

SAMPLE NUMBER	LOCATION	TOTAL WEIGHT (G)	SILT FRACTION				SAND FRACTION				SAMPLE WT. % SILT+SAND	
			SILT	WT. %		WHOLE HEAVY MINERALS	NON-MICA. SILT HEAVY MINERALS	WT. %	WT. %			WHOLE SAND
				MINERALS	LIGHT MINERALS				HEAVY MINERALS	MINERALS		

Rio de la Plata System

1	Rio de la Plata	252.4	7.6	85.3	14.7	14.0	1.1	76.7	86.2	13.8	11.7
24	Rio de la Plata	476.5	9.4	88.4	11.6	11.0	1.1	72.2	95.4	4.6	4.4

Rio Cibuco System

11	Rio Cibuco	336.4	15.9	84.8	15.2	14.8	2.4	48.7	90.9	9.1	6.6
7	Rio Cibuco	303.8	6.3	81.0	19.0	18.4	1.2	82.2	85.5	14.5	13.1
8	Rio Cibuco	437.9	2.1	81.7	18.3	18.0	0.4	90.9	85.9	14.1	13.2
9	Rio Cibuco	310.9	4.6	83.5	16.5	16.0	0.8	75.4	86.9	13.1	10.7
4	Rio Cibuco	495.5	0.9	88.0	12.0	11.7	0.1	90.5	86.9	13.1	12.0
6	Rio Cibuco	445.4	1.9	89.8	10.2	9.9	0.2	81.5	86.9	13.1	10.9
22	Rio Cibuco	1053.8	1.6	85.9	14.1	13.8	0.2	32.8	94.3	5.7	2.1
10	Rio Mavilla	448.5	3.2	83.8	16.2	15.4	0.5	92.5	90.5	9.5	9.3
3	Rio Mavilla	483.6	5.2	82.5	17.5	16.9	0.9	60.8	81.5	18.5	12.1
17	Rio Mavilla	535.3	10.0	75.7	24.3	23.9	2.4	66.8	76.1	23.9	18.4
18	Rio Mavilla	1072.1	2.8	74.2	25.8	25.4	0.7	85.8	78.7	21.3	19.0
19	Rio Mavilla	1018.4	2.2	74.5	25.5	24.8	0.6	52.2	71.8	28.2	15.3
20	Rio Mavilla	701.8	2.0	85.3	14.7	13.8	0.3	78.8	88.6	11.4	9.3
5	Rio de Los Negros	318.4	1.9	83.9	16.1	15.7	0.3	88.9	86.1	13.9	12.7
28	Rio Dos Bocas	767.8	2.4	84.5	15.5	14.7	0.4	88.9	80.6	19.4	17.6
12	Rio Indio	866.9	0.9	90.2	9.8	9.7	0.1	94.9	97.1	2.9	2.9
13	Rio Indio	968.6	1.1	90.2	9.8	9.6	0.1	90.9	96.4	3.6	3.4
23	Rio Unibon	657.7	3.3	90.6	9.4	9.0	0.3	85.6	92.0	8.0	7.1
27	Rio Las Carreras	558.3	3.7	91.1	8.9	8.8	0.3	70.4	84.2	15.8	11.4
26	Rio Morovis	932.8	2.3	90.7	9.3	9.0	0.2	92.4	94.2	5.8	5.6
25	Rio Morovis	752.6	3.9	90.1	9.9	9.7	0.4	69.1	92.8	7.2	5.4

