Off

CALABRIGO, MORROW AND ASSOCIATES VANCOUVER, B.C.

# GEOLOGICAL BRANCH ASSESSMENT REPORT

# 12,011

ASSESSMENT REPORT

GEOPHYSICAL AND GEOCHEMICAL SOIL SURVEY

ON THE

HOOK AND KENNY CLAIMS

QUEEN CHARLOTTE ISLANDS, B.C.

SKEENA MINING DIVISION

N. Lat. 53 32.5' W. Long. 132 15'

NTS 103 F/9W & 9E

by

M. Pond, B.Sc.

STRATO GEOLOGICAL ENGINEERING LTD. 103 - 709 Dunsmuir Street Vancouver, B.C. V6C 1M9

November 23, 1983



### SUMMARY

Recently completed reconnaisance VLF electromagnetic (VLF-EM) and geochemical soil surveys over the central portion the HOOK and KENNY mineral claims have indicated an area of interest. A mercury anomaly coincident with north-south trending low magnetic, and weak conductive zones, warrants further investigation.

An extention of the reconnaisance program to the south and east is therefore recommended for these claim groups.

Respectfully submitted,
STRATO GEOLOGICAL ENGINEERING LTD.

Michael Pond

Michael A. Pond, B.Sc.

Geologist.

November 23,1983.

R. J. Englund, B.Sc.

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### INTRODUCTION

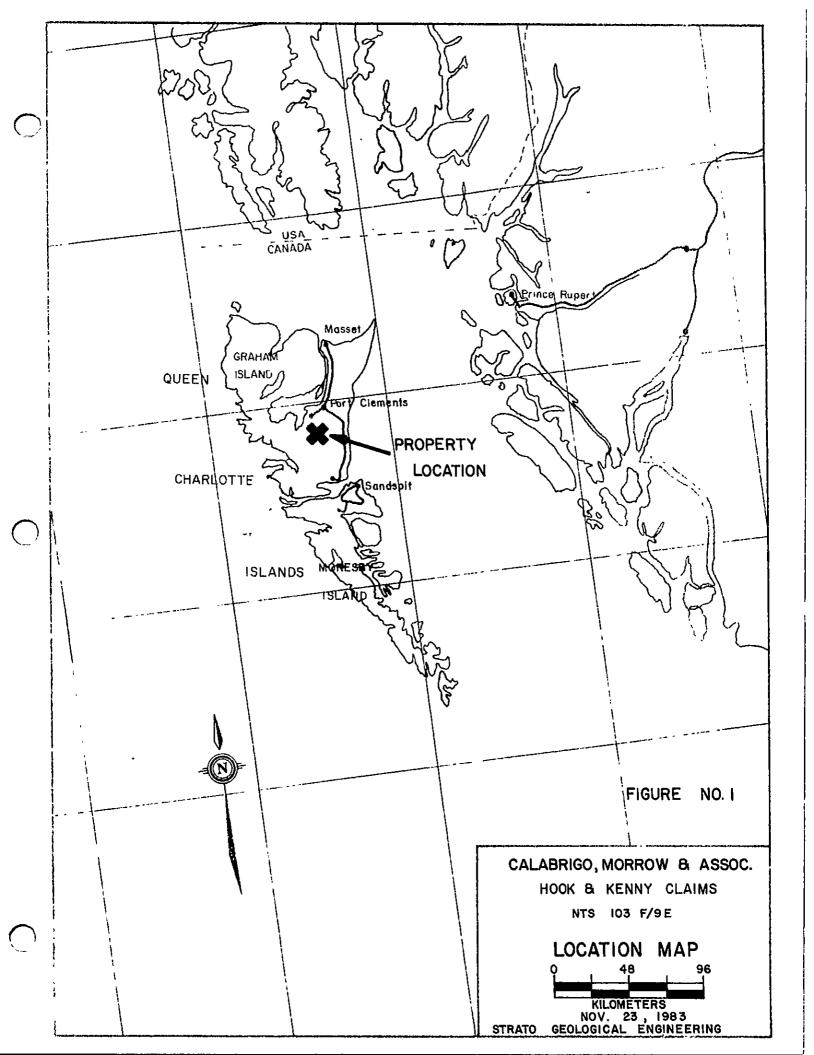
Pursuant to a request by Mr. R. Calibrigo, VLF-EM and geochemical soil surveys were carried out over the HOOK and KENNY claim groups during September 1983.

