60000522

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-416
AUTHOR	K. Allen; S. King; R. Vance; G. Langstaff; R. Lisle; B. Kastelic, M. Jex; M. Pentz; V. Reid; J. Welch
DATE OF DOC(S)	1997
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Newmont Gold Co. Hecla Mining Co; Rosebud Mining Co. Newmont Exploration Ltd
COMMODITY If not obvious	gold; silver
NOTES	drill logs; assay; geology; photographs; geochemistry; total depth 750'; invoices 82p.

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-416

6000 0522

NEWMONT EXPLORATION LIMITED — DRILL HOLE SUMMARY

Project: Rosebud Location: Hecla's East Zone Drill Hole No.: RS-416

State: NV Co.: Pershing T.: R.: S.:

Purpose: Mine Geology Infill Results:

Date Started: 10/19/97 - 10/19/97 rc Date Finished: 11/21/97 - 11/21/97 core

Grid System: Northing: Easting: Elevation:

Collar Az/Inc.: / -90 Drill Site: Total Depth: 750

Geologist(s): Log Date(s): Laboratory:

HOLE CONSTRUCTION AND HISTORY

CASING (INTERVAL):

From	To	Hole Type/Size	Started	Completed	Contractor
0	600	rc /	10/19/97	10/19/97	Eklund
600	750	core / HQ	11/21/97	11/21/97	Boart-Longyear
		/			
		/			

LITHOLOGIC SUMMARY				ALTERATION/	SIGNIFICANT ASSAYS				
From	To	Formation	Rock Type	MINERALIZATION	From	To	Width	Au oz/st	Cutoff

DOWNHOLE SURVEYS

Directional Date:

Other

Depth (ft)	Azimuth	Inclination
750	38' @ 278°	-84.9

Water Table Depth:

Water Flow Rate:

COMMENTS

see Wolnar survey

Hecla MINING COMPANY

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

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	RS-416	LOCATION	EAST ZONE	REMARKS	HQ, RC PILOTED TO 599'
PAGE	1 OF 3	NORTHING			
DATE	01/11/98	EASTING			
LOGGED BY	HDM	ELEVATION			
SCALE	1"=10'	AZIMUTH	—		
TOTAL DEPTH	750'	INCLINATION	-90°		

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		CORE POINT = 599'				
599'-615.9' ~~FG PINK PORPHYRY~~ Tc		599-615.9': FLESH-COLORED FINE-GRAINED PINK "PORPHYRY". FINE 1-3 mm AMPHIBOLE PHENOCRYST RELICTS ARE SCATTERED THRU THE FG GROUNDMASS AND DISPLAY DK FOLIATION SUB-⊥ TO C/A. AMPHIBOLE SHOT TO CRM COLORED (LEDCOXENE?) ~602.5'-603.0' & ~613-615.9': FAINT ~~OLD~~ EARLY MONOLITHIC MOSAIC BRECCIA PICKED OUT BY PREFERENTIAL RUDDY HmOX(?) STAINING OF THE MATRIX.	600 610		600.9-601.9': QUARTZ + MARCASITE-CEMENTED, HYDROTHERMAL CRACKLE BXA 607'-610': SILICIFIED MONOLITHIC CRACKLE BRECCIA +/- MARC. 615.9'-634.8': SOUTH RIDGE FAULT ZONES.	600.9-601.9': STR. QZ + MARC 599'-605.9': MODERATE QZ + MARCASITE VEINS THRU THIS INTERVAL. LARGE VNS SHOW OPEN CTR.S LINED WITH BLOCKY BARITE & GREY CLAY, +/- FINE DRUSY QUARTZ.
615.9'-634.8' SOUTH RIDGE FAULT ZONE		615.9': PALE CELADON GREEN GOUGE BEGINS AT NEAR ⊥ TO C/A TO 617.7'. NO WELL-DEFINED SHEAR FABRIC. 617.7'-619.1': DARK BLUE-GREEN TO CELADON GREEN SILICIFIED FRAGMENTS ~~FROM~~ DERIVED FROM UNDERLYING MATERIAL ARE PACKED IN PALE CELADON GOUGE. 619.1-622.7': STRONG TEXTURE-DESTRUCTIVE, SILICA OVERPRINT ON BLUE-GREEN, PROBABLE PRIORLY CLAY-ALTERED LAPILLI TUFF. ENDS AT DKLY SILICIFIED MYLONITIC ZONE, @ 622.5-622.7'. 622.7-626.2': GOUGY SHEAR ZONE. FOLIATED PALE GREEN GOUGE GRADES DOWN INTO MORE GOUGE-PACKED, UNHEALED MODERATELY MILLED RUBBLE BXA W/ FRAGMENTS FROM BELOW. 626.2-627.2: GRN, WAXY CLAY-ALTERED FAULT BRECCIA; MILLED 627.6-630.9': SHATTERED/CRACKLED FRAGMENTS OF BUFF, APHANITIC LITHOLOGY DOMINATE THE HETEROLITHIC FAULT BXA THRU THIS INTERVAL. ROCK IS LESS INTENSELY MILLED THAN ABOVE.	620 630		615.9': BEGINNING OF FAULT GOUGE ZONE, EXTENDS TO 617.7'. 617.7-619.1': UNHEALED FAULT BRECCIA. PYRARGERITE 627.2-627.6': MYLONITIC FAULT BRECCIA ZONE BELOW JOINT. 627.6-630.9': SiO_2'd TECTONIC BXA 631.2-632.3': JOINT-BOUNDED ZONE OF TOTAL SILICA REPLACEMT.	617.7-619.1': STR. GRN CLAY ALT'N, WK TO TR SPOTTY SiO_2, IN FRAGMENTS. 619.1-622.7': PERVASIVE SiO_2 RANGES FROM WEAK TO MODERATE. OVERPRINTS EARLIER MOD. GRN CLAY ALT'N. WK TO MOD. DISS'D MARC. LOCAL SUBHEDRAL PYRARGERITE. 622.7-626.2': STR. ARGILLIC, MOD. DISS'D, Py. 626.2-627.2: GRN WAXY CLAY-ALTERED FAULT BRECCIA, INCREASINGLY SILICIFIED DOWNHOLE THRU THIS INTERVAL. 630.9'-632.3': MILKY AUTOBXA'D SILICA-FLOODED ZONE. (VN)
634.8'-638.2' UBUD		632.3'-634.8': FAULT BXAT'N DECREASES DOWNHOLE INTO UNDISRUPTED BUD.				632.3-634.8': SILICIFICATION IS STRONG TO MODERATE & DIES ABRUPTLY AT 634.8'
638.2-641.6' SOUTH RIDGE FAULT ZONE		634.8'-638.2': UNDISRUPTED VCG SAND TO FINE PEBBLE SIZED BLUE-GREEN BUD TUFF. 638.2-641.6': STRLY TO INTENSE SILICIFIED FAULT OVERPRINTED BUD LITHIC LAPILLI TUFF + DOZER FRAGMENTS.	640		641.2-641.6': FAULT MYLONITE IN BLUE-GRN (BUD?) ABOVE: SHARP FAULTED CONTACT W/ DOZER AT 641.6'.	634.8'-638.2': PRIOR GRN CLAY ALTERATION. 638.2-641.6': STR. TO INTENSE SILICIFICATION

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	A
599	600.8		.005	.11		
600.8	604.0		.004	.09		
604.0	607.0		.002	.06		
607.0	610.0		.001	.08		
610.0	613.0		.007	.07	.010	
613.0	615.9		.003	.06		
615.9	617.7		.005	.14		
617.7	619.5		.043	32.50		
619.5	622.7		.010	5.83	.013	
622.7	626.2		.027	9.95		
626.2	627.2		.004	.16		
627.2	628.2		.011	.14		
628.2	630.9		.007	.05		
630.9	632.3		.044	.12	.032	
632.3	634.8		.027	.13		
634.8	638.2		.017	.05		
641.6	641.6		.010	.13		

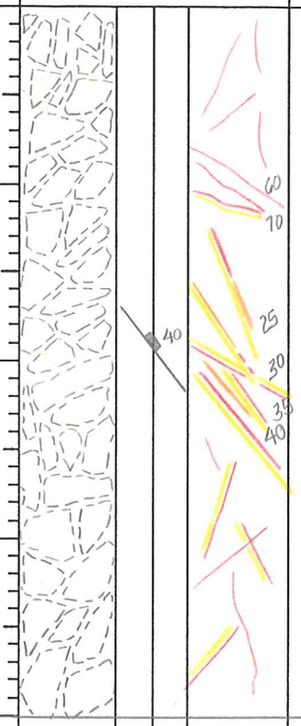
HOLE NUMBER RS-416 PAGE 2 OF 3

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
641.6'-750' DOZER		641.6-642.9': MODERATELY BOUDINAGED STRONGLY VEINED TECTONIZED DOZER. PALE TAN-GRY, APHANITIC, ~~& MASSIVE~~. BRECCIATED DOWN TO ~662'. PALE CELADON GREEN WHEN WET. 642.9'-~662': SILICA + MARCASITE CEMENTS MONOLITHIC TIGHTLY PACKED BRECCIA DOWN TO ~662'. MAY BE SOME DEGREE OF AUTOBRECCIA IN THIS SEGMENT OF DOZER, BUT ALL OF THIS ZONE IS OVERPRINTED WITH HYDROTHERMAL, FAULT-RELATED, MODERATE BRECCIA & LOCALIZE VEIN CRACKLE BXA. 662.0-675': COMPARATIVELY MASSIVE BUT GRADING DOWNWARDS INTO AUTOBRECCIA. ROCK HAS A DISRUPTED TEXTURE THROUGHOUT.	640 650 660 670 680 690 700 710		641.6-642.9': SHEARING FABRIC SUB-// TO FAULT. 646.7-651.5' CRACKLE BXA SILICA-CEMENTED +/- BLADED MARCASITE. LATE WHT CLAY IN VUGS. 642.9-662': FAULT-RELATED BRECCIATION DIES OFF DOWN HOLE.	638.2-641.6': SILICIFICATION & IRREGULAR SILICA +/- MARC REPLACEMT & VNING PICK UP AGAIN AT 638.2', & INCREASE UNTIL SILICA REPLACEMT = ~50% FROM 641.3-641.6'. 641.6-662': STRONG GRAY SiO_2 VNING +/- MARCASITE, AND LOCALLY SiO_2 +/- MARC CEMENTS CRACKLE BXA. SPOTTY WK TO MOD. SILICIFICATION OF WALLROCK CLOSE TO SILICA VNS & BXA. LATE WHT CLAY IN VUGS. 662'- : STRWKING DIES DOWN TO MOD. QZ+MARC VNING. MARC INCREASED WRT TO SiO_2. CONT'D LATE WHT CLAY IN VUGS.
AUTOBXA		~675': AUTOBRECCIATED DOZER. TEXTURE IS WELL-DEVELOPED BY 679'. THE FAINT BXA IS CROSS-CUT BY ALL OTHER FEATURES. ~679': MOSAIC-TEXTURED AUTOBRECCIA. TEXTURE IS LOCALLY HIGHLIGHTED BY FAINT RUDDY HM.OX STAINING. 688.3-689.1': BRECCIA VEIN SOARS INTO, EXPANDS & OVERPRINTS PRIOR AUTOBRECCIA			688.3-689.1': SILICA +/- MARC CEMENTS CRACKLE BXA	666': FINE CALCITE WITH WHT CLAY IN QZ+MARCASITE + WHT CLAY VN. INTIMATE W/ QZ. FOUND TO 672'. 671'-690': TRACE VN CALCITE 690'- : CALCITE AS DESCRIBED ABOVE IS FOUND WEAKLY TO MODERATELY PRESENT IN VEINS. TRACE ARGILLIC THRU OUT 700.0-706.7': ZONE OF 3/2" BARITE + WHT CLAY + BLADED MARCASITE + EUHEDRAL PYRARGERITE IN CALCITE VNS. PYRAGERITE MOST CLOSELY ASSOCIATED W/ CALCITE, WHICH APPEARS TO BE LATE WRT MARC & BARITE. NO X-CUTTING

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
638.2	641.6		.010	.13	
641.6	643.3		.023	.08	
643.3	646.7		.021	.13	
646.7	651.5		.087	.29	.090
651.5	657.1		.036	.07	
657.1	662.2		.110	.06	.085
662.2	666.0		.016	.49	
666.0	671.3		.038	.08	
671.3	676.4		.016	.46	
676.4	681.0		.028	.08	
681.0	684.7		.019	.50	
684.7	688.3		.021	2.04	
688.3	689.3		.034	.11	.038
689.3	693.3		.004	.08	
693.3	694.5		.012	7.29	
694.5	700.0		.011	.14	
700.0	702.9		.014	11.29	
702.9	706.7		.024	20.42	
706.7	708.9		.015	.43	

HOLE NUMBER RS-416 PAGE 3 OF 3

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
641.6-750' DOZER AUTOBXA		CONTINUED PALE GRN DOZER AUTOBXA AS DESCRIBED ABOVE.	710 720 730 740 750			BY 706.7': CALCITE IS GONE. STRONG VNING & QZ+WHT CLAY +MARC CEMENTED BXA CONTINUES TO ~708.9 708.9-724.2': MOD. TO WK QZ+MARC VNS & VNLTS. MINOR WHT CLAY. 724.2-734.0': ~1" SILICA + WHT CLAY +/- MARC VNS. +/- BLOCKY BARITE IN VUGS. WHT CLAY ENCASED IN SILICA. CONT'D TRACE PERVASIVE ~~ALT'N~~ ARGILLIC ALT'N
		750.0' T.D.				

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
708.9	714.0		.012	.11	
714.0	719.0		.007	.17	
719.0	724.2		.029	1.27	
724.2	729.1		.008	.19	
729.1	734.0		.012	.08	
734.0	739.1		.009	.08	
739.1	742.5		.013	.09	
742.5	746.0		.015	.07	
746.0	750.0		.017	.09	

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-416 DATE: 01/10/98 LOGGED BY: HBM PAGE 1 OF 2

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY /FT.	FRACTURE DATA AVG. ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
~599	600.0	140.0	140.0	60.0										
600.0	610.0	100.0	100.0	78.0										
610.0	620.0	98.0	100.0	59.0										
620.0	630.0	100.0	100.0	60.0										
630.0	640.0	102.0	102.0	83.0										
640.0	650.0	100.0	100.0	94.0										
650.0	660.0	98.0	98.0	94.0										
660.0	670.0	102.0	102.0	96.0										
670.0	680.0	98.0	98.0	92.0										
680.0	690.0	100.0	100.0	100.0										
690.0	700.0	98.0	98.0	96.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-416 DATE 01/12/98 LOGGED BY: HJM PAGE 2 OF 2

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)
700.0	710.0	102.0	102.0	88.0										
710.0	720.0	98.0	98.0	98.0										
720.0	730.0	98.0	98.0	81.0										
730.0	740.0	102.0	102.0	97.0										
740.0	750.0	96.0	96.0	90.0										
	T.D.													

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 0047910-IN
INVOICE DATE: 01/27/98

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-416	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
44	SAMPLES RECEIVED	.00	.00
44	JAW CRUSHING CHARGE	1.30	57.20
44	COARSE MILLING CHARGE	4.50	198.00
44	SPLITTING CHARGE	2.40	105.60
44	RING MILLING CHARGE	2.00	88.00
44	Au (1 A.T. FIRE ASSAY)	8.00	352.00
2	Au ANALYSES/GRAVIMETRIC	8.75	17.50
44	HYDROCHLORIC/NITRIC DIGESTION	2.00	88.00
44	Ag ANALYSES	1.00	44.00
7	Ag (ore grade) ANALYSES	5.00	35.00

86-5210-477
EDA

NET INVOICE:	985.30
LESS DISCOUNT:	197.06
FREIGHT:	.00
INVOICE TOTAL:	788.24

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP047910

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-416 RECEIVED : 15 JAN 1998

No. SAMPLES : 44 REPORTED : 26 JAN 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 SP047910

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-416

REPORTED : 26 JAN 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-416 599.0-600.8	0.005			0.11
RS-416 600.8-604.0	0.004			0.09
RS-416 604-607	0.002			0.06
RS-416 607-610	0.001			0.08
RS-416 610-613	0.007	0.010		0.07
RS-416 613.0-615.9	0.003			0.06
RS-416 615.9-617.7	0.005			0.14
RS-416 617.7-619.5	0.043			32.50
RS-416 619.5-622.7	0.010	0.013		5.83
RS-416 622.7-626.2	0.027			9.95
RS-416 626.2-627.2	0.004			0.16
RS-416 627.2-628.2	0.011			0.14
RS-416 628.2-630.9	0.007			0.05
RS-416 630.9-632.3	0.044	0.032		0.12
RS-416 632.3-634.8	0.027			0.13
RS-416 634.8-638.2	0.017			0.05
RS-416 638.2-641.6	0.010			0.13
RS-416 641.6-643.3	0.023			0.08
RS-416 643.3-646.7	0.021			0.13
RS-416 646.7-651.5	0.087		0.090	0.29
RS-416 651.5-657.1	0.036			0.07
RS-416 657.1-662.2	0.110		0.085	0.06
RS-416 662.2-666.0	0.016			0.49
RS-416 666.0-671.3	0.038			0.08
RS-416 671.3-676.4	0.016			0.46

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP047910

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-416

REPORTED : 26 JAN 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-416 676.4-681.0	0.028			0.08
RS-416 681.0-684.7	0.019			0.50
RS-416 684.7-688.3	0.021			2.04
RS-416 688.3-689.3	0.034	0.038		0.11
RS-416 689.3-693.3	0.004			0.08
RS-416 693.3-694.5	0.012			7.29
RS-416 694.5-700.0	0.011			0.14
RS-416 700.0-702.9	0.014			11.29
RS-416 702.9-706.7	0.024			20.42
RS-416 706.7-708.9	0.015			0.43
RS-416 708.9-714.0	0.012			0.11
RS-416 714-719	0.007			0.17
RS-416 719.0-724.2	0.029			1.27
RS-416 724.2-729.1	0.008			0.19
RS-416 729.1-734.0	0.012			0.08
RS-416 734.0-739.1	0.009			0.08
RS-416 739.1-742.5	0.013			0.09
RS-416 742.5-746.0	0.015			0.07
RS-416 746-750	0.017			0.09

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP047910

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RENO NV,USA
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HECLA MINING COMPANY

COPIES TO : KURT ALLEN
:
:
:

CLIENT REFERENCE No: RS-416
No. SAMPLES : 44
MAIN SAMPLE TYPE : DRILL CORE

RECEIVED : 15 JAN 1998
REPORTED : 26 JAN 1998

NEVADA LEGISLATIVE DISCLAIMER :-
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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 SP047910

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-416

REPORTED : 26 JAN 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-416 599.0-600.8	0.005			0.11
RS-416 600.8-604.0	0.004			0.09
RS-416 604-607	0.002			0.06
RS-416 607-610	0.001			0.08
RS-416 610-613	0.007	0.010		0.07
RS-416 613.0-615.9	0.003			0.06
RS-416 615.9-617.7	0.005			0.14
RS-416 617.7-619.5	0.043			32.50
RS-416 619.5-622.7	0.010	0.013		5.83
RS-416 622.7-626.2	0.027			9.95
RS-416 626.2-627.2	0.004			0.16
RS-416 627.2-628.2	0.011			0.14
RS-416 628.2-630.9	0.007			0.05
RS-416 630.9-632.3	0.044	0.032		0.12
RS-416 632.3-634.8	0.027			0.13
RS-416 634.8-638.2	0.017			0.05
RS-416 638.2-641.6	0.010			0.13
RS-416 641.6-643.3	0.023			0.08
RS-416 643.3-646.7	0.021			0.13
RS-416 646.7-651.5	0.087		0.090	0.29
RS-416 651.5-657.1	0.036			0.07
RS-416 657.1-662.2	0.110		0.085	0.06
RS-416 662.2-666.0	0.016			0.49
RS-416 666.0-671.3	0.038			0.08
RS-416 671.3-676.4	0.016			0.46

