60001197

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. D-296-98
AUTHOR	S. King; K. Allen; D. Mackerrow
DATE OF DOC(S)	1998
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Rosebud Mining Co. LLC Hecla Mining Co.
COMMODITY If not obvious	gold; silver
NOTES	Drill log; geology; assay; photographs; total depth 232' receipt; handwritten notes; downhole camera images 32p 3 down hole camera images

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)

	Initials	Date
SS:	DD	5/14/08
DB:	Mah	
SCANNED:	NB	

Revised: 1/22/08

D-296-98

60001197 4010

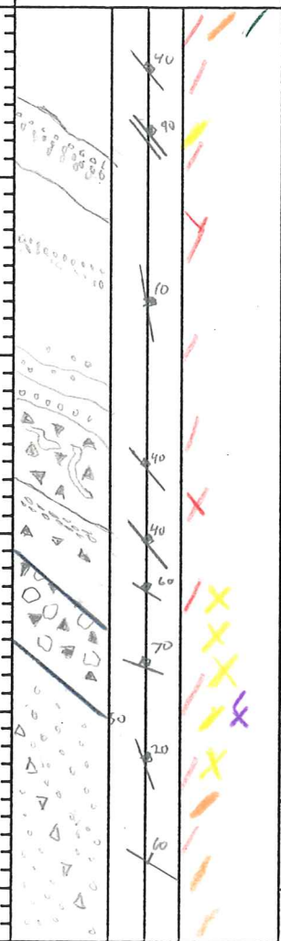
6000 1197

- quartz, chalcedony, silicification
- faults, fractures
- FeOx
- BARITE
- sulfide
- calcite, carbonate
- argillization, white clays
- propylitization
- potassic alteration
- chlorite, chloritic clays

Hecla
MINING COMPANY

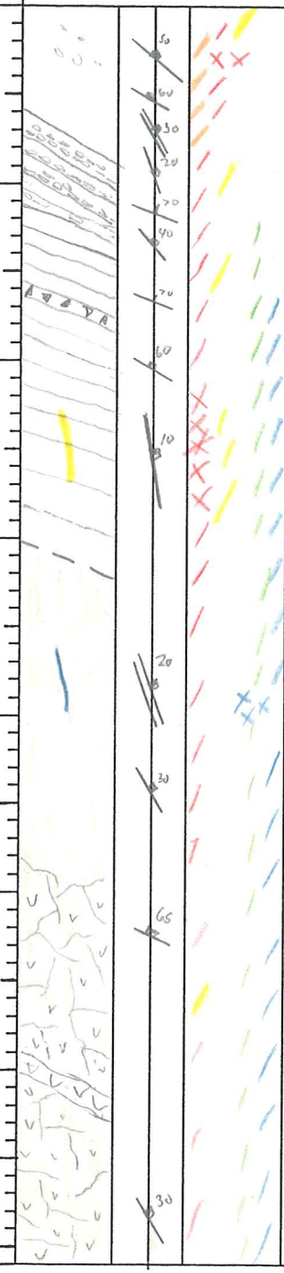
ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	D-296-98	LOCATION	STOPE 50 SECTION 152S	REMARKS	
PAGE 1 OF 4		NORTHING		COMPLETED 8-22-98	
DATE	10-11-98	EASTING			
LOGGED BY	D.G. Macherron	ELEVATION			
SCALE	1"=1'	AZIMUTH	12S		
TOTAL DEPTH	232	INCLINATION	50°		

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
	Reduced ↓	0-75.6 Slightly Planar Laminar Fine to medium grain flow. Vesiculs present through out the core. Laminar nature is variable through the flow. Rocks are pinkish gray in color which grades to Greenish gray by 13'. 23.5-27.5 Auto Breccia Pinkish brown fine grain matrix with clast up to 3" in diameter. Clast are vesicular in texture. Clast are angular to subrounded in shape. Possible mafic magma blobs scatter through the core average size < ¼".	10 20 30 40 50		5.5-6.5 Crackle Bxa 8-8.5 Crackle Bxa High angle fracture set of 10° Between 18 to 24' Autobreccia 23.5 to 28' 31-36 healed crackle Bxa texture.	Chloritic fracture coating 0-5'. 6.5' qtz/Musc/Py vein ½" wide dipping 40° Disseminated py generally < 1%. Locally py forms massed of dark sulfide with contraction of > 25%, Possible replacement By Py in these blebs. 31-36 silica healed crackle Bxa. 1" white Clay vein at 33.5' 33-38 Translucent pale green clay Barite crystals 41' Clay filled gash fractures from 51-53