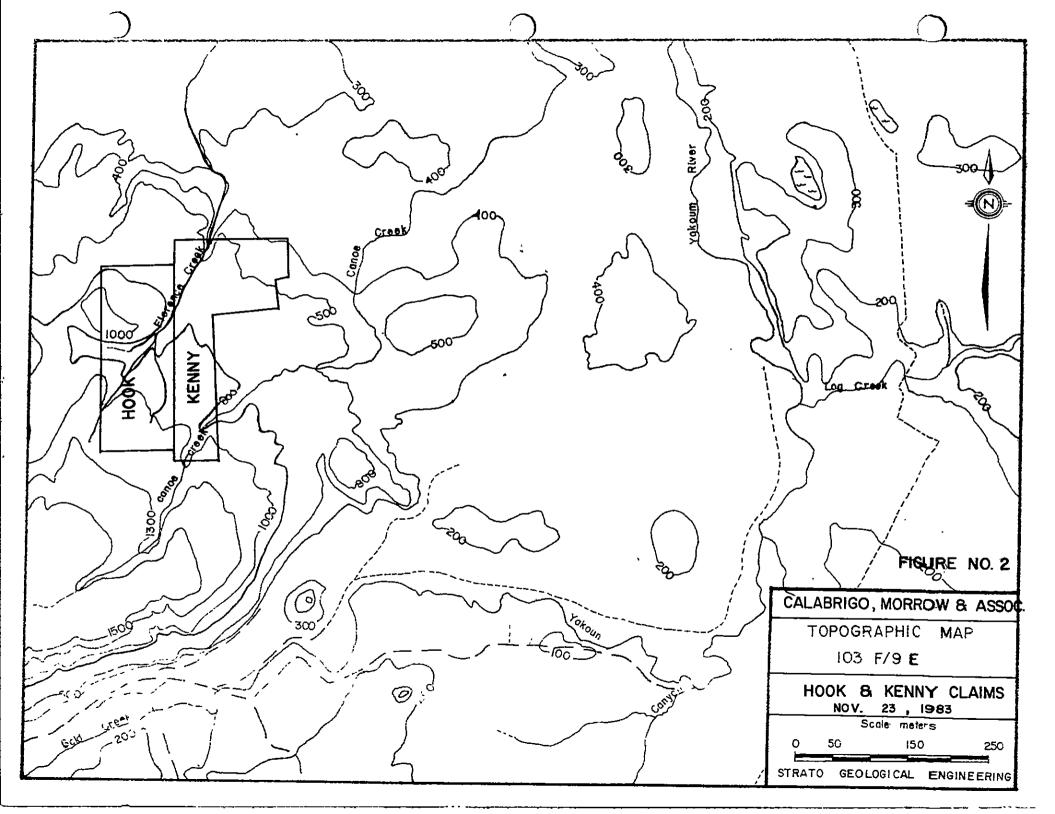
The purpose of the surveys was to follow up on recommendations made by R. J. Englund in his assessment report for the claims dated October 30, 1981. Specifically work was done over an area of low magnetic trends along Florence Creek. The results of 5.6 kilometers of VLF-EM survey are presented in this report.

# LOCATION, ACCESS, TOPOGRAPHY

The properties lie some 25 kilometers south and east of Juskatla and are accessible by Mac Millan-Bloedel logging roads where Branch No. 4 goes into the northern edge of the HOOK claim, and new logging roads also provide access to the central portion of the claim groups (Figures 1 and 2).

Florence Creek cuts through the northwest corner of the KENNY group and continues southerly through the eastern part of the HOOK claims, Canoe Creek cuts through the south-





west corner of the KENNY claims. Both creeks are quite deeply incised in most areas. Most of the claim groups are covered by virgin timber except in the northern areas where logging has occured.

In general, the area is one of the low relief with elevations ranging from some 120 meters to 300 meters in the northwest portion of the HOOK claim. The slopes are comparitively gentle with some steep ground in creek ravines.