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP047910

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-416

REPORTED : 26 JAN 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-416 676.4-681.0	0.028			0.08
RS-416 681.0-684.7	0.019			0.50
RS-416 684.7-688.3	0.021			2.04
RS-416 688.3-689.3	0.034	0.038		0.11
RS-416 689.3-693.3	0.004			0.08
RS-416 693.3-694.5	0.012			7.29
RS-416 694.5-700.0	0.011			0.14
RS-416 700.0-702.9	0.014			11.29
RS-416 702.9-706.7	0.024			20.42
RS-416 706.7-708.9	0.015			0.43
RS-416 708.9-714.0	0.012			0.11
RS-416 714-719	0.007			0.17
RS-416 719.0-724.2	0.029			1.27
RS-416 724.2-729.1	0.008			0.19
RS-416 729.1-734.0	0.012			0.08
RS-416 734.0-739.1	0.009			0.08
RS-416 739.1-742.5	0.013			0.09
RS-416 742.5-746.0	0.015			0.07
RS-416 746-750	0.017			0.09

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 1 of 12
Log'd by: G. Langstaff Date: 12/30/97	County: Pershing	Easting:	Azimuth:	Elevation:	Core/Chips(Intervals): 0-600' chips	

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	PHENOS/LAPILLI/CLASTS Size	PHENOS/LAPILLI/CLASTS Shape	PHENOS/LAPILLI/CLASTS Color	PHENOS/LAPILLI/CLASTS Mineral/ Type	ALTERATION Int.	ALTERATION Distrib.	ALTERATION Type	ALTERATION Minerals	VEINS Thick.	VEINS Abund.	VEINS Selvedge	VEINS Minerals	INTERPRETATION Rock Name/ Composition	INTERPRETATION Formation	Comments	Recovery	Assay
5																				colluvium?		various gray, brown, and pale yellow chips and dark brown clay		
10																								
15	0?	x	mostly 10YR6/6	Volc	vf	massive	<1	1-3mm	long	white	fell or amygd?	w	pervasive	arg	white clay	<2mm	pres	orange-brn limonite	black		altered TcFG?	some orange brown clay to 30'		
		x	dk yellow but significant				<1	2mm	irreg	clear vitr.	qtz amygd?	w	local	sil	qtz + orange mottling	[<2mm	rare	?	FeMn ox? qtz]			very slightly calcareous to 30'		
							<1	1mm	long	pale grn	chl?		gives granular texture									a few large med grey chips from above?		
20	*		10YR6/2-5GY7/1 yl brn to gin-grey																			some pale chips have orange mottling or vein-like brown staining		
																						dark yellow chips commonly have black FeMn ox in fractures, splotches		
25	0? *																					loose biotite flake from colluvium? no more silicification		
30			10YR6/6 dk yellow orange		aph			some chips with relict patches of reddish matrix and black specks (hbl microphenos?) suggests this is alteration not lithologic contact													TcFG (hbl only)			
35			10YR4/2			microcrystalline	15	.2-1mm	prism blob speck	black	hbl													
40			dk yellow brn with 10YR6/4 yel brn				<1	1-2mm	irreg	white	amygd?													
45	*																					weakly calcareous to 50'		
50																								

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 2 of 12
Log'd by: G. Langstaff Date: 12/30/97	County: Pershing	Easting:	Azimuth:	Elevation:	Core/Chips(Intervals): 0-600' chips	

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	PHENOS/LAPILLI/CLASTS Size	PHENOS/LAPILLI/CLASTS Shape	PHENOS/LAPILLI/CLASTS Color	PHENOS/LAPILLI/CLASTS Mineral/ Type	ALTERATION Int.	ALTERATION Distrib.	ALTERATION Type	ALTERATION Minerals	VEINS Thick.	VEINS Abund.	VEINS Selvedge	VEINS Minerals	INTERPRETATION Rock Name/ Composition	INTERPRETATION Formation	Comments	Recovery	Assay
55			mostly 10YR5/2- 5YR6/2 pale gray	Volc	aph	massive, microporphy.	1-2 <1	.2-1mm .5-2mm	prism/blade irreg splotch irreg	black black	hbl microxeno.?	weak bleaching of matrix w/hbl preserved, overprinted by hematite staining									T, FG (hbl only)			
60			brn but abundant stains, vein-like,																					
65			and mottles of 5YR3/2- 10R3/2 red brn																					
70	Δ?					[local weak brecciation?]																small magnetic chip		
75	Δ?																					rare orange brown clay		
80	*? Δ?						[<1]	2mm	long	white	feldspar or amygd?]													
85	Δ?																					small magnetic chips to 100' weakly calcareous to 100'		
90	Δ?																							
95	*?																							
100			see	description next page																				

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 3 of 12
Log'd by: G. Lang staff Date: 12/30/97	County: Pershing	Easting:	Azimuth:	Elevation:	Core/Chips(Intervals): 0-600' chips	

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	PHENOS/LAPILLI/CLASTS Size	PHENOS/LAPILLI/CLASTS Shape	PHENOS/LAPILLI/CLASTS Color	PHENOS/LAPILLI/CLASTS Mineral/ Type	ALTERATION Int.	ALTERATION Distrib.	ALTERATION Type	ALTERATION Minerals	VEINS Thick.	VEINS Abund.	VEINS Selvedge	VEINS Minerals	INTERPRETATION Rock Name/ Composition	INTERPRETATION Formation	Comments	Recovery	Assay
105			5Y7/1-5Y7/1 pale grey [Eocene]	Volc	vf	massive	<1					W W	pervasive local dissem	arg py	white clay pyrite often in siliceous patch of rock	<1mm	rare	brown	calcite		altered TeFG	weakly calcareous to 105' rare yellow clay in sample		
110																						rare pyrite coating fractures		
115							<1 <1	1-4mm 1mm	irreg long round	white green	feld or amygd? chl?					<3mm	rare	none	py±qtz			some veinlike orange stains		
120																						some white clay in sample mostly vein rather than dissem pyrite		
125							<1	1mm	irreg	white	feld or amygd?					[hair-trim	rare	none	qtz]					
130			[yellower color]																			rare orange clay in sample		
135							<1	1.5mm	prism	green	chl?													
140																								
145			[greener color]																					
150							<1	.5mm	chunk	green	chl?													

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 4 of 12
Log'd by: G. Langstaff Date: 12/30/97	County: Pershing	Easting:	Azimuth:	Elevation:	Core/Chips(Intervals): 0-600' chips	

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	PHENOS/LAPILLI/CLASTS Size	PHENOS/LAPILLI/CLASTS Shape	PHENOS/LAPILLI/CLASTS Color	PHENOS/LAPILLI/CLASTS Mineral/ Type	ALTERATION Int.	ALTERATION Distrib.	ALTERATION Type	ALTERATION Minerals	VEINS Thick.	VEINS Abund.	VEINS Selvedge	VEINS Minerals	INTERPRETATION Rock Name/ Composition	INTERPRETATION Formation	Comments	Recovery	Assay
155			5G7/1-5Y7/1 pale grey	Volc	vf	massive	<1	.5mm	chunk	green	chl?	W	pervasive	arg	whiteclay	<2mm	rare	none	py ± qtz (generally on outside edges)		altered TcFG?	slightly calcareous to 180'		
												W	dissem	py	py often in siliceous patches									
160																								
165							<1	2mm	long	green	chl?											rare orange clay		
							<1	.5mm	oblong	pale green	chl?													
							<1	.5mm	chunk	vitr. grey	qtz/fld?													
170							<1	1mm	oblong	pale green	chl?					hair thin	rare	none	qtz					
175							<1	2mm	irreg	green	chl?													
							<1	1mm	oblong	pale green	chl?													
180	* ?						<1	2mm	long	white	feld or amygd?													
							<1	2mm	prism	green	chl?													
185							<1	2mm	round	green	chl?					<3mm	rare	?	calcite			weakly calcareous to 195' some pyrite coats fractures		0
190	* ?						<1	1mm	irreg	white	amygd?											more dissem py in siliceous patches		110
195																						slightly calcareous more py+qtz veins		11
200																						weakly calcareous vein with calcite and very thinly bladed mare? + qtz		

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 5 of 12
Log'd by: G. Langstaff Date: 12/30/97	County: Pershing	Easting:	Azimuth:	Elevation:	Core/Chips(Intervals): 0-600' (chips)	

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	PHENOS/LAPILLI/CLASTS Size	PHENOS/LAPILLI/CLASTS Shape	PHENOS/LAPILLI/CLASTS Color	PHENOS/LAPILLI/CLASTS Mineral/ Type	ALTERATION Int.	ALTERATION Distrib.	ALTERATION Type	ALTERATION Minerals	VEINS Thick.	VEINS Abund.	VEINS Selvedge	VEINS Minerals	INTERPRETATION Rock Name/ Composition	INTERPRETATION Formation	Comments	Recovery	Assay
205			mostly 5GY 7/1- 5Y 7/1 pale grey	Volc	vf	massive, locally weakly granular	<1	2mm	irreg	green	chl?	w	pervasive	arg	white clay	<4mm	pres	?	calcite ± py		altered T, FG	weakly calcareous to 250' some white clay in sample		
							<1	.5mm	round	pale grn	chl?													
																<3mm	rare	none	py ± qtz			both yellow and more steely "pyrite" pyrite(?) intergrown with green things		
210			w/some paler 5GY 8/1													<3mm	rare	?	py+diss qtz+white clay+calc			trace dissem pyrite both yellow and more steely "pyrite		
215							<1	1mm	round	green	chl?	w	patchy	py	py often in silicous patches	<3mm	rare	?	py ± qtz ± calcite					
220																								
225																						some white clay is some py-bearing veins		
230							<1	.5mm	irreg round	pale green	chl?	w	patchy	py	py ± sil. patches	[<2mm	rare	?	calcite]					
235							<1	1.5mm	prism chunk	pale grn	chl?													
							<1	.5-1mm	irreg	green	chl?													
240							<1	3mm	irreg	vitr+white	amygd? w/qtz?											calcite vein cuts(?) pyrite vein		
							<1	1mm	radial prisms	green	glomeroporphyritic chl?													
							<1	.5mm	round	vitr grey	qtz/feld?													
245							<1	2-4mm	irreg chunk	white ± green	amygd?													
							<1	.5-1mm	round	vitr grey	qtz/feld?													
250							<1	.5mm	round	vitr grey	qtz/feld?											only a few chips with pyrite (all vein?)		
							<1	.5mm	irreg	green	chl?													

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 6 of 12
Log'd by: G. Langstaff Date: 12/30/97	County: Pershing	Easting:	Azimuth:	Elevation:	Core/Chips(Intervals): 0-600' chips	

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	PHENOS/LAPILLI/CLASTS Size	PHENOS/LAPILLI/CLASTS Shape	PHENOS/LAPILLI/CLASTS Color	PHENOS/LAPILLI/CLASTS Mineral/ Type	ALTERATION Int.	ALTERATION Distrib.	ALTERATION Type	ALTERATION Minerals	VEINS Thick.	VEINS Abund.	VEINS Selvedge	VEINS Minerals	INTERPRETATION Rock Name/ Composition	INTERPRETATION Formation	Comments	Recovery	Assay
255			5GY6/1-	Volc	vf	massive	<1	.5mm	chunk	vitr.grey	qtz/feld?	W	dissem	arg	white clay						altered	weakly calcareous to 280'		
			5GY8/1				<1	<.5mm	round chunk	dark	chl?										TuPG	rare dissem pyrite cubes		
			pale grn																					
			grey																					
260							<1	<1mm	round chunk	red	?											trace dissem pyrite		
							<1	2-5mm	irreg	white ± grey	amygd?													
							<1	1-2mm	long irreg	green	chl?													
265							<1	.5mm	chunk	vitr.grey	feld?					<3mm	rare	qtz?	calcite			trace dissem pyrite		
							<1	<.5mm	round irreg	red	?								±? qtz					
							<1	2-5mm	irreg	white	amygd?					<2mm	rare	?	py					
270							<1	<.5mm	round chunk	dark, red	?					<2mm	rare	?	py					
							<1	2-3mm	irreg	white	amygd?													
275							<1	1mm	oblong	pale green	chl?					<3mm	rare	?	py ± calc ± qtz			some pyrite only fracture coatings		0
280							<1	2mm	oblong	pale green	chl?													94 106
285							<1	2mm	irreg	pale green	chl?											slightly calcareous to 290'		10
290							<1	2mm	irreg	pale grn	amygd?											some dissem pyrite		
295							<1	2-3mm	irreg	pale grn	amygd?											trace dissem pyrite		
300							<1	1-2mm	irreg chunk	pale grn	amygd?	W	patchy	py	py often in siliceous patches	<2mm	rare	?	calcite			weakly calcareous bladed marc? in vein w/qtz + calcite		

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 7 of 12
Log'd by: G. Langstaff Date: 12/30/97	County: Pershing	Easting:	Azimuth:	Elevation:	Core/Chips(Intervals): 0-600' chips	

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	PHENOS/LAPILLI/CLASTS Size	PHENOS/LAPILLI/CLASTS Shape	PHENOS/LAPILLI/CLASTS Color	PHENOS/LAPILLI/CLASTS Mineral/ Type	ALTERATION Int.	ALTERATION Distrib.	ALTERATION Type	ALTERATION Minerals	VEINS Thick.	VEINS Abund.	VEINS Selvedge	VEINS Minerals	INTERPRETATION Rock Name/ Composition	INTERPRETATION Formation	Comments	Recovery	Assay
305	*?		5G7/1 pale grn grey	Volc	vf	massive	<1	4mm	irreg	green	amygd?	W	local?	sil	qtz	<2mm	rare	?	calcite		altered TcFG w/fold?	weakly calcareous rare white clay in sample rare siliceous patches and possibly dissem pyrite		
												W	dissem	arg	white clay	<3mm	rare (qtz on outer edges)	?	pyt±qtz					
310							<1	1-2mm	round irreg	green	chl?											slightly calcareous		
315																						weakly calcareous to 350'		
320	*?						<1	1.5mm	irreg	green	amygd?											a few siliceous chips with pyrite		
							<1	1mm	round	pale grn	fold?													
325	*?						<1	3mm	irreg	green	amygd?											rare chips of pale grey clay trace dissem pyrite		
							<1	.5mm	round	green	chl?													
							<1	.5mm	round chunk	vit. grey	qtz/fld?													
330	*?		5RB/1-N4 red grey	Volc	aph	massive microporp. local breccia	1%	1-3mm	speck prism	black	hbl					<2mm	rare	none	calcite		TcFG w/fold	variable vein-like and stains of red-brown		
							<1	2mm	irreg	white	amygd?													
							<1	1mm	chunk	green	chl?													
							<1	1-2mm	chunk	white	feldspar													
335																<1mm	rare	none	pale grey clay			rare bleached chips		
340																						microphenocrysts less apparent from here down		
345	*?					[banding & min foliation]																very pale clay looks out of place		
350																						very pale clay w/pyrite looks out of place		

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 8 of 12
Log'd by: G. Lanastaff Date: 12/31/97	County: Pershing	Easting:	Azimuth:	Elevation:	Core/Chips(Intervals): 0-600' chips	

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	PHENOS/LAPILLI/CLASTS Size	PHENOS/LAPILLI/CLASTS Shape	PHENOS/LAPILLI/CLASTS Color	PHENOS/LAPILLI/CLASTS Mineral/Type	ALTERATION Int.	ALTERATION Distrib.	ALTERATION Type	ALTERATION Minerals	VEINS Thick.	VEINS Abund.	VEINS Selvedge	VEINS Minerals	INTERPRETATION Rock Name/Composition	INTERPRETATION Formation	Comments	Recovery	Assay
355			mostly N4 grey with some 10R 2/2 to 10R 3/2 dk red	Volc	aph	massive, weakly porph locally with banding & min. foliation	<1 <1 <1	1-2mm .1-.3mm .5mm	long & rounded blocky prism specks prisms blocky	white black black	feldspar hbl hbl										TcFG w/ feld	weakly calcareous to 400'		
360																								
365																								
370																						rare small magnetic chips feldspar phenos up to 1x3mm		
375																<1mm	rare	none	qtz					
380	ΔΔΔ	X	pale & dark 5Y6/1- 5Y6/1/1 pale grey	Volc? Volc? 	aph-5mm? aph-25mm? 	matrix-sup breccia matrix & locally clast support	80-60 20-80 <1	.5-5mm .5-9mm 1mm	ang subround ang round prism	white white green	volc clasts volc clasts chl?	W W W	arg in clasts, sil in matrix? perv in clasts patchy matrix	arg sil	white clay qtz	hair thin <2mm	rare rare	none ?	qtz calcite?		altered Tc LLT?	breccia locally all bleached, usually dark matrix clast w/ feldspar phenos? trace pyrite		
385		X					<1	1mm	long	green	chl?													
390		X					<1 <1	1-2mm 2mm	irreg prism round	green pale green	chl? chl?											rare pyritic chips, some siliceous patches		
395		X					<1 <1	1mm 2mm	prism irreg	green pale green	chl? chl?	W	patchy	py	py usually in siliceous patches	<3mm	rare	?	py ± cal ± white clay					
400		X						1-2mm	prism round	green	chl?					<2mm	rare	?	py + qtz			some white clay in sample		29

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 9 of 12
Log'd by: G. Langstaff Date: 12/31/97	County: Pershing	Easting:	Azimuth:	Elevation:	Core/Chips(Intervals): 0-600' chips	

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	PHENOS/LAPILLI/CLASTS Size	PHENOS/LAPILLI/CLASTS Shape	PHENOS/LAPILLI/CLASTS Color	PHENOS/LAPILLI/CLASTS Mineral/ Type	ALTERATION Int.	ALTERATION Distrib.	ALTERATION Type	ALTERATION Minerals	VEINS Thick.	VEINS Abund.	VEINS Selvedge	VEINS Minerals	INTERPRETATION Rock Name/ Composition	INTERPRETATION Formation	Comments	Recovery	Assay
																						Samples contaminated (?) by grey, calcareous drilling mud (?)		
405		X	5YR7/1-5YR8/1 pale grey	Volc?	aph-75mm	clast & matrix support, some jig-saw fit	40-70	.5-5mm	angr subroun	white	volc clasts	W-m W W	patchy in clasts patchy disem	sil arg py	qtz white clay py often in siliceous patches	<3mm	rare	none	py ± qtz		altered TcLLT?	variably but commonly weakly calcareous to 415'; bladed marc? in massive qtz some texturally destructive quartz replacement, rare or absent below 415'		121
410		X					<1 <1	1mm 1mm	long prism prism	green pale green	chl? chl?													79
415		X														<4mm	rare	?	bladed marc? calc			magnetic mineral associated w/ sulfide to 430' bladed marc? in massive qtz		294 338
420		X										W VW	in clasts in matrix	arg sil	white clay qtz							slightly calcareous to 425'		23
425		X														<3mm	rare	?	calcite ± sulfide			pentagonal bladed marc? on fracture?		
430		X																				weakly calcareous both white and clear calcite		
435		X					<1	1-2mm	irreg	green	chl?					<3mm	rare	?	py/marc ± calc ± qtz			slightly calcareous to 450' some intervals have few chips with clastic textures - interbedding or variable brecciation?		
440		X					<1	2mm	prism	green	chl?											bladed marc? in vein calcite		
445		X					<1	1-2mm	prism irreg oblong	green	chl?											rare greener chips without clastic texture		
450		X					<1	1mm	irreg prism	green	chl?					<4mm	pres	?	calcite			some greener chips ± disseminated pyrite chips with breccia texture have redder matrix than above but most chips are aphanitic		

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 10 of 12
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chips generally finer in this tray, harder to determine textures