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ac
0	5.0					
5.0	8.0					
8.0	13.0					
13.0	18.0					
18.0	23.0					
23.0	28.0					
28.0	33.0					
33.0	38.0					
38.0	43.0					
43.0	48.0					
48.0	53.0					

HOLE NUMBER D-296-98 PAGE 2 OF 4

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
P.L. ↓	Reduced ↓	0-80.4 PLANAR LAMINAR Vesicular planar laminar continues. Distinctive planar characteristic become more prevalent below 56' Contact with F.G.M. is gradational between 76' to 80.6. No distinct break can be made. Pinu 65.4	50 60 70 80		Vesicul layers ½" apart from 56 to 60' Crackle bxu 65.5 to 66' healed by white clay High angle 10° Brecciated ½" Fracture from 73.6 to 76'	Chlorite on fractures begins leaching out from fracture below 58' 54.5 - ½" mare. vein 30° dip, TCA. 65-66' Hard white clay with mare. in Bxu. Calcite also present in Bxu Calcite veinlets and in fractures below 66' 73.6 to 76' 1" Brecciated fracture with qtz, calcite, mare., and py. fracture is 10° TCA
F.G.M. ↓	80.4-	98.0 FINE GRAINED MASSIVE Gray Green very fine grained flow. Surface shows irregular alteration with dark gray patches of more mafic(?) minor. Propylitic alteration present Contact with vitrophyre is not distinct. contact is texturally gradational	90		Hairline fractures throughout FGM are stained gray brown	85' 1" calcite vein dipping 20° TCA
VIT.	98.0-	137 VITROPHYRE Very fine grained partially glassy flow. Lobeate fracture pattern. Pale green in color from propylitic alteration. Very weak in disseminated py <.5%	100 110 120		Typical crackle fabric from cooling or dewatering 109-110 There is a distinct foliation to vitrophyre, at 60°	Calcite on fractures continues.

ANALYTICAL DATA

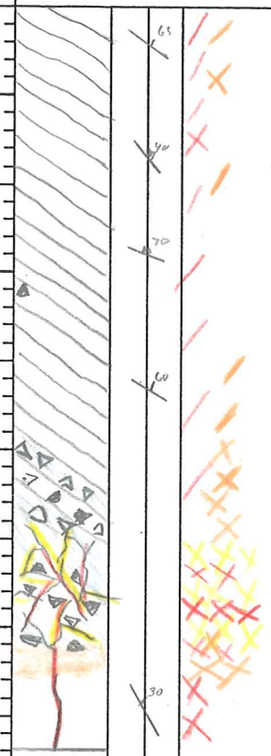
FROM	TO	W	Au	Ag	Au2
48	53				
53	58				
58	63				
63	68				
68	73				
73	76				
76	80.4				
80.4	83.0				
83.0	88.0				
88.0	93.0				
93	98.0				
98.0	103.0				
103.0	108.0				
108.0	113.0				
113	118.0				
118	123				

HOLE NUMBER D-296-98 PAGE 3 OF 4

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
VIT. ↓	Reduce ↓	98–137 VITROPHYRE Fine grained glassy flow. Pale green color. Bleaching of lobate devitrification features begins at 118. Lower contact begins to crackle at 136. AT 136.8 there is a 1" mosaic Bxa Dipping 40°	120 130		Crackle Bxa texture from cooling or dewatering	Chlorite and calcite found on fractures Py and marc. form small veinlets & generally steeply Dipping to core axis
FGM		137–164.5 Fine Grained Massive Fine grain very uniform textured flow. 142-147 has very similar crackle texture to vitrophyre 159–164.5 Vitrophyre like chill margin at base of next flow. 1' milled and mosaic Bxa contact between FGM and PL	140 150 160	40 40	Possible flow boundary Bxa from 153 to 157.2 Bxa is milled with subrounded to rounded clasts. Upper contact of boundary is sharp. Lower contact grades back into FGM	Calcite on fractures ends at 160
P.L.	164.5–232	PLANAR LAMINAR Fine to medium textured flow. Laminated textured. Very prevalent. Orientation of bedding is 70° TCA. "Mafic magma blobs" Pmu 171	170 180 190	50 30 70 30 75 80		Barite and chalcopyrite in broken vug from 171.0 – 171.7 Marcasite found in clay Py salvages

ANALYTICAL DATA					
FROM	TO	W	Au	Ag	Au2
118	123				
123	128				
128	133.0				
133	137				
137	142				
142	147				
147	152				
152	157				
157	159				
159	164.5				
164.5	167				
167	172				
172	177				
177	182				
182	187				
187	192				

