United States
Department of
Agriculture

Forest Service

White River
National Forest
Aspen Sopris
Ranger District

July 2020

Aspen-Sopris Ranger District Office

Specifications

Volume 3 of 3

APPENDIX A

Geotechnical Report

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Geotechnical Engineering Report

Proposed Aspen-Sopris District Office & Work Compound Site Development
Carbondale Site
Carbondale, Colorado

June 29, 2018
Terracon Project No. 25185026

Prepared for:
Chamberlin Architects
Grand Junction, Colorado

Prepared by:
Terracon Consultants, Inc.
Wheat Ridge, Colorado

June 29, 2018

Chamberlin Architects
12345 Street Name
Grand Junction, Colorado 81501

Attn: Mr. Daniel Gartner
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Re: Geotechnical Engineering Report
Proposed Aspen-Sopris District Office & Work Compound Site Development
Carbondale Site
620 Main Street
Carbondale, Colorado
Terracon Project No. 25185026

Mr. Gartner:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. P25185026 dated February 5, 2018. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations, floor slabs and pavements for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

COLORADO REGISTERED WILLIAM D. RETHAMEL 36508 6/29/18 PROFESSIONAL ENGINEER

William D. Rethamel, P.E.
Senior Project Engineer

Scott B. Myers, P.E.
Geotechnical Department Manager

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Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the Terracon GeoReport logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES
SITE LOCATION AND EXPLORATION PLANS
EXPLORATION RESULTS (Boring Logs and Laboratory Data)
SUPPORTING INFORMATION (General Notes and Unified Soil Classification System)

REPORT SUMMARY

A geotechnical engineering exploration has been prepared for the proposed Aspen-Sopris District Office & Work Compound Site Development at the Carbondale Site, located at 620 Main Street in Carbondale, Colorado. Based on the information obtained from this subsurface exploration and the laboratory testing completed, the site appears suitable for the proposed construction; however, the following geotechnical conditions will need to be considered:

- Up to about 2 feet of fill materials were encountered in some of the borings drilled for this exploration. It is our opinion the existing fill should not be used to support foundation, interior slab, pavement or exterior slab construction without complete removal and modification. Support of pavement construction and exterior slab construction on the existing fill materials can be considered, provided a portion of the existing fill materials are overexcavated, processed, moisture conditioned and recompacted and some movement can be tolerated.

- Laboratory testing indicates the native sand and gravel soils have nil expansive potential. Based on our experience with similar conditions, the clay fill materials and native clay soils are anticipated to have nil to low expansive potential. The sandstone bedrock is considered essentially non-expansive.

- Based on the geotechnical engineering analyses, the proposed buildings may be constructed on spread footing or mat foundations bottomed on native soils or new engineered fill, provided all existing fill materials are removed and provided the owner is willing to accept the associated risk of movement.

- Based on the properties of the subsurface materials, the floor system for the proposed buildings may consist of slabs-on-grade constructed on native soils or new engineered fill, provided the owner is willing to accept the risk of movement.

- Based on the 2015 International Building Code, Section 1613.3.2, the seismic site classification for this site is C.

- Existing fill materials may be encountered at exterior flatwork and pavement construction elevation. Construction of exterior flatwork and pavements on new engineered fill is recommended to improve performance.

- The amount of movement associated with foundations, floor slabs, slabs-on-grade, etc. will be related to the wetting of the underlying soils and bedrock. Therefore, it is imperative the recommendations outlined in the **Grading and Drainage** section of this report be followed to reduce potential movement. Moisture conditioning and/or replacement of the

on-site fill materials and/or native soils and bedrock should follow the recommendations outlined in the **Earthwork** section of this report.

This summary should be used in conjunction with the entire report for design purposes. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein. The section titled **GENERAL COMMENTS** should be read for an understanding of the report limitations.

Geotechnical Engineering Report

Proposed Aspen-Sopris District Office & Work Compound Site Development

Carbondale Site

620 Main Street

Carbondale, Colorado

Terracon Project No. 25185026

June 29, 2018

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed Aspen-Sopris District Office & Work Compound Site Development at the Carbondale Site to be located at 620 Main Street in Carbondale, Colorado. Results for the geotechnical study at the Rose Lane site are reported under a separate cover.

As part of our subsurface exploration, three borings (designated as Boring Nos. 1 to 3) were drilled at the site to depths of about 15 to 21 feet below existing site grade. Practical drilling refusal occurred in all three borings at the depths indicated. Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs in the **Exploration Results** section of this report.

The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil and bedrock conditions
- Groundwater levels
- Earthwork
- Drainage
- Lateral earth pressures
- Seismic site classification
- Foundation design and construction
- Floor slab design and construction
- Pavement design and construction

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Location	The proposed development at the Carbondale Site will be located at 620 Main Street in Carbondale, Colorado. The site is about 1.2 acres in size. The general location of the proposed project is 39.4001° N 107.2132° W. The general vicinity is shown in the **Site Location** section.
Existing improvements	The Carbondale Site consists of a developed ranger station with five, one-story buildings, specifically, an office building, an engineer's office, a garage, a warehouse, and a storage building. It is our understanding some of the buildings have basement areas.
Current ground cover	The ground cover at the Carbondale Site consists primarily of asphalt and gravel-paved parking areas and access drives and concrete ramps and sidewalks, with areas of landscaping consisting of irrigated grasses and trees.
Existing topography	Based on a provided topographic survey, the site is relatively flat with an elevation difference of about 3 feet.

