I. CHEMICAL DATA FOR SITES 395 AND 396: ANALYTICAL PROCEDURES AND COMPARISON OF INTERLABORATORY STANDARDS

J. Natland,[1] H. Bougault,[2] T. Fujii,[3] A. L. Graham,[4] W. G. Melson,[5] E. Prosser,[6] J. M. Rhodes,[7] and B. Zolotarev[8]

INTRODUCTION

Chemical data have been contributed to this volume by several laboratories. To facilitate comparison of the data, four standards of rocks we recovered on Leg 45 were powdered on board ship, and splits distributed to members of the shipboard party. The standards are (1) Sample 395-17-1, 56-69 cm, a gabbro; (2) Sample 395-18-1, 61-70 cm, a serpentinized peridotite; (3) Sample 395A-15-5, 0-11 cm, a plagioclase olivine phyric basalt of chemical Unit P_2; and (4) Sample 395A-63-1, 108-116 cm, a dolerite of chemical Unit P_4'. Of the samples, the gabbro, the phyric basalt, and the dolerite are fresh. The serpentinized peridotite is relatively fresh, as sea-floor peridotites go, but overall is considerably more altered than the other samples.

In this chapter, we summarize the analytical procedures of the five laboratories contributing most of the data to this volume, present the interlaboratory comparisons, and then tabulate all major-oxide and trace-element data for each hole in stratigraphic order. Natural glass probe data submitted by W. G. Melson are not strictly equivalent to whole-rock data, and are listed in a separate table.

ANALYTICAL PROCEDURES

The five groups whose procedures we summarize are (1) Centre Océanologique de Bretagne, Brest, France (COB, Bougault et al., this volume); (2) the NASA-Johnson Space Center, Houston, Texas (JSC, Rhodes et al., this volume); (3) British Museum of Natural History, London, United Kingdom (BM, Graham et al., this volume); (4) the chemical analytical laboratory of the Geological Institute of the USSR Academy of Sciences (GI, Zolotarev and Choponov, this volume); and (5) the Mineralogisch-Petrographisches Institut der Universität München, Münich, Federal Republic of Germany (MPI, Propach et al., this volume).

COB (XRF Shipboard Analysis)

These investigations were performed by H. Bougault and J. M. Rhodes of the shipboard scientific party, with the help of DSDP shipboard chemist, Anne Gilbert. The analyses were performed on the CNEXO mobile X-ray fluorescence van on board *Glomar Challenger.* The following major elements and trace elements were determined: SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, TiO_2, K_2O, Cr, Ni, Sr, and Zr.

Major Elements

No significant differences were found between Leg 45 and Leg 37 shipboard chemical analysis for major elements using the XRF unit. The methods have been discussed in detail in Bougault (1977).

Minor differences concern the use of OPR crucibles and the derivation of calibration curves from standards.

OPR crucibles: These crucibles, made of an alloy of platinum, gold, and rhodium, allow the liquid to cool inside the crucibles without sticking, thus ensuring easy removal from the crucibles of the glass discs formed. During Leg 37, the bottoms of the crucibles were bent, and it was necessary to grind the glass discs to get a flat surface for analysis. During Leg 45 we had new, thicker, ORP crucibles which did not bend with use, and grinding was not necessary. Additional improvements have been made on the ORP crucibles since Leg 45, allowing long-term use without deformation of the bottoms of the crucibles.

Calibration curves: Instead of drafting the calibration line and obtaining the concentration of unknown samples from this calibration line, the slope and intercept were calculated using a least-squares method with a HP-65 programmable calculator. These parameters, together with a reference standard intensity to take into account possible daily variations caused by the instrument drift, were stored on magnetic strips for future calculations. The reference standard was measured every day, together with at least two other international reference standards; the concentrations of unknown samples were obtained from their intensities through these parameters, using the HP-65 calculator.

Precision of the results is probably within 1 per cent relative for all major elements, as can be seen by looking at data from our thickest nearly homogeneous basalt unit (A_3), where several samples were analyzed (Table 1).

[1]Deep Sea Drilling Project, University of California, La Jolla, California.
[2]Centre Oceanologique de Bretagne, CNEXO, Brest, France.
[3]Geological Institute, University of Tokyo, Tokyo, Japan.
[4]Department of Mineralogy, British Museum of Natural History, London, England.
[5]Department of Mineral Sciences, National Museum of Natural History, Smithsonian Institution, Washington, D.C.
[6]Institute for Applied Geophysics of the Technical University, Münich, Federal Republic of Germany.
[7]Lockheed Electronics Company, Houston, Texas (present address: University of Massachusetts, Amherst, Massachusetts).
[8]Geological Institute of the USSR, Academy of Sciences, Moscow, USSR.

TABLE 1
Precision of XRF Data Determined on Board Ship

	$\overline{x}$	σx	$\sigma\overline{x}$
SiO_2	49.71	.18	0.05
Al_2O_3	15.14	.22	0.06
Fe_2O_3	11.20	.19	0.05
MgO	7.63	.27	0.07
CaO	11.30	0.10	0.03
TiO_2	1.72	0.02	0.01
Ni (ppm)	117	4.4	1.1
Sr (ppm)	131	2	0.5
Zr (ppm)	125	4.8	1.2

Note: Unit A_3; 15 analyzed samples; average; $\overline{x}$; standard deviation: σx; standard deviation for average $\overline{x}$:$\sigma\overline{x}$. K_2O is not given, because it is a variable element even within a homogeneous unit. σ values integrate both analytical precision and possible variation within the unit. σ values were used as a criterion to distinguish one sample from another, in order to define different chemical units.

Trace Elements

Four trace elements were chosen to improve the discrimination of different magmatic units: two of them with high crystal/liquid partition coefficients, Cr and Ni, and two others, Zr and Sr, with low partition coefficients. In addition to the recognition of chemical units, these data can provide additional information, especially in aphyric units, about partial melting and fractional crystallization.

Shipboard measurements of trace elements were made from powder pellets; they were prepared by mixing two grams of rock powder and 0.2 gram of wax. After pressing, the pellet was placed on a hot plate at a temperature higher than the melting point of wax. The wax melted and, when cold, ensured a durable pellet.

The precise determination of trace elements using such a method requires the solution of two problems:

1) Background determination: more exactly, determination of possible interferences caused by components of the instrument (holder, tube impurities, etc.) occurring within the element to be determined.

2) Matrix effect correction ($\Sigma\alpha_i C_i$).

The procedures used on Leg 45 for solving these problems are given in Bougault et al. (1977). Shipboard calculations used to make interference and matrix corrections were in three steps, using the HP-65 programmable calculator:

a) Calculation of the matrix effect for standards and corrected intensities, taking into account instrumental interferences.
b) Calculation of a straight-line calibration curve (corrected intensities versus concentrations of standards) by means of a least-squares method.
c) Calculation, for unknown samples, of matrix effect (from major-oxide concentrations and mass absorption coefficients), corrected intensities, and deduction of concentrations from parameters previously determined.

All measurements were made using a gold tube. Counting time was 80 seconds on the peak and 40 seconds for each background for Cr, Ni, and Sr, and 200 seconds on the peak and 100 seconds for each background for Zr. Cr, Ni, and Sr were measured on their $K\alpha$ line. The $K\beta$ line was used for Zr to avoid Sr interference with Zr $K\alpha$. The orders of magnitude of measured counts for intensities are as follows: Cr (300 ppm), 21,000; Ni (100 ppm), 35,000; Sr (100 ppm), 27,000; Zr (130 ppm), 30,000.

Calibration curves for Ni, Sr, and Zr are presented in Figure 1. Table 2 indicates the values found for standards from calculated parameters. No figure is shown for Cr; the reproducibility of intensity measurements is as good as for the other elements, but there are problems associated with V interference ($VK\beta$) and with the exact determination of Cr absorption coefficients (Cr is a light element compared with Ni, Sr, and Zr). Consequently, the concentrations obtained for Cr are only derived from intensity measurements, without any matrix correction or V interference correction, and are not as accurate as Ni, Sr, and Zr determinations.

For Zr, standards DRN and BR are slightly off the curve; in fact, two other standards, W1 and G2, are just on this calibration curve (shore-based study), but were not available on board.

The precision and accuracy can be estimated from standard measurements (Table 2) or from the results obtained for different samples of a single homogeneous basaltic unit (Table 1): these precisions and accuracies are confirmed by shore-based studies (Bougault et al., this volume). The determination of these four trace elements proved to be very helpful for discriminating among the different chemical types of basalt encountered.

COB (Additional Shore-Based Analyses)

Analyses for MnO_2, P_2O_5, and Na_2O were completed on shore. FeO determinations were made by J. Norberg (Smithsonian Institution) according to the method outlined by L. C. Peck (1964). All major-element data were obtained by X-ray fluorescence, except Na_2O, which was determined by atomic absorption. Trace-element data were obtained by X-ray fluorescence (XRF), neutron activation (NA), or atomic absorption (AA). Co, Ni, and Zr were analyzed by both X-ray fluorescence and neutron activation.

The neutron activation analysis used was pure instrumental activation analysis (without chemical separation) using epithermal neutron irradiation (OSIRIS Reactor in Saclay—C. E. A. Groupe Pierre Sue). Because the concentrations of investigated elements in tholeiites (Tb, Hf, Ta . . .) were of low orders of magnitude, the use of epithermal neutrons is very important; this kind of irradiation allows the interaction of ^{46}Sc and ^{55}Fe to be strongly diminished. Irradiation was performed under Cd vials; then several measurements were made using a Ge-Li detector (resolution 2 KeV at 1.33 MeV) at different times from four days to one month after irradiation. The reference standards used were GSN and BCR-1.

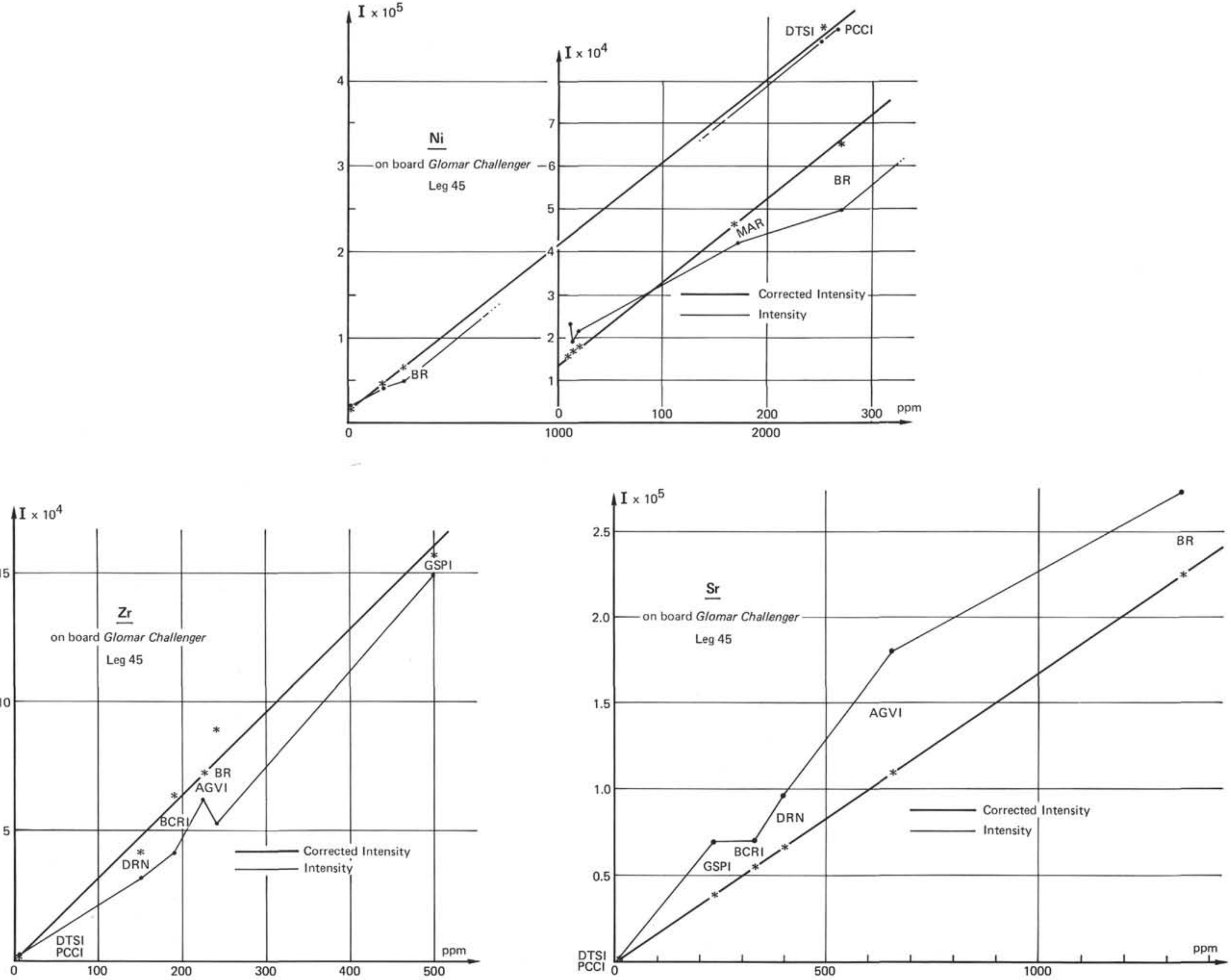

Figure 1. *Calibration curves (counts versus concentration in parts per million) for Ni, Zr, and Sr, determined on Leg 45 aboard the* Glomar Challenger. *Heavy lines are least-squares fits of concentration to intensity data corrected for instrumental and matrix interference.*

TABLE 2
Reproducibility of Trace-Element Data for Standard Samples

	Zr				Sr				Ni			
Standard	Recomd. Values	18 Dec.	19 Dec.	10 Jan.	Recomd. Values	17 Dec.	30 Dec.	10 Jan.	Recomd. Values	16 Dec.	29 Dec.	1 Jan.
PCC1	<10	3.5			0.41	.7			2339	2305	2306	2305
BR	240	266	270	267	1350	1351	1352	1354	270	266	265	
DRN	150	131			400	399			20	22.6	25	21
BCR1	190	201	197	191	330	328	332	332	15	14	15	13
DTS1	<5	13			0.35	2			2269	2304		2312
GSP1	500	496	497	495	233	233	233		12	11.6		
AGV 1	225	228			657	658	659	656				
MAR	70	71	70	71		108	110	109	170	177	171	170
GAST	115	115				125				156		
KNIPPA	297	293			1004	1008						

JSC (Shore-Based Analyses)

Major-element data were obtained by X-ray fluorescence analysis (XRF) of fused glass discs, prepared by fusing the sample with lanthanum-bearing lithium borate fusion mixture (Norrish and Hutton, 1969). FeO was determined titrimetrically using the modified cold-acid digestion method of Wilson (Maxwell, 1968), and Fe_2O_3 was obtained by difference from the XRF total iron value. Na_2O was determined on a separate 20 to 30 mg aliquot by instrumental neutron-activation analysis (INAA). Total water content was measured coulometrically using a DuPont moisture analyzer in which the sample is fused with a lead oxide flux.

The trace elements (Rb, Sr, Y, Zr, Nb) were determined by XRF analysis of pressed powder pellets. Corrections were made for non-linear backgrounds, tube contamination, and inter-element interferences (Norrish and Chappell, 1967). Corrections for matrix effects were based on a modification of the Compton scattering method (Reynolds, 1967), using the Ag-Compton peak. Additional trace-element data (La, Ce, Sm, Eu, Tb, Yb, Lu, Hf, Cr, Sc, Ni) were obtained by INAA following the methods of Jacobs et al. (in press).

BM (Shore-Based Analyses)

Concentrations of SiO_2, TiO_2, Al_2O_3, Fe_2O_3 (total), MnO, MgO, CaO, P_2O_5, Nb, Zr, and Y were determined using XRF analysis; fused beads were prepared from 500 mg of sample and 2 grams of lithium metaborate. FeO was determined through a hydrofluoric-sulfuric acid dissolution followed by titration with standardized potassium permanganate (French and Adams, 1972). H_2O^- was measured as weight loss after 1 to 2 hours at 110°C. H_2O^+ and CO_2 were measured on a Perkin-Elmer 240 elemental analyzer after drying at 110°C. All other trace elements were determined by atomic absorption analysis of hydrofluoric-boric acid solution of samples (Langmyhr and Paus, 1969).

GI (Shore-Based Analyses)

The following components were determined: SiO_2, Al_2O_3, Fe_2O_3, FeO, TiO_2, MnO, CaO, MgO, H_2O^+, H_2O^-, P_2O_5, Na_2O, K_2O, CO_2 and C_{org}.

The samples selected for analysis were crushed in a metal mortar and then powdered in agate mortars. In each case, the finely dispersed material was averaged out by means of quartering. Below are the substances used in analyses for rock-forming components:

1) SiO_2, Al_2O_3, TiO_2, MnO, CaO, and MgO were determined from a 0.5-gram separate.

2) FeO and P_2O_5 were each determined from individual 0.5-gram separates.

3) CO_2 and C_{org} were measured on another 0.5-gram separate by a wet combustion method.

4) Moisture of samples was determined from a separate weighing 0.2 to 0.5 gram, and the total $H_2O^{\pm}$ content from a 0.2-gram separate.

5) The amount of alkaline elements was determined by flame photometry after decomposition of 0.1 gram of rock.

SiO_2 was estimated gravimetrically as silicic acid gel in muriatic solutions, followed by supplementary photometry of subsequent filtrates after separation of sesquioxides and determination of Ca, Mg, and Mn.

Al_2O_3, Fe_2O_3, CaO, and MgO were estimated by the volumetric titration technique.

The methods of photometry of colored complex compounds were used for distinguishing TiO_2 (through coloration of peroxide compounds in a sulfate medium) and MnO (in ammoniacal medium during formation of the complex with formaldoxime).

Ferrous iron was determined by volumetric titration of potassium bichromate.

Phosphorus was recognized photometrically from its separate, after repeated treatment with an admixture of nitric and hydrofluoric acids and subsequent leaching by means of diluted nitric acid. The nitric acid was colored by mixing in molybdenum-acid and vanadium-acid ammonium.

MPI (Shore-Based Analyses)

All samples were cleaned with distilled water in an ultrasonic bath; in a few cases black rubbery glue spots were removed beforehand with trichlorethylene. Pea-sized chips were then broken off with a hammer and chisel on a polished, hardened steel plate. These were then placed in a "Widia" oscillating shatter-box ring mill (98% W_2C, 2% Co) and ground to a grain size of 50 μm maximum. Grinding time was 90 seconds. The mill pot was washed with distilled water, then rinsed in triply distilled water and dried after each run.

Two grams of each sample and 4 grams of lithium tetraborate were then weighed into a platinum-gold crucible, mixed, covered, and melted in an electric furnace at 1150°C. The glass regulus was then crushed with two hammer blows in a hardened steel mortar and transferred to a tungsten carbide micro-mill. After a grinding time of 10 minutes, the particle size was less than 40 μm. The sample was then bound with 3 drops of supersaturated Mowiol solution, placed in a 40-mm die, backed with boric acid, and pressed at 15 tons for 1 minute. The disc was then dried in a desiccator.

All analyses were made on an X-ray spectrometer; the samples were in the form of pressed glass powder tablets. Primary standards USGS W-1, ZGI B.M., CSRM MRG-1, USGS PCC-1, NIM N, NIM D., as well as secondary in-house standards, were used as reference samples. SiO_2, Al_2O_3, Fe_2O_3(t), MgO, Na_2O, K_2O, TiO_2, MnO, P_2O_5, Rb, Sr, and Zr were measured. Element concentrations were determined by least-squares linear regressions to published reference standard analyses.

Na_2O, K_2O, and Rb were determined on a flame photometer coupled to a lock-in amplifier (Cammann, 1972). The procedure for digestion of samples was as follows: 0.3-gram samples were digested with HF-H_2SO_4 for 3 hours at 135°C in modified "Uniseal" Teflon bombs, and then evaporated three times to dryness. The sample was then diluted to 150 ml and stored in polyethylene bottles. All chemicals used were of suprapure grade, and all vessels were washed with hot aqua regia and boiling distilled water and rinsed in triply distilled water. All samples were prepared in dust-free labs. FeO was determined using a Teflon digestion vessel under nitrogen atmosphere. The digested sample was titrated with potassium dichromate; the end point was determined with an electrode coupled to an automatic titrator/potentiograph. H_2O (total) was extracted at 1600°C with an induction furnace coupled via silica glass tubing to an automatic Karl Fischer titrator. The carrier gas was argon.

COMPARISON OF MAJOR-ELEMENT DATA ON INTERLABORATORY STANDARDS

Of the five laboratories whose procedures have been summarized, three (COB, BM, and MPI) submitted analyses of the standards. Tables 3 through 6 present the major-oxide analyses of these standards as reported. To facilitate comparison of the analyses, each was recalculated to a dry, CO_2-free and reduced state, then normalized to 100 per cent. These values are presented in Tables 7 through 10, along with means, standard deviations, and the standard deviations as per cent of the mean. Standard deviations and standard deviations as per cent of the mean are not listed where oxide values are very low to begin with.

TABLE 3
Major-Element Analyses (as reported) of Leg 45 Gabbro Standard Sample 395-17-1, 56-69 cm

	COB	BM	MPI
SiO_2	50.2	48.0	47.45
TiO_2	0.39	0.37	0.35
Al_2O_3	17.71	16.6	16.73
Fe_2O_3	1.39	1.52	1.15
FeO	4.62	4.46	4.95
MnO	0.11	0.11	0.11
MgO	12.2	11.4	11.62
CaO	9.32	8.86	8.99
Na_2O	3.53	3.51	3.61
K_2O	0.20	0.17	0.21
P_2O_5	0.02	0.01	0.02
H_2O^+	–	4.48	4.48
H_2O^-	–	0.67	0.33
CO_2	–	0.14	–
Total	99.69	100.30	100.01
LOI	4.9	–	–

TABLE 4
Major-Element Analyses (as reported) of Leg 45 Serpentinized Peridotite Standard Sample 395-18-1, 61-70 cm

	COB	BM	MPI
SiO_2	43.1	40.8	40.57
TiO_2	0.03	0.02	0.01
Al_2O_3	0.91	1.09	0.74
Fe_2O_3	5.19	4.32	5.55
FeO	4.55	4.53	5.17
MnO	0.11	0.10	0.11
MgO	44.3	40.8	40.27
CaO	0.89	0.86	0.84
Na_2O	0.03	0.07	0.02
K_2O	0.00	0.00	0.02
P_2O_5	0.02	<0.01	0.01
H_2O^+	–	6.60	6.38
H_2O^-	–	0.55	0.30
H_2O (t)	–	–	–
CO_2	–	0.40	–
Total	99.13	100.14	99.99
LOI	-7.6	–	

The greatest variations are in Fe_2O_3/FeO in the data as reported, and in FeO* and Al_2O_3 in the normalized analyses. The normalized data are quite consistent for basalt standard Sample 395A-15-5, 0-11 cm, but differences are greater for basalt standard Sample 395A-63-1, 108-116 cm, suggesting that caution should be used when comparing data in detail among the various laboratories. TiO_2, one of the most useful elements for defining chemical stratigraphy in basalts, is highly consistent for all standards among the laboratories.

The two laboratories which did not analyze the four shipboard standards instead submitted analyses of samples from intervals immediately adjacent either to the standards or to other rocks analyzed on board ship. These were separate pieces of rocks, and thus the analyses do not have the same value as analyses of splits of the standard powders. Table 11 compares one such

TABLE 5
Major-Element Analyses (as reported) of Leg 45 Basalt Standard Sample 395A-15-5, 0-11 cm

	COB	BM	MPI
SiO_2	49.1	48.7	48.56
TiO_2	1.16	1.12	1.12
Al_2O_3	19.17	18.9	19.43
Fe_2O_3	0.17	1.93	2.04
FeO	7.00	5.75	5.63
MnO	0.13	0.12	0.11
MgO	7.0	7.00	6.98
CaO	12.16	11.8	12.03
Na_2O	2.72	2.73	2.48
K_2O	0.07	0.07	0.09
P_2O_5	0.14	0.11	0.14
H_2O^+	–	1.10	1.02
H_2O^-	–	0.57	0.38
CO_2	–	0.17	–
Total	98.84	100.07	100.01
LOI	-1.4	–	–

TABLE 6
Major-Element Analyses (as reported) of Leg 45 Dolerite Standard Sample 395A-63-1, 108-116 cm

	COB	BM	MPI
SiO_2	49.5	49.4	49.53
TiO_2	1.08	1.05	1.08
Al_2O_3	17.44	17.0	17.53
Fe_2O_3	–	1.89	1.97
FeO	7.73	5.92	5.77
MnO	0.15	0.14	0.13
MgO	8.5	8.88	8.13
CaO	12.16	11.7	12.07
Na_2O	2.42	2.44	2.14
K_2O	0.07	0.07	0.09
P_2O_5	0.09	0.09	0.09
H_2O^+	–	1.18	1.32
H_2O^-	–	0.43	0.16
CO_2	–	0.10	–
Total	99.14	100.29	100.01
LOI	-1.8	–	–

TABLE 7
Dry-Reduced Analyses of Leg 45 Gabbro Standard Sample 17-1, 56-59 cm

	COB	BM	MPI	$\bar{X}$	σ	σ (%)
SiO_2	50.43	50.60	49.91	50.31	0.36	0.7
TiO_2	0.39	0.39	0.37	0.38	0.01	3.0
Al_2O_3	17.79	17.50	17.60	17.63	0.15	0.8
FeO*	5.90	6.14	6.30	6.11	0.20	3.3
MnO	0.11	0.12	0.12	0.12	–	–
MgO	12.26	12.02	12.22	12.17	0.12	1.0
CaO	9.36	9.34	9.46	9.39	0.06	0.7
Na_2O	3.55	3.70	3.80	3.68	0.13	3.4
K_2O	0.20	0.18	0.22	0.20	0.02	10.0
P_2O_5	0.02	0.01	0.02	0.02	–	–

analysis from JSC (from table 1 of Rhodes et al., this volume) for a sample taken adjacent to basalt standard

TABLE 8
Dry-Reduced Analyses of Leg 45 Serpentinized Peridotite Standard Sample 395-18-1, 61-70 cm

	COB	BM	MPI	$\bar{X}$	σ	σ (%)
SiO_2	43.71	44.27	43.74	43.91	0.32	0.7
TiO_2	0.03	0.02	0.01	0.02	–	–
Al_2O_3	0.92	1.18	0.80	0.97	0.19	20.7
FeO*	9.35	9.13	10.96	9.81	1.00	10.2
MnO	0.11	0.11	.12	0.11	–	–
MgO	44.92	44.27	43.42	44.20	0.75	1.7
CaO	0.90	0.93	0.91	0.91	0.02	1.7
Na_2O	0.03	0.08	0.02	0.04	–	–
K_2O	0.00	0.00	0.02	0.01	–	–
P_2O_5	0.02	<0.01	0.01	0.01	–	–

TABLE 9
Dry-Reduced Analyses of Leg 45 Basalt Standard Sample 395A-15-5, 0-11 cm

	COB	BM	MPI	$\bar{X}$	σ	σ (%)
SiO_2	49.45	49.68	49.35	49.49	0.17	0.3
TiO_2	1.17	1.14	1.14	1.15	0.02	1.5
Al_2O_3	19.30	19.28	19.74	19.44	0.26	1.3
FeO*	7.69	7.64	7.59	7.64	0.05	0.7
MnO	0.13	0.12	0.11	–	–	–
MgO	7.05	7.14	7.09	7.09	0.05	0.6
CaO	12.25	12.04	12.22	12.17	0.11	0.9
Na_2O	2.74	2.78	2.52	2.68	0.14	5.2
K_2O	0.07	0.07	0.09	–	–	–
P_2O_5	0.14	0.11	0.11	–	–	–

TABLE 10
Dry-Reduced Analyses of Leg 45 Dolerite Standard Sample 395A-63-1, 108-116 cm

	COB	BM	MPI	$\bar{X}$	σ	σ (%)
SiO_2	49.93	50.21	50.37	50.17	0.22	0.4
TiO_2	1.09	1.07	1.10	1.09	0.02	1.4
Al_2O_3	17.59	17.28	17.83	17.57	0.28	1.6
FeO*	7.80	7.75	7.67	7.74	0.07	0.9
MnO	0.15	0.14	0.13	0.15	0.01	6.7
MgO	8.57	9.03	8.27	8.62	0.38	4.4
CaO	12.27	11.89	12.27	12.14	0.22	1.8
Na_2O	2.44	2.48	2.18	2.37	0.16	6.9
K_2O	0.07	0.07	0.09	0.08	–	–
P_2O_5	0.09	0.09	0.09	0.09	–	–

Sample 395A-15-5, 0-11 cm. The analysis is compared with COB data on the standard, dry, reduced, CO_2-free, and normalized to 100 per cent. Table 12 compares replicate analyses of two samples from GI (from table 1 of Zolotarev and Choponov, this volume) with the adjacent standard gabbro Sample 395-17-1, 56-69 cm and Sample 395-11-1, 105-107 cm, both analyzed by COB. The analyses again are calculated dry, reduced, CO_2-free, and normalized to 100 per cent.