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	Size	Shape	Color	Mineral/ Type	ALTERATION Int.	Distrib.	Type	Minerals	VEINS Thick.	Abund.	Selvedge	Minerals	INTERPRETATION Rock Name/ Composition	Formation	Comments	Recovery	Assay
455			5G7/1-	Volc?	aph-	mostly matr-	<1	1mm	irreg chunk	green	chl?	W	pervasive	arg	white clay	<3mm	pres	none	more py & calc		altered	magnetic mineral associated with sulfide		
			5Y6/1		>5mm?	support	30-	.3-7mm	ang round	white	volc-clast	W	patchy dissem	py	py rarely in						TcLLT?	to 500', more at 485-500'		
			pale gray				60								silicons							slightly calcareous to 480'		
				Volc	aph-	massive,									patches							breccia matrix commonly dark red		
460					vf	commonly	<1	1-2mm	irreg, prism chunk	green	chl?					<3mm	rare	?	calcite					
						granular																		
465							<1	1-3mm	chunk prism	green	chl?											blebs and more in vein calcite		
470							<1	2-3mm	chunk prism	green	chl?											rare chips with clastic textures		
475			[greener]				<1	1-2mm	chunk prism	green	chl?										clay vitro?	slightly more clay alteration more clay		
480			[pinkish]	Volc	aph	massive with local(?) brecciation	<1	1-2mm	prism chunk irreg	black	?									massive intrusion?	MPP? aphyric			
485			[greener]				<1	1-2mm	chunk prism round	green	chl?										clay vitro.	weakly calcareous to 500' rare chips with clastic textures more clay		
490				Volc?	aph-vf	local brecciation?	<1	1-2mm	chunk prism	green	chl?										altered LLT	more chips with clastic textures like those in unit above		
495							<1	1-2mm	prism irreg	green	chl?											some chips with dark red breccia matrix		
500							<1	.5-1mm	chunk irreg	green	chl?													
							20-	.3-3mm	ang round	white	volc clast													
							40	in	darker	red	matrix													

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 11 of 12
Log'd by: G. Langstaff Date: 12/31/97	County: Pershing	Easting:	Azimuth:	Elevation:	Core/Chips(Intervals):	

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	PHENOS/LAPILLI/CLASTS Size	PHENOS/LAPILLI/CLASTS Shape	PHENOS/LAPILLI/CLASTS Color	PHENOS/LAPILLI/CLASTS Mineral/ Type	ALTERATION Int.	ALTERATION Distrib.	ALTERATION Type	ALTERATION Minerals	VEINS Thick.	VEINS Abund.	VEINS Selvedge	VEINS Minerals	INTERPRETATION Rock Name/ Composition	INTERPRETATION Formation	Comments	Recovery	Assay
505			5GY6/1 pale grn grey	Volc	aph	massive with minor brec.	<1	1-3mm	chunk prism irreg	green	chl?	W	pervasive	arg	white clay	<2mm <1mm	pres rare	? ?	calcite pyrite		altered LLT	magnetic mineral associated with sulfide weakly calcareous to 550' some chips with breccia textures		
510			mostly N4 dk grey with some 10R 2/2	Volc	aph	locally (?) brecciated, chips massive with rare foliation	<1 <1 <1 10-40	.2-.4mm 1-2mm .5-2mm .2-3mm	specks prism chunk chunk ang subround	black white green gold/dk grey	hbl feldspar chl? volc clast					<3mm	rare	?	calcite		LLT	rarely pale chips in dark red matrix also dk grey chips in pale brn matrix breccia is matrix supported where present but most chips are monomict volcanic w/o matrix		
515			dk grey red																					
520																								
525			5Y6/1-	Volc	aph	massive	<1	1mm	prism	green	chl?	W	pervasive	arg	white clay						altered	partially bleached chip with relict hbl microphenos and pyrite and green things		
530			5GY8/1 pale grey			locally (?) brecciated						W	disseem	py	py rarely in siliceous patches	<3mm	rare	none	py ± qtz ± calc		LLT possibly w/ qtz Mpp?	magnetic mineral present to 545'		
535							<1	1mm	prism	green	chl?													
540							<1	1-2mm	irreg	green	chl?											bladed mineral? in qtz. breccia matrix		24
545							<1	1mm	irreg	green	chl?					<3mm	rare	?	calcite					89
550							<1	.5-1mm	irreg prism	green	chl?											chips more crumbly, probably stronger clay alteration		20 25

Project: ROSEBUD JV	State: Nevada	Northing:	Inclination:	Total Depth:	Hole No. RS-416	Page 12 of 12
Log'd by: G. Langstaff Date: 12/31/97	County: Pershing	Easting:	Azimuth:	Elevation:	Core/Chips(Intervals):	

Depth (ft.)	GRAPHIC Rock	GRAPHIC Alt/Vn	ROCK Color	ROCK Rock Type	ROCK Grain Size	ROCK Structure (Sed.,Vol.)	PHENOS/LAPILLI/CLASTS %	PHENOS/LAPILLI/CLASTS Size	PHENOS/LAPILLI/CLASTS Shape	PHENOS/LAPILLI/CLASTS Color	PHENOS/LAPILLI/CLASTS Mineral/ Type	ALTERATION Int.	ALTERATION Distrib.	ALTERATION Type	ALTERATION Minerals	VEINS Thick.	VEINS Abund.	VEINS Selvedge	VEINS Minerals	INTERPRETATION Rock Name/ Composition	INTERPRETATION Formation	Comments	Recovery	Assay
555			mostly 5Y7/1- 5GY7/1 pale grey	Volc	aph	matrix & clast sup breccia?	<1 90-40	1mm .2-3mm	prism and subround in red matrix	green white	chl? volc clast	W W	pervasive local dissem	arg py	white clay py	<3mm	rare	none	py ± qtz		altered LLT	weakly calcareous to 565' chips bit pale greenish grey clay w/ py cubes		17
560			but matrix as dark as 10R4/2 grey red				<1	1mm	long	green	chl?					<1mm	rare	?	calcite			matrix paler than above		83
565							<1 <1	1-2mm 1mm	irreg prism prism	green white	chl? feld>clay					<1mm	rare	?	pale waxy clay		gradational contact or mixed chips	some matrix as dark as at 550-555'		72
570						breccia texture uncommon massive	<1	1mm .5-1mm	long oblong chunk	green white	chl? feld>clay											slightly calcareous to 575'		84
575																					T, Mpp	clay-altered feldspar in both clasts and matrix		48
580			10R6/6 red orange to 5YR8/1 pink grey			becomes distinctly porphyr. though phenos rare	<1	1-2mm	round long	white	feld>clay					<1mm <2mm	rare rare	? ?	pale waxy clay qtz					142
585																						bladed mare? in qtz		205
590																						bladed mare? in qtz pyrite veinlets with qtz margins		86
595																								123
600			mostly 5YR8/1 pinkish grey																					201

brecciated pink porphyry with silicification in core

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP046898

American Assay Laboratories

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

NEWMONT GOLD COMPANY

COPIES TO : RANDY VANCE
: KURT ALLEN
:
:

CLIENT REFERENCE No: RS-416
No. SAMPLES : 123
MAIN SAMPLE TYPE : DRILL CUTTINGS

RECEIVED : 23 OCT 1997
REPORTED : 5 NOV 1997

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP046898

American Assay Laboratories

CLIENT : NEWMONT GOLD COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-416

REPORTED : 5 NOV 1997

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-416 000-005	91		0.003		<0.5	<0.02
RS-416 005-010	17	12	<0.001	<0.001	<0.5	<0.02
RS-416 010-015	19		<0.001		<0.5	<0.02
RS-416 015-020	<5		<0.001		<0.5	<0.02
RS-416 020-025	17		<0.001		<0.5	<0.02
RS-416 025-030	<5		<0.001		<0.5	<0.02
RS-416 030-035	<5		<0.001		<0.5	<0.02
RS-416 035-040	<5		<0.001		<0.5	<0.02
RS-416 040-045	<5		<0.001		<0.5	<0.02
RS-416 045-050	<5		<0.001		<0.5	<0.02
RS-416 050-055	<5		<0.001		<0.5	<0.02
RS-416 055-060	<5		<0.001		<0.5	<0.02
RS-416 060-065	<5		<0.001		<0.5	<0.02
RS-416 065-070	<5		<0.001		<0.5	<0.02
RS-416 070-075	15		<0.001		<0.5	<0.02
RS-416 075-080	<5		<0.001		<0.5	<0.02
RS-416 080-085	<5		<0.001		<0.5	<0.02
RS-416 085-090	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-416 090-095	<5		<0.001		<0.5	<0.02
RS-416 095-100	<5		<0.001		<0.5	<0.02
RS-416 100-105	7		<0.001		<0.5	<0.02
RS-416 105-110	13		<0.001		<0.5	<0.02
RS-416 110-115	17		<0.001		1.2	0.04
RS-416 115-120	32	35	<0.001	0.001	2.3	0.07
RS-416 120-125	7		<0.001		0.6	<0.02

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REPORTED : 5 NOV 1997

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-416 125-130	<5		<0.001		<0.5	<0.02
RS-416 130-135	<5		<0.001		<0.5	<0.02
RS-416 135-140	14		<0.001		1.0	0.03
RS-416 140-145	32		<0.001		2.4	0.07
RS-416 145-150A	22		<0.001		1.6	0.05
RS-416 145-150B	858		0.025		0.6	<0.02
RS-416 150-155	15		<0.001		1.4	0.04
RS-416 155-160	23		<0.001		1.5	0.04
RS-416 160-165	<5		<0.001		0.5	<0.02
RS-416 165-170	<5		<0.001		0.5	<0.02
RS-416 170-175	70		0.002		1.1	0.03
RS-416 175-180	<5		<0.001		0.5	<0.02
RS-416 180-185	<5		<0.001		0.6	<0.02
RS-416 185-190	110		0.003		1.1	0.03
RS-416 190-195	11		<0.001		1.4	0.04
RS-416 195-200	45		0.001		1.6	0.05
RS-416 200-205	55		0.002		2.3	0.07
RS-416 205-210	22		<0.001		1.0	0.03
RS-416 210-215	60		0.002		1.1	0.03
RS-416 215-220	27		<0.001		0.8	0.02
RS-416 220-225	<5		<0.001		0.7	0.02
RS-416 225-230	30		<0.001		0.7	0.02
RS-416 230-235	5		<0.001		0.7	0.02
RS-416 235-240	14		<0.001		0.6	<0.02
RS-416 240-245	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP046898

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REFERENCE : RS-416

REPORTED : 5 NOV 1997

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-416 245-250	<5		<0.001		<0.5	<0.02
RS-416 250-255	<5		<0.001		<0.5	<0.02
RS-416 255-260	<5		<0.001		<0.5	<0.02
RS-416 260-265	<5		<0.001		<0.5	<0.02
RS-416 265-270	<5		<0.001		<0.5	<0.02
RS-416 270-275	<5		<0.001		0.8	0.02
RS-416 275-280	106	94	0.003	0.003	1.0	0.03
RS-416 280-285	10		<0.001		0.9	0.03
RS-416 285-290	15		<0.001		1.8	0.05
RS-416 290-295	13		<0.001		1.6	0.05
RS-416 295-300	64		0.002		3.6	0.11
RS-416 300-305	59		0.002		3.0	0.09
RS-416 305-310	52		0.002		3.1	0.09
RS-416 310-315	7		<0.001		1.2	0.04
RS-416 315-320	<5		<0.001		<0.5	<0.02
RS-416 320-325	5		<0.001		<0.5	<0.02
RS-416 325-330	<5		<0.001		<0.5	<0.02
RS-416 330-335	<5		<0.001		<0.5	<0.02
RS-416 335-340	<5		<0.001		<0.5	<0.02
RS-416 340-345	<5		<0.001		<0.5	<0.02
RS-416 345-350	<5		<0.001		<0.5	<0.02
RS-416 350-355	<5		<0.001		<0.5	<0.02
RS-416 355-360	<5		<0.001		<0.5	<0.02
RS-416 360-365	<5		<0.001		<0.5	<0.02
RS-416 365-370	<5		<0.001		<0.5	<0.02

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ANALYSIS REPORT SP046898

American Assay Laboratories

CLIENT : NEWMONT GOLD COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-416

REPORTED : 5 NOV 1997

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-416 370-375	<5		<0.001		<0.5	<0.02
RS-416 375-380	<5		<0.001		<0.5	<0.02
RS-416 380-385	<5		<0.001		<0.5	<0.02
RS-416 385-390	<5		<0.001		<0.5	<0.02
RS-416 390-395	<5		<0.001		0.5	<0.02
RS-416 395-400	29		<0.001		2.1	0.06
RS-416 400-405	121		0.004		3.0	0.09
RS-416 405-410	79		0.002		4.3	0.13
RS-416 410-415A	338	294	0.010	0.009	3.7	0.11
RS-416 410-415B	96		0.003		<0.5	<0.02
RS-416 415-420	23		<0.001		1.4	0.04
RS-416 420-425	25		<0.001		1.4	0.04
RS-416 425-430	22		<0.001		1.3	0.04
RS-416 430-435	38		0.001		1.8	0.05
RS-416 435-440	30		<0.001		2.3	0.07
RS-416 440-445	34		<0.001		1.6	0.05
RS-416 445-450	16		<0.001		0.7	0.02
RS-416 450-455	10		<0.001		0.7	0.02
RS-416 455-460	<5		<0.001		0.7	0.02
RS-416 460-465	16		<0.001		1.9	0.06
RS-416 465-470	21		<0.001		1.8	0.05
RS-416 470-475	5		<0.001		1.0	0.03
RS-416 475-480	<5		<0.001		<0.5	<0.02
RS-416 480-485	<5		<0.001		0.9	0.03
RS-416 485-490	50		0.001		1.2	0.04

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP046898

American Assay Laboratories

CLIENT : NEWMONT GOLD COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-416

REPORTED : 5 NOV 1997

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-416 490-495	20		<0.001		0.7	0.02
RS-416 495-500	8		<0.001		0.7	0.02
RS-416 500-505	10		<0.001		0.6	<0.02
RS-416 505-510	17		<0.001		0.7	0.02
RS-416 510-515	<5		<0.001		<0.5	<0.02
RS-416 515-520	<5		<0.001		<0.5	<0.02
RS-416 520-525	<5		<0.001		<0.5	<0.02
RS-416 525-530	<5		<0.001		0.7	0.02
RS-416 530-535	<5		<0.001		<0.5	<0.02
RS-416 535-540	24		<0.001		0.8	0.02
RS-416 540-545	89		0.003		2.3	0.07
RS-416 545-550	25	20	<0.001	<0.001	0.8	0.02
RS-416 550-555	17		<0.001		0.9	0.03
RS-416 555-560	83		0.002		2.0	0.06
RS-416 560-565	72		0.002		1.8	0.05
RS-416 565-570A	84		0.002		1.0	0.03
RS-416 565-570B	140		0.004		<0.5	<0.02
RS-416 570-575	48		0.001		1.5	0.04
RS-416 575-580	142		0.004		2.3	0.07
RS-416 580-585	205		0.006		3.5	0.10
RS-416 585-590	86		0.003		2.8	0.08
RS-416 590-595	123		0.004		2.5	0.07
RS-416 595-600	201		0.006		2.4	0.07

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 0046898-IN
INVOICE DATE: 11/05/97

INVOICE TO:
NEWMONT EXPLORATION
ROSEBUD MINE
P.O. BOX 2610
WINNEMUCCA NV 89446

NEWMONT EXPLORATION
ROSEBUD MINE
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
RS-416	ROSEBUD EXPLOR.	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
123	SAMPLES RECEIVED	.00	.00
117	DRYING	1.00	117.00
117	JAW CRUSHING CHARGE	1.30	152.10
117	SPLITTING CHARGE	1.20	140.40
117	FINE MILLING CHARGE	2.00	234.00
123	Au (1 A.T. FIRE ASSAY)	8.00	984.00
123	HYDROCHLORIC/NITRIC DIGESTION	2.00	246.00
123	Ag ANALYSES	1.00	123.00

NET INVOICE:	1,996.50
LESS DISCOUNT:	399.30
FREIGHT:	.00
INVOICE TOTAL:	1,597.20

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

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

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: Newmont Exploration - Rosebud Mine

Address: P.O. Box 2610

City Winnemucca State NV Zip 89446

Telephone Number: (702) 623-6912 Fax Number: (702) 623-6567

Project Name: Rosebud Exploration Purchase Order Number:

Date Submitted: 10/22/97 Number of Samples: 123

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

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
RS-416	RC	Au/Ag FA/AA each sample (5')
0-600' T.D.		
+150B, 415B, 570B		
PEEL HERE MS-3 150B		
415B MS-1 (RMG1)		
PEEL HERE 570B MS-2 MS-2		

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:

Bob Kastelic/Randy Vance
Rosebud Mine

Results to:

Rick Lisle - Newmont Exploration
Winnemucca
Randy Vance } Rosebud Mine
Kurt Allen }

Comments:

CLIENT FILE COPY

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* NEWMONT EXPLORATION LTD. *
****

JOB NUMBER: 29-0521-311

WELL NAME: RS-416

LOCATION: ROSEBUD MINE

SURVEY DATE: 11/21/97

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 048.50

WELLNAV

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

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

****
****
*** 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: 29-0521-311 WELL NAME: RS-416

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	0.07	0.107	-89.71	335.75	0.12 N	0.05 W	0.58	0.29	0.13	AT 335.75	058.81
100.0	100.00	0.60	0.315	-88.90	290.47	0.40 N	0.55 W	1.84	0.92	0.68	AT 305.75	059.74
150.0	149.98	1.66	0.625	-88.58	297.87	0.86 N	1.55 W	0.72	0.36	1.77	AT 298.89	061.18
200.0	199.96	3.12	0.768	-87.98	274.03	1.21 N	2.98 W	1.84	0.92	3.21	AT 292.07	062.76
250.0	249.93	4.93	0.790	-87.85	283.55	1.49 N	4.77 W	0.74	0.37	5.00	AT 287.34	064.13
300.0	299.89	6.99	0.955	-87.42	282.20	1.95 N	6.78 W	0.87	0.43	7.05	AT 286.02	065.71
350.0	349.83	9.44	1.017	-86.95	277.58	2.36 N	9.20 W	1.04	0.52	9.50	AT 284.39	067.08
400.0	399.75	12.22	0.935	-86.67	275.60	2.68 N	11.96 W	0.60	0.30	12.26	AT 282.62	068.59
450.0	449.66	15.17	0.789	-86.56	275.20	2.96 N	14.90 W	0.23	0.11	15.19	AT 281.22	070.46
500.0	499.56	18.39	0.697	-86.06	277.82	3.32 N	18.10 W	1.05	0.53	18.40	AT 280.41	071.61
550.0	549.44	21.87	0.668	-85.96	277.72	3.79 N	21.54 W	0.20	0.10	21.88	AT 279.99	073.05
600.0	599.29	25.66	0.460	-85.32	272.85	4.13 N	25.33 W	1.48	0.74	25.66	AT 279.27	074.20
650.0	649.12	29.82	0.208	-85.10	276.62	4.48 N	29.49 W	0.77	0.38	29.82	AT 278.64	075.50
700.0	698.93	34.09	0.080	-85.10	276.43	4.97 N	33.73 W	0.03	0.02	34.09	AT 278.37	075.79
750.0	748.74	38.45	-0.003	-84.90	277.83	5.51 N	38.05 W	0.47	0.23	38.45	AT 278.24	075.43

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*************************************************************
*                         ********                          *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                         ********                          *
*  750.0 FEET EQUALS    38.45    FEET AT   278.24           *
*                         ********                          *
*************************************************************
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* NEWMONT EXPLORATION LTD. *
****

JOB NUMBER: 29-0521-311

WELL NAME: RS-416 / VS 305.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 11/21/97

