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Trusted to help mitigate risk

PROJECT BRIEF

# The Colony
# White Pine Canyon

## PROJECT PROFILE

CLIENT:
Iron Mountain Associates (IMA)

LOCATION:
Park City, UT

VALUE:
- Identify and manage client risk
- Calculated remaining service life through realistic uncertainty quantification
- Recommended targeted remediation areas resulting in cash savings

SERVICES PROVIDED:
- Field investigations and laboratory testing
- Reliability analysis
- Statistical analysis
- Remedial design
- Active Risk Management®
- Construction quality assurance

"Technically viable rehabilitation solutions and costs were developed and a phased program for the required near term and furture rehabilitation was prepared for the client."

## FIELD AND LABORATORY INVESITGATIONS TO DETERMINE PROJECTED SERVICE LIFE

Geocomp was retained to determine the extent and impact of corrosion on the steel reinforcements for the service life of the MSE structures. This included a series of field and laboratory investigations (including forensic deconstruction of a number of structures) that were conducted over a five year period. An extensive data set of reinforced fill soils was developed and a regression analysis of the data set and other statistical techniques were used to establish a loss rate model. This provided the basis to perform reliability analyses and predict remaining service life of all structures. Predicted corrosion degredation rates were confirmed through use of monitoring methods, including sample retrievals and non-destructive testing. Technically viable rehabilitation solutions and costs were developed and a phased program for the required near term and future rehabilitation was prepared for the client.

## BACKGROUND

The montainous terrain of The Colony posed a significant challenge to infrastructure construction on this popular ski slope. Mechanically stabilized earth (MSE) retaining walls were used and consisted of welded wire for face elements and primary reinforcement. Unfortunetely, intrusion of deicing salts placed on the roads in the winter led to accleration of the metallic grid reinforcement in most of the walls. As a result of the accelerated corrosion, it was recognized that the service life of the walls would be lower than that for which they had been designed.