Rio Grande de Manati

15	Rio Manati	631.7	6.8	90.3	9.7	9.4	0.7	64.3	95.7	4.3	3.5
16	Rio Manati	989.0	4.1	88.6	11.4	11.1	0.5	69.4	96.3	3.7	3.1

SAMPLE ID	RIO DE LA PLATA				RIO CIBUCO						RIO MAVILLA					
	1	24	11	7	8	9	4	6	22	10	3	17	18	19	20	
Rutile+Anatase+																
Brookite+Leucoxene	2.5	2.5	2.7	1.8	1.9	1.7	0.7	1.5	2.5	3.5	0.7	1.6	0.3	1.3	6.0	
Ilmenite	6.6	6.9	7.6	4.4	7.4	4.8	2.7	4.0	8.2	2.7	2.5	2.6	2.4	2.7	6.8	
Sphene	0.0	1.6	0.3	0.3	0.7	0.3	1.0	0.9	0.0	0.4	0.5	0.7	2.1	0.3	0.4	
Hematite+Goethite+																
Magnetite+Maghemite+																
Siderite	7.6	9.4	12.4	6.8	6.0	10.6	5.3	12.9	12.0	6.2	7.2	6.9	9.4	5.7	12.0	
Manganese oxide+																
manganosiderite	0.0	0.0	0.0	0.0	0.7	0.8	0.7	0.0	0.3	0.8	0.2	0.3	0.0	0.0	0.4	
Pyrite	0.3	0.0	0.3	0.9	0.5	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.3	0.0	0.0	
Barite	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Zircon	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.0	
Monazite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Apatite+Vivianite	0.0	0.0	0.6	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Corundum	0.9	0.3	0.0	0.0	0.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	
Epidote	9.4	11.3	8.2	8.0	4.2	9.5	4.0	1.2	0.6	4.3	7.1	3.6	0.9	0.7	2.3	
Garnet	23.9	18.4	13.9	15.1	16.3	17.3	39.2	30.3	39.6	20.5	15.5	7.2	9.7	12.0	23.7	
Beryl+Topaz	2.2	0.6	0.0	0.3	0.0	1.4	0.0	0.9	0.0	1.2	0.0	0.3	0.3	0.3	0.4	
Amphiboles*	11.3	11.5	24.7	34.4	39.3	31.0	13.6	9.3	6.9	33.2	41.9	42.3	60.2	55.5	16.7	
Pyroxenes*	16.9	14.5	13.7	6.0	7.2	4.1	15.9	11.8	8.7	3.8	2.9	20.8	4.2	8.4	8.8	
Tourmaline*	2.6	10.0	5.2	12.0	6.6	6.8	5.3	11.1	6.0	8.6	6.9	4.8	5.0	5.6	2.9	
Olivine*	1.6	1.1	3.8	2.2	2.2	3.6	3.0	4.8	0.7	2.4	5.7	1.4	1.4	0.7	0.9	
Spinel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Magnesite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Chromite	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.8	0.0	0.0	0.0	1.0	0.4	
Gold	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	
Cerargyrite	1.9	0.3	0.3	0.9	0.7	1.1	0.0	0.3	1.0	0.4	2.0	0.7	0.3	0.4	0.0	
Altered grains	3.8	7.2	4.5	3.9	2.6	3.1	5.0	6.1	9.1	3.1	3.0	2.9	0.9	2.3	11.3	
Other+Rock Fragments	8.2	4.1	1.2	2.7	3.5	2.8	3.3	4.9	3.8	8.1	3.7	3.3	2.3	3.0	6.6	
Quartz	48	36	61	55	62	69	64	68	68	64	59	55	61	60	66	
K-feldspar	1	2	7	16	9	9	9	10	11	8	9	14	13	14	11	
Plagioclase	51	30	29	29	28	22	27	22	21	28	32	31	26	26	23	

SAMPLE ID	RIO DE LOS NEGROS 5	RIO DOS BOCAS 28	12	13	RIO INDIO 23	RIO UNIBON 27	RIO LAS CARRERAS 26	25	15	16	RIO MOROVIS	RIO MANATI
-----------	------------------------	---------------------	----	----	-----------------	------------------	------------------------	----	----	----	-------------	------------

