



UNIVERSIDADE FEDERAL DE OURO PRETO  
ESCOLA DE MINAS  
DEPARTAMENTO DE GEOLOGIA  
MESTRADO EM GEOLOGIA

ABORDAGEM INTERDISCIPLINAR E EPISTEMOLÓGICA SOBRE AS  
EVIDÊNCIAS DO LIMITE CRETÁCEO-TERCIÁRIO, COM BASE EM  
LEITURAS EFETUADAS NO REGISTRO SEDIMENTAR DAS BACIAS DA  
COSTA LESTE BRASILEIRA

VOLUME II

POR

GILBERTO ATHAYDE ALBERTÃO

551.77  
A333

Ex: 2227120  
I: 1353855  
v. 2

Dezembro, 1992

E & P / GEDOC  
Reg. 155177/4333 v.2  
i: 1353855  
e: 1353869  
Data: 22/11/93

Cópia M. F. Aguiar

**ANEXOS E ENCARTES**

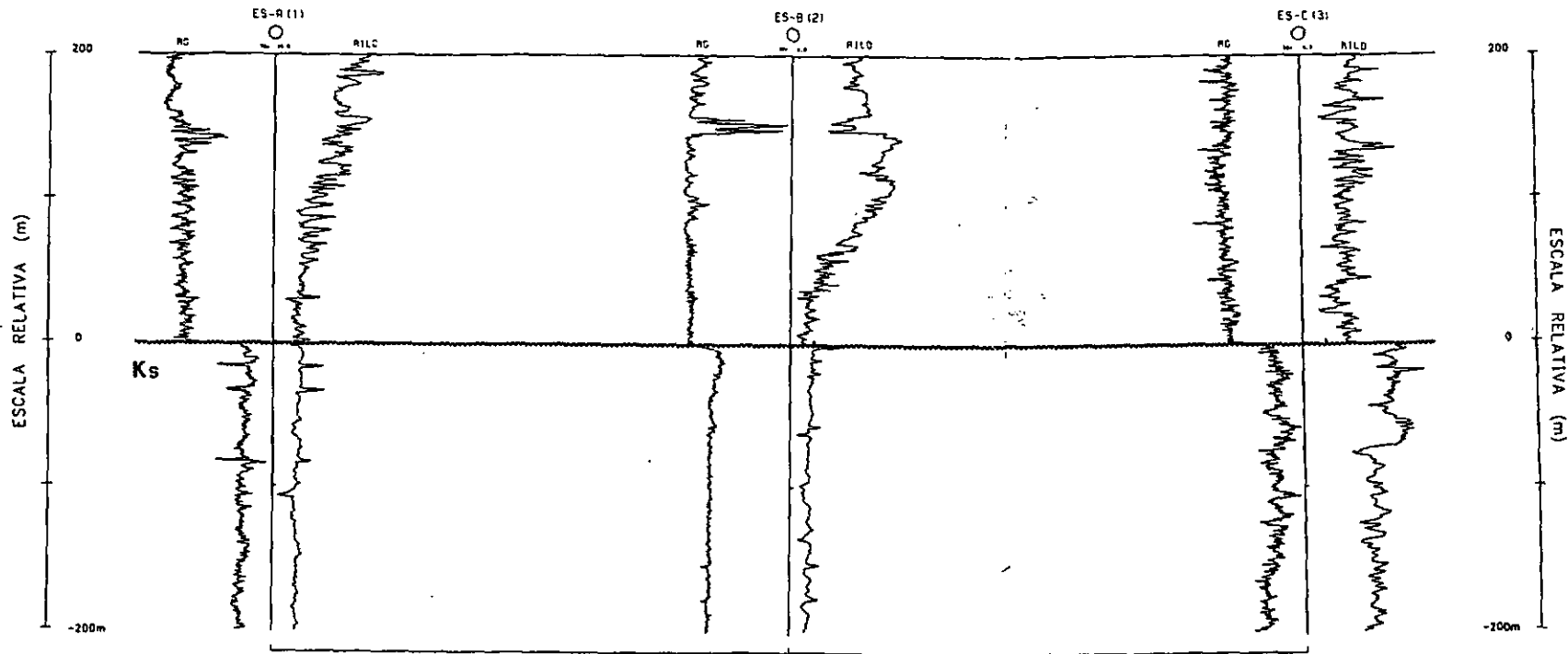
---

EV: 2277/20  
I: 1353855

Reg 148/99

<b>BR</b>	E & P - ES / GEXP / GEDOC
N. Exemplar	2277/20
Reg. Informação	1353855
N. Chamada	T551.77/A333
Data	04/06/99

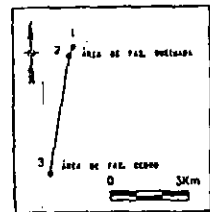
2277/20  
I: 1353855



### LEGENDA

- MR - MESA ROTATIVA (m)
- PERFILS
  - RC - RIOS GAMA
  - RILD - RESISTIVIDADE
- Ks
- Ks

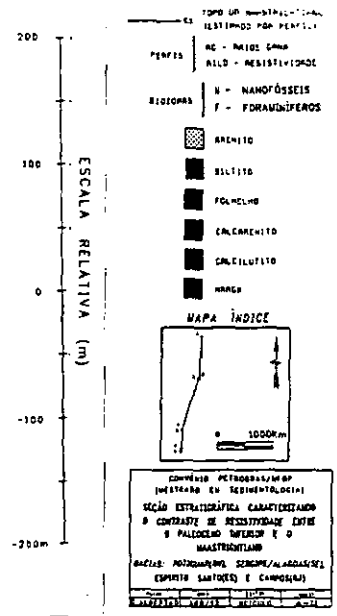
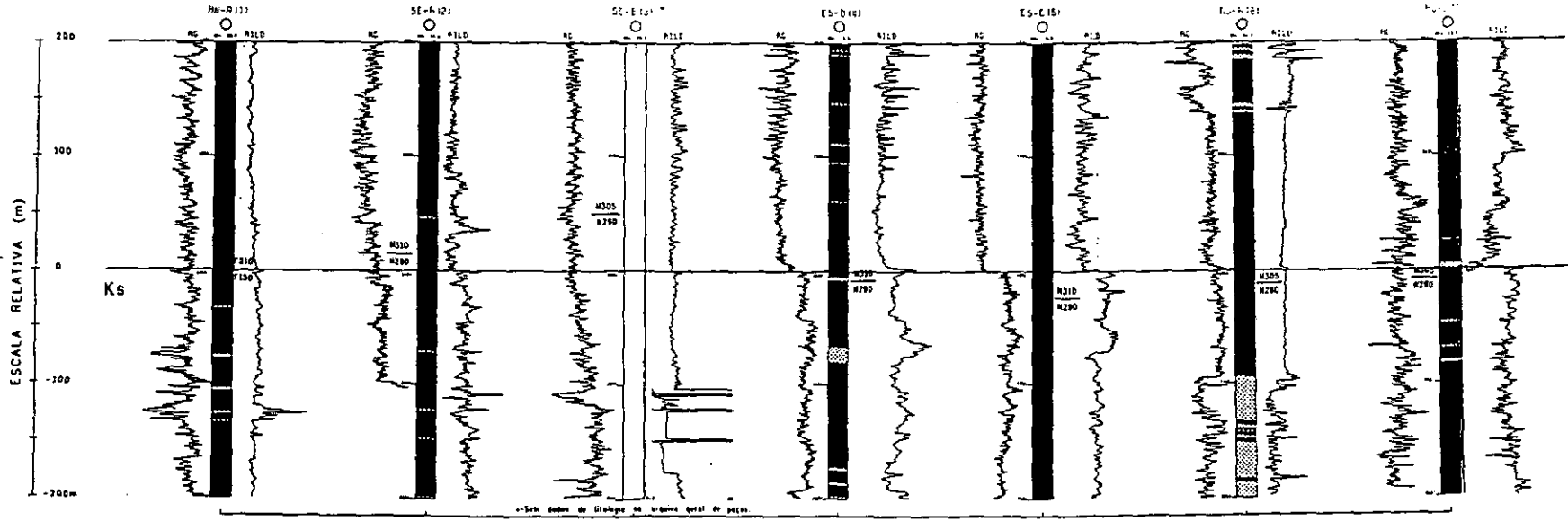
### MAPA ÍNDICE

