6000 0552

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-442
AUTHOR	K. Allen; S King; V. Reid; M. Jex; D. White
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; Hecla Mining Co.; Rosebud Project Rosebud Mining Co. LLC
COMMODITY If not obvious	gold; silver
NOTES	drill logs; assay; geology; photographs; geochemistry; total depth 900'; invoices 66p

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 3/19/08
Initials Date
DB:
Initials Date
SCANNED:
Initials Date

Revised: 1/22/08

RS-442

60000552
4010

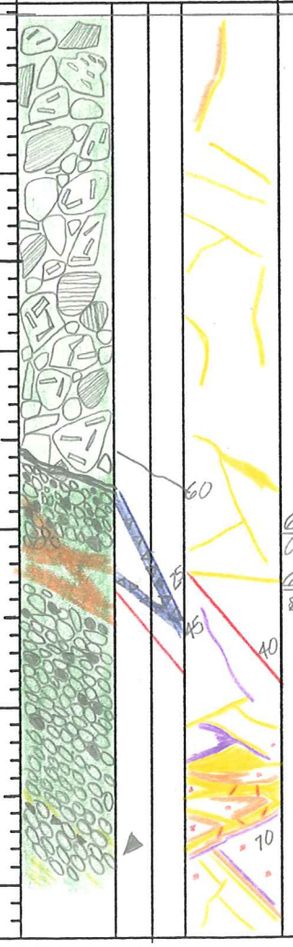
6000058

- 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	RS-442	LOCATION	EAST, SURFACE	REMARKS	PILOTED TO 651'
PAGE 1 OF	4	NORTHING			
DATE	05/07/98	EASTING			
LOGGED BY	HSM	ELEVATION			
SCALE	1"=10'	AZIMUTH	—		
TOTAL DEPTH	900'	INCLINATION	-90°		

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE (CORE POINT = 651')	ALTERATION AND MINERALIZATION
650.0-678.0 CONGLOMERATIC UBUD		651.0'-678.0': HETEROLITHIC, CONGLOMERATIC UBUD. MEDIUM GREEN, VARIABLY PUNKY TO HARD GRN CLAY ALTERED LITHIC LAPILLI TUFF. FINER LAPILLI MATERIAL FORMS A MATRIX TO LT. GRN PUNKY PUMICEOUS & HARD DARK GRN PLAG-BEARING CHOCOLATE COBBLES	650, 660, 670, 680, 690, 700			651.0'-678.0': MOD/WK MILKY SILICA VNS. IRREGULAR SI + WHT CLAY VNS & VUG FILL. WK DISS'D PY, WK BLADED MARC IN SI VNLTS VARIABLY MOD. TO STR. GRN CLAY ALTERATION.
678.0'-700.0' UBUD		678.0'-~683': SPECKLED MEDIUM TO LT. GRN VCG SAND-SIZED BUD. LITHIC LAPILLI TUFF.				678.0'-690.0': STR. PERVASIVE GRN CLAY ALT'N. MOD/WK MILKY SILICA VNLTS, MODERATE DISS'D MARC/PY WK/SPARSE MARC VNLTS RIMMED WITH DARK SULFIDES.
		~683-693.8': PEBBLE-SIZED SPECKLED LT. GRN BUD, LITHIC LAPILLI TUFF. SUB-ANGULAR PEBBLE-SIZED FRAGMENTS ARE GENERALLY MORE BLCHED & PUNKY THAN MATRIX.			681.1'-681.4': 3" OF GREASY WHT-GRN GOUGE. 684.5'-684.8': ~2" GRIT & LT. GRN GOUGE.	690.0-693.8': CONT'D STR. PERVASIVE GRN CLAY ALT'N, LOCAL WK TO MOD SILICIFICATION OVERPRINTS THIS. VERY STR. BANDED MILKY SILICA (+WHT CLAY?) VNS IN THIS INTERVAL. LATE BARITE IN OPEN SPACE.
		693.8'-700': DKER GRN WKLY SHEARED VCG SAND-SIZED BUD. SILICIFICATION OVERPRINT.				

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag
651.0	655.1					
655.1	660.0					
660.0	665.2					
665.2	670.0					
670.0	673.7					
673.7	678.0					
678.0	681.1					
681.1	684.8					
684.8	690.0					
690.0	693.8					
693.8	696.6					
696.6	700.0					

HOLE NUMBER RS-442 PAGE 2 OF 4

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
700.0-711.8' SOUTH RIDGE FAULT 711.8'-715.3 DOZER 715.3-724.8' 2ND FAULT STRAND		700.0'-703.2': RUDDY TAN SUB-ROUNDED TO SUB-ANGULAR LBT-AFFINITY FRAGMENTS FLOAT IN A DISTURBED, CONTORTED GRK BUD-DERIVED MATRIX. MATRIX-SUPPORTED, PROBABLY TECTONIC BRECCIA. FRAGMENTS ARE SPOTTED/MASSIVE APHANITIC LBT TYPE. 703.2-705.0': THE MIXED BRN LBT + GRN BUD MATRIXED BRECCIA DESCRIBED ABOVE IS REBRECCIATED & CEMENTED WITH MILKY SILICA +/- LATE BARITE FORMING A HYDROTHERMAL MOSAIC BXA. 705.0-706.2': STRLY SILICA-FLOODED AND RE-BRECCIATED ROCK FLOUR. SILICA-FLOODED GRN BUD FRAGMTS FLOAT IN GRY SILICIFIED RK FLOUR. GRY-BLK VRG SULFIDE VNLTS CUT	700 710		702': ~2" GRIT & WHT GOUGE 700.0-703.2': MATRIX-SUPPORTED TECTONIC MOSAIC BRECCIA. 703.2-705.0': SILICA + BA CEMENTED HYDROTHERMAL B'XA APPEARS TO OVERPRINT 705.0-706.2': STRLY SILICIFIED HETEROLITHIC ROCK FLOUR. 706.2-706.6': FRIABLE GOUGE ZONE. WITH SHEAR CATACLASTIC TEXTURE THRU LOSS	700.0'-703.2': CONT'D STR. GRN CLAY ALTERATION IN MATRIX. PERVASIVE WK SILICIFICATN. WK PY/MARC DISSEMINATN. 703.2-706.0': V. STR VN SILICA +/- WHT CLAY & LATE BA. MOD. PERVASIVE SILICA & STR. GRN CLAY ALT'N IN BUD MAT'L. WK/MOD DISS'D PY/MARC 705.0'-706.2': STRLY SILICIFIED SPOTTY FRAGMENT SPECIFIC GRN CLAY ALT'N.
724.8'-DOZER		THIS BXA ZONE & ARE IN SILICIFIED FRAGMTS W/IN & CUT BY BXA. 706.2-706.6': LT. GRK TO WHT, MOTTLED, SHEARED, CLAY ALTERED RK FLOUR BRECCIA. 706.6-707': CONT'D PALE (BLCHED) SHEARED ZONE EXTENDING INTO WHT BARITE CEMENTED HETEROLITHIC MOSAIC BRECCIA. STIBNITE? 707.0-708.4': WHT BARITE +/- SOOTY SULFIDE CEMENTS SUB-ROUND FRAGMTS OF GRY SILICA-REPLACED ROCK FLOUR, AND SILICIFIED, GRN, BUD-DERIVED COBBLES. 708.4-711.8': MILLED, MATRIX-RICH HETEROLITHIC BXA. DOMINANTLY PEA-SIZED MATERIAL IS VARIABLY FULLY TO SEMI-~~HEAL~~ CEMENTED WITH SILICA. MOTTLED LT. TO DK GRN & GRY, DUE TO PRIOR GRN CLAY ALT'N OF FRAGMENTS; (LIKELY BUD-DERIVED OR Tos) 711.8'-715.3: DECREASINGLY SILICIFIED, AUTOBXAT'D & VNED BUT INTACT DOZER. 715.3-717.0': SILICA STKWK VNLT CRACKLE BXA IN DOZER. 717.0'-720.4': BARITE + LEACHED MILKY SILICA VN CEMENTED MOSAIC BXA IN DOZER. 720.4-722.0': WHT TO LT. GRN CLAY +/- SILICA MATRIX/CEMENT ON HETEROLITHIC MOSAIC BRECCIA. PREVIOUSLY CLAY ALTERED & SILICIFIED SUB-ANGULAR FRAGMTS FLOAT IN CLAY + Si MATRIX. 722.0'-723.3': MOTTLED SILICA-FLOODED FAULT RK FLOUR & BRECCIA. 723.3-724.8': STRLY BXAT'D LT. GRN DOZER GRADING DOWN INTO STRLY SHEARED DOZER. TECTONIC FABRICS DOMINATE. 724.8'-730': CONT'D BUT WEAKER TECTONIC OVERPRINT ON CRTM-LT. GRN DOZER AUTOBXA.	720 730 740 750 760 770		706.6-708.5': BARITE + Si CEMENTED MATRIX-SUPPORTED MOSAIC BXA. 720.0-723.5': MIXED LITHOLOGY FAULT BXA. MILLED/CATACLASTIZED FLT BXA IS SILICA-FLOODED & OVERPRINTED WITH HYDROTHERMAL BXA FROM 720.4-722.0 730.0-730.6': LT. GRN, GRITTY UNHEALED GOUGE ZONE IN BROKEN DOZER. 730-735': STRLY/MODLY BROKEN. UNHEALED CRACKLE BRECCIA PACKED WITH GOUGE FROM 730.0-730.6 & 734-735.0'. ~740': WK UNHEALED BXA W/ TR GOUGE LIKE ABOVE.	MOD. SOOTY BLK SILICA-SULFIDE VEINING STR. BA VNS ON JNTS. 706.2-708.4': STR. GRY SILICA REPLACEMT OVERPRINTED/CUT BY STRONG LATER BARITE +/- SOOTY SULFIDE. 708.4'-711.8': STR TO MOD. SILICIFICATION OVERPRINTING SPOTTY GRN CLAY ALT'N. LOCAL SOOTY SULFIDES IN SILICA. WK BARITE +/- STIBNITE IN VUGS. 711.8-715.3': WK WALLRK SiO_2 MOD/STR. SILICA VNING & LATER BARITE. WK Py. 715.3-717.0': STR. SILICA VNING/CEMENT. MOD WHT CLAY +/- Si VNS. TR DISS'D Py. 717.0-718.8': STR TO MOD SiO_2 X-CUT BY Ba + SiO_2 + MARC BRECCIA CEMENT. 720-722': STR SILICA-FLOODING X-CUT BY WHT TO LT. GRN CLAY +/- SILICA. WK DISS'D SULFIDE. 722.0-723.3': >80% SILICA REPLACEMENT. MOTTLED GRY TO WHT SiO_2 OVERPRINTS FLT RK FLOUR. 723.3-724.8': YELLOW-GRN PERVASIVE MOD. CLAY ALT'N, WK SiO_2 MOD/STR DIFFUSE SILICA + MARC VNLTS.

ANALYTICAL DATA

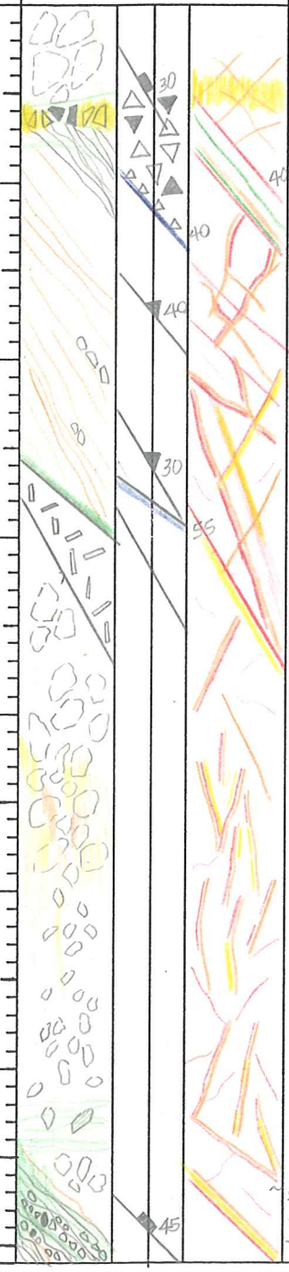
FROM	TO	W	Au	Ag	Au2
700.0	703.2				
703.2	705.0				
705.0	706.2				
706.2	708.4				
708.4	711.8				
711.8	715.3				
715.3	717.0				
717.0	718.8				
720.0	722.0				
722.0	723.3				
723.3	724.8				
724.8	730.0				
730.0	734.5				
734.5	738.5				
738.5	742.8				
742.8	746.9				
746.9	752.3				
752.3	757.0				
757.0	761.9				
761.9	767.1				

HOLE NUMBER RS-442 PAGE 3 OF 4

LITH.	OX/RED	LITHOLOGY
724.8'- DOZER	798.1'	730.0'- 775.5' : LT. TAN DOZER MOTTLED WITH FAINT RUDDY FeOx (?) STAINING. PSEUDOBRECCIATED DUE TO MOTTLING. TRUE AUTOBRECCIATION PICKS UP ~ 765'.
		LARGELY UNBRECCIATED REGULARLY FLOW BANDED DOZER FROM 782.3'-798.1'.
798.1'- DIKE, PORPHYRY	801.9	798.1': THIN GRN CLAY ALTERED CONTACT AT 55° TO C/A.
		798.1-801.9': LT. GRN-GRY TAN APHANITIC GROUNDMASS.
801.9- DOZER		RAGGED GLOMERO PORPHYRITIC WHT PLAG PHENO CRYST RELICTS. MODERATE SILICA + WHT CLAY + MARCASITE VNLTS HAVE DUSTY GRY (VFG SULFIDE ?) HALOS IN THE DIKE GROUNDMASS. PHENOS REMAIN WHT CLAY ALTERED. SiO_2 + MARC/PY VEIN AT LOWER CONTACT W/ DOZER. ~10/ SQ IN. PHENO DENSITY
		801.9-839.7': ~~AS ABOVE~~. AUTOBRECCIATED FAINTLY MOTTLED & BANDED DOZER. RUDDY MOTTLING IS PREVALENT BUT WK TO 810.8', & PICKS UP AGAIN BELOW 825.1'.
		839.7-843.0': VEIN CRACKLE BRECCIATED MIXTURE ~~OF~~ OF DOZER ROCKS.

FT 770, 780, 790, 800, 810, 820, 830, 840

GRAPHIC LOG



STRUCTURE

775.5-781.5': SEMI-HEALED SHEARED/BROKEN ZONE

838.0-839.7': STR. HEALED MYLONITE FABRIC IN DOZER AUTOBXA. 45° TO C/A.

ALTERATION AND MINERALIZATION

724.8-730: TR PERVASIVE GRN CLAY MOD. DIFFUSE SiO_2 + MARC VNS TR. WHT CLAY ON FRAX. WK DISS'D PYRITE.

730-734.5': AS ABOVE W/ STRONG ARGILLIZATION IN BROKEN ZONES.

734.5-742.8': AS ABOVE W/ MOD/STR. SILICA CEMENTED BRECCIA VNING.

742.8'-775.5': WK MARC/PY VNLTS. WK WHT CLAY ON FRAX, SPARSE FINELY DRUSY QUARTZ + MARC VNLTS. CONT'D TR GRN CLAY ALT'N IN WALLROCK.

775.5'-782.3': STR TO WK SILICA + MARC BXA CEMENT INCREASED FRAX COATING CLAY. LOCAL MOD. WALLRK ARG.

782.3-783.1': WHT CLAY + PYRARGERITE ON FRAX = STR.

WHT CLAY + MARC +/- PYRARGERITE GENERALLY INCREASED TO MOD. TO 793.

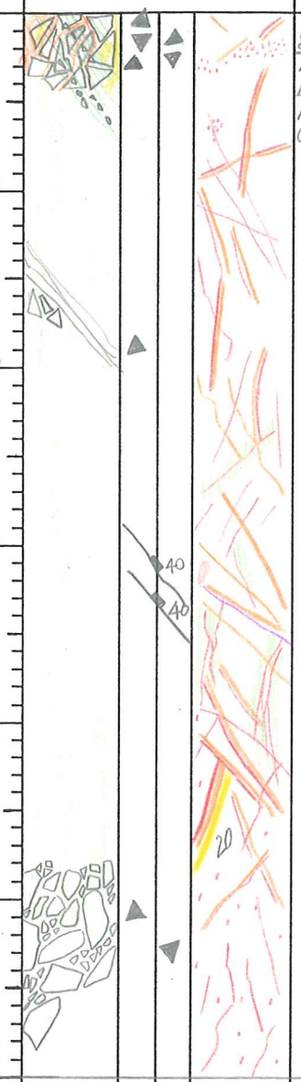
810.8-825.1': STR. TO MOD. SILICA + MARC + WHT CLAY VNLTS DOMINANTLY AT V. LOW ANGLES TO CORE AXIS. WK PERVASIVE SiO_2 BLEED OUT INTO WALLRK. WHERE UNSILICIFIED WALLRK IS MOD TO STR ARGILLIZED. TR DISS'D PY.