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed in the project planning stage, and our final understanding of the project conditions is as follows:

Item	Description
Proposed construction	We understand the existing buildings will be demolished and removed from the Carbondale site. We were informed development at the site may include an office, a warehouse and seasonal and transitional housing for employees. We understand the office building will include about 7,016 square feet of area and the remaining developments will be about 57,560 square feet of area. We anticipate no below-grade areas are planned. We understand the project will also include access drives and parking areas for visitors and employees at the site. We assume the majority of these areas will be asphalt-paved, but rigid (concrete) pavements may be included in some areas.
Building construction	We assume the proposed development will be one or two story structures consisting of cast-in-place concrete foundations with wood or light metal framed superstructures. We assume the office and housing buildings will utilize wood or concrete masonry exterior wall treatments, while the warehouse building may have a metal skin or concrete masonry exterior. We assume concrete slab-on-grade floors are desired.

Item	Description
Anticipated foundation systems	Spread footings or mat foundations
Below grade areas	None anticipated
Maximum Loads (all values assumed)	■ Columns: 20 to 100 kips ■ Walls: 2 to 4 kips per linear foot (klf) ■ Slabs: 150 to 250 pounds per square foot (psf)
Grading	Cut and fill, 3 feet (+/-) max (assumed)
Excavation depth	3 feet (assumed)
Free-standing retaining walls	None indicated
Infrastructure	We assume both rigid (concrete) and flexible (asphalt) pavement sections will be considered. Please confirm this assumption. Anticipated traffic is as follows: ■ Autos/light trucks: 100 vehicles per day ■ Light delivery and trash collection vehicles: 2 vehicles per week ■ Tractor-trailer trucks: <1 vehicle per week The pavement design period is 20 years. New pavements will likely consist of flexible asphalt and rigid concrete pavement. We anticipate installation of underground utilities within about 5 to 8 feet of finished site grades.

GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface soil and groundwater conditions based upon our review of the data and our understanding of the geologic setting and planned construction. The following sections provide our geotechnical characterization.

The geotechnical characterization forms the basis of our geotechnical calculations and evaluation of site preparation, foundation options and pavement options. As noted in **General Comments**, the characterization is based upon widely spaced exploration points across the site, and variations are likely.

Geology

Surficial geologic conditions at the site, as mapped by the Colorado Geological Survey (CGS) ([1]Kirkham and Widmann, 2008), consist of stream channel, flood-plain and low terrace deposits

[1]Kirkham, R.M., and Widmann, B.L., 2008, ***Geologic Map of Carbondale Quadrangle, Garfield, County, Colorado***, Colorado Geological Survey, Map MS-36.

of the Holocene and late Pleistocene Ages. The material is described as poorly sorted, clast-supported gravel in a sandy or silty matrix. The thickness was not indicated. The soils are underlain by Eagle Valley Evaporite formation of the middle Pennsylvanian period. This material is described as an evaporitic sequence of gypsum, anhydrite and halite interbedded with marine mudstone, sandstone, thin carbonate beds and black shale. The thickness of the bedrock is not indicated on the map.

According to mapping by CGS by White[2] (2002), the project site is located in an area with evaporite bedrock. Evaporite rocks are soluble in water and near-surface voids and loose rubble zones can form through dissolution. Settlement and collapse of the ground surface into these subsurface voids can create ground depressions and sinkholes, known collectively as karst landforms. The map also indicates there are areas of surface karst features near the site that could include localized ground depressions, caverns, and sinkholes that have formed from the dissolution of evaporite rock. The map indicates the nearest known subsidence features are about one mile away.

The geologic conditions presented in this section were obtained by locating the subject site on available large-scale geologic maps. Due to the scales involved, precise location of the site can be difficult to determine. In addition, the large-scale geologic maps describe only general trends. Local variations are possible and site specific geology may differ from those described above. A site-specific detailed geologic description and geological hazard assessment are beyond the scope of this project.

Typical Profile

Based on the results of the borings for this exploration, subsurface conditions on the site can be generalized as follows:

Material Description	Approximate Depth to Bottom of Stratum below Existing Site Grade	Consistency/ Relative Density/ Hardness
Topsoil	About 6 inches, encountered in Boring Nos. 1 and 2 only.	N/A
Apparent aggregate base course	About 3 inches, encountered in Boring No. 3 only.	N/A

[2]White, J.L., 2002, ***Collapsible Soils and Evaporite Karst Hazards Map of the Roaring Fork River Corridor, Garfield, Eagle, and Pitkin Counties, Colorado***, United States Geological Survey, Map MF-34.