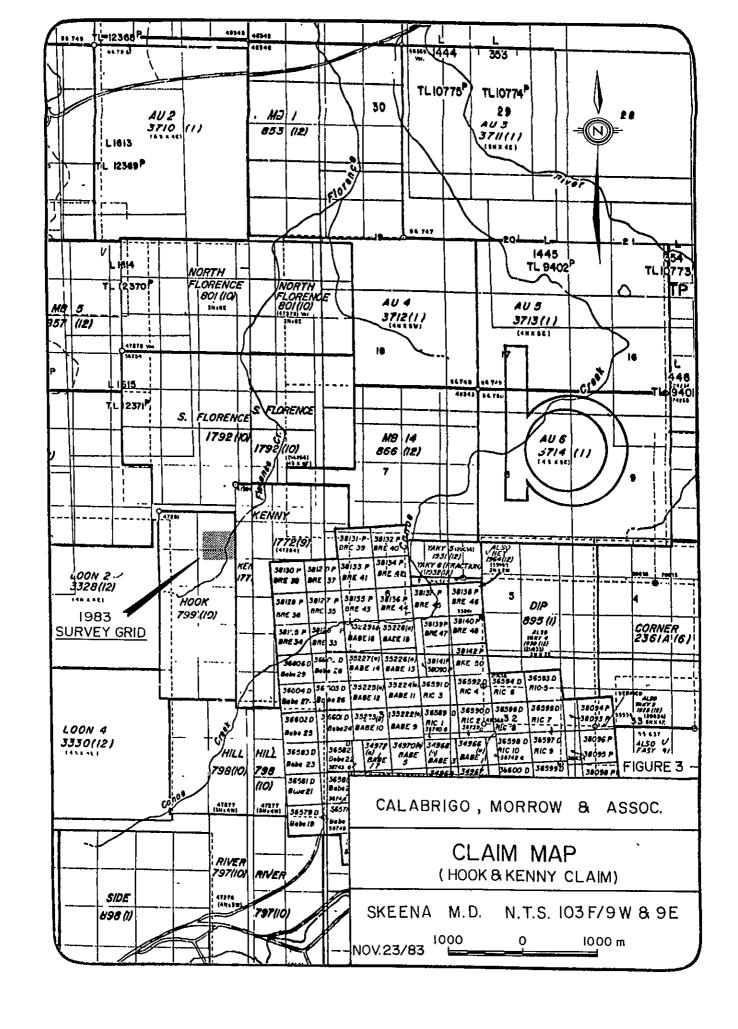
### CLAIMS

The properties comprise of twenty-eight contiguous mineral claim units located in the Skeena Mining Division, about 25 kilometers southeast of Juskatla, Queen Charlotte Islands, B. C.

The claims are recorded as follows:

Claim Name	No. of Units	Record No.	Expiry Date
ноок	10	799	16 Oct. 1983
KENNY	18	1,772	28 Sept. 1983

Assessment work has been filed, this report being part of the work to maintain the claims in good standing until 1984.



The claim units are shown on B. C. Department of Mines and Petroleum Resources Mineral Titles Reference Map ]03 F/9W and 9E.

### GENERAL GEOLOGY

The area is mapped by A. Sutherland Brown, Bulletin No.54, as being underlain by the Masset Formation consisting of subaerial basalt flows and breccias, rhyolite ash flows, and some dacite.

Geological field observations in the vicinity of the survey grid were made by G. Fjetland, Geologist and are as follows:

"Outcrop on the property is poor and limited almost exclusively to road rock quarries and creek draws. The quarries found north of the claim boundaries are in a volcanic agglomerate of the Yakoun Formation. The rock is an andesite with feldspar phenocrysts. Clasts are sub-rounded and cobble-sized.

The only rocks found in outcrop on the property are mafic volcanic intrusives, found on banks of Florence Creek. They are usually fine grained, non-vesicular and massive with small euhedral feldspar phenocrysts. The intrusives may also assume a coaser, less homogenous,

non-porphyritic texture. No stratigraphic relationship was observed between the two types. The rocks are dark green to black and weather light brown. Mineralization is limited to minor disseminated pyrite. The mafic volcanics underlie the volcanic agglomerates. No geologic structures, faults or folds were observed in the limited rock exposure afforded."

### PREVIOUS WORK

Previous work on the HOOK and KENNY claims included a reconnaisance type geochemistry programme done by Team Mineral Services Inc., of Delta, B. C. in 1979; a VLF-EM survey completed during the summer of 1980 by Strato Geological Engineering Ltd.; and magnetometer survey completed during July and August 1981 also done by Strato Geological Engineering Ltd.

The early geochemistry work gave two anomalous gold values and several anomalous mercury values, it was recommended that further geochemical work be done and that further samples should also be assayed for arsenic and silver.

The preliminary VLF-EM and magnetometer surveys

showed two, near north-south trending weak conductores in the vicinity of a magnetic gradient (a possible contact) from approximately line 21+50s, 5+00E to line 15+25s, 3+50E on the old 1981 grid.

