975	158		0.005		1.8	0.05
RS-490 0975-0980	174		0.005		1.7	0.05
RS-490 0980-0985	128		0.004		1.1	0.03
RS-490 0985-0990	124		0.004		0.8	0.02
RS-490 0990-0995	168		0.005		1.9	0.06
RS-490 0995-1000	141		0.004		1.5	0.04

## AMERICAN ASSAY LABORATORIES

**PROVISIONAL REPORT SP058109**

CLIENT : HECLA MINING COMPANY  
 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 1000-1005	98		0.003		0.9	0.03
RS-490 1005-1010	187		0.005		2.5	0.07
RS-490 1010-1015	158	152	0.005	0.004	1.4	0.04
RS-490 1015-1020	85		0.002		0.6	<0.02
RS-490 1020-1025	105		0.003		1.0	0.03
RS-490 1025-1030	112		0.003		0.7	0.02
RS-490 1030-1035	95	90	0.003	0.003	0.9	0.03
RS-490 1035-1040	187		0.005		0.5	<0.02
RS-490 1040-1045	69	78	0.002	0.002	0.5	<0.02
RS-490 1045-1050	113		0.003		1.1	0.03
RS-490 1050-1055	60		0.002		0.5	<0.02
RS-490 1055-1060	93		0.003		<0.5	<0.02
RS-490 1060-1065	87		0.003		0.6	<0.02
RS-490 1065-1070	108		0.003		0.9	0.03
RS-490 1070-1075	127		0.004		2.5	0.07
RS-490 1075-1080	121		0.004		3.3	0.10
RS-490 1080-1085	42		0.001		0.8	0.02
RS-490 1085-1090	15		<0.001		<0.5	<0.02
RS-490 1090-1095	35		0.001		0.7	0.02
RS-490 1095-1100	35		0.001		0.8	0.02
RS-490 1100-1105	18	10	<0.001	<0.001	<0.5	<0.02
RS-490 1105-1110	<5		<0.001		<0.5	<0.02
RS-490 1110-1115	7		<0.001		<0.5	<0.02
RS-490 1115-1120	13		<0.001		<0.5	<0.02
RS-490 1120-1125	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

**PROVISIONAL REPORT SP056109**

CLIENT : HECLA MINING COMPANY  
 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 1125-1130	<5		<0.001		<0.5	<0.02
RS-490 1130-1135	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-490 1135-1140	<5		<0.001		<0.5	<0.02
RS-490 1140-1145	<5		<0.001		<0.5	<0.02
RS-490 1145-1150	10		<0.001		<0.5	<0.02
RS-490 1150-1155	9		<0.001		<0.5	<0.02
RS-490 1155-1160	8		<0.001		<0.5	<0.02
RS-490 1160-1165	<5		<0.001		<0.5	<0.02
RS-490 1165-1170	6		<0.001		<0.5	<0.02
RS-490 1170-1175	<5		<0.001		<0.5	<0.02
RS-490 1175-1180	<5		<0.001		<0.5	<0.02
RS-490 1180-1185	6		<0.001		<0.5	<0.02
RS-490 1185-1190	8	6	<0.001	<0.001	<0.5	<0.02
RS-490 1190-1195	<5		<0.001		<0.5	<0.02
RS-490 1195-1200	6		<0.001		<0.5	<0.02
RS-490 1200-1205	<5		<0.001		<0.5	<0.02
RS-490 1205-1210	<5		<0.001		<0.5	<0.02
RS-490 1210-1215	<5		<0.001		<0.5	<0.02
RS-490 1215-1220	<5		<0.001		<0.5	<0.02
RS-490 1220-1225	<5		<0.001		<0.5	<0.02
RS-490 1225-1230	<5		<0.001		<0.5	<0.02
RS-490 1230-1235	<5		<0.001		<0.5	<0.02
RS-490 1235-1240	<5		<0.001		<0.5	<0.02
RS-490 1240-1245	<5		<0.001		<0.5	<0.02
RS-490 1245-1250	8		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

