60000539

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-432
AUTHOR	K. Allen; S. King; V. Reid; S. Viegut
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 Mining Co, LLC; Rosebud Project
COMMODITY If not obvious	gold; silver
NOTES	drill logs; assay; geology; photographs; geochemistry; total depth 770'; invoices; 64p.

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 3/18/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

RS-432

60000539
4010

6000 0539

- 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-432	LOCATION	EAST, SURFACE
PAGE	1 OF 4	NORTHING	
DATE	03/31/98	EASTING	
LOGGED BY	RBM	ELEVATION	
SCALE	1" = 10'	AZIMUTH	—
TOTAL DEPTH	770'	INCLINATION	-90°

REMARKS

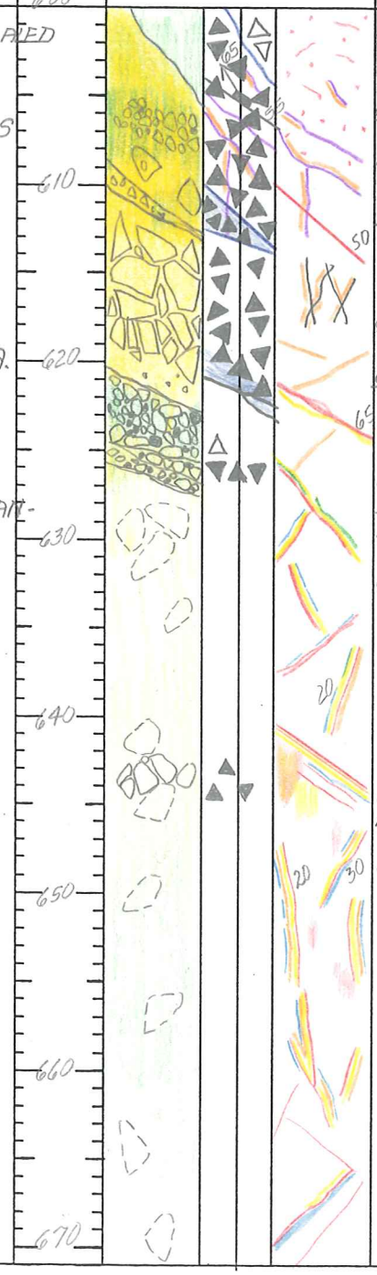
LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
550.0-595.8' CHOCOLATE BRECCIA LITHOLOGY		550.0'- : MODERATELY BLEACHED, MODERATELY ARGILLIZED HETEROLITHIC VOLCANIC BRECCIA. SUB-ANGULAR TO SUB-ROUND FRAGMTS VARY FROM DULL LT. TAN-PINK TO CREAM-TAN. MATRIX ROCK FLOUR IS LOCALLY PUNKY & LT. GRN CLAY ALTERED. INDIVIDUAL FRAGMENTS CAN BE STR'LY BLCHED & ARGILLIZED. PRIMARILY MATRIX-SUPPORTED.	550			550.0'-569. : MOD. BLEBBING W/ PY. LOCAL MOD./WK MARC/PY WITH CALCITE. MOD. BLCHING & ARGILLIZATION. ~~MOD~~
		~565': RUDDY BRN FeOx STAINING IN ROCK FLOUR MATRIX.	560			569.0'-570.0': STR. GRN CLAY + MOD. DULL BRASSY FG DISS'D & VN Py.
		~580.0': MINOR CHANGE IN STYLE OF ALTERATION. INCREASED PUNKY, WHT CLAY ALTERATION IN FRAGMTS; INCREASED HARD RUDDY BRN STAINING IN RK FLOUR MATRIX, OCCURS WITH WK TO STRONG SILICIFICATION. WHERE WK SILICIFICATION IS RESTRICTED TO THE MATRIX. IT LOCALLY FLOODS THE ROCK.	570	45	569.0'-570.0': WKLY SHEARED & BROKEN, LT. GRN PUNKY	~570' - ~580': INCREASED PYRITE VNLTS, DISS'D & BLEBS. CONT'D MOD. BLCHING & ARGILLIZAT'N. INCIPIENT WK TO MOD. SILICIFICATION.
			580		589.0-591.6': SHEARED RUBBLIZED	580'-589': MOD. MARC/PY VNLTS. MOD/WK SILICA + MARC +/- CALCITE VNS. OVERALL MOD. SILICIFICATION. LOCAL STR. TO MOD. ARGILLIZATION.
			590		590.0-591.5': BROKEN GRN PUNKY CLAY ALTERED.	585': FIRST SOOTY STIBNITE & BLOCKY BARITE ON LATE OPEN FRAX.
		595.5-595.8': MILLED SILICIFIED GRIT IN UNHEALED GOUGE.		50		589.0-595.7': SPOTTY MOD. GRN CLAY. SILICEOUS BRN CHOCOLATE FRAGMTS & RK FLOUR MATRIX.
595.8'-602.1' "VITROPHYRE"		595.8'-599.1 : STRONGLY TO MODERATELY SILICIFIED, MASSIVE MEDIUM BLUE-GREEN "VITROPHYRIC" UNIT. STR./MODERATE WISPY PYRITE/MARCASITE VNLTS. 599.1-602.1': UNHEALED GOUGE-PACKED CRACKLE TO WKLY MILLED MOSAIC BXA, IN VITROPHYRE TYPE RKS, GRY SILICA.	600			

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag
550.0	555.2					
555.2	560.0					
560.0	565.0					
565.0	570.0					
570.0	575.0					
575.0	580.0					
580.0	584.5					
584.5	589.0					
589.0	591.6					
591.6	595.7					
595.7	599.1					
599.1	601.2					

HOLE NUMBER RS-432 PAGE 2 OF 4

LITH.	OX/RED.	LITHOLOGY
595.7-602.1 "VITROPHYRE"		601-602.1': MIXED LITHOLOGY FRAGMTS IN LT. GRN UNHEALED GOUGE, MODERATE MARC.
602.1-626.7' FAULT	ZONE	602.1-605.1': STR'LY SILICIFIED MEDIUM GRN BUD., MOD. MARCASITE + PY IN VNLTS & DISS'D. LATE BARITE FILLS VUGS UNES VNS. FROM 604': GRN BUD FORMS MATRIX TO SILICIFIED BRECCIA.
		605.1-609.1': >70% GRY SILICA-FLOODED, MILLED SANDY/GRITTY FAULT BRECCIA. MOD. DISS'D MARC/PY. OVERPRINTS GRN CLAY ALTERATN LOCALLY.
		609.1'-613.3': CONT'D >80% GRY SILICA-FLOODED BXA. MULTI-EPISODE BXA IN SILICA TO ~612': CRM/WHT SILICA FORMS MATRIX ON GRY SILICA FRAGMTS.
		613.3'-621.2': SILICA-CEMENTED, STR'LY SILICIFIED MONOLITHIC CRACKLE BRECCIA. BRN MASSIVE TO BANDED ROCK UNIT. 615'-617': BROKEN, PACKED W/ TAN-WHT GOUGE. 620'-621.2': STRONGLY MILLED & GRY SILICA-SULFIDE REPLACEMT ABOVE BUD.
627.6- DOZER		621.2-626.7': PHYLLITE-BEARING PROBABLE TOS AT DOZER CONTACT. SLIVER AT BASE OF FAULT ZONE.
		626.7- : WKLY AUTOBRECCIATED DOZER.

FT



GRAPHIC LOG

STRUCTURE
599.1-602.1': UNHEALED CRACKLE TO WKLY MILLED MOSAIC BXA, FAULT.
602.1-605.1': WKLY BXA'D & DISRUPTED.
605.1-~612': MOD. TO STR. MULTI-EPISODE BXA.
612-613.3': STRLY MILLED & SiO2'd AT 50-70° TO CA.
613.3-619.4': MOD/WK FAULT CRACKLE BRECCIA.
619.4'-621.2': MOD. TO STR. MILLING & TOTAL REPLACEMT SILICA.
621.2-625.0': MOD'LY DISRUPTED. MOSTLY HYDROTHERMAL OVERPRINT.
625.0'-626.7': STR. HYDROTHERMAL +/- TECTONIC OVERPRINT ON ~~BUD~~ AT DOZER CNTCT TOS SOME MILLED FAULT BXA W/ SiO2.
642.6-645': SILICA + Py/MARC CEMENTED HYDROTHERMAL BXA W/IN DOZER.

ALTERATION AND MINERALIZATION

FROM 604': BARITE IN VUGS

602.1-605.1': STR. SILICIFICATION, MOD. GRN CLAY ALT'N.

605.1-609.4': MOD. GRN CLY ALT'N, STR. SiO2, MOD. DISS'D MARC/Py. LATE BARITE & CLAY IN VUGS, + WK STIBNITE.

609.4-613.3': STR. TO TOTAL REPLACEMT SILICA. MOD. TO STR. Py/MARC. VFG BLK SULFIDE.

613.3-619.4': STR. SILICA CEMENTED, MODLY TO STRLY SILICIFIED CRACKLE BXA STRWK, + CRM CLAY IN MATRIX ~617-619.4'

~615.0-617.6 = CRM/WHT CLAY GOUGE + PYRARGERITE & VFG GRY SULFIDE (POSSIBLE STIBNITE?) ~~L. WHT CLAY VNLTS~~

619.4-621.2': CONT'D STR. SiO2 TO TOTAL SiO2 REPLACEMT. MOD. DISS'D MARC, & L. WHT CLAY VNLTS

621.2-625.0': VARIABLY MODERATELY TO STRLY SILICIFIED, STRLY GRN CLAY ALTERED BUD. WK/MOD. DISS'D & VNLT MARC.

625.0-626.7': STR SILICIFICATION + MINOR GRY REPLACEMT SILICA OVERPRINTING STRLY GRN CLAY ALTERED TOS. MOD. MARC & WHT CALCITE + CLAY + VUGGY FINE QZ. TR. WALLROCK ARGILLIZATN.

626.7-630': LT. GRN/CRM SPOTTILY SILICEOUS DOZER. MOD. SILICA + MARC/Py GRN CLAY OR LATE WHT CLY VNS, +/- SPARRY CALCITE.

