6000 0794

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. MW-8
AUTHOR	C. Muerhoff; S. Fairclotth; W. Hanson; C Eppler
DATE OF DOC(S)	1994
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Hecla Mining Co.; Rosebud Project Hecla-Rosebud Project
COMMODITY If not obvious	gold; silver
NOTES	drill logs; geology; assay; total depth 500' receipt; handwritten notes; water 13 pgs

Keep docs at about 250 pages if no oversized maps attached
(for every 1 oversized page (>11x17) with text reduce
the amount of pages by ~25)

SS: DD 4/30/08
Initials Date
DB:
Initials Date
SCANNED:
Initials Date

Revised: 1/22/08

MW-8 (#6)

6000 0794
4010

6000 0794

MONITORING WELL INSTALLATION SHEET

:B NO. Hecla - Rosebud Project

EZOMETER NO. P- MW-8

OCATION: NW1/4, SW1/4, Sec 24, T34N, R30E

ATE OF INSTALLATION: 6/3/94

OTAL DEPTH: 500'

EZOMETER TYPE: observation well

EVATION OF THE PIPE TOP:

EVATION OF THE TIP:

EVATION OF THE GROUND SURFACE:

ATER LEVEL AT ~~COMPLETION~~: 6/9/94
DEPTH (FT.): 44.0' from top of casing
ELEVATION (FT.): ~ 4818.8

USHING OF THE HOLE: airlift

OTECTION STEEL CASING:
O. D.: 6"
FROM: -1.7'
TO: +3.3'

CLIENT: Hecla Mining Company

DRILLING CONTRACTOR: Humboldt Drilling

FIELD ENGINEER: W. Hanson

DRILLING SYSTEM: RC

DRILLING TOOLS: 5 1/2" hammer

PIPE MATERIAL: PVC O.D. 2" w.b. schedule 80

LENGTH OF SECTIONS: 20'

JOINING METHOD: screw

PERFORATION TYPE: 0.020 factory slotted

SIZE OF SLOTS: 0.020 NO. OF SLOTS:

PERFORATED AREA: 20'

NON PERFORATED PIPES: FROM: +2.8' TO: - 400'

PERFORATED PIPES: FROM: 400' TO: 420'

GRAVEL PACK: FROM: 395' TO: 420'

TYPE AND DEPTH OF SEALING: bentonite
@ 370'-375'
@ 425'-430'

HYDRO-GEO CONSULTANTS

OWNER: Hecla Mining Company

PROJECT: Rosebud

LOCATION: NW 1/4, SW 1/4, Sec 24, T34N, R30E

COORDINATES N: NOT SURVEYED YET E: ELEV.:

BORING NO. MW-8

TYPE OF DRILLING: RC

ANGLE FROM HORIZONTAL: -90°

PAGE 1 OF 4

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	WELL CONSTRUCTION	RQD (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	SAMPLE INTERVAL	ANALYTICAL Au (opt)	ANALYTICAL Ag (opt)	Au checks
		OVERBURDEN		CEMENT SEAL					0 - 10	<.001	<.02	
									10 - 20			
20									20 - 30			<.001
		STRONGLY LIMONITIC FG TUFF BECOMING ARGILLIZED WITH DEPTH							30 - 40			
40									40 - 50			
				2" SCHEDULE 80 BLANK CASING					50 - 60			
60									60 - 70			
		FINE GRAIN TUFF(?) OR TUFFACEOUS EPICLASTIC(?) PEA-GREEN IN COLOR W/ HAIRLINE QUARTZ/CHALCEDONY ± SULFIDE VEINING EUHEDRAL PYRITE AGGLOMERATIONS OCCASSIONAL 'BLEBS' OF CHALCOPYRITE. (CHOCOLATE TUFF UNIT ?)							70 - 80	.001		
80									80 - 90	.001		
				GRAVEL BACKFILL					90 - 100	<.001		
100									100 - 110	.004	.50	
									110 - 120	.002	.20	
120									120 - 130	.003	<.02	
									130 - 140	.001	<.02	
140									140 - 150	<.001	<.02	
			HIT WATER @ 160' TEST #1 3 gpm						150 - 160	<.001	<.02	
160												