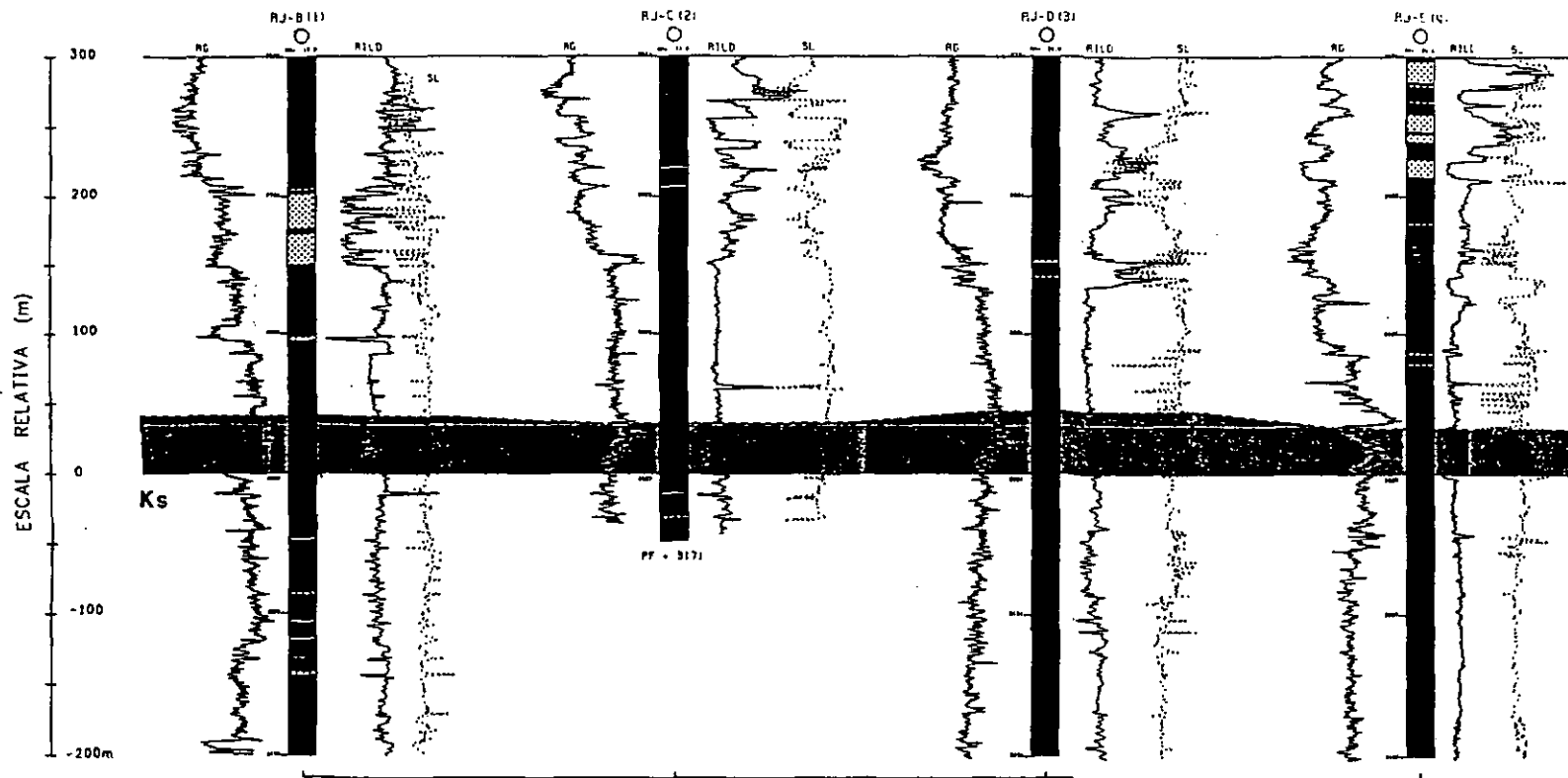


CONVÊNIO PETROBRÁS/UFOP  
(MESTRADO EM SEDIMENTOLOGIA)  
SEÇÃO ESTRATIGRÁFICA COMPARANDO  
FEIÇÃO EROSIVA CARACTERÍSTICA DA  
ÁREA DE FAZENDA QUEIMADA COM  
POSSÍVEL FEIÇÃO EROSIVA DA ÁREA  
DE FAZENDA CEDRO  
BACIA DO ESPÍRITO SANTO

DATA	DATA	FEIÇÃO	FEIÇÃO
03/08/78	03/08/78	QUEIMADA	CEDEIRO

A-1





MR + MESA ROTATIVA (m)  
 PF - PROFUNDIDADE FINAL (m)

PERFIS  
 RG - RAIOS GAMA  
 SL - SÔNICO  
 RILD - RESISTIVIDADE

— Ks TOPO DO MESSINIENSE ESTIMADO POR PERFIL

- PALEOCÊNIO INFERIOR
- ARENITO
- FOLHEADO
- CALCILÍTICO
- MARGA
- DIRMICÍTICO

MAPA ÍNDICE

CONVÊNIO PETROBRÁS/UFOP  
 (MÉTRADO EM SEDIMENTOLOGIA)  
 SEÇÃO ESTRATIGRÁFICA COM A  
 CARACTERIZAÇÃO DAS BASSAS  
 VELOCIDADES/RESISTIVIDADES NO  
 PALEOCÊNIO INFERIOR DA BACIA  
 DE CAMPOS (RJ)

Projeto	100/100	100/100	100/100
Autores	A. S. L. A. B.	A. S. L. A. B.	A. S. L. A. B.



## NOTAS EXPLICATIVAS SOBRE OS ANEXOS A-V / A-X

---

Os anexos A-V, A-VI, A-VII, A-VIII, A-IX e A-X contêm o tabelamento dos resultados de diversas análises laboratoriais, respectivamente para os poços RJ-1, RJ-2, ES-1, ES-2 e SE-1 e ainda para os dados de afloramento (Pedreira Poty).

1) Em todos os anexos mencionados, os símbolos desde NA até IR representam os símbolos dos elementos químicos, e os valores numéricos expressam suas concentrações em "ppm", com exceção do irídio (IR), cujas concentrações estão expressas em "ppb". Esses valores são resultado das análises de ativação neutrônica (AANI).

2) A seguir, são relacionados os símbolos de minerais, cujas composições percentuais foram obtidas através de análises de DRX.

a) Os percentuais dos minerais abaixo foram obtidos para rocha total; a soma perfaz 100%:

ARG = argilominerais

QZ = quartzo

KF = K-feldspato

PL = plagioclásio

CC = calcita

DO (nos anexos V a IX) ou DOL (no anexo X) = dolomita

PY = pirita

b) Os percentuais dos minerais a seguir foram obtidos para fração fina (menor que 2micra); a soma perfaz 100% (do percentual de argilominerais):

KA = caulinita

KL = clorita

IL = illita

IS = interestratificado de illita-esmectita

3) Análises isotópicas (carbono e oxigênio) foram realizadas somente para as amostras de superfície (anexo A-X):

DC = Delta  $^{13}\text{C}$  (em valores *per mil* - %.)

DO = Delta  $^{18}\text{O}$  (em valores *per mil* - %.)

COT = carbono orgânico total (em valores percentuais)

RI = resíduo insolúvel (em valores percentuais)

4) "PROF" significa, nos dados de subsuperfície (poços), a profundidade da amostra de calha; já nos dados de superfície (Pedreira Poty), indica a posição da amostra (altura), em relação ao nível de referência das medidas.



## ANEXO A-V (poco RJ-1)

1

OBS	NA	MG	AL	CL	K-	CA	SC	TI	V	GR	MN	FE
1	10000	3400	32800	1650	19700	43500	1.47	790	12.9	14.2	296	9900
2	11400	5400	46000	2340	17800	70000	5.20	1800	36.6	50.0	312	21300
3	11100	4900	46700	2200	17900	67000	5.10	2000	35.8	64.0	329	20900
4	11200	3400	42000	2160	19500	60000	3.73	890	24.9	39.3	346	14700
5	10900	4000	36800	2200	19900	58000	3.02	1050	17.3	37.6	363	12500
6	12200	6400	43800	2980	21800	61000	3.74	1900	28.0	42.0	351	15200
7	12900	7000	46600	3500	22000	65000	4.35	2300	45.0	59.0	504	22100
8	15100	5900	49800	4000	23200	58000	4.30	1420	23.8	41.0	474	18200
9	14300	7300	49100	4400	20900	64000	5.90	2400	43.0	68.0	465	26000
10	17700	10400	57400	5500	21900	52800	6.90	2900	53.0	54.0	492	27000
11	18200	9800	54300	6900	19900	60000	6.00	3100	45.0	59.0	552	22300

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1	BA2
1	1.95	.	.	0.49	.	6.6	49	280	.	.	.	.	.	0.55	1080	.	.
2	5.30	.270	17	1.30	.	11.2	69	370	.	.	.	.	.	1.89	1780	.	.
3	11.50	.240	.	.	.	9.2	66	.	.	.	.	.	.	1.74	1980	.	.
4	3.68	.	.	0.52	.	6.4	64	460	.	.	.	0.33	.	1.26	1220	.	.
5	4.32	.54	.	1.13	.	8.4	53	430	.	.	.	.	.	1.10	1290	.	.
6	4.30	.	.	0.90	.	13.0	74	410	.	.	.	.	.	1.57	1410	.	.
7	5.30	.	15	1.40	.	12.7	75	.	.	.	.	.	.	1.57	1850	.	.
8	6.10	.62	.	.	.	10.9	77	.	.	.	.	.	.	1.76	1920	.	.
9	7.20	.230	.	1.40	.	15.4	83	.	.	.	.	.	.	2.29	1920	.	.
10	8.10	.191	.	1.80	.	21.7	92	470	.	.	.	.	.	2.73	4510	.	.
11	7.50	.143	.	.	.	17.5	82	.	.	.	.	.	.	2.32	3840	.	.

OBS	LA	CE	NO	SM	EU	TB	DY	YB	LU	HF	TA	W	AU
1	18.1	26.8	7.4	1.92	0.48	0.16	1.07	0.34	0.077	2.33	0.51	.	.
2	26.8	50.0	12.8	3.26	0.72	0.35	2.20	1.29	0.149	3.30	0.76	1.6	.
3	24.9	44.6	22.0	3.20	0.71	0.32	1.65	1.19	0.123	2.94	4.30	89.0	.
4	24.5	44.1	18.9	2.53	0.70	0.39	1.30	0.34	0.133	2.94	0.69	2.8	.
5	30.5	56.0	19.1	3.85	0.91	0.42	2.30	0.99	0.141	3.20	1.65	21.0	.
6	29.9	55.0	21.7	3.19	0.73	0.38	1.60	0.90	0.147	3.96	1.12	1.5	.
7	34.0	59.0	16.5	4.10	0.81	0.36	2.30	1.58	0.155	4.20	1.26	.	.
8	36.0	62.0	30.0	3.97	0.88	0.35	1.90	1.07	0.158	4.20	1.27	2.4	.
9	41.2	73.0	28.0	4.38	0.88	0.51	2.90	1.43	0.185	4.60	1.67	.	.
10	49.0	91.0	36.0	5.40	0.94	0.57	3.30	1.61	0.261	5.90	2.08	2.3	.
11	52.0	87.0	37.0	6.50	1.10	0.59	3.10	2.41	0.255	5.37	2.04	4.0	.

