UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Analytical results and sample locality map for selected metals in Mn-Fe oxide-coated stream gravels, and the ratios of metals to iron and to manganese, Glens Falls 1° x 2° quadrangle, New York, Vermont, and New Hampshire

by

Eric P. Welsch and Kenneth C. Watts, Jr.

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This report presents the results of a geochemical survey of the Glens Falls 1° x 2° quadrangle, New York, Vermont, and New Hampshire. The geochemical samples were collected as one of several multidisciplinary studies associated with the Conterminous United States Mineral Appraisal Program (CUSMAP).

Introduction

The geochemical data in this report are a result of regional sampling begun in 1981, following a pilot study of geochemical media and methods (Watts, 1981, unpublished data). The regional reconnaissance sampling was completed in 1985.

As part of the regional reconnaissance studies, which relied chiefly on the collection of heavy minerals from modern stream alluvium, Mn-Fe oxides, which often coat stream gravels, were collected as a supplementary geochemical exploration tool. Some investigators working in the northeastern United States (Nowlan, 1976; Whitney, 1975a,b; Whitney, 1981) have suggested that the trace elements associated with these Mn-Fe oxides and hydroxides may indirectly indicate the presence of mineral deposits undergoing decomposition somewhere in the paths of the circulating ground and surface waters. The purpose of this report is to release the analytical results (tables 1 and 2). Ratios of the analyzed elements to iron (table 3) and manganese (table 4) are included for readers who may find them useful for interpretations. An interpretive report of the data and their possible mineral-deposit significance is being prepared.

The Glens Falls quadrangle is located within longitudes 72°00' and 74°00' and latitudes 43°00' and 44°00'. It includes portions of New York, Vermont, and New Hampshire (fig. 1). The climate of the area is considered humid continental with average temperatures ranging from 16° in winter to 75°F in summer, and an average rainfall of about 39 inches. Relief varies from: (1) high (around 1,500 to 2,000 ft) in the Green Mountains, Adirondack Mountains, and high Taconic Mountains where topography is rugged, ridge lines are around 2,000 ft, and some peaks exceed 3,000 feet in elevation; (2) to moderate (about 1,000 ft) in the rolling hills adjacent to the Connecticut River, where high points reach as much as 3,100 ft (Mt. Ascutney); (3) to low (less than 100 ft up to about 700 ft) in the low Taconic Mountains and the nearly flat, upper Hudson Valley and Champlain lowland, where average elevations range from about 150 to 350 ft.

Vehicle access to sample sites in the area is generally good except along the north-trending spine of the Green Mountains and high Taconic Mountains, and in parts of the Adirondack Mountains where relatively large tracts of wooded or boggy areas remain roadless.

Bedrock in the Glens Falls quadrangle is highly varied, and reflects a wide range of depositional environments and tectonic history (Doll and others, 1961; Fisher and others, 1970; Billings, 1976). From west to east (corresponding to large numbers on plate 1 and separated by dashed line), the stratigraphic-tectonic units consist of: (1) Precambrian (Grenvillian) granulite and charnockite, high-grade gneiss and schist, graphitic metasediments, gabbro, and anorthosite within the Adirondack Mountains; (2) a Cambrian-Ordovician shelf sequence of carbonates and quartzites in the Champlain-Hudson Valleys and the Vermont Valley; (3) a Cambrian-Ordovician eugeosynclinal sequence of green, red, and black slates, phyllites, minor

carbonates, and graywackes in the Taconic Mountains in New York and Vermont; (4) Precambrian core rocks of high-grade gneiss, schist, amphibolite, and granulite, and Cambrian(?) cover rocks consisting of schists, gneisses, and dolomites within the Green Mountain anticlinorium and Chester and Athens domes of Vermont; (5) Cambrian to Devonian amphibolite, greenstone, felsic volcanics, and metasediments of the Eastern Basin sequence of Vermont; (6) Ordovician-early Devonian metasediments, felsic volcanics, amphibolite, greenstone, and silicic plutons east of the Connecticut River in New Hampshire associated with floored gneissic (mantled) domes; and (7) sheeted Devonian-Mississippian granites of the New Hampshire plutonic series. Two small discordant plutons of post-kinematic Mesozoic age belonging to the White Mountain Series of alkalic igneous rocks occur at Cuttingsville (8) and Mt. Ascutney, Vermont (9). These plutons, though small in areal outcrop, are geochemically and metallogenically significant to the mineral resource investigations.

Three chief deformational events have affected rocks in the Glens Falls quadrangle. The first deformational and metamorphic event was the Grenvillian in Late Proterozoic time; the second event was the Taconian during the Middle Ordovician; and the last was the Acadian deformation during the Late Devonian. The Grenvillian deformation involved plutonism and deep-seated metamorphism (Adirondack Mountains); the Taconian involved westward, semiconsolidated gravity gliding and axial uplift (Taconic Mountains), and later retrograde metamorphism and brittle thrust faulting (Taconic Mountains, Green Mountains). The Acadian resulted in metamorphism, doming, recumbent folding, and acid plutonism (New Hampshire). The result is rock metamorphosed the full range from low-grade pelites (Taconic Mountains) to granulite facies (Adirondack Mountains), with a large amount corresponding to various mineral zones of the amphibolite facies (Vermont and New Hampshire).

Later, in Pleistocene time, the rock sequence was covered by glacial, glaciofluvial, and glaciolacustrine deposits brought about by ice advance and retreat. The deposits left by this glaciation have concealed bedrock except in roadcuts, river beds and banks, and the occasional "ledge" of outcrop on hillsides.

Sample Collection

In the course of sampling stream alluvium concentrates, coated gravels were also collected where they were available. The presence or absence of the coatings depends on a number of environmental and geologic factors of which oxidation potential, pH, stream gradient, and bedrock composition are among the most important. Sampling density was highly variable as a result of coating availability. In areas where coatings were available at most alluvium sampling sites encountered, the sample density averaged approximately one site per 3 mi^2.

Samples of both the stream concentrate alluvium and oxide coatings were collected from tributaries to large drainage systems. The length of these tributaries ranges from 1-3 mi as a rule. Large drainage systems were rarely sampled except near their headwater portions.

The preferred sample consisted of gravel (approximately 5-60 mm) displaying visible stains or coatings of either iron or manganese oxides. The sample was a composite collected from several places within 10 to 20 feet of the plotted map locality.

Sample Preparation

In most cases, enough of the sample was transferred to a 250-ml beaker (to about the 200-ml mark) to allow full immersion in 100 ml of 0.25 M hydroxylamine hydrochloride in 0.25 M HCl (Chao, 1984). The sample weight was recorded, solution was added, and the sample was placed on an oscillating platform overnight.

The following day a portion of the leach solution (about 20 ml) was filtered into 25 x 150-mm test tubes and aspirated directly into the flame of a Perkin Elmer 5000 AA. The instrument parameters were set according to Perkin Elmer's method manual.

Many of the first 83 samples listed in tables 1-4 were small cobbles or large gravels, and thus were too ungainly to permit convenient leaching in a reasonably small quantity of solution. These samples were crushed to the size of small pebbles and a 50-gram portion was leached with 20 ml of solution. Very little leaching of the interior of the crushed gravels can be expected due to the oxide-specific nature of the leaching solution (Chao, 1984), and crushed samples, therefore, should compare reasonably well with those leached directly without crushing.

There is, however, an additional difficulty in trying to relate the two sample types. The larger gravels have less surface area than the smaller ones taken later, and this causes the first 83 samples to appear lower in metal concentration than they really are when compared to the remaining samples in tables 1 and 2. The problem is eliminated in the ratio values presented in tables 3 and 4.

Rock Analysis Storage System

Upon completion of all analytical work, the analytical results were entered into a computer-based file called Rock Analysis Storage System (RASS). The data were then retrieved and converted to a binary form (STATPAC) (VanTrump and Miesch, 1976) for computerized statistical analysis interpretation and various forms of publication.

Description of Data Tables

Table 1 lists the total micrograms or milligrams of metal in the leach liquid. The first column presents the USGS field numbers of the samples which correspond to the sample locality map (fig. 2), however the leading digit does not appear on the map. The last column lists the sample weights in grams.

Table 2 lists the same data expressed as parts per million in the gravel sample. This was done in order to put the data in the same form as other similar studies from the region (Whitney, 1975a,b).

The final two tables present the data as ratios of metal to Fe (table 3) and to Mn (table 4). Because of the formatting used in the computer program that produced tables 1-4, some of the elements listed in these tables (Fe, Mg, Ca, Ti, Ag, and Be) carry one or more nonsignificant digits to the right of the significant digits. The analysts did not determine these elements to the accuracy suggested by the extra zeros.

Acknowledgments

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TABLE1-ANALYSES OF MN-FE OXIDE COATINGS IN MICROGRAMS OR MILLIGRAMS

[N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	Latitude	Longitude	Cu-ug	Pb-ug	Zn-ug	Cd-ug	Ni-ug	Co-ug	Fe-mg	Mn-mg	Weight
3MS110RC	43 41 8	72 6 36	.5	<5.0000	240.000	5.0	5	50.0000	1.6500	17.0000	50
3MS111RC	43 41 39	72 8 3	2.0	<5.0000	175.000	6.5	10	50.0000	1.7000	18.5000	50
3MS122RC	43 37 33	72 1 21	4.0	10.0000	210.000	2.0	5	15.0000	1.7500	7.5000	50
3MS126RC	43 30 14	72 3 18	.5	<5.0000	380.000	4.5	10	45.0000	1.3000	25.0000	50
3MS128RC	43 34 30	72 3 33	1.0	5.0000	365.000	6.0	10	35.0000	1.3000	26.5000	50
3CA110RC	43 28 57	72 36 3	3.0	25.0000	80.000	<.5	140	85.0000	11.5000	22.0000	50
3CA112RC	43 26 51	72 34 52	50.0	70.0000	850.000	15.0	30	40.0000	1.5500	23.0000	50
3CL120RC	43 21 28	72 28 27	.5	<5.0000	70.000	1.0	15	10.0000	.8500	14.5000	50
3SO119RC	43 15 54	72 13 0	.5	<5.0000	200.000	3.0	10	20.0000	1.3000	11.0000	50
3SR101RC	43 11 25	72 30 18	1.0	<5.0000	35.000	.5	15	50.0000	1.7000	14.5000	50
3SR102RC	43 8 44	72 30 30	.5	<5.0000	65.000	2.5	85	110.0000	1.0500	37.5000	50
3SR116RC	43 8 55	72 34 52	2.5	5.0000	155.000	2.0	10	15.0000	1.3500	5.5000	50
3SR125RC	43 6 6	72 32 14	1.0	<5.0000	450.000	.5	30	30.0000	1.5000	13.5000	50
3SR134RC	43 0 29	72 43 5	1.0	<5.0000	500.000	7.5	40	110.0000	1.4000	27.5000	50
3SR143RC	43 4 58	72 38 2	<.5	<5.0000	220.000	2.0	25	40.0000	1.6000	15.5000	50
2ST115RC	43 58 24	72 19 54	10.0	60.0000	40.000	<.5	5	10.0000	5.0000	6.0000	50
2ST121RC	43 57 12	72 15 22	.5	<5.0000	205.000	1.5	15	10.0000	.9000	19.0000	50
2ST126RC	43 54 40	72 21 12	1.5	<5.0000	15.000	.5	10	<5.0000	.9000	9.0000	50
2ST129RC	43 54 54	72 17 6	31.5	5.0000	20.000	.5	20	20.0000	1.4000	6.5000	50
2ST249RC	43 47 42	72 16 57	1.5	<5.0000	150.000	2.5	30	30.0000	3.5500	20.0000	50
2ST254RC	43 49 51	72 15 33	1.5	5.0000	30.000	1.0	10	15.0000	4.0000	5.0000	50
2ST255RC	43 51 36	72 16 23	3.5	5.0000	25.000	2.0	80	80.0000	1.7500	9.5000	50
3SR211RC	43 11 54	72 42 6	2.5	<5.0000	80.000	.5	15	30.0000	1.2500	5.5000	50
3SR208RC	43 14 3	72 39 54	1.0	<5.0000	495.000	9.5	110	105.0000	1.1500	40.0000	50
3CL134RC	43 23 52	72 15 5	1.0	<5.0000	405.000	6.0	55	105.0000	1.2000	48.0000	50
3CL267RC	43 17 3	72 20 44	4.5	<5.0000	160.000	3.0	15	30.0000	1.2000	12.0000	50
3CL127RC	43 26 48	72 17 38	1.0	<5.0000	800.000	22.5	200	190.0000	1.3000	39.0000	50
3CL130RC	43 26 10	72 19 38	.5	<5.0000	65.000	1.0	30	30.0000	1.4000	10.5000	50
3SV108RC	43 24 59	72 8 22	.5	<5.0000	225.000	3.0	5	25.0000	2.6000	7.5000	50
3NH208RC	43 34 25	72 21 2	1.0	<5.0000	155.000	3.5	10	25.0000	1.0000	37.5000	50
3SR110RC	43 9 47	72 39 0	13.0	<5.0000	5.000	<.5	5	25.0000	.6000	.5000	50
3HN106RC	43 37 43	72 16 17	5.0	<5.0000	110.000	2.0	15	15.0000	.7500	.7000	50
2MC101RC	43 58 43	72 3 16	11.0	15.0000	440.000	3.5	75	80.0000	6.5000	3.7500	50
2MC102RC	43 58 34	72 2 37	1.0	<5.0000	15.000	<.5	5	<5.0000	2.1500	.5000	50
2MC105RC	43 46 50	72 0 0	8.5	140.0000	1,500.000	31.5	30	185.0000	5.5000	44.0000	50
2MC116RC	43 46 24	72 8 42	17.5	15.0000	370.000	4.5	50	55.0000	3.2500	35.0000	50
2MC121RC	43 49 33	72 6 30	7.5	15.0000	485.000	3.5	30	55.0000	2.9000	31.0000	50
2MC164RC	43 51 21	72 7 8	4.5	25.0000	310.000	2.0	35	65.0000	2.5000	34.5000	50
2ST103RC	43 55 16	72 25 14	2.0	15.0000	45.000	1.0	25	15.0000	2.0000	9.5000	50
2ST105RC	43 55 52	72 23 0	1.0	225.0000	20.000	.5	15	5.0000	1.5500	8.0000	50
2ST112RC	43 59 37	72 25 42	2.0	5.0000	50.000	1.0	100	45.0000	3.9500	90.0000	50
3NH202RC	43 34 23	72 17 45	1.0	<5.0000	150.000	3.5	5	15.0000	1.3000	25.0000	50
3CH206RC	43 19 24	72 40 29	7.5	45.0000	175.000	4.5	10	10.0000	1.0000	3.5000	50
3BF230RC	43 13 23	72 16 44	.5	<5.0000	300.000	8.0	70	250.0000	1.7000	25.5000	50
3BF232RC	43 12 12	72 23 42	1,000.0	35.0000	500.000	10.0	230	160.0000	3.3500	90.0000	50

TABLE1-ANALYSES OF MN-FE OXIDE COATINGS IN MICROGRAMS OR MILLIGRAMS--Continued

Sample	Latitude	Longitude	Cu-ug	Pb-ug	Zn-ug	Cd-ug	Ni-ug	Co-ug	Fe-mg	Mn-mg	Weight
2LD102RC	43 22 45	72 42 59	2.5	5.0000	140.000	2.5	15	45.0000	1.6500	4.7500	50
2LD103RC	43 27 0	72 41 41	1.5	100.0000	75.000	1.0	10	10.0000	2.1500	3.3000	50
2LD105RC	43 29 33	72 39 19	125.0	5.0000	120.000	3.0	175	200.0000	13.5000	50.0000	50
2LD108RC	43 28 34	72 43 26	5.5	<5.0000	125.000	12.0	160	185.0000	11.5000	75.0000	50
2LD107RC	43 28 38	72 43 9	<.5	5.0000	310.000	4.0	30	105.0000	1.2500	15.0000	50
2LD216RC	43 27 25	72 39 53	36.0	25.0000	230.000	4.5	140	150.0000	16.0000	38.0000	50
2LD220RC	43 29 4	72 39 21	1.5	<5.0000	70.000	3.0	35	45.0000	1.7500	16.0000	50
2LD221RC	43 24 26	72 38 17	1.0	<5.0000	55.000	1.5	20	50.0000	1.5000	10.0000	50
2AN103RC	43 16 35	72 44 9	<.5	5.0000	550.000	4.5	45	155.0000	3.5000	17.5000	50
2AN110RC	43 18 48	72 37 47	<.5	<5.0000	30.000	1.0	30	20.0000	1.5500	2.3500	50
2AN111RC	43 18 51	72 37 45	.5	<5.0000	100.000	2.5	40	25.0000	.8500	6.0000	50
2AN208RC	43 17 54	72 38 26	.5	<5.0000	65.000	2.5	45	85.0000	1.6500	6.0000	50
2PY107RC	43 33 37	72 42 14	2.5	<5.0000	35.000	4.5	50	235.0000	1.7500	30.0000	50
2PY113RC	43 30 56	72 39 42	45.0	<5.0000	550.000	7.0	300	125.0000	10.5000	49.0000	50
2PY114RC	43 30 58	72 39 36	2.5	<5.0000	75.000	2.5	65	100.0000	2.7000	12.0000	50
2PY120RC	43 35 24	72 39 51	55.0	25.0000	150.000	7.0	600	170.0000	27.5000	95.0000	50
2WA109RC	43 22 24	72 57 51	4.5	60.0000	1,350.000	21.5	95	160.0000	5.0000	15.0000	50
2WA111RC	43 15 27	72 54 4	1.5	<5.0000	40.000	1.0	5	45.0000	.7500	1.9000	50
2WA115RC	43 16 24	72 53 18	3.0	5.0000	325.000	4.5	20	65.0000	1.8000	12.5000	50
2WA118RC	43 22 49	72 55 1	2.0	<5.0000	230.000	3.0	15	105.0000	2.6500	13.0000	50
2WA123RC	43 26 29	72 58 13	11.0	30.0000	850.000	9.5	95	65.0000	8.5000	3.4000	340
2WA128RC	43 15 14	72 46 30	1.5	<5.0000	210.000	4.5	15	125.0000	2.3000	16.5000	50
2WA129RC	43 15 43	72 47 14	2.0	5.0000	55.000	1.0	5	35.0000	2.9000	4.8000	50
2WA129RC	43 15 43	72 47 14	1.5	5.0000	345.000	5.0	25	55.0000	2.5500	19.0000	50
2WA132RC	43 21 5	72 46 23	1.5	10.0000	125.000	3.0	15	45.0000	2.4000	5.5000	50
2WA134RC	43 7 40	72 48 5	900.0	550.0000	350.000	5.0	30	115.0000	8.5000	23.0000	50
2WA141RC	43 15 56	72 50 21	2.0	10.0000	230.000	8.0	20	95.0000	1.6500	27.0000	50
2WA201RC	43 26 42	72 49 30	3.0	<5.0000	80.000	1.5	15	35.0000	3.2500	8.5000	50
2WA202RC	43 29 30	72 54 20	1.5	<5.0000	65.000	2.0	15	30.0000	1.3000	9.5000	50
2WA206RC	43 28 18	72 48 5	1.5	<5.0000	350.000	7.0	25	75.0000	1.4500	17.5000	50
2WA207RC	43 29 56	72 49 25	2.0	<5.0000	35.000	.5	5	10.0000	2.0500	2.0000	50
2WA208RC	43 28 38	72 51 17	1.5	5.0000	35.000	.5	5	10.0000	1.8000	2.4000	50
2WA209RC	43 28 38	72 51 17	8.0	10.0000	40.000	1.0	10	50.0000	1.5000	5.5000	50
2WA245RC	43 26 25	72 45 51	31.5	45.0000	355.000	4.5	40	85.0000	10.5000	18.5000	50
2WA217RC	43 25 56	72 46 5	20.5	45.0000	300.000	4.0	30	65.0000	8.5000	17.5000	50
2WA218RC	43 24 44	72 46 58	1.5	5.0000	40.000	.5	5	30.0000	2.8000	4.0000	50
2WA220RC	43 23 36	72 49 39	1.0	5.0000	55.000	.5	5	15.0000	1.6000	3.2000	50
2WA228RC	43 20 26	72 49 58	1.0	<5.0000	85.000	1.5	10	30.0000	4.7500	3.8000	50
5CM206RC	43 3 55	73 29 57	55.0	290.0000	250.000	6.0	96	88.0000	45.0000	64.0000	212
5CM212RC	43 3 31	73 24 0	180.0	580.0000	630.000	18.0	300	240.0000	80.0000	250.0000	250
4SL200RC	43 46 50	73 45 42	14.0	220.0000	3,800.001	42.0	140	950.0000	140.0000	380.0000	226
4SL201RC	43 45 25	73 52 45	17.0	80.0000	570.000	5.0	30	80.0000	23.0000	32.0000	245
4SL202RC	43 46 36	73 54 49	19.0	120.0000	1,400.000	12.0	60	160.0000	68.0000	140.0000	250
4SL203RC	43 47 27	73 53 24	10.0	140.0000	930.000	8.0	40	150.0000	40.0000	30.0000	254
4SL204RC	43 49 38	73 51 59	5.0	80.0000	220.000	2.0	10	20.0000	30.0000	3.0000	252

TABLE1-ANALYSES OF MN-FE OXIDE COATINGS IN MICROGRAMS OR MILLIGRAMS--Continued

Sample	Latitude	Longitude	Cu-ug	Pb-ug	Zn-ug	Cd-ug	Ni-ug	Co-ug	Fe-mg	Mn-mg	Weight
4PL200RC	43 45 36	73 31 0	78.0	80.0000	1,000.000	9.0	1,600	550.0000	37.0000	50.0000	280
4PL201RC	43 47 54	73 32 12	12.0	150.0000	1,800.000	18.0	100	180.0000	61.0000	120.0000	272
4PL202RC	43 48 3	73 31 49	11.0	110.0000	930.000	9.0	30	180.0000	42.0000	40.0000	268
4PL203RC	43 45 3	73 41 3	10.0	140.0000	700.000	4.0	30	50.0000	67.0000	21.0000	291
4PL204RC	43 46 35	73 41 17	14.0	100.0000	500.000	4.0	20	40.0000	12.0000	13.0000	262
4PL205RC	43 49 8	73 44 23	25.0	300.0000	2,200.000	22.0	60	250.0000	75.0000	90.0000	255
4PL206RC	43 51 25	73 42 46	25.0	390.0000	4,000.000	42.0	110	500.0000	88.0000	310.0000	269
4PL207RC	43 55 36	73 44 18	90.0	200.0000	2,900.000	60.0	280	1,800.0000	93.0000	230.0000	262
4PL208RC	43 57 17	73 43 4	12.0	150.0000	710.000	8.0	30	230.0000	75.0000	37.0000	277
4PL209RC	43 54 57	73 38 7	130.0	150.0000	1,800.000	16.0	80	180.0000	58.0000	130.0000	258
4PL210RC	43 54 38	73 39 47	30.0	100.0000	530.000	6.0	60	210.0000	49.0000	11.0000	283
4PL211RC	43 56 2	73 35 38	10.0	30.0000	260.000	2.0	10	20.0000	32.0000	7.0000	226
4PL212RC	43 56 10	73 32 15	10.0	90.0000	40.000	8.0	30	30.0000	4.0000	10.0000	218
4PL213RC	43 57 35	73 30 42	48.0	90.0000	1,000.000	10.0	80	160.0000	70.0000	63.0000	259
4PL214RC	43 54 5	73 33 10	20.0	150.0000	1,900.000	20.0	100	200.0000	92.0000	280.0000	247
4PL215RC	43 53 54	73 34 18	28.0	220.0000	1,700.000	24.0	70	300.0002	64.0000	110.0000	294
4PL216RC	43 54 6	73 33 11	13.0	170.0000	1,600.000	10.0	90	230.0000	67.0000	110.0000	258
4PL217RC	43 52 3	73 31 57	93.0	260.0000	700.000	5.0	40	200.0000	44.0000	30.0000	295
4BL208RC	43 38 42	73 36 33	18.0	430.0000	1,600.000	10.0	70	290.0000	48.0000	17.0000	310
4PL209RC	43 39 57	73 36 51	20.0	170.0000	500.000	5.0	40	150.0000	43.0000	36.0000	265
4BL210RC	43 41 1	73 35 48	29.0	180.0000	2,800.000	18.0	60	250.0000	47.0000	97.0000	275
4BL211RC	43 39 42	73 31 39	19.0	180.0000	300.000	5.0	30	140.0000	32.0000	18.0000	257
4BL213RC	43 40 27	73 30 43	58.0	90.0000	600.000	5.0	60	390.0000	55.0000	21.0000	275
4BL214RC	43 45 5	73 32 25	57.0	240.0000	1,500.000	11.0	90	170.0000	55.0000	97.0000	246
4BL215RC	43 43 15	73 40 14	26.0	190.0000	8,900.000	75.0	140	780.0000	88.0000	630.0002	250
4BL216RC	43 44 38	73 38 15	88.0	170.0000	1,700.000	13.0	100	380.0000	44.0000	52.0000	236
4BL217RC	43 44 36	73 38 5	20.0	130.0000	1,100.000	7.0	90	340.0000	51.0000	130.0000	250
4BL218RC	43 43 32	73 30 5	38.0	100.0000	400.000	4.0	50	90.0000	21.0000	12.0000	268
4BL219RC	43 44 48	73 40 24	72.0	310.0000	8,500.000	40.0	180	640.0000	71.0000	180.0000	280
4PL100RC	43 32 30	73 34 57	47.0	290.0000	4,600.000	46.0	270	390.0000	65.0000	88.0000	280
4BL101RC	43 33 6	73 35 36	45.0	150.0000	1,300.000	11.0	60	210.0000	54.0000	20.0000	270
4BL102RC	43 31 0	73 30 31	8.0	80.0000	200.000	1.0	70	210.0000	12.0000	28.0000	243
4BL103RC	43 31 13	73 31 43	120.0	280.0000	1,200.000	10.0	120	360.0000	54.0000	26.0000	273
4BL104RC	43 31 24	73 30 35	49.0	160.0000	1,600.000	14.0	130	350.0000	29.0000	14.0000	291
4BL105RC	43 32 11	73 30 24	150.0	390.0000	2,800.000	24.0	120	970.0000	27.0000	44.0000	260
4GF110RC	43 27 9	73 34 53	21.0	200.0000	2,400.000	29.0	90	220.0000	63.0000	100.0000	241
4GF111RC	43 28 58	73 34 37	29.0	450.0000	4,500.000	39.0	160	180.0000	130.0000	87.0000	256
4GF112RC	43 28 22	73 30 24	59.0	60.0000	450.000	4.0	70	190.0000	82.0000	160.0000	249
4GF113RC	43 27 8	73 30 42	22.0	100.0000	690.000	10.0	60	200.0000	52.0000	36.0000	284
4GF114RC	43 26 25	73 31 1	46.0	70.0000	260.000	2.0	40	70.0000	43.0000	8.0000	244
4FA200RC	43 29 15	73 26 8	55.0	95.0000	450.000	10.0	1,300	200.0001	54.0000	110.0000	167
4LN101RC	43 6 4	72 51 53	48.0	130.0000	2,300.000	17.0	100	530.0000	80.0000	87.0000	278
4LN103RC	43 4 10	72 52 1	20.0	390.0000	900.000	9.0	50	600.0000	97.0000	56.0000	253
4LN105RC	43 8 0	72 49 20	14.0	90.0000	210.000	2.0	20	450.0000	57.0000	19.0000	219
4LN201RC	43 14 13	72 51 27	22.0	100.0000	700.000	7.0	50	180.0000	38.0000	17.0000	276