HOLE NUMBER D-296-98 PAGE 4 OF 4

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
P.L. ↓	164.5 – 232	PLANAR LAMINAR Laminated fine to medium grained flow. There are less distinct laminations from 119 – 203, Core is blueish green from 212 to 214.4 Core is bleach white between 219.4 to 227. Fault and fracture zone present from 214.8 to 225.3. Not all of it is bxa but stock works of qtz and more. Flooded vugs are present	190 200 210 220 230		2" mosaic bxa at 199' dipping 40° TCA 2" crackle bxa at 206' dipping 40° TCA. Bxa is healed by silica Clay filled fractures 213' From 214.8 Crackle bxa grades into mosaic bxa in fault zone. QTZ stockwork From 219.4 to 225.3, stockwork is bxa from 221 to 224.3	Pyrite veinlets favor lamini parting White clay (kaolinite) with more blades in fractures increase between 187 to 197 Disseminated py >1% in P.L. Py forms salvages up to 1" wide. Silica flooded fault from 215.5 to 218.5 Bleaching of the flow from 219.4 to 227.	187 192 197 202 207 212 214.8 219.4 222.0 225.3 228.5	192 197 202 207 212 214.8 219.4 222.0 225.3 228.5 232				
		EOH 232'										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-296-98 DATE: 10-11-98 LOGGED BY: D.G. Macherrow. PAGE 1 OF 5

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
0	5.0	54	100	14										
5.0	8.0	48	100	26										
8.0	13.0	94	100	38										
13.0	18.0	60	100	60										
18.0	23.0	48	100	40										
23.0	28.0	66	100	56										
28.0	33.0	100	100	82										
33.0	38.0	58	100	36										
38.0	43.0	90	100	42										
43.0	48.0	76	100	48										
48.0	53.0	94	100	92										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-296-98 DATE: 10-11-98 LOGGED BY: D.G. MacKerrow. PAGE 2 OF 5

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
53.0	58.0	40	100	20										
58.0	63.0	60	100	36										
63.0	68.0	86	100	60										
68.0	73.0	100	100	72										
73.0	78.0	100	100	62										
78.0	83.0	100	100	66										
83.0	88.0	100	100	88										
88.0	93.0	96	100	76										
93.0	98.0	100	100	72										
98.0	103.0	100	100	74										
103.0	108.0	100	100	64										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-296-98 DATE: 10-11 LOGGED BY: D.G. Mackerrow PAGE 3 OF 5

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY/FT.	FRACTURE DATA AVG. ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
108.0	113.0	100	100	96										
113.0	118.0	100	100	74										
118.0	123.0	50	100	64										
123.0	128.0	100	100	100										
128.0	133.0	100	100	86										
133.0	137.0	100	100	82										
137.0	142.0	100	100	84										
142.0	147.0	100	100	92										
147.0	152.0	100	100	100										
152.0	157.0	100	100	98										
157.0	162.0	100	100	96										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-296 DATE: 10-11-98 LOGGED BY: D.G. Mackerrow PAGE 4 OF 5

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
162.0	167.0	76	100	64										
167.0	172.0	74	100	66										
172.0	177.0	100	100	80										
177.0	182.0	88	100	80										
182.0	187.0	100	100	72										
187.0	192.0	100	100	86										
192.0	197.0	100	100	78										
197.0	202.0	100	100	92										
202.0	207.0	100	100	78										
207.0	212.0	100	100	64										
212.0	217.0	80	100	60										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D.G. MacKerrow DATE: 10-11-98 LOGGED BY: D.G. MacKerrow PAGE 5 OF 5

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
217.0	222.0	56	100	82										
222.0	227.0	60	100	56										
227.0	232.0	100	100	88										

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051117

PO BOX 11530
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

CLIENT REFERENCE No: D-296-98 RECEIVED : 15 OCT 1998

No. SAMPLES : 52 REPORTED : 22 OCT 1998

MAIN SAMPLE TYPE : DRILL CORE

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(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

10/22/1998 14:18 7023561413 AMERICAN ASSAY LABS PAGE 01
7023561413

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051117

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-296-98

REPORTED : 22 OCT 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-296-98 0-5	<0.001			0.02
D-296-98 5-8	0.014			0.09
D-296-98 8-13	0.002			0.09
D-296-98 13-18	0.002			0.03
D-296-98 18-23	0.007			0.14
D-296-98 23-28	0.001			0.02
D-296-98 28-33	0.002			0.03
D-296-98 33-38	0.005			0.06
D-296-98 38-43	0.008			0.09
D-296-98 43-48	0.005			0.05
D-296-98 48-53	0.006			0.10
D-296-98 53-58	0.008			0.41
D-296-98 58-63	0.021			0.05
D-296-98 63-68	0.026	0.032		1.15
D-296-98 68-73	0.005			0.07
D-296-98 73-76	0.005			0.58
D-296-98 76.0-80.4	0.002			0.04
D-296-98 80.4-83.0	<0.001			<0.02
D-296-98 83-88	<0.001			<0.02
D-296-98 88-93	0.002			<0.02
D-296-98 93-98	0.001			<0.02
D-296-98 98-103	<0.001			0.02
D-296-98 103-108	0.004			0.02
D-296-98 108-113	0.003			<0.02
D-296-98 113-118	<0.001			0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051117