Material Description	Approximate Depth to Bottom of Stratum below Existing Site Grade	Consistency/ Relative Density/ Hardness
Existing fill consisting of lean clay with varying amounts of sand	About 1 to 2 feet, encountered in Boring Nos. 1 and 2 only.	Variable
Native soil consisting of lean clay with varying amounts of sand and gravel, and sand with varying amounts of clay, silt, gravel and cobble	About 11 to 13 feet	Clay: hard Sand: medium dense to very dense
Bedrock consisting of sandstone	About 15 to 21 feet, Maximum depth explored in remaining borings. Practical refusal occurred in all three borings at the depths indicated.	Very hard

Stratification boundaries on the boring logs represent the approximate location of changes in soil and material types; in-situ, the transition between materials may be gradual. Further details of the borings can be found on the Boring Logs in the **Exploration Results**.

Laboratory testing indicates the native sand and gravel soils have nil expansive potential. Based on our experience with similar conditions, the clay fill materials and native clay soils are anticipated to have nil to low expansive potential. The sandstone bedrock is considered essentially non-expansive. A summary of laboratory test results is included in the **Exploration Results**.

Groundwater Conditions

The borings were observed while drilling for the presence and level of groundwater. The water levels observed in the boreholes can be found on the boring logs in **Exploration Results**, and are summarized below.

Boring No.	Shallowest depth to groundwater encountered while or upon completion of drilling*
1	None encountered
2	None encountered

Boring No.	Shallowest depth to groundwater encountered while or upon completion of drilling*
3	None encountered

* Due to safety concerns, borings were backfilled immediately after completion. Therefore, subsequent groundwater measurements were not obtained.

These observations represent groundwater conditions at the time of the field exploration, and may not be indicative of other times or at other locations. Groundwater levels can be expected to fluctuate with varying seasonal and weather conditions.

Zones of perched and/or trapped groundwater may also occur at times in the subsurface soils overlying bedrock, on top of the bedrock surface or within permeable fractures in the bedrock materials. The location and amount of perched water is dependent upon several factors, including hydrologic conditions, type of site development, irrigation demands on or adjacent to the site, fluctuations in water features, seasonal and weather conditions.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed. Groundwater levels during construction or at other times in the life of the structures may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

GEOTECHNICAL OVERVIEW

Based on subsurface conditions encountered in the borings, the site appears suitable for the proposed construction from a geotechnical point of view provided certain precautions and design and construction recommendations outlined in this report are followed. We have identified geotechnical conditions that could impact design and construction of the proposed buildings and other site improvements.

Existing Fill Materials

Up to about 2 feet of fill materials were encountered in portions of the site. It should be noted that fill depths presented in the boring logs are approximate and the depth and composition of fill should be expected to vary. We do not possess any information regarding whether the fill was placed under the observation of a geotechnical engineer.

Based upon the results of our field exploration and laboratory testing, it is our opinion the existing fill should not be used to support foundations, interior slabs, exterior slabs-on-grade or pavement construction without complete removal and modification.

If the owner is willing to accept a higher risk of movement for pavements and exterior slabs, consideration could be given to overexcavating a portion of the existing fill materials below these elements, then processing, moisture conditioning and compacting the materials back to subgrade elevation.

It should be noted that there exists the potential for construction debris and/or domestic trash to be encountered within the fill on some portions of the site. The potential for encountering construction debris and domestic trash is considered to be low. The fill materials should be observed for the presence of trash and debris during site grading and construction.

The existing fill can be reused as engineered fill below slabs-on-grade and pavements, provided any deleterious materials are removed and some movement can be tolerated. Some removal and replacement may be required if unsuitable or soft materials are exposed.

Existing Structures

The existing buildings and flatwork will be demolished and removed prior to construction of the new buildings. All existing foundations, utilities and all deleterious fill should be removed during demolition operations. All materials derived from the demolition of the existing foundations and exterior flatwork should be removed from the site and should not be allowed for use in any on-site fills, unless the materials are properly processed and meet the criteria presented in the **Material Types** section of this report.

EARTHWORK

The following presents recommendations for site preparation, excavation, subgrade preparation and placement of engineered fills on the project. All earthwork on the project should be observed and evaluated by Terracon.

Site Preparation

Strip and remove existing pavements, demolition debris, vegetation, organics and other deleterious materials from proposed building and pavement areas. All exposed surfaces should be free of mounds and depressions that could prevent uniform compaction.

Stripped materials consisting of vegetation, unsuitable fills and organic materials should be wasted from the site or used to revegetate landscaped areas or exposed slopes after completion of grading operations.

Where possible, the site should be initially graded to create a relatively level surface to receive fill and to provide for a relatively uniform thickness of fill beneath the proposed structures. All exposed areas that will receive fill, once properly cleared, should be scarified to a minimum depth of 12 inches, conditioned to near optimum moisture content and compacted. It is imperative the moisture content of prepared materials be protected from moisture loss.

Although evidence of underground facilities such as grease pits and septic tanks was not observed during our exploration, such features could be encountered during construction. If unexpected fills or underground facilities are encountered, such features should be removed and the excavation thoroughly cleaned prior to backfill placement and/or construction.

It is anticipated that excavations for the proposed construction can be accomplished with conventional earthmoving equipment. However, heavy-duty construction equipment may be necessary when excavating into cobbles and sandstone bedrock.

Depending upon depth of excavation and seasonal conditions, groundwater may be encountered in excavations on the site. Groundwater seeping into excavations at this site could most likely be controlled by shallow trenches leading to a sump pit where the water could be removed by pumping.

