

Selection Criteria for Sedimentation Ponds that may be Transitioned to Permanent Impoundments for a Reclaimed Surface Mine in the Southwest USA¹

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Abstract: An important aspect of post-mining closure activities is the determination of suitable sedimentation ponds that can be converted to permanent impoundments for a grazing and wild-life-habitat post-mining land use. During the final reclamation at a large surface coal mine in the arid southwest USA there were many sedimentation ponds that had been in place to facilitate mining activities that were desired for retention by the post-mining land user. Before a sediment pond could be converted to a permanent impoundment, an evaluation was conducted to ensure that the structure met all regulatory requirements and could support the intended post mining land use while requiring minimal maintenance for the landowner. The selection criteria included: a water quality assessment, water quantity and capacity evaluation, sediment accumulation rate assessment, and an impoundment structure-stability assessment. While not all sediment ponds were found suitable for conversion to permanent impoundments after the evaluation, the impoundments that were selected will provide important water resources for grazing, and opportunities for wildlife enhancements to be created in the final reclamation plan.

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