### INSTRUMENTATION AND SURVEY PROCEDURE

The survey grid was not established from any post or specific location on the claims. A tie in at Line 1+00S, 3+70E was made to Line 9+00S, 7+00E of the older 1981 grid also put in by Strato Geological Engineering Ltd. East-west lines were compassed and chained at generally 50 meter line separation and 15 meter station intervals from a north-south baseline. The eastern boundary of the grid just covers the common claim boundary of the HOOK and KENNY claims.

The VLF-EM survey was conducted with a Sabre Electronic Model 27, receiver. The Transmitter station used was NPG, Jim Creek (Seattle) Washington, at a frequency of 24.8 KHz. and a radiated power of 250 kilowatts. Both dip angle and horizontal field strength measurements were recorded; dip angle measurements were filtered using the Fraser Filter Method to permit presentation of data in a contour map form, Figure 4. The method is well known and is fully described in literature.

Sixty-five soil samples and seven stream silt samples were collected over the grid area. Four to nine samples were collected on each of the grid lines. All samples were analysed for silver, arsenic, and antimony by the inductively coupled plasma (ICP) method. The atomic absorbtion (A.A.) method was used for mercury.

Statistical analysis was performed using the graphical technique of Lepeltier (1969) even though the total number of samples was small (72). Population trends were noted as follows and are suseful in providing some idea of anomalous values but may be slightly imprecise. Concentrations greater than the geometric mean (background, b) plus two standard deviations (S) can be considered anomalous and those greater than background plus three standard deviations are considered highly anomalous. If the threshold of the anomalous population occurs at a lower concentration value than b+2S then threshold is considered anomalous and b+2S is considered very anomalous. Figure 6 in this report presents the results of geochemical analysis.

### DISCUSSION OF RESULTS

### VLF-EM SURVEY

This survey showed many weak to very weak conductive zones, probably reflecting near surface features or ground-water effects. No significant strongly conductive zones,

i.e. faults, shears or sulfide zones can be clearly interpreted from the results.

The anomalies that are picked up generally trend northerly and coincide with northerly trending magnetic lows along Florence Creek.

### ANALYTICAL RESULTS

ELEMENT	b	b+s	* b+2s	b+3s
Sb	3 ppm	4 ppm	8 ppm	17 ppm
n = 72  sam	ples		*Threshold	8 ppm

Two populations, a low and a high background can be graphically determined for antimony. Because of the lack of outcrop it is difficult to interpret what rock types have caused the split of populations. On Figure 6 values above background plus one standard deviation were noted because none above the threshold are observed. Eleven values fall into this category and are interpreted to be higher fluctuations of background and not to be meaningful as they are scattered over the grid and not grouped.

ELEMENT	b	b+s	b+2 <b>s</b>	b+3s	
Нg	180 ppb	360 ppb	720 ppb	1450 ppb	_
n = 72  sam	ples		Threshold =	420 ppb	

Three populations can be graphically determined for mercury. A low and a high background and an anomalous population. Seven values ranging from threshold to highly anomalous are clustered in a group in the southeast portion of the grid indicating a definite anomalous zone, Lines 0+50S to 3+00S and stations 3+60E to 5+10E bound this zone which may extend to the south and east.

ELEMENT	b	b+s	*b+2s	b+3s	
Ag	.18ppm	.27ppm	.45ppm	.76ppm	
n = 72		*threshold = .45 ppm			

Two populations, a low and a high background can be graphically determined for silver. Only one value is anomalous and clusters at the edge of the mercury anomaly.

ELEMENT	b	b+s	* b+2s	b+3s
As	6.6ppm	11.5ppm	19ppm	34.5ppm
n = 72  sam	ples	* Thresho	ndqql - blo	

Three populations, a low and a high background and an anomalous population can be graphically determined for arsenic. Only two values are anomalous, one clusters centrally in the mercury anomaly, and the other is believed to be an isolated high in the north part of the grid.

### CONCLUSIONS AND RECOMMENDATIONS

The results of the grid soil geochemistry have defined an area of potential economic interest. The anomalous zone is coincident with low magnetic and weak conductive zones along Florence Creek.

Anomalous mercury and other elements are extremely important as an indicator for gold in this area of the Queen Charlotte Islands. The Cinola gold deposit located southeast of the HOOK and KENNY claim is characterized by an anomalous mercury halo surrounding the deposit.