TABLE1-ANALYSES OF MN-FE OXIDE COATINGS IN MICROGRAMS OR MILLIGRAMS--Continued

Sample	Latitude	Longitude	Cu-ug	Pb-ug	Zn-ug	Cd-ug	Ni-ug	Co-ug	Fe-mg	Mn-mg	Weight
4LN202RC	43 12 33	72 46 25	93.0	150.0000	800.000	7.0	50	160.0000	34.0000	44.0000	260
4LN203RC	43 11 4	72 51 17	30.0	150.0000	1,000.000	8.0	80	650.0000	76.0000	110.0000	260
4LN204RC	43 10 18	72 49 54	44.0	80.0000	840.000	8.0	70	390.0000	62.0000	44.0000	258
4LN205RC	43 12 5	72 52 18	23.0	100.0000	1,000.000	13.0	60	170.0000	36.0000	33.0000	238
4LN206RC	43 10 17	72 53 29	25.0	40.0000	820.000	8.0	50	320.0000	43.0000	33.0000	254
4LN207RC	43 9 48	72 54 9	15.0	170.0000	1,700.000	18.0	80	690.0000	33.0000	80.0000	198
4LN209RC	43 9 2	72 50 31	14.0	130.0000	630.000	5.0	40	190.0000	40.0000	29.0000	218
4LN210RC	43 3 53	72 46 6	8.0	100.0000	230.000	2.0	20	140.0000	27.0000	15.0000	256
4LN211RC	43 1 58	72 46 48	160.0	70.0000	240.000	2.0	150	220.0000	32.0000	12.0000	300
4LN214RC	43 1 9	72 52 57	26.0	90.0000	1,100.000	13.0	60	170.0000	52.0000	33.0000	270
4LN215RC	43 1 45	72 53 26	16.0	390.0000	430.000	5.0	40	310.0000	55.0000	44.0000	237
4LN216RC	43 3 6	72 53 30	9.0	100.0000	140.000	1.0	20	60.0000	36.0000	5.0000	247
4LN217RC	43 3 41	72 58 10	33.0	300.0000	290.000	3.0	40	170.0000	66.0000	15.0000	263
4LN218RC	43 3 42	72 59 18	22.0	260.0000	80.000	1.0	20	40.0000	35.0000	2.0000	242
4LL100RC	43 15 30	73 48 33	20.0	170.0000	1,300.000	12.0	60	160.0000	44.0000	39.0000	284
4LL101RC	43 18 42	73 45 53	10.0	190.0000	1,200.000	16.0	40	210.0000	25.0000	26.0000	252
4LL102RC	43 18 19	73 46 43	5.0	60.0000	300.000	3.0	20	20.0000	10.0000	5.0000	237
4LL106RC	43 22 56	73 46 48	10.0	70.0000	490.000	4.0	20	70.0000	25.0000	10.0000	228
4LL107RC	43 24 2	73 52 52	12.0	80.0000	2,300.000	2.0	20	30.0000	25.0000	2.0000	250
4LL108RC	43 23 0	73 51 42	28.0	70.0000	110.000	1.0	30	40.0000	20.0000	1.0000	240
4LL110RC	43 24 48	73 53 30	21.0	160.0000	480.000	4.0	30	100.0000	52.0000	11.0000	260
4LL111RC	43 28 22	73 51 0	46.0	120.0000	780.000	4.0	50	120.0000	69.0000	11.0000	249
4LL112RC	43 29 14	73 53 5	34.0	130.0000	1,400.000	17.0	70	200.0000	62.0000	62.0000	237
4LL113RC	43 29 41	73 48 45	47.0	80.0000	400.000	2.0	50	130.0000	130.0000	7.0000	250
4LL114RC	43 28 13	73 47 5	56.0	210.0000	1,200.000	10.0	60	190.0000	62.0000	39.0000	289
4LL115RC	43 28 12	73 45 13	14.0	170.0000	520.000	5.0	30	120.0000	48.0000	18.0000	266
4LL200RC	43 24 31	73 57 38	11.0	70.0000	810.000	6.0	30	90.0000	53.0000	9.0000	228
4LL201RC	43 24 53	73 58 53	18.0	390.0000	4,200.000	56.0	150	440.0000	64.0000	120.0000	268
4LL202RC	43 26 7	73 57 34	14.0	160.0000	1,200.000	10.0	30	180.0000	63.0000	28.0000	232
4LL203RC	43 27 16	73 58 42	13.0	50.0000	640.000	4.0	30	80.0000	45.0000	16.0000	284
4LL204RC	43 27 26	73 57 15	10.0	80.0000	570.000	4.0	30	90.0000	45.0000	15.0000	218
4LL205RC	43 27 53	73 56 11	32.0	450.0000	8,700.000	64.0	160	480.0000	64.0000	180.0000	228
4LL206RC	43 18 49	73 54 17	17.0	120.0000	530.000	6.0	30	160.0000	51.0000	23.0000	270
4LL207RC	43 18 41	73 57 42	11.0	190.0000	910.000	11.0	30	120.0000	52.0000	24.0000	274
4LL208RC	43 20 59	73 59 57	19.0	110.0000	600.000	5.0	20	140.0000	70.0000	22.0000	264
4LL209RC	43 22 6	73 55 16	58.0	180.0000	3,000.000	34.0	110	530.0000	140.0000	180.0000	261
4LL210RC	43 16 5	73 57 12	47.0	100.0000	650.000	4.0	40	60.0000	28.0000	8.0000	245
4LL211RC	43 16 1	73 57 22	10.0	140.0000	330.000	3.0	20	120.0000	48.0000	11.0000	267
4LL212RC	43 17 44	73 54 18	11.0	110.0000	480.000	5.0	20	70.0000	33.0000	10.0000	249
4NC100RC	43 40 45	73 46 33	12.0	190.0000	1,200.000	7.0	30	70.0000	36.0000	43.0000	244
4NC101RC	43 43 34	73 46 0	18.0	130.0000	1,500.000	11.0	50	170.0000	83.0000	69.0000	237
4NC102RC	43 44 52	73 50 34	10.0	80.0000	510.000	4.0	20	160.0000	45.0000	15.0000	269
4NC103RC	43 44 13	73 30 18	27.0	110.0000	510.000	3.0	310	80.0000	57.0000	11.0000	283
4NC104RC	43 41 54	73 51 7	11.0	120.0000	550.000	4.0	20	100.0000	44.0000	26.0000	242
4NC105RC	43 42 52	73 53 3	16.0	100.0000	790.000	8.0	30	140.0000	57.0000	29.0000	277

TABLE1-ANALYSES OF MN-FE OXIDE COATINGS IN MICROGRAMS OR MILLIGRAMS--Continued

Sample	Latitude	Longitude	Cu-ug	Pb-ug	Zn-ug	Cd-ug	Ni-ug	Co-ug	Fe-mg	Mn-mg	Weight
4NC106RC	43 44 13	73 55 12	14.0	350.0000	1,200.000	4.0	40	350.0000	110.0000	140.0000	227
4NC107RC	43 41 45	73 57 45	24.0	170.0000	1,200.000	12.0	40	220.0000	69.0000	66.0000	237
4NC108RC	43 42 32	73 56 9	13.0	110.0000	390.000	5.0	30	120.0000	59.0000	24.0000	270
4NC109RC	43 41 43	73 54 54	14.0	120.0000	750.000	7.0	30	90.0000	57.0000	27.0000	291
4NC110RC	43 39 47	73 55 36	17.0	180.0000	1,100.000	5.0	40	150.0000	69.0000	96.0000	247
4NC111RC	43 40 17	73 53 8	7.0	40.0000	460.000	63.0	70	1,200.0000	110.0000	670.0000	246
4NC112RC	43 38 6	73 51 31	28.0	200.0000	440.000	10.0	60	160.0000	140.0000	150.0000	224
4NC113RC	43 39 5	73 59 46	42.0	70.0000	260.000	12.0	70	170.0000	70.0000	48.0000	293
4NC114RC	43 36 59	73 58 31	19.0	110.0000	110.000	8.0	50	260.0000	84.0000	150.0000	245
4NC115RC	43 36 20	73 58 49	13.0	60.0000	62.000	3.0	30	60.0000	57.0000	12.0000	229
4NC116RC	43 35 3	73 59 0	15.0	90.0000	160.000	9.0	50	150.0000	52.0000	80.0000	259
4NC117RC	43 34 54	73 58 44	84.0	50.0000	50.000	6.0	40	170.0000	45.0000	9.0000	295
4NC119RC	43 36 40	73 53 32	14.0	80.0000	68.000	5.0	20	100.0000	49.0000	23.0000	238
4NC120RC	43 31 40	73 55 40	55.0	110.0000	150.000	12.0	180	240.0000	61.0000	66.0000	269
4NC121RC	43 32 33	73 59 40	14.0	90.0000	140.000	11.0	180	180.0000	58.0000	120.0000	245
4NC123RC	43 33 41	73 55 23	32.0	70.0000	210.000	13.0	80	380.0000	85.0000	220.0000	259
4NC124RC	43 34 13	73 54 22	19.0	40.0000	33.000	5.0	50	120.0000	30.0000	17.0000	269
4NC125RC	43 33 59	73 53 43	14.0	170.0000	150.000	13.0	40	200.0000	72.0000	51.0000	244
4NC126RC	43 31 0	73 51 19	30.0	140.0000	50.000	2.0	30	90.0000	28.0000	4.0000	197
4NC127RC	43 31 5	73 54 22	19.0	230.0000	390.000	17.0	90	280.0000	60.0000	200.0000	267
4NC128RC	43 32 3	73 52 6	19.0	140.0000	130.000	7.0	50	150.0000	37.0000	50.0000	263
4NC129RC	43 32 42	73 51 18	42.0	250.0000	230.000	12.0	70	350.0000	120.0000	170.0000	262
4NC130RC	43 35 44	73 49 42	12.0	110.0000	16.000	1.0	20	50.0000	35.0000	10.0000	245
4NC131RC	43 34 27	73 45 15	40.0	50.0000	48.000	4.0	40	190.0000	34.0000	20.0000	231
4TC202RC	43 57 35	73 29 18	12.0	60.0000	300.000	2.0	50	50.0000	19.0000	32.0000	264
4TC203RC	43 57 33	73 29 16	6.0	30.0000	150.000	2.0	30	30.0000	23.0000	25.0000	251
4TC204RC	43 52 58	73 28 21	6.0	40.0000	90.000	1.0	20	30.0000	20.0000	13.0000	252
4TC205RC	43 49 5	73 29 55	10.0	160.0000	680.000	15.0	40	80.0000	47.0000	54.0000	307
4TC206RC	43 45 44	73 27 22	5.0	30.0000	150.000	<1.0	30	30.0000	20.0000	30.0000	288
4SL205RC	43 50 26	73 51 15	39.0	50.0000	360.000	<1.0	50	60.0000	48.0000	4.0000	308
4SL206RC	43 56 19	73 57 13	13.0	120.0000	740.000	6.0	30	160.0000	62.0000	25.0000	284
4SL207RC	43 56 42	73 57 12	15.0	440.0000	1,200.000	9.0	30	120.0000	32.0000	35.0000	253
4SL208RC	43 57 25	73 52 12	44.0	30.0000	260.000	1.0	360	110.0000	38.0000	5.0000	231
4SL209RC	43 57 33	73 47 26	5.0	40.0000	210.000	<1.0	20	20.0000	29.0000	2.0000	278
4SL210RC	43 56 38	73 51 0	23.0	110.0000	900.000	4.0	40	200.0000	45.0000	13.0000	264
4SL211RC	43 57 21	73 50 14	8.0	120.0000	530.000	3.0	20	50.0000	22.0000	7.0000	300
4SL212RC	43 50 3	73 55 55	6.0	70.0000	500.000	3.0	30	60.0000	36.0000	7.0000	276
4SL213RC	43 48 20	73 57 9	65.0	80.0000	2,200.000	10.0	100	420.0000	89.0000	27.0000	286
4SL214RC	43 52 55	73 54 9	14.0	60.0000	410.000	1.0	20	80.0000	30.0000	4.0000	268
4SL215RC	43 51 5	73 48 9	6.0	450.0000	1,200.000	12.0	40	70.0000	26.0000	33.0000	278
4PL218RC	43 59 15	73 39 5	16.0	470.0000	3,300.000	27.0	70	370.0000	86.0000	130.0000	246
4PL219RC	43 59 17	73 39 39	30.0	340.0000	770.000	4.0	50	360.0000	87.9999	50.0000	278
4PL220RC	43 58 31	73 42 52	6.0	120.0000	420.000	3.0	20	50.0000	35.0000	8.0000	258
4PL221RC	43 58 6	73 43 43	9.0	170.0000	480.000	3.0	30	80.0000	33.0000	17.0000	282
4WH200RC	43 34 25	73 26 45	18.0	110.0000	300.000	5.0	40	90.0000	34.0000	30.0000	223

TABLE1-ANALYSES OF MN-FE OXIDE COATINGS IN MICROGRAMS OR MILLIGRAMS--Continued

Sample	Latitude	Longitude	Cu-ug	Pb-ug	Zn-ug	Cd-ug	Ni-ug	Co-ug	Fe-mg	Mn-mg	Weight
4WH201RC	43 35 20	73 29 21	7.0	130.0000	700.000	4.0	30	90.0000	21.0000	15.0000	228
4WH202RC	43 35 2	73 29 16	23.0	80.0000	960.000	6.0	80	240.0000	45.0000	31.0000	242
4WH203RC	43 34 29	73 28 22	61.0	150.0000	1,500.000	35.0	780	750.0000	70.0000	140.0000	222
4BL220RC	43 38 18	73 30 9	28.0	10.0000	360.000	2.0	50	130.0000	36.0000	15.0000	234
4PU200RC	43 38 18	73 27 7	24.0	70.0000	320.000	2.0	40	190.0000	60.0000	20.0000	193
4PU201RC	43 37 21	73 26 49	10.0	50.0000	180.000	3.0	30	60.0000	10.0000	15.0000	247
4PU202RC	43 40 14	73 29 31	42.0	150.0000	660.000	3.0	50	90.0000	52.0000	7.0000	244
4PU203RC	43 39 15	73 29 30	76.0	110.0000	210.000	2.0	40	60.0000	32.0000	13.0000	245
4PU206RC	43 40 44	73 25 4	28.0	60.0000	150.000	1.0	60	50.0000	34.0000	18.0000	259
4PU207RC	43 41 10	73 27 15	10.0	60.0000	170.000	2.0	30	40.0000	19.0000	20.0000	234
4PU208RC	43 43 52	73 27 28	21.0	160.0000	1,400.000	14.0	70	180.0000	83.0000	240.0000	236
4SA101RC	43 12 17	73 53 5	14.0	310.0000	850.000	11.0	50	130.0000	40.0000	20.0000	305
4SA102RC	43 11 30	73 54 18	8.0	160.0000	450.000	3.0	30	160.0000	18.0000	18.0000	262
4SA103RC	43 10 43	73 54 19	14.0	90.0000	400.000	2.0	30	40.0000	23.0000	4.0000	265
4SA104RC	43 9 2	73 53 3	19.0	110.0000	1,100.000	10.0	60	110.0000	34.0000	38.0000	268
4SA105RC	43 9 2	73 53 21	32.0	110.0000	520.000	6.0	110	130.0000	25.0000	8.0000	255
4SA106RC	43 6 39	73 55 39	73.0	70.0000	830.000	8.0	50	90.0000	29.0000	57.0000	292
4SA107RC	43 6 11	73 59 55	30.0	310.0000	8,000.000	68.0	240	620.0000	77.0000	340.0000	246
4SA108RC	43 4 48	73 58 6	16.0	100.0000	620.000	4.0	30	50.0000	35.0000	10.0000	258
4SA109RC	43 10 39	73 59 30	18.0	100.0000	2,100.000	59.0	150	130.0000	97.0000	800.0000	210
4SA110RC	43 8 57	73 58 7	39.0	810.0000	27,000.000	200.0	680	160.0000	85.0000	450.0000	260
4SA200RC	43 8 57	73 51 18	38.0	150.0000	1,000.000	10.0	60	40.0000	54.0000	100.0000	242
4SA201RC	43 9 10	73 46 32	29.0	150.0000	1,600.000	11.0	70	110.0000	30.0000	45.0000	254
4SA203RC	43 8 22	73 46 14	410.0	310.0000	2,200.000	25.0	1,300	130.0000	110.0000	59.0000	243
4SA205RC	43 8 13	73 48 37	23.0	160.0000	900.000	7.0	40	90.0000	34.0000	120.0000	195
4BL200RC	43 31 5	73 44 31	22.0	100.0000	1,000.000	4.0	30	620.0000	43.0000	29.0000	277
4BL201RC	43 36 36	73 43 19	34.0	60.0000	1,000.000	3.0	60	50.0000	84.0000	34.0000	288
4BL202RC	43 36 30	73 43 12	82.0	110.0000	1,800.000	10.0	90	6,500.0000	53.0000	49.0000	292
4BL203RC	43 34 16	73 39 57	25.0	360.0002	1,500.000	16.0	80	1,800.0000	38.0000	28.0000	337
4BL204RC	43 35 33	73 38 36	17.0	600.0000	1,700.000	16.0	70	150.0000	44.0000	54.0000	273
4BL205RC	43 36 41	73 37 46	14.0	220.0000	1,200.000	16.0	120	140.0000	29.0000	34.0000	255
4BL206RC	43 36 59	73 40 55	19.0	70.0000	900.000	6.0	50	190.0000	39.0000	19.0000	265
4BL207RC	43 39 15	73 43 45	7.0	130.0000	1,200.000	6.0	30	100.0000	25.0000	41.0000	253
4GF100RC	43 27 10	73 44 12	16.0	290.0000	900.000	5.0	40	100.0000	28.0000	18.0000	257
4GF101RC	43 26 18	73 43 43	12.0	300.0000	1,000.000	11.0	30	140.0000	33.0000	19.0000	227
4GF102RC	43 24 46	73 43 28	21.0	90.0000	600.000	3.0	30	60.0000	17.0000	16.0000	294
4GF103RC	43 24 28	73 42 2	8.0	80.0000	300.000	1.0	20	40.0000	32.0000	6.0000	221
4GF104RC	43 23 55	73 43 48	7.0	50.0000	200.000	1.0	10	40.0000	11.0000	5.0000	291
4GF105RC	43 20 18	73 44 18	12.0	20.0000	100.000	<1.0	10	20.0000	15.0000	2.0000	298
4GF106RC	43 19 5	73 44 24	350.0	320.0000	1,600.000	12.0	60	100.0000	41.0000	37.0000	238
4GF107RC	43 23 40	73 38 51	4.0	50.0000	160.000	1.0	10	20.0000	21.0000	2.0000	246
4GF108RC	43 25 3	73 39 6	15.0	50.0000	160.000	<1.0	10	20.0000	15.0000	2.0000	272
4GF109RC	43 26 10	73 35 42	26.0	220.0000	1,600.000	20.0	110	150.0000	33.0000	58.0000	180
4AR100RC	43 0 23	73 10 14	12.0	120.0000	180.000	2.0	40	80.0000	32.0000	86.0000	224
4AR103RC	43 2 50	73 9 3	14.0	120.0000	780.000	16.0	120	190.0000	78.0000	170.0000	242

TABLE1-ANALYSES OF MN-FE OXIDE COATINGS IN MICROGRAMS OR MILLIGRAMS--Continued

Sample	Latitude	Longitude	Cu-ug	Pb-ug	Zn-ug	Cd-ug	Ni-ug	Co-ug	Fe-mg	Mn-mg	Weight
4AR108RC	43 2 44	73 8 12	12.0	140.0000	1,800.000	22.0	150	320.0000	24.0000	38.0000	280
4DO102RC	43 15 15	73 6 52	14.0	460.0000	90.000	1.0	10	30.0000	11.0000	4.0000	182
4DO116RC	43 20 35	73 1 32	20.0	70.0000	100.000	4.0	150	120.0000	17.0000	20.0000	241
4SD100RC	43 3 44	73 0 4	16.0	430.0000	90.000	1.0	20	280.0000	58.0000	19.0000	219
4SD104RC	43 3 14	73 3 16	8.0	330.0000	80.000	1.0	20	410.0000	62.0000	27.0000	244
4SD106RC	43 4 44	73 6 36	14.0	710.0000	2,000.000	36.0	280	1,300.0000	36.0000	170.0000	265
4SD108RC	43 6 35	73 6 11	7.0	200.0000	1,300.000	16.0	130	770.0000	39.0000	45.0000	246
4SD109RC	43 5 50	73 5 51	11.0	100.0000	3,300.000	30.0	270	840.0000	33.0000	110.0000	242
4SM102RC	43 8 20	73 17 8	75.0	310.0000	1,100.000	12.0	100	320.0000	58.0000	610.0000	259
4SM103RC	43 7 50	73 20 3	100.0	190.0000	230.000	5.0	50	80.0000	55.0000	77.0000	249
4SM104RC	43 10 14	73 17 34	120.0	600.0000	380.000	11.0	140	160.0000	34.0000	98.0000	220
4SH104RC	43 2 23	73 19 40	25.0	270.0000	720.000	11.0	50	90.0000	23.0000	54.0000	173
4SH105RC	43 3 44	73 21 45	75.0	190.0001	490.000	15.0	170	180.0000	36.0000	89.0000	138
4SH106RC	43 6 9	73 19 31	65.0	250.0001	340.000	11.0	120	90.0000	19.0000	49.0000	187
4SH107RC	43 6 56	73 18 10	35.0	270.0000	560.000	10.0	80	120.0000	32.0000	76.0000	248
4CA601RC	43 26 2	72 32 49	47.0	140.0000	100.000	9.0	80	90.0000	14.0000	29.0000	290
4CA602RC	43 24 33	73 30 12	28.0	120.0000	100.000	7.0	60	160.0000	30.0000	96.0000	233
4CA605RC	43 28 54	72 37 29	62.0	90.0000	2,200.000	17.0	180	520.0000	120.0000	320.0000	254
4CA607RC	43 29 54	72 31 12	96.0	80.0000	140.000	<1.0	130	80.0000	29.0000	31.0000	257
4MA101RC	43 9 28	73 2 28	4.0	100.0000	290.000	3.0	20	170.0000	14.0000	6.0000	278
4MA102RC	43 9 42	73 2 0	10.0	120.0000	210.000	3.0	50	180.0000	8.0000	11.0000	262
4MA105RC	43 12 2	73 3 35	95.0	730.0000	1,900.000	21.0	220	300.0000	55.0000	170.0000	256
4MA107RC	43 11 18	73 3 30	6.0	20.0000	40.000	<1.0	30	40.0000	1.0000	12.0000	237
4MA109RC	43 11 23	73 1 3	23.0	50.0000	3,000.000	17.0	190	180.0000	28.0000	110.0000	251
4MA110RC	43 14 22	73 0 16	44.0	1,100.0000	5,200.000	30.0	250	330.0000	41.0000	79.0000	217
4MS400RC	43 41 42	72 10 47	24.0	80.0000	190.000	3.0	60	130.0000	15.0000	16.0000	285
4MS401RC	43 37 34	72 1 24	19.0	70.0000	1,300.000	12.0	60	120.0000	21.0000	55.0000	267
4WL203RC	43 28 31	73 8 53	120.0	1,000.0000	340.000	12.0	270	320.0000	64.0000	73.0000	238
4WL204RC	43 27 42	73 8 5	620.0	400.0000	680.000	21.0	430	330.0000	120.0000	220.0000	262
4WL205RC	43 24 21	73 8 57	170.0	440.0000	650.000	7.0	290	340.0000	44.0000	54.0000	258
4HK201RC	43 53 17	72 48 45	230.0	290.0000	280.000	8.0	550	200.0000	30.0000	41.0000	229
4HK208RC	43 59 27	72 50 24	400.0	800.0000	920.000	12.0	420	340.0000	65.0000	110.0000	248
4TC201RC	43 45 15	73 19 21	240.0	900.0000	750.000	6.0	210	260.0000	68.0000	87.0000	252
4PA205RC	43 18 14	73 14 3	200.0	2,300.0000	420.000	14.0	230	210.0000	48.0000	120.0000	235
4BR210RC	43 57 24	72 58 57	24.0	190.0000	980.000	9.0	110	120.0000	42.0000	24.0000	256
4BD400RC	43 48 36	73 2 32	62.0	340.0000	3,800.000	37.0	700	300.0000	100.0000	200.0000	203
4BD401RC	43 47 11	73 1 42	52.0	800.0000	1,200.000	21.0	430	340.0000	53.0000	110.0001	287
4BD402RC	43 46 21	73 1 14	140.0	520.0000	730.000	8.0	250	150.0000	130.0000	86.0000	239
4DO101RC	43 21 59	73 5 50	78.0	470.0000	450.000	10.0	320	260.0000	41.0000	83.0000	253
4RT109RC	43 30 43	73 1 19	9.0	50.0000	180.000	3.0	200	80.0000	15.0000	66.0000	246
4SY100RC	43 46 13	73 10 56	76.0	450.0000	460.000	14.0	200	270.0000	44.0000	67.0000	201
4PA204RC	43 16 37	73 13 35	140.0	650.0000	510.000	13.0	190	210.0000	55.0000	84.0000	270
4CT100RC	43 42 40	72 57 58	51.0	320.0000	2,100.000	19.0	370	340.0000	53.0000	87.0000	233
4CT101RC	43 44 19	72 56 9	45.0	280.0000	2,800.000	29.0	280	410.0000	68.0000	83.0000	253
4CT103RC	43 42 9	72 53 13	39.0	440.0000	1,400.000	23.0	200	210.0000	24.0000	54.0000	285

