APPENDIX 7-18

SEEP AND SPRING SPECIFIC CONDUCTIVITY MEASUREMENTS

Specific coductance (umhos/cm @ 25 C) of the seep and springs in the coal leases and adjacent areas from June 1985 through Oct./Nov. 1990.

Field Number	JUNE 85 Specific Cond.	OCT. 85 Specific Cond.	JULY 87 Specific Cond.	OCT. 87 Specific Cond.	OCT. 89 Specific Cond.	JUNE 90 Specific Cond.	OCT./NOV 90 Specific Cond.
SP-1	(a)	(d)	–	–	–	–	–
SP-2	(a)	(d)	–	–	–	–	–
SP-3	730	(d)	–	–	–	–	–
SP-4	660	(a)	–	–	–	–	–
SP-5	(a)	(d)	–	–	–	–	–
SP-6	590	(d)	–	–	–	–	–
SP-7	440	(d)	–	–	–	379	(c)
SP-8	280	(d)	–	–	–	194	(c)
SP-9	(a)	(d)	–	–	–	306	(c)
SP-10	220	(a)	–	–	–	244	(c)
SP-11	(a)	(d)	–	–	–	126	(c)
SP-12	250	(a)	–	–	–	112	(c)
SP-13	100	(d)	–	–	(a)	187	(c)
SP-14	150	340	–	–	380	150	(c)
SP-14a	–	–	–	–	–	280	(c)
SP-14b	–	–	–	–	–	306	(c)
SP-15	(a)	(d)	–	–	–	–	–
SP-16	560	(d)	–	–	–	–	–
SP-17	460	(d)	–	–	–	–	–
SP-18	500	450	–	–	–	–	–
SP-19	620	530	–	–	–	–	–
SP-20	(a)	(d)	–	–	–	–	–

Field Number	JUNE 85 Specific Cond.	OCT. 85 Specific Cond.	JULY 87 Specific Cond.	OCT. 87 Specific Cond.	OCT. 89 Specific Cond.	JUNE 90 Specific Cond.	OCT./NOV 90 Specific Cond.
SP-21	820	(d)	–	–	–	–	–
SP-22	230	350	–	–	–	–	–
SP-23	550	670	–	–	–	–	–
SP-24	790	(d)	–	–	–	–	–
SP-25	820	(d)	–	–	–	–	–
SP-26	(a)	(a)	–	–	–	–	–
SP-27	(a)	(a)	–	–	–	–	–
SP-28	(a)	(d)	–	–	–	–	–
SP-29	(a)	(d)	–	–	–	–	–
SP-30	1060	1150	–	–	–	–	–
SP-31	(a)	(d)	–	–	–	–	–
SP-32	(a)	(d)	–	–	–	–	–
SP-33	(a)	(d)	–	–	–	–	–
SP-34	(a)	(d)	–	–	–	–	–
SP-35	(a)	(d)	–	–	–	–	–
SP-36	890	950	–	–	–	–	–
SP-37	(a)	(d)	–	–	–	–	–
SP-38	1180	(d)	–	–	–	–	–
SP-39	(a)	(d)	–	–	–	–	–
SP-40	(a)	(d)	–	–	–	–	–
SP-41	(a)	(d)	–	–	–	–	–
SP-42	(a)	(d)	–	–	–	–	–
SP-43	(a)	(d)	–	–	–	(a)	(c)

Field Number	JUNE 85 Specific Cond.	OCT. 85 Specific Cond.	JULY 87 Specific Cond.	OCT. 87 Specific Cond.	OCT. 89 Specific Cond.	JUNE 90 Specific Cond.	OCT./NOV 90 Specific Cond.
SP–44	(a)	(d)	–	–	–	(a)	(c)
SP–45	(a)	(d)	–	–	–	(a)	(c)
SP–46	(a)	(d)	–	–	–	(a)	(c)
SP–47	(a)	(d)	–	–	–	(a)	(c)
SP–47a	–	–	–	–	–	–	(c)
SP–48	(a)	(d)	–	–	–	(a)	(c)
SP–48a	–	–	–	–	–	602	(c)
SP–48b	–	–	–	–	–	642	(c)
SP–49	(a)	(d)	–	–	–	(a)	(d)
SP–50	(a)	(d)	–	–	–	(a)	(d)
SP–51	(a)	(d)	–	–	–	(a)	(d)
SP–52	600	540	–	–	392	545	(d)
SP–53	490	470	–	–	–	506	236
SP–54	500	500	–	–	352	536	(d)
SP–55	480	530	–	–	(a)	466	(d)
SP–56	490	470	–	–	(a)	536	(d)
SP–57	480	470	–	–	–	(a)	(b)
SP–58	500	500	–	–	470	437	466
SP–59	690	520	–	–	–	(a)	(d)
SP–60	(a)	(d)	–	–	–	(a)	(c)
SP–61	450	450	–	–	–	362	(c)
SP–62	(a)	(d)	–	–	–	(a)	(c)
SP–63	(a)	(d)	–	–	–	(a)	(c)