630'-642.6' WK SILICA + MARC

642.6-645' STR. SILICA + MARCASITE CEMENTED CRACKLE BXA.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
599.1	602.1				
602.1	605.1				
605.1	609.4				
609.4	613.3				
613.3	615.3				
615.3	617.3				
617.3	619.4				
619.4	621.2				
621.2	625.0				
625.0	626.7				
626.7	630.0				
630.0	635.0				
635.0	640.0				
640.0	642.6				
642.6	645.1				
645.1	650.0				
650.0	655.0				
655.0	660.0				
660.0	665.3				
665.3	670.0				

HOLE NUMBER RS-432 PAGE 3 OF 4

2208 nm
2202 nm

LITH.	OX/RED	LITHOLOGY	FT 670	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
626.7-770.0' DOZER		FROM 626.7': LT. GRN TO GRN, TIGHTLY-PACKED, CRACKLE AUTOBXA. FAINT RUDDY STAINING HILIGHTS BRECCIA FRAGMENTS. GENERAL MODERATE SILICA + MARCASITE +/- WHT CLAY & CALCITE VNING THRU'OUT. FINE PYRITE OVERGROWTHS ON MARC BLADES COMMON THRU'OUT THIS ZONE. DARK ALMOST SOOTY PY SURROUNDS MARC IN LATE SILICA VNS.	680 690 700 710 720 730 740	75 35 20 40 20 65 40 45 25 45 30	~672': MINOR SILICA + MARC +/- GRN CLY CEMENTED BRECCIA. 687': UNHEALED BROKEN ZONE. LT. GRN GRITTY CLAY GOUGE + BARITE XTLS. 707': CRACKLE BXA VN PYRARGERITE	FROM 645.1': MOD/WK SILICA + MARCASITE +/- WHT CLAY & CALCITE, AS LATE INFILL. LOCALLY DULL BRASSY PY/MARC IS DISSD IN INTERSTITICES OF THE AUTOBRECCIA MATRIX. CONT'D TRACE ARGILLIZATION OF WALLROCK. TO 721.6'. FROM ~680': REAPPEARANCE OF BLOCKY BARITE ON LATE FRAX, LOSE CALCITE. IF PYRARGERITE IS PRESENT IN THIS ZONE IT IS NOT READILY VISIBLE. TO 721.6'. 707': 3-4" WIDE GRY SILICA + MARCASITE +/- WHT CLAY 721.6-727.7': STR. QUARTZ + MARCASITE OPEN SPACE VNS WITH LATE WHT CLAY AND LOCALLY ANHEDRAL PYRARGERITE. MOD/STR. SOME GRY CLAY, BLOCKY BARITE ON LATE FRAX. 727.7-744.4': MOD/WK SILICA + MARCASITE +/- PY VNLTS. SOME GRY CLAY ON FRAX.
		INCREASED DEFINITION TO AUTOBRECCIA TEXTURE BELOW 707'.				

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
670.0	675.0				
675.0	680.0				
680.0	685.0				
685.0	690.0				
690.0	695.0				
695.0	700.0				
700.0	705.0				
705.0	710.0				
710.0	715.3				
715.3	720.0				
720.0	721.6				
721.6	724.7				
724.7	727.7				
727.7	730.0				
730.0	734.9				
734.9	740.0				

HOLE NUMBER RS-432 PAGE 4 OF 4

LITH.	OX/RED	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
626.7'-770.0'? DOZER 759.2-770' POSSIBLE DIKE		751.7-759.2': LARGELY HEALED, MYLONITIC/CATACLASTIC BRECCIA. MONOLITHIC DOZER BRECCIA AT MARGIN OF WKLY PORPHYRITIC DIKE? OR DOZER SUBUNIT? THIS MAY ALSO BE DOZER BELOW. 759.2'-770': CONT'D LT. GRN, APHANITIC GROUNDMASS WITH PERVASIVE TRACE/WK GRN CLAY ALTERATION. SPARSE SHAGGY/WISPY RELICTS OF GLOMEROPORPHYRITIC PLAG PHENOS ARE SUGGESTED. MOST OF THIS SUBUNIT IS OVERPRINTED BY HYDROTHERMALLY CEMENTED, SLIGHTLY (WKLY) MILLED, CLAST-SUPPORTED BRECCIATION.	740 750 760 770		PYRARGERITE 751.7-759.2': HEALED DIKE MARGIN, MYLONITIC BRECCIA. STRANDS OF 85 MOD'LY GRN CLAY ALTERED SHEARING AT HI ∠'S TO CORE AXIS ARE PREVALENT FROM 754'-755.6'.	744.4-749.1': STR. SILICA + WHT CLAY + MARCASITE, +/- PYRARGERITE VNS & VNLTS. PYRARGERITE PRESENT WITH GRY CLAY + HEALED WHT CLAY + SILICA. 749.1-759.2': MOD. SILICA + MARC VNING W/ GRN CLAY SELVAGES. ~755: CALCITE REAPPEARS IN W/ SILICA + MARC VNS. 755.6-759.2': STRGER RUDDY STAINING IN BXA ZONE. 761.0-770': SILICA + MARC +/- CALCITE CEMENTED MOSAIC TO CRACKLE BRECCIA CUTS WKLY PORPHYRITIC DIKE.
		T.D. 770'	780 790 800			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
740.0	744.4				
744.4	749.1				
749.1	751.7				
751.7	755.4				
755.4	759.2				
759.2	762.5				
762.5	765.9				
765.9	770.0				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-432 DATE: 03/31/98 LOGGED BY: ZBM 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)
550.0	560.0	100.0	100.0	93.0										
560.0	570.0	101.0	101.0	81.0										
570.0	580.0	102.0	102.0	77.0										
580.0	590.0	95.0	95.0	64.0										
590.0	600.0	107.0	107.0	37.0										
600.0	610.0	93.0	93.0	54.0										
610.0	617.0	110.0	110.0	32.9										
617.0	623.5	101.5	101.5	62.7										
623.5	630.0	100.0	100.0	81.5										
630.0	640.0	103.0	103.0	80.0										
640.0	650.0	100.0	100.0	86.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-432 DATE 04/02/98 LOGGED BY: HBM 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)
650.0	660.0	102.0	102.0	97.0										
660.0	670.0	98.0	98.0	83.0										
670.0	680.0	99.0	99.0	86.0										
680.0	690.0	99.0	99.0	80.0										
690.0	700.0	100.0	100.0	95.0										
700.0	710.0	100.0	100.0	87.0										
710.0	720.0	95.0	95.0	89.0										
720.0	730.0	107.0	107.0	67.0										
730.0	740.0	99.0	99.0	97.0										
740.0	750.0	102.0	102.0	94.0										
750.0	760.0	102.0	102.0	75.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-432 DATE: 04/02/98 LOGGED BY: ADM 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)
760.0	770.0	99.0	99.0	94.0										
	T.D.													

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

Quick log

HOLE NUMBER RS-432
PAGE 1 OF 3
DATE 6/24/98
LOGGED BY CDA
TOTAL DEPTH 550 RVC PRE-COLLAR
770' CORE

LOCATION EAST ZONE
NORTHING
EASTING
ELEVATION
AZIMUTH Vert
INCLINATION -90

AREA EAST ZONE
DRILLING CO. EKLUND
RIG TYPE RVC
HOLE SIZE 6 1/2
DOWN HOLE SURVEY BY WELNAV

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 %	AC-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MIXCURE	ANALYTICAL DATA: FROM	TO	W	Au
10		COL	Colluvium																		X																			
20		TLF6	FINE-GRAINED, LATITIC to ANDESITIC, FLOW.																	X																				
30																			X																					
40																			X																					
50																			X																					
60																			X																					
70																			X																					
80																			X																					
90																																								
100																																								
110																																								
120																																								
130																																								
140																																								
150																																								
160																																								
170																																								
180																																								
190																																								
200																																								

Hecla MINING COMPANY

ROSEBUD PROJECT
DRILL LOG

HOLE NUMBER RS-432
PAGE 2 OF 3
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: 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	MIXTURE	ANALYTICAL DA: FROM	TO	W	Au
210		TCFG	FINE-GRAINED, LATITIC to ANDESITIC FLOW.																																					
220																																								
230																																								
240																																								
250																																								
260																																								
270																																								
280																																								
290																																								
300																																								
310																																								
320																																								
330																																								
340																																								
350																																								
360																																								
370		TCLLT	FINE-GRAINED, LATITIC to ANDESITIC AUTO-BRECCIA OR VOLCANIC BRECCIA																																					
380																																								
390																																								
400																																								

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-432
PAGE 3 OF 3
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	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%	%	%	%	%	%	%								
410		TCUT																																						
420																																								
430																																								
440																																								
450																																								
460																																								
470																																								
480																																								
490																																								
500																																								
510																																								
520																																								
530																																								
540																																								
550																																								
			TD RUC PRE-COLLAR = 550'																																					

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048460

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-432 RECEIVED : 7 APR 1998

No. SAMPLES : 56 REPORTED : 15 APR 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. Page : 1

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048460

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 15 APR 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)	
RS-432 550.0-555.2	<0.001			<0.02	
RS-432 555.2-560.0	<0.001			<0.02	
RS-432 560-565	<0.001			<0.02	
RS-432 565-570	0.001			0.04	
RS-432 570-575	0.002			0.07	
RS-432 575-580	0.009			0.09	
RS-432 580.0-584.5	0.023			0.14	
RS-432 584.5-589.0	0.014			0.29	
RS-432 589.0-591.6	0.007			0.14	
RS-432 591.6-595.7	0.014			0.17	
RS-432 595.7-599.1	0.010			0.12	
RS-432 599.1-602.2	0.008			0.12	
RS-432 602.2-605.1	0.021			0.07	
RS-432 605.1-609.4	0.023			0.46	
RS-432 609.4-613.3	0.007			1.90	
RS-432 613.3-615.3	0.040			2.73	615.3-617.3=2'
RS-432 615.3-617.3	0.053		0.049	52.42	
RS-432 617.3-619.4	0.007			0.10	
RS-432 619.4-621.2	0.027			0.43	625-642.6 =
RS-432 621.2-625.0	0.045			0.15	17.6'@
RS-432 625.0-626.7 1.7	1.003	1.011	1.335	0.33	0.403 Au
RS-432 626.7-630.0 3.3	0.144		0.090	0.06	0.82 Ag
RS-432 630-635 5	0.365		0.360	0.16	
RS-432 635-640 5	0.472		0.517	2.47	
RS-432 640.0-642.6 2.6	0.277		0.260	0.19	

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048460

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 15 APR 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
RS-432 642.6-645.1	0.132		0.125	0.15
RS-432 645.1-650.0	0.105		0.067	0.33
RS-432 650-655	0.059			0.66
RS-432 655-660	0.030			0.13
RS-432 660.0-665.3	0.101		0.112	1.50
RS-432 665.3-670.0	0.017			0.08
RS-432 670-675	0.023			0.15
RS-432 675-680	0.081		0.076	0.39
RS-432 680-685	0.036			1.50
RS-432 685-690	0.010			0.39
RS-432 690-695	0.016			0.08
RS-432 695-700	0.010			0.72
RS-432 700-705	0.019			0.17
RS-432 705-710	0.013			0.06
RS-432 710.0-715.3	0.004			0.07
RS-432 715.3-720.0	0.016			1.09
RS-432 720.0-721.6	0.006	0.006		0.08
RS-432 721.6-724.7	0.010			1.88
RS-432 724.7-727.7	0.010			0.52
RS-432 727.7-730.0	0.002			0.02
RS-432 730.0-734.9	0.015			0.04
RS-432 734.9-740.0	0.003			0.05
RS-432 740.0-744.4	0.022			0.39
RS-432 744.4-749.1	0.009			1.00
RS-432 749.1-751.7	0.004			0.06