TABLE1-ANALYSES OF MN-FE OXIDE COATINGS IN MICROGRAMS OR MILLIGRAMS--Continued

Sample	Latitude	Longitude	Cu-ug	Pb-ug	Zn-ug	Cd-ug	Ni-ug	Co-ug	Fe-mg	Mn-mg	Weight
4CT104RC	43 42 53	72 55 20	40.0	390.0000	730.000	9.0	90	90.0000	49.0000	26.0000	255
4CT105RC	43 40 14	72 59 11	94.0	520.0000	2,100.000	20.0	390	220.0000	71.0000	110.0001	245
4CT106RC	43 39 8	72 57 44	70.0	440.0000	2,800.000	28.0	210	200.0000	73.0000	130.0000	237
4CT109RC	43 38 38	72 53 10	8.0	50.0000	540.000	1.0	30	30.0000	15.0000	14.0000	160
4CT110RC	43 39 19	72 53 19	45.0	340.0000	2,300.000	25.0	170	510.0000	130.0000	33.0000	260
4MD103RC	43 23 28	73 0 27	6.0	50.0000	90.000	3.0	100	80.0000	10.0000	31.0000	272
4BP202RC	43 59 26	72 53 52	380.0	570.0000	480.000	8.0	390	340.0000	82.0000	64.0000	251
4PR100RC	43 41 38	73 2 40	11.0	30.0000	360.000	2.0	50	90.0000	40.0000	87.0000	251
4PR106RC	43 44 24	73 1 12	17.0	140.0000	980.000	12.0	170	140.0000	36.0000	150.0000	284
4PR110RC	43 39 43	73 0 6	20.0	140.0000	460.000	1.0	50	40.0000	20.0000	16.0000	230
4PR111RC	43 40 49	73 0 33	25.0	130.0000	490.000	3.0	80	60.0000	12.0000	50.0000	251
4PR112RC	43 42 15	73 0 26	85.0	300.0000	730.000	5.0	120	80.0000	24.0000	50.0000	271
4PP103RC	43 42 15	72 49 36	140.0	230.0000	1,600.000	22.0	20	360.0000	37.0000	60.0000	254
4PP107RC	43 38 41	72 47 26	160.0	290.0000	1,500.000	13.0	130	290.0000	110.0000	130.0000	222
4PP108RC	43 38 42	72 47 17	32.0	390.0000	2,700.000	16.0	120	360.0000	87.0000	120.0000	247
4PP111RC	43 39 52	72 48 43	17.0	410.0000	1,300.000	14.0	100	150.0000	44.0000	38.0000	252
4CR106RC	43 51 19	72 54 35	19.0	230.0000	1,200.000	18.0	170	260.0000	28.0000	28.0000	224
4CR110RC	43 47 21	72 58 41	44.0	510.0000	470.000	6.0	100	100.0000	79.0000	38.0000	208
4BO109RC	43 44 46	73 11 51	23.0	240.0000	570.000	4.0	50	80.0000	36.0000	110.0000	221
4BO110RC	43 44 21	73 10 37	24.0	400.0000	520.000	19.0	90	120.0000	20.0000	58.0000	228
4PO111RC	43 43 23	73 10 59	440.0	310.0000	840.000	24.0	380	480.0000	62.0000	62.0000	194
4BO100RC	43 43 11	73 14 7	38.0	110.0000	340.000	3.0	70	70.0000	24.0000	49.0000	184
4PO101RC	43 43 3	73 12 13	69.0	130.0000	200.000	4.0	310	170.0000	31.0000	55.0000	244
4PO104RC	43 40 47	73 10 30	91.0	650.0000	240.000	11.0	480	160.0000	26.0000	47.0000	191
4KP100RC	43 33 26	72 51 36	52.0	360.0000	8,700.000	110.0	990	820.0000	77.0000	220.0000	278
4KP102RC	43 32 38	72 50 8	27.0	160.0000	1,500.000	18.0	310	520.0000	84.0000	92.0000	274
4KP105RC	43 32 14	72 52 21	41.0	320.0000	1,300.000	13.0	230	120.0000	25.0000	60.0000	227
4PP100RC	43 38 1	72 52 12	8.0	100.0000	50.000	3.0	10	10.0000	1.0000	.5080	127
4RL100RC	43 34 8	72 58 2	5.0	100.0000	360.000	4.0	60	50.0000	28.0000	29.0000	229
4RL104RC	43 32 50	72 57 26	10.0	120.0000	300.000	4.0	50	30.0000	35.0000	12.0000	241
4EM101RC	43 58 49	73 6 19	160.0	1,000.0000	880.000	7.0	220	120.0000	41.0000	47.0000	196
4EM103RC	43 59 20	73 2 25	21.0	190.0000	1,100.000	11.0	230	120.0000	32.0000	32.0000	245
4EM105RC	43 58 35	73 1 18	11.0	190.0000	1,000.000	11.0	160	130.0000	27.0000	40.0000	244
4EM108RC	43 57 30	73 0 59	28.0	80.0000	570.000	4.0	140	60.0000	32.0000	9.0000	288
4GR207RC	43 27 48	73 15 23	29.0	200.0000	360.000	5.0	120	80.0000	26.0000	44.0000	266
4GR209RC	43 25 13	73 17 59	90.0	300.0000	490.000	5.0	220	120.0000	56.0000	95.0000	221
4GR210RC	43 28 58	73 18 29	86.0	220.0001	1,400.000	13.0	430	270.0000	99.0000	340.0000	200
4GR211RC	43 27 18	73 19 15	92.0	300.0000	330.000	6.0	300	150.0000	46.0000	84.0000	251
4GR213RC.	43 22 39	73 19 6	69.0	400.0000	1,400.000	15.0	550	550.0000	92.0000	220.0000	163
4GR214RC	43 25 46	73 19 45	9.0	90.0000	280.000	3.0	70	80.0000	27.0000	100.0000	206
4GR216RC	43 24 55	73 22 21	150.0	340.0000	410.000	5.0	250	370.0000	45.0000	55.0000	207
4TH200RC	43 36 23	73 18 22	21.0	100.0000	510.000	6.0	130	230.0001	52.0000	89.0000	173
4TH202RC	43 33 5	73 15 57	130.0	650.0000	1,200.000	13.0	210	290.0000	61.0000	72.0000	178
4TH203RC	43 31 22	73 15 43	59.0	250.0001	880.000	6.0	110	229.9999	66.0000	180.0000	209
4TH204RC	43 31 36	73 19 26	75.0	230.0001	440.000	4.0	80	110.0000	71.0000	100.0000	192

TABLE1-ANALYSES OF MN-FE OXIDE COATINGS IN MICROGRAMS OR MILLIGRAMS--Continued

Sample	Latitude	Longitude	Cu-ug	Pb-ug	Zn-ug	Cd-ug	Ni-ug	Co-ug	Fe-mg	Mn-mg	Weight
4BE200RC	43 38 49	73 16 19	140.0	980.0000	2,100.000	11.0	120	219.9999	84.0000	120.0000	217
4BE203RC	43 43 44	73 16 25	5.0	40.0000	1,000.000	<1.0	50	70.0000	110.0000	40.0000	241
4BE204RC	43 44 7	73 18 23	49.0	230.0000	1,000.000	6.0	60	110.0000	47.0000	59.0000	234
4WP201RC	43 19 51	73 17 26	120.0	1,200.0000	370.000	9.0	150	130.0000	47.0000	55.0000	237
4WP202RC	43 17 24	73 20 48	60.0	380.0000	320.000	6.0	110	140.0000	47.0000	58.0000	219
4WP203RC	43 18 21	73 21 29	54.0	260.0000	1,300.000	6.0	100	360.0000	130.0000	310.0000	223
4WP204RC	43 15 21	73 19 29	230.0	330.0000	1,200.000	24.0	290	190.0000	68.0000	140.0000	209
4WP205RC	43 15 20	73 16 31	46.0	280.0000	260.000	2.0	60	120.0000	24.0000	36.0000	230
4CY200RC	43 14 44	73 27 22	63.0	290.0000	560.000	6.0	130	180.0000	54.0000	81.0000	229
4CY201RC	43 9 57	73 23 39	120.0	400.0000	1,000.000	9.0	120	190.0000	64.0000	150.0000	238
4CY203RC	43 11 6	73 26 35	69.0	300.0000	800.000	6.0	140	200.0000	68.0000	93.0000	209
4CY204RC	43 11 7	73 29 33	66.0	1,300.0000	420.000	6.0	130	160.0000	60.0000	100.0000	197
4CY205RC	43 8 20	73 28 18	110.0	510.0000	690.000	4.0	80	130.0000	94.0000	32.0000	215
4SM200RC	43 12 24	73 20 42	100.0	490.0000	1,200.000	7.0	100	130.0000	54.0000	120.0000	245
5CM200RC	43 2 27	73 29 7	120.0	450.0000	530.000	6.0	76	90.0000	79.0000	120.0000	110
5CM203RC	43 4 11	73 28 41	120.0	370.0000	360.000	4.0	72	92.0000	57.0000	33.0000	245
5CM204RC	43 6 19	73 24 59	17.0	80.0000	250.000	12.0	150	150.0000	27.0000	100.0000	216
5CM207RC	43 0 33	73 29 14	88.0	650.0000	600.000	8.0	220	250.0000	82.0000	78.0000	237
5HF200RC	43 21 48	73 23 20	18.0	2,880.0000	1,100.000	10.0	85	130.0000	59.0000	110.0000	192
5HF201RC	43 20 0	73 22 51	38.0	360.0000	710.000	9.0	77	150.0000	44.0000	140.0000	236
5HF202RC	43 17 33	73 24 55	72.0	240.0000	570.000	13.0	180	190.0000	61.0000	88.0000	212
5HF203RC	43 15 8	73 23 3	100.0	330.0000	770.000	14.0	120	240.0000	110.0000	330.0000	226
5CY206RC	43 9 0	73 24 50	80.0	400.0000	1,200.000	11.0	98	120.0000	68.0000	160.0000	202
5CY207RC	43 14 16	73 28 31	190.0	300.0000	1,100.000	8.0	88	110.0000	52.0000	57.0000	190
5SC200RC	43 8 42	73 31 30	45.0	270.0000	200.000	2.0	40	170.0000	43.0000	51.0000	222
5SC201RC	43 10 51	73 31 0	6.0	40.0000	280.000	3.0	38	87.0000	20.0000	70.0000	225
5BF404RC	43 10 53	72 25 25	110.0	290.0000	430.000	5.0	290	220.0000	38.0000	22.0000	243
5BF405RC	43 6 48	72 17 5	48.0	1,540.5000	1,200.000	30.0	230	3,792.0000	180.0000	340.0000	237

TABLE2-ANALYSES OF MN-FE OXIDE COATINGS IN PARTS PER MILLION OF TOTAL SAMPLE

[N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	Latitude	Longitude	Cu-ppm	Pb-ppm	Zn-ppm	Cd-ppm	Ni-ppm	Co-ppm	Fe-ppm	Mn-ppm	Weight
3MS110RC	43 41 8	72 6 36	.0100	<.1000	4.8000	.1000	.1000	1.0000	33.0000	340.0000	50
3MS111RC	43 41 39	72 8 3	.0400	<.1000	3.5000	.1300	.2000	1.0000	34.0000	370.0000	50
3MS122RC	43 37 33	72 1 21	.0800	.2000	4.2000	.0400	.1000	.3000	35.0000	150.0000	50
3MS126RC	43 30 14	72 3 18	.0100	<.1000	7.6000	.0900	.2000	.9000	26.0000	500.0000	50
3MS128RC	43 34 30	72 3 33	.0200	.1000	7.3000	.1200	.2000	.7000	26.0000	530.0000	50
3CA110RC	43 28 57	72 36 3	.0600	.5000	1.6000	<.0100	2.8000	1.7000	230.0000	440.0000	50
3CA112RC	43 26 51	72 34 52	1.0000	1.4000	17.0000	.3000	.6000	.8000	31.0000	460.0000	50
3CL120RC	43 21 28	72 28 27	.0100	<.1000	1.4000	.0200	.3000	.2000	17.0000	290.0000	50
3SO119RC	43 15 54	72 13 0	.0100	<.1000	4.0000	.0600	.2000	.4000	26.0000	220.0000	50
3SR101RC	43 11 25	72 30 18	.0200	<.1000	.7000	.0100	.3000	1.0000	34.0000	290.0000	50
3SR102RC	43 8 44	72 30 30	.0100	<.1000	1.3000	.0500	1.7000	2.2000	21.0000	750.0000	50
3SR116RC	43 8 55	72 34 52	.0500	.1000	3.1000	.0400	.2000	.3000	27.0000	110.0000	50
3SR125RC	43 6 6	72 32 14	.0200	<.1000	9.0000	.0100	.6000	.6000	30.0000	270.0000	50
3SR134RC	43 0 29	72 43 5	.0200	<.1000	10.0000	.1500	.8000	2.2000	28.0000	550.0000	50
3SR143RC	43 4 58	72 38 2	<.0100	<.1000	4.4000	.0400	.5000	.8000	32.0000	310.0000	50
2ST115RC	43 58 24	72 19 54	.2000	1.2000	.8000	<.0100	.1000	.2000	100.0000	120.0000	50
2ST121RC	43 57 12	72 15 22	.0100	<.1000	4.1000	.0300	.3000	.2000	18.0000	380.0000	50
2ST126RC	43 54 40	72 21 12	.0300	<.1000	.3000	.0100	.2000	<.0100	18.0000	180.0000	50
2ST129RC	43 54 54	72 17 6	.6300	.1000	.4000	.0100	.4000	.4000	28.0000	130.0000	50
2ST249RC	43 47 42	72 16 57	.0300	<.1000	3.0000	.0500	.6000	.6000	71.0000	400.0000	50
2ST254RC	43 49 51	72 15 33	.0300	.1000	.6000	.0200	.2000	.3000	80.0000	100.0000	50
2ST255RC	43 51 36	72 16 23	.0700	.1000	.5000	.0400	1.6000	1.6000	35.0000	190.0000	50
3SR211RC	43 11 54	72 42 6	.0500	<.1000	1.6000	.0100	.3000	.6000	25.0000	110.0000	50
3SR208RC	43 14 3	72 39 54	.0200	<.1000	9.9000	.1900	2.2000	2.1000	23.0000	800.0000	50
3CL134RC	43 23 52	72 15 5	.0200	<.1000	8.1000	.1200	1.1000	2.1000	24.0000	960.0000	50
3CL267RC	43 17 3	72 20 44	.0900	<.1000	3.2000	.0600	.3000	.6000	24.0000	240.0000	50
3CL127RC	43 26 48	72 17 38	.0200	<.1000	16.0000	.4500	4.0000	3.8000	26.0000	780.0000	50
3CL130RC	43 26 10	72 19 38	.0100	<.1000	1.3000	.0200	.6000	.6000	28.0000	210.0000	50
3SV108RC	43 24 59	72 8 22	.0100	<.1000	4.5000	.0600	.1000	.5000	52.0000	150.0000	50
3NH208RC	43 34 25	72 21 2	.0200	<.1000	3.1000	.0700	.2000	.5000	20.0000	750.0000	50
3SR110RC	43 9 47	72 39 0	.2600	<.1000	.1000	<.0100	.1000	.5000	12.0000	10.0000	50
3HN106RC	43 37 43	72 16 17	.1000	<.1000	2.2000	.0400	.3000	.3000	15.0000	14.0000	50
2MC101RC	43 58 43	72 3 16	.2200	.3000	8.8000	.0700	1.5000	1.6000	130.0000	75.0000	50
2MC102RC	43 58 34	72 2 37	.0200	<.1000	.3000	<.0100	.1000	<.0100	43.0000	10.0000	50
2MC105RC	43 46 50	72 0 0	.1700	2.8000	30.0000	.6300	.6000	3.7000	110.0000	880.0000	50
2MC116RC	43 46 24	72 8 42	.3500	.3000	7.4000	.0900	1.0000	1.1000	65.0000	700.0000	50
2MC121RC	43 49 33	72 6 30	.1500	.3000	9.7000	.0700	.6000	1.1000	58.0000	620.0000	50
2MC164RC	43 51 21	72 7 8	.0900	.5000	6.2000	.0400	.7000	1.3000	50.0000	690.0000	50
2ST103RC	43 55 16	72 25 14	.0400	.3000	.9000	.0200	.5000	.3000	40.0000	190.0000	50
2ST105RC	43 55 52	72 23 0	.0200	4.5000	.4000	.0100	.3000	.1000	31.0000	160.0000	50
2ST112RC	43 59 37	72 25 42	.0400	.1000	1.0000	.0200	2.0000	.9000	79.0000	1,800.0002	50
3NH202RC	43 34 23	72 17 45	.0200	<.1000	3.0000	.0700	.1000	.3000	26.0000	500.0000	50
3CH206RC	43 19 24	72 40 29	.1500	.9000	3.5000	.0900	.2000	.2000	20.0000	70.0000	50
3BF230RC	43 13 23	72 16 44	.0100	<.1000	6.0000	.1600	1.4000	5.0000	34.0000	510.0000	50
3BF232RC	43 12 12	72 23 42	20.0000	.7000	10.0000	.2000	4.6000	3.2000	67.0000	1,800.0002	50

TABLE2-ANALYSES OF MN-FF OXIDE COATINGS IN PARTS PER MILLION OF TOTAL SAMPLE--Continued

Sample	Latitude	Longitude	Cu-ppm	Pb-ppm	Zn-ppm	Cd-ppm	Ni-ppm	Co-ppm	Fe-ppm	Mn-ppm	Weight
2LD102RC	43 22 45	72 42 59	.0500	.1000	2.8000	.0500	.3000	.9000	33.0000	95.0000	50
2LD103RC	43 27 0	72 41 41	.0300	2.0000	1.5000	.0200	.2000	.2000	43.0000	66.0000	50
2LD105RC	43 29 33	72 39 19	2.5000	.1000	2.4000	.0600	3.5000	4.0000	270.0000	1,000.0000	50
2LD108RC	43 28 34	72 43 26	.1100	<.1000	2.5000	.2400	3.2000	3.7000	230.0000	1,500.0000	50
2LD107RC	43 28 38	72 43 9	<.0100	.1000	6.2000	.0800	.6000	2.1000	25.0000	300.0000	50
2LD216RC	43 27 25	72 39 53	.7200	.5000	4.6000	.0900	2.8000	3.0000	320.0000	760.0000	50
2LD220RC	4 29 4	72 39 21	.0300	<.1000	1.4000	.0600	.7000	.9000	35.0000	320.0000	50
2LD221RC	43 24 26	72 38 17	.0200	<.1000	1.1000	.0300	.4000	1.0000	30.0000	200.0000	50
2AN103RC	43 16 35	72 44 9	<.0100	.1000	11.0000	.0900	.9000	3.1000	70.0000	350.0000	50
2AN110RC	43 18 48	72 37 47	<.0100	<.1000	.6000	.0200	.6000	.4000	31.0000	47.0000	50
2AN111RC	43 18 51	72 37 45	.0100	<.1000	2.0000	.0500	.8000	.5000	17.0000	120.0000	50
2AN208RC	43 17 54	72 38 26	.0100	<.1000	1.3000	.0500	.9000	1.7000	33.0000	120.0000	50
2PY107RC	43 33 37	72 42 14	.0500	<.1000	.7000	.0900	1.0000	4.7000	35.0000	600.0000	50
2PY113RC	43 30 56	72 39 42	.9000	<.1000	11.0000	.1400	6.0000	2.5000	210.0000	980.0000	50
2PY114RC	43 30 58	72 39 36	.0500	<.1000	1.5000	.0500	1.3000	2.0000	54.0000	240.0000	50
2PY120RC	43 35 24	72 39 51	1.1000	.5000	3.0000	.1400	12.0000	3.4000	550.0000	1,899.9995	50
2WA109RC	43 22 24	72 57 51	.0900	1.2000	27.0000	.4300	1.9000	3.2000	100.0000	300.0000	50
2WA111RC	43 15 27	72 54 4	.0300	<.1000	.8000	.0200	.1000	.9000	15.0000	38.0000	50
2WA115RC	43 16 24	72 53 18	.0600	.1000	6.5000	.0900	.4000	1.3000	36.0000	250.0000	50
2WA118RC	43 22 49	72 55 1	.0400	<.1000	4.6000	.0600	.3000	2.1000	53.0000	260.0000	50
2WA123RC	43 26 29	72 58 13	.0324	.0882	2.5000	.0279	.2794	.1912	25.0000	10.0000	340
2WA128RC	43 15 14	72 46 30	.0300	<.1000	4.2000	.0900	.3000	2.5000	46.0000	330.0000	50
2WA129RC	43 15 43	72 47 14	.0400	.1000	1.1000	.0200	.1000	.7000	58.0000	96.0000	50
2WA129RC	43 15 43	72 47 14	.0300	.1000	6.9000	.1000	.5000	1.1000	51.0000	380.0000	50
2WA132RC	43 21 5	72 46 23	.0300	.2000	2.5000	.0600	.3000	.9000	48.0000	110.0000	50
2WA134RC	43 7 40	72 48 5	18.0000	11.0000	7.0000	.1000	.6000	2.3000	170.0000	460.0000	50
2WA141RC	43 15 56	72 50 21	.0400	.2000	4.6000	.1600	.4000	1.9000	33.0000	540.0000	50
2WA201RC	43 26 42	72 49 30	.0600	<.1000	1.6000	.0300	.3000	.7000	65.0000	170.0000	50
2WA202RC	43 29 30	72 54 20	.0300	<.1000	1.3000	.0400	.3000	.6000	26.0000	190.0000	50
2WA206RC	43 28 18	72 48 5	.0300	<.1000	7.0000	.1400	.5000	1.5000	29.0000	350.0000	50
2WA207RC	43 29 56	72 49 25	.0400	<.1000	.7000	.0100	.1000	.2000	41.0000	40.0000	50
2WA208RC	43 28 38	72 51 17	.0300	.1000	.7000	.0100	.1000	.2000	36.0000	48.0000	50
2WA209RC	43 28 38	72 51 17	.1600	.2000	.8000	.0200	.2000	1.0000	30.0000	110.0000	50
2WA245RC	43 26 25	72 45 51	.6300	.9000	7.1000	.0900	.8000	1.7000	210.0000	370.0000	50
2WA217RC	43 25 56	72 46 5	.4100	.9000	6.0000	.0800	.6000	1.3000	170.0000	350.0000	50
2WA218RC	43 24 44	72 46 58	.0300	.1000	.8000	.0100	.1000	.6000	56.0000	80.0000	50
2WA220RC	43 23 36	72 49 39	.0200	.1000	1.1000	.0100	.1000	.3000	32.0000	64.0000	50
2WA228RC	43 20 26	72 49 58	.0200	<.1000	1.7000	.0300	.2000	.6000	95.0000	76.0000	50
5CM206RC	43 3 55	73 29 57	.2594	1.3679	1.1792	.0283	.4528	.4151	212.2642	301.8867	212
5CM212RC	43 3 31	73 24 0	.7200	2.3200	2.5200	.0720	1.2000	.9600	320.0000	1,000.0000	250
4SL200RC	43 46 50	73 45 42	.0619	.9735	16.8142	.1858	.6195	4.2035	619.4690	1,681.4155	226
4SL201RC	43 45 25	73 52 45	.0694	.3265	2.3265	.0204	.1224	.3265	93.8775	130.6123	245
4SL202RC	43 46 36	73 54 49	.0760	.4800	5.6000	.0480	.2400	.6400	272.0000	560.0000	250
4SL203RC	43 47 27	73 53 24	.0394	.5512	3.6614	.0315	.1575	.5906	157.4803	118.1102	254
4SL204RC	43 49 38	73 51 59	.0198	.3175	.8730	.0079	.0397	.0794	119.0476	11.9048	252

TABLE2-ANALYSES OF MN-FE OXIDE COATINGS IN PARTS PER MILLION OF TOTAL SAMPLE--Continued

Sample	Latitude	Longitude	Cu-ppm	Pb-ppm	Zn-ppm	Cd-ppm	Ni-ppm	Co-ppm	Fe-ppm	Mn-ppm	Weight
4PL200RC	43 45 36	73 31 0	.2786	.2857	3.5714	.0321	5.7143	1.9643	132.1428	178.5714	280
4PL201RC	43 47 54	73 32 12	.0441	.5515	6.6176	.0662	.3676	.6618	224.2646	441.1765	272
4PL202RC	43 48 3	73 31 49	.0410	.4104	3.4701	.0336	.1119	.6716	156.7164	149.2537	268
4PL203RC	43 45 3	73 41 3	.0344	.4811	2.4055	.0137	.1031	.1718	230.2405	72.1649	291
4PL204RC	43 46 35	73 41 17	.0534	.3817	1.9084	.0153	.0763	.1527	45.8015	49.6183	262
4PL205RC	43 49 8	73 44 23	.0980	1.1765	8.6275	.0863	.2353	.9804	294.1177	352.9412	255
4PL206RC	43 51 25	73 42 46	.0929	1.4498	14.8699	.1561	.4089	1.8587	327.1375	1,152.4163	269
4PL207RC	43 55 36	73 44 18	.3435	.7634	11.0687	.2290	1.0687	6.8702	354.9619	877.8625	262
4PL208RC	43 57 17	73 43 4	.0433	.5415	2.5632	.0289	.1083	.8303	270.7581	133.5740	277
4PL209RC	43 54 57	73 38 7	.5039	.5814	6.9767	.0620	.3101	.6977	224.8062	503.8760	258
4PL210RC	43 54 38	73 39 47	.1060	.3534	1.8728	.0212	.2120	.7420	173.1449	38.8693	283
4PL211RC	43 56 2	73 35 38	.0442	.1327	1.1504	.0088	.0442	.0885	141.5929	30.9734	226
4PL212RC	43 56 10	73 32 15	.0459	.4128	.1835	.0367	.1376	.1376	18.3486	45.8716	218
4PL213RC	43 57 35	73 30 42	.1853	.3475	3.8610	.0386	.3089	.6178	270.2703	243.2432	259
4PL214RC	43 54 5	73 33 10	.0810	.6073	7.6923	.0810	.4049	.8097	372.4697	1,133.6030	247
4PL215RC	43 53 54	73 34 18	.0952	.7483	5.7823	.0816	.2381	1.0204	217.6871	374.1497	294
4PL216RC	43 54 6	73 33 11	.0504	.6589	6.2016	.0388	.3488	.8915	259.6899	426.3567	258
4PL217RC	43 52 3	73 31 57	.3153	.8814	2.3729	.0169	.1356	.6780	149.1525	101.6949	295
4BL208RC	43 38 42	73 36 33	.0581	1.3871	5.1613	.0323	.2258	.9355	154.8387	54.8387	310
4BL209RC	43 39 57	73 36 51	.0755	.6415	1.8868	.0189	.1509	.5660	162.2642	135.8491	265
4BL210RC	43 41 1	73 35 48	.1055	.6545	10.1818	.0655	.2182	.9091	170.9091	352.7273	275
4BL211RC	43 39 42	73 31 39	.0739	.7004	1.1673	.0195	.1167	.5447	124.5136	70.0389	257
4BL213RC	43 40 27	73 30 43	.2109	.3273	2.1818	.0182	.2182	1.4182	200.0000	76.3636	275
4BL214RC	43 45 5	73 32 25	.2317	.9756	6.0976	.0447	.3659	.6911	223.5773	394.3088	246
4BL215RC	43 43 15	73 40 14	.1040	.7600	35.6000	.3000	.5600	3.1200	352.0000	2,520.0015	250
4BL216RC	43 44 38	73 38 15	.3729	.7203	7.2034	.0551	.4237	1.6102	186.4408	220.3390	236
4BL217RC	43 44 36	73 38 5	.0800	.5200	4.4000	.0280	.3600	1.3600	204.0000	520.0000	250
4BL218RC	43 43 32	73 30 5	.1418	.3731	1.4925	.0149	.1866	.3358	78.3582	44.7761	268
4BL219RC	43 44 48	73 40 24	.2571	1.1071	30.3571	.1429	.6429	2.2857	253.5715	642.8572	280
4BL100RC	43 32 30	73 34 57	.1679	1.0357	16.4286	.1643	.9643	1.3929	232.1429	314.2856	280
4BL101RC	43 33 6	73 35 36	.1667	.5556	4.8148	.0407	.2222	.7778	200.0000	74.0741	270
4BL102RC	43 31 0	73 30 31	.0329	.3292	.8230	.0041	.2881	.8642	49.3827	115.2263	243
4BL103RC	43 31 13	73 31 43	.4396	1.0256	4.3956	.0366	.4396	1.3187	197.8022	95.2381	273
4BL104RC	43 31 24	73 30 35	.1684	.5498	5.4983	.0481	.4467	1.2027	99.6563	48.1100	291
4BL105RC	43 32 11	73 30 24	.5769	1.5000	10.7692	.0923	.4615	3.7308	103.8461	169.2308	260
4GF110RC	43 27 9	73 34 53	.0871	.8299	9.9585	.1203	.3734	.9129	261.4109	414.9377	241
4GF111RC	43 28 58	73 34 37	.1133	1.7578	17.5781	.1523	.6250	.7031	507.8125	339.8438	256
4GF112RC	43 28 22	73 30 24	.2369	.2410	1.8072	.0161	.2811	.7631	329.3174	642.5703	249
4GF113RC	43 27 8	73 30 42	.0775	.3521	2.4296	.0352	.2113	.7042	183.0987	126.7605	284
4GF114RC	43 26 25	73 31 1	.1885	.2869	1.0656	.0082	.1639	.2869	176.2296	32.7869	244
4FA200RC	43 29 15	73 26 8	.3293	.5689	2.6946	.0599	7.7844	1.1976	323.3533	658.6826	167
4LN101RC	43 6 4	72 51 53	.1727	.4676	8.2734	.0612	.3597	1.9065	287.7698	312.9497	278
4LN103RC	43 4 10	72 52 1	.0791	1.5415	3.5573	.0356	.1976	2.3715	383.3992	221.3439	253
4LN105RC	43 8 0	72 49 20	.0639	.4110	.9589	.0091	.0913	2.0548	260.2739	86.7580	219
4LN201RC	43 14 13	72 51 27	.0797	.3623	2.5362	.0254	.1812	.6522	137.6812	61.5942	276