Four of the five laboratories (all but BM) have at least eight analyses of our thick (209 m) homogeneous aphyric basalt unit, A_3 of Hole 395A. The means and standard deviations of the analyses from each laboratory for Unit A_3 are listed on Table 13. The averaged result for each laboratory is from many different

TABLE 11
Comparison of JSC Analysis of Sample Taken Near DSDP Leg 45 Basalt Standard With COB Data for the Standard

	JSC 395A-15-5, 16-20 cm	COB 395A-15-5, 0-11 cm
SiO_2	49.58	49.45
TiO_2	1.16	1.17
Al_2O_3	19.43	19.30
FeO*	7.62	7.69
MnO	0.13	0.13
MgO	7.06	7.05
CaO	11.99	12.25
Na_2O	2.79	2.74
K_2O	0.07	0.07
P_2O_5	0.09	0.14
S	0.09	–

TABLE 12
Comparison of GI and COB Data on Gabbros and Basalts

	395-17-1, 64-68 cm GI-I	395-17-1, 64-68 cm GI-II	395-17-1, 56-69 cm COB	395-11-1, 105-110 cm GI-I	395-11-1, 105-110 cm GI-II	395-11-1, 105-107 cm COB
SiO_2	51.10	51.13	50.43	48.43	48.60	49.21
TiO_2	0.50	0.49	0.39	1.73	1.57	1.71
Al_2O_3	18.39	18.15	17.79	16.36	16.37	16.03
FeO*	4.14	4.40	5.90	11.95	11.68	11.62
MnO	0.13	0.11	0.11	0.19	0.22	0.20
MgO	9.39	9.00	12.26	5.63	5.98	6.83
CaO	11.46	11.85	9.36	11.65	11.50	11.08
Na_2O	4.41	4.40	3.55	3.48	3.51	2.90
K_2O	0.47	0.47	0.20	0.34	0.34	0.22
P_2O_5	–	–	0.02	0.23	0.24	0.18

TABLE 13
Chemical Unit A_3 Laboratory Means and Standard Deviations

	(15)[a] COB	(8)[a] JSC	(9)[a] GI	(10)[a] MPI	$\bar{X} \pm \sigma$
SiO_2	50.96 ±0.14	50.36 ±0.40	50.34 ±0.28	50.53 ±0.60	50.55 ±0.29
TiO_2	1.76 ±0.02	1.74 ±0.04	1.70 ±0.05	1.78 ±0.05	1.75 ±0.03
Al_2O_3	15.51 ±0.23	15.44 ±0.23	15.73 ±0.36	15.78 ±0.22	15.62 ±0.17
FeO*	9.29 ±0.17	10.03 ±0.20	9.40 ±0.24	9.12 ±0.18	9.46 ±0.40
MnO	0.18 ±0.01	0.18 ±0.01	0.18 ±0.01	0.17 ±0.01	0.18 ±0.01
MgO	7.80 ±0.26	7.59 ±0.16	7.47 ±0.47	7.56 ±0.48	7.61 ±0.14
CaO	11.60 ±0.11	11.33 ±0.13	11.63 ±0.24	11.77 ±0.17	11.58 ±0.18
Na_2O	2.52 ±0.06	2.93 ±0.04	3.10 ±0.15	2.79 ±0.14	2.84 ±0.25
K_2O	0.22 ±0.05	0.25 ±0.05	0.30 ±0.04	0.29 ±0.04	0.27 ±0.04
P_2O_5	0.17 ±0.01	0.15 ±0.02	0.19 ±0.01	0.31 ±0.01	0.17 ±0.02[b]

[a]Number of analyses.
[b]Excludes P_2O_5 data from MPI. See text for explanation.

samples, each varying slightly in composition as a result of alteration and a small but real internal variation caused by magmatic processes. A grand mean (weighting each laboratory the same and not taking into account the standard deviations for each laboratory) and standard deviation for Unit A_3 is also listed on Table 13.

Table 12 demonstrates that adjacent samples of coarse-grained rocks do not provide good interlaboratory comparisons (see gabbro data for MgO, CaO, and FeO*). Comparing two closely adjacent aphyric basalts, as in Table 12, is more valid, but small differences still exist which might be related to alteration (MgO, CaO), rather than to analytical technique. Tables 12 and 13 suggest that GI is reporting Na_2O systematically higher than the other laboratories (this can also be seen by scanning the appended data tables). P_2O_5 was also reported high by MPI in the table submitted for this chapter, as evident in Table 13 (but not in the tables of standards, Tables 6 through 9, nor in Propach et al. [this volume]). For this reason, P_2O_5 is not listed for these analyses in Table 20, at the request of G. Propach.

TRACE-ELEMENT DATA

Two laboratories (BM and COB) submitted trace-element data on the four standards. The data are shown in Table 14. COB submitted separate X-ray fluorescence and instrumental neutron-activation data on several elements. All COB neutron-activation data are listed in a separate column. Agreement between the laboratories ranges from fair to good.

Two laboratories (COB and JSC) compiled average trace-element values for the nearly homogeneous chemical Unit A_3. Both laboratories determined at least some rare-earth elements. The trace-element averages are listed in Table 15. The agreement for the rare-earth elements and for Sc, Sr and Zr is excellent. For Cr and Ni, differences between the laboratories exceed the variation within the unit (shown ± one standard deviation for the COB data), but only for Cr does the JSC value overlap COB values for other aphyric basalt units (see Bougault et al., this volume, Table 7, for average data of other units).

PRESENTATION OF THE DATA

All chemical data submitted to this volume are listed in order of depth in Table 16 (natural glass probe compositions), Tables 17 through 19 (Hole 395), Tables 20 through 22 (Hole 395A) and Tables 23 through 25 (Hole 396). There are three tables for each hole—one each listing major oxides, two others each listing trace elements. The major-element tables list the method of analysis for each analyzed sample, as explained in the note to Table 17. Listed by each analysis is the sample code assigned to the principal investigator who either received the samples on board ship, or who otherwise submitted data (for example, BOG = Bougault, data from Bougault, et al., this volume). A full list of sample codes is provided in the note to Tables 17 (this note applies to Tables 17-25).

The chemical analyses in Tables 16 through 25 are included in the DSDP igneous-rocks data bank. The computer files from which the tables were made also have lithologic information on each piece of rock from which samples were taken, including a visual estimate of their degree of alteration. Inquiries about the use of the files should be addressed to Donna Hawkins, DSDP.

REFERENCES

Bougault, H., 1977. Major elements, analytical chemistry on board and preliminary results. *In* Aumento, F., Melson, W. G., et al., *Initial Reports of the Deep Sea Drilling Project,* v. 37: Washington (U.S. Government Printing Office), p. 643-657.

Bougault, H., Cambon, P., and Toulhoat, H., 1977. X-ray spectrometric analysis of trace elements in rocks; correction

TABLE 14
Trace-Element Data on Leg 45 Standards

	395-17-1, 56-69 cm			395-18-1, 61-70 cm			395A-15-1, 0-11 cm			395A-63-1, 108-116 cm		
	BM	COB	COB (NA)	BM	COB	COB (NA)	BM	COB	COB (NA)	BM	COB	COB (NA)
B	7			50			8			8		
Be	<2			<2			<2			<2		
Li	20			7			7			8		
Mn	–	729			684			786				
Ni	165	155	170	2187	2370	2543	75	95	104	105	129	140
Cr	140	165		2180	2677		210	252		315	362	
Co	39	40	43	70	127	123	41	37	35.9	55	38	37.6
Cu	11	0		28	11		10	59		14	61	
Zn	34	19		60	44		65	51		60	69	
V	190	153		36	29		210	202		210	211	
Sc			35.2			6.58			28.1			29.7
Sb			0.017			0.018			0.01			
Y	11			<5			32			29		
Nb	<5			6			n.f.[a]			6		
Zr	<5	16	<27	9	4	<25	75	84	92	70	68	64
Sr	280	324		<5	6		140	158		120	132	
Ba	<50			<50			<50			<50		
Rb	<5		3.8	<5		<1.8	<5		<1.5	<5		<0.8
Cs			0.34			<0.02			0.025			0.026
La			0.44			0.12			2.4			2.02
Eu			0.41			<0.05			1.06			0.94
Tb			0.193			0.011			0.58			0.52
Hf			0.19			<0.13			2.04			1.66
Ta			<0.057			<0.007			0.138			0.10
Th			<0.019			<0.027			0.107			0.069

[a]Not found.

TABLE 15
Unit A_3 Trace-Element Averages

	COB	± σ	JSC
Sc	38.7	±0.7	38.4
V	306	±3.6	
Cr	251	±6	280
Co	42.7	±1.5	
(NA) Co	43.4	±0.7	
Ni	117	±4.4	98
(NA) Ni	118	±3.8	
Cu	57.8	±2.1	
Zn	84.6	±5.6	
Sr	131.2	±2	130
Rb			2.3
Y			36.5
Nb			2.2
Zr	125.6	±4.8	119
(NA) Zr	131.8	±8.7	
La	4.1	±0.1	3.94
Ce			12.2
Sm			4.20
Eu	1.52	±0.04	1.44
Tb	0.89	±0.03	1.04
Yb			0.38
Lu			0.57
Hf	3.16	±0.09	3.2
Ta	0.228	±0.007	
Th	0.164	±0.017	

for instrumental interferences, *X-Ray Spectrometry,* v. 6, no. 2, p. 66-72.

Cammann, K., 1972. Aufban eines extrem empfindlichen Flammenfotometers für Analysen im Picogramm-Bereich mit Hilfe eines "lock-in" Verstärker, *Messtechnik,* v. 9, p. 272-277.

French, W. J. and Adams, S. J., 1972. A rapid method for the extraction and determination of iron (II) in silicate rocks and minerals, *The Analyst,* v. 97, p. 828-831.

Jacobs, J. W., Korotev, R. L., Blanchard, D. P., and Hasking, L. A., in press. A well-tested procedure for instrumental neutron activation analysis of silicate rocks and minterals, *J. Radioanal. Chem.*

Langmyhr, F. J. and Paus, P. E., 1968. The analysis of inorganic siliceous materials by atomic absorption spectrophotometry and the hydrofluoric acid decomposition technique Part I. The analysis of silicate rocks, *Anal. Chim. Acta,* v. 43, p. 397-408.

Maxwell, John A., 1968. *Rock and Mineral Analysis,* Interscience (New York), p. 584.

Norrish, K. and Chappell, B. W., 1967. X-ray fluorescence spectrography. *In* Zussman, J. (Ed.), *Physical methods in determinative mineralogy:* New York (Academic Press), p. 161-214.

Norrish, K. and Hutton, J. T., 1969. An accurate X-ray spectrographic method for the analysis of a wide range of geological samples, *Geochim. Cosmochim. Acta,* v. 33, p. 431-453.

Peck, L. C., 1964. Systematic analysis of silicates, *Geological Survey Bulletin 1170:* Washington (U.S. Government Printing Office).

Reynolds, R. C., 1967. Estimation of mass absorption coefficients of Compton scattering: Improvements and extensions of the method, *Am. Mineralogist,* v. 48, p. 1133-1143.

TABLE 16
Major Element Analyses of Basalt Glasses in Holes 395, 395A, and 396 (submitted by W. G. Melson)

Sample	Depth (m)	SiO_2	TiO_2	Al_2O_3	Total Iron	MgO	CaO	Na_2O	K_2O	P_2O_5	Total
HOLE 395											
11- 1, 123-124	94.47	50.16	1.66	15.45	10.92	7.53	10.54	3.04	0.11	0.15	99.56
11- 1, 135-136	94.59	50.37	1.70	15.60	10.90	7.03	10.84	3.03	0.12	0.17	99.76
14- 1, 119-121	122.96	50.50	1.67	15.76	10.89	7.00	10.60	3.14	0.10	0.15	99.81
14- 1, 119-121	122.96	50.45	1.67	15.30	10.80	7.25	10.62	2.97	0.11	0.16	99.33
16- 2, 102-	143.09	51.31	1.63	15.65	11.01	7.07	10.84	2.84	0.13	0.16	100.64
16- 2, 103-104	143.11	50.13	1.64	15.67	11.09	7.39	10.86	2.96	0.11	0.17	100.02
18- 2, 38- 39	161.51	51.48	1.49	14.33	9.72	6.90	12.15	2.33	0.11	0.17	98.68
HOLE 395A											
5A		50.24	1.65	15.10	9.87	8.06	11.02	2.72	0.11	0.14	98.91
5A		49.29	1.57	15.19	11.06	7.95	10.58	2.95	0.10	0.13	99.12
5A		49.41	1.54	15.34	10.85	8.25	10.58	2.97	0.11	0.14	99.19
5A		49.45	1.58	15.18	10.93	8.17	10.50	2.95	0.10	0.13	98.99
5A		49.97	1.60	15.33	10.97	7.86	10.54	2.95	0.11	0.14	99.47
5A		49.18	1.58	15.38	11.09	8.01	10.55	2.93	0.12	0.12	98.96
5A		50.21	1.66	15.37	11.01	7.97	10.56	2.95	0.10	0.15	99.99
5A		49.81	1.60	15.54	10.97	7.95	10.45	2.99	0.09	0.14	99.54
5A		49.87	1.56	15.40	10.95	7.99	10.58	2.93	0.11	0.13	99.52
5A		49.58	1.64	15.35	11.07	7.96	10.46	2.98	0.12	0.12	99.28
5A		50.24	1.65	15.10	9.87	8.06	11.02	2.72	0.11	0.14	98.91
5A		49.64	1 52	15.33	10.98	8.01	10.53	2.95	0.11	0.13	99.20
11- 1, 74- 76	154.28	50.58	1.68	15.85	11.07	6.97	10.89	2.96	0.10	0.16	100.27
16- 1, 87-	201.86	51.73	1.41	14.92	9.74	7.57	12.20	2.46	0.09	0.18	100.30
17- 1, 84-	211.36	51.18	1.39	14.81	9.50	7.40	12.30	2.48	0.12	0.13	99.30
20- 1, 42-	232.32	51.94	1.40	15.11	10.11	7.53	12.40	2.44	0.08	0.15	101.16
23- 1, 84-	261.21	51.44	1.48	14.86	9.80	7.29	11.84	2.71	0.10	0.14	99.66
26- 2, 75-	291 04	51.36	1.55	14.74	9.77	7.30	11.77	2.76	0.12	0.13	99.50
26- 2, 89-	291.18	51.75	1.51	14.88	9.47	6.86	11.90	2.86	0.10	0.16	99.50
26- 2, 124-	291 53	51.69	1.52	14.63	9.57	7.03	11.93	2.79	0.10	0.14	99.40
27- 2, 69-	300.52	51.22	1.53	14.73	9.44	6.96	11.98	2.86	0.11	0.14	98.97
30- 1, 33-	327.20	50.63	1.62	15.22	9.63	6.91	11.60	3.08	0.12	0.14	98.95
35- 1, 60-	373.53	51.25	1.70	15.59	9.61	7.06	11.15	2.97	0.14	0.16	99.63
35- 1, 142-	374.35	50.97	1.72	15.28	9.77	7.54	11.18	2.88	0.15	0.14	99.63
41- 1, 73-	428.78	51.16	1.70	15.37	10.10	7.68	11.35	2.83	0.13	0.17	100.49
51- 1, 110-117	524.10	51 38	1.80	15.42	9.77	6.82	11.25	2.94	0.16	0.19	99.73
51- 2, 112-115	525.60	51.23	1.68	15.54	9.87	7.50	11.16	2.89	0.12	0.21	100.20
52- 1, 120-122	533.45	50.52	1.75	15.75	10.07	6.94	11.19	2.93	0.12	0.16	99.43
53- 1, 10- 11	541.61	50.46	1.74	15.58	9.88	7.02	11.29	2.89	0.11	0.17	99.14
53- 2, 149-	544.50	50.39	1.73	15.40	9.83	7.46	10.99	2.90	0.11	0.15	98.96
57- 1, 136-148	571.50	50.22	1.62	15.64	10.11	8.07	11.05	2.84	0.11	0.14	99.80
58- 2, 83-	581.80	50.45	1.64	15.69	10.25	8.19	11.08	2.91	0.12	0.15	100.48
58- 2, 97-100	581.96	49.58	1.55	15.47	10.09	8.08	10.82	2 89	0.11	0.15	98.69
58- 2, 100-	581.97	49.77	1.60	15.57	10.27	8.31	11.01	2.87	0.11	0.15	99.65
59- 1, 103-	590.02	50.20	1.60	15.35	10.33	8.06	11.04	2.87	0.12	0.14	99.71
60- 1, 115-120	599.71	50.14	1.60	15.65	10.33	7.69	11.09	2.79	0.12	0.15	99.56
60- 3, 125-127	602.79	50.28	1.58	15.52	10.28	8.25	11.14	2.78	0.12	0.12	100.07
64- 2, 129-	628.92	49.66	1.62	15.34	10.15	7.91	11.00	2.85	0.11	0.14	98.78
66- 1, 106-	646.23	50.19	1.70	15.51	10.19	8.07	10.87	2.89	0.11	0.16	99.70
67- 1, 144-145	656.15	50.39	1.68	15.82	10.22	7.38	11.24	2.92	0.12	0.14	99.91
67- 2, 125-	657.45	50.32	1.62	15.54	10.42	7.96	10.81	2.83	0.10	0.19	99.78
HOLE 396											
14- 6, 42- 43	125.53	51.68	1.69	15.57	9.78	7.42	11.41	2.90	0.12	0.19	100.76
14- 6, 65- 66	125.76	50.50	1.65	15.70	9.28	6.99	11.18	2.99	0.13	0.15	98.57
14- 6, 65- 66	125.76	50.56	1.60	15.36	9.49	7.31	11.32	2.87	0.12	0.14	98.77
14- 6, 70-	125.80	50.79	1.65	15.62	9.69	7.22	11.36	2.94	0.14	0.18	99.59
14- 6, 109-110	126.20	50.91	1.67	15.61	9.42	7.14	11.27	2.95	0.12	0.15	99.24
15- 1, 61- 62	127.36	50.59	1.43	16.05	8.79	7.80	11.67	2.87	0.12	0.14	99.46
15- 4, 92- 93	132.17	50.72	1.37	16.22	8.87	8.09	11.49	2.74	0.11	0.14	99.75
16- 1, 41- 42	136.47	50.97	1.33	16.27	8.86	8.04	11.68	2.81	0.11	0.14	100.21
16- 1, 79- 80	136.85	50.53	1.39	16.44	8.27	8.09	11.70	2.85	0.11	0.13	99.51
16- 2, 138-	138.93	50.12	1.38	15.94	8.79	8.13	11.61	2.75	0.11	0.12	98.95
16- 4, 57- 58	141.13	50.54	1.33	16.38	8.81	7.90	11.50	2.79	0.10	0.13	99.48
18-CC, 50-	159.15	50.88	1.41	16.40	8.79	7.89	11.71	2.82	0.11	0.13	100.14
19- 2, 12-	165.18	50.43	1.37	16.17	8.81	7.86	11.66	2.78	0.11	0.12	99.31
21- 1, 41- 42	182.47	50.47	1.34	16.34	8.65	7.71	11.60	2.86	0.10	0.16	99.23
22- 1, 124-125	192.58	50.49	1.33	16.25	8.72	7.91	11.50	2.84	0.11	0.16	99.31
22- 2, 12- 13	192.96	50.33	1.36	16.43	8.72	7.93	11 71	2.81	0.11	0.14	99.54
22- 4, 99-100	197.33	50.96	1.55	15.10	9.84	7.37	11.72	2.76	0.10	0.14	99.54
23- 1, 74- 75	201.34	50.77	1.55	15.32	9.91	7.35	11.56	2.71	0.10	0.14	99.41
24- 1, 77- 78	211.02	51.00	1.53	15.30	9.78	7.32	11.61	2.72	0.10	0.17	99.53
24- 2, 112-	212.86	51.24	1.46	15.13	10.01	7.46	11.68	2.65	0.11	0.14	99.88
24- 3, 73- 74	213.98	51.48	1.53	15.11	9.88	7.55	11.66	2.69	0.10	0.17	100.17
25- 1, 39- 40	219.89	51.45	1.55	15.01	9.99	7.60	11.65	2.69	0.12	0.18	100.24