**PROVISIONAL REPORT SPO56109**

CLIENT : HECLA MINING COMPANY  
 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 1250-1255	<5		<0.001		<0.5	<0.02
RS-490 1255-1260	<5		<0.001		<0.5	<0.02
RS-490 1260-1265	<5		<0.001		<0.5	<0.02
RS-490 1265-1270	<5		<0.001		<0.5	<0.02
RS-490 1270-1275	<5		<0.001		<0.5	<0.02
RS-490 1275-1280	<5		<0.001		<0.5	<0.02
RS-490 1280-1285	<5		<0.001		<0.5	<0.02
RS-490 1285-1290	<5		<0.001		<0.5	<0.02
RS-490 1290-1295	<5		<0.001		<0.5	<0.02
RS-490 1295-1300	<5		<0.001		<0.5	<0.02
RS-490 1300-1305	11		<0.001		<0.5	<0.02
RS-490 1305-1310	<5		<0.001		<0.5	<0.02
RS-490 1310-1315	<5		<0.001		<0.5	<0.02
RS-490 1315-1320	<5		<0.001		<0.5	<0.02
RS-490 1320-1325	8		<0.001		<0.5	<0.02
RS-490 1325-1330	8		<0.001		<0.5	<0.02
RS-490 1330-1335	5		<0.001		<0.5	<0.02
RS-490 1335-1340	6		<0.001		<0.5	<0.02
RS-490 1340-1345	7		<0.001		<0.5	<0.02
RS-490 1345-1350	<5		<0.001		<0.5	<0.02
RS-490 1350-1355	5		<0.001		<0.5	<0.02
RS-490 1355-1360	<5		<0.001		<0.5	<0.02
RS-490 1360-1365	<5		<0.001		<0.5	<0.02
RS-490 1365-1370	5		<0.001		<0.5	<0.02
RS-490 1370-1375	7		<0.001		<0.5	<0.02

## AMERICAN ASSAY LABORATORIES

## PROVISIONAL REPORT SP056109

CLIENT : HECLA MINING COMPANY  
 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 1375-1380	<5		<0.001		<0.5	<0.02
RS-490 1380-1385	<5		<0.001		<0.5	<0.02
RS-490 1385-1390	<5		<0.001		<0.5	<0.02
RS-490 1390-1395	5		<0.001		<0.5	<0.02
RS-490 1395-1400	6		<0.001		<0.5	<0.02
RS-490 1400-1405	18		<0.001		<0.5	<0.02
RS-490 1405-1410	28		<0.001		<0.5	<0.02
RS-490 1410-1415	22		<0.001		<0.5	<0.02
RS-490 1415-1420	10		<0.001		<0.5	<0.02
RS-490 1420-1425	44	55	0.001	0.002	3.4	0.10
RS-490 1425-1430	32		<0.001		1.1	0.03
RS-490 1430-1435	14		<0.001		0.7	0.02
RS-490 1435-1440	40		0.001		1.7	0.05
RS-490 1440-1445	25	20	<0.001	<0.001	1.2	0.04
RS-490 1445-1450	80	70	0.002	0.002	1.1	0.03
RS-490 1450-1455	11		<0.001		<0.5	<0.02
RS-490 1455-1460	15		<0.001		1.0	0.03
RS-490 1460-1465	137		0.004		1.9	0.06
RS-490 1465-1470	249	236	0.007	0.007	4.7	0.14
RS-490 1470-1475	67		0.002		3.5	0.10
RS-490 1475-1480	532	544	0.016	0.016	22.0	0.64
RS-490 1480-1485	161		0.005		3.8	0.11
RS-490 1485-1490	111		0.003		3.3	0.10
RS-490 1490-1495	130		0.004		2.3	0.07
RS-490 1495-1500	507		0.015		36.5	1.06