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-296-98

REPORTED : 22 OCT 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-296-98 118-123	<0.001			<0.02
D-296-98 123-128	<0.001			<0.02
D-296-98 128-133	<0.001			<0.02
D-296-98 133-137	0.003			0.02
D-296-98 137-142	<0.001			<0.02
D-296-98 142-147	<0.001			<0.02
D-296-98 147-152	<0.001	<0.001		<0.02
D-296-98 152-157	<0.001			<0.02
D-296-98 157-159	<0.001			<0.02
D-296-98 159.0-164.5	0.005			0.06
D-296-98 164.5-167.0	0.001			0.03
D-296-98 167-172	0.033			0.13
D-296-98 172-177	0.004			0.08
D-296-98 177-182	0.080		0.103	0.22
D-296-98 182-187	0.006			0.08
D-296-98 187-192	0.049			0.65
D-296-98 192-197	0.036			0.35
D-296-98 197-202	0.007			0.09
D-296-98 202-207	0.024			0.09
D-296-98 207-212	0.018			0.15
D-296-98 212.0-214.8	0.019			0.15
D-296-98 214.8-219.4	0.022			0.14
D-296-98 219.4-222.0	0.027			0.12
D-296-98 222.0-225.3	0.037			0.16
D-296-98 225.3-228.5	0.015			0.12

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051117

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-296-98

REPORTED : 22 OCT 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-296-98 228.5-232.0	0.006			0.09
43546.	0.501			ISF

American Assay Laboratories

INVOICE

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

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

(702) 356-0606

INVOICE NO: SP 0051117-IN
INVOICE DATE: 10/21/98

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
D-296-98	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
52	SAMPLES RECEIVED	.00	.00
51	JAW CRUSHING CHARGE	1.30	66.30
51	COARSE MILLING CHARGE	4.50	229.50
51	SPLITTING CHARGE	2.40	122.40
51	RING MILLING CHARGE	2.00	102.00
52	Au (1 A.T. FIRE ASSAY)	8.00	416.00
1	Au ANALYSES/GRAVIMETRIC	8.75	8.75
51	HYDROCHLORIC/NITRIC DIGESTION	2.00	102.00
51	Ag ANALYSES.	1.00	51.00

86-5110-477
KM

NET INVOICE:	1,097.95
LESS DISCOUNT:	219.59
FREIGHT:	.00
INVOICE TOTAL:	878.36

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ANALYSIS REPORT SP051117

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

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:

CLIENT REFERENCE No: D-296-98 RECEIVED : 15 OCT 1998

No. SAMPLES : 52 REPORTED : 22 OCT 1998

MAIN SAMPLE TYPE : DRILL CORE

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(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051117

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-296-98

REPORTED : 22 OCT 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-296-98 0-5	<0.001			0.02
D-296-98 5-8	0.014			0.09
D-296-98 8-13	0.002			0.09
D-296-98 13-18	0.002			0.03
D-296-98 18-23	0.007			0.14
D-296-98 23-28	0.001			0.02
D-296-98 28-33	0.002			0.03
D-296-98 33-38	0.005			0.06
D-296-98 38-43	0.008			0.09
D-296-98 43-48	0.005			0.05
D-296-98 48-53	0.006			0.10
D-296-98 53-58	0.008			0.41
D-296-98 58-63	0.021			0.05
D-296-98 63-68	0.026	0.032		1.15
D-296-98 68-73	0.005			0.07
D-296-98 73-76	0.005			0.58
D-296-98 76.0-80.4	0.002			0.04
D-296-98 80.4-83.0	<0.001			<0.02
D-296-98 83-88	<0.001			<0.02
D-296-98 88-93	0.002			<0.02
D-296-98 93-98	0.001			<0.02
D-296-98 98-103	<0.001			0.02
D-296-98 103-108	0.004			0.02
D-296-98 108-113	0.003			<0.02
D-296-98 113-118	<0.001			0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051117

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-296-98

REPORTED : 22 OCT 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-296-98 228.5-232.0	0.006			0.09
43546	0.501			ISF

xAMERICAN ASSAY LABORATORIES
ANALYSIS REPORT SP051117

American Assay Laboratories

PO BOX 11530
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Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN
:
:
:

CLIENT REFERENCE No: D-296-98
No. SAMPLES : 52
MAIN SAMPLE TYPE : DRILL CORE

RECEIVED : 15 OCT 1998
REPORTED : 22 OCT 1998

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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(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051117

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-296-98

REPORTED : 22 OCT 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-296-98 0-5	<0.001			0.02
D-296-98 5-8	0.014			0.09
D-296-98 8-13	0.002			0.09
D-296-98 13-18	0.002			0.03
D-296-98 18-23	0.007			0.14
D-296-98 23-28	0.001			0.02
D-296-98 28-33	0.002			0.03
D-296-98 33-38	0.005			0.06
D-296-98 38-43	0.008			0.09
D-296-98 43-48	0.005			0.05
D-296-98 48-53	0.006			0.10
D-296-98 53-58	0.008			0.41
D-296-98 58-63	0.021			0.05
D-296-98 63-68	0.026	0.032		1.15
D-296-98 68-73	0.005			0.07
D-296-98 73-76	0.005			0.58
D-296-98 76.0-80.4	0.002			0.04
D-296-98 80.4-83.0	<0.001			<0.02
D-296-98 83-88	<0.001			<0.02
D-296-98 88-93	0.002			<0.02
D-296-98 93-98	0.001			<0.02
D-296-98 98-103	<0.001			0.02
D-296-98 103-108	0.004			0.02
D-296-98 108-113	0.003			<0.02
D-296-98 113-118	<0.001			0.02

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SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-296-98 118-123	<0.001			<0.02
D-296-98 123-128	<0.001			<0.02
D-296-98 128-133	<0.001			<0.02
D-296-98 133-137	0.003			0.02
D-296-98 137-142	<0.001			<0.02
D-296-98 142-147	<0.001			<0.02
D-296-98 147-152	<0.001	<0.001		<0.02
D-296-98 152-157	<0.001			<0.02
D-296-98 157-159	<0.001			<0.02
D-296-98 159.0-164.5	0.005			0.06
D-296-98 164.5-167.0	0.001			0.03
D-296-98 167-172	0.033			0.13
D-296-98 172-177	0.004			0.08
D-296-98 177-182	0.080		0.103	0.22
D-296-98 182-187	0.006			0.08
D-296-98 187-192	0.049			0.65
D-296-98 192-197	0.036			0.35
D-296-98 197-202	0.007			0.09
D-296-98 202-207	0.024			0.09
D-296-98 207-212	0.018			0.15
D-296-98 212.0-214.8	0.019			0.15
D-296-98 214.8-219.4	0.022			0.14
D-296-98 219.4-222.0	0.027			0.12
D-296-98 222.0-225.3	0.037			0.16
D-296-98 225.3-228.5	0.015			0.12

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SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-296-98 228.5-232.0	0.006			0.09
43546	0.501			ISF

