

附表1 研究区双桥子组 (P<sub>1</sub>s) 碳质板岩主量元素分析结果表  
Table1 Major elements compositions for the study samples

样品	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	MgO	CaO	TiO <sub>2</sub>	MnO	Fe <sub>2</sub> O <sub>3</sub>	FeO	H <sub>2</sub> O <sup>+</sup>	CO <sub>2</sub>	LOST					
	w <sub>B</sub> /%															$\omega(\text{SiO}_2)/\omega(\text{Al}_2\text{O}_3)$	$\omega(\text{Al}_2\text{O}_3)/\omega(\text{Al}_2\text{O}_3+\text{Fe}_2\text{O}_3)$	$\omega(\text{Al})/\omega(\text{Al}+\text{Fe}+\text{Mn})$	$\omega(\text{Si})/\omega(\text{Si}+\text{Al}+\text{Fe})$
EZK7201-3-1	72.06	13.97	0.59	3.33	0.12	1.19	0.87	0.42	0.12	0.94	2.4	2.85	0.5	3.77	5.16	0.94	0.80	0.81	86.03
EZK7201-3-2	69.05	12.69	0.75	3.05	0.09	1.05	3.78	0.35	0.21	0.77	2.27	2.4	2.1	5.51	5.44	0.94	0.80	0.81	81.74
EZK7201-3-3	65.64	13.92	0.69	3.3	0.08	1.17	3.8	0.41	0.23	1.18	2.55	2.76	2.99	6.57	4.72	0.92	0.78	0.79	79.56
EZK7201-3-4	68.81	14.4	0.69	3.26	0.09	1.34	1.52	0.51	0.08	0.84	3.07	2.98	1.8	4.89	4.78	0.94	0.78	0.79	83.21
EZK7201-4-1	63.69	15.56	0.95	3.24	0.4	1.64	1.99	0.63	0.11	3.44	2.3	3.41	1.5	5.62	4.09	0.82	0.73	0.75	79.25
EZK7201-4-2	60.12	15.93	1.36	3.17	0.49	1.77	2.8	0.67	0.17	5.41	1.12	3.3	2.99	6.87	3.77	0.75	0.70	0.73	76.05
EZK7201-4-3	64.96	16.31	1.1	3.57	0.13	1.27	1.19	0.67	0.07	2.82	2.02	3.11	1.4	5.49	3.98	0.85	0.77	0.75	81.27
EZK7201-4-4	69.49	14.18	0.73	3.33	0.18	1.19	1.56	0.55	0.07	1.45	2.5	2.85	1.45	4.31	4.90	0.91	0.78	0.79	83.67
EZK7502-2-2	67.58	14.72	0.92	3.74	0.09	1.25	1.67	0.49	0.1	0.96	3.35	2.87	1.8	4.59	4.59	0.94	0.77	0.78	82.3
EZK7502-2-3	61.86	15.62	0.82	3.64	0.1	1.58	3.63	0.58	0.1	0.87	4.03	3.27	2.4	6.56	3.96	0.95	0.76	0.75	77.48
EZK7502-2-4	69.21	14.77	1.87	3.23	0.11	1.34	1.02	0.6	0.05	0.83	3.08	2.61	0.65	3.56	4.69	0.95	0.79	0.79	83.98
EZK7502-2-6	64.57	14.03	0.35	3.9	0.13	1.85	2.79	0.49	0.37	1.36	3.08	2.57	3.89	6.97	4.60	0.91	0.74	0.78	78.6
EZK7502-2-7	70.16	13.73	1.39	3.04	0.1	1.33	1.92	0.48	0.06	0.48	2.72	2.52	1.6	4.13	5.11	0.97	0.81	0.81	83.89
EZK7502-2-8	68.73	13.9	1.53	3.28	0.1	1.42	1.89	0.5	0.08	0.75	3.12	2.54	1.75	4.17	4.94	0.95	0.78	0.79	82.63
EZK7502-2-10	66.94	15.12	0.99	3.43	0.16	1.69	1.24	0.62	0.05	0.97	3.48	3.22	1.4	4.76	4.43	0.94	0.77	0.77	82.06
EZK7502-2-11	64.5	16.24	0.25	4.14	0.14	1.74	1.4	0.67	0.06	1.02	3.77	3.44	1	5.48	3.97	0.94	0.77	0.75	80.74
EZK7502-2-13	72.33	13.85	0.83	3.17	0.12	1.22	0.9	0.58	0.04	0.69	2.37	2.7	0.8	3.46	5.22	0.95	0.82	0.81	86.18
EZK7502-2-14	65.49	15.82	0.55	3.64	0.14	1.57	1.11	0.62	0.07	1.68	3.73	2.3	1.4	4.98	4.14	0.90	0.74	0.76	81.31
EZK7502-2-15	69.65	13.79	0.48	3.9	0.08	1.28	1.47	0.48	0.05	2.35	1.52	2.51	1	4.61	5.05	0.85	0.78	0.80	83.44
EZK7502-2-16	67.89	13.87	0.41	3.27	0.12	1.75	2.08	0.53	0.08	1.71	2.63	3	2	5.4	4.89	0.89	0.76	0.79	81.76
EZK7502-2-17	72.56	12.4	1.68	2.58	0.07	1.18	0.93	0.43	0.03	2.06	1.3	2.25	1.2	4.47	5.85	0.86	0.79	0.82	84.96
EZK7502-2-18	67.96	16.56	2.02	3.08	0.1	1.29	0.45	0.68	0.04	0.66	3.45	2.88	0.16	3.22	4.10	0.96	0.80	0.77	84.52
EZK7502-2-19	63.57	16.67	0.37	4.05	0.11	1.5	1.62	0.66	0.07	3.53	1.53	3.47	1.4	5.96	3.81	0.83	0.76	0.75	80.24