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048460

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 15 APR 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
RS-432 751.7-755.4	0.003			0.05
RS-432 755.4-759.2	0.014			0.07
RS-432 759.2-762.5	0.020			0.03
RS-432 762.5-765.9	0.006			0.05
RS-432 765.9-770.0	0.016			0.05
27838	0.554			2.49

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 0048460-IN
INVOICE DATE: 04/16/98

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-432	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
56	SAMPLES RECEIVED	.00	.00
55	DRYING	2.00	110.00
55	JAW CRUSHING CHARGE	2.60	143.00
55	COARSE MILLING CHARGE	9.00	495.00
55	SPLITTING CHARGE	2.40	132.00
55	RING MILLING CHARGE	2.00	110.00
56	Au (1 A.T. FIRE ASSAY)	8.00	448.00
10	Au ANALYSES/GRAVIMETRIC	8.75	87.50
56	HYDROCHLORIC/NITRIC DIGESTION	2.00	112.00
56	Ag ANALYSES	1.00	56.00
7	Ag (ore grade) ANALYSES	5.00	35.00

86-5210-477
CAA

NET INVOICE:	1,728.50
LESS DISCOUNT:	345.70
FREIGHT:	.00
INVOICE TOTAL:	1,382.80

xAMERICAN ASSAY LABORATORIES
ANALYSIS REPORT SP048460

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-432 RECEIVED : 7 APR 1998

No. SAMPLES : 56 REPORTED : 15 APR 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 SP048460

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 15 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-432 550.0-555.2	<0.001			<0.02
RS-432 555.2-560.0	<0.001			<0.02
RS-432 560-565	<0.001			<0.02
RS-432 565-570	0.001			0.04
RS-432 570-575	0.002			0.07
RS-432 575-580	0.009			0.09
RS-432 580.0-584.5	0.023			0.14
RS-432 584.5-589.0	0.014			0.29
RS-432 589.0-591.6	0.007			0.14
RS-432 591.6-595.7	0.014			0.17
RS-432 595.7-599.1	0.010			0.12
RS-432 599.1-602.2	0.008			0.12
RS-432 602.2-605.1	0.021			0.07
RS-432 605.1-609.4	0.023			0.46
RS-432 609.4-613.3	0.007			1.90
RS-432 613.3-615.3	0.040			2.73
RS-432 615.3-617.3	0.053		0.049	52.42
RS-432 617.3-619.4	0.007			0.10
RS-432 619.4-621.2	0.027			0.43
RS-432 621.2-625.0	0.045			0.15
RS-432 625.0-626.7	1.003	1.011	1.335	0.33
RS-432 626.7-630.0	0.144		0.090	0.06
RS-432 630-635	0.365		0.360	0.16
RS-432 635-640	0.472		0.517	2.47
RS-432 640.0-642.6	0.277		0.260	0.19

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048460

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 15 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-432 642.6-645.1	0.132		0.125	0.15
RS-432 645.1-650.0	0.105		0.067	0.33
RS-432 650-655	0.059			0.66
RS-432 655-660	0.030			0.13
RS-432 660.0-665.3	0.101		0.112	1.50
RS-432 665.3-670.0	0.017			0.08
RS-432 670-675	0.023			0.15
RS-432 675-680	0.081		0.076	0.39
RS-432 680-685	0.036			1.50
RS-432 685-690	0.010			0.39
RS-432 690-695	0.016			0.08
RS-432 695-700	0.010			0.72
RS-432 700-705	0.019			0.17
RS-432 705-710	0.013			0.06
RS-432 710.0-715.3	0.004			0.07
RS-432 715.3-720.0	0.016			1.09
RS-432 720.0-721.6	0.006	0.006		0.08
RS-432 721.6-724.7	0.010			1.88
RS-432 724.7-727.7	0.010			0.52
RS-432 727.7-730.0	0.002			0.02
RS-432 730.0-734.9	0.015			0.04
RS-432 734.9-740.0	0.003			0.05
RS-432 740.0-744.4	0.022			0.39
RS-432 744.4-749.1	0.009			1.00
RS-432 749.1-751.7	0.004			0.06

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048460

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 15 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-432 751.7-755.4	0.003			0.05
RS-432 755.4-759.2	0.014			0.07
RS-432 759.2-762.5	0.020			0.03
RS-432 762.5-765.9	0.006			0.05
RS-432 765.9-770.0	0.016			0.05
27838	0.554			2.49

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048460

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-432 RECEIVED : 7 APR 1998

No. SAMPLES : 56 REPORTED : 15 APR 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 SP048460

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 15 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-432 550.0-555.2	<0.001			<0.02
RS-432 555.2-560.0	<0.001			<0.02
RS-432 560-565	<0.001			<0.02
RS-432 565-570	0.001			0.04
RS-432 570-575	0.002			0.07
RS-432 575-580	0.009			0.09
RS-432 580.0-584.5	0.023			0.14
RS-432 584.5-589.0	0.014			0.29
RS-432 589.0-591.6	0.007			0.14
RS-432 591.6-595.7	0.014			0.17
RS-432 595.7-599.1	0.010			0.12
RS-432 599.1-602.2	0.008			0.12
RS-432 602.2-605.1	0.021			0.07
RS-432 605.1-609.4	0.023			0.46
RS-432 609.4-613.3	0.007			1.90
RS-432 613.3-615.3	0.040			2.73
RS-432 615.3-617.3	0.053		0.049	52.42
RS-432 617.3-619.4	0.007			0.10
RS-432 619.4-621.2	0.027			0.43
RS-432 621.2-625.0	0.045			0.15
RS-432 625.0-626.7	1.003	1.011	1.335	0.33
RS-432 626.7-630.0	0.144		0.090	0.06
RS-432 630-635	0.365		0.360	0.16
RS-432 635-640	0.472		0.517	2.47
RS-432 640.0-642.6	0.277		0.260	0.19

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048460

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 15 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-432 642.6-645.1	0.132		0.125	0.15
RS-432 645.1-650.0	0.105		0.067	0.33
RS-432 650-655	0.059			0.66
RS-432 655-660	0.030			0.13
RS-432 660.0-665.3	0.101		0.112	1.50
RS-432 665.3-670.0	0.017			0.08
RS-432 670-675	0.023			0.15
RS-432 675-680	0.081		0.076	0.39
RS-432 680-685	0.036			1.50
RS-432 685-690	0.010			0.39
RS-432 690-695	0.016			0.08
RS-432 695-700	0.010			0.72
RS-432 700-705	0.019			0.17
RS-432 705-710	0.013			0.06
RS-432 710.0-715.3	0.004			0.07
RS-432 715.3-720.0	0.016			1.09
RS-432 720.0-721.6	0.006	0.006		0.08
RS-432 721.6-724.7	0.010			1.88
RS-432 724.7-727.7	0.010			0.52
RS-432 727.7-730.0	0.002			0.02
RS-432 730.0-734.9	0.015			0.04
RS-432 734.9-740.0	0.003			0.05
RS-432 740.0-744.4	0.022			0.39
RS-432 744.4-749.1	0.009			1.00
RS-432 749.1-751.7	0.004			0.06

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048460

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 15 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-432 751.7-755.4	0.003			0.05
RS-432 755.4-759.2	0.014			0.07
RS-432 759.2-762.5	0.020			0.03
RS-432 762.5-765.9	0.006			0.05
RS-432 765.9-770.0	0.016			0.05
27838	0.554			2.49

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048297

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

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

NS,

CLIENT REFERENCE No: RS-432 RECEIVED : 16 MAR 1998

No. SAMPLES : 56 REPORTED : 24 MAR 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

PROVISIONAL REPORT SP048297

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 24 MAR 1998

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
RS-432 000-010	<0.001		0.08
RS-432 010-020	0.002	0.001	0.02
RS-432 020-030	0.003		0.07
RS-432 030-040	0.003		0.02
RS-432 040-050	0.002		0.05
RS-432 050-060	<0.001		0.02
RS-432 060-070	0.001		0.05
RS-432 070-080	0.002		0.09
RS-432 080-090	0.003		0.09
RS-432 090-100	0.003		0.11
RS-432 100-110	0.002		0.09
RS-432 110-120	0.002		0.07
RS-432 120-130	0.003		0.11
RS-432 130-140	0.002		0.09
RS-432 140-150	0.004		0.19
RS-432 150-160	0.003		0.11
RS-432 160-170	0.001	0.001	0.06
RS-432 170-180	0.001		0.06
RS-432 180-190	<0.001		0.02
RS-432 190-200	0.002		0.09
RS-432 200-210	0.002		0.11
RS-432 210-220	0.001		0.09
RS-432 220-230	0.001		0.09
RS-432 230-240	<0.001		0.02
RS-432 240-250	<0.001		<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048297

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 24 MAR 1998

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
RS-432 250-260	<0.001		<0.02
RS-432 260-270	<0.001		<0.02
RS-432 270-280	0.004	0.003	0.03
RS-432 280-290	<0.001		0.02
RS-432 290-300	<0.001	<0.001	0.02
RS-432 300-310	<0.001		<0.02
RS-432 310-320	<0.001		0.02
RS-432 320-330	<0.001		0.03
RS-432 330-340	<0.001		0.03
RS-432 340-350	<0.001		0.02
RS-432 350-360	0.001		0.05
RS-432 360-370	0.002		0.11
RS-432 370-380	0.001		0.09
RS-432 380-390	0.002		0.06
RS-432 390-400	<0.001		<0.02
RS-432 400-410	<0.001		0.06
RS-432 410-420	0.003		0.13
RS-432 420-430	<0.001		0.05
RS-432 430-440	<0.001	<0.001	<0.02
RS-432 440-450	<0.001		<0.02
RS-432 450-460	<0.001		<0.02
RS-432 460-470	<0.001		<0.02
RS-432 470-480	<0.001		<0.02
RS-432 480-490	0.001		0.04
RS-432 490-500	0.001	0.001	0.04

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048297

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 24 MAR 1998

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
RS-432 500-510	<0.001		0.02
RS-432 510-520	<0.001		<0.02
RS-432 520-530	0.001		0.06
RS-432 530-540	0.002		0.03
RS-432 540-550	0.002		0.06
27784	0.118		2.90

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 0048297-IN
INVOICE DATE: 03/24/98

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-432	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
56	SAMPLES RECEIVED	.00	.00
55	DRYING	1.00	55.00
55	EXCESSIVE WETNESS	1.00	55.00
55	JAW CRUSHING CHARGE	1.30	71.50
55	SPLITTING CHARGE	1.20	66.00
55	FINE MILLING CHARGE	2.00	110.00
56	Au (1 A.T. FIRE ASSAY)	8.00	448.00
56	HYDROCHLORIC/NITRIC DIGESTION	2.00	112.00
56	Ag ANALYSES	1.00	56.00

