Table 1.--Surface localities, measurements, and observations of coal beds in Pumpkin Creek EMRIA study site, Powder River County, Montana

Locality number	Location: Section	Location: Township	Location: Range	Coal bed	Coal thickness (in feet)	Quadrangle
1	1	2 S.	49 E.	Knobloch	4.2+	Coalwood
2	1	2 S.	49 E.	---do---	3.5	Do.
3	1	2 S.	49 E.	---do---	3.7	Do.
4	1	2 S.	49 E.	---do---	3.3	Do.
5	1	2 S.	49 E.	---do---	3.8	Do.
6	1	2 S.	49 E.	---do---	2.0+	Do.
7	1	2 S.	49 E.	---do---	3.3	Box Elder Creek
8	1	2 S.	49 E.	---do---	3.7	Coalwood
9	1	2 S.	49 E.	---do---	3.2	Do.
10	1	2 S.	49 E.	---do---	4.5	Box Elder Creek
11	2	2 S.	49 E.	---do---	2.0	Do.
12	2	2 S.	49 E.	---do---	2.3	Coalwood
13	2	2 S.	49 E.	---do---	3.6	Box Elder Creek
14	3	2 S.	49 E.	Flowers-Goodale	3.8+	Do.
15	3	2 S.	49 E.	Knobloch	4.1	Do.
16	3	2 S.	49 E.	Flowers-Goodale	3.1	Do.
17	3	2 S.	49 E.	Knobloch	3.8	Do.
18	3	2 S.	49 E.	Flowers-Goodale	3.3	Do.
19	3	2 S.	49 E.	Knobloch	5.2+	Do.
20	3	2 S.	49 E.	---do---	4.0+	Do.
21	3	2 S.	49 E.	---do---	2.6	Do.
22	4	2 S.	49 E.	---do---	7.2	Do.
23	4	2 S.	49 E.	---do---	7.4	Do.
24	4	2 S.	49 E.	---do---	6.7	Do.
25	4	2 S.	49 E.	---do---	4.1	Do.
26	4	2 S.	49 E.	---do---	2.8	Do.
27	4	2 S.	49 E.	---do---	8.2	Do.
28	4	2 S.	49 E.	---do---	2.2	Do.
29	4	2 S.	49 E.	---do---	3.2	Do.
30	4	2 S.	49 E.	---do---	3.6	Do.
31	5	2 S.	49 E.	Flowers-Goodale	2.3	Do.
32	5	2 S.	49 E.	---do---	2.5	Do.
33	5	2 S.	49 E.	---do---	1.1	Do.
34	5	2 S.	49 E.	---do---	3.8	Do.
35	5	2 S.	49 E.	---do---	1.5	Do.
36	5	2 S.	49 E.	---do---	3.2	Do.
37	5	2 S.	49 E.	---do---	1.8	Do.
38	5	2 S.	49 E.	Local 2	1.7	Do.
39	5	2 S.	49 E.	Flowers-Goodale	3	Do.
40	5	2 S.	49 E.	---do---	2.8	Do.
41	6	2 S.	49 E.	---do---	2.0	Do.
					3.4	
42	6	2 S.	49 E.	Flowers-Goodale	2.0	Box Elder Creek
					3.8	
43	6	2 S.	49 E.	Knobloch	3.3	Do.
					2.4	
44	6	2 S.	48 E.	---do---	0.7	Do.
45	6	2 S.	48 E.	Flowers-Goodale	2.6	Do.
46	6	2 S.	49 E.	---do---	2.6	Do.
47	6	2 S.	49 E.	---do---	1.4	Do.
48	6	2 S.	49 E.	---do---	1.5	Do.
49	7	2 S.	49 E.	Knobloch	trace	Do.
50	7	2 S.	49 E.	---do---	1.1+	Do.
51	8	2 S.	49 E.	Flowers-Goodale	2.2	Do.
52	8	2 S.	49 E.	Knobloch	1.7+	Do.
53	8	2 S.	49 E.	---do---	2.8	Do.
54	8	2 S.	49 E.	---do---	2.3	Do.
55	8	2 S.	49 E.	Flowers-Goodale	2.7	Do.
56	8	2 S.	49 E.	Local 2	3.7	Do.
57	9	2 S.	49 E.	Knobloch	7	Do.
58	9	2 S.	49 E.	---do---	7.5	Do.
59	9	2 S.	49 E.	---do---	7.1+	Do.
60	12	2 S.	49 E.	---do---	3.5	Coalwood
61	12	2 S.	49 E.	---do---	2.0	Do.
62	13	2 S.	49 E.	---do---	1.7	Do.
63	14	2 S.	49 E.	Mackin-Walker	7.2	Box Elder Creek
64	14	2 S.	49 E.	---do---	3.0+	Do.