TABLE 17
Major Element Analyses of Basalts in Hole 395

Sample		Depth (m)	Inv.Method		SiO_2	TiO_2	Al_2O_3	Fe_2O_3	FeO	Total Iron	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	CO_2	H_2O^-	H_2O^+	Total	LOI	S
10-CC,		88.30	BOG	XRFAA	44.77	0.09	6.27	10.66	4.35	9.59	0.10	35.31	1.85	0.00	0.02	0.02	-	-	-	99.09	11.56	-
10-CC,		88.30	BOG	XRFAA	43.56	0.03	1.26	9.95	0.93	8.95	0.13	43.73	0.03	0.00	0.02	0.01	-	-	-	98.72	13.79	-
10-CC,		88.30	BOG	XRFAA	45.67	0.04	24.24	3.81	-	3.43	0.07	13.87	12.61	1.15	0.08	0.02	-	-	-	101.56	4.21	-
11- 1,	42- 44	93.66	RHD	XRFNA	49.40	1.62	15.09	1.28	9.83	10.98	0.20	8.51	10.41	2.80	0.11	0.13	-	-	0.55	100.04	-	0.11
11- 1,	50- 55	93.76	ZOL	WET	48.19	1.65	15.32	4.48	7.39	11.42	0.20	6.73	11.10	3.14	0.37	0.17	0.30	0.46	0.68	100.18	-	-
11- 1,	60- 65	93.86	PRP	XRFFP	48.49	1.66	15.47	2.85	8.43	-	0.17	6.70	10.94	3.06	0.27	-	-	-	1.68	99.72	-	-
11- 1,	105-107	94.29	BOG	XRFAA	48.95	1.70	15.93	12.83	6.96	11.55	0.20	6.79	11.01	2.88	0.22	0.18	-	-	-	100.69	0.95	-
11- 1,	105-110	94.31	ZOL	WET	45.54	1.70	16.06	5.51	6.77	11.73	0.19	5.53	11.44	3.42	0.33	0.23	0.35	0.60	0.84	98.51	-	-
11- 1,	130-133	94.55	ZOL	WET	48.67	1.74	14.49	1.97	9.25	11.02	0.19	8.63	9.69	3.10	0.38	0.06	0.12	0.48	0.92	99.69	-	-
11- 1,	136-138	94.60	RHD	XRFNA	49.30	1.61	14.84	1.36	9.73	10.95	0.19	8.45	10.34	2.92	0.10	0.11	-	-	0.43	99.50	-	0.11
11- 2,	62- 64	95.36	BOG	XRFAA	49.35	1.61	14.88	11.95	-	10.75	0.18	8.47	10.49	2.83	0.09	0.15	-	-	-	100.00	1.08	-
11- 2,	62- 64	95.36	GH	XRFAA	48.80	1.58	14.50	3.53	7.69	10.87	0.17	8.43	10.30	3.05	0.08	0.14	0.22	0.52	0.79	99.80	-	-
11- 2,	67- 72	95.43	ZOL	WET	48.03	1.53	14.54	2.86	8.56	11.13	0.18	8.78	10.43	2.98	0.29	0.15	0.75	0.54	1.01	100.63	-	-
11- 2,	100-105	95.76	RHD	XRFNA	48.50	1.58	14.79	1.81	9.06	10.69	0.17	8.56	10.18	2.82	0.14	0.12	-	-	1.56	99.37	-	0.11
11- 2,	100-106	95.76	PRP	XRFFP	49.15	1.61	15.05	1.74	9.13	-	0.18	8.34	10.52	2.57	0.18	-	-	-	1.26	99.73	-	-
11- 2,	102-107	95.78	ZOL	WET	48.80	1.47	14.68	2.36	9.01	11.13	0.18	8.45	10.55	2.98	0.20	0.15	-	0.46	0.39	99.68	-	-
12- 2,	109-111	105.35	BOG	XRFAA	49.84	1.61	15.11	11.90	8.10	10.71	0.18	8.88	10.50	2.85	0.09	0.13	-	-	-	101.09	1.25	-
12- 2,	109-111	105.35	GH	XRFAA	48.90	1.60	14.80	2.82	8.25	10.79	0.17	8.54	10.40	2.87	0.09	0.14	0.22	0.48	0.65	99.83	-	-
12- 2,	110-115	105.38	ZOL	WET	48.61	1.53	14.51	2.83	8.73	11.28	0.17	8.35	10.84	2.98	0.24	0.15	0.45	0.48	0.22	100.09	-	-
14- 1,	112-114	122.89	BOG	XRFAA	47.01	1.83	16.79	13.76	-	12.38	0.20	6.64	10.93	2.90	0.28	0.22	-	-	-	100.56	8.70	-
14- 1,	131-132	123.08	BOG	XRFAA	49.65	1.63	14.94	11.97	7.53	10.77	0.17	8.31	10.56	2.88	0.13	0.15	-	-	-	100.39	1.20	-
14- 1,	131-132	123.08	GH	XRFAA	49.00	1.62	14.70	3.26	7.81	10.74	0.17	8.11	10.40	2.95	0.13	0.14	0.16	0.36	0.63	98.44	-	-
15- 1,	12- 14	131.40	ZOL	WET	46.12	1.55	14.91	6.49	7.90	13.74	0.23	6.88	9.10	3.08	0.44	0.18	-	1.92	1.44	100.24	-	-
15- 1,	71- 73	131.99	BOG	XRFAA	49.81	1.61	15.11	11.76	-	10.58	0.17	7.47	10.92	2.85	0.25	0.14	-	-	-	100.09	4.22	-
15- 1,	74- 76	132.02	GH	XRFAA	48.80	1.60	14.60	2.88	8.20	10.79	0.17	8.36	10.40	2.94	0.09	0.13	0.17	0.84	0.62	99.80	-	-
15- 1,	91- 95	132.20	PRP	XRFFP	48.42	1.64	14.98	2.88	7.90	-	0.16	7.92	10.79	3.19	0.13	-	-	-	1.72	99.73	-	-
15- 1,	112-115	132.40	BOG	XRFAA	49.09	1.62	15.01	12.05	-	10.85	0.17	8.57	10.53	2.88	0.10	0.15	-	-	-	100.17	1.50	-
15- 1,	119-124	132.48	ZOL	WET	49.03	1.55	15.08	3.39	7.44	10.49	0.16	7.92	10.85	3.20	0.17	0.15	-	0.54	0.10	99.58	-	-
15- 2,	68- 72	133.47	RHD	XRFNA	49.30	1.60	14.68	2.61	8.33	10.68	0.18	8.40	10.17	2.89	0.14	0.13	-	-	1.42	99.94	-	0.12
15- 2,	121-125	134.00	ZOL	WET	48.60	1.54	14.49	2.45	9.37	11.58	0.18	8.52	10.89	2.98	0.33	0.16	-	0.44	0.20	100.15	-	-
15- 2,	130-133	134.09	BOG	XRFAA	49.01	1.62	14.75	12.22	-	11.00	0.18	8.46	10.54	2.85	0.13	0.15	-	-	-	99.91	0.82	-
16- 2,	41- 46	142.51	ZOL	WET	48.08	1.57	15.30	5.31	6.67	11.45	0.18	6.76	10.92	3.14	0.31	0.16	0.65	0.56	0.52	100.13	-	-
16- 2,	63- 66	142.72	RHD	XRFNA	49.60	1.66	15.15	4.62	6.94	11.10	0.19	8.17	10.43	2.82	0.16	0.16	-	-	0.91	100.94	-	0.10
16- 2,	104-105	143.12	BOG	XRF	49.31	1.62	14.91	12.26	-	-	-	8.75	10.56	-	0.12	-	-	-	-	97.53	0.33	-
16- 3,	3- 8	143.63	RHD	XRFNA	48.90	1.60	14.69	2.90	8.87	10.85	0.18	8.47	10.25	2.87	0.17	0.12	-	-	1 53	99.94	-	0.14
16- 3,	4- 7	143.63	ZOL	WET	48.98	1.50	14.75	3 00	8.25	10.95	0.17	8.12	10.65	2.98	0.27	0.15	0.10	0.48	0.72	100.12	-	-
17- 1	56- 59	150.66	GH	XRFAA	48.00	0.37	16.60	1.52	4.46	5.83	0.11	11.40	8.86	3.51	0.17	0.01	0.14	0.67	4.48	100.30	-	-
17- 1,	56- 69	150.71	BOG	XRFAA	50.16	0.39	17.71	6.52	4.62	5.87	0.11	12.22	9.32	3.53	0.20	0.02	-	-	-	100.18	4.90	-
17- 1,	56- 69	150.71	PRP	XRFFP	47.45	0.35	16.73	1.15	4.95	5.99	0.11	11.62	8.99	3.61	0.21	0.02	-	0.33	4.48	100.00	-	-
17- 1,	64- 68	150.74	ZOL	WET	48.70	1.48	17.53	0.38	3.60	3.94	0.12	8.95	10.92	4.21	0.45	-	0.07	0.71	3.38	100.50	-	-
18- 1,	37- 41	160.01	BOG	XRFAA	49.43	1.01	17.32	8.62	5.67	7.76	0.14	8.46	12.58	2.38	0.07	0.10	-	-	-	100.11	1.40	-
18- 1,	61- 70	160.28	BOG	XRFAA	43.15	0.03	0.91	10.25	4.55	9.23	0.11	44.35	0.89	0.03	0.00	0.02	-	-	-	99.74	7.59	-
18- 1,	61- 70	160.28	GH	XRFAA	40.80	0.02	1.09	4.32	4.53	8.42	0.10	40.80	0.86	0.07	0.00	0.01	0.40	0.55	6.60	100.14	-	-
18- 1,	61- 70	160.28	PRP	XRFFP	40.57	0.01	0.74	5.55	5.17	10.17	0.11	40.27	0.84	0.02	0.02	0.01	-	0.30	6.38	99.99	-	-
18- 1,	92- 96	160.56	ZOL	WET	41.54	0.17	1.02	3.34	4.92	7.93	0.10	40.10	1.61	0.08	0.08	0.01	0.30	0.73	5.63	99.63	-	-
18- 2,	33- 38	161.48	BOG	XRFAA	49.38	1.02	18.21	8.37	-	7.53	0.14	7.89	12.85	2.33	0.13	0.12	-	-	-	100.44	0.59	-
18- 2,	39- 41	161.52	ZOL	WET	47.68	1.03	17.14	3.82	5.48	8.92	0.13	8.52	13.20	2.49	0.18	0.11	0.10	0.26	0.09	100.23	-	-
18- 2,	43- 46	161.57	RHD	PROBE	50.69	1.44	14.23	-	-	9.98	0.14	7.42	11.77	2.59	0.11	-	-	-	-	98.37	-	-
18- 2,	43- 46	161.57	RHD	XRFNA	48.80	1.14	16.67	2.90	5.90	8.51	0.15	8.07	12.24	2.34	0.13	0.09	-	-	0.89	99.38	-	0.05
18- 2,	85- 95	162.02	BOG	XRFAA	43.36	0.04	1.37	9.36	3.10	8.42	0.10	42.02	2.09	-	-	0.00	-	-	-	98.34	9.11	-
18- 2,	130-137	162.46	ZOL	WET	40.79	0.17	2.76	3.52	3.68	6.85	0.09	38.04	1.36	0.08	0.09	0.01	0.30	0.70	7.93	99.52	-	-
19- 1,	18- 20	169.34	BOG	XRFAA	49.81	1.65	15.08	11.05	7.41	9.95	0.19	8.53	11.25	2.75	0.31	0.16	-	-	-	100.78	0.93	-
19- 1,	57- 62	169.75	RHD	XRFNA	49.70	1.29	18.48	3.23	4.45	7.36	0.12	5.99	12.10	2.68	0.11	0.10	-	-	1.97	100.27	-	0.03
19- 1,	92- 97	170.10	ZOL	WET	48.68	1.36	17.46	3.81	5.15	8.58	0.13	6.61	12.28	2.82	0.33	0.12	0.45	0.58	0.16	99.94	-	-
19- 1,	135-138	170.52	PRP	XRFFP	48.97	1.33	18.31	1.71	6.35	-	0.12	6.59	12.03	2.79	0.08	-	-	-	1.42	99.70	-	-
20- 1,	32- 36	178.99	BOG	XRFAA	49.64	1.28	18.77	9.52	4.47	8.57	0.14	6.13	12.05	2.79	0.30	0.13	-	-	-	100.75	1.51	-
20- 1,	35- 39	179.02	ZOL	WET	48.48	1.20	18.12	3.00	4.46	7.16	0.15	7.22	12.08	2 85	0.22	0.11	-	0.99	0.71	99.59	-	-

[a] The following applies to Tables 17 through 25. Intervals are given in centimeters, following core and section numbers. The analyst codes are as follows: BOG = Henri Bougault, Centre Océanoglogique de Bretagne (Chapter 22, this volume): FJ = Toshitsugu Fujii, University of Tokyo, Tokyo, Japan (Chapters 24, 25, and 34, this volume): GH = A. L. Graham, British Museum of Natural History, London, U. K. (Chapter 33, this volume): HRN = S. Hoernes, Abt. Geochemie Mineralogisches Institut, Tübingen, Federal Republic Germany (Chapter 29, this volume): RHD = J. M. Rhodes, Lockheed Electronics Co., Houston, Texas (Chapter 19, this volume): PRP = G. Propach, Institut für Mineralogie und Petrographie, Munich, Federal Republic of Germany (Chapter 30, this volume): ZOL = B. Zolatarev, Geological Institute of USSR Academy of Sciences, Moscow, USSR. The methods codes are as follows: XRFAA = X-ray fluorescence and atomic absorption: WET = classical wet chemical techniques: PROBE = electron microprobe: AANA = atomic absorption and instrumental neutron activation analysis: XRFNA = X-ray fluorescence and instrumental neutron activation analysis: XRFFP = X-ray fluorescence and flame photometry. Methods codes apply to Tables 17, 20, and 23 only.

TABLE 18[a,b]
First Transition and Rare Earth Elements in Basalts of Hole 395

Sample	Depth (m)	Inv.	Sc	V	Cr	Co	Ni	Cu	Zn	La	Ce	Nd	Sm	Eu	Gd	Tb	Dy	Tm	Yb	Lu
10-CC,	88.30	BOG	8.25	49.0	2805	111.0	2160	12	45	<0.84	-	-	-	<0.057	-	<0.014	-	-	-	-
10-CC,	88.30	BOG	-	-	-	99.6	1716	-	-	-	-	-	-	-	-	-	-	-	-	-
10-CC,	88.30	BOG	1.92	3.6	323	39.0	554	50	17	0.11	-	-	-	0.150	-	0.008	-	-	-	-
10-CC,	88.30	BOG	-	-	-	41.6	563	-	-	-	-	-	-	-	-	-	-	-	-	-
10-CC,	88.30	BOG	-	34.0	1071	104.0	1128	91	39	-	-	-	-	-	-	-	-	-	-	-
11- 1, 42- 44	93.66	RHD	36.60	-	290	-	120	-	-	2.91	9.60	-	3.3800	1.330	-	0.920	-	-	3.3	0.500
11- 1, 105-107	94.29	BOG	38.40	301.0	279	48.0	161	69	92	3.25	-	-	-	1 500	-	0.870	-	-	-	-
11- 1, 105-107	94.29	BOG	-	-	-	49.3	160	-	-	-	-	-	-	-	-	-	-	-	-	-
11- 2, 62- 64	95.36	BOG	36.60	263.7	271	48.0	173	68	81	3.20	-	-	-	1.330	-	0.820	-	-	-	-
11- 2, 62- 64	95.36	BOG	-	-	-	40.4	190	-	-	-	-	-	-	-	-	-	-	-	-	-
11- 2, 62- 64	95.36	GH	-	300.0	270	40.0	145	27	95	-	-	-	-	-	-	-	-	-	-	-
11- 2, 100-105	95.76	RHD	36.00	-	290	-	190	-	-	2.79	9.70	-	3.4100	1.270	-	0.920	-	-	3.2	0.470
12- 2, 109-111	105.35	BOG	37.30	266.0	269	47.0	172	68	85	2 12	-	-	-	1.420	-	0.830	-	-	-	-
12- 2, 109-111	105.35	BOG	-	-	-	49.6	189	-	-	-	-	-	-	-	-	-	-	-	-	-
12- 2, 109-111	105.35	GH	-	290.0	270	45.0	140	17	105	-	-	-	-	-	-	-	-	-	-	-
14- 1, 112-114	122.89	BOG	40.80	323.0	274	49.0	-	65	101	3.60	-	-	-	1.490	-	0.930	-	-	-	-
14- 1, 112-114	122.89	BOG	-	-	-	48.8	183	-	-	-	-	-	-	-	-	-	-	-	-	-
14- 1, 131-132	123.08	BOG	37.30	269.0	269	49.0	177	70	87	3.10	-	-	-	1.360	-	0.840	-	-	-	-
14- 1, 131-132	123.08	BOG	-	-	-	49.9	186	-	-	-	-	-	-	-	-	-	-	-	-	-
14- 1, 131-132	123.08	GH	-	280.0	250	32.0	155	55	90	-	-	-	-	-	-	-	-	-	-	-
15- 1, 71- 73	131.99	BOG	38.00	274.0	279	51 0	-	64	84	4.10	-	-	-	1.400	-	0.830	-	-	-	-
15- 1, 71- 73	131.99	BOG	-	-	-	49.9	181	-	-	-	-	-	-	-	-	-	-	-	-	-
15- 1, 74- 76	132.02	GH	-	260.0	270	35.0	125	13	95	-	-	-	-	-	-	-	-	-	-	-
15- 1 112-115	132.40	BOG	-	-	271	-	167	-	-	-	-	-	-	-	-	-	-	-	-	-
15- 2, 130-133	134.09	BOG	37.90	266.0	265	48.0	182	68	89	3.40	-	-	-	1.450	-	0.850	-	-	-	-
15- 2, 130-133	134.09	BOG	-	-	-	50.4	186	-	-	-	-	-	-	-	-	-	-	-	-	-
16- 2, 104-105	143.12	BOG	36.90	270.0	267	49.0	176	69	87	3.30	-	-	-	1.400	-	0.830	-	-	-	-
16- 2, 104-105	143.12	BOG	-	-	-	48.9	183	-	-	-	-	-	-	-	-	-	-	-	-	-
17- 1, 56- 59	150.66	GH	-	190.0	140	39.0	165	11	34	-	-	-	-	-	-	-	-	-	-	-
17- 1, 56- 69	150.71	BOG	35.20	153.0	165	40.0	155	0	19	0.44	-	-	-	0.410	-	0.193	-	-	-	-
17- 1, 56- 69	150.71	BOG	-	-	-	43.0	170	-	-	-	-	-	-	-	-	-	-	-	-	-
18- 1, 37- 41	160.01	BOG	31.30	217.0	361	38.0	139	68	53	2.04	-	-	-	0.950	-	0.520	-	-	-	-
18- 1, 37- 41	160.01	BOG	-	-	-	41.3	152	-	-	-	-	-	-	-	-	-	-	-	-	-
18- 1, 61- 70	160.28	BOG	6.58	29.0	2677	127.0	2370	11	44	0.12	-	-	-	<0.050	-	0.011	-	-	-	-
18- 1, 61- 70	160.28	BOG	-	-	-	123.0	2543	-	-	-	-	-	-	-	-	-	-	-	-	-
18- 1, 61- 70	160.28	GH	-	36.0	2180	70.0	2187	28	60	-	-	-	-	-	-	-	-	-	-	-
18- 2, 33- 38	161.48	BOG	30.00	208.0	341	37.0	130	60	57	1.90	-	-	-	0.970	-	0.540	-	-	-	-
18- 2, 33- 38	161.48	BOG	-	-	-	37.9	137	-	-	-	-	-	-	-	-	-	-	-	-	-
18- 2, 43- 46	161.57	RHD	-	-	274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18- 2, 85- 95	162.02	BOG	-	52.0	4788	116.0	2110	33	42	-	-	-	-	-	-	-	-	-	-	-
19- 1, 18- 20	169.34	BOG	38.00	200.0	293	41.0	141	61	79	3.80	-	-	-	1.420	-	0.840	-	-	-	-
19- 1, 18- 20	169.34	BOG	-	-	-	44.0	137	-	-	-	-	-	-	-	-	-	-	-	-	-
19- 1, 57- 62	169.75	RHD	29.80	-	252	-	110	-	-	2.71	9.30	-	3.0900	1.060	-	0.760	-	-	2.8	0.420
20- 1, 32- 36	178.99	BOG	30.60	219.0	222	34.0	186	55	58	2.77	-	-	-	1.180	-	0.640	-	-	-	-
20- 1, 32- 36	178.99	BOG	-	-	-	35.0	90	-	-	-	-	-	-	-	-	-	-	-	-	-

[a]See footnote a, Table 17.
[b]Fe, Mn, and Ti listed as oxides in Table 17.

TABLE 19[a]
Trace Elements in Basalts of Hole 395

Sample		Depth (m)	Inv.	B	Li	Be	Rb	Sr	Cs	Ba	Th	U	Y	Zr	Hf	Nb	Ta	Au	Sb
10-CC,		88.30	BOG	-	-	-	-	6	<0.027	-	0.0500	-	-	3	<0.140	-	<0.008	-	0.189
10-CC,		88.30	BOG	-	-	-	-	-	-	-	-	-	-	< 27	-	-	-	-	-
10-CC,		88.30	BOG	-	-	-	-	99	<0.015	-	0.0150	-	-	8	<0.067	-	<0.004	-	-
10-CC,		88.30	BOG	-	-	-	-	-	-	-	-	-	-	< 14	-	-	-	-	-
10-CC,		88.30	BOG	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-	-
11- 1,	42- 44	93.66	RHD	-	-	-	1.2	115	-	-	-	-	35	105	3.000	2.4	-	-	-
11- 1,	60- 65	93.86	PRP	-	-	-	10.0	130	-	-	-	-	-	122	-	-	-	-	-
11- 1,	105-107	94.29	BOG	-	-	-	3.3	127	0.099	-	0.1370	-	-	121	2.840	-	0.200	-	0.500
11- 1,	105-107	94.29	BOG	-	-	-	-	-	-	-	-	-	-	112	-	-	-	-	-
11- 1,	136-138	94.60	RHD	-	-	-	0.9	112	-	-	-	-	35	105	-	1.9	-	-	-
11- 2,	62- 64	95.36	BOG	-	-	-	<1.4	119	0.024	-	0.1320	-	-	112	2.710	-	0.183	-	0.020
11- 2,	62- 64	95.36	BOG	-	-	-	-	-	-	-	-	-	-	126	-	-	-	-	-
11- 2,	62- 64	95.36	GH	5	7	< 2	<5.0	110	-	<50	-	-	39	105	-	<5.0	-	-	-
11- 2,	100-105	95.76	RHD	-	-	-	1.7	116	-	-	-	-	34	102	2.700	1.9	-	-	-
11- 2,	100-106	95.76	PRP	-	-	-	5.0	118	-	-	-	-	-	122	-	-	-	-	-
12- 2,	109-111	105.35	BOG	-	-	-	<0.9	120	0.037	-	0.1370	-	-	119	2.730	-	0.194	-	0.016
12- 2,	109-111	105.35	BOG	-	-	-	-	-	-	-	-	-	-	120	-	-	-	-	-
12- 2,	109-111	105.35	GH	7	7	< 2	<5.0	105	-	<50	-	-	37	115	-	6.0	-	-	-
14- 1,	112-114	122.89	BOG	-	-	-	4.1	-	0.027	-	0.1410	-	-	-	3.180	-	0.207	-	0.980
14- 1,	112-114	122.89	BOG	-	-	-	-	-	-	-	-	-	-	137	-	-	-	-	-
14- 1	131-132	123.08	BOG	-	-	-	2.4	120	0.080	-	0.1340	-	-	114	2.860	-	0.193	-	0.017
14- 1,	131-132	123.08	BOG	-	-	-	-	-	-	-	-	-	-	136	-	-	-	-	-
14- 1,	131-132	123.08	GH	2	7	< 2	<5.0	100	-	<50	-	-	38	115	-	7.0	-	-	-
15- 1,	71- 73	131.99	BOG	-	-	-	<1.1	-	0.050	-	0.1380	-	-	-	2.830	-	0.192	-	0.018
15- 1,	71- 73	131.99	BOG	-	-	-	-	-	-	-	-	-	-	108	-	-	-	-	-
15- 1,	74- 76	132.02	GH	7	7	0	<5.0	105	-	<50	-	-	37	105	-	12.0	-	-	-
15- 1,	91- 95	132.20	PRP	-	-	-	3.0	122	-	-	-	-	-	91	-	-	-	-	-
15- 1,	112-115	132.40	BOG	-	-	-	-	124	-	-	-	-	-	115	-	-	-	-	-
15- 2,	68- 72	133.47	RHD	-	-	-	1.1	116	-	-	-	-	35	106	-	1.7	-	-	-
15- 2,	130-133	134.09	BOG	-	-	-	1.9	118	0.020	-	0.1300	-	-	116	2.880	-	0.187	-	0.015
15- 2,	130-133	134.09	BOG	-	-	-	-	-	-	-	-	-	-	112	-	-	-	-	-
16- 2,	63- 66	142.72	RHD	-	-	-	1.1	115	-	-	-	-	37	106	-	1.8	-	-	-
16- 2,	104-105	143.12	BOG	-	-	-	<1.8	118	0.036	-	0.1300	-	-	120	2.830	-	0.190	-	0.033
16- 2,	104-105	143.12	BOG	-	-	-	-	-	-	-	-	-	-	108	-	-	-	-	-
16- 3,	3- 8	143.63	RHD	-	-	-	1.1	118	-	-	-	-	36	108	-	2.1	-	-	-
17- 1,	56- 59	150.66	GH	7	20	< 2	<5.0	280	-	<50	-	-	11	< 5	-	<5.0	-	-	-
17- 1,	56- 69	150.71	BOG	-	-	-	3.8	324	0.340	-	<0.0190	-	-	16	0.190	-	<0.057	-	0.017
17- 1,	56- 69	150.71	BOG	-	-	-	-	-	-	-	-	-	-	< 27	-	-	-	-	-
17- 1,	56- 69	150.71	PRP	-	-	-	7.0	313	-	-	-	-	-	88	-	-	-	-	-
18- 1,	37- 41	160.01	BOG	-	-	-	2.1	112	0.038	-	0.0790	-	-	67	1.650	-	0.103	-	-
18- 1,	37- 41	160.01	BOG	-	-	-	-	-	-	-	-	-	-	63	-	-	-	-	-
18- 1,	61- 70	160.28	BOG	-	-	-	<1.8	6	<0.020	-	<0.0270	-	-	4	<0.130	-	<0.007	-	0.018
18- 1,	61- 70	160.28	BOG	-	-	-	-	-	-	-	-	-	-	< 25	-	-	-	-	-
18- 1,	61- 70	160.28	GH	50	< 1	< 2	<5.0	< 5	-	<50	-	-	<5	9	-	6.0	-	-	-
18- 1,	61- 70	160.28	PRP	-	-	-	<1.0	3	-	-	-	-	-	42	-	-	-	-	-
18- 2,	33- 38	161.48	BOG	-	-	-	2.3	114	0.066	-	0.0830	-	-	67	1.660	-	0.109	-	0.033
18- 2,	33- 38	161.48	BOG	-	-	-	-	-	-	-	-	-	-	68	-	-	-	-	-
18- 2,	43- 46	161.57	RHD	-	-	-	1.5	110	-	-	-	-	26	71	-	1.1	-	-	-
18- 2,	85- 95	162.02	BOG	-	-	-	-	10	-	-	-	-	-	1	-	-	-	-	-
19- 1,	18- 20	169.34	BOG	-	-	-	<1.5	130	0.040	-	0.1540	-	-	127	3.000	-	0.201	-	0.026
19- 1,	18- 20	169.34	BOG	-	-	-	-	-	-	-	-	-	-	131	-	-	-	-	-
19- 1,	57- 62	169.75	RHD	-	-	-	1.2	158	-	-	-	-	26	85	2.300	2.0	-	-	-
19- 1,	135-138	170.52	PRP	-	-	-	1.0	151	-	-	-	-	-	146	-	-	-	-	-
20- 1,	32- 36	178.99	BOG	-	-	-	8.1	162	0.400	-	0.1130	-	-	94	2.210	-	0.149	-	0.101
20- 1,	32- 36	178.99	BOG	-	-	-	-	-	-	-	-	-	-	98	-	-	-	-	-

[a]See footnote a, Table 17.