825.1-839.7': WK TO MOD. ARG. W/ SOME AUTOBXA FRAGMTS PREFERENTIALLY ARGILLIZED. FAINT GRN CLAY ALTERATN. WK MARC/PY VNLTS & DISS'D. WK/MOD. WHT CLAY + BLADED MARC ON FRAX.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
767.1	771.7				
771.7	775.5				
775.5	779.1				
779.1	782.3				
782.3	783.1				
783.1	787.8				
787.8	793.4				
ARG 793.4	798.1				
798.1	801.9				
801.9	805.9				
805.9	810.8				
810.8	815.0				
815.0	820.0				
820.0	825.1				
825.1	830.1				
830.1	835.2				
835.2	839.7				

HOLE NUMBER RS-442 PAGE 4 OF 4

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
801.9-900' DOZER		839.7-843.0': HEALED TO SEMI-HEALED CRACKLE BXA 843.0'-900.0': MASSIVE FEATURELESS APHANITIC LT. GRN GRY DOZER BELOW OLD MYLONITE & CRACKLE BXA ZONE. SMALL CRACKLE BXA/AUTOBRECCIA ZONES IN MASSIVE UNIT AT 859-860 & 887.4-894.1' APPEAR TO BE LATER HYDROFRAX TYPE IN TEXTURE. 887.4-894.1': AUTOBXA ZONE? SPOTTY MONOLITHIC MOSAIC BRECCIA ## W/ RK FLOOR/GRN CLAY MATRIX. 900' TD.	840 850 860 870 880 890 900		839.7-843.0': SEMI-HEALED MONOMICT DOZER CRACKLE BXA. OVERPRINTS/ X-CUTS MYLONITE TEXTURE WHICH CONTINUES @ 40-30° TO C/A	839.7-843.0': MOD. GRN CLAY ALTERATION, W/ SPOTTY OVERPRINTING WK SiO_2 SILICA TACK-HEALED BXA W/ MOD. WHT CLAY IN VUGS. STR TO MOD. PY DISS'D & IN FRAX. 843.0'-~889': WK/MOD. FINE PY/MARC VNLTS +/- TR. DRUSY QUARTZ. WK (SPARSE) WHT CLAY + MARC VNLTS/ FRAX COATINGS. SPOTTY RUDDY HALOS ON PYRITIC VNLTS. FROM ~863-878.3': SPOTTY GRAINY/PONKY ZONES OF STR. WALLRK ARGILLIZATION IN SELVAGES OF THIN DULL SPORADIC MARC VNLTS. ~889': WHT CLAY + MARC/PY VNLTS DISAPPEAR, & GRN CLAY ALTERATION DECREASES TO TR. SPOTTY STRONGER ALTERATION IS GONE. FAINT RUDDY + GRN (CLAY) SELVAGES CONTINUE.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
839.7	843.0				
843.0	848.0				
848.0	853.2				
853.2	858.1				
858.1	863.1				
863.1	868.2				
868.2	873.2				
873.2	878.3				
878.3	883.2				
883.2	887.4				
887.4	890.7				
890.7	894.1				
894.1	900.0				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-442 DATE: 05/07/98 LOGGED BY: ADM PAGE 1 OF 3

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
651.0	660.0	98.9	98.9	88.9										
660.0	670.0	100.0	100.0	69.0										
670.0	680.0	100.0	100.0	47.0										
680.0	690.0	95.0	95.0	77.0										
690.0	700.0	95.0	95.0	83.0										
700.0	710.0	100.0	100.0	56.0										
710.0	720.0	82.0	82.0	53.0										
720.0	724.8	112.5	112.5	58.3										
724.8	730.0	100.0	100.0	50.0										
730.0	736.7	100.0	100.0	16.4										
736.7	746.7	100.0	100.0	68.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-442 DATE: 05/08/98 LOGGED BY: HSM PAGE 2 OF 3

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)
746.7	757.0	100.0	100.0	81.0										
757.0	767.1	103.0	103.0	94.0										
767.1	777.3	100.0	100.0	85.0										
777.3	787.5	102.0	102.0	67.6										
787.5	797.5	98.0	98.0	91.2										
797.5	807.5	100.0	100.0	86.0										
807.5	817.7	103.0	103.0	47.1										
817.7	827.7	98.0	98.0	82.0										
827.7	837.9	98.0	98.0	72.5										
837.9	848.0	101.0	101.0	94.1										
848.0	858.1	10.1	10.1	94.1										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-442 DATE: 05/08/98 LOGGED BY: HLM PAGE 3 OF 3

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)
858.1	868.2	100.0	100.0	81.2										
868.2	878.3	104.0	104.0	70.3										
878.3	887.4	92.1	92.1	64.4										
887.4	897.5	99.0	99.0	81.2										
897.5	900.0	100.0	100.0	80.0										
	TD													

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048824

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

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

CLIENT REFERENCE No: RS-442 RECEIVED : 12 MAY 1998

No. SAMPLES : 63 REPORTED : 18 MAY 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

PROVISIONAL REPORT SP048824

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 18 MAY 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)	
RS-442 651.0-655.1	0.016			0.39	
RS-442 655.1-660.0	0.012			0.17	
RS-442 660.0-665.2	0.006			0.11	
RS-442 665.2-670.0	0.006	0.007		0.07	
RS-442 670.0-673.7	0.004			0.04	
RS-442 673.7-678.0	0.003			0.26	
RS-442 678.0-681.1	0.002			0.05	
RS-442 681.1-684.8	0.008			5.95	
RS-442 684.8-690.0	0.003			0.51	
RS-442 690.0-693.8	0.002			0.13	
RS-442 693.8-696.6	<0.001			0.05	
RS-442 696.6-700.0	0.003			0.09	
RS-442 700.0-703.2	0.002			0.07	
RS-442 703.2-705.0	0.002			0.09	
RS-442 705.0-706.2	0.008			0.05	
RS-442 706.2-708.4	0.013			2.11	
RS-442 708.4-711.8	0.003			1.08	
RS-442 711.8-715.3	0.034			0.10	
RS-442 715.3-717.0	0.086		0.102	0.32	717.0-722' = 5 @
RS-442 717.0-718.8 1.8	1.028		0.932	0.91	0.701 Au
RS-442 720-722 2	0.407	0.344	0.204	1.13	1.03 Ag
RS-442 722.0-723.3	0.010			0.17	
RS-442 723.3-724.8	0.041			0.11	
RS-442 724.8-730.0	0.005			0.07	
RS-442 730.0-734.5	0.004	0.006		0.54	

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048824

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 18 MAY 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)	
RS-442 734.5-738.5	0.015			0.22	
RS-442 738.5-742.8	0.029			0.03	
RS-442 742.8-746.9	0.008			0.03	
RS-442 746.9-752.3	0.017			0.04	
RS-442 752.3-757.0	0.012			0.03	
RS-442 757.0-761.9	0.011			0.03	
RS-442 761.9-767.1	0.013			0.04	
RS-442 767.1-771.7	0.042			0.08	775.5 - 787.8 =
RS-442 771.7-775.5	0.017			0.15	12.3'
RS-442 775.5-779.1 3.6	0.049			4.78	
RS-442 779.1-782.3 3.2	0.028			0.55	0.029 Au
RS-442 782.3-783.1 0.8	0.041			92.27	11.17 Ag
RS-442 783.1-787.8 4.7	0.012			9.50	
RS-442 787.8-793.4	0.012			1.26	
RS-442 793.4-798.1	0.007			0.11	
RS-442 798.1-801.9	0.015			0.42	
RS-442 801.9-805.9	0.020			0.16	
RS-442 805.9-810.8	0.009			0.22	
RS-442 810.8-815.0	0.010			0.43	
RS-442 815-820	0.010	0.009		1.42	
RS-442 820.0-825.1	0.004			0.16	
RS-442 825.1-830.1	0.003			0.04	
RS-442 830.1-835.2	0.007			0.06	
RS-442 835.2-839.7	0.005			0.09	
RS-442 839.7-843.0	0.010			0.24	

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048824

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 18 MAY 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
RS-442 843-848	0.010			0.06
RS-442 848.0-853.2	0.004			0.05
RS-442 853.2-858.1	0.006			0.08
RS-442 858.1-863.1	0.004			0.05
RS-442 863.1-868.2	0.002			0.07
RS-442 868.2-873.2	0.004			0.09
RS-442 873.2-878.3	0.003			0.07
RS-442 878.3-883.2	0.006			0.12
RS-442 883.2-887.4	0.010	0.009		1.26
RS-442 887.4-890.7	0.005			0.06
RS-442 890.7-894.1	0.004			0.04
RS-442 894.1-900.0	0.002			0.04
31078	0.138			2.78

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048824

American Assay Laboratories

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

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

CLIENT REFERENCE No: RS-442 RECEIVED : 12 MAY 1998

No. SAMPLES : 63 REPORTED : 18 MAY 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 SP048824

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 18 MAY 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-442 651.0-655.1	0.016			0.39
RS-442 655.1-660.0	0.012			0.17
RS-442 660.0-665.2	0.006			0.11
RS-442 665.2-670.0	0.006	0.007		0.07
RS-442 670.0-673.7	0.004			0.04
RS-442 673.7-678.0	0.003			0.26
RS-442 678.0-681.1	0.002			0.05
RS-442 681.1-684.8	0.008			5.95
RS-442 684.8-690.0	0.003			0.51
RS-442 690.0-693.8	0.002			0.13
RS-442 693.8-696.6	<0.001			0.05
RS-442 696.6-700.0	0.003			0.09
RS-442 700.0-703.2	0.002			0.07
RS-442 703.2-705.0	0.002			0.09
RS-442 705.0-706.2	0.008			0.05
RS-442 706.2-708.4	0.013			2.11
RS-442 708.4-711.8	0.003			1.08
RS-442 711.8-715.3	0.034			0.10
RS-442 715.3-717.0	0.086		0.102	0.32
RS-442 717.0-718.8	1.028		0.932	0.91
RS-442 720-722	0.407	0.344	0.204	1.13
RS-442 722.0-723.3	0.010			0.17
RS-442 723.3-724.8	0.041			0.11
RS-442 724.8-730.0	0.005			0.07
RS-442 730.0-734.5	0.004	0.006		0.54

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048824

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 18 MAY 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-442 734.5-738.5	0.015			0.22
RS-442 738.5-742.8	0.029			0.03
RS-442 742.8-746.9	0.008			0.03
RS-442 746.9-752.3	0.017			0.04
RS-442 752.3-757.0	0.012			0.03
RS-442 757.0-761.9	0.011			0.03
RS-442 761.9-767.1	0.013			0.04
RS-442 767.1-771.7	0.042			0.08
RS-442 771.7-775.5	0.017			0.15
RS-442 775.5-779.1	0.049			4.78
RS-442 779.1-782.3	0.028			0.55
RS-442 782.3-783.1	0.041			92.27
RS-442 783.1-787.8	0.012			9.50
RS-442 787.8-793.4	0.012			1.26
RS-442 793.4-798.1	0.007			0.11
RS-442 798.1-801.9	0.015			0.42
RS-442 801.9-805.9	0.020			0.16
RS-442 805.9-810.8	0.009			0.22
RS-442 810.8-815.0	0.010			0.43
RS-442 815-820	0.010	0.009		1.42
RS-442 820.0-825.1	0.004			0.16
RS-442 825.1-830.1	0.003			0.04
RS-442 830.1-835.2	0.007			0.06
RS-442 835.2-839.7	0.005			0.09
RS-442 839.7-843.0	0.010			0.24

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048824

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 18 MAY 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-442 843-848	0.010			0.06
RS-442 848.0-853.2	0.004			0.05
RS-442 853.2-858.1	0.006			0.08
RS-442 858.1-863.1	0.004			0.05
RS-442 863.1-868.2	0.002			0.07
RS-442 868.2-873.2	0.004			0.09
RS-442 873.2-878.3	0.003			0.07
RS-442 878.3-883.2	0.006			0.12
RS-442 883.2-887.4	0.010	0.009		1.26
RS-442 887.4-890.7	0.005			0.06
RS-442 890.7-894.1	0.004			0.04
RS-442 894.1-900.0	0.002			0.04
31078	0.138			2.78

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

Quick LOG

HOLE NUMBER: RS-442
PAGE: 1 OF 4
DATE: 6/26/98
LOGGED BY: KLA
TOTAL DEPTH: 650' RUC PRE-COLLAR, 906' CORE

LOCATION: EAST ZONE
NORTHING:
EASTING:
ELEVATION:
AZIMUTH: VERT.
INCLINATION: -90

AREA: EAST ZONE
DRILLING CO.: ERLUND
RIG TYPE: RUC
HOLE SIZE: 5 1/2
DOWN HOLE SURVEY BY: WELDAU

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MATRIX %	SILICIFICATION CLASTS %	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	AG-SULF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBE	ANALYTICAL DA: FROM	TO	W	Au
10		Col	Colluvium																		X																			
20																					X																			
30		TCFG	Fine-grained chocolate latitic to andesitic flow																	X																				
40																				X																				
50																				X																				
60																			X																					
70																			X																					
80																			X																					
90		TCLT																																						
100																																								
110																																								
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130																																								
140																																								
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160																																								
170																																								
180																																								
190																																								
200																																								

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-442
PAGE 2 OF 4
DATE
LOGGED BY
TOTAL DEPTH

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION																	MINERALIZATION									METALLURGY				ANALYTICAL DA			
						SILICIFICATION					ARGILLIC				PROPYLITIC %		POTASSIC %		OXIDATION			VIENING		SULFIDES			PY	CPY	MAR	AC-SULF	SULFATE	BARITE	OXIDE	SULF	CARBON	MOCURE	FROM	TO	W	Au
						5%	15%	+25%	MATRIX %	CLASTS %	5%	15%	+25%	TYPE	CHLORITE	CALCITE	K-SPAR	ALUNITE	5%	15%	+25%	%	TYPE	5%	15%	+25%	%	%	%	%	%	%								
210		TCLLT																																						
220																																								
230																																								
240																																								
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350																																								
360																																								
370																																								
380																																								
390																																								
400		FGPP	FINE GRAINED Rhyolitic? sill? LATITIC?																																					

Hecla MINING COMPANY

ROSEBUD PROJECT
DRILL LOG

HOLE NUMBER RS-442
PAGE 3 OF 4
DATE
LOGGED BY
TOTAL DEPTH

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION																	MINERALIZATION									METALLURGY				ANALYTICAL DA			
						SILICIFICATION					ARGILLIC				PROPYLITIC %		POTASSIC %		OXIDATION			VIENING		SULFIDES			PY	CPY	MAR	AC-SULF	STIBNITE	BARITE	OXIDE	SULF	CARBON	MIXCURE	FROM	TO	W	Au
						5%	15%	+25%	MATRIX %	CLASTS %	5%	15%	+25%	TYPE	CHLORITE	CALCITE	K-SPAR	ALUNITE	5%	15%	+25%	%	TYPE	5%	15%	+25%	%	%	%	%	%	%								
410		FGPP																																						
420		UHPP	LT GREEN CLAY VITROPHYRE.																																					
430																																								
440		LPT																																						
450		UBUD																																						
460																																								
470																																								
480																																								
490																																								
500																																								
510																																								
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530																																								
540																																								
550																																								
560																																								
570																																								
580																																								
590																																								
600																																								

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-442
PAGE 4 OF 4
DATE
LOGGED BY
TOTAL DEPTH

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION																	MINERALIZATION									METALLURGY				ANALYTICAL DA			
						SILICIFICATION					ARGILLIC				PROPYLITIC %		POTASSIC %		OXIDATION			VIENING		SULFIDES			PY	CPY	MAR	AC-SULF	STIBNITE	BARITE	OXIDE	SULF	CARBON	MOLYBDE	FROM	TO	W	Au
						5%	15%	+25%	MATRIX %	CLASTS %	5%	15%	+25%	TYPE	CHLORITE	CALCITE	K-SPAR	ALUNITE	5%	15%	+25%	%	TYPE	5%	15%	+25%	%	%	%	%	%	%									
610		CLBUD																																						
620		PABX																																						
630																																								
640																																								
650		M.BUD																																						
			RUC PRE-COLLAR TD = 650'																																					

merican
Assay
Laboratories

INVOICE

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

RICAN ASSAY LABORATORIES
0 GLENDALE AVE.
RKS, NV 89431

702) 356-0606

INVOICE NO: SP 0048824-IN
INVOICE DATE: 05/28/98

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
RS-442	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
63	SAMPLES RECEIVED	.00	.00
62	JAW CRUSHING CHARGE	2.60	161.20
62	COARSE MILLING CHARGE	9.00	558.00
62	SPLITTING CHARGE	2.40	148.80
62	RING MILLING CHARGE	2.00	124.00
63	Au (1 A.T. FIRE ASSAY)	8.00	504.00
3	Au ANALYSES/GRAVIMETRIC	8.75	26.25
63	HYDROCHLORIC/NITRIC DIGESTION	2.00	126.00
63	Ag ANALYSES	1.00	63.00
5	Ag (ore grade) ANALYSES	5.00	25.00

86-5210-$77
RDA

NET INVOICE:	1,736.25
LESS DISCOUNT:	347.25
FREIGHT:	.00
INVOICE TOTAL:	1,389.00

xAMERICAN ASSAY LABORATORIES
ANALYSIS REPORT SP048824

American Assay Laboratories

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

HECLA MINING COMPANY

COPIES TO : KURT ALLEN
:
:
:

CLIENT REFERENCE No: RS-442
No. SAMPLES : 63
MAIN SAMPLE TYPE : DRILL CORE

RECEIVED : 12 MAY 1998
REPORTED : 18 MAY 1998

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 SP048824

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 18 MAY 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-442 651.0-655.1	0.016			0.39
RS-442 655.1-660.0	0.012			0.17
RS-442 660.0-665.2	0.006			0.11
RS-442 665.2-670.0	0.006	0.007		0.07
RS-442 670.0-673.7	0.004			0.04
RS-442 673.7-678.0	0.003			0.26
RS-442 678.0-681.1	0.002			0.05
RS-442 681.1-684.8	0.008			5.95
RS-442 684.8-690.0	0.003			0.51
RS-442 690.0-693.8	0.002			0.13
RS-442 693.8-696.6	<0.001			0.05
RS-442 696.6-700.0	0.003			0.09
RS-442 700.0-703.2	0.002			0.07
RS-442 703.2-705.0	0.002			0.09
RS-442 705.0-706.2	0.008			0.05
RS-442 706.2-708.4	0.013			2.11
RS-442 708.4-711.8	0.003			1.08
RS-442 711.8-715.3	0.034			0.10
RS-442 715.3-717.0	0.086		0.102	0.32
RS-442 717.0-718.8	1.028		0.932	0.91
RS-442 720-722	0.407	0.344	0.204	1.13
RS-442 722.0-723.3	0.010			0.17
RS-442 723.3-724.8	0.041			0.11
RS-442 724.8-730.0	0.005			0.07
RS-442 730.0-734.5	0.004	0.006		0.54

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048824

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 18 MAY 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-442 734.5-738.5	0.015			0.22
RS-442 738.5-742.8	0.029			0.03
RS-442 742.8-746.9	0.008			0.03
RS-442 746.9-752.3	0.017			0.04
RS-442 752.3-757.0	0.012			0.03
RS-442 757.0-761.9	0.011			0.03
RS-442 761.9-767.1	0.013			0.04
RS-442 767.1-771.7	0.042			0.08
RS-442 771.7-775.5	0.017			0.15
RS-442 775.5-779.1	0.049			4.78
RS-442 779.1-782.3	0.028			0.55
RS-442 782.3-783.1	0.041			92.27
RS-442 783.1-787.8	0.012			9.50
RS-442 787.8-793.4	0.012			1.26
RS-442 793.4-798.1	0.007			0.11
RS-442 798.1-801.9	0.015			0.42
RS-442 801.9-805.9	0.020			0.16
RS-442 805.9-810.8	0.009			0.22
RS-442 810.8-815.0	0.010			0.43
RS-442 815-820	0.010	0.009		1.42
RS-442 820.0-825.1	0.004			0.16
RS-442 825.1-830.1	0.003			0.04
RS-442 830.1-835.2	0.007			0.06
RS-442 835.2-839.7	0.005			0.09
RS-442 839.7-843.0	0.010			0.24

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048824

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 18 MAY 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-442 843-848	0.010			0.06
RS-442 848.0-853.2	0.004			0.05
RS-442 853.2-858.1	0.006			0.08
RS-442 858.1-863.1	0.004			0.05
RS-442 863.1-868.2	0.002			0.07
RS-442 868.2-873.2	0.004			0.09
RS-442 873.2-878.3	0.003			0.07
RS-442 878.3-883.2	0.006			0.12
RS-442 883.2-887.4	0.010	0.009		1.26
RS-442 887.4-890.7	0.005			0.06
RS-442 890.7-894.1	0.004			0.04
RS-442 894.1-900.0	0.002			0.04
31078	0.138			2.78

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048578

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

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

NSI

RVC

CLIENT REFERENCE No: RS-442 RECEIVED : 20 APR 1998

No. SAMPLES : 65 REPORTED : 30 APR 1998

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

SIGNATORY : Susan King M.S.

04/30/1998 08:59 7023561413 AMERICAN ASSAY LABS PAGE 01
7023561413

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048578

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 30 APR 1998

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
RS-442 000-010	0.003		0.04
RS-442 010-020	<0.001	0.001	0.02
RS-442 020-030	0.001		0.04
RS-442 030-040	0.003		0.06
RS-442 040-050	0.001		0.08
RS-442 050-060	<0.001		0.02
RS-442 060-070	0.001		0.12
RS-442 070-080	<0.001		<0.02
RS-442 080-090	0.002		0.06
RS-442 090-100	0.001		0.05
RS-442 100-110	<0.001		<0.02
RS-442 110-120	<0.001		<0.02
RS-442 120-130	<0.001		<0.02
RS-442 130-140	<0.001		<0.02
RS-442 140-150	<0.001		<0.02
RS-442 150-160	0.001		0.04
RS-442 160-170	0.001		0.06
RS-442 170-180	<0.001		<0.02
RS-442 180-190	<0.001		<0.02
RS-442 190-200	<0.001	<0.001	0.02
RS-442 200-210	<0.001		<0.02
RS-442 210-220	<0.001		<0.02
RS-442 220-230	<0.001		<0.02
RS-442 230-240	<0.001		<0.02
RS-442 240-250	0.001		0.05

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048578

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 30 APR 1998

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
RS-442 250-260	0.004		0.11
RS-442 260-270	0.001		0.05
RS-442 270-280	0.001		0.03
RS-442 280-290	<0.001		<0.02
RS-442 290-300	<0.001	<0.001	<0.02
RS-442 300-310	0.009		0.04
RS-442 310-320	0.001		0.06
RS-442 320-330	0.001		0.02
RS-442 330-340	<0.001		<0.02
RS-442 340-350	0.004		0.07
RS-442 350-360	<0.001		0.02
RS-442 360-370	<0.001		<0.02
RS-442 370-380	<0.001		<0.02
RS 442 380 390	0.009		0.09
RS-442 390-400	0.004		0.06
RS-442 400-410	0.002	0.003	0.08
RS-442 410-420	0.001		0.04
RS-442 420-430	0.004		0.02
RS-442 430-440	0.004		0.06
RS-442 440-450	0.002		0.04
RS-442 450-460	0.003		0.04
RS-442 460-470	0.002		0.03
RS-442 470-480	0.009		0.14
RS-442 480-490	0.009		0.13
RS-442 490-500	0.001		0.04

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048578

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 30 APR 1998

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
RS-442 500-510	0.001	0.001	0.02
RS-442 510-520	0.002		0.07
RS-442 520-530	0.004		0.13
RS-442 530-540	0.003		0.08
RS-442 540-550	0.010		0.06
RS-442 550-560	0.001		0.03
RS-442 560-570	0.001	<0.001	0.03
RS-442 570-580	0.001		0.02
RS-442 580-590	0.007		0.03
RS-442 590-600	0.002		0.04
RS-442 600-610	0.007		0.05
RS-442 610-620	0.002		0.05
RS-442 620-630	0.005		0.03
RS-442 630-640	0.003		0.07
RS-442 640-650	0.004		0.14

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

(702) 356-0606

INVOICE NO: SP 0048578-IN
INVOICE DATE: 04/30/98

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
RS-442	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
65	SAMPLES RECEIVED	.00	.00
65	DRYING	1.00	65.00
65	EXCESSIVE WETNESS	1.00	65.00
65	JAW CRUSHING CHARGE	1.30	84.50
65	SPLITTING CHARGE	1.20	78.00
65	FINE MILLING CHARGE	2.00	130.00
65	Au (1 A.T. FIRE ASSAY)	8.00	520.00
65	HYDROCHLORIC/NITRIC DIGESTION	2.00	130.00
65	Ag ANALYSES	1.00	65.00

86-5210-477
KA

NET INVOICE:	1,137.50
LESS DISCOUNT:	341.25
FREIGHT:	.00
INVOICE TOTAL:	796.25

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048578

American Assay Laboratories

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

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

CLIENT REFERENCE No: RS-442 RECEIVED : 20 APR 1998

No. SAMPLES : 65 REPORTED : 30 APR 1998

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

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048578

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 30 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-442 000-010	0.003		0.04
RS-442 010-020	<0.001	0.001	0.02
RS-442 020-030	0.001		0.04
RS-442 030-040	0.003		0.06
RS-442 040-050	0.001		0.08
RS-442 050-060	<0.001		0.02
RS-442 060-070	0.001		0.12
RS-442 070-080	<0.001		<0.02
RS-442 080-090	0.002		0.06
RS-442 090-100	0.001		0.05
RS-442 100-110	<0.001		<0.02
RS-442 110-120	<0.001		<0.02
RS-442 120-130	<0.001		<0.02
RS-442 130-140	<0.001		<0.02
RS-442 140-150	<0.001		<0.02
RS-442 150-160	0.001		0.04
RS-442 160-170	0.001		0.06
RS-442 170-180	<0.001		<0.02
RS-442 180-190	<0.001		<0.02
RS-442 190-200	<0.001	<0.001	0.02
RS-442 200-210	<0.001		<0.02
RS-442 210-220	<0.001		<0.02
RS-442 220-230	<0.001		<0.02
RS-442 230-240	<0.001		<0.02
RS-442 240-250	0.001		0.05

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048578

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 30 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-442 250-260	0.004		0.11
RS-442 260-270	0.001		0.05
RS-442 270-280	0.001		0.03
RS-442 280-290	<0.001		<0.02
RS-442 290-300	<0.001	<0.001	<0.02
RS-442 300-310	0.009		0.04
RS-442 310-320	0.001		0.06
RS-442 320-330	0.001		0.02
RS-442 330-340	<0.001		<0.02
RS-442 340-350	0.004		0.07
RS-442 350-360	<0.001		0.02
RS-442 360-370	<0.001		<0.02
RS-442 370-380	<0.001		<0.02
RS-442 380-390	0.009		0.09
RS-442 390-400	0.004		0.06
RS-442 400-410	0.002	0.003	0.08
RS-442 410-420	0.001		0.04
RS-442 420-430	0.004		0.02
RS-442 430-440	0.004		0.06
RS-442 440-450	0.002		0.04
RS-442 450-460	0.003		0.04
RS-442 460-470	0.002		0.03
RS-442 470-480	0.009		0.14
RS-442 480-490	0.009		0.13
RS-442 490-500	0.001		0.04

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048578

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

REPORTED : 30 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-442 500-510	0.001	0.001	0.02
RS-442 510-520	0.002		0.07
RS-442 520-530	0.004		0.13
RS-442 530-540	0.003		0.08
RS-442 540-550	0.010		0.06
RS-442 550-560	0.001		0.03
RS-442 560-570	0.001	<0.001	0.03
RS-442 570-580	0.001		0.02
RS-442 580-590	0.007		0.03
RS-442 590-600	0.002		0.04
RS-442 600-610	0.007		0.05
RS-442 610-620	0.002		0.05
RS-442 620-630	0.005		0.03
RS-442 630-640	0.003		0.07
RS-442 640-650	0.004		0.14

xAMERICAN ASSAY LABORATORIES
ANALYSIS REPORT SP048578

American Assay Laboratories

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

HECLA MINING COMPANY

COPIES TO : KURT ALLEN
:
:
:

CLIENT REFERENCE No: RS-442 RECEIVED : 20 APR 1998

No. SAMPLES : 65 REPORTED : 30 APR 1998

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(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
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SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048578

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SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-442 000-010	0.003		0.04
RS-442 010-020	<0.001	0.001	0.02
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RS-442 050-060	<0.001		0.02
RS-442 060-070	0.001		0.12
RS-442 070-080	<0.001		<0.02
RS-442 080-090	0.002		0.06
RS-442 090-100	0.001		0.05
RS-442 100-110	<0.001		<0.02
RS-442 110-120	<0.001		<0.02
RS-442 120-130	<0.001		<0.02
RS-442 130-140	<0.001		<0.02
RS-442 140-150	<0.001		<0.02
RS-442 150-160	0.001		0.04
RS-442 160-170	0.001		0.06
RS-442 170-180	<0.001		<0.02
RS-442 180-190	<0.001		<0.02
RS-442 190-200	<0.001	<0.001	0.02
RS-442 200-210	<0.001		<0.02
RS-442 210-220	<0.001		<0.02
RS-442 220-230	<0.001		<0.02
RS-442 230-240	<0.001		<0.02
RS-442 240-250	0.001		0.05

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048578

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-442

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SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-442 250-260	0.004		0.11
RS-442 260-270	0.001		0.05
RS-442 270-280	0.001		0.03
RS-442 280-290	<0.001		<0.02
RS-442 290-300	<0.001	<0.001	<0.02
RS-442 300-310	0.009		0.04
RS-442 310-320	0.001		0.06
RS-442 320-330	0.001		0.02
RS-442 330-340	<0.001		<0.02
RS-442 340-350	0.004		0.07
RS-442 350-360	<0.001		0.02
RS-442 360-370	<0.001		<0.02
RS-442 370-380	<0.001		<0.02
RS-442 380-390	0.009		0.09
RS-442 390-400	0.004		0.06
RS-442 400-410	0.002	0.003	0.08
RS-442 410-420	0.001		0.04
RS-442 420-430	0.004		0.02
RS-442 430-440	0.004		0.06
RS-442 440-450	0.002		0.04
RS-442 450-460	0.003		0.04
RS-442 460-470	0.002		0.03
RS-442 470-480	0.009		0.14
RS-442 480-490	0.009		0.13
RS-442 490-500	0.001		0.04

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048578

American Assay Laboratories

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REPORTED : 30 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-442 500-510	0.001	0.001	0.02
RS-442 510-520	0.002		0.07
RS-442 520-530	0.004		0.13
RS-442 530-540	0.003		0.08
RS-442 540-550	0.010		0.06
RS-442 550-560	0.001		0.03
RS-442 560-570	0.001	<0.001	0.03
RS-442 570-580	0.001		0.02
RS-442 580-590	0.007		0.03
RS-442 590-600	0.002		0.04
RS-442 600-610	0.007		0.05
RS-442 610-620	0.002		0.05
RS-442 620-630	0.005		0.03
RS-442 630-640	0.003		0.07
RS-442 640-650	0.004		0.14

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* ROSEBUD MINING COMPANY, LLC *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-442