65	17	2 S.	49 E.	Knobloch	.8	Do.
66	20	2 S.	49 E.	Mackin-Walker	3	Do.
67	22	2 S.	49 E.	---do---	5+	Do.
68	22	2 S.	49 E.	---do---	4.9	Do.
69	22	2 S.	49 E.	---do---	4.9	Do.
70	22	2 S.	49 E.	---do---	4.5	Do.
71	23	2 S.	49 E.	---do---	1.5+	Do.
72	23	2 S.	49 E.	---do---	2+	Do.
73	23	2 S.	49 E.	---do---	2.5+	Do.
74	23	2 S.	49 E.	---do---	5.1	Do.
75	24	2 S.	49 E.	---do---	7.3	Coalwood
76	24	2 S.	49 E.	---do---	4+	Box Elder Creek
77	24	2 S.	49 E.	---do---	2+	Do.
78	24	2 S.	49 E.	---do---	4.8	Do.
79	26	2 S.	49 E.	Sawyer	5.0+	Do.
80	26	2 S.	49 E.	---do---	9.5+	Do.
81	26	2 S.	49 E.	---do---	10.6+	Do.
82	26	2 S.	49 E.	Mackin-Walker	3.8	Do.
83	26	2 S.	49 E.	---do---	4+	Do.
84	26	2 S.	49 E.	---do---	5.2	Do.
85	27	2 S.	49 E.	---do---	5	Do.
86	27	2 S.	49 E.	---do---	5.2	Do.
87	27	2 S.	49 E.	Stump	3.4	Do.
88	27	2 S.	49 E.	Stump	2.9	Box Elder Creek
89	27	2 S.	49 E.	---do---	2.8	Do.
90	28	2 S.	49 E.	Mackin-Walker	6.2+	Do.
91	28	2 S.	49 E.	---do---	6.2+	Do.
92	28	2 S.	49 E.	---do---	4	Do.
93	28	2 S.	49 E.	---do---	3.3	Do.
94	28	2 S.	49 E.	Stump	2.7	Do.
95	30	2 S.	49 E.	Sawyer	12+	Do.
96	30	2 S.	49 E.	---do---	16	Do.
97	31	2 S.	49 E.	---do---	9.5	Leslie Spring
98	31	2 S.	49 E.	---do---	3.4	Do.
99	31	2 S.	49 E.	Mackin-Walker	2.9	Do.
100	31	2 S.	49 E.	---do---	3.7	Do.
101	32	2 S.	49 E.	---do---	2.6	Do.
102	33	2 S.	49 E.	---do---	3.0	Do.
103	33	2 S.	49 E.	---do---	2.6	Do.
104	33	2 S.	49 E.	---do---	2+	Do.
105	33	2 S.	49 E.	---do---	2.8+	Do.
106	34	2 S.	49 E.	Stump	2.0+	Do.
107	34	3 S.	49 E.	---do---	4.6	Do.
108	34	2 S.	49 E.	---do---	3.3	Do.
109	34	2 S.	49 E.	Mackin-Walker	2.7	Do.
110	35	2 S.	49 E.	---do---	9.7	Do.
111	35	2 S.	49 E.	---do---	4.1	Do.
112	35	2 S.	49 E.	---do---	1.2	Do.
113	35	2 S.	49 E.	Sawyer	5+	Do.
114	35	2 S.	49 E.	---do---	8+	Do.
115	35	3 S.	49 E.	---do---	27.5	Do.
116	36	2 S.	49 E.	Mackin-Walker	5.3	Do.
117	1	2 S.	48 E.	Flowers-Goodale	2.8	Box Elder Creek
118	1	2 S.	48 E.	---do---	2.2	Do.
119	1	2 S.	48 E.	---do---	1.6	Do.
120	1	2 S.	48 E.	Knobloch	3.0+	Do.
121	12	2 S.	48 E.	Flowers-Goodale	2.6	Do.
122	13	2 S.	48 E.	Knobloch	1.0+	Do.
123	24	2 S.	48 E.	---do---	6.2+	Do.
124	24	2 S.	48 E.	Sawyer	4.8+	Do.
125	2	3 S.	49 E.	Mackin-Walker	4	Leslie Spring
126	2	3 S.	49 E.	---do---	3.5	Do.
127	2	3 S.	49 E.	---do---	3.5	Do.
128	2	3 S.	49 E.	---do---	3.7	Do.
129	2	3 S.	49 E.	---do---	2.3	Do.
130	3	3 S.	49 E.	---do---	3.2	Do.
131	3	3 S.	49 E.	---do---	3.8	Do.
132	3	3 S.	49 E.	---do---	3.7	Do.
133	3	3 S.	49 E.	---do---	5.3	Do.
134	4	3 S.	49 E.	---do---	2.5	Do.
135	4	3 S.	49 E.	---do---	3.2	Do.
136	4	3 S.	49 E.	Stump	2.85	Do.