EZK7502-2-20	64.36	17.3	0.55	4.19	0.11	1.26	1.55	0.72	0.05	2.3	1.42	3.32	1.2	5.76	3.72	0.88	0.82	0.75	81.66
EZK7502-2-21	70.88	14.26	0.94	3.73	0.09	0.96	0.86	0.54	0.02	2.43	0.43	2.46	0.8	4.62	4.97	0.85	0.83	0.81	85.14
EZK7502-2-22	63.87	16.83	0.79	3.88	0.13	1.66	1.06	0.65	0.3	1.36	3.42	3.04	1.2	5.48	3.80	0.93	0.77	0.75	80.7
EZK7401-2-1	66.68	15.53	0.17	3.68	0.14	1.6	1.04	0.59	0.06	2.97	2.08	3.59	0.7	5.06	4.29	0.84	0.75	0.76	82.21
EZK7401-2-2	63.23	18.15	0.23	4.23	0.16	1.69	0.27	0.77	0.07	3.38	2.05	3.95	0.12	5.36	3.48	0.84	0.77	0.73	81.38
EZK7401-2-3	64.36	16.72	0.77	3.39	0.16	1.5	1.3	0.7	0.05	3.41	1.65	3.54	0.8	5.47	3.85	0.83	0.77	0.75	81.08
EZK7401-2-4	66.37	14.84	0.26	3.51	0.08	1.39	1.85	0.62	0.07	3.09	2.17	3.42	1.7	5.73	4.47	0.83	0.74	0.77	81.21
EZK7401-2-5	67.81	16.08	1.11	3.95	0.06	1.06	0.55	0.69	0.02	2.5	1.23	2.76	0.45	4.61	4.22	0.87	0.81	0.77	83.89
EZK7401-2-6	59.55	18.93	0.85	4.61	0.19	1.49	0.97	0.79	0.08	2.34	2.35	3.26	3.99	7.36	3.15	0.89	0.80	0.72	78.48
EZK7401-2-7	65.78	16.8	0.74	3.97	0.09	1.46	0.36	0.75	0.04	2.56	2.15	3.24	0.14	4.88	3.92	0.87	0.78	0.75	82.58
EZK7401-2-8	66.69	16.16	1.02	3.59	0.4	1.37	0.74	0.66	0.04	3.17	1.27	3.24	0.1	4.56	4.13	0.84	0.78	0.76	82.85
EZK7401-2-9	65.78	17.12	1.02	3.82	0.08	1.42	0.21	0.71	0.04	3.3	1.37	3.25	0.08	4.76	3.84	0.84	0.78	0.75	82.9
WZK0902-1-1	66.67	15.92	1.52	3.76	0.13	1.71	0.44	0.68	0.05	2.28	2.85	3.03	0.45	3.51	4.19	0.87	0.75	0.76	82.59
WZK0902-1-3	61.59	18.72	1.05	4.79	0.15	2.02	0.31	0.79	0.04	2.47	3.23	3.76	0.5	4.29	3.29	0.88	0.77	0.72	80.31
WZK0902-1-4	62.62	17.35	1.01	4.13	0.15	2.26	0.62	0.74	0.08	4.5	1.87	3.71	0.3	4.28	3.61	0.79	0.73	0.73	79.97
WZK0902-1-5	64.19	15.52	0.68	4.72	0.11	1.43	1.95	0.64	0.09	3.22	1.5	2.73	2.99	5.59	4.14	0.83	0.76	0.76	79.71
WZK0902-1-7	65.36	15.42	0.73	4.43	0.12	1.38	1.6	0.58	0.17	3.27	1.33	2.85	1.2	5.28	4.24	0.83	0.76	0.77	80.78
WZK0902-1-8	68.46	14.17	1.31	4.84	0.12	1.34	1.46	0.51	0.08	1.58	2.13	2.34	1.15	3.56	4.83	0.90	0.79	0.79	82.63
WZK0902-1-9	68.87	14.58	1.61	4.21	0.12	1.33	1.16	0.57	0.06	1.37	2.3	2.48	0.7	3.66	4.72	0.91	0.80	0.79	83.45
WZK0902-1-11	66.16	15.85	1.41	3.82	0.14	1.65	0.93	0.68	0.1	1.78	3.03	3.05	0.75	4.23	4.17	0.90	0.76	0.76	82.01
WZK0902-1-14	69.34	15.16	1.94	3.41	0.11	1.29	0.66	0.58	0.05	1.06	2.83	2.66	0.4	3.07	4.57	0.93	0.79	0.78	84.5
WZK0902-1-15	64.76	16.98	0.91	5.37	0.09	1.2	0.89	0.61	0.07	2.12	1.5	2.63	0.7	5.13	3.81	0.89	0.82	0.76	81.74
WZK0902-1-17	64.78	17.63	0.36	5.23	0.09	1.41	0.77	0.63	0.06	2.29	2.15	3.34	0.6	4.46	3.67	0.89	0.80	0.75	82.41
WZK0902-1-19	66.7	17.13	0.33	4.9	0.08	1.27	0.66	0.59	0.03	2.45	1.52	3.32	0.4	4.39	3.89	0.87	0.81	0.76	83.83
WZK0902-1-20	69.01	14.14	1.3	3.39	0.1	1.25	1.91	0.47	0.1	0.8	2.85	2.56	1.5	4.18	4.88	0.95	0.79	0.80	83.15
WZK0902-1-22	63.69	17.72	0.75	4.82	0.13	1.26	0.9	0.62	0.06	3.2	1.27	3.37	1.05	5.25	3.59	0.85	0.80	0.74	81.41
WZK0902-1-24	63.08	17.73	0.1	5.16	0.12	1.41	0.8	0.68	0.06	3.69	1.63	3.54	0.7	5.19	3.56	0.83	0.77	0.73	80.81

WZK0902-1-26	66.94	17.46	0.11	5.44	0.12	1.27	0.27	0.66	0.02	1.67	1.9	3.3	0.15	4.12	3.83	0.91	0.83	0.76	84.4
WZK0902-1-28	62.18	17.54	0.37	5.06	0.1	1.67	1.1	0.67	0.07	3.42	1.97	3.37	0.65	5.45	3.55	0.84	0.76	0.73	79.72
WZK0902-1-30	65.24	17.05	0.24	4.7	0.1	1.29	0.99	0.61	0.08	1.06	3.42	3.44	0.6	4.65	3.83	0.94	0.79	0.75	82.29
WZK0902-1-31	65.37	16.88	1.33	4.49	0.12	1.34	1.22	0.63	0.06	3.52	0.77	2.84	0.9	4.01	3.87	0.83	0.80	0.76	82.25
WZK0902-1-33	63.74	17.53	0.59	4.96	0.13	1.61	0.63	0.69	0.05	3.68	1.88	3.45	0.45	4.52	3.64	0.83	0.76	0.73	81.27
WZK0902-1-35	69.73	14.52	3.17	2.68	0.08	1.06	1.19	0.41	0.1	1.94	1.35	2.01	1.25	3.85	4.80	0.88	0.81	0.80	84.25
WZK0902-1-37	65.72	17.3	1.11	4.65	0.09	1.39	0.36	0.57	0.07	2.79	1.57	3.22	0.5	4.29	3.80	0.86	0.80	0.75	83.02
WZK0902-1-39	49.07	22.93	0.93	6.89	0.11	1.53	1.14	0.9	0.07	5.88	1.22	3.61	1.7	8.98	2.14	0.80	0.76	0.62	72
WZK0902-1-41	60.87	18.04	0.74	5.1	0.16	1.28	1.55	0.59	0.17	3.49	1.32	3.25	1.5	6.35	3.37	0.84	0.78	0.73	78.91
WZK0902-1-43	61.46	18.13	0.43	5.08	0.07	1.21	0.99	0.61	0.12	3.16	1.98	3.3	0.7	6.36	3.39	0.85	0.78	0.73	79.59
WZK0902-1-44	65.38	17.06	0.48	5.31	0.07	1.17	0.6	0.5	0.05	2.49	1.52	2.87	0.6	5.01	3.83	0.87	0.81	0.76	82.44
WZK0902-1-46	67.28	15.73	2.18	3.3	0.11	1.1	0.66	0.55	0.06	3.07	1.3	2.86	0.3	4.34	4.28	0.84	0.78	0.77	83.01
WZK0902-1-47	58.8	18.87	2.24	3.2	0.22	1.66	0.96	0.84	0.13	4.89	1.57	3.86	0.9	6.28	3.12	0.79	0.74	0.70	77.67
WZK0902-1-49	59.12	18.14	0.89	4.95	0.16	2.2	1.12	0.77	0.04	3.84	2.1	3.87	0.5	6.23	3.26	0.83	0.75	0.71	77.26
WZK0902-1-51	57.04	21.05	0.61	5.38	0.14	2.57	0.79	0.89	0.03	2.39	2.48	4.34	0.52	6.14	2.71	0.90	0.81	0.69	78.09
WZK0902-1-53	55.3	20.63	1.46	4.1	0.23	2.66	0.34	0.94	0.04	5.27	2.27	4.76	0.1	6.29	2.68	0.80	0.73	0.66	75.93
WZK0902-1-54	60.6	17.56	1.75	3.87	0.19	1.96	0.63	0.78	0.07	4.05	2.22	3.74	0.26	5.86	3.45	0.81	0.73	0.72	78.16
WZK0902-1-55	49.44	22.97	1.44	6.6	0.21	2.38	0.36	1.03	0.08	6.05	2.33	4.02	0.06	6.62	2.15	0.79	0.73	0.61	72.41
WZK0902-1-57	59.81	18.25	2.22	3.33	0.21	2.09	0.79	0.83	0.13	4.76	1.95	3.36	0.2	5.21	3.28	0.79	0.73	0.71	78.06
WZK0902-1-59	59.7	19.04	1.64	3.4	0.18	1.61	0.47	0.85	0.08	5.4	1.17	4.21	0.24	6.15	3.14	0.78	0.74	0.70	78.74
WZK0902-1-60	62.21	16.77	2.35	2.72	0.2	1.49	1.23	0.76	0.15	3.57	2.3	3.31	0.58	5.84	3.71	0.82	0.74	0.73	78.98
WZK0902-1-62	58.44	18.85	0.92	3.79	0.08	1.91	2.32	0.74	0.15	4.95	1.63	4.15	1.4	6.12	3.10	0.79	0.74	0.70	77.29
LZK110-3-2-1	66.83	17.11	0.13	5.13	0.1	1.17	0.04	0.66	0.05	2.53	1.4	3.37	0.04	4.49	3.91	0.87	0.81	0.76	83.94
LZK110-3-2-2	69.43	15.87	0.12	4.42	0.13	0.91	0.11	0.57	0.07	2.85	1.13	3.22	0.04	4.08	4.37	0.85	0.80	0.78	85.3
LZK110-3-2-3	63.1	19.86	0.13	5.36	0.11	1.33	0.3	0.73	0.06	2.32	1.7	3.76	0.04	4.58	3.18	0.90	0.83	0.73	82.96
LZK110-3-2-4	65.79	17.43	0.11	4.45	0.14	1.46	0.24	0.74	0.06	3.42	1.27	3.74	0.06	4.56	3.77	0.84	0.79	0.75	83.22
LZK110-3-2-5	61.87	19.69	0.12	4.97	0.16	1.55	0.37	0.84	0.07	4.02	1.38	4.21	0.08	4.89	3.14	0.83	0.78	0.71	81.56