D-296-98	45	49	126.5
	115	48	126.2
	232	49	125.7

D- 297 - 98 BOX 2
13
18
D-296-98 Box 2
Depth 10-19

8
5
D-296-98 Box 1
Depth 0-10

23
D-296-98 Box 3
Depth 19-28

38
43
D-296-98 Box 5
37-46

33
28
D-296-98 Box 4
28-37

48
53
D-296-98 Box 6
Depth 46-54

68
63
D-296 -98 BOX 8
DEPTH 62_5 - 71_5

58
Dr 296-98 Box 7
depth 54-62-5

73
76
D-296 -98 BOX 9
DEPTH 71_5 - 81

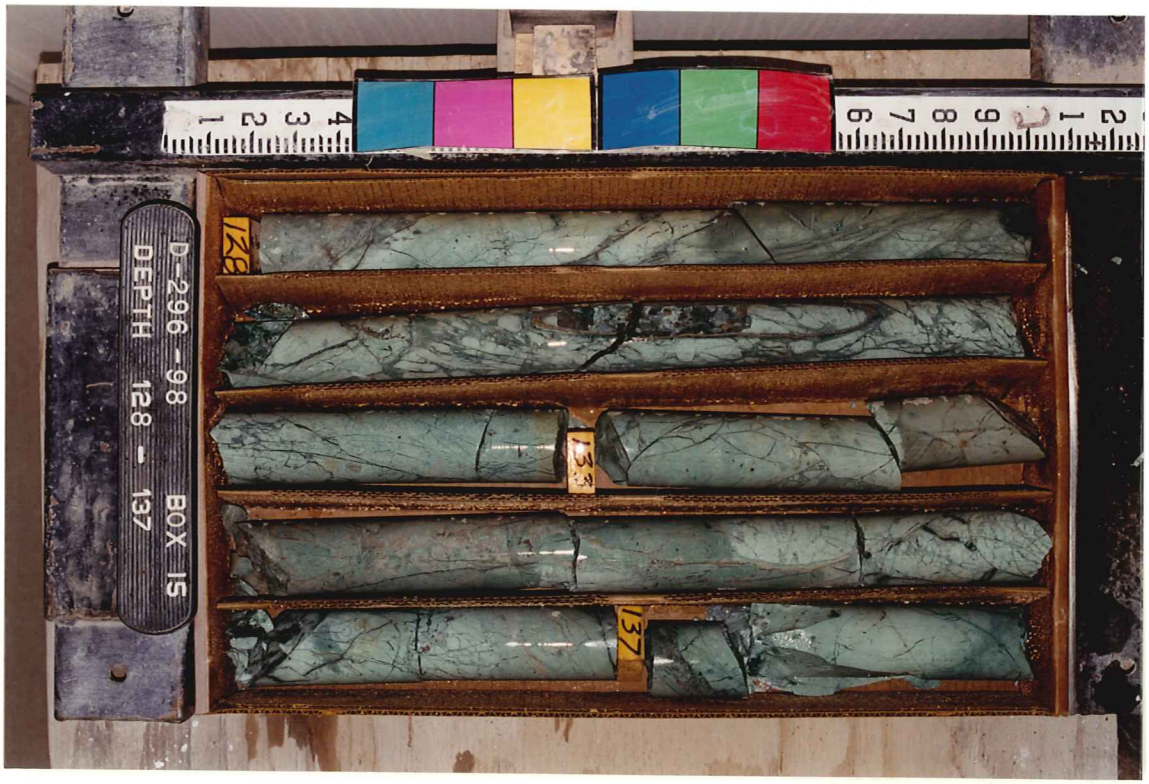
98'
93
D-296 -98 BOX 11
DEPTH 90_5 - 100_5