OBS	HG	TH	U	IR	ARG	OZ	KF	PL	PY	CC	DO	KA	KL	IL	IS	PROF
1	.	3.23	0.67	.	5	50	15	15	0	10	5	0	5	15	80	-3036
2	.	7.40	1.69	.	15	40	10	15	0	20	0	5	10	10	75	-3039
3	.	6.08	1.57	.	15	30	10	10	0	30	5	0	10	10	80	-3042
4	.	5.37	1.33	.	10	40	15	10	0	20	5	0	10	10	80	-3045
5	.	6.07	1.42	.	10	55	10	10	0	10	5	0	5	10	85	-3048
6	.	6.70	1.50	.	15	30	20	15	0	20	0	0	5	10	85	-3051
7	.	7.50	1.51	.	10	35	20	10	0	20	5	5	10	25	60	-3054
8	.	7.90	1.69	.	15	45	15	5	0	15	5	0	5	20	75	-3057
9	.	9.30	1.81	.	25	25	15	10	0	25	0	0	10	25	65	-3060
10	.	11.30	2.07	.	30	25	5	15	0	20	5	0	5	30	65	-3063
11	.	11.10	2.41	.	20	20	30	10	0	15	5	0	10	35	55	-3066

OBS	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE
12	18700	7900	63400	4800	22700	62000	7.30	2800	48.0	59.0	515	28400
13	14800	7800	53400	1610	23600	50100	5.90	2600	39.8	47.0	457	23000
14	16800	8800	59200	2270	23400	55400	6.70	3500	50.0	68.0	584	26800
15	17400	9400	60600	2770	24500	58000	7.50	3600	54.0	59.0	680	29800
16	16700	6700	63800	940	25300	67000	6.90	2200	44.0	59.0	760	27800
17	15000	8600	63500	2010	26300	52600	8.20	3200	59.0	70.0	549	30800
18	17800	11000	69500	1990	27400	51300	9.10	4100	65.0	60.0	500	33200
19	18400	12700	69000	2290	27200	56000	9.20	4600	76.0	63.0	630	33800
20	19400	10000	71600	2460	25400	63000	8.70	3900	65.0	74.0	660	34400
21	18300	11700	68700	2650	26600	60000	10.10	4300	72.0	67.0	590	37500

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1	BA2
12	19.60	.	90	.	.	.	13.3	101	.	.	.	.	.	.	2.61	4710	.
13	7.50	.	.	11	.	.	1.3	95	410	.	.	.	.	.	2.11	3340	.
14	8.40	.	290	.	1.60	.	2.3	100	540	.	.	.	.	.	2.70	5700	.
15	9.50	.	150	.	.	.	2.2	101	470	.	.	.	.	.	2.87	5300	.
16	8.50	.	.	.	.	.	1.2	101	.	.	.	.	.	.	2.58	1680	.
17	9.70	.	230	.	1.30	.	1.5	111	430	.	.	.	.	.	3.19	4040	.
18	10.80	.	180	.	.	.	2.3	129	340	.	.	.	.	.	3.60	3730	.
19	11.30	.	163	.	1.90	.	1.2	124	430	.	.	.	.	.	3.47	3880	.
20	10.60	.	370	.	.	.	1.2	111	320	.	.	.	.	.	3.49	4280	.
21	11.90	.	200	23	2.40	.	2.8	130	510	.	.	.	.	.	3.90	3800	.

OBS	LA	CE	NO	SM	EU	TB	DY	YB	LU	HF	TA	W	AU
12	54.0	99.0	41.0	5.80	1.08	0.63	2.90	1.27	0.252	6.50	4.14	148.0	.
13	46.0	81.0	33.0	5.08	0.87	0.49	2.80	1.70	0.194	5.70	1.89	5.0	.
14	51.0	90.0	41.0	5.60	1.00	0.55	2.90	1.68	0.253	6.10	2.09	2.2	.
15	53.0	94.0	39.0	6.40	1.12	0.68	3.40	2.14	0.225	6.30	2.11	.	.
16	51.0	89.0	25.0	5.30	1.08	0.51	1.90	0.95	0.243	6.30	2.16	.	.
17	60.0	106.0	43.0	6.30	1.22	0.70	3.60	2.12	0.312	6.80	2.49	3.8	.
18	61.0	110.0	45.0	6.60	1.26	0.71	3.90	2.24	0.294	7.00	2.54	2.2	.
19	63.0	104.0	29.2	7.50	1.27	0.69	3.70	3.20	0.288	7.00	2.47	.	.
20	61.0	104.0	42.0	6.10	1.23	0.58	3.30	1.21	0.248	6.50	2.42	8.0	.
21	67.0	118.0	46.0	7.20	1.36	0.76	4.40	2.25	0.313	7.30	2.86	.	.

OBS	HG	TH	U	IR	ARG	QZ	KF	PL	PY	CC	DO	KA	KL	IL	IS	PROF	
12	.	12.20	2.17	.	.	25	30	15	10	0	15	5	0	5	15	80	-3069
13	.	10.20	1.91	0.030	.	15	55	10	5	0	10	5	0	10	25	65	-3072
14	.	12.80	2.10	0.047	.	35	20	10	15	0	15	5	5	10	25	60	-3075
15	.	11.10	2.09	0.030	.	25	30	15	15	0	15	0	5	5	30	60	-3078
16	.	11.30	2.03	0.030	.	20	40	15	10	0	15	0	0	5	25	70	-3081
17	.	14.20	2.31	0.032	.	30	30	10	10	0	20	0	0	5	10	85	-3084
18	.	13.30	2.48	0.031	.	25	20	15	20	0	20	0	0	5	15	80	-3087
19	.	13.90	2.43	.	.	25	20	20	15	0	20	0	0	10	35	55	-3090
20	.	14.70	2.53	.	.	25	35	10	10	0	20	0	5	10	25	60	-3093
21	.	14.80	2.53	.	.	25	25	15	15	0	20	0	5	5	20	70	-3096

## ANEXD A-VI (poco RJ-2)

1

OBS	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE
1	21300	10300	78300	10100	26100	35700	11.9	4200	97	74	980	46000
2	22000	12100	76400	8500	27400	30300	12.4	4500	91	79	870	48000
3	21400	16400	80400	10000	25200	33400	11.7	5000	91	72	910	45000
4	22600	12700	81900	7500	24000	30300	11.6	4500	86	86	940	46400
5	20700	11400	81900	9400	25400	26400	11.7	3600	80	72	940	46000
6	22300	11800	78000	8400	28300	31600	12.1	4000	93	79	850	48000
7	22000	13800	79500	11100	23700	28500	10.9	4100	83	86	770	45000
8	23300	12900	84200	7700	25400	25300	11.8	4000	83	84	830	46700
9	21400	14200	82900	9900	25700	25300	12.0	3700	79	70	1270	47000
10	22200	10000	75200	8700	26600	28500	11.8	4100	78	78	1250	49000
11	22000	14800	79200	10400	27100	31500	12.1	5200	76	76	1250	48000

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1
1	14.5	.173	.1.9	.32.0	124	.400	. . .	.4.50	3830							
2	15.6	.134	19 2.0	.36.0	149	.500	. . .	.5.00	3200							
3	15.3	.122	.2.1	.37.0	164	.320	. . .	.4.90	2690							
4	13.4	.120	. . .	.28.0	144	.260	. . .	.3.90	4050							
5	14.2	.170	.2.8	.28.0	133	.310	. . .	.4.40	3360							
6	15.1	.144	.3.5	.35.0	155	.530	. . .	.5.00	3600							
7	14.1	.129	.2.6	.39.0	142	.260	. . .	.4.60	3580							
8	13.3	.140	. . .	.30.0	151	.210	. . .	.4.50	2760							
9	14.4	. . .	.1.7	.31.0	137	.340	. . .	.4.30	2860							
10	14.6	.134	.2.8	.35.0	156	390 520	. . .	.4.60	3700							
11	15.1	.142	.2.1	.37.0	156	.410	. . .	.4.90	3490							

OBS	BA2	LA	CE	NO	SM	EU	TB	DY	YB	LU	HF	TA	W	AU
1	3600	73	147	55	6.60	1.32	0.58	3.6	2.55	0.315	8.4	3.90	. .	. .
2	3040	81	171	67	9.20	1.44	0.86	4.8	3.10	0.430	8.8	4.30	. .	. .
3	2990	80	133	79	8.90	1.41	0.84	5.5	3.50	0.370	8.1	4.30	1.9	. .
4	3500	82	201	69	7.20	1.30	0.72	5.6	2.40	0.450	8.7	3.84	. .	. .
5	2650	75	144	51	6.20	1.24	0.70	3.2	2.59	0.300	8.1	3.70	. .	. .
6	3310	81	171	75	8.40	1.33	0.77	5.0	2.35	0.420	8.7	4.40	. .	. .
7	3900	79	128	70	8.20	1.34	0.79	5.2	2.60	0.326	7.7	4.40	2.8	. .
8	2400	86	222	77	7.30	1.40	0.85	4.1	2.50	0.490	9.3	4.10	. .	. .
9	2520	69	138	50	5.90	1.19	0.69	2.9	2.90	0.350	7.1	3.08	. .	. .
10	3600	72	156	69	8.30	1.42	0.82	4.4	2.67	0.410	8.5	3.70	. .	. .
11	3130	73	155	65	7.60	1.46	0.92	4.4	2.69	0.343	8.0	3.70	. .	. .

OBS	HG	TH	U	IR	ARG	QZ	KF	PL	PY	CC	DD	KA	KL	IL	IS	PROF
1	.16.9	2.62	. . .	45	20	0	20	0	15	0	5	5	25	65	-3204	
2	.18.2	2.59	. . .	35	20	10	20	0	15	0	0	10	20	70	-3207	
3	.15.6	2.61	. . .	40	20	10	15	0	15	0	5	5	25	65	-3210	
4	.20.5	2.67	. . .	40	20	10	15	0	15	0	5	5	40	50	-3213	
5	.17.7	2.76	. . .	45	20	10	15	0	10	0	5	5	30	60	-3216	
6	.18.9	2.72	. . .	40	15	10	20	0	15	0	5	5	15	75	-3219	
7	.16.1	2.65	. . .	45	15	10	15	0	15	0	5	5	25	65	-3222	
8	.22.1	2.80	. . .	45	15	10	15	0	15	0	0	10	20	70	-3225	
9	.17.0	2.55	. . .	45	20	10	15	0	10	0	5	5	25	65	-3228	
10	.17.6	2.60	. . .	45	15	10	15	0	15	0	5	5	35	65	-3231	
11	.17.5	2.50	. . .	30	15	25	20	0	10	0	0	10	10	80	-3234	

OBS	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE
12	19300	10000	74100	6800	25000	41300	11.0	3300	82	65	3130	46000
13	18600	8900	69900	7000	19100	43100	12.2	2400	66	76	2620	48000
14	19100	11400	73300	7700	21100	60000	11.5	4400	79	74	1560	42000
15	18700	12700	73200	7000	22600	60000	10.7	4700	71	62	1280	39600
16	20200	12600	70000	9500	22900	77000	10.9	5200	60	71	1520	41000
17	17800	9900	62400	8600	22200	76000	9.8	2700	59	62	1010	36000
18	18200	11700	67600	8700	23500	85000	10.6	3900	75	69	1020	40200
19	17800	11000	69600	7200	25100	75000	11.1	4600	84	67	1010	41200
20	19600	10700	66500	9900	26600	89000	10.8	4000	51	64	1010	38800
21	16900	7600	60500	8600	18000	89000	9.9	2000	65	55	1140	36800
22	17500	11700	62700	9800	26400	112000	10.2	3800	74	66	1130	36100