Where unstable conditions develop during construction, workability may be improved by overexcavation of wet zones and mixing these soils with crushed gravel or recycled concrete and recompaction.

The stability of subgrade soils may be affected by precipitation, repetitive construction traffic or other factors. If unstable conditions are encountered or develop during construction, workability may be improved by overexcavation of wet zones and mixing these soils with crushed gravel. Use of geotextiles could also be considered as a stabilization technique. Lightweight excavation equipment may be required to reduce subgrade pumping.

Material Types

Fill for this project should consist of engineered fill. Engineered fill is fill that meets the criteria presented in this report and has been properly documented.

Engineered fill should meet the following material property requirements:

Fill Type [1]	USCS Classification	Acceptable location for placement
On-site sand and gravel soils	SM, SC, GC-GM	On-site sand and gravel soils are considered suitable for reuse as compacted fill below foundation, slab and pavement areas and as general backfill for this project.
On-site clay soils mixed with sand and gravel soils[3]	CL	On-site clay soils mixed with sand and gravel soils are considered suitable for reuse as compacted fill below foundation, slab and pavement areas and as general backfill for this project.
Processed demolition debris (asphalt and concrete)	--	Properly processed asphalt and concrete is considered suitable for reuse as compacted fill below foundation, slab and pavement areas, provided the materials are processed and blended with on-site soils.
Imported soils	Varies	Imported soils meeting the gradation outlined herein can be considered acceptable for use as engineered fill beneath slabs and pavements.

1. Controlled, compacted fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the geotechnical engineer for evaluation.
2. Care should be taken during the fill placement process to avoid zones of dis-similar fill. Improvements constructed over varying fill types are at a higher risk of differential movement compared to improvements over a uniform fill zone.
3. On-site clay soils should be mixed with on-site sand and gravel soils to meet the gradation requirements outlined below for imported soils.
4. Demolition debris (asphalt and concrete) should be processed to maximum individual particle size of 3 inches and blended with on-site soils prior to reuse at a ratio of 50 percent asphalt or concrete debris to 50 percent soil.

Imported soils for engineered fill (if required) should meet the following material property requirements:

Gradation	Percent finer by weight (ASTM C136)
3”	100
No. 4 Sieve	50-100
No. 200 Sieve	< 35

- Liquid Limit……30 (max)
- Plasticity Index……..15 (max)
- Maximum Expansive Potential (%)……...0.5*

*Measured on a sample compacted to approximately 95 percent of the ASTM D698 maximum dry density at optimum water content. The sample is confined under a 200 psf surcharge and submerged.

Compaction Requirements

Engineered fill should be placed and compacted in horizontal lifts, using equipment and procedures that will produce recommended moisture contents and densities throughout the lift.

Item	Description
Fill lift thickness	8-inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6-inches in loose thickness when hand-guided equipment (e.g. jumping jack, plate compactor) is used
Compaction requirements [1]	Minimum of 98% of the material's standard Proctor maximum dry density (ASTM D698).
Moisture content cohesive soils (sand and gravel soils and on-site clays mixed with sand and gravel soil)	-2 to +2 % of the optimum moisture content

1. We recommend that engineered fill be tested for water content and compaction during placement. Should the results of the in-place density tests indicate the specified water or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified water and compaction requirements are achieved.
2. Water levels should be maintained low enough to allow for satisfactory compaction to be achieved without the compacted fill material pumping when proofrolled.
3. Moisture conditioned clay soils should not be allowed to dry out. A loss of moisture within these materials could result in an increase in the materials expansive potential. Subsequent wetting of these materials could result in undesirable movement.
4. Due to the potential varied nature of soils blended with properly processed demolition debris, additional testing methods may be required at the time of placement in order to determine acceptable compaction effort.

Excavation

Excavations into the subsurface soils will encounter a variety of conditions. The individual contractor(s) is responsible for designing and constructing stable, temporary excavations as required to maintain stability of both the excavation sides and bottom. All excavations should be

sloped or shored in the interest of safety following local and federal regulations, including current Occupational Safety and Health Administration (OSHA) excavation and trench safety standards.

Soils penetrated by the proposed excavations may vary significantly across the site. The soil and bedrock classifications are based solely on the materials encountered in the exploratory borings. The contractor should verify that similar conditions exist throughout the proposed area of excavation. If different subsurface conditions are encountered at the time of construction, the actual conditions should be evaluated to determine any excavation modifications necessary to maintain safe conditions.

Grading and Drainage

All grades must be adjusted to provide positive drainage away from the buildings during construction and maintained throughout the life of the proposed project. Infiltration of water into utility or foundation excavations must be prevented during construction. Landscaped irrigation adjacent to the foundation systems should be minimized or eliminated. Water permitted to pond near or adjacent to the perimeter of the structures (either during or post-construction) can result in significantly higher soil movements than those discussed in this report. As a result, any estimations of potential movement described in this report cannot be relied upon if positive drainage is not obtained and maintained, and water is allowed to infiltrate the fill and/or subgrade.