Rutile+Anatase+												
Brookite+Leucoxene	1.2	0.0	3.4	1.4	2.7	3.0	1.9	1.5	3.5	0.6		
Ilmenite	3.7	3.2	5.7	6.4	3.4	0.7	6.1	4.6	16.1	11.5		
Sphene	0.3	0.7	0.7	0.8	0.7	0.7	0.0	0.2	2.9	0.5		
Hematite+Goethite+												
Magnetite+Maghemite+												
Siderite	7.9	10.2	9.5	4.2	11.9	19.3	9.3	21.3	12.9	15.3		
Manganese oxide+												
manganosiderite	0.0	0.0	0.0	0.6	0.0	0.0	0.3	0.7	0.0	0.5		
Pyrite	0.0	0.3	0.3	2.0	0.0	0.0	0.0	0.5	0.3	0.3		
Barite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Zircon	0.3	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0		
Monazite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Apatite+Vivianite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.0	0.0		
Corundum	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.6	0.0		
Epidote	3.1	10.5	9.4	5.0	4.1	2.0	1.9	4.4	13.9	13.1		
Garnet	18.3	20.7	28.7	26.4	33.3	37.7	51.8	45.7	10.7	22.9		
Beryl+Topaz	1.2	1.4	0.0	0.3	1.4	0.7	1.0	1.7	0.6	0.5		
Amphiboles*	33.1	27.4	20.6	19.3	9.9	14.6	9.3	6.0	9.4	4.1		
Pyroxenes*	16.8	6.7	5.4	9.6	22.0	9.7	2.8	2.6	11.6	12.6		
Tourmaline*	4.5	6.3	6.8	12.3	3.3	4.0	1.1	2.4	0.9	1.7		
Olivine*	1.7	4.5	1.0	2.6	1.5	0.3	0.3	0.6	0.4	0.2		
Spinel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Magnesite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Chromite	0.3	1.4	0.0	0.3	0.7	0.3	0.0	0.0	0.0	0.8		
Gold	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Cerargyrite	0.0	0.1	1.4	0.0	0.0	0.0	0.7	0.2	0.7	0.6		
Altered Grains	4.6	3.5	4.1	4.5	2.7	2.3	7.1	4.4	6.8	7.7		
Other+Rock Fragments	2.7	3.1	3.0	3.4	2.4	4.3	6.4	2.7	7.7	7.1		

Quartz	52	43	61	56	69	87	44	44	32	42		
K-feldspar	9	14	11	12	7	5	16	15	21	18		
Plagioclase	35	43	28	32	24	8	40	41	47	40		

Sample	Magnetite	Ilmenite pyroxenes	Amphiboles+	Epidote	Sphene	Zircon	Trace Minerals	Zircon rock fragments	Trace	Altered Grains
Rio de La Plata										
1	16.7	5.8	40.8	12.4	0.0	0.0	G		24.2	
24	27.8	5.8	34.9	10.3	0.0	0.0	G,R		21.2	
Rio Cibuco										
11	16.4	9.9	32.4	15.1	0.4	0.1	G,R=0.1		25.5	
7	20.8	10.8	32.0	13.5	1.8	0.0	0.0		21.1	
8	27.9	8.7	30.3	10.1	1.1	0.2	R		21.7	
9	8.8	10.5	34.6	11.5	0.6	0.0	R=0.1		33.9	
4	25.9	9.4	32.1	10.5	1.3	0.2	0.0		20.6	
6	9.6	7.2	43.0	12.9	2.0	0.0	G		25.2	
22	41.9	5.5	20.1	6.3	0.2	0.0	0.0		25.9	
Rio Mavilla										
10	13.1	10.6	34.1	16.3	0.4	0.1	G,R,A		25.4	
3	25.4	10.3	27.9	13.0	0.1	0.0	G,R		23.2	
17	13.2	9.4	32.2	13.3	0.2	0.1	R,H=0.3		31.2	
18	28.5	4.9	25.8	10.9	0.2	<0.1	R,A		29.6	
19	23.6	7.3	27.6	6.5	0.1	<0.1	R,H=0.2		34.7	
20	29.3	11.6	26.9	10.3	0.3	0.0	R		21.6	
Rio de Los Negros										
5	16.1	12.6	33.8	8.6	1.4	0.0	R		27.5	
Rio Dos Bocas										
28	15.8	6.0	41.1	9.3	0.6	0.0	0.0		27.2	
Rio Indio										
12	16.3	16.6	41.9	11.1	1.0	0.3	G		12.8	
13	21.4	14.7	37.4	12.3	0.9	0.3	G		13.0	
Rio Unibon										
23	2.4	15.4	34.9	15.5	1.5	0.0	G,R=0.3		20.0	
Rio Las Carreras										
27	3.8	7.7	48.0	11.5	0.8	0.4	0.0		27.7	
Rio Morovis										
26	77.4	11.3	3.5	1.6	1.3	0.6	R=0.1,A=0.2		4.0	
25	66.4	19.3	4.7	2.0	1.3	0.6	G=0.3,R=0.1,A=0.2,C,TO		5.1	
Rio Manati										
15	14.0	17.3	37.0	11.1	0.1	0.1	R		20.4	
16	29.4	11.9	28.8	11.0	0.2	0.0	0.0		18.6	