Field Number	JUNE 85 Specific Cond.	OCT. 85 Specific Cond.	JULY 87 Specific Cond.	OCT. 87 Specific Cond.	OCT. 89 Specific Cond.	JUNE 90 Specific Cond.	OCT./NOV 90 Specific Cond.
SP–64	440	(d)	–	–	–	376	(c)
SP–65	430	500	–	–	–	–	–
SP–66	(a)	(d)	–	–	–	–	–
SP–67	(a)	(d)	–	–	–	–	–
SP–68	(a)	(d)	–	–	–	–	–
SP–69	(a)	(d)	–	–	–	–	–
SP–70	550	(a)	–	–	–	–	–
SP–71	(a)	(a)	–	–	–	–	–
SP–72	(a)	(d)	–	–	–	–	–
SP–73	(a)	(d)	–	–	–	–	–
SP–74	(a)	(d)	–	–	–	–	–
SP–75	(a)	(d)	–	–	–	–	–
SP–76	960	850	–	–	–	–	–
SP–77	(a)	(d)	–	–	–	–	–
SP–78	(a)	(d)	–	–	–	–	–
SP–79	(a)	(d)	–	–	–	–	–
SP–80	(a)	(d)	–	–	–	–	–
SP1–1	–	–	360	440	(a)	437	418
SP1–2	–	–	280	–	–	214	(b)
SP1–2a	–	–	280	320	292	202	264
SP1–3	–	–	190	250	280	164	249
SP1–4	–	–	(a)	(a)	–	257	(d)
SP1–5	–	–	(a)	(a)	–	169	(d)

Field Number	JUNE 85 Specific Cond.	OCT. 85 Specific Cond.	JULY 87 Specific Cond.	OCT. 87 Specific Cond.	OCT. 89 Specific Cond.	JUNE 90 Specific Cond.	OCT./NOV 90 Specific Cond.
SP1–6	–	–	(a)	(a)	–	346	(a)
SP1–7	–	–	(a)	(a)	–	348	(a)
SP1–8	–	–	420	–	282	197	(a)
SP1–9	–	–	(a)	(a)	(a)	260	(a)
SP1–10	–	–	(a)	(a)	–	311	(c)
SP1–10a	–	–	–	–	(c)	(a)	(c)
SP1–10b	–	–	–	–	–	281	(c)
SP1–11	–	–	360	–	(c)	352	(d)
SP1–12	–	–	(a)	(a)	340	350	(d)
SP1–13	–	–	(a)	(a)	(a)	(a)	(a)
SP1–13a	–	–	–	–	–	420	–
SP1–13b	–	–	–	–	–	539	–
SP1–14	–	–	(a)	(a)	(a)	(a)	(a)
SP1–15	–	–	380	(a)	326	352	(d)
SP1–16	–	–	280	–	–	364	350
SP1–16a	–	–	–	–	–	360	330
SP1–17	–	–	390	410	–	354	(d)
SP1–17a	–	–	–	–	–	340	(d)
SP1–18	–	–	(a)	(a)	–	350	(a)
SP1–19	–	–	400	–	–	304	139
SP1–20	–	–	360	350	(c)	304	223
SP1–21	–	–	370	–	(c)	174	(a)
SP1–21a	–	–	–	–	–	174	(a)