83'
88'
D-296 -98 BOX 10
DEPTH 81 - 90_5

103
108
D-296 -98 BOX 12
DEPTH 100_5 - 110

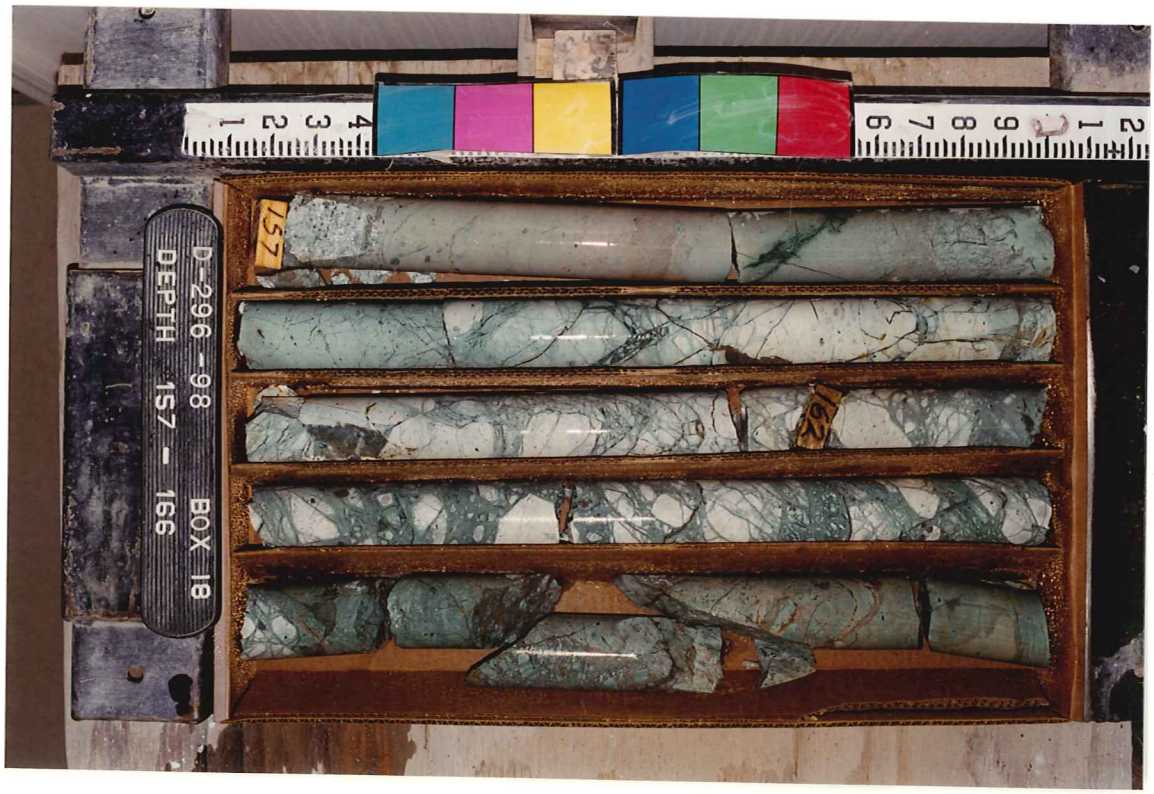
D-296 -98 BOX 14
DEPTH 118_5 - 128

D-296 -98 BOX 13
DEPTH 110 - 118_5


D-296 -98 BOX 15
DEPTH 128 - 137

157
152
D-296 -98 BOX 17
DEPTH 148 - 157

142
147
D-296 -98 BOX 16
DEPTH 137 - 148


157
162
D-296 -98 BOX 18
DEPTH 157 - 166

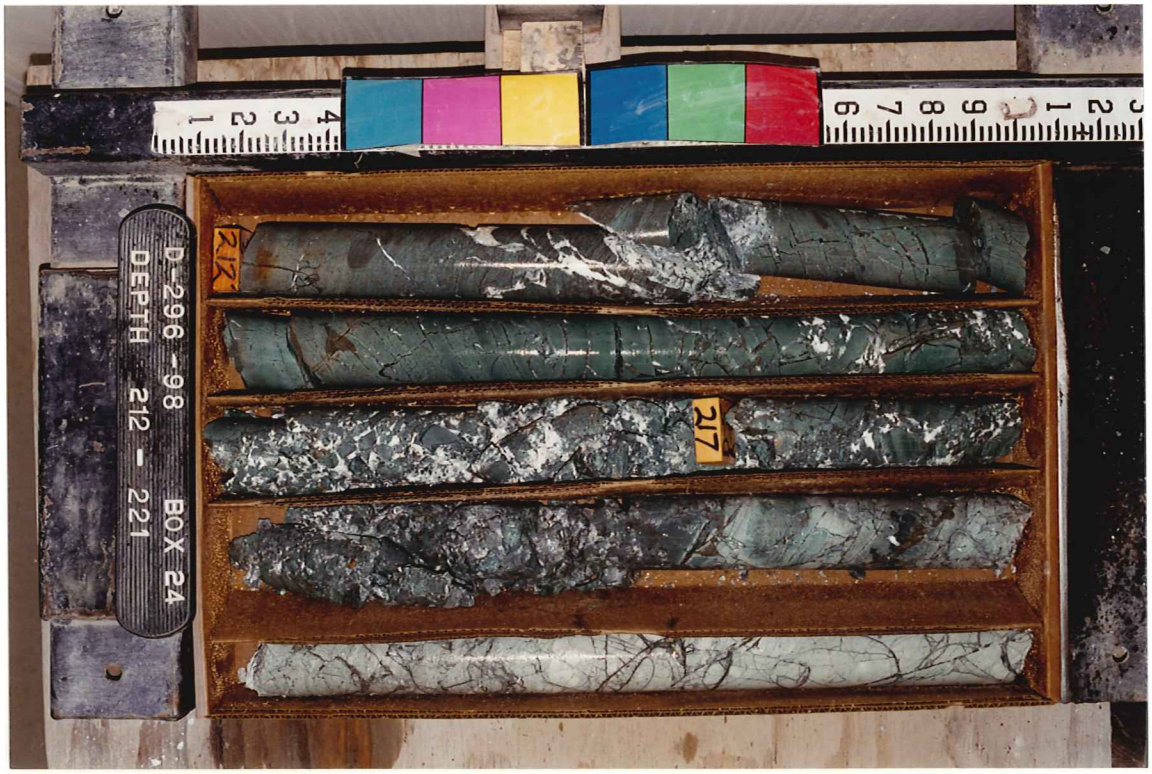
177
187
D-296 -98 BOX 20
DEPTH 175_5 - 184_5