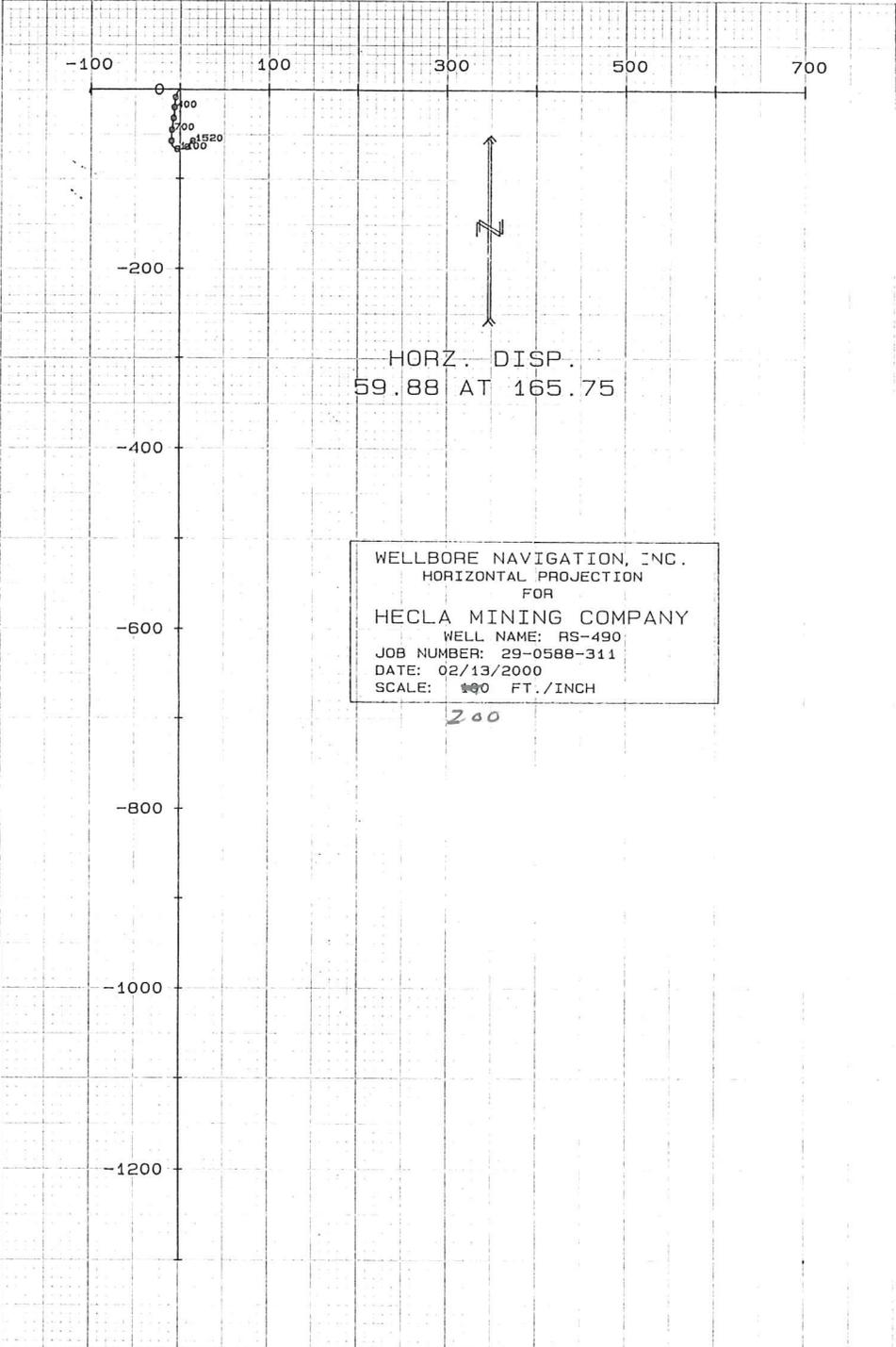
AMERICAN ASSAY LABORATORIES

**PROVISTIONAL REPORT SPO56109**

CLIENT : HECLA MINING COMPANY  
 PROJECT : ROSEBUD  
 REFERENCE : RS-490  
 REPORTED : 7 MAR 2000

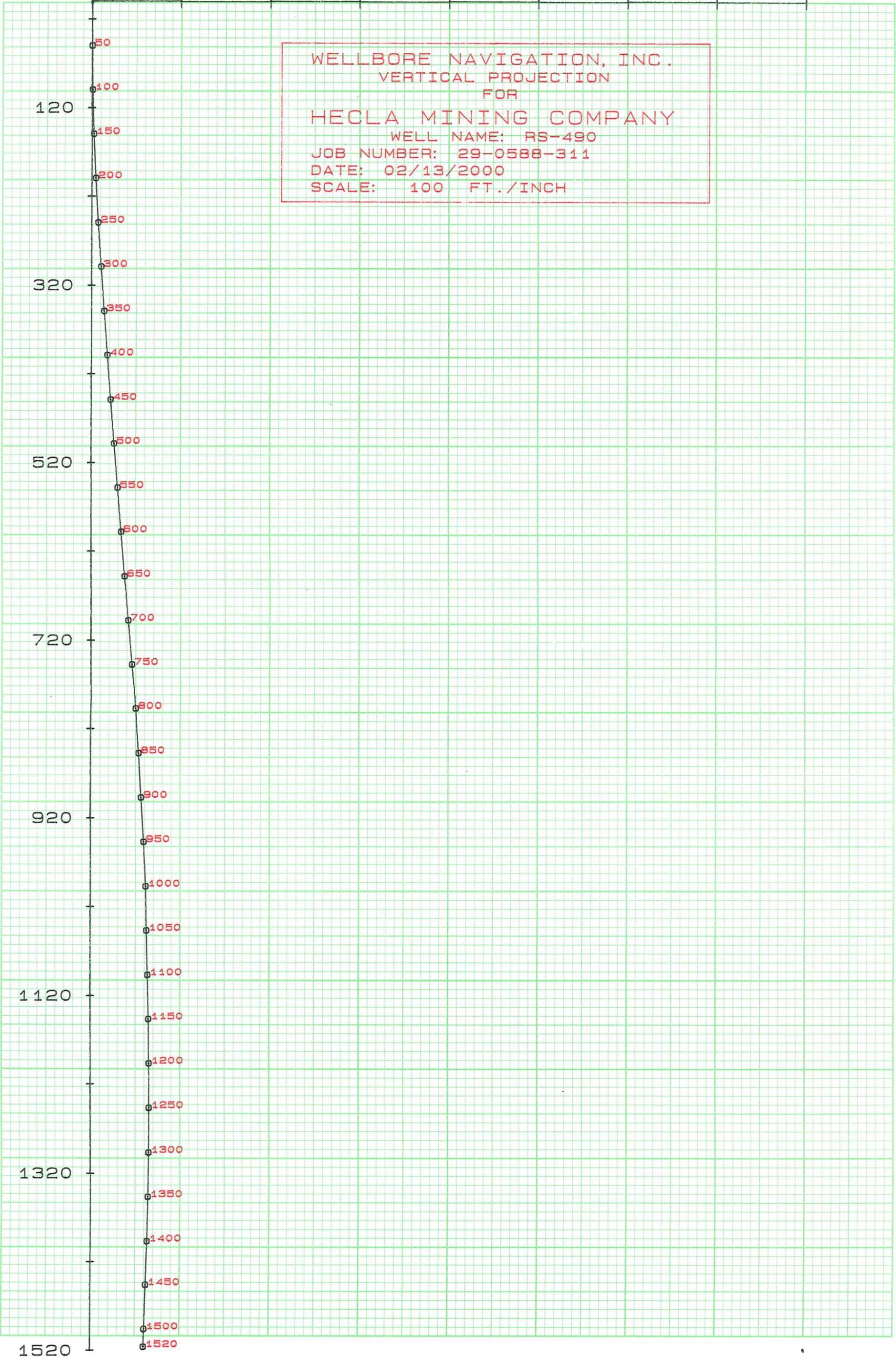
SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-490 1500-1505	111		0.003		4.1	0.12
RS-490 1505-1510	110		0.003		2.7	0.08
RS-490 1510-1515	45		0.001		1.5	0.04
RS-490 1515-1520	56		0.002		1.8	0.05
RS-490 1520-1525	93		0.003		1.7	0.05
RS-490 1525-1530	81		0.002		2.2	0.06
RS-490 1530-1535	111		0.003		1.9	0.06
RS-490 1535-1540	100		0.003		2.8	0.08
RS-490 1540-1545	26		<0.001		0.9	0.03
RS-490 1545-1550	<5		<0.001		0.5	<0.02
RS-490 1550-1555	<5		<0.001		<0.5	<0.02
RS-490 1555-1560	<5		<0.001		<0.5	<0.02
RS-490 1560-1565	<5		<0.001		0.5	<0.02
RS-490 1565-1570	<5		<0.001		<0.5	<0.02
RS-490 1570-1575	<5		<0.001		<0.5	<0.02
RS-490 1575-1580	<5		<0.001		<0.5	<0.02
RS-490 1580-1585	<5		<0.001		<0.5	<0.02
RS-490 1585-1590	<5		<0.001		<0.5	<0.02
RS-490 1590-1595	<5		<0.001		<0.5	<0.02
RS-490 1595-1600	<5		<0.001		<0.5	<0.02
89548	12840		0.375		109.6	3.20





0 200 400 600 800

WELLBORE NAVIGATION, INC.  
VERTICAL PROJECTION  
FOR  
HECLA MINING COMPANY  
WELL NAME: RS-490  
JOB NUMBER: 29-0588-311  
DATE: 02/13/2000  
SCALE: 100 FT./INCH



1520

-100                      100                      300                      500                      700

400  
700  
1520  
1800



HORZ. DISP.  
59.88 AT 165.75

-200

-400

-600

-800

-1000

-1200

WELLBORE NAVIGATION, INC.  
HORIZONTAL PROJECTION  
FOR  
HECLA MINING COMPANY  
WELL NAME: RS-490  
JOB NUMBER: 29-0588-311  
DATE: 02/13/2000  
SCALE: 100 FT./INCH