LZK110-3-2-6	63	18.92	0.16	4.65	0.17	1.64	0.37	0.8	0.06	3.24	2.28	4.05	0.04	4.35	3.33	0.85	0.77	0.72	81.92
LZK110-3-2-7	67.83	16.53	0.18	4.02	0.19	1.3	0.4	0.75	0.05	2.66	2	3.39	0.06	3.99	4.10	0.86	0.78	0.76	84.36
LZK110-3-2-8	66.29	17.26	0.14	4.31	0.13	1.37	0.86	0.67	0.05	2.98	1.18	3.69	0.4	4.53	3.84	0.85	0.80	0.76	83.55
LZK110-3-2-9	63.97	18.04	0.12	4.4	0.14	1.42	0.82	0.71	0.11	3.3	1.92	3.89	0.55	5.05	3.55	0.85	0.77	0.73	82.01
LZK110-3-2-10	64.73	17.14	0.12	4.1	0.13	1.44	1.33	0.61	0.09	3.44	1.9	3.8	0.55	4.97	3.78	0.83	0.76	0.74	81.87
LZK110-3-2-11	64.47	17.56	0.1	4.37	0.13	1.73	0.65	0.76	0.09	2.18	2.63	3.81	0.25	4.83	3.67	0.89	0.78	0.74	82.03
LZK110-3-2-12	63.97	16.04	0.08	3.48	0.14	1.79	0.39	0.58	0.16	5.42	2.4	4.24	0.15	5.11	3.99	0.75	0.67	0.73	80.01
LZK110-3-2-13	57.17	21.08	0.24	4.03	0.16	2.24	2.18	0.88	0.1	3.59	1.77	4.59	0.25	6.18	2.71	0.85	0.79	0.68	78.25
LZK110-3-2-14	68.66	16.5	0.07	4.33	0.11	1.25	0.7	0.67	0.05	2.46	0.73	3.53	0.25	4.59	4.16	0.87	0.84	0.78	85.16
LZK110-3-2-15	61.03	18.6	0.08	4.34	0.1	1.52	2.12	0.85	0.09	2.82	1.28	4.34	0.55	6.8	3.28	0.87	0.82	0.73	79.63
LZK110-3-2-16	63.82	19.39	0.1	5.32	0.1	1.17	0.66	0.78	0.06	1.97	1.1	3.75	0.35	5.18	3.29	0.91	0.86	0.74	83.21
LZK110-3-2-17	66.48	15.86	0.08	3.16	0.13	1.51	1.26	0.69	0.11	2.61	2.33	4.04	0.5	5.33	4.19	0.86	0.76	0.76	82.34
LZK110-3-2-18	62.45	19.35	0.09	4.97	0.13	1.68	0.24	0.7	0.08	2.09	2.68	4.14	0.1	5.03	3.23	0.90	0.80	0.72	81.8
LZK110-3-2-19	67.58	16.16	0.1	3.7	0.1	1.35	1.09	0.69	0.08	2.3	1.82	3.71	0.7	4.95	4.18	0.88	0.79	0.77	83.74
LZK110-3-2-20	64.67	18.83	0.1	5	0.13	1.24	0.81	0.78	0.06	1.54	1.62	3.69	0.45	4.86	3.43	0.92	0.85	0.75	83.5
LZK110-3-2-21	73.39	11.1	0.1	1.87	0.14	1.81	0.68	0.36	0.15	2.34	3.97	3.28	0.2	3.49	6.61	0.83	0.63	0.81	84.49
LZK110-3-2-22	62.45	19.48	0.11	4.99	0.12	1.69	0.52	0.62	0.09	3.03	1.75	4.2	0.25	5.15	3.21	0.87	0.80	0.72	81.93
LZK110-3-2-23	67.23	14.97	0.08	3.4	0.08	1.64	0.67	0.63	0.12	2.66	3	3.63	0.3	5.01	4.49	0.85	0.72	0.77	82.2
LZK110-3-2-24	59.88	20.42	0.13	5.01	0.15	1.76	0.75	0.79	0.11	1.76	2.8	4.51	0.3	5.9	2.93	0.92	0.81	0.71	80.3
LZK110-3-2-26	63.1	17.81	0.14	4.12	0.11	1.78	1.25	0.7	0.13	2.72	2.33	4.12	0.3	5.36	3.54	0.87	0.77	0.73	80.91
LZK110-3-2-27	63.61	17.32	0.23	3.2	0.13	1.93	1.66	0.65	0.18	3.14	2.38	4.17	0.3	5.11	3.67	0.85	0.75	0.74	80.93
LZK110-3-2-28	66.22	15.01	0.17	2.92	0.12	1.99	1.83	0.58	0.15	4.13	2.18	3.68	0.35	4.57	4.41	0.78	0.70	0.76	81.23
LZK110-3-2-29	64.89	17.55	0.54	5.02	0.1	1.36	0.73	0.6	0.07	1.04	3.27	3.49	0.65	4.61	3.70	0.94	0.80	0.75	82.44
LZK110-3-2-30	62.16	18.01	0.1	4.37	0.12	1.84	0.57	0.7	0.19	4.76	2.12	4.3	0.1	4.83	3.45	0.79	0.72	0.71	80.17
LZK110-3-2-31	66.28	18.88	0.15	5.24	0.09	1.1	0.49	0.67	0.04	1.11	1.65	3.4	0.25	4.13	3.51	0.94	0.87	0.75	85.16

表2 研究区双桥子组 (P<sub>1s</sub>) 碳质板岩微量元素分析结果  
Table2 Trace elements compositions for the study samples