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 048.50

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 035.00

WELNAV

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

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

****
****
*** 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: 29-0521-311 WELL NAME: RS-416 / 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	0.06	-0.109	-89.71	335.75	0.12 N	0.05 W	0.58	0.29	0.13	AT 335.75	058.81
100.0	100.00	0.01	-0.682	-88.90	290.47	0.40 N	0.55 W	1.84	0.92	0.68	AT 305.75	059.74
150.0	149.98	-0.19	-1.761	-88.58	297.87	0.86 N	1.55 W	0.72	0.36	1.77	AT 298.89	061.18
200.0	199.96	-0.72	-3.132	-87.98	274.03	1.21 N	2.98 W	1.84	0.92	3.21	AT 292.07	062.76
250.0	249.93	-1.52	-4.760	-87.85	283.55	1.49 N	4.77 W	0.74	0.37	5.00	AT 287.34	064.13
300.0	299.89	-2.29	-6.671	-87.42	282.20	1.95 N	6.78 W	0.87	0.43	7.05	AT 286.02	065.71
350.0	349.83	-3.34	-8.889	-86.95	277.58	2.36 N	9.20 W	1.04	0.52	9.50	AT 284.39	067.08
400.0	399.75	-4.67	-11.335	-86.67	275.60	2.68 N	11.96 W	0.60	0.30	12.26	AT 282.62	068.59
450.0	449.66	-6.13	-13.902	-86.56	275.20	2.96 N	14.90 W	0.23	0.11	15.19	AT 281.22	070.46
500.0	499.56	-7.66	-16.732	-86.06	277.82	3.32 N	18.10 W	1.05	0.53	18.40	AT 280.41	071.61
550.0	549.44	-9.25	-19.825	-85.96	277.72	3.79 N	21.54 W	0.20	0.10	21.88	AT 279.99	073.05
600.0	599.29	-11.14	-23.117	-85.32	272.85	4.13 N	25.33 W	1.48	0.74	25.66	AT 279.27	074.20
650.0	649.12	-13.24	-26.723	-85.10	276.62	4.48 N	29.49 W	0.77	0.38	29.82	AT 278.64	075.50
700.0	698.93	-15.28	-30.477	-85.10	276.43	4.97 N	33.73 W	0.03	0.02	34.09	AT 278.37	075.79
750.0	748.74	-17.31	-34.330	-84.90	277.83	5.51 N	38.05 W	0.47	0.23	38.45	AT 278.24	075.43

```
*************************************************************
*                         ********                          *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                         ********                          *
*  750.0 FEET EQUALS    38.45   FEET AT  278.24             *
*                         ********                          *
*************************************************************
```

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* NEWMONT EXPLORATION LTD. *
****

JOB NUMBER: 29-0521-311

WELL NAME: RS-416 / VS 035.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 11/21/97