TABLE2-ANALYSES OF MN-FE OXIDE COATINGS IN PARTS PER MILLION OF TOTAL SAMPLE--Continued

Sample	Latitude	Longitude	Cu-ppm	Pb-ppm	Zn-ppm	Cd-ppm	Ni-ppm	Co-ppm	Fe-ppm	Mn-ppm	Weight
4LN202RC	43 12 33	72 46 25	.3577	.5769	3.0769	.0269	.1923	.6154	130.7693	169.2308	260
4LN203RC	43 11 4	72 51 17	.1154	.5769	3.8462	.0308	.3077	2.5000	292.3076	423.0769	260
4LN204RC	43 10 18	72 49 54	.1705	.3101	3.2558	.0310	.2713	1.5116	240.3101	170.5427	258
4LN205RC	43 12 5	72 52 18	.0966	.4202	4.2017	.0546	.2521	.7143	151.2605	138.6555	238
4LN206RC	43 10 17	72 53 29	.0984	.1575	3.2283	.0315	.1969	1.2598	169.2913	129.9213	254
4LN207RC	43 9 48	72 54 9	.0758	.8586	8.5859	.0909	.4040	3.4848	166.6667	404.0403	198
4LN209RC	43 9 2	72 50 31	.0642	.5963	2.8899	.0229	.1835	.8716	183.4862	133.0275	218
4LN210RC	43 3 53	72 46 6	.0313	.3906	.8984	.0078	.0781	.5469	105.4688	58.5938	256
4LN211RC	43 1 58	72 46 48	.5333	.2333	.8000	.0067	.5000	.7333	106.6667	40.0000	300
4LN214RC	43 1 9	72 52 57	.0963	.3333	4.0741	.0481	.2222	.6296	192.5926	122.2223	270
4LN215RC	43 1 45	72 53 26	.0675	1.6456	1.8143	.0211	.1688	1.3080	232.0675	185.6540	237
4LN216RC	43 3 6	72 53 30	.0364	.4049	.5668	.0040	.0810	.2429	145.7490	20.2429	247
4LN217RC	43 3 41	72 58 10	.1255	1.1407	1.1027	.0114	.1521	.6464	250.9506	57.0342	263
4LN218RC	43 3 42	72 59 18	.0909	1.0744	.3306	.0041	.0826	.1653	144.6281	8.2645	242
4LL100RC	43 15 30	73 48 33	.0704	.5986	4.5775	.0423	.2113	.5634	154.9296	137.3239	284
4LL101RC	43 18 42	73 45 53	.0397	.7540	4.7619	.0635	.1587	.8333	103.1746	103.1746	252
4LL102RC	43 18 19	73 46 43	.0211	.2532	1.2658	.0127	.0844	.0844	42.1941	21.0970	237
4LL106RC	43 22 56	73 46 48	.0439	.3070	2.1491	.0175	.0877	.3070	109.6491	43.8596	228
4LL107RC	43 24 2	73 52 52	.0480	.3200	9.2000	.0080	.0800	.1200	100.0001	8.0000	250
4LL108RC	43 23 0	73 51 42	.1167	.2917	.4583	.0042	.1250	.1667	83.3333	4.1667	240
4LL110RC	43 24 48	73 53 30	.0808	.6154	1.8462	.0154	.1154	.3846	200.0000	42.3077	260
4LL111RC	43 28 22	73 51 0	.1847	.4819	3.1325	.0161	.2008	.4819	277.1084	44.1767	249
4LL112RC	43 29 14	73 53 5	.1435	.5485	5.9072	.0717	.2954	.8439	261.6033	261.6033	237
4LL113RC	43 29 41	73 48 45	.1880	.3200	1.6000	.0080	.2000	.5200	520.0000	28.0000	250
4LL114RC	43 28 13	73 47 5	.1938	.7266	4.1522	.0346	.2076	.6574	214.5328	134.9480	289
4LL115RC	43 28 12	73 45 13	.0526	.6391	2.3308	.0188	.1128	.4511	180.4512	67.6692	266
4LL200RC	43 24 31	73 57 38	.0482	.3070	3.5526	.0263	.1316	.3947	232.4561	39.4737	228
4LL201RC	43 24 53	73 58 53	.0672	1.4552	15.6716	.2090	.5597	1.6418	238.8060	447.7612	268
4LL202RC	43 26 7	73 57 34	.0603	.6897	5.1724	.0431	.1293	.7759	271.5518	120.6896	232
4LL203RC	43 27 16	73 58 42	.0458	.1761	2.2535	.0141	.1056	.2817	158.4508	56.3380	284
4LL204RC	43 27 26	73 57 15	.0459	.3670	2.6147	.0183	.1376	.4128	206.4220	68.8074	218
4LL205RC	43 27 53	73 56 11	.1404	1.9737	38.1579	.2807	.7018	2.1053	280.7017	789.4736	228
4LL206RC	43 18 49	73 54 17	.0630	.4444	1.9630	.0222	.1111	.5926	188.8889	85.1852	270
4LL207RC	43 18 41	73 57 42	.0401	.6934	3.3212	.0401	.1095	.4380	189.7810	87.5912	274
4LL208RC	43 20 59	73 59 57	.0720	.4167	2.2727	.0189	.0758	.5303	265.1516	83.3333	264
4LL209RC	43 22 6	73 55 16	.2222	.6897	11.4943	.1303	.4215	2.0307	536.3984	689.6553	261
4LL210RC	43 16 5	73 57 12	.1918	.4082	2.6531	.0163	.1633	.2449	114.2857	32.6531	245
4LL211RC	43 16 1	73 57 22	.0375	.5243	1.2360	.0112	.0749	.4494	179.7753	41.1985	267
4LL212RC	43 17 44	73 54 18	.0442	.4418	1.9277	.0201	.0803	.2811	132.5300	40.1606	249
4NC100RC	43 40 45	73 46 33	.0492	.7787	4.9180	.0287	.1230	.2869	147.5410	176.2296	244
4NC101RC	43 43 34	73 46 0	.0759	.5485	6.3291	.0464	.2110	.7173	350.2109	291.1392	237
4NC102RC	43 44 52	73 50 34	.0372	.2974	1.8959	.0149	.0743	.5948	167.2862	55.7621	269
4NC103RC	43 44 13	73 30 18	.0954	.3887	1.8021	.0106	1.0954	.2827	201.4135	38.8693	283
4NC104RC	43 41 54	73 51 7	.0455	.4959	2.2727	.0165	.0826	.4132	181.8182	107.4380	242
4NC105RC	43 42 52	73 53 3	.0578	.3610	2.8520	.0289	.1083	.5054	205.7762	104.6931	277

TABLE2-ANALYSES OF MN-FE OXIDE COATINGS IN PARTS PER MILLION OF TOTAL SAMPLE--Continued

Sample	Latitude	Longitude	Cu-ppm	Pb-ppm	Zn-ppm	Cd-ppm	Ni-ppm	Co-ppm	Fe-ppm	Mn-ppm	Weight
4NC106RC	43 44 13	73 55 12	.0617	1.5419	5.2863	.0176	.1762	1.5419	484.5815	616.7400	227
4NC107RC	43 41 45	73 57 45	.1013	.7173	5.0633	.0506	.1688	.9283	291.1392	278.4810	237
4NC108RC	43 42 32	73 56 9	.0481	.4074	1.4444	.0185	.1111	.4444	218.5184	88.8889	270
4NC109RC	43 41 43	73 54 54	.0481	.4124	2.5773	.0241	.1031	.3093	195.8763	92.7835	291
4NC110RC	43 39 47	73 55 36	.0688	.7287	4.4534	.0202	.1619	.6073	279.3523	388.6641	247
4NC111RC	43 40 17	73 53 8	.0285	.1626	1.8699	.2561	.2846	4.8780	447.1545	2,723.5774	246
4NC112RC	43 38 6	73 51 31	.1250	.8929	1.9643	.0446	.2679	.7143	625.0000	669.6428	224
4NC113RC	43 39 5	73 59 46	.1433	.2389	.8874	.0410	.2389	.5802	238.9079	163.8225	293
4NC114RC	43 36 59	73 58 31	.0776	.4490	.4490	.0327	.2041	1.0612	342.8572	612.2449	245
4NC115RC	43 36 20	73 58 49	.0568	.2620	.2707	.0131	.1310	.2620	248.9083	52.4017	229
4NC116RC	43 35 3	73 59 0	.0579	.3475	.6178	.0347	.1931	.5792	200.7723	308.8804	259
4NC117RC	43 34 54	73 58 44	.2847	.1695	.1695	.0203	.1356	.5763	152.5424	30.5085	295
4NC119RC	43 36 40	73 53 32	.0588	.3361	.2857	.0210	.0840	.4202	205.8824	96.6387	238
4NC120RC	43 31 40	73 55 40	.2045	.4089	.5576	.0446	.6691	.8922	226.7658	245.3532	269
4NC121RC	43 32 33	73 59 40	.0571	.3673	.5714	.0449	.7347	.7347	236.7347	489.7959	245
4NC123RC	43 33 41	73 55 23	.1236	.2703	.8108	.0502	.3089	1.4672	328.1853	849.4209	259
4NC124RC	43 34 13	73 54 22	.0706	.1487	.1227	.0186	.1859	.4461	111.5242	63.1970	269
4NC125RC	43 33 59	73 53 43	.0574	.6967	.6148	.0533	.1639	.8197	295.0820	209.0164	244
4NC126RC	43 31 0	73 51 19	.1523	.7107	.2538	.0102	.1523	.4569	142.1320	20.3046	197
4NC127RC	43 31 5	73 54 22	.0712	.8614	1.4607	.0637	.3371	1.0487	224.7191	749.0637	267
4NC128RC	43 32 3	73 52 6	.0722	.5323	.4943	.0266	.1901	.5703	140.6844	190.1141	263
4NC129RC	43 32 42	73 51 18	.1603	.9542	.8779	.0458	.2672	1.3359	458.0154	648.8550	262
4NC130RC	43 35 44	73 49 42	.0490	.4490	.0653	.0041	.0816	.2041	142.8571	40.8163	245
4NC131RC	43 34 27	73 45 15	.1732	.2165	.2078	.0173	.1732	.8225	147.1862	86.5801	231
4TC202RC	43 57 35	73 29 18	.0455	.2273	1.1364	.0076	.1894	.1894	71.9697	121.2121	264
4TC203RC	43 57 33	73 29 16	.0239	.1195	.5976	.0080	.1195	.1195	91.6334	99.6015	251
4TC204RC	43 52 58	73 28 21	.0238	.1587	.3571	.0040	.0794	.1190	79.3651	51.5873	252
4TC205RC	43 49 5	73 29 55	.0326	.5212	2.2150	.0489	.1303	.2606	153.0945	175.8958	307
4TC206RC	43 45 44	73 27 22	.0174	.1042	.5208	<.0035	.1042	.1042	69.4444	104.1667	288
4SL205RC	43 50 26	73 51 15	.1266	.1623	1.1688	<.0032	.1623	.1948	155.8441	12.9870	308
4SL206RC	43 56 19	73 57 13	.0458	.4225	2.6056	.0211	.1056	.5634	218.3099	88.0283	284
4SL207RC	43 56 42	73 57 12	.0593	1.7391	4.7431	.0356	.1186	.4743	126.4822	138.3399	253
4SL208RC	43 57 25	73 52 12	.1905	.1299	1.1255	.0043	1.5584	.4762	164.5021	21.6450	231
4SL209RC	43 57 33	73 47 26	.0180	.1439	.7554	<.0036	.0719	.0719	104.3165	7.1942	278
4SL210RC	43 56 38	73 51 0	.0871	.4167	3.4091	.0152	.1515	.7576	170.4546	49.2424	264
4SL211RC	43 57 21	73 50 14	.0267	.4000	1.7667	.0100	.0667	.1667	73.3333	23.3333	300
4SL212RC	43 50 3	73 55 55	.0217	.2536	1.8116	.0109	.1087	.2174	130.4348	25.3623	276
4SL213RC	43 48 20	73 57 9	.2273	.2797	7.6923	.0350	.3497	1.4685	311.1887	94.4056	286
4SL214RC	43 52 55	73 54 9	.0522	.2239	1.5299	.0037	.0746	.2985	111.9404	14.9254	268
4SL215RC	43 51 5	73 48 9	.0216	1.6187	4.3165	.0432	.1439	.2518	93.5252	118.7050	278
4PL218RC	43 59 15	73 39 5	.0650	1.9106	13.4146	.1098	.2846	1.5041	349.5935	528.4553	246
4PL219RC	43 59 17	73 39 39	.1079	1.2230	2.7698	.0144	.1799	1.2950	316.5466	179.8561	278
4PL220RC	43 58 31	73 42 52	.0233	.4651	1.6279	.0116	.0775	.1938	135.6589	31.0078	258
4PL221RC	43 58 6	73 43 43	.0319	.6028	1.7021	.0106	.1064	.2837	117.0212	60.2837	282
4WH200RC	43 34 25	73 26 45	.0807	.4933	1.3453	.0224	.1794	.4036	152.4664	134.5292	223

TABLE2-ANALYSES OF MN-FE OXIDE COATINGS IN PARTS PER MILLION OF TOTAL SAMPLE--Continued

Sample	Latitude	Longitude	Cu-ppm	Pb-ppm	Zn-ppm	Cd-ppm	Ni-ppm	Co-ppm	Fe-ppm	Mn-ppm	Weight
4WH201RC	43 35 20	73 29 21	.0307	.5702	3.0702	.0175	.1316	.3947	92.1053	65.7895	228
4WH202RC	43 35 2	73 29 16	.0950	.3306	3.9669	.0248	.3306	.9917	185.9504	128.0992	242
4WH203RC	43 34 29	73 28 22	.2748	.6757	6.7568	.1577	3.5135	3.3784	315.3152	630.6306	222
4BL220RC	43 38 18	73 30 9	.1197	.0427	1.5385	.0085	.2137	.5556	153.8461	64.1026	234
4PU200RC	43 38 18	73 27 7	.1244	.3627	1.6580	.0104	.2073	.9845	310.8809	103.6270	193
4PU201RC	43 37 21	73 26 49	.0405	.2024	.7287	.0121	.1215	.2429	40.4858	60.7287	247
4PU202RC	43 40 14	73 29 31	.1721	.6148	2.7049	.0123	.2049	.3689	213.1147	28.6885	244
4PU203RC	43 39 15	73 29 30	.3102	.4490	.8571	.0082	.1633	.2449	130.6123	53.0612	245
4PU206RC	43 40 44	73 25 4	.1081	.2317	.5792	.0039	.2317	.1931	131.2740	69.4981	259
4PU207RC	43 41 10	73 27 15	.0427	.2564	.7265	.0085	.1282	.1709	81.1967	85.4701	234
4PU208RC	43 43 52	73 27 28	.0890	.6780	5.9322	.0593	.2966	.7627	351.6948	1,016.9487	236
4SA101RC	43 12 17	73 53 5	.0459	1.0164	2.7869	.0361	.1639	.4262	131.1476	65.5737	305
4SA102RC	43 11 30	73 54 18	.0305	.6107	1.7176	.0115	.1145	.6107	68.7023	68.7023	262
4SA103RC	43 10 43	73 54 19	.0528	.3396	1.5094	.0075	.1132	.1509	86.7925	15.0943	265
4SA104RC	43 9 2	73 53 3	.0709	.4104	4.1045	.0373	.2239	.4104	126.8657	141.7910	268
4SA105RC	43 9 2	73 53 21	.1255	.4314	2.0392	.0235	.4314	.5098	98.0392	31.3725	255
4SA106RC	43 6 39	73 55 39	.2500	.2397	2.8425	.0274	.1712	.3082	99.3150	195.2054	292
4SA107RC	43 6 11	73 59 55	.1220	1.2602	32.5203	.2764	.9756	2.5203	313.0081	1,382.1135	246
4SA108RC	43 4 48	73 58 6	.0620	.3876	2.4031	.0155	.1163	.1938	135.6589	38.7597	258
4SA109RC	43 10 39	73 59 30	.0857	.4762	10.0000	.2810	.7143	.6190	461.9048	3,809.5237	210
4SA110RC	43 8 57	73 58 7	.1500	3.1154	103.8462	.7692	2.6154	.6154	326.9231	1,730.7690	260
4SA200RC	43 8 57	73 51 18	.1570	.6198	4.1322	.0413	.2479	.1653	223.1405	413.2231	242
4SA201RC	43 9 10	73 46 32	.1142	.5906	6.2992	.0433	.2756	.4331	118.1102	177.1653	254
4SA203RC	43 8 22	73 46 14	1.6872	1.2757	9.0535	.1029	5.3498	.5350	452.6748	242.7983	243
4SA205RC	43 8 13	73 48 37	.1179	.8205	4.6154	.0359	.2051	.4615	174.3590	615.3845	195
4BL200RC	43 31 5	73 44 31	.0794	.3610	3.6101	.0144	.1083	2.2383	155.2346	104.6931	277
4BL201RC	43 36 36	73 43 19	.1181	.2083	3.4722	.0104	.2083	.1736	291.6667	118.0556	288
4BL202RC	43 36 30	73 43 12	.2808	.3767	6.1644	.0342	.3082	22.2603	181.5069	167.8082	292
4BL203RC	43 34 16	73 39 57	.0742	1.0682	4.4510	.0475	.2374	5.3412	112.7596	83.0861	337
4BL204RC	43 35 33	73 38 36	.0623	2.1978	6.2271	.0586	.2564	.5495	161.1721	197.8022	273
4BL205RC	43 36 41	73 37 46	.0549	.8627	4.7059	.0627	.4706	.5490	113.7255	133.3333	255
4BL206RC	43 36 59	73 40 55	.0717	.2642	3.3962	.0226	.1887	.7170	147.1698	71.6982	265
4BL207RC	43 39 15	73 43 45	.0277	.5138	4.7431	.0237	.1186	.3953	98.8143	162.0553	253
4GF100RC	43 27 10	73 44 12	.0623	1.1284	3.5019	.0195	.1556	.3891	108.9494	70.0389	257
4GF101RC	43 26 18	73 43 43	.0529	1.3216	4.4053	.0485	.1322	.6167	145.3745	83.7004	227
4GF102RC	43 24 46	73 43 28	.0714	.3061	2.0408	.0102	.1020	.2041	57.8231	54.4218	294
4GF103RC	43 24 28	73 42 2	.0362	.3620	1.3575	.0045	.0905	.1810	144.7964	27.1493	221
4GF104RC	43 23 55	73 43 48	.0241	.1718	.6873	.0034	.0344	.1375	37.8007	17.1821	291
4GF105RC	43 20 18	73 44 18	.0403	.0671	.3356	<.0034	.0336	.0671	50.3356	6.7114	298
4GF106RC	43 19 5	73 44 24	1.4706	1.3445	6.7227	.0504	.2521	.4202	172.2689	155.4622	238
4GF107RC	43 23 40	73 38 51	.0163	.2033	.6504	.0041	.0407	.0813	85.3658	8.1301	246
4GF108RC	43 25 3	73 39 6	.0551	.1838	.5882	<.0037	.0368	.0735	55.1471	7.3529	272
4GF109RC	43 26 10	73 35 42	.1444	1.2222	8.8889	.1111	.6111	.8333	183.3333	322.2222	180
4AR100RC	43 0 23	73 10 14	.0536	.5357	.8036	.0089	.1786	.3571	142.8571	383.9287	224
4AR103RC	43 2 50	73 9 3	.0579	.4959	3.2231	.0661	.4959	.7851	322.3140	702.4792	242

TABLE2-ANALYSES OF MN-FE OXIDE COATINGS IN PARTS PER MILLION OF TOTAL SAMPLE--Continued

Sample	Latitude	Longitude	Cu-ppm	Pb-ppm	Zn-ppm	Cd-ppm	Ni-ppm	Co-ppm	Fe-ppm	Mn-ppm	Weight
4AR108RC	43 2 44	73 8 12	.0429	.5000	6.4286	.0786	.5357	1.1429	85.7143	135.7143	280
4DO102RC	43 15 15	73 6 52	.0769	2.5275	.4945	.0055	.0549	.1648	60.4396	21.9780	182
4DO116RC	43 20 35	73 1 32	.0830	.2905	.4149	.0166	.6224	.4979	70.5394	82.9875	241
4SD100RC	43 3 44	73 0 4	.0731	1.9635	.4110	.0046	.0913	1.2785	264.8401	86.7580	219
4SD104RC	43 3 14	73 3 16	.0328	1.3525	.3279	.0041	.0820	1.6803	254.0984	410.6557	244
4SD106RC	43 4 44	73 6 36	.0528	2.6792	7.5472	.1358	1.0566	4.9057	135.8491	641.5095	265
4SD108RC	43 6 35	73 6 11	.0285	.8130	5.2846	.0650	.5285	3.1301	158.5366	182.9268	246
4SD109RC	43 6 50	73 5 51	.0455	.4132	13.6364	.1240	1.1157	3.4711	136.3636	454.5454	242
4SM102RC	43 8 20	73 17 8	.2896	1.1969	4.2471	.0463	.3861	1.2355	223.9382	2,355.2122	259
4SM103RC	43 7 50	73 20 3	.4016	.7631	.9237	.0201	.2008	.3213	220.8835	309.2371	249
4SM104RC	43 10 14	73 17 34	.5455	2.7273	1.7273	.0500	.6364	.7273	154.5454	445.4546	220
4SH104RC	43 2 23	73 19 40	.1445	1.5607	4.1618	.0636	.2890	.5202	132.9480	312.1387	173
4SH105RC	43 3 44	73 21 45	.5435	1.3768	3.5507	.1087	1.2319	1.3043	260.8696	644.9275	138
4SH106RC	43 6 9	73 19 31	.3476	1.3369	1.8182	.0588	.6417	.4813	101.6043	262.0320	187
4SH107RC	43 6 56	73 18 10	.1411	1.0887	2.2581	.0403	.3226	.4839	129.0323	306.4517	248
4CA601RC	43 26 2	72 32 49	.1621	.4828	.3448	.0310	.2759	.3103	48.2759	100.0000	290
4CA602RC	43 24 33	73 30 12	.1202	.5150	.4292	.0300	.2575	.6867	128.7554	412.0171	233
4CA605RC	43 28 54	72 37 29	.2441	.3543	8.6614	.0669	.7087	2.0472	472.4409	1,259.8428	254
4CA607RC	43 29 54	72 31 12	.3735	.3113	.5447	<.0039	.5058	.3113	112.8405	120.6226	257
4MA101RC	43 9 28	73 2 28	.0144	.3597	1.0432	.0108	.0719	.6115	50.3597	21.5827	278
4MA102RC	43 9 42	73 2 0	.0382	.4580	.8015	.0115	.1908	.6870	30.5343	41.9847	262
4MA105RC	43 12 2	73 3 35	.3711	2.8516	7.4219	.0820	.8594	1.1719	214.8438	664.0625	256
4MA107RC	43 11 18	73 3 30	.0253	.0844	.1688	<.0042	.1266	.1688	4.2194	50.6329	237
4MA109RC	43 11 23	73 1 3	.0916	.1992	11.9522	.0677	.7570	.7171	111.5538	438.2471	251
4MA110RC	43 14 22	73 0 16	.2028	5.0691	23.9631	.1382	1.1521	1.5207	188.9401	364.0552	217
4MS400RC	43 41 42	72 10 47	.0842	.2807	.6667	.0105	.2105	.4561	52.6316	56.1404	285
4MS401RC	43 37 33	72 1 21	.0712	.2622	4.8689	.0449	.2247	.4494	78.6517	205.9925	267
4WL203RC	43 28 31	73 8 53	.5042	4.2017	1.4286	.0504	1.1345	1.3445	268.9075	306.7227	238
4WL204RC	43 27 42	73 8 5	2.3664	1.5267	2.5954	.0802	1.6412	1.2595	458.0154	839.6946	262
4WL205RC	43 24 21	73 8 57	.6589	1.7054	2.5194	.0271	1.1240	1.3178	170.5427	209.3023	258
4HK201RC	43 53 17	72 48 45	1.0044	1.2664	1.2227	.0349	2.4017	.8734	131.0045	179.0393	229
4HK208RC	43 59 27	72 50 24	1.6129	3.2258	3.7097	.0484	1.6935	1.3710	262.0967	443.5483	248
4TC201RC	43 45 15	73 19 21	.9524	3.5714	2.9762	.0238	.8333	1.0317	269.8413	345.2380	252
4PA205RC	43 18 14	73 14 3	.8511	9.7872	1.7872	.0596	.9787	.8936	204.2553	510.6382	235
4BR210RC	43 57 24	72 58 57	.0938	.7422	3.8281	.0352	.4297	.4688	164.0625	93.7500	256
4BD400RC	43 48 36	73 2 32	.3054	1.6749	18.7192	.1823	3.4483	1.4778	492.6108	985.2217	203
4BD401RC	43 47 11	73 1 42	.1812	2.7875	4.1812	.0732	1.4983	1.1847	184.6690	383.2754	287
4BD402RC	43 46 21	73 1 14	.5858	2.1757	3.0544	.0335	1.0460	.6276	543.9331	359.8328	239
4DO101RC	43 21 59	73 5 50	.3083	1.8577	1.7787	.0395	1.2648	1.0277	162.0553	328.0632	253
4PT109RC	43 30 43	73 1 19	.0366	.2033	.7317	.0122	.8130	.3252	60.9756	268.2927	246
4SY100RC	43 46 13	73 10 56	.3781	2.2388	2.2886	.0697	.9950	1.3433	218.9055	333.3333	201
4PA204RC	43 16 37	73 13 35	.5185	2.4074	1.8889	.0481	.7037	.7778	203.7037	311.1111	270
4CT100RC	43 42 40	72 57 58	.2189	1.3734	9.0129	.0815	1.5880	1.4592	227.4678	373.3906	233
4CT101RC	43 44 19	72 56 0	.1779	1.1067	11.0672	.1146	1.1067	1.6206	268.7747	328.0632	253
4CT102RC	43 42 9	72 53 13	.1368	1.5439	4.9123	.0807	.7018	.7368	84.2105	189.4737	285