The following action is recommended for the claims to determine the extent of the anomalous zone to the south and east.

- Extention of the survey grid to the south and east especially over the low magnetic zones flanking Florence Creek.
- 2. Further reconnaisance VLF-EM work to determine conductive zones indicative of fault and/or shear zones which may be mineralized.
- 3. Further soil sampling on the new grid lines plus fill in soil samples over the existing portion of the grid.

4. Contingent upon the results of the above recommendations, a program of trenching to bedrock over high anomalies to determine any gold mineralization present on the HOOK and KENNY claims.

Kling O.S.

R.J. Englund, B.Sc.

Respectfully submitted,
STRATO GEOLOGICAL ENGINEERING LTD.,

Michael Pond

Michael Pond, B.Sc.

Geologist.

November 23,1983.

### REFERENCES

- Assessment Report on a Magnetometer Survey on the HOOK and KENNY claims, Queen Charlotte Islands,
   B.C., Skeena Mining Division, for Calibrigo, Morrow and Associates, by R.J.Englund, B.Sc., Strato
   Geological Engineering Ltd., dated October 30,1981.
- 2. Geophysical Report on the HOOK claim, Skeena Mining Division, Queen Charlotte Islands, B.C., for R. Calibrigo and Associates, by A.F.Roberts, P.Eng. dated December 10,1980.
- 3. Report on the KENNY claim, Queen Charlotte Islands, B.C., Skeena Mining Division, for A. Morrow, by A.F. Roberts, P.Eng., dated December 10,1980.
- 4. B.C. Department of Mines and Petroleum Resources
  Bulletin No.54, Geology of the Queen Charlotte
  Islands, A. Sutherland Brown, 1968.
- 5. A Geological Evaluation of the Cinola (Specogna)
  Gold Deposit, Queen Charlotte Islands, B.C. by
  Normand Champigny, B.A.Sc. thesis U.B.C. April
  1981.

### TIME - COST DISTRIBUTION

The claims toward which work is being applied with this report consists of the Kenny (1772) and Hook (mineral claims. This report describes the VLF Eclectromagnetic and geochemical soils survey work conducted on the claims by Strato Geological Engineering Ltd. during the period September 17 to September 26, 1983.

A listing of personnel and a distribution of costs is as follows:

### Personnel

J. Gibson

Field Supv., Geophysical Technician

G. Fjetland, B.Sc.

Geologist.

### Cost Distribution

Labour	\$ 2,600.00
Room and Board	800.00
Vehicle Rental, (gas, oil, etc.)	560.00
Field Supplies	144.00
Mob-Demobilization Costs (proportionate)	337.41
Maps & report - drafting, reproduction, copying, etc.	295.50
Report - Data reduction, Interpretation	1,100.00

Total

\$ 5,836.91

Signed

Strato Geological Engineering Ltd.

# CERTIFICATE

I, Michael A. Pond, of 312 - 1165 West 13th Avenue of the City of Vancouver, Province of British Columbia, do hereby certify as follows:

- I am a graduate of the University of British Columbia where I obtained my Bachelor of Science Degree (Geology), in May, 1982.
- I have been engaged in the study and practice of exploration geology since graduation and for two summer field seasons prior to graduation.
- I have primarily worked in British Columbia with Utah Mines Ltd. and with Strato Geological Engineering Ltd.; and in the Henik Lakes region of the N.W.T. with Suncor Inc.
- 4. I have no direct, indirect or contingent interest, nor do I expect to receive any such interest in the properties OF Mr. R. Calabrigo and Associates>

Dated at Vancouver, Province of British Columbia, this 23rd day of November, 1983.

michael Porch

Michael A. Pond, B.Sc.

## CERTIFICATE

I, Ralph J. Englund, of 1112 Grover Ave., Coquitlam, British Columbia, do hereby certify as follows:

- I am a Consulting Geophysicist with offices at 103 709 Dunsmuir Street, Vancouver, B. C. V6C 1M9
- I graduated in 1971 from the University of British Columbia, with a degree of Bachelor of Science.
- 3. I have been engaged in the study, teaching, and practice of exploration geophysics continuously for a period of 11 years. I have worked as a geophysical consultant on numerous projects in Western North America since 1972.
- 4. I am a member in good standing of the British Columbia Geophysical Society.
- 5. The field work and the interpretation of results in this report were done under my direct supervision.
- 6. I have no direct, indirect, or contingent interest in the properties of R. Calabrigo and Associates, nor do I expect to receive any such interest.

