60001453

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 96-370
AUTHOR	M. Brady; R. Dixon; C. Kortemeir; S King; M. Allen; C. Muerhoff; M. Linder; B. Marchello, R. Silva; V. Reid; R. Pearrow; C. Held; C. Dines.
DATE OF DOC(S)	1996
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Santa Fe Pacific Gold Corp. North Dozer Hill
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 1131; handwritten notes; directional surveys; photographs, negatives; geochemistry 92p 1 bag of negatives

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

	Initials	Date
SS:	DD	5/22/08
DB:	mch	
SCANNED:		

Revised: 1/22/08

96-370

6000 1453 4010

60001453

SANTA FE PACIFIC GOLD — DRILL HOLE SUMMARY

Project: Rosebud Location: Dozer Hill Drill Hole No.: 96-370

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

Purpose: infill/model verification Results:

Date Started: Date Finished: 12/15/97

Grid System: NV Northing: 2,204,670 Easting: 482,225 Elevation: 5,314

Collar Az/Inc.: — / -90 Drill Site: Total Depth: 1130.7

Geologist(s): Kortemeier, Dixon, Brady Log Date(s): 12/96 Laboratory: R.B. Mina

HOLE CONSTRUCTION AND HISTORY CASING (INTERVAL): 0-500

From	To	Hole Type/Size	Started	Completed	Contractor
0	500	RC / 5 3/4		11/26/96	Eklund
500	1130.7	Core / HQ		12/15/96	Longyear
		/			
		/			

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

DOWNHOLE SURVEYS

Directional Date:

Other

Depth (ft)	Azimuth	Inclination
	See Welnav Report	

Water Table Depth:

Water Flow Rate:

COMMENTS

No collar survey

N. DOZER Hill

→ UNCLEAR.

Surveyed co-ordinates? or
were they site (pad) co-ordinates?

→ Field exam needed

—RBV, 9/22/98

Filename: drbLOG.xls

PROJECT: ROSEBUD	STATE: Nevada	NORTHING: SITE:	TOTAL Page 1/2
LOGD BY: CPK	COUNTY: Pershing	EASTING:	BEARING:
UTM#: NK 11-10-06	SEC. T. N., R.	ELEVATION:	ANGLE:

HOLE#: DRB 96-37C

DRILLING NOTES

TIME | Dates, H20, Casing, Bits, Hole C

SURFACE CASING 0-20'
CORE CASING 0-500'

DEPTH in FEET

STRATIGRAPHY/LITHOLOGY

Depth	COLOR (WET)	ALUVM (1)	BADGER (2)	CHOCOLT (3)	BUD (4)	BRADY (5)	MKR POR (6)	LBUD (7)	DOZER (8)	WILDROS (9)	SURGTUF (10)	ASH FLO (11)	LAVA (12)	AUTOBXA (13)	INTRUSV (14)	BASALT (15)	ANDESIT (16)	RHYOLIT (17)
10	BROWN																	
	TAN																	
20	"																	
	GRN/BRN																	
30	"																	
	"																	
40	PALE GRN																	
	"																	
50	"																	
	"																	
60	GLDN																	
	BRWN																	
70	GRAY																	
	BL GRN																	
80																		
90	BRN/TAN																	
	"																	
100	WHT																	
	"																	
110	TAN/PALE																	
	GREEN																	
120																		
130	VY PALE																	
	TAN																	
140																		
150																		
160																		
170																		
180																		
190																		
200																		
210	BRWN/																	
	WHT																	
220																		
230																		
240																		
250																		

STRCT: BROKEN (15), GOUGE (16)

GRAPHIC

ALTERATION & MINERALIZATION

Depth	OXD'T'N MANGAN (17)	HEMAT (18)	LIMON (19)	PYRITE (20)	GRAPHIC	UNALTRD (21)	PROPYLT (22)	ARG (22)	PLSIL (23)	STKWKS (24)	VEINS QTZ (25)	CALCITE (26)	(27)	GRAPHIC
10														
20														
30														
40														
50														
60														
70														
80														
90														
100														
110														
120														
130														
140														
150														
160														
170														
180														
190														
200														
210														
220														
230														
240														
250														

COMMENTS

Sample Recovery

Composite Geochem Intervals

Au, Ag every 5'
ICP 20' COMPOSITES AS SHOWN

SAMPLE No.	Comments
5	ALLUVIAL OVERBURDEN
10	MAT SILICA OVERESTIMATED? DUE TO HARDNESS
15	& CLAYS WASHING THRU?
20	CURRENTLY ABOUT 5% O.S. QTZ VEIN.
65	
70	WELL DEFINED CLASTIC TEXTURE
75	FAULT ZONE OR INCR ALTN @ CTC
80	
95	FINE GRAINED VY UNIFORM TEXTURE W/ SPARSE BLOCKY
100	CLY ALTERED FELDSP. ~1% DISSEM PY
110	WEAK PERVASIVE ARGILLIZATION. G-MASS
115	SILICEOUS
165	
170	CLEAR CALCITE VEINS
175	
180	
195	PY COALESCING INTO 2-3 MM VEINLETS.
200	
205	
210	WELL DEFINED ANGULAR FRAGMENTAL TEXTURE
215	MATRIX IS QTZ FLOODED. LITHICS X-CUT BY
220	HAIRLINE QTZ VEINLETS PY INCREASE TO
225	APPROX. 2% LOCAL CLASTS VY SLIGHT TR
230	CHLORITE
235	
240	
245	
250	

PROJECT: ROSEBUD	STATE: Nevada	NORTHING:	TOTAL 500' PILOT Page 2/2
LOGD BY: CPK	COUNTY: Pershing	EASTING:	BEARING: NA
UTM#: NK 11-10-06	SEC. T. N., R.	ELEVATION:	ANGLE: -90

HOLE#: DRB96-370

DEPTH in FEET	DRILLING NOTES (TIME; Dates, H20, Casing, Bits, Hole Co)	COLOR (WET)	1 ALLUVM	2 BADGER	3 CHOCOLT	4 BUD	5 BRADY	6 MKR PORR	7 BUD	8 DOZER	9 WILDROS	10 SURGTUF	11 ASHOFLO	12 LAVA0	13 AUTOBXA	11 INTRUSV	12 BASALT	13 ANDESIT	14 RHYOLIT	15 BROKEN	16 GOUGE	GRAPHIC	17 MANGAN	18 HEMAT	19 LIMON	20 PYRITE	GRAPHIC	21 UNALTRD	22 PROPYLT	22 ARG	23 PLSIL	24 STKWKS	25 VEINS (QTZ)	26 CALCITE	27	GRAPHIC	COMMENTS (Sample Recovery; Composite Geochem Intervals)	SAMPLE No.
260		BRWN																																				LOCAL CLEAR WEBBY SILICA REMOBILIZATION	255
		GRN &																																				IN & AROUND CLASTS, VY MINOR CLEAR QTZ	260
270		WHT																																				VNLTS CUTTING CLASTS.	265
																																							270
280																																							275
																																							280
290																																							285
																																							290
300		BRWNH																																				PY ~ 2% LOCAL VEINS 3MM WIDE.	295
		TAN																																					300
310		MED GRY																																					305
																																							310
320																																							315
																																							320
330		TAN																																				BRN @ CTC TAN ARGILLIZED FINE GRAINED PORPHYRITIC	325
																																						LAVA ?? AMT CHLORITE DECR. ? POSSIBLY	330
340																																							335
																																						WISPY QTZ VEINS REPLACED GLASS SHARDS? ABOVE LITHIC POOR XTAL TUFF?	340
350																																							345
		GRN & GRY																																				TYPICAL VOLCANIC CLASTIC BUD TEXTURE	350
360																																							355
																																						SILICIFIED MATRIX: LOCAL REMOB OF SILICA FROM GLASS?	360
370																																							365
																																							370
380		GRN/BRN																																					375
		REDH BRN																																				CTC W DK REDDH BRN LAVA? HEMATITIC G-MASS.	380
390																																						FLOW BANDED SPARSE PLAG XTALS MAFICS →	385
																																						→ HEMATITE.	390
400																																						MINOR AMTS WHT CLY ON FRACTS	395
																																						PURPLE COLOR DUE TO HEMATITE FLOODING? DISTAL	400
410		DK PURPH																																				TO STRONGER ALTERATION	405
		BRN																																					410
420																																						HEM ALTERED RELICT H.S. ? XTALS	415
																																							420
430																																							425
																																							430
440																																							435
																																							440
450																																						VY SLIGHT BLEACHING, TR AMT CHL	445
																																							450
460																																						4MM WIDE PY VNLT.	455
																																							460
470																																							465
																																							470
480																																							475
																																							480
490	PILOTED TO 500' & CASED COMPLETE W CORE																																						485
																																							490
500																																						3 MM WIDE CALCITE VEINLET	495
																																							500

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1130.7	STARTED: 12/4/96	PAGE: 1/13
LOGD BY: CPR	STATE: Nevada County Pershing	EASTING:	BEARING: NA	COMPLETED:	HOLE #
DATE: 12/5/96	SEC. T. N., E.	ELEVATION:	ANGLE: -90	DRILLER: LONGYEAR: M. ALLEN	CSF 96-370

SCALE: 1" = 10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH FT; REC/CUT; RQD

LITHOLOGY: ALLUVUM, MUDCGL, LITHTUF, PUMTUF, SURGTUF, ASH, FLO, LAVA, AUTOBX, INTRUSV, BASALT, ANDESIT, RHYOLIT

STRUCT: TEC, BRECBXA

ALTERATION/MINLIZATION: Fe MIN: MNOX, HEMTIT, LIMON, PYRITE; PROP, ARG, ARGG, RPL, SIL, QTZVNS, CALCITE, MECLAS

STRAT: BADGER, CHOCOLT, UBUD, BRADY, MKRPOR, LBUD, WILDROS, DOZER

DEPTH FT	LITH GRAPH	ALT GRAPH	STRUCT	SAMPLE INT	COMMENTS
500					START CORING @ 500'
505			45 FLD FOL	500 To 505	FROM 500' TO FINE GRAINED PORPHYRITIC LAVA DK REDDISH PURPLE G-MASS. WHITE FELDSPARS ≈ 10% APPROX 1-2 MM IN LENGTH, PLY OX H.B & BIOT 1-2MM IN LENGTH ≈ 5% VY MINOR AMTS LIMONITE
510				To 510	@ 517' 55° TO C.A. FLOW FOLIATION
515				To 515'	
520			55° FLD FOL 45° QAL VNLT	To 520'	FROM 517' TO 551 ROCKS ARE LOCALLY CUT BY QALCITE, CALCITE + ILLITE + PYRITE VEINS. VEINS WITH ILLITE AND OR PYRITE USUALLY HAVE 2-6 CM BLEACHED SELVAGES VEINS OCCUR AVG 1 EVERY 3'. INTERVENING ROCKS ARE UNALTERED SAVE HEMATITE FLOODED, TR AMT CHL ON FRACTS
525				To 525'	
530			40° CAL VN 35° FLD FOL,	To 530'	
535				To 535'	
540			ILL QAL 40°	To 540'	
545			ILL VNLT 20°	To 545'	
550				To 550'	

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED: 12/04/96	PAGE: 2/13
LOGD BY: RLD	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 12/07/96	SEC. T. N., E.	ELEVATION:	ANGLE: -90°	DRILLER: LONGYEAR: M. Allen	CSF 96-370

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	REC/CUT	RQD	LITH GRAPH	ALT GRAPH	STRUCT	COMMENTS	SAMPLE INT
550						Fine-grained porphy. And. cont. —	550 to 555
555	10.3/10.3 553.8; 7.5/10.3	7.0/10.3; 8.4/10.3					555 to 560
560	563.7 3.9/4.0; 565.7	1.0/2.0			50° FLD FOL		560 to 565
565	5.1/5.1 570.8	3.3/5.1				565'-595' frac-controlled hema stain @ 30°-40° to c.a.	565 to 570
570	10.2/10.2	6.5/10.2			70° planar fracs		570 to 575
575	581					579-582 strong frac @ 05° to c.a.	575 to 580
580	7.0/7.0 588	3.1/7.0					580 to 585
585	6.0/6.0 594	3.5/6.0			50° FLD FOL	587.5 1/4" CAL-ILLITE VNLT @ 50° to C.a. (opposite Flow Fol.)	585 to 590
590	10.0/10.0	8.4/10.0					590 to 595
595							595 to 600
600							

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED: 12/04/96	PAGE: 3/13
LOGD BY: RLD	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 12/07/96	SEC. T. N., E.	ELEVATION:	ANGLE: -90°	DRILLER: LONGYEAR	CSF96-370

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
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SURGE TUF	Bedded matrix rich lithic tuff

| DRILLING | | | LITHOLOGY | | | | | | | | | | | | STRUCT | | | | ALTERATION/MINLIZATION | | | | | | | | | | | | STRAT | | | | | | | | | | | |

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED: 12/04/96	PAGE: 4/13
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # 96 370
DATE: 12/07/96	SEC. T. N., E.	ELEVATION:	ANGLE: -90°	DRILLER: LONGYEAR	

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	REC/CUT	RQD	COMMENTS	SAMPLE INT
655	8.2/10.2	9.0/10.2	Fine-grained And. cont.- flow bxa -calcite veinlets	650 to 655
660	9.2/7.2	5.6/7.2	CaCO3 in bxa matrix + as short discontinuous fractures. 70° CA	to 660
665	10.0/10.0	3.5/10.0	flowfoliation 65°CA	to 665
670	10.0/10.0	6.0/10.0	Flow foliation 65°CA core broken along flow foliation planes	to 670
675				to 675
680	10.0/10.0		flowfoliation 65°CA	to 680
685			680-82 vesicular flow top w/calcite fillings	to 685
690	10.0/10.0		calcite veinlet 30°CA wk remobilized fe,x along fractures	to 690
695			CaCO3 veinlet 70°CA chlorite w/calcite in frac's. flow bxa + flow foliated.	to 695
700			flow bxa w/calcite in bxa matrix	to 700

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 5/13
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # 96
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE: -90°	DRILLER:	370

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	REC/CUT	R Q D	ALLUVUM	MUD CGL		LITHTUF	PUMTUF	SURGTUF	ASH FLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC BXA	BROKEN	GOUGE	VOID	Fe MIN: MNOX	HEMIT	LIMONIT	PYRITE	PROP	ARG	ARG2	RPL SIL		QTZ VNS	CALCITE	MECLAS	BADGER	CHOCOLT	UBUD	BRADY	MKRPOR	LBUD	WILDROS	DOZER	DEPTH FT	LITH GRAPH	ALT GRAPH	STRCT	SAMPL INT	COMMENTS
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37						
705	10.0/90 704																1				1									1														700 to 705	Andesite flow bxa w/irregular calcite fillings in bxa matrix; calcite veinlet 25°CA
710	9.0/10.0																													2														to 710	
715	713 8.0/8.0																2							1																				to 715	flow foliations 75°CA; chlorite films along flow foliation
720	721																1							2																				to 720	← inflow bxa chlorite more pervasive but still weak
725	10.0/10.0																																											to 725	← now chlorite pervasive in bxa frags + matrix
730	731																																											to 730	
735	2.5/9.3																				1			1																				to 735	calcite veins 65°CA
740	740.3 10.3/3.5 743.8																													2														to 740	wk chlorite + calcite on discontinuous feature surfaces
745	10.2/10.2																																											to 745	calcite as matrix fillings around flow bxa frags
750																																												to 750	

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 6/13
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # 96
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	370

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	REC/CUT	R Q D	ALLUVUM (1)	MUDCGL (2)	(3)	LITHTUF (4)	PUMTUF (5)	SURGTUF (6)	ASHFLO (7)	LAVA (8)	AUTOBX (9)	INTRUSV (10)	BASALT (11)	ANDESIT (12)	RHYOLIT (13)	TEC.BXA (14)	BROKEN (15)	GOUGE (16)	VOID (17)	Fe MIN: MNOX (18)	HEMTIT (19)	LIMONIT (20)	PYRITE (21)	PROP (22)	ARG (23)	ARG (24)	REPL SIL (25)	(26)	QTZ VNS (27)	CALCITES (28)	METCLAS (29)	BADGER (30)	CHOCOLT (31)	BUD (32)	BRADY (33)	MKRPOR (34)	LBUD (35)	WILDROS (36)	DOZER (37)	DEPTH FT	LITH GRAPH	ALT GRAPH	STRCT NT	COMMENTS	SAMPLE INT
	10.2 / 10.2																1							1						2																andesite flow bxa; irregular calcite fillings in matrix.	750 to 755
755																																														755 to 760
760	10.0 / 10.0																																													760 to 765
765	10.0 /																							2																					@ 765 chlorite more pervasive in breccia frags + matrix ¼" w calcite veinlet 35°CA.	765 to 770
770	10.0																																													770 to 775
775	10.0 /																																													775 to 780
780	10.0																							3																						780 to 785
785	10.0 /																																													785 to 790
790	10.0																													2																790 to 795
795	9.0 / 9.0																2																												calcite filling bxa ½" w 70°CA	795 to 800
800																																														

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 7/13
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # 96
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	370

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH FT; RECOVERY; RQD

LITHOLOGY: ALLUVUM (1), MUD CGL (2), (3), LITH TUF (4), PUM TUF (5), SURGE TUF (6), ASH FLO (7), LAVA (8), AUTOBXA (9), INTRUSV (10), BASALT (11), ANDESITE (12), RHYOLITE (13)

STRUCT: TEC BXA (14), BROKEN (15), GOUGE (16), VOID (17)

ALTERATION/MINLIZATION: Fe MIN: MNOX (18), HEMTIT (19), LIMONIT (20), PYRITE (21); PROP (22), ARG (23), ARG2 (24), RPLSIL (25), (26), QTZVNS (27), CALCITES (28), METCLAS (29)

STRAT: BADGER (30), CHOCOLT (31), BUD (32), BRADY (33), MKRPOR (34), LBUD (35), WILDROS (36), DOZER (37)

DEPTH FT; LITHGRAPH; ALTGRAPH; STRCNT

SAMPLE INT

COMMENTS

Depth ft	Rec/Cut	Struct (15)	Alteration (19)	Lithgraph	Sample int	Comments
		2	3		800 to 805	Andesite flow bxa pervasive chlorite flooding grading down to veinlet chlorite
805	10.3				to 810	calcite veinlets 55°CA
810	10.3				to 815	
815	10.3				to 820	
820	10.3				to 825	calcite filling matrix surrounding breccia fragments.
825	10.2				to 830	flow foliation(?) 70°CA
830	10.2				to 835	flow contact 90°CA leopard skin flow top(?) 830-833.8 qtz filling → not hydrothermal
835	10.3				to 840	DK GRY fragments (volc) local in flow + flow bxa feox increasing along fracture surfaces and in flow bxa matrix
840	10.3	2	2		to 845	strong flow foliation 75°CA
845	8.5 / 8.5				to 850	
850						

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 8/13
LOGD BY:	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # 96 370
DATE:	SEC. T. N. E.	ELEVATION:	ANGLE:	DRILLER:	

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
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| DRILLING | | | LITHOLOGY | | | | | | | | | | | | | STRUCT | | | | ALTERATION/MINLIZATION | | | | | | | | | | | STRAT | | | | | | | | | | | | |

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 9/13
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # 96 370
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
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PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	REC/CUT	R Q D	ALLUVUM 1	MUD CGL 2	3	LITHTUF 4	PUMTUF 5	SURGTUF 6	ASH FLO 7	LAVA 8	AUTOBX 9	INTRUSV 10	BASALT 11	ANDESIT 12	RHYOLIT 13	TEC. CBXA 14	BROKEN 15	GOUGE 16	VOID 17	Fe MIN: MNOX 18	HEMTIT 19	LIMON 20	PYRITE 21	PROP 22	ARG 23	ARG 24	RPL SILL 25	26	QTZ VNS 27	CALCITE 28	METCLAS 29	BADGER 30	CHOCOLT 31	UBUD 32	BRADY 33	MKR POR 34	LBUD 35	WILDROS 36	DOZER 37	DEPTH FT	LITH GRAPH	ALT GRAPH	STRCT NT	SAMPL INT
905	10.0																				2									1															900 to 905
910	10.0																																												905 to 910
915	10.0																																												910 to 915
920	10.0																																												915 to 920
925	10.1																																												920 to 925
930	10.1																							2																					925 to 930
935	10.2																						2		2		1																		930 to 935
940	10.2																2								3		3																		935 to 940
945	10.2																								2																				940 to 945
950	10.2																																												945 to 950

COMMENTS

andesite flow - massive w/no flow foliation random hematite stains clay fractures + random wk calcite veinlets

¼" calcite veinlet 35° CA

chlorite in fract increasing downward then Lt grn clay in fracts w/ pervasively bleached + clay rock

irregular silica + py veinlet roughly parallel to CA.