TABLE2-ANALYSES OF MN-FE OXIDE COATINGS IN PARTS PER MILLION OF TOTAL SAMPLE--Continued

Sample	Latitude	Longitude	Cu-ppm	Pb-ppm	Zn-ppm	Cd-ppm	Ni-ppm	Co-ppm	Fe-ppm	Mn-ppm	Weight
4CT104RC	43 42 53	72 55 20	.1569	1.5294	2.8627	.0353	.3529	.3529	192.1568	101.9608	255
4CT105RC	43 40 14	72 59 11	.3837	2.1224	8.5714	.0816	1.5918	.8980	289.7959	448.9797	245
4CT106RC	43 39 8	72 57 44	.2954	1.8565	11.8143	.1181	.8861	.8439	308.0168	548.5232	237
4CT109RC	43 38 38	72 53 10	.0500	.3125	3.3750	.0063	.1875	.1875	93.7500	87.5000	160
4CT110RC	43 39 19	72 53 19	.1731	1.3077	8.8462	.0962	.6538	1.9615	500.0000	126.9231	260
4MD103RC	43 23 28	73 0 27	.0221	.1838	.3309	.0110	.3676	.2941	36.7647	113.9706	272
4BR202RC	43 59 26	72 53 52	1.5139	2.2709	1.9124	.0319	1.5538	1.3546	326.6931	254.9801	251
4PP100RC	43 41 38	73 2 40	.0438	.1195	1.4343	.0080	.1992	.3586	159.3625	346.6135	251
4ER108RC	43 44 24	73 1 12	.0599	.4930	3.4507	.0423	.5986	.4930	126.7605	528.1689	284
4ER110RC	43 39 43	73 0 6	.0870	.6087	2.0000	.0043	.2174	.1739	86.9565	69.5652	230
4PR111RC	43 40 49	73 0 33	.0996	.5179	1.9522	.0120	.3187	.2390	47.8088	199.2032	251
4PR112RC	43 42 15	73 0 26	.3137	1.1070	2.6937	.0185	.4428	.2952	88.5609	184.5018	271
4PP103RC	43 42 15	72 49 36	.5512	.9055	6.2992	.0866	.0787	1.4173	145.6693	236.2205	254
4PP107RC	43 38 41	72 47 26	.7207	1.3063	6.7568	.0586	.5856	1.3063	495.4956	585.5857	222
4PP108RC	43 38 42	72 47 17	.1296	1.5789	10.9312	.0648	.4858	1.4575	352.2268	485.8298	247
4PP111RC	43 39 52	72 48 43	.0675	1.6270	5.1587	.0556	.3968	.5952	174.6032	150.7937	252
4CR106RC	43 51 19	72 54 35	.0848	1.0268	5.3571	.0804	.7589	1.1607	125.0000	125.0000	224
4CR110RC	43 47 21	72 58 41	.2115	2.4519	2.2596	.0288	.4808	.4808	379.8076	182.6923	208
4PO109RC	43 44 46	73 11 51	.1041	1.0860	2.5792	.0181	.2262	.3620	162.8959	497.7375	221
4BO110RC	43 44 21	73 10 37	.1053	1.7544	2.2807	.0833	.3947	.5263	87.7193	254.3860	228
4PO111RC	43 43 23	73 10 59	2.2680	1.5979	4.3299	.1237	1.9588	2.4742	319.5876	319.5876	194
4PO100RC	43 43 11	73 14 7	.2065	.5978	1.8478	.0163	.3804	.3804	130.4349	266.3044	184
4BO101RC	43 43 3	73 12 13	.2828	.5328	.8197	.0164	1.2705	.6967	127.0493	225.4099	244
4EO104RC	43 40 47	73 10 30	.4764	3.4031	1.2565	.0576	2.5131	.8377	136.1257	246.0733	191
4KP100RC	43 33 26	72 51 36	.1871	1.2950	31.2950	.3957	3.5612	2.9496	276.9785	791.3669	278
4KP102RC	43 32 38	72 50 8	.0985	.5839	5.4745	.0657	1.1314	1.8978	306.5693	335.7664	274
4KP105RC	43 32 14	72 52 21	.1806	1.4097	5.7269	.0573	1.0132	.5286	110.1322	264.3171	227
4PP100RC	43 38 1	72 52 12	.0630	.7874	.3937	.0236	.0787	.0787	7.8740	4.0000	127
4EL100RC	43 34 8	72 58 2	.0218	.4367	1.5721	.0175	.2620	.2183	122.2708	126.6376	229
4EL104RC	43 32 50	72 57 26	.0415	.4979	1.2448	.0166	.2075	.1245	145.2282	49.7925	241
4EM101RC	43 58 49	73 6 19	.8163	5.1020	4.4898	.0357	1.1224	.6122	209.1837	239.7959	196
4EM103RC	43 59 20	73 2 25	.0857	.7755	4.4898	.0449	.9388	.4898	130.6123	130.6123	245
4EM105RC	43 58 35	73 1 18	.0451	.7787	4.0984	.0451	.6557	.5328	110.6557	163.9344	244
4EM108RC	43 57 30	73 0 59	.0972	.2778	1.9792	.0139	.4861	.2083	111.1111	31.2500	288
4GR207RC	43 27 48	73 15 23	.1090	.7519	1.3534	.0188	.4511	.3008	97.7443	165.4136	266
4GR209RC	43 25 13	73 17 59	.4072	1.3575	2.2172	.0226	.9955	.5430	253.3936	429.8643	221
4GR210RC	43 28 58	73 18 29	.4300	1.1000	7.0000	.0650	2.1500	1.3500	495.0000	1,699.9998	200
4GR211RC	43 27 18	73 19 15	.3665	1.1952	1.3147	.0239	1.1952	.5976	183.2669	334.6614	251
4GR213RC	43 22 39	73 19 6	.4233	2.4540	8.5890	.0920	3.3742	3.3742	564.4172	1,349.6934	163
4GR214RC	43 25 46	73 19 45	.0437	.4369	1.3592	.0146	.3398	.3883	131.0679	485.4370	206
4GR216RC	43 24 55	73 22 21	.7246	1.6425	1.9807	.0242	1.2077	1.7874	217.3913	265.7004	207
4TH200RC	43 36 23	73 18 22	.1214	.5780	2.9480	.0347	.7514	1.3295	300.5781	514.4509	173
4TH202RC	43 33 5	73 15 57	.7303	3.6517	6.7416	.0730	1.1798	1.6292	342.6965	404.4944	178
4TH203RC	43 31 22	73 15 43	.2823	1.1962	4.2105	.0287	.5263	1.1005	315.7896	861.2441	209
4TH204RC	43 31 36	73 19 26	.3906	1.1979	2.2917	.0208	.4167	.5729	369.7917	520.8333	192

TABLE2-ANALYSES OF MN-FE OXIDE COATINGS IN PARTS PER MILLION OF TOTAL SAMPLE--Continued

Sample	Latitude	Longitude	Cu-ppm	Pb-ppm	Zn-ppm	Cd-ppm	Ni-ppm	Co-ppm	Fe-ppm	Mn-ppm	Weight
4BE200RC	43 38 49	73 16 19	.6452	4.5161	9.6774	.0507	.5530	1.0138	387.0967	552.9954	217
4BE203RC	43 43 44	73 16 25	.0207	.1660	4.1494	<.0041	.2075	.2905	456.4314	165.9751	241
4BE204RC	43 44 7	73 18 23	.2094	.9829	4.2735	.0256	.2564	.4701	200.8547	252.1368	234
4WP201RC	43 19 51	73 17 26	.5063	5.0633	1.5612	.0380	.6329	.5485	198.3122	232.0675	237
4WP202RC	43 17 24	73 20 48	.2740	1.7352	1.4612	.0274	.5023	.6393	214.6119	264.8401	219
4WP203RC	43 18 21	73 21 29	.2422	1.1659	5.8296	.0269	.4484	1.6143	582.9597	1,390.1348	223
4WP204RC	43 15 21	73 19 29	1.1005	1.5789	5.7416	.1148	1.3876	.9091	325.3589	669.8564	209
4WP205RC	43 15 20	73 16 31	.2000	1.2174	1.1304	.0087	.2609	.5217	104.3478	156.5217	230
4CY200RC	43 14 44	73 27 22	.2751	1.2664	2.4454	.0262	.5677	.7860	235.8078	353.7117	229
4CY201RC	43 9 57	73 23 39	.5042	1.6807	4.2017	.0378	.5042	.7983	268.9075	630.2522	238
4CY203RC	43 11 6	73 26 35	.3301	1.4354	3.8278	.0287	.6699	.9569	325.3589	444.9761	209
4CY204RC	43 11 7	73 29 33	.3350	6.5990	2.1320	.0305	.6599	.8122	304.5686	507.6143	197
4CY205RC	43 8 20	73 28 18	.5116	2.3721	3.2093	.0186	.3721	.6047	437.2092	148.8372	215
4SM200RC	43 12 24	73 20 42	.4082	2.0000	4.8980	.0286	.4082	.5306	220.4081	489.7959	245
5CM200RC	43 2 27	73 29 7	1.0909	4.0909	4.8182	.0545	.6909	.8182	718.1819	1,090.9089	110
5CM203RC	43 4 11	73 28 41	.4898	1.5102	1.4694	.0163	.2939	.3755	232.6531	134.6939	245
5CM204RC	43 6 19	73 24 59	.0787	.3704	1.1574	.0556	.6944	.6944	125.0000	462.9629	216
5CM207RC	43 0 33	73 29 14	.3713	2.7426	2.5316	.0338	.9283	1.0549	345.9915	329.1140	237
5HF200RC	43 21 48	73 23 20	.0938	15.0000	5.7292	.0521	.4427	.6771	307.2917	572.9167	192
5HF201RC	43 20 0	73 22 51	.1610	1.5254	3.0085	.0381	.3263	.6356	186.4407	593.2205	236
5HF202RC	43 17 33	73 24 55	.3396	1.1321	2.6887	.0613	.8491	.8962	287.7358	415.0942	212
5HF203RC	43 15 8	73 23 3	.4425	1.4602	3.4071	.0619	.5310	1.0619	486.7256	1,460.1775	226
5CY206RC	43 9 0	73 24 50	.3960	1.9802	5.9406	.0545	.4851	.5941	336.6338	792.0791	202
5CY207RC	43 14 16	73 28 31	1.0000	1.5789	5.7895	.0421	.4632	.5789	273.6843	300.0000	190
5SC200RC	43 8 42	73 31 30	.2027	1.2162	.9009	.0090	.1802	.7658	193.6937	229.7297	222
5SC201RC	43 10 51	73 31 0	.0267	.1778	1.2444	.0133	.1689	.3867	88.8889	311.1111	225
5BF404RC	43 10 53	72 25 25	.4527	1.1934	1.7695	.0206	1.1934	.9053	156.3786	90.5350	243
5BF405RC	43 6 48	72 17 5	.2025	6.5000	5.0633	.1266	.9705	16.0000	759.4937	1,434.5989	237

TABLE3- RATIOS OF METALS TO IRON IN MN-FE OXIDE COATINGS X1000

[N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	LATITUDE	LONGITUD	CU/FE	PB/FE	ZN/FE	CD/FE	NI/FE	CO/FE	MN/FE
3MS110RC	43 41 8	72 6 36	.3030	<3.0303	145.4545	3.0303	3.0303	30.3030	10,303.031
3MS111RC	43 41 39	72 8 3	1.1765	<2.9412	102.9412	3.8235	5.8824	29.4118	10,882.352
3MS122RC	43 37 33	72 1 21	2.2857	5.7143	120.0000	1.1429	2.8571	8.5714	4,285.715
3MS126RC	43 30 14	72 3 18	.3846	<3.8462	292.3076	3.4615	7.6923	34.6154	19,230.773
3MS128RC	43 34 30	72 3 33	.7692	3.8462	280.7693	4.6154	7.6923	26.9231	20,384.613
3CA110RC	43 28 57	72 36 3	.2609	2.1739	6.9565	<.0435	12.1739	7.3913	1,913.043
3CA112RC	43 26 51	72 34 52	32.2581	45.1613	548.3872	9.6774	19.3548	25.8065	14,838.711
3CL120RC	43 21 28	72 28 27	.5882	<5.8824	82.3529	1.1765	17.6471	11.7647	17,058.824
3SO119RC	43 15 54	72 13 0	.3846	<3.8462	153.8461	2.3077	7.6923	15.3846	8,461.539
3SR101RC	43 11 25	72 30 18	.5882	<2.9412	20.5882	.2941	8.8235	29.4118	8,529.410
3SR102RC	43 8 44	72 30 30	.4762	<4.7619	61.9048	2.3810	80.9523	104.7619	35,714.277
3SR116RC	43 8 55	72 34 52	1.8519	3.7037	114.8148	1.4815	7.4074	11.1111	4,074.075
3SR125RC	43 6 6	72 32 14	.6667	<3.3333	300.0000	.3333	20.0000	20.0000	9,000.000
3SR134RC	43 0 29	72 43 5	.7143	<3.5714	357.1428	5.3571	28.5714	78.5714	19,642.852
3SR143RC	43 4 58	72 38 2	<.3125	<3.1250	137.4999	1.2500	15.6250	25.0000	9,687.496
2ST115RC	43 58 24	72 19 54	2.0000	12.0000	8.0000	<.1000	1.0000	2.0000	1,200.000
2ST121RC	43 57 12	72 15 22	.5556	<5.5556	227.7778	1.6667	16.6667	11.1111	21,111.113
2ST126RC	43 54 40	72 21 12	1.6667	<5.5556	16.6667	.5556	11.1111	<.5556	10,000.000
2ST129RC	43 54 54	72 17 6	22.5000	3.5714	14.2857	.3571	14.2857	14.2857	4,642.859
2ST249RC	43 47 42	72 16 57	.4225	<1.4085	42.2535	.7042	8.4507	8.4507	5,633.805
2ST254RC	43 49 51	72 15 33	.3750	1.2500	7.5000	.2500	2.5000	3.7500	1,250.001
2ST255RC	43 51 36	72 16 23	2.0000	2.8571	14.2857	1.1429	45.7143	45.7143	5,428.570
3SR211RC	43 11 54	72 42 6	2.0000	<4.0000	64.0000	.4000	12.0000	24.0000	4,400.000
3SR208RC	43 14 3	72 39 54	.8696	<4.3478	430.4351	8.2609	95.6522	91.3044	34,782.637
3CL134RC	43 23 52	72 15 5	.8333	<4.1667	337.5000	5.0000	45.8333	87.5000	40,000.000
3CL267RC	43 17 3	72 20 44	3.7500	<4.1667	133.3333	2.5000	12.5000	25.0000	10,000.000
3CL127RC	43 26 48	72 17 38	.7692	<3.8462	615.3845	17.3077	153.8461	146.1539	30,000.000
3CL130RC	43 26 10	72 19 38	.3571	<3.5714	46.4286	.7143	21.4286	21.4286	7,500.000
3SV106RC	43 24 59	72 8 22	.1923	<1.9231	86.5384	1.1538	1.9231	9.6154	2,884.614
3NH208RC	43 34 25	72 21 2	1.0000	<5.0000	155.0000	3.5000	10.0000	25.0000	37,500.000
3SR110RC	43 9 47	72 39 0	21.6667	<8.3333	8.3333	<.8333	8.3333	41.6667	833.333
3HN106RC	43 37 43	72 16 17	6.6667	<6.6667	146.6666	2.6667	20.0000	20.0000	933.333
2MC101RC	43 58 43	72 3 16	1.6923	2.3077	67.6923	.5385	11.5385	12.3077	576.923
2MC102RC	43 58 34	72 2 37	.4651	<2.3256	6.9767	<.2326	2.3256	<.2326	232.558
2MC105RC	43 46 50	72 0 0	1.5455	25.4545	272.7273	5.7273	5.4545	33.6364	8,000.000
2MC116RC	43 46 24	72 8 42	5.3846	4.6154	113.8461	1.3846	15.3846	16.9231	10,769.230
2MC121RC	43 49 33	72 6 30	2.5862	5.1724	167.2414	1.2069	10.3448	18.9655	10,689.656
2MC164RC	43 51 21	72 7 8	1.8000	10.0000	124.0000	.8000	14.0000	26.0000	13,800.000
2ST103RC	43 55 16	72 25 14	1.0000	7.5000	22.5000	.5000	12.5000	7.5000	4,750.000
2ST105RC	43 55 52	72 23 0	.6452	145.1613	12.9032	.3226	9.6774	3.2258	5,161.293
2ST112RC	43 59 37	72 25 42	.5063	1.2658	12.6582	.2532	25.3165	11.3924	22,784.820
3NH202RC	43 34 23	72 17 45	.7692	<3.8462	115.3846	2.6923	3.8462	11.5385	19,230.773
3CH206RC	43 19 24	72 40 29	7.5000	45.0000	175.0000	4.5000	10.0000	10.0000	3,500.000
3FF230RC	43 13 23	72 16 44	.2941	<2.9412	176.4706	4.7059	41.1765	147.0588	15,000.000
3FF232RC	43 12 12	72 23 42	298.5073	10.4478	149.2537	2.9851	68.6567	47.7612	26,865.660

TABLE3- RATIOS OF METALS TO IRON IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/FE	PB/FE	ZN/FE	CD/FE	NI/FE	CO/FE	MN/FE
2LD102RC	43 22 45	72 42 59	1.5152	3.0303	84.8485	1.5152	9.0909	27.2727	2,878.789
2LD103RC	43 27 0	72 41 41	.6977	46.5116	34.8837	.4651	4.6512	4.6512	1,534.884
2LD105RC	43 29 33	72 39 19	9.2593	.3704	8.8889	.2222	12.9630	14.8148	3,703.704
2LD108RC	43 28 34	72 43 26	.4783	<.4348	10.8696	1.0435	13.9130	16.0870	6,521.738
2LD107RC	43 28 38	72 43 9	<.4000	4.0000	248.0000	3.2000	24.0000	84.0000	12,000.000
2LD216RC	43 27 25	72 39 53	2.2500	1.5625	14.3750	.2812	8.7500	9.3750	2,375.000
2LD220RC	43 29 4	72 39 21	.8571	<2.8571	40.0000	1.7143	20.0000	25.7143	9,142.859
2LD221RC	43 24 26	72 38 17	.6667	<3.3333	36.6667	1.0000	13.3333	33.3333	6,666.668
2AN103RC	43 16 35	72 44 9	<.1429	1.4286	157.1429	1.2857	12.8571	44.2857	5,000.000
2AN110RC	43 18 48	72 37 47	<.3226	<3.2258	19.3548	.6452	19.3548	12.9032	1,516.129
2AN111RC	43 18 51	72 37 45	.5882	<5.8824	117.6470	2.9412	47.0588	29.4118	7,058.824
2AN208RC	43 17 54	72 38 26	.3030	<3.0303	39.3940	1.5152	27.2727	51.5152	3,636.364
2PY107RC	43 33 37	72 42 14	1.4286	<2.8571	20.0000	2.5714	28.5714	134.2857	17,142.852
2PY113RC	43 30 56	72 39 42	4.2857	<.4762	52.3810	.6667	28.5714	11.9048	4,666.668
2PY114RC	43 30 58	72 39 36	.9259	<1.8519	27.7778	.9259	24.0741	37.0370	4,444.445
2PY120RC	43 35 24	72 39 51	2.0000	.9091	5.4545	.2545	21.8182	6.1818	3,454.545
2WA109RC	43 22 24	72 57 51	.9000	12.0000	270.0000	4.3000	19.0000	32.0000	2,999.999
2WA111RC	43 15 27	72 54 4	2.0000	<6.6667	53.3333	1.3333	6.6667	60.0000	2,533.332
2WA115RC	43 16 24	72 53 18	1.6667	2.7778	180.5556	2.5000	11.1111	36.1111	6,944.445
2WA118RC	43 22 49	72 55 1	.7547	<1.8868	86.7925	1.1321	5.6604	39.6227	4,905.660
2WA123RC	43 26 29	72 58 13	1.2941	3.5294	100.0000	1.1176	11.1765	7.6471	400.000
2WA128RC	43 15 14	72 46 30	.6522	<2.1739	91.3044	1.9565	6.5217	54.3478	7,173.914
2WA129RC	43 15 43	72 47 14	.6897	1.7241	18.9655	.3448	1.7241	12.0690	1,655.173
2WA129RC	43 15 43	72 47 14	.5882	1.9608	135.2941	1.9608	9.8039	21.5686	7,450.980
2WA132RC	43 21 5	72 46 23	.6250	4.1667	52.0833	1.2500	6.2500	18.7500	2,291.667
2WA134RC	43 7 40	72 48 5	105.8823	64.7058	41.1765	.5882	3.5294	13.5294	2,705.882
2WA141RC	43 15 56	72 50 21	1.2121	6.0606	139.3939	4.8485	12.1212	57.5757	16,363.633
2WA201RC	43 26 42	72 49 30	.9231	<1.5385	24.6154	.4615	4.6154	10.7692	2,615.385
2WA202RC	43 29 30	72 54 20	1.1538	<3.8462	50.0000	1.5385	11.5385	23.0769	7,307.691
2WA206RC	43 28 18	72 48 5	1.0345	<3.4483	241.3793	4.8276	17.2414	51.7241	12,068.965
2WA207RC	43 29 56	72 49 25	.9756	<2.4390	17.0732	.2439	2.4390	4.8780	975.610
2WA208RC	43 28 38	72 51 17	.8333	2.7778	19.4444	.2778	2.7778	5.5556	1,333.333
2WA209RC	43 28 38	72 51 17	5.3333	6.6667	26.6667	.6667	6.6667	33.3333	3,666.667
2WA245RC	43 26 25	72 45 51	3.0000	4.2857	33.8095	.4286	3.8095	8.0952	1,761.905
2WA217RC	43 25 56	72 46 5	2.4118	5.2941	35.2941	.4706	3.5294	7.6471	2,058.823
2WA218RC	43 24 44	72 46 58	.5357	1.7857	14.2857	.1786	1.7857	10.7143	1,428.571
2WA220RC	43 23 36	72 49 39	.6250	3.1250	34.3750	.3125	3.1250	9.3750	2,000.000
2WA228RC	43 20 26	72 49 58	.2105	<1.0526	17.8947	.3158	2.1053	6.3158	800.000
5CM206RC	43 3 55	73 29 57	1.2222	6.4444	5.5556	.1333	2.1333	1.9556	1,422.222
5CM212RC	43 3 31	73 24 0	2.2500	7.2500	7.8750	.2250	3.7500	3.0000	3,125.000
4SL200RC	43 46 50	73 45 42	.1000	1.5714	27.1429	.3000	1.0000	6.7857	2,714.285
4SL201RC	43 45 25	73 52 45	.7391	3.4783	24.7826	.2174	1.3043	3.4783	1,391.305
4SL202RC	43 46 36	73 54 49	.2794	1.7647	20.5882	.1765	.8824	2.3529	2,058.823
4SL203RC	43 47 27	73 53 24	.2500	3.5000	23.2500	.2000	1.0000	3.7500	750.000
4SL204RC	43 49 38	73 51 59	.1667	2.6667	7.3333	.0667	.3333	.6667	100.000

TABLE3- RATIOS OF METALS TO IRON IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/FE	PB/FE	ZN/FE	CD/FE	NI/FE	CO/FE	MN/FE
4PL200RC	43 45 35	73 31 0	2.1081	2.1622	27.0270	.2432	43.2433	14.8649	1,351.352
4PL201RC	43 47 54	73 32 12	.1967	2.4590	29.5082	.2951	1.6393	2.9508	1,967.214
4PL202RC	43 48 3	73 31 49	.2619	2.6190	22.1429	.2143	.7143	4.2857	952.381
4PL203RC	43 45 3	73 41 3	.1493	2.0896	10.4478	.0597	.4478	.7463	313.433
4PL204RC	43 46 35	73 41 17	1.1667	8.3333	41.6667	.3333	1.6667	3.3333	1,083.333
4PL205RC	43 49 8	73 44 23	.3333	4.0000	29.3333	.2933	.8000	3.3333	1,200.000
4PL206RC	43 51 25	73 42 46	.2841	4.4318	45.4546	.4773	1.2500	5.6818	3,522.728
4PL207RC	43 55 36	73 44 18	.9677	2.1505	31.1828	.6452	3.0108	19.3548	2,473.118
4PL208RC	43 57 17	73 43 4	.1600	2.0000	9.4667	.1067	.4000	3.0667	493.333
4PL209RC	43 54 57	73 38 7	2.2414	2.5862	31.0345	.2759	1.3793	3.1034	2,241.380
4PL210RC	43 54 38	73 39 47	.6122	2.0408	10.8163	.1224	1.2245	4.2857	224.490
4PL211RC	43 56 2	73 35 38	.3125	.9375	8.1250	.0625	.3125	.6250	218.750
4PL212RC	43 56 10	73 32 15	2.5000	22.5000	10.0000	2.0000	7.5000	7.5000	2,500.001
4PL213RC	43 57 35	73 30 42	.6857	1.2857	14.2857	.1429	1.1429	2.2857	900.000
4PL214RC	43 54 5	73 33 10	.2174	1.6304	20.6522	.2174	1.0870	2.1739	3,043.477
4PL215RC	43 53 54	73 34 18	.4375	3.4375	26.5625	.3750	1.0938	4.6875	1,718.750
4PL216RC	43 54 6	73 33 11	.1940	2.5373	23.8806	.1493	1.3433	3.4328	1,641.791
4PL217RC	43 52 3	73 31 57	2.1136	5.9091	15.9091	.1136	.9091	4.5455	681.819
4PL208RC	43 38 42	73 36 33	.3750	8.9583	33.3333	.2083	1.4583	6.0417	354.167
4PL209RC	43 39 57	73 36 51	.4651	3.9535	11.6279	.1163	.9302	3.4884	837.209
4BL210RC	43 41 1	73 35 48	.6170	3.8298	59.5745	.3830	1.2766	5.3191	2,063.829
4BL211RC	43 39 42	73 31 39	.5938	5.6250	9.3750	.1563	.9375	4.3750	562.500
4PL213RC	43 40 27	73 30 43	1.0545	1.6364	10.9091	.0909	1.0909	7.0909	381.818
4BL214RC	43 45 5	73 32 25	1.0364	4.3636	27.2727	.2000	1.6364	3.0909	1,763.636
4BL215RC	43 43 15	73 40 14	.2955	2.1591	101.1364	.8523	1.5909	8.8636	7,159.094
4BL216RC	43 44 38	73 38 15	2.0000	3.8636	38.6364	.2955	2.2727	8.6364	1,181.818
4BL217RC	43 44 36	73 38 5	.3922	2.5490	21.5686	.1373	1.7647	6.6667	2,549.020
4BL218RC	43 43 32	73 30 5	1.8095	4.7619	19.0476	.1905	2.3810	4.2857	571.428
4BL219RC	43 44 48	73 40 24	1.0141	4.3662	119.7183	.5634	2.5352	9.0141	2,535.212
4BL100RC	43 32 30	73 34 57	.7231	4.4615	70.7693	.7077	4.1538	6.0000	1,353.846
4BL101RC	43 33 6	73 35 36	.8333	2.7778	24.0741	.2037	1.1111	3.8889	370.371
4BL102RC	43 31 0	73 30 31	.6667	6.6667	16.6667	.0833	5.8333	17.5000	2,333.333
4BL103RC	43 31 13	73 31 43	2.2222	5.1852	22.2222	.1852	2.2222	6.6667	481.481
4BL104RC	43 31 24	73 30 35	1.6897	5.5172	55.1724	.4828	4.4828	12.0690	482.759
4BL105RC	43 32 11	73 30 24	5.5556	14.4445	103.7038	.8889	4.4444	35.9259	1,629.631
4GF110RC	43 27 9	73 34 53	.3333	3.1746	38.0952	.4603	1.4286	3.4921	1,587.301
4GF111RC	43 28 58	73 34 37	.2231	3.4615	34.6154	.3000	1.2308	1.3846	669.231
4GF112RC	43 28 22	73 30 24	.7195	.7317	5.4878	.0488	.8537	2.3171	1,951.219
4GF113RC	43 27 8	73 30 42	.4231	1.9231	13.2692	.1923	1.1538	3.8462	692.307
4GF114RC	43 26 25	73 31 1	1.0698	1.6279	6.0465	.0465	.9302	1.6279	186.046
4FA200RC	43 29 15	73 26 8	1.0185	1.7593	8.3333	.1852	24.0741	3.7037	2,037.037
4LN101RC	43 6 4	72 51 53	.6000	1.6250	28.7500	.2125	1.2500	6.6250	1,087.500
4LN103RC	43 4 10	72 52 1	.2062	4.0206	9.2783	.0928	.5155	6.1856	577.320
4LN105RC	43 8 0	72 49 20	.2456	1.5789	3.6842	.0351	.3509	7.8947	333.333
4LN201RC	43 14 13	72 51 27	.5789	2.6316	18.4211	.1842	1.3158	4.7368	447.368