LOCATION: ROSEBUD MINE

SURVEY DATE: 04/25/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

WLNAV

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

COMMENTS: ** BOART LONGYEAR **
***** MIKE JEX *****

****
****
*** 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

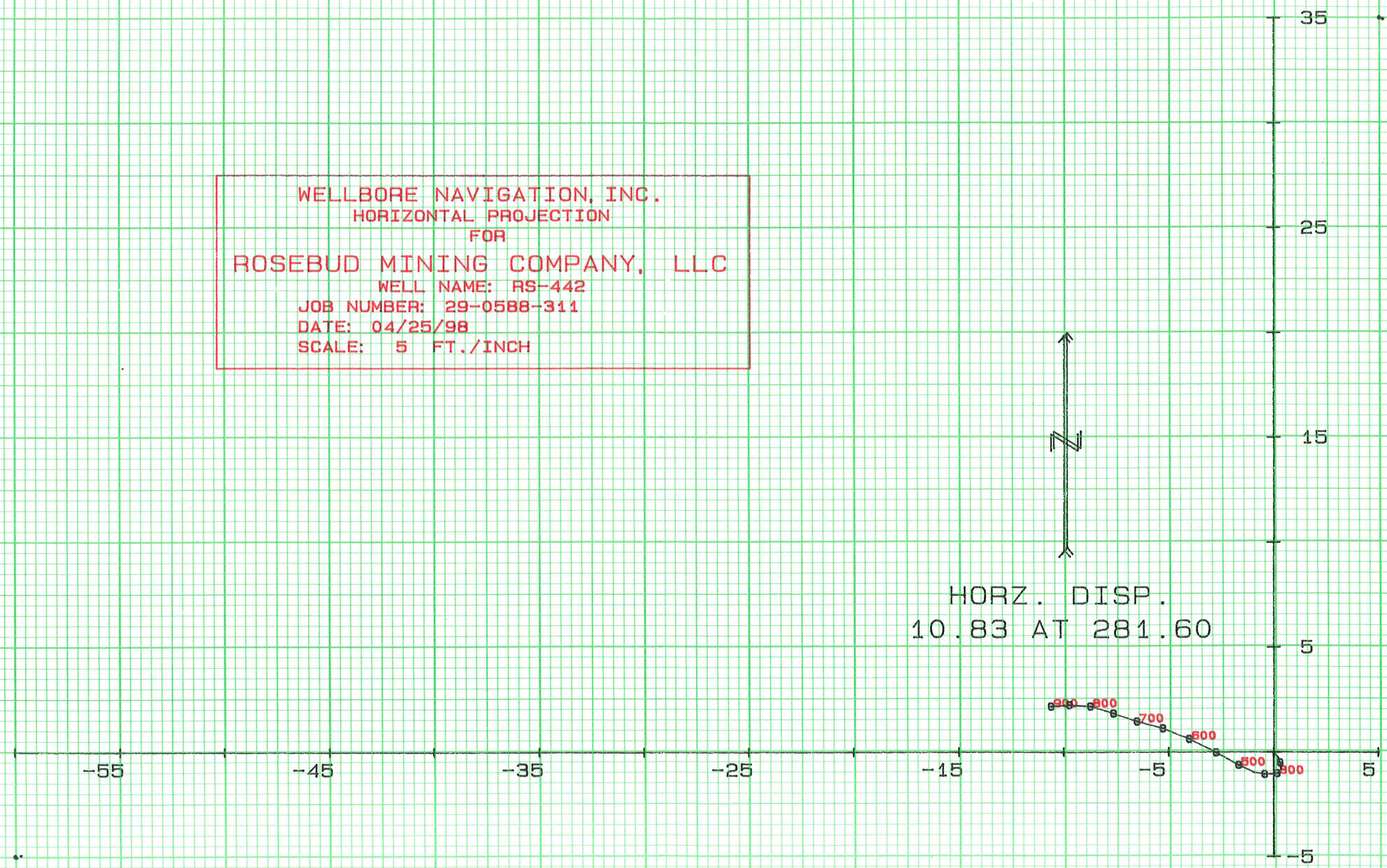
WELL NAME: RS-442

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R CLOS.	INCL HORZ	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION
50.0	50.00	-0.04	-0.062	-89.83	158.54	0.07 S	0.03 E	0.34	0.17	0.07	AT 158.54
100.0	100.00	-0.25	-0.225	-89.54	131.69	0.27 S	0.20 E	0.64	0.32	0.34	AT 143.06
150.0	150.00	-0.40	-0.448	-89.71	206.68	0.52 S	0.30 E	0.95	0.48	0.60	AT 150.16
200.0	200.00	-0.47	-0.593	-89.74	113.34	0.68 S	0.34 E	0.80	0.40	0.76	AT 153.00
250.0	250.00	-0.53	-0.755	-89.66	212.71	0.85 S	0.37 E	0.92	0.46	0.92	AT 156.46
300.0	300.00	-0.36	-0.980	-89.67	244.48	1.03 S	0.16 E	0.37	0.18	1.04	AT 171.28
350.0	350.00	-0.10	-1.067	-89.67	281.40	1.07 S	0.11 W	0.42	0.21	1.07	AT 186.03
400.0	399.99	0.22	-1.134	-89.56	261.55	1.07 S	0.44 W	0.34	0.17	1.15	AT 202.60
450.0	449.99	0.71	-1.152	-89.28	290.26	0.99 S	0.93 W	0.79	0.40	1.35	AT 223.29
500.0	499.99	1.51	-0.955	-88.82	298.46	0.63 S	1.68 W	0.96	0.48	1.79	AT 249.35
550.0	549.97	2.68	-0.580	-88.37	300.10	0.03 S	2.74 W	0.90	0.45	2.74	AT 269.39
600.0	599.95	4.05	-0.197	-88.36	294.31	0.62 N	4.01 W	0.33	0.17	4.06	AT 278.81
650.0	649.93	5.40	0.046	-88.50	289.15	1.13 N	5.28 W	0.40	0.20	5.40	AT 282.09
700.0	699.92	6.66	0.121	-88.59	280.55	1.46 N	6.50 W	0.47	0.24	6.67	AT 282.64
750.0	749.90	7.84	0.271	-88.67	297.76	1.84 N	7.62 W	0.83	0.42	7.84	AT 283.58
800.0	799.89	8.98	0.377	-88.65	276.22	2.18 N	8.72 W	1.00	0.50	8.99	AT 284.01
850.0	849.88	9.98	0.240	-89.03	270.46	2.24 N	9.73 W	0.79	0.40	9.99	AT 282.98
900.0	899.87	10.83	-0.001	-88.95	261.29	2.18 N	10.61 W	0.36	0.18	10.83	AT 281.60

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*   900.0 FEET EQUALS     10.83    FEET AT   281.60         *
*                          ********                         *
*************************************************************
```

WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR
ROSEBUD MINING COMPANY, LLC
WELL NAME: RS-442
JOB NUMBER: 29-0588-311
DATE: 04/25/98
SCALE: 5 FT./INCH



STARLIGHT PRINTING (801) 467-2841

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* ROSEBUD MINING COMPANY, LLC *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-442 / VS 305.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 04/25/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

WELNAV

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 035.00

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

COMMENTS: ** BOART LONGYEAR **
***** MIKE JEX *****

****
****
*** 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-442 / VS 305.00

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
50.0	50.00	-0.04	0.062	-89.83	158.54	0.07 S	0.03 E	0.34	0.17	0.07	AT 158.54
100.0	100.00	-0.11	0.323	-89.54	131.69	0.27 S	0.20 E	0.64	0.32	0.34	AT 143.06
150.0	150.00	-0.25	0.541	-89.71	206.68	0.52 S	0.30 E	0.95	0.48	0.60	AT 150.16
200.0	200.00	-0.36	0.670	-89.74	113.34	0.68 S	0.34 E	0.80	0.40	0.76	AT 153.00
250.0	250.00	-0.48	0.787	-89.66	212.71	0.85 S	0.37 E	0.92	0.46	0.92	AT 156.46
300.0	300.00	-0.76	0.722	-89.67	244.48	1.03 S	0.16 E	0.37	0.18	1.04	AT 171.28
350.0	350.00	-0.94	0.519	-89.67	281.40	1.07 S	0.11 W	0.42	0.21	1.07	AT 186.03
400.0	399.99	-1.13	0.248	-89.56	261.55	1.07 S	0.44 W	0.34	0.17	1.15	AT 202.60
450.0	449.99	-1.34	-0.195	-89.28	290.26	0.99 S	0.93 W	0.79	0.40	1.35	AT 223.29
500.0	499.99	-1.48	-1.010	-88.82	298.46	0.63 S	1.68 W	0.96	0.48	1.79	AT 249.35
550.0	549.97	-1.60	-2.230	-88.37	300.10	0.03 S	2.74 W	0.90	0.45	2.74	AT 269.39
600.0	599.95	-1.79	-3.642	-88.36	294.31	0.62 N	4.01 W	0.33	0.17	4.06	AT 278.81
650.0	649.93	-2.10	-4.975	-88.50	289.15	1.13 N	5.28 W	0.40	0.20	5.40	AT 282.09
700.0	699.92	-2.54	-6.164	-88.59	280.55	1.46 N	6.50 W	0.47	0.24	6.67	AT 282.64
750.0	749.90	-2.86	-7.300	-88.67	297.76	1.84 N	7.62 W	0.83	0.42	7.84	AT 283.58
800.0	799.89	-3.22	-8.392	-88.65	276.22	2.18 N	8.72 W	1.00	0.50	8.99	AT 284.01
850.0	849.88	-3.74	-9.257	-89.03	270.46	2.24 N	9.73 W	0.79	0.40	9.99	AT 282.98
900.0	899.87	-4.30	-9.936	-88.95	261.29	2.18 N	10.61 W	0.36	0.18	10.83	AT 281.60

```
*************************************************************
*                         ********                          *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                         ********                          *
*   900.0 FEET EQUALS     10.83    FEET AT   281.60         *
*                         ********                          *
*************************************************************
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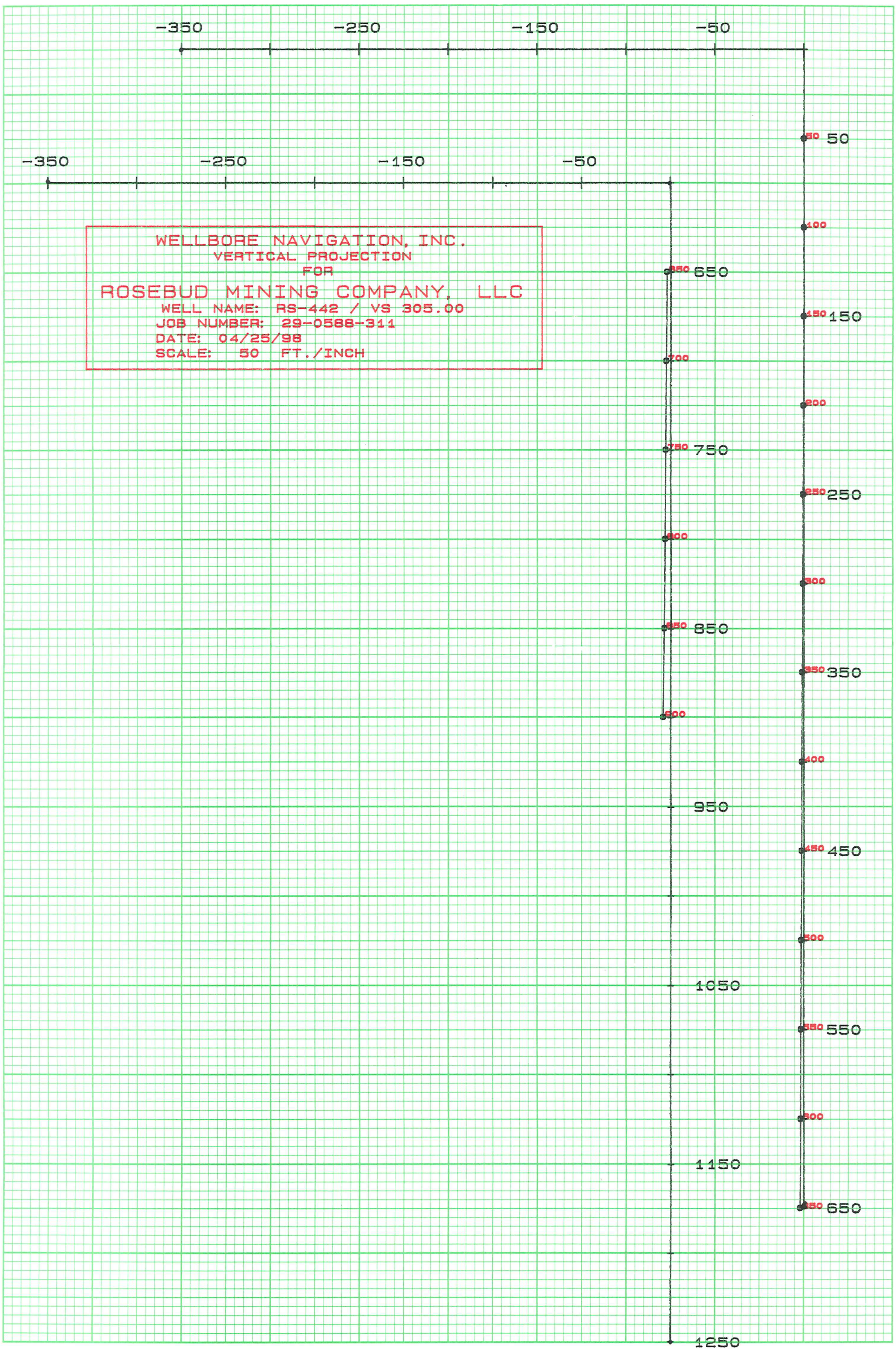

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* ROSEBUD MINING COMPANY, LLC *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-442 / VS 035.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 04/25/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 125.00

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

COMMENTS: ** BOART LONGYEAR **
***** MIKE JEX *****

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

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311 WELL NAME: RS-442 / 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
50.0	50.00	0.06	0.041	-89.83	158.54	0.07 S	0.03 E	0.34	0.17	0.07	AT 158.54
100.0	100.00	0.32	0.105	-89.54	131.69	0.27 S	0.20 E	0.64	0.32	0.34	AT 143.06
150.0	150.00	0.54	0.254	-89.71	206.68	0.52 S	0.30 E	0.95	0.48	0.60	AT 150.16
200.0	200.00	0.67	0.356	-89.74	113.34	0.68 S	0.34 E	0.80	0.40	0.76	AT 153.00
250.0	250.00	0.79	0.482	-89.66	212.71	0.85 S	0.37 E	0.92	0.46	0.92	AT 156.46
300.0	300.00	0.72	0.755	-89.67	244.48	1.03 S	0.16 E	0.37	0.18	1.04	AT 171.28
350.0	350.00	0.52	0.938	-89.67	281.40	1.07 S	0.11 W	0.42	0.21	1.07	AT 186.03
400.0	399.99	0.25	1.128	-89.56	261.55	1.07 S	0.44 W	0.34	0.17	1.15	AT 202.60
450.0	449.99	-0.20	1.340	-89.28	290.26	0.99 S	0.93 W	0.79	0.40	1.35	AT 223.29
500.0	499.99	-1.01	1.478	-88.82	298.46	0.63 S	1.68 W	0.96	0.48	1.79	AT 249.35
550.0	549.97	-2.23	1.598	-88.37	300.10	0.03 S	2.74 W	0.90	0.45	2.74	AT 269.39
600.0	599.95	-3.64	1.791	-88.36	294.31	0.62 N	4.01 W	0.33	0.17	4.06	AT 278.81
650.0	649.93	-4.97	2.103	-88.50	289.15	1.13 N	5.28 W	0.40	0.20	5.40	AT 282.09
700.0	699.92	-6.16	2.536	-88.59	280.55	1.46 N	6.50 W	0.47	0.24	6.67	AT 282.64
750.0	749.90	-7.30	2.864	-88.67	297.76	1.84 N	7.62 W	0.83	0.42	7.84	AT 283.58
800.0	799.89	-8.39	3.220	-88.65	276.22	2.18 N	8.72 W	1.00	0.50	8.99	AT 284.01
850.0	849.88	-9.26	3.744	-89.03	270.46	2.24 N	9.73 W	0.79	0.40	9.99	AT 282.98
900.0	899.87	-9.94	4.300	-88.95	261.29	2.18 N	10.61 W	0.36	0.18	10.83	AT 281.60