86-5210-477
EDA

NET INVOICE:	973.50
LESS DISCOUNT:	292.05
FREIGHT:	.00
INVOICE TOTAL:	681.45

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048297

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-432 RECEIVED : 16 MAR 1998

No. SAMPLES : 56 REPORTED : 24 MAR 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 SP048297

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 24 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-432 000-010	<0.001		0.08
RS-432 010-020	0.002	0.001	0.02
RS-432 020-030	0.003		0.07
RS-432 030-040	0.003		0.02
RS-432 040-050	0.002		0.05
RS-432 050-060	<0.001		0.02
RS-432 060-070	0.001		0.05
RS-432 070-080	0.002		0.09
RS-432 080-090	0.003		0.09
RS-432 090-100	0.003		0.11
RS-432 100-110	0.002		0.09
RS-432 110-120	0.002		0.07
RS-432 120-130	0.003		0.11
RS-432 130-140	0.002		0.09
RS-432 140-150	0.004		0.19
RS-432 150-160	0.003		0.11
RS-432 160-170	0.001	0.001	0.06
RS-432 170-180	0.001		0.06
RS-432 180-190	<0.001		0.02
RS-432 190-200	0.002		0.09
RS-432 200-210	0.002		0.11
RS-432 210-220	0.001		0.09
RS-432 220-230	0.001		0.09
RS-432 230-240	<0.001		0.02
RS-432 240-250	<0.001		<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048297

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 24 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-432 250-260	<0.001		<0.02
RS-432 260-270	<0.001		<0.02
RS-432 270-280	0.004	0.003	0.03
RS-432 280-290	<0.001		0.02
RS-432 290-300	<0.001	<0.001	0.02
RS-432 300-310	<0.001		<0.02
RS-432 310-320	<0.001		0.02
RS-432 320-330	<0.001		0.03
RS-432 330-340	<0.001		0.03
RS-432 340-350	<0.001		0.02
RS-432 350-360	0.001		0.05
RS-432 360-370	0.002		0.11
RS-432 370-380	0.001		0.09
RS-432 380-390	0.002		0.06
RS-432 390-400	<0.001		<0.02
RS-432 400-410	<0.001		0.06
RS-432 410-420	0.003		0.13
RS-432 420-430	<0.001		0.05
RS-432 430-440	<0.001	<0.001	<0.02
RS-432 440-450	<0.001		<0.02
RS-432 450-460	<0.001		<0.02
RS-432 460-470	<0.001		<0.02
RS-432 470-480	<0.001		<0.02
RS-432 480-490	0.001		0.04
RS-432 490-500	0.001	0.001	0.04

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048297

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 24 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-432 500-510	<0.001		0.02
RS-432 510-520	<0.001		<0.02
RS-432 520-530	0.001		0.06
RS-432 530-540	0.002		0.03
RS-432 540-550	0.002		0.06
27784	0.118		2.90

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048297

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-432 RECEIVED : 16 MAR 1998

No. SAMPLES : 56 REPORTED : 24 MAR 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 SP048297

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 24 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-432 000-010	<0.001		0.08
RS-432 010-020	0.002	0.001	0.02
RS-432 020-030	0.003		0.07
RS-432 030-040	0.003		0.02
RS-432 040-050	0.002		0.05
RS-432 050-060	<0.001		0.02
RS-432 060-070	0.001		0.05
RS-432 070-080	0.002		0.09
RS-432 080-090	0.003		0.09
RS-432 090-100	0.003		0.11
RS-432 100-110	0.002		0.09
RS-432 110-120	0.002		0.07
RS-432 120-130	0.003		0.11
RS-432 130-140	0.002		0.09
RS-432 140-150	0.004		0.19
RS-432 150-160	0.003		0.11
RS-432 160-170	0.001	0.001	0.06
RS-432 170-180	0.001		0.06
RS-432 180-190	<0.001		0.02
RS-432 190-200	0.002		0.09
RS-432 200-210	0.002		0.11
RS-432 210-220	0.001		0.09
RS-432 220-230	0.001		0.09
RS-432 230-240	<0.001		0.02
RS-432 240-250	<0.001		<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048297

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 24 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-432 250-260	<0.001		<0.02
RS-432 260-270	<0.001		<0.02
RS-432 270-280	0.004	0.003	0.03
RS-432 280-290	<0.001		0.02
RS-432 290-300	<0.001	<0.001	0.02
RS-432 300-310	<0.001		<0.02
RS-432 310-320	<0.001		0.02
RS-432 320-330	<0.001		0.03
RS-432 330-340	<0.001		0.03
RS-432 340-350	<0.001		0.02
RS-432 350-360	0.001		0.05
RS-432 360-370	0.002		0.11
RS-432 370-380	0.001		0.09
RS-432 380-390	0.002		0.06
RS-432 390-400	<0.001		<0.02
RS-432 400-410	<0.001		0.06
RS-432 410-420	0.003		0.13
RS-432 420-430	<0.001		0.05
RS-432 430-440	<0.001	<0.001	<0.02
RS-432 440-450	<0.001		<0.02
RS-432 450-460	<0.001		<0.02
RS-432 460-470	<0.001		<0.02
RS-432 470-480	<0.001		<0.02
RS-432 480-490	0.001		0.04
RS-432 490-500	0.001	0.001	0.04

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048297

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-432

REPORTED : 24 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-432 500-510	<0.001		0.02
RS-432 510-520	<0.001		<0.02
RS-432 520-530	0.001		0.06
RS-432 530-540	0.002		0.03
RS-432 540-550	0.002		0.06
27784	0.118		2.90

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

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

JOB NUMBER: 29-0588-311

WELL NAME: RS-432

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/18/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

WELNAV

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

COMMENTS: ** BOART LONGYEAR **
*** SCOTT VIEGUT ***

****
****
*** 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-432

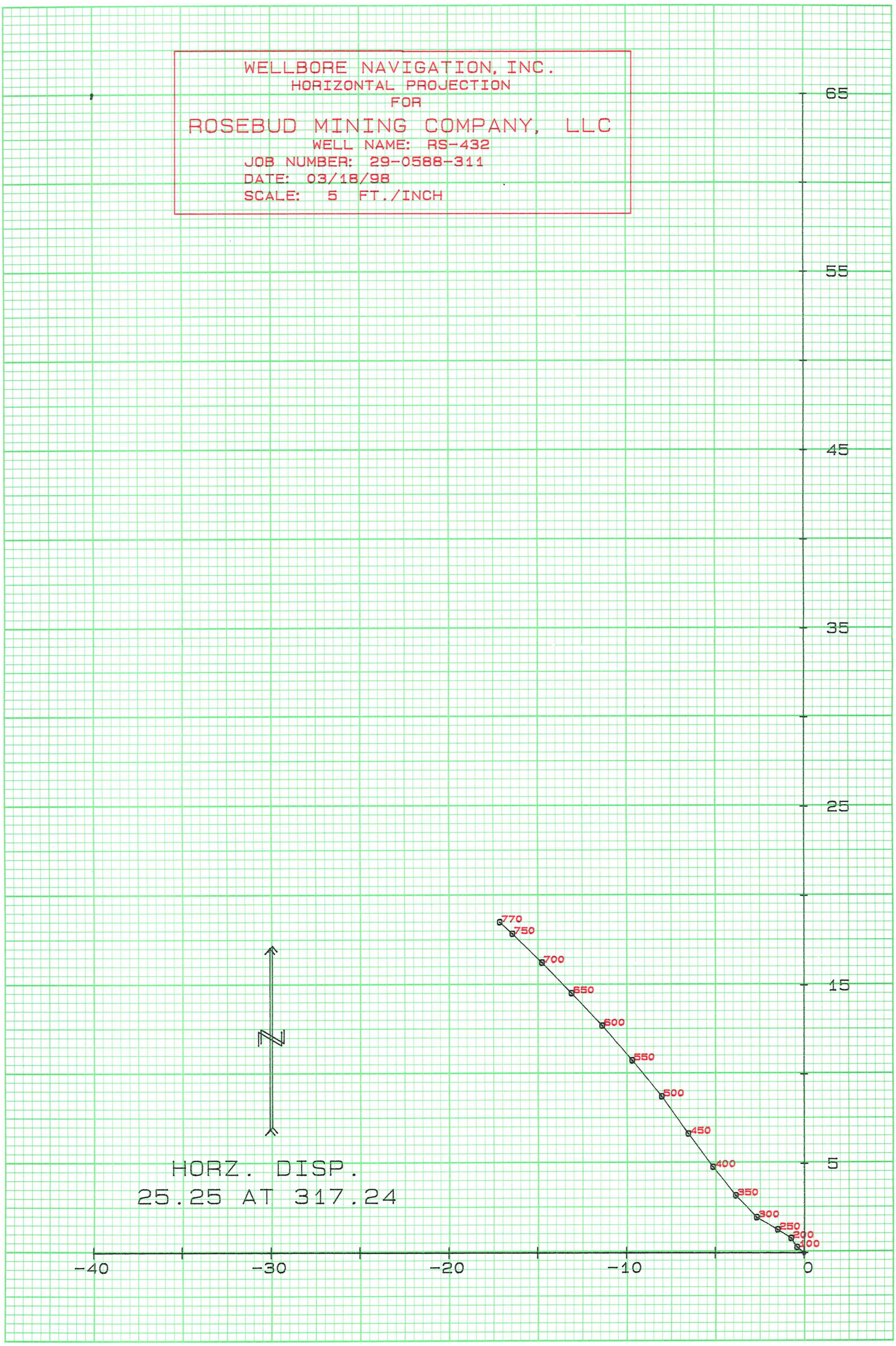
INRUN SURVEY
BY MINIMUM CURVATURE

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	0.17	-0.034	-89.61	305.87	0.10 N	0.14 W	0.78	0.39	0.17	AT 305.87
100.0	100.00	0.52	-0.076	-89.57	314.64	0.33 N	0.41 W	0.15	0.07	0.53	AT 308.98
150.0	150.00	0.75	-0.039	-89.86	004.41	0.52 N	0.54 W	0.71	0.36	0.75	AT 314.24
200.0	200.00	1.11	0.015	-89.27	318.94	0.83 N	0.74 W	1.28	0.64	1.11	AT 318.01
250.0	249.99	1.98	-0.218	-88.62	293.50	1.31 N	1.50 W	1.57	0.79	1.99	AT 310.95
300.0	299.97	3.28	-0.616	-88.24	305.55	1.99 N	2.68 W	1.00	0.50	3.34	AT 306.61
350.0	349.94	4.99	-0.649	-87.80	324.59	3.22 N	3.86 W	1.57	0.79	5.03	AT 309.83
400.0	399.90	7.02	-0.502	-87.51	318.50	4.82 N	5.14 W	0.76	0.38	7.04	AT 313.15
450.0	449.84	9.34	-0.262	-87.14	327.23	6.68 N	6.53 W	1.10	0.55	9.34	AT 315.63
500.0	499.78	11.89	0.061	-86.95	321.84	8.77 N	8.03 W	0.67	0.34	11.89	AT 317.53
550.0	549.71	14.50	0.213	-87.05	319.27	10.79 N	9.69 W	0.34	0.17	14.51	AT 318.08
600.0	599.64	17.08	0.297	-87.05	318.91	12.74 N	11.38 W	0.04	0.02	17.08	AT 318.23
650.0	649.58	19.58	0.273	-87.20	314.36	14.56 N	13.09 W	0.55	0.27	19.58	AT 318.04
700.0	699.52	21.98	0.211	-87.31	317.21	16.28 N	14.76 W	0.35	0.18	21.98	AT 317.79
750.0	749.47	24.30	0.077	-87.35	310.61	17.89 N	16.44 W	0.62	0.31	24.30	AT 317.42
770.0	769.44	25.25	-0.002	-87.14	314.32	18.54 N	17.15 W	1.38	0.28	25.25	AT 317.24