TABLE3- RATIOS OF METALS TO IRON IN MN-FF OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/FE	PB/FE	ZN/FE	CD/FE	NI/FE	CO/FE	MN/FE
4LN202RC	43 12 33	72 46 25	2.7353	4.4118	23.5294	.2059	1.4706	4.7059	1,294.117
4LN203RC	43 11 4	72 51 17	.3947	1.9737	13.1579	.1053	1.0526	8.5526	1,447.369
4LN204RC	43 10 18	72 49 54	.7097	1.2903	13.5484	.1290	1.1290	6.2903	709.678
4LN205RC	43 12 5	72 52 18	.6389	2.7778	27.7778	.3611	1.6667	4.7222	916.667
4LN206RC	43 10 17	72 53 29	.5814	.9302	19.0698	.1860	1.1628	7.4419	767.442
4LN207RC	43 9 48	72 54 9	.4545	5.1515	51.5151	.5455	2.4242	20.9091	2,424.241
4LN209RC	43 9 2	72 50 31	.3500	3.2500	15.7500	.1250	1.0000	4.7500	725.000
4LN210RC	43 3 53	72 46 6	.2963	3.7037	8.5185	.0741	.7407	5.1852	555.556
4LN211RC	43 1 58	72 46 48	5.0000	2.1875	7.5000	.0625	4.6875	6.8750	375.000
4LN214RC	43 1 9	72 52 57	.5000	1.7308	21.1538	.2500	1.1538	3.2692	634.616
4LN215RC	43 1 45	72 53 26	.2909	7.0909	7.8182	.0909	.7273	5.6364	800.000
4LN216RC	43 3 6	72 53 30	.2500	2.7778	3.8889	.0278	.5556	1.6667	138.889
4LN217RC	43 3 41	72 58 10	.5000	4.5455	4.3939	.0455	.6061	2.5758	227.273
4LN218RC	43 3 42	72 59 18	.6286	7.4286	2.2857	.0286	.5714	1.1429	57.143
4LL100RC	43 15 30	73 48 33	.4545	3.8636	29.5455	.2727	1.3636	3.6364	886.364
4LL101RC	43 18 42	73 45 53	.3846	7.3077	46.1538	.6154	1.5385	8.0769	1,000.000
4LL102RC	43 18 19	73 46 43	.5000	6.0000	30.0000	.3000	2.0000	2.0000	500.000
4LL106RC	43 22 56	73 46 48	.4000	2.8000	19.6000	.1600	.8000	2.8000	400.000
4LL107RC	43 24 2	73 52 52	.4800	3.2000	92.0000	.0800	.8000	1.2000	80.000
4LL108RC	43 23 0	73 51 42	1.4000	3.5000	5.5000	.0500	1.5000	2.0000	50.000
4LL110RC	43 24 48	73 53 30	.4038	3.0769	9.2308	.0769	.5769	1.9231	211.538
4LL111RC	43 28 22	73 51 0	.6667	1.7391	11.3043	.0580	.7246	1.7391	159.420
4LL112RC	43 29 14	73 53 5	.5484	2.0968	22.5807	.2742	1.1290	3.2258	1,000.000
4LL113RC	43 29 41	73 48 45	.3615	.6154	3.0769	.0154	.3846	1.0000	53.846
4LL114RC	43 28 13	73 47 5	.9032	3.3871	19.3548	.1613	.9677	3.0645	629.032
4LL115RC	43 28 12	73 45 13	.2917	3.5417	12.9167	.1042	.6250	2.5000	375.000
4LL200RC	43 24 31	73 57 38	.2075	1.3208	15.2830	.1132	.5660	1.6981	169.811
4LL201RC	43 24 53	73 58 53	.2813	6.0938	65.6250	.8750	2.3438	6.8750	1,875.000
4LL202RC	43 26 7	73 57 34	.2222	2.5397	19.0476	.1587	.4762	2.8571	444.444
4LL203RC	43 27 16	73 58 42	.2889	1.1111	14.2222	.0889	.6667	1.7778	355.555
4LL204RC	43 27 26	73 57 15	.2222	1.7778	12.6667	.0889	.6667	2.0000	333.333
4LL205RC	43 27 53	73 56 11	.5000	7.0313	135.9376	1.0000	2.5000	7.5000	2,812.501
4LL206RC	43 18 49	73 54 17	.3333	2.3529	10.3922	.1176	.5882	3.1373	450.980
4LL207RC	43 18 41	73 57 42	.2115	3.6538	17.5000	.2115	.5769	2.3077	461.538
4LL208RC	43 20 59	73 59 57	.2714	1.5714	8.5714	.0714	.2857	2.0000	314.285
4LL209RC	43 22 6	73 55 16	.4143	1.2857	21.4286	.2429	.7857	3.7857	1,285.714
4LL210RC	43 16 5	73 57 12	1.6786	3.5714	23.2143	.1429	1.4286	2.1429	285.714
4LL211RC	43 16 1	73 57 22	.2083	2.9167	6.8750	.0625	.4167	2.5000	229.167
4LL212RC	43 17 44	73 54 18	.3333	3.3333	14.5455	.1515	.6061	2.1212	303.031
4NC100RC	43 40 45	73 46 33	.3333	5.2778	33.3333	.1944	.8333	1.9444	1,194.445
4NC101RC	43 43 34	73 46 0	.2169	1.5663	18.0723	.1325	.6024	2.0482	831.325
4NC102RC	43 44 52	73 50 34	.2222	1.7778	11.3333	.0889	.4444	3.5556	333.333
4NC103RC	43 44 13	73 30 18	.4737	1.9298	8.9474	.0526	5.4386	1.4035	192.982
4NC104RC	43 41 54	73 51 7	.2500	2.7273	12.5000	.0909	.4545	2.2727	590.909
4NC105RC	43 42 52	73 53 3	.2807	1.7544	13.8597	.1404	.5263	2.4561	508.772

TABLE3- RATIOS OF METALS TO IRON IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/FE	PB/FE	ZN/FE	CD/FE	NI/FE	CO/FE	MN/FE
4NC106RC	43 44 13	73 55 12	.1273	3.1818	10.9091	.0364	.3636	3.1818	1,272.727
4NC107RC	43 41 45	73 57 45	.3478	2.4638	17.3913	.1739	.5797	3.1884	956.522
4NC108RC	43 42 32	73 56 9	.2203	1.8644	6.6102	.0847	.5085	2.0339	406.780
4NC109RC	43 41 43	73 54 54	.2456	2.1053	13.1579	.1228	.5263	1.5789	473.684
4NC110RC	43 39 47	73 55 36	.2464	2.6087	15.9420	.0725	.5797	2.1739	1,391.304
4NC111RC	43 40 17	73 53 8	.0636	.3636	4.1818	.5727	.6364	10.9091	6,090.906
4NC112RC	43 38 6	73 51 31	.2000	1.4286	3.1429	.0714	.4286	1.1429	1,071.428
4NC113RC	43 39 5	73 59 46	.6000	1.0000	3.7143	.1714	1.0000	2.4286	685.714
4NC114RC	43 36 59	73 58 31	.2262	1.3095	1.3095	.0952	.5952	3.0952	1,785.714
4NC115RC	43 36 20	73 58 49	.2281	1.0526	1.0877	.0526	.5263	1.0526	210.526
4NC116RC	43 35 3	73 59 0	.2885	1.7308	3.0769	.1731	.9615	2.8846	1,538.462
4NC117RC	43 34 54	73 58 44	1.8667	1.1111	1.1111	.1333	.8889	3.7778	200.000
4NC119RC	43 36 40	73 53 32	.2857	1.6327	1.3878	.1020	.4082	2.0408	469.388
4NC120RC	43 31 40	73 55 40	.9016	1.8033	2.4590	.1967	2.9508	3.9344	1,081.967
4NC121RC	43 32 33	73 59 40	.2414	1.5517	2.4138	.1897	3.1034	3.1034	2,068.966
4NC123RC	43 33 41	73 55 23	.3765	.8235	2.4706	.1529	.9412	4.4706	2,588.236
4NC124RC	43 34 13	73 54 22	.6333	1.3333	1.1000	.1667	1.6667	4.0000	566.667
4NC125RC	43 33 59	73 53 43	.1944	2.3611	2.0833	.1806	.5556	2.7778	708.333
4NC126RC	43 31 0	73 51 19	1.0714	5.0000	1.7857	.0714	1.0714	3.2143	142.857
4NC127RC	43 31 5	73 54 22	.3167	3.8333	6.5000	.2833	1.5000	4.5667	3,333.334
4NC128RC	43 32 3	73 52 6	.5135	3.7838	3.5135	.1892	1.3514	4.0541	1,351.352
4NC129RC	43 32 42	73 51 18	.3500	2.0833	1.9167	.1000	.5833	2.9167	1,416.666
4NC130RC	43 35 44	73 49 42	.3429	3.1429	.4571	.0286	.5714	1.4286	285.714
4NC131RC	43 34 27	73 45 15	1.1765	1.4706	1.4118	.1176	1.1765	5.5882	588.235
4TC202RC	43 57 35	73 29 18	.6316	3.1579	15.7895	.1053	2.6316	2.6316	1,684.211
4TC203RC	43 57 33	73 29 16	.2609	1.3043	6.5217	.0870	1.3043	1.3043	1,086.957
4TC204RC	43 52 58	73 28 21	.3000	2.0000	4.5000	.0500	1.0000	1.5000	650.000
4TC205RC	43 49 5	73 29 55	.2128	3.4043	14.4681	.3191	.8511	1.7021	1,148.936
4TC206RC	43 45 44	73 27 22	.2500	1.5000	7.5000	<.0500	1.5000	1.5000	1,500.002
4SL205RC	43 50 26	73 51 15	.8125	1.0417	7.5000	<.0208	1.0417	1.2500	83.333
4SL206RC	43 56 19	73 57 13	.2097	1.9355	11.9355	.0968	.4839	2.5806	403.226
4SL207RC	43 56 42	73 57 12	.4688	13.7500	37.5000	.2813	.9375	3.7500	1,093.750
4SL208RC	43 57 25	73 52 12	1.1579	.7895	6.8421	.0263	9.4737	2.8947	131.579
4SL209RC	43 57 33	73 47 26	.1724	1.3793	7.2414	<.0345	.6897	.6897	68.965
4SL210RC	43 56 38	73 51 0	.5111	2.4444	20.0000	.0889	.8889	4.4444	288.889
4SL211RC	43 57 21	73 50 14	.3636	5.4545	24.0909	.1364	.9091	2.2727	318.182
4SL212RC	43 50 3	73 55 55	.1667	1.9444	13.8889	.0833	.8333	1.6667	194.444
4SL213RC	43 48 20	73 57 9	.7303	.8989	24.7191	.1124	1.1236	4.7191	303.371
4SL214RC	43 52 55	73 54 9	.4667	2.0000	13.6667	.0333	.6667	2.6667	133.333
4SL215RC	43 51 5	73 48 9	.2308	17.3077	46.1538	.4615	1.5385	2.6923	1,269.231
4PL218RC	43 59 15	73 39 5	.1860	5.4651	38.3721	.3140	.8140	4.3023	1,511.628
4PL219RC	43 59 17	73 39 39	.3409	3.8636	8.7500	.0455	.5682	4.0909	568.182
4PL220RC	43 58 31	73 42 52	.1714	3.4286	12.0000	.0857	.5714	1.4286	228.571
4PL221RC	43 58 6	73 43 43	.2727	5.1515	14.5455	.0909	.9091	2.4242	515.152
4WH200RC	43 34 25	73 26 45	.5294	3.2353	8.8235	.1471	1.1765	2.6471	882.354

TABLE3- RATIOS OF METALS TO IRON IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/FE	PB/FE	ZN/FE	CD/FE	NI/FE	CO/FE	MN/FE
4WH201RC	43 35 20	73 29 21	.3333	6.1905	33.3333	.1905	1.4286	4.2857	714.285
4WH202RC	43 35 2	73 29 16	.5111	1.7778	21.3333	.1333	1.7778	5.3333	688.889
4WH203RC	43 34 29	73 28 22	.8714	2.1429	21.4286	.5000	11.1429	10.7143	2,000.001
4BL220RC	43 38 18	73 30 9	.7778	.2778	10.0000	.0556	1.3889	3.6111	416.667
4PU200RC	43 38 18	73 27 7	.4000	1.1667	5.3333	.0333	.6667	3.1667	333.333
4PU201RC	43 37 21	73 26 49	1.0000	5.0000	18.0000	.3000	3.0000	6.0000	1,500.000
4PU202RC	43 40 14	73 29 31	.8077	2.8846	12.6923	.0577	.9615	1.7308	134.615
4PU203RC	43 39 15	73 29 30	2.3750	3.4375	6.5625	.0625	1.2500	1.8750	406.250
4PU206RC	43 40 44	73 25 4	.8235	1.7647	4.4118	.0294	1.7647	1.4706	529.412
4PU207RC	43 41 10	73 27 15	.5263	3.1579	8.9474	.1053	1.5789	2.1053	1,052.630
4PU208RC	43 43 52	73 27 28	.2530	1.9277	16.8675	.1687	.8434	2.1687	2,891.565
4SA101RC	43 12 17	73 53 5	.3500	7.7500	21.2500	.2750	1.2500	3.2500	499.999
4SA102RC	43 11 30	73 54 18	.4444	8.8889	25.0000	.1667	1.6667	8.8889	1,000.000
4SA103RC	43 10 43	73 54 19	.6087	3.9130	17.3913	.0870	1.3043	1.7391	173.913
4SA104RC	43 9 2	73 53 3	.5588	3.2353	32.3529	.2941	1.7647	3.2353	1,117.647
4SA105RC	43 9 2	73 53 21	1.2800	4.4000	20.8000	.2400	4.4000	5.2000	320.000
4SA106RC	43 6 39	73 55 39	2.5172	2.4138	28.6207	.2759	1.7241	3.1035	1,965.519
4SA107RC	43 6 11	73 59 55	.3896	4.0260	103.8961	.8831	3.1169	8.0520	4,415.586
4SA108RC	43 4 48	73 58 6	.4571	2.8571	17.7143	.1143	.8571	1.4286	285.714
4SA109RC	43 10 39	73 59 30	.1856	1.0309	21.6495	.6082	1.5464	1.3402	8,247.422
4SA110RC	43 8 57	73 58 7	.4588	9.5294	317.6470	2.3529	8.0000	1.8824	5,294.117
4SA200RC	43 8 57	73 51 18	.7037	2.7778	18.5185	.1852	1.1111	.7407	1,851.853
4SA201RC	43 9 10	73 46 32	.9667	5.0000	53.3333	.3667	2.3333	3.6667	1,499.999
4SA203RC	43 8 22	73 46 14	3.7273	2.8182	20.0000	.2273	11.8182	1.1818	536.364
4SA205RC	43 8 13	73 48 37	.6765	4.7059	26.4706	.2059	1.1765	2.6471	3,529.411
4BL200RC	43 31 5	73 44 31	.5116	2.3256	23.2558	.0930	.6977	14.4186	674.419
4BL201RC	43 36 36	73 43 19	.4048	.7143	11.9048	.0357	.7143	.5952	404.762
4BL202RC	43 36 30	73 43 12	1.5472	2.0755	33.9623	.1887	1.6981	122.6414	924.528
4BL203RC	43 34 16	73 39 57	.6579	9.4737	39.4737	.4211	2.1053	47.3684	736.842
4BL204RC	43 35 33	73 38 36	.3864	13.6364	38.6364	.3636	1.5909	3.4091	1,227.273
4BL205RC	43 36 41	73 37 46	.4828	7.5862	41.3793	.5517	4.1379	4.8276	1,172.414
4BL206RC	43 36 59	73 40 55	.4872	1.7949	23.0769	.1538	1.2821	4.8718	487.180
4BL207RC	43 39 15	73 43 45	.2800	5.2000	48.0000	.2400	1.2000	4.0000	1,639.999
4GF100RC	43 27 10	73 44 12	.5714	10.3571	32.1429	.1786	1.4286	3.5714	642.857
4GF101RC	43 26 18	73 43 43	.3636	9.0909	30.3030	.3333	.9091	4.2424	575.757
4GF102RC	43 24 46	73 43 28	1.2353	5.2941	35.2941	.1765	1.7647	3.5294	941.176
4GF103RC	43 24 28	73 42 2	.2500	2.5000	9.3750	.0313	.6250	1.2500	187.500
4GF104RC	43 23 55	73 43 48	.6364	4.5455	18.1818	.0909	.9091	3.6364	454.545
4GF105RC	43 20 18	73 44 18	.8000	1.3333	6.6667	<.0667	.6667	1.3333	133.333
4GF106RC	43 19 5	73 44 24	8.5366	7.8049	39.0244	.2927	1.4634	2.4390	902.439
4GF107RC	43 23 40	73 38 51	.1905	2.3810	7.6191	.0476	.4762	.9524	95.238
4GF108RC	43 25 3	73 39 6	1.0000	3.3333	10.6667	<.0667	.6667	1.3333	133.333
4GF109RC	43 26 10	73 35 42	.7879	6.6667	48.4848	.6061	3.3333	4.5455	1,757.575
4AR100RC	43 0 23	73 10 14	.3750	3.7500	5.6250	.0625	1.2500	2.5000	2,687.501
4AR103RC	43 2 50	73 9 3	.1795	1.5385	10.0000	.2051	1.5385	2.4359	2,179.487

TABLE3- RATIOS OF METALS TO IRON IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/FE	PB/FE	ZN/FE	CD/FE	NI/FE	CO/FE	MN/FE
4AR108RC	43 2 44	73 8 12	.5000	5.8333	75.0000	.9167	6.2500	13.3333	1,583.334
4DO102RC	43 15 15	73 6 52	1.2727	41.8182	8.1818	.0909	.9091	2.7273	363.636
4DO116RC	43 20 35	73 1 32	1.1765	4.1176	5.8824	.2353	8.8235	7.0588	1,176.471
4SD100RC	43 3 44	73 0 4	.2759	7.4138	1.5517	.0172	.3448	4.8276	327.586
4SD104RC	43 3 14	73 3 16	.1290	5.3226	1.2903	.0161	.3226	6.6129	435.484
4SD106RC	43 4 44	73 6 36	.3889	19.7222	55.5556	1.0000	7.7778	36.1111	4,722.223
4SD108RC	43 6 35	73 6 11	.1795	5.1282	33.3333	.4103	3.3333	19.7436	1,153.846
4SD109RC	43 6 50	73 5 51	.3333	3.0303	100.0000	.9091	8.1818	25.4545	3,333.333
4SM102RC	43 8 20	73 17 8	1.2931	5.3448	18.9655	.2069	1.7241	5.5172	10,517.242
4SM103RC	43 7 50	73 20 3	1.8182	3.4545	4.1818	.0909	.9091	1.4545	1,400.000
4SM104RC	43 10 14	73 17 34	3.5294	17.6471	11.1765	.3235	4.1176	4.7059	2,882.355
4SH104RC	43 2 23	73 19 40	1.0870	11.7391	31.3044	.4783	2.1739	3.9130	2,347.826
4SH105RC	43 3 44	73 21 45	2.0833	5.2778	13.6111	.4167	4.7222	5.0000	2,472.221
4SH106RC	43 6 9	73 19 31	3.4211	13.1579	17.8947	.5789	6.3158	4.7368	2,578.946
4SH107RC	43 6 56	73 18 10	1.0938	8.4375	17.5000	.3125	2.5000	3.7500	2,375.000
4CA601RC	43 26 2	72 32 49	3.3571	10.0000	7.1429	.6429	5.7143	6.4286	2,071.429
4CA602RC	43 24 33	73 30 12	.9333	4.0000	3.3333	.2333	2.0000	5.3333	3,199.999
4CA605RC	43 28 54	72 37 29	.5167	.7500	18.3333	.1417	1.5000	4.3333	2,666.667
4CA607RC	43 29 54	72 31 12	3.3103	2.7586	4.8276	<.0345	4.4828	2.7586	1,068.966
4MA101RC	43 9 28	73 2 28	.2857	7.1429	20.7143	.2143	1.4286	12.1429	428.571
4MA102RC	43 9 42	73 2 0	1.2500	15.0000	26.2500	.3750	6.2500	22.5000	1,375.000
4MA105RC	43 12 2	73 3 35	1.7273	13.2727	34.5455	.3818	4.0000	5.4545	3,090.909
4MA107RC	43 11 18	73 3 30	6.0000	20.0000	40.0000	<1.0000	30.0000	40.0000	12,000.004
4MA109RC	43 11 23	73 1 3	.8214	1.7857	107.1429	.6071	6.7857	6.4286	3,928.572
4MA110RC	43 14 22	73 0 16	1.0732	26.8293	126.8293	.7317	6.0976	8.0488	1,926.828
4MS400RC	43 41 42	72 10 47	1.6000	5.3333	12.6667	.2000	4.0000	8.6667	1,066.667
4MS401RC	43 37 34	72 1 24	.9048	3.3333	61.9048	.5714	2.8571	5.7143	2,619.048
4WL203RC	43 28 31	73 8 53	1.8750	15.6250	5.3125	.1875	4.2188	5.0000	1,140.625
4WL204RC	43 27 42	73 8 5	5.1667	3.3333	5.6667	.1750	3.5833	2.7500	1,833.333
4WL205RC	43 24 21	73 8 57	3.8636	10.0000	14.7727	.1591	6.5909	7.7273	1,227.272
4HK201RC	43 53 17	72 48 45	7.6667	9.6667	9.3333	.2667	18.3333	6.6667	1,366.666
4HK208RC	43 59 27	72 50 24	6.1538	12.3077	14.1539	.1846	6.4615	5.2308	1,692.308
4TC201RC	43 45 15	73 19 21	3.5294	13.2353	11.0294	.0882	3.0882	3.8235	1,279.411
4PA205RC	43 18 14	73 14 3	4.1667	47.9167	8.7500	.2917	4.7917	4.3750	2,499.999
4PR210RC	43 57 24	72 58 57	.5714	4.5238	23.3333	.2143	2.6190	2.8571	571.429
4BD400RC	43 48 36	73 2 32	.6200	3.4000	38.0000	.3700	7.0000	3.0000	2,000.000
4BD401RC	43 47 11	73 1 42	.9811	15.0943	22.6415	.3962	8.1132	6.4151	2,075.472
4BD402RC	43 46 21	73 1 14	1.0769	4.0000	5.6154	.0615	1.9231	1.1538	661.539
4BO101RC	43 21 59	73 5 50	1.9024	11.4634	10.9756	.2439	7.8049	6.3415	2,024.390
4BT109RC	43 30 43	73 1 19	.6000	3.3333	12.0000	.2000	13.3333	5.3333	4,400.000
4SY100RC	43 46 13	73 10 56	1.7273	10.2273	10.4545	.3182	4.5455	6.1364	1,522.727
4PA204RC	43 16 37	73 13 35	2.5455	11.8182	9.2727	.2364	3.4545	3.8182	1,527.272
4CT100RC	43 42 40	72 57 58	.9623	6.0377	39.6226	.3585	6.9811	6.4151	1,641.510
4CT101RC	43 44 19	72 56 0	.6618	4.1176	41.1765	.4265	4.1176	6.0294	1,220.589
4CT103RC	43 42 9	72 53 13	1.6250	18.3333	58.3333	.9583	8.3333	8.7500	2,250.001

TABLE3- RATIOS OF METALS TO IRON IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/FE	PB/FE	ZN/FE	CD/FE	NI/FE	CO/FE	MN/FE
4CT104RC	43 42 53	72 55 20	.8163	7.9592	14.8980	.1837	1.8367	1.8367	530.612
4CT105RC	43 40 14	72 59 11	1.3239	7.3239	29.5775	.2817	5.4930	3.0986	1,549.296
4CT106RC	43 39 8	72 57 44	.9589	6.0274	38.3562	.3836	2.8767	2.7397	1,780.822
4CT109RC	43 38 38	72 53 10	.5333	3.3333	36.0000	.0667	2.0000	2.0000	933.333
4CT110RC	43 39 19	72 53 19	.3462	2.6154	17.6923	.1923	1.3077	3.9231	253.846
4MD103RC	43 23 28	73 0 27	.6000	5.0000	9.0000	.3000	10.0000	8.0000	3,100.000
4BR202RC	43 59 26	72 53 52	4.6341	6.9512	5.8537	.0976	4.7561	4.1463	780.488
4PP100RC	43 41 38	73 2 40	.2750	.7500	9.0000	.0500	1.2500	2.2500	2,175.000
4PP108RC	43 44 24	73 1 12	.4722	3.8889	27.2222	.3333	4.7222	3.8889	4,166.668
4PP110RC	43 39 43	73 0 6	1.0000	7.0000	23.0000	.0500	2.5000	2.0000	800.000
4PP111RC	43 40 49	73 0 33	2.0833	10.8333	40.8333	.2500	6.6667	5.0000	4,166.668
4PP112RC	43 42 15	73 0 26	3.5417	12.5000	30.4167	.2083	5.0000	3.3333	2,083.333
4PP103RC	43 42 15	72 49 36	3.7838	6.2162	43.2432	.5946	.5405	9.7297	1,621.622
4PP107RC	43 38 41	72 47 26	1.4545	2.6364	13.6364	.1182	1.1818	2.6364	1,181.818
4PP108RC	43 38 42	72 47 17	.3678	4.4828	31.0345	.1839	1.3793	4.1379	1,379.310
4PP111RC	43 39 52	72 48 43	.3864	9.3182	29.5455	.3182	2.2727	3.4091	863.636
4CR106RC	43 51 19	72 54 35	.6786	8.2143	42.8571	.6429	6.0714	9.2857	1,000.000
4CR110RC	43 47 21	72 58 41	.5570	6.4557	5.9494	.0759	1.2658	1.2658	481.013
4BO109RC	43 44 46	73 11 51	.6389	6.6667	15.8333	.1111	1.3889	2.2222	3,055.555
4BO110RC	43 44 21	73 10 37	1.2000	20.0000	26.0000	.9500	4.5000	6.0000	2,900.000
4BO111RC	43 43 23	73 10 59	7.0968	5.0000	13.5484	.3871	6.1290	7.7419	1,000.000
4BO100RC	43 43 11	73 14 7	1.5833	4.5833	14.1667	.1250	2.9167	2.9167	2,041.666
4BO101RC	43 43 3	73 12 13	2.2258	4.1935	6.4516	.1290	10.0000	5.4839	1,774.193
4BO104RC	43 40 47	73 10 30	3.5000	25.0000	9.2308	.4231	18.4615	6.1538	1,807.692
4KP100RC	43 33 26	72 51 36	.6753	4.6753	112.9870	1.4286	12.8571	10.6493	2,857.142
4KP102RC	43 32 38	72 50 8	.3214	1.9048	17.8571	.2143	3.6905	6.1905	1,095.238
4KP105RC	43 32 14	72 52 21	1.6400	12.8000	52.0000	.5200	9.2000	4.8000	2,400.000
4FP100RC	43 38 1	72 52 12	8.0000	100.0000	50.0000	3.0000	10.0000	10.0000	508.000
4RL100RC	43 34 8	72 58 2	.1786	3.5714	12.8571	.1429	2.1429	1.7857	1,035.714
4RL104RC	43 32 50	72 57 26	.2857	3.4286	8.5714	.1143	1.4286	.8571	342.857
4EM101RC	43 58 49	73 6 19	3.9024	24.3902	21.4634	.1707	5.3659	2.9268	1,146.341
4EM103RC	43 59 20	73 2 25	.6562	5.9375	34.3750	.3438	7.1875	3.7500	1,000.000
4EM105RC	43 58 35	73 1 18	.4074	7.0370	37.0370	.4074	5.9259	4.8148	1,481.481
4FM108RC	43 57 30	73 0 59	.8750	2.5000	17.8125	.1250	4.3750	1.8750	281.250
4GR207RC	43 27 48	73 15 23	1.1154	7.6923	13.8462	.1923	4.6154	3.0769	1,692.309
4GR209RC	43 25 13	73 17 59	1.6071	5.3571	8.7500	.0893	3.9286	2.1429	1,696.428
4GR210RC	43 28 58	73 18 29	.8687	2.2222	14.1414	.1313	4.3434	2.7273	3,434.343
4GR211RC	43 27 18	73 19 15	2.0000	6.5217	7.1739	.1304	6.5217	3.2609	1,826.087
4GR213RC	43 22 39	73 19 6	.7500	4.3478	15.2174	.1630	5.9783	5.9783	2,391.304
4GR214RC	43 25 46	73 19 45	.3333	3.3333	10.3704	.1111	2.5926	2.9630	3,703.707
4GR216RC	43 24 55	73 22 21	3.3333	7.5556	9.1111	.1111	5.5556	8.2222	1,222.222
4TH200RC	43 36 23	73 18 22	.4038	1.9231	9.8077	.1154	2.5000	4.4231	1,711.538
4TH202RC	43 33 5	73 15 57	2.1311	10.6557	19.6721	.2131	3.4426	4.7541	1,180.328
4TH203RC	43 31 22	73 15 43	.8939	3.7879	13.3333	.0909	1.6667	3.4848	2,727.272
4TH204RC	43 31 36	73 19 26	1.0563	3.2394	6.1972	.0563	1.1268	1.5493	1,408.450