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*   900.0 FEET EQUALS     10.83    FEET AT   281.60         *
*                          ********                         *
*************************************************************
```

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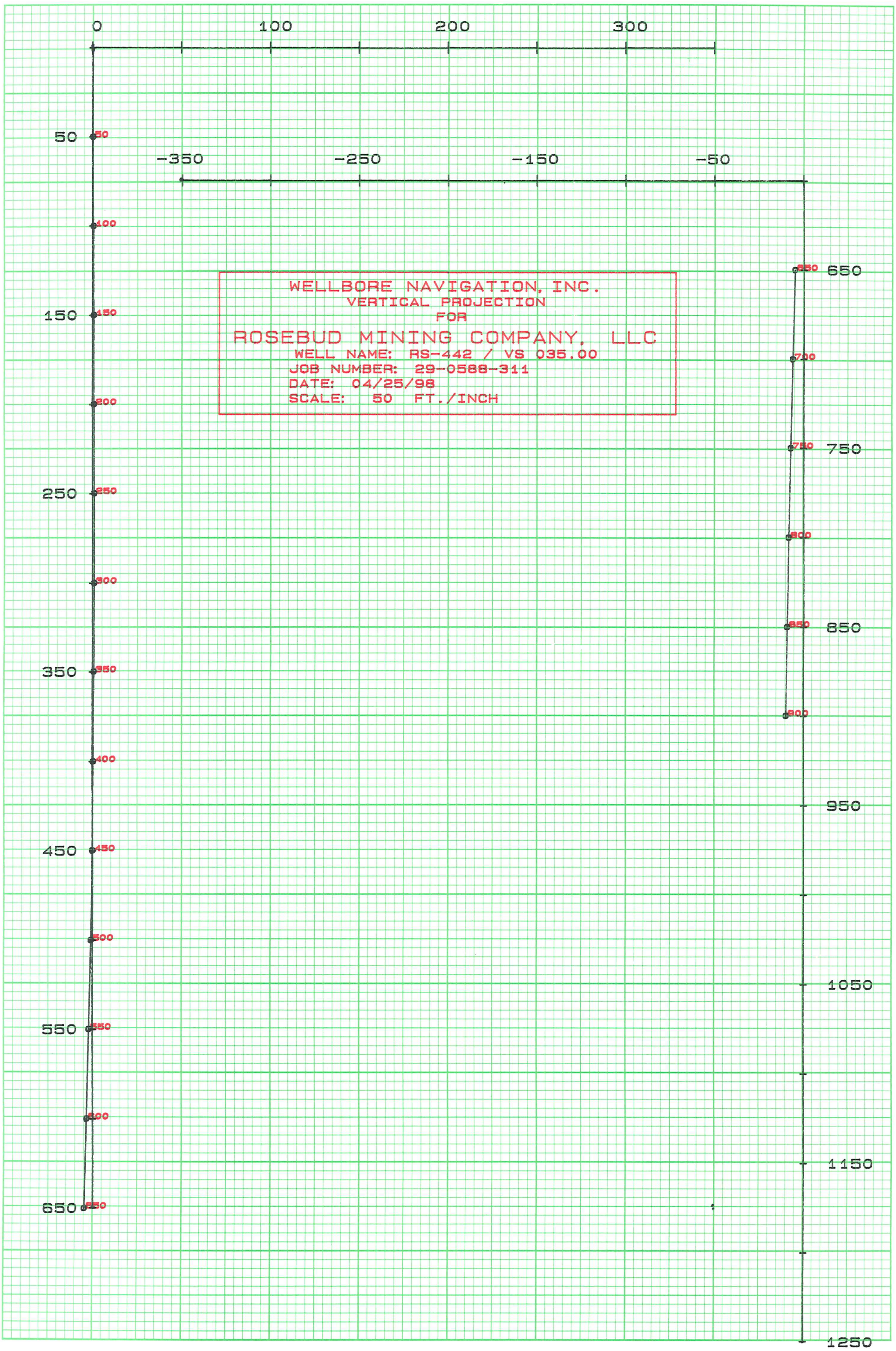

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

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(520) 294-6352

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Nevada 89801
Box 2908
Elko, NV 89801
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(702) 738-9100
Fax
(702) 738-2594

Mazatlan Office
Telephone/Fax
011-52-69-170035

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: Rosebud Mine

Address: P.O Box 2610

City Winnemucca State NV Zip 89820

Telephone Number: (702) 623-6912 Fax Number: (702) 623-6967

Project Name: Development Purchase Order Number:

Date Submitted: 4/19/98 Number of Samples: 65

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

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
RS-442 0-10' → 640-650'	RC	Hg-Au Rose bud protocol
65 samples		

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month

[ ] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

Kurt Allen

Results to:

Kurt Allen

Comments:

CLIENT FILE COPY

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* **ROSEBUD MINING COMPANY, LLC** *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-442

LOCATION: ROSEBUD MINE

SURVEY DATE: 04/18/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

WATER CONTACT= 607'

WELNAV

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

COMMENTS: ***** EKLUND *****
** DENNIS WHITE **

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

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311

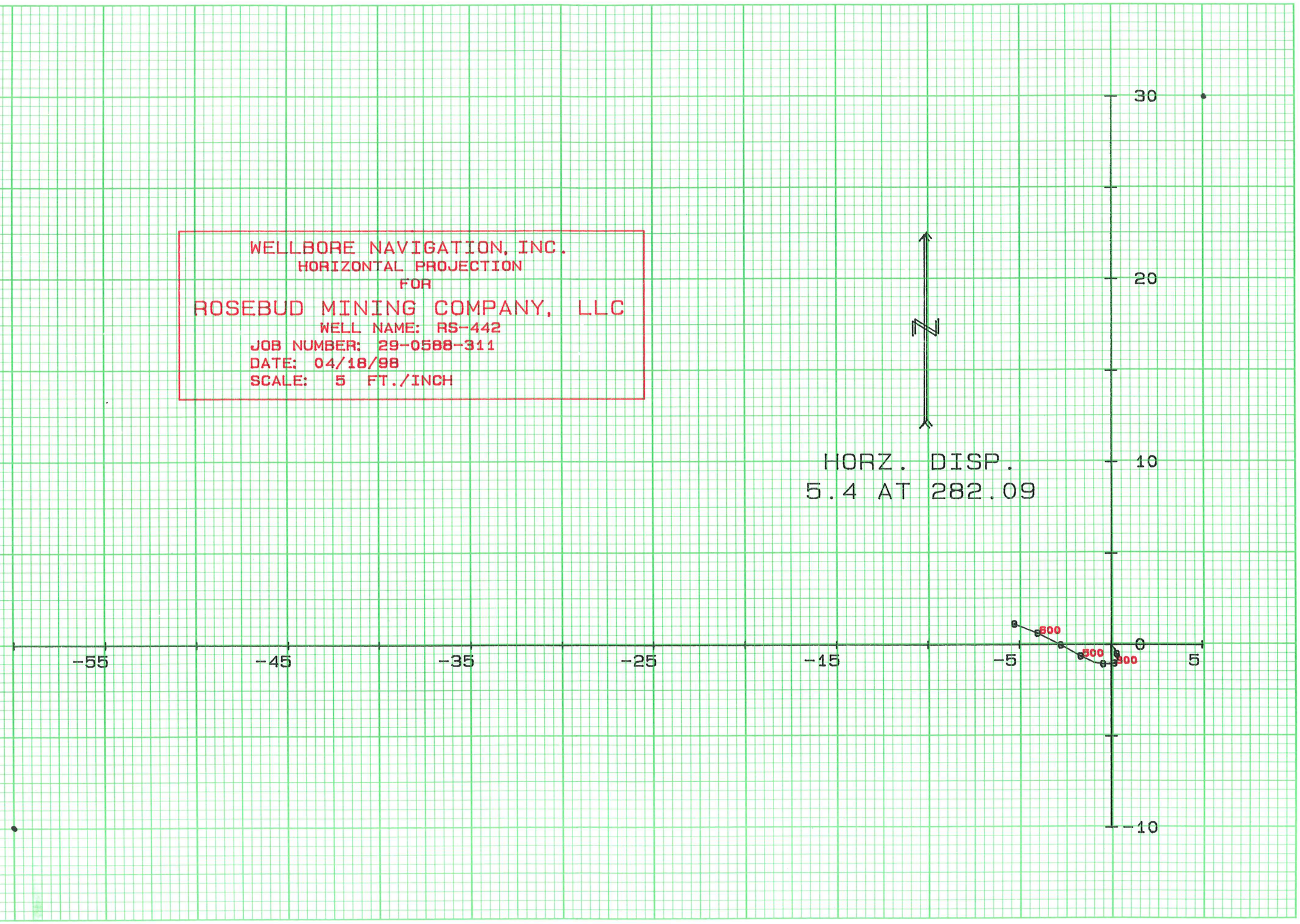
WELL NAME: RS-442

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R CLOS.	INCL HORZ	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION	TEMP. DEG F
50.0	50.00	-0.04	-0.062	-89.83	158.54	0.07 S	0.03 E	0.34	0.17	0.07	AT 158.54	083.84
100.0	100.00	-0.26	-0.223	-89.54	131.69	0.27 S	0.20 E	0.64	0.32	0.34	AT 143.07	082.64
150.0	150.00	-0.40	-0.444	-89.71	206.68	0.52 S	0.30 E	0.95	0.48	0.60	AT 150.16	081.07
200.0	200.00	-0.48	-0.589	-89.74	113.34	0.68 S	0.34 E	0.80	0.40	0.76	AT 153.00	079.45
250.0	250.00	-0.54	-0.750	-89.66	212.71	0.85 S	0.37 E	0.92	0.46	0.92	AT 156.46	077.87
300.0	300.00	-0.37	-0.977	-89.67	244.48	1.03 S	0.16 E	0.37	0.18	1.04	AT 171.28	075.60
350.0	350.00	-0.11	-1.066	-89.67	281.40	1.07 S	0.11 W	0.42	0.21	1.07	AT 186.03	074.18
400.0	399.99	0.21	-1.135	-89.56	261.55	1.07 S	0.44 W	0.34	0.17	1.15	AT 202.59	072.86
450.0	449.99	0.70	-1.158	-89.28	290.26	0.99 S	0.93 W	0.79	0.40	1.35	AT 223.29	071.91
500.0	499.99	1.51	-0.968	-88.82	298.46	0.63 S	1.68 W	0.96	0.48	1.79	AT 249.35	071.28
550.0	549.97	2.68	-0.603	-88.37	300.10	0.03 S	2.74 W	0.90	0.45	2.74	AT 269.39	070.59
600.0	599.95	4.05	-0.232	-88.36	294.31	0.62 N	4.01 W	0.33	0.17	4.06	AT 278.81	064.47
650.0	649.93	5.40	-0.000	-88.50	289.15	1.13 N	5.28 W	0.40	0.20	5.40	AT 282.09	065.25

```
*************************************************************
*                          ********                         *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                          ********                         *
*   650.0 FEET EQUALS      5.40   FEET AT  282.09            *
*                          ********                         *
*************************************************************
```

WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR
ROSEBUD MINING COMPANY, LLC
WELL NAME: RS-442
JOB NUMBER: 29-0588-311
DATE: 04/18/98
SCALE: 5 FT./INCH



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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* ROSEBUD MINING COMPANY, LLC *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-442 / VS 305.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 04/18/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 035.00
WATER CONTACT= 607'

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

COMMENTS: ***** EKLUND *****
** DENNIS WHITE **

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

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311 WELL NAME: RS-442 / VS 305.00

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL HORZ	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION	TEMP. DEG F
50.0	50.00	-0.04	0.062	-89.83	158.54	0.07 S	0.03 E	0.34	0.17	0.07	AT 158.54	083.84
100.0	100.00	-0.11	0.323	-89.54	131.69	0.27 S	0.20 E	0.64	0.32	0.34	AT 143.07	082.64
150.0	150.00	-0.25	0.541	-89.71	206.68	0.52 S	0.30 E	0.95	0.48	0.60	AT 150.16	081.07
200.0	200.00	-0.36	0.670	-89.74	113.34	0.68 S	0.34 E	0.80	0.40	0.76	AT 153.00	079.45
250.0	250.00	-0.48	0.787	-89.66	212.71	0.85 S	0.37 E	0.92	0.46	0.92	AT 156.46	077.87
300.0	300.00	-0.76	0.722	-89.67	244.48	1.03 S	0.16 E	0.37	0.18	1.04	AT 171.28	075.60
350.0	350.00	-0.94	0.519	-89.67	281.40	1.07 S	0.11 W	0.42	0.21	1.07	AT 186.03	074.18
400.0	399.99	-1.13	0.248	-89.56	261.55	1.07 S	0.44 W	0.34	0.17	1.15	AT 202.59	072.86
450.0	449.99	-1.34	-0.195	-89.28	290.26	0.99 S	0.93 W	0.79	0.40	1.35	AT 223.29	071.91
500.0	499.99	-1.48	-1.010	-88.82	298.46	0.63 S	1.68 W	0.96	0.48	1.79	AT 249.35	071.28
550.0	549.97	-1.60	-2.230	-88.37	300.10	0.03 S	2.74 W	0.90	0.45	2.74	AT 269.39	070.59
600.0	599.95	-1.79	-3.642	-88.36	294.31	0.62 N	4.01 W	0.33	0.17	4.06	AT 278.81	064.47
650.0	649.93	-2.10	-4.975	-88.50	289.15	1.13 N	5.28 W	0.40	0.20	5.40	AT 282.09	065.25

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*   650.0 FEET EQUALS      5.40   FEET AT  282.09            *
*                          ********                         *
*************************************************************
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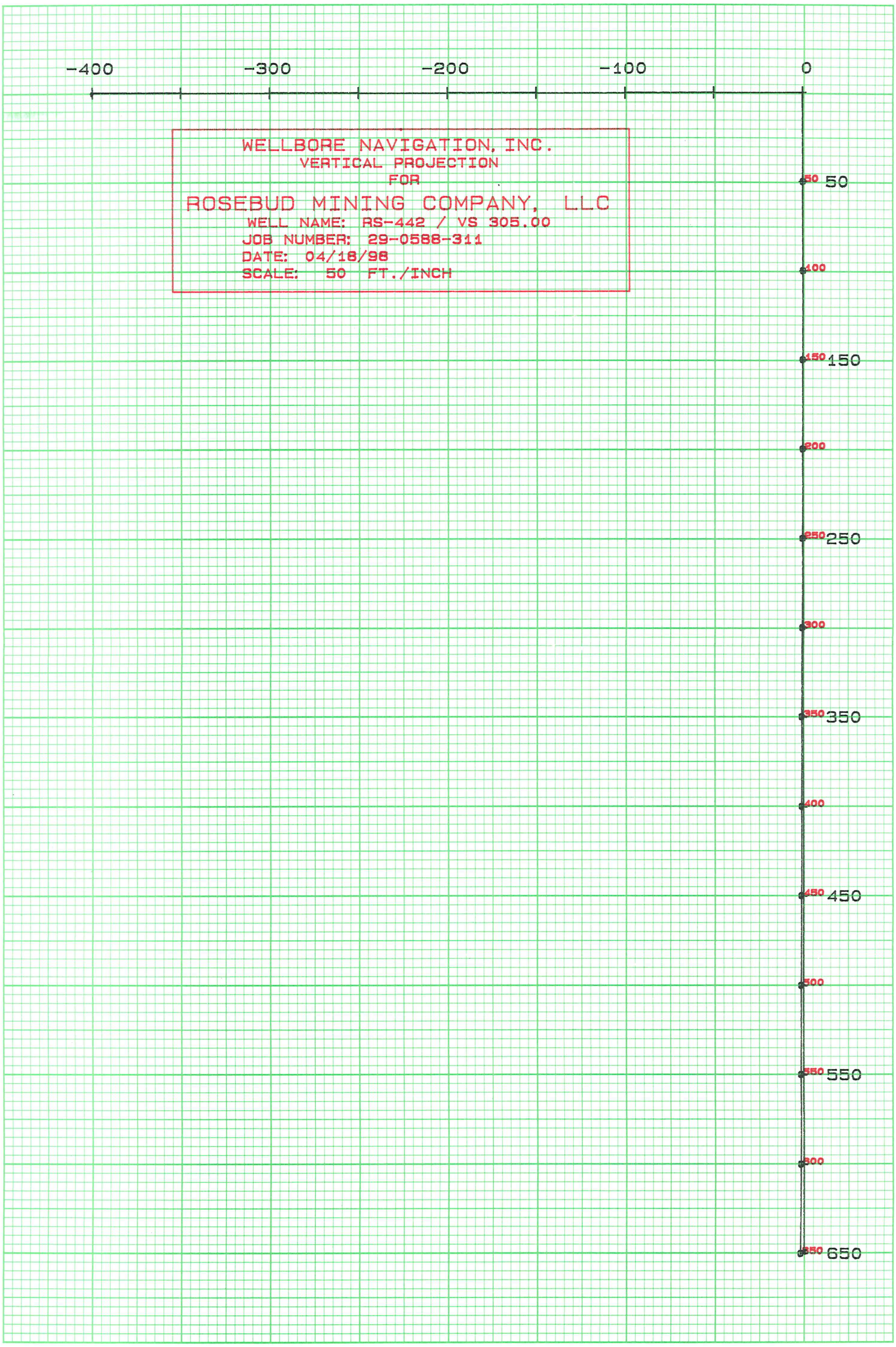

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* ROSEBUD MINING COMPANY, LLC *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-442 / VS 035.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 04/18/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 125.00
WATER CONTACT= 607'

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

COMMENTS: ***** EKLUND *****
** DENNIS WHITE **

****
****
*** 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-442 / 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	TEMP. DEG F
50.0	50.00	0.06	0.041	-89.83	158.54	0.07 S	0.03 E	0.34	0.17	0.07	AT 158.54	083.84
100.0	100.00	0.32	0.105	-89.54	131.69	0.27 S	0.20 E	0.64	0.32	0.34	AT 143.07	082.64
150.0	150.00	0.54	0.254	-89.71	206.68	0.52 S	0.30 E	0.95	0.48	0.60	AT 150.16	081.07
200.0	200.00	0.67	0.356	-89.74	113.34	0.68 S	0.34 E	0.80	0.40	0.76	AT 153.00	079.45
250.0	250.00	0.79	0.482	-89.66	212.71	0.85 S	0.37 E	0.92	0.46	0.92	AT 156.46	077.87
300.0	300.00	0.72	0.755	-89.67	244.48	1.03 S	0.16 E	0.37	0.18	1.04	AT 171.28	075.60
350.0	350.00	0.52	0.938	-89.67	281.40	1.07 S	0.11 W	0.42	0.21	1.07	AT 186.03	074.18
400.0	399.99	0.25	1.128	-89.56	261.55	1.07 S	0.44 W	0.34	0.17	1.15	AT 202.59	072.86
450.0	449.99	-0.20	1.340	-89.28	290.26	0.99 S	0.93 W	0.79	0.40	1.35	AT 223.29	071.91
500.0	499.99	-1.01	1.478	-88.82	298.46	0.63 S	1.68 W	0.96	0.48	1.79	AT 249.35	071.28
550.0	549.97	-2.23	1.598	-88.37	300.10	0.03 S	2.74 W	0.90	0.45	2.74	AT 269.39	070.59
600.0	599.95	-3.64	1.791	-88.36	294.31	0.62 N	4.01 W	0.33	0.17	4.06	AT 278.81	064.47
650.0	649.93	-4.97	2.103	-88.50	289.15	1.13 N	5.28 W	0.40	0.20	5.40	AT 282.09	065.25