167
177
D-296 -98 BOX 19
DEPTH 166 - 175_5

D-296 -98 BOX 21
DEPTH 184_5 - 194
187
197

207
D-296-98 BOX 23
DEPTH 203 - 212

197
202
D-296-98 BOX 22
DEPTH 194 - 203

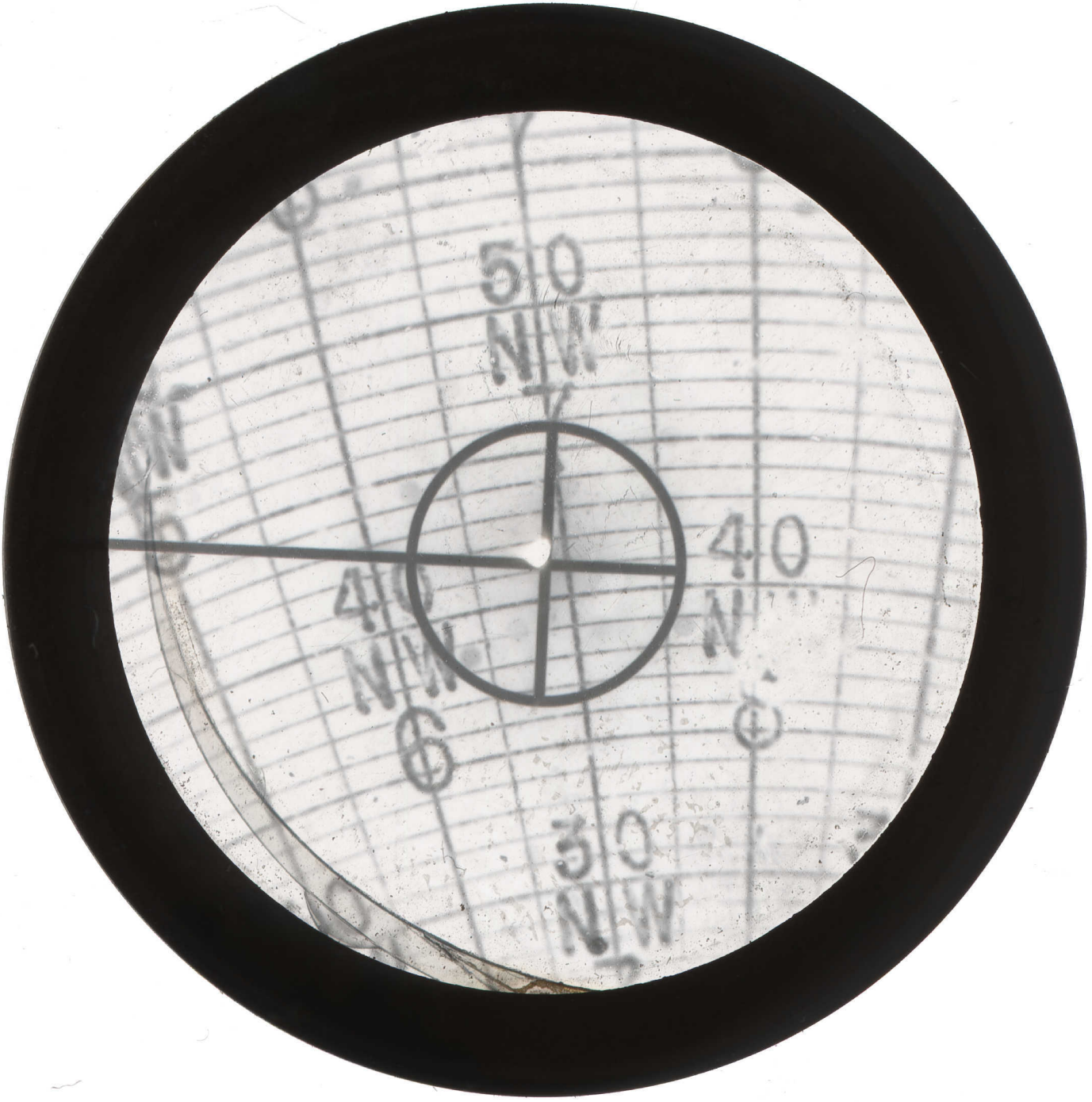

212
217
D-296-98 BOX 24
DEPTH 212 - 221

232
D-296 -98 BOX 26
DEPTH 230_5 - 232 TD

222
227
D-296 -98 BOX 25
DEPTH 221 - 230_5

SINGLE SHOT
PHOTO DISC RECORD

COMPANY Hecla
WELL NAME D-296-98
LEASE
TAKEN BY Hughes
DEPTH 45
DATE 8/22/98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408


50
NW
40
NW
40
N
30
NW

SINGLE SHOT
PHOTO DISC RECORD

COMPANY Hecla
WELL NAME D-296-98
LEASE
TAKEN BY Hughes
DEPTH 232
DATE 8/22/98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408

50
MIN
40
MIN
40
MIN
30
MIN

SINGLE SHOT
PHOTO DISC RECORD

COMPANY Heela
WELL NAME D-296-98
LEASE
TAKEN BY Hughes
DEPTH 115
DATE 8/22/98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408

50
MW
40
MW
40
MW
50
MW