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1
12	13.9	.109	.	.	.	31.0	140	.	220	.	.	.	.	.	4.50	3510
13	14.9	.128	.1.4	.	.	24.0	137	.	490	.	.	.	.	.	5.20	2840
14	13.1	.149	.3.4	.	.	30.0	134	.	400	.	.	0.30	.	.	4.80	2060
15	12.4	.114	.	.	.	32.0	137	.	220	.	.	0.28	.	.	4.40	2120
16	12.3	.124	.	.	.	31.0	130	.	400	.	.	.	.	.	4.60	5400
17	11.3	.182	.	.	.	30.0	134	.	220	.	.	.	.	.	4.14	3080
18	10.9	.	.	.	.	32.0	121	.	210	.	.	.	.	.	3.60	3020
19	12.4	.104	.	.	.	34.0	141	440	380	.	.	.	.	.	4.70	3170
20	13.7	.123	.	.	.	31.0	138	.	380	.	.	.	.	.	4.50	3170
21	11.9	.112	.	.	.	28.0	132	.	.	.	.	0.28	.	.	4.10	3110
22	11.0	.	.	.	.	35.0	114	.	.	.	.	.	.	.	3.60	3170

OBS	BA2	LA	CE	ND	SM	EU	TB	DY	YB	LU	HF	TA	W	AU
12	4000	70	108	59	7.60	1.22	0.78	2.7	2.60	0.262	7.0	3.39	17.0	.
13	2270	63	135	52	5.60	1.47	0.74	3.8	1.44	0.325	7.3	2.92	.	.
14	2050	60	122	52	6.60	1.28	0.76	4.0	2.40	0.297	6.4	2.43	.	.
15	2450	61	85	62	7.20	1.22	0.63	4.6	1.57	0.226	5.3	2.66	.	.
16	4500	59	114	53	5.60	1.20	0.68	2.2	1.89	0.313	6.6	2.33	.	.
17	3060	57	94	55	4.87	1.08	0.65	3.8	1.95	0.250	6.2	2.66	.	.
18	2930	64	154	27	7.10	1.11	0.68	3.8	2.72	0.285	7.2	2.47	.	.
19	3080	63	121	51	7.00	1.43	0.70	3.7	2.34	0.299	7.0	2.63	.	.
20	3100	66	122	56	6.00	1.21	0.78	2.9	1.69	0.305	6.4	2.73	.	.
21	3200	57	93	66	4.92	1.10	0.63	2.9	1.71	0.253	5.7	2.87	.	.
22	2970	60	143	48	6.60	1.04	0.77	4.5	2.18	0.330	5.8	2.01	.	.

OBS	HG	TH	U	IR	ARG	QZ	KF	PL	PY	CC	DO	KA	KL	IL	IS	PROF
12	.	14.7	2.55	.	35	25	10	10	0	20	0	0	10	30	60	-3237
13	.	16.3	2.56	0.022	45	20	10	10	0	15	0	5	10	40	45	-3240
14	.	14.5	2.52	0.038	35	20	10	10	0	25	0	5	10	25	60	-3243
15	.	12.6	2.51	0.041	35	10	5	30	0	20	0	5	5	15	75	-3246
16	.	14.0	2.20	.	35	15	5	15	0	30	0	0	5	30	65	-3249
17	.	12.8	2.32	.	35	10	10	10	0	35	0	5	5	30	60	-3252
18	.	16.0	2.43	.	35	20	5	10	0	30	0	5	5	35	55	-3255
19	.	15.1	2.42	.	35	15	10	10	0	30	0	5	5	30	60	-3258
20	.	14.5	2.24	.	30	15	5	15	0	35	0	5	5	35	55	-3261
21	.	12.2	2.16	.	30	20	5	10	0	35	0	5	10	45	40	-3264
22	.	15.5	2.06	.	30	15	5	10	0	40	0	5	5	25	65	-3267

OBS	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE
23	16600	10700	63300	7900	22300	109000	10.2	2900	71	62	1130	36600
24	17800	12700	63500	9300	25700	111000	10.2	3000	72	61	1060	35800
25	15000	10400	62000	5700	21500	92000	10.2	4200	74	58	860	35800
26	17900	12900	64000	9900	27500	105000	10.7	3900	73	67	870	38300
27	17200	10500	67700	7100	24000	89000	10.7	4300	74	65	860	39000
28	19400	11300	64300	10000	23000	96000	10.8	3300	76	69	1030	38500

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1
23	11.8	.99	.1.6	.37.0	121	.320	.320	.320	.320	.320	.320	.320	.320	.320	.320	3300
24	12.6	.101	.30.0	131	.370	.370	.370	.370	.370	.370	.370	.370	.370	.370	.370	3400
25	12.3	.100	.18.3	130	.370	.370	.370	.370	.370	.370	.370	.370	.370	.370	.370	3170
26	11.6	.150	.37.0	125	.370	.370	.370	.370	.370	.370	.370	.370	.370	.370	.370	3120
27	12.5	.107	.35.0	129	.390	.390	.390	.390	.390	.390	.390	.390	.390	.390	.390	5900
28	14.7	.220	.31.0	137	.350	.350	.350	.350	.350	.350	.350	.350	.350	.350	.350	3490

OBS	BA2	LA	CE	NO	SM	EU	TB	DY	YB	LU	HF	TA	W	AU
23	2670	58	110	46	6.50	1.23	0.63	2.5	2.21	0.289	5.9	2.40	.	.
24	3400	61	116	49	5.50	1.13	0.68	2.8	1.82	0.282	5.8	2.55	.	.
25	3070	54	89	57	4.87	1.05	0.56	3.5	1.67	0.267	5.8	2.43	.	.
26	3050	56	135	43	6.40	1.07	0.57	4.8	2.15	0.248	5.6	2.13	.	.
27	5300	63	118	50	7.10	1.25	0.67	4.6	2.29	0.335	6.4	2.70	.	.
28	3000	61	123	49	5.30	1.23	0.73	3.0	1.86	0.349	6.6	2.89	.	.

OBS	HG	TH	U	IR	ARG	OZ	KF	PL	PY	CC	DO	KA	KL	IL	IS	PROF
23	.	13.8	2.04	.	30	15	5	10	0	40	0	0	10	30	60	-3270
24	.	13.4	1.93	.	30	15	5	10	0	40	0	5	5	25	65	-3273
25	.	11.7	2.07	.	30	10	5	15	0	40	0	0	10	20	70	-3276
26	.	14.7	2.08	.	30	15	5	10	0	40	0	0	10	30	60	-3279
27	.	14.4	2.22	.	35	15	10	10	0	30	0	0	10	30	60	-3282
28	.	13.9	2.13	.	30	10	15	15	0	30	0	0	10	25	65	-3285

ANEXO A-VII (poco ES-1)

OBS	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE
1	13300	12800	84900	960	21200	27300	14.7	4900	102	94	380	60000
2	12800	14000	86600	1740	21000	29400	14.5	5400	108	106	370	67000
3	11900	13600	86500	1820	23300	42700	15.6	4900	108	97	374	59000
4	13200	14400	92000	3180	24500	37800	15.0	4800	108	93	375	61000
5	11900	12100	91000	2310	22700	26700	15.6	5300	116	115	316	58000
6	12300	16200	93000	2880	26100	33900	16.5	6200	119	105	353	57000
7	13600	14400	95000	3500	22500	25900	15.8	6100	114	97	322	59000
8	15400	14200	95000	5300	26600	31600	15.0	4600	116	107	357	57000
9	13300	16600	87900	4600	29400	30400	16.3	6000	114	101	320	57000
10	13300	17100	92000	3900	28400	28300	15.8	5700	116	93	332	51000
11	14100	16200	91000	5200	23800	31400	15.0	5700	116	109	354	54000

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1
1	15.4	.	.	21	4.1	.	3.4	134	.	.	.	.	0.29	.	4.0	490
2	15.8	.	86	18	3.5	.	7.7	134	310	.	.	.	.	.	4.6	440
3	17.3	.	60	.	4.5	.	7.1	143	.	.	.	.	0.33	.	5.3	480
4	16.9	.	91	.	2.2	.	10.1	146	.	.	.	.	.	.	4.9	380
5	16.9	.	95	26	4.1	.	9.2	155	300	.	.	.	.	.	4.6	340
6	18.7	.	560	.	2.8	.	14.3	170	.	.	.	.	.	.	5.6	380
7	17.3	.	82	.	3.6	.	12.5	161	.	.	.	.	0.61	.	5.3	320
8	16.9	.	94	19	1.9	.	14.9	148	260	.	.	.	.	.	5.1	440
9	18.8	.	70	20	2.1	.	16.4	173	.	.	.	.	.	.	6.0	390
10	17.4	.	96	17	2.3	.	18.0	171	.	.	.	.	.	.	5.8	380
11	15.9	.	96	.	3.0	.	19.1	158	.	.	.	.	.	.	5.3	510

OBS	BA2	LA	CE	ND	SM	EU	TB	DY	YB	LU	HF	TA	W	AU	HG
1	.	65	118	35	8.5	1.27	1.01	6.4	2.90	0.380	6.20	1.04	.	.	.
2	.	59	109	39	7.9	1.45	0.88	5.7	2.70	0.320	5.40	1.21	.	.	.
3	.	64	124	53	9.9	1.53	1.01	5.3	3.10	0.380	6.10	1.39	.	.	.
4	.	65	120	43	9.0	1.51	0.96	5.7	1.96	0.356	5.70	1.29	.	.	.
5	.	64	113	49	8.4	1.55	0.79	5.8	2.34	0.310	5.10	1.41	.	.	.
6	.	65	121	45	9.1	1.53	0.96	5.8	2.90	0.370	5.60	1.59	.	.	.
7	.	66	118	37	10.8	1.43	1.13	5.7	3.50	0.350	5.45	1.36	.	.	.
8	.	65	115	38	8.7	1.50	0.91	5.6	2.10	0.340	5.43	1.48	.	.	.
9	.	68	126	47	8.8	1.46	1.05	6.3	2.89	0.380	5.20	1.53	.	.	.
10	.	68	121	43	8.4	1.53	0.93	7.1	2.70	0.350	5.40	1.40	.	.	.
11	.	66	112	47	9.5	1.44	0.94	6.1	3.50	0.370	5.20	1.34	.	.	.