VW — W — MS — S — VS

VW — W — MW — SW — FR

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER

PROJECT

LOCATION

COORDINATES N ____ E ____ ELEV. ____

BORING NO. MW-0

TYPE OF DRILLING

ANGLE FROM HORIZONTAL

PAGE 2 OF 4

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	WELL CONSTRUCTION	RQD (%) 25 50 75	FRACTURES PER FOOT 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	SAMPLE INTERVAL	ANALYTICAL Au (opt)	ANALYTICAL Ag (opt)	Au checks
180									160-170	.001	.03	
									170-180	.006	.08	
									180-190	.001	.02	
200		LIGHT GREY FRAGMENTAL TUFF, QUARTZ & SULFIDE POOR.	TEST #2 @200', 10 gpm	2" SCHEDULE 80 BLANK CASING					190-200	.001	.02	
									200-210	<.001	<.02	
									210-220	<.001	<.02	
220				GRAVEL BACKFILL					220-230	<.001	<.02	
240		SAME AS INTERVAL 70'-190', EXCEPT NOW W/ PERVASIVE SILICA-FLOODING OF TUFF	TEST #3 @240', 13 gpm						230-240	<.001	.02	
									240-250	.008	.03	.007
260			TEST #4 @260', 17 gpm						250-260	.003	.02	
									260-270	.001	.02	
280			TEST #5 @280', 14 gpm						270-280	.001	.03	
									280-290	<.001	.02	
300			TEST #6 @300', 17 gpm						290-300	<.001	.03	
									300-310	.001	<.02	
320			TEST #7 @320', 19 gpm						310-320	.002	<.02	.002

VW — VW
FW — W
MW — MS
SW — S
FR — VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER

PROJECT

LOCATION

COORDINATES N E ELEV.

BORING NO. MW-0

TYPE OF DRILLING

ANGLE FROM HORIZONTAL

PAGE 3 OF 4

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	WELL CONSTRUCTION	RQD (%)	FRACTURES PER FOOT	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	SAMPLE INTERVAL	ANALYTICAL Au (opt)	ANALYTICAL Ag (opt)	Au checks
		SILICA-FLOODED FG TUFF CONTINUES		2" SCHEDULE 80 BLANK CASING					320-330	.002	<.02	
			TEST #8 @340', 17 gpm						330-340	.003	<.02	
340				GRAVEL BACKFILL					340-350	.003	<.02	.003
			TEST #9 @360', 17 gpm						350-360	.001	<.02	
360									360-370	<.001	<.02	
				UPPER BENTONITE SEAL					370-380	.001	.03	
380		FAULT(?) WHITE 'SUGARY' CLAYS w/ ± 20% DARK GREEN TUFF FRAGMENTS	TEST #10 @380', 29 gpm	SILICA SAND					380-390	<.001	.02	
		RELATIVELY UNALTERED CHOCOLATE TUFF, DARK BROWN, LITHIC-RICH w/ FG DISSEMINATED MAFICS, QUARTZ & SULFIDE - POOR	TEST #11 @400', 55 gpm						390-400		<.02	
400				2" SCHEDULE 80 0.02 SLOTTED SCREEN					400-410			
			TEST #12 @420', 100 gpm						410-420			
420				SILICA SAND								
				LOWER BENTONITE SEAL					420-430			
440			TEST #13 @440', 100 gpm						430-440			
									440-450			
460			TEST #14 @460', 100 gpm	GRAVEL BACKFILL					450-460			
									460-470			
480		SEE NEXT PAGE	TEST #15 @480', 100 gpm						470-480			

D/U ?

WEATHERING: VW, W, MS, S, VS

STRENGTH: VW, W, MS, S, VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER

PROJECT

LOCATION

COORDINATES N E ELEV.