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 048.50

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 125.00

WELNAV

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

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

****
****
*** 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: 29-0521-311 WELL NAME: RS-416 / 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	-0.11	-0.065	-89.71	335.75	0.12 N	0.05 W	0.58	0.29	0.13	AT 335.75	058.81
100.0	100.00	-0.68	-0.009	-88.90	290.47	0.40 N	0.55 W	1.84	0.92	0.68	AT 305.75	059.74
150.0	149.98	-1.76	0.188	-88.58	297.87	0.86 N	1.55 W	0.72	0.36	1.77	AT 298.89	061.18
200.0	199.96	-3.13	0.719	-87.98	274.03	1.21 N	2.98 W	1.84	0.92	3.21	AT 292.07	062.76
250.0	249.93	-4.76	1.515	-87.85	283.55	1.49 N	4.77 W	0.74	0.37	5.00	AT 287.34	064.13
300.0	299.89	-6.67	2.294	-87.42	282.20	1.95 N	6.78 W	0.87	0.43	7.05	AT 286.02	065.71
350.0	349.83	-8.89	3.343	-86.95	277.58	2.36 N	9.20 W	1.04	0.52	9.50	AT 284.39	067.08
400.0	399.75	-11.33	4.668	-86.67	275.60	2.68 N	11.96 W	0.60	0.30	12.26	AT 282.62	068.59
450.0	449.66	-13.90	6.127	-86.56	275.20	2.96 N	14.90 W	0.23	0.11	15.19	AT 281.22	070.46
500.0	499.56	-16.73	7.657	-86.06	277.82	3.32 N	18.10 W	1.05	0.53	18.40	AT 280.41	071.61
550.0	549.44	-19.82	9.249	-85.96	277.72	3.79 N	21.54 W	0.20	0.10	21.88	AT 279.99	073.05
600.0	599.29	-23.12	11.142	-85.32	272.85	4.13 N	25.33 W	1.48	0.74	25.66	AT 279.27	074.20
650.0	649.12	-26.72	13.242	-85.10	276.62	4.48 N	29.49 W	0.77	0.38	29.82	AT 278.64	075.50
700.0	698.93	-30.48	15.279	-85.10	276.43	4.97 N	33.73 W	0.03	0.02	34.09	AT 278.37	075.79
750.0	748.74	-34.33	17.314	-84.90	277.83	5.51 N	38.05 W	0.47	0.23	38.45	AT 278.24	075.43

```
*************************************************************
*                         ********                          *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                         ********                          *
*  750.0 FEET EQUALS    38.45   FEET AT  278.24             *
*                         ********                          *
*************************************************************
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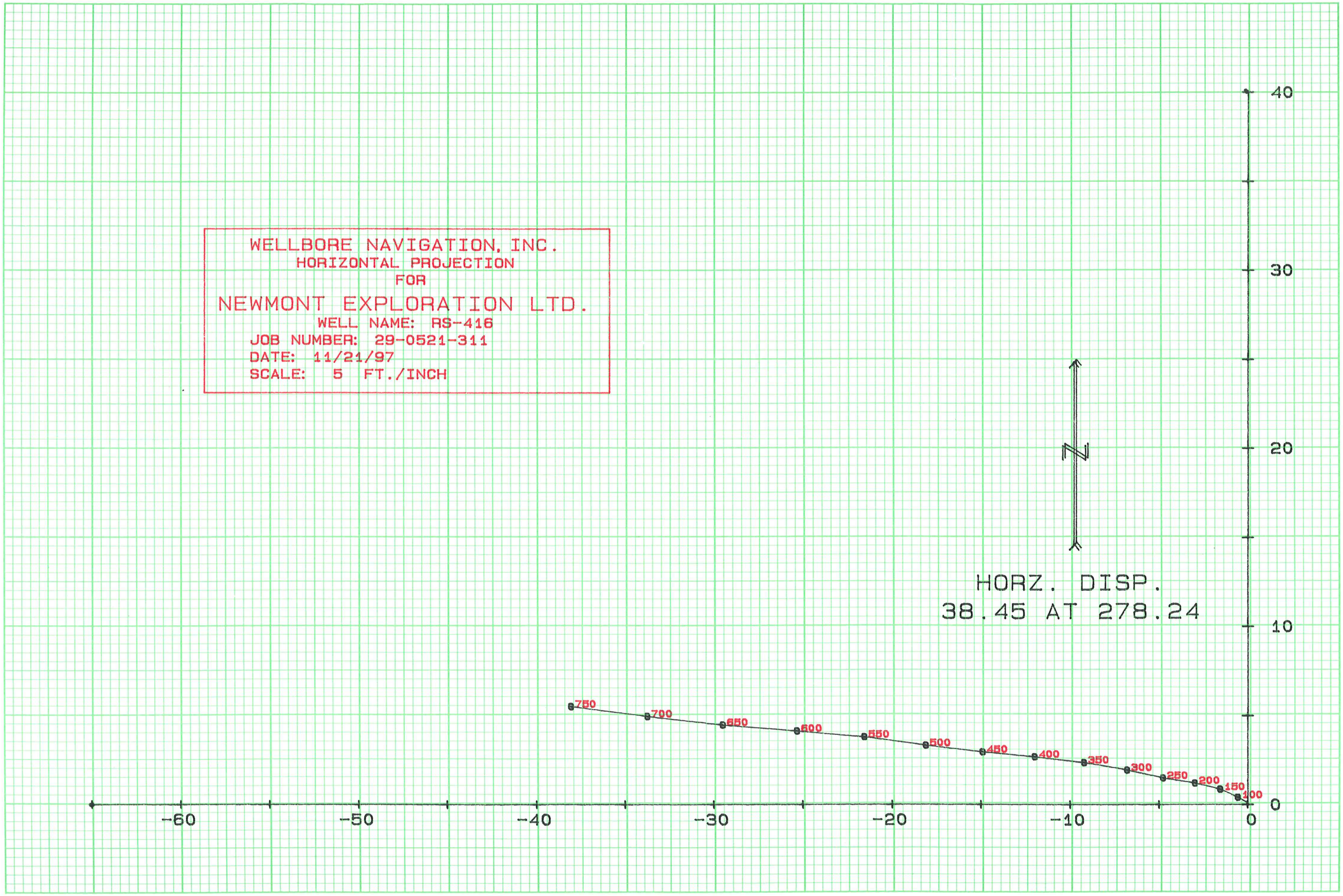

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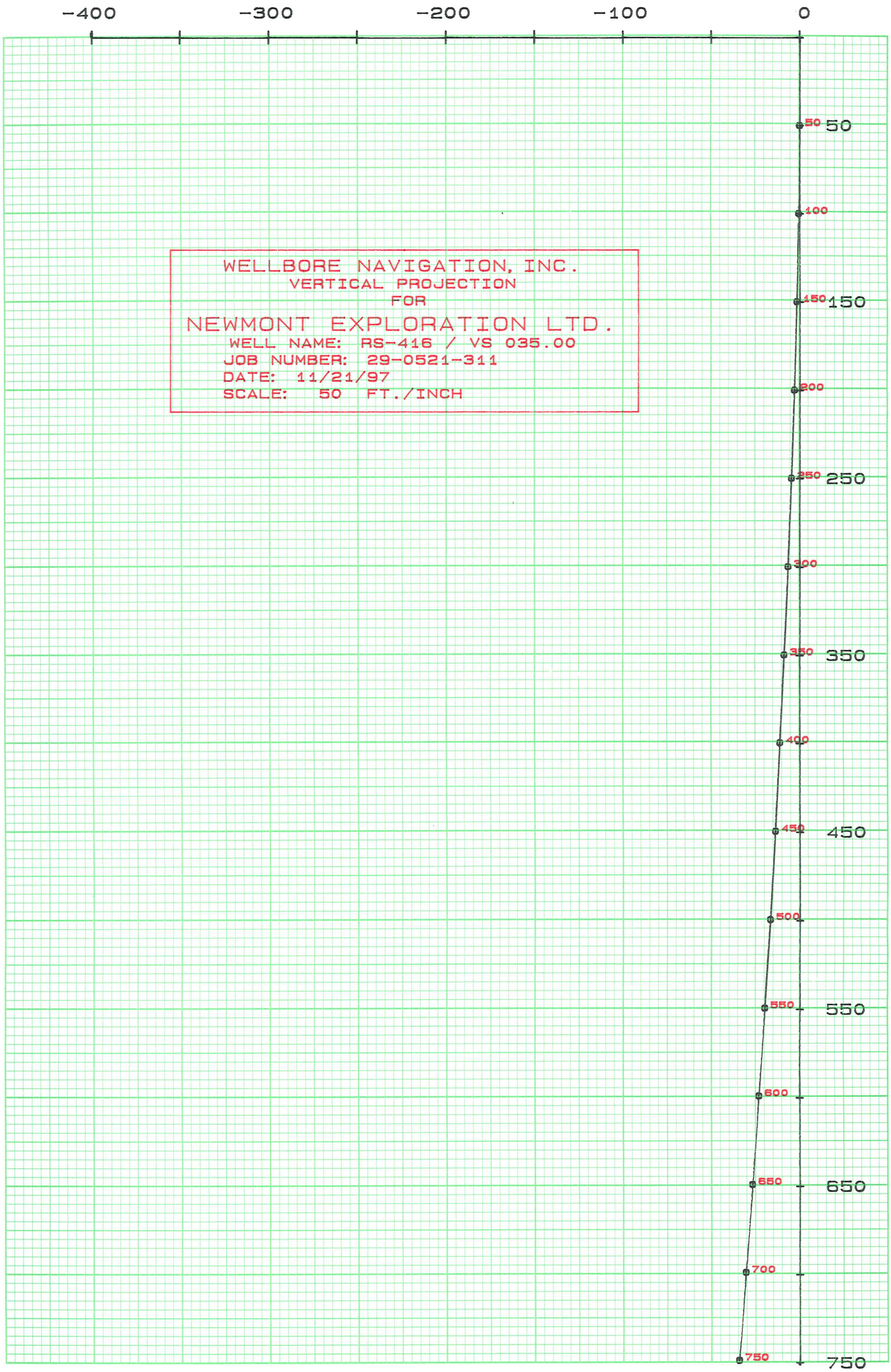
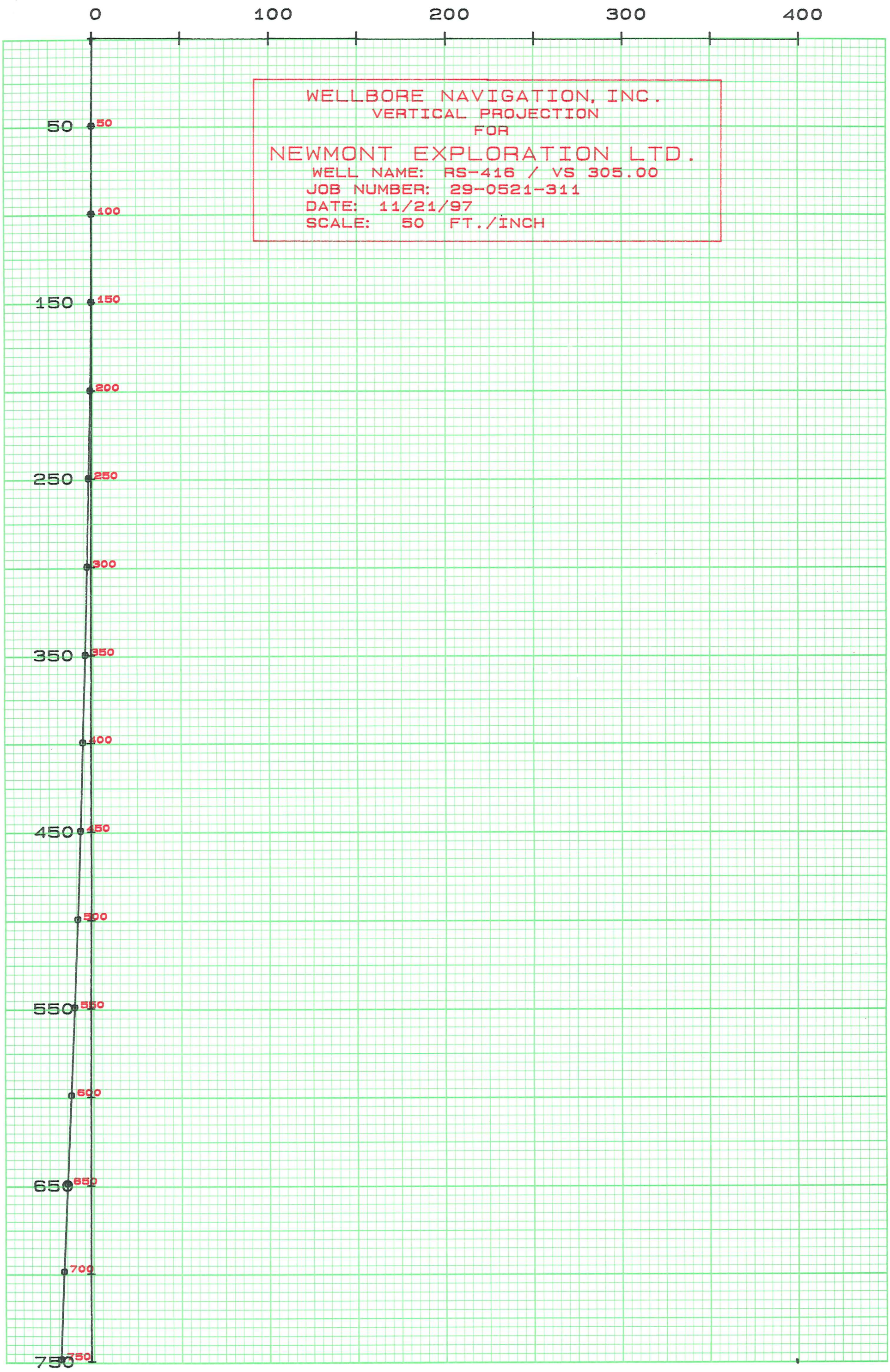
STARLIGHT PRINTING (801) 467-2841



STARLIGHT PRINTING (801) 467-2841



AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP047910

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

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

But Silver!

NSI

CLIENT REFERENCE No: RS-416 RECEIVED : 15 JAN 1998

No. SAMPLES : 44 REPORTED : 26 JAN 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 SP047910

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-416

REPORTED : 26 JAN 1998

SAMPLES		Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
RS-416 599.0-600.8		0.005			0.11
RS-416 600.8-604.0		0.004			0.09
RS-416 604-607		0.002			0.05
RS-416 607-610		0.001			0.08
RS-416 610-613		0.007	0.010		0.07
RS-416 613.0-615.9		0.003			0.06
RS-416 615.9-617.7		0.005			0.14
RS-416 617.7-619.5	1.8'	0.043			32.50
RS-416 619.5-622.7	3.2'	0.010	0.013		5.83
RS-416 622.7-626.2	3.5'	0.027			9.95
RS-416 626.2-627.2		0.004			0.16
RS-416 627.2-628.2		0.011			0.14
RS-416 628.2-630.9		0.007			0.05
RS-416 630.9-632.3		0.044	0.032		0.12
RS-416 632.3-634.8		0.027			0.13
RS-416 634.8-638.2		0.017			0.05
RS-416 638.2-641.6		0.010			0.13
RS-416 641.6-643.3		0.023			0.08
RS-416 643.3-646.7		0.021			0.13
RS-416 646.7-651.5		0.087		0.090	0.29
RS-416 651.5-657.1		0.036			0.07
RS-416 657.1-662.2		0.110		0.085	0.06
RS-416 662.2-666.0		0.016			0.49
RS-416 666.0-671.3		0.038			0.08
RS-416 671.3-676.4		0.016			0.46

617.7-626.2 = 8.5'
@ 0.024 Au
13.17 Ag

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP047910

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-416

REPORTED : 26 JAN 1998

SAMPLES		Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
RS-416 676.4-681.0		0.028			0.08
RS-416 681.0-684.7		0.019			0.50
RS-416 684.7-688.3		0.021			2.04
RS-416 688.3-689.3		0.034	0.038		0.11
RS-416 689.3-693.3		0.004			0.08
RS-416 693.3-694.5		0.012			7.29
RS-416 694.5-700.0		0.011			0.14
RS-416 700.0-702.9	2.9'	0.014			11.29
RS-416 702.9-706.7	3.8'	0.024			20.42
RS-416 706.7-708.9		0.015			0.43
RS-416 708.9-714.0		0.012			0.11
RS-416 714-719		0.007			0.17
RS-416 719.0-724.2		0.029			1.27
RS-416 724.2-729.1		0.008			0.19
RS-416 729.1-734.0		0.012			0.08
RS-416 734.0-739.1		0.009			0.08
RS-416 739.1-742.5		0.013			0.09
RS-416 742.5-746.0		0.015			0.07
RS-416 746-750		0.017			0.09

700-706.7' = 6.7' @
0.020 Au
16.47 Ag

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
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Tucson, AZ 85706
Telephone
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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. LLC

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: 1/14/98 Number of Samples: 44

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

Hole #	SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
RS-416	632.3-634.8	BRE	689.3-693.3 Au-Ag FOLLOWING
599-600.8	634.8-638.2		693.3-694.5 ROSEBUD MINE DEVELOP
600.8-604	~~[illegible]~~-638.2-641.6		694.5-700 MENT PROTOCOL
604-607	641.6-643.3		700-702.9
607-610	643.3-646.7		702.9-706.7
610-613	646.7-651.5		706.7-708.9
613-615.9	651.5-657.1		708.9-714
615.9-617.7	657.1-662.2		714-719
617.7-619.5	662.2-666		719-724.2
619.5-622.7	666-671.3		724.2-729.1
622.7-626.2	671.3-676.4		729.1-734
626.2-627.2	676.4-681.0		734-739.1
627.2-628.2	681.0-684.7		739.1-742.5
628.2-630.9	684.7-688.3		742.5-746
630.9-632.3	688.3-689.3		746-750

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
RANDY VANCE

Comments:

CLIENT FILE COPY

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 0046898-IN
INVOICE DATE: 11/05/97

INVOICE TO:
NEWMONT EXPLORATION
ROSEBUD MINE
P.O. BOX 2610
WINNEMUCCA NV 89446

NEWMONT EXPLORATION
ROSEBUD MINE
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
RS-416	ROSEBUD EXPLOR.	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
123	SAMPLES RECEIVED	.00	.00
117	DRYING	1.00	117.00
117	JAW CRUSHING CHARGE	1.30	152.10
117	SPLITTING CHARGE	1.20	140.40
117	FINE MILLING CHARGE	2.00	234.00
123	Au (1 A.T. FIRE ASSAY)	8.00	984.00
123	HYDROCHLORIC/NITRIC DIGESTION	2.00	246.00
123	Ag ANALYSES	1.00	123.00

8652-86-5210-477
RAA

NET INVOICE:	1,996.50
LESS DISCOUNT:	399.30
FREIGHT:	.00
INVOICE TOTAL:	1,597.20

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP046898

American Assay Laboratories

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

NEWMONT GOLD COMPANY

COPIES TO : RANDY VANCE

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-416 RECEIVED : 23 OCT 1997

No. SAMPLES : 123 REPORTED : 5 NOV 1997