137	4	3 S.	49 E.	Stump	2.6	Leslie Spring
138	4	3 S.	49 E.	---do---	2.6	Do.
139	5	3 S.	49 E.	Mackin-Walker	2.8	Do.
140	5	3 S.	49 E.	---do---	2.5	Do.
141	5	3 S.	49 E.	---do---	2.6	Do.
142	6	3 S.	49 E.	---do---	2.8+	Do.
143	6	3 S.	49 E.	---do---	3.3	Do.
144	7	3 S.	49 E.	---do---	2.3	Do.
145	8	3 S.	49 E.	---do---	3.0	Do.
146	8	3 S.	49 E.	---do---	1.3+	Do.
147	8	3 S.	48 E.	---do---	2.6	Do.
148	8	3 S.	49 E.	---do---	2.9	Do.
149	9	3 S.	49 E.	---do---	2.8	Do.
150	9	3 S.	49 E.	---do---	2.6	Do.
151	11	3 S.	49 E.	---do---	0.6+	Do.
152	11	3 S.	49 E.	---do---	0.5+	Do.
153	13	3 S.	49 E.	Sawyer	10+	Do.
154	13	3 S.	49 E.	Mackin-Walker	3.6	Olive
155	13	3 S.	49 E.	---do---	4.1	Do.
156	13	3 S.	49 E.	---do---	3.9	Do.
157	14	3 S.	49 E.	---do---	2.8+	Leslie Spring
158	14	3 S.	49 E.	---do---	4.0	Do.
159	14	3 S.	49 E.	---do---	3.8	Do.
160	14	3 S.	49 E.	---do---	3.8	Do.
161	14	3 S.	49 E.	---do---	3.2	Do.
162	14	3 S.	49 E.	---do---	3.1	Do.
163	14	3 S.	49 E.	---do---	2.5+	Do.
164	14	3 S.	49 E.	---do---	1.2+	Do.
165	15	3 S.	49 E.	---do---	.8+	Do.
166	15	3 S.	49 E.	---do---	3+	Do.
167	15	3 S.	49 E.	---do---	3.2	Do.
168	16	3 S.	49 E.	---do---	1.2	Do.
169	21	3 S.	49 E.	---do---	trace	Do.
170	22	3 S.	49 E.	---do---	.5	Do.
171	23	3 S.	49 E.	---do---	3.5	Do.
172	28	3 S.	49 E.	Sawyer	5+	Do.
173	30	3 S.	49 E.	Stump	1.7	Do.
174	30	3 S.	49 E.	Local 4	2.3	Do.
175	31	3 S.	49 E.	Stump	1.8	Do.
176	31	3 S.	49 E.	Local 4	1.1	Do.
177	31	3 S.	49 E.	Stump	2.0	Do.
178	33	3 S.	49 E.	Sawyer	trace	Do.
179	33	3 S.	49 E.	A	4+	Do.
180	34	3 S.	49 E.	Sawyer	8+	Do.
181	34	3 S.	49 E.	---do---	9.8	Do.
182	35	3 S.	49 E.	---do---	12+	Do.
183	35	3 S.	49 E.	---do---	5.7	Do.
184	36	3 S.	49 E.	A	2+	Olive
185	36	3 S.	49 E.	Sawyer	9	Olive
186	36	3 S.	49 E.	---do---	7	Do.
187	1	3 S.	48 E.	Mackin-Walker	2.6	Leslie Spring
188	1	3 S.	48 E.	---do---	2.2	Do.
189	12	3 S.	48 E.	Sawyer	1.3	Do.
190	3	4 S.	49 E.	---do---	10.2+	Do.
191	5	4 S.	49 E.	Local 3	1.6	Do.
192	5	4 S.	49 E.	---do---	2.3	Do.
193	5	4 S.	49 E.	Sawyer	6.0+	Do.
194	7	4 S.	49 E.	Local 6	2.3	Do.
195	7	4 S.	49 E.	---do---	2.3	Do.
196	7	4 S.	49 E.	---do---	1.0	Do.
197	7	4 S.	49 E.	Local 5	3.0	Do.
198	7	4 S.	49 E.	---do---	2.6	Do.
199	8	4 S.	49 E.	Local 3	1.4	Do.
200	9	4 S.	49 E.	---do---	1.2	Do.
201	9	4 S.	49 E.	Sawyer	4.3+	Do.
202	9	4 S.	49 E.	Local 3	3.2+	Do.
203	1	4 S.	48 E.	Local 6	3.0	Do.
204	1	4 S.	48 E.	---do---	3.0	Do.
205	1	4 S.	48 E.	---do---	1.3	Do.
206	1	4 S.	48 E.	---do---	2.6	Do.
207	1	4 S.	48 E.	Local 5	2.9	Do.
208	1	4 S.	48 E.	Local 6	2.5	Do.
209	1	4 S.	48 E.	---do---	2.8	Do.
210	1	4 S.	48 E.	---do---	2.2	Do.