BORING NO. MW-0

TYPE OF DRILLING

ANGLE FROM HORIZONTAL

PAGE 4 OF 4

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	WELL CONSTRUCTION	RQD (%) 25 50 75	FRACTURES PER FOOT 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: SAMPLE INTERVAL	ANALYTICAL Au (opt)	ANALYTICAL Ag (opt)
		UPPER BUD TUFF (?) LIGHT-GREEN, CLAY-RICH FINE-GRAIN TUFF W/ DISSEMINATED PYRITE, LITHIC-RICH, BUT CRYSTAL-POOR	TEST #16 @500', 1000 gpm	GRAVEL BACKFILL					480-490	<.001	.02
									490-500	.001	<.02
500		T.D. 500'									

LOG OF BORING

FW — VW
PW — W
MW — MS
SW — S
FR — VS

HYDRO-GEO CONSULTANTS

FIELD PERMEABILITY TEST

Falling/Rising Head

Project Hecla Mining Company Tested By W. Hanson Date 6/3/94
Project No. Rosebud Calculated By _____ Date _____
Boring No. MW-3 Checked By _____ Date _____
Type of Test (Falling/Rising) —
Diameter of Boring 5 1/2" Permeability, K _____
Diameter of Casing 2" schedule 80
Height of Casing (Ref. Level)
Above Ground Surface 2.8' Filling/Pumping From: _____ To: _____
Perforated Casing From: 400 To: 420
Type of Perforation 0.020 slotted
Depth to Ground Water From
Top of Casing 44.0' on 6/9/94 Filling/Pumping Rate _____ gpm

Date and Time	Elapsed Time (Min.)	Depth to Water (ft.)	S.W.L. - Depth to Water (ft.) H	H/Ho
13/94	Well was developed. Probe too		short for rising head test.	
	(see daily	log)		
/9/94	Well was not pumped again until this date			
	depth to H_2O:	44.0' from top of 2" PVC		

COMMENTS: After pumping or addition of water, water level measurements should be recorded as follows: t = 0, t = 30 sec.5 min, t = 1 min/10 min, t= 5 min/15 min, t = 30 min/ 1-1/2 hr, t = 1 hr/until WL = +/- 90% SWL

Sheet ___ of ___

HISTORY OF HOLE

Job # ___ Boring # MW8

Date JUNE 2/94 Temperature 85 °F

Weather SUNNY HOT

gist W. Hanson Surface Elevation ___ Depth ___ to ___

er JEFF Drill Fluid ___ Casing Size ___ Core Size ___

ractor HUMBOLT Type of Barrel ___

tion ___

BEGINNING OF SHIFT	END OF SHIFT
Depth of Hole ___	Time ___ Hrs. Productive ___ Hrs. Delayed ___
Depth to Casing ___	Depth of Hole ___ Depth of Casing ___ Depth to WL ___
h to WL ___	

02/06/94

7:30 AM - DRILL 20 - 80' PALE GREY TO TAN CLAYS 0-80' BROWN/ORANGE CLAY

10:30 AM 160' HIT WATER @ 160' WT = 2.5 gpm @ 115 PSI

12:00 PM 200' WT = 10 gpm @ 125 PSI

80 - 160' PALE GREY GREEN

160' ROCK CHANGE DK GREY / BLACK TO 220' @ 220' LT BROWN/ORANGE

12:30 PM 240' WT = 13 gpm @ 125 PSI

12:45 PM 260' WT = 17 gpm @ 135 PSI

1:05 PM 280' WT = 14 gpm @ 135 PSI

1:25 PM 300' WT = 17 gpm @ 140 PSI

1:40 PM 320' WT = 19 gpm @ 145 PSI

2:00 PM 340' WT = 17 gpm @ 150 PSI ROCK CHANGE @ 350' - 370' LT GREY / BROWN

2:50 PM 360' WT = 17 gpm @ 170 PSI 370-380' DK GREY TO LT GREY

3:25 PM 380' WT = 29 gpm @ 150 PSI 10' CLAY FT ZONE 380-390 PALE GRN.

