Table 3.--Chemical composition of 12 samples of oil shale from central Brooks Range, [illegible]thern Alaska, and samples of the Green River, Chattanooga, and Pierre and Bearpaw Shales for comparison

[Analysts and methods: SiO_2 and Al_2O_3, [illegible] D. Goss, colorimetric; Fe_2O_3, MgO, CaO [illegible] MnO, John Mensik & Claude Huffman, atomic absorption; Na_2O and K_2O, Wayne Mountjoy, internal standard flame photometer; TiO_2 and L.O.I., G. T. Burrow, colorimetric and gravimetric; [illegible] and SO_3, L. F. Rader, gravimetric; As, Se, and V, G. T. Burrow, colorimetric, nephelometric, and colorimetric; B and Pb, Wayne Mountjoy, colorimetric and atomic absorption; Cr, [illegible], Sr, and Zn, Claude Huffman & John Mensik, atomic absorption; Co and Mo, L. F. Rader, colorimetric; Ni, E. J. Fennelly, colorimetric; eU, H. H. Kipp, alpha-beta count; Hg, Howard Knight, atomic absorption spectroscopy; Ag, Margaret Hinkle, colorimetric field method; Au, H. W. Lakin, H. M. Nakagawa, & J. H. Van Sickle; colorimetric field method; Te, J. B. McHugh, colorimetric field method; specific gravity determinations (average of two measurements), R. F. Gantnier. Major elements reported in percent; minor elements reported in ppm except where otherwise indicated.]