MAIN SAMPLE TYPE : DRILL CUTTINGS

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP046898

American Assay Laboratories

CLIENT : NEWMONT GOLD COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-416

REPORTED : 5 NOV 1997

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-416 000-005	91		0.003		<0.5	<0.02
RS-416 005-010	17	12	<0.001	<0.001	<0.5	<0.02
RS-416 010-015	19		<0.001		<0.5	<0.02
RS-416 015-020	<5		<0.001		<0.5	<0.02
RS-416 020-025	17		<0.001		<0.5	<0.02
RS-416 025-030	<5		<0.001		<0.5	<0.02
RS-416 030-035	<5		<0.001		<0.5	<0.02
RS-416 035-040	<5		<0.001		<0.5	<0.02
RS-416 040-045	<5		<0.001		<0.5	<0.02
RS-416 045-050	<5		<0.001		<0.5	<0.02
RS-416 050-055	<5		<0.001		<0.5	<0.02
RS-416 055-060	<5		<0.001		<0.5	<0.02
RS-416 060-065	<5		<0.001		<0.5	<0.02
RS-416 065-070	<5		<0.001		<0.5	<0.02
RS-416 070-075	15		<0.001		<0.5	<0.02
RS-416 075-080	<5		<0.001		<0.5	<0.02
RS-416 080-085	<5		<0.001		<0.5	<0.02
RS-416 085-090	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-416 090-095	<5		<0.001		<0.5	<0.02
RS-416 095-100	<5		<0.001		<0.5	<0.02
RS-416 100-105	7		<0.001		<0.5	<0.02
RS-416 105-110	13		<0.001		<0.5	<0.02
RS-416 110-115	17		<0.001		1.2	0.04
RS-416 115-120	32	35	<0.001	0.001	2.3	0.07
RS-416 120-125	7		<0.001		0.6	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP046898

American Assay Laboratories

CLIENT : NEWMONT GOLD COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-416

REPORTED : 5 NOV 1997

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-416 125-130	<5		<0.001		<0.5	<0.02
RS-416 130-135	<5		<0.001		<0.5	<0.02
RS-416 135-140	14		<0.001		1.0	0.03
RS-416 140-145	32		<0.001		2.4	0.07
RS-416 145-150A	22		<0.001		1.6	0.05
RS-416 145-150B	858		0.025		0.6	<0.02
RS-416 150-155	15		<0.001		1.4	0.04
RS-416 155-160	23		<0.001		1.5	0.04
RS-416 160-165	<5		<0.001		0.5	<0.02
RS-416 165-170	<5		<0.001		0.5	<0.02
RS-416 170-175	70		0.002		1.1	0.03
RS-416 175-180	<5		<0.001		0.5	<0.02
RS-416 180-185	<5		<0.001		0.6	<0.02
RS-416 185-190	110		0.003		1.1	0.03
RS-416 190-195	11		<0.001		1.4	0.04
RS-416 195-200	45		0.001		1.6	0.05
RS-416 200-205	55		0.002		2.3	0.07
RS-416 205-210	22		<0.001		1.0	0.03
RS-416 210-215	60		0.002		1.1	0.03
RS-416 215-220	27		<0.001		0.8	0.02
RS-416 220-225	<5		<0.001		0.7	0.02
RS-416 225-230	30		<0.001		0.7	0.02
RS-416 230-235	5		<0.001		0.7	0.02
RS-416 235-240	14		<0.001		0.6	<0.02
RS-416 240-245	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP046898

American Assay Laboratories

CLIENT : NEWMONT GOLD COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-416

REPORTED : 5 NOV 1997

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-416 245-250	<5		<0.001		<0.5	<0.02
RS-416 250-255	<5		<0.001		<0.5	<0.02
RS-416 255-260	<5		<0.001		<0.5	<0.02
RS-416 260-265	<5		<0.001		<0.5	<0.02
RS-416 265-270	<5		<0.001		<0.5	<0.02
RS-416 270-275	<5		<0.001		0.8	0.02
RS-416 275-280	106	94	0.003	0.003	1.0	0.03
RS-416 280-285	10		<0.001		0.9	0.03
RS-416 285-290	15		<0.001		1.8	0.05
RS-416 290-295	13		<0.001		1.6	0.05
RS-416 295-300	64		0.002		3.6	0.11
RS-416 300-305	59		0.002		3.0	0.09
RS-416 305-310	52		0.002		3.1	0.09
RS-416 310-315	7		<0.001		1.2	0.04
RS-416 315-320	<5		<0.001		<0.5	<0.02
RS-416 320-325	5		<0.001		<0.5	<0.02
RS-416 325-330	<5		<0.001		<0.5	<0.02
RS-416 330-335	<5		<0.001		<0.5	<0.02
RS-416 335-340	<5		<0.001		<0.5	<0.02
RS-416 340-345	<5		<0.001		<0.5	<0.02
RS-416 345-350	<5		<0.001		<0.5	<0.02
RS-416 350-355	<5		<0.001		<0.5	<0.02
RS-416 355-360	<5		<0.001		<0.5	<0.02
RS-416 360-365	<5		<0.001		<0.5	<0.02
RS-416 365-370	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP046898

American Assay Laboratories

CLIENT : NEWMONT GOLD COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-416

REPORTED : 5 NOV 1997

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-416 370-375	<5		<0.001		<0.5	<0.02
RS-416 375-380	<5		<0.001		<0.5	<0.02
RS-416 380-385	<5		<0.001		<0.5	<0.02
RS-416 385-390	<5		<0.001		<0.5	<0.02
RS-416 390-395	<5		<0.001		0.5	<0.02
RS-416 395-400	29		<0.001		2.1	0.06
RS-416 400-405	121		0.004		3.0	0.09
RS-416 405-410	79		0.002		4.3	0.13
RS-416 410-415A	338	294	0.010	0.009	3.7	0.11
RS-416 410-415B	96		0.003		<0.5	<0.02
RS-416 415-420	23		<0.001		1.4	0.04
RS-416 420-425	25		<0.001		1.4	0.04
RS-416 425-430	22		<0.001		1.3	0.04
RS-416 430-435	38		0.001		1.8	0.05
RS-416 435-440	30		<0.001		2.3	0.07
RS-416 440-445	34		<0.001		1.6	0.05
RS-416 445-450	16		<0.001		0.7	0.02
RS-416 450-455	10		<0.001		0.7	0.02
RS-416 455-460	<5		<0.001		0.7	0.02
RS-416 460-465	16		<0.001		1.9	0.06
RS-416 465-470	21		<0.001		1.8	0.05
RS-416 470-475	5		<0.001		1.0	0.03
RS-416 475-480	<5		<0.001		<0.5	<0.02
RS-416 480-485	<5		<0.001		0.9	0.03
RS-416 485-490	50		0.001		1.2	0.04

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP046898

American Assay Laboratories

CLIENT : NEWMONT GOLD COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-416

REPORTED : 5 NOV 1997

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-416 490-495	20		<0.001		0.7	0.02
RS-416 495-500	8		<0.001		0.7	0.02
RS-416 500-505	10		<0.001		0.6	<0.02
RS-416 505-510	17		<0.001		0.7	0.02
RS-416 510-515	<5		<0.001		<0.5	<0.02
RS-416 515-520	<5		<0.001		<0.5	<0.02
RS-416 520-525	<5		<0.001		<0.5	<0.02
RS-416 525-530	<5		<0.001		0.7	0.02
RS-416 530-535	<5		<0.001		<0.5	<0.02
RS-416 535-540	24		<0.001		0.8	0.02
RS-416 540-545	89		0.003		2.3	0.07
RS-416 545-550	25	20	<0.001	<0.001	0.8	0.02
RS-416 550-555	17		<0.001		0.9	0.03
RS-416 555-560	83		0.002		2.0	0.06
RS-416 560-565	72		0.002		1.8	0.05
RS-416 565-570A	84		0.002		1.0	0.03
RS-416 565-570B	140		0.004		<0.5	<0.02
RS-416 570-575	48		0.001		1.5	0.04
RS-416 575-580	142		0.004		2.3	0.07
RS-416 580-585	205		0.006		3.5	0.10
RS-416 585-590	86		0.003		2.8	0.08
RS-416 590-595	123		0.004		2.5	0.07
RS-416 595-600	201		0.006		2.4	0.07

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* NEWMONT EXPLORATION LTD. *
****

JOB NUMBER: 29-0521-311

WELL NAME: RS-416

LOCATION: ROSEBUD MINE

SURVEY DATE: 11/21/97

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 048.50

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

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

****
*** THIS DIRECTIONAL SURVEY REPORT IS ****
** CORRECT TO THE BEST OF MY KNOWLEDGE ***
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
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****
COMPANY REPRESENTATIVE
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0521-311 WELL NAME: RS-416

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	0.07	0.107	-89.71	335.75	0.12 N	0.05 W	0.58	0.29	0.13	AT 335.75	058.81
100.0	100.00	0.60	0.315	-88.90	290.47	0.40 N	0.55 W	1.84	0.92	0.68	AT 305.75	059.74
150.0	149.98	1.66	0.625	-88.58	297.87	0.86 N	1.55 W	0.72	0.36	1.77	AT 298.89	061.18
200.0	199.96	3.12	0.768	-87.98	274.03	1.21 N	2.98 W	1.84	0.92	3.21	AT 292.07	062.76