3:50 PM 400' WT = 55 gpm @ 150 PSI 390-440 - DK REDDISH BROWN

4:25 PM 420' WT = 100 gpm @ 150 PSI

4:50 PM 440' WT = 100 gpm @ 190 PSI 440 PALE GREEN TO GREY

5:25 PM 460' WT = 100 gpm @ 195 PSI

5:50 PM 480' WT = 100 gpm @ 200 PSI

02/06/94

7:45 AM 500' WT = 100 gpm @ 225 PSI 500' = EOH

7:50 AM - TRIP OUT RODS BIT SET TO PLACE CSG

9:00 AM - HOLE CAVED @ 350' FAULT ZONE

10:00 AM - TRIP 4" BACK IN HOLE TO CLEAN OUT HOLE

12:00 AM - TRIP IN 2" CSG - HOLE STILL CAVING 390 - 400'

WILL SET TOP OF CSG @ 400' BOTTOM @ 420' AND BACKFILL W/

GRAVEL TO 375'

2:00 PM - GRAVEL @ 395'

2:30 PM - ADD SILICA SAND TO 375' START ADDING BENT PELLETS

3:00 PM - COMPLETE BENT PELLETS BACKFILL W GRAVEL TO COLLAR

6:00 PM - EOS

06/07/94

8:30 AM - TAGGED 20' TO COLLAR

10:30 AM - TRIP IN 1" RODS

11:20 AM - BEGIN OPERATING WELL LOTS OF WATER + 10 gpm

12:00 PM - + 10 gpm H_2O WATER IS MILKY

12:30 PM + 10 gpm H_2O WATER IS CLEARING UP PH 6.51 µS 1160-1180

1:00 PM + 10 gpm H_2O CLEAR PH 6.49 µS 1180

1:15 PM SHUT DOWN AIR - START RISING HEAD TEST - PROBE READS

22' DOWN HOLE - CONTACT W/ WET CSG.

1.30 PM SHUT DOWN HOLE - BEGIN TO TRIP OUT 1" RODS

Checked by: ___

ANALYSIS REPORT

American Assay Laboratories Inc.

P.O. BOX 71060
RENO, NV,,U.S.A.,
Ph.1-702-356-0606, Fax.1-702-356-1413
Telex:

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF
:
:
:

CLIENT REFERENCE No: ~~#7~~ MW-8

LABORATORY JOB No. : SP029619

SAMPLE TYPE :

RECEIVED : 17/06/94

REPORTED : 24/06/94

No. SAMPLES : 10

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

SIGNATORY : Sue Faircloth M.S.

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : #7
JOB NUMBER : SP029619
REPORTED : 24/06/94

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
#7 000-010	<0.001		<0.02
#7 010-020	<0.001		<0.02
#7 020-030	<0.001	<0.001	<0.02
#7 030-040	<0.001		<0.02
#7 040-050	<0.001		<0.02
#7 050-060	<0.001		<0.02
#7 060-070 MW-8	<0.001		<0.02
#7 070-080	0.001		<0.02
#7 080-090	0.001		<0.02
#7 090-100	<0.001		<0.02

ANALYSIS REPORT

American Assay Laboratories Inc.

P.O. BOX 71060
RENO, NV,,U.S.A.,
Ph.1-702-356-0606, Fax.1-702-356-1413
Telex:

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF
:
:
:

CLIENT REFERENCE No: ~~#8~~ MW-8

LABORATORY JOB No. : SP029597

SAMPLE TYPE :

RECEIVED : 17/06/94

REPORTED : 23/06/94

No. SAMPLES : 40

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

SIGNATORY : Sue Faircloth M.S.

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : #8
JOB NUMBER : SP029597
REPORTED : 23/06/94

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
#8 100-110	0.004		0.50
#8 110-120	0.002		0.20
#8 120-130	0.003		<0.02
#8 130-140	0.001		<0.02
#8 140-150	<0.001		<0.02
#8 150-160	<0.001		<0.02
#8 160-170	0.001		0.03
#8 170-180	0.006		0.08
#8 180-190	0.001		0.02
#8 190-200	0.001		0.02
#8 200-210	<0.001		<0.02
#8 210-220	<0.001		<0.02
#8 220-230	<0.001		<0.02
#8 230-240	<0.001		0.02
#8 240-250	0.008	0.007	0.03
#8 250-260	0.003		0.02
#8 260-270	0.001		0.02
#8 270-280	0.001		0.03
#8 280-290	<0.001		0.02
#8 290-300	<0.001		0.03
#8 300-310	0.001		<0.02
#8 310-320	0.002	0.002	<0.02
#8 320-330	0.002		<0.02
#8 330-340	0.003		<0.02
#8 340-350	0.003	0.003	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : #8
JOB NUMBER : SP029597
REPORTED : 23/06/94