```
*************************************************************
*                        ********                           *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                        ********                           *
*   650.0 FEET EQUALS      5.40    FEET AT   282.09         *
*                        ********                           *
*************************************************************
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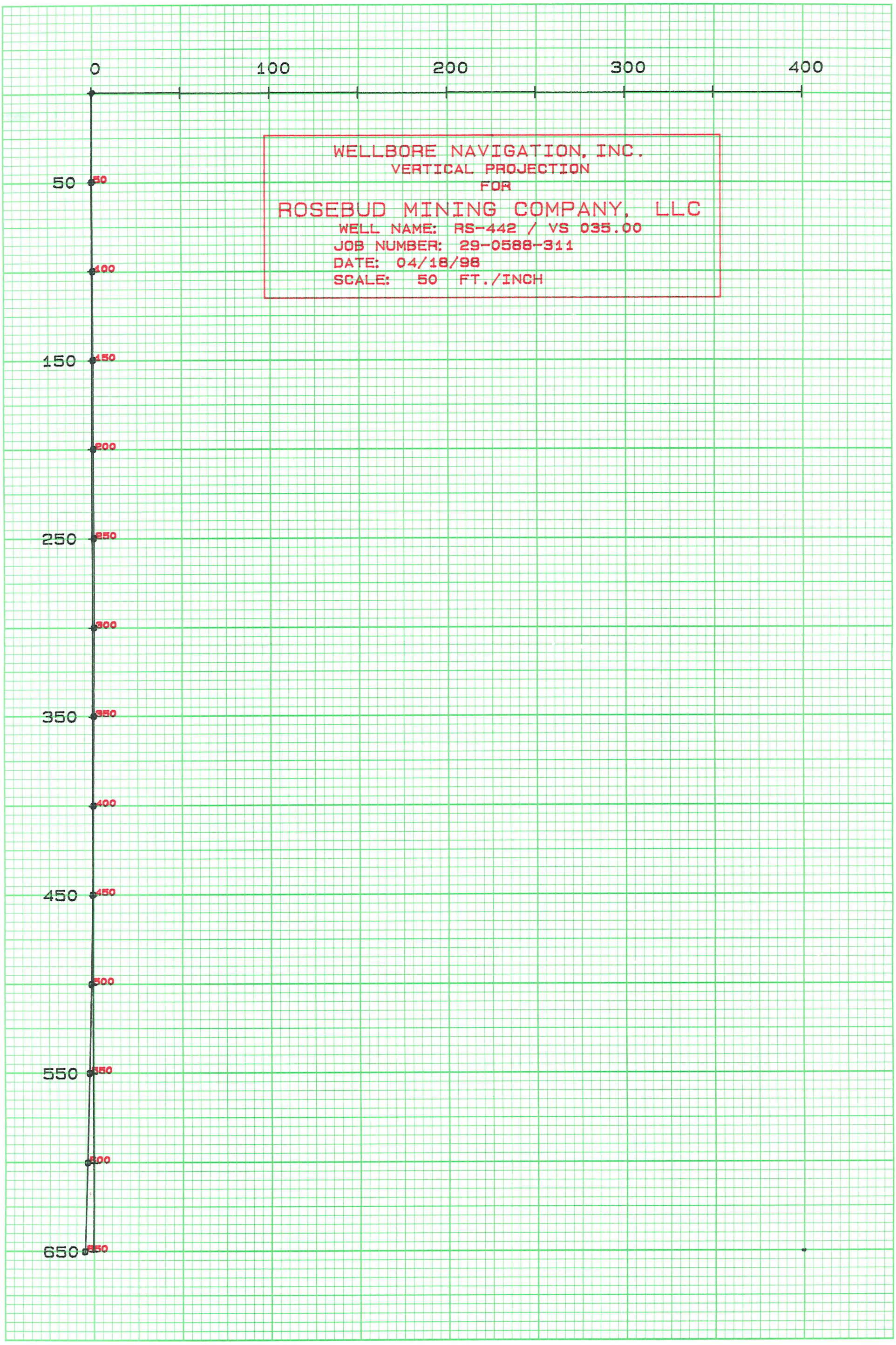

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

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Nevada 89801
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Elko, NV 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

Mazatlan Office
Telephone/Fax
011-52-69-170035

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: ROSEBUD MINING CO LLT

Address: P.O. BOX 2610

City WINNEMUCCA State NV Zip 89446

Telephone Number: (702) 623-69~~4~~12 Fax Number: (702) 623-6967

Project Name: DEVELOPMENT Purchase Order Number: _____

Date Submitted: 5/11/98 Number of Samples: _____

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

RS-442 SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
863.1-868.2		
868.2-873.2		
873.2-878.3		
878.3-883.2		
883.2-887.4		
887.4-890.7		
890.7-894.1		
894.1-900.0		

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month
[ ] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

KURT ALLEN

Results to:

KURT ALLEN

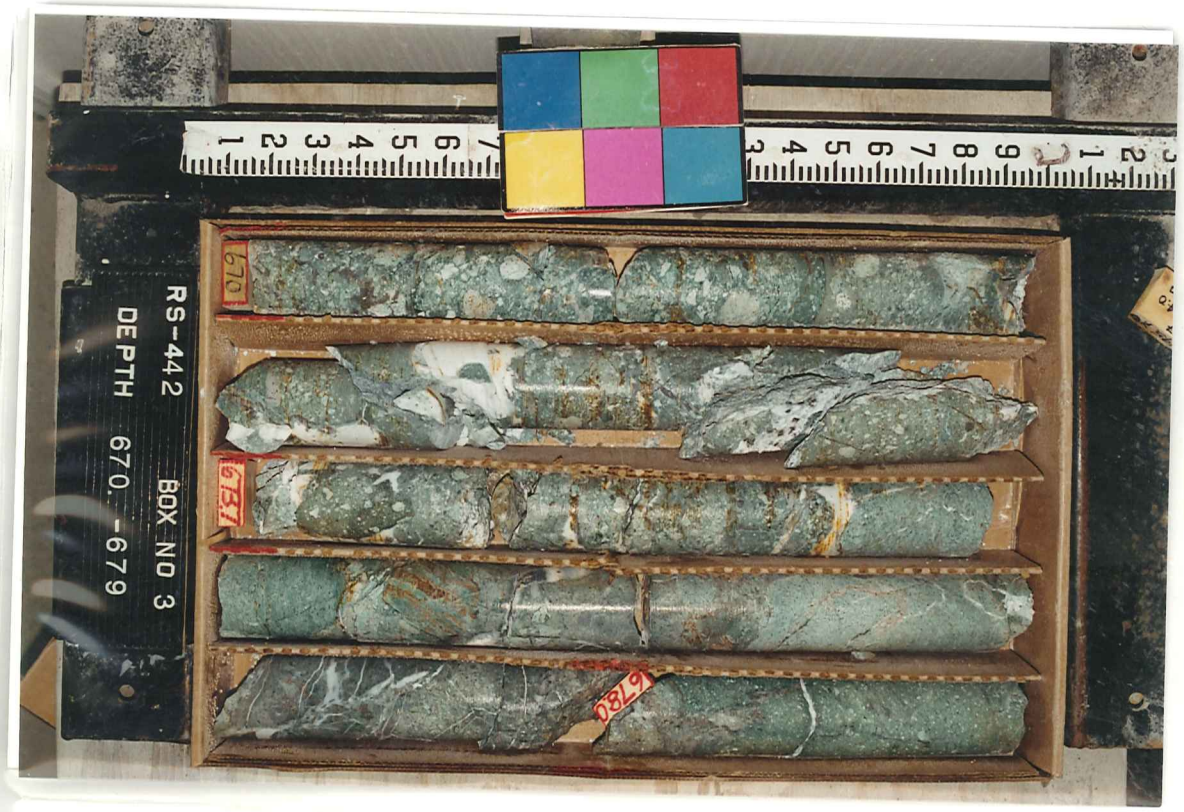
Comments:

PAGE 2 OF 2

CLIENT FILE COPY

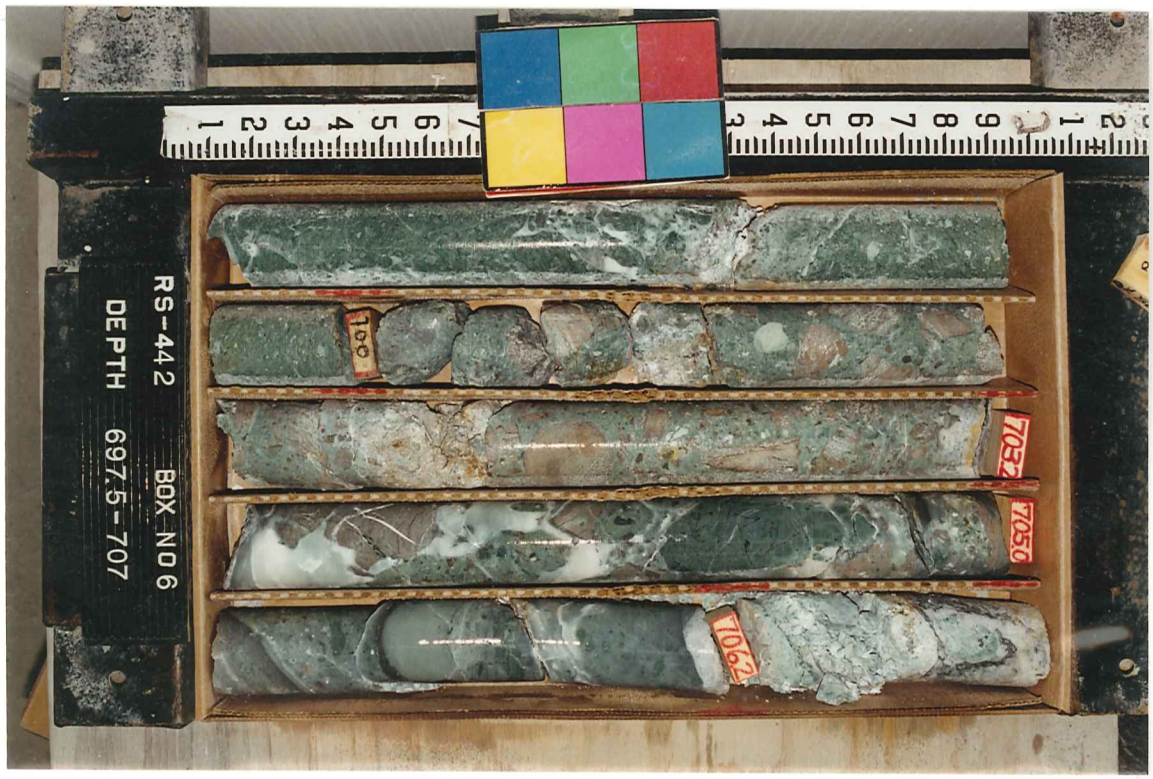
RS-442 BOX NO 1
DEPTH 650 -660.5
655
668