1½" w qtz vn 60° CA w/ bladed marcasite

andesite flow w/ vesicular flow top 935-938 increasing clay in vesicules

70° CA

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 10/13
LOGD BY:	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # 96 370
DATE:	SEC. T. N. E.	ELEVATION:	ANGLE:	DRILLER:	

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

| DRILLING | | | LITHOLOGY | | | | | | | | | | | | | STRUCT | | | | ALTERATION/MINLIZATION | | | | | | | | | | | STRAT | | | | | | | | | | | | |

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 11/13
LOGD BY:	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # 96
DATE:	SEC. T. N. E.	ELEVATION:	ANGLE:	DRILLER:	370

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
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| DRILLING | | | LITHOLOGY | | | | | | | | | | | | | STRUCT | | | | ALTERATION/MINLIZATION | | | | | | | | | | | STRAT | | | | | | | | | | | | |

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 12/13
LOGD BY:	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # 96 370
DATE:	SEC. T. N. E.	ELEVATION:	ANGLE:	DRILLER:	

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

| DRILLING | | | LITHOLOGY | | | | | | | | | | | | | STRUCT | | | | ALTERATION/MINLIZATION | | | | | | | | | | | STRAT | | | | | | | | | | | | |

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 13/13
LOGD BY:	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # 96 370
DATE:	SEC. T. N. E.	ELEVATION:	ANGLE:	DRILLER:	

SCALE: 1" =10 ft

LITH. EXPLANATION:

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LITH TUF	Lithic clast dominant tuff
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| DRILLING | | | LITHOLOGY | | | | | | | | | | | | | STRUCT | | | | ALTERATION/MINLIZATION | | | | | | | | | | | STRAT | | | | | | | | | | | | |

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP042129

American Assay Laboratories

RECEIVED
JAN 20 1997
SANTA FE PACIFIC GOLD
RENO

P.O. BOX 11530
RENO, NV,,USA
Ph.1-702-356-0606, Fax.1-702-356-1413

SANTA FE PACIFIC MINING

COPIES TO : R.L. DIXON
: CHARLIE MUERHOFF
:
:

CLIENT REFERENCE No: CSF96-370 RECEIVED : 18 DEC 1996

No. SAMPLES : 31 REPORTED : 18 DEC 1996

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 : Sue King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP042129

American Assay Laboratories

CLIENT : SANTA FE PACIFIC MINING
PROJECT : CSF96-370
REFERENCE : CSF96-370

REPORTED : 18 DEC 1996

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
CSF96-370 975-980	<5		<0.001		<0.5	<0.02
CSF96-370 980-985	8		<0.001		<0.5	<0.02
CSF96-370 985-990	<5		<0.001		<0.5	<0.02
CSF96-370 990-995	7		<0.001		2.6	0.08
CSF96-370 995-1000	10		<0.001		4.1	0.12
CSF96-370 1000-1005	9		<0.001		1.5	0.04
CSF96-370 1005-1010	<5		<0.001		<0.5	<0.02
CSF96-370 1010-1015	<5		<0.001		1.4	0.04
CSF96-370 1015-1020	60	60	0.002	0.002	1.3	0.04
CSF96-370 1020-1025	<5		<0.001		<0.5	<0.02
CSF96-370 1025-1030	<5		<0.001		<0.5	<0.02
CSF96-370 1030-1035	<5		<0.001		<0.5	<0.02
CSF96-370 1035-1040	6		<0.001		<0.5	<0.02
CSF96-370 1040-1045	<5		<0.001		<0.5	<0.02
CSF96-370 1045-1050	<5		<0.001		<0.5	<0.02
CSF96-370 1050-1055	<5		<0.001		<0.5	<0.02
CSF96-370 1055-1060	<5		<0.001		<0.5	<0.02
CSF96-370 1060-1065	942		0.027		1.0	0.03
CSF96-370 1065-1070	<5		<0.001		<0.5	<0.02
CSF96-370 1070-1075	23		<0.001		0.7	0.02
CSF96-370 1075-1080	7		<0.001		<0.5	<0.02
CSF96-370 1080-1085	25		<0.001		<0.5	<0.02
CSF96-370 1085-1090	60		0.002		0.8	0.02
CSF96-370 1090-1095	435		0.013		0.6	<0.02
CSF96-370 1095-1100	50		0.001		1.0	0.03

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REFERENCE : CSF96-370

REPORTED : 18 DEC 1996

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
CSF96-370 1100-1105	2040		0.060		6.8	0.20
CSF96-370 1105-1110	437		0.013		2.1	0.06
CSF96-370 1110-1115	282		0.008		1.2	0.04
CSF96-370 1115-1120	1465		0.043		2.2	0.06
CSF96-370 1120-1125	3200	3466	0.093	0.101	2.6	0.08
CSF96-370 1125-1130.7	56		0.002		3.3	0.10

25' @ .047 opt Au

AMERICAN ASSAY LABORATORIES

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American Assay Laboratories

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Ph.1-702-356-0606, Fax.1-702-356-1413

SANTA FE PACIFIC MINING

COPIES TO : R.L. DIXON
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CLIENT REFERENCE No: PSF96-370 RECEIVED : 2 DEC 1996

No. SAMPLES : 100 REPORTED : 2 DEC 1996

MAIN SAMPLE TYPE : DRILL CUTTINGS

RC 0-500'

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 : Sue King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP041843

American Assay Laboratories

CLIENT : SANTA FE PACIFIC MINING
PROJECT : PSF96-370
REFERENCE : PSF96-370

REPORTED : 2 DEC 1996

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
PSF96-370 5	52		0.002		1.5	0.04
PSF96-370 10	54	50	0.002	0.001	1.4	0.04
PSF96-370 15	53		0.002		1.2	0.04
PSF96-370 20	69		0.002		2.7	0.08
PSF96-370 25	104		0.003		2.7	0.08
PSF96-370 30	84		0.002		2.1	0.06
PSF96-370 35	141		0.004		3.7	0.11
PSF96-370 40	81		0.002		2.0	0.06
PSF96-370 45	373	419	0.011	0.012	1.4	0.04
PSF96-370 50	95		0.003		1.7	0.05
PSF96-370 55	81		0.002		2.4	0.07
PSF96-370 60	72	58	0.002	0.002	2.8	0.08
PSF96-370 65	68		0.002		2.4	0.07
PSF96-370 70	18		<0.001		<0.5	<0.02
PSF96-370 75	31		<0.001		<0.5	<0.02
PSF96-370 80	31		<0.001		<0.5	<0.02
PSF96-370 85	61		0.002		2.2	0.06
PSF96-370 90	88		0.003		6.2	0.18
PSF96-370 95	271		0.008		7.0	0.20
PSF96-370 100	<5		<0.001		<0.5	<0.02
PSF96-370 105	<5		<0.001		<0.5	<0.02
PSF96-370 110	<5		<0.001		<0.5	<0.02
PSF96-370 115	<5		<0.001		<0.5	<0.02
PSF96-370 120	68		0.002		0.8	0.02
PSF96-370 125	39		0.001		0.7	0.02

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REFERENCE : PSF96-370

REPORTED : 2 DEC 1996

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
PSF96-370 130	<5	<5	<0.001	<0.001	<0.5	<0.02
PSF96-370 135	<5		<0.001		<0.5	<0.02
PSF96-370 140	<5		<0.001		<0.5	<0.02
PSF96-370 145	<5		<0.001		<0.5	<0.02
PSF96-370 150	<5		<0.001		<0.5	<0.02
PSF96-370 155	<5		<0.001		<0.5	<0.02
PSF96-370 160	<5		<0.001		<0.5	<0.02
PSF96-370 165	<5		<0.001		<0.5	<0.02
PSF96-370 170	<5	<5	<0.001	<0.001	<0.5	<0.02
PSF96-370 175	<5		<0.001		<0.5	<0.02
PSF96-370 180	<5		<0.001		<0.5	<0.02
PSF96-370 185	<5		<0.001		<0.5	<0.02
PSF96-370 190	<5		<0.001		<0.5	<0.02
PSF96-370 195	<5		<0.001		0.5	<0.02
PSF96-370 200	6		<0.001		0.6	<0.02
PSF96-370 205	13		<0.001		0.5	<0.02
PSF96-370 210	<5		<0.001		<0.5	<0.02
PSF96-370 215	5		<0.001		<0.5	<0.02
PSF96-370 220	17		<0.001		0.5	<0.02
PSF96-370 225	<5		<0.001		<0.5	<0.02
PSF96-370 230	80	81	0.002	0.002	1.4	0.04
PSF96-370 235	40		0.001		1.1	0.03
PSF96-370 240	<5		<0.001		0.6	<0.02
PSF96-370 245	13		<0.001		0.8	0.02
PSF96-370 250	6		<0.001		0.7	0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
PSF96-370 255	8		<0.001		0.8	0.02
PSF96-370 260	10		<0.001		<0.5	<0.02
PSF96-370 265	<5		<0.001		<0.5	<0.02
PSF96-370 270	<5		<0.001		<0.5	<0.02
PSF96-370 275	<5		<0.001		<0.5	<0.02
PSF96-370 280	<5		<0.001		<0.5	<0.02
PSF96-370 285	<5		<0.001		<0.5	<0.02
PSF96-370 290	54		0.002		1.4	0.04
PSF96-370 295	12		<0.001		0.7	0.02
PSF96-370 300	42		0.001		0.8	0.02
PSF96-370 305	<5		<0.001		0.6	<0.02
PSF96-370 310	132	143	0.004	0.004	2.3	0.07
PSF96-370 315	<5		<0.001		1.0	0.03
PSF96-370 320	<5		<0.001		0.6	<0.02
PSF96-370 325	15		<0.001		1.5	0.04
PSF96-370 330	10		<0.001		1.3	0.04
PSF96-370 335	<5		<0.001		0.7	0.02
PSF96-370 340	6		<0.001		1.0	0.03
PSF96-370 345	15		<0.001		2.2	0.06
PSF96-370 350	<5		<0.001		0.9	0.03
PSF96-370 355	<5		<0.001		<0.5	<0.02
PSF96-370 360	<5		<0.001		<0.5	<0.02
PSF96-370 365	5		<0.001		<0.5	<0.02
PSF96-370 370	<5		<0.001		<0.5	<0.02
PSF96-370 375	<5		<0.001		<0.5	<0.02

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PROJECT : PSF96-370
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REPORTED : 2 DEC 1996

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
PSF96-370 380	<5		<0.001		<0.5	<0.02
PSF96-370 385	<5	<5	<0.001	<0.001	<0.5	<0.02
PSF96-370 390	<5		<0.001		<0.5	<0.02
PSF96-370 395	<5		<0.001		<0.5	<0.02
PSF96-370 400	<5		<0.001		<0.5	<0.02
PSF96-370 405	<5		<0.001		<0.5	<0.02
PSF96-370 410	<5		<0.001		<0.5	<0.02
PSF96-370 415	<5		<0.001		<0.5	<0.02
PSF96-370 420	<5		<0.001		<0.5	<0.02
PSF96-370 425	6		<0.001		<0.5	<0.02
PSF96-370 430	<5		<0.001		<0.5	<0.02
PSF96-370 435	<5	<5	<0.001	<0.001	<0.5	<0.02
PSF96-370 440	<5		<0.001		<0.5	<0.02
PSF96-370 445	<5		<0.001		<0.5	<0.02
PSF96-370 450	<5		<0.001		<0.5	<0.02
PSF96-370 455	<5		<0.001		<0.5	<0.02
PSF96-370 460	6		<0.001		<0.5	<0.02
PSF96-370 465	<5	<5	<0.001	<0.001	<0.5	<0.02
PSF96-370 470	7		<0.001		0.5	<0.02
PSF96-370 475	<5		<0.001		<0.5	<0.02
PSF96-370 480	<5		<0.001		<0.5	<0.02
PSF96-370 485	<5		<0.001		<0.5	<0.02
PSF96-370 490	<5		<0.001		<0.5	<0.02
PSF96-370 495	<5		<0.001		<0.5	<0.02
PSF96-370 500	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP042077

American Assay Laboratories

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SANTA FE PACIFIC MINING

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SANTA FE PACIFIC GOLD
RENO

FILE COPY

CLIENT REFERENCE No: CSF96-370

No. SAMPLES : 94

MAIN SAMPLE TYPE : DRILL CUTTINGS

RECEIVED : 16 DEC 1996

REPORTED : 16 DEC 1996

NEVADA LEGISLATIVE DISCLAIMER :-
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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 : Sue King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP042077

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
CSF96-370 500-509.5	<5		<0.001		<0.5	<0.02
CSF96-370 509.5-517.5	<5		<0.001		<0.5	<0.02
CSF96-370 517.5-520	<5		<0.001		<0.5	<0.02
CSF96-370 520-525	<5		<0.001		<0.5	<0.02
CSF96-370 525-530	9		<0.001		<0.5	<0.02
CSF96-370 530-535	<5		<0.001		<0.5	<0.02
CSF96-370 535-540	6		<0.001		<0.5	<0.02
CSF96-370 540-545	<5		<0.001		<0.5	<0.02
CSF96-370 545-550	<5		<0.001		<0.5	<0.02
CSF96-370 550-555	<5		<0.001		<0.5	<0.02
CSF96-370 555-560	<5		<0.001		<0.5	<0.02
CSF96-370 560-565	<5		<0.001		<0.5	<0.02
CSF96-370 565-570	<5		<0.001		<0.5	<0.02
CSF96-370 570-575	<5		<0.001		<0.5	<0.02
CSF96-370 575-580	<5		<0.001		<0.5	<0.02
CSF96-370 580-585	<5		<0.001		<0.5	<0.02
CSF96-370 585-590	7		<0.001		<0.5	<0.02
CSF96-370 590-595	<5		<0.001		<0.5	<0.02
CSF96-370 595-600	<5		<0.001		<0.5	<0.02
CSF96-370 600-605	<5		<0.001		<0.5	<0.02
CSF96-370 605-610	<5		<0.001		<0.5	<0.02
CSF96-370 610-615	<5		<0.001		<0.5	<0.02
CSF96-370 615-620	<5		<0.001		<0.5	<0.02
CSF96-370 620-625	<5		<0.001		<0.5	<0.02
CSF96-370 625-630	<5		<0.001		<0.5	<0.02

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REFERENCE : CSF96-370

REPORTED : 16 DEC 1996

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
CSF96-370 630-635	<5		<0.001		<0.5	<0.02
CSF96-370 635-640	45		0.001		<0.5	<0.02
CSF96-370 640-645	<5		<0.001		<0.5	<0.02
CSF96-370 645-650	<5		<0.001		<0.5	<0.02
CSF96-370 650-655	<5		<0.001		<0.5	<0.02
CSF96-370 655-660	<5		<0.001		<0.5	<0.02
CSF96-370 660-665	<5		<0.001		<0.5	<0.02
CSF96-370 665-670	<5		<0.001		<0.5	<0.02
CSF96-370 670-675	<5		<0.001		<0.5	<0.02
CSF96-370 675-680	9		<0.001		<0.5	<0.02
CSF96-370 680-685	8		<0.001		<0.5	<0.02
CSF96-370 685-690	8		<0.001		<0.5	<0.02
CSF96-370 690-695	6		<0.001		<0.5	<0.02
CSF96-370 695-700	<5		<0.001		<0.5	<0.02
CSF96-370 700-705	<5		<0.001		<0.5	<0.02
CSF96-370 705-710	7		<0.001		<0.5	<0.02
CSF96-370 710-715	<5		<0.001		<0.5	<0.02
CSF96-370 715-720	6		<0.001		<0.5	<0.02
CSF96-370 720-725	7		<0.001		<0.5	<0.02
CSF96-370 725-730	<5		<0.001		<0.5	<0.02
CSF96-370 730-735	<5		<0.001		<0.5	<0.02
CSF96-370 735-740	<5		<0.001		<0.5	<0.02
CSF96-370 740-745	<5		<0.001		<0.5	<0.02
CSF96-370 745-750	<5	<5	<0.001	<0.001	<0.5	<0.02
CSF96-370 750-755	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP042077