Table 2.--Measured, indicated, and inferred resources of subbituminous coal in the Tongue River Member of the Paleocene Fort Union Formation in beds more than 5 feet (1.5 m) thick, under less than 1,000 feet (305 m) of overburden as of January 1, 1978, based on measurements at the outcrop and subsurface data

[In thousands of short tons (1 short ton = 0.9078 metric tons); totals are rounded. The coal is assumed to weigh 1,770 short tons per acre foot (1.3 metric tons/m³). One foot = 0.3 meter. Leaders (-----) indicate no data]

Location: Township South	Location: Range East	Measured: Thickness of coal in feet 5-10	Measured: >10	Indicated: Thickness of coal in feet 5-10	Indicated: >10	Inferred: Thickness of coal in feet 5-10	Inferred: >10	Totals
				Mackin-Walker bed				
2	49	20,220	-----	6,380	-----	-----	-----	26,600
3	49	4,400	-----	3,400	-----	-----	-----	7,800
Totals		24,620	-----	9,780	-----	-----	-----	34,400
				Sawyer bed				
2	48	-----	10,320	-----	-----	-----	-----	10,320
2	49	-----	274,950	-----	143,500	-----	4,510	422,960
3	48	-----	34,920	-----	63,100	-----	730	98,750
3	49	580	297,600	-----	373,880	-----	760	672,820
4	48	-----	620	-----	88,200	-----	6,100	94,920
4	49	-----	22,050	-----	35,050	-----	80	57,180
Totals		580	640,460	-----	703,730	-----	12,180	1,356,950
				Coal bed A				
3	48	-----	1,570	-----	18,790	-----	750	21,110
3	49	-----	40,780	-----	54,970	-----	-----	95,750
4	48	-----	430	-----	9,910	-----	6,500	16,840
4	49	2,210	19,120	1,960	31,330	120	3,220	57,960
Totals		2,210	61,900	1,960	115,000	120	10,470	191,660
Grand totals		27,410	702,300	11,740	818,730	120	22,650	1,583,010

Table 3.--Measured, indicated, and inferred resources of subbituminous coal, in tons, in the Tongue River Member of Paleocene Fort Union Formation, possibly recoverable by surface mining methods, in beds more than 5 feet (1.5 m) thick, under less than 200 feet (61 m) of overburden, as of January 1, 1978

[In thousands of short tons (1 short ton = 0.9078 metric tons); totals are rounded. The coal is assumed to weigh 1,770 short tons per acre foot (1.3 metric tons/m³); these resources are included in Table 2. Leaders (-----) indicate no data]

Location: Township South	Location: Range East	Measured: Thickness of coal in feet 5-10	Measured: >10	Indicated: Thickness of coal in feet 5-10	Indicated: >10	Inferred: Thickness of coal in feet 5-10	Inferred: >10	Totals
				Mackin-Walker bed				
2	49	20,220	-----	6,310	-----	-----	-----	26,530
3	49	4,400	-----	3,400	-----	-----	-----	7,800
Totals		24,620	-----	9,710	-----	-----	-----	34,330
				Sawyer bed				
2	48	-----	10,320	-----	-----	-----	-----	10,320
2	49	-----	273,900	-----	127,800	-----	4,510	406,210
3	48	-----	34,920	-----	63,100	-----	730	98,750
3	49	580	286,110	-----	339,780	-----	760	627,230
4	48	-----	-----	-----	7,700	-----	470	8,170
4	49	-----	18,080	-----	24,900	-----	80	43,060
Totals		580	623,330	-----	563,280	-----	6,550	1,193,740
				Coal bed A				
3	48	-----	1,570	-----	17,900	-----	680	20,150
3	49	-----	39,740	-----	45,110	-----	-----	84,850
4	48	-----	-----	-----	290	-----	-----	290
4	49	2,150	16,580	1,650	15,800	120	240	36,540
Totals		2,150	57,890	1,650	79,100	120	920	141,830
Grand totals		27,350	681,220	11,360	642,380	120	7,470	1,369,900

LOCALITY AND STRUCTURE CONTOUR MAPS OF THE PUMPKIN CREEK EMRIA STUDY SITE, POWDER RIVER COUNTY, MONTANA

By
Marguerite Glenn
1978