OBS	TH	U	IR	ARG	QZ	KF	PL	PY	CC	DO	KA	KL	IL	IS	PROF
1	19.6	3.18	.	50	20	15	10	0	5	0	20	0	20	60	-1809
2	20.1	3.06	.	40	20	10	10	15	5	0	20	0	25	55	-1812
3	20.0	3.36	.	35	20	10	10	15	10	0	20	0	25	55	-1815
4	20.1	3.09	.	40	20	10	10	10	10	0	20	0	25	55	-1818
5	21.5	3.11	.	35	20	10	25	0	10	0	20	0	25	55	-1821
6	20.1	3.05	.	55	25	0	10	0	10	0	20	0	25	55	-1824
7	19.6	3.16	0.038	40	20	10	10	15	5	0	20	0	30	50	-1827
8	21.5	3.23	0.039	40	40	5	10	0	5	0	20	0	30	50	-1830
9	20.6	3.27	0.044	45	15	5	10	15	10	0	15	0	35	50	-1833
10	20.6	3.31	0.037	50	20	10	10	0	10	0	15	0	30	55	-1836
11	20.9	3.41	0.023	45	20	5	20	0	10	0	20	0	35	45	-1839

OBS	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE
12	15000	13900	98000	4700	28100	29700	16.5	5500	122	105	352	55000
13	14000	14100	85300	5100	26000	25600	15.6	5400	108	98	280	59000
14	14000	13300	100000	3600	22900	20700	16.1	5700	119	116	269	53000
15	14700	17000	95000	3700	25600	30100	16.8	6600	122	108	310	53000
16	15600	15600	100000	4900	27600	29900	15.9	4600	123	100	306	52000
17	13600	14300	90000	3500	25800	26100	15.6	5300	108	112	278	53000

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1
12	18.2	.	90	2.4	.	15.5	167	.	.	.	.	.	.	.	5.9	400
13	16.9	.	77	22	4.5	1.4	19.2	161	.	.	.	0.31	.	.	5.5	520
14	17.3	.	92	27	3.0	.	17.3	151	.	.	.	.	.	.	4.9	330
15	18.3	.	90	.	.	.	13.7	176	.	.	.	.	.	.	6.0	390
16	21.2	.	105	2.9	2.2	14.3	168	.	.	.	.	.	.	.	5.7	390
17	17.2	.	103	24	4.2	.	13.0	154	230	.	.	0.21	.	.	5.1	430

OBS	BA2	LA	GE	ND	SM	EU	TB	DY	YB	LU	HF	TA	W	AU	HG
12	.	70	129	53	9.1	1.49	1.19	5.0	2.70	0.380	5.50	1.47	.	.	.
13	.	67	121	51	8.9	1.50	1.01	6.2	2.88	0.350	5.50	1.51	.	.	.
14	.	64	116	47	8.8	1.57	0.92	6.3	3.20	0.370	5.00	1.36	.	.	.
15	.	72	134	54	10.6	1.57	1.22	5.9	3.00	0.410	6.10	1.55	.	.	.
16	.	71	132	46	9.5	1.46	0.93	5.5	2.90	0.400	6.00	1.45	.	.	.
17	.	70	122	37	9.0	1.60	0.99	6.2	2.98	0.360	5.80	1.38	.	.	.

OBS	TH	U	IR	ARG	QZ	KF	PL	PY	CC	DD	KA	KL	IL	IS	PROF
12	21.4	3.40	0.041	50	30	5	5	0	10	0	20	0	30	50	-1842
13	21.1	3.23	.	45	25	5	5	10	10	0	20	0	30	50	-1845
14	20.8	3.13	.	45	25	10	15	0	5	0	20	0	30	50	-1848
15	22.0	3.33	.	45	20	10	15	0	10	0	15	0	30	55	-1851
16	22.3	3.46	.	50	25	5	10	0	10	0	20	0	30	50	-1854
17	22.9	3.39	.	45	30	10	10	0	5	0	20	0	30	50	-1857

ANEXO A-VIII (poco ES-2)

OBS	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE
1	13900	11900	97000	5800	28100	36900	15.4	6200	102	520	329	52000
2	10500	7200	70900	4000	18800	44500	12.4	2800	81	480	680	80000
3	12000	12400	79900	4600	26000	47100	13.9	4500	88	570	540	70000
4	11300	10600	77600	4300	22300	48900	12.1	4100	86	550	476	56000
5	12100	10600	88500	4300	27000	57000	14.0	4900	95	700	385	56000
6	11000	9100	78500	3700	20300	51300	13.7	3800	86	470	343	55000
7	11700	12800	81000	4100	22900	52700	14.0	4400	92	460	325	55000
8	10900	11700	84200	3270	22400	49200	12.8	4800	97	328	314	47000
9	11400	12400	82200	3700	24200	52300	12.8	4500	94	415	401	55000
10	11400	9600	77400	4200	22900	52000	12.5	3900	83	359	374	50000
11	11400	11700	77200	4200	23000	57000	13.0	4600	84	379	456	61000

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1	BA2
1	14.8	.110	.	.	.	20.1	191	.	.	.	.	.	.	.	7.9	970	610
2	14.2	.119	.2.8	.	.	13.5	148	.	230	.	.	.	.	.	5.8	1170	1050
3	15.7	.95	.3.9	.	.	20.8	165	.	.	.	.	0.52	.	.	6.3	1180	960
4	14.9	.118	.1.6	.	.	21.6	169	430	240	.	.	.	.	.	5.4	3280	3600
5	13.8	.110	.1.9	.	.	17.7	159	.	.	.	.	.	.	.	6.3	1960	1610
6	14.0	.105	.1.9	.	.	12.3	159	320	320	.	.	.	.	.	5.8	1450	1000
7	14.3	.122	.2.8	.	.	17.6	172	.	280	.	.	0.17	.	.	6.1	1070	920
8	15.3	.129	.2.0	.	.	16.3	162	290	200	.	.	.	.	.	5.9	800	790
9	12.6	.90	.2.2	.	.	12.4	156	.	.	.	.	.	.	.	5.5	850	800
10	13.0	.123	.	.	.	13.8	156	.	.	.	.	.	.	.	5.8	970	800
11	20.8	.113	.3.1	.	.	16.8	168	.	.	.	.	.	.	.	5.8	800	820

OBS	LA	CE	ND	SM	EU	TB	DY	YB	LU	HF	TA	W	AU	HG
1	65.0	191	64	7.90	1.42	1.20	4.0	3.20	0.380	6.00	1.60	.	.	.
2	45.9	101	39	5.70	1.24	0.77	3.7	1.33	0.293	5.10	1.06	.	.	.
3	52.0	114	48	8.20	1.28	0.85	5.1	2.68	0.326	5.10	1.44	4.8	.	.
4	48.0	82	51	6.90	1.20	0.78	4.3	2.34	0.217	4.20	1.23	14.8	.	.
5	55.0	146	54	6.90	1.30	0.77	3.2	1.80	0.360	5.00	1.31	.	.	.
6	47.2	105	39	5.28	1.32	0.78	4.1	1.59	0.318	5.00	1.31	4.1	.	.
7	51.0	111	47	7.20	1.32	0.83	5.2	2.08	0.306	5.03	1.40	4.2	.	.
8	50.0	83	45	7.50	1.15	0.75	5.1	2.10	0.283	4.40	1.26	25.0	.	.
9	50.0	131	50	6.00	1.15	0.79	3.5	2.59	0.330	4.80	1.16	.	.	.
10	47.6	93	36	5.60	1.25	0.71	3.6	1.49	0.270	4.90	1.27	.	.	.
11	48.0	105	38	7.10	1.23	0.69	5.3	2.06	0.314	4.88	1.20	62.0	.	.

OBS	TH	U	IR	ARG	QZ	KF	PL	PY	CC	DO	KA	KL	IL	IS	PROF
1	23.3	2.93	.	40	25	10	10	0	15	0	10	15	25	50	-2808
2	15.8	2.46	.	40	25	10	10	0	15	0	5	10	35	50	-2811
3	17.0	2.62	.	30	20	15	20	0	15	0	5	15	20	60	-2814
4	13.6	2.46	.	45	25	5	10	0	15	0	10	15	35	40	-2817
5	20.3	2.71	.	40	20	5	15	0	20	0	10	15	25	50	-2820
6	16.6	2.67	.	45	25	5	10	0	15	0	10	15	25	50	-2823
7	16.5	2.59	0.031	40	20	10	10	0	15	5	10	15	25	50	-2826
8	13.5	2.69	0.028	30	25	10	15	0	15	5	10	15	25	50	-2829
9	17.7	2.59	0.036	40	25	5	10	0	20	0	10	15	25	50	-2832
10	14.9	2.77	0.026	35	25	10	10	0	20	0	10	15	30	45	-2835
11	15.6	2.49	.	35	25	15	10	0	15	0	10	15	30	45	-2838



ANEXO A-IX (poco SE-1)

OBS	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE
1	12000	9000	84200	5100	17000	34800	14.8	3000	104	151	296	53000
2	9900	14700	87500	7400	18800	40900	14.4	4000	101	135	272	50000
3	12700	12400	95000	5200	18200	26900	14.3	4200	113	126	202	43500
4	11300	14500	99000	7900	19700	24000	15.1	4300	116	169	211	45900
5	12200	11500	85900	5700	17300	35200	14.8	3200	103	143	236	46000
6	9900	15000	87500	8300	19700	45600	15.0	4000	105	147	270	46000
7	12200	13400	84100	5000	21800	34100	13.0	3500	104	123	406	58000
8	11600	12800	90000	8000	18900	34300	14.5	4300	107	168	238	49000
9	12600	10600	87700	5000	20300	26400	15.3	3800	106	146	190	45000
10	13200	14900	86800	6500	19300	34800	15.2	4100	99	153	235	51000
11	12700	13500	89100	5100	20500	31100	13.9	3700	107	129	229	42400