American Assay Laboratories

CLIENT : SANTA FE PACIFIC MINING
PROJECT : CSF96-370
REFERENCE : CSF96-370

REPORTED : 16 DEC 1996

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
CSF96-370 755-760	<5		<0.001		<0.5	<0.02
CSF96-370 760-765	<5		<0.001		<0.5	<0.02
CSF96-370 765-770	<5		<0.001		<0.5	<0.02
CSF96-370 770-775	<5		<0.001		<0.5	<0.02
CSF96-370 775-780	<5		<0.001		<0.5	<0.02
CSF96-370 780-785	<5	<5	<0.001	<0.001	<0.5	<0.02
CSF96-370 785-790	<5		<0.001		<0.5	<0.02
CSF96-370 790-795	<5		<0.001		<0.5	<0.02
CSF96-370 795-800	<5		<0.001		<0.5	<0.02
CSF96-370 800-805	<5		<0.001		<0.5	<0.02
CSF96-370 805-810	<5		<0.001		<0.5	<0.02
CSF96-370 810-815	<5		<0.001		<0.5	<0.02
CSF96-370 815-820	<5		<0.001		<0.5	<0.02
CSF96-370 820-825	<5		<0.001		<0.5	<0.02
CSF96-370 825-830	<5		<0.001		<0.5	<0.02
CSF96-370 830-835	<5		<0.001		<0.5	<0.02
CSF96-370 835-840	<5		<0.001		<0.5	<0.02
CSF96-370 840-845	<5		<0.001		<0.5	<0.02
CSF96-370 845-850	<5		<0.001		<0.5	<0.02
CSF96-370 850-855	<5		<0.001		<0.5	<0.02
CSF96-370 855-860	<5		<0.001		<0.5	<0.02
CSF96-370 860-865	<5		<0.001		<0.5	<0.02
CSF96-370 865-870	<5		<0.001		<0.5	<0.02
CSF96-370 870-875	<5		<0.001		<0.5	<0.02
CSF96-370 875-880	<5	<5	<0.001	<0.001	<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP042077

American Assay Laboratories

CLIENT : SANTA FE PACIFIC MINING
PROJECT : CSF96-370
REFERENCE : CSF96-370

REPORTED : 16 DEC 1996

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
CSF96-370 880-885	<5		<0.001		<0.5	<0.02
CSF96-370 885-890	<5		<0.001		<0.5	<0.02
CSF96-370 890-895	<5		<0.001		<0.5	<0.02
CSF96-370 895-900	<5		<0.001		<0.5	<0.02
CSF96-370 900-905	<5		<0.001		<0.5	<0.02
CSF96-370 905-910	<5		<0.001		<0.5	<0.02
CSF96-370 910-915	<5		<0.001		<0.5	<0.02
CSF96-370 915-920	<5		<0.001		<0.5	<0.02
CSF96-370 920-925	<5		<0.001		<0.5	<0.02
CSF96-370 925-930	<5		<0.001		<0.5	<0.02
CSF96-370 930-935	<5		<0.001		<0.5	<0.02
CSF96-370 935-940	50	58	0.001	0.002	0.8	0.02
CSF96-370 940-945	<5		<0.001		<0.5	<0.02
CSF96-370 945-950	12		<0.001		<0.5	<0.02
CSF96-370 950-955	<5		<0.001		0.5	<0.02
CSF96-370 955-960	<5		<0.001		<0.5	<0.02
CSF96-370 960-965	<5		<0.001		<0.5	<0.02
CSF96-370 965-970	10		<0.001		0.7	0.02
CSF96-370 970-975	<5	<5	<0.001	<0.001	<0.5	<0.02

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SANTA FE PACIFIC GOLD
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CLIENT: SANTA FE PACIFIC GOLD CORP.
CLIENT REF: PSF 96-370
AAL REF: SP041843
METHOD: AAL 01-0

ELEMENT SAMPLES	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sb ppm	Sr ppm	Th ppm	Ti %	U ppm	V ppm	W ppm	Zn ppm
PSF96-370 5-20	2	0.88	66	8	330	< 2	0.35	0.5	1	7	11	2.08	< 1	0.46	28	0.11	60	3	0.06	1	0.027	23	16	96	4	< .01	< 5	7	< 2	6
PSF96-370 25-40	2	0.61	137	3	221	< 2	0.19	0.3	1	9	9	2.05	< 1	0.36	30	0.05	38	3	0.03	< 1	0.018	15	11	59	4	< .01	< 5	3	2	2
PSF96-370 45-60	1.6	0.45	104	3	127	< 2	0.1	0.2	< 1	12	8	1.75	< 1	0.19	20	0.03	64	3	0.01	1	0.011	11	17	41	3	< .01	6	1	< 2	11
PSF96-370 65-80	1	1.07	18	6	53	< 2	0.2	3	5	3	3	1.73	< 1	0.43	31	0.04	38	< 1	0.01	3	0.022	31	8	106	4	< .01	8	2	< 2	109
PSF96-370 85-100	5.9	0.49	63	< 3	78	< 2	0.16	< .2	3	3	2	1.47	1	0.34	20	0.02	18	4	0.01	3	0.012	40	6	35	4	< .01	< 5	< 1	< 2	78
PSF96-370 105-120	< .3	0.58	12	< 3	44	< 2	0.23	< .2	< 1	2	< 1	1.24	< 1	0.25	21	0.02	614	< 1	0.01	< 1	0.026	36	10	17	5	< .01	< 5	< 1	< 2	85
PSF96-370 125-140	< .3	0.47	10	< 3	37	< 2	0.67	< .2	< 1	2	2	1.44	< 1	0.22	12	0.03	1340	< 1	0.01	7	0.023	30	9	22	5	< .01	< 5	< 1	< 2	59
PSF96-370 145-160	< .3	0.54	5	< 3	37	< 2	1.33	< .2	< 1	1	1	1.24	< 1	0.23	10	0.03	1104	< 1	0.01	< 1	0.023	25	6	49	5	< .01	< 5	< 1	< 2	42
PSF96-370 165-180	< .3	0.58	< 2	< 3	25	< 2	3.11	< .2	< 1	2	< 1	1.03	< 1	0.32	11	0.04	1401	< 1	0.01	< 1	0.018	27	5	115	3	< .01	< 5	< 1	< 2	54
PSF96-370 185-200	0.4	0.61	24	< 3	116	< 2	1.59	< .2	< 1	3	2	1.47	1	0.35	8	0.04	698	7	0.01	< 1	0.02	35	4	74	2	< .01	< 5	< 1	< 2	67
PSF96-370 205-220	0.5	0.62	14	4	51	< 2	1	< .2	< 1	5	3	1.77	1	0.34	18	0.04	470	1	0.02	3	0.037	27	12	57	< 2	< .01	< 5	< 1	< 2	38
PSF96-370 225-240	0.9	0.58	55	< 3	58	< 2	0.85	0.2	1	6	4	2.17	< 1	0.37	19	0.04	371	1	0.01	2	0.05	30	7	62	< 2	< .01	< 5	1	< 2	67
PSF96-370 245-260	0.8	0.54	23	4	100	< 2	0.78	0.7	< 1	5	4	1.67	< 1	0.37	28	0.04	390	1	0.01	< 1	0.031	38	5	87	2	< .01	< 5	< 1	< 2	81
PSF96-370 265-280	< .3	0.77	5	< 3	81	< 2	3.17	< .2	< 1	4	1	0.94	< 1	0.38	29	0.1	1519	< 1	0.02	2	0.021	32	< 2	198	< 2	< .01	< 5	< 1	< 2	68
PSF96-370 285-300	0.6	0.68	19	4	55	< 2	1.51	0.8	< 1	4	4	1.78	< 1	0.38	25	0.07	712	1	0.03	1	0.033	28	4	119	< 2	< .01	< 5	1	< 2	72
PSF96-370 305-320	1.3	0.86	45	< 3	62	< 2	0.95	1.6	2	4	5	3.34	< 1	0.46	19	0.12	542	< 1	0.02	1	0.057	31	13	106	< 2	0.01	< 5	3	< 2	93
PSF96-370 325-340	1.2	0.51	33	4	68	< 2	0.29	0.4	< 1	3	6	2.08	< 1	0.37	37	0.03	64	1	0.01	1	0.029	48	15	68	6	< .01	< 5	< 1	< 2	58
PSF96-370 345-360	1	0.85	27	5	57	< 2	0.47	0.5	1	5	4	2.28	< 1	0.45	30	0.09	150	2	0.01	< 1	0.041	52	9	113	< 2	< .01	< 5	1	< 2	83
PSF96-370 365-380	< .3	1.32	8	< 3	371	< 2	2.97	0.2	1	1	3	1.96	1	0.5	32	0.23	1384	< 1	0.03	< 1	0.043	22	< 2	260	< 2	< .01	< 5	3	< 2	67
PSF96-370 385-400	< .3	1.08	4	4	136	< 2	2.18	< .2	< 1	8	7	2.3	1	0.4	36	0.24	1026	1	0.04	1	0.045	19	< 2	222	< 2	0.01	< 5	4	< 2	39
PSF96-370 405-420	< .3	1.22	< 2	< 3	514	2	1.64	0.3	4	7	5	2.61	< 1	0.55	33	0.21	723	< 1	0.03	1	0.084	16	< 2	142	< 2	0.05	< 5	26	2	49
PSF96-370 425-440	< .3	0.88	< 2	< 3	95	< 2	1.61	< .2	2	7	5	3.08	< 1	0.46	29	0.12	507	1	0.03	< 1	0.1	12	2	152	< 2	0.04	< 5	39	2	28
PSF96-370 445-460	< .3	0.95	14	5	189	< 2	2.75	0.2	5	5	1	2.88	< 1	0.4	25	0.18	863	1	0.05	3	0.103	19	< 2	175	< 2	0.03	< 5	30	2	49
PSF96-370 465-480	< .3	1.12	30	< 3	100	< 2	3.52	0.4	7	6	4	3.76	< 1	0.43	28	0.3	1102	1	0.06	2	0.097	20	< 2	168	< 2	0.04	< 5	37	< 2	71
PSF96-370 485-500	< .3	1.24	< 2	4	150	< 2	2.3	< .2	4	8	6	3.35	< 1	0.56	30	0.33	846	1	0.05	1	0.104	17	< 2	169	< 2	0.07	< 5	40	< 2	63
STANDARD C2	6.9	1.99	46	24	198	16	0.56	20	34	62	56	4.03	2	0.15	39	0.97	1209	19	0.08	69	0.113	34	15	53	33	0.07	20	68	12	139

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AAL 01-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
UNIT	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	0.3	0.01	2	3	1	2	0.01	0.2	1	1	1	0.01	1	0.01	1	0.01	2	1	0.01	1	0.001	3	2	1	2	0.01	5	1	2	1

0.500 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR B, Ba, Ca, Cr, Fe, La, Mg, Mn, Sr, Ti AND W.
DIGEST IS LIMITED FOR Al, K AND Na.

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AAL 01-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
UNIT	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	0.3	0.01	2	3	1	2	0.01	0.2	1	1	1	0.01	1	0.01	1	0.01	2	1	0.01	1	0.001	3	2	1	2	0.01	5	1	2	1

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CLIENT:	SANTA FE PACIFIC GOLD CORP.
CLIENT REF:	CSF96-370
AAL REF:	SP042129
METHOD:	AAL 01-0

ELEMENT SAMPLES	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sb ppm	Sr ppm	Th ppm	Ti %	U ppm	V ppm	W ppm	Zn ppm
CSF96-370 970-990	< .3	0.89	18	< 3	44	3	1.25	0.7	2	17	19	3.11	< 1	0.37	18	0.09	457	2	0.07	5	0.056	22	3	130	4	< .01	< 5	4	< 2	34
CSF96-370 990-1010	2.6	1.23	21	< 3	86	13	1.02	0.3	3	8	12	2.09	< 1	0.58	26	0.13	387	1	0.07	2	0.059	20	4	191	4	< .01	< 5	3	< 2	50
CSF96-370 1010-1030	0.9	1.29	27	< 3	68	7	1.88	0.2	3	5	10	1.79	< 1	0.59	27	0.21	859	1	0.06	1	0.054	25	2	230	3	< .01	< 5	3	< 2	64
CSF96-370 1030-1050	< .3	1.33	17	< 3	123	< 2	1.44	0.2	4	4	9	2.29	< 1	0.48	30	0.31	822	< 1	0.04	1	0.056	19	< 2	197	3	< .01	< 5	4	< 2	80
CSF96-370 1050-1070	0.5	1.05	16	< 3	46	< 2	0.3	< .2	2	6	9	1.72	< 1	0.47	29	0.11	223	1	0.03	1	0.037	19	< 2	168	3	< .01	< 5	1	< 2	99
CSF96-370 1070-1090	0.7	1.18	29	< 3	78	< 2	0.17	< .2	2	5	16	1.66	< 1	0.6	23	0.07	50	1	0.03	2	0.009	18	4	196	2	< .01	< 5	1	< 2	45
CSF96-370 1090-1110	8	0.57	23	< 3	28	< 2	0.13	< .2	2	5	19	1.44	< 1	0.35	17	0.03	33	1	0.03	4	0.003	12	4	96	2	< .01	< 5	1	< 2	30
1110-1130.7	4.1	0.4	84	< 3	12	< 2	0.08	7	8	10	80	2.5	< 1	0.26	10	0.02	57	20	0.02	49	0.008	20	14	100	2	< .01	< 5	10	< 2	633
STANDARD C2	6.9	1.85	48	26	188	14	0.51	21	37	65	63	3.86	1	0.16	40	0.93	1165	20	0.07	72	0.106	35	14	53	35	0.06	19	70	13	124

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AAL 01-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
UNIT	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	0.3	0.01	2	3	1	2	0.01	0.2	1	1	1	0.01	1	0.01	1	0.01	2	1	0.01	1	0.001	3	2	1	2	0.01	5	1	2	1

0.500 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR B, Ba, Ca, Cr, Fe, La, Mg, Mn, Sr, Ti AND W.
DIGEST IS LIMITED FOR Al, K AND Na.

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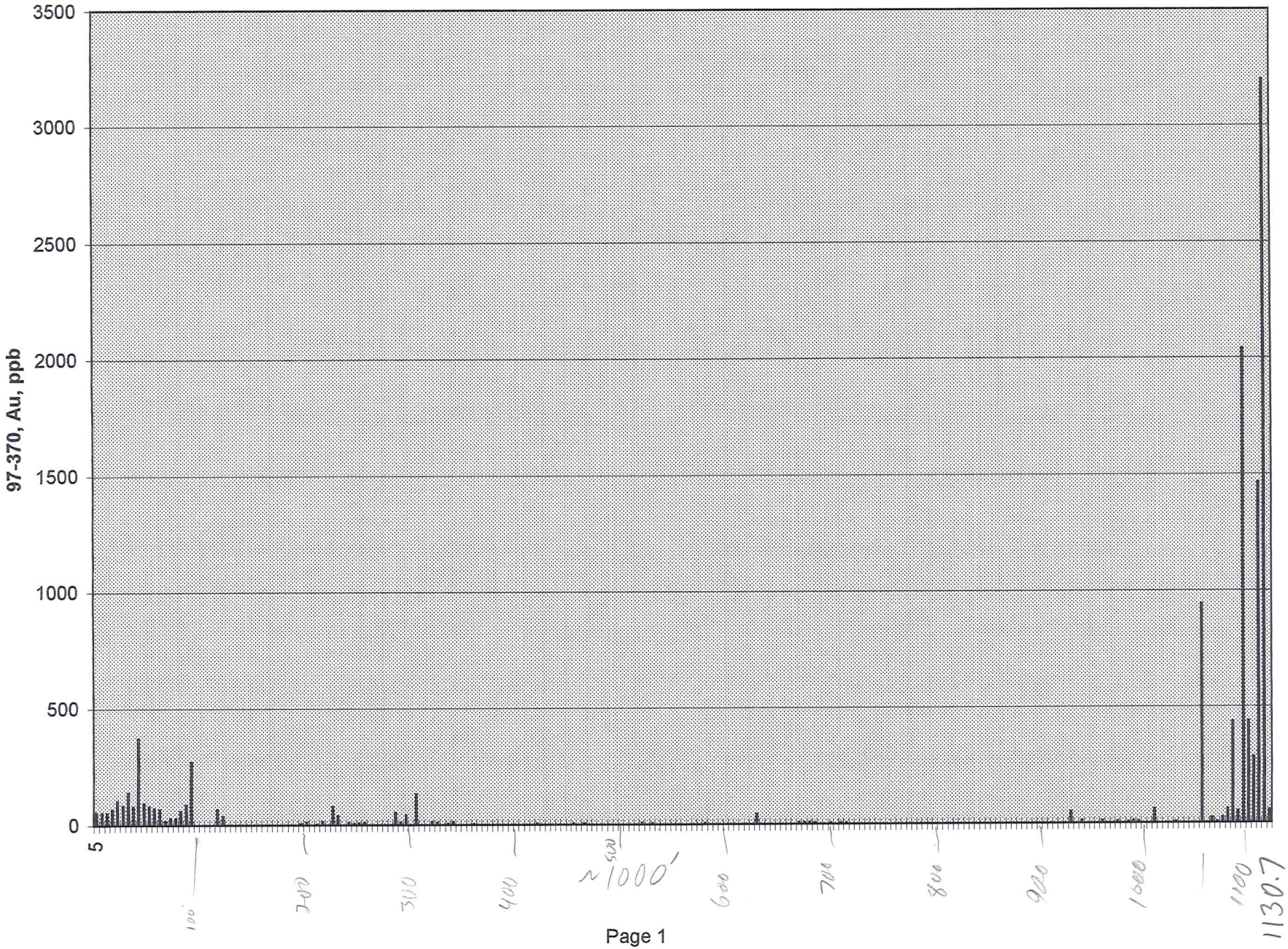
CLIENT: SANTA FE PACIFIC GOLD CORP.
CLIENT REF: CSF96-370
AAL REF: SP042077
METHOD: AAL 01-0