****
* ******** *
* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
* ******** *
* 770.0 FEET EQUALS 25.25 FEET AT 317.24 *
* ******** *
****

STARLIGHT PRINTING (801) 467-2841

WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR
ROSEBUD MINING COMPANY, LLC
WELL NAME: RS-432
JOB NUMBER: 29-0588-311
DATE: 03/18/98
SCALE: 5 FT./INCH



WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

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

JOB NUMBER: 29-0588-311

WELL NAME: RS-432 / VS 305.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/18/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 035.00

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

COMMENTS: ** BOART LONGYEAR **
*** SCOTT VIEGUT ***

****
****
*** 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

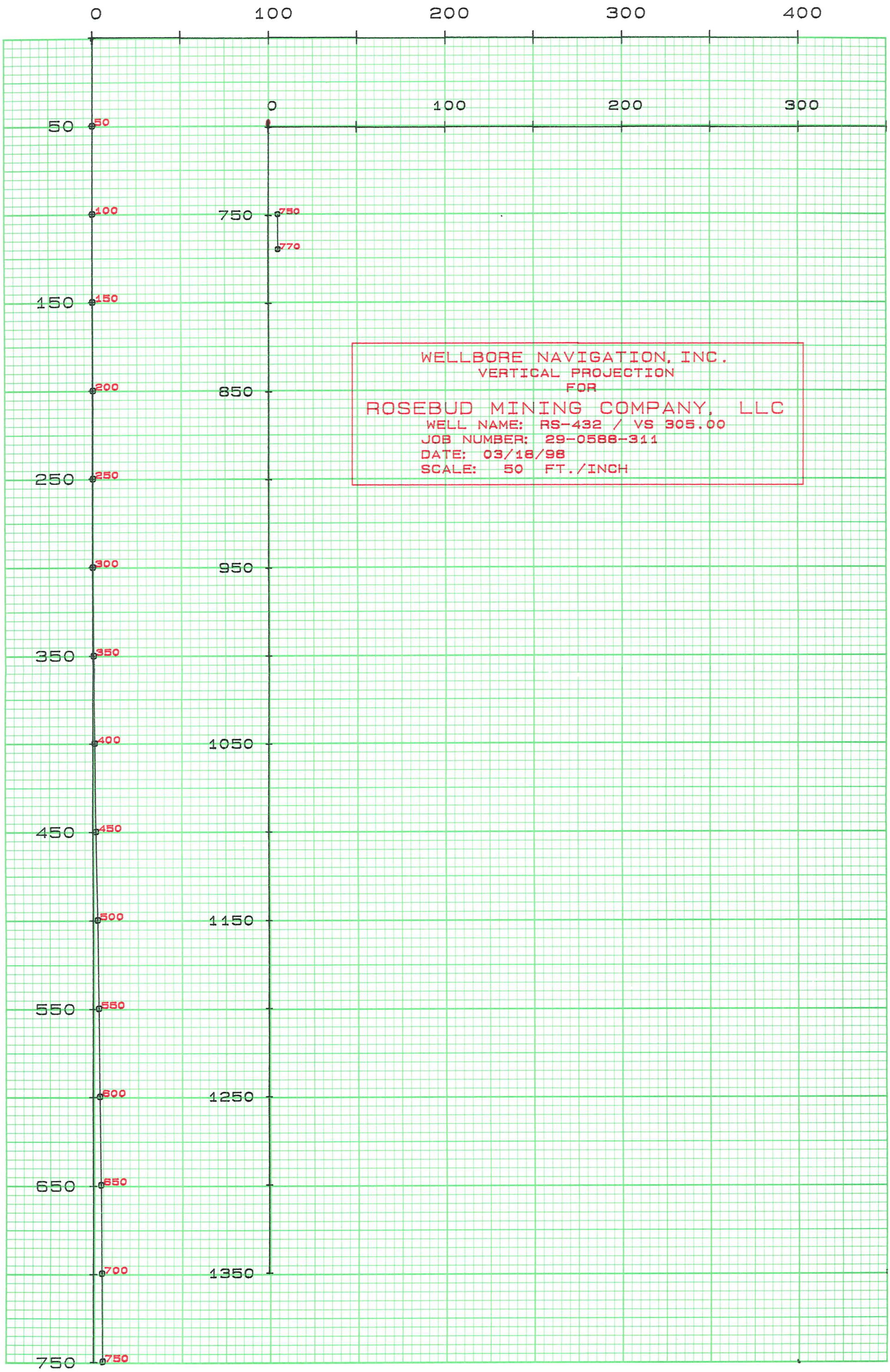
WELL NAME: RS-432 / VS 305.00

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	0.00	-0.170	-89.61	305.87	0.10 N	0.14 W	0.78	0.39	0.17	AT 305.87
100.0	100.00	0.04	-0.525	-89.57	314.64	0.33 N	0.41 W	0.15	0.07	0.53	AT 308.98
150.0	150.00	0.12	-0.741	-89.86	004.41	0.52 N	0.54 W	0.71	0.36	0.75	AT 314.24
200.0	200.00	0.25	-1.082	-89.27	318.94	0.83 N	0.74 W	1.28	0.64	1.11	AT 318.01
250.0	249.99	0.21	-1.981	-88.62	293.50	1.31 N	1.50 W	1.57	0.79	1.99	AT 310.95
300.0	299.97	0.09	-3.338	-88.24	305.55	1.99 N	2.68 W	1.00	0.50	3.34	AT 306.61
350.0	349.94	0.42	-5.010	-87.80	324.59	3.22 N	3.86 W	1.57	0.79	5.03	AT 309.83
400.0	399.90	1.00	-6.971	-87.51	318.50	4.82 N	5.14 W	0.76	0.38	7.04	AT 313.15
450.0	449.84	1.72	-9.182	-87.14	327.23	6.68 N	6.53 W	1.10	0.55	9.34	AT 315.63
500.0	499.78	2.58	-11.609	-86.95	321.84	8.77 N	8.03 W	0.67	0.34	11.89	AT 317.53
550.0	549.71	3.28	-14.129	-87.05	319.27	10.79 N	9.69 W	0.34	0.17	14.51	AT 318.08
600.0	599.64	3.91	-16.625	-87.05	318.91	12.74 N	11.38 W	0.04	0.02	17.08	AT 318.23
650.0	649.58	4.42	-19.079	-87.20	314.36	14.56 N	13.09 W	0.55	0.27	19.58	AT 318.04
700.0	699.52	4.86	-21.431	-87.31	317.21	16.28 N	14.76 W	0.35	0.18	21.98	AT 317.79
750.0	749.47	5.23	-23.728	-87.35	310.61	17.89 N	16.44 W	0.62	0.31	24.30	AT 317.42
770.0	769.44	5.35	-24.680	-87.14	314.32	18.54 N	17.15 W	1.38	0.28	25.25	AT 317.24

****
* ******** *
* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
* ******** *
* 770.0 FEET EQUALS 25.25 FEET AT 317.24 *
* ******** *
****

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-432 / VS 035.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/18/98

