

# Mitigation of the Rock Springs No. 9 Mine Below Pipeline Utility Corridor<sup>1</sup>

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**Abstract:** The Rock Springs Coal Mining District is characterized by extensive underground coal mines. Numerous reclamation projects have been completed by the Wyoming Department of Environment Quality, Abandoned Mine Land Program (AML) to address hazards posed by shallow underground mine workings. The Rock Springs Coal Mining District is located near and in Rock Springs, Wyoming in Sweetwater County. The historic coal mines were crucial for the development of the Union Pacific's transcontinental railway and development of the western United States. The Rock Springs No. 9 mine was crossed by a utility corridor containing 3 high pressure interstate gas and petroleum pipelines. The mine voids were as shallow as 30' from the surface and posed a risk to the critical infrastructure due to subsidence collapse. In addition, a large underground mine fire to the south of the corridor had begun to burn beneath the pipelines. The Wyoming AML program responded by applying lessons learned on past projects utilizing drilling and grouting techniques to stabilize shallow underground mine voids and extinguish underground coal mine fires to mitigate subsidence hazards, extinguish the fire beneath the gas pipelines, and prevent the spread of the fire to the north along outcrop. Special operating procedures were developed in conjunction with the pipeline operators to ensure the safe completion of the work adjacent to the high-pressure pipelines. The reclamation of the Rock Springs No. 9 Mine utility corridor was a rewarding and challenging project for the Wyoming Abandoned Mine Land Program, and mitigated hazards due to past mining practices through the use of multiple methods. The long-term benefits of this project to the include preventing the spread of underground coal mine fire and final stabilization and mitigation of mine voids to prevent damage to critical public infrastructure.

**Additional Key Words:** Drilling and grouting, subsidence mitigation, mine fire, pipeline.

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