ELEMENT SAMPLES	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sb ppm	Sr ppm	Th ppm	Ti %	U ppm	V ppm	W ppm	Zn ppm
CSF96-370 500-520	< .3	1.06	5	< 3	149	< 2	1.8	0.2	4	10	11	2.83	< 1	0.54	27	0.14	625	1	0.06	2	0.091	15	2	185	4	0.04	< 5	30	< 2	27
CSF96-370 520-540	< .3	0.91	< 2	< 3	86	< 2	1.91	0.3	4	14	17	3.02	< 1	0.43	25	0.14	849	4	0.07	3	0.087	14	< 2	186	4	0.04	< 5	31	< 2	40
CSF96-370 540-560	< .3	1.1	4	< 3	116	< 2	2.07	0.3	5	11	14	2.82	< 1	0.55	26	0.19	842	2	0.1	3	0.088	13	< 2	190	3	0.03	< 5	25	< 2	49
CSF96-370 560-580	< .3	1.35	< 2	< 3	115	< 2	1.76	0.2	7	31	35	4.41	< 1	0.49	25	0.39	758	4	0.12	8	0.089	11	< 2	205	4	0.04	< 5	40	< 2	73
CSF96-370 580-600	< .3	1.19	< 2	< 3	92	< 2	1.83	< .2	6	21	23	3.91	< 1	0.45	26	0.33	800	4	0.1	5	0.088	14	< 2	199	4	0.04	< 5	36	< 2	75
CSF96-370 600-620	< .3	1.48	< 2	< 3	209	< 2	1.85	0.3	6	16	17	3.41	< 1	0.71	27	0.24	758	3	0.12	3	0.086	14	< 2	186	4	0.05	< 5	32	< 2	65
CSF96-370 620-640	< .3	1.09	< 2	< 3	85	< 2	1.87	0.2	4	9	11	2.84	< 1	0.56	26	0.14	827	1	0.08	1	0.086	9	< 2	196	3	0.05	< 5	25	< 2	42
CSF96-370 640-660	< .3	0.9	< 2	< 3	90	< 2	2.05	< .2	5	15	16	3.15	< 1	0.41	25	0.14	837	1	0.08	3	0.088	10	< 2	200	3	0.04	< 5	30	< 2	43
CSF96-370 660-680	< .3	0.96	< 2	< 3	104	< 2	1.54	0.2	6	27	32	4.18	< 1	0.39	25	0.22	824	5	0.12	6	0.086	7	< 2	192	4	0.04	< 5	36	< 2	64
CSF96-370 680-700	< .3	0.84	< 2	< 3	114	< 2	0.96	0.2	4	25	30	3.63	< 1	0.42	26	0.1	682	4	0.12	6	0.067	11	< 2	133	6	0.03	< 5	17	< 2	47
CSF96-370 700-720	< .3	0.94	< 2	< 3	102	< 2	1.36	< .2	4	30	36	3.69	< 1	0.45	27	0.12	821	5	0.12	6	0.067	10	< 2	156	5	0.03	< 5	17	< 2	48
CSF96-370 720-740	< .3	1.4	< 2	3	83	< 2	1.38	0.3	5	10	9	2.8	< 1	0.49	30	0.4	720	1	0.09	2	0.071	6	< 2	170	3	0.02	< 5	10	< 2	83
CSF96-370 740-760	< .3	1.01	2	< 3	116	< 2	1.67	0.5	3	9	7	2.08	< 1	0.51	30	0.1	856	1	0.08	2	0.064	8	< 2	178	4	0.03	< 5	10	< 2	49
CSF96-370 760-780	< .3	0.85	< 2	< 3	104	< 2	0.99	0.4	3	17	18	2.6	< 1	0.41	28	0.15	506	3	0.09	3	0.065	8	< 2	127	4	0.03	< 5	9	< 2	59
CSF96-370 780-800	< .3	1.44	< 2	< 3	150	4	1.21	0.3	5	12	12	3.01	< 1	0.42	28	0.54	839	1	0.14	3	0.064	9	< 2	169	3	0.03	< 5	11	< 2	74
CSF96-370 800-820	< .3	0.88	< 2	< 3	120	< 2	0.81	< .2	4	36	32	3.77	< 1	0.33	18	0.23	659	6	0.14	7	0.058	< 3	< 2	124	4	0.06	< 5	14	< 2	54
CSF96-370 820-840	< .3	1.26	4	< 3	144	< 2	0.79	< .2	4	38	33	4.18	< 1	0.64	26	0.15	666	5	0.2	8	0.061	12	< 2	122	7	0.1	< 5	16	2	38
CSF96-370 840-860	< .3	0.84	3	3	85	< 2	0.64	< .2	4	30	27	3.74	< 1	0.38	26	0.09	581	5	0.12	7	0.067	14	< 2	106	8	0.06	< 5	16	2	39
CSF96-370 860-880	< .3	0.99	< 2	< 3	271	< 2	0.96	0.2	3	29	25	3.6	< 1	0.48	30	0.1	830	5	0.15	6	0.068	13	< 2	131	9	0.03	< 5	17	< 2	35
CSF96-370 880-900	< .3	0.83	< 2	< 3	141	< 2	1.27	< .2	3	26	22	3.27	< 1	0.37	27	0.12	792	4	0.11	5	0.067	11	< 2	124	8	0.03	< 5	15	< 2	39
CSF96-370 900-920	< .3	1.03	< 2	< 3	82	< 2	1.68	< .2	3	18	17	3.25	< 1	0.47	28	0.12	1024	3	0.12	3	0.068	14	< 2	126	9	0.03	< 5	16	< 2	37
CSF96-370 920-940	0.3	0.93	12	< 3	67	< 2	1.1	0.2	3	12	13	2.61	< 1	0.42	21	0.08	498	3	0.07	3	0.068	12	4	140	6	0.01	< 5	7	< 2	41
CSF96-370 940-960	< .3	0.85	7	< 3	62	< 2	1.5	< .2	2	27	28	3.1	< 1	0.33	21	0.07	723	5	0.07	5	0.055	12	< 2	125	6	0.01	< 5	4	< 2	31
CSF96-370 960-975	0.4	0.91	21	< 3	56	< 2	1.02	0.2	2	22	36	3.22	< 1	0.31	16	0.12	574	4	0.07	5	0.049	13	3	103	4	< .01	< 5	2	< 2	48
STANDARD C2	6.8	1.92	43	26	188	13	0.56	20.6	36	63	61	3.79	1	0.15	37	0.95	1194	19	0.07	70	0.109	39	17	51	35	0.06	18	68	14	121

97-370, Au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2500
2000
1500
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500
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100
200
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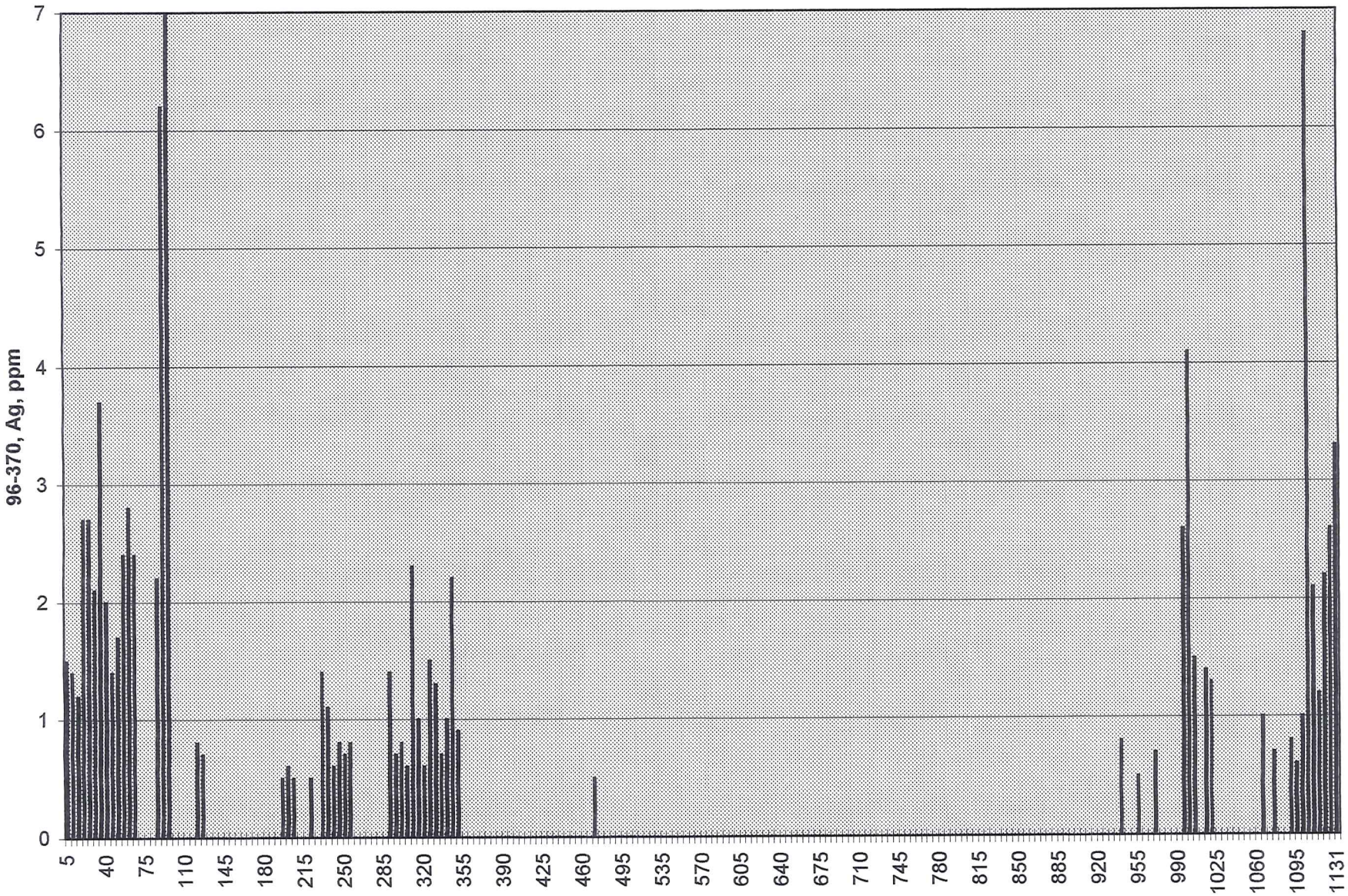
~1000'
600
700
800
900
1000
1100
1130.7

97-370, Ag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390
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495
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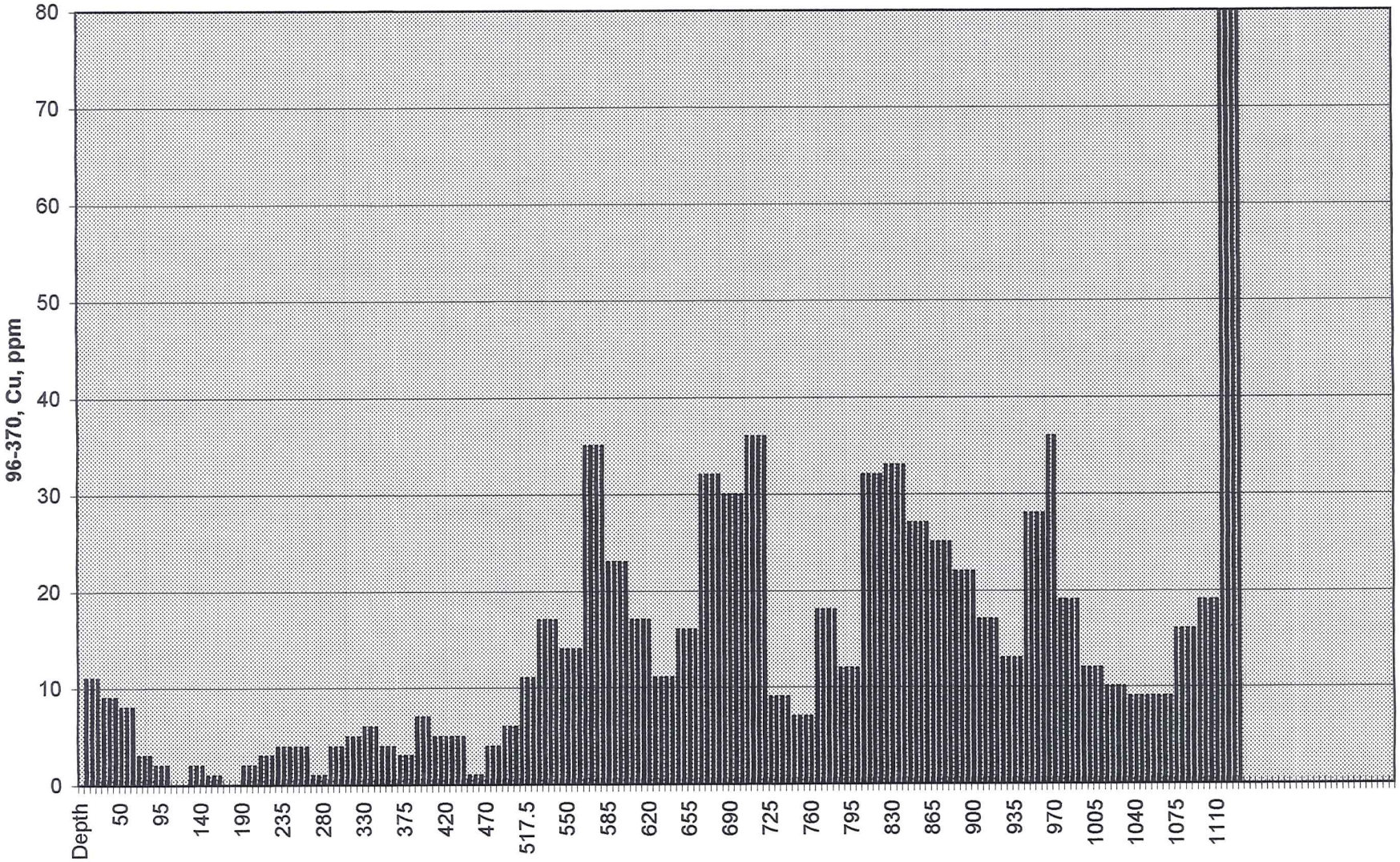
Cu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30
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50
60
70
80
Depth
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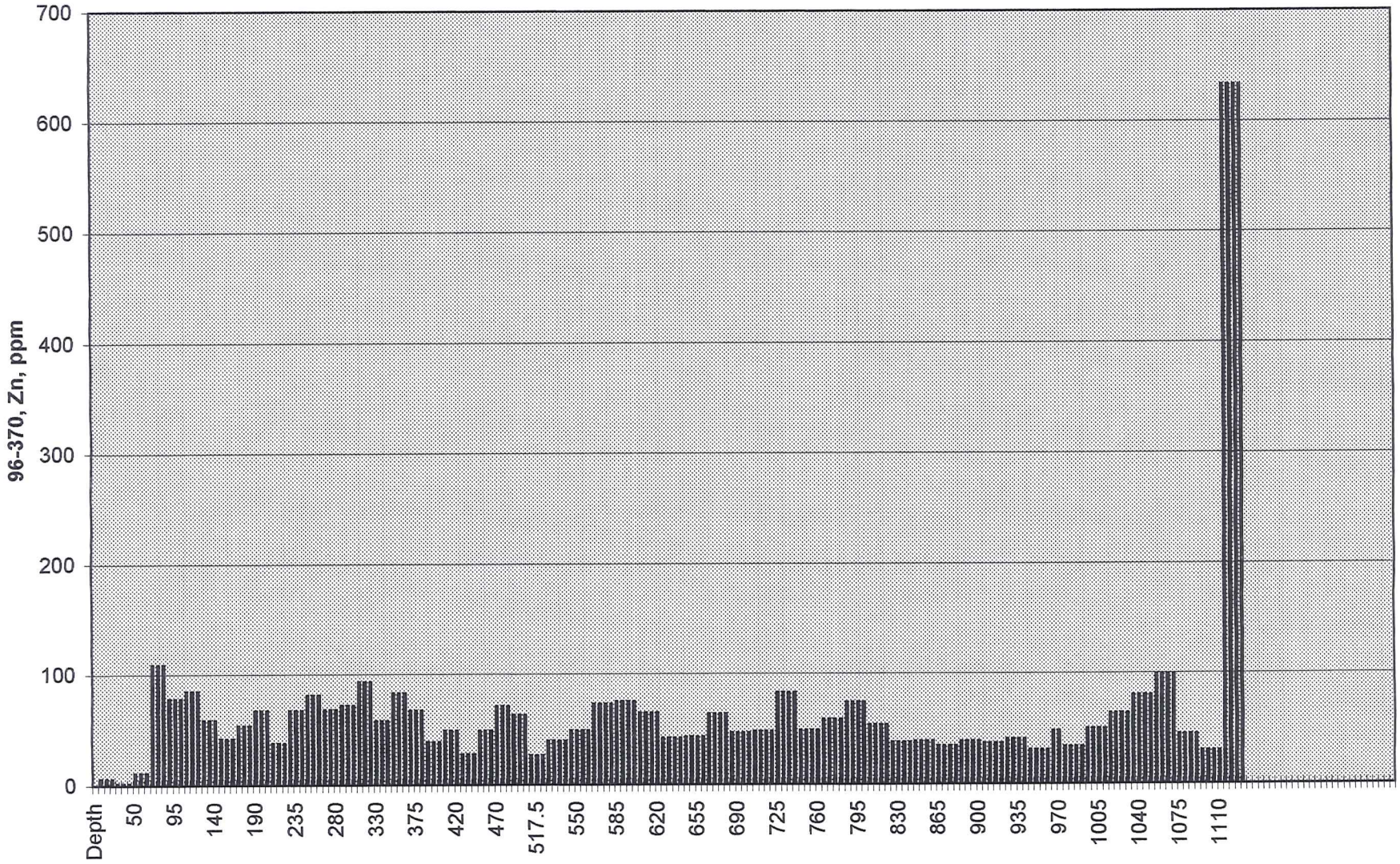
420
470
517.5
550
585
620
655
690
725
760
795
830
865
900
935
970
1005
1040
1075
1110