样品号	Ba	Th	U	Zr	Hf	Y	Sc	V	Cr	Co	Ni	Cu	Zn	$\omega(V)/\omega(V+Ni)$	$\omega(U)/\omega(Th)$	$\omega(V)/\omega(Cr)$	$\omega(Ni)/\omega(Co)$	$\delta U$
	$\mu g/g$																	
WZK0902-1-1	467.1	18.53	4.99	299.02	8.29	39.8	12.87	76.65	45.14	19.22	19.3	13.64	88.6	0.80	0.27	1.70	1.00	0.89
WZK0902-1-3	658.53	19.97	5.59	227.3	6.62	49.4	16.02	98.11	54.42	18.02	24.43	11.37	105.66	0.80	0.28	1.80	1.36	0.91
WZK0902-1-4	439.28	18.75	5.2	207.8	5.97	43.05	15.36	93.43	52.11	19.62	26.69	32.55	119.58	0.78	0.28	1.79	1.36	0.91
WZK0902-1-5	639.9	16.55	5.36	205.68	6.08	40.67	11.54	70.43	39.84	22.28	17.63	14.5	81.64	0.80	0.32	1.77	0.79	0.99
WZK0902-1-7	446.73	11.09	3.08	236.17	6.44	38.77	12.77	90.11	32.28	18.45	32.01	18.03	128.9	0.74	0.28	2.79	1.73	0.91
WZK0902-1-8	674.42	14.91	4.36	193.14	5.75	30.53	9.46	53.63	28.37	20.56	11.3	8.28	65.41	0.83	0.29	1.89	0.55	0.93
WZK0902-1-9	612.6	16.3	4.23	214.67	6.44	32.46	10.37	60.87	34.83	19.07	13.66	8.6	81.68	0.82	0.26	1.75	0.72	0.88
WZK0902-1-11	474.51	17.91	4.95	240.64	6.77	41.35	13.25	82.96	44.21	20.56	19.3	13.53	94.88	0.81	0.28	1.88	0.94	0.91
WZK0902-1-14	503.47	15.7	4.15	225.68	6.42	35.47	10.58	60.9	35.6	21.34	15.14	13.76	77.97	0.80	0.26	1.71	0.71	0.88
WZK0902-1-15	725.28	13.67	3.96	277.98	7.57	44.08	12.52	74.94	32.18	30.62	16.88	9.5	84.35	0.82	0.29	2.33	0.55	0.93
WZK0902-1-17	569.17	18.77	5.2	262.56	7.49	46.29	12.86	68.05	37.05	19.13	17.58	12.66	96.02	0.79	0.28	1.84	0.92	0.91
WZK0902-1-19	518.01	17.43	5.18	215.35	6.23	39.01	11.92	63.99	34.66	21.44	15.93	11.28	91.24	0.80	0.30	1.85	0.74	0.94
WZK0902-1-20	445.37	14.53	3.82	186.24	5.55	31.94	10.05	56.02	29.94	20.76	13.96	7.89	82.48	0.80	0.26	1.87	0.67	0.88
WZK0902-1-22	585.56	19.04	5.6	257.41	7.46	47.61	13.43	79.36	37.58	19.95	20.67	14.37	93.27	0.79	0.29	2.11	1.04	0.94
WZK0902-1-24	544.97	19.92	5.87	226.11	6.68	50.42	14.12	75.17	43.55	18.18	21.02	22.45	96.98	0.78	0.29	1.73	1.16	0.94
WZK0902-1-26	664.25	19.6	5.32	226.18	6.55	47.57	13.95	77.68	41.66	18.71	19.27	13.04	99.46	0.80	0.27	1.86	1.03	0.90
WZK0902-1-28	584.4	19.52	5.32	219.89	6.3	50.87	14.54	81.76	42.56	15.83	22	26.16	105.71	0.79	0.27	1.92	1.39	0.90
WZK0902-1-30	549.05	18.46	4.91	230.28	6.75	43.02	12.99	69.33	37.49	23.99	17.26	11.97	90.46	0.80	0.27	1.85	0.72	0.89
WZK0902-1-31	599.8	18.2	5.48	269.71	7.47	43.87	12.13	68.75	36.02	18.65	15.91	8.34	87.98	0.81	0.30	1.91	0.85	0.95
WZK0902-1-33	542.87	19.8	5.68	224.23	6.6	49.8	14.83	82.54	42.25	15.49	21.05	16.89	108.23	0.80	0.29	1.95	1.36	0.93
WZK0902-1-35	424.54	11.4	3.06	205.58	5.71	33.92	9.56	53	21.87	20.53	20.93	11.83	92.63	0.72	0.27	2.42	1.02	0.89
WZK0902-1-37	798.53	16.67	4.35	241.93	7.02	42.87	13.3	72.01	36.32	16.23	22.26	16.42	110.53	0.76	0.26	1.98	1.37	0.88
WZK0902-1-39	772.31	23.11	6.17	303.65	8.62	57	17.22	126.56	55.19	19.92	35.65	29.97	83.52	0.78	0.27	2.29	1.79	0.89
WZK0902-1-41	689.51	17.68	4.53	247.67	6.83	46.42	13.17	86.74	34.72	16.82	31.23	25.76	1483.41	0.74	0.26	2.50	1.86	0.87
WZK0902-1-43	529.09	12.77	3.76	322.3	8.19	49.72	12.6	74.08	29.15	25.03	36.23	17.47	108.47	0.67	0.29	2.54	1.45	0.94
WZK0902-1-44	810.91	13.2	3.57	299.68	7.82	50.06	11.64	61.08	23.37	15.26	18.45	14.76	112.84	0.77	0.27	2.61	1.21	0.90

WZK0902-1-46	591.47	12.58	3.65	240.32	6.54	39.98	11.65	71.56	33.18	19.87	20.49	16.93	101.95	0.78	0.29	2.16	1.03	0.93
WZK0902-1-47	352.76	12.96	3.08	269.52	7.12	40.75	16.52	131.2	63.68	15.87	31.61	22.14	96.9	0.81	0.24	2.06	1.99	0.83
WZK0902-1-49	529.33	12.64	3.02	263.91	6.99	42.15	16.29	125.22	62.38	22.81	31.15	28.42	103.52	0.80	0.24	2.01	1.37	0.84
WZK0902-1-51	701.06	13.57	3.45	304.58	7.91	39.64	16.91	149.82	65.14	21.62	32.41	34.04	72	0.82	0.25	2.30	1.50	0.87
WZK0902-1-53	648.93	14.35	3.38	302.37	8.03	44.42	18.02	146.73	68.77	18	32	4.52	107.65	0.82	0.24	2.13	1.78	0.83
WZK0902-1-54	526.78	11.52	2.81	252.55	6.53	37.4	15.56	126.22	60.71	25.57	31.8	16.86	93.07	0.80	0.24	2.08	1.24	0.85
WZK0902-1-55	790.52	14.91	3.83	332.09	9.02	50.24	20.36	169.09	74.84	19.9	40.07	30.78	126.24	0.81	0.26	2.26	2.01	0.87
WZK0902-1-57	417.29	12.07	2.83	251.62	6.62	38.61	16.86	133.79	78.87	22.06	42.36	23.8	122.46	0.76	0.23	1.70	1.92	0.83
WZK0902-1-59	401.89	12.48	2.98	262.79	7.03	40.55	17.46	138.54	61.86	25.32	37.31	15.33	101.7	0.79	0.24	2.24	1.47	0.83
WZK0902-1-60	311.66	11.81	2.76	239.67	6.42	34.76	14.27	114.33	54.09	16.85	27.08	16.68	101.87	0.81	0.23	2.11	1.61	0.82
WZK0902-1-62	692.15	13.27	3.2	226.13	6.37	38.69	16.8	143.17	52.9	17.35	50.68	28.65	134.6	0.74	0.24	2.71	2.92	0.84
EZK7502-2-2	145.19	458.28	16.24	4.49	213.19	6.12	39.82	10.67	65.69	29.81	32.02	23.39	16.26	0.25	0.04	0.16	1.07	0.19
EZK7502-2-3	145.55	305.27	16.47	4.64	177.77	5.43	38.65	12.04	62	30.19	19.51	14.55	7.54	0.38	0.05	0.19	0.65	0.28
EZK7502-2-4	125.73	460.04	17.23	4.65	256.76	7.1	36.98	10.68	58.72	32.51	32.77	12.57	9.56	0.25	0.04	0.18	1.01	0.20
EZK7502-2-6	176.94	277.82	10.09	2.97	180.76	4.84	34.62	12.08	97.93	30.58	31.6	49.85	23.02	0.28	0.04	0.12	1.03	0.20
EZK7502-2-7	124.43	262.6	13.84	4.04	181.69	5.16	28.31	8.6	48.84	27.25	32.71	10.69	4.23	0.21	0.05	0.18	1.20	0.27
EZK7502-2-8	141.1	514.3	14.12	4.43	172.01	4.97	27.95	9.76	57.88	34.54	34.68	13.38	10.41	0.22	0.03	0.17	1.00	0.15
EZK7502-2-10	155.96	327.1	17.17	5.31	217.25	6.08	47.57	11.94	71.4	42.46	36.73	19.39	58.48	0.25	0.05	0.17	0.87	0.27
EZK7502-2-11	176.84	469.49	16.83	4.84	190.16	5.52	41.02	13.16	79.02	43.08	29.16	20.6	16.47	0.31	0.04	0.17	0.68	0.19
EZK7502-2-13	138.64	389.15	15.83	3.64	265.17	7.25	31.61	10.69	61.33	34.31	39.99	12.71	7.03	0.21	0.04	0.17	1.17	0.22
EZK7502-2-14	139.97	470.42	13.47	3.31	207.22	6.01	36.81	12.53	84.9	40.38	22.27	21.43	11.8	0.36	0.03	0.15	0.55	0.16
EZK7502-2-15	170.13	373.87	15.65	4.12	207.08	5.83	31.41	9.45	49.03	29.35	41.34	12.48	8.1	0.19	0.04	0.19	1.41	0.22
EZK7502-2-16	136.33	427.68	11.77	3	171.08	4.84	31.7	12.04	75.45	54.22	37.22	31.06	42.48	0.24	0.03	0.16	0.69	0.15
EZK7502-2-17	99.9	345.28	9.13	2.84	209.25	5.48	29.43	8.68	44.74	21.58	42.81	10.79	12.5	0.17	0.03	0.19	1.98	0.15
EZK7502-2-18	100.59	576.9	11.58	3.1	220.35	6	36.38	12.23	109.59	45.91	28.56	24.55	11.35	0.30	0.02	0.11	0.62	0.11
EZK7502-2-19	145.05	523.75	13.18	3.21	225.22	6.15	37.48	13.98	105.29	46.99	27.99	27.33	28.88	0.33	0.03	0.13	0.60	0.14
EZK7502-2-20	138.42	1286.31	12.4	2.92	238.86	6.48	34.49	14.19	127.34	58.64	21.29	18.92	12.17	0.40	0.01	0.11	0.36	0.06
EZK7502-2-21	121.98	630.87	9.75	2.71	220.62	5.78	27.99	8.26	49.33	30.24	47	14.83	11.92	0.15	0.02	0.17	1.55	0.09
EZK7502-2-22	144.09	535.87	14.76	3.79	206.93	5.77	41.24	15.25	123.09	47.92	33.48	51	76.31	0.31	0.03	0.12	0.70	0.15
LZK110-3-2-3	221.34	830.14	15.45	4.65	290.49	7.7	35.6	15.87	136.67	50.44	18.66	22.19	11.01	0.46	0.02	0.12	0.37	0.11