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 **
*** SCOTT VIEGUT ***

****
****
*** 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

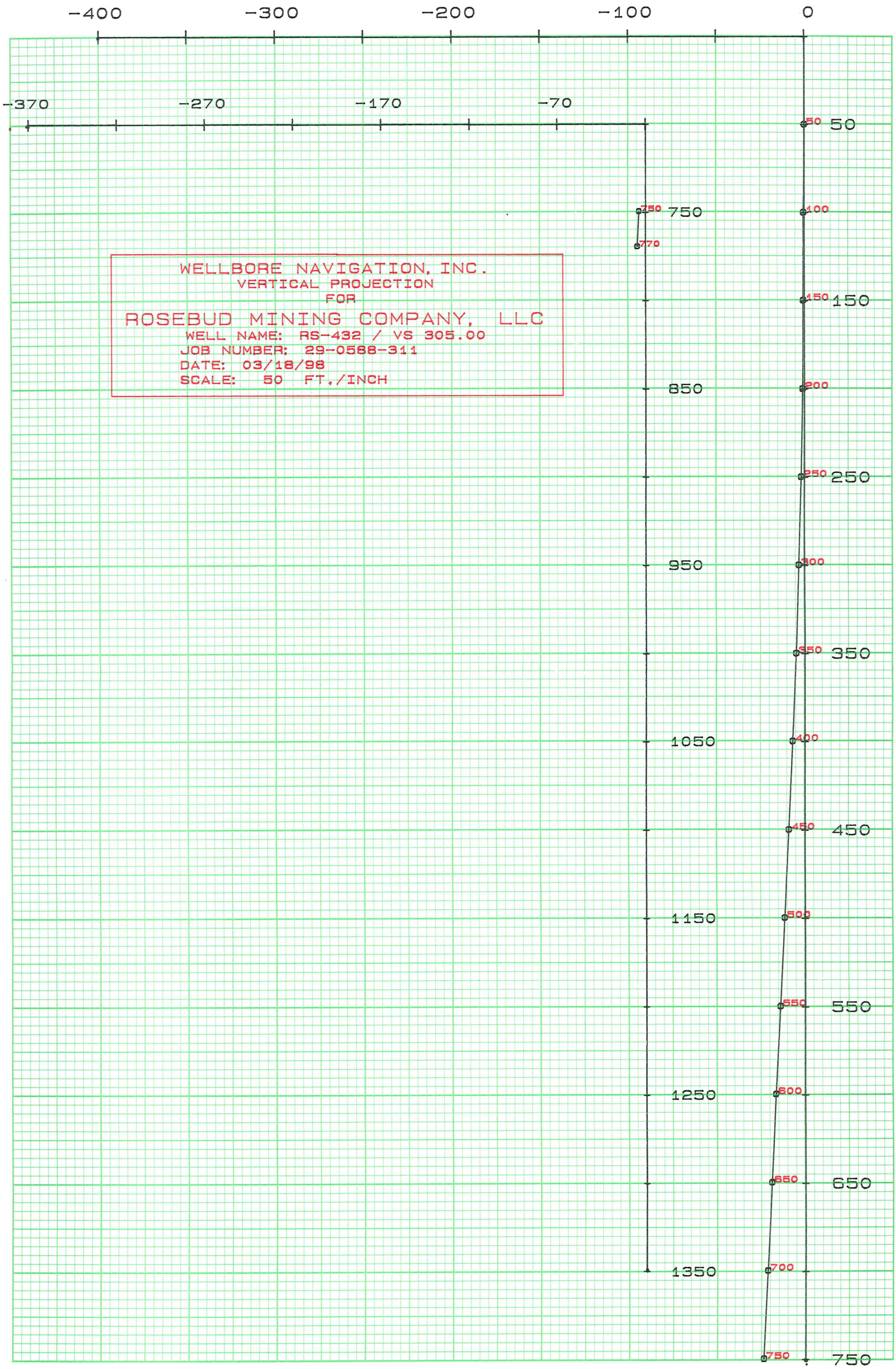
WELL NAME: RS-432 / VS 035.00

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	-0.17	-0.003	-89.61	305.87	0.10 N	0.14 W	0.78	0.39	0.17	AT 305.87
100.0	100.00	-0.53	-0.037	-89.57	314.64	0.33 N	0.41 W	0.15	0.07	0.53	AT 308.98
150.0	150.00	-0.74	-0.121	-89.86	004.41	0.52 N	0.54 W	0.71	0.36	0.75	AT 314.24
200.0	200.00	-1.08	-0.250	-89.27	318.94	0.83 N	0.74 W	1.28	0.64	1.11	AT 318.01
250.0	249.99	-1.98	-0.207	-88.62	293.50	1.31 N	1.50 W	1.57	0.79	1.99	AT 310.95
300.0	299.97	-3.34	-0.094	-88.24	305.55	1.99 N	2.68 W	1.00	0.50	3.34	AT 306.61
350.0	349.94	-5.01	-0.423	-87.80	324.59	3.22 N	3.86 W	1.57	0.79	5.03	AT 309.83
400.0	399.90	-6.97	-0.998	-87.51	318.50	4.82 N	5.14 W	0.76	0.38	7.04	AT 313.15
450.0	449.84	-9.18	-1.724	-87.14	327.23	6.68 N	6.53 W	1.10	0.55	9.34	AT 315.63
500.0	499.78	-11.61	-2.581	-86.95	321.84	8.77 N	8.03 W	0.67	0.34	11.89	AT 317.53
550.0	549.71	-14.13	-3.284	-87.05	319.27	10.79 N	9.69 W	0.34	0.17	14.51	AT 318.08
600.0	599.64	-16.63	-3.910	-87.05	318.91	12.74 N	11.38 W	0.04	0.02	17.08	AT 318.23
650.0	649.58	-19.08	-4.418	-87.20	314.36	14.56 N	13.09 W	0.55	0.27	19.58	AT 318.04
700.0	699.52	-21.43	-4.865	-87.31	317.21	16.28 N	14.76 W	0.35	0.18	21.98	AT 317.79
750.0	749.47	-23.73	-5.226	-87.35	310.61	17.89 N	16.44 W	0.62	0.31	24.30	AT 317.42
770.0	769.44	-24.68	-5.352	-87.14	314.32	18.54 N	17.15 W	1.38	0.28	25.25	AT 317.24

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*   770.0 FEET EQUALS     25.25    FEET AT   317.24         *
*                          ********                         *
*************************************************************
```

STARLIGHT PRINTING (801) 467-2841



WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* ROSEBUD MINING COMPANY *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-432

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/11/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

WATER CONTACT= 480'

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! *
**
**
** ********** **
** COMPANY REPRESENTATIVE **
****
****

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

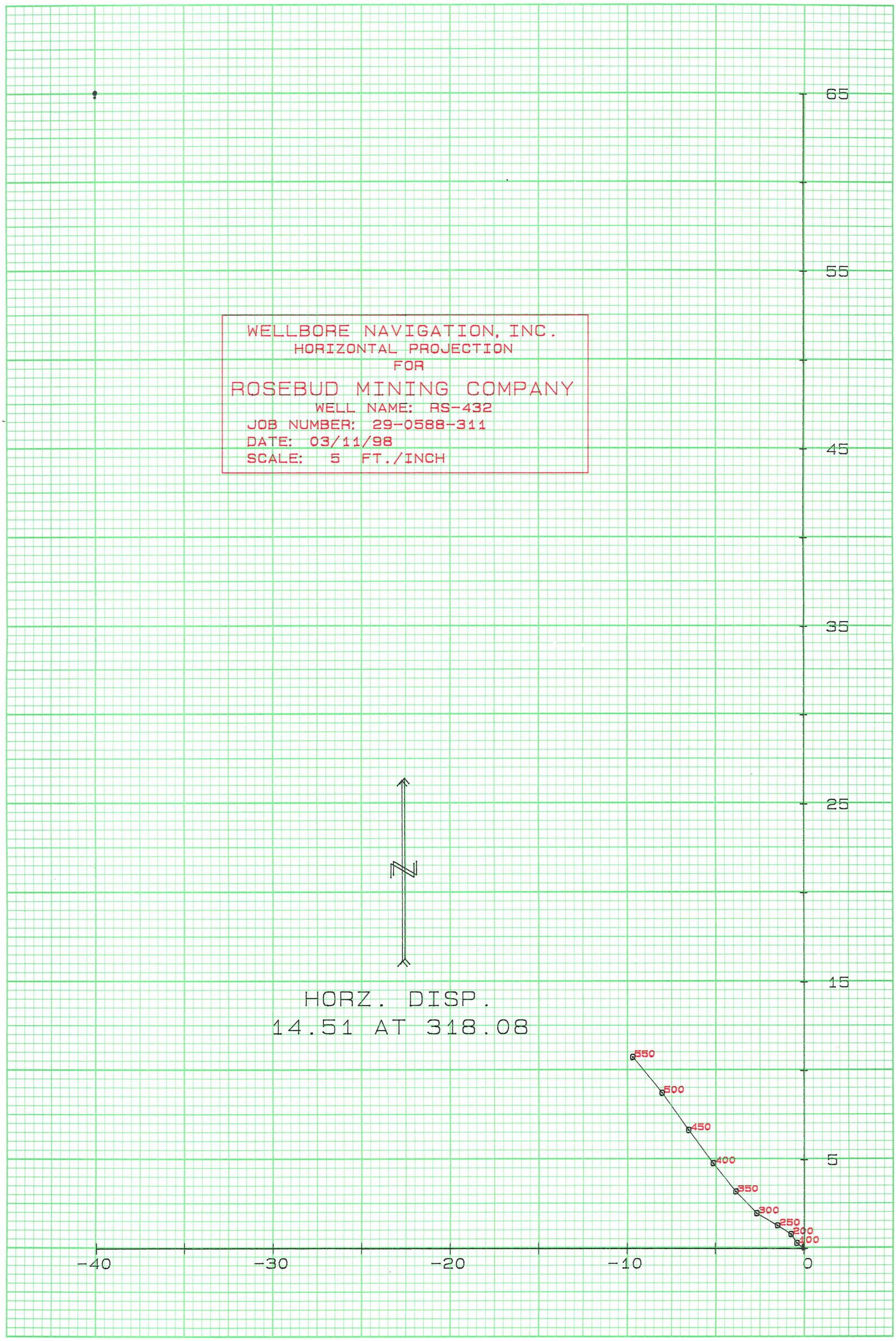
JOB NUMBER: 29-0588-311 WELL NAME: RS-432

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	0.17	-0.036	-89.61	305.87	0.10 N	0.14 W	0.78	0.39	0.17	AT 305.87	083.09
100.0	100.00	0.52	-0.083	-89.57	314.64	0.33 N	0.41 W	0.15	0.07	0.53	AT 308.98	081.38
150.0	150.00	0.75	-0.050	-89.86	004.41	0.52 N	0.54 W	0.71	0.36	0.75	AT 314.24	077.07
200.0	200.00	1.11	-0.001	-89.27	318.94	0.83 N	0.74 W	1.28	0.64	1.11	AT 318.01	073.60
250.0	249.99	1.98	-0.247	-88.62	293.50	1.31 N	1.50 W	1.57	0.79	1.99	AT 310.95	071.37
300.0	299.97	3.27	-0.664	-88.24	305.55	1.99 N	2.68 W	1.00	0.50	3.34	AT 306.61	069.77
350.0	349.94	4.98	-0.722	-87.80	324.59	3.22 N	3.86 W	1.57	0.79	5.03	AT 309.83	068.70
400.0	399.90	7.02	-0.605	-87.51	318.50	4.82 N	5.14 W	0.76	0.38	7.04	AT 313.15	067.42
450.0	449.84	9.33	-0.399	-87.14	327.23	6.68 N	6.53 W	1.10	0.55	9.34	AT 315.63	066.62
500.0	499.78	11.89	-0.113	-86.95	321.84	8.77 N	8.03 W	0.67	0.34	11.89	AT 317.54	061.64
550.0	549.71	14.51	0.001	-87.05	319.27	10.79 N	9.69 W	0.34	0.17	14.51	AT 318.08	062.34

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*   550.0 FEET EQUALS     14.51    FEET AT  318.08          *
*                          ********                         *
*************************************************************
```

STARLIGHT PRINTING (801) 467-2841



WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* ROSEBUD MINING COMPANY *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-432 / VS 305.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/11/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

WELNAV

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 035.00
WATER CONTACT= 480'

