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=====
=   DEEP SEA DRILLING PROJECT   =
=   X-RAY MINERALOGY DATA BASE =
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## I. INTRODUCTION

### A. BACKGROUND AND METHODS

This data set results from x-ray diffraction analyses made by the University of California at Riverside X-ray Mineralogy Laboratory which operated from Leg 1 through Leg 37 under DSDP contract. There are 14,578 individual analyses in the data set. These are distributed among the three sample fractions as follows -

Bulk:	> 20 microns	= 7005 analyses
Silt:	20 - 2 microns	= 3645 analyses
Clay:	< 2 microns	= 3928 analyses

The silt and clay fractions are decalcified with buffered acetic acid and thus calcite and other such minerals will not be found in these fractions.

The x-ray data for each of the Legs 1 through 37 is published in the respective Initial Report of the Deep Sea Drilling Project along with useful ancillary information that is not included in the file described here. Because the Riverside laboratory used a variety of methods to assign subbottom depths to the samples, it is recommended that the Initial Reports be consulted whenever it is important to know how down-hole sample positions were determined on a particular leg.

### B. LEGS IN DATA SET

The data set comprises analyses from Legs 1 through 37. Bulk fraction analyses exist for each leg. Legs which do not have analyses for either the silt or the clay fraction are listed below.

Silt:	No analyses for Legs 1,2,3,5,7,10 and 11
Clay:	No analyses for Legs 1,2,3,4,5 and 6

In the Initial Reports there are histograms and other non-numerical presentations for some of the above listed 'missing' fractions.

### C. REFERENCES

The laboratory procedure for the x-ray analyses is discussed in Volume 28 of the Initial Reports of the Deep Sea Drilling Project.

For an overview of this data set see G. Ross Heath, 1984. X-ray Mineralogy Studies. In G. Ross Heath (Ed.), Sedimentology, Physical Properties, and Geochemistry in the Initial Reports of the Deep Sea Drilling Project Volumes 1-44: An Overview, World Data Center A for

Marine Geology and Geophysics Report MGG-1, pp. 71-91.

#### D. RECORD AND FILE DESCRIPTION

The encoded data set is segregated by mineral fraction into three separate files. Each file is written in ascending order by 'DSDP label' (record columns 1-29) in the format described below.

An individual x-ray analysis will comprise one or more 120 character length logical records in the following format.

Character Position =====	FORTRAN Format =====	Field Content =====
1- 2	(A2)	leg number
3- 6	(A4)	hole
7- 9	(A3)	core
10- 11	(A2)	section designator or blank field
12- 19	(F8.2)	subbottom depth (M) of top of sample interval or top of cored interval
20- 27	(F8.2)	subbottom depth (M) of bottom or middle of sample interval
28	(A1)	fraction: B=bulk,S=silt,C=clay
29	(I1)	relative position of record in sample: 0 = lead record segment 1,2,.. = following record segments (as needed)
30	(1X)	blank field
31- 32	(I2)	number of minerals in sample
33-120	11(A4,F4.1)	mineral mnemonic/weight percent couplets for those minerals occurring in sample(i.e., zero percentages do not occur).

Note: The mnemonic/percentage couplets occurring in columns 33-120 will usually begin with the mnemonics DIFF and AMOR for the analyses from Legs 10 through 37. Although these are not minerals themselves (see table below), they are included in the total mineral count of an analysis as given in columns 31-32. The percentages attached to the actual minerals are weight percents relative to the particular sample and fraction, but for some analyses these values have not been normalized to 100 percent. Despite the fact that percentages are written to 1/10 of 1 percent, this data set must be viewed as semiquantitative. In some cases, percentages are negative to indicate one of the following relative abundance codes.

-5.0 = TRACE  
-25. = PRESENT  
-65. = ABUNDANT  
-99. = MAJOR

In addition, a mineral weight percentage may be given as "100." to indicate 100%.

## E. X-RAY MINERAL MNEMONIC LIST:

Inventory of DSDP/UC Riverside X-ray Minerals  
Over All Legs and All Fractions  
(ordered by frequency of occurrence)

Mineral =====	Four Character Mnemonic =====	No. of Occurrences =====
'diffuse scattering' measure	DIFF	10192
'amorphous material' measure	AMOR	10171
QUARTZ	QUAR	11999
MICA	MICA	9160
PLAGIOCLASE	PLAG	9059
MONTMORILLONITE	MONT	7546
CHLORITE	CHLO	5420
CALCITE	CALC	4942
KAOLINITE	KAOL	4911
K-FELDSPAR	K-FE	4635
CLINOPTILOLITE	CLIN	2389
PYRITE	PYRI	2017
BARITE	BARI	1611
PALYGORSKITE	PALY	1402
AMPHIBOLE	AMPH	1148
PHILLIPSITE	PHIL	1145
CRISTOBALITE	CRIS	829
DOLOMITE	DOLO	762
AUGITE	AUGI	579
GOETHITE	GOET	371
MAGNETITE	MAGN	352
TRIDYMITE	TRID	349
GYPSUM	GYPS	329
HALITE	HALI	305
ANALCITE	ANAL	296
HEMATITE	HEMA	257
ARAGONITE	ARAG	177
ANATASE	ANAT	175
SIDERITE	SIDE	135
FELDSPAR (undifferentiated)	FELD	98
APATITE	APAT	75
GIBBSITE	GIBB	62
SEPIOLITE	SEPI	43
SANIDINE	SANI	29
RHODOCHROSITE	RHOD	28
MAGNESIAN CALCITE	MGCA	26
CALCIUM DOLOMITE	CADO	25
MIXED LAYER CLAY	MIXL	20

BEIDELLITE

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16

DSDP/X-RAY 6/85

Page 4

TALC	TALC	8
ANHYDRITE	ANHY	6
"variety of MONTMORILLONITE"	2-MO	6
ILMENITE	ILME	5
ERIONITE	ERIO	4
CHABAZITE	CHAB	3
CUPRITE	CUPR	3
CELESTITE	CELE	2
PSILOMELANE	PSIL	2
BASSANITE	BASS	1
SPHALERITE	SPHA	1
ILLITE	ILLI	1
"UNKNOWN"	U- 1	285
	U- 2	117
	U-1	116
	U-2	116
	U-10	66
	U- 4	55
	U- 3	53
	U-11	44
	UNKN	16
	U- 5	9
	U-12	6
	U- 6	5
	U- 7	3
	U- 9	3
	U- 8	2

NGDC NOTES: (list of deviations from field descriptions)

Please note that additional xray mineralogy data are described in "xrdwhoi" documentation.

Description of deviation =====	Record Number(s) =====
Weight percentage: col 45-48 - negative weight percentages given are not legal relative abundance codes as described in documentation	6130,6132-6144,6147,6166,6169, 6171,6173,6175,6189-6195,6200, 6235-6251,6570,6626,6660
Mineral weight percentage does not total to one hundred	157,302,369,377,1245,1570,1588, 1602,1609-1610,1619,1853-1854, 1896,1909,1912,1929,1999,2323, 2356,2383,2404,2475-2477,2732, 2876,3278-3687,3689-3713,3715- 4195,4197-4296,4298-4306,4308- 4309,4311-4371,4374-4381,4383- 4434,4436-5257,5259-5264,5268, 5270-7167

DSDP/X-RAY 6/85