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
#8 350-360	0.001		<0.02
#8 360-370	<0.001		<0.02
#8 370-380	0.001		0.03
#8 380-390	<0.001		0.02
#8 390-400	<0.001		<0.02
#8 400-410	<0.001		<0.02
#8 410-420	<0.001		<0.02
#8 420-430	<0.001		<0.02
#8 430-440	<0.001		<0.02
#8 440-450	<0.001		<0.02
#8 450-460	<0.001		<0.02
#8 460-470	<0.001		<0.02
#8 470-480	<0.001		<0.02
#8 480-490	<0.001		0.02
#8 490-500	0.001		<0.02

WHITE—DIVISION OF WATER RESOURCES
CANARY—CLIENT'S COPY
PINK—WELL DRILLER'S COPY

PRINT OR TYPE ONLY
DO NOT WRITE ON BACK

STATE OF NEVADA
DIVISION OF WATER RESOURCES

WELL DRILLER'S REPORT

Please complete this form in its entirety in accordance with NRS 534.170 and NAC 534.340

OFFICE USE ONLY
Log No.
Permit No.
Basin

NOTICE OF INTENT NO. 26908

1. OWNER Hecla Mining
MAILING ADDRESS P. O. Box 1861 Lovelock, NV 89419

ADDRESS AT WELL LOCATION Rosebud Mine 55 miles north of Lovelock

2. LOCATION SE ¼ SW ¼ Sec. 24 T. 34 (N)/S R. 29 E. Pershing County
PERMIT NO. M/O-462-C (Issued by Water Resources) Parcel No. MU#9 (Subdivision Name)

3. WORK PERFORMED
[X] New Well [ ] Replace [ ] Recondition
[ ] Deepen [ ] Abandon [ ] Other

4. PROPOSED USE
[ ] Domestic [ ] Irrigation [ ] Test
[ ] Municipal/Industrial [X] Monitor [ ] Stock

5. WELL TYPE
[ ] Cable [X] Rotary [ ] RVC
[ ] Air [ ] Other

6. LITHOLOGIC LOG

Material	Water Strata	From	To	Thickness
allivian		0	24	24
hard volcanic				
dark green		24	30	6

Date started Aug 7, 19 94
Date completed Aug 8, 19 94

7. WELL TEST DATA
TEST METHOD: [ ] Bailer [ ] Pump [X] Air Lift

G.P.M.	Draw Down (Feet Below Static)	Time (Hours)
trace of water		

8. WELL CONSTRUCTION
Depth Drilled 30 Feet Depth Cased 30 Feet

HOLE DIAMETER (BIT SIZE)

	From	To
9 7/8 Inches	0 Feet	30 Feet
Inches	Feet	Feet
Inches	Feet	Feet

CASING SCHEDULE

Size O.D. (Inches)	Weight/Ft. (Pounds)	Wall Thickness (Inches)	From (Feet)	To (Feet)
5 9/16	Sch 80	PVC	+2	20

Perforations:
Type perforation screen-PVC-Sch80
Size perforation .020
From 20 feet to 30 feet
From feet to feet
From feet to feet
From feet to feet
From feet to feet

Surface Seal: [X] Yes [ ] No
Depth of Seal 18
Placement Method: [ ] Pumped [X] Poured
Seal Type: [ ] Neat Cement [X] Cement Grout [ ] Concrete Grout

Gravel Packed: [X] Yes [ ] No
From 18 feet to 30 feet

9. WATER LEVEL
Static water level 11 feet below land surface
Artesian flow G.P.M. P.S.I.
Water temperature norm °F Quality good

10. DRILLER'S CERTIFICATION
This well was drilled under my supervision and the report is true to the best of my knowledge.
Name Humboldt Drilling & Pump Co. Inc. (Contractor)
Address P. O. Box 590 (Contractor)
Winnemucca, NV 89446
Nevada contractor's license number issued by the State Contractor's Board 015234
Nevada driller's license number issued by the Division of Water Resources, the on-site driller 1195
Signed C. F. Eyler (By driller performing actual drilling on site or contractor)
Date 9-24-94

(Rev. 3-91) USE ADDITIONAL SHEETS IF NECESSARY (O)-627