****
****** 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

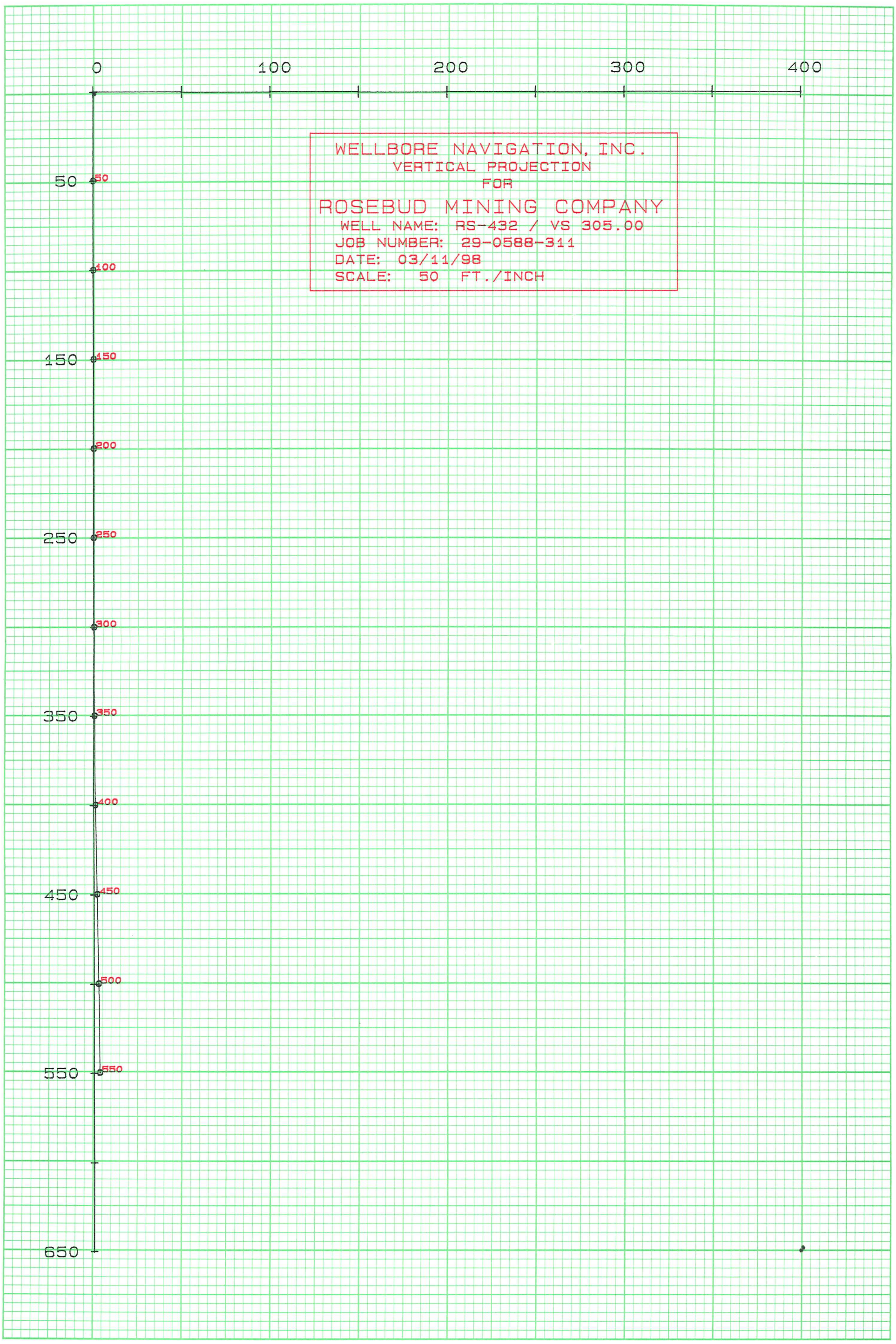
JOB NUMBER: 29-0588-311 WELL NAME: RS-432 / VS 305.00

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	0.00	-0.170	-89.61	305.87	0.10 N	0.14 W	0.78	0.39	0.17	AT 305.87	083.09
100.0	100.00	0.04	-0.525	-89.57	314.64	0.33 N	0.41 W	0.15	0.07	0.53	AT 308.98	081.38
150.0	150.00	0.12	-0.741	-89.86	004.41	0.52 N	0.54 W	0.71	0.36	0.75	AT 314.24	077.07
200.0	200.00	0.25	-1.082	-89.27	318.94	0.83 N	0.74 W	1.28	0.64	1.11	AT 318.01	073.60
250.0	249.99	0.21	-1.981	-88.62	293.50	1.31 N	1.50 W	1.57	0.79	1.99	AT 310.95	071.37
300.0	299.97	0.09	-3.338	-88.24	305.55	1.99 N	2.68 W	1.00	0.50	3.34	AT 306.61	069.77
350.0	349.94	0.42	-5.010	-87.80	324.59	3.22 N	3.86 W	1.57	0.79	5.03	AT 309.83	068.70
400.0	399.90	1.00	-6.971	-87.51	318.50	4.82 N	5.14 W	0.76	0.38	7.04	AT 313.15	067.42
450.0	449.84	1.72	-9.182	-87.14	327.23	6.68 N	6.53 W	1.10	0.55	9.34	AT 315.63	066.62
500.0	499.78	2.58	-11.609	-86.95	321.84	8.77 N	8.03 W	0.67	0.34	11.89	AT 317.54	061.64
550.0	549.71	3.28	-14.129	-87.05	319.27	10.79 N	9.69 W	0.34	0.17	14.51	AT 318.08	062.34

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*   550.0 FEET EQUALS     14.51    FEET AT   318.08         *
*                          ********                         *
*************************************************************
```

STARLIGHT PRINTING (801) 467-2841



WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* ROSEBUD MINING COMPANY *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-432 / VS 035.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/11/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

WELNAV

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 125.00
WATER CONTACT= 480'

****
****** 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

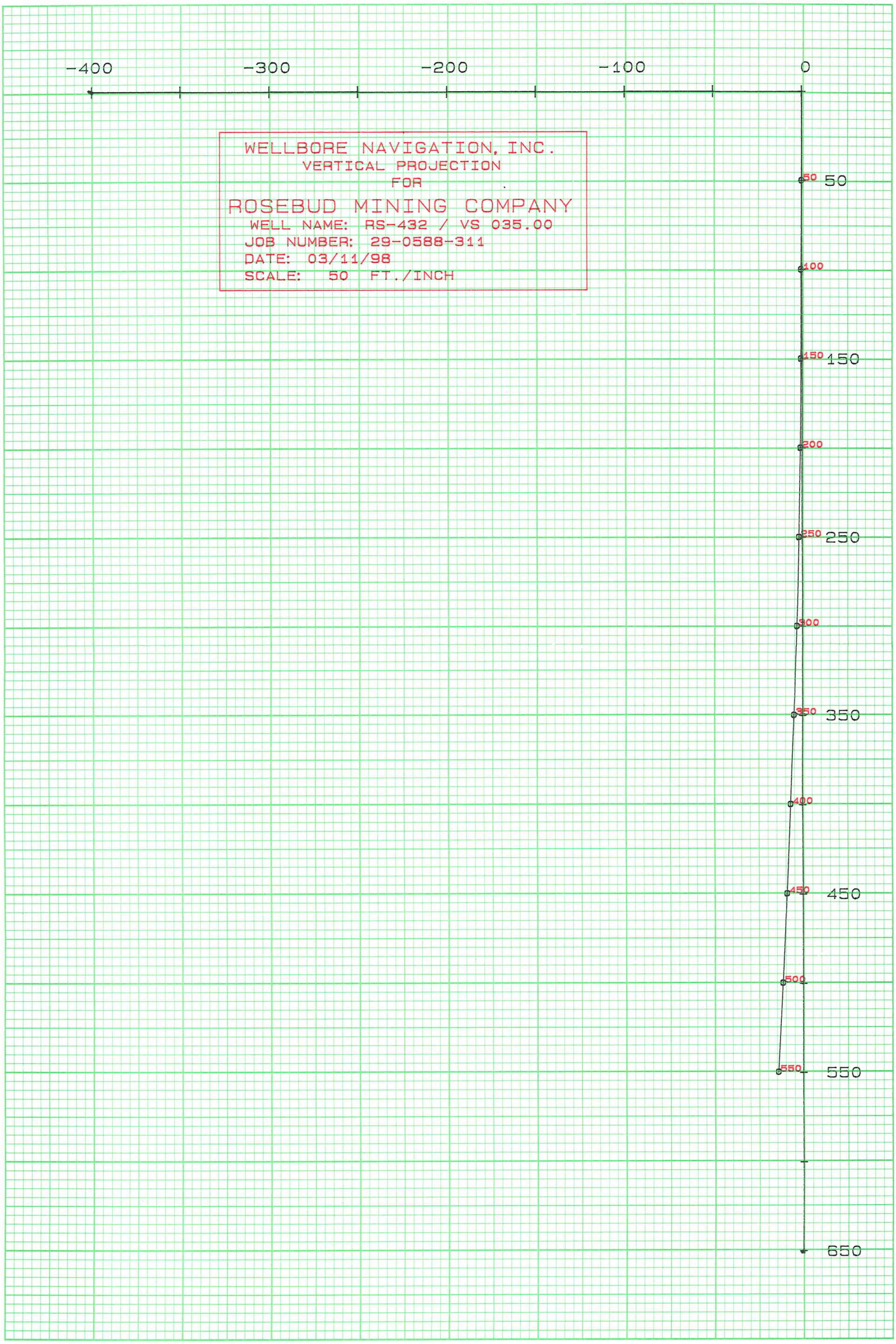
JOB NUMBER: 29-0588-311 WELL NAME: RS-432 / VS 035.00

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	-0.17	-0.003	-89.61	305.87	0.10 N	0.14 W	0.78	0.39	0.17	AT 305.87	083.09
100.0	100.00	-0.53	-0.037	-89.57	314.64	0.33 N	0.41 W	0.15	0.07	0.53	AT 308.98	081.38
150.0	150.00	-0.74	-0.121	-89.86	004.41	0.52 N	0.54 W	0.71	0.36	0.75	AT 314.24	077.07
200.0	200.00	-1.08	-0.250	-89.27	318.94	0.83 N	0.74 W	1.28	0.64	1.11	AT 318.01	073.60
250.0	249.99	-1.98	-0.207	-88.62	293.50	1.31 N	1.50 W	1.57	0.79	1.99	AT 310.95	071.37
300.0	299.97	-3.34	-0.094	-88.24	305.55	1.99 N	2.68 W	1.00	0.50	3.34	AT 306.61	069.77
350.0	349.94	-5.01	-0.423	-87.80	324.59	3.22 N	3.86 W	1.57	0.79	5.03	AT 309.83	068.70
400.0	399.90	-6.97	-0.998	-87.51	318.50	4.82 N	5.14 W	0.76	0.38	7.04	AT 313.15	067.42
450.0	449.84	-9.18	-1.724	-87.14	327.23	6.68 N	6.53 W	1.10	0.55	9.34	AT 315.63	066.62
500.0	499.78	-11.61	-2.581	-86.95	321.84	8.77 N	8.03 W	0.67	0.34	11.89	AT 317.54	061.64
550.0	549.71	-14.13	-3.284	-87.05	319.27	10.79 N	9.69 W	0.34	0.17	14.51	AT 318.08	062.34

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*   550.0 FEET EQUALS     14.51    FEET AT   318.08         *
*                          ********                         *
*************************************************************
```

STARLIGHT PRINTING (801) 467-2841



SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 11530
Reno, NV 89510
Telephone
(702) 356-0606
Fax
(702) 356-1413

Tucson Office
2775 E. Ganley
Tucson, AZ 85706
Telephone
(520) 294-8078
Fax
(520) 294-6352

Elko Office
2320 Last Chance Rd.
Nevada 89801
Box 2908
Elko, NV 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

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 89820

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

Project Name: DEVELOPMENT Purchase Order Number:

Date Submitted: 04/13/98 Number of Samples: 51

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

RS-433	SAMPLE IDENTIFICATION			TYPE	ELEMENTS REQUIRED
650-655.4	706-709.1	770.9-775.6		CORE	AU-AG ACCORDING TO
655.4-660	709.1-712.3	775.6-777.8			& ROSEBUD MINE
660-665	712.3-717.1	777.8-781	820-825		PROTOCOLS
665-670	717.1-720	781-784.4	825-830		
670-674.2	720-725	784.4-789	830-834.8		
674.2-678.3	725-730	789-793.9	834.8-840		
678.3-683.9	730-734.2	793.9-798.8	840-845.2		
683.9-689.5	734.2-738.9	798.8-800.8	845.2-850		
689.5-693.9	738.9-744.5	800.8-804.7			
693.9-696.8	744.5-749.2	804.7-807.3			
696.8-698.6	749.2-753.3	807.3-808.4			
698.6-700.4	753.3-757	808.4-810			
700.4-701.2	757-760.7	810-813			
701.2-703.2	760.7-765.7	813-816.5			
703.2-706	765.7-770.9	816.5-820			

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

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 11530
Reno, NV 89510
Telephone
(702) 356-0606
Fax
(702) 356-1413

Tucson Office
2775 E. Ganley
Tucson, AZ 85706
Telephone
(520) 294-8078
Fax
(520) 294-6352

Elko Office
2320 Last Chance Rd.
Nevada 89801
Box 2908
Elko, NV 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

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

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: ROSEBUD MINING CO LTT

Address: P.O. BOX 2610

City WINNEMUCCA State NV Zip 89446

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

Project Name: DEVELOPMENT Purchase Order Number: _____

Date Submitted: 04/04/98 Number of Samples: _____

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

RS-432 SAMPLE IDENTIFICATION		TYPE	ELEMENTS REQUIRED	
550.0-555.2	613.3-615.3	CORE	AU-AG ACCORDING TO	
555.2-560.0	615.3-617.3		& ROSEBUD MINING	
560.0-565.0	617.3-619.4		PROTOCOLS	
565.0-570.0	619.4-621.2		665.3-670.0	721.6-724.7
570.0-575.0	621.2-625.0		670.0-675.0	724.7-727.7
575.0-580.0	625.0-626.7		675.0-680.0	727.7-730.0
580.0-584.5	626.7-630.0		680.0-685.0	730.0-734.9
584.5-589.0	630-635.0		685.0-690.0	734.9-740.0
589.0-591.6	635.0-640.0		690.0-695.0	740-744.4
591.6-595.7	640.0-642.6		695.0-700.0	744.4-749.1
595.7-599.1	642.6-645.1		700.0-705.0	749.1-751.7
599.1-602.2	645.1-650.0		705.0-710.0	751.7-755.4
602.2-605.1	650.0-655.0		710.0-715.3	755.4-759.2
605.1-609.4	655.0-660.0		715.3-720.0	759.2-762.5
609.4-613.3	660.0-665.3		720.0-721.6	762.5-765.9
				765.9-770.0

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:

CLIENT FILE COPY

5500
5552
RS – 432 BOX 1
DEPTH 550. – 559.

5600
5650
RS – 432 BOX 2
DEPTH 559. – 568.

5750
RS – 432 BOX 3
DEPTH 568. – 576.7

RS- 432 BOX 4
DEPTH 576.7 - 586.

RS- 432 BOX 5
DEPTH 586. - 595.

RS- 432 BOX 6
DEPTH 595. - 604.

605.
609.4
613.5
610
RS - 432 BOX 7
DEPTH 604. - 613.

621.2
617.3
615.5
619.4
RS - 432 BOX 8
DEPTH 613. - 621.3

626.7
625.
623.3
RS - 432 BOX 9
DEPTH 621.3 - 631.

RS – 432
BOX 10
DEPTH 631. – 639.6
635.0

RS – 432
BOX 11
DEPTH 639.6 – 649.4
645.1
642.6

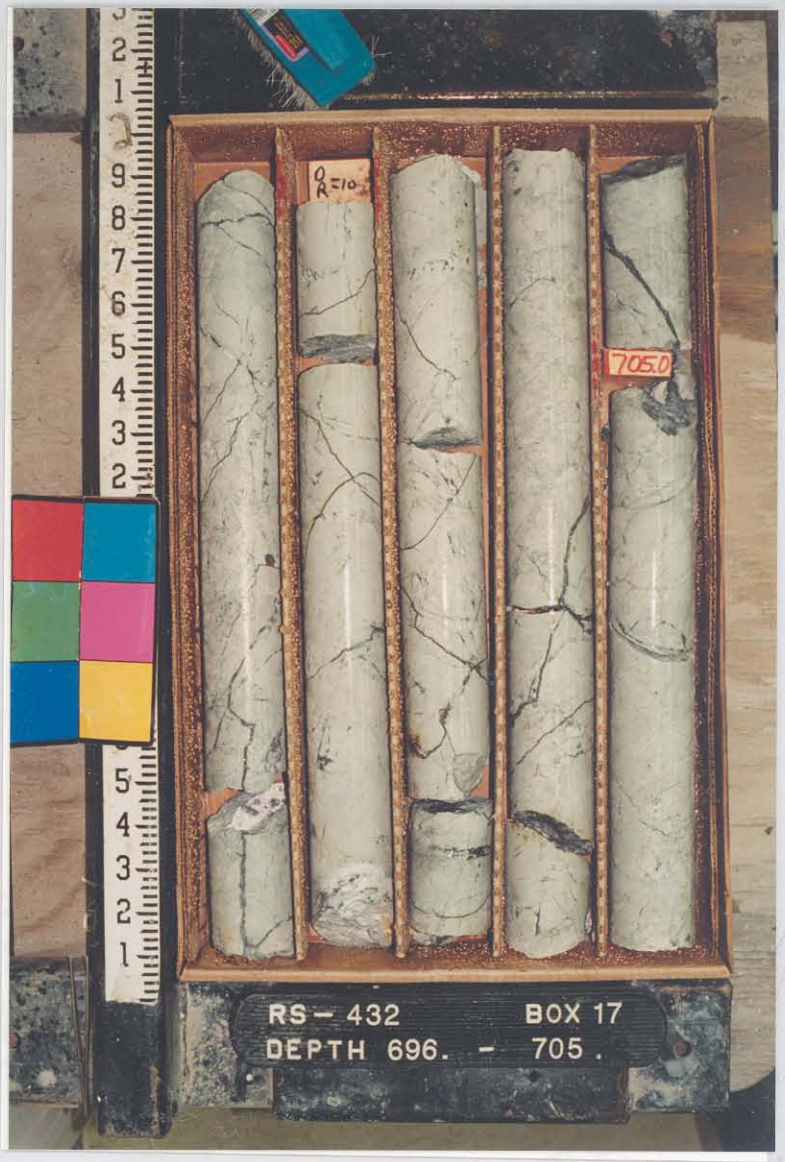
RS – 432
BOX 12
DEPTH 649.4 – 659.
655.0

660
RS – 432 BOX 13
DEPTH 659. – 668.

670
675.0
RS – 432 BOX 14
DEPTH 668. – 678.

685
680
RS – 432 BOX 15
DEPTH 678. – 687.

690
695
RS – 432 BOX 16
DEPTH 687. - 696.


Q
R=10
705.0
RS – 432 BOX 17
DEPTH 696. - 705 .

RS – 432 BOX 18
DEPTH 705. - 714.

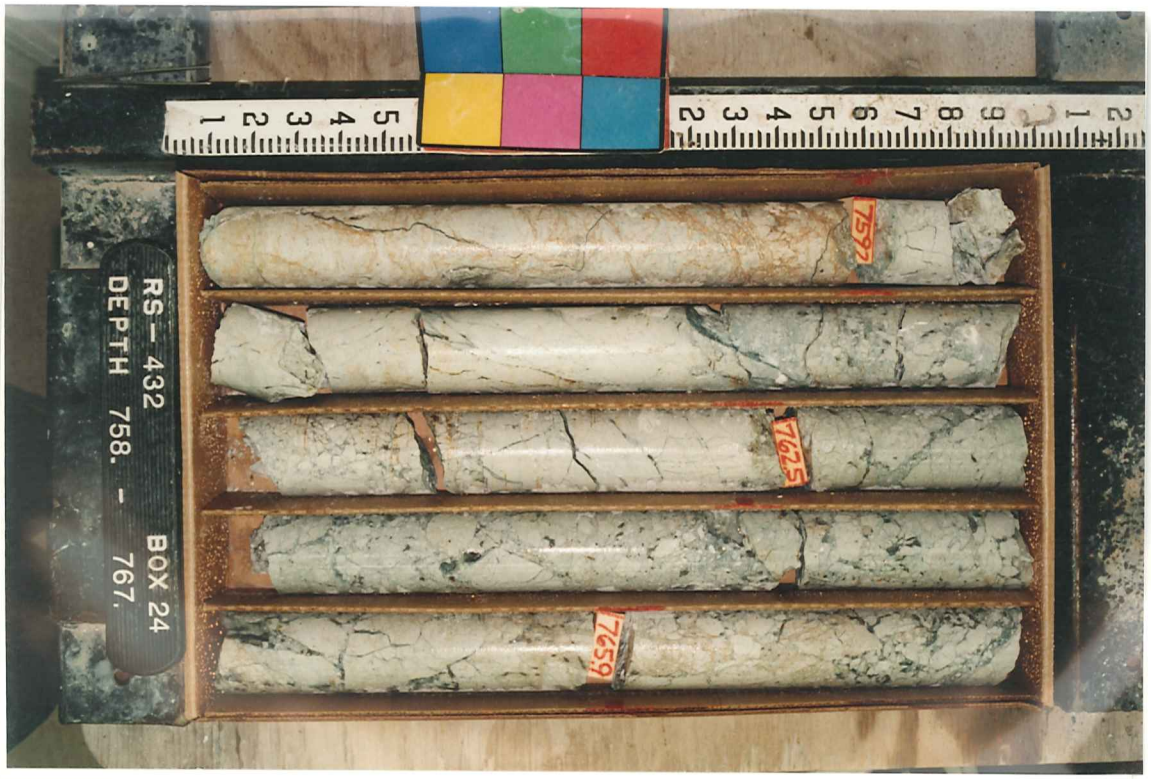
RS – 432
BOX 19
DEPTH 714. – 723.
715.3
721.6

RS – 432
BOX 20
DEPTH 723. – 731.5
730

RS – 432
BOX 21
DEPTH 731.5 – 740.3
740
732.5

RS – 432
BOX 22
DEPTH 740.3 – 749.

750
749.1
755.4
RS – 432
BOX 23
DEPTH 749. – 758.


759
762.5
765.9
RS – 432
BOX 24
DEPTH 758. – 767.

770
RS— 432
BOX 25
DEPTH 767. - 770. TD