Permanent grades should be sloped at a minimum of 5 percent grade for at least 10 feet beyond the perimeter of the buildings. Asphalt pavement or concrete flatwork should be sloped at a minimum of 2 percent beyond the building perimeters for the life of the buildings. Where Americans with Disabilities Act (ADA) or other requirements or existing site features limit the gradient, slopes on the order of ½ to 1 percent minimum may be necessary to comply with the ADA, but do increase the risk of unanticipated movement. Backfill against footings, exterior walls and in utility and sprinkler line trenches should be compacted in accordance with recommendations in this report and free of all construction debris to reduce the possibility of water infiltration. After building construction and prior to project completion, we recommend that verification of final grading be performed to document that positive drainage, as described above, has been achieved.

Where paving or flatwork abuts the structures, care should be taken that joints are properly sealed and maintained to prevent the infiltration of surface water.

Landscape or xeriscape areas within 10 feet of the foundation systems shall not hindered by landscape edging, grade variations or vegetation. In addition, consideration should be given to snow removal practices that will minimize the stockpiling of snow in planter and landscaped areas adjacent to structural improvements.

Planters located adjacent to the structures should be watertight. Sprinkler mains and spray heads should be located a minimum of 10 feet away from the building lines. Where drip line irrigation is located near the buildings, we recommend that drip line irrigation systems be located at least 5 feet from the outside edge of the foundations. Roof drains should discharge on pavements or be extended away from the structures a minimum of 10 feet through the use of splash blocks or downspout extensions.

Trees or other vegetation whose root systems have the ability to remove excessive moisture from the subgrade and foundation soils should not be planted next to the buildings. Trees and shrubbery should be kept away from the exterior edges of foundations, a distance at least equal to their expected mature height.

Earthwork Construction Considerations

Upon completion of grading operations, care should be taken to maintain the moisture content of the subgrade prior to construction of slabs-on-grade, pavements, etc. Construction traffic over prepared subgrade should be minimized and avoided to the extent practical. Construction traffic over processed clay subgrade will eventually reduce the moisture content and increase the density of the subgrade. Subsequent wetting of these materials will result in undesirable movement.

The site should also be graded to prevent ponding of surface water on prepared subgrade or in excavations. In areas where water is allowed to pond over a period of time, the affected area should be removed and allowed to dry out; however, allowing the clays to dry out below the optimum moisture content is not recommended. If constraints do not allow for moisture conditioning of affected clays as recommended in this report, the affected area should be overexcavated and replaced with engineered fill. As an alternative, geotextiles could also be considered as a stabilization technique.

The geotechnical engineer should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during overexcavation operations, excavations, subgrade preparation; proof-rolling; placement and compaction of controlled compacted fills; backfilling of excavations into the completed subgrade, and just prior to construction of building floor slabs.

SHALLOW FOUNDATIONS

It is our opinion the proposed buildings may be constructed on spread footings or mat foundations bottomed on native soils or new engineered fill, provided all existing fill materials are removed and provided the owner understands and accepts the risk of movement.

Spread Footing or Mat Foundation Recommendations

Spread footing or mat foundation systems may be considered for support of the proposed buildings when constructed on native soils or new engineered fill, provided all existing fill materials are removed, and provided the potential for movement can be tolerated. New fill materials beneath foundations should be placed and compacted as outlined in the **Earthwork** section of this report.

Design recommendations for spread footing foundation systems are presented in the following paragraphs.

Description	Value
Overexcavation/modification depth	**All existing fill must be removed to native soils**, and replaced with properly moisture conditioned and compacted fill, if necessary
Supporting stratum	Native soils or new engineered fill
Maximum net allowable bearing pressure[1,2]	4,000 psf
Minimum dead load pressure[3]	Not required
Modulus of subgrade reaction	55 pci
Void thickness, if needed	N/A
Coefficient of friction (sliding)	0.4
Minimum footing dimensions[4]	Isolated footings: 24 inches Continuous footings: 16 inches
Minimum embedment below finished grade for frost protection[5]	3 feet
Approximate total movement from foundation loads[6]	About 1 inch
Estimated differential movement[6,7]	About ½ to ¾ inch

1. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. This pressure assumes that any existing fill or lower strength soils, if encountered, will be excavated and replaced with engineered fill.
2. Maximum allowable soil bearing pressure can be increased by 1/3 for transient loading conditions.
3. A minimum dead load pressure is not applicable for mat foundations.
4. Not applicable for mat foundations.
5. For perimeter footings, footings beneath unheated areas, and footings that will be exposed to freezing conditions during construction. Interior footings may bottom at a minimum depth of 12 inches below finished grade in heated areas.

Description	Value

6. Foundation movement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of engineered fill, and the quality of the earthwork operations and footing construction.
7. Footings should be proportioned on the basis of equal total dead load pressure to reduce differential movement between adjacent footings.

Additional foundation movements could occur if water from any source infiltrates the foundation soils; therefore, proper drainage should be provided in the final design and during construction and throughout the life of the structure. Failure to maintain the proper drainage as recommended in the **Grading and Drainage** section of this report will nullify the movement estimates provided above.

Unstable subgrade conditions should be observed by the geotechnical engineer to assess the subgrade and provide suitable alternatives for stabilization. Stabilized areas should be proofrolled prior to continuing construction to assess the stability of the subgrade.