Zn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200
100
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50
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140
190
235
280
330
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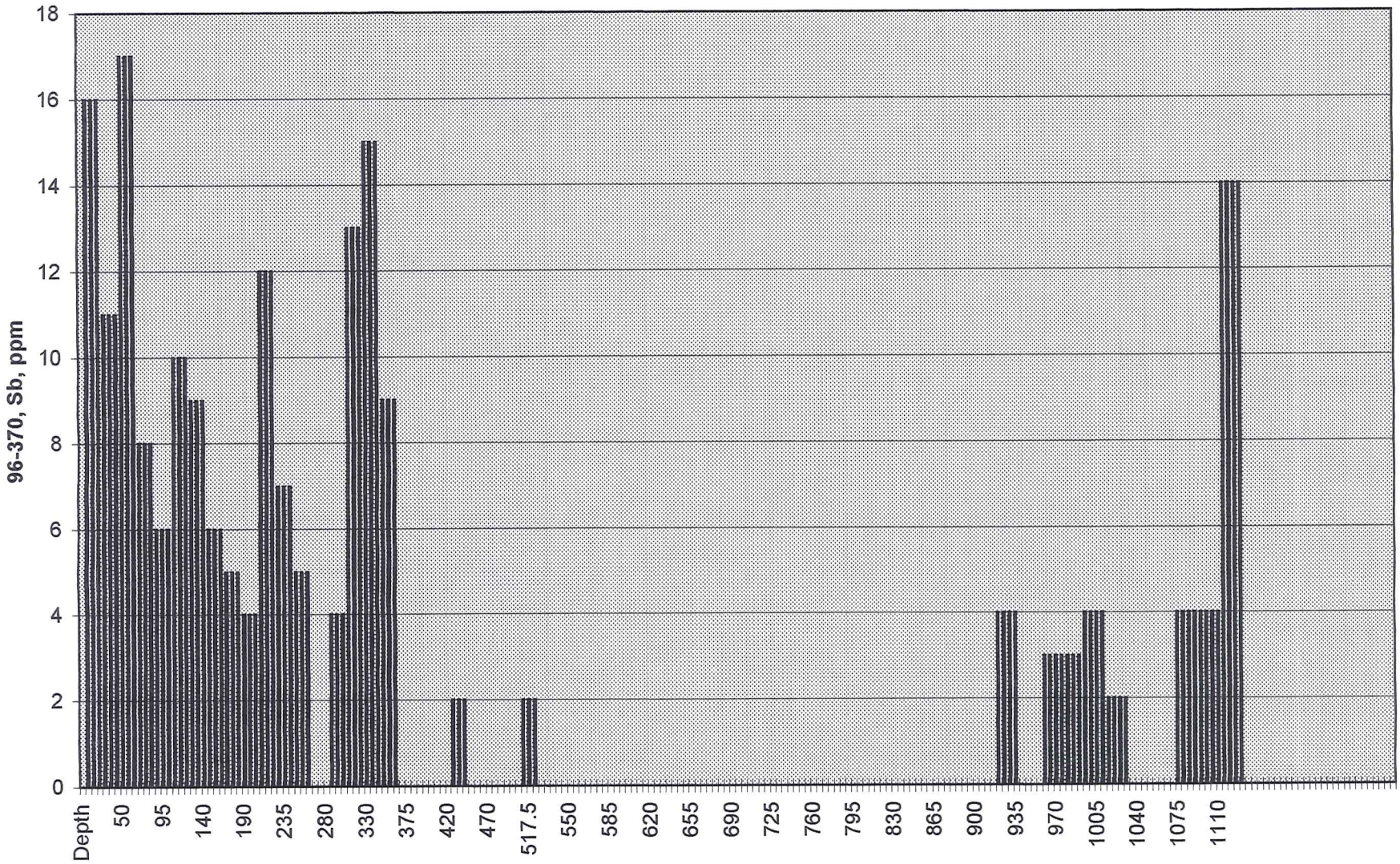
420
470
517.5
550
585
620
655
690
725
760
795
830
865
900
935
970
1005
1040
1075
1110

Sb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2
4
6
8
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12
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16
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Depth
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375
420
470
517.5
550
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970
1005
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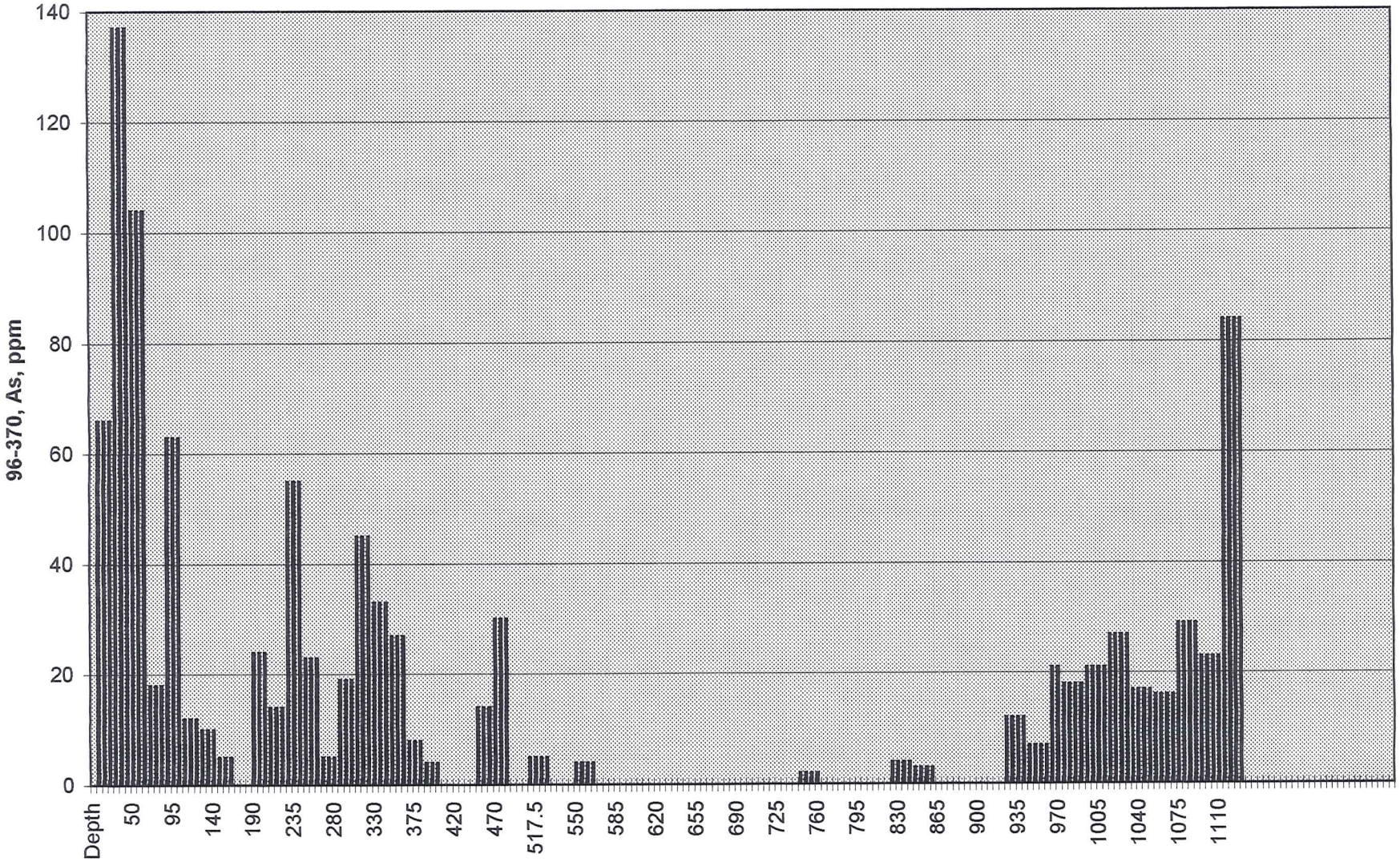
As

As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80
60
40
20
0
Depth
50
95
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190
235
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517.5
550
585
620
655
690
725
760
795
830
865
900
935
970
1005
1040
1075
1110

SANTA FE PACIFIC GOLD CORP.
DRILL HOLE ABANDONMENT

Project: Rose Bud
Hole No.: SF 96-370 Date Completed: Dec 15, 1996
Hole Depth: 1131 Hole Size: (3.895) HQ
Artesian: _____ Est. flow: _____ g.p.m. Depth: _____ ft.
Non-Artesian: X

BENTONITE SLURRY ABANDONMENT

Mud Viscosity: 42 sec./qt. (at completion) (Fluid-drilled holes only)
Mud Viscosity: 100 sec./qt.(abandonment fluid) (All holes)
Mud Weight: 9# lbs./gal. (abandonment fluid) (All holes)

SURFACE SEAL

Cement Weight: 15# lbs./gal.
Placed in Hole: From 20 ft. to Surface ft.

CEMENT ABANDONMENT (Artesian Holes)

Cement Weight: _____ lbs./gal.
Placed in Hole: From _____ ft. to _____ ft.
From _____ ft. to _____ ft.

MATERIALS MIXED

Qty.	Size	Product	Brand Name
	50 lb	Enviroplug Coarse	Wyo-Ben
3	94 lb	Cement	Nevada Cement
23	50 lb	Abandonite	Wyo-Ben

GROUND WATER INFORMATION

Depth/ft.	GPM	Temp.	Depth/ft.	GPM	Temp.
100					
200					
300					
400					
500					
600					
700					
800					

OTHER

SANTA FE PACIFIC GOLD CORP.
By: [signature]
Title: _____

CONTRACTOR Boart Longyear
Rig No. 462
By: M.J. Linder / Burke Marchello
Title: Driller

6/12/96

SANTA FE PACIFIC GOLD CORP.
DRILL HOLE ABANDONMENT

Project: Rose Bud
Hole No.: SF 96-370 Date Completed: Dec 15, 1996
Hole Depth: 1131 Hole Size: (3.895) HQ
Artesian: _____ Est. flow: _____ g.p.m. Depth: _____ ft.
Non-Artesian: X

BENTONITE SLURRY ABANDONMENT

Mud Viscosity: 42 sec./qt. (at completion) (Fluid-drilled holes only)
Mud Viscosity: 100 sec./qt.(abandonment fluid) (All holes)
Mud Weight: 9# lbs./gal. (abandonment fluid) (All holes)

SURFACE SEAL

Cement Weight: 15# lbs./gal.
Placed in Hole: From 20 ft. to Surface ft.

CEMENT ABANDONMENT (Artesian Holes)

Cement Weight: _____ lbs./gal.
Placed in Hole: From _____ ft. to _____ ft.
From _____ ft. to _____ ft.

MATERIALS MIXED

Qty.	Size	Product	Brand Name
	50 lb	Enviroplug Coarse	Wyo-Ben
3	94 lb	Cement	Nevada Cement
23	50 lb	Abandonite	Wyo-Ben

GROUND WATER INFORMATION

Depth/ft.	GPM	Temp.	Depth/ft.	GPM	Temp.
100					
200					
300					
400					
500					
600					
700					
800					

OTHER

SANTA FE PACIFIC GOLD CORP.
By: [signature]
Title: _____

CONTRACTOR Boart Longyear
Rig No. 462
By: M.J. Linder / Burke Marchello
Title: Driller

6/12/96

SANTA FE PACIFIC GOLD CORP.
DRILL HOLE ABANDONMENT AND SURFACE SEAL

LABOR CONTRACTOR

Project: Rosebud

Hole #: 370

Drilled By: Eklund

Date Completed: 12-16-96

Hole Depth: 1044'

Hole Size: 4"

Wet Hole: X

Dry Hole: _____

SURFACE SEAL

Cement Weight: 15 lbs./gal.

Placed in Hole: From 10 ft. to 0 ft.

MATERIALS MIXED

Qty.	Size	Product	Brand Name
29	50 lbs.	Enviroplug Coarse	Wyo-Ben
2	94 lbs.	Cement	Nevada Cement

REMARKS

SANTA FE PACIFIC GOLD CORP.

By: [signature]

Title: _____

TAYLOR SERVICES INC.

By: Ramon Silva

Title: _____

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

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

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

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

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

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: Santa Fe Pacific Gold

Address: 250 So. Rock Blvd.

City Reno State NV Zip 89502

Telephone Number: (702) 858-8000 Fax Number: ( ) 858-8011

Project Name: CSF96-370 Purchase Order Number:

Date Submitted: 12/12/96 Number of Samples: 77

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

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
CSF96-370	Core	
		Au-Ag
500'-509.5		
509.5-517.5		
517.5-520		
520-525, etc.		Au-Ag every 5'
to 890		" "
<3 spls.		
<500-509.5, 509.5-517.5, 517.5-520>		Composite 20' for trace
<520-525, 525-530, 530-535 535-540>		element analysis, 30
etc. to 880'		element ICP
		(4 spls/composite from
		520'-880'

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:

R. L. Dixon
Santa Fe Pacific Gold
250 So. Rock Blvd.
Reno, NV 89502

Results to:

FAX assays to
Charlie Muschoff
c/o Hecla Mining Co.

Comments:

CLIENT FILE COPY

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* SFPG *
****

JOB NUMBER: 29-0521-311

WELL NAME: CSF96-370 / VERTICAL

LOCATION: ROSEBUD

SURVEY DATE: 12/10/96

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 225.50
TIE-ON COORDINATES AT: 0 M.D.
TAKEN FROM: COLLAR

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

COMMENTS: ** BOART LONGYEAR **
*** MYRON ALLEN ***
*** RON PEARROW ***
PROJECTED F/950' T/1100'.

****
****
*** 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: CSF96-370 / 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.
0.0	0.00	0.00	0.000	-88.86	028.47	0.00 N	0.00 E	0.00		0.00	AT 000.00	
50.0	49.99	-0.14	0.961	-88.91	035.62	0.82 N	0.51 E	0.30	0.15	0.97	AT 031.96	052.13
100.0	99.98	-0.42	1.884	-88.87	045.10	1.56 N	1.14 E	0.38	0.19	1.93	AT 036.19	053.64
150.0	149.97	-0.85	2.853	-88.70	049.57	2.27 N	1.92 E	0.39	0.19	2.98	AT 040.19	055.00
200.0	199.96	-1.35	3.620	-89.18	067.47	2.78 N	2.68 E	1.16	0.58	3.86	AT 043.99	057.30
250.0	249.96	-1.69	4.127	-89.39	044.63	3.11 N	3.20 E	0.70	0.35	4.46	AT 045.86	059.02
300.0	299.95	-1.69	4.715	-89.19	007.65	3.65 N	3.43 E	0.98	0.49	5.01	AT 043.30	060.96
350.0	349.95	-1.15	5.368	-88.75	328.65	4.46 N	3.20 E	1.61	0.80	5.49	AT 035.63	061.83
400.0	399.93	0.06	5.767	-88.25	299.97	5.31 N	2.25 E	1.77	0.89	5.77	AT 023.00	063.98
450.0	449.90	1.74	5.850	-87.89	293.43	6.06 N	0.75 E	0.84	0.42	6.10	AT 007.03	065.13
500.0	499.86	3.78	5.691	-87.40	285.67	6.73 N	1.19 W	1.17	0.58	6.83	AT 349.98	067.29
550.0	549.81	6.00	5.383	-87.47	285.65	7.33 N	3.34 W	0.14	0.07	8.06	AT 335.48	069.09
600.0	599.75	8.32	5.007	-87.13	283.27	7.92 N	5.63 W	0.72	0.36	9.71	AT 324.61	070.60
650.0	649.69	10.87	4.478	-86.90	280.52	8.45 N	8.17 W	0.54	0.27	11.76	AT 315.96	072.69
700.0	699.61	13.50	3.921	-86.94	282.68	8.99 N	10.80 W	0.25	0.12	14.06	AT 309.77	073.27
750.0	749.55	16.04	3.469	-87.15	284.32	9.59 N	13.31 W	0.45	0.23	16.41	AT 305.78	074.78
800.0	799.49	18.44	3.004	-87.24	280.85	10.13 N	15.70 W	0.38	0.19	18.68	AT 302.82	075.86
850.0	849.43	20.77	2.516	-87.29	282.70	10.61 N	18.03 W	0.20	0.10	20.92	AT 300.48	076.58
900.0	899.37	23.10	2.002	-87.23	279.62	11.07 N	20.38 W	0.32	0.16	23.19	AT 298.52	077.38
950.0	949.31	25.49	1.447	-87.15	281.33	11.52 N	22.79 W	0.23	0.12	25.53	AT 296.82	077.66
1000.0	999.25	27.89	0.938	-87.22	281.88	12.01 N	25.19 W	0.15	0.08	27.91	AT 295.50	077.59
1050.0	1049.19	30.28	0.459	-87.20	282.55	12.53 N	27.57 W	0.08	0.04	30.28	AT 294.44	077.59
1100.0	1099.13	32.66	0.001	-87.24	282.83	13.06 N	29.94 W	0.08	0.04	32.66	AT 293.57	077.59

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*  1100.0 FEET EQUALS     32.66    FEET AT   293.57         *
*                          ********                         *
*************************************************************
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* SFPG *
****

JOB NUMBER: 29-0521-311

WELL NAME: CSF96-370 / S-N SECTION

LOCATION: ROSEBUD

SURVEY DATE: 12/10/96

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 225.50
TIE-ON COORDINATES AT: 0 M.D.
TAKEN FROM: COLLAR

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 000.00

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

COMMENTS: ** BOART LONGYEAR **
*** MYRON ALLEN ***
*** RON PEARROW ***
PROJECTED F/950' T/1100'.

