

TABLE 2.6-4

RESERVOIRS AND STOCK PONDS
SOUTH HEART LIGNITE MINE

Reservoir/ Pond	Twp	Rng	Sec	Water Quality Samples Collected?	Type	Land Owner	Use	Developed Water Resource Surface Area in June 2006 (acres)	Volume (acre-ft)	Comment	Probable Impacts from Mining and Year	Year of Disturbance or Closest Distance to Mine Open Mine Pit	Probable Hydrologic Reclamation Action
SHRES-14	139	98	14	No	Impoundment	Perdaems, James D. and Rosella J.	Stock	na	na	Dry	None	na	None
SHRES-15	139	98	15	No	Impoundment	Mary Peters, et al	Stock	na	na	Dry	Mined through in 2023	2023	Water replacement consistent with post-mining land use
SHRES-16A	139	98	16	Yes	Impoundment	Mary Peters, et al	Stock	0.05	0.006		Mined through in 2035	2035	Water replacement consistent with post-mining land use
SHRES-16B	139	98	16	Yes	Impoundment	Mary Peters, et al	Stock	0.36	0.017		Mined through in 2032	2032	Water replacement consistent with post-mining land use
SHRES-16C	139	98	16	Yes	Impoundment	Mary Peters, et al	Stock	0.46	0.019		Mined through in 2033	2033	Water replacement consistent with post-mining land use
SHRES-16D	139	98	16	Yes	Impoundment	Kuylen, Robert F. and Brenda K.	Stock	0.46	0.019		Mined through in 2036	2036	Water replacement consistent with post-mining land use
SHRES-17	139	98	17	Yes	Impoundment	Kuylen, Robert F. and Brenda K.	Stock	0.35	0.017		Mined through in 2037	2037	Water replacement consistent with post-mining land use
SHRES-17A	139	98	17	Yes	Impoundment	Kuylen, Robert F. and Brenda K.	Stock	0.23	0.014		None		None
SHRES-17B	139	98	17	No	Impoundment	Kuylen, Robert F. and Brenda K.	Stock	na	na	Dry	Within less than 1000 ft of pit boundary 2043	2043	Possible water replacement consistent with post-mining land use
SHRES-17C	139	98	17	No	Impoundment	Kuylen, Robert F. and Brenda K.	Stock	na	na	Dry	Within less than 1000 ft of pit boundary 2043	2043	Possible water replacement consistent with post-mining land use
SHRES-17D	139	98	17	No	Impoundment	Kuylen, Robert F. and Brenda K.	Stock	na	na	Dry	Within less than 1000 ft of pit boundary 2043	2043	Possible water replacement consistent with post-mining land use
SHRES-20A	139	98	20	No	Excavation	Western Area Power Authority	Stormwater	0.68	0.023	Stormwater retention pond; not sampled due to access	None	na	None
SHRES-20B	139	98	20	No	Excavation	Western Area Power Authority	Stormwater	0.74	0.024	Stormwater retention pond; not sampled due to access	None	na	None

Notes:

Reservoir use is based on observations, discussions with land owners, and land use

All potential reservoirs were initially identified from aerial photographs taken in June 2006; supplemental ground surveys occurred in September and October 2006 and May 2007 to identify reservoirs that actively hold water

Water quality results are presented in Appendix 2.6-4

Developed water resource areas were estimated from aerial photographs taken in June 2006 when reservoirs are assumed to contain nearly maximum volume due to precipitation and runoff

Volumes of reservoirs observed to hold water were estimated by assuming the shape of the reservoir is approximated by one half an oblate spheroid with an equatorial radius estimated from the area and a polar radius of 5 ft. The polar radius is estimated from field observations of livestock in the pools and likely represents a maximum depth.

Years of probable impacts and disturbance assume mining begins in 2014

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SHRES-21A	139	98	21	Yes	Impoundment	Kuylen, Robert F. and Brenda K.	Stock	na	na	Dry	Mined through in 2020	2020	Water replacement consistent with post-mining land use
SHRES-21B	139	98	21	No	Impoundment	Kuylen, Robert F. and Brenda K.	Stock	0.35	0.017		Mined through in 2035	2035	Water replacement consistent with post-mining land use
SHRES-22	139	98	22	Yes	Excavation	Perdaems, James D. and Rosella J.	Stock	0.59	0.022		Within less than 1000 ft of pit boundary 2021	2021	Possible water replacement consistent with post-mining land use
SHRES-22A	139	98	22	No	Impoundment	Perdaems, Jerry F. and Sandra M.	Stock	na	na	Dry	Within less than 1000 ft of pit boundary 2015	2015	Possible water replacement consistent with post-mining land use
SHRES-22B	139	98	22	No	Excavation	Perdaems, James D. and Rosella J.	Stock	0.21	0.013	Active feedlot	Within less than 1000 ft of pit boundary 2022	2022	Possible water replacement consistent with post-mining land use
SHRES-23	139	98	23	Yes	Impoundment	Perdaems, James D. and Rosella J.	Stock	0.32	0.016		None	na	None
SHRES-23A	139	98	23	Yes	Excavation	Perdaems, James D. and Rosella J.	Stock	0.23	0.014		None	na	None
SHRES-27	139	98	27	Yes	Impoundment	Kuylen, Patrick; Kuylen, Katherine R.	Stock	0.10	0.009		Mined through in 2040	2040	Water replacement consistent with post-mining land use
SHRES-27A	139	98	27	No	Impoundment	Kuylen, Patrick; Kuylen, Katherine R.	Stock	na	na	Dry	Mined through in 2039	2039	Water replacement consistent with post-mining land use
SHRES-28	139	98	28	Yes	Excavation	Kuylen, Patrick; Kuylen, Katherine R.	Stock	0.32	0.016		Within less than 1000 ft of pit boundary 2017	2017	Possible water replacement consistent with post-mining land use
SHRES-3	138	98	3	No	Impoundment	Luptak, Raymond and Vivian	Stock	0.39	0.018		None	na	None
SHRES-34	139	98	34	Yes	Excavation	Emmil, Leocadia Family Trust	Stock	0.32	0.016		None	na	None

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