Dated at Vancouver, Province of British Columbia, this 23 rd day of November, 1983.

R.J. Englund, B.Sc.

APPENDIX A

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ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS, VANCOUVER B.C. PH: 253-3158 TELEX: 04-53124

STD A-1

DATE RECEIVED OCT 18 1983

DATE REPORTS MAILED

# ICP GEOCHEMICAL ANALYSIS

A .500 GRAM SAMPLE IS DIGESTED WITH 3 ML OF 3:1:3 HCL TO HN03 TO H20 AT 90 DEG.C. FOR 1 HOUR. THE SAMPLE IS DILUTED TO 10 MLS WITH WATER.

THIS LEACH IS PARTIAL FOR: Ca,P,Mg,Al,Ti,La,Na,K,W,Ba,Si,Sr,Cr AND B. Au DETECTION 3 ppm.

HG: ANALYSIS BY FLAMELESS AA FROM .500 GRAM SAMPLE.

SAMPLE TYPE - SOIL

ASSAYER \_\_\_ DEAN TOYE, CERTIFIED B.C. ASSAYER

STRATO GEOLOGICAL PROJECT # 585 (HOOK) FILE # 83-2613 PAGE# 1 SAMPLE AG AS SB Hg≭ PPm ppm ppm ppb 2N 0+60E 10 5 2 120 2N 1+20E 2N 2+10E 2N 2+55E . 2 22 230 . 1 622 160 . 1 4 100 1+50N OE 5 . 1 240 1+50N 0+60E . 4 14 190 62272 1+50N 1+20E . 1 8 80 1+50N 1+80E 1+50N 2+10E 1+50N 2+55E 557 . 1 180 .3 90 . 4 5 140 1+50N'3E . 2 90 10 DNENG 1+50N 4+20E 1+50N 5+10E 47 - 1 240 . 1 8 160 27 1N 1+20E 1N 3E . 1 150 . 2 150 1N 3+60E 1N 4+80E 9 SERES 110 ENNN. 9 380 0+50N OE ź 330 0+50N 1+20E 60 0+50N 1+80E 11 160 0+50N 2+40E . 2 40.00 11 200 0+50N 3E . 1 7 210 08 0E 08 2+40E 300 . 1 4 . 1 4 100 05 3E .2 Ž 8 90 OS 3+60E 4 NUNNN 360 0S 4+20E . 2 8 340 05 4+80E 05 5+10E 639 . 1 220 30 . 1 0+508 1+80E . 2 380 0+50S 2+40E . 4 9 22222 200 0+509 3E . 1 4 260 0+508 3+60E . 1 4 140 0+50S 4+20E . 1 130 0+50S 4+80E . 1 7 1200

. 3

10

2

50

STRATO GEOLOGICAL F	ROJECT :	#	585 (HOOK)	F	(LE # 83	-2613
SAMPLE			AG ppm	AS ppm	SB ppm	Hg*
1S 2+40E 1S 3E 1S 3+60E 1S 4+70E 1S 5+10E P			.1 .1 .2	25 10 4 2	53222	90 50 60 160 520
1+50S 0+60E 1+50B 1+20E 1+50S 1+80E 1+50S 2+40E 1+50S 3E			. 1 . 1 . 2 . 4	11 6 2 16	2 2 3 4 6	180 190 140 100 190
1+50S 4+20E 1+50S 5+10E 2S 0E 2S 0+60E 2S 1+20E			.1	5 11 5 5 7	NNNGN	100 300 80 90 280
2S 1+80E 2S 2+40E P 2S 3E 2S 3+60E 2S 4+20E	,	•	. 1 . 1 . 1 . 1	6 3 16 12 2	NNGNN	40 130 240 580 110
25 4+80E 2+50S 0E 2+50S 0+60E 2+50S 1+80E 2+50S 2+40E	<u> </u>		. 1 . 1 . 1 . 1	13 5 12 10	NGNDN	2600 80 100 290 120
2+508 3E 2+508 3+60E 2+508 4+20E 2+508 4+80E 38 0E			.1 .2 .2 .2	9 20 10 4 5	2 4 2 4 2	390 230 370 4000 240
3S 0+40E 3S 1+20E 3S 1+80E 3S 2+40E . 3S 3E			.1 .1 .5 .3	4 13 7 18 6	NNMN	180 120 60 280 320
38 4+20E 38 4+80E STD A-1			. 1 . 1 . 3	11 7 11	222	840 1200 50

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