250.0	249.93	4.93	0.790	-87.85	283.55	1.49 N	4.77 W	0.74	0.37	5.00	AT 287.34	064.13
300.0	299.89	6.99	0.955	-87.42	282.20	1.95 N	6.78 W	0.87	0.43	7.05	AT 286.02	065.71
350.0	349.83	9.44	1.017	-86.95	277.58	2.36 N	9.20 W	1.04	0.52	9.50	AT 284.39	067.08
400.0	399.75	12.22	0.935	-86.67	275.60	2.68 N	11.96 W	0.60	0.30	12.26	AT 282.62	068.59
450.0	449.66	15.17	0.789	-86.56	275.20	2.96 N	14.90 W	0.23	0.11	15.19	AT 281.22	070.46
500.0	499.56	18.39	0.697	-86.06	277.82	3.32 N	18.10 W	1.05	0.53	18.40	AT 280.41	071.61
550.0	549.44	21.87	0.668	-85.96	277.72	3.79 N	21.54 W	0.20	0.10	21.88	AT 279.99	073.05
600.0	599.29	25.66	0.460	-85.32	272.85	4.13 N	25.33 W	1.48	0.74	25.66	AT 279.27	074.20
650.0	649.12	29.82	0.208	-85.10	276.62	4.48 N	29.49 W	0.77	0.38	29.82	AT 278.64	075.50
700.0	698.93	34.09	0.080	-85.10	276.43	4.97 N	33.73 W	0.03	0.02	34.09	AT 278.37	075.79
750.0	748.74	38.45	-0.003	-84.90	277.83	5.51 N	38.05 W	0.47	0.23	38.45	AT 278.24	075.43

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*                         ********                          *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                         ********                          *
*   750.0 FEET EQUALS     38.45    FEET AT   278.24         *
*                         ********                          *
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* NEWMONT EXPLORATION LTD. *
****

JOB NUMBER: 29-0521-311

WELL NAME: RS-416 / VS 305.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 11/21/97

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 048.50

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 035.00

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

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

****
****
*** THIS DIRECTIONAL SURVEY REPORT IS ****
** CORRECT TO THE BEST OF MY KNOWLEDGE ***
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0521-311 WELL NAME: RS-416 / 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	0.06	-0.109	-89.71	335.75	0.12 N	0.05 W	0.58	0.29	0.13	AT 335.75	058.81
100.0	100.00	0.01	-0.682	-88.90	290.47	0.40 N	0.55 W	1.84	0.92	0.68	AT 305.75	059.74
150.0	149.98	-0.19	-1.761	-88.58	297.87	0.86 N	1.55 W	0.72	0.36	1.77	AT 298.89	061.18
200.0	199.96	-0.72	-3.132	-87.98	274.03	1.21 N	2.98 W	1.84	0.92	3.21	AT 292.07	062.76
250.0	249.93	-1.52	-4.760	-87.85	283.55	1.49 N	4.77 W	0.74	0.37	5.00	AT 287.34	064.13
300.0	299.89	-2.29	-6.671	-87.42	282.20	1.95 N	6.78 W	0.87	0.43	7.05	AT 286.02	065.71
350.0	349.83	-3.34	-8.889	-86.95	277.58	2.36 N	9.20 W	1.04	0.52	9.50	AT 284.39	067.08
400.0	399.75	-4.67	-11.335	-86.67	275.60	2.68 N	11.96 W	0.60	0.30	12.26	AT 282.62	068.59
450.0	449.66	-6.13	-13.902	-86.56	275.20	2.96 N	14.90 W	0.23	0.11	15.19	AT 281.22	070.46
500.0	499.56	-7.66	-16.732	-86.06	277.82	3.32 N	18.10 W	1.05	0.53	18.40	AT 280.41	071.61
550.0	549.44	-9.25	-19.825	-85.96	277.72	3.79 N	21.54 W	0.20	0.10	21.88	AT 279.99	073.05
600.0	599.29	-11.14	-23.117	-85.32	272.85	4.13 N	25.33 W	1.48	0.74	25.66	AT 279.27	074.20
650.0	649.12	-13.24	-26.723	-85.10	276.62	4.48 N	29.49 W	0.77	0.38	29.82	AT 278.64	075.50
700.0	698.93	-15.28	-30.477	-85.10	276.43	4.97 N	33.73 W	0.03	0.02	34.09	AT 278.37	075.79
750.0	748.74	-17.31	-34.330	-84.90	277.83	5.51 N	38.05 W	0.47	0.23	38.45	AT 278.24	075.43

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*                         ********                          *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                         ********                          *
*  750.0 FEET EQUALS      38.45    FEET AT   278.24         *
*                         ********                          *
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* NEWMONT EXPLORATION LTD. *
****

JOB NUMBER: 29-0521-311

WELL NAME: RS-416 / VS 035.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 11/21/97

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 048.50

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 125.00

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

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

****
****
*** THIS DIRECTIONAL SURVEY REPORT IS ****
** CORRECT TO THE BEST OF MY KNOWLEDGE ***
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
**
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**
COMPANY REPRESENTATIVE
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0521-311 WELL NAME: RS-416 / VS 035.0C

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	-0.11	-0.065	-89.71	335.75	0.12 N	0.05 W	0.58	0.29	0.13	AT 335.75	058.81
100.0	100.00	-0.68	-0.009	-88.90	290.47	0.40 N	0.55 W	1.84	0.92	0.68	AT 305.75	059.74
150.0	149.98	-1.76	0.188	-88.58	297.87	0.86 N	1.55 W	0.72	0.36	1.77	AT 298.89	061.18
200.0	199.96	-3.13	0.719	-87.98	274.03	1.21 N	2.98 W	1.84	0.92	3.21	AT 292.07	062.76
250.0	249.93	-4.76	1.515	-87.85	283.55	1.49 N	4.77 W	0.74	0.37	5.00	AT 287.34	064.13
300.0	299.89	-6.67	2.294	-87.42	282.20	1.95 N	6.78 W	0.87	0.43	7.05	AT 286.02	065.71
350.0	349.83	-8.89	3.343	-86.95	277.58	2.36 N	9.20 W	1.04	0.52	9.50	AT 284.39	067.08
400.0	399.75	-11.33	4.668	-86.67	275.60	2.68 N	11.96 W	0.60	0.30	12.26	AT 282.62	068.59
450.0	449.66	-13.90	6.127	-86.56	275.20	2.96 N	14.90 W	0.23	0.11	15.19	AT 281.22	070.46
500.0	499.56	-16.73	7.657	-86.06	277.82	3.32 N	18.10 W	1.05	0.53	18.40	AT 280.41	071.61
550.0	549.44	-19.82	9.249	-85.96	277.72	3.79 N	21.54 W	0.20	0.10	21.88	AT 279.99	073.05
600.0	599.29	-23.12	11.142	-85.32	272.85	4.13 N	25.33 W	1.48	0.74	25.66	AT 279.27	074.20
650.0	649.12	-26.72	13.242	-85.10	276.62	4.48 N	29.49 W	0.77	0.38	29.82	AT 278.64	075.50
700.0	698.93	-30.48	15.279	-85.10	276.43	4.97 N	33.73 W	0.03	0.02	34.09	AT 278.37	075.79
750.0	748.74	-34.33	17.314	-84.90	277.83	5.51 N	38.05 W	0.47	0.23	38.45	AT 278.24	075.43

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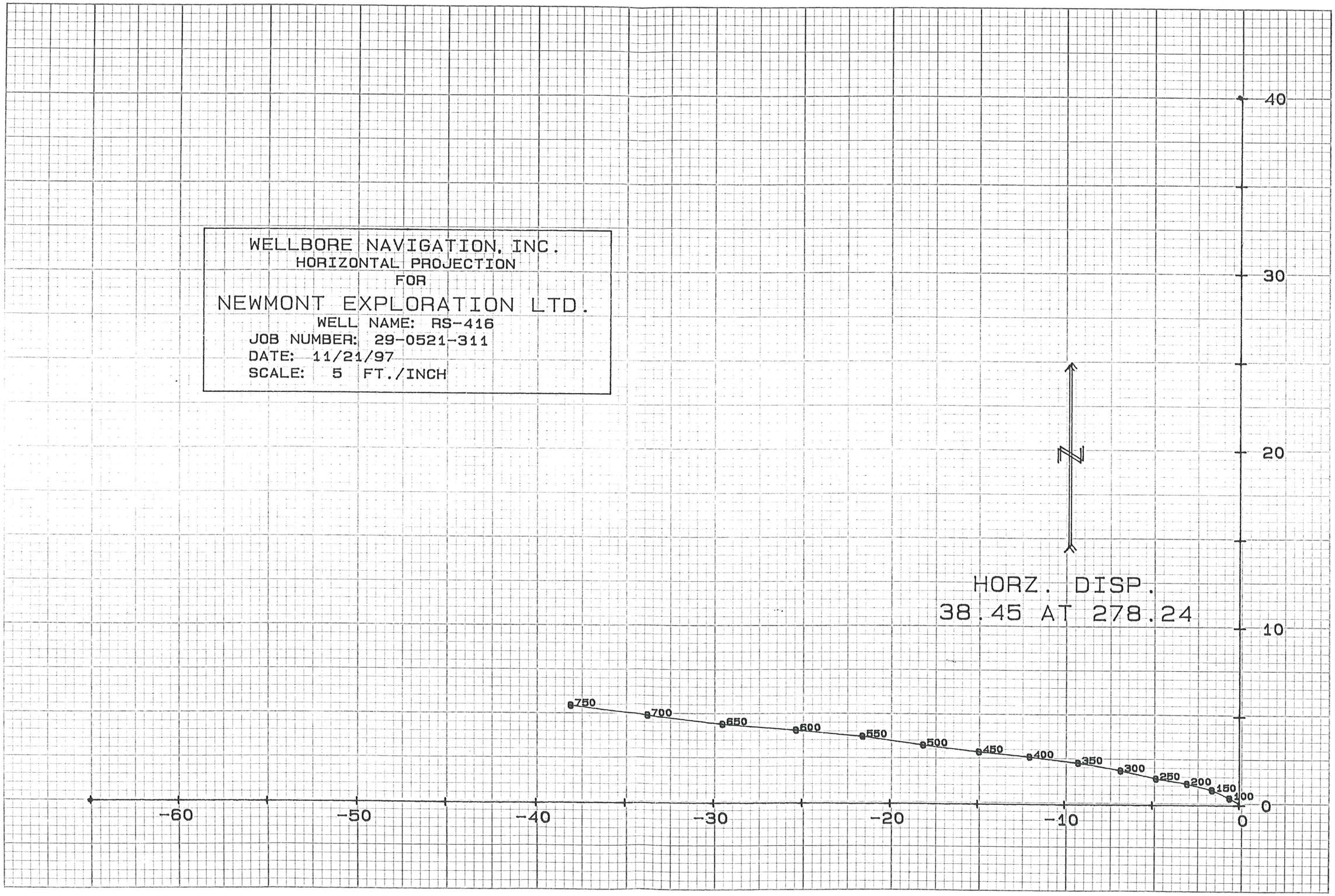
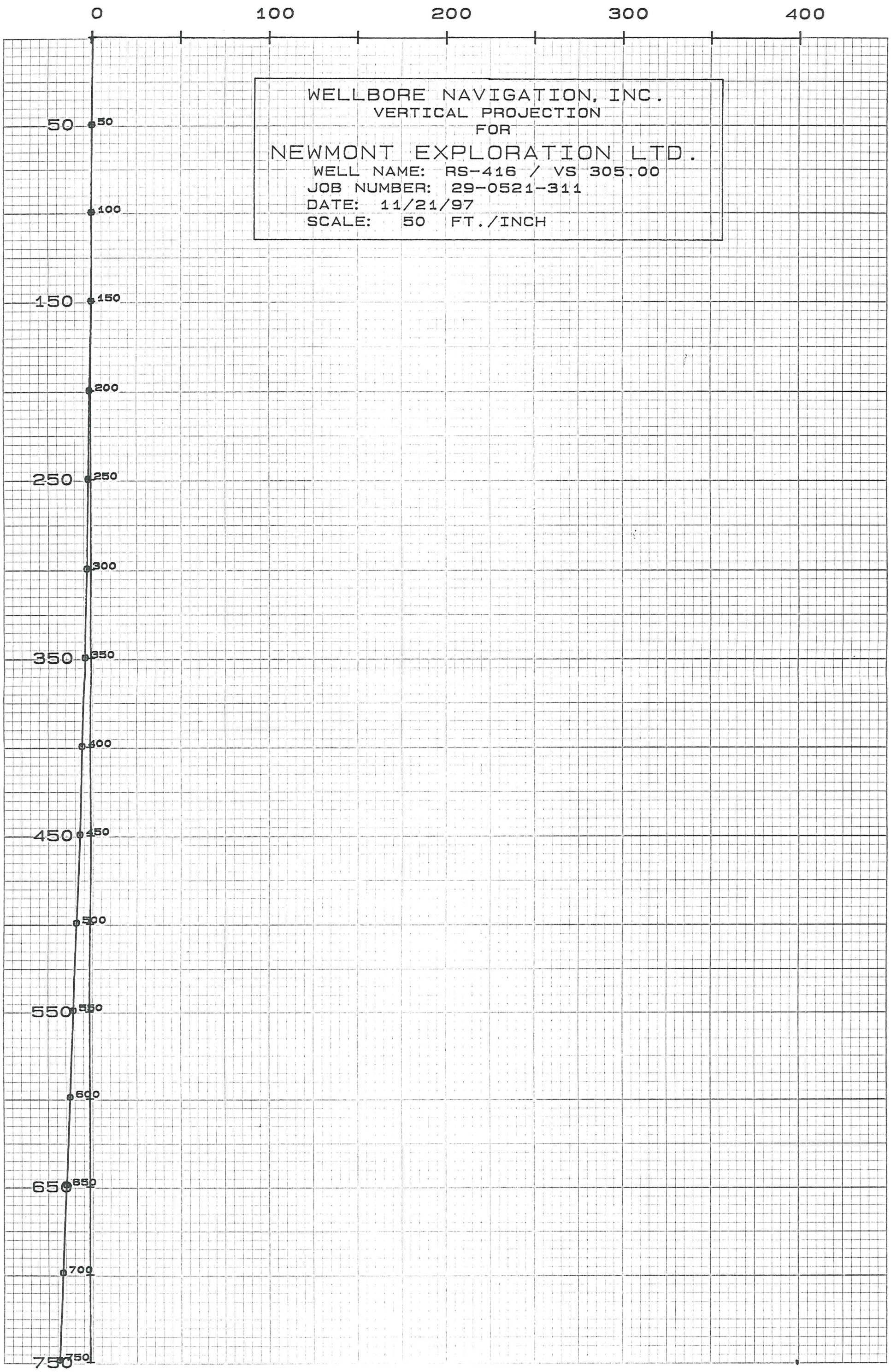
* ******** *
* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
* ******** *
* 750.0 FEET EQUALS 38.45 FEET AT 278.24 *
* ******** *
****

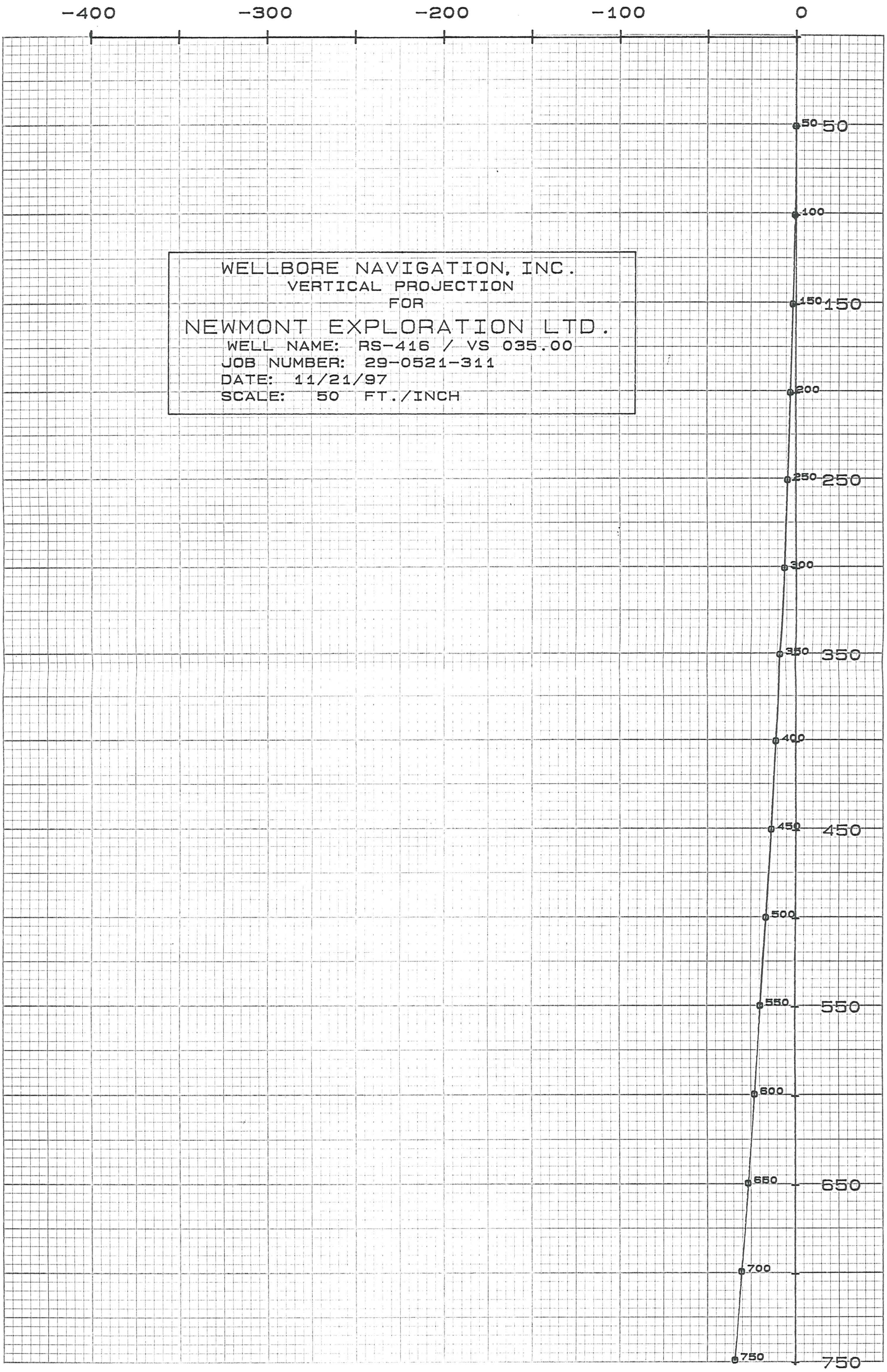
WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR
NEWMONT EXPLORATION LTD.
WELL NAME: RS-416
JOB NUMBER: 29-0521-311
DATE: 11/21/97
SCALE: 5 FT./INCH



STARLIGHT PRINTING (801) 467-2841



STARLIGHT PRINTING (801) 467-2841



WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* NEWMONT GOLD COMPANY *
****

JOB NUMBER: 29-0521-311

WELL NAME: RS-416 / VERTICAL

LOCATION: ROSEBUD MINE

SURVEY DATE: 10/19/97

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 333.50

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

COMMENTS: **** EKLUND ****
** JOHN WELCH **

****
****
*** 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: 29-0521-311

WELL NAME: RS-416 / VERTICAL

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	0.15	0.144	-89.52	322.38	0.17 N	0.13 W	0.96	0.48	0.21	AT 322.38	075.79