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1
1	14.5	.	68	.	2.3	1.7	29.0	126	330	210	.	.	.	.	6.1	1360
2	13.8	.	111	.	1.9	1.6	93.0	129	400	290	.	.	.	.	6.1	1060
3	14.1	.	103	.	3.2	.	42.0	122	.	160	.	.	0.50	.	6.3	620
4	14.2	.	140	.	4.7	.	94.0	138	.	.	.	.	.	.	6.0	730
5	14.6	.	96	.	1.5	.	37.0	123	190	460	.	.	.	.	6.3	820
6	14.6	.	135	.	3.3	.	117.0	129	390	260	.	.	.	.	6.2	950
7	14.2	.	60	.	4.6	.	43.0	121	.	320	.	.	0.24	.	5.3	1050
8	13.6	.	.	.	.	.	92.0	133	470	.	.	.	.	.	6.0	1130
9	18.0	.	72	.	1.7	1.3	21.6	129	.	340	.	.	0.39	.	6.1	900
10	16.7	.	.	.	3.8	2.0	49.0	139	.	.	.	.	0.40	.	6.5	800
11	13.5	.	55	.	2.5	.	31.0	133	.	140	.	.	.	.	5.5	710

OBS	BA2	LA	CE	ND	SM	EU	TB	DY	YB	LU	HF	TA	W	AU
1	1040	41.2	87	39	5.08	1.29	0.70	4.1	1.61	0.308	4.00	0.98	.	.
2	970	44.6	92	43	6.50	1.30	0.62	4.0	2.13	0.294	4.00	1.18	.	.
3	600	48.0	78	46	7.80	1.47	0.83	5.6	2.09	0.248	3.91	1.23	.	.
4	430	47.0	123	49	5.40	1.26	0.78	3.5	2.20	0.330	4.40	1.13	.	.
5	430	40.7	87	33	5.03	1.31	0.69	4.1	1.63	0.319	4.10	1.01	.	.
6	950	46.0	99	39	6.60	1.38	0.73	4.6	2.54	0.329	4.00	1.11	.	.
7	1140	43.7	73	50	6.50	1.24	0.60	3.6	1.94	0.234	3.62	1.05	.	.
8	1040	48.5	123	46	6.10	1.26	0.63	3.9	1.92	0.320	4.60	0.93	.	.
9	820	45.0	95	36	4.94	1.40	0.76	3.8	1.84	0.310	4.30	1.05	.	.
10	600	46.0	103	31	6.70	1.44	0.67	5.0	2.31	0.329	4.50	1.13	.	.
11	660	48.0	79	49	7.20	1.41	0.66	4.9	2.55	0.221	3.84	1.03	.	.

OBS	HG	TH	U	IR	ARG	OZ	KF	PL	PY	CC	DO	KA	KL	IL	IS	PROF
1	.	14.7	2.92	.	45	25	5	10	10	5	0	20	0	20	60	-1458
2	.	14.7	2.80	.	55	25	5	5	0	10	0	10	10	20	60	-1461
3	.	13.4	3.05	.	50	25	10	5	0	10	0	15	5	20	60	-1464
4	.	18.5	2.91	.	50	30	5	10	0	5	0	10	15	15	60	-1467
5	.	15.4	2.99	.	35	20	10	5	20	10	0	10	10	20	60	-1470
6	.	15.1	3.10	.	50	25	5	5	0	15	0	10	15	20	55	-1473
7	.	12.2	2.90	.	45	30	5	10	0	10	0	10	15	15	60	-1476
8	.	17.4	3.06	.	45	25	10	10	0	10	0	10	15	20	55	-1479
9	.	16.2	3.07	.	45	25	5	5	10	10	0	10	15	20	55	-1482
10	.	15.8	3.06	0.042	45	30	5	10	0	10	0	10	10	20	60	-1485
11	.	13.5	3.35	0.047	45	25	10	10	0	10	0	5	10	20	65	-1488

OBS	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE
12	12900	13500	95000	7600	18600	24300	15.2	4100	117	149	245	45300
13	13100	9700	87600	5300	20500	23000	15.6	4400	106	140	217	45000
14	12400	12800	87900	8000	23500	26700	15.3	4500	104	149	208	47000
15	12600	11300	89000	4000	20100	26800	14.2	4500	112	140	253	43000
16	12900	14500	91000	7200	18400	30900	14.8	4500	113	166	246	47900
17	11100	10900	86100	3800	23200	30300	15.2	3700	99	151	223	49000
18	13100	13700	90000	6000	20800	27700	15.7	4600	108	138	206	49000
19	11900	11900	89000	4000	21200	30900	14.1	4400	114	119	239	42700
20	10900	13900	90000	7700	23900	31600	14.8	4200	112	150	236	46500
21	12500	9800	85300	4500	15400	23000	15.1	3300	95	130	219	50000
22	12200	12500	88500	6400	19700	30200	15.6	4400	109	142	245	49000

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1
12	13.1	.	.	.	.	.	81.0	136	.	.	.	.	.	.	6.6	520
13	14.4	.	72	.	.	.	21.9	131	.	210	.	.	0.33	.	6.6	740
14	15.5	.	.	3.4	.	.	103.0	139	.	.	.	.	0.41	.	6.3	1140
15	14.1	.	98	4.1	.	.	25.0	131	410	.	.	.	0.37	.	6.5	1050
16	13.8	.	.	3.6	2.9	.	76.0	126	.	.	.	.	.	.	5.7	1170
17	15.8	.	121	2.4	1.5	.	15.2	135	.	320	.	.	0.29	.	6.2	1080
18	15.8	.	.	3.8	.	.	56.0	140	.	240	.	.	0.45	.	6.8	730
19	14.4	.	153	3.6	.	.	25.0	137	.	210	.	.	0.55	.	5.9	810
20	14.1	.	80	.	2.5	.	93.0	132	.	180	.	.	0.37	.	6.1	1260
21	15.8	.	121	1.7	1.8	.	21.3	126	.	180	.	.	0.23	.	6.5	1120
22	21.5	.	90	4.9	.	.	69.0	141	.	.	.	.	0.62	.	6.6	1090

OBS	BA2	LA	CE	NO	SM	EU	TB	DY	YB	LU	HF	TA	W	AU
12	350	47.9	126	48	5.80	1.30	0.66	3.9	2.90	0.390	4.98	1.00	.	.
13	370	42.8	94	39	4.83	1.35	0.74	3.9	2.17	0.322	4.70	1.21	.	.
14	1120	44.5	96	42	6.40	1.31	0.74	4.1	2.55	0.370	4.80	1.10	.	.
15	1200	44.0	75	50	6.00	1.24	0.57	3.0	1.98	0.233	4.40	1.19	.	.
16	690	47.0	124	50	5.21	1.25	0.91	3.6	2.20	0.400	4.97	0.99	.	.
17	910	42.8	94	34	4.72	1.39	0.70	4.1	1.50	0.319	4.70	1.04	.	.
18	640	45.0	98	45	6.30	1.34	0.72	4.6	2.39	0.370	4.74	0.99	.	.
19	820	45.2	73	55	6.60	1.27	0.66	4.6	2.35	0.256	4.21	1.12	.	.
20	1040	49.0	123	43	6.00	1.27	0.79	3.7	2.34	0.420	4.60	0.87	.	.
21	780	40.8	88	40	4.57	1.24	0.65	2.9	2.30	0.327	4.80	1.13	.	.
22	930	44.5	99	43	6.80	1.31	0.62	4.6	2.30	0.331	4.59	1.12	.	.

OBS	HG	TH	U	IR	ARG	QZ	KF	PL	PY	CC	DO	KA	KL	IL	IS	PROF
12	.	18.8	3.18	0.039	45	30	5	10	0	10	0	5	15	20	60	-1491
13	.	15.9	3.02	0.038	45	25	15	5	0	10	0	5	10	15	70	-1494
14	.	15.1	2.95	0.040	45	25	10	10	0	10	0	5	10	15	70	-1497
15	.	13.4	2.91	.	55	20	5	10	0	10	0	5	10	15	70	-1500
16	.	17.8	2.96	.	45	20	10	10	0	15	0	10	15	20	55	-1503
17	.	15.4	3.04	.	50	25	5	10	0	10	0	10	5	15	70	-1506
18	.	16.0	2.99	.	45	30	5	10	0	10	0	10	15	20	55	-1509
19	.	13.0	3.01	.	45	25	5	10	0	15	0	5	10	20	65	-1512
20	.	17.6	3.01	.	40	30	5	10	0	15	0	5	15	20	60	-1515
21	.	15.2	2.94	.	45	25	5	10	0	15	0	5	10	20	65	-1518
22	.	16.0	3.08	.	45	25	10	10	0	10	0	5	10	15	70	-1521

OBS	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE
23	11900	11800	88700	3370	23100	30600	14.0	3700	118	114	225	44000
24	13100	13800	92000	4600	19400	27700	15.1	4000	124	152	230	47800

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1
23	15.4	.	123	.	2.8	1.3	20.5	127	.	240	.	.	0.39	.	5.9	1240
24	14.7	.	.	.	2.0	3.2	19.4	123	.	290	.	.	.	.	5.9	1560

OBS	BA2	LA	CE	ND	SM	EU	TB	DY	YB	LU	HF	TA	W	AU
23	1370	43.5	74	37	6.80	1.17	0.66	4.1	2.33	0.256	3.93	1.04	.	.
24	1160	47.0	126	52	5.20	1.26	0.75	4.2	2.30	0.370	4.46	1.06	.	.

OBS	HG	TH	U	IR	ARG	OZ	KF	PL	PY	CC	DO	KA	KL	IL	IS	PROF
23	.	13.1	3.01	.	45	25	10	10	0	10	0	5	5	20	70	-1524
24	.	18.0	3.12	.	45	25	10	10	0	10	0	5	15	15	65	-1527

ANEXO A-X (Pedreira Poty)

OBS	N	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE
1	59	.	.	.	.	.	.	.	.	.	.	.	.
2	58	.	.	.	.	.	.	.	.	.	.	.	.
3	57	.	.	.	.	.	.	.	.	.	.	.	.
4	56	.	.	.	.	.	.	.	.	.	.	.	.
5	55	.	.	.	.	.	.	.	.	.	.	.	.
6	54	.	.	.	.	.	.	.	.	.	.	.	.
7	53	.	.	.	.	.	.	.	.	.	.	.	.
8	52	.	.	.	.	.	.	.	.	.	.	.	.
9	51	.	.	.	.	.	.	.	.	.	.	.	.
10	50	660	29000	71000	.	16200	137000	9.000	4000	73.0	111.0	166.0	34800
11	49	220	4300	3370	.	.	409000	0.610	.	14.7	9.7	73.0	3290

OBS	CO	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1
1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
10	7.70	.	140.0	.	9.70	.	.	100.0	.	.	.	.	.	.	4.700	.
11	0.87	150	90.0	.	1.46	.	1.20	.	850	.	.	.	0.140	.	0.240	57

OBS	BA2	LA	CE	ND	SM	EU	TB	DY	YB	LU	HF	TA	W	AU	HG
1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
10	.	42.8	111.0	43.0	4.63	0.900	0.630	3.00	1.55	0.187	3.940	0.860	.	.	.
11	.	11.7	11.8	9.1	1.25	0.250	0.140	0.64	0.40	0.037	0.288	.	.	.	.

