DEPARTMENT OF GEOLOGY
OHIO STATE UNIVERSITY

APPENDIX III. COMPLETE ANALYSES OF MANGANESE AND IRON ORES.*

Sample No.†	MnO_2	MnO	SiO_2	Fe_2O_3	Al_2O_3	MgO	CaO	Na_2O	K_2O	H_2O-	H_2O+	TiO_2	P_2O_5	V_2O_3	NiO_2	CoO	BaO	Li_2O	As_2O_3	Sb_2O_3	CuO	PbO	SnO_2	Cr_2O_3	S	Total	Analyst
Manganese ores - Samples from bed No. 1																											
4	71.65	1.04	1.26	15.97	2.50	None	0.22	0.05	4.80	0.19	1.74	0.08	0.01	None	None	0.37	0.05	....	....	....	None	None	....	....	....	99.93	Michael Fleischer
8	67.97	6.24	.40	14.24	1.73	0.07	.33	.17	4.07	1.11	2.11	.16	.91	<0.01	None	.14	.07	0.001	None	None	0.004	None	....	....	....	99.73	J. M. Axelrod
10	72.45	2.58	.56	15.41	1.04	None	.21	.28	3.63	.44	2.33	.05	.34	None	Tr.	.28	.14	....	....	....	None	None	....	....	....	99.74	Michael Fleischer
14	69.82	3.48	.88	16.59	.92	.42	.30	.19	3.52	.47	2.18	.14	.42	....	None	.05	.53	....	....	....	....	....	....	....	....	99.91	Victor North
20	61.18	1.53	3.85	23.07	2.20	.23	.19	.30	3.69	.47	2.61	.21	.72	....	None	.04	.15	....	....	....	....	....	....	....	....	100.44	Do.
26	67.19	3.55	1.77	16.46	2.16	.19	.26	.20	2.03	1.03	3.42	.14	.66	....	None	.02	.95	....	....	....	....	....	....	....	....	100.03	Do.
28	69.90	.64	.90	18.08	2.59	.10	.04	.53	3.21	.22	2.82	.10	Tr.	None	None	.35	.35	.002	None	None	None	None	None	....	....	99.83	J. J. Fahey
106	66.30	2.69	1.71	18.13	2.51	.36	.07	.50	2.57	.51	4.39	.10	None	None	None	.33	.26	.002	None	None	None	None	None	....	....	100.43	Do.
Manganese ores - Samples from bed No. 2																											
5	69.10	1.50	1.03	17.70	2.08	0.09	0.02	0.63	3.43	0.14	2.56	0.05	0.83	None	None	0.20	0.33	0.001	None	None	None	Tr.	None	....	....	99.69	J. J. Fahey
15	70.57	5.31	.36	14.90	.92	.24	.40	.17	4.48	.50	1.40	.15	.23	<0.01	None	.10	.16	Tr.	None	None	0.003	None	....	....	....	99.89	J. M. Axelrod
23	65.43	4.64	1.31	19.71	1.90	.11	.50	.13	2.59	.50	2.03	.12	.41	None	None	.16	.81	....	....	....	None	None	....	....	....	100.35	Michael Fleischer
33	72.10	1.77	1.33	17.43	.11	None	.05	.06	4.28	.19	1.58	.04	.28	None	None	.24	.65	....	....	....	None	None	....	....	....	100.11	Do.
105	69.90	2.86	.96	17.19	1.94	None	None	.46	3.47	.22	2.34	.08	None	None	None	.30	None	.002	None	None	None	Tr.	None	....	....	99.69	J. J. Fahey
Iron ores																											
Fe 10	.....	0.77	27.83	70.74	0.36	....	....	....	....	....	....	0.01	0.17	....	....	....	....	....	....	....	....	....	....	0.007	0.017	99.88	Michael Fleischer
Fe 11	.....	.09	9.02	89.97	.48	None	0.54	....	....	0.30	....	None	.19	None	None	0.01	....	None	....	....	....	....	....	.036	.036	100.60	Do.
Fe 25	.....	.01	11.40	87.60	.86	0.14	.04	....	....	.09	....	.03	.12	....	....	....	....	.....	....	....	....	....	....	Tr.	Tr.	100.29	R. E. Stevens

† Locations of samples shown on plates 5 and 6.

* Complete analyses made in the laboratories of the Geological Survey.

GPO O - 641896