Field Number	JUNE 85 Specific Cond.	OCT. 85 Specific Cond.	JULY 87 Specific Cond.	OCT. 87 Specific Cond.	OCT. 89 Specific Cond.	JUNE 90 Specific Cond.	OCT./NOV 90 Specific Cond.
SP1-21b	–	–	–	–	–	236	(d)
SP1-22	–	–	(a)	(a)	–	(a)	(d)
SP1-23	–	–	(a)	(a)	–	369	(a)
SP1-24	–	–	310	(a)	389	311	368
SP1-25	–	–	490	330	294	268	356
SP1-26	–	–	430	340	282	277	288
SP1-27	–	–	450	–	282	320	298
SP1-28	–	–	(a)	(a)	–	(a)	(c)
SP1-29	–	–	470	–	(a)	403	(b)
SP1-29a	–	–	–	–	–	(a)	(b)
SP1-29b	–	–	–	–	–	(a)	(b)
SP1-30	–	–	440	–	992	326	(c)
SP1-30a	–	–	–	–	–	(a)	(c)
SP1-30b	–	–	–	–	–	(a)	(c)
SP1-31	–	–	430	–	(a)	326	(c)
SP1-32	–	–	(a)	(a)	–	374	(c)
SP1-32a	–	–	–	–	–	383	(d)
SP1-33	–	–	(a)	390	410	468	498
SP1-34	–	–	480	460	550	850	(a)
SP1-35	–	–	470	480	375	383	417
SP1-36	–	–	490	500	390	731	499
SP1-37	–	–	(a)	450	325	461	411
Sp1-37a	–	–	500	490	363	880	(a)

Field Number	JUNE 85 Specific Cond.	OCT. 85 Specific Cond.	JULY 87 Specific Cond.	OCT. 87 Specific Cond.	OCT. 89 Specific Cond.	JUNE 90 Specific Cond.	OCT./NOV 90 Specific Cond.
Sp1–38	–	–	480	470	360	1159	(a)
SP1–39	–	–	460	450	360	409	(a)
SP1–40	–	–	530	690	310	1100	423
SP1–40a	–	–	(a)	490	350	624	–
SP1–41	–	–	(a)	450	–	(a)	(a)
SP1–41a	–	–	–	–	–	–	363
SP1–42	–	–	490	420	–	412	(a)
SP1–43	–	–	470	460	–	385	(a)
SP1–44	–	–	490	480	–	669	458
SP1–45	–	–	–	–	315	864	383
SP1–46	–	–	–	–	340	834	395
SP1–47	–	–	–	–	305	347	443
SP1–48	–	–	–	–	380	312	(a)
SP1–49	–	–	–	–	(a)	288	(c)
SP1–50	–	–	–	–	(a)	299	(c)
SP1–51	–	–	–	–	350	242	(c)
SP1–52	–	–	–	–	(a)	305	(c)
SP1–53	–	–	–	–	310	367	402
SP1–53a	–	–	–	–	–	248	(c)
SP1–54	–	–	–	–	642	(a)	(c)
SP2–1	–	–	430	–	474	380	(a)
SP2–2	–	–	(a)	(a)	–	406	(d)
SP2–2a	–	–	–	–	–	423	385

Field Number	JUNE 85 Specific Cond.	OCT. 85 Specific Cond.	JULY 87 Specific Cond.	OCT. 87 Specific Cond.	OCT. 89 Specific Cond.	JUNE 90 Specific Cond.	OCT./NOV 90 Specific Cond.
SP2-3	–	–	380	–	458	408	(a)
SP2-4	–	–	400	–	–	379	(d)
SP2-5	–	–	410	–	–	428	(d)
SP2-6	–	–	410	–	–	426	(a)
SP2-7	–	–	410	–	–	353	(d)
SP2-8	–	–	(a)	–	–	333	419
SP2-9	–	–	250	270	234	350	301
SP2-10	–	–	300	–	–	(a)	(d)
SP2-11	–	–	270	–	–	266	(d)
SP2-12	–	–	(a)	–	–	387	(d)
SP2-13	–	–	230	–	–	135	(c)
SP2-14	–	–	200	–	–	(a)	(c)
SP2-15	–	–	210	–	–	162	(c)
SP2-16	–	–	(a)	(b)	–	(a)	(c)
SP2-17	–	–	210	(b)	–	(c)	(c)
SP2-18	–	–	(a)	(b)	–	(a)	(c)
SP2-19	–	–	(a)	(b)	–	(a)	(c)
SP2-20	–	–	(a)	(b)	–	(a)	(c)
SP2-21	–	–	320	(b)	–	(a)	(c)
SP2-22	–	–	350	(b)	–	(a)	(c)
SP2-22a	–	–	–	–	–	304	(c)
SP2-23	–	–	290	(b)	–	(a)	(c)
SP2-24	–	–	310	(a)	360	276	351

