DEPARTMENT OF THE INTERIOR
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Table 4. - Heavy minerals, in percent, in grab samples from the Sentinel Butte Member of Fort Union Formation (Paleocene) in Williston basin

[Total nonopaque minerals = 100 percent. Plates cited are in U.S. Geol. Survey Prof. Paper 463, 1965]

Sample No.	Stratigraphic interval above base of formation (feet)	Nonopaque minerals																			Total heavy-mineral fraction		Total number of nonopaque grains counted
		Garnet	Zircon	Augite	Hornblende	Tourmaline	Sphene	Rutile	Apatite	Biotite	Hypersthene	Staurolite	Sillimanite	Kyanite	Monazite	Chlorite	Epidote	Clinozoisite	Zoisite	Andalusite	Nonopaques	Opaques	
Killdeer Mountains, Dunn County, N. Dak. [See pl. 3, loc. 1]																							
GND- 97		47	5	0	7	0	0	0	0	12	0	3	0	0	0	8	15	1	2	0	45	55	78
Sentinel Butte, Golden Valley County, N. Dak. [See pl. 3, loc. 2]																							
GND-125	460	0	22	0	1	52	0	1	0	0	0	1	0	15	0	0	0	1	0	7	15	85	67
124	425	11	54	0	3	16	0	4	0	1	0	3	0	5	0	0	0	0	0	3	16	84	152
123	390	28	15	0	1	3	0	2	0	1	0	0	0	3	0	15	29	1	0	2	10	90	117
Bullion Butte, Billings County, N. Dak. [See pl. 3, loc. 3]																							
BB5-1	450	2	36	0	0	20	0	1	0	0	0	14	0	12	0	0	1	2	0	12	--	--	103
Slide Butte, Slope County, N. Dak. [See pl. 3, loc. 4]																							
GND-136	185	0	8	0	0	25	0	2	0	0	0	50	0	13	0	0	0	0	0	2	--	--	45
Chalky Buttes, Slope County, N. Dak. [See pl. 3, loc. 6]																							
CND- 4	150	29	24	0	0	7	5	2	0	0	1	8	0	3	0	0	14	0	1	6	29	71	101
10	145	20	4	0	0	0	0	4	0	0	0	0	0	10	0	0	58	0	4	0	--	--	33
11	130	52	3	0	3	1	1	0	0	1	0	3	0	6	0	6	20	0	0	4	47	53	123
Rocky Ridge, Billings County, N. Dak. [See pl. 1]																							
CND- 2	170	57	4	2	0	6	4	0	0	0	0	12	0	4	0	0	9	0	2	0	59	41	98
1	105	35	16	3	0	1	11	0	0	0	0	0	0	3	0	0	24	0	1	6	45	55	102
H T Butte, Slope County, N. Dak. [See pl. 1]																							
CND- 14	300	0	11	0	0	10	0	4	0	0	0	47	0	20	0	0	0	0	0	8	36	64	220
16	275	0	0	0	0	7	0	0	0	0	0	70	0	20	0	0	0	0	0	3	55	45	205
13	225	0	0	0	0	20	0	1	0	0	0	57	0	15	0	0	2	0	0	5	37	63	189
6	180	4	36	0	2	17	2	1	1	0	0	13	0	10	0	0	0	0	0	14	11	89	49
Wolf Butte, Adams County, N. Dak. [See pl. 1]																							
GND- 15	100	0	6	1	2	3	0	2	0	0	0	48	0	26	0	0	4	0	0	8	38	62	142
14	90	0	14	0	0	16	0	2	0	0	0	36	0	22	0	0	4	0	0	6	35	65	162
13	80	0	7	2	2	19	0	6	0	0	0	31	0	12	0	0	14	0	0	7	39	61	172
West Rainy Butte, Slope County, N. Dak. [See pl. 3, loc. 7]																							
GND- 78	400	0	5	1	0	18	0	5	0	0	0	52	0	16	0	0	0	1	0	2	29	71	127
77	350	0	19	0	0	10	0	9	0	0	0	49	0	13	0	0	0	0	0	0	17	83	126
White Butte, Hettinger County, N. Dak. [See pl. 3, loc. 12]																							
GND- 53	285	3	63	0	0	6	0	2	0	0	0	8	0	12	0	1	2	0	0	3	8	92	127
Schultz Butte, Stark County, N. Dak. [See pl. 3, loc. 13]																							
GND- 47	215	0	44	0	1	6	0	9	0	0	0	26	0	12	0	0	0	1	0	1	29	71	125
46	205	7	32	0	0	7	1	6	0	0	0	24	0	17	0	0	0	1	0	5	20	80	109