TABLE 20[a]
Major Elements in Basalts of Hole 395A

Sample	Depth (m)	Inv.Method	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	FeO	Total Iron	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	CO_2	H_2O^-	H_2O^+	Total	LOI	S
4- 1, 66- 69	97.51	RHD XRFNA	49.50	1.70	15.18	2.86	7.44	10.01	0.17	7.69	11.17	2.74	0.28	0.15	-	-	1.08	100.04	-	0.07
4- 1, 66- 69	97.51	ZOL WET	47.82	1.80	15.06	3.38	6.64	9.68	0.20	8.12	10.87	2.96	0.31	0.14	0.27	0.60	1.37	99.54	-	-
4- 1, 91-103	97.81	BOG XRFAA	51.60	0.81	18.86	7.11	-	6.40	0.13	5.50	12.42	4.03	0.10	0.17	-	-	-	100.73	1.10	-
4- 2, 56- 61	98.93	HRN AANA	-	0.40	-	-	-	7.47	-	-	0.05	0.07	-	-	-	-	-	8.82	-	-
4- 2, 56- 61	98.93	PRP XRFFP	38.47	0.04	1.14	9.33	1.48	-	0.11	39.39	0.08	0.04	0.01	-	-	-	9.92	100.01	-	-
4- 2, 63- 66	98.98	ZOL WET	38.09	0.09	0.62	8.21	0.57	7.96	0.07	38.54	0.62	0.08	0.08	-	0.20	0.58	1.88	99.63	-	-
5- 1, 6- 10	106.24	RHD XRFNA	49.20	1.63	15.11	3.95	6.04	9.60	0.17	7.74	11.03	2.79	0.26	0.17	-	-	1.51	99.64	-	0.05
5- 1, 6- 10	106.24	ZOL WET	47.42	1.81	14.95	5.45	6.13	11.04	0.20	8.00	10.85	2.90	0.35	0.13	0.03	0.69	1.47	100.48	-	-
5- 1, 10- 14	106.28	ZOL WET	48.61	1.50	14.94	2.80	8.41	10.93	0.17	8.24	10.88	3.09	0.17	0.15	0.10	0.52	-	99.58	-	-
5- 1, 100-103	107.18	BOG XRFAA	49.40	1.62	14.87	12.20	8.07	10.98	0.18	8.80	10.53	2.90	0.10	0.17	-	-	-	100.77	0.90	-
5- 1, 108-113	107.27	ZOL WET	48.64	1.49	14.84	2.43	8.70	10.89	0.17	8.18	10.79	2.87	0.21	0.15	0.30	0.44	0.60	99.87	-	-
5- 1, 115-120	107.34	PRP XRFFP	49.30	1.59	14.59	2.14	8.76	-	0.17	8.54	10.29	2.68	0.12	-	-	-	1.55	99.73	-	-
6- 1, 120-134	116.69	RHD XRFNA	48.70	1.60	14.74	4.30	6.82	10.69	0.18	8.08	10.11	2.97	0.22	0.12	-	-	2.48	100.45	-	0.07
6- 1, 130-134	116.74	BOG XRFAA	49.60	1.64	15.19	12.03	-	10.83	0.18	8.50	10.60	2.85	0.16	0.19	-	-	-	100.74	1.90	-
7- 1, 76- 82	116.79	BOG XRFAA	49.40	1.63	14.92	12.27	-	11.04	0.18	8.40	10.61	2.83	0.17	0.17	-	-	-	100.58	1.00	-
7- 1, 76- 82	116.79	GH XRFAA	48.80	1.62	15.00	3.50	7.75	10.90	0.18	8.27	10.30	2.87	0.16	0.14	0.14	0.69	0.59	100.01	-	-
7- 1, 129-133	117.31	ZOL WET	47.78	1.45	15.28	6.06	6.11	11.56	0.17	7.40	10.86	3.19	0.17	0.16	-	1.16	0.43	100.22	-	-
8- 1, 3- 8	125.14	ZOL WET	46.85	1.65	16.40	5.48	6.64	11.57	0.23	6.20	11.29	3.51	0.35	0.18	-	0.60	0.66	100.04	-	-
8- 1, 49- 52	125.60	ZOL WET	47.40	1.79	14.74	3.50	8.40	11.55	0.20	8.88	9.91	2.60	0.26	0.09	0.08	0.28	1.60	99.73	-	-
8- 1, 50- 52	125.60	BOG XRFAA	49.10	1.64	14.89	12.49	-	11.24	0.20	8.40	10.49	2.85	0.13	0.16	-	-	-	100.35	0.10	-
8- 1, 50- 52	125.60	GH XRFAA	49.20	1.63	14.80	2.25	9.01	11.04	0.19	8.41	10.40	2.75	0.15	0.14	0.17	0.10	0.42	99.62	-	-
8- 1 70- 73	125.81	RHD XRFNA	48.70	1.66	15.40	2.56	8.81	11.11	0.20	7.60	10.46	2.90	0.18	0.17	-	-	1.62	100.33	-	0.10
8- 1, 127-135	126.40	PRP XRFFP	49.52	1.62	14.69	2.33	8.38	-	0.15	7.87	10.35	2.64	0.17	-	-	-	2.02	99.74	-	-
9- 1, 70- 73	135.34	ZOL WET	47.47	1.80	13.91	4.22	8.58	12.38	0.19	8.60	9.94	2.96	0.31	0.09	0.22	0.93	1.07	100.29	-	-
9- 1, 73- 79	135.38	RHD XRFNA	48.50	1.60	14.69	2.84	8.03	10.59	0.20	8.21	10.17	2.93	0.16	0.12	-	-	1.93	99.56	-	0.14
9- 1, 98-102	135.62	ZOL WET	48.50	1.44	14.91	3.78	8.46	11.86	0.24	8.00	10.84	3.08	0.31	0.14	-	0.26	0.23	100.19	-	-
9- 2, 8- 10	136.21	ZOL WET	48.58	1.53	14.87	2.73	8.78	11.24	0.17	8.62	10.72	2.97	0.23	0.14	-	0.56	0.28	100.18	-	-
9- 2, 17- 28	136.35	PRP XRFFP	49.26	1.61	14.93	1.95	8.83	-	0.17	8.40	10.37	2.82	0.11	-	-	-	1.28	99.73	-	-
9- 2, 18- 21	136.32	BOG XRFAA	49.40	1.64	15.14	12.20	8.38	10.98	0.18	8.50	10.65	2.83	0.11	0.16	-	-	-	100.81	0.70	-
9- 2, 48- 52	136.62	ZOL WET	48.60	1.45	15.80	3.44	8.47	11.57	0.20	8.79	10.40	2.95	0.17	0.13	-	0.25	0.04	100.64	-	-
9- 2, 81- 86	136.96	ZOL WET	47.62	1.91	14.92	5.54	7.25	12.24	0.21	7.11	10.03	3.16	0.31	0.11	0.07	0.56	1.46	100.26	-	-
9- 2, 100-104	137.14	RHD XRFNA	48.90	1.63	14.92	2.67	8.20	10.60	0.19	8.15	10.29	3.01	0.15	0.13	-	-	1.25	99.61	-	0.14
10- 1, 144-146	145.47	RHD XRFNA	48.80	1.60	14.90	1.97	8.96	10.73	0.19	8.40	10.23	2.90	0.14	0.12	-	-	1.41	99.79	-	0.13
11- 1, 56- 66	154.14	PRP XRFFP	48.23	1.67	15.60	7.41	4.67	-	0.18	5.68	10.76	2.98	0.28	-	-	-	2.23	99.69	-	-
11- 1, 56- 66	154.14	PRP XRFFP	49.22	1.61	15.17	4.19	6.26	-	0.15	7.82	10.43	2.96	0.16	-	-	-	1.74	99.71	-	-
11- 1, 80- 83	154.35	ZOL WET	46.88	1.53	15.83	7.91	5.17	12.29	0.20	6.16	11.13	3.19	0.32	0.19	-	1 29	0.60	100.40	-	-
11- 1, 117-129	154.76	BOG XRFAA	49.80	1.65	15.06	12.65	-	11.39	0.19	8.60	10.74	2 79	0.16	0.18	-	-	-	100.82	1.30	-
11- 1, 120-125	154.76	ZOL WET	48.07	1.47	14.61	2.53	8.75	11.03	0.22	9.12	10.82	2.99	0.23	0.14	-	0.59	0.57	100.11	-	-
13- 1, 88- 93	173.35	PRP XRFFP	48.70	1.27	18.81	2.61	5.21	-	0.14	7.07	12.19	2.48	0.15	-	-	-	1.07	99.70	-	-
13- 1, 99-103	173.45	ZOL WET	48.29	1.36	18.17	3.69	5.11	8.43	0.14	6.99	12.22	2.83	0.26	0.12	0.15	0.59	-	99.92	-	-
13- 1, 105-111	173.52	BOG XRFAA	49.90	1.39	18.64	8.37	-	7.53	0.14	6.50	12.62	2.75	0.15	0.16	-	-	-	100.48	2.10	-
13- 1, 142-147	173.89	RHD XRFNA	49.20	1.37	17.34	2.52	5.96	8.23	0.15	6.55	11.54	2.83	0.11	0.10	-	-	1.94	99.66	-	0.09
14- 1, 87- 99	182.91	PRP XRFFP	49.58	1.40	17.21	3.16	5.65	-	0.14	6.96	11.55	2.53	0.16	-	-	-	1.56	99.90	-	-
14- 1, 90- 98	182.92	ZOL WET	48.02	1.25	16.20	3.85	6.59	10.06	0.15	6.69	12.55	2.88	0.17	0.11	-	0.59	0.57	99.62	-	-
14- 1, 92- 99	182.94	BOG XRFAA	49.20	1.36	17.81	9.43	6.34	8.49	0.14	7.10	11.97	2.73	0.11	0.14	-	-	-	99.99	1.60	-
14- 2, 60- 68	184.12	ZOL WET	47.98	1.48	18.31	2.87	4.73	7.31	0.13	6.60	11.40	2.96	0.28	0.10	0.41	1.02	1.26	99.53	-	-
14- 2, 98-112	184.53	BOG XRFAA	49.00	1.36	17.93	9.24	-	8.32	0.13	6.10	12.11	2.88	0.20	0.15	-	-	-	100.29	1.80	-
14- 2, 98-112	184.53	BOG XRFAA	49.50	1.33	18.28	8.94	-	8.05	0.15	6.90	12.10	2.88	0.08	0.14	-	-	-	99.11	2.00	-
14- 2, 125-134	184.78	HRN AANA	-	1.92	-	-	-	8.36	-	-	9.03	2.83	-	-	-	-	-	23.07	-	-
14- 2, 125-134	184.78	PRP XRFFP	49.50	1.39	17.13	2.59	6.36	-	0.15	6.74	11.64	2.61	0.18	-	-	-	1.42	99.71	-	-
14- 2, 140-147	184.92	RHD XRFNA	49.10	1.34	17.93	1.57	6.94	8.35	0.13	6.81	11.73	2.80	0.09	0.10	-	-	1.48	100.12	-	0.10
14- 3, 29- 34	185.30	RHD XRFNA	49.70	1.33	18.13	2.40	5.86	8.02	0.14	6.58	11.74	2.85	0.07	0.12	-	-	1.46	100.49	-	0.12
14- 3, 111-118	186.13	ZOL WET	48.55	1.36	17.90	3.05	5.41	8.16	0.13	7.33	11.78	2.89	0.15	0.11	-	0.83	0.17	99.96	-	-
15- 1, 12- 16	191.63	ZOL WET	48.58	1.27	18.15	1.41	6.70	7.97	0.11	7.15	12.20	2.76	0.09	0.11	0.35	0.80	0.06	99.74	-	-
15- 1, 46- 55	192.00	PRP XRFFP	48.95	1.36	17.38	3.47	5.16	-	0.13	7.04	11.70	2.66	0.09	-	-	-	1.77	99.71	-	-
15- 1, 75- 81	192.27	RHD XRF	49.00	1.35	17.51	2.69	5.97	8.39	0.13	6.97	11.54	2.76	0.11	0.11	-	-	1.63	99.87	-	0.12
15- 1, 93-102	192.47	BOG XRFAA	49.70	1.34	18.25	9.40	-	8.46	0.14	7.30	12.10	2.72	0.09	0.14	-	-	-	101.18	1.90	-
15- 1, 106-111	192.58	ZOL WET	48.20	1.36	17.34	3.84	6.01	9.47	0.11	7.09	11.71	2.82	0.15	0.11	-	0.47	0.41	99.62	-	-
15- 2, 102-108	194.04	BOG XRFAA	50.20	1.39	17.97	9.73	5.78	8.76	0.14	6.80	12.01	2.94	0.10	0.14	-	-	-	101.42	2.10	-
15- 3, 72- 79	195.25	ZOL WET	48.24	1.36	17.68	3.30	6.67	9.64	0.11	7.34	11.43	2.98	0.20	0.11	0.20	0.30	0.64	100.56	-	-
15- 3, 128-142	195.84	BOG XRFAA	49.90	1.37	17.72	9.91	-	8.92	0.15	7.30	12.15	2.82	0.11	0.14	-	-	-	101.57	1.20	-
15- 3, 128-142	195.84	GH XRFAA	48.80	1.34	17.30	2.07	6.58	8.44	0.14	7.26	11.70	2.73	0.11	0.13	0.13	0.67	0.53	99.49	-	-
15- 4, 10- 15	196.12	RHD XRF	49.50	1.35	17.57	1.40	7.25	8.52	0.14	7.03	11.57	2.71	0.11	0.12	-	-	-	98.86	-	0.11
15- 4, 10- 15	196.12	RHD XRF	49.00	1.36	17.65	1.40	7.25	8.51	0.13	7.07	11.58	2.71	0.11	0.12	-	-	1.71	100.21	-	0.11
15- 4, 52- 57	196.54	ZOL WET	49.17	1.36	17.58	3.64	5.61	8.89	0.11	7.34	11.81	2.82	0.16	0.10	-	0.44	0.47	100.61	-	-
15- 4, 86- 91	196.88	PRP XRFFP	48.76	1.30	17.79	2.06	6.20	-	0.13	6.88	11.54	2.55	0.07	-	-	-	1.79	99.07	-	-
15- 4, 99-107	197.02	RHD XRF	48.30	1.30	18.01	2.34	5.96	8.07	0.15	6.82	11.51	2.87	0.08	0.09	-	-	1.65	99.20	-	0.08
15- 5, 0- 11	197.55	BOG XRFAA	49.10	1.16	19.17	8.49	7.00	7.64	0.13	7.00	12.16	2.72	0.07	0.14	-	-	-	100.14	1.40	-
15- 5, 0- 11	197.55	GH XRFAA	48.70	1.12	18.90	1.93	5.75	7.49	0.12	7.00	11.80	2.73	0.07	0.11	0.17	0.57	1.10	100.07	-	-
15- 5, 0- 11	197.55	PRP XRFFP	48.56	1.12	19.43	2.04	5.63	7.47	0.11	6.98	12.03	2.48	0.09	0.14	-	0.38	1.02	100.01	-	-
15- 5, 3- 12	197.57	ZOL WET	47.98	1.19	18.29	3.50	5.91	9.06	0.14	7.57	11.84	2.76	0.16	0.09	-	0.40	0.65	100.48	-	-
15- 5, 16- 20	197.67	RHD XRF	48.90	1.14	19.16	1.47	6.19	7.51	0.13	6.96	11.83	2.75	0.07	0.09	-	-	1.63	100.41	-	0.09
16- 1, 69- 74	201.71	BOG XRFAA	50.30	1.40	17.74	9.61	-	8.65	-	6.70	12.01	2.87	0.18	-	-	-	-	100.81	2.00	-
16- 1, 80- 83	201.81	ZOL WET	48.57	1.23	17.49	3.71	4.71	8.05	0.16	6.46	12.25	3.22	0.23	0.14	-	0.81	0.65	99.63	-	-
16- 1, 90- 98	201.93	BOG XRFAA	48.80	1.05	17.84	8.94	-	8.05	0.14	7.50	12.67	2.32	0.12	0.12	-	-	-	99.50	0.70	-
16- 1, 100-103	202 01	ZOL WET	48.15	1.18	18.11	4.63	5.01	9.18	0.14	6.97	12.94	2.40	0.27	0.10	-	0.30	0.09	100.29	-	-
16- 1, 100-104	202.01	BOG XRFAA	49.50	1.07	17.36	8.67	-	7.80	0.14	7.80	12.57	2.42	0.12	0.12	-	-	-	99.77	0.50	-
16- 1, 120-125	202.22	PRP XRFFP	49.48	1.02	17.81	2.85	5.00	-	0.13	7.09	12.75	2.36	0.12	-	-	-	1.09	99.70	-	-

[a]See footnote a, Table 17.

TABLE 20 – *Continued*

Sample	Depth (m)	Inv. Method	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	FeO	Total Iron	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	CO_2	H_2O^-	H_2O^+	Total	LOI	S
16- 1, 128-131	202.29	ZOL WET	47.70	1.10	17.84	5.13	5.05	9.67	0.15	7.24	12.76	2.48	0.20	0.15	-	0.28	0.48	100.56	-	-
16- 1, 143-147	202.44	PRP XRFFP	48.46	1.14	18.57	3.86	4.89	-	0.14	6.27	13.06	2.05	0.09	-	-	-	1.15	99.68	-	-
17- 1, 4- 9	210.59	ZOL WET	48.27	1.10	16.61	4.26	5.08	8.91	0.15	7.53	12.92	2.52	0.21	0.09	0.15	0.44	0.48	99.81	-	-
17- 1, 46- 55	211.02	PRP XRFFP	48.68	1.08	18.13	3.17	5.03	-	0.13	6.68	13.07	2.25	0.11	-	-	-	1.35	99.68	-	-
17- 1, 46- 55	211.02	PRP XRFFP	49.26	1.04	17.24	3.31	4.80	-	0.14	7.15	12.69	2.27	0.13	-	-	-	1.69	99.72	-	-
17- 1, 46- 55	211.02	RHD XRF	48.90	1.09	18.05	3.70	4.78	8.11	0.15	6.66	12.83	2.50	0.12	0.09	-	-	1.19	100.08	-	0.01
17- 1, 46- 55	211.02	RHD PROBE	51.03	1.38	14.49	-	-	9.06	0.16	7.63	11.96	2.51	0.11	-	-	-	-	99.15	-	-
17- 1, 69- 75	211.24	PRP XRFFP	48.88	0.98	17.57	3.60	4.06	-	0.13	7.22	12.60	2.96	0.12	-	-	-	1.59	99.71	-	-
17- 1, 115-124	211.72	BOG XRFAA	49.90	1.04	17.84	8.49	4.51	7.64	-	7.20	12.82	2.34	0.12	-	-	-	-	99.75	2.00	-
18- 1, 25- 30	220.07	ZOL WET	48.75	1.19	17.27	2.84	5.75	8.31	0.14	7.61	12.65	2.57	0.17	0.10	-	0.24	0.32	99.60	-	-
18- 1, 140-146	221.22	BOG XRFAA	49.40	1.05	17.57	8.58	-	7.72	0.14	7.30	12.68	2.42	0.11	0.11	-	-	-	99.36	1.70	-
19- 1, 132-136	230.68	RHD XRFNA	49.10	1.08	16.85	3.42	4.80	7.88	0.13	7.61	12.19	2.31	0.13	0.08	-	-	1.94	99.67	-	0.01
20- 1, 43- 45	232.34	BOG XRFAA	49.60	1.07	17.71	9.20	-	8.28	0.15	8.00	12.85	2.42	0.16	0.11	-	-	-	101.27	0.40	-
20- 1, 92- 95	232.84	ZOL WET	48.42	0.88	18.18	3.83	4.65	8.10	0.14	7.40	12.89	2.56	0.19	0.09	-	0.64	0.46	100.32	-	-
21- 1, 87- 90	242.33	RHD XRFNA	49.80	1.03	17.73	2.58	5.23	7.55	0.14	7.53	12.49	2.39	0.15	0.10	-	-	1.68	100.91	-	0.03
21- 1, 112-123	242.62	PRP XRFFP	48.59	1.01	17.18	2.72	5.17	-	0.12	7.99	12.48	2.56	0.13	-	-	-	1.77	99.72	-	-
22- 1, 87- 92	251.86	BOG XRFAA	49.60	1.02	17.80	8.73	-	7.86	0.13	8.00	12.91	2.34	0.10	0.11	-	-	-	100.74	1.90	-
22- 1, 87- 92	251.86	GH XRFAA	49.10	0.98	17.70	3.04	4.59	7.33	0.12	7.84	12.40	2.37	0.09	0.09	0.07	0.79	0.85	100.05	-	-
22- 1, 110-115	252.10	ZOL WET	48.47	1.02	17.43	3.12	4.93	7.74	0.11	7.95	12.78	2.47	0.16	0.09	-	0.78	0.30	99.60	-	-
22- 2, 5- 10	252.55	ZOL WET	48.58	1.10	17.20	4.49	5.00	9.04	0.14	7.46	12.67	2.57	0.16	0.09	-	0.56	0.23	100.24	-	-
22- 2, 72- 76	253.21	BOG XRFAA	50.10	1.13	16.25	9.32	5.65	8.39	0.15	8.40	12.39	2.42	0.08	0.09	-	-	-	100.33	1.60	-
22- 2, 72- 76	253.21	GH XRFAA	49.30	1.10	16.00	2.48	5.93	8.16	0.14	8.35	12.10	2.38	0.11	0.12	0.11	0.71	0.88	99.71	-	-
22- 2, 125-130	253.75	PRP XRFFP	49.01	1.02	17.21	1.33	6.49	-	0.13	8.18	12.46	2.07	0.14	-	-	-	1.67	99.71	-	-
23- 1, 51- 55	260.90	RHD XRFNA	49.20	1.12	18.51	3.76	4.24	7.62	0.14	6.51	12.59	2.75	0.15	0.12	-	-	1.01	100.10	-	0.01
23- 1, 65- 68	261.04	BOG XRFAA	49.40	1.12	17.54	9.24	-	8.32	0.15	7.60	12.39	2.62	0.25	0.11	-	-	-	100.52	0.90	-
23- 1, 117-122	261.57	BOG XRFAA	50.10	1.11	17.65	8.51	-	7.66	0.14	8.40	12.39	2 54	0.16	0.11	-	-	-	101 11	0.70	-
23- 1, 145-147	261.83	BOG XRFAA	49.10	1.07	17.33	8.24	-	7.42	0.14	8.50	12.26	2.39	0.11	0.12	-	-	-	99.26	0.60	-
24- 1, 117-120	271.06	ZOL WET	47.96	1.27	17.67	4.64	5.52	9.70	0.17	7.06	12.49	2.89	0.15	0.15	-	0.30	0.23	100.50	-	-
24- 1, 125-129	271.15	BOG XRFAA	49.70	1.12	17.76	8.69	-	7.82	0.14	7.80	12.50	2.59	0.10	0.11	-	-	-	100.51	0.90	-
24- 2, 14- 23	271.56	PRP XRFFP	47.57	1.13	17.60	2.32	6.43	-	0.15	8.18	12.67	2.50	0.09	-	-	-	1.07	99.71	-	-
24- 2, 41- 45	271.81	ZOL WET	48.25	1.10	16.85	3.39	5.34	8.39	0.17	8.28	12.58	2.76	0.27	0.12	-	0.38	0.38	99.87	-	-
24- 2, 69- 72	272.09	RHD XRFNA	49.10	1.15	17.26	2.80	5.11	7.63	0.15	7.90	12.17	2.65	0.13	0.09	-	-	0.88	99.42	-	0.00
25- 1, 36- 43	279.81	HRN AANA	-	1.59	-	-	-	7.93	-	-	11.83	2.58	-	-	-	-	-	24.81	-	-
25- 1, 36- 43	279.81	PRP XRFFP	49.29	1.10	17.02	2.91	5.27	-	0.13	7.76	12.04	2.18	0.15	-	-	-	1.88	99.73	-	-
25- 1, 38- 43	279.82	GH XRFAA	49.60	1.10	16.60	3.40	4.86	7.92	0.15	7.65	12.00	2.53	0.15	0.09	0.10	0.72	1.00	99.95	-	-
25- 1, 38- 43	279.82	ZOL WET	49.21	1.19	16.31	3.48	6.29	9.42	0.14	8.16	12.09	2.70	0.13	0.09	-	0.42	0.28	100.49	-	-
25- 1, 96-100	280.39	RHD XRFNA	49.30	1.14	17.10	2.58	5.28	7.60	0.14	7.67	11.99	2.62	0.14	0.11	-	-	1.54	99.58	-	0.01
26- 1, 63- 67	289.44	ZOL WET	48.95	1.03	16.38	4.29	4.60	8.46	0.15	8.06	12.27	2.70	0.17	0.11	-	0.86	0.45	100.02	-	-
26- 1, 104-112	289.87	PRP XRFFP	49.32	1.08	16.89	1.73	6.31	-	0.13	8.17	11.95	2.24	0.06	-	-	-	1.29	99.17	-	-
26- 1, 115-119	289.96	ZOL WET	47.33	1.10	16.86	5.00	4.73	9.23	0.13	8.16	12.13	2.61	0.17	0.08	0.15	0.68	0.37	99.50	-	-
26- 1, 129-133	290.10	BOG XRFAA	49.60	1.13	17.20	8.76	-	7.88	0.14	7.90	12.21	2.42	0.06	0.11	-	-	-	99.53	1.70	-
26- 2, 4- 10	290.36	ZOL WET	47.89	1.12	16.58	3.35	4.81	7.83	0.31	7.94	13.31	2.70	0.17	0.09	0.55	0.39	0.45	99.66	-	-
26- 2, 24- 33	290.58	GH XRFAA	48.70	0.97	16.60	2.95	4.79	7.45	0.14	8.65	12.40	2.30	0.10	0.07	0.63	0.87	1.20	100.37	-	-
26- 2, 33- 42	290.67	PRP XRFFP	48.75	1.08	16.17	3.37	5.03	-	0.14	8.63	11.84	2.75	0.15	-	-	-	1.81	99.72	-	-
26- 2, 83- 85	291.13	ZOL WET	49.36	1.07	16.92	1.51	6.65	8.01	0.15	8.23	12.18	2.60	0.15	0.10	0.05	0.29	0.16	99.97	-	-
26- 2, 125-129	291.56	RHD XRFNA	48.90	1.25	18.85	3.41	4.85	7.92	0.17	5.87	12.27	2.84	0.16	0.13	-	-	1.26	99.96	-	0.02
26- 2, 125-129	291.56	RHD PROBE	51.07	1.47	14.34	-	-	9.98	0.17	7.28	11.58	2.83	0.12	-	-	-	-	98.76	-	-
27- 1, 116-123	299.53	ZOL WET	48.39	1.05	15.67	2.90	5.28	7.89	0.14	8.06	12.88	2.82	0.29	0.11	0.60	0.79	0.66	99.64	-	-
27- 1, 127-131	299.62	BOG XRFAA	49.60	1.13	16.90	8.84	-	7.96	0.14	8.30	12.11	2 57	0.06	0.10	-	-	-	99.75	1.60	-
27- 1, 127-131	299.62	GH XRFAA	49.60	1.11	16.60	2.03	6.05	7.88	0.14	8.24	11.80	2.51	0.06	0.11	0.07	0.81	0.74	99.87	-	-
27- 2, 27- 34	300.14	ZOL WET	48.72	1.06	15.97	3.34	5.30	8.31	0.23	8.25	12.28	2.82	0.27	0.10	0.20	0.80	0.61	99.95	-	-
27- 2, 111-116	300.97	RHD XRFNA	49.60	1.14	17.13	1.94	6.03	7.78	0.15	8.03	12.08	2.64	0.15	0.10	-	-	0.71	99.69	-	0.02
27- 2, 126-132	301.12	ZOL WET	49.39	1.10	17.19	2.02	6.25	8.07	0.16	7.79	12.34	2.82	0.21	0.11	0.25	0.24	0.15	99.90	-	-
27- 2, 140-150	301.28	PRP XRFFP	48.57	1.11	17.46	2.42	5.55	-	0.14	7.93	12.95	2.56	0.18	-	-	-	0.86	99.73	-	-
28- 1, 44- 48	308.30	PRP XRFFP	48.93	1.19	18.67	2.50	4.90	-	0.14	7.07	12.27	2.92	0.21	-	-	-	0.91	99.71	-	-
28- 1, 105-112	308.93	RHD XRFNA	48.80	1.19	19.09	3.07	4.97	7.73	0.15	6.33	12.22	2.78	0.15	0.11	-	-	0.97	99.87	-	0.02
28- 1, 105-112	308.93	ZOL WET	48.26	1.27	18.77	3.66	5.50	8.79	0.18	6.88	11.90	1.83	0.29	0.12	-	0.41	0.25	100.32	-	-
28- 1, 116-122	309.03	BOG XRFAA	49.60	1.19	18.61	8.56	-	7.70	0.15	6.60	12 27	2.74	0.15	0.12	-	-	-	99.99	1.40	-
28- 1, 116-122	309.03	RHD PROBE	50.65	1.58	14.75	-	-	9.88	0.20	7.24	11.50	3.07	0.12	-	-	-	-	99.36	-	-
29- 1, 119-122	318.55	BOG XRFAA	49.10	1.25	18.13	8.71	5.11	7.84	0.14	7.20	12.26	2.62	0.21	0.14	-	-	-	99.76	1.20	-
29- 1, 125-131	318.62	RHD XRFNA	49.80	1.14	17.07	2.65	5.73	8.11	0.15	8.00	12.04	2.59	0.13	0.10	-	-	0.83	99.41	-	0.02
30- 1, 52- 58	327.42	PRP XRFFP	48.53	1.43	18.28	4.02	4.18	-	0.14	6.19	12 22	2.57	0.17	-	-	-	1.99	99.72	-	-
30- 1, 82- 87	327.72	BOG XRFAA	49.30	1.15	17.69	8.80	-	7.92	0.13	8.30	11.92	2.62	0.09	0.10	-	-	-	100.10	1.70	-
30- 1, 100-104	327.89	ZOL WET	47.57	1.10	17.62	4.55	5.09	9.19	0.14	7.90	11.86	2.70	0.16	0.09	-	0.76	0.31	99.85	-	-
31- 1, 63- 67	336.71	BOG XRFAA	49.70	1.17	18.59	8.67	4.06	7.80	0.13	6.80	12.33	2.77	0.17	0.12	-	-	-	100.45	2.50	-
31- 1, 70- 76	336.79	BOG XRFAA	49.10	1.14	18.42	8.69	-	7.82	0.14	7.00	12.31	2.72	0.17	0.11	-	-	-	99.80	2.40	-
31- 1, 70- 76	336.79	ZOL WET	47.89	1.14	19.28	4.11	4.53	8.23	0.16	4.88	12.97	2.99	0.21	0.16	0.50	0.54	0.86	100.22	-	-
31- 1, 96-107	337.08	RHD XRFNA	49.80	1.10	18.62	3.28	4.49	7.44	0.12	6.69	12.17	2.89	0.18	0.08	-	-	1.77	101.23	-	0.01
31- 1, 125-128	337.33	PRP XRFFP	48.16	1.41	18.36	3.57	4.39	-	0.11	6.60	12.25	2.75	0.18	-	-	-	1.92	99.70	-	-
32- 1, 54- 62	346.04	BOG XRFAA	49.60	1.19	18.79	8.73	-	7.86	0.13	5.50	13.90	2.77	0.15	0.11	-	-	-	100.87	3.10	-
32- 1, 54- 62	346.04	BOG XRFAA	49.00	1.09	18.25	8.09	-	7.28	0.15	5.90	15.64	2.62	0.36	0.12	-	-	-	101.22	7.70	-
32- 2, 21- 28	347.21	ZOL WET	48.47	1.15	17.67	3.24	5.18	8.10	0.13	6.68	12.50	2.82	0.28	0.11	0.40	0.69	0.60	99.92	-	-
32- 2, 56- 63	347.56	BOG XRFAA	49.20	1.09	18.94	8.30	-	7.47	0.15	7.10	12.38	2.69	0.12	0.10	-	-	-	100.05	1.90	-
33- 1, 70- 77	354.74	PRP XRFFP	48.17	1.12	18.64	3.02	5.22	-	0.14	6.97	12.42	2.46	0.16	-	-	-	1.39	99.71	-	-
33- 1, 142-148	355.45	RHD XRFNA	48.90	1.14	17.55	4.08	4.00	7.67	0.14	7.11	11.85	2.73	0.18	0.11	-	-	1.86	99.66	-	0.01
33- 2, 9- 13	355.61	BOG XRFAA	50.00	1.13	18.44	8.89	-	8.00	0.14	7.30	12.53	2.74	0.17	0.09	-	-	-	101.43	2.10	-
33- 2, 9- 13	355.61	GH XRFAA	48.50	1.08	18.00	3.35	4.56	7.57	0.13	7.59	12.00	2.67	0.16	0.10	0.04	1.01	0.98	100.17	-	-
33- 2, 127-129	356.78	BOG XRFAA	49.70	1.70	15.29	11.07	-	9.96	0.18	7.70	11.33	2.72	0.24	0.17	-	-	-	100.10	1.70	-