****
****
*** 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: CSF96-370 / S-N SECTION

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.
0.0	0.00	0.00	0.000	-88.86	028.47	0.00 N	0.00 E	0.00		0.00	AT 000.00	
50.0	49.99	0.82	0.514	-88.91	035.62	0.82 N	0.51 E	0.30	0.15	0.97	AT 031.96	052.13
100.0	99.98	1.56	1.140	-88.87	045.10	1.56 N	1.14 E	0.38	0.19	1.93	AT 036.19	053.64
150.0	149.97	2.27	1.921	-88.70	049.57	2.27 N	1.92 E	0.39	0.19	2.98	AT 040.19	055.00
200.0	199.96	2.78	2.683	-89.18	067.47	2.78 N	2.68 E	1.16	0.58	3.86	AT 043.99	057.30
250.0	249.96	3.11	3.201	-89.39	044.63	3.11 N	3.20 E	0.70	0.35	4.46	AT 045.86	059.02
300.0	299.95	3.65	3.435	-89.19	007.65	3.65 N	3.43 E	0.98	0.49	5.01	AT 043.30	060.96
350.0	349.95	4.46	3.198	-88.75	328.65	4.46 N	3.20 E	1.61	0.80	5.49	AT 035.63	061.83
400.0	399.93	5.31	2.253	-88.25	299.97	5.31 N	2.25 E	1.77	0.89	5.77	AT 023.00	063.98
450.0	449.90	6.06	0.747	-87.89	293.43	6.06 N	0.75 E	0.84	0.42	6.10	AT 007.03	065.13
500.0	499.86	6.73	-1.189	-87.40	285.67	6.73 N	1.19 W	1.17	0.58	6.83	AT 349.98	067.29
550.0	549.81	7.33	-3.344	-87.47	285.65	7.33 N	3.34 W	0.14	0.07	8.06	AT 335.48	069.09
600.0	599.75	7.92	-5.625	-87.13	283.27	7.92 N	5.63 W	0.72	0.36	9.71	AT 324.61	070.60
650.0	649.69	8.45	-8.173	-86.90	280.52	8.45 N	8.17 W	0.54	0.27	11.76	AT 315.96	072.69
700.0	699.61	8.99	-10.804	-86.94	282.68	8.99 N	10.80 W	0.25	0.12	14.06	AT 309.77	073.27
750.0	749.55	9.59	-13.310	-87.15	284.32	9.59 N	13.31 W	0.45	0.23	16.41	AT 305.78	074.78
800.0	799.49	10.13	-15.697	-87.24	280.85	10.13 N	15.70 W	0.38	0.19	18.68	AT 302.82	075.86
850.0	849.43	10.61	-18.032	-87.29	282.70	10.61 N	18.03 W	0.20	0.10	20.92	AT 300.48	076.58
900.0	899.37	11.07	-20.377	-87.23	279.62	11.07 N	20.38 W	0.32	0.16	23.19	AT 298.52	077.38
950.0	949.31	11.52	-22.787	-87.15	281.33	11.52 N	22.79 W	0.23	0.12	25.53	AT 296.82	077.66
1000.0	999.25	12.01	-25.192	-87.22	281.88	12.01 N	25.19 W	0.15	0.08	27.91	AT 295.50	077.59
1050.0	1049.19	12.53	-27.571	-87.20	282.55	12.53 N	27.57 W	0.08	0.04	30.28	AT 294.44	077.59
1100.0	1099.13	13.06	-29.936	-87.24	282.83	13.06 N	29.94 W	0.08	0.04	32.66	AT 293.57	077.59

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*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*  1100.0 FEET EQUALS     32.66    FEET AT   293.57         *
*                          ********                         *
*************************************************************
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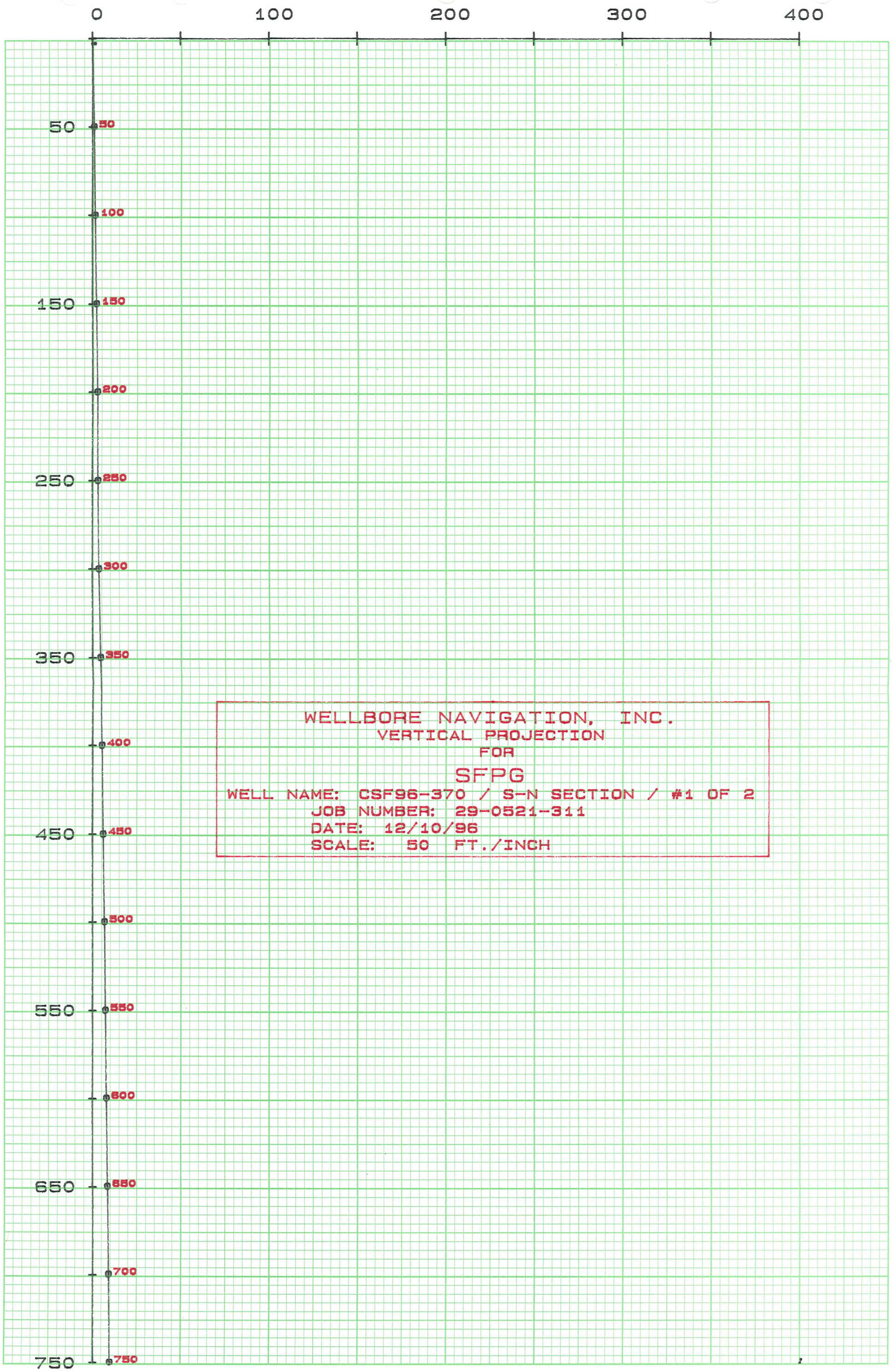
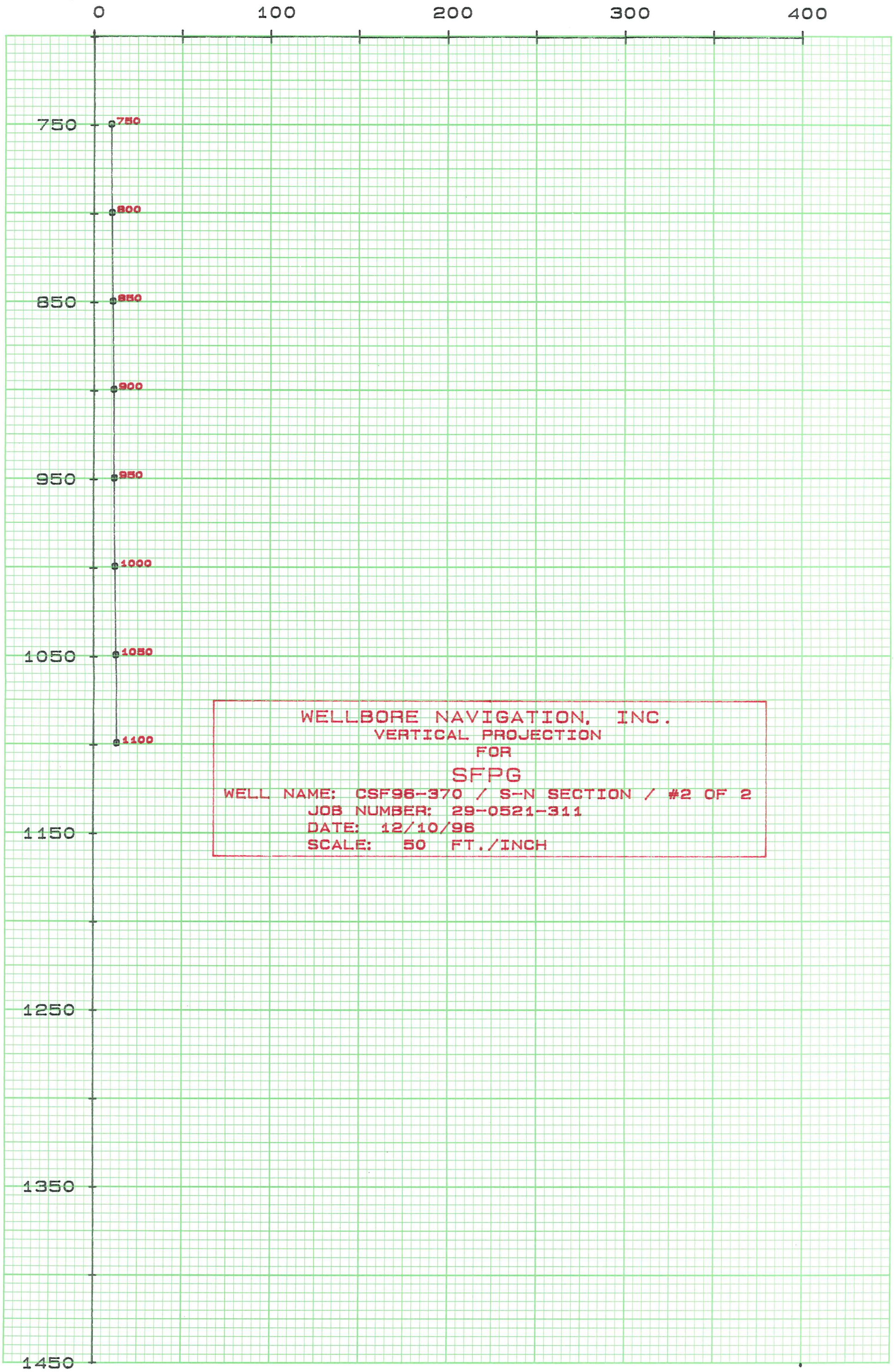
CK PRINTING CENTER (801) 467-2841



CK PRINTING CENTER (801) 467-2841



WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* SFPG *
****

JOB NUMBER: 29-0521-311

WELL NAME: CSF96-370 / W-E SECTION

LOCATION: ROSEBUD

SURVEY DATE: 12/10/96

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 225.50
TIE-ON COORDINATES AT: 0 M.D.
TAKEN FROM: COLLAR

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 090.00

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

COMMENTS: ** BOART LONGYEAR **
*** MYRON ALLEN ***
*** RON PEARROW ***
PROJECTED F/950' T/1100'.

****
****
*** 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: CSF96-370 / W-E SECTION

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.
0.0	0.00	0.00	0.000	-88.86	028.47	0.00 N	0.00 E	0.00		0.00	AT 000.00	
50.0	49.99	0.51	-0.824	-88.91	035.62	0.82 N	0.51 E	0.30	0.15	0.97	AT 031.96	052.13
100.0	99.98	1.14	-1.558	-88.87	045.10	1.56 N	1.14 E	0.38	0.19	1.93	AT 036.19	053.64
150.0	149.97	1.92	-2.274	-88.70	049.57	2.27 N	1.92 E	0.39	0.19	2.98	AT 040.19	055.00
200.0	199.96	2.68	-2.779	-89.18	067.47	2.78 N	2.68 E	1.16	0.58	3.86	AT 043.99	057.30
250.0	249.96	3.20	-3.106	-89.39	044.63	3.11 N	3.20 E	0.70	0.35	4.46	AT 045.86	059.02
300.0	299.95	3.43	-3.645	-89.19	007.65	3.65 N	3.43 E	0.98	0.49	5.01	AT 043.30	060.96
350.0	349.95	3.20	-4.462	-88.75	328.65	4.46 N	3.20 E	1.61	0.80	5.49	AT 035.63	061.83
400.0	399.93	2.25	-5.309	-88.25	299.97	5.31 N	2.25 E	1.77	0.89	5.77	AT 023.00	063.98
450.0	449.90	0.75	-6.056	-87.89	293.43	6.06 N	0.75 E	0.84	0.42	6.10	AT 007.03	065.13
500.0	499.86	-1.19	-6.728	-87.40	285.67	6.73 N	1.19 W	1.17	0.58	6.83	AT 349.98	067.29
550.0	549.81	-3.34	-7.332	-87.47	285.65	7.33 N	3.34 W	0.14	0.07	8.06	AT 335.48	069.09
600.0	599.75	-5.63	-7.917	-87.13	283.27	7.92 N	5.63 W	0.72	0.36	9.71	AT 324.61	070.60
650.0	649.69	-8.17	-8.451	-86.90	280.52	8.45 N	8.17 W	0.54	0.27	11.76	AT 315.96	072.69
700.0	699.61	-10.80	-8.991	-86.94	282.68	8.99 N	10.80 W	0.25	0.12	14.06	AT 309.77	073.27
750.0	749.55	-13.31	-9.591	-87.15	284.32	9.59 N	13.31 W	0.45	0.23	16.41	AT 305.78	074.78
800.0	799.49	-15.70	-10.125	-87.24	280.85	10.13 N	15.70 W	0.38	0.19	18.68	AT 302.82	075.86
850.0	849.43	-18.03	-10.612	-87.29	282.70	10.61 N	18.03 W	0.20	0.10	20.92	AT 300.48	076.58
900.0	899.37	-20.38	-11.074	-87.23	279.62	11.07 N	20.38 W	0.32	0.16	23.19	AT 298.52	077.38
950.0	949.31	-22.79	-11.520	-87.15	281.33	11.52 N	22.79 W	0.23	0.12	25.53	AT 296.82	077.66
1000.0	999.25	-25.19	-12.014	-87.22	281.88	12.01 N	25.19 W	0.15	0.08	27.91	AT 295.50	077.59
1050.0	1049.19	-27.57	-12.529	-87.20	282.55	12.53 N	27.57 W	0.08	0.04	30.28	AT 294.44	077.59
1100.0	1099.13	-29.94	-13.061	-87.24	282.83	13.06 N	29.94 W	0.08	0.04	32.66	AT 293.57	077.59

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*************************************************************
*                          ********                         *
*       THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF         *
*                          ********                         *
*   1100.0 FEET EQUALS     32.66    FEET AT   293.57        *
*                          ********                         *
*************************************************************
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* SFPG *
****

JOB NUMBER: 29-0521-311

WELL NAME: CSF96-370 / VERTICAL

LOCATION: ROSEBUD

SURVEY DATE: 12/10/96

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: 225.50
TIE-ON COORDINATES AT: 0 M.D.
TAKEN FROM: COLLAR

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

COMMENTS: ** BOART LONGYEAR **
*** MYRON ALLEN ***
*** RON PEARROW ***
PROJECTED F/950' T/1100'.