Field Number	JUNE 85 Specific Cond.	OCT. 85 Specific Cond.	JULY 87 Specific Cond.	OCT. 87 Specific Cond.	OCT. 89 Specific Cond.	JUNE 90 Specific Cond.	OCT./NOV 90 Specific Cond.
SP2–24a	–	–	–	–	(a)	216	(d)
SP2–24b	–	–	–	–	–	222	(d)
SP2–25	–	–	(a)	(a)	–	(a)	(d)
SP2–26	–	–	(a)	–	–	297	(b)
SP2–27	–	–	440	380	410	360	(b)
SP2–28	–	–	400	380	328	390	435
SP2–29	–	–	410	–	(a)	380	(c)
SP2–30	–	–	370	380	413	428	(c)
SP2–30a	–	–	–	–	–	359	(c)
SP2–31	–	–	390	(a)	(a)	419	(b)
SP2–32	–	–	410	350	(a)	392	(b)
SP2–32a	–	–	–	–	–	(a)	(b)
SP2–32b	–	–	–	–	–	409	(b)
SP2–33	–	–	410	–	(a)	421	(b)
SP2–33a	–	–	450	430	421	432	466
SP2–34	–	–	320	–	–	267	(b)
SP2–35	–	–	360	340	350	279	(c)
SP2–36	–	–	(a)	–	–	(a)	(c)
SP2–36a	–	–	–	–	–	319	(c)
SP2–36b	–	–	–	–	–	333	(c)
SP2–37	–	–	390	–	377	306	(c)
SP2–38	–	–	410	–	(a)	321	(c)
SP2–39	–	–	370	–	–	(a)	(c)

Field Number	JUNE 85 Specific Cond.	OCT. 85 Specific Cond.	JULY 87 Specific Cond.	OCT. 87 Specific Cond.	OCT. 89 Specific Cond.	JUNE 90 Specific Cond.	OCT./NOV 90 Specific Cond.
SP2–40	–	–	440	–	–	(a)	(c)
SP2–40a	–	–	–	–	–	361	(c)
SP2–40b	–	–	–	–	–	(a)	(c)
SP2–41	–	–	440	(a)	(a)	(a)	(c)
SP2–42	–	–	–	–	(a)	310	343
SP2–43	–	–	–	–	(a)	380	294
SP2–43a	–	–	–	–	–	435	353
SP2–44	–	–	–	–	(a)	380	(b)
SP2–44a	–	–	–	–	–	461	(b)
SP2–44b	–	–	–	–	–	459	(b)

(a) Insufficient water to sample.
(b) Frozen.
(c) Inaccessible due to weather and ground conditions.
(d) Dry.

Specific conductance (umhos/cm @ 25 C) of the seep and springs in the coal leases and adjacent areas in 1991.

Field Number	JUNE 91 Specific Cond.	OCT/NOV 91 Specific Cond.
SP-7	d	d
SP-8	176	428
SP-9	SEEP	d
SP-10	SEEP	354
SP-11	202	a
SP-12	SEEP	d
SP-13	SEEP	a
SP-14	301	360
SP-14a	259	c
SP-14b	d	c
SP-43	d	d
SP-44	d	d
SP-45	d	d
SP-46	d	d
SP-47	d	d
SP-47a	368	345
SP-48	342	d
SP-48a	362	d
SP-48b	d	d
SP-49	a	d
SP-50	381	d
SP-51	d	d

Field Number	JUNE 91 Specific Cond.	OCT/NOV 91 Specific Cond.
SP-52	337	602
SP-53	536	d
SP-54	333	550
SP-55	314	a
SP-56	512	483
SP-57	d	d
SP-57a	331	c
SP-58	318	481
SP-59	d	d
SP-60	d	c
SP-61	d	c
SP-62	d	c
SP-63	458	c
SP-64	451	c
SP1-1	1740	384
SP1-2	a	341
SP1-2a	314	291
SP1-2b	219	d
SP1-3	304	b
SP1-3a	191	d
SP1-4	326	456
SP1-4a	376	a
SP1-4b	–	a