TABLE3- RATIOS OF METALS TO IRON IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/FE	PB/FE	ZN/FE	CD/FE	NI/FE	CO/FE	MN/FE
4BE200RC	43 38 49	73 16 19	1.6667	11.6667	25.0000	.1310	1.4286	2.6190	1,428.572
4BE203RC	43 43 44	73 16 25	.0455	.3636	9.0909	<.0091	.4545	.6364	363.636
4BE204RC	43 44 7	73 18 23	1.0426	4.8936	21.2766	.1277	1.2766	2.3404	1,255.319
4WP201RC	43 19 51	73 17 26	2.5532	25.5319	7.8723	.1915	3.1915	2.7660	1,170.213
4WP202RC	43 17 24	73 20 48	1.2766	8.0851	6.8085	.1277	2.3404	2.9787	1,234.042
4WP203RC	43 18 21	73 21 29	.4154	2.0000	10.0000	.0462	.7692	2.7692	2,384.616
4WP204RC	43 15 21	73 19 29	3.3824	4.8529	17.6471	.3529	4.2647	2.7941	2,058.823
4WP205RC	43 15 20	73 16 31	1.9167	11.6667	10.8333	.0833	2.5000	5.0000	1,500.000
4CY200RC	43 14 44	73 27 22	1.1667	5.3704	10.3704	.1111	2.4074	3.3333	1,500.000
4CY201RC	43 9 57	73 23 39	1.8750	6.2500	15.6250	.1406	1.8750	2.9688	2,343.751
4CY203RC	43 11 6	73 26 35	1.0147	4.4118	11.7647	.0882	2.0588	2.9412	1,367.647
4CY204RC	43 11 7	73 29 33	1.1000	21.6667	7.0000	.1000	2.1667	2.6667	1,666.666
4CY205RC	43 8 20	73 28 18	1.1702	5.4255	7.3404	.0426	.8511	1.3830	340.426
4SM200RC	43 12 24	73 20 42	1.8519	9.0741	22.2222	.1296	1.8519	2.4074	2,222.222
5CM200RC	43 2 27	73 29 7	1.5190	5.6962	6.7089	.0759	.9620	1.1392	1,518.987
5CM203RC	43 4 11	73 28 41	2.1053	6.4912	6.3158	.0702	1.2632	1.6140	578.947
5CM204RC	43 6 19	73 24 59	.6296	2.9630	9.2593	.4444	5.5556	5.5556	3,703.703
5CM207RC	43 0 33	73 29 14	1.0732	7.9268	7.3171	.0976	2.6829	3.0488	951.220
5HF200RC	43 21 48	73 23 20	.3051	48.8136	18.6441	.1695	1.4407	2.2034	1,864.406
5HF201RC	43 20 0	73 22 51	.8636	8.1818	16.1364	.2045	1.7500	3.4091	3,181.818
5HF202RC	43 17 33	73 24 55	1.1803	3.9344	9.3443	.2131	2.9508	3.1148	1,442.622
5HF203RC	43 15 8	73 23 3	.9091	3.0000	7.0000	.1273	1.0909	2.1818	3,000.002
5CY206RC	43 9 0	73 24 50	1.1765	5.8823	17.6470	.1618	1.4412	1.7647	2,352.940
5CY207RC	43 14 16	73 28 31	3.6538	5.7692	21.1538	.1538	1.6923	2.1154	1,096.153
5SC200RC	43 8 42	73 31 30	1.0465	6.2791	4.6512	.0465	.9302	3.9535	1,186.047
5SC201RC	43 10 51	73 31 0	.3000	2.0000	14.0000	.1500	1.9000	4.3500	3,500.000
5BF404RC	43 10 53	72 25 25	2.8947	7.6316	11.3158	.1316	7.6316	5.7895	578.947
5BF405RC	43 6 48	72 17 5	.2667	8.5583	6.6657	.1667	1.2778	21.0667	1,888.888

TABLE4- RATIOS OF METALS TO MANGANESE IN MN-FE OXIDE COATINGS X1000

[N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	LATITUDE	LONGITUD	CU/MN	PB/MN	ZN/MN	CD/MN	NI/MN	CO/MN	FE/MN
3MS110RC	43 41 8	72 6 36	.0294	<.2941	14.1176	.2941	.2941	2.9412	97.059
3MS111RC	43 41 39	72 8 3	.1081	<.2703	9.4595	.3514	.5405	2.7027	91.892
3MS122RC	43 37 33	72 1 21	.5333	1.3333	28.0000	.2667	.6667	2.0000	233.333
3MS126RC	43 30 14	72 3 18	.0200	<.2000	15.2000	.1800	.4000	1.8000	52.000
3MS128RC	43 34 30	72 3 33	.0377	.1887	13.7736	.2264	.3774	1.3208	49.057
3CA110RC	43 28 57	72 36 3	.1364	1.1364	3.6364	<.0227	6.3636	3.8636	522.727
3CA112RC	43 26 51	72 34 52	2.1739	3.0435	36.9565	.6522	1.3043	1.7391	67.391
3CL120RC	43 21 28	72 28 27	.0345	<.3448	4.8276	.0690	1.0345	.6897	58.621
3SO119RC	43 15 54	72 13 0	.0455	<.4545	18.1818	.2727	.9091	1.8182	118.182
3SR101RC	43 11 25	72 30 18	.0690	<.3448	2.4138	.0345	1.0345	3.4483	117.241
3SR102RC	43 8 44	72 30 30	.0133	<.1333	1.7333	.0667	2.2667	2.9333	28.000
3SR116RC	43 8 55	72 34 52	.4545	.9091	28.1818	.3636	1.8182	2.7273	245.454
3SR125RC	43 6 6	72 32 14	.0741	<.3704	33.3333	.0370	2.2222	2.2222	111.111
3SR134RC	43 0 29	72 43 5	.0364	<.1818	18.1818	.2727	1.4545	4.0000	50.909
3SR143RC	43 4 58	72 38 2	<.0323	<.3226	14.1935	.1290	1.6129	2.5806	103.226
2ST115RC	43 58 24	72 19 54	1.6667	10.0000	6.6667	<.0833	.8333	1.6667	833.333
2ST121RC	43 57 12	72 15 22	.0263	<.2632	10.7895	.0789	.7895	.5263	47.368
2ST126RC	43 54 40	72 21 12	.1667	<.5556	1.6667	.0556	1.1111	<.0556	100.000
2ST129RC	43 54 54	72 17 6	4.8462	.7692	3.0769	.0769	3.0769	3.0769	215.385
2ST249RC	43 47 42	72 16 57	.0750	<.2500	7.5000	.1250	1.5000	1.5000	177.500
2ST254RC	43 49 51	72 15 33	.3000	1.0000	6.0000	.2000	2.0000	3.0000	800.000
2ST255RC	43 51 36	72 16 23	.3684	.5263	2.6316	.2105	8.4211	8.4211	184.211
3SR211RC	43 11 54	72 42 6	.4545	<.9091	14.5455	.0909	2.7273	5.4545	227.273
3SR208RC	43 14 3	72 39 54	.0250	<.1250	12.3750	.2375	2.7500	2.6250	28.750
3CL134RC	43 23 52	72 15 5	.0208	<.1042	8.4375	.1250	1.1458	2.1875	25.000
3CL267RC	43 17 3	72 20 44	.3750	<.4167	13.3333	.2500	1.2500	2.5000	100.000
3CL127RC	43 26 48	72 17 38	.0256	<.1282	20.5128	.5769	5.1282	4.8718	33.333
3CL130RC	43 26 10	72 19 38	.0476	<.4762	6.1905	.0952	2.8571	2.8571	133.333
3SV108RC	43 24 59	72 8 22	.0667	<.6667	30.0000	.4000	.6667	3.3333	346.667
3NH208RC	43 34 25	72 21 2	.0267	<.1333	4.1333	.0933	.2667	.6667	26.667
3SR110RC	43 9 47	72 39 0	26.0000	<10.0000	10.0000	<1.0000	10.0000	50.0000	1,200.000
3HN106RC	43 37 43	72 16 17	7.1429	<7.1429	157.1429	2.8571	21.4286	21.4286	1,071.429
2MC101RC	43 58 43	72 3 16	2.9333	4.0000	117.3334	.9333	20.0000	21.3333	1,733.333
2MC102RC	43 58 34	72 2 37	2.0000	<10.0000	30.0000	<1.0000	10.0000	<1.0000	4,300.000
2MC105RC	43 46 50	72 0 0	.1932	3.1818	34.0909	.7159	.6818	4.2045	125.000
2MC116RC	43 46 24	72 8 42	.5000	.4286	10.5714	.1286	1.4286	1.5714	92.857
2MC121RC	43 49 33	72 6 30	.2419	.4839	15.6452	.1129	.9677	1.7742	93.548
2MC164RC	43 51 21	72 7 8	.1304	.7246	8.9855	.0580	1.0145	1.8841	72.464
2ST103RC	43 55 16	72 25 14	.2105	1.5789	4.7368	.1053	2.6316	1.5789	210.526
2ST105RC	43 55 52	72 23 0	.1250	28.1250	2.5000	.0625	1.8750	.6250	193.750
2ST112RC	43 59 37	72 25 42	.0222	.0556	.5556	.0111	1.1111	.5000	43.889
3NH202RC	43 34 23	72 17 45	.0400	<.2000	6.0000	.1400	.2000	.6000	52.000
3CH206RC	43 19 24	72 40 29	2.1429	12.8571	50.0000	1.2857	2.8571	2.8571	285.714
3BF230RC	43 13 23	72 16 44	.0196	<.1961	11.7647	.3137	2.7451	9.8039	66.667
3BF232RC	43 12 12	72 23 42	11.1111	.3889	5.5556	.1111	2.5556	1.7778	37.222

TABLE4- RATIOS OF METALS TO MANGANESE IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/MN	PB/MN	ZN/MN	CD/MN	NI/MN	CO/MN	FE/MN
2LD102RC	43 22 45	72 42 59	.5263	1.0526	29.4737	.5263	3.1579	9.4737	347.368
2LD103RC	43 27 0	72 41 41	.4545	30.3030	22.7273	.3030	3.0303	3.0303	651.515
2LD105RC	43 29 33	72 39 19	2.5000	.1000	2.4000	.0600	3.5000	4.0000	270.000
2LD108RC	43 28 34	72 43 26	.0733	<.0667	1.6667	.1600	2.1333	2.4667	153.333
2LD107RC	43 28 38	72 43 9	<.0333	.3333	20.6667	.2667	2.0000	7.0000	83.333
2LD216RC	43 27 25	72 39 53	.9474	.6579	6.0526	.1184	3.6842	3.9474	421.053
2LD220RC	43 29 4	72 39 21	.0938	<.3125	4.3750	.1875	2.1875	2.8125	109.375
2LD221RC	43 24 26	72 38 17	.1000	<.5000	5.5000	.1500	2.0000	5.0000	150.000
2AN103RC	43 16 35	72 44 9	<.0286	.2857	31.4286	.2571	2.5714	8.8571	200.000
2AN110RC	43 18 48	72 37 47	<.2128	<2.1277	12.7660	.4255	12.7660	8.5106	659.574
2AN111RC	43 18 51	72 37 45	.0833	<.8333	16.6667	.4167	6.6667	4.1667	141.667
2AN208RC	43 17 54	72 38 26	.0833	<.8333	10.8333	.4167	7.5000	14.1667	275.000
2PY107RC	43 33 37	72 42 14	.0833	<.1667	1.1667	.1500	1.6667	7.8333	58.333
2PY113RC	43 30 56	72 39 42	.9184	<.1020	11.2245	.1429	6.1224	2.5510	214.286
2PY114RC	43 30 58	72 39 36	.2083	<.4167	6.2500	.2083	5.4167	8.3333	225.000
2PY120RC	43 35 24	72 39 51	.5789	.2632	1.5789	.0737	6.3158	1.7895	289.474
2WA109RC	43 22 24	72 57 51	.3000	4.0000	90.0000	1.4333	6.3333	10.6667	333.333
2WA111RC	43 15 27	72 54 4	.7895	<2.6316	21.0526	.5263	2.6316	23.6842	394.737
2WA115RC	43 16 24	72 53 18	.2400	.4000	26.0000	.3600	1.6000	5.2000	144.000
2WA118RC	43 22 49	72 55 1	.1538	<.3846	17.6923	.2308	1.1538	8.0769	203.846
2WA123RC	43 26 29	72 58 13	3.2353	8.8235	250.0001	2.7941	27.9412	19.1177	2,500.000
2WA128RC	43 15 14	72 46 30	.0909	<.3030	12.7273	.2727	.9091	7.5758	139.394
2WA129RC	43 15 43	72 47 14	.4167	1.0417	11.4583	.2083	1.0417	7.2917	604.167
2WA129RC	43 15 43	72 47 14	.0789	.2632	18.1579	.2632	1.3158	2.8947	134.211
2WA132RC	43 21 5	72 46 23	.2727	1.8182	22.7273	.5455	2.7273	8.1818	436.364
2WA134RC	43 7 40	72 48 5	39.1304	23.9130	15.2174	.2174	1.3043	5.0000	369.565
2WA141RC	43 15 56	72 50 21	.0741	.3704	8.5185	.2963	.7407	3.5185	61.111
2WA201RC	43 26 42	72 49 30	.3529	<.5882	9.4118	.1765	1.7647	4.1176	382.353
2WA202RC	43 29 30	72 54 20	.1579	<.5263	6.8421	.2105	1.5789	3.1579	136.842
2WA206RC	43 28 18	72 48 5	.0857	<.2857	20.0000	.4000	1.4286	4.2857	82.857
2WA207RC	43 29 56	72 49 25	1.0000	<2.5000	17.5000	.2500	2.5000	5.0000	1,025.000
2WA208RC	43 28 38	72 51 17	.6250	2.0833	14.5833	.2083	2.0833	4.1667	750.000
2WA209RC	43 28 38	72 51 17	1.4545	1.8182	7.2727	.1818	1.8182	9.0909	272.727
2WA245RC	43 26 25	72 45 51	1.7027	2.4324	19.1892	.2432	2.1622	4.5946	567.568
2WA217RC	43 25 56	72 46 5	1.1714	2.5714	17.1429	.2286	1.7143	3.7143	485.714
2WA218RC	43 24 44	72 46 58	.3750	1.2500	10.0000	.1250	1.2500	7.5000	700.000
2WA220RC	43 23 36	72 49 39	.3125	1.5625	17.1875	.1563	1.5625	4.6875	500.000
2WA228RC	43 20 26	72 49 58	.2632	<1.3158	22.3684	.3947	2.6316	7.8947	1,250.001
5CM206RC	43 3 55	73 29 57	.8594	4.5313	3.9063	.0938	1.5000	1.3750	703.125
5CM212RC	43 3 31	73 24 0	.7200	2.3200	2.5200	.0720	1.2000	.9600	320.000
4SL200RC	43 46 50	73 45 42	.0368	.5789	10.0000	.1105	.3684	2.5000	368.421
4SL201RC	43 45 25	73 52 45	.5312	2.5000	17.8125	.1563	.9375	2.5000	718.750
4SL202RC	43 46 36	73 54 49	.1357	.8571	10.0000	.0857	.4286	1.1429	485.714
4SL203RC	43 47 27	73 53 24	.3333	4.6667	31.0000	.2667	1.3333	5.0000	1,333.333
4SL204RC	43 49 38	73 51 59	1.6667	26.6667	73.3333	.6667	3.3333	6.6667	10,000.000

TABLE4- RATIOS OF METALS TO MANGANESE IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/MN	PB/MN	ZN/MN	CD/MN	NI/MN	CO/MN	FE/MN
4PL200RC	43 45 36	73 31 0	1.5600	1.6000	20.0000	.1800	32.0000	11.0000	740.000
4PL201RC	43 47 54	73 32 12	.1000	1.2500	15.0000	.1500	.8333	1.5000	508.333
4PL202RC	43 48 3	73 31 49	.2750	2.7500	23.2500	.2250	.7500	4.5000	1,050.000
4PL203RC	43 45 3	73 41 3	.4762	6.6667	33.3333	.1905	1.4286	2.3810	3,190.476
4PL204RC	43 46 35	73 41 17	1.0769	7.6923	38.4615	.3077	1.5385	3.0769	923.077
4PL205RC	43 49 8	73 44 23	.2778	3.3333	24.4444	.2444	.6667	2.7778	833.333
4PL206RC	43 51 25	73 42 46	.0806	1.2581	12.9032	.1355	.3548	1.5129	283.871
4PL207RC	43 55 36	73 44 18	.3913	.8696	12.6087	.2609	1.2174	7.8261	404.348
4PL208RC	43 57 17	73 43 4	.3243	4.0541	19.1892	.2162	.8108	6.2162	2,027.026
4PL209RC	43 54 57	73 38 7	1.0000	1.1538	13.8462	.1231	.6154	1.3846	446.154
4PL210RC	43 54 38	73 39 47	2.7273	9.0909	48.1818	.5455	5.4545	19.0909	4,454.547
4PL211RC	43 56 2	73 35 38	1.4286	4.2857	37.1429	.2857	1.4286	2.8571	4,571.430
4PL212RC	43 56 10	73 32 15	1.0000	9.0000	4.0000	.8000	3.0000	3.0000	400.000
4PL213RC	43 57 35	73 30 42	.7619	1.4286	15.8730	.1587	1.2698	2.5397	1,111.111
4PL214RC	43 54 5	73 33 10	.0714	.5357	6.7857	.0714	.3571	.7143	328.572
4PL215RC	43 53 54	73 34 18	.2545	2.0000	15.4545	.2182	.6364	2.7273	581.818
4PL216RC	43 54 6	73 33 11	.1182	1.5455	14.5455	.0909	.8182	2.0909	609.091
4PL217RC	43 52 3	73 31 57	3.1000	8.6667	23.3333	.1667	1.3333	6.6667	1,466.666
4BL208RC	43 38 42	73 36 33	1.0588	25.2941	94.1176	.5882	4.1176	17.0588	2,823.528
4BL209RC	43 39 57	73 36 51	.5556	4.7222	13.8889	.1389	1.1111	4.1667	1,194.445
4PL210RC	43 41 1	73 35 48	.2990	1.8557	28.8660	.1856	.6186	2.5773	484.536
4BL211RC	43 39 42	73 31 39	1.0556	10.0000	16.6667	.2778	1.6667	7.7778	1,777.778
4BL213RC	43 40 27	73 30 43	2.7619	4.2857	28.5714	.2381	2.8571	18.5714	2,619.048
4BL214RC	43 45 5	73 32 25	.5876	2.4742	15.4639	.1134	.9278	1.7526	567.010
4BL215RC	43 43 15	73 40 14	.0413	.3016	14.1270	.1190	.2222	1.2381	139.682
4BL216RC	43 44 38	73 38 15	1.6923	3.2692	32.6923	.2500	1.9231	7.3077	846.154
4BL217RC	43 44 36	73 38 5	.1538	1.0000	8.4615	.0538	.6923	2.6154	392.308
4BL218RC	43 43 32	73 30 5	3.1667	8.3333	33.3333	.3333	4.1667	7.5000	1,750.000
4BL219RC	43 44 48	73 40 24	.4000	1.7222	47.2222	.2222	1.0000	3.5556	394.445
4BL100PC	43 32 30	73 34 57	.5341	3.2955	52.2728	.5227	3.0682	4.4318	738.636
4BL101RC	43 33 6	73 35 36	2.2500	7.5000	64.9999	.5500	3.0000	10.5000	2,699.997
4BL102RC	43 31 0	73 30 31	.2857	2.8571	7.1429	.0357	2.5000	7.5000	428.572
4BL103RC	43 31 13	73 31 43	4.6154	10.7692	46.1539	.3846	4.6154	13.8462	2,076.923
4BL104RC	43 31 24	73 30 35	3.5000	11.4286	114.2857	1.0000	9.2857	25.0000	2,071.428
4BL105RC	43 32 11	73 30 24	3.4091	8.8636	63.6364	.5455	2.7273	22.0455	613.636
4GF110RC	43 27 9	73 34 53	.2100	2.0000	24.0000	.2900	.9000	2.2000	630.000
4GF111RC	43 28 58	73 34 37	.3333	5.1724	51.7241	.4483	1.8391	2.0690	1,494.253
4GF112RC	43 28 22	73 30 24	.3687	.3750	2.8125	.0250	.4375	1.1875	512.500
4GF113RC	43 27 8	73 30 42	.6111	2.7778	19.1667	.2778	1.6667	5.5556	1,444.446
4GF114RC	43 26 25	73 31 1	5.7500	8.7500	32.5000	.2500	5.0000	8.7500	5,375.004
4FA200RC	43 29 15	73 26 8	.5000	.8636	4.0909	.0909	11.8182	1.8182	490.909
4LN101RC	43 6 4	72 51 53	.5517	1.4943	26.4368	.1954	1.1494	6.0920	919.540
4LN103RC	43 4 10	72 52 1	.3571	6.9643	16.0714	.1607	.8929	10.7143	1,732.142
4LN105RC	43 8 0	72 49 20	.7368	4.7368	11.0526	.1053	1.0526	23.6842	2,999.999
4LN201RC	43 14 13	72 51 27	1.2941	5.8824	41.1765	.4118	2.9412	10.5882	2,235.294

TABLE4- RATIOS OF METALS TO MANGANESE IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/MN	PB/MN	ZN/MN	CD/MN	NI/MN	CO/MN	FE/MN
4LN202RC	43 12 33	72 46 25	2.1136	3.4091	18.1818	.1591	1.1364	3.6364	772.728
4LN203RC	43 11 4	72 51 17	.2727	1.3636	9.0909	.0727	.7273	5.9091	690.909
4LN204RC	43 10 18	72 49 54	1.0000	1.8182	19.0909	.1818	1.5909	8.8636	1,409.090
4LN205RC	43 12 5	72 52 18	.6970	3.0303	30.3030	.3939	1.8182	5.1515	1,090.908
4LN206RC	43 10 17	72 53 29	.7576	1.2121	24.8485	.2424	1.5152	9.6970	1,303.030
4LN207RC	43 9 48	72 54 9	.1875	2.1250	21.2500	.2250	1.0000	8.6250	412.500
4LN209RC	43 9 2	72 50 31	.4828	4.4828	21.7241	.1724	1.3793	6.5517	1,379.311
4LN210RC	43 3 53	72 46 6	.5333	6.6667	15.3333	.1333	1.3333	9.3333	1,800.000
4LN211RC	43 1 58	72 46 48	13.3333	5.8333	20.0000	.1667	12.5000	18.3333	2,666.669
4LN214RC	43 1 9	72 52 57	.7879	2.7273	33.3333	.3939	1.8182	5.1515	1,575.757
4LN215RC	43 1 45	72 53 26	.3636	8.8636	9.7727	.1136	.9091	7.0455	1,250.000
4LN216RC	43 3 6	72 53 30	1.8000	20.0000	28.0000	.2000	4.0000	12.0000	7,199.996
4LN217RC	43 3 41	72 58 10	2.2000	20.0000	19.3333	.2000	2.6667	11.3333	4,400.000
4LN218RC	43 3 42	72 59 18	11.0000	129.9999	40.0000	.5000	10.0000	20.0000	17,500.000
4LL100RC	43 15 30	73 48 33	.5128	4.3590	33.3333	.3077	1.5385	4.1026	1,128.205
4LL101RC	43 18 42	73 45 53	.3846	7.3077	46.1538	.6154	1.5385	8.0769	1,000.000
4LL102RC	43 18 19	73 46 43	1.0000	12.0000	60.0000	.6000	4.0000	4.0000	2,000.000
4LL106RC	43 22 56	73 46 48	1.0000	7.0000	49.0000	.4000	2.0000	7.0000	2,500.000
4LL107RC	43 24 2	73 52 52	6.0000	40.0000	1,149.9995	1.0000	10.0000	15.0000	12,500.008
4LL108RC	43 23 0	73 51 42	28.0000	70.0000	110.0000	1.0000	30.0000	40.0000	20,000.000
4LL110RC	43 24 48	73 53 30	1.9091	14.5455	43.6364	.3636	2.7273	9.0909	4,727.273
4LL111RC	43 28 22	73 51 0	4.1818	10.9091	70.9091	.3636	4.5455	10.9091	6,272.727
4LL112RC	43 29 14	73 53 5	.5484	2.0968	22.5807	.2742	1.1290	3.2258	1,000.000
4LL113RC	43 29 41	73 48 45	6.7143	11.4286	57.1429	.2857	7.1429	18.5714	18,571.426
4LL114RC	43 28 13	73 47 5	1.4359	5.3846	30.7693	.2564	1.5385	4.8718	1,589.744
4LL115RC	43 28 12	73 45 13	.7778	9.4444	34.4444	.2778	1.6667	6.6667	2,666.669
4LL200RC	43 24 31	73 57 38	1.2222	7.7778	90.0000	.6667	3.3333	10.0000	5,888.891
4LL201RC	43 24 53	73 58 53	.1500	3.2500	35.0000	.4667	1.2500	3.6667	533.333
4LL202RC	43 26 7	73 57 34	.5000	5.7143	42.8571	.3571	1.0714	6.4286	2,250.001
4LL203RC	43 27 16	73 58 42	.8125	3.1250	40.0000	.2500	1.8750	5.0000	2,812.501
4LL204RC	43 27 26	73 57 15	.6667	5.3333	38.0000	.2667	2.0000	6.0000	2,999.999
4LL205RC	43 27 53	73 56 11	.1778	2.5000	48.3333	.3556	.8889	2.6667	355.555
4LL206RC	43 18 49	73 54 17	.7391	5.2174	23.0435	.2609	1.3043	6.9565	2,217.392
4LL207RC	43 18 41	73 57 42	.4583	7.9167	37.9167	.4583	1.2500	5.0000	2,166.667
4LL208RC	43 20 59	73 59 57	.8636	5.0000	27.2727	.2273	.9091	6.3636	3,181.820
4LL209RC	43 22 6	73 55 16	.3222	1.0000	16.6667	.1889	.6111	2.9444	777.778
4LL210RC	43 16 5	73 57 12	5.8750	12.5000	81.2500	.5000	5.0000	7.5000	3,500.000
4LL211RC	43 16 1	73 57 22	.9091	12.7273	30.0000	.2727	1.8182	10.9091	4,363.637
4LL212RC	43 17 44	73 54 18	1.1000	11.0000	48.0000	.5000	2.0000	7.0000	3,299.997
4NC100RC	43 40 45	73 46 33	.2791	4.4186	27.9070	.1628	.6977	1.6279	837.209
4NC101RC	43 43 34	73 46 0	.2609	1.8841	21.7391	.1594	.7246	2.4638	1,202.899
4NC102RC	43 44 52	73 50 34	.6667	5.3333	34.0000	.2667	1.3333	10.6667	2,999.999
4NC103RC	43 44 13	73 30 18	2.4545	10.0000	46.3636	.2727	28.1818	7.2727	5,181.816
4NC104RC	43 41 54	73 51 7	.4231	4.6154	21.1538	.1538	.7692	3.8462	1,692.307
4NC105RC	43 42 52	73 53 3	.5517	3.4483	27.2414	.2759	1.0345	4.8276	1,965.518