The base of all foundation excavations should be free of water and loose soil prior to concrete placement. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Should the soils at bearing level become excessively dry, disturbed or saturated, or frozen, the affected soil should be removed prior to placing concrete.

Footings, foundations and masonry walls should be detailed and reinforced as necessary to reduce the potential for distress caused by differential foundation movement. The use of joints at openings or other discontinuities in masonry walls is recommended.

SEISMIC CONSIDERATIONS

Based on our subsurface exploration and laboratory testing, it is our opinion that the soils have a low risk of liquefaction. The following table presents the seismic site classification based on the 2015 International Building Code:

Code Used	Site Classification
2015 International Building Code (IBC) [1]	C

1. In general accordance with the *2015 International Building Code*, Section 1613.3.2.
2. The 2015 International Building Code (IBC) requires a site soil profile determination extending a depth of 100 feet for seismic site classification. The current scope requested does not include the required 100-foot soil profile determination. The deepest boring of this exploration extended to a maximum depth of about 21 feet and this seismic site class definition considers that similar soil conditions exist below the maximum depth of the subsurface exploration.

FLOOR SLABS

Interior Floors

Slab-on-grade floors may be utilized for the interior floor systems, provided slabs-on-grade are constructed on native soils or new engineered fill, and provided all existing fill materials are removed and provided some slab movement can be tolerated. New fill materials beneath slabs-on-grade should be placed and compacted as outlined in the **Earthwork** section of this report. We estimate this alternative will result in movements of less than 1 inch. If very little movement can be tolerated, structural floors, supported independent of the subgrade materials, are recommended.

For structural design of concrete slabs-on-grade, a modulus of subgrade reaction of 120 pounds per cubic inch (pci) may be used for point or limited area loads for floors supported on an engineered fill.

Additional floor slab design and construction recommendations are as follows:

- Positive separations and/or isolation joints should be provided between slabs and all foundations, columns or utility lines to allow independent movement.
- Control joints should be provided in slabs to control the location and extent of cracking.
- Interior trench backfill placed beneath slabs should be compacted in accordance with recommended specifications described previously.
- The use of a vapor retarder should be considered beneath concrete slabs on grade that will be covered with wood, tile, carpet or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer and slab contractor should refer to ACI 302 for procedures and cautions regarding the use and placement of a vapor retarder.
- Floor slabs should not be constructed on frozen subgrade.
- Other design and construction considerations, as outlined in Section 302.1R of the *ACI Design Manual*, are recommended.

Movements of slab-on-grades using the above outlined technique will likely be reduced and tend to be more uniform. The estimates outlined previously assume that the other recommendations in this report are followed. Additional movement could occur should the subsurface soils become wetted to significant depths, which could result in potential excessive movement causing uneven

floor slabs and severe cracking. This could be due to over watering of landscaping, poor drainage, improperly functioning drain systems, and/or broken utility lines. Therefore, it is imperative that the recommendations outlined in this section and in the **Grading and Drainage** section of this report be followed.

EXTERIOR FLATWORK

Exterior slabs-on-grade and flatwork constructed on the existing fill materials will have a low risk of movement. The performance of exterior slabs-on-grade can be improved if the subgrade soils are scarified to a depth of 1-foot, moisture-conditioned and recompacted prior to exterior slab construction. New fill materials beneath slabs-on-grade (if any) should be placed and compacted as outlined in the **Earthwork** section of this report.

For structural design of exterior concrete slabs-on-grade, a modulus of subgrade reaction of 120 pci may be used for point or limited area loads for exterior slabs-on-grade at this site.

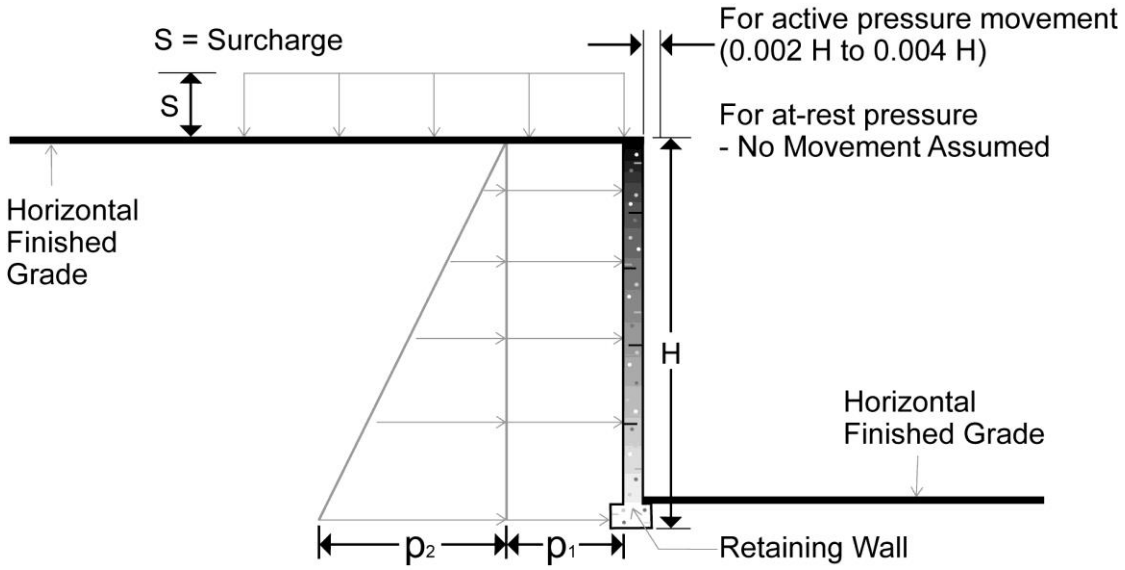
Additional slab design and construction recommendations are as follows:

- Minimizing moisture increases in the backfill.
- Controlling moisture-density during placement of backfill.
- Positive separations and/or isolation joints should be provided between exterior slabs and the buildings to allow independent movement.
- Control joints should be provided in slabs to control the location and extent of cracking.
- Exterior slabs should not be constructed on frozen subgrade
- Other design and construction considerations, as outlined in Section 302.1R of the *ACI Design Manual*, are recommended.

Movements of exterior slabs-on-grade using the above technique will likely be reduced and tend to be more uniform. Additional movement could occur should the subsurface soils and bedrock become wetted to significant depths, which could result in potential excessive movement causing uneven exterior slabs and severe cracking. This could be due to over watering of landscaping, poor drainage, and/or broken utility lines. Therefore, it is imperative that the recommendations outlined in the **Grading and Drainage** section of this report be followed.

LATERAL EARTH PRESSURES

We anticipate no below-grade areas are planned. If plans change to include below-grade areas, reinforced concrete walls with unbalanced backfill levels on opposite sides should be designed for earth pressures at least equal to those indicated in the following table. Earth pressures will be influenced by structural design of the walls, conditions of wall restraint, methods of construction and/or compaction and the strength of the materials being restrained. Two wall restraint conditions are shown. Active earth pressure is commonly used for design of free-standing cantilever retaining walls and assumes wall movement. The "at-rest" condition assumes no wall movement. The recommended design lateral earth pressures do not include a factor of safety and do not provide for possible hydrostatic pressure on the walls.



Earth Pressure Conditions	Lateral Earth Pressure Coefficient	Equivalent Fluid Density (pcf)	Surcharge Pressure, p_1 (psf)	Earth Pressure, p_2 (psf)
Active (Ka)	0.32	40	(0.32)S	(40)H
At-Rest (Ko)	0.5	60	(0.5)S	(60)H
Passive (Kp)	2.5	300	---	---

Applicable conditions to the above include:

- For active earth pressure, wall must rotate about base, with top lateral movements of about 0.002 **H** to 0.004 **H**, where **H** is wall height
- For passive earth pressure to develop, wall must move horizontally to mobilize resistance.
- Uniform surcharge, where S is surcharge pressure
- In-situ soil backfill weight a maximum of 120 pcf
- Horizontal backfill, compacted to at least 95 percent of standard Proctor maximum dry density
- Loading from heavy compaction equipment not included
- No hydrostatic pressures acting on wall
- No dynamic loading
- No safety factor included in soil parameters

To control hydrostatic pressure behind earth-retaining walls we recommend that a drain be installed below the foundation of the wall with a collection pipe leading to a reliable discharge. If this is not possible, then combined hydrostatic and lateral earth pressures should be calculated for lean clay backfill using an equivalent fluid weighing 90 and 100 pcf for active and at-rest conditions, respectively. For granular backfill, an equivalent fluid weighing 85 and 90 pcf should be used for active and at-rest, respectively. These pressures do not include the influence of surcharge, equipment or floor loading; these values should be added where applicable. Heavy construction equipment (such as cranes) should not operate within a distance closer than the exposed height of retaining walls to prevent lateral pressures more than those provided.

The preceding data are applicable only to cast-in-place concrete or modular block walls up to 5 feet in height. **If taller single walls, tiered walls, or Mechanically Stabilized Earth (MSE) walls will be included in the proposed development, additional site-specific studies and laboratory testing will be required.** The lateral earth pressure recommendations given in the following paragraphs are applicable to the design of rigid retaining walls subject to slight rotation, such as cantilever, or gravity type concrete walls. Lateral earth pressures are not used in the design of mechanically stabilized earth (MSE or modular block - geogrid reinforced backfill walls), and our scope of services does not include conducting strength testing of either foundation soils or potential retained backfill that form the basis of MSE retaining wall design. MSE walls are typically subcontracted as design-build structures, since design details are often manufacturer specific. We would be available to discuss and provide an appropriate scope of testing and geotechnical engineering to determine design parameters specific to recommendations for the design of such wall systems upon request.

PAVEMENTS

Design of privately maintained pavements for the project has been based on the procedures outlined by the Asphalt Institute (AI) and the American Concrete Institute (ACI).

Pavements and flatwork constructed on the existing fill materials will have a low risk of movement. The risk of movement can be slightly reduced if the subgrade materials are modified by scarifying the materials to a depth of 1 foot and properly moisture conditioning and compacting the materials to grade.