LZK110-3-2-4	189.76	684.49	13.1	3.23	252.28	6.65	32.46	15.79	133.1	56.79	15.47	25.88	11.68	0.51	0.02	0.12	0.27	0.11
LZK110-3-2-5	202.94	731.42	18.92	4.34	257.2	7.34	43.66	16.98	124.54	59.05	15.76	24.63	14.48	0.52	0.03	0.14	0.27	0.14
LZK110-3-2-6	190.28	671.34	20.47	5.36	217.35	6.23	43.33	17.04	100.2	57.44	13.93	19.23	7.36	0.55	0.03	0.17	0.24	0.17
LZK110-3-2-7	161.77	535.45	15.55	4.35	226.3	6.47	54.72	13.52	91.85	50.28	23.44	29.67	14.45	0.37	0.03	0.15	0.47	0.16
LZK110-3-2-8	178.46	549.34	10.04	2.57	204.6	5.63	24.77	14.57	111.44	52.69	15.29	15.78	15.02	0.49	0.02	0.13	0.29	0.10
LZK110-3-2-9	179.08	567.27	12.97	3.44	227.05	6.33	36.38	15.95	134.31	55.38	17.4	26.49	16.28	0.48	0.02	0.12	0.31	0.13
LZK110-3-2-10	168.13	521.66	13.36	3.64	203.79	6.04	39.22	15.27	113.63	44.26	14.41	19.05	10.21	0.51	0.03	0.13	0.33	0.14
LZK110-3-2-11	181.86	562.95	14.91	4.82	249.25	6.85	35.72	14.81	105.16	56.01	20.9	26.05	11.9	0.41	0.03	0.14	0.37	0.15
LZK110-3-2-12	143.02	463.68	15.93	4.7	176.79	5.04	36.27	13.2	79.29	39.22	20.43	14.92	28.46	0.39	0.03	0.17	0.52	0.19
LZK110-3-2-13	166.43	503.57	22.74	6.95	286.45	8.07	54.28	17.37	104.76	57.6	20.57	22.56	2.97	0.46	0.05	0.17	0.36	0.24
LZK110-3-2-14	174.52	636.03	9.73	2.64	237.08	6.25	30.96	13.47	103.14	52.61	27.89	22.68	11.47	0.33	0.02	0.13	0.53	0.09
LZK110-3-2-15	172.19	701.52	13.97	3.53	287.55	7.93	44.71	16.74	141.37	62.19	25.22	31.99	4.7	0.40	0.02	0.12	0.41	0.11
LZK110-3-2-16	206.01	799.57	13.2	3.34	280.43	7.71	40.14	17.06	155.78	62.49	14.58	30.23	8.79	0.54	0.02	0.11	0.23	0.09
LZK110-3-2-17	126.2	462.93	10.69	2.84	227.7	6.23	37.38	14.84	133.48	54.43	22.94	29.91	19.64	0.39	0.02	0.11	0.42	0.13
LZK110-3-2-18	193.08	709.32	14.09	3.24	203.58	6.12	30.66	16.88	161.41	50.65	13.94	33.59	5.52	0.55	0.02	0.10	0.28	0.11
LZK110-3-2-19	144.7	505.29	11.01	3.04	253.74	6.82	32.12	14.42	125.45	54.86	22.56	31.47	10.7	0.39	0.02	0.11	0.41	0.12
LZK110-3-2-20	206.63	720.34	12.43	3.22	278.01	7.33	34.02	16.39	144.65	60.07	24.85	18.63	4.61	0.40	0.02	0.11	0.41	0.10
LZK110-3-2-21	77.81	245.14	7.09	1.97	128.89	3.58	24.59	8.68	75.57	28.29	26.38	16.7	25.18	0.25	0.03	0.11	0.93	0.16
LZK110-3-2-22	193.64	662.1	16.34	4.07	198.02	6	33.82	14.9	140.61	43.55	21.44	22.63	6.18	0.41	0.02	0.11	0.49	0.14
LZK110-3-2-23	133.3	466.71	11.13	3.03	233.88	5.91	42.22	12.87	115.53	48.65	27.86	39.18	42.64	0.32	0.02	0.11	0.57	0.13
LZK110-3-2-24	202.44	724.21	16.5	4.19	254.11	7.09	45.49	18.93	192.91	58.04	17.84	55.64	13.55	0.51	0.02	0.10	0.31	0.13
LZK110-3-2-26	169.35	592.21	12.71	3.36	222.18	5.92	45.08	15.54	150.42	58.25	20.55	48.27	20.9	0.43	0.02	0.10	0.35	0.12
LZK110-3-2-27	127.58	455.91	14.04	3.6	191.21	5.58	38.25	15.05	146.66	49.5	10.56	33.08	20.77	0.59	0.03	0.10	0.21	0.17
LZK110-3-2-28	113.21	430.05	11.27	2.82	175.17	5.06	37.27	14.88	129.23	44.23	21.27	38.18	27.03	0.41	0.03	0.12	0.48	0.15
LZK110-3-2-29	199.07	559.31	18	4.9	268.46	7.3	49.44	13.19	72.87	37.59	18.65	20.53	19.16	0.41	0.03	0.18	0.50	0.18
LZK110-3-2-30	172.43	603.74	13.7	3.26	214.16	5.92	41.4	17.21	153.87	50.69	16.24	48.75	5.34	0.51	0.02	0.11	0.32	0.13
LZK110-3-2-31	208.1	695.79	21.11	6.27	311.22	8.63	42.61	11.65	59.91	35.93	17.44	13.42	14.29	0.40	0.03	0.19	0.49	0.17

$$\delta U = U / [1/2(U + Th/3)]$$





附表2 研究区双桥子组 (P<sub>1s</sub>) 碳质板岩稀土元素分析结果  
 Table 2 Rare earth elements compositions for the study samples