TABLE 20 – *Continued*

Sample	Depth (m)	Inv.	Method	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	FeO	Total Iron	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	CO_2	H_2O^-	H_2O^+	Total	LOI	S
33-2, 145-150	356.98	PRP	XRFFP	48.86	1.67	15.24	3.15	6.99	–	0.18	7.69	11.41	2 74	0.29	–	–	–	1.49	99.71	–	–
34-1, 140-143	364.95	RHD	XRFNA	49.50	1.69	15.32	2.98	7.24	9.92	0.19	7.61	11.21	2.80	0.22	0.17	–	–	1.33	100.32	–	0.09
35-1, 26-32	373.22	RHD	XRFNA	49.30	1.67	15.01	4.50	5.66	9.71	0.16	7.45	10.95	2.88	0.32	0.13	–	–	1.95	100.03	–	0.03
35-1, 53-54	373.47	BOG	XRFAA	49.80	1.71	15.14	11.13	7.33	10.02	0.18	7.70	11.29	2.74	0.18	0.17	–	–	–	100.04	1.10	–
36-1, 46-50	382.92	RHD	XRFNA	48.90	1.67	15.13	4.10	5.80	9.49	0.19	7.48	11.09	2.93	0.26	0.14	–	–	2.28	100.03	–	0.02
37-1, 45-50	392.45	PRP	XRFFP	47.58	1.70	15.28	4.53	6.05	–	0.16	7.16	11.72	3.03	0.29	–	–	–	2.20	99.70	–	–
37-1, 50-54	392.49	ZOL	WET	48.71	1.61	15.34	3.94	6.12	9.67	0.17	7.18	11.38	3.05	0.29	0.17	0.10	0.93	0.90	99.89	–	–
37-1, 136-141	393.36	BOG	XRFAA	49.90	1.70	15.06	10.90	–	9.81	0.17	7.50	11.24	2.72	0.29	0.16	–	–	–	99.54	1.90	–
38-1, 142-148	402.80	RHD	XRFNA	48.60	1.65	14.61	4.15	5.83	9.56	0.17	7.40	10.83	2.89	0.22	0.14	–	–	2.00	98.53	–	.004
39-1, 102-107	411.94	BOG	XRFAA	49.90	1.72	15.33	10.98	–	9.88	0.18	7.60	11.39	2.72	0.28	0.17	–	–	–	100.27	1.90	–
41-1, 107-111	429.14	RHD	XRFNA	49.70	1.70	15.30	2.90	7.28	9.89	0.17	7.28	11.14	2.82	0.22	0.15	–	–	1.11	99.85	–	0.08
41-1, 142-144	429.48	BOG	XRFAA	49.70	1.74	15.07	11.17	–	10.05	0.19	7.50	11.25	2.65	0.27	0.18	–	–	–	99.72	1.30	–
42-1, 86-89	438.44	BOG	XRFAA	49.70	1.75	15.19	11.42	–	10.28	0.19	7.40	11.23	2.69	0.16	0.17	–	–	–	99.90	0.80	–
42-1, 143-147	439.01	PRP	XRFFP	49.15	1.76	15.46	3.52	6.88	–	0.17	7.02	11.48	2.67	0.28	–	–	–	1.30	99.69	–	–
45-1, 124-127	467.27	BOG	XRFAA	49.80	1.76	15.09	11.45	7.41	10.31	0.19	7.30	11.27	2.62	0.18	0.17	–	–	–	99.83	1.10	–
46-1, 61-64	476.16	RHD	XRFNA	49.30	1.75	15.10	3.90	6.29	9.80	0.19	7.21	11.10	2.90	0.31	0.17	–	–	1.26	99.50	–	0.02
46-1, 88-97	476.46	PRP	XRFFP	49.59	1.67	15.49	2.72	7.23	–	0.17	7.41	11.45	2.57	0.24	–	–	–	1.16	99.70	–	–
47-1, 63-67	485.63	BOG	XRFAA	49.80	1.67	15.81	11.05	–	9.95	0.18	7.20	11.52	2.65	0.21	0.16	–	–	–	100.25	1.20	–
47-2, 62-68	487.13	PRP	XRFFP	48.92	1.74	14.82	3.80	6.34	–	0.17	7.73	11.26	2.61	0.32	–	–	–	1.99	99.70	–	–
47-2, 105-110	487.56	ZOL	WET	48.42	1.69	16.02	4.03	6.33	9.96	0.17	6.28	11.59	3.28	0.36	0.19	–	0.73	0.81	99.90	–	–
48-1, 135-140	495.73	BOG	XRFAA	49.40	1.71	15.09	11.16	–	10.04	0.19	7.90	11.23	2.77	0.25	0.17	–	–	–	99.87	1.50	–
49-1, 26-31	504.16	RHD	XRFNA	49.50	1.74	15.13	3.14	7.24	10.07	0.19	7.29	11.19	2.84	0.18	0.17	–	–	1.30	99.97	–	0.09
49-1, 43-49	504.33	PRP	XRFFP	48.98	1.72	15.24	4.48	5.83	–	0.16	6.50	11.56	2.71	0.27	–	–	–	2.25	99.70	–	–
49-2, 13-17	505.52	BOG	XRFAA	49.60	1.72	15.08	11.14	–	10.03	0.18	8.10	11.32	2.72	0.17	0.18	–	–	–	100.21	1.20	–
50-1, 87-92	514.28	ZOL	WET	49.01	1.65	15.03	3.05	7.50	10.25	0.17	7.16	11.33	2.93	0.23	0.20	–	0.48	0.66	99.60	–	–
50-1, 107-117	514.50	PRP	XRFFP	49.09	1.70	14.96	4.21	5.77	–	0.15	7.57	11.15	2.69	0.35	–	–	–	2.05	99.69	–	–
50-2, 143-147	516.33	RHD	XRFNA	48.80	1.72	15.07	3.97	6.38	9.95	0.16	7.67	11.02	2.85	0.22	0.16	–	–	1.76	99.84	–	0.05
51-2, 41-44	524.89	BOG	XRFAA	49.80	1.72	15.08	11.34	–	10.21	0.19	7.50	11.33	2.59	0.23	0.17	–	–	–	99.95	1.30	–
51-2, 122-127	525.71	ZOL	WET	48.78	1.53	14.90	4.63	6.42	10.59	0.17	8.08	11.07	2.96	0.31	0.17	0.05	0.74	0.55	100.30	–	–
51-3, 78-82	526.77	RHD	XRFNA	48.80	1.70	14.93	3.52	6.67	9.84	0.18	7.69	10.87	2.88	0.26	0.15	–	–	1.77	99.51	–	0.07
52-1, 45-50	532.72	PRP	XRFFP	49.41	1.73	15.25	2.43	7.59	–	0.17	7.84	11.33	2.63	0.22	–	–	–	1 09	99.69	–	–
52-1, 48-53	532.75	BOG	XRFAA	49.80	1.74	15.03	11.61	–	10.45	0.19	7.30	11.47	2.72	0.18	0.20	–	–	–	100.24	1.00	–
52-2, 75-80	534.52	RHD	XRFNA	50.30	1.73	15.22	2.94	7.37	10.02	0.19	7.34	11.10	2.76	0.19	0.16	–	–	1.38	100.75	–	0.11
53-1, 7-11	541.60	BOG	XRFAA	49.60	1.72	15.11	11.28	–	10.15	0.18	7.90	11.22	2.69	0.18	0.17	–	–	–	100.05	1.30	–
53-1, 78-84	542.32	ZOL	WET	48.18	1.65	15.06	4.90	5.57	9.98	0.17	7.26	11.23	2.99	0.29	0.17	–	1.08	1.10	99.66	–	–
54-1, 48-51	545.00	BOG	XRF	49.60	1.72	14.90	11.11	–	10.00	–	7.70	11.11	–	0.14	–	–	–	–	96.28	0.70	–
54-1, 113-121	545.68	PRP	XRFFP	48.36	1.75	15.03	3.95	6.11	–	0.15	7.60	11.33	2.80	0.29	–	–	–	2.34	99.71	–	–
54-1, 130-137	545.85	ZOL	WET	48.37	1.65	14.82	5.29	5.51	10.27	0.17	7.35	11.22	2.99	0:29	0.17	–	1.12	1.12	100.07	–	–
55-1, 49-54	551.54	BOG	XRFAA	49.30	1.73	14.88	11.13	6.21	10.02	0.17	8.00	11.18	2.72	0.17	0.17	–	–	–	99.32	1.60	–
55-1, 105-113	552.11	ZOL	WET	48.56	1.65	15.06	4.57	5.85	9.96	0.16	7.18	11.36	2.76	0.24	0.18	0.10	1.11	0.97	99.75	–	–
56-2, 75-81	562.83	BOG	XRFAA	49.90	1.74	14.88	11.13	–	10.02	0.18	7.80	11.18	2.72	0.17	0.16	–	–	–	99.76	1.90	–
56-2, 100-107	563.08	ZOL	WET	48.84	1.65	15.17	4.38	6.02	9.96	0.17	7.17	10.98	2.99	0.25	0.19	0.10	0.94	0.98	99.83	–	–
56-3, 47-55	564.06	PRP	XRFFP	49.34	1.78	15.20	4.59	5.70	–	0.14	6.67	11.30	2.53	0.28	–	–	–	2.17	99.70	–	–
56-3, 55-64	564.14	ZOL	WET	48.39	1.67	15.21	3.63	6.82	10.09	0.15	7.25	10.82	2.93	0.33	0.19	0.10	1.02	1.21	99.72	–	–
56-3, 62-65	564.18	RHD	XRFNA	49.40	1.75	14.99	3.21	7.12	10.01	0.18	7.82	10.82	2 80	0.19	0.18	–	–	1.44	100.02	–	0.07
56-3, 62-65	564.18	RHD	PROBE	50.44	1.73	14.93	–	–	9.90	0.21	7.51	10.79	2.93	0.15	–	–	–	–	98.99	–	–
57-1, 40-43	570.49	RHD	XRFNA	48.80	1.57	14.93	2.32	8.02	10.11	0.19	8.62	10.55	2.80	0.15	0.15	–	–	1.50	99.51	–	0.09
57-1, 47-53	570.58	PRP	XRFFP	47.62	1.61	15.25	5.42	5.34	–	0.16	7.31	11.18	2.80	0.29	–	–	–	2.74	99.72	–	–
57-1, 125-131	571.36	BOG	XRFAA	49.20	1.59	15.14	11.20	–	10.08	0.18	8.10	11.09	2.62	0.22	0.15	–	–	–	99.49	2.30	–
57-1, 125-131	571.36	GH	XRFAA	48.60	1.57	14.60	4.30	5.99	9.86	0.18	8.48	10.90	2 75	0.23	0.14	0.18	1.28	1.20	100.40	–	–
58-2, 57-64	581.57	ZOL	WET	46.94	1.45	14.48	3 18	7.31	10.17	0.17	8.18	19.18	3.36	0.66	0.14	0.20	2.65	2.41	100.31	–	–
58-2, 88-94	581.88	PRP	XRFFP	47.01	1.58	14.49	2.71	7.57	–	0.18	8.75	8.78	2.93	0.48	–	–	–	5.32	99.80	–	–
58-2, 115-122	582.16	BOG	XRFAA	50.50	1.58	14.47	10.86	–	9.77	0.18	8.20	10.50	2.65	0.10	0.12	–	–	–	99.16	0.50	–
59-1, 67-70	589.68	RHD	XRFNA	48.30	1.58	14.93	2.69	7.65	10.07	0.16	8.45	10.71	2.83	0.13	0.13	–	–	1.84	99.42	–	0.05
59-2, 43-47	590.94	ZOL	WET	47.48	1.49	14.56	4.65	6.95	11.14	0.17	8.10	11.29	2.90	0.38	0.15	–	1.11	0.87	100.10	–	–
59-2, 65-69	591.16	BOG	XRFAA	49.00	1.59	15.24	11.25	6.26	10.13	0.18	8.10	11.18	2.65	0.30	0.15	–	–	–	99.64	2.90	–
60-1, 66-70	599.21	RHD	XRFNA	48.40	1.59	15.12	3.21	6.94	9.83	0.19	8.01	10.77	2.85	0.14	0.12	–	–	1.95	99.36	–	0.07
60-2, 105-113	601.12	PRP	XRFFP	47.39	1.60	15.13	4.58	5.76	–	0.18	7.93	11.10	2.80	0.19	–	–	–	3.03	99.69	–	–
60-3, 33-37	601.88	RHD	XRFNA	47.20	1.55	15.09	5.02	5.36	9.88	0.18	8.40	10.60	2.77	0.16	0.13	–	–	2.17	98.61	–	0.01
60-3, 137-143	602.93	BOG	XRFAA	48.80	1.59	15.15	11.39	–	10.25	0.20	8.40	11.12	2.57	0.17	0.14	–	–	–	99.53	1.90	–
61-1, 140-150	609.35	PRP	XRFFP	48.63	1.18	16.44	3.31	5.23	8.21	0.15	8.04	11.79	2.68	0.16	0.12	–	0.80	1.48	100.01	–	–
61-1, 142-150	609.36	RHD	XRFNA	49.20	1.21	16.05	3.81	4.92	8.35	0.15	7.84	11.71	2.72	0.16	0.10	–	–	1.66	99.55	–	0.01
61-2, 37-45	609.81	BOG	XRFAA	49.50	1.14	16.96	8.97	–	8.07	0.14	8.30	11.93	2.44	0.07	0.10	–	–	–	99.55	1.80	–
61-2, 37-45	609.81	GH	XRFAA	49.30	1.12	16.60	1.92	6.17	.7.90	0.14	8.79	11.70	2.53	0.08	0.10	0.04	0.68	1.03	100.20	–	–
61-2, 65-70	610.07	ZOL	WET	48.94	1.02	17.11	2.56	5.64	7.94	0.13	7.50	12.65	2.77	0.14	0.10	–	0.68	0.67	99.91	–	–
61-2, 75-85	610.20	PRP	XRFFP	49.06	1.11	16.96	2.01	6.36	8.17	0.13	8.13	11.78	2.55	0.10	0.11	–	0.50	1.21	100.01	–	–
61-3, 5-10	610.98	ZOL	WET	48.60	1.06	15.83	2.01	5.66	7.47	0.14	8.60	12.33	2.65	0.14	0.11	0.20	0.44	1.73	99.50	–	–
61-3, 90-110	611.90	HRN	AANA	–	1.64	–	–	–	8.13	–	–	11.20	2.48	–	–	–	–	–	24.35	–	–
61-3, 90-110	611.90	PRP	XRFFP	48.69	1.13	16.61	2.01	6.50	8.31	0.14	8.44	11.98	2.35	0.09	0.12	–	0.44	1.49	99.99	–	–
62-1, 10-15	617.55	RHD	XRFNA	49.30	1.09	17.15	2.10	5.93	7.82	0.16	7.93	11.63	2.70	0.08	0.08	–	–	1.75	100.02	–	0.11
62-1, 40-42	617.83	BOG	XRFAA	48.60	1.59	15.06	11.15	6.11	10.03	0.18	8.50	11.09	2.92	0.22	0.15	–	–	–	99.46	1.90	–
62-1, 40-50	617.87	PRP	XRFFP	46.43	1.61	14.89	4.94	6.39	–	0.20	8.33	11.52	2.73	0.30	–	–	–	2.37	99.71	–	–
62-1, 70-80	618.17	PRP	XRFFP	49.59	1.21	16.30	3.53	5.07	8.25	0.15	7.90	11.92	2.39	0.15	0.08	–	0.59	1.11	100.00	–	–
62-1, 80-87	618.26	BOG	XRFAA	49.60	1.18	16.30	9.05	4.93	8.15	0.15	8.10	11.98	2.44	0.12	0.11	–	–	–	99.03	1.80	–
62-1, 80-87	618.26	GH	XRFAA	49.70	1.15	16.10	3.25	5.10	8.03	0.15	8.67	11.70	2.65	0.11	0.10	0.04	0.71	0.85	100.28	–	–
63-1, 0-10	618.68	PRP	XRFFP	49.33	1.14	16.95	1.97	6.20	7.97	0.14	8.28	11.65	2.38	0.09	0.11	–	0.51	1.25	100.00	–	–
63-1, 20-23	618.85	FJ	WET	48.85	1.17	16.72	3.65	4.36	7.65	0.14	7.74	12.19	2.67	0.15	0.22	–	0.25	1.83	99.94	–	–
63-1, 42-47	619.08	RHD	XRFNA	49.60	1.12	16.47	2.68	5.56	7.97	0.17	8.18	11.59	2.54	0.09	0.09	–	–	1.78	99.92	–	0.05
63-1, 108-116	619.75	BOG	XRFAA	49.50	1.08	17.44	8.59	–	7.73	0.15	8.50	12 16	2.42	0.07	0.09	–	–	–	100.00	1 80	–
63-1, 108-116	619.75	GH	XRFAA	49.40	1.05	17.00	1.89	5.92	7.62	0.14	8.88	11.70	2.44	0.07	0.09	0.10	0.43	1.18	100.29	–	–

TABLE 20 – *Continued*

Sample	Depth (m)	Inv.	Method	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	FeO	Total Iron	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	CO_2	H_2O^-	H_2O^+	Total	LOI	S
63- 1, 108-116	619.75	PRP	XRFFP	49.53	1.08	17.53	1.97	5.77	7.54	0.13	8.13	12.07	2.14	0.09	0.09	-	0.16	1.32	100.01	-	-
63- 1, 135-142	620.02	PRP	XRFFP	49.04	1.05	16.72	3.95	4.62	8.17	0.14	8.55	11.85	2 18	0.14	0.11	-	0.93	1.07	100.35	-	-
63- 2, 80- 90	620.98	HRN	AANA	-	2.00	-	-	-	8.06	-	-	11.62	2.59	-	-	-	-	-	25.17	-	-
63- 2, 80- 90	620.98	PRP	XRFFP	49.16	1.14	16.72	3.10	5.16	7.95	0.15	8.14	12.12	2.41	0.13	0.11	-	0.53	1.13	100.00	-	-
63- 3, 75- 84	622.43	PRP	XRFFP	47.57	1.10	17.96	3.43	4.67	7.76	0.15	7.32	12.39	2.70	0.12	0.12	-	0.75	1.73	100.01	-	-
63- 3, 108-114	622.74	ZOL	WET	47.86	0.87	17.35	3 94	3.76	7.31	0.13	7.23	13.14	2.60	0.20	0.08	0.20	1.08	1.26	99.64	-	-
63- 4, 86- 93	624.03	RHD	XRFNA	48.50	1.06	17.19	3.92	4.16	7.69	0.15	7.56	11.77	2.64	0.12	0.09	-	-	2.75	99.90	-	0.00
63- 4, 115-122	624.32	PRP	XRFFP	48.04	0.87	16.86	3.51	4.00	7.16	0.14	9.09	12.19	2.29	0.09	0.11	-	0.96	1.79	99.94	-	-
64- 1, 29- 37	626.46	RHD	XRFNA	49.10	1.06	17.21	3.27	4.71	7.65	0.16	7.31	12.45	4.21	0.10	0.08	-	-	1.31	100.87	-	0.02
64- 1, 45- 54	626.63	ZOL	WET	48.35	1.02	16.88	3.21	5.15	8.04	0.15	8.27	12.39	2.60	0.18	0.11	-	0.58	1.05	100.04	-	-
64- 1, 95-100	627.11	FJ	WET	49.12	1.12	16.66	2.12	5.89	7.80	0.14	8.45	11.48	2.44	0.10	0.21	-	0.10	1.89	99.72	-	-
64- 1, 137-142	627.53	PRP	XRFFP	49.16	1.04	17.45	2.49	5.30	7.54	0.13	7.90	12.13	2.48	0.11	0.12	-	0.40	1.24	99.95	-	-
64- 2, 77- 82	628.43	PRP	XRFFP	47.71	1.10	17.17	3.29	5.25	8.21	0.14	8.30	12.38	2.60	0.11	0.12	-	0.71	1.38	100.26	-	-
64- 2, 112-117	628.78	PRP	XRFFP	45.69	1.08	15.40	3.28	5.02	7.97	0.14	8.42	11.45	2.57	0.14	0.11	-	0.47	1.13	94.90	-	-
64- 2, 116-122	628.82	BOG	XRFAA	49.30	1.10	16.91	8.85	-	7.97	0.14	8.50	12.06	2.44	0.11	0.09	-	-	-	99.50	2.00	-
64- 2, 120-132	628.89	PRP	XRFFP	48.47	1.00	16.93	3.25	4.78	7.71	0.14	8.94	11.92	2.30	0.14	0.11	-	0.60	1.40	99.98	-	-
64- 2, 127-130	628.92	FJ	PROBE	50.80	1.61	15.10	-	-	9.60	0.16	7.65	12.10	2.80	0.09	-	-	-	-	99.91	-	-
64- 3, 5- 7	629.19	PRP	XRFFP	47.60	1.58	14.75	4.48	5.97	-	0.17	8.71	10.93	2.92	0.23	-	-	-	2.37	99.71	-	-
64- 3, 48- 53	629.64	BOG	XRFAA	49.20	1.63	15.27	11.60	4.96	10.44	0.20	8.60	10.87	2.49	0.25	0.16	-	-	-	100.27	4.90	-
64- 3, 62- 67	629.78	ZOL	WET	47.26	1.49	14.87	4.59	5.87	10.00	0.17	8.26	11.39	2.90	0.25	0.15	-	1.52	1.07	99.79	-	-
64- 4, 5- 10	630.71	PRP	XRFFP	47.46	1.62	15.05	4.44	5.92	-	0.18	8.73	11.08	2 53	0.19	-	-	-	2.51	99.71	-	-
64- 4, 130-135	631.96	RHD	XRFNA	47.10	1.59	15.00	5.07	5.49	10.05	0.19	7.72	10.67	2.96	0.15	0.13	-	-	3.08	99.13	-	0.00
64-CC, 17- 21	632.23	RHD	XRFNA	48.80	1.56	15.07	3.90	6.36	9.87	0.17	8.15	10.77	2.76	0.17	0.13	-	-	2.03	99.94	-	0.08
65- 1, 81- 84	636.47	ZOL	WET	47.39	1.53	15.18	4.23	6.99	10.80	0.20	7.72	11.65	2.90	0.31	0.16	-	0.92	0.42	99.60	-	-
65- 1, 81- 86	636.48	BOG	XRFAA	48.70	1.63	15.12	11.45	-	10.31	0.20	8.20	11.23	2.72	0.23	0.15	-	-	-	99.63	2.10	-
65- 1, 94- 97	636.60	PRP	XRFFP	47.83	1.61	15.11	4.65	6.02	-	0.19	8.09	11.13	2 40	0.28	-	-	-	2.42	99.73	-	-
66- 1, 36- 41	645.56	RHD	XRFNA	48.10	1.61	15.02	3.84	6.63	10.09	0.18	8.32	10.77	2.77	0.12	0.14	-	-	2.28	99.83	-	0.05
66- 1, 145-150	646.65	PRP	XRFFP	46.80	1.63	15.01	3.56	7.17	-	0.17	8.20	11.53	3.18	0.27	-	-	-	2.20	99.72	-	-
66- 2, 66- 71	647.36	BOG	XRFAA	49.10	1.64	15.24	11.65	5.95	10.49	0.20	8.30	11.17	2.69	0.20	0.15	-	-	-	100.34	2.60	-
66- 3, 12- 16	648.31	RHD	XRFNA	47.70	1.59	14.76	4.71	5.87	10.11	0.21	7.99	10.67	2.96	0.18	0.14	-	-	2.62	99.37	-	0.00
66- 3, 71- 79	648.92	PRP	XRFFP	46.49	1.61	15.35	4.73	5.64	-	0.19	7.98	11.20	3.06	0.20	-	-	-	3.27	99.72	-	-
67- 2, 47- 50	656.69	ZOL	WET	47.72	1.53	16.11	4.93	5.63	10.07	0.17	6.14	11.67	2.90	0.29	0.16	-	1.42	0.96	99.63	-	-
67- 2, 54- 59	656.77	BOG	XRFAA	49.90	1.69	15.10	10.56	5.08	9.50	0.17	7.30	11.40	2 72	0.29	0.15	-	-	-	99.28	2.60	-
67- 2, 63- 67	656.85	PRP	XRFFP	48.36	1.70	15.09	2.13	7.41	-	0.16	7.54	11.67	3.01	0.24	-	-	-	2.39	99.70	-	-
67- 2, 138-143	657.61	ZOL	WET	46.71	1.49	15.01	2.54	8.04	10.33	0.18	8.18	10.79	3.03	0.40	0.15	0.50	2.06	1.28	100.36	-	-
67-CC, 130-135	657.80	RHD	XRFNA	48.20	1.57	14.87	2.48	7.86	10.09	0.18	8.57	10.85	2.69	0.22	0.15	-	-	1.96	99.72	-	0.08