TABLE4- RATIOS OF METALS TO MANGANESE IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/MN	PB/MN	ZN/MN	CD/MN	NI/MN	CO/MN	FE/MN
4NC106RC	43 44 13	73 55 12	.1000	2.5000	8.5714	.0286	.2857	2.5000	785.715
4NC107RC	43 41 45	73 57 45	.3636	2.5758	18.1818	.1818	.6061	3.3333	1,045.454
4NC108RC	43 42 32	73 56 9	.5417	4.5833	16.2500	.2083	1.2500	5.0000	2,458.332
4NC109RC	43 41 43	73 54 54	.5185	4.4444	27.7778	.2593	1.1111	3.3333	2,111.111
4NC110RC	43 39 47	73 55 36	.1771	1.8750	11.4583	.0521	.4167	1.5625	718.750
4NC111RC	43 40 17	73 53 8	.0104	.0597	.6866	.0940	.1045	1.7910	164.179
4NC112RC	43 38 6	73 51 31	.1867	1.3333	2.9333	.0667	.4000	1.0667	933.333
4NC113RC	43 39 5	73 59 46	.8750	1.4583	5.4167	.2500	1.4583	3.5417	1,458.333
4NC114RC	43 36 59	73 58 31	.1267	.7333	.7333	.0533	.3333	1.7333	560.000
4NC115RC	43 36 20	73 58 49	1.0833	5.0000	5.1667	.2500	2.5000	5.0000	4,750.000
4NC116RC	43 35 3	73 59 0	.1875	1.1250	2.0000	.1125	.6250	1.8750	650.000
4NC117RC	43 34 54	73 58 44	9.3333	5.5556	5.5556	.6667	4.4444	18.8889	5,000.000
4NC119RC	43 36 40	73 53 32	.6087	3.4783	2.9565	.2174	.8696	4.3478	2,130.435
4NC120RC	43 31 40	73 55 40	.8333	1.6667	2.2727	.1818	2.7273	3.6364	924.242
4NC121RC	43 32 33	73 59 40	.1167	.7500	1.1667	.0917	1.5000	1.5000	483.333
4NC123RC	43 33 41	73 55 23	.1455	.3182	.9545	.0591	.3636	1.7273	386.364
4NC124RC	43 34 13	73 54 22	1.1176	2.3529	1.9412	.2941	2.9412	7.0588	1,764.706
4NC125RC	43 33 59	73 53 43	.2745	3.3333	2.9412	.2549	.7843	3.9216	1,411.765
4NC126RC	43 31 0	73 51 19	7.5000	35.0000	12.5000	.5000	7.5000	22.5000	7,000.000
4NC127RC	43 31 5	73 54 22	.0950	1.1500	1.9500	.0850	.4500	1.4000	300.000
4NC128RC	43 32 3	73 52 6	.3800	2.8000	2.6000	.1400	1.0000	3.0000	740.000
4NC129RC	43 32 42	73 51 18	.2471	1.4706	1.3529	.0706	.4118	2.0588	705.883
4NC130RC	43 35 44	73 49 42	1.2000	11.0000	1.6000	.1000	2.0000	5.0000	3,499.999
4NC131RC	43 34 27	73 45 15	2.0000	2.5000	2.4000	.2000	2.0000	9.5000	1,700.000
4TC202RC	43 57 35	73 29 18	.3750	1.8750	9.3750	.0625	1.5625	1.5625	593.750
4TC203RC	43 57 33	73 29 16	.2400	1.2000	6.0000	.0800	1.2000	1.2000	920.000
4TC204RC	43 52 58	73 28 21	.4615	3.0769	6.9231	.0769	1.5385	2.3077	1,538.462
4TC205RC	43 49 5	73 29 55	.1852	2.9630	12.5926	.2778	.7407	1.4815	870.370
4TC206RC	43 45 44	73 27 22	.1667	1.0000	5.0000	<.0333	1.0000	1.0000	666.666
4SL205RC	43 50 26	73 51 15	9.7500	12.5000	90.0000	<.2500	12.5000	15.0000	12,000.000
4SL206RC	43 56 19	73 57 13	.5200	4.8000	29.6000	.2400	1.2000	6.4000	2,479.998
4SL207RC	43 56 42	73 57 12	.4286	12.5714	34.2857	.2571	.8571	3.4286	914.285
4SL208RC	43 57 25	73 52 12	8.8000	6.0000	52.0000	.2000	72.0000	22.0000	7,599.996
4SL209RC	43 57 33	73 47 26	2.5000	20.0000	105.0000	<.5000	10.0000	10.0000	14,500.000
4SL210RC	43 56 38	73 51 0	1.7692	8.4615	69.2307	.3077	3.0769	15.3846	3,461.538
4SL211RC	43 57 21	73 50 14	1.1429	17.1429	75.7143	.4286	2.8571	7.1429	3,142.857
4SL212RC	43 50 3	73 55 55	.8571	10.0000	71.4285	.4286	4.2857	8.5714	5,142.859
4SL213RC	43 48 20	73 57 9	2.4074	2.9630	81.4815	.3704	3.7037	15.5556	3,296.295
4SL214RC	43 52 55	73 54 9	3.5000	15.0000	102.5000	.2500	5.0000	20.0000	7,500.008
4SL215RC	43 51 5	73 48 9	.1818	13.6364	36.3636	.3636	1.2121	2.1212	787.879
4PL218RC	43 59 15	73 39 5	.1231	3.6154	25.3846	.2077	.5385	2.8462	661.538
4PL219RC	43 59 17	73 39 39	.6000	6.8000	15.4000	.0800	1.0000	7.2000	1,759.999
4PL220RC	43 58 31	73 42 52	.7500	15.0000	52.5000	.3750	2.5000	6.2500	4,375.000
4PL221RC	43 58 5	73 43 43	.5294	10.0000	28.2353	.1765	1.7647	4.7059	1,941.176
4WH200RC	43 34 25	73 26 45	.6000	3.6667	10.0000	.1667	1.3333	3.0000	1,133.332

TABLE4- RATIOS OF METALS TO MANGANESE IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/MN	PB/MN	ZN/MN	CD/MN	NI/MN	CO/MN	FE/MN
4WH201RC	43 35 20	73 29 21	.4667	8.6667	46.6667	.2667	2.0000	6.0000	1,400.000
4WH202RC	43 35 2	73 29 16	.7419	2.5806	30.9677	.1935	2.5806	7.7419	1,451.613
4WH203RC	43 34 29	73 28 22	.4357	1.0714	10.7143	.2500	5.5714	5.3571	500.000
4BL220RC	43 38 18	73 30 9	1.8667	.6667	24.0000	.1333	3.3333	8.6667	2,399.999
4PU200RC	43 38 18	73 27 7	1.2000	3.5000	16.0000	.1000	2.0000	9.5000	3,000.000
4TU201RC	43 37 21	73 26 49	.6667	3.3333	12.0000	.2000	2.0000	4.0000	666.667
4PU202RC	43 40 14	73 29 31	6.0000	21.4286	94.2857	.4286	7.1429	12.8571	7,428.570
4PU203RC	43 39 15	73 29 30	5.8462	8.4615	16.1539	.1538	3.0769	4.6154	2,461.539
4PU206RC	43 40 44	73 25 4	1.5556	3.3333	8.3333	.0556	3.3333	2.7778	1,888.888
4PU207RC	43 41 10	73 27 15	.5000	3.0000	8.5000	.1000	1.5000	2.0000	950.001
4PU208RC	43 43 52	73 27 28	.0875	.6667	5.8333	.0583	.2917	.7500	345.833
4SA101RC	43 12 17	73 53 5	.7000	15.5000	42.5000	.5500	2.5000	6.5000	2,000.003
4SA102RC	43 11 30	73 54 18	.4444	8.8889	25.0000	.1667	1.6667	8.8889	1,000.000
4SA103RC	43 10 43	73 54 19	3.5000	22.5000	100.0000	.5000	7.5000	10.0000	5,750.000
4SA104RC	43 9 2	73 53 3	.5000	2.8947	28.9474	.2632	1.5789	2.8947	894.737
4SA105RC	43 9 2	73 53 21	4.0000	13.7500	65.0000	.7500	13.7500	16.2500	3,125.001
4SA106RC	43 6 39	73 55 39	1.2807	1.2281	14.5614	.1404	.8772	1.5789	508.771
4SA107RC	43 6 11	73 59 55	.0882	.9118	23.5294	.2000	.7059	1.8235	226.471
4SA108RC	43 4 48	73 58 6	1.6000	10.0000	62.0000	.4000	3.0000	5.0000	3,500.000
4SA109RC	43 10 39	73 59 30	.0225	.1250	2.6250	.0738	.1875	.1625	121.250
4SA110RC	43 8 57	73 58 7	.0867	1.8000	60.0000	.4444	1.5111	.3556	188.889
4SA200RC	43 8 57	73 51 18	.3800	1.5000	10.0000	.1000	.6000	.4000	540.000
4SA201RC	43 9 10	73 46 32	.6444	3.3333	35.5556	.2444	1.5556	2.4444	666.667
4SA203RC	43 8 22	73 46 14	6.9492	5.2542	37.2881	.4237	22.0339	2.2034	1,864.407
4SA205RC	43 8 13	73 48 37	.1917	1.3333	7.5000	.0583	.3333	.7500	283.333
4BL200RC	43 31 5	73 44 31	.7586	3.4483	34.4828	.1379	1.0345	21.3793	1,482.759
4BL201RC	43 36 36	73 43 19	1.0000	1.7647	29.4118	.0882	1.7647	1.4706	2,470.589
4BL202RC	43 36 30	73 43 12	1.6735	2.2449	36.7347	.2041	1.8367	132.6530	1,081.633
4BL203RC	43 34 16	73 39 57	.8929	12.8571	53.5714	.5714	2.8571	64.2857	1,357.142
4BL204RC	43 35 33	73 38 36	.3148	11.1111	31.4815	.2963	1.2963	2.7778	814.815
4BL205RC	43 36 41	73 37 46	.4118	6.4706	35.2941	.4706	3.5294	4.1176	852.941
4BL206RC	43 36 59	73 40 55	1.0000	3.6842	47.3684	.3158	2.6316	10.0000	2,052.629
4BL207RC	43 39 15	73 43 45	.1707	3.1707	29.2683	.1463	.7317	2.4390	609.757
4GF100RC	43 27 10	73 44 12	.8889	16.1111	50.0000	.2778	2.2222	5.5556	1,555.555
4GF101RC	43 26 18	73 43 43	.6316	15.7895	52.6316	.5789	1.5789	7.3684	1,736.843
4GF102RC	43 24 46	73 43 28	1.3125	5.6250	37.5000	.1875	1.8750	3.7500	1,062.500
4GF103RC	43 24 28	73 42 2	1.3333	13.3333	50.0000	.1667	3.3333	6.6667	5,333.332
4GF104RC	43 23 55	73 43 48	1.4000	10.0000	40.0000	.2000	2.0000	8.0000	2,200.001
4GF105RC	43 20 18	73 44 18	6.0000	10.0000	50.0000	<.5000	5.0000	10.0000	7,500.000
4GF106RC	43 19 5	73 44 24	9.4595	8.6486	43.2432	.3243	1.6216	2.7027	1,108.108
4GF107RC	43 23 40	73 38 51	2.0000	25.0000	80.0000	.5000	5.0000	10.0000	10,499.988
4GF108RC	43 25 3	73 39 6	7.5000	25.0000	80.0000	<.5000	5.0000	10.0000	7,500.000
4GF109RC	43 26 10	73 35 42	.4483	3.7931	27.5862	.3448	1.8966	2.5862	568.966
4AR100RC	43 0 23	73 10 14	.1395	1.3953	2.0930	.0233	.4651	.9302	372.093
4AR103RC	43 2 50	73 9 3	.0824	.7059	4.5882	.0941	.7059	1.1176	458.823

TABLE4- RATIOS OF METALS TO MANGANESE IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/MN	PB/MN	ZN/MN	CD/MN	NI/MN	CO/MN	FE/MN
4AR108RC	43 2 44	73 8 12	.3158	3.6842	47.3684	.5789	3.9474	8.4211	631.579
4DO102RC	43 15 15	73 6 52	3.5000	115.0000	22.5000	.2500	2.5000	7.5000	2,749.999
4DO116RC	43 20 35	73 1 32	1.0000	3.5000	5.0000	.2000	7.5000	6.0000	850.000
4SD100RC	43 3 44	73 0 4	.8421	22.6316	4.7368	.0526	1.0526	14.7368	3,052.629
4SD104RC	43 3 14	73 3 16	.2963	12.2222	2.9630	.0370	.7407	15.1852	2,296.296
4SD106RC	43 4 44	73 6 36	.0824	4.1765	11.7647	.2118	1.6471	7.6471	211.765
4SD108RC	43 6 35	73 6 11	.1556	4.4444	28.8889	.3556	2.8889	17.1111	866.667
4SD109RC	43 6 50	73 5 51	.1000	.9091	30.0000	.2727	2.4545	7.6364	300.000
4SM102RC	43 8 20	73 17 8	.1230	.5082	1.8033	.0197	.1639	.5246	95.082
4SM103RC	43 7 50	73 20 3	1.2987	2.4675	2.9870	.0649	.6494	1.0390	714.285
4SM104RC	43 10 14	73 17 34	1.2245	6.1224	3.8776	.1122	1.4286	1.6327	346.938
4SH104RC	43 2 23	73 19 40	.4630	5.0000	13.3333	.2037	.9259	1.6667	425.926
4SH105RC	43 3 44	73 21 45	.8427	2.1348	5.5056	.1685	1.9101	2.0225	404.495
4SH106RC	43 6 9	73 19 31	1.3265	5.1020	6.9388	.2245	2.4490	1.8367	387.755
4SH107RC	43 6 56	73 18 10	.4605	3.5526	7.3684	.1316	1.0526	1.5789	421.052
4CA601RC	43 26 2	72 32 49	1.6207	4.8276	3.4483	.3103	2.7586	3.1034	482.759
4CA602RC	43 24 33	73 30 12	.2917	1.2500	1.0417	.0729	.6250	1.6667	312.500
4CA605RC	43 28 54	72 37 29	.1937	.2812	6.8750	.0531	.5625	1.6250	375.000
4CA607RC	43 29 54	72 31 12	3.0968	2.5806	4.5161	<.0323	4.1935	2.5806	935.484
4MA101RC	43 9 28	73 2 28	.6667	16.6667	48.3333	.5000	3.3333	28.3333	2,333.333
4MA102RC	43 9 42	73 2 0	.9091	10.9091	19.0909	.2727	4.5455	16.3636	727.273
4MA105RC	43 12 2	73 3 35	.5588	4.2941	11.1765	.1235	1.2941	1.7647	323.530
4MA107RC	43 11 18	73 3 30	.5000	1.6667	3.3333	<.0833	2.5000	3.3333	83.333
4MA109RC	43 11 23	73 1 3	.2091	.4545	27.2727	.1545	1.7273	1.6364	254.545
4MA110RC	43 14 22	73 0 16	.5570	13.9241	65.8228	.3797	3.1646	4.1772	518.988
4MS400RC	43 41 42	72 10 47	1.5000	5.0000	11.8750	.1875	3.7500	8.1250	937.500
4MS401RC	43 37 34	72 1 24	.3455	1.2727	23.6364	.2182	1.0909	2.1818	381.818
4WL203RC	43 28 31	73 8 53	1.6438	13.6986	4.6575	.1644	3.6986	4.3836	876.712
4WL204RC	43 27 42	73 8 5	2.8182	1.8182	3.0909	.0955	1.9545	1.5000	545.455
4WL205RC	43 24 21	73 8 57	3.1481	8.1481	12.0370	.1296	5.3704	6.2963	814.815
4HK201RC	43 53 17	72 48 45	5.6098	7.0732	6.8293	.1951	13.4146	4.8780	731.708
4HK208RC	43 59 27	72 50 24	3.6364	7.2727	8.3636	.1091	3.8182	3.0909	590.909
4TC201RC	43 45 15	73 19 21	2.7586	10.3448	8.6207	.0690	2.4138	2.9885	781.609
4PA205RC	43 18 14	73 14 3	1.6667	19.1667	3.5000	.1167	1.9167	1.7500	400.000
4BR210RC	43 57 24	72 58 57	1.0000	7.9167	40.8333	.3750	4.5833	5.0000	1,750.000
4BD400RC	43 48 36	73 2 32	.3100	1.7000	19.0000	.1850	3.5000	1.5000	500.000
4BD401RC	43 47 11	73 1 42	.4727	7.2727	10.9091	.1909	3.9091	3.0909	481.818
4BD402RC	43 46 21	73 1 14	1.6279	6.0465	8.4884	.0930	2.9070	1.7442	1,511.627
4DO101RC	43 21 59	73 5 50	.9398	5.6627	5.4217	.1205	3.8554	3.1325	493.976
4RT109RC	43 30 43	73 1 19	.1364	.7576	2.7273	.0455	3.0303	1.2121	227.273
4SY100RC	43 46 13	73 10 56	1.1343	6.7164	6.8657	.2090	2.9851	4.0299	656.717
4PA204RC	43 16 37	73 13 35	1.6667	7.7381	6.0714	.1548	2.2619	2.5000	654.762
4CT100RC	43 42 40	72 57 58	.5862	3.6782	24.1379	.2184	4.2529	3.9080	609.195
4CT101RC	43 44 19	72 56 0	.5422	3.3735	33.7349	.3494	3.3735	4.9398	819.277
4CT103RC	43 42 9	72 53 13	.7222	8.1481	25.9259	.4259	3.7037	3.8889	444.444

TABLE4- RATIOS OF METALS TO MANGANESE IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/MN	PB/MN	ZN/MN	CD/MN	NI/MN	CO/MN	FE/MN
4CT104RC	43 42 53	72 55 20	1.5385	15.0000	28.0769	.3462	3.4615	3.4615	1,884.615
4CT105RC	43 40 14	72 59 11	.8545	4.7273	19.0909	.1818	3.5455	2.0000	645.454
4CT106RC	43 39 8	72 57 44	.5385	3.3846	21.5385	.2154	1.6154	1.5385	561.538
4CT109RC	43 38 38	72 53 10	.5714	3.5714	38.5714	.0714	2.1429	2.1429	1,071.429
4CT110RC	43 39 19	72 53 19	1.3636	10.3030	69.6970	.7576	5.1515	15.4545	3,939.394
4MD103RC	43 23 28	73 0 27	.1935	1.6129	2.9032	.0968	3.2258	2.5806	322.581
4BR202RC	43 59 26	72 53 52	5.9375	8.9062	7.5000	.1250	6.0938	5.3125	1,281.249
4PR100RC	43 41 38	73 2 40	.1264	.3448	4.1379	.0230	.5747	1.0345	459.770
4PR108RC	43 44 24	73 1 12	.1133	.9333	6.5333	.0800	1.1333	.9333	240.000
4PR110RC	43 39 43	73 0 6	1.2500	8.7500	28.7500	.0625	3.1250	2.5000	1,249.999
4PR111RC	43 40 49	73 0 33	.5000	2.6000	9.8000	.0600	1.6000	1.2000	240.000
4PR112RC	43 42 15	73 0 26	1.7000	6.0000	14.6000	.1000	2.4000	1.6000	480.000
4PP103RC	43 42 15	72 49 36	2.3333	3.8333	26.6667	.3667	.3333	6.0000	616.667
4PP107RC	43 38 41	72 47 26	1.2308	2.2308	11.5385	.1000	1.0000	2.2308	846.154
4PP108RC	43 38 42	72 47 17	.2667	3.2500	22.5000	.1333	1.0000	3.0000	725.000
4PP111RC	43 39 52	72 48 43	.4474	10.7895	34.2105	.3684	2.6316	3.9474	1,157.894
4CR106RC	43 51 19	72 54 35	.6786	8.2143	42.8571	.6429	6.0714	9.2857	1,000.000
4CR110RC	43 47 21	72 58 41	1.1579	13.4211	12.3684	.1579	2.6316	2.6316	2,078.947
4BO109RC	43 44 46	73 11 51	.2091	2.1818	5.1818	.0364	.4545	.7273	327.273
4BO110RC	43 44 21	73 10 37	.4138	6.8966	8.9655	.3276	1.5517	2.0690	344.828
4BO111RC	43 43 23	73 10 59	7.0968	5.0000	13.5484	.3871	6.1290	7.7419	1,000.000
4BO100RC	43 43 11	73 14 7	.7755	2.2449	6.9388	.0612	1.4286	1.4286	489.796
4PO101RC	43 43 3	73 12 13	1.2545	2.3636	3.6364	.0727	5.6364	3.0909	563.636
4BO104RC	43 40 47	73 10 30	1.9362	13.8298	5.1064	.2340	10.2128	3.4043	553.192
4KP100RC	43 33 26	72 51 36	.2364	1.6364	39.5455	.5000	4.5000	3.7273	350.000
4KP102RC	43 32 38	72 50 8	.2935	1.7391	16.3044	.1957	3.3696	5.6522	913.044
4KP105RC	43 32 14	72 52 21	.6833	5.3333	21.6667	.2167	3.8333	2.0000	416.667
4PP100RC	43 38 1	72 52 12	15.7480	196.8504	98.4252	5.9055	19.6850	19.6850	1,968.504
4RL100RC	43 34 8	72 58 2	.1724	3.4483	12.4138	.1379	2.0690	1.7241	965.517
4RL104RC	43 32 50	72 57 26	.8333	10.0000	25.0000	.3333	4.1667	2.5000	2,916.667
4EM101RC	43 58 49	73 6 19	3.4043	21.2766	18.7234	.1489	4.6809	2.5532	872.340
4EM103RC	43 59 20	73 2 25	.6562	5.9375	34.3750	.3438	7.1875	3.7500	1,000.000
4EM105RC	43 58 35	73 1 18	.2750	4.7500	25.0000	.2750	4.0000	3.2500	675.000
4EM108RC	43 57 30	73 0 59	3.1111	8.8889	63.3333	.4444	15.5556	6.6667	3,555.555
4GR207RC	43 27 48	73 15 23	.6591	4.5455	8.1818	.1136	2.7273	1.8182	590.908
4GR209RC	43 25 13	73 17 59	.9474	3.1579	5.1579	.0526	2.3158	1.2632	589.474
4GR210RC	43 28 58	73 18 29	.2529	.6471	4.1176	.0382	1.2647	.7941	291.177
4GR211RC	43 27 18	73 19 15	1.0952	3.5714	3.9286	.0714	3.5714	1.7857	547.619
4GR213RC	43 22 39	73 19 6	.3136	1.8182	6.3636	.0682	2.5000	2.5000	418.182
4GR214RC	43 25 46	73 19 45	.0900	.9000	2.8000	.0300	.7000	.8000	270.000
4GR216RC	43 24 55	73 22 21	2.7273	6.1818	7.4545	.0909	4.5455	6.7273	818.182
4TH200RC	43 36 23	73 18 22	.2360	1.1236	5.7303	.0674	1.4607	2.5843	584.270
4TH202RC	43 33 5	73 15 57	1.8056	9.0278	16.6667	.1806	2.9167	4.0278	847.222
4TH203RC	43 31 22	73 15 43	.3278	1.3889	4.8889	.0333	.6111	1.2778	366.667
4TH204RC	43 31 36	73 19 26	.7500	2.3000	4.4000	.0400	.8000	1.1000	710.000

TABLE4- RATIOS OF METALS TO MANGANESE IN MN-FE OXIDE COATINGS X1000--Continued

Sample	LATITUDE	LONGITUD	CU/MN	PB/MN	ZN/MN	CD/MN	NI/MN	CO/MN	FE/MN
4BE200RC	43 38 49	73 16 19	1.1667	8.1667	17.5000	.0917	1.0000	1.8333	700.000
4BE203RC	43 43 44	73 16 25	.1250	1.0000	25.0000	<.0250	1.2500	1.7500	2,749.999
4BE204RC	43 44 7	73 18 23	.8305	3.8983	16.9492	.1017	1.0169	1.8644	796.610
4WP201RC	43 19 51	73 17 26	2.1818	21.8182	6.7273	.1636	2.7273	2.3636	854.545
4WP202RC	43 17 24	73 20 48	1.0345	6.5517	5.5172	.1034	1.8966	2.4138	810.345
4WP203RC	43 18 21	73 21 29	.1742	.8387	4.1935	.0194	.3226	1.1613	419.355
4WP204RC	43 15 21	73 19 29	1.6429	2.3571	8.5714	.1714	2.0714	1.3571	485.714
4WP205RC	43 15 20	73 16 31	1.2778	7.7778	7.2222	.0556	1.6667	3.3333	666.667
4CY200RC	43 14 44	73 27 22	.7778	3.5802	6.9136	.0741	1.6049	2.2222	666.667
4CY201RC	43 9 57	73 23 39	.8000	2.6667	6.6667	.0600	.8000	1.2667	426.667
4CY203RC	43 11 6	73 26 35	.7419	3.2258	8.6021	.0645	1.5054	2.1505	731.183
4CY204RC	43 11 7	73 29 33	.6600	13.0000	4.2000	.0600	1.3000	1.6000	600.000
4CY205RC	43 8 20	73 28 18	3.4375	15.9375	21.5625	.1250	2.5000	4.0625	2,937.500
4SM200RC	43 12 24	73 20 42	.8333	4.0833	10.0000	.0583	.8333	1.0833	450.000
5CM200RC	43 2 27	73 29 7	1.0000	3.7500	4.4167	.0500	.6333	.7500	658.333
5CM203RC	43 4 11	73 28 41	3.6364	11.2121	10.9091	.1212	2.1818	2.7879	1,727.273
5CM204RC	43 6 19	73 24 59	.1700	.8000	2.5000	.1200	1.5000	1.5000	270.000
5CM207RC	43 0 33	73 29 14	1.1282	8.3333	7.6923	.1026	2.8205	3.2051	1,051.281
5HF200RC	43 21 48	73 23 20	.1636	26.1818	10.0000	.0909	.7727	1.1818	536.364
5HF201RC	43 20 0	73 22 51	.2714	2.5714	5.0714	.0643	.5500	1.0714	314.286
5HF202RC	43 17 33	73 24 55	.8182	2.7273	6.4773	.1477	2.0455	2.1591	693.182
5HF203RC	43 15 8	73 23 3	.3030	1.0000	2.3333	.0424	.3636	.7273	333.333
5CY206RC	43 9 0	73 24 50	.5000	2.5000	7.5000	.0688	.6125	.7500	425.000
5CY207RC	43 14 16	73 28 31	3.3333	5.2632	19.2982	.1404	1.5439	1.9298	912.281
5SC200RC	43 8 42	73 31 30	.8824	5.2941	3.9216	.0392	.7843	3.3333	843.137
5SC201RC	43 10 51	73 31 0	.0857	.5714	4.0000	.0429	.5429	1.2429	285.714
5BF404RC	43 10 53	72 25 25	5.0000	13.1818	19.5455	.2273	13.1818	10.0000	1,727.273
5BF405RC	43 6 48	72 17 5	.1412	4.5309	3.5294	.0882	.6765	11.1529	529.412