RS-442 BOX NO 2
DEPTH 660.5-670
665.2


RS-442 BOX NO 3
DEPTH 670 -679
670
679
678.0

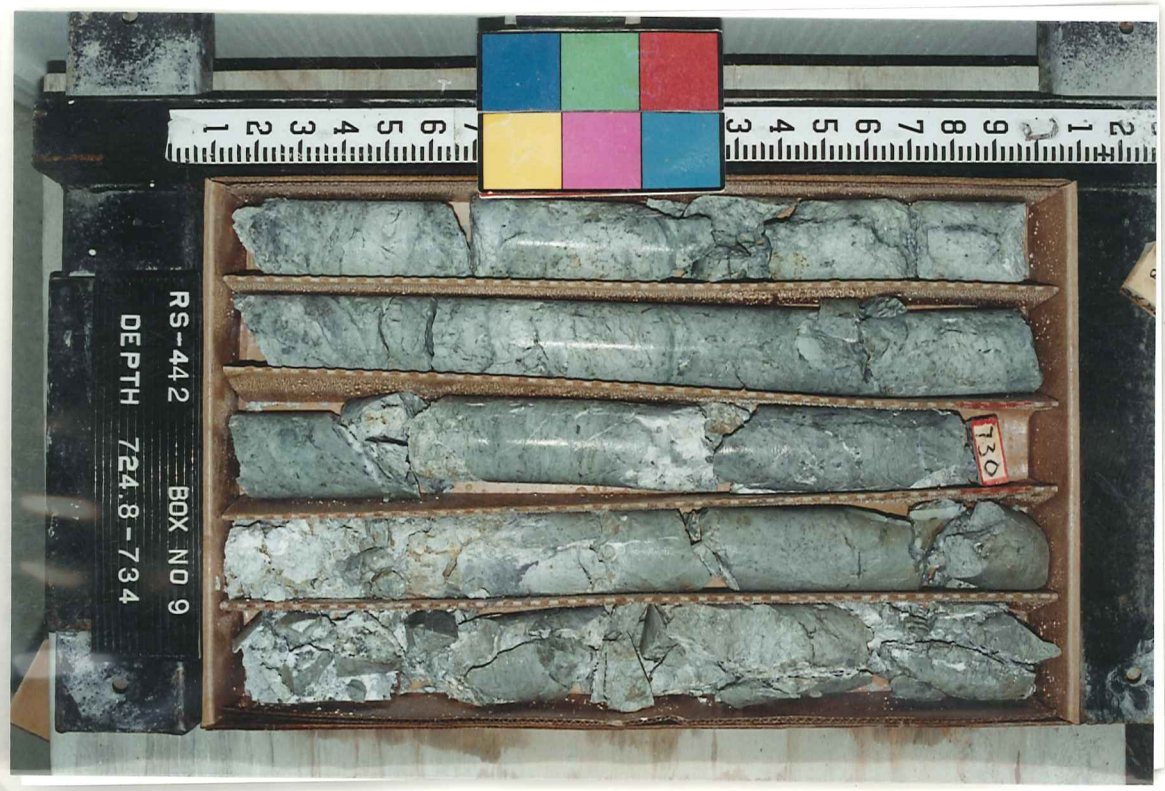
RS-442 BOX NO 4
DEPTH 679 -688

RS-442 BOX NO 5
DEPTH 688 -697.5


RS-442 BOX NO 6
DEPTH 697.5-707

7084
710
7118
RS-442 BOX NO 7
DEPTH 707. -716

7170
7188
7220
7233
RS-442 BOX NO 8
DEPTH 716 -724.8


730
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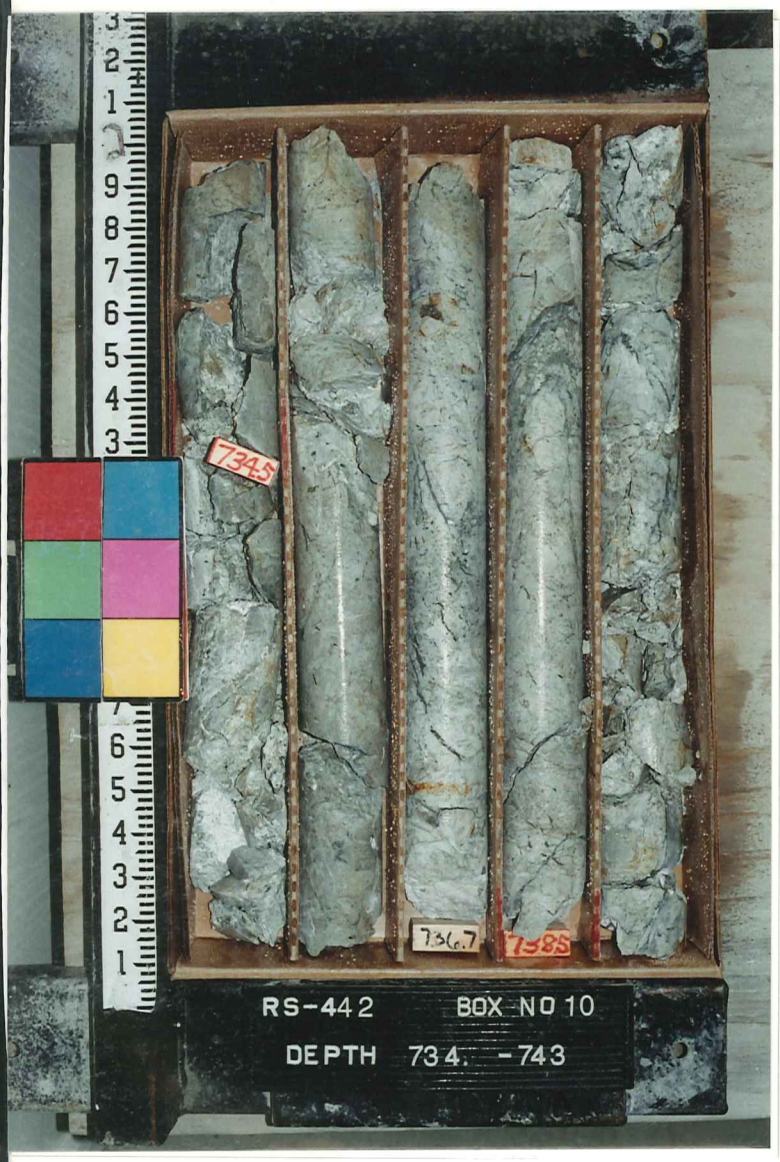
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738.5
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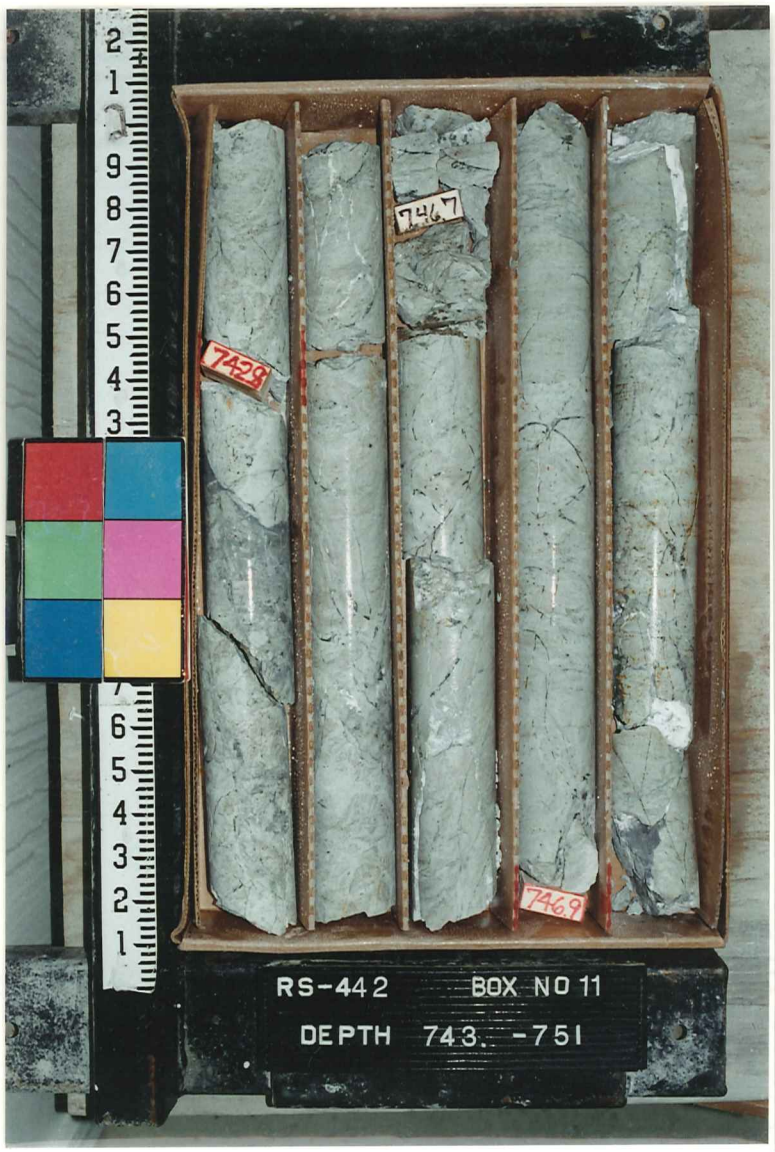
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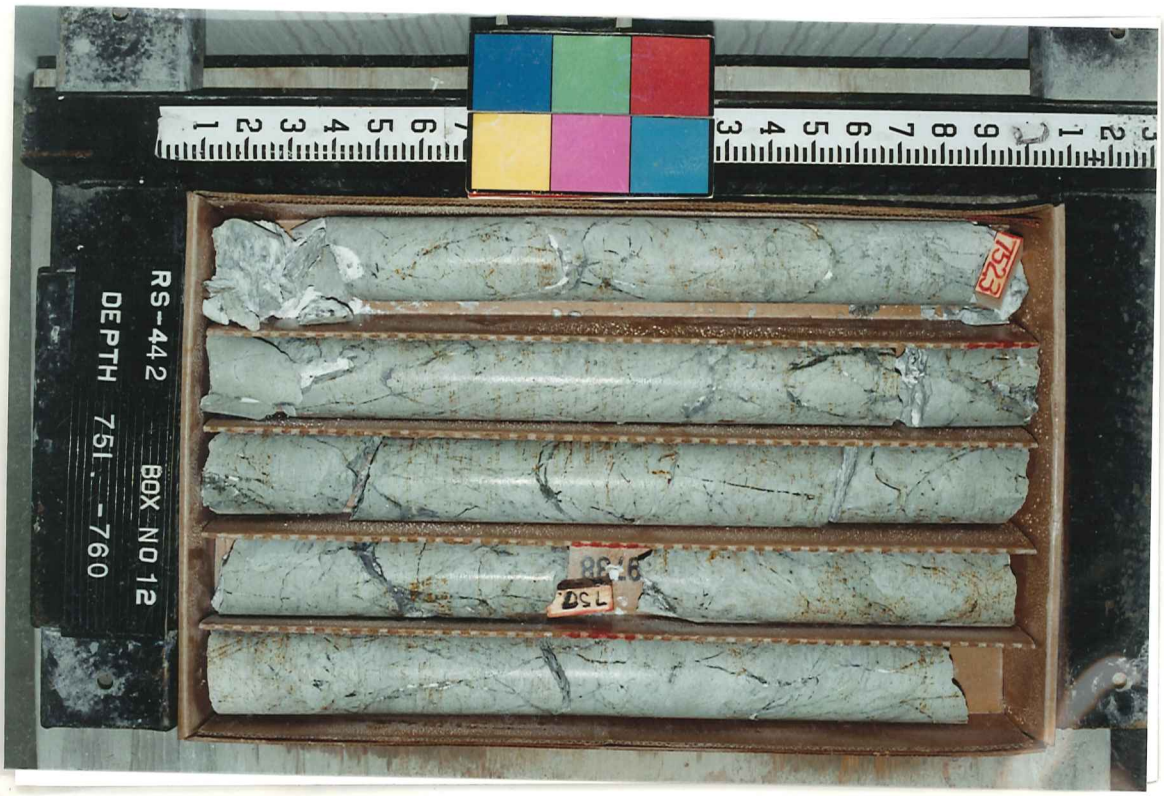
746.7
746.9
RS-442 BOX NO 11
DEPTH 743. -751


752.3
752.
754.6
RS-442 BOX NO 12
DEPTH 751. -760

767.1
761.9
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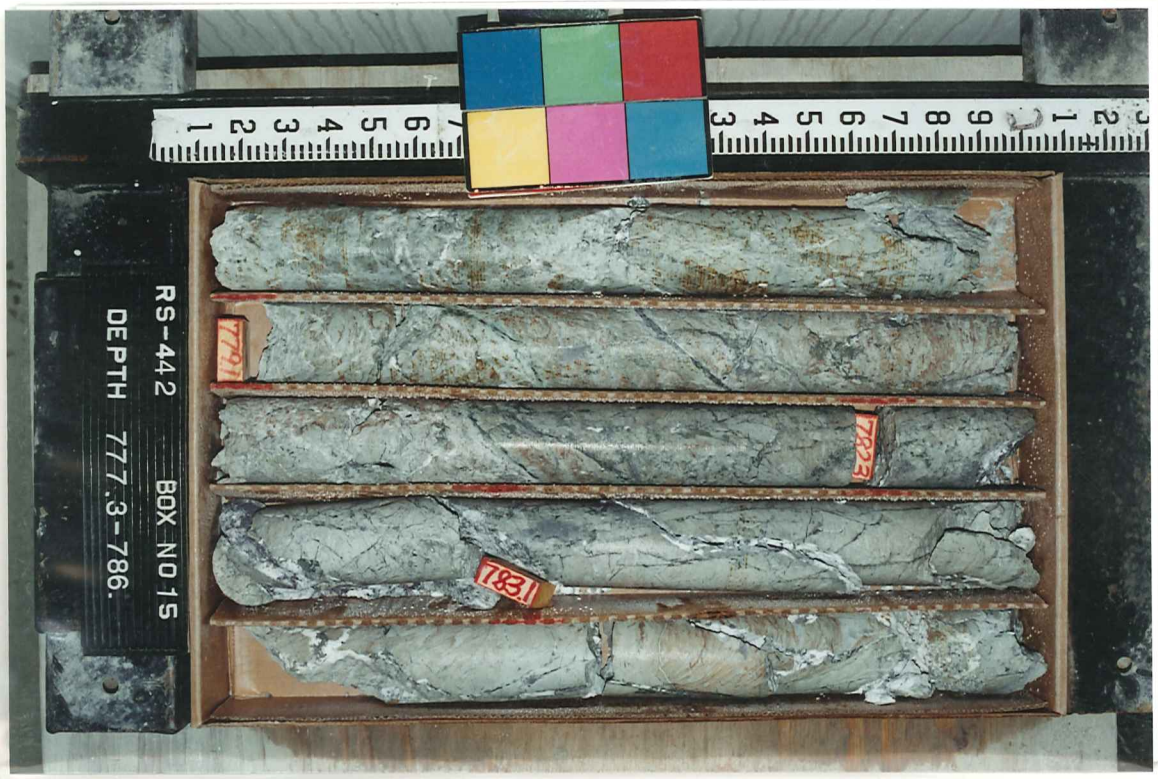
DEPTH 760 -768.5

775.5
777.3
777.7
RS-442 BOX NO 14
DEPTH 768.5-777.3


779.1
782.3
783.1
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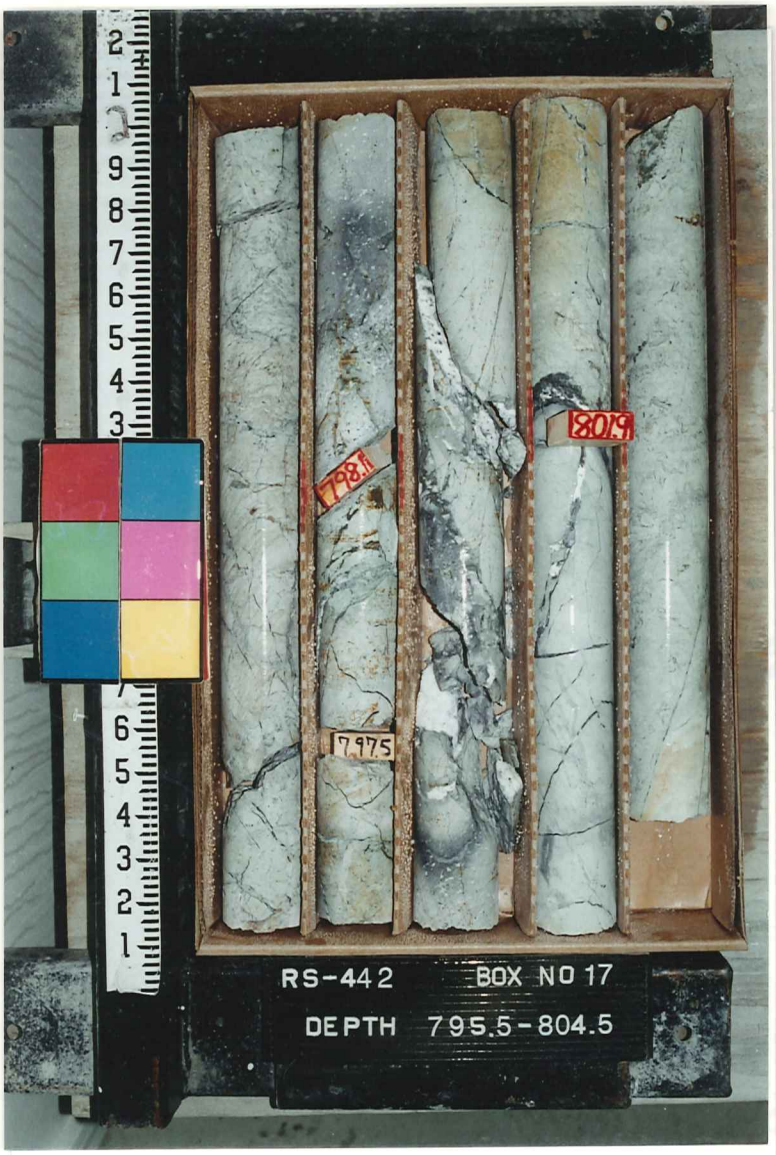
DEPTH 777.3-786.

7934
7875
7875
RS-442 BOX NO 16
DEPTH 786. -795.5


8019
7975
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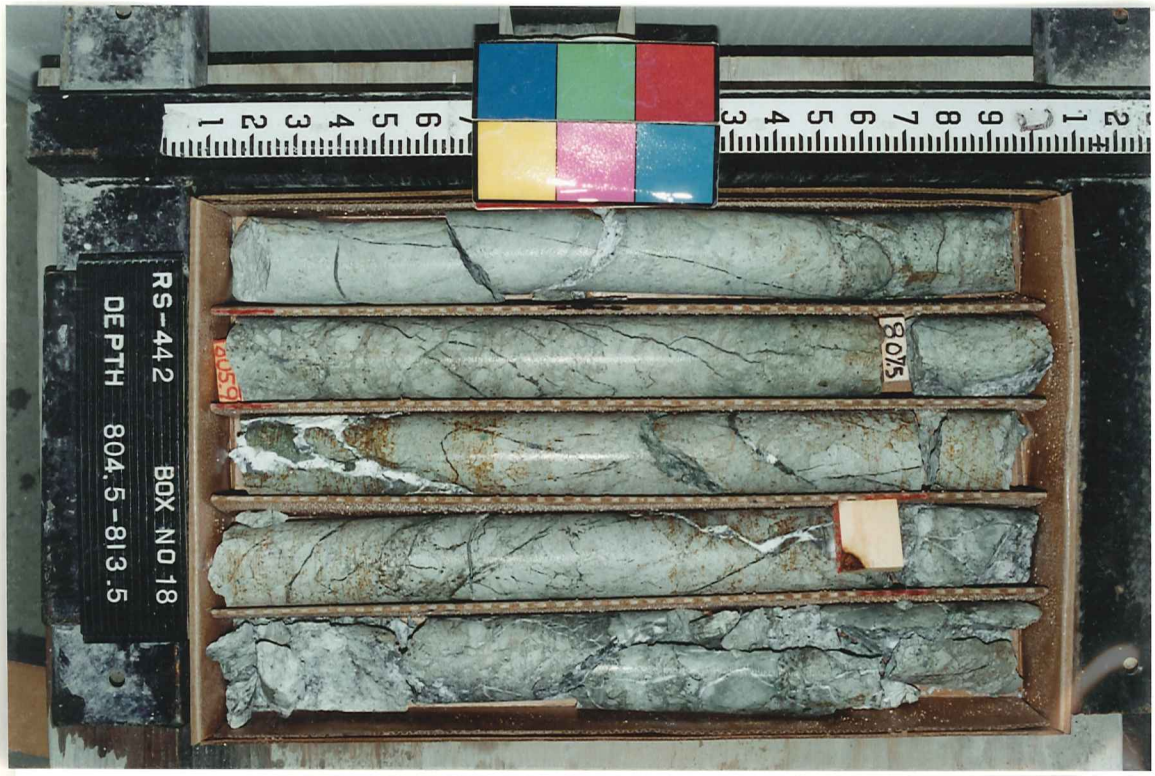
DEPTH 795.5-804.5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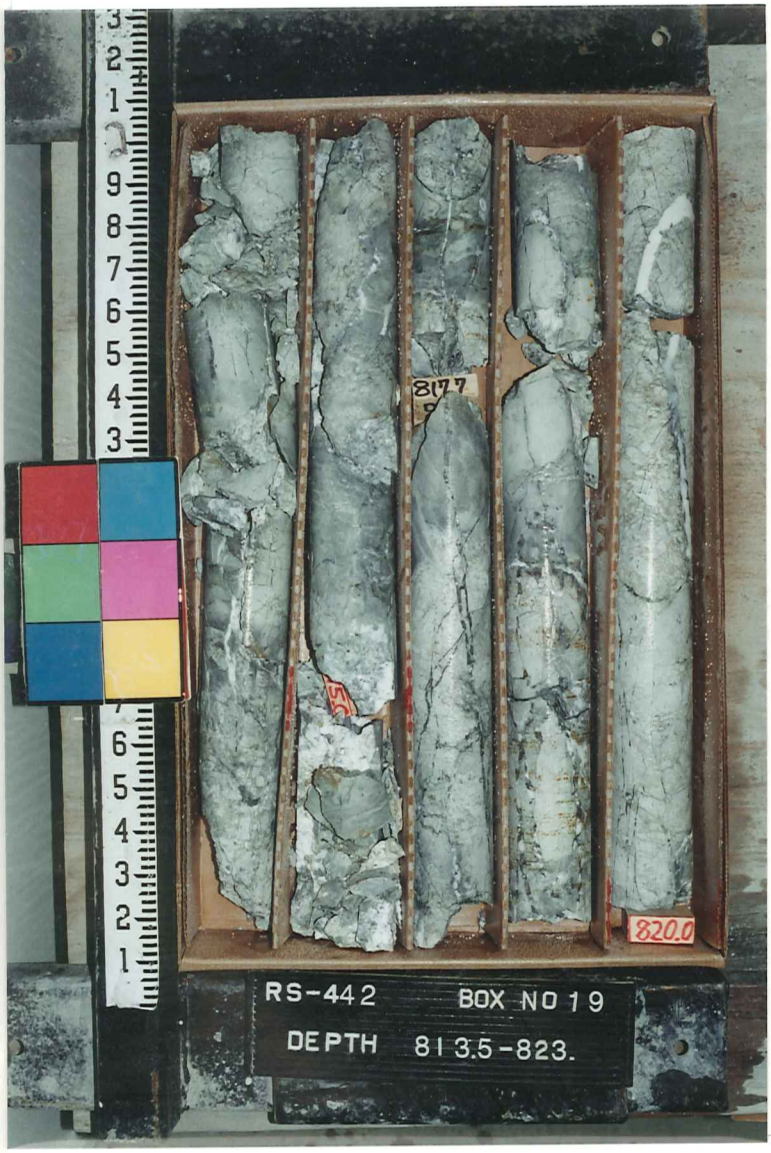
DEPTH 804.5-813.5