样品号	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	ΣREE	LREE	HREE	L/H	(La/Yb) <sub>N</sub>	Eu/Eu*	Ce/Ce*	Y/Ho
	μg/g																						
EZK7201-3-1	32.56	66.81	7.72	29.34	6.33	0.93	5.46	0.92	5.37	1.08	3.11	0.49	3.1	0.49	31.94	163.71	143.69	20.02	7.18	0.99	0.74	1	29.7
EZK7201-3-2	31.42	64.49	7.45	27.91	5.63	1.14	5.05	0.88	5.09	1.02	3.07	0.47	3.17	0.47	30.56	157.26	138.04	19.22	7.18	0.93	1	1	30.1
EZK7201-3-3	33.59	70.18	8.02	30.6	6.44	1.25	5.86	1	6.05	1.22	3.58	0.54	3.53	0.54	35.7	172.4	150.08	22.32	6.72	0.9	0.96	1.01	29.3
EZK7201-3-4	41.09	82.8	9.64	36.82	7.69	1.19	6.73	1.17	6.71	1.37	3.99	0.62	4.06	0.62	39.7	204.5	179.23	25.27	7.09	0.96	0.78	0.99	29
EZK7201-4-1	32.11	69.79	8.11	32.36	7.43	1.52	7.15	1.18	6.66	1.34	3.81	0.59	3.9	0.6	40.76	176.55	151.32	25.23	6.00	0.78	0.98	1.03	30.4
EZK7201-4-2	35.42	76.83	8.89	34.2	7.26	1.57	6.74	1.14	6.52	1.31	3.78	0.57	3.65	0.57	37.84	188.45	164.17	24.28	6.76	0.92	1.06	1.03	28.9
EZK7201-4-3	36.6	80.69	8.98	33.62	6.88	1.27	6.05	1.02	5.98	1.2	3.55	0.55	3.64	0.54	34.35	190.57	168.04	22.53	7.46	0.95	0.92	1.06	28.5
EZK7201-4-4	29.01	61.38	7.11	26.53	5.53	1.13	4.97	0.89	5.2	1.04	3.15	0.5	3.27	0.51	29.98	150.22	130.69	19.53	6.69	0.84	1.02	1.01	28.8
EZK7502-2-2	41.62	88.05	9.82	37.88	8.39	1.29	7.12	1.2	6.89	1.42	3.98	0.61	3.96	0.63	39.82	212.86	187.05	25.81	7.25	0.99	0.78	1.03	28.1
EZK7502-2-3	41.52	83.67	9.95	39.56	8.31	1.35	7.48	1.21	6.9	1.4	3.99	0.59	3.88	0.62	38.65	210.43	184.36	26.07	7.07	1.01	0.81	0.98	27.7
EZK7502-2-4	42.15	87.23	10.04	37.82	7.77	1.18	6.58	1.11	6.26	1.28	3.7	0.57	3.72	0.56	36.98	209.97	186.19	23.78	7.83	1.07	0.77	1.01	28.8
EZK7502-2-6	33.67	72.84	8.12	30.91	6.53	1.14	6.05	1.03	5.97	1.2	3.48	0.52	3.41	0.52	34.62	175.39	153.21	22.18	6.91	0.93	0.85	1.04	28.8
EZK7502-2-7	32.16	64.8	7.42	27.79	5.61	1	4.87	0.86	4.81	0.99	2.77	0.43	2.74	0.43	28.31	156.68	138.78	17.9	7.75	1.11	0.89	0.99	28.7
EZK7502-2-8	33.07	67.85	7.81	28.99	6.06	1.05	5.14	0.83	4.84	0.97	2.86	0.45	2.94	0.43	27.95	163.29	144.83	18.46	7.85	1.06	0.88	1	28.8
EZK7502-2-10	59.01	117.01	12.8	49.14	10.16	1.31	8.41	1.38	8.23	1.65	4.54	0.68	4.39	0.67	47.57	279.38	249.43	29.95	8.33	1.27	0.67	1.01	28.9
EZK7502-2-11	40.63	86.39	10.09	37.9	8.03	1.27	6.96	1.18	6.92	1.42	4.04	0.6	4.01	0.62	41.02	210.06	184.31	25.75	7.16	0.96	0.8	1.01	28.9
EZK7502-2-13	40.85	82.83	9.45	34.86	6.98	1.11	5.93	0.94	5.49	1.09	3.17	0.48	3.25	0.51	31.61	196.94	176.08	20.86	8.44	1.19	0.81	1	28.9
EZK7502-2-14	36.93	78.39	8.96	34.51	7.43	1.26	6.32	1.07	6.33	1.27	3.62	0.56	3.55	0.55	36.81	190.75	167.48	23.27	7.20	0.98	0.86	1.02	29.1
EZK7502-2-15	32.82	69.2	8.09	30.58	6.54	1.13	5.48	0.91	5.24	1.09	3.18	0.46	3.08	0.48	31.41	168.28	148.36	19.92	7.45	1	0.89	1.01	28.7
EZK7502-2-16	31.6	66.4	7.79	29.56	6.29	1.11	5.57	0.93	5.53	1.07	3.15	0.48	3.07	0.48	31.7	163.03	142.75	20.28	7.04	0.97	0.88	1	29.7
EZK7502-2-17	28.53	59.42	6.8	26.39	5.57	1.09	4.96	0.84	5.07	0.99	3.02	0.47	3.09	0.48	29.43	146.72	127.8	18.92	6.75	0.87	0.97	1.01	29.8
EZK7502-2-18	34.78	74.23	8.51	32.69	6.61	1.26	5.68	1	5.96	1.26	3.74	0.57	3.77	0.58	36.38	180.64	158.08	22.56	7.01	0.87	0.97	1.02	28.8
EZK7502-2-19	38.94	83.67	9.53	36.84	7.78	1.37	6.63	1.12	6.48	1.33	3.9	0.59	3.91	0.62	37.48	202.71	178.13	24.58	7.25	0.94	0.9	1.03	28.1
EZK7502-2-20	37.95	86.47	9.53	36.26	7.52	1.43	6.07	1.03	6.08	1.21	3.53	0.56	3.61	0.58	34.49	201.83	179.16	22.67	7.90	0.99	1	1.08	28.5
EZK7502-2-21	35.28	73.28	8.32	31.57	6.15	1.2	4.99	0.83	4.83	0.95	2.88	0.44	2.99	0.47	27.99	174.18	155.8	18.38	8.48	1.11	1.02	1.01	29.4
EZK7502-2-22	38.02	82.67	9.64	37.63	7.89	1.29	6.86	1.18	7.12	1.46	4.39	0.64	4.42	0.69	41.24	203.9	177.14	26.76	6.62	0.81	0.82	1.02	28.2