	Alaska Oil Shale												Green River Shale 2/	Chattanooga Shale 3/	Pierre Shale 4/	Bearpaw Shale 5/
Locality Number	11		13	14		16	19		21	25	27					
Field No.	64ATr207A	64ATr207B	64ATr20[illegible]	64ATr20[illegible]A	64ATr20[illegible]B	64AT[illegible]	64ATr305B	64ATr305C	64APn215	64APn20[illegible]	64APn201D-1	64APn201D-2	KR62-350X	LC201	S57-37-1	[illegible]1-16B-1
Laboratory No.	D115215	D115216	D1152[illegible]	D1152[illegible]	D1152[illegible]	D1152[illegible]	[illegible]	D115222	D115226	D115225	D115223	D115224	D115183	D1124[illegible]	[illegible]	2984[illegible]
SiO_2	13.1	[illegible]	[illegible].22	15.4	42.[illegible]	50.[illegible]	15.7	30.4	58.0	41.3	44.[illegible]	48.1	31.6	46.[illegible]	65.0	67.0
Al_2O_3	[illegible].03	5.70	1.25	1.1[illegible]	1.44	1.[illegible]	2.47	7.04	8.34	2.31	11.6	14.0	7.36	6.88	13.2	13.5
Total iron as Fe_2O_3	3.96	8.60	1.42	0.31	0.77	1.77	3.01	2.28	1.29	2.55	2.30	2.40	2.69	13.9	2.91	5.17
MgO	0.28	0.88	0.17	0.07	0.07	0.17	0.68	1.58	0.60	0.10	1.20	0.90	5.00	0.86	1.08	1.10
CaO	0.75	2.45	0.11	0.06	0.06	0.18	23.1	4.84	0.12	0.14	2.10	1.15	12.8	0.75	0.36	0.29
Na_2O	0.28	0.62	0.16	0.50	0.71	0.20	0.17	0.75	0.63	0.97	1.14	1.29	2.24	0.44	0.49	0.70
K_2O	0.61	1.18	0.43	0.28	0.22	0.28	0.45	0.98	1.70	0.48	2.23	2.60	2.02	2.[illegible]5	3.45	2.53
TiO_2	0.22	0.42	0.13	0.12	0.14	0.10	0.19	0.47	0.36	0.23	0.53	0.59	0.28	0.64	0.73	0.64
P_2O_5	0.15	0.55	0.17	0.03	<0.03	0.04	0.55	2.10	0.20	0.05	0.40	0.30	0.22	0.63	0.17	0.26
MnO	0.009	0.13	0.00[illegible]	0.001	0.002	0.01	0.68	0.45	0.005	0.009	0.067	0.009	0.038	0.016	0.006	0.008
BaO	0.07	0.03	0.03	0.30	1.[illegible]	0.07	1.81	3.52	0.89	0.26	7.56	0.99	0.10	0.03	0.10	0.07
Total Sulfur as SO_3	13.0	13.6	9.21	2.72	2.87	3.25	7.89	7.97	2.62	2.72	6.27	4.81	1.45	25.2	1.10	0.20
LOI at 1000°C	76.1	37.2	86.4	80.4	49.0	48.4	43.6	40.2	24.7	49.2	20.2	24.8	32.0	24.8	12.4	7.3
Total 1/	111.6	110.5	103.8	101.4	100.1	100.[illegible]	100.3	102.6	99.5	100.3	99.6	101.[illegible]	97.[illegible]	100.6	[illegible]	[illegible]8.7
As	49	200	37	63	67	110	3[illegible]	110	27	110	24	29	43	240	43	17
B	52	[illegible]0	53	32	35		[illegible]	110	180	60	250	270	140	270	240	240
Cr	40	110	24	18	14	16	[illegible]	250	260	48	280	430	250	300	150	100
Cu	40	320	38	8	[illegible]	25	[illegible]5	480	32	34	65	100	47	88	66	27
Co	9	150	[illegible]	8	[illegible]	14	[illegible]1	27	2	12	3	3	60	240	5	15
Pb	30	80	10	<10	<10	<10	20	10	10	<10	<10	<10	45	50	25	45
Mo	37[illegible]	220	[illegible]	110	170	450	11	100	36	440	23	35	26	280	14	4
Ni	72	450	22	22	17	[illegible]	81	400	120	28	95	93	960	400	16	21
Se	<1	10	5	8	<1	5	3	200	100	20	50	65	2	1	5	15
Sr	70	100	70	80	490	42	580	[illegible]00	200	110	860	200	660	75	130	110
V	450	660	240	200	70	140	90	1700	1200	210	3100	1200	70	23	39	20
Zn	52	810	38	48	13	38	420	7000	76	34	140	280	57	250	42	97
eU	50	30	20	20	<10	<10	30	70	20	20	30	20	10	80	30	20
Hg (ppb)	3000	1400	1400	1200	3000	1600	900	1500	1000	650	750	800	-	-	-	-
Ag (ppb)	150	300	200	200	100	200	300	4000	400	300	300	300	-	-	-	-
Au (ppb)	150	150	<30	50	70	100	70	50	70	70	30	100	-	-	-	-
Te (ppb)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	100	100	-	-	-	-
Sp. G.	1.3	1.8	1.2	1.1	1.5	1.2	1.9	1.8	1.9	1.7	2.1	2.1	-	-	-	-

1/ Mathematical total. No adjustments, such as oxygen included as Fe_2O_3 if iron is pyrite, or inclusion of sulfur twice, due to measuring as SO_3 and also as LOI, have been made.

2/ Average mine-run shale from the Bureau of Mines Demonstration Mine near Rifle, Colorado. See Stanfield and others (1951, "composite sample", p. 4, tables 6, 15-20) for data on properties and composition of a sample of similar but not identical shale.

3/ Adit, about 1 mi. SW. on old Tennessee route 26 (now a boat landing road) from point where it joins Route 26 at top of descent to E. end of Sligo Bridge. See Bates and Strahl (1957) for data on mineralogy of shale from the same locality.

4/ Pierre Shale, Sharon Springs Member, NE¼ sec. 17, T. 93 N., R. 56 [illegible]., Yankton Co., S. Dak.

5/ Bearpaw Shale, 290 ft above base, NW¼NW¼ sec. 3, T. 36 N., R. 8 W., Glacier Co., Mont.