817.7
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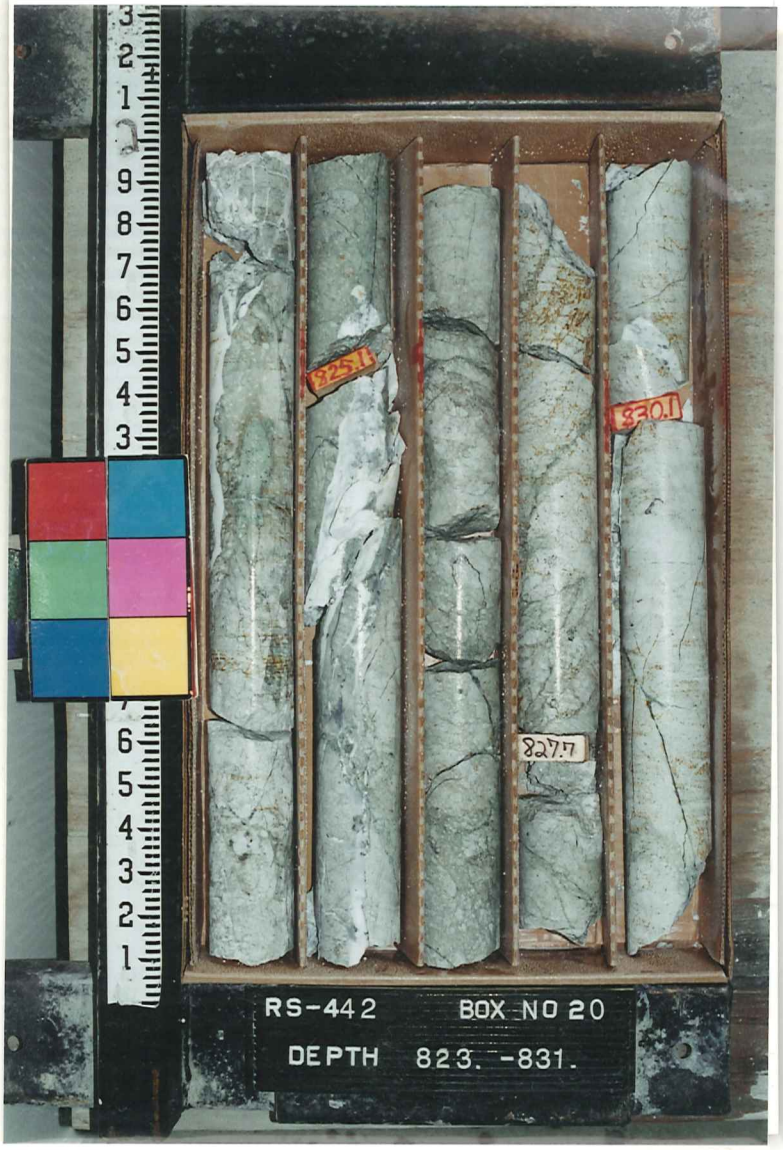
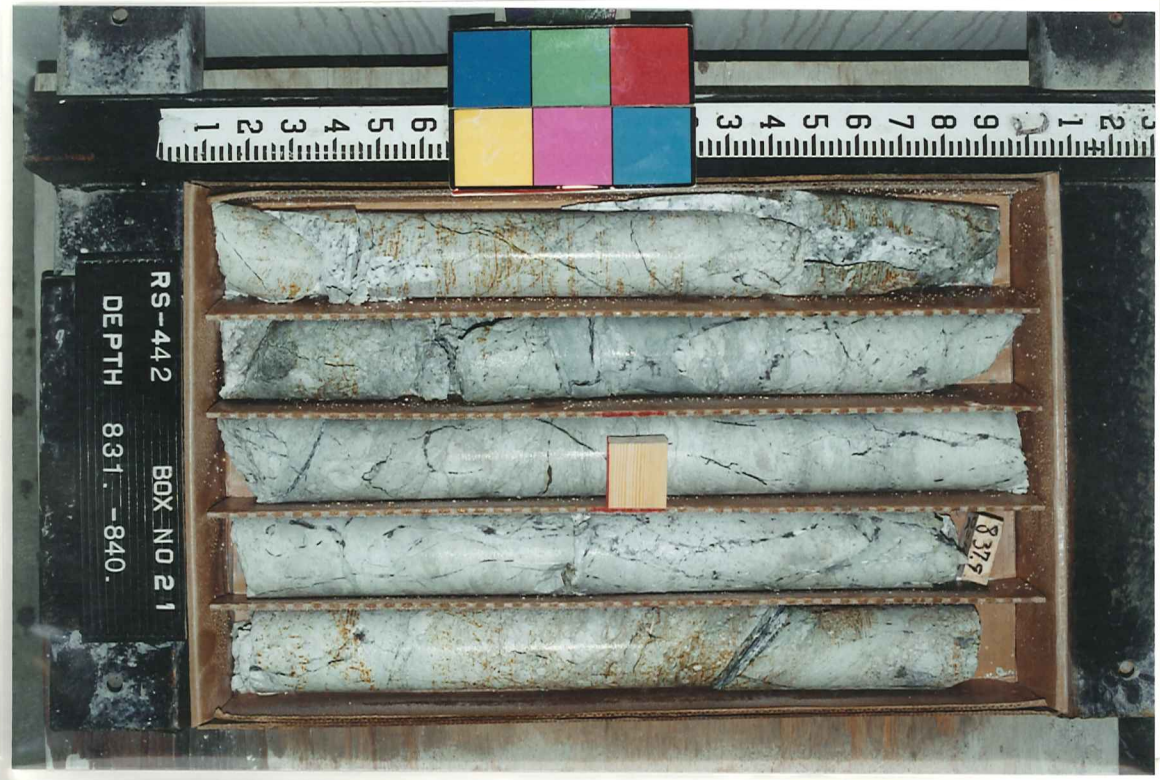
RS-442 BOX NO 19
DEPTH 813.5-823.


825.1
830.1
827.7
RS-442 BOX NO 20
DEPTH 823.-831.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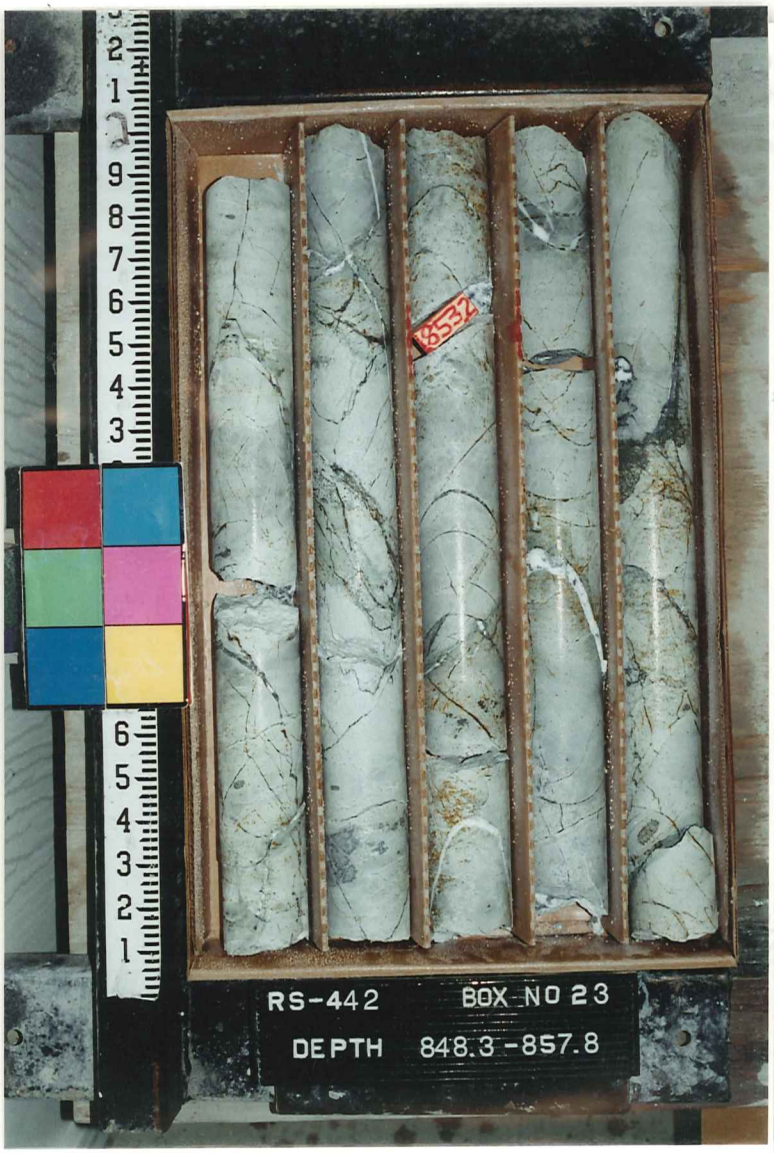
837.5

RS-442 BOX NO 22
DEPTH 840 . -848.3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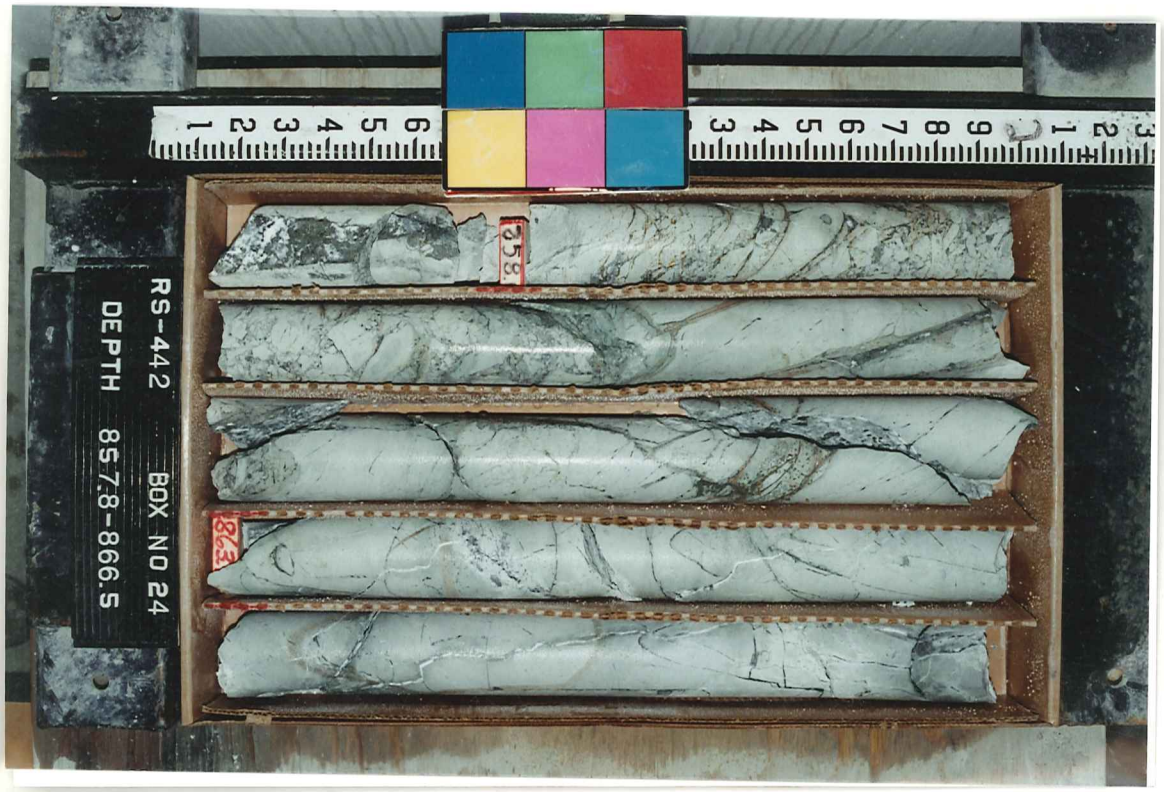
DEPTH 848.3 -857.8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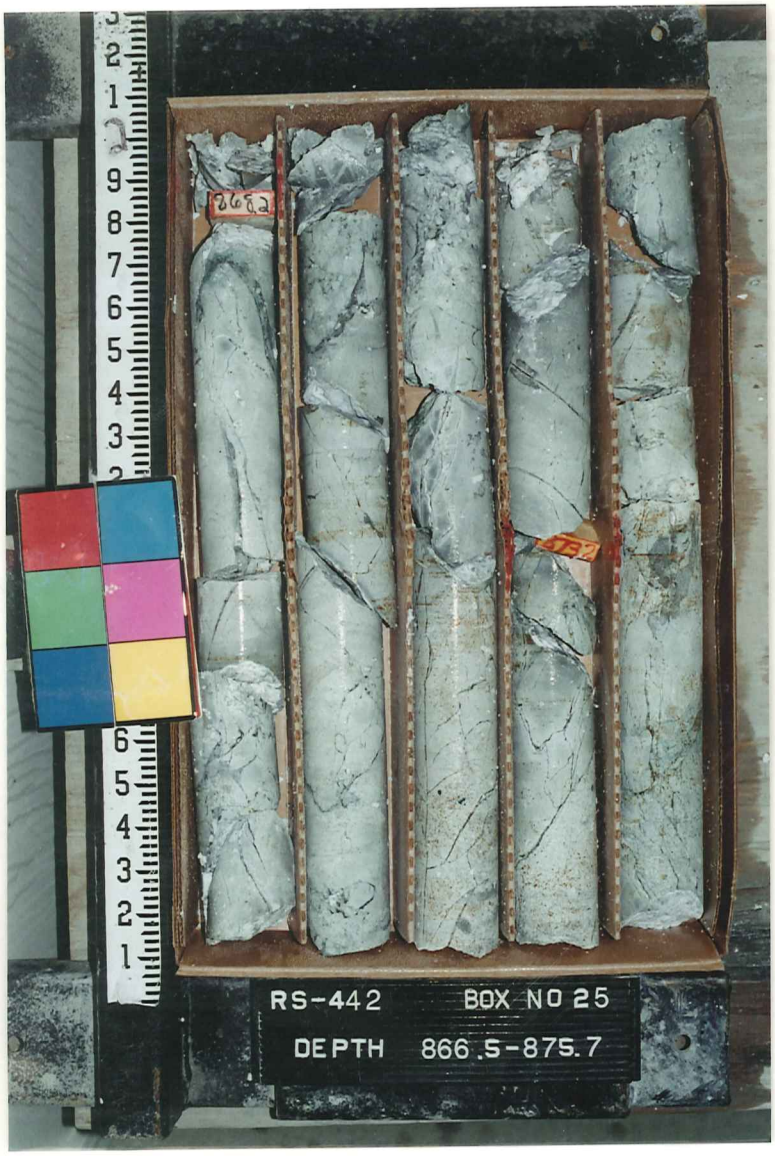
DEPTH 857.8-866.5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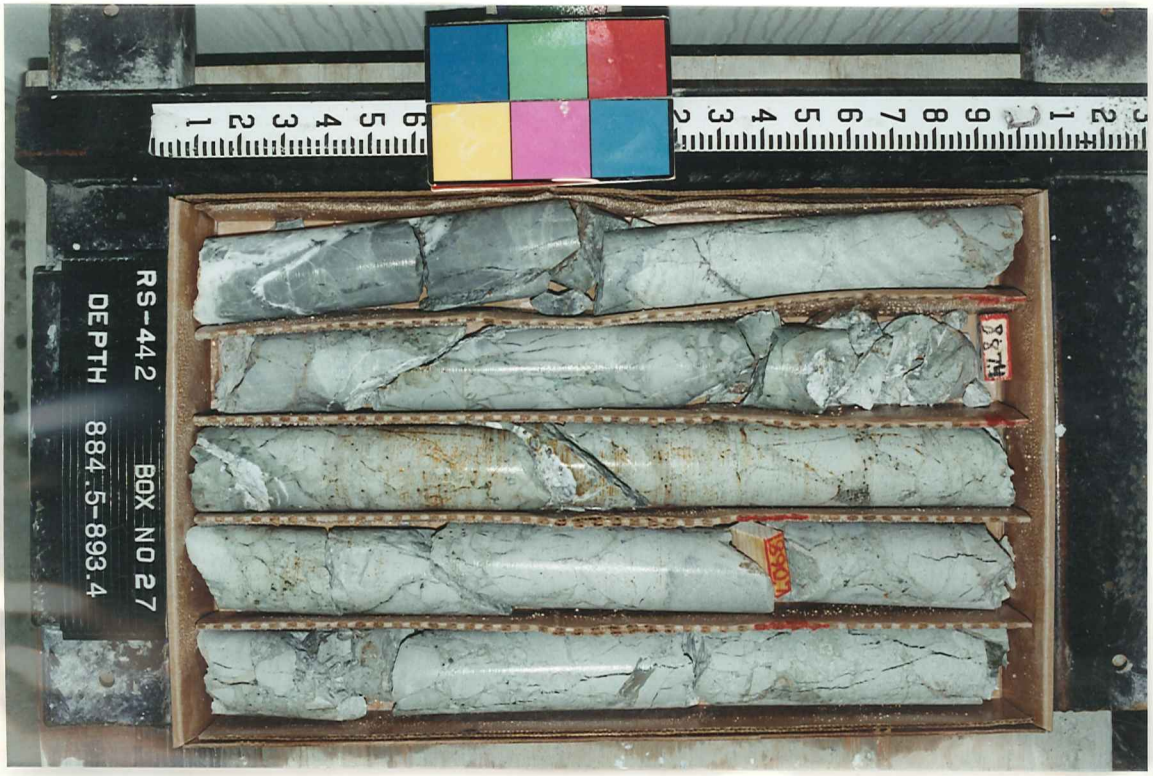
DEPTH 866.5-875.7

RS-442 BOX NO 26
DEPTH 875.7-884.5


RS-442 BOX NO 27
DEPTH 884.5-893.4

RS-442
BOX NO 28
DEPTH 893.4 - 900.TD