TABLE 21[a,b]
First Transition and Rare Earth Elements in Basalts of Hole 395A

Sample	Depth (m)	Inv.	Sc	V	Cr	Co	Ni	Cu	Zn	La	Ce	Nd	Sm	Eu	Gd	Tb	Dy	Tm	Yb	Lu
4- 1, 66- 69	97.51	RHD	38.40	-	320	-	140	-	-	3.77	12.20	-	3.9100	1.400	-	1.000	-	-	3.5	0.530
4- 1, 91-103	97.81	BOG	33.70	233.0	247	29.0	124	73	50	2.30	-	-	-	1.610	-	0.750	-	-	-	-
4- 1, 91-103	97.81	BOG	-	-	-	30.7	128	-	-	-	-	-	-	-	-	-	-	-	-	-
4- 2, 56- 61	98.93	HRN	6.90	-	7	90.3	1550	-	65	0.10	0.16	<0.38	0.0210	0.015	<0.4	<0.008	<0.100	0.000	0.0	<0.025
5- 1, 100-103	107.18	BOG	37.00	270.0	272	50.0	173	77	81	3.10	-	-	-	1.330	-	0.820	-	-	-	-
5- 1, 100-103	107.18	BOG	-	-	-	50.5	197	-	-	-	-	-	-	-	-	-	-	-	-	-
6- 1, 130-134	116.74	BOG	34.20	271.0	274	50.0	177	73	84	3.30	-	-	-	1.290	-	0.710	-	-	-	-
6- 1, 130-134	116.74	BOG	-	-	-	45.6	168	-	-	-	-	-	-	-	-	-	-	-	-	-
7- 1, 76- 82	116.79	BOG	36.90	271.0	273	48.0	186	70	84	3.30	-	-	-	1.400	-	0.820	-	-	-	-
7- 1, 76- 82	116.79	BOG	-	-	-	49.0	178	-	-	-	-	-	-	-	-	-	-	-	-	-
7- 1, 76- 82	116.79	GH	-	270.0	255	33.0	164	55	90	-	-	-	-	-	-	-	-	-	-	-
8- 1, 50- 52	125.60	BOG	37.10	265.0	264	49.0	178	72	87	3.20	-	-	-	1.450	-	0.830	-	-	-	-
8- 1, 50- 52	125.60	BOG	-	-	-	48.8	184	-	-	-	-	-	-	-	-	-	-	-	-	-
8- 1, 50- 52	125.60	GH	-	280.0	275	55.0	160	75	95	-	-	-	-	-	-	-	-	-	-	-
8- 1, 70- 73	125.81	RHD	37.90	-	300	-	140	-	-	3.18	11.10	-	3.7200	1.390	-	0.950	-	-	3.6	0.520
9- 2, 18- 21	136.32	BOG	37.10	271.0	269	50.0	193	72	83	3.20	-	-	-	1.460	-	0.850	-	-	-	-
9- 2, 18- 21	136.32	BOG	-	-	-	48.7	185	-	-	-	-	-	-	-	-	-	-	-	-	-
10- 1, 144-146	145.47	RHD	37.10	-	300	-	150	-	-	3.31	9.80	-	3.6800	1.340	-	0.950	-	-	3.7	0.560
11- 1, 117-129	154.76	BOG	37.50	270.0	268	50.0	176	73	86	3.40	-	-	-	1.420	-	0.880	-	-	-	-
11- 1, 117-129	154.76	BOG	-	-	-	49.7	184	-	-	-	-	-	-	-	-	-	-	-	-	-
13- 1, 105-111	173.52	BOG	33.10	241.0	232	40.0	134	62	69	2.90	-	-	-	1.290	-	0.700	-	-	-	-
13- 1, 105-111	173.52	BOG	-	-	-	44.0	128	-	-	-	-	-	-	-	-	-	-	-	-	-
14- 1, 92- 99	182.94	BOG	32.90	234.0	236	39.0	88	60	64	3.00	-	-	-	1.220	-	0.680	-	-	-	-
14- 1, 92- 99	182.94	BOG	-	-	-	38.0	104	-	-	-	-	-	-	-	-	-	-	-	-	-
14- 2, 98-112	184.53	BOG	32.80	232.0	228	36.0	89	59	63	2.90	-	-	-	1.240	-	0.710	-	-	-	-
14- 2, 98-112	184.53	BOG	32.20	234.0	236	38.0	110	61	65	2.90	-	-	-	1.260	-	0.660	-	-	-	-
14- 2, 98-112	184.53	BOG	-	-	-	39.5	105	-	-	-	-	-	-	-	-	-	-	-	-	-
14- 2, 98-112	184.53	BOG	-	-	-	38.3	99	-	-	-	-	-	-	-	-	-	-	-	-	-
14- 2, 125-134	184.78	HRN	34.10	-	228	77.7	100	-	88	3.00	8.80	9.20	3.1800	1.190	4.2	0.700	5.300	0.520	2.7	0.540
14- 2, 140-147	184.92	RHD	31.10	-	220	-	87	-	-	2.93	9.50	-	3.2000	1.170	-	0.820	-	-	3.0	0.450
15- 1, 93-102	192.47	BOG	32.10	229.0	234	37.0	98	61	63	3.04	-	-	-	1.210	-	0.690	-	-	-	-
15- 1, 93-102	192.47	BOG	-	-	-	38.4	99	-	-	-	-	-	-	-	-	-	-	-	-	-
15- 2, 102-108	194.04	BOG	32.50	236.0	230	36.0	93	59	61	3.00	-	-	-	1.210	-	0.680	-	-	-	-
15- 2, 102-108	194.04	BOG	-	-	-	37.3	94	-	-	-	-	-	-	-	-	-	-	-	-	-
15- 3, 128-142	195.84	BOG	32.30	239.0	228	37.0	91	62	65	3.10	-	-	-	1.270	-	0.670	-	-	-	-
15- 3, 128-142	195.84	BOG	-	-	-	39.1	106	-	-	-	-	-	-	-	-	-	-	-	-	-
15- 3, 128-142	195.84	GH	-	230.0	205	50.0	100	14	75	-	-	-	-	-	-	-	-	-	-	-
15- 4, 10- 15	196.12	RHD	31.50	-	290	-	83	-	-	2.79	9.20	-	3.0500	1.160	-	0.710	-	-	2.7	0.420
15- 4, 10- 15	196.12	RHD	32.60	-	250	-	90	-	-	2.95	9.70	-	3.2600	1.200	-	0.760	-	-	2.8	0.460
15- 5, 0- 11	197.55	BOG	28.10	202.0	252	37.0	95	59	51	2.40	-	-	-	1.060	-	0.580	-	-	-	-
15- 5, 0- 11	197.55	BOG	-	-	-	35.9	104	-	-	-	-	-	-	-	-	-	-	-	-	-
15- 5, 0- 11	197.55	GH	-	210.0	210	41.0	75	10	65	-	-	-	-	-	-	-	-	-	-	-
15- 5, 16- 20	197.67	RHD	29.00	-	300	-	70	-	-	2.40	7.80	-	2.6800	1.030	-	0.690	-	-	2.4	0.360
15- 5, 16- 20	197.67	RHD	28.20	-	260	-	100	-	-	2.42	8.00	-	2.6600	1.010	-	0.640	-	-	2.4	0.370
16- 1, 69- 74	201.71	BOG	-	240.0	226	37.0	104	63	63	-	-	-	-	-	-	-	-	-	-	-
16- 1, 90- 98	201.93	BOG	30.90	220.0	342	38.0	134	63	58	2.20	-	-	-	0.930	-	0.540	-	-	-	-
16- 1, 90- 98	201.93	BOG	-	-	-	39.9	136	-	-	-	-	-	-	-	-	-	-	-	-	-
16- 1, 100-104	202.01	BOG	32.40	221.0	362	39.0	144	70	59	2.20	-	-	-	1.010	-	0.570	-	-	-	-
16- 1, 100-104	202.01	BOG	-	-	-	42.7	156	-	-	-	-	-	-	-	-	-	-	-	-	-
17- 1, 46- 55	211.02	RHD	-	-	411	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17- 1, 115-124	211.72	BOG	32.00	220.0	348	38.0	144	63	53	3.20	-	-	-	1.010	-	0.560	-	-	-	-
17- 1, 115-124	211.72	BOG	-	-	-	40.5	146	-	-	-	-	-	-	-	-	-	-	-	-	-
18- 1, 140-146	221.22	BOG	30.90	224.0	344	40.0	136	68	63	2.00	-	-	-	0.930	-	0.540	-	-	-	-
18- 1, 140-146	221.22	BOG	-	-	-	39.7	133	-	-	-	-	-	-	-	-	-	-	-	-	-
19- 1, 132-136	230.68	RHD	32.50	-	377	-	110	-	-	2.02	6.70	-	2.3800	0.910	-	0.660	-	-	2.4	0.360
20- 1, 43- 45	232.34	BOG	32.40	223.0	358	39.0	141	63	63	2.02	-	-	-	1.000	-	0.560	-	-	-	-
20- 1, 43- 45	232.34	BOG	-	-	-	41.4	144	-	-	-	-	-	-	-	-	-	-	-	-	-
21- 1, 87- 90	242.33	RHD	32.40	-	380	-	130	-	-	2.07	6.80	-	2.4500	0.930	-	0.620	-	-	2.4	0.370
22- 1, 87- 92	251.86	BOG	30.40	223.0	354	39.0	152	68	58	1.81	-	-	-	0.920	-	0.520	-	-	-	-
22- 1, 87- 92	251.86	BOG	-	-	-	39.5	149	-	-	-	-	-	-	-	-	-	-	-	-	-
22- 1, 87- 92	251.86	GH	-	200.0	310	47.0	145	65	70	-	-	-	-	-	-	-	-	-	-	-
22- 2, 72- 76	253.21	BOG	33.40	237.0	368	40.0	137	73	64	2.10	-	-	-	0.990	-	0.560	-	-	-	-
22- 2, 72- 76	253.21	BOG	-	-	-	42.1	145	-	-	-	-	-	-	-	-	-	-	-	-	-
22- 2, 72- 76	253.21	GH	-	240.0	360	44.0	125	48	70	-	-	-	-	-	-	-	-	-	-	-
23- 1, 65- 68	261.04	BOG	32.10	228.0	367	38.0	124	72	64	2.22	-	-	-	1.020	-	0.570	-	-	-	-
23- 1, 65- 68	261.04	BOG	-	-	-	39.2	129	-	-	-	-	-	-	-	-	-	-	-	-	-
23- 1, 117-122	261.57	BOG	31.30	218.0	375	40.0	147	67	66	2.30	-	-	-	1.050	-	0.550	-	-	-	-
23- 1, 117-122	261.57	BOG	-	-	-	40.3	151	-	-	-	-	-	-	-	-	-	-	-	-	-
23- 1, 145-147	261.83	BOG	30.90	263.0	279	40.0	149	66	68	2.10	-	-	-	1.010	-	0.550	-	-	-	-
23- 1, 145-147	261.83	BOG	-	-	-	41.8	169	-	-	-	-	-	-	-	-	-	-	-	-	-
24- 1, 125-129	271.15	BOG	32.00	225.0	229	37.0	136	67	61	2.40	-	-	-	0.990	-	0.560	-	-	-	-
24- 1, 125-129	271.15	BOG	-	-	-	41.2	146	-	-	-	-	-	-	-	-	-	-	-	-	-
25- 1, 36- 43	279.81	HRN	33.40	-	315	92.7	180	-	165	2.10	7.50	9.90	2.6100	1.010	3.2	0.570	3.800	0.350	2.3	0.420
25- 1, 38- 43	279.82	GH	-	270.0	310	90.0	135	60	50	-	-	-	-	-	-	-	-	-	-	-
25- 1, 96-100	280.39	RHD	33.00	-	340	-	150	-	-	2.41	8.10	-	2.7700	1.060	-	0.720	-	-	2.5	0.400
26- 1, 129-133	290.10	BOG	32.10	224.0	315	41.0	127	67	60	2.21	-	-	-	1.030	-	0.580	-	-	-	-
26- 1, 129-133	290.10	BOG	-	-	-	39.3	130	-	-	-	-	-	-	-	-	-	-	-	-	-
26- 2, 24- 33	290.58	GH	-	210.0	410	95.0	165	65	45	-	-	-	-	-	-	-	-	-	-	-
26- 2, 125-129	291.56	RHD	-	-	274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27- 1, 127-131	299.62	BOG	33.00	224.0	314	40.0	129	71	72	2.32	-	-	-	1.060	-	0.580	-	-	-	-

[a]See footnote a, Table 17.

[b]Fe, Mn, and Ti listed as oxides in Table 20.

TABLE 21 – *Continued*

Sample	Depth (m)	Inv.	Sc	V	Cr	Co	Ni	Cu	Zn	La	Ce	Nd	Sm	Eu	Gd	Tb	Dy	Tm	Yb	Lu
27- 1, 127-131	299.62	BOG	-	-	-	43.1	150	-	-	-	-	-	-	-	-	-	-	-	-	-
27- 1, 127-131	299.62	GH	-	200.0	285	49.0	110	28	70	-	-	-	-	-	-	-	-	-	-	-
27- 2, 111-116	300.97	RHD	33.50	-	340	-	130	-	-	2.33	7.20	-	2.7200	1.040	-	0.600	-	-	2.7	0.400
28- 1, 116-122	309.03	BOG	28.90	206.0	284	38.0	148	57	69	2.60	-	-	-	1.070	-	0.570	-	-	-	-
28- 1, 116-122	309.03	BOG	-	-	-	38.7	144	-	-	-	-	-	-	-	-	-	-	-	-	-
28- 1, 116-122	309.03	RHD	-	-	274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29- 1, 119-122	318.55	BOG	31.30	215.0	295	38.0	127	57	65	2.70	-	-	-	1.140	-	0.640	-	-	-	-
29- 1, 119-122	318.55	BOG	-	-	-	38.1	140	-	-	-	-	-	-	-	-	-	-	-	-	-
30- 1, 82- 87	327.72	BOG	30.80	202.0	293	38.0	142	63	63	2.50	-	-	-	1.080	-	0.580	-	-	-	-
30- 1, 82- 87	327.72	BOG	-	-	-	41.4	169	-	-	-	-	-	-	-	-	-	-	-	-	-
31- 1, 63- 67	336.71	BOG	29.90	200.0	208	38.0	134	59	66	2.40	-	-	-	1.060	-	0.570	-	-	-	-
31- 1, 63- 67	336.71	BOG	-	-	-	38.9	140	-	-	-	-	-	-	-	-	-	-	-	-	-
31- 1, 70- 76	336.79	BOG	29.90	200.0	288	37.0	131	59	60	2.30	-	-	-	1.080	-	0.560	-	-	-	-
31- 1, 70- 76	336.79	BOG	-	-	-	39.3	144	-	-	-	-	-	-	-	-	-	-	-	-	-
31- 1, 96-107	337.08	RHD	32.30	-	310	-	140	-	-	2.48	8.10	-	2.8200	1.060	-	0.670	-	-	2.7	0.410
32- 1, 54- 62	346.04	BOG	27.60	232.0	299	35.0	165	49	48	2.11	-	-	-	0.950	-	0.510	-	-	-	-
32- 1 54- 62	346.04	BOG	30.90	193.0	255	36.0	111	59	59	2.40	-	-	-	1.070	-	0.580	-	-	-	-
32- 1, 54- 62	346.04	BOG	-	-	-	35.5	145	-	-	-	-	-	-	-	-	-	-	-	-	-
32- 1, 54- 62	346.04	BOG	-	-	-	38.3	116	-	-	-	-	-	-	-	-	-	-	-	-	-
32- 2, 56- 63	347.56	BOG	29.20	200.0	260	36.0	121	62	62	2.30	-	-	-	1.020	-	0.540	-	-	-	-
32- 2, 56- 63	347.56	BOG	-	-	-	36.8	134	-	-	-	-	-	-	-	-	-	-	-	-	-
33- 2, 9- 13	355.61	BOG	30.10	218.0	304	37.0	135	62	61	2.20	-	-	-	1.020	-	0.570	-	-	-	-
33- 2, 9- 13	355.61	BOG	-	-	-	38.9	135	-	-	-	-	-	-	-	-	-	-	-	-	-
33- 2, 9- 13	355.61	GH	-	180.0	240	44.0	135	60	70	-	-	-	-	-	-	-	-	-	-	-
33- 2, 127-129	356.78	BOG	38.20	303.0	258	43.0	114	59	79	4.30	-	-	-	1.500	-	0.850	-	-	-	-
33- 2, 127-129	356.78	BOG	-	-	-	43.2	118	-	-	-	-	-	-	-	-	-	-	-	-	-
34- 1, 140-143	364.95	RHD	38.50	-	280	-	110	-	-	3.82	11.70	-	4.1000	1.430	-	0.990	-	-	3.7	0.560
35- 1, 53- 54	373.47	BOG	39.40	311.0	260	43.0	113	61	79	4.00	-	-	-	1.550	-	0.910	-	-	-	-
35- 1, 53- 54	373.47	BOG	-	-	-	43.5	123	-	-	-	-	-	-	-	-	-	-	-	-	-
37- 1, 136-141	393.36	BOG	38.30	308.0	260	45.0	121	56	76	4.40	-	-	-	1.500	-	0.850	-	-	-	-
37- 1, 136-141	393.36	BOG	-	-	-	44.3	122	-	-	-	-	-	-	-	-	-	-	-	-	-
39- 1, 102-107	411.94	BOG	40.70	304.0	251	41.0	128	57	84	4.00	-	-	-	1.510	-	0.850	-	-	-	-
39- 1, 102-107	411.94	BOG	-	-	-	43.3	128	-	-	-	-	-	-	-	-	-	-	-	-	-
41- 1, 107-111	429.14	RHD	38.70	-	290	-	100	-	-	3.70	12.30	-	4.0900	1.470	-	1.050	-	-	3.6	0.550
41- 1, 142-144	429.48	BOG	39.10	303.0	249	43.0	121	57	81	4.00	-	-	-	1.550	-	0.930	-	-	-	-
41- 1, 142-144	429.48	BOG	-	-	-	44.7	119	-	-	-	-	-	-	-	-	-	-	-	-	-
42- 1, 86- 89	438.44	BOG	38.80	302.0	243	44.0	115	61	81	4.00	-	-	-	1.520	-	0.920	-	-	-	-
42- 1, 86- 89	438.44	BOG	-	-	-	43.2	114	-	-	-	-	-	-	-	-	-	-	-	-	-
45- 1, 124-127	467.27	BOG	38.90	308.0	243	44.0	111	54	92	4.20	-	-	-	1.550	-	0.900	-	-	-	-
45- 1, 124-127	467.27	BOG	-	-	-	43.7	116	-	-	-	-	-	-	-	-	-	-	-	-	-
47- 1, 63- 67	485.63	BOG	38.40	302.0	258	42.0	119	56	80	4.00	-	-	-	1.430	-	0.870	-	-	-	-
47- 1, 63- 67	485.63	BOG	-	-	-	42.2	117	-	-	-	-	-	-	-	-	-	-	-	-	-
48- 1, 135-140	495.73	BOG	38.30	302.0	250	42.0	120	57	90	4.10	-	-	-	1.480	-	0.870	-	-	-	-
48- 1, 135-140	495.73	BOG	-	-	-	44.0	120	-	-	-	-	-	-	-	-	-	-	-	-	-
49- 1, 26- 31	504.16	RHD	38.80	-	290	-	40	-	-	4.14	12.50	-	4.2800	1.450	-	1.090	-	-	3.8	0.560
49- 2, 13- 17	505.52	BOG	39.50	305.0	257	45.0	118	59	86	4.10	-	-	-	1.600	-	0.900	-	-	-	-
49- 2, 13- 17	505.52	BOG	-	-	-	44.5	252	-	-	-	-	-	-	-	-	-	-	-	-	-
51- 2, 41- 44	524.89	BOG	37.90	302.0	251	41.0	119	60	90	3.90	-	-	-	1.490	-	0.890	-	-	-	-
51- 2, 41- 44	524.89	BOG	-	-	-	42.8	116	-	-	-	-	-	-	-	-	-	-	-	-	-
52- 1, 48- 53	532.75	BOG	38.30	305.0	251	42.0	118	61	116	4.00	-	-	-	1.520	-	0.900	-	-	-	-
52- 1, 48- 53	532.75	BOG	-	-	-	42.6	115	-	-	-	-	-	-	-	-	-	-	-	-	-
52- 2, 75- 80	534.52	RHD	37.80	-	280	-	120	-	-	3.81	12.10	-	4.3300	1.360	-	1.020	-	-	3.9	0.590
53- 1, 7- 11	541.60	BOG	38.20	309.0	241	40.0	119	56	92	3.90	-	-	-	1.530	-	0.880	-	-	-	-
53- 1, 7- 11	541.60	BOG	-	-	-	42.6	118	-	-	-	-	-	-	-	-	-	-	-	-	-
54- 1, 48- 51	545.00	BOG	38.30	314.0	245	41.0	111	57	83	4.00	-	-	-	1.510	-	0.900	-	-	-	-
54- 1, 48- 51	545.00	BOG	-	-	-	43.4	114	-	-	-	-	-	-	-	-	-	-	-	-	-
55- 1, 49- 54	551.54	BOG	38.90	312.0	249	44.0	116	57	92	4.10	-	-	-	1.550	-	0.910	-	-	-	-
55- 1, 49- 54	551.54	BOG	-	-	-	44.3	118	-	-	-	-	-	-	-	-	-	-	-	-	-
56- 2, 75- 81	562.83	BOG	-	311.0	246	43.0	102	57	103	-	-	-	-	-	-	-	-	-	-	-
56- 3, 62- 65	564.18	RHD	38.30	-	260	-	120	-	-	4.24	12.60	-	4.2000	1.510	-	1.060	-	-	3.9	0.580
56- 3, 62- 65	564.18	RHD	-	-	205	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57- 1, 40- 43	570.49	RHD	36.70	-	340	-	170	-	-	3.34	10.40	-	3.6700	1.340	-	0.930	-	-	3.3	0.530
57- 1, 125-131	571.36	BOG	37.40	288.0	302	47.0	163	63	83	3.60	-	-	-	1.420	-	0.820	-	-	-	-
57- 1, 125-131	571.36	BOG	-	-	-	48.2	177	-	-	-	-	-	-	-	-	-	-	-	-	-
57- 1, 125-131	571.36	GH	-	270.0	305	43.0	160	70	90	-	-	-	-	-	-	-	-	-	-	-
58- 2, 115-122	582.16	BOG	-	273.0	294	45.0	169	62	79	-	-	-	-	-	-	-	-	-	-	-
59- 2, 65- 69	591.16	BOG	36.60	279.0	298	46.0	177	69	83	3.40	-	-	-	1.430	-	0.800	-	-	-	-
59- 2, 65- 69	591.16	BOG	-	-	-	47.5	182	-	-	-	-	-	-	-	-	-	-	-	-	-
60- 3, 137-143	602.93	BOG	36.90	285.0	206	48.0	174	68	81	3.40	-	-	-	1.380	-	0.810	-	-	-	-
60- 3, 137-143	602.93	BOG	-	-	-	46.9	171	-	-	-	-	-	-	-	-	-	-	-	-	-
61- 1, 142-150	609.36	RHD	35.60	-	320	-	110	-	-	2.24	8.20	-	2.8100	1.080	-	0.720	-	-	2.5	0.380
61- 2, 37- 45	609.81	BOG	32.40	238.0	219	39.0	133	69	65	2.20	-	-	-	1.080	-	0.580	-	-	-	-
61- 2, 37- 45	609.81	BOG	-	-	-	40.8	137	-	-	-	-	-	-	-	-	-	-	-	-	-
61- 2, 37- 45	609.81	GH	-	220.0	75	40.0	90	6	70	-	-	-	-	-	-	-	-	-	-	-
61- 3, 90-110	611.90	HRN	34.30	-	334	92.8	130	-	105	2.20	7.50	8.80	2.6300	1.020	3.1	0.560	3.800	0.430	2.3	0.440
62- 1, 40- 42	617.83	BOG	36.50	282.0	316	48.0	179	69	90	3.50	-	-	-	1.370	-	0.800	-	-	-	-
62- 1, 40- 42	617.83	BOG	-	-	-	48.7	183	-	-	-	-	-	-	-	-	-	-	-	-	-
62- 1, 80- 87	618.26	BOG	33.20	251.0	308	38.0	116	68	64	2.35	-	-	-	1.090	-	0.610	-	-	-	-
62- 1 80- 87	618.26	BOG	-	-	-	41.0	133	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 21 – *Continued*