100.0	99.99	0.73	0.491	-88.92	304.52	0.60 N	0.64 W	1.28	0.64	0.88	AT 312.92	074.56
150.0	149.98	1.72	0.782	-88.70	287.87	1.04 N	1.57 W	0.82	0.41	1.88	AT 303.48	073.12
200.0	199.97	3.04	0.871	-88.25	279.10	1.33 N	2.87 W	1.01	0.51	3.16	AT 294.97	072.26
250.0	249.94	4.78	0.804	-87.75	274.97	1.54 N	4.60 W	1.04	0.52	4.85	AT 288.52	071.11
300.0	299.89	6.93	0.699	-87.32	277.22	1.77 N	6.73 W	0.88	0.44	6.96	AT 284.74	070.10
350.0	349.83	9.45	0.639	-86.90	277.93	2.11 N	9.23 W	0.84	0.42	9.47	AT 282.85	068.59
400.0	399.75	12.27	0.636	-86.64	279.87	2.54 N	12.02 W	0.56	0.28	12.28	AT 281.95	067.65
450.0	449.66	15.27	0.626	-86.46	277.77	3.00 N	14.99 W	0.44	0.22	15.29	AT 281.33	067.15
500.0	499.55	18.52	0.542	-86.10	277.25	3.43 N	18.21 W	0.72	0.36	18.53	AT 280.66	064.92
550.0	549.42	22.12	0.367	-85.63	275.25	3.82 N	21.79 W	0.98	0.49	22.12	AT 279.93	065.21
600.0	599.27	25.93	-0.002	-85.58	271.67	4.05 N	25.61 W	0.56	0.28	25.93	AT 278.98	066.93

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*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*   600.0 FEET EQUALS    25.93   FEET AT  278.98            *
*                          ********                         *
*************************************************************
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* NEWMONT GOLD COMPANY *
****

JOB NUMBER: 29-0521-311

WELL NAME: RS-416 / VS 305.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 10/19/97

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 333.50

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 035.00

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

COMMENTS: **** EKLUND ****
** JOHN WELCH **

****
*** 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: 29-0521-311

WELL NAME: RS-416 / 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	0.06	-0.200	-89.52	322.38	0.17 N	0.13 W	0.96	0.48	0.21	AT 322.38	075.79
100.0	99.99	0.12	-0.871	-88.92	304.52	0.60 N	0.64 W	1.28	0.64	0.88	AT 312.92	074.56
150.0	149.98	-0.05	-1.884	-88.70	287.87	1.04 N	1.57 W	0.82	0.41	1.88	AT 303.48	073.12
200.0	199.97	-0.55	-3.113	-88.25	279.10	1.33 N	2.87 W	1.01	0.51	3.16	AT 294.97	072.26
250.0	249.94	-1.38	-4.649	-87.75	274.97	1.54 N	4.60 W	1.04	0.52	4.85	AT 288.52	071.11
300.0	299.89	-2.41	-6.533	-87.32	277.22	1.77 N	6.73 W	0.88	0.44	6.96	AT 284.74	070.10
350.0	349.83	-3.57	-8.771	-86.90	277.93	2.11 N	9.23 W	0.84	0.42	9.47	AT 282.85	068.59
400.0	399.75	-4.81	-11.302	-86.64	279.87	2.54 N	12.02 W	0.56	0.28	12.28	AT 281.95	067.65
450.0	449.66	-6.14	-14.001	-86.46	277.77	3.00 N	14.99 W	0.44	0.22	15.29	AT 281.33	067.15
500.0	499.55	-7.64	-16.878	-86.10	277.25	3.43 N	18.21 W	0.72	0.36	18.53	AT 280.66	064.92
550.0	549.42	-9.37	-20.037	-85.63	275.25	3.82 N	21.79 W	0.98	0.49	22.12	AT 279.93	065.21
600.0	599.27	-11.38	-23.301	-85.58	271.67	4.05 N	25.61 W	0.56	0.28	25.93	AT 278.98	066.93

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*************************************************************
*                         ********                          *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                         ********                          *
*   600.0 FEET EQUALS     25.93    FEET AT  278.98          *
*                         ********                          *
*************************************************************
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* NEWMONT GOLD COMPANY *
****

JOB NUMBER: 29-0521-311

WELL NAME: RS-416 / VS 035.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 10/19/97

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 333.50

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 125.00

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

COMMENTS: **** EKLUND ****
** JOHN WELCH **

****
****
*** 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: 29-0521-311 WELL NAME: RS-416 / 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	-0.20	-0.063	-89.52	322.38	0.17 N	0.13 W	0.96	0.48	0.21	AT 322.38	075.79
100.0	99.99	-0.87	-0.121	-88.92	304.52	0.60 N	0.64 W	1.28	0.64	0.88	AT 312.92	074.56
150.0	149.98	-1.88	0.050	-88.70	287.87	1.04 N	1.57 W	0.82	0.41	1.88	AT 303.48	073.12
200.0	199.97	-3.11	0.550	-88.25	279.10	1.33 N	2.87 W	1.01	0.51	3.16	AT 294.97	072.26
250.0	249.94	-4.65	1.375	-87.75	274.97	1.54 N	4.60 W	1.04	0.52	4.85	AT 288.52	071.11
300.0	299.89	-6.53	2.411	-87.32	277.22	1.77 N	6.73 W	0.88	0.44	6.96	AT 284.74	070.10
350.0	349.83	-8.77	3.571	-86.90	277.93	2.11 N	9.23 W	0.84	0.42	9.47	AT 282.85	068.59
400.0	399.75	-11.30	4.809	-86.64	279.87	2.54 N	12.02 W	0.56	0.28	12.28	AT 281.95	067.65
450.0	449.66	-14.00	6.138	-86.46	277.77	3.00 N	14.99 W	0.44	0.22	15.29	AT 281.33	067.15
500.0	499.55	-16.88	7.636	-86.10	277.25	3.43 N	18.21 W	0.72	0.36	18.53	AT 280.66	064.92
550.0	549.42	-20.04	9.373	-85.63	275.25	3.82 N	21.79 W	0.98	0.49	22.12	AT 279.93	065.21
600.0	599.27	-23.30	11.377	-85.58	271.67	4.05 N	25.61 W	0.56	0.28	25.93	AT 278.98	066.93

****
* ******** *
* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
* ******** *
* 600.0 FEET EQUALS 25.93 FEET AT 278.98 *
* ******** *
****

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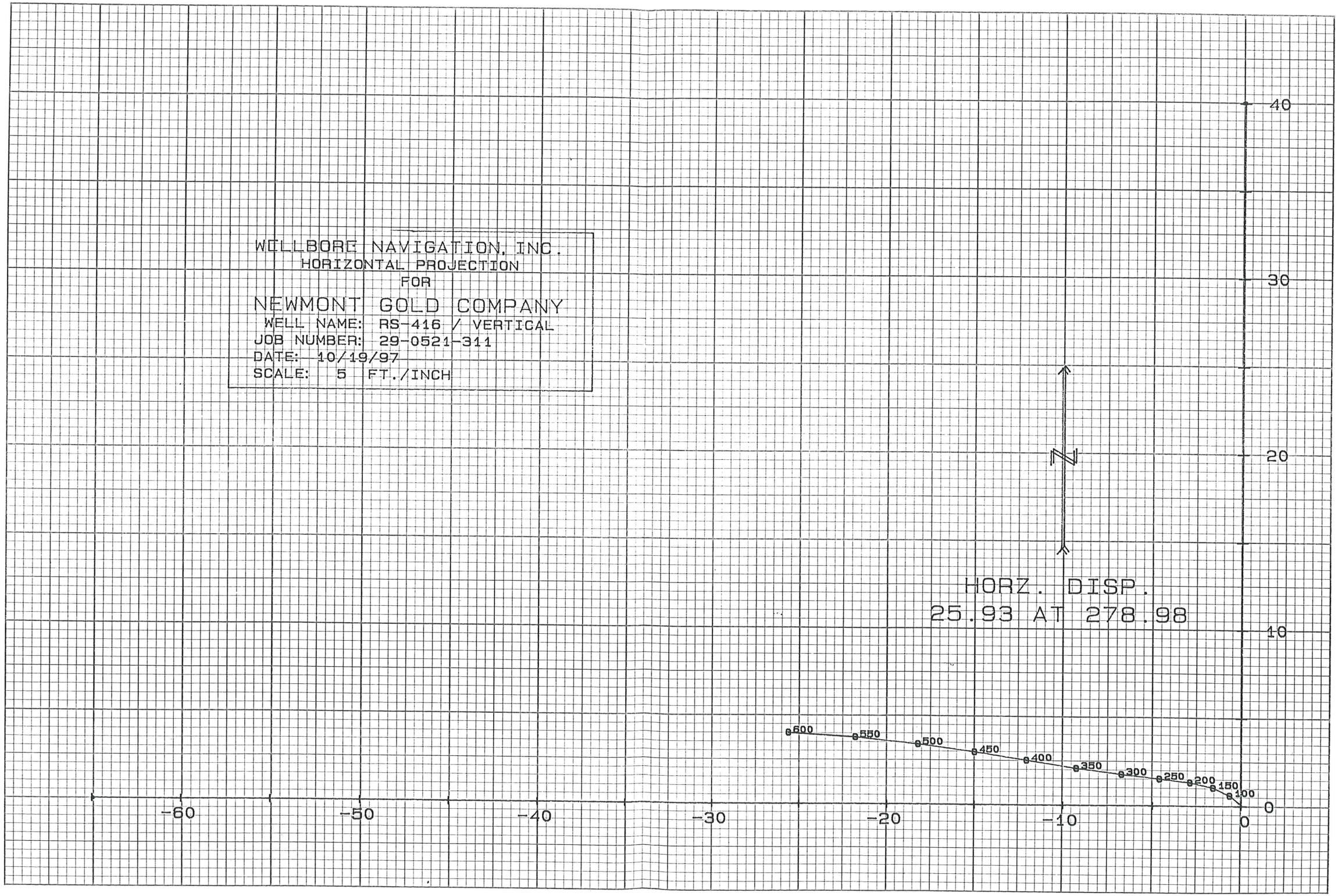

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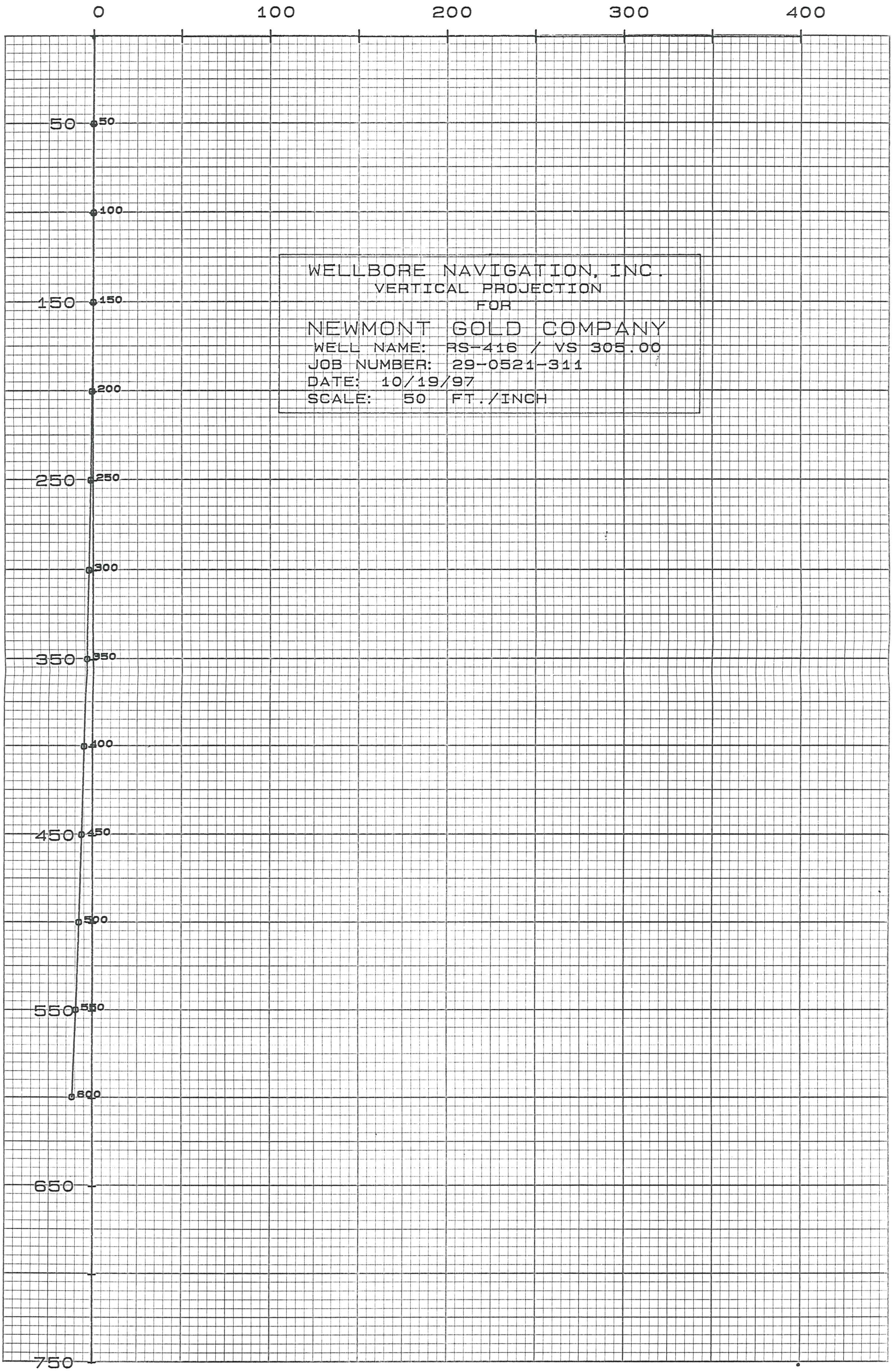

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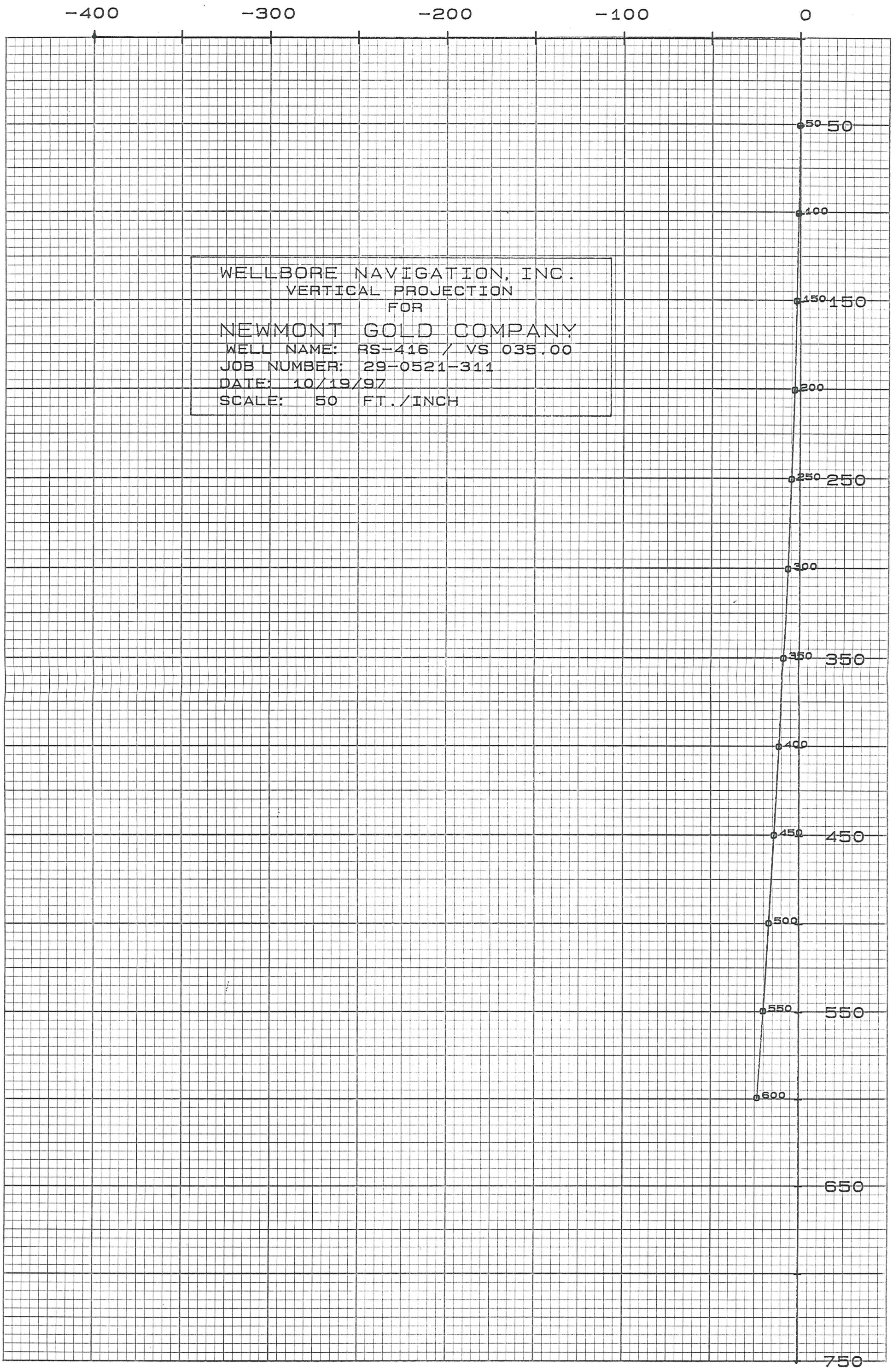

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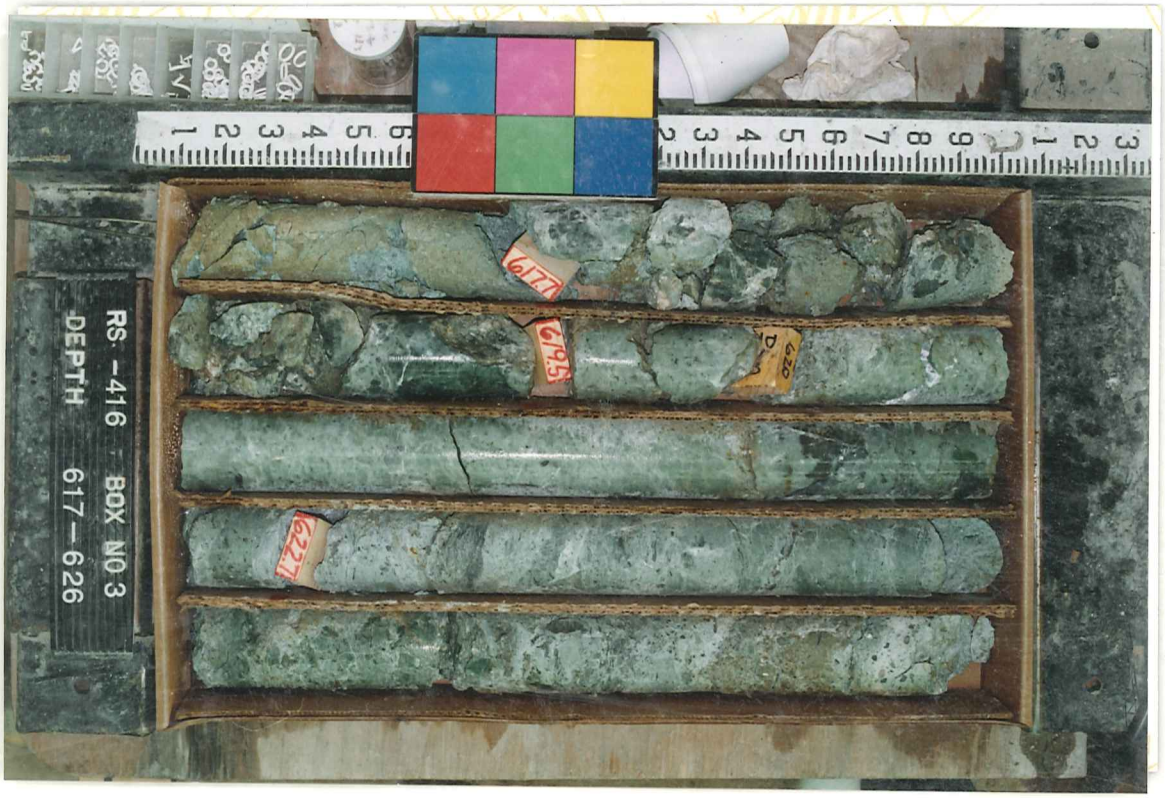
DEPTH 608 - 617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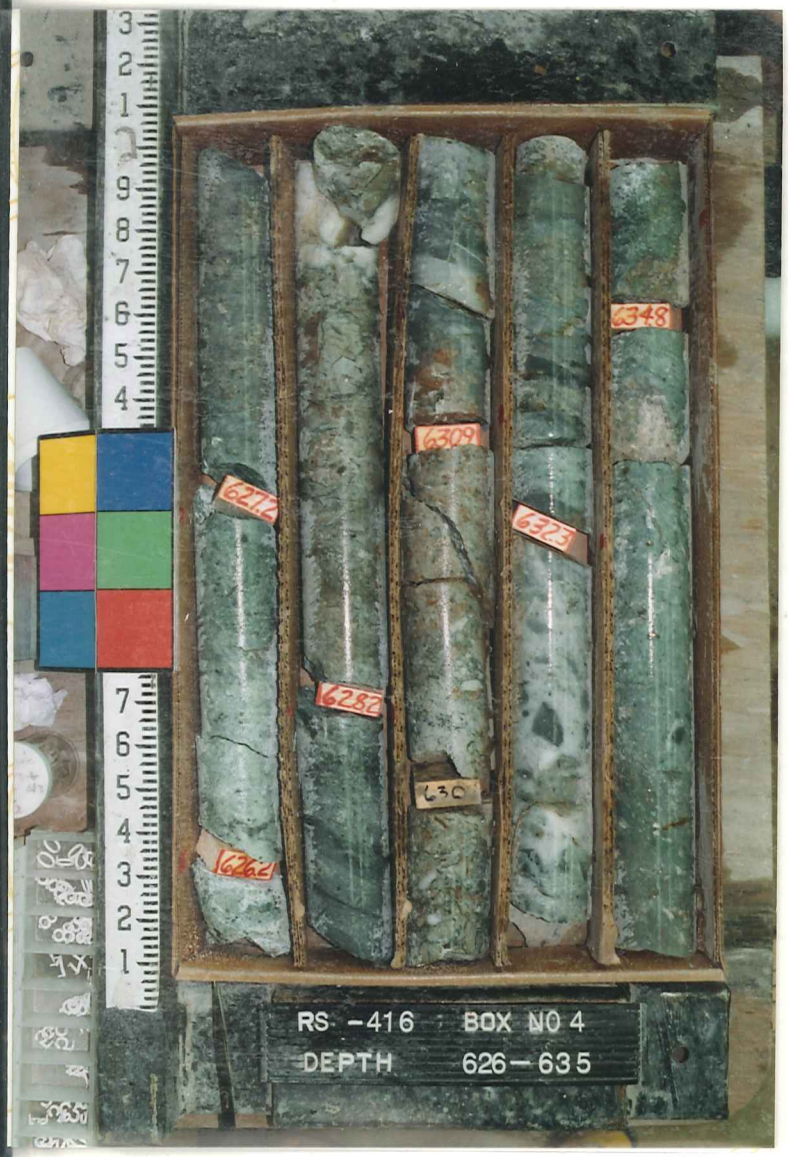
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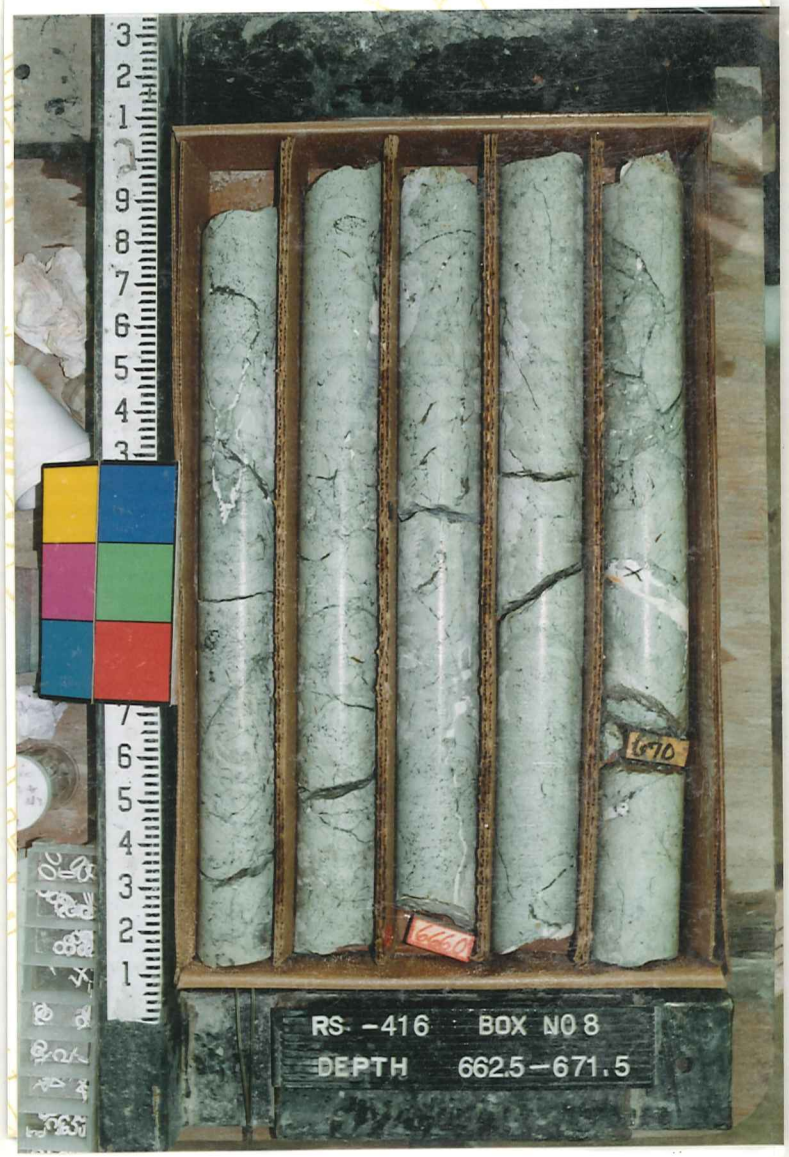
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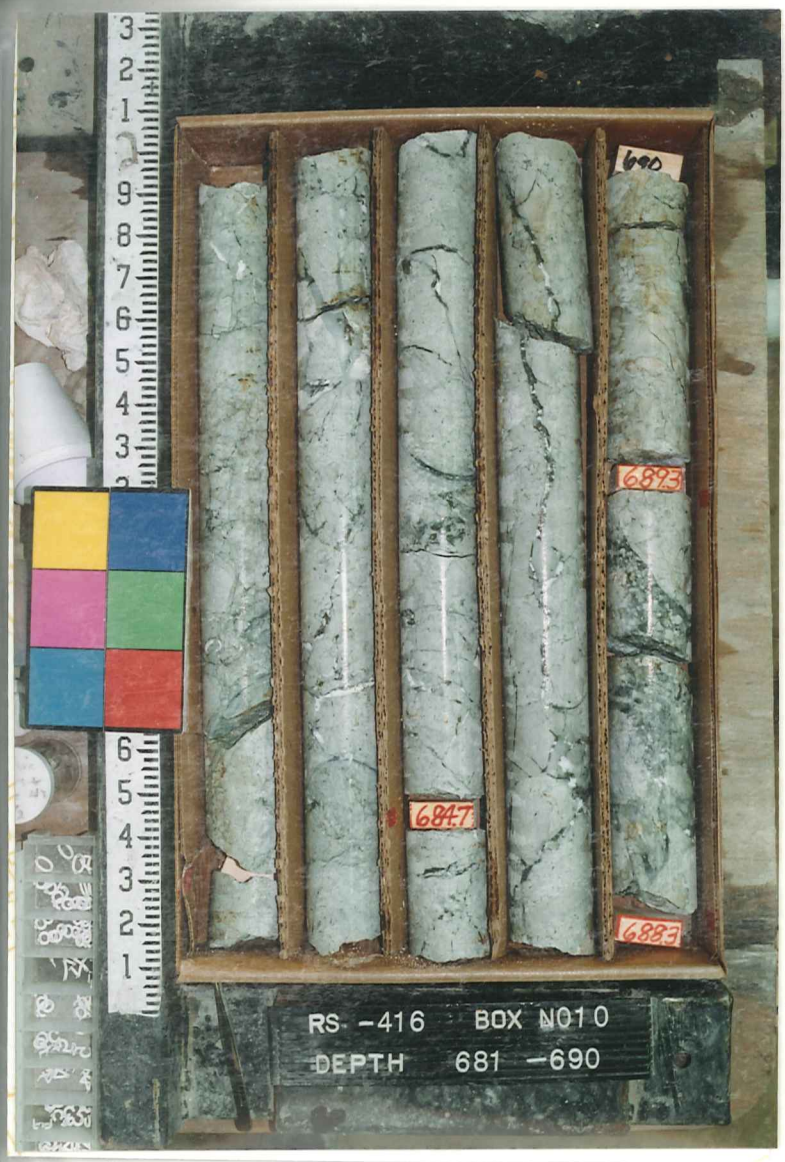
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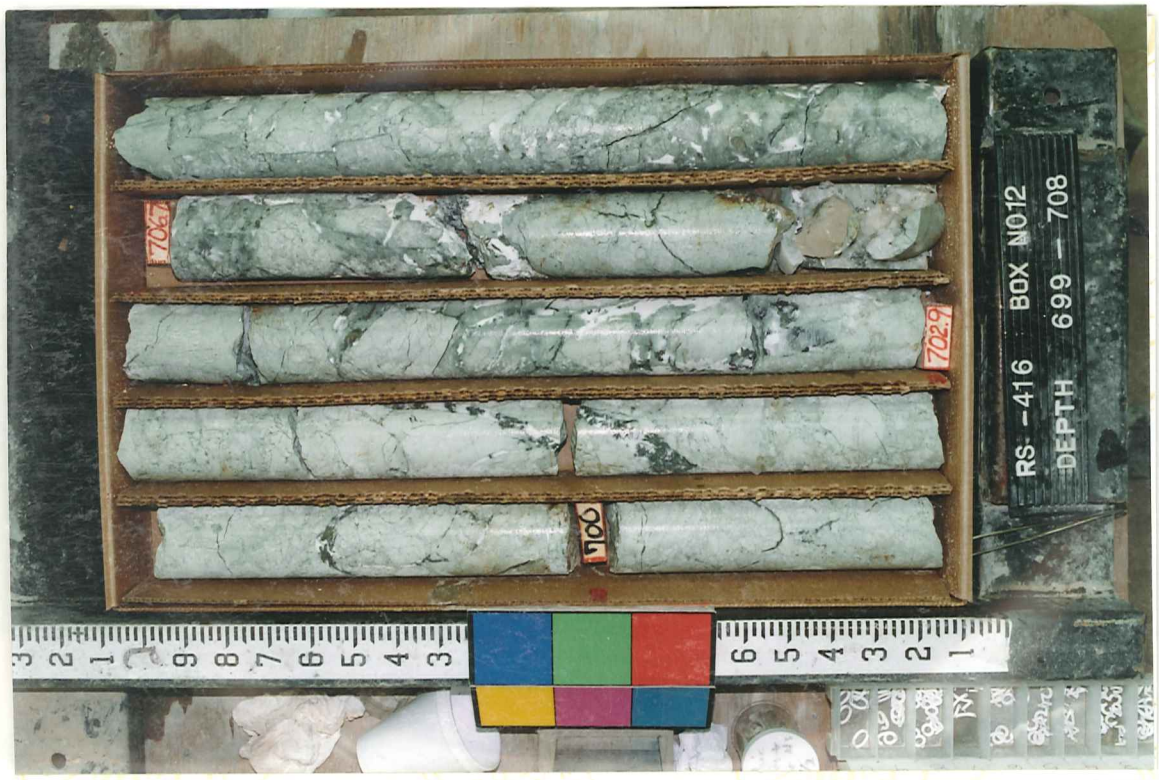
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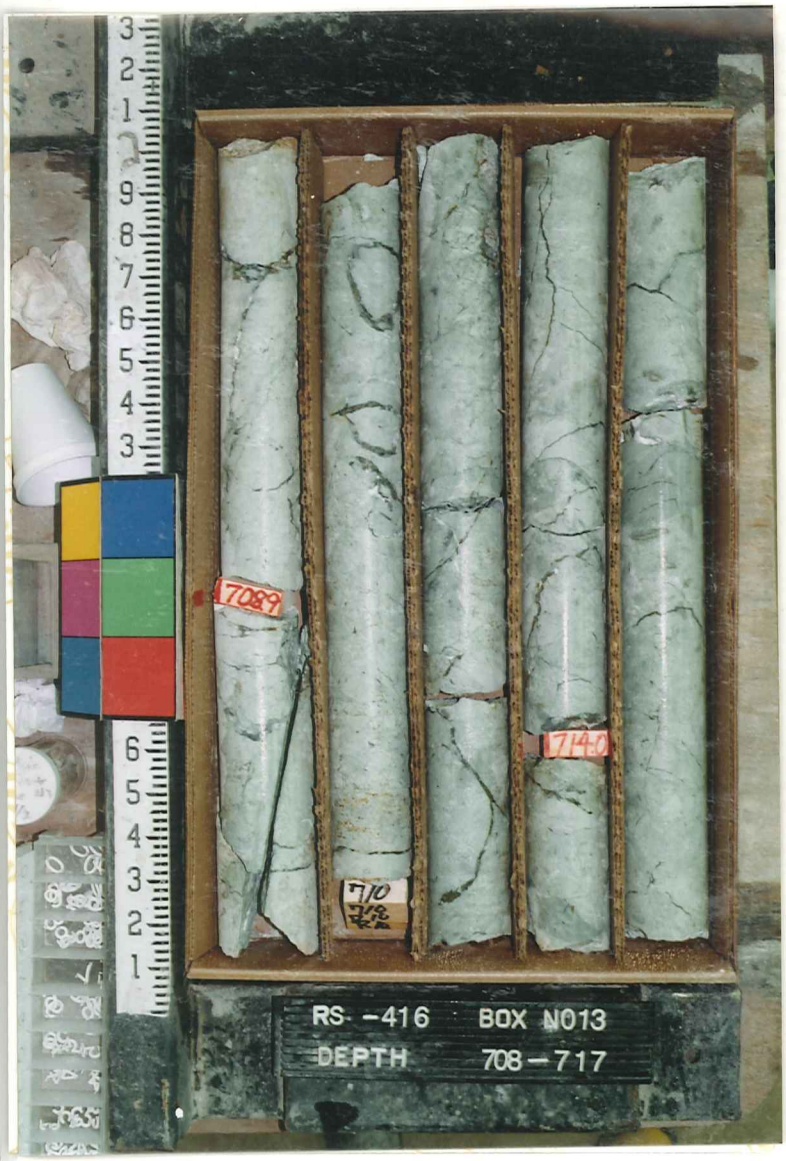
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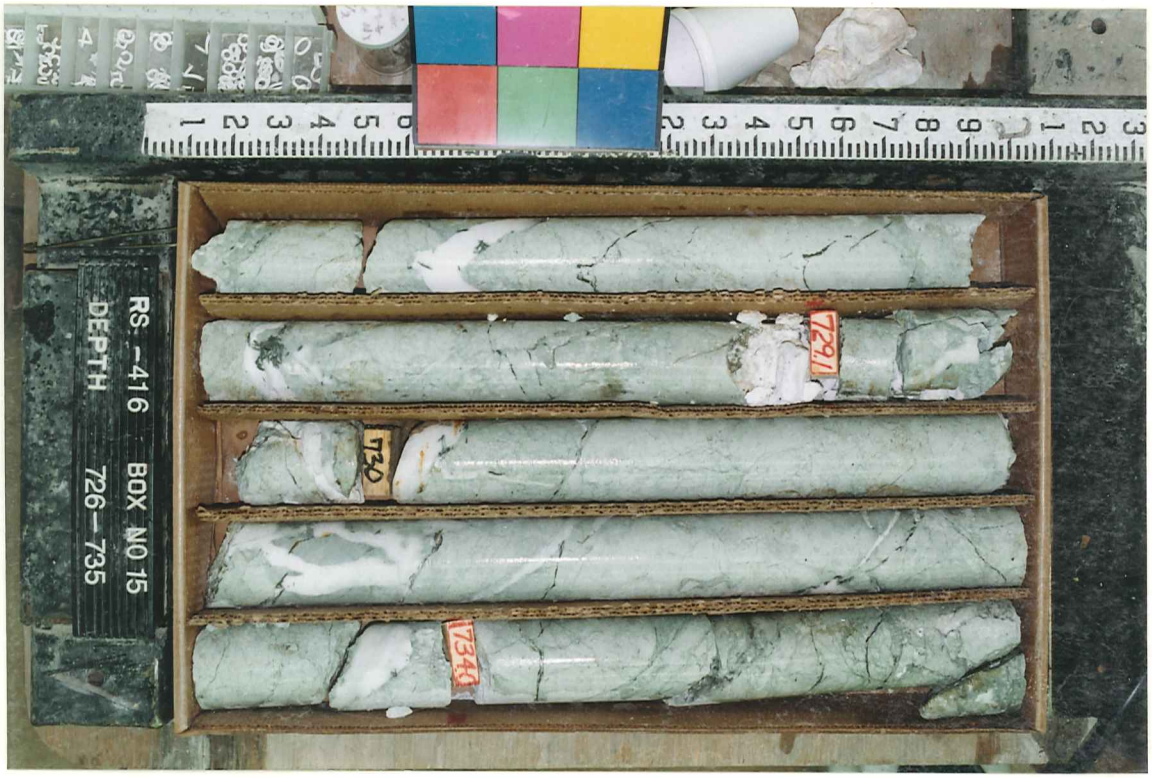
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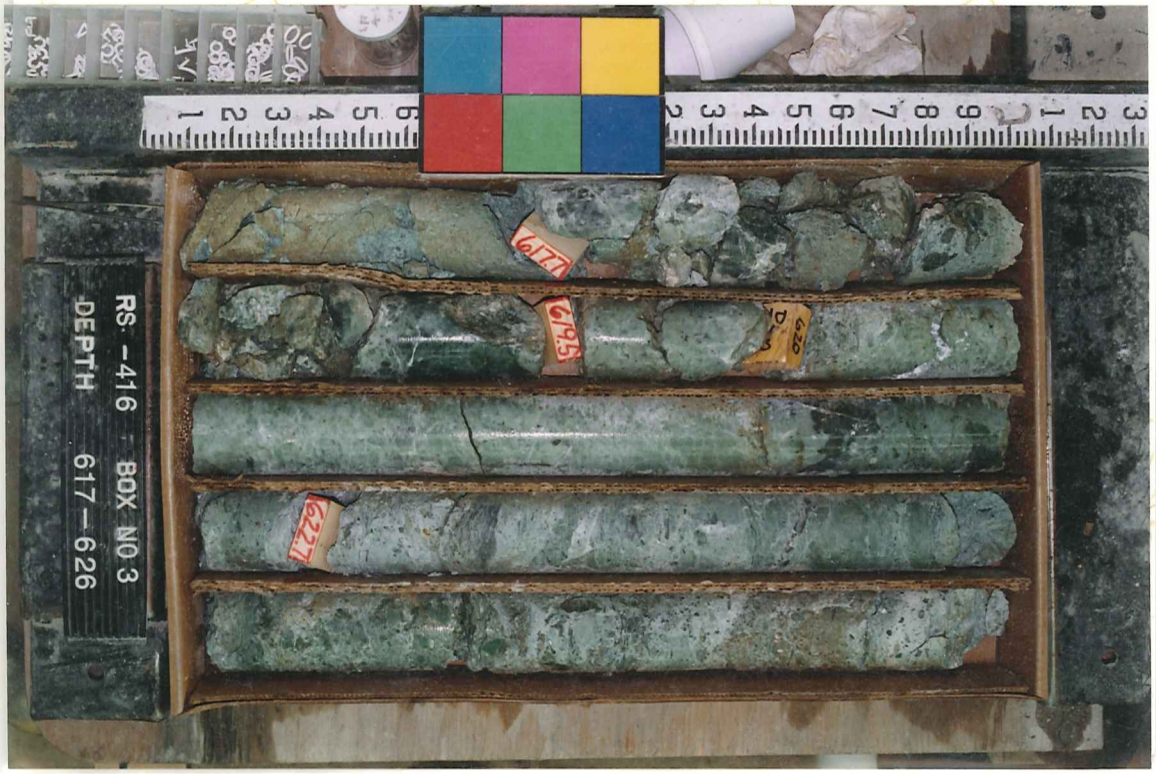
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DEPTH 635 — 644
6382
640
6416
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DEPTH 644 — 653
6447
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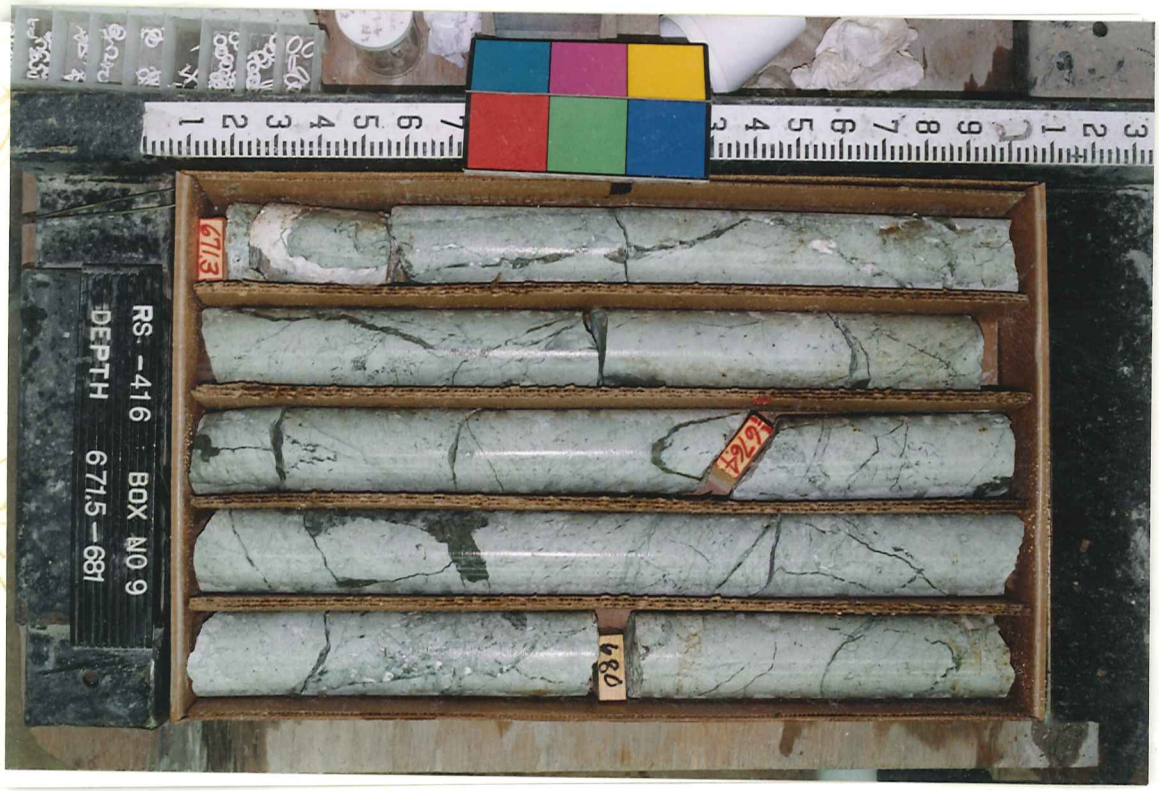
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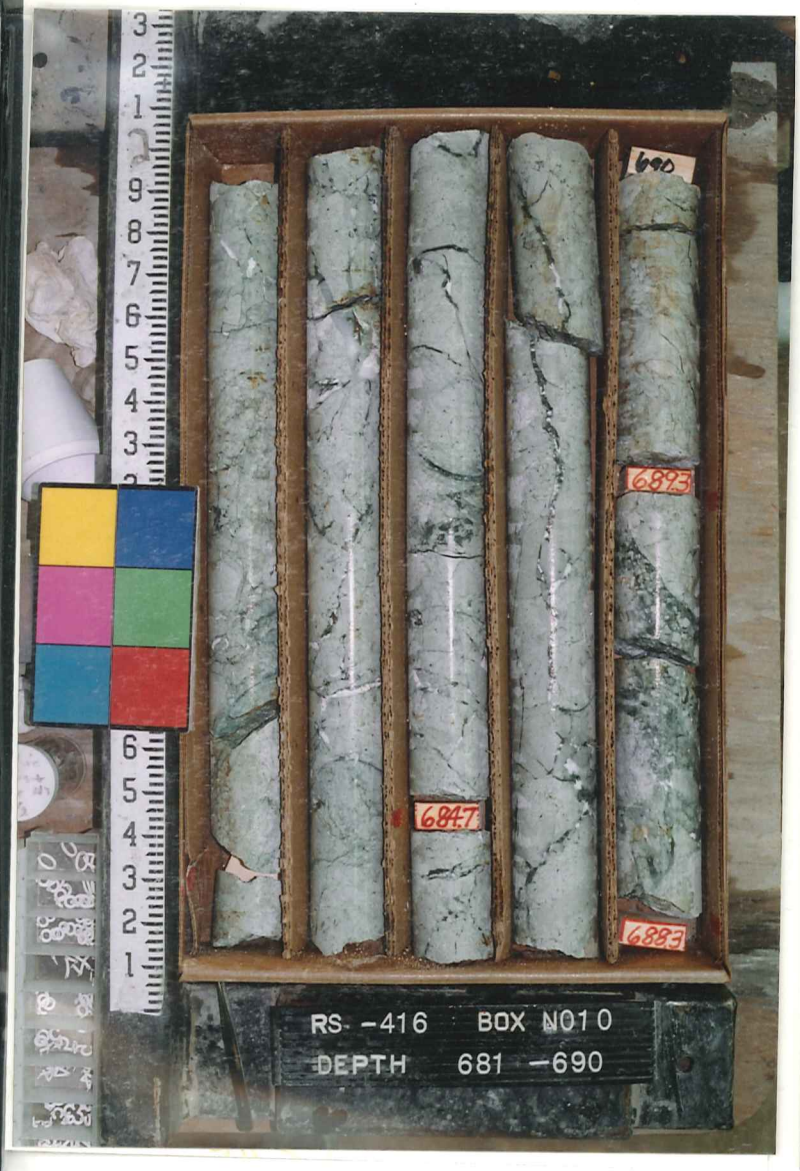
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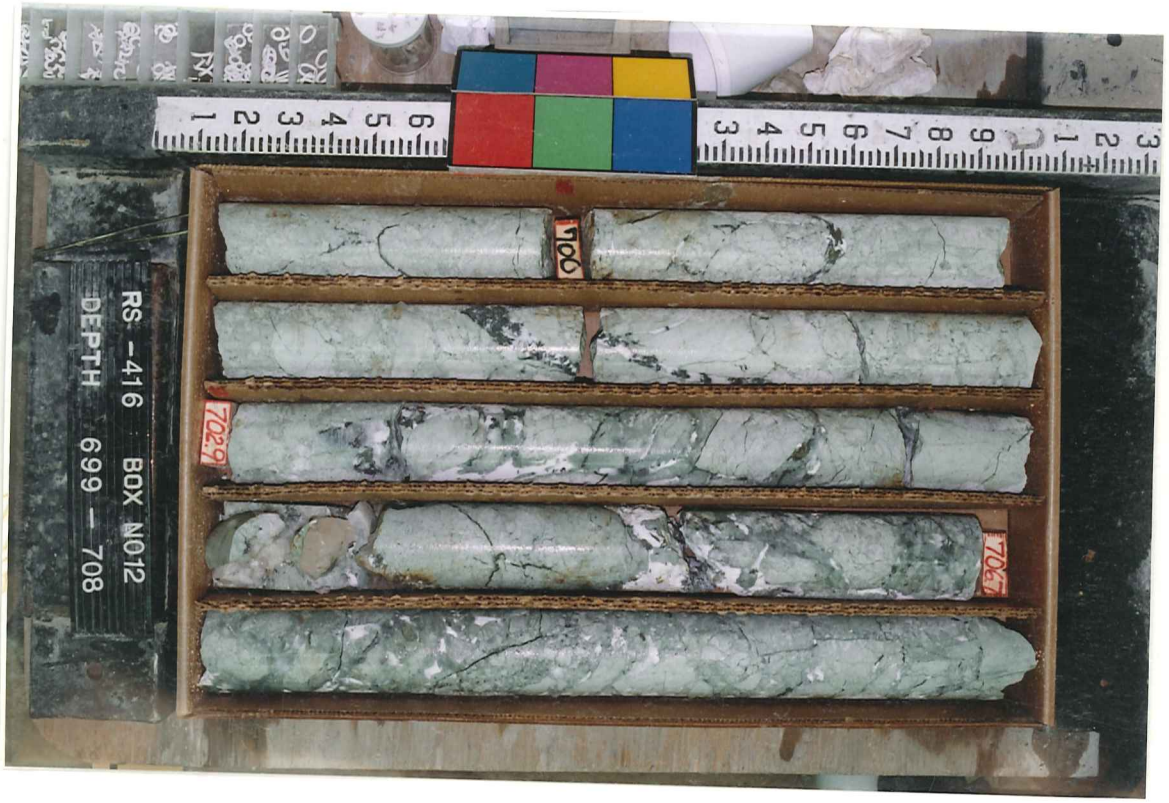
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DEPTH 708 – 717

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DEPTH 717 – 726

RS -416 BOX N015
DEPTH 726 – 735

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198 12 421 6912 N N N N 2