****
****
*** 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: CSF96-370 / 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.
0.0	0.00	0.00	0.000	-88.86	028.47	0.00 N	0.00 E	0.00		0.00	AT 000.00	
50.0	49.99	-0.14	0.961	-88.91	035.62	0.82 N	0.51 E	0.30	0.15	0.97	AT 031.96	052.13
100.0	99.98	-0.42	1.884	-88.87	045.10	1.56 N	1.14 E	0.38	0.19	1.93	AT 036.19	053.64
150.0	149.97	-0.85	2.853	-88.70	049.57	2.27 N	1.92 E	0.39	0.19	2.98	AT 040.19	055.00
200.0	199.96	-1.35	3.620	-89.18	067.47	2.78 N	2.68 E	1.16	0.58	3.86	AT 043.99	057.30
250.0	249.96	-1.69	4.127	-89.39	044.63	3.11 N	3.20 E	0.70	0.35	4.46	AT 045.86	059.02
300.0	299.95	-1.69	4.715	-89.19	007.65	3.65 N	3.43 E	0.98	0.49	5.01	AT 043.30	060.96
350.0	349.95	-1.15	5.368	-88.75	328.65	4.46 N	3.20 E	1.61	0.80	5.49	AT 035.63	061.83
400.0	399.93	0.06	5.767	-88.25	299.97	5.31 N	2.25 E	1.77	0.89	5.77	AT 023.00	063.98
450.0	449.90	1.74	5.850	-87.89	293.43	6.06 N	0.75 E	0.84	0.42	6.10	AT 007.03	065.13
500.0	499.86	3.78	5.691	-87.40	285.67	6.73 N	1.19 W	1.17	0.58	6.83	AT 349.98	067.29
550.0	549.81	6.00	5.383	-87.47	285.65	7.33 N	3.34 W	0.14	0.07	8.06	AT 335.48	069.09
600.0	599.75	8.32	5.007	-87.13	283.27	7.92 N	5.63 W	0.72	0.36	9.71	AT 324.61	070.60
650.0	649.69	10.87	4.478	-86.90	280.52	8.45 N	8.17 W	0.54	0.27	11.76	AT 315.96	072.69
700.0	699.61	13.50	3.921	-86.94	282.68	8.99 N	10.80 W	0.25	0.12	14.06	AT 309.77	073.27
750.0	749.55	16.04	3.469	-87.15	284.32	9.59 N	13.31 W	0.45	0.23	16.41	AT 305.78	074.78
800.0	799.49	18.44	3.004	-87.24	280.85	10.13 N	15.70 W	0.38	0.19	18.68	AT 302.82	075.86
850.0	849.43	20.77	2.516	-87.29	282.70	10.61 N	18.03 W	0.20	0.10	20.92	AT 300.48	076.58
900.0	899.37	23.10	2.002	-87.23	279.62	11.07 N	20.38 W	0.32	0.16	23.19	AT 298.52	077.38
950.0	949.31	25.49	1.447	-87.15	281.33	11.52 N	22.79 W	0.23	0.12	25.53	AT 296.82	077.66
1000.0	999.25	27.89	0.938	-87.22	281.88	12.01 N	25.19 W	0.15	0.08	27.91	AT 295.50	077.59
1050.0	1049.19	30.28	0.459	-87.20	282.55	12.53 N	27.57 W	0.08	0.04	30.28	AT 294.44	077.59
1100.0	1099.13	32.66	0.001	-87.24	282.83	13.06 N	29.94 W	0.08	0.04	32.66	AT 293.57	077.59

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*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*  1100.0 FEET EQUALS    32.66   FEET AT  293.57             *
*                          ********                         *
*************************************************************
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WELLBORE NAVIGATION, INC.
ELKO NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* SFPG *
****

JOB NUMBER: 29-0521-311

WELL NAME: FFS96-370

LOCATION: ROSEBUD

SURVEY DATE: 11-26-96

SURVEY ENGINEER: CHAD HELD

GYRO REFERENCE BEARING: 058.50

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

COMMENTS: CASED CORE HOLE
PRECOLLAR

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

WELLBORE NAVIGATION, INC.
ELKO NEVADA

JOB NUMBER: 29-0521-311

WELL NAME: PFS96-370

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R CLOS.	INCL	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION
50.0	50.00	0.33	0.382	01.15	042.18	0.37 N	0.34 E	2.30	1.15	0.50	AT 042.18
100.0	99.98	1.03	1.234	01.39	043.67	1.18 N	1.09 E	0.48	0.24	1.61	AT 042.74
150.0	149.97	1.54	2.082	00.91	064.23	1.79 N	1.87 E	1.25	0.63	2.59	AT 046.18
200.0	199.97	1.82	2.836	00.93	061.02	2.16 N	2.58 E	0.11	0.06	3.37	AT 050.04
250.0	249.96	2.02	3.563	00.81	073.81	2.46 N	3.28 E	0.46	0.23	4.10	AT 053.12
300.0	299.96	2.54	4.114	01.17	015.99	3.05 N	3.76 E	2.02	1.01	4.84	AT 050.95
350.0	349.95	3.55	4.278	01.23	348.60	4.06 N	3.79 E	1.14	0.57	5.56	AT 043.00
400.0	399.93	4.69	3.546	02.11	303.77	5.10 N	2.92 E	3.02	1.51	5.88	AT 029.78
450.0	449.89	5.82	2.023	02.25	294.98	6.03 N	1.26 E	0.72	0.36	6.16	AT 011.85
500.0	499.84	6.83	-0.000	02.96	285.08	6.78 N	0.87 W	1.68	0.84	6.83	AT 352.67

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*************************************************************
*                         ********                          *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                         ********                          *
*   500.0 FEET EQUALS      6.83   FEET AT  352.67           *
*                         ********                          *
*************************************************************
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* SFPG *
****

JOB NUMBER: 29-0521-311

WELL NAME: PSF96-370 / VERTICAL

LOCATION: ROSEBUD

SURVEY DATE: 11/26/96

SURVEY ENGINEER: CHAD HELD

GYRO REFERENCE BEARING: 058.50

WELNAV

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

COMMENTS: **** EKLUND ****
** CRAIG DINES **

****
****
*** 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: PSF96-370 / VERTICAL

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R CLOS.	INCL	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION
50.0	50.00	0.33	0.382	-88.85	042.18	0.37 N	0.34 E	2.30	1.15	0.50	AT 042.18
100.0	99.98	1.03	1.234	-88.61	043.67	1.18 N	1.09 E	0.48	0.24	1.61	AT 042.74
150.0	149.97	1.54	2.082	-89.09	064.23	1.79 N	1.87 E	1.25	0.63	2.59	AT 046.18
200.0	199.97	1.82	2.836	-89.07	061.02	2.16 N	2.58 E	0.11	0.06	3.37	AT 050.04
250.0	249.96	2.02	3.563	-89.19	073.81	2.46 N	3.28 E	0.46	0.23	4.10	AT 053.12
300.0	299.96	2.54	4.114	-88.83	015.99	3.05 N	3.76 E	2.02	1.01	4.84	AT 050.95
350.0	349.95	3.55	4.278	-88.77	348.60	4.06 N	3.79 E	1.14	0.57	5.56	AT 043.00
400.0	399.93	4.69	3.546	-87.89	303.77	5.10 N	2.92 E	3.02	1.51	5.88	AT 029.78
450.0	449.89	5.82	2.023	-87.75	294.98	6.03 N	1.26 E	0.72	0.36	6.16	AT 011.85
500.0	499.84	6.83	-0.000	-87.04	285.08	6.78 N	0.87 W	1.68	0.84	6.83	AT 352.67

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*************************************************************
*                         ********                          *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                         ********                          *
*   500.0 FEET EQUALS     6.83   FEET AT  352.67            *
*                         ********                          *
*************************************************************
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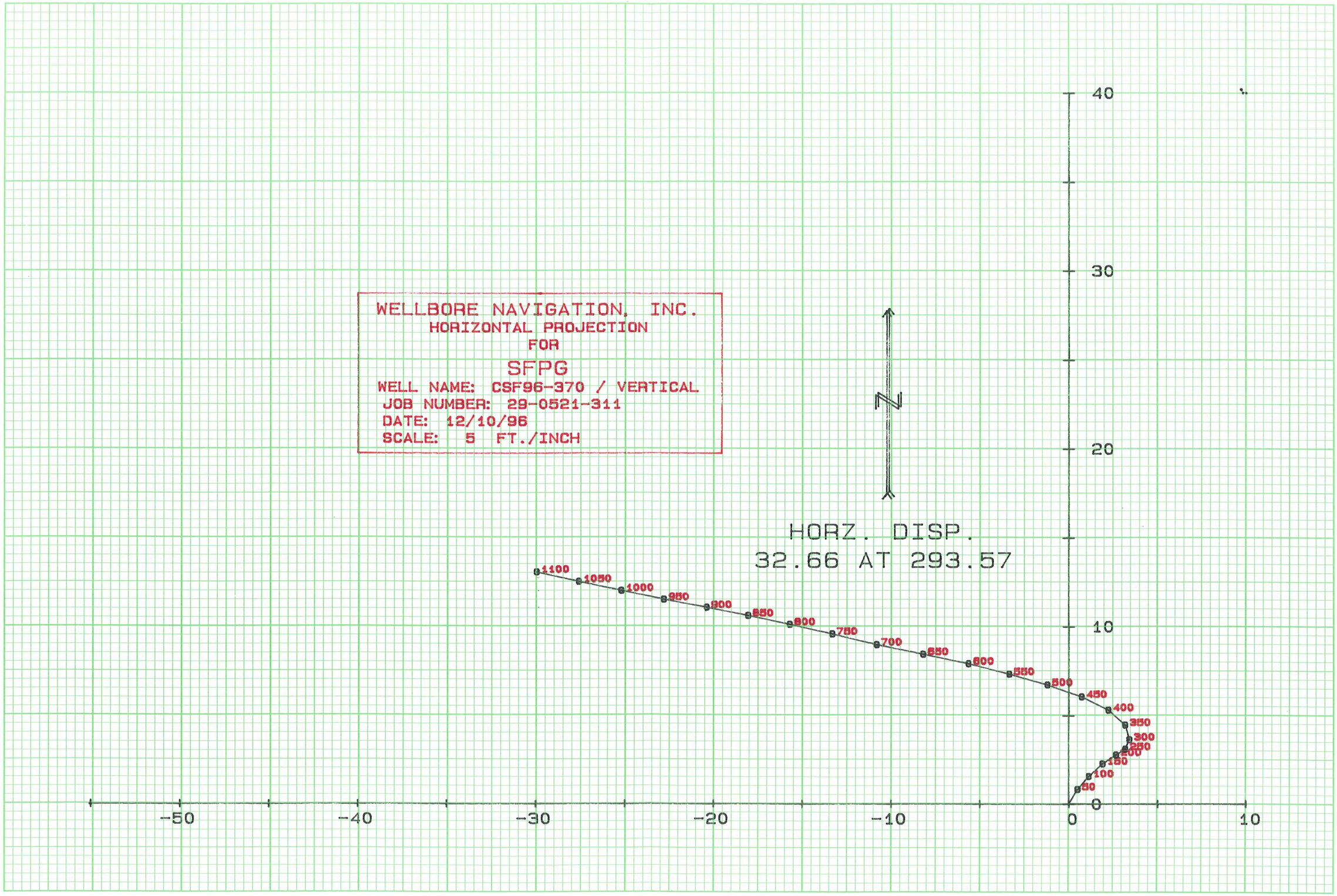
CK PRINTING CENTER (801) 467-2841



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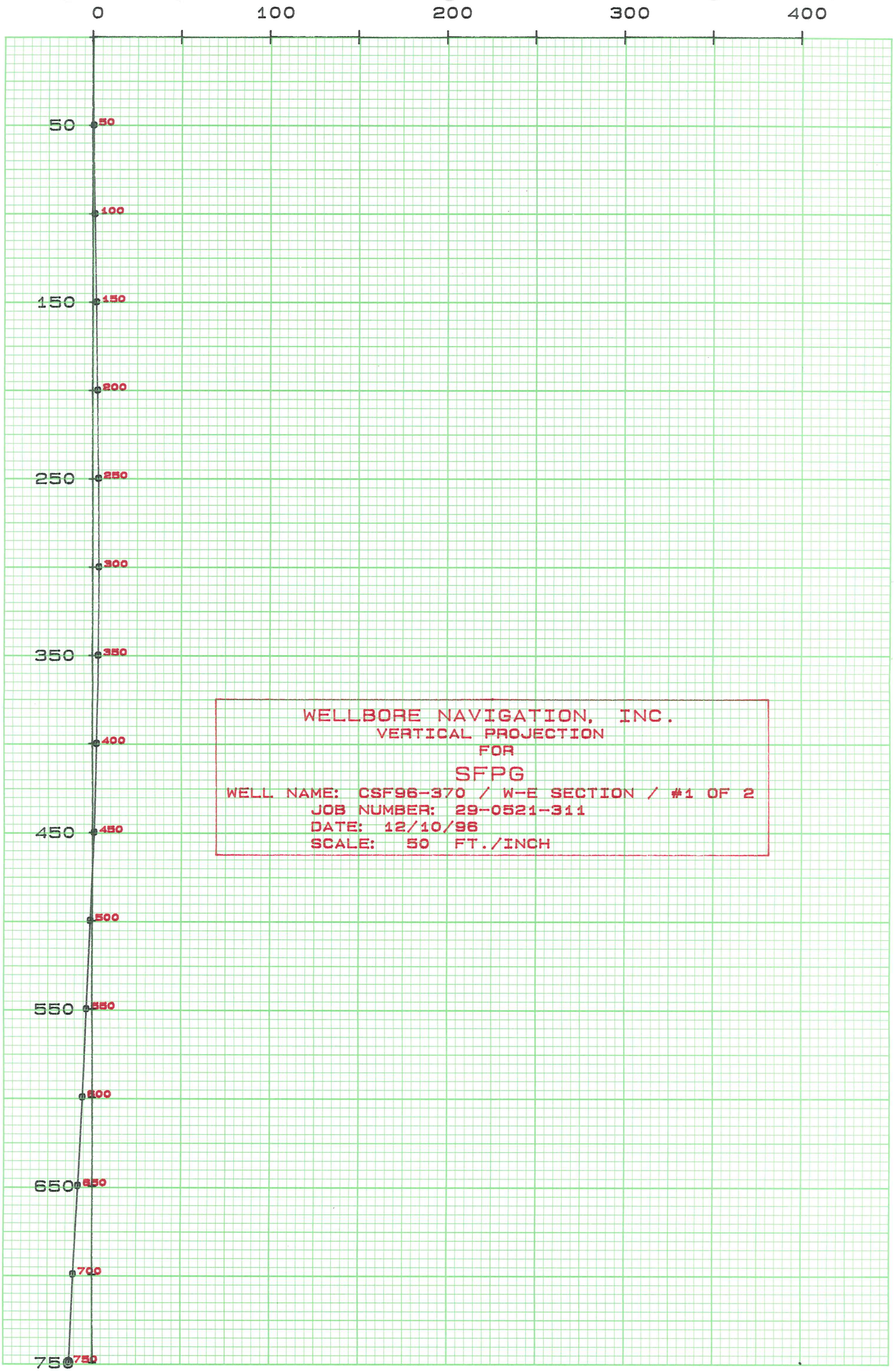

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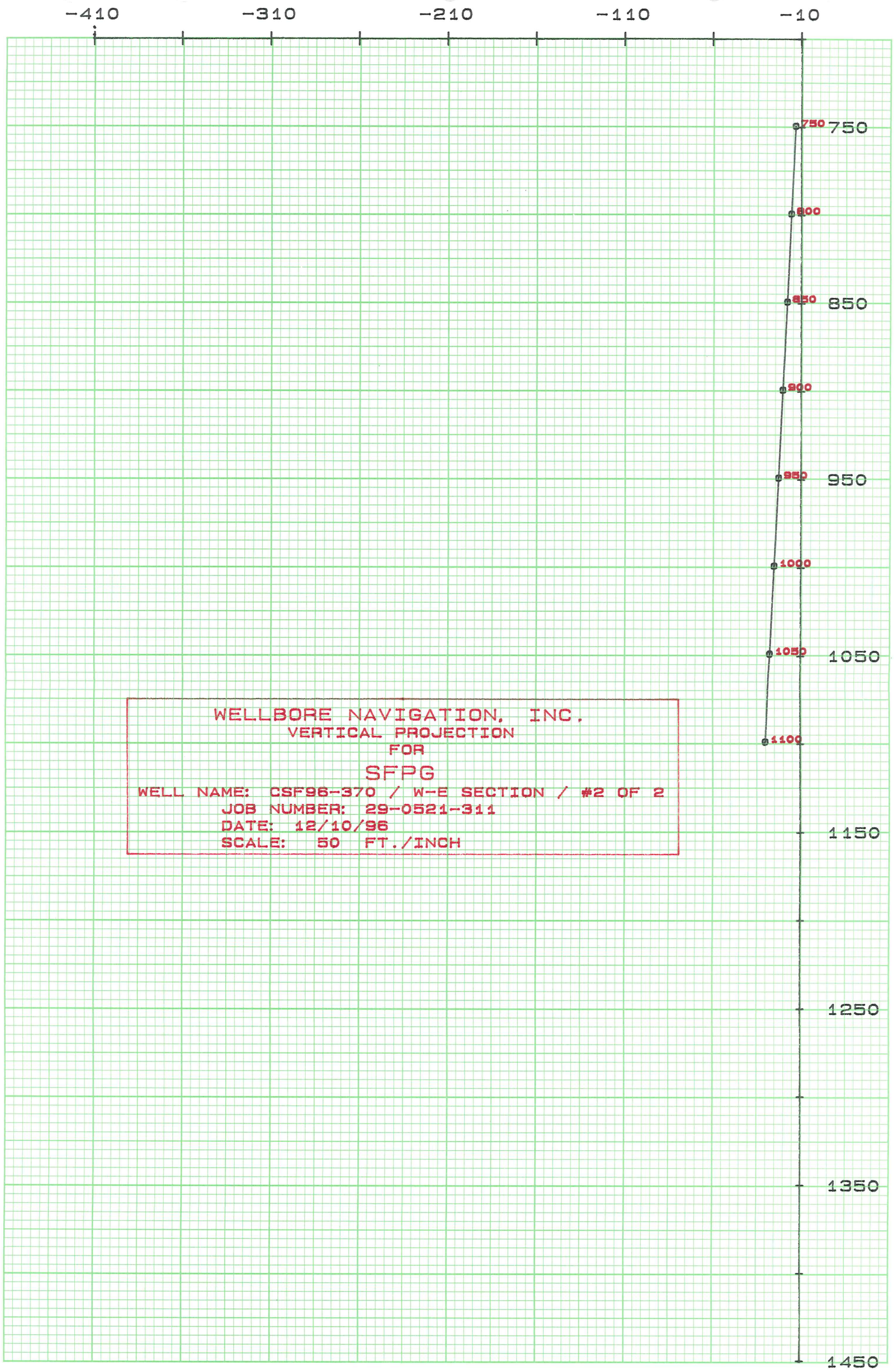
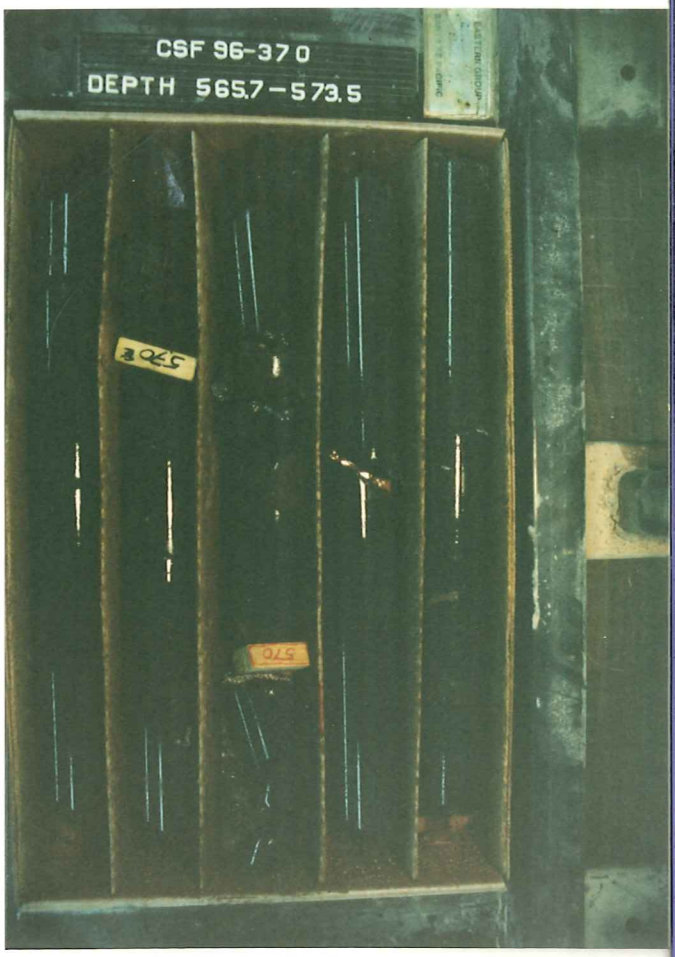