Sample	Depth (m)	Inv.	Sc	V	Cr	Co	Ni	Cu	Zn	La	Ce	Nd	Sm	Eu	Gd	Tb	Dy	Tm	Yb	Lu
62- 1, 80- 87	618.26	GH	-	230.0	285	50.0	115	65	70	-	-	-	-	-	-	-	-	-	-	-
63- 1, 20- 23	618.85	FJ	-	-	294	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-
63- 1, 108-116	619.75	BOG	29.70	211.0	362	38.0	129	61	69	2.02	-	-	-	0.940	-	0.520	-	-	-	-
63- 1, 108-116	619.75	BOG	-	-	-	37.6	140	-	-	-	-	-	-	-	-	-	-	-	-	-
63- 1, 108-116	619.75	GH	-	210.0	315	55.0	105	14	60	-	-	-	-	-	-	-	-	-	-	-
63- 2, 80- 90	620.98	HRN	34.80	-	360	77.2	180	-	110	2.40	8.30	7.20	2.7300	1.030	3.4	0.590	4.200	0.430	2 3	0.450
63- 4, 86- 93	624.03	RHD	30.60	-	380	-	140	-	-	2.30	8.40	-	2.9300	1.080	-	0.720	-	-	2.6	0.430
64- 1, 95-100	627.11	FJ	-	-	308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64- 2, 116-122	628.82	BOG	31.60	217.0	330	39.0	144	61	63	2.10	-	-	-	1.020	-	0.560	-	-	-	-
64- 2, 116-122	628.82	BOG	-	-	-	41.0	149	-	-	-	-	-	-	-	-	-	-	-	-	-
64- 3, 48- 53	629.64	BOG	36.40	267.0	294	47.0	180	57	82	3.70	-	-	-	1.370	-	0.820	-	-	-	-
64- 3, 48- 53	629.64	BOG	-	-	-	47.4	181	-	-	-	-	-	-	-	-	-	-	-	-	-
65- 1, 81- 86	636.48	BOG	36.90	277.0	298	47.0	170	62	86	3.60	-	-	-	1.420	-	0.820	-	-	-	-
65- 1, 81- 86	636.48	BOG	-	-	-	48.0	177	-	-	-	-	-	-	-	-	-	-	-	-	-
66- 1, 36- 41	645.56	RHD	36.70	-	320	-	140	-	-	3.18	10.30	-	3.5600	1.390	-	0.990	-	-	3.2	0.470
66- 2, 66- 71	647.36	BOG	37.10	275.0	295	45.0	158	62	87	3.50	-	-	-	1.400	-	0.830	-	-	-	-
66- 2, 66- 71	647.36	BOG	-	-	-	46.9	171	-	-	-	-	-	-	-	-	-	-	-	-	-
67- 2, 54- 59	656.77	BOG	37.80	297.0	263	44.0	139	54	83	4.00	-	-	-	1.460	-	0.870	-	-	-	-
67- 2, 54- 59	656.77	BOG	-	-	-	43.8	131	-	-	-	-	-	-	-	-	-	-	-	-	-
67-CC, 130-135	657.80	RHD	36.60	-	330	-	140	-	-	3.37	10.60	-	3.6700	1.330	-	0.940	-	-	3.6	0.500

TABLE 22[a]
Trace Elements in Basalts of Hole 395A

Sample	Depth (m)	Inv.	B	Li	Be	Rb	Sr	Cs	Ba	Th	U	Y	Zr	Hf	Nb	Ta	Au	Sb
4- 1, 66- 69	97.51	RHD	–	–	–	2.6	131	–	–	–	–	36	119	3.000	2.3	–	–	–
4- 1, 91-103	97.81	BOG	–	–	–	2.1	178	0.215	–	0.0230	–	–	36	1.170	–	0.034	–	0.030
4- 1, 91-103	97.81	BOG	–	–	–	–	–	–	–	–	–	–	59	–	–	–	–	–
4- 2, 56- 61	98.93	HRN	–	–	–	<7.0	< 5	<0.220	<35	<0.1200	0.43	–	–	<0.030	–	2.350	0.027	0.140
4- 2, 56- 61	98.93	PRP	–	–	–	9.0	7	–	–	–	–	–	91	–	–	–	–	–
5- 1, 6- 10	106.24	RHD	–	–	–	3.3	129	–	–	–	–	35	113	–	1.9	–	–	–
5- 1, 100-103	107.18	BOG	–	–	–	<1.8	121	0.038	–	0.1490	–	–	113	2 850	–	0.189	–	0.020
5- 1, 100-103	107.18	BOG	–	–	–	–	–	–	–	–	–	–	123	–	–	–	–	–
5- 1, 115-120	107.34	PRP	–	–	–	5.0	126	–	–	–	–	–	139	–	–	–	–	–
6- 1, 120-134	116.69	RHD	–	–	–	3.0	118	–	–	–	–	34	104	–	2.0	–	–	–
6- 1, 130-134	116.74	BOG	–	–	–	1.9	122	0.040	–	0.1290	–	–	107	2.520	–	0.174	–	0.012
6- 1, 130-134	116.74	BOG	–	–	–	–	–	–	–	–	–	–	105	–	–	–	–	–
7- 1, 76- 82	116.79	BOG	–	–	–	2.3	122	0.100	–	0.1360	–	–	111	2.720	–	0.197	–	–
7- 1, 76- 82	116.79	BOG	–	–	–	–	–	–	–	–	–	–	105	–	–	–	–	–
7- 1, 76- 82	116.79	GH	3	6	< 2	<5.0	105	–	<50	–	–	39	120	–	6.0	–	–	–
8- 1, 50- 52	125.60	BOG	–	–	–	2.7	117	0.018	–	0.1310	–	–	111	2.850	–	0.196	–	0.043
8- 1, 50- 52	125.60	BOG	–	–	–	–	–	–	–	–	–	–	104	–	–	–	–	–
8- 1, 50- 52	125.60	GH	1	9	< 2	<5.0	115	–	<50	–	–	35	110	–	<5.0	–	–	–
8- 1, 70- 73	125.81	RHD	–	–	–	1.6	119	–	–	–	–	35	104	3.000	2 0	–	–	–
8- 1, 127-135	126.40	PRP	–	–	–	4.0	122	–	–	–	–	–	168	–	–	–	–	–
9- 1, 73- 79	135.38	RHD	–	–	–	1.5	118	–	–	–	–	35	103	–	1.7	–	–	–
9- 2, 17- 28	136.35	PRP	–	–	–	8.0	121	–	–	–	–	–	140	–	–	–	–	–
9- 2, 18- 21	136.32	BOG	–	–	–	3.2	120	0.021	–	0.1240	–	–	112	2.870	–	0.190	–	0.102
9- 2, 18- 21	136.32	BOG	–	–	–	–	–	–	–	–	–	–	115	–	–	–	–	–
9- 2, 100-104	137.14	RHD	–	–	–	1.3	114	–	–	–	–	36	106	–	1.6	–	–	–
10- 1, 144-146	145.47	RHD	–	–	–	1.3	115	–	–	–	–	32	103	2.900	2.1	–	–	–
11- 1, 56- 66	154.14	PRP	–	–	–	3.0	127	–	–	–	–	–	134	–	–	–	–	–
11- 1, 56- 66	154.14	PRP	–	–	–	7.0	143	–	–	–	–	–	145	–	–	–	–	–
11- 1, 117-129	154.76	BOG	–	–	–	2.2	124	0.036	–	0.1100	–	–	108	2.910	–	0.187	–	0.012
11- 1, 117-129	154.76	BOG	–	–	–	–	–	–	–	–	–	–	143	–	–	–	–	–
13- 1, 88- 93	173.35	PRP	–	–	–	5.0	150	–	–	–	–	–	115	–	–	–	–	–
13- 1, 105-111	173.52	BOG	–	–	–	2.9	165	0.120	–	0.1070	–	–	98	2.470	–	0.171	–	–
13- 1, 105-111	173.52	BOG	–	–	–	–	–	–	–	–	–	–	109	–	–	–	–	–
13- 1, 142-147	173.89	RHD	–	–	–	1.1	153	–	–	–	–	29	87	–	1.7	–	–	–
14- 1, 87- 99	182.91	PRP	–	–	–	5.0	150	–	–	–	–	–	120	–	–	–	–	–
14- 1, 92- 99	182.94	BOG	–	–	–	<1.3	160	0.048	–	0.1170	–	–	97	2.390	–	0.163	–	0.017
14- 1, 92- 99	182.94	BOG	–	–	–	–	–	–	–	–	–	–	109	–	–	–	–	–
14- 2, 98-112	184.53	BOG	–	–	–	3.7	162	0.175	–	0.1310	–	–	95	2.480	–	0.162	–	0.042
14- 2, 98-112	184.53	BOG	–	–	–	<0.9	171	0.020	–	0.1170	–	–	99	8.290	–	0.160	–	0.008
14- 2, 98-112	184.53	BOG	–	–	–	–	–	–	–	–	–	–	125	–	–	–	–	–
14- 2, 98-112	184.53	BOG	–	–	–	–	–	–	–	–	–	–	106	–	–	–	–	–
14- 2, 125-134	184.78	HRN	–	–	–	<6.0	160	<0.250	<55	0.2000	<0.12	–	–	2.040	–	0.310	0.000	<0.030
14- 2, 125-134	184.78	PRP	–	–	–	4.0	150	–	–	–	–	–	128	–	–	–	–	–
14- 2, 140-147	184.92	RHD	–	–	–	0.9	152	–	–	–	–	27	87	2.400	1.2	–	–	–
14- 3, 29- 34	185.30	RHD	–	–	–	0.5	152	–	–	–	–	27	86	–	1.9	–	–	–
15- 1, 46- 55	192.00	PRP	–	–	–	8.0	150	–	–	–	–	–	113	–	–	–	–	–
15- 1, 75- 81	192.27	RHD	–	–	–	1.0	155	–	–	–	–	30	95	–	1.4	–	–	–
15- 1, 93-102	192.47	BOG	–	–	–	1.7	160	0.055	–	0.1040	–	–	100	2.260	–	0.160	–	–
15- 1, 93-102	192.47	BOG	–	–	–	–	–	–	–	–	–	–	95	–	–	–	–	–
15- 2, 102-108	194.04	BOG	–	–	–	<1.8	155	0.030	–	0.1290	–	–	97	2.290	–	0.155	–	0.012
15- 2, 102-108	194.04	BOG	–	–	–	–	–	–	–	–	–	–	88	–	–	–	–	–
15- 3, 128-142	195.84	BOG	–	–	–	<1.8	160	0.057	–	0.1360	–	–	97	2.380	–	0.157	–	0.012
15- 3, 128-142	195.84	BOG	–	–	–	–	–	–	–	–	–	–	102	–	–	–	–	–
15- 3, 128-142	195.84	GH	3	7	< 2	<5.0	140	–	<50	–	–	28	95	–	6.0	–	–	–
15- 4, 10- 15	196.12	RHD	–	–	–	1.3	156	–	–	–	–	29	91	2.400	1.4	–	–	–
15- 4, 10- 15	196.12	RHD	–	–	–	1.0	152	–	–	–	–	29	93	2.600	1.8	–	–	–
15- 4, 86- 91	196.88	PRP	–	–	–	10.0	147	–	–	–	–	–	125	–	–	–	–	–
15- 4, 99-107	197.02	RHD	–	–	–	0.5	154	–	–	–	–	28	89	–	1.7	–	–	–
15- 5, 0- 11	197.55	BOG	–	–	–	<1.5	158	0.025	–	0.1070	–	–	84	2.040	–	0.138	–	0.010
15- 5, 0- 11	197.55	BOG	–	–	–	–	–	–	–	–	–	–	92	–	–	–	–	–
15- 5, 0- 11	197.55	GH	8	7	< 2	<5.0	140	–	<50	–	–	32	75	–	0.0	–	–	–
15- 5, 0- 11	197.55	PRP	–	–	–	<1.0	144	–	–	–	–	–	92	–	–	–	–	–
15- 5, 16- 20	197.67	RHD	–	–	–	0.6	153	–	–	–	–	24	76	1.900	0.7	–	–	–
15- 5, 16- 20	197.67	RHD	–	–	–	–	–	–	–	–	–	–	–	2.100	–	–	–	–
16- 1, 69- 74	201.71	BOG	–	–	–	–	202	–	–	–	–	–	93	–	–	–	–	–
16- 1, 90- 98	201.93	BOG	–	–	–	2.6	115	0.010	–	0.0830	–	–	66	1.740	–	0.114	–	0.186
16- 1, 90- 98	201.93	BOG	–	–	–	–	–	–	–	–	–	–	77	–	–	–	–	–
16- 1 100-104	202.01	BOG	–	–	–	2.2	115	0.068	–	0.0840	–	–	66	1.760	–	0.111	–	0.048

[a]See footnote a, Table 17.

TABLE 22 – *Continued*

Sample	Depth (m)	Inv.	B	Li	Be	Rb	Sr	Cs	Ba	Th	U	Y	Zr	Hf	Nb	Ta	Au	Sb
16- 1, 100-104	202.01	BOG	-	-	-	-	-	-	-	-	-	-	69	-	-	-	-	-
16- 1, 120-125	202.22	PRP	-	-	-	6.0	110	-	-	-	-	-	76	-	-	-	-	-
16- 1, 143-147	202 44	PRP	-	-	-	4.0	114	-	-	-	-	-	96	-	-	-	-	-
17- 1, 46- 55	211.02	PRP	-	-	-	8.0	111	-	-	-	-	-	86	-	-	-	-	-
17- 1, 46- 55	211.02	PRP	-	-	-	7.0	116	-	-	-	-	-	91	-	-	-	-	-
17- 1, 46- 55	211.02	RHD	-	-	-	1.9	119	-	-	-	-	24	65	-	0.9	-	-	-
17- 1, 69- 75	211.24	PRP	-	-	-	7.0	118	-	-	-	-	-	120	-	-	-	-	-
17- 1, 115-124	211.72	BOG	-	-	-	2.0	122	0.130	-	0.1030	-	-	67	1.800	-	0.113	-	0.020
17- 1, 115-124	211.72	BOG	-	-	-	-	-	-	-	-	-	-	82	-	-	-	-	-
18- 1, 140-146	221.22	BOG	-	-	-	2.5	118	0.128	-	0.0740	-	-	64	1.700	-	0.113	-	0.071
18- 1, 140-146	221.22	BOG	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-
19- 1, 132-136	230.68	RHD	-	-	-	2.1	110	-	-	-	-	23	64	1.900	1.2	-	-	-
20- 1, 43- 45	232.34	BOG	-	-	-	2.6	117	0.043	-	0.0910	-	-	69	1.750	-	0.115	-	0.055
20- 1, 43- 45	232.34	BOG	-	-	-	-	-	-	-	-	-	-	74	-	-	-	-	-
21- 1, 87- 90	242.33	RHD	-	-	-	1.7	112	-	-	-	-	22	60	1.900	1.5	-	-	-
21- 1, 112-123	242.62	PRP	-	-	-	5.0	116	-	-	-	-	-	110	-	-	-	-	-
22- 1, 87- 92	251.86	BOG	-	-	-	2.1	115	0.132	-	0.0670	-	-	70	1.630	-	0.103	-	-
22- 1, 87- 92	251.86	BOG	-	-	-	-	-	-	-	-	-	-	64	-	-	-	-	-
22- 1, 87- 92	251.86	GH	9	25	< 2	<5.0	110	-	<50	-	-	31	60	-	<5.0	-	-	-
22- 2, 72- 76	253.21	BOG	-	-	-	1.8	136	0.062	-	0.1000	-	-	71	1.810	-	0.116	-	0.013
22- 2, 72- 76	253.21	BOG	-	-	-	-	-	-	-	-	-	-	74	-	-	-	-	-
22- 2, 72- 76	253.21	GH	6	11	< 2	<5.0	95	-	<50	-	-	33	70	-	0.0	-	-	-
22- 2, 125-130	253.75	PRP	-	-	-	2.0	105	-	-	-	-	-	65	-	-	-	-	-
23- 1, 51- 55	260.90	RHD	-	-	-	1.4	138	-	-	-	-	24	68	-	1.3	-	-	-
23- 1, 65- 68	261.04	BOG	-	-	-	6.9	138	2.900	-	0.0810	-	-	80	1.940	-	0.109	-	0.140
23- 1, 65- 68	261.04	BOG	-	-	-	-	-	-	-	-	-	-	80	-	-	-	-	-
23- 1, 117-122	261.57	BOG	-	-	-	2.2	138	0.083	-	0.1050	-	-	75	1.850	-	0.106	-	0.023
23- 1, 117-122	261.57	BOG	-	-	-	-	-	-	-	-	-	-	90	-	-	-	-	-
23- 1, 145-147	261.83	BOG	-	-	-	<1.3	127	0.035	-	0.0760	-	-	73	1.830	-	0.105	-	0.019
23- 1, 145-147	261.83	BOG	-	-	-	-	-	-	-	-	-	-	79	-	-	-	-	-
24- 1, 125-129	271.15	BOG	-	-	-	1.3	135	0.040	-	0.6800	-	-	72	1.800	-	0.111	-	-
24- 1, 125-129	271.15	BOG	-	-	-	-	-	-	-	-	-	-	75	-	-	-	-	-
24- 2, 14- 23	271.56	PRP	-	-	-	3.0	127	-	-	-	-	-	111	-	-	-	-	-
24- 2, 69- 72	272.09	RHD	-	-	-	1.5	131	-	-	-	-	25	-	-	-	-	-	-
25- 1, 36- 43	279.81	HRN	-	-	-	<7.0	145	<0.270	<60	<0.1600	0.07	-	-	1.710	-	0.450	0.050	0.030
25- 1, 36- 43	279.81	PRP	-	-	-	5.0	130	-	-	-	-	-	143	-	-	-	-	-
25- 1, 38- 43	279.82	GH	-	17	< 2	7.0	110	-	<50	-	-	28	95	-	<5.0	-	-	-
25- 1, 96-100	280.39	RHD	-	-	-	2.3	133	-	-	-	-	24	73	2.300	0.9	-	-	-
26- 1, 104-112	289.87	PRP	-	-	-	7.0	122	-	-	-	-	-	89	-	-	-	-	-
26- 1, 129-133	290.10	BOG	-	-	-	1 8	134	0.028	-	0.0750	-	-	70	1.950	-	0.107	-	0.013
26- 1, 129-133	290.10	BOG	-	-	-	-	-	-	-	-	-	-	86	-	-	-	-	-
26- 2, 24- 33	290.58	GH	-	18	0	<5.0	120	-	<50	-	-	28	85	-	<5.0	-	-	-
26- 2, 33- 42	290.67	PRP	-	-	-	9.0	139	-	-	-	-	-	118	-	-	-	-	-
26- 2, 125-129	291.56	RHD	-	-	-	2.5	165	-	-	-	-	26	82	-	1.3	-	-	-
27- 1, 127-131	299.62	BOG	-	-	-	-	133	0.035	-	0.0790	-	-	64	2.000	-	0.114	-	0.188
27- 1, 127-131	299.62	BOG	-	-	-	-	-	-	-	-	-	-	92	-	-	-	-	-
27- 1, 127-131	299.62	GH	5	7	< 2	<5.0	115	-	<50	-	-	28	85	-	<5.0	-	-	-
27- 2, 111-116	300.97	RHD	-	-	-	2.1	129	-	-	-	-	25	73	2.200	1.0	-	-	-
27- 2, 140-150	301.28	PRP	-	-	-	7.0	130	-	-	-	-	-	118	-	-	-	-	-
28- 1, 44- 48	308.30	PRP	-	-	-	8.0	145	-	-	-	-	-	104	-	-	-	-	-
28- 1, 105-112	308.93	RHD	-	-	-	2.7	159	-	-	-	-	27	82	-	1.1	-	-	-
28- 1, 116-122	309.03	BOG	-	-	-	2.1	168	0.167	-	0.0111	-	-	81	2.010	-	0.126	-	0.031
28- 1, 116-122	309.03	BOG	-	-	-	-	-	-	-	-	-	-	95	-	-	-	-	-
29- 1, 119-122	318.55	BOG	-	-	-	4.3	158	0.168	-	0.1010	-	-	80	2.150	-	0.137	-	0.047
29- 1 119-122	318.55	BOG	-	-	-	-	-	-	-	-	-	-	84	-	-	-	-	-
29- 1, 125-131	318.62	RHD	-	-	-	2.0	132	-	-	-	-	25	74	-	1.3	-	-	-
30- 1, 52- 58	327.42	PRP	-	-	-	12.0	164	-	-	-	-	-	80	-	-	-	-	-
30- 1, 82- 87	327.72	BOG	-	-	-	<1.3	158	0.063	-	0.0950	-	-	76	1.970	-	0.126	-	0.016
30- 1, 82- 87	327.72	BOG	-	-	-	-	-	-	-	-	-	-	96	-	-	-	-	-
31- 1, 63- 67	336.71	BOG	-	-	-	3.6	165	0.243	-	0.1120	-	-	82	1.980	-	0.124	-	0.079
31- 1, 63- 67	336.71	BOG	-	-	-	-	-	-	-	-	-	-	92	-	-	-	-	-
31- 1, 70- 76	336.79	BOG	-	-	-	4.2	172	0.210	-	0.0880	-	-	81	1.870	-	0.121	-	-
31- 1, 70- 76	336.79	BOG	-	-	-	-	-	-	-	-	-	-	88	-	-	-	-	-
31- 1, 96-107	337.08	RHD	-	-	-	2.6	175	-	-	-	-	23	71	2.200	0.8	-	-	-
31- 1, 125-128	337.33	PRP	-	-	-	8.0	156	-	-	-	-	-	110	-	-	-	-	-
32- 1, 54- 62	346.04	BOG	-	-	-	9.1	172	0.440	-	0.0800	-	-	70	1.690	-	0.111	-	0.240
32- 1, 54- 62	346.04	BOG	-	-	-	5.5	177	0.430	-	0.0740	-	-	80	2.030	-	0.124	-	0.147
32- 1, 54- 62	346.04	BOG	-	-	-	-	-	-	-	-	-	-	74	-	-	-	-	-

TABLE 22 – *Continued*

Sample	Depth (m)	Inv.	B	Li	Be	Rb	Sr	Cs	Ba	Th	U	Y	Zr	Hf	Nb	Ta	Au	Sb
32- 1, 54- 62	346.04	BOG	-	-	-	-	-	-	-	-	-	-	84	-	-	-	-	-
32- 2, 56- 63	347.56	BOG	-	-	-	3.3	180	0.141	-	0.0800	-	-	76	1.880	-	0.116	-	0.018
32- 2, 56- 63	347.56	BOG	-	-	-	-	-	-	-	-	-	-	77	-	-	-	-	-
33- 1, 70- 77	354.74	PRP	-	-	-	6.0	159	-	-	-	-	-	141	-	-	-	-	-
33- 1, 142-148	355.45	RHD	-	-	-	2.5	151	-	-	-	-	23	73	-	1.0	-	-	-
33- 2, 9- 13	355.61	BOG	-	-	-	3.5	162	0.221	-	0.0870	-	-	69	1.860	-	0.115	-	0.033
33- 2, 9- 13	355.61	BOG	-	-	-	-	-	-	-	-	-	-	77	-	-	-	-	-
33- 2, 9- 13	355.61	GH	8	18	< 2	<5.0	140	-	<50	-	-	25	75	-	<5.0	-	-	-
33- 2, 127-129	356.78	BOG	-	-	-	2.9	132	0.018	-	0.1530	-	-	118	3.020	-	0.219	-	-
33- 2, 127-129	356.78	BOG	-	-	-	-	-	-	-	-	-	-	124	-	-	-	-	-
33- 2, 145-150	356.98	PRP	-	-	-	9.0	130	-	-	-	-	-	154	-	-	-	-	-
34- 1, 140-143	364.95	RHD	-	-	-	1.0	127	-	-	-	-	36	116	3.300	2.4	-	-	-
35- 1, 26- 32	373.22	RHD	-	-	-	4.7	133	-	-	-	-	35	117	-	2.0	-	-	-
35- 1, 53- 54	373.47	BOG	-	-	-	-	129	0.030	-	0.1420	-	-	127	3.180	-	0.232	-	0.040
35- 1, 53- 54	373.47	BOG	-	-	-	-	-	-	-	-	-	-	122	-	-	-	-	-
36- 1, 46- 50	382.92	RHD	-	-	-	3.3	130	-	-	-	-	36	117	-	1.9	-	-	-
37- 1, 45- 50	392.45	PRP	-	-	-	11.0	134	-	-	-	-	-	133	-	-	-	-	-
37- 1, 136-141	393.36	BOG	-	-	-	4.7	135	0.280	-	0.1570	-	-	117	3.100	-	0.224	-	-
37- 1, 136-141	393.36	BOG	-	-	-	-	-	-	-	-	-	-	142	-	-	-	-	-
38- 1, 142-148	402 80	RHD	-	-	-	2.3	134	-	-	-	-	35	114	-	2.0	-	-	-
39- 1, 102-107	411.94	BOG	-	-	-	3.1	129	0.175	-	0.1460	-	-	122	3.140	-	0.216	-	0.055
39- 1, 102-107	411.94	BOG	-	-	-	-	-	-	-	-	-	-	137	-	-	-	-	-
41- 1, 107-111	429.14	RHD	-	-	-	0.7	129	-	-	-	-	36	117	3.300	2.1	-	-	-
41- 1, 142-144	429.48	BOG	-	-	-	4.4	130	0.210	-	0.1750	-	-	128	3.190	-	0.236	-	-
41- 1, 142-144	429.48	BOG	-	-	-	-	-	-	-	-	-	-	129	-	-	-	-	-
42- 1, 86- 89	438.44	BOG	-	-	-	<1.5	132	<0.020	-	0.2100	-	-	131	3.280	-	0.230	-	0.050
42- 1, 86- 89	438.44	BOG	-	-	-	-	-	-	-	-	-	-	148	-	-	-	-	-
42- 1, 143-147	439.01	PRP	-	-	-	4.0	134	-	-	-	-	-	151	-	-	-	-	-
45- 1, 124-127	467.27	BOG	-	-	-	2.8	131	<0.020	-	0.1580	-	-	131	3.200	-	0.236	-	-
45- 1, 124-127	467.27	BOG	-	-	-	-	-	-	-	-	-	-	123	-	-	-	-	-
46- 1, 61- 64	476.16	RHD	-	-	-	4.5	132	-	-	-	-	37	125	-	2.2	-	-	-
46- 1, 88- 97	476.46	PRP	-	-	-	5.0	126	-	-	-	-	-	165	-	-	-	-	-
47- 1, 63- 67	485.63	BOG	-	-	-	<1.5	134	<0.020	-	0.1520	-	-	118	3.020	-	0.220	-	0.072
47- 1, 63- 67	485.63	BOG	-	-	-	-	-	-	-	-	-	-	123	-	-	-	-	-
47- 2, 62- 68	487.13	PRP	-	-	-	8.0	130	-	-	-	-	-	119	-	-	-	-	-
48- 1, 135-140	495.73	BOG	-	-	-	3.6	131	0.081	-	0.1630	-	-	124	3.040	-	0.227	-	-
48- 1, 135-140	495.73	BOG	-	-	-	-	-	-	-	-	-	-	122	-	-	-	-	-
49- 1, 26- 31	504.16	RHD	-	-	-	1.5	131	-	-	-	-	37	121	3 200	2.5	-	-	-
49- 1, 43- 49	504.33	PRP	-	-	-	6.0	145	-	-	-	-	-	163	-	-	-	-	-
49- 2, 13- 17	505.52	BOG	-	-	-	2.3	128	<0.024	-	0.1610	-	-	128	3.330	-	0.231	-	0.036
49- 2, 13- 17	505.52	BOG	-	-	-	-	-	-	-	-	-	-	135	-	-	-	-	-
50- 1, 107-117	514.50	PRP	-	-	-	11.0	129	-	-	-	-	-	196	-	-	-	-	-
50- 2, 143-147	516.33	RHD	-	-	-	2.8	130	-	-	-	-	37	121	-	1.9	-	-	-
51- 2, 41- 44	524.89	BOG	-	-	-	<1.5	130	0.023	-	0.1640	-	-	128	3.190	-	0.225	-	0.039
51- 2, 41- 44	524.89	BOG	-	-	-	-	-	-	-	-	-	-	137	-	-	-	-	-
51- 3, 78- 82	526.77	RHD	-	-	-	2.3	129	-	-	-	-	37	122	-	2.1	-	-	-
52- 1, 45- 50	532.72	PRP	-	-	-	5.0	134	-	-	-	-	-	139	-	-	-	-	-
52- 1, 48- 53	532.75	BOG	-	-	-	2.2	134	0.029	-	0.1520	-	-	123	3.200	-	0.224	-	0.038
52- 1, 48- 53	532.75	BOG	-	-	-	-	-	-	-	-	-	-	144	-	-	-	-	-
52- 2, 75- 80	534.52	RHD	-	-	-	1.0	128	-	-	-	-	37	119	3.200	2.8	-	-	-
53- 1, 7- 11	541.60	BOG	-	-	-	2.5	131	0.015	-	0.1740	-	-	128	3.160	-	0.229	-	0.036
53- 1, 7- 11	541.60	BOG	-	-	-	-	-	-	-	-	-	-	136	-	-	-	-	-
54- 1, 48- 51	545.00	BOG	-	-	-	<1.5	124	0.013	-	0.1860	-	-	132	3.220	-	0.227	-	0.032
54- 1, 48- 51	545.00	BOG	-	-	-	-	-	-	-	-	-	-	131	-	-	-	-	-
54- 1, 113-121	545.68	PRP	-	-	-	6.0	135	-	-	-	-	-	151	-	-	-	-	-
55- 1, 49- 54	551.54	BOG	-	-	-	5.4	131	0.200	-	0.1640	-	-	126	3.190	-	0.241	-	-
55- 1, 49- 54	551.54	BOG	-	-	-	-	-	-	-	-	-	-	124	-	-	-	-	-
56- 2, 75- 81	562.83	BOG	-	-	-	-	131	-	-	-	-	-	129	-	-	-	-	-
56- 3, 47- 55	564.06	PRP	-	-	-	6.0	125	-	-	-	-	-	127	-	-	-	-	-
56- 3, 62- 65	564.18	RHD	-	-	-	1.2	127	-	-	-	-	38	125	3.200	2.7	-	-	-
57- 1, 40- 43	570.49	RHD	-	-	-	0.9	121	-	-	-	-	34	107	3.100	2.4	-	-	-
57- 1, 47- 53	570.58	PRP	-	-	-	9.0	135	-	-	-	-	-	148	-	-	-	-	-
57- 1, 125-131	571.36	BOG	-	-	-	4.7	134	0.168	-	0.1410	-	-	105	2.850	-	0.190	-	0.280
57- 1, 125-131	571.36	BOG	-	-	-	-	-	-	-	-	-	-	116	-	-	-	-	-
57- 1, 125-131	571.36	GH	9	13	< 2	<5.0	125	-	<50	-	-	35	110	-	<5.0	-	-	-
58- 2, 88- 94	581.88	PRP	-	-	-	9.0	127	-	-	-	-	-	176	-	-	-	-	-
58- 2, 115-122	582.16	BOG	-	-	-	-	119	-	-	-	-	-	110	-	-	-	-	-
59- 1, 67- 70	589.68	RHD	-	-	-	0.6	125	-	-	-	-	34	109	-	2.4	-	-	-