Field Number	JUNE 91 Specific Cond.	OCT/NOV 91 Specific Cond.
SP1–5	a	a
SP1–6	150	316
SP1–7	282	498
SP1–8	299	c
SP1–9	164	a
SP1–10	d	a
SP1–10a	259	458
SP1–10b	320	d
SP1–11	265	a
SP1–12	320	b
SP1–13	a	a
SP1–13a	a	c
SP1–13b	156	c
SP1–14	d	c
SP1–15	251	d
SP1–16	338	d
SP1–16a	316	d
SP1–17	332	321
SP1–17a	a	381
SP1–18	287	d
SP1–18a	–	275
SP1–19	341	d
SP1–20	250	d

1992 SPECIFIC CONDUCTANCE (umhos/cm @ 25 C) MEASUREMENTS
COLLECTED DURING SEEP AND SPRING SURVEYS
CONDUCTED IN THE LBA #9 AREA

Spring/Seep Number	JUNE 1992 Specific Conductance
SP1-1	247
SP1-2	a
SP1-4a	564
SP1-4a(1)	a
SP1-4b(1)	a
SP1-4c	a
SP1-13c	a
SP1-33	a
SP1-34	a
SP1-35	a
SP1-36	a
SP1-37	a
SP1-37a	a
SP1-37b	a
SP1-38	a
SP1-38a	a
SP1-39	a
SP1-40	433
SP1-40a	399
SP1-41	a
SP1-41a	a

1992 SPECIFIC CONDUCTANCE (umhos/cm @ 25 C) MEASUREMENTS
COLLECTED DURING SEEP AND SPRING SURVEYS
CONDUCTED IN THE LBA #9 AREA

Spring/Seep Number	JUNE 1992 Specific Conductance
SP1-42	379
SP1-42a	a
SP1-43	a
SP1-43a	a
SP1-44	a
SP1-45	a
SP1-45a	a
SP1-46	a
SP1-47	a
SP2-1	411
SP2-2	401
SP2-2a	a
SP2-3	389
SP2-3a	a
SP2-3b	397
SP2-4	a
SP2-5	a
SP2-6	a
SP2-7	a
SP2-8	a
SP2-18	a
SP2-19	473

1992 SPECIFIC CONDUCTANCE (umhos/cm @ 25 C) MEASUREMENTS
COLLECTED DURING SEEP AND SPRING SURVEYS
CONDUCTED IN THE LBA #9 AREA

Spring/Seep Number	JUNE 1992 Specific Conductance
SP2-20	266
SP2-21	383
SP2-21a	a
SP2-21b	a
SP2-22	402
SP2-22a	387
SP2-23	305
SP3-2	a
SP3-3	a
SP3-4	255
SP3-5	a
SP3-6	a
SP3-7	447
SP3-8	129
SP3-9	a
SP3-10	423
SP3-10a	a
SP3-10b	a
SP3-11	358
SP3-12	a
SP3-13	481
SP3-13a	288

1992 SPECIFIC CONDUCTANCE (umhos/cm @ 25 C) MEASUREMENTS
COLLECTED DURING SEEP AND SPRING SURVEYS
CONDUCTED IN THE LBA #9 AREA

Spring/Seep Number	JUNE 1992 Specific Conductance
SP3-13b	a
SP3-16	a
SP3-16a	a
SP3-16b	424
SP5-1	316
SP5-1a	a
SP6-1	98
SP6-2	393
SP6-3	351
SP6-3a	322
SP6-4	a
SP6-5	a
SP6-9	a
SP6-10	a
SP6-11	426
SP6-11a	542

1992 SPECIFIC CONDUCTANCE (umhos/cm @ 25 C) MEASUREMENTS
COLLECTED DURING SEEP AND SPRING SURVEYS
CONDUCTED IN THE LBA #9 AREA

Spring/Seep Number	JUNE 1992 Specific Conductance
SP6–11b	401
SP6–12	481
SP6–13	a
SP6–13a	a
SP6–13b	280
SP6–13c	a
SP6–13d	a
SP6–14	a
SP6–15	a
SP6–15a	541
SP6–15b	532
SP6–16	a
SP7–1	a
SP7–2	a
SP7–3	704

(a) Insufficient water to sample
(b) Frozen
(c) Inaccessible due to ground/weather conditions