OBS	TH	U	IR	ARG	QZ	KF	CC	DOL	PY	KA	IL	IS	DC	DO	COT	RI	PROF
1	.	.	.	30	30	10	5	20	5	25	15	60	1.45	-0.21	0.33	86	2535.0
2	.	.	.	10	5	0	45	40	0	30	20	50	0.62	-3.29	0.22	24	2205.0
3	.	.	.	30	15	5	20	20	10	35	15	50	1.44	-3.02	0.48	70	1785.0
4	.	.	.	15	15	5	35	25	5	30	20	50	0.98	-3.32	0.39	55	1660.0
5	.	.	.	10	10	0	30	40	10	30	15	55	0.88	-3.41	0.33	35	1615.0
6	.	.	.	35	25	10	20	5	5	35	10	55	1.18	-2.92	0.85	85	1535.0
7	.	.	.	0	0	0	100	0	0	0	0	0	1.52	-4.96	0.10	5	1325.0
8	.	.	.	30	15	5	35	10	5	25	15	60	1.14	-2.64	0.89	62	1285.0
9	.	.	.	5	5	0	90	0	0	25	25	50	2.25	-2.66	0.17	10	1265.0
10	20.80	7.80	.	25	10	5	20	35	5	30	20	50	1.55	-2.25	0.72	45	1242.0
11	1.32	3.63	.	0	0	0	100	0	0	0	0	0	2.15	-4.12	0.20	5	1165.0



OBS	N	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE	CO
23	37	155	3900	2490	.	.	443000	0.550	.	8.9	8.6	73.0	2030	0.36
24	36	.	4400	14600	.	.	315000	1.380	520	38.4	43.0	50.8	5600	1.69
25	35	.	3800	5880	.	.	360000	0.960	.	18.4	20.8	58.0	3640	1.00
26	34	.	4100	5700	.	.	.	0.960	.	17.0	17.8	67.0	3300	0.52
27	33	.	5500	19800	107	.	289000	2.050	830	42.1	54.0	59.0	9200	2.09
28	32	377	3800	7800	.	3800	436000	1.280	.	20.6	24.7	74.0	4210	0.66
29	31	275	4100	4180	.	1780	424000	0.750	.	13.9	15.9	60.0	4300	0.52
30	30	285	2420	3140	69	1580	389000	0.740	.	14.5	13.9	81.0	3990	0.54
31	29	263	2200	6000	.	2300	376000	1.250	.	15.9	23.8	76.0	6100	0.92
32	28	142	4100	2290	.	490	404000	0.570	.	11.2	13.9	52.0	2310	.
33	27	298	2500	3390	.	1690	388000	0.780	.	14.4	14.8	66.0	21000	0.66

OBS	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1	BA2
23	190	94.0	.	0.62	.	.	.	950	.	.	.	0.135	.	.	56	.
24	.	22.0	.	.	1.8	.	23.0	470	90	.	.	0.530	.	0.760	100	.
25	.	11.5	.	.	1.0	.	9.1	600	.	.	.	.	.	0.370	2600	.
26	.	.	.	.	1.0	.	.	440	48	.	.	.	.	0.320	180	.
27	.	23.0	.	.	4.0	.	24.0	530	210	.	.	0.770	.	0.920	350	.
28	.	.	.	1.60	1.1	1.02	11.0	450	.	.	.	0.360	.	0.400	140	.
29	.	11.4	.	1.83	0.8	1.02	8.5	770	100	.	.	0.280	.	0.300	100	.
30	.	11.2	.	2.07	1.2	0.88	5.5	940	120	.	.	0.250	.	0.150	86	.
31	74	81.0	.	2.30	1.4	0.84	10.4	510	150	.	.	0.270	.	0.350	128	.
32	.	.	.	0.71	1.9	0.44	4.3	1310	71	.	.	.	.	0.099	.	.
33	.	7.2	.	2.70	0.6	1.47	.	840	99	.	.	0.410	.	0.200	82	.

OBS	LA	GE	ND	SM	EU	TB	OY	YB	LU	HF	TA	W	AU	HG
23	7.3	8.0	4.6	0.67	0.140	0.068	.	0.29	0.038	0.280	.	.	.	.
24	18.9	19.8	6.3	2.26	0.480	0.260	1.86	0.76	0.130	1.030	0.180	.	.	.
25	15.0	16.6	7.1	1.54	0.357	0.189	1.36	0.57	0.053	0.510	.	.	.	.
26	13.3	13.1	7.1	1.11	0.290	0.070	1.07	0.55	0.119	0.450	.	.	.	.
27	38.0	43.0	23.0	4.31	1.030	0.640	5.10	1.54	0.200	1.750	0.250	.	.	.
28	18.4	19.8	7.8	2.43	0.440	.	1.57	0.76	0.122	0.630	.	.	.	.
29	14.0	18.7	8.5	1.75	0.390	0.243	1.30	0.76	0.121	0.540	0.470	.	.	.
30	13.8	16.8	5.9	1.38	0.390	0.203	1.84	0.75	0.103	0.310	.	.	.	.
31	21.1	28.5	17.3	2.17	0.680	0.410	2.32	1.09	0.187	1.020	0.102	.	.	.
32	7.3	21.4	.	0.68	4.600	0.090	0.92	0.35	0.094	0.300	.	.	.	.
33	17.9	19.1	12.0	2.22	0.480	0.290	1.60	0.85	0.083	0.390	0.670	.	.	.

OBS	TH	U	IR	ARG	QZ	KF	CC	DOL	PY	KA	IL	IS	DC	DO	COT	RI	PROF
23	0.69	2.94	0.017	0	0	0	100	.	0	0	0	0	1.85	-4.07	0.17	5	1018.5
24	4.03	10.90	0.061	15	5	5	75	0	0	40	30	30	1.67	-2.58	0.86	20	1017.0
25	2.04	7.50	0.035	.	.	.	.	.	.	.	.	.	.	.	.	.	1016.0
26	1.62	6.70	0.026	.	.	.	.	.	.	.	.	.	.	.	.	.	1014.0
27	7.00	22.10	0.083	10	5	15	65	5	0	45	20	35	1.55	-3.02	0.65	19	1012.5
28	2.40	8.20	0.037	0	5	0	95	0	0	0	0	0	1.42	-3.82	0.33	5	1011.5
29	1.75	6.36	.	0	0	0	100	0	0	0	0	0	1.92	-4.36	0.18	6	1010.5
30	1.58	6.34	.	0	10	0	90	0	0	0	0	0	1.98	-3.89	0.13	4	1006.5
31	2.99	7.90	.	0	5	0	95	0	0	0	0	0	1.50	-4.65	0.21	5	999.5
32	1.70	6.56	.	0	0	0	100	0	0	0	0	0	1.93	-4.34	0.13	4	998.5
33	1.53	7.50	.	0	0	0	100	0	0	0	0	0	2.15	-3.91	0.13	4	993.5

OBS	N	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE	CO
34	26	690	4200	10500	.	4800	367000	2.340	330	38.4	48.0	63.0	35400	1.41
35	25	416	3300	5300	.	.	396000	1.370	.	24.4	29.5	73.0	8500	0.45
36	24	890	4000	16300	290	7000	319000	2.950	630	49.8	54.0	64.0	13300	2.44
37	23	730	4900	25000	.	10300	302000	3.360	900	52.0	69.0	97.0	15100	2.60
38	22	247	4600	13400	.	6400	370000	1.960	590	29.6	27.8	80.0	6400	1.68
39	21	410	4000	14900	.	6600	383000	2.310	610	29.6	41.0	79.0	11900	1.67
40	20	236	3600	12400	36	5500	321000	1.770	560	25.2	24.2	74.0	56000	1.76
41	19	190	2800	10000	.	3700	370000	1.430	450	17.6	22.9	76.0	5100	1.35
42	18	235	4500	10500	.	4800	396000	1.520	570	18.3	24.6	70.0	7400	1.20
43	17	324	4200	19600	.	9000	329000	2.700	1060	31.9	41.0	81.0	10300	2.48
44	16	307	4300	15800	.	7000	356000	2.160	690	30.1	37.7	87.0	7600	1.59

OBS	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1	BA2
34	.	20.0	.	9.10	7.7	3.60	26.0	830	310	.	.	1.240	.	0.580	.	.
35	.	.	.	3.60	.	.	8.8	790	110	.	.	0.380	.	0.320	250	.
36	.	.	.	9.50	4.9	5.70	27.0	830	300	.	.	1.020	.	1.080	340	160
37	.	.	.	7.10	3.2	2.00	38.0	510	300	.	.	0.690	.	1.280	440	.
38	140	88.0	.	2.60	.	.	29.1	630	110	.	.	0.140	.	1.010	300	260
39	230	126.0	.	4.10	1.5	1.20	27.8	690	230	.	.	0.500	.	1.120	.	170
40	.	.	.	2.50	.	0.70	29.0	510	.	.	.	0.450	.	0.900	140	66
41	.	82.0	.	1.60	.	.	18.8	730	.	.	.	0.150	.	0.770	108	100
42	.	14.0	.	2.22	1.3	0.68	20.6	710	.	.	.	0.190	.	0.850	.	.
43	.	.	4.9	4.20	1.4	1.07	38.9	630	130	.	.	0.490	.	1.350	.	199
44	.	.	.	3.70	1.6	0.63	29.4	570	80	.	.	0.280	.	1.170	200	140

OBS	LA	CE	ND	SM	EU	TB	DY	YB	LU	HF	TA	W	AU	HG
34	52.0	73.0	39.0	7.20	1.670	0.980	6.50	3.19	0.450	1.360	.	.	.	.
35	29.1	48.0	18.1	3.13	0.860	0.560	2.90	1.71	0.267	0.750	.	.	.	.
36	60.0	81.0	28.0	6.60	1.780	1.040	7.20	3.55	0.410	1.680	0.230	.	.	.
37	58.0	115.0	34.0	6.40	1.620	1.090	4.80	2.70	0.430	3.100	0.320	.	.	.
38	10.4	14.1	9.6	1.07	0.220	0.160	0.71	0.43	0.048	0.960	0.230	.	.	.
39	24.6	39.7	18.2	2.79	0.670	0.360	2.60	1.17	0.160	1.280	0.220	.	.	.
40	10.9	16.1	5.7	1.22	0.250	0.120	0.65	0.46	0.041	0.940	0.230	.	.	.
41	10.3	18.5	6.3	0.84	0.216	0.126	0.58	0.48	0.067	0.820	0.180	.	.	.
42	10.3	17.8	5.7	1.14	0.230	0.086	.	0.36	0.052	0.730	0.160	.	.	.
43	15.9	28.8	13.1	1.60	0.330	0.180	1.23	0.68	0.067	1.350	0.260	.	.	.
44	18.3	42.0	11.3	1.85	0.400	.	0.93	0.57	0.084	1.140	0.210	.	.	.