96-370

CSF 96-37 0
DEPTH 509.5 517.5
Kodak
515
513
510

CSF 96-37 0
DEPTH 545.5 – 555.4
550

CSF 96-37 0
DEPTH 573.5–583
580
575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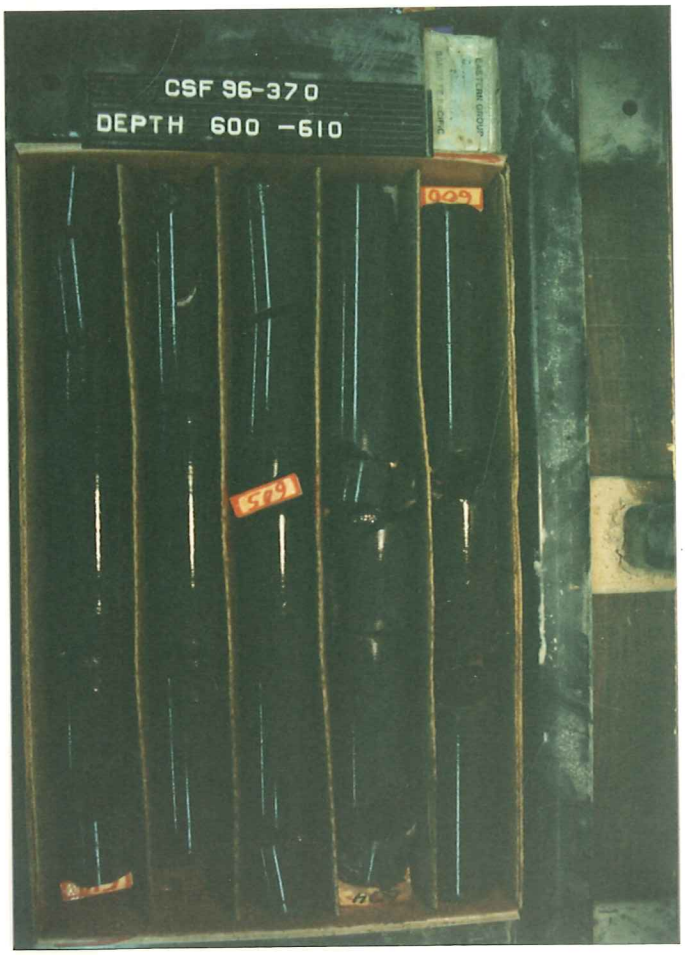
DEPTH 565.7 – 573.5
570

CSF 96-370
DEPTH 610 -619

CSF 96-370
DEPTH 619 -631
631


CSF 96-370
DEPTH 600 -610
609
579

CSF 96-370
DEPTH 5917 -600
545
594

CSF 96-370
DEPTH 692.5 - 703

CSF 96-370
DEPTH 647 -657

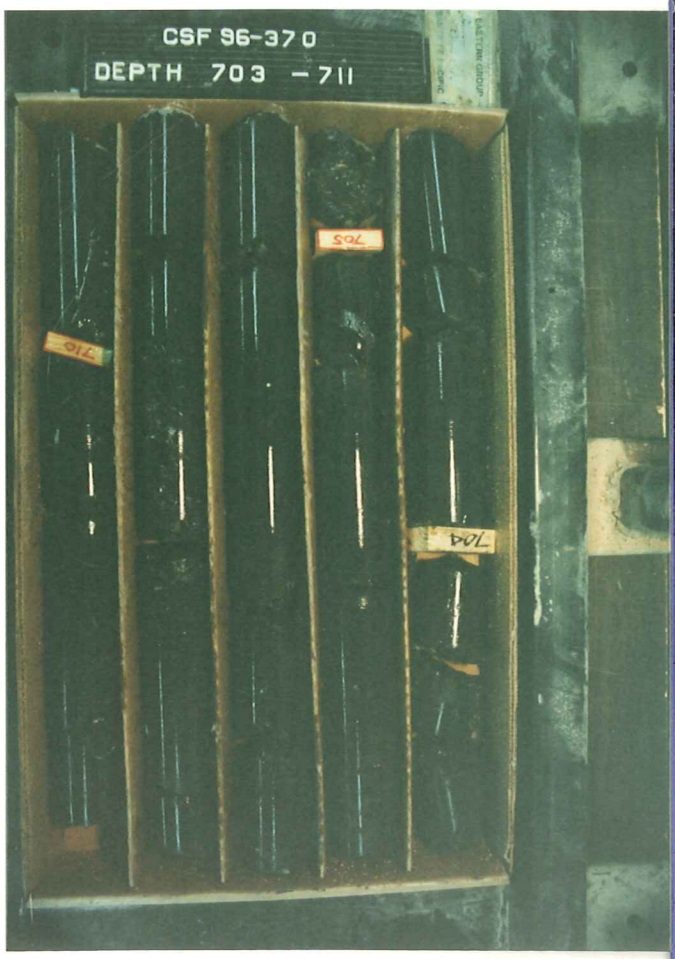
CSF 96-370
DEPTH 665 -674

CSF 96-370
DEPTH 657 -665

CSF 96-370
DEPTH 674 -683.5

CSF 96-370
DEPTH 711 - 720

CSF 96-370
DEPTH 720 - 729


CSF 96-370
DEPTH 703 -711

CSF 96-370
DEPTH 729 - 738.5

CSF 96-370
DEPTH 766.5 - 775

CSF 96-370
DEPTH 784.5 - 794

CSF 96-370
DEPTH 738.5 - 748.4

CSF 96-370
DEPTH 858 - 860

CSF 96-370
DEPTH 748.4 - 757

CSF 96-370
DEPTH 868 - 876

CSF 96-370
DEPTH 850.5 - 858

CSF 96-370
DEPTH 876 - 885

CSF 96-370
DEPTH 913.7 - 922.5

CSF 96-370
DEPTH 885 - 894.5

CSF 96-370
DEPTH 904 - 913.7

CSF 96-370
DEPTH 894.5 - 904

CSF 96-370
DEPTH 931 - 940

CSF 96-370
DEPTH 940 - 949.1

CSF 96-370
DEPTH 922.5 - 931

CSF 96-370
DEPTH 949.1 – 959.6

CSF 96-370
DEPTH 985 – 995

CSF 96-370
DEPTH 959.6 – 968.5

CSF 96-370
DEPTH 976.5 – 985

CSF 96-370
DEPTH 968.5 - 976.5

CSF 96-370
DEPTH 1003.7 - 1012.5

CSF 96-370
DEPTH 1012.5 - 1022

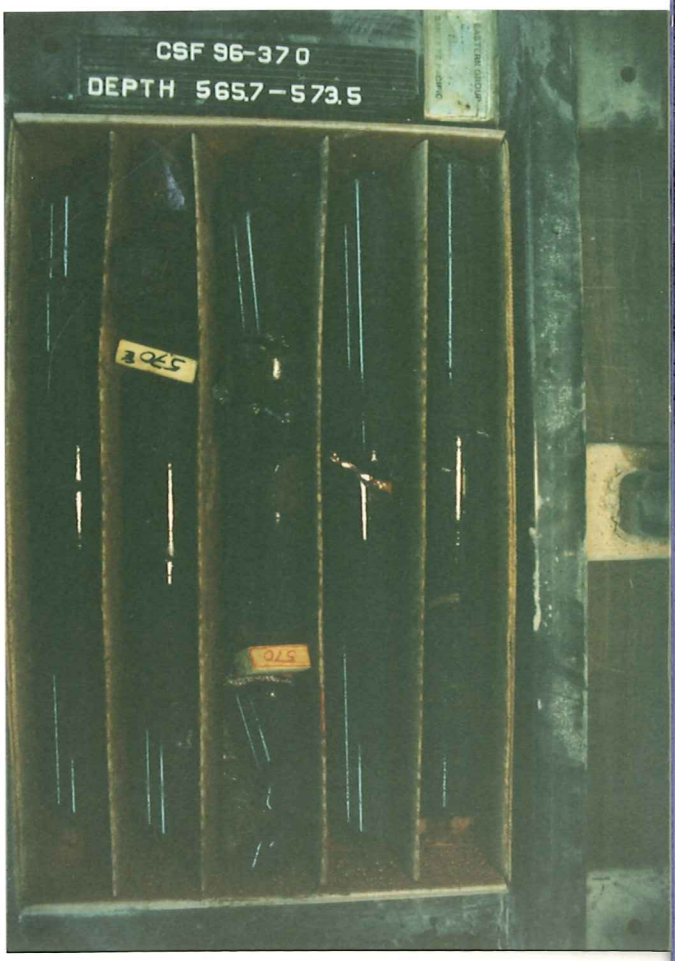
CSF 96-370
DEPTH 995 - 1003.7

96-370

CSF 96-37 0
DEPTH 509.5 517.5
Kodak

CSF 96-37 0
DEPTH 545.5 – 555.4

CSF 96-37 0
DEPTH 573.5–583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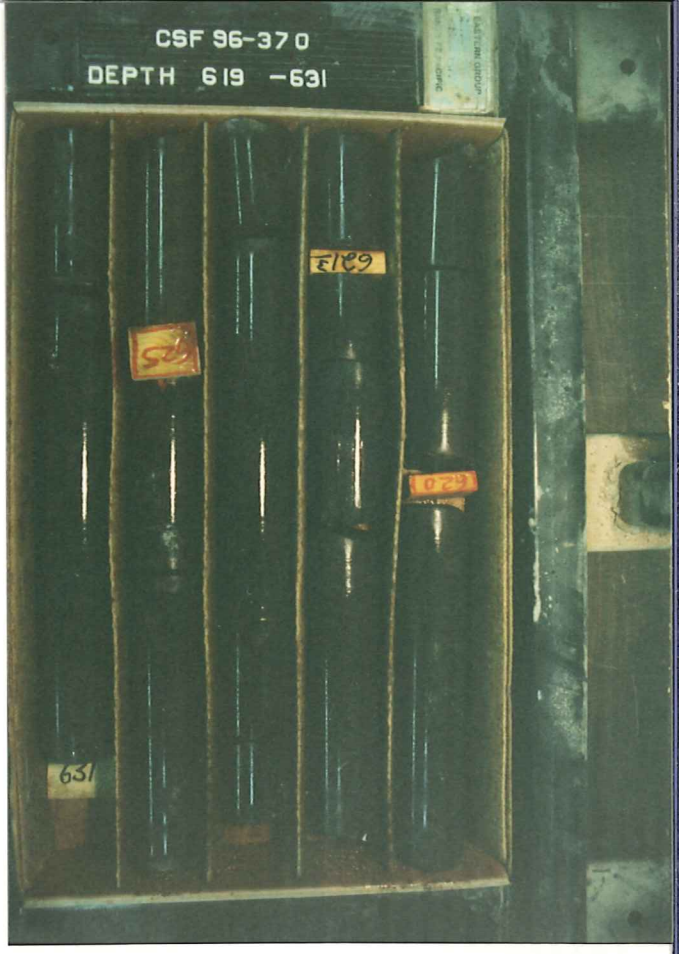
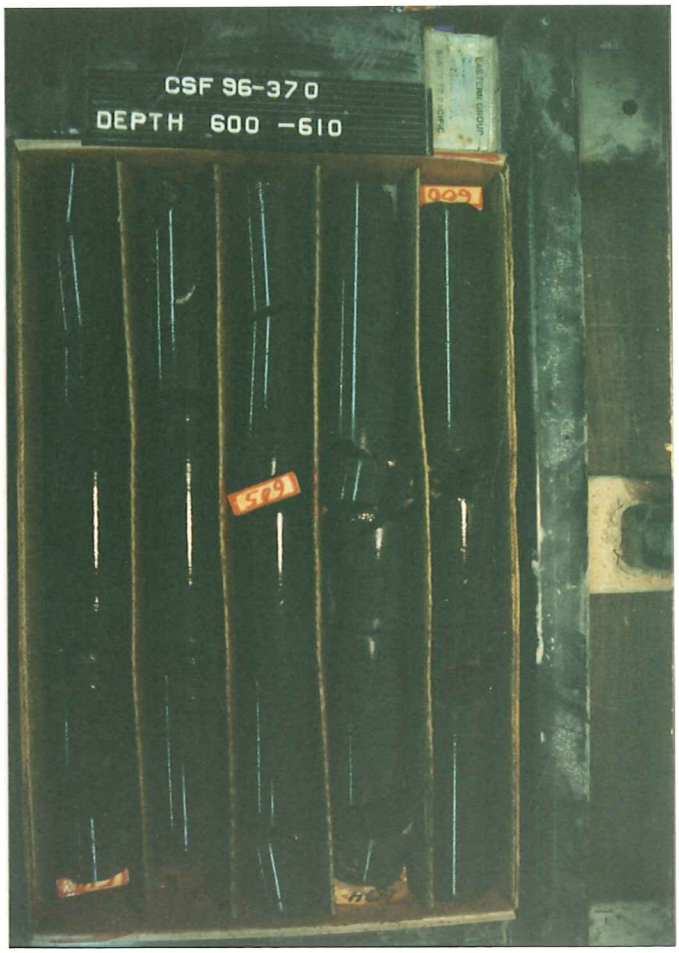
DEPTH 565.7 – 573.5

CSF 96-370
DEPTH 610 -619


CSF 96-370
DEPTH 619 -631


CSF 96-370
DEPTH 600 -610

CSF 96-370
DEPTH 591.7 -600

CSF 96-370
DEPTH 703 - 711

CSF 96-370
DEPTH 647 -657

CSF 96-370
DEPTH 692.5 - 703

CSF 96-370
DEPTH 657 -665

CSF 96-370
DEPTH 720 - 729

CSF 96-370
DEPTH 665 -674

CSF 96-370
DEPTH 711 - 720

CSF 96-370
DEPTH 674 -683.5

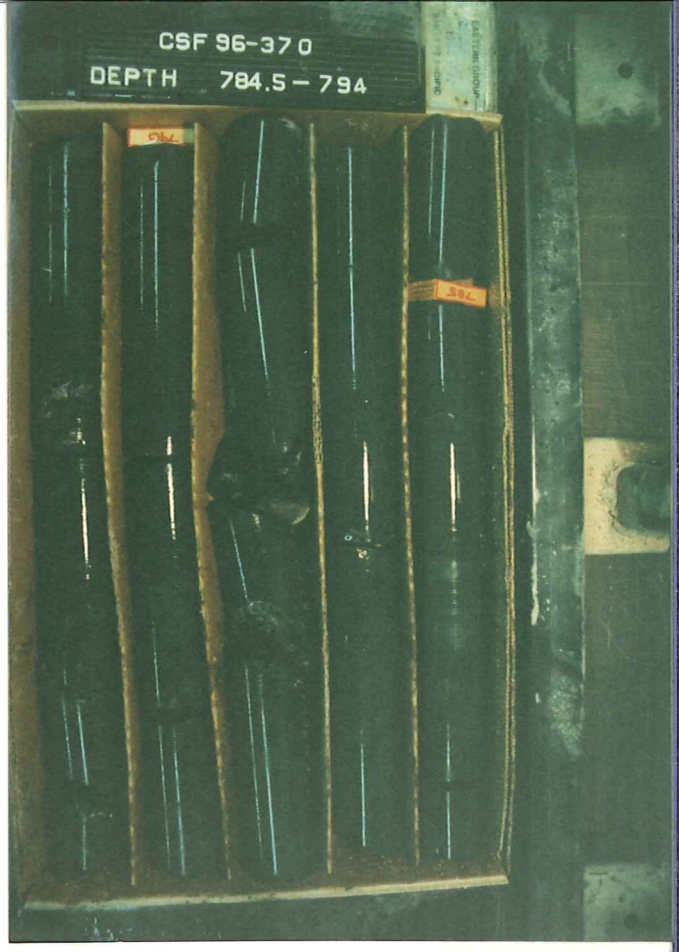
CSF 96-37 0
DEPTH 738.5 – 748.4

CSF 96-37 0
DEPTH 729 – 738.5

CSF 96-37 0
DEPTH 748.4 – 757

CSF 96-37 0
DEPTH 766.5 – 775

CSF 96-370
DEPTH 850.5 - 858


CSF 96-370
DEPTH 784.5 - 794

CSF 96-370
DEPTH 858 - 868

CSF 96-370
DEPTH 868 - 876

CSF 96-370
DEPTH 922.5 - 931

CSF 96-370
DEPTH 876 - 885

CSF 96-370
DEPTH 913.7 - 922.5

CSF 96-370
DEPTH 885 - 894.5

CSF 96-370
DEPTH 940 - 949.1

CSF 96-370
DEPTH 894.5 - 904

CSF 96-370
DEPTH 931 - 940

CSF 96-370
DEPTH 904 - 913.7

CSF 96-370
DEPTH 995 - 1003.7

CSF 96-370
DEPTH 949.1 - 959.6

CSF 96-370
DEPTH 985 - 995

CSF 96-370
DEPTH 959.6 - 968.5

CSF 96-370
DEPTH 1012.5 -1022
1020
1015

CSF 96-370
DEPTH 968.5 - 976.5
975
970

CSF 96-370
DEPTH 1003.7-1012.5
1010
1012.5

CSF 96-370
DEPTH 976.5 - 985
980