TABLE 22 – *Continued*

Sample	Depth (m)	Inv.	B	Li	Be	Rb	Sr	Cs	Ba	Th	U	Y	Zr	Hf	Nb	Ta	Au	Sb
59- 2, 65- 69	591.16	BOG	-	-	-	4.6	127	0.110	-	0.1590	-	-	111	2.790	-	0.194	-	0.022
59- 2, 65- 69	591.16	BOG	-	-	-	-	-	-	-	-	-	-	110	-	-	-	-	-
60- 1, 66- 70	599.21	RHD	-	-	-	0.9	125	-	-	-	-	35	109	-	1.8	-	-	-
60- 2, 105-113	601.12	PRP	-	-	-	4.0	133	-	-	-	-	-	144	-	-	-	-	-
60- 3, 33- 37	601.88	RHD	-	-	-	2.2	117	-	-	-	-	34	103	-	2.3	-	-	-
60- 3, 137-143	602.93	BOG	-	-	-	3.1	130	0.089	-	0.1310	-	-	119	2.780	-	0.194	-	0.015
60- 3, 137-143	602.93	BOG	-	-	-	-	-	-	-	-	-	-	118	-	-	-	-	-
61- 1, 140-150	609.35	PRP	-	-	-	9.0	127	-	-	-	-	-	65	-	-	-	-	-
61- 1, 142-150	609.36	RHD	-	-	-	3.9	128	-	-	-	-	27	78	2.200	0.6	-	-	-
61- 2, 37- 45	609.81	BOG	-	-	-	<1.2	129	0.020	-	0.0800	-	-	86	1.870	-	0.111	-	-
61- 2, 37- 45	609.81	BOG	-	-	-	-	-	-	-	-	-	-	77	-	-	-	-	-
61- 2, 37- 45	609.81	GH	4	8	< 2	<5.0	115	-	<50	-	-	29	-	-	<5.0	-	-	-
61- 2, 75- 85	610.20	PRP	-	-	-	6.0	135	-	-	-	-	-	65	-	-	-	-	-
61- 3, 90-110	611.90	HRN	-	-	-	<6.0	120	<0.260	<45	<0.1400	<0.10	-	-	1.650	-	0.700	0.013	<0.030
61- 3, 90-110	611.90	PRP	-	-	-	5.0	118	-	-	-	-	-	113	-	-	-	-	-
62- 1, 10- 15	617.55	RHD	-	-	-	0.8	122	-	-	-	-	23	69	-	1.1	-	-	-
62- 1, 40- 42	617.83	BOG	-	-	-	3.6	128	0.144	-	0.1440	-	-	117	2.870	-	0.195	-	0.019
62- 1, 40- 42	617.83	BOG	-	-	-	-	-	-	-	-	-	-	117	-	-	-	-	-
62- 1, 40- 50	617.87	PRP	-	-	-	11.0	130	-	-	-	-	-	140	-	-	-	-	-
62- 1, 70- 80	618.17	PRP	-	-	-	8.0	126	-	-	-	-	-	104	-	-	-	-	-
62- 1, 80- 87	618.26	BOG	-	-	-	3.0	129	0.126	-	0.0820	-	-	74	1.990	-	0.111	-	0.021
62- 1, 80- 87	618.26	BOG	-	-	-	-	-	-	-	-	-	-	82	-	-	-	-	-
62- 1, 80- 87	618.26	GH	0	18	< 2	<5.0	120	-	<50	-	-	28	70	-	0.0	-	-	-
63- 1, 0- 10	618.68	PRP	-	-	-	4.0	125	-	-	-	-	-	81	-	-	-	-	-
63- 1, 42- 47	619.08	RHD	-	-	-	1.0	123	-	-	-	-	24	71	-	0.3	-	-	-
63- 1, 108-116	619.75	BOG	-	-	-	<0.8	132	0.026	-	0.0690	-	-	68	1.660	-	0.100	-	-
63- 1, 108-116	619.75	BOG	-	-	-	-	-	-	-	-	-	-	64	-	-	-	-	-
63- 1, 108-116	619.75	GH	8	8	< 2	<5.0	120	-	<50	-	-	29	70	-	6.0	-	-	-
63- 1, 108-116	619.75	PRP	-	-	-	7.0	123	-	-	-	-	-	87	-	-	-	-	-
63- 1, 135-142	620.02	PRP	-	-	-	6.0	120	-	-	-	-	-	118	-	-	-	-	-
63- 2, 80- 90	620.98	HRN	-	-	-	<6.0	130	<0.260	<50	<0.1500	<0.10	-	-	1.770	-	0.460	0.000	<0.030
63- 2, 80- 90	620.98	PRP	-	-	-	9.0	128	-	-	-	-	-	148	-	-	-	-	-
63- 3, 75- 84	622.43	PRP	-	-	-	7.0	124	-	-	-	-	-	109	-	-	-	-	-
63- 4, 86- 93	624.03	RHD	-	-	-	4.0	130	-	-	-	-	22	65	2.400	0.8	-	-	-
63- 4, 115-122	624.32	PRP	-	-	-	7.0	118	-	-	-	-	-	131	-	-	-	-	-
64- 1, 29- 37	626.46	RHD	-	-	-	1.7	136	-	-	-	-	23	68	-	0.9	-	-	-
64- 1, 137-142	627.53	PRP	-	-	-	9.0	121	-	-	-	-	-	105	-	-	-	-	-
64- 2, 77- 82	628.43	PRP	-	-	-	14.0	123	-	-	-	-	-	102	-	-	-	-	-
64- 2, 112-117	628.78	PRP	-	-	-	8.0	129	-	-	-	-	-	96	-	-	-	-	-
64- 2, 116-122	628.82	BOG	-	-	-	2.6	139	0.148	-	0.0640	-	-	66	1.810	-	0.103	-	0.022
64- 2, 116-122	628.82	BOG	-	-	-	-	-	-	-	-	-	-	74	-	-	-	-	-
64- 2, 120-132	628.89	PRP	-	-	-	8.0	122	-	-	-	-	-	105	-	-	-	-	-
64- 3, 5- 7	629.19	PRP	-	-	-	7.0	131	-	-	-	-	-	144	-	-	-	-	-
64- 3, 48- 53	629.64	BOG	-	-	-	6.7	126	0.171	-	0.1460	-	-	108	2.850	-	0.198	-	0.079
64- 3, 48- 53	629.64	BOG	-	-	-	-	-	-	-	-	-	-	129	-	-	-	-	-
64- 4, 5- 10	630.71	PRP	-	-	-	5.0	130	-	-	-	-	-	119	-	-	-	-	-
64- 4, 130-135	631.96	RHD	-	-	-	2.3	126	-	-	-	-	35	108	-	2.7	-	-	-
64-CC, 17- 21	632.23	RHD	-	-	-	1 9	132	-	-	-	-	33	107	-	1.8	-	-	-
65- 1, 81- 86	636.48	BOG	-	-	-	5.4	130	0.174	-	0.1580	-	-	114	3.070	-	0.197	-	0.039
65- 1, 81- 86	636.48	BOG	-	-	-	-	-	-	-	-	-	-	111	-	-	-	-	-
65- 1, 94- 97	636.60	PRP	-	-	-	10.0	132	-	-	-	-	-	116	-	-	-	-	-
66- 1, 36- 41	645.56	RHD	-	-	-	1.3	127	-	-	-	-	36	112	2.800	2.0	-	-	-
66- 1 145-155	646.67	PRP	-	-	-	8.0	134	-	-	-	-	-	133	-	-	-	-	-
66- 2, 66- 71	647.36	BOG	-	-	-	4.6	131	0.172	-	0.1380	-	-	106	2.880	-	0.200	-	0.047
66- 2, 66- 71	647.36	BOG	-	-	-	-	-	-	-	-	-	-	110	-	-	-	-	-
66- 3, 12- 16	648.31	RHD	-	-	-	3.8	126	-	-	-	-	35	109	-	2.5	-	-	-
66- 3, 71- 79	648.92	PRP	-	-	-	7.0	128	-	-	-	-	-	129	-	-	-	-	-
67- 2, 54- 59	656.77	BOG	-	-	-	3.1	132	0.144	-	0.1420	-	-	124	3.070	-	0.225	-	0.019
67- 2, 54- 59	656.77	BOG	-	-	-	-	-	-	-	-	-	-	112	-	-	-	-	-
67- 2, 63- 67	656.85	PRP	-	-	-	8.0	136	-	-	-	-	-	180	-	-	-	-	-
67-CC, 130-135	657.80	RHD	-	-	-	0.9	122	-	-	-	-	34	107	3.300	-	-	-	-

TABLE 23[a]
Major Elements in Basalts of Hole 396

Sample	Depth (m)	Inv.Method	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	FeO	Total Iron	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	CO_2	H_2O^-	H_2O^+	Total	LOI	S
14- 6, 20- 25	125.33	BOG XRFAA	49.30	1.50	16.25	9.96	5.36	8.96	0.16	7.00	11.57	2.62	0.31	0.15	-	-	-	98.82	2.00	-
14- 6, 44- 49	125.57	ZOL WET	48.88	1.45	17.10	3.06	6.31	9.06	0.16	6.24	12.04	2.90	0.32	0.15	-	0.74	0.50	99.85	-	-
14- 6, 94-100	126.07	RHD XRFNA	49.00	1.51	16.85	4.23	5.19	9.00	0.18	6.05	11.59	2.79	0.26	0.13	-	-	1.73	99.57	-	0.06
15- 1, 110-115	127.87	RHD XRFNA	49.30	1.27	16.95	1.39	7.15	8.40	0.17	7.48	11.80	2.66	0.20	0.09	-	-	1.49	100.00	-	0.05
15- 2, 92- 99	129.20	ZOL WET	47.70	1.36	17.10	5.63	3.66	8.73	0.16	4.98	13.01	3.10	0.31	0.15	0.35	1.59	0.95	100.05	-	-
15- 4, 27- 33	131.54	ZOL WET	47.84	1.15	16.95	3.93	4.74	8.28	0.15	8.07	11.93	2.77	0.26	0.12	0.05	1.28	0.51	99.75	-	-
15- 4, 48- 53	131.75	BOG XRFAA	49.50	1.24	16.75	9.17	4.36	8.25	0.15	8.50	11.88	2.59	0.21	0.12	-	-	-	100.11	3.10	-
16- 1, 97-101	137.04	RHD XRFNA	48.79	1.26	16.86	3.64	4.90	8.17	0.15	8.03	11.85	2.87	0.21	0.08	-	-	1.52	100.21	-	0.05
16- 2, 120-127	138.79	ZOL WET	48.35	1.25	17.36	3.26	5.47	8.40	0.16	6.57	12.49	2.77	0.25	0.13	0.10	0.64	0.74	99.54	-	-
16- 3, 137-142	140.44	BOG XRFAA	49.80	1.27	16.73	9.24	4.45	8.32	0.15	8.10	11.95	2.57	0.24	0.12	-	-	-	100.17	2.40	-
16- 4, 120-127	141.79	ZOL WET	47.54	1.25	17.33	4.18	4.55	8.31	0.15	6.40	12.76	2.84	0.28	0.13	0.55	1.41	0.54	99.91	-	-
18- 1, 52- 60	155.11	ZOL WET	47.15	1.23	16.94	3.79	4.52	7.93	0.15	6.13	13.36	2.84	0.36	0.12	1.00	1.11	0.68	99.52	-	-
18- 1 130-136	155.88	BOG XRFAA	49.70	1.27	16.93	9.68	-	8.71	0.17	7.90	12.09	2.62	0.29	0.13	-	-	-	100.78	2.60	-
18- 1, 140-150	156.00	ZOL WET	47.56	1.25	16.97	3.23	5.99	8.90	0.16	7.30	13.02	2.70	0.26	0.12	0.40	0.78	0.16	99.90	-	-
18- 2, 27- 33	156.35	ZOL WET	48.65	1.25	16.43	3.40	5.35	8.41	0.15	7.65	12.14	2.77	0.32	0.12	-	1.16	0.43	99.82	-	-
18- 3, 147-150	159.04	RHD XRFNA	49.27	1.29	16.30	3.85	4.72	8.18	0.14	7.66	11.48	2.75	0.23	0.08	-	-	2.28	100.70	-	0.02
19- 1, 110-116	164.69	ZOL WET	48.31	1.23	16.41	4.22	4.54	8.34	0.13	6.87	12.52	2.84	0.28	0.12	0.25	1.62	0.75	100.09	-	-
19- 2, 20- 27	165.30	ZOL WET	47.38	1.23	17.69	4.08	3.78	7.45	0.13	5.58	13.39	2.84	0.36	0.13	0.92	1.59	0.69	99.82	-	-
19- 2, 138-141	166.45	BOG XRFAA	49.70	1.29	16.70	9.23	-	8.31	0.17	7.70	11.98	2 73	0.21	0.13	-	-	-	99.84	3.00	-
21- 1, 62- 70	182.72	ZOL WET	48.06	1.39	16.46	2.75	6.30	8.78	0.13	8.90	11.39	2.77	0.26	0.10	0.25	0.52	1.14	100.42	-	-
21- 1, 87- 89	182.94	BOG XRF	48.90	1.19	17.08	8.95	-	8.05	-	8.70	12.24	-	0.25	-	-	-	-	97.31	2.40	-
22- 2, 120-128	194.07	RHD XRFNA	48.99	1.23	16.69	3.65	4.68	7.96	0.14	7.60	11.66	2.79	0.24	0.09	-	-	2.47	100.24	-	0.02
22- 4, 55- 62	196.42	ZOL WET	48.26	1.35	16.47	3.64	4.69	7.97	0.11	7.39	11.45	2.84	0.33	0.09	0.27	1.36	1.28	99.63	-	-
22- 4, 144-150	197.30	BOG XRFAA	49.80	1.29	16.93	9.47	4.64	8.52	0.15	7.60	12.11	2.69	0.25	0.11	-	-	-	100.30	2.30	-
22-CC, 100-117	197.43	ZOL WET	48.92	1.27	16.42	4.02	5.10	8.72	0.14	7.17	11.48	2.90	0.25	0.12	-	1.14	0.54	99.66	-	-
23- 1, 58- 61	201.18	RHD XRFNA	49.17	1.25	17.29	4.33	4.19	8.09	0.13	6.42	12.07	2.77	0.20	0.09	-	-	2.86	100.79	-	0.02
23- 1, 143-147	202.04	BOG XRFAA	49.20	1.29	16.68	9.29	-	8.36	0.15	7.30	11.96	2.72	0.21	0.11	-	-	-	98.91	2.50	-
24- 2, 49- 54	212.26	RHD XRFNA	49.81	1.30	16.52	3.92	5.02	8.55	0.17	7.21	11.76	2.72	0.23	0.09	-	-	2.10	100.86	-	0.01
24- 2, 65- 72	212.43	ZOL WET	47.21	1.36	16.07	4.12	5.62	9.33	0.17	7.70	11.48	2.70	0.33	0.11	0.37	1.17	1.17	99.58	-	-
24- 3, 67- 73	213.94	ZOL WET	48.72	1.19	16.51	3.82	5.15	8.59	0.14	7.01	12.07	2.96	0.26	0.11	0.15	0.93	0.51	99.53	-	-
24- 3, 73- 78	214.00	BOG XRFAA	49.10	1.29	16.58	9.68	5.23	8.71	0.16	7.90	12.07	2.65	0.23	0.12	-	-	-	99.78	2.00	-
25- 1, 96-100	220.47	BOG XRFAA	49.70	1.29	16.71	9.49	-	8.54	0.15	7.40	11.99	2.65	0.13	0.11	-	-	-	99.62	2.20	-
25- 1, 124-130	220.76	ZOL WET	48.77	1.27	15.66	4.03	5.41	9.04	0.13	7.18	11.92	2.90	0.22	0.12	0.15	0.94	0.88	99.58	-	-
25- 1, 134-139	220.86	RHD XRFNA	49.30	1.29	16.21	4.43	4.68	8.68	0.17	6.86	11.69	2.68	0.25	0.15	-	-	2.52	100.26	-	0.03

[a]See footnote a, Table 17.

TABLE 24[a,b]
First Transition and Rare Earth Elements in Basalts of Hole 396

Sample	Depth (m)	Inv.	Sc	V	Cr	Co	Ni	Cu	Zn	La	Ce	Nd	Sm	Eu	Gd	Tb	Dy	Tm	Yb	Lu
14- 6, 20- 25	125.33	BOG	36.80	312.0	288	40.0	111	58	73	3.50	-	-	-	1.380	-	0.790	-	-	-	-
14- 6, 20- 25	125.33	BOG	-	-	-	40.7	114	-	-	-	-	-	-	-	-	-	-	-	-	-
15- 1, 110-115	127.87	RHD	33.40	-	440	-	175	-	-	2.72	8.90	-	2.8200	1.040	-	0.710	-	-	2.5	0.390
15- 4, 48- 53	131.75	BOG	-	256.0	415	41.0	171	65	66	-	-	-	-	-	-	-	-	-	-	-
16- 3, 137-142	140.44	BOG	34.80	268.0	397	40.0	143	64	67	3.00	-	-	-	1.140	-	0.640	-	-	-	-
16- 3, 137-142	140.44	BOG	-	-	-	40.8	142	-	-	-	-	-	-	-	-	-	-	-	-	-
18- 1, 130-136	155.88	BOG	-	262.0	371	40.0	142	67	66	-	-	-	-	-	-	-	-	-	-	-
19- 2, 138-141	166.45	BOG	35.40	269.0	391	39.0	142	67	65	2.90	-	-	-	1.230	-	0.660	-	-	-	-
19- 2, 138-141	166.45	BOG	-	-	-	41.4	144	-	-	-	-	-	-	-	-	-	-	-	-	-
21- 1, 87- 89	182.94	BOG	-	261.0	431	41.0	189	67	65	-	-	-	-	-	-	-	-	-	-	-
22- 4, 144-150	197.30	BOG	34.50	254.0	284	40.0	123	65	70	2.65	-	-	-	1.230	-	0.670	-	-	-	-
22- 4, 144-150	197.30	BOG	-	-	-	41.5	121	-	-	-	-	-	-	-	-	-	-	-	-	-
23- 1, 58- 61	201.18	RHD	34.50	-	300	-	90	-	-	2.54	8.40	-	2.9900	1.110	-	0.780	-	-	2.8	0.440
23- 1, 143-147	202.04	BOG	34.20	255.0	208	41.0	128	65	72	2.70	-	-	-	1.190	-	0.670	-	-	-	-
23- 1, 143-147	202.04	BOG	-	-	-	42.4	125	-	-	-	-	-	-	-	-	-	-	-	-	-
24- 3, 73- 78	214.00	BOG	35.10	254.0	293	41.0	124	66	73	2.70	-	-	-	1.260	-	0.680	-	-	-	-
24- 3, 73- 78	214.00	BOG	-	-	-	42.8	134	-	-	-	-	-	-	-	-	-	-	-	-	-
25- 1, 96-100	220.47	BOG	34.90	259.0	288	40.0	109	64	71	2.70	-	-	-	1.200	-	0.680	-	-	-	-
25- 1, 96-100	220.47	BOG	-	-	-	40.9	116	-	-	-	-	-	-	-	-	-	-	-	-	-
25- 1, 134-139	220.86	RHD	35.00	-	290	-	70	-	-	2.75	8.90	-	3.0200	1.120	-	0.850	-	-	3.0	0.450

[a]See footnote a, Table 17.
[b]Fe, Mn, and Ti listed as oxides in Table 23.

TABLE 25[a]
Trace Elements in Basalts of Hole 396

Sample	Depth (m)	Inv.	B	Li	Be	Rb	Sr	Cs	Ba	Th	U	Y	Zr	Hf	Nb	Ta	Au	Sb
14- 6, 20- 25	125.33	BOG	–	–	–	4.7	148	0.260	–	0.1610	–	–	109	2.640	–	0.207	–	0.021
14- 6, 20- 25	125.33	BOG	–	–	–	–	–	–	–	–	–	–	118	–	–	–	–	–
14- 6, 94-100	126.07	RHD	–	–	–	2.5	152	–	–	–	–	33	105	–	2.3	–	–	–
15- 1, 110-115	127.87	RHD	–	–	–	1.0	149	–	–	–	–	26	84	–	2.1	–	–	–
15- 1, 110-115	127.87	RHD	–	–	–	–	–	–	–	–	–	–	–	2 300	–	–	–	–
15- 4, 48- 53	131.75	BOG	–	–	–	–	155	–	–	–	–	–	86	–	–	–	–	–
16- 1, 97-101	137.04	RHD	–	–	–	2.5	145	–	–	–	–	27	85	–	1.4	–	–	–
16- 3, 137-142	140.44	BOG	–	–	–	4.4	155	0.250	–	1.2200	–	–	90	2.140	–	0.167	–	0.020
16- 3, 137-142	140.44	BOG	–	–	–	–	–	–	–	–	–	–	90	–	–	–	–	–
18- 1, 130-136	155.88	BOG	–	–	–	–	146	–	–	–	–	–	87	–	–	–	–	–
18- 3, 147-150	159.04	RHD	–	–	–	2.7	160	–	–	–	–	28	87	–	1.6	–	–	–
19- 2, 138-141	166.45	BOG	–	–	–	3.9	168	0.255	–	0.1320	–	–	86	2.240	–	0.173	–	0.025
19- 2, 138-141	166.45	BOG	–	–	–	–	–	–	–	–	–	–	83	–	–	–	–	–
21- 1, 87- 89	182.94	BOG	–	–	–	–	150	–	–	–	–	–	85	–	–	–	–	–
22- 2, 120-128	194.07	RHD	–	–	–	3.3	145	–	–	–	–	26	83	–	2.0	–	–	–
22- 4, 144-150	197.30	BOG	–	–	–	5.1	135	0.289	–	0.1160	–	–	86	2.160	–	0.153	–	0.014
22- 4, 144-150	197.30	BOG	–	–	–	–	–	–	–	–	–	–	103	–	–	–	–	–
23- 1, 58- 61	201.18	RHD	–	–	–	2.9	152	–	–	–	–	27	79	–	1.1	–	–	–
23- 1, 58- 61	201.18	RHD	–	–	–	–	–	–	–	–	–	–	–	2.400	–	–	–	–
23- 1, 143-147	202.04	BOG	–	–	–	4.2	133	0.228	–	0.0960	–	–	93	2.160	–	0.152	–	0.011
23- 1, 143-147	202.04	BOG	–	–	–	–	–	–	–	–	–	–	89	–	–	–	–	–
24- 2, 49- 54	212.26	RHD	–	–	–	3.5	127	–	–	–	–	28	83	–	1 4	–	–	–
24- 3, 73- 78	214.00	BOG	–	–	–	4.3	128	0.234	–	0.1160	–	–	86	2.310	–	0.156	–	0.025
24- 3, 73- 78	214.00	BOG	–	–	–	–	–	–	–	–	–	–	90	–	–	–	–	–
25- 1, 96-100	220.47	BOG	–	–	–	3.0	130	0.056	–	0.1260	–	–	81	2.180	–	0.153	–	0.016
25- 1, 96-100	220.47	BOG	–	–	–	–	–	–	–	–	–	–	107	–	–	–	–	–
25- 1, 134-139	220.86	RHD	–	–	–	–	–	–	–	–	–	–	–	2.400	–	–	–	–

[a]See footnote a, Table 17.