Design Traffic

We assumed the following design parameters for Asphalt Institute flexible pavement thickness design:

- Automobile Parking Areas
  - Parking stalls and parking lots for cars and pick-up trucks, up to 100 vehicles per day
- Main Traffic Corridors
  - Parking lots with a maximum of 2 trucks per day
- Subgrade Soil Characteristics
  - USCS Classification – CL, SC or GC-GM (Poor to Medium Subgrade)

We assumed the following design parameters for ACI rigid pavement thickness design based upon the average daily truck traffic (ADTT):

- Automobile Parking Areas
  - ACI Category A-1: Automobile parking with an ADTT of 1 over 20 years
- Main Traffic Corridors
  - ACI Category B: Commercial entrance and service lanes with an ADTT of 25 over 20 years
- Subgrade Soil Characteristics
  - USCS Classification – CL, SC or GC-GM
- Concrete modulus of rupture value of 600 psi

We should be contacted to confirm and/or modify the recommendations contained herein if actual traffic volumes differ from the assumed values shown above.

Subgrade Soils

Based on subgrade soil Unified Soil Classifications of CL, SC or GC-GM, AI classifies the subgrade soil as poor to medium. Existing clay fill materials will be encountered below the proposed pavement areas. We recommend scarifying the subgrade to a depth of at least 1 foot, moisture conditioning and recompacting the material to grade to improve performance.

Recommended Minimum Pavement Sections and Materials

Recommended alternatives for flexible and rigid pavements are summarized for each traffic area as follows:

Traffic Area	Alternative	Preliminary Pavement Thickness (Inches)			
		Asphalt Concrete Surface	Aggregate Base Course	Portland Cement Concrete	Total
Automobile Parking (AI Class I and ACI Category A)	A	5			5
	B	4	6		10
	C[1]			5	5
Main Traffic Corridors (AI Class III and ACI Category B)	A	6			6
	B	4-1/2	8		12-1/2
	C[1]			6	6

1. The minimum pavement section thickness per ACI

Each alternative should be investigated with respect to current material availability and economic conditions. A minimum 6-inch thickness of rigid reinforced concrete pavement is recommended at the location of dumpsters where trash trucks park and load, and in areas of tight turning radius.

Concrete pavement joint spacing should be in accordance with specifications in ACI 330R-08.

For analysis of pavement costs, the following specifications should be considered for each pavement component:

Pavement Component	Colorado Department of Transportation Criteria
Asphalt Concrete Surface	Grading S or SX
Aggregate Base Course	Class 5 or 6
Portland Cement Concrete	Class P

Pavement Maintenance

Future performance of pavements constructed at this site will be dependent upon several factors, including:

- Maintaining stable moisture content of the subgrade soils both before and after pavement construction.
- Providing for a planned program of preventative maintenance.

The performance of all pavements can be enhanced by minimizing excess moisture, which can reach the subgrade soils. The following recommendations should be implemented:

- Site grading at a minimum 2 percent grade onto or away from the pavements.
- Water should not be allowed to pond behind curbs.
- Compaction of any utility trenches for landscaped areas to the same criteria as the pavement subgrade.
- Sealing all landscaped areas in or adjacent to pavements or provide drains to reduce the risk of moisture migration to subgrade soils.
- Placing compacted backfill against the exterior side of curb and gutter.
- Placing curb, gutter and/or sidewalk directly on subgrade soils without the use of base course materials.

Preventative maintenance should be planned and provided for an ongoing pavement management program in order to enhance future pavement performance. Preventative maintenance activities are intended to slow the rate of pavement deterioration.

Preventative maintenance consists of both localized maintenance (e.g. crack sealing and patching) and global maintenance (e.g. surface sealing). Preventative maintenance is usually the first priority when implementing a planned pavement maintenance program.

Pavement Construction Considerations

Site grading is generally accomplished early in the construction phase. However, as construction proceeds, the subgrade may be disturbed due to utility excavations, construction traffic, desiccation, or rainfall. As a result, the pavement subgrade may not be suitable for pavement

construction and corrective action will be required. The subgrade should be carefully evaluated at the time of pavement construction for signs of disturbance or excessive rutting. If disturbance has occurred, pavement subgrade areas should be reworked, moisture conditioned, and properly compacted to the recommendations in this report immediately prior to paving.

We recommend the pavement areas be rough graded and then thoroughly proof rolled with a loaded tandem axle dump truck prior to final grading and paving. Particular attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas where backfilled trenches are located. Areas where unsuitable conditions are located should be repaired by removing and replacing the materials with properly compacted fills. All pavement areas should be moisture conditioned and properly compacted to the recommendations in this report immediately prior to paving.

The placement of a partial pavement thickness for use during construction is not recommended without a detailed pavement analysis incorporating construction traffic. In addition, if the actual traffic varies from the assumptions outlined above, we should be contacted to confirm and/or modify the pavement thickness recommendations outlined above.

CORROSIVITY

The following table lists the results of laboratory water-soluble sulfate testing. The test results may be used to estimate potential corrosive characteristics of the on-site soils with respect to contact with the various underground materials which will be used for project construction.

Boring No.	Sample Depth (feet)	Water-Soluble Sulfate[1] (%)
1	2	<0.10
3	2	<0.10

1. Results of water-soluble sulfate testing indicate that samples of the on-