EZK7401-2-1	37.21	78	8.85	34.29	7.21	1.2	6.35	1.05	6.09	1.27	3.73	0.57	3.72	0.58	36.03	190.12	166.76	23.36	7.14	0.94	0.84	1.02	28.4
EZK7401-2-2	37.36	80.96	9.22	35.2	7.47	1.45	6.37	1.09	6.26	1.28	3.78	0.58	3.75	0.59	36.04	195.36	171.66	23.7	7.24	0.94	0.98	1.03	28.1
EZK7401-2-3	36.83	82.44	9.33	35.8	7.54	1.34	6.47	1.11	6.46	1.31	3.86	0.61	3.9	0.6	37.37	197.6	173.28	24.32	7.13	0.89	0.9	1.06	28.5
EZK7401-2-4	32.62	68.48	7.78	29.87	6.33	1.25	5.3	0.87	5.07	1.05	3.13	0.49	3.27	0.51	30.05	166.02	146.33	19.69	7.43	0.94	1.02	1.02	28.8
EZK7401-2-5	38.37	83.8	9.54	35.9	7.33	1.25	6.12	1.04	6.1	1.29	3.79	0.59	3.99	0.62	36.98	199.73	176.19	23.54	7.48	0.91	0.88	1.04	28.7
EZK7401-2-6	42.77	92.48	10.39	39.32	8.11	1.55	6.94	1.16	7.17	1.45	4.19	0.67	4.34	0.68	41.86	221.22	194.62	26.6	7.32	0.93	0.97	1.04	28.9
EZK7401-2-7	40	85.91	9.75	37.01	7.55	1.43	6.37	1.08	6.3	1.3	3.86	0.61	3.9	0.61	37.3	205.68	181.65	24.03	7.56	0.97	0.97	1.03	28.7
EZK7401-2-8	35.36	76.79	8.82	33.71	7.11	1.44	6.22	1.05	6.38	1.3	3.8	0.59	3.84	0.61	38.38	187.02	163.23	23.79	6.86	0.87	1.02	1.03	29.5
EZK7401-2-9	37.22	79.4	9.18	34.82	6.94	1.24	5.97	1.04	6.15	1.3	3.82	0.6	3.95	0.59	37.35	192.22	168.8	23.42	7.21	0.89	0.91	1.02	28.8
WZK0902-1-1	43.89	92.7	10.38	39.71	8.24	1.3	6.9	1.17	6.99	1.37	4.04	0.61	4.01	0.63	39.8	221.94	196.22	25.72	7.63	1.03	0.81	1.03	29
WZK0902-1-3	49.42	107.4	11.96	46.68	9.74	1.59	8.61	1.47	8.56	1.72	4.92	0.72	4.57	0.72	49.4	258.08	226.79	31.29	7.25	1.02	0.81	1.05	28.7
WZK0902-1-4	46	101.05	11.23	43.24	9.03	1.47	7.94	1.33	7.85	1.52	4.36	0.64	4.23	0.65	43.05	240.54	212.02	28.52	7.43	1.02	0.81	1.05	28.3
WZK0902-1-5	42.6	85.93	10	38.86	7.98	1.26	7.09	1.2	6.89	1.37	4.1	0.6	3.84	0.61	40.67	212.33	186.63	25.7	7.26	1.05	0.78	0.99	29.6
WZK0902-1-7	35.69	75.82	8.72	33.82	7.24	1.4	6.59	1.12	6.7	1.38	4.07	0.61	4	0.63	38.77	187.79	162.69	25.1	6.48	0.84	0.95	1.02	28.2
WZK0902-1-8	34.44	71.39	8.25	31.2	6.33	1.06	5.42	0.92	5.38	1.08	3.2	0.48	3.16	0.49	30.53	172.8	152.67	20.13	7.58	1.03	0.85	1	28.2
WZK0902-1-9	36.72	75.19	8.86	33.41	6.94	1.19	5.91	0.95	5.89	1.16	3.25	0.5	3.4	0.53	32.46	183.9	162.31	21.59	7.52	1.02	0.87	0.99	28.1
WZK0902-1-11	43.72	94.69	10.62	40.52	8.53	1.35	7.33	1.22	7.03	1.43	4.1	0.63	4.03	0.62	41.35	225.82	199.43	26.39	7.56	1.02	0.8	1.04	29
WZK0902-1-14	38.05	78.76	9.11	34.76	7.39	1.12	6.22	1.03	6.23	1.21	3.43	0.53	3.34	0.53	35.47	191.71	169.19	22.52	7.51	1.07	0.77	1	29.3
WZK0902-1-15	42.64	89.02	10.23	40.02	8.44	1.45	7.4	1.26	7.81	1.56	4.59	0.71	4.63	0.73	44.08	220.49	191.8	28.69	6.69	0.87	0.86	1.01	28.3
WZK0902-1-17	50.51	108.46	12.04	46.26	9.61	1.38	8.04	1.35	8.15	1.63	4.68	0.75	4.78	0.73	46.29	258.37	228.26	30.11	7.58	1	0.73	1.04	28.4
WZK0902-1-19	42.55	89.64	10.19	38.79	7.95	1.22	6.71	1.17	6.89	1.36	3.98	0.62	3.91	0.61	39.01	215.59	190.34	25.25	7.54	1.03	0.79	1.02	28.7
WZK0902-1-20	35.69	72.9	8.4	32.1	6.7	1.11	5.69	0.96	5.71	1.13	3.18	0.51	3.2	0.48	31.94	177.76	156.9	20.86	7.52	1.05	0.85	1	28.4
WZK0902-1-22	50.54	107.07	12.13	46.37	9.63	1.46	8.28	1.38	8.24	1.63	4.77	0.73	4.77	0.75	47.61	257.75	227.2	30.55	7.44	1	0.77	1.03	29.2
WZK0902-1-24	52.25	112.41	12.49	48.4	10.37	1.58	8.83	1.48	8.82	1.72	4.92	0.76	4.82	0.76	50.42	269.61	237.5	32.11	7.40	1.02	0.77	1.04	29.2
WZK0902-1-26	48.62	106.29	11.7	45.39	9.52	1.51	8.23	1.4	8.33	1.64	4.79	0.73	4.71	0.72	47.57	253.58	223.03	30.55	7.30	0.97	0.8	1.06	29
WZK0902-1-28	51.1	110.94	12.54	48.01	10.47	1.6	8.71	1.48	8.74	1.75	4.93	0.75	5	0.76	50.87	266.78	234.66	32.12	7.31	0.96	0.79	1.04	29.1
WZK0902-1-30	46.22	99.7	11.17	42.12	8.98	1.36	7.38	1.28	7.43	1.48	4.34	0.66	4.36	0.68	43.02	237.16	209.55	27.61	7.59	1	0.79	1.04	29.1
WZK0902-1-31	46.01	99.34	11.03	42.53	9.07	1.44	7.72	1.31	7.46	1.51	4.38	0.67	4.35	0.69	43.87	237.51	209.42	28.09	7.46	1	0.81	1.05	29
WZK0902-1-33	49.38	107.83	12.11	47.12	10.07	1.52	8.57	1.46	8.59	1.71	4.88	0.77	4.84	0.73	49.8	259.58	228.03	31.55	7.23	0.96	0.77	1.05	29.2
WZK0902-1-35	32.7	68.74	7.84	29.72	6.27	1.02	5.53	0.96	5.79	1.17	3.46	0.54	3.63	0.57	33.92	167.94	146.29	21.65	6.76	0.85	0.82	1.02	29.1

