

Client Contact:
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- Services Provided:**
- **Geologic Hazards Assessment**
 - **Preliminary Geotechnical Study**
 - **Laboratory Testing**
 - **Construction Materials Testing**

Project Summary:

Cesare, Inc. (Cesare) conducted a geologic hazards assessment and preliminary geotechnical study of a 266-acre parcel on the south side of Green Mountain in western Lakewood. The western two-thirds of the site lies within the Jefferson County Designated Dipping Bedrock Area. Potential geologic hazards, in addition to the steeply dipping bedrock, consisted of expansive soils/bedrock, unstable soils and slope stability, subsidence from coal and clay mining, and erodible soils.

During the geotechnical study, 50 auger test holes were drilled and 9 test pits excavated. Laboratory tests included swell/consolidation, grain size distribution, Atterberg limits, moisture content, dry density, standard Proctor, and remolded swell/consolidation.

Mitigation to lessen the risk of differential heave and expansion from clay and claystone was required on the site. Subexcavation, moisture conditioning, and recompaction of the excavated materials back into place were recommended. Recommendations were made for excavation, fill placement, foundations, floors, underground utilities, pavements, surface drainage, and subsurface drainage.

During construction Cesare conducted construction materials testing of utility trench backfill, lime stabilization, pond embankments, curb and gutter, sidewalk, and asphalt pavements. Cesare worked closely with the client, contractors, and other design engineers to achieve the overall quality of the design and construction.