OBS	TH	U	IR	ARG	QZ	KF	CC	DOL	PY	KA	IL	IS	DC	DO	COT	RI	PROF
34	5.90	21.40	.	.	.	.	0	.	.	.	.	.	.	.	.	.	986.5
35	3.20	14.00	.	0	0	0	95	0	5	0	0	0	1.57	-4.90	0.21	5	974.5
36	7.40	28.50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	967.5
37	10.40	24.70	.	10	5	0	85	0	0	25	25	50	1.55	-3.84	0.29	12	964.5
38	3.06	6.06	0.014	10	5	0	85	0	0	25	30	45	1.62	-3.51	0.30	19	963.5
39	4.61	12.40	0.041	10	5	0	85	0	0	30	0	70	1.72	-3.60	0.28	15	954.5
40	3.11	4.93	0.014	5	0	0	65	0	30	20	35	45	1.67	-3.63	0.18	14	951.5
41	2.77	4.52	0.008	10	5	0	85	0	0	25	25	50	2.02	-2.86	0.17	10	949.0
42	2.91	3.75	0.012	10	5	0	85	0	0	20	20	60	2.04	-3.09	0.20	10	945.0
43	5.40	8.40	0.020	10	10	0	80	0	0	25	15	60	1.76	-3.56	0.22	14	939.5
44	5.00	7.50	0.015	0	0	5	95	0	0	0	0	0	1.70	-3.51	0.27	18	933.5





OBS	N	NA	MG	AL	CL	K	CA	SC	TI	V	CR	MN	FE	CO
56	4	670	8900	50700	.	21600	226000	6.300	2800	57.0	67.0	156.0	18800	6.60
57	3	460	5400	25200	.	11400	321000	3.290	1250	35.0	57.0	100.0	10000	2.43
58	2	.	.	.	.	.	.	.	.	.	.	.	.	.
59	1	.	.	.	.	.	.	.	.	.	.	.	.	.

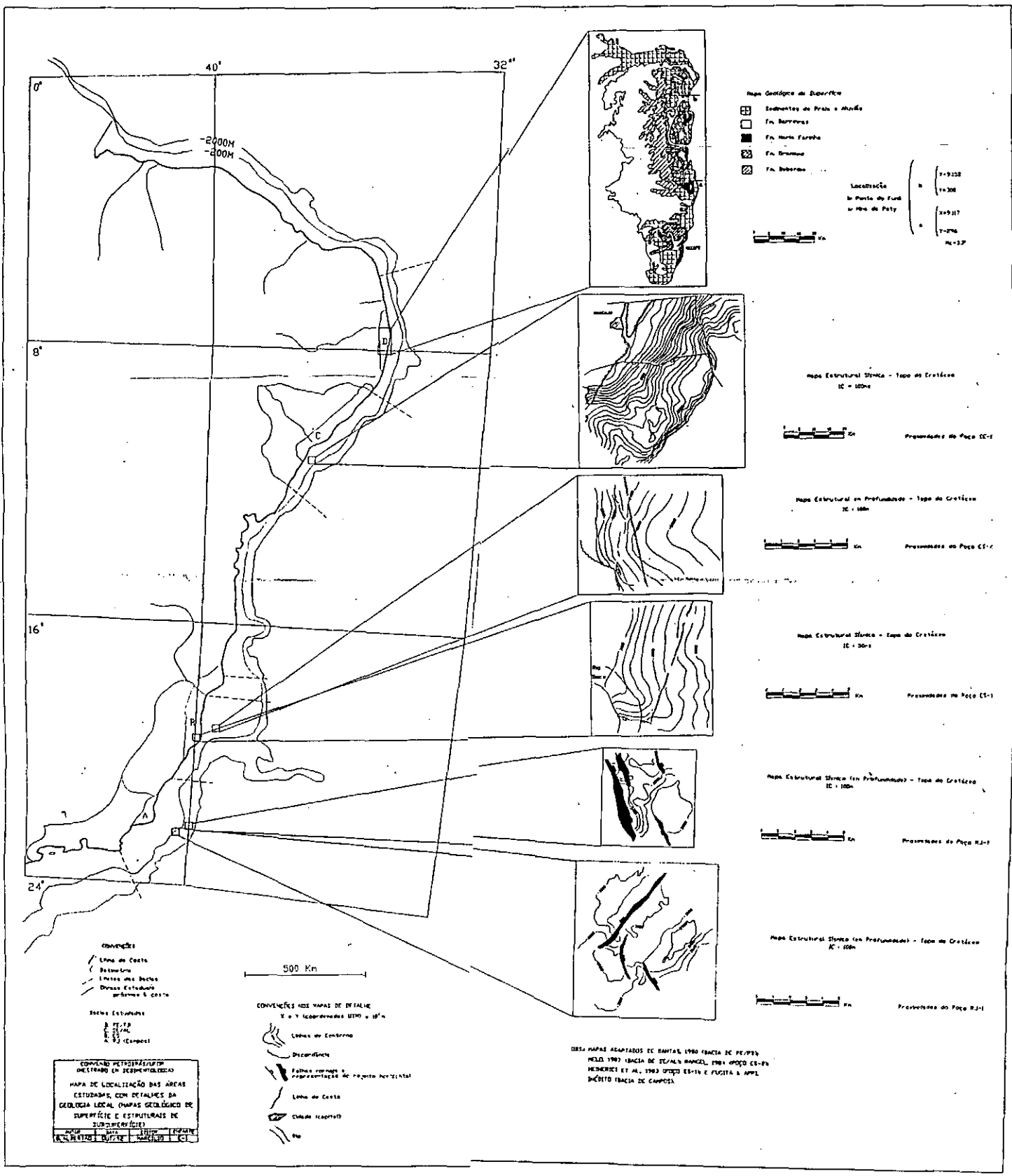
OBS	CU	ZN	GA	AS	SE	BR	RB	SR	ZR	AG	IN	SB	I	CS	BA1	BA2
56	160	147.0	.	3.20	.	.	101.0	500	180	.	.	0.320	.	3.900	390	350
57	280	170.0	.	3.00	.	.	51.0	670	.	.	.	0.340	.	1.860	250	180
58	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
59	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

OBS	LA	CE	ND	SM	EU	TB	DY	YB	LU	HF	TA	W	AU	HG
56	35.1	56.0	32.0	4.53	0.730	0.380	2.70	1.21	0.119	2.600	0.870	.	.	.
57	22.7	58.0	23.0	2.33	0.500	0.260	1.17	0.90	0.129	1.860	0.370	.	.	.
58	.	.	.	.	.	.	.	.	.	.	.	.	.	.
59	.	.	.	.	.	.	.	.	.	.	.	.	.	.

OBS	TH	U	IR	ARG	QZ	KF	CC	DOL	PY	KA	IL	IS	DC	DO	COT	RI	PROF
56	10.40	4.91	.	20	10	5	60	5	0	20	20	60	1.47	-2.39	0.51	35	645.0
57	7.80	6.00	.	10	5	5	75	5	0	25	25	50	1.47	-3.12	0.42	25	395.0
58	.	.	.	20	10	5	60	5	0	25	25	50	1.31	-2.52	0.63	40	245.0
59	.	.	.	15	0	5	75	5	0	20	35	45	1.42	-3.11	0.30	24	145.0



**Mapa Geológico de Superfície**

- Sedimentos do Pórcio e Mioceno
- ▨ Fa. Barrocas
- ▩ Fa. Monte Furado
- ▧ Fa. Gramma
- ▦ Fa. Iboara

**Localização**

na Paraíba de Furtado  
e Rio de Paty

N 19° 12' 30"  
 S 19° 30'  
 S 20° 17'  
 S 19° 26'  
 N 23° 30'

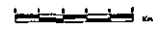


**Mapa Estrutural Sísmica - Topo do Crátão**  
IC = 100m



Projeção de Mapa CC-1

**Mapa Estrutural em Profundidade - Topo do Crátão**  
IC = 1000m



Projeção de Mapa CC-1

**Mapa Estrutural Sísmica - Topo do Crátão**  
IC = 3000m



Projeção de Mapa CC-1

**Mapa Estrutural Sísmica (em Profundidade) - Topo do Crátão**  
IC = 100m



Projeção de Mapa CC-1

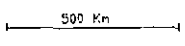
**Mapa Estrutural Sísmica (em Profundidade) - Topo do Crátão**  
IC = 100m



Projeção de Mapa CC-1

**CONVENÇÕES**

- Linha de Costa
- Bacia
- Limites das Bacias
- Direção Estrutural conforme o corte



**Seções Estruturais**

A - B - C - D

**CONVENÇÕES NOS MAPAS DE DETALHE**  
X e Y coordenadas UTM a 10°

- Linhas de Contorno
- Discordâncias
- Falhas rasas e representadas de acordo com o sentido
- Linha de Costa
- Cidades (capitais)
- Rio

**CONVENÇÃO PETROGRÁFICA**  
DISTRIBUÍDA EM SEPARAVIDADE

**MAPA DE LOCALIZAÇÃO DAS ÁREAS ESTUDADAS, COM DETALHES DA GEOLOGIA LOCAL (MAPAS GEOLÓGICOS DE SUPERFÍCIE E ESTRUTURAIS DE SUBSUPERFÍCIE)**

COLO	ROXO	VERDE	AMARELO
19-10-1970	10-10-1970	10-10-1970	10-10-1970

ESTES MAPAS ADAPTADOS DE SANTOS, 1980 (BACIA DE PE. 07/70) NELA 1987 (BACIA DE ITAUNA) RANGEL, 1988 (OPÇÃO CC-01) MENENDES ET AL., 1983 (OPÇÃO ES-10) E FUSITA & APPL. (BACIA DE CAMPOS).