WZK0902-1-37	44.31	97.07	10.68	41.51	8.8	1.36	7.52	1.28	7.47	1.5	4.31	0.68	4.48	0.69	42.87	231.66	203.73	27.93	7.29	0.93	0.78	1.06	28.5
WZK0902-1-39	60.63	132.56	14.77	55.69	11.66	1.87	9.89	1.7	9.69	1.98	5.72	0.88	5.78	0.87	57	313.69	277.18	36.51	7.59	0.99	0.82	1.05	28.8
WZK0902-1-41	44.26	97.58	10.87	41.83	8.89	1.43	7.89	1.3	7.94	1.56	4.68	0.75	4.81	0.72	46.42	234.51	204.86	29.65	6.91	0.87	0.8	1.06	29.7
WZK0902-1-43	42.54	90.19	10.3	40.43	8.47	1.52	7.57	1.32	8.24	1.71	5.05	0.81	5.32	0.79	49.72	224.26	193.45	30.81	6.28	0.75	0.89	1.02	29
WZK0902-1-44	45.5	100.64	11.26	44.4	9.47	1.52	8.31	1.39	8.52	1.69	5.16	0.83	5.31	0.8	50.06	244.8	212.79	32.01	6.65	0.81	0.8	1.05	29.6
WZK0902-1-46	40.38	85.01	9.82	38.07	8.07	1.31	6.98	1.09	6.67	1.37	4.1	0.64	4.27	0.64	39.98	208.42	182.66	25.76	7.09	0.89	0.82	1.01	29.3
WZK0902-1-47	40.68	87.59	10.08	39.14	8.15	1.57	7.06	1.18	7.2	1.4	4.23	0.66	4.2	0.65	40.75	213.79	187.21	26.58	7.04	0.91	0.97	1.03	29
WZK0902-1-49	38.88	83.97	9.69	37.49	7.74	1.57	7.03	1.18	7.28	1.47	4.43	0.7	4.35	0.63	42.15	206.41	179.34	27.07	6.63	0.84	1	1.03	28.7
WZK0902-1-51	44.18	97.13	10.69	41.43	8.43	1.62	6.99	1.16	6.88	1.37	4.12	0.69	4.36	0.65	39.64	229.7	203.48	26.22	7.76	0.95	0.99	1.06	29
WZK0902-1-53	45.36	105.11	11.32	45.19	9.5	1.83	8.02	1.32	7.82	1.54	4.56	0.74	4.67	0.7	44.42	247.68	218.31	29.37	7.43	0.92	0.98	1.1	28.9
WZK0902-1-54	35.79	77.22	9	35.15	7.4	1.51	6.8	1.12	6.65	1.32	3.88	0.64	3.87	0.58	37.4	190.93	166.07	24.86	6.68	0.87	1	1.02	28.4
WZK0902-1-55	45.4	101.36	11.32	44.71	9.72	1.77	8.67	1.44	8.76	1.76	5.18	0.85	5.25	0.81	50.24	247	214.28	32.72	6.55	0.81	0.91	1.06	28.5
WZK0902-1-57	38.06	83.86	9.72	37.76	7.94	1.58	6.8	1.11	6.9	1.34	3.95	0.63	3.89	0.59	38.61	204.13	178.92	25.21	7.10	0.92	1.01	1.03	28.8
WZK0902-1-59	41.69	90.32	10.36	41.01	8.56	1.61	7.28	1.19	7.1	1.44	4.28	0.68	4.34	0.64	40.55	220.5	193.55	26.95	7.18	0.91	0.96	1.03	28.1
WZK0902-1-60	37.93	82.46	9.53	37.25	7.73	1.52	6.73	1.05	6.05	1.2	3.56	0.59	3.78	0.57	34.76	199.95	176.42	23.53	7.50	0.95	0.99	1.03	28.9
WZK0902-1-62	38.6	84.41	9.32	35.43	7.15	1.33	6.17	1.02	6.45	1.34	4.01	0.68	4.34	0.66	38.69	200.91	176.24	24.67	7.14	0.84	0.94	1.06	29
LZK110-3-2-1	48.98	105.72	11.95	43.18	9.15	1.44	8.27	1.42	8.6	1.66	4.92	0.79	5.2	0.76	51.25	252.04	220.42	31.62	6.97	0.89	0.78	1.04	30.9
LZK110-3-2-2	46.21	93.48	10.9	42.96	9.11	1.32	7.74	1.28	7.62	1.62	4.56	0.72	4.48	0.67	47.15	232.67	203.98	28.69	7.11	0.97	0.74	0.99	29.1
LZK110-3-2-3	41.1	87.94	9.86	36.73	7.07	1.26	5.8	0.97	6.06	1.26	3.79	0.6	4.19	0.63	35.6	207.26	183.96	23.3	7.90	0.92	0.92	1.04	28.2
LZK110-3-2-4	35.53	80.38	8.98	33.75	7.13	1.12	5.73	0.97	5.91	1.19	3.39	0.57	3.76	0.59	32.46	189	166.89	22.11	7.55	0.89	0.82	1.07	27.3
LZK110-3-2-5	48.84	105.54	11.72	44.2	9.04	1.54	7.36	1.26	7.63	1.52	4.55	0.7	4.6	0.69	43.66	249.19	220.88	28.31	7.80	1	0.89	1.05	28.8
LZK110-3-2-6	43.51	93.57	10.96	42.25	8.69	1.36	7.41	1.25	7.71	1.56	4.6	0.72	4.76	0.69	43.33	229.04	200.34	28.7	6.98	0.86	0.8	1.02	27.8
LZK110-3-2-7	51.03	116	12.73	48.56	10.12	1.87	9.03	1.54	9.27	1.8	5.03	0.77	4.98	0.71	54.72	273.44	240.31	33.13	7.25	0.97	0.92	1.08	30.3
LZK110-3-2-8	21.39	49.97	6	23.36	5	0.73	4.17	0.71	4.61	0.95	2.82	0.45	3.25	0.5	24.77	123.91	106.45	17.46	6.10	0.62	0.75	1.05	26
LZK110-3-2-9	35.39	75.8	8.73	33.87	6.91	1.32	6.07	1.01	6.35	1.25	3.61	0.55	3.66	0.59	36.38	185.11	162.02	23.09	7.02	0.91	0.96	1.02	29.1
LZK110-3-2-10	34.32	74.37	8.44	31.84	6.57	1.25	5.84	1.06	6.77	1.34	4.02	0.59	3.92	0.61	39.22	180.94	156.79	24.15	6.49	0.83	0.95	1.04	29.2
LZK110-3-2-11	36.76	77.9	8.8	33.84	7.09	1.31	5.87	1.03	6.11	1.26	3.69	0.59	3.86	0.61	35.72	188.72	165.7	23.02	7.20	0.9	0.95	1.03	28.4
LZK110-3-2-12	36.57	78.54	9.1	35.36	7.94	1.26	6.41	1.08	6.35	1.26	3.74	0.57	3.73	0.56	36.27	192.47	168.77	23.7	7.12	0.92	0.83	1.02	28.8
LZK110-3-2-13	55.67	121.33	13.62	52.15	11.35	1.67	9.37	1.55	9.3	1.85	5.35	0.8	5.4	0.8	54.28	290.21	255.79	34.42	7.43	0.97	0.76	1.05	29.4
LZK110-3-2-14	32.33	70.13	8.11	30.18	6.15	1.15	5.24	0.91	5.67	1.12	3.26	0.52	3.6	0.53	30.96	168.9	148.05	20.85	7.10	0.85	0.95	1.03	27.7

LZK110-3-2-15	60.71	134.28	14.32	54.87	10.97	1.96	8.43	1.42	8.12	1.57	4.63	0.71	4.59	0.71	44.71	307.29	277.11	30.18	9.18	1.25	0.96	1.08	28.6
LZK110-3-2-16	39.24	88.61	9.6	37.44	7.46	1.16	6	1.09	6.92	1.39	4.2	0.64	4.15	0.63	40.14	208.53	183.51	25.02	7.33	0.89	0.81	1.08	28.9
LZK110-3-2-17	33.41	73.66	7.79	29.47	6.65	1.43	5.87	1.02	6.08	1.18	3.65	0.58	3.7	0.55	37.38	175.04	152.41	22.63	6.73	0.85	1.07	1.08	31.7
LZK110-3-2-18	34.94	78.16	8.22	31.21	6.64	1	5.1	0.89	5.22	1.09	3.21	0.52	3.56	0.54	30.66	180.3	160.17	20.13	7.96	0.92	0.8	1.09	28.2
LZK110-3-2-19	30.17	67.48	7.41	28.67	6.05	1.22	5.11	0.88	5.22	1.09	3.24	0.49	3.42	0.56	32.12	161.01	141	20.01	7.05	0.83	1.03	1.07	29.5
LZK110-3-2-20	28.17	62.27	6.88	26.49	5.52	0.97	5.04	0.88	5.49	1.18	3.6	0.56	3.88	0.61	34.02	151.54	130.3	21.24	6.13	0.68	0.87	1.06	28.9
LZK110-3-2-21	22.15	49.83	5.44	20.61	4.51	1.16	4.23	0.74	4.2	0.8	2.32	0.35	2.3	0.35	24.59	118.99	103.7	15.29	6.78	0.91	1.24	1.08	30.8
LZK110-3-2-22	37.84	85.11	9.24	35.58	7.28	1.04	5.51	0.97	5.85	1.19	3.62	0.58	3.9	0.6	33.82	198.31	176.09	22.22	7.92	0.91	0.77	1.08	28.5
LZK110-3-2-23	29.54	64.69	7.06	26.98	5.94	1.02	5.72	1.06	6.73	1.38	4.13	0.61	3.93	0.57	42.22	159.36	135.23	24.13	5.60	0.71	0.82	1.06	30.7
LZK110-3-2-24	45.65	103.66	10.99	42.6	8.44	1.41	7.35	1.27	7.67	1.57	4.64	0.7	4.68	0.7	45.49	241.33	212.75	28.58	7.44	0.92	0.84	1.1	29
LZK110-3-2-26	38.19	85.72	9.86	37.41	7.22	1.17	6.55	1.2	7.83	1.64	4.52	0.68	4.43	0.62	45.08	207.04	179.57	27.47	6.54	0.81	0.8	1.05	27.5
LZK110-3-2-27	35.92	80.79	8.79	34.21	7.25	1.17	6.34	1.07	6.44	1.3	3.81	0.57	3.85	0.56	38.25	192.07	168.13	23.94	7.02	0.88	0.81	1.08	29.4
LZK110-3-2-28	36.76	74.7	8.4	33.73	7	1.47	6.59	1.05	6.47	1.32	3.75	0.55	3.61	0.55	37.27	185.95	162.06	23.89	6.78	0.96	1.02	1.01	28.2
LZK110-3-2-29	49.89	110.8	12.11	46.41	9.86	1.5	8.55	1.44	8.47	1.71	5.09	0.76	5	0.78	49.44	262.37	230.57	31.8	7.25	0.94	0.77	1.07	28.9
LZK110-3-2-30	43.49	91.42	10.05	39.85	8.13	1.92	7.01	1.19	6.97	1.4	4.2	0.63	4.05	0.62	41.4	220.93	194.86	26.07	7.47	1.01	1.19	1.04	29.5
LZK110-3-2-31	45.76	93.54	10.58	38.97	7.68	1.08	6.52	1.17	6.87	1.43	4.33	0.68	4.61	0.74	42.61	223.96	197.61	26.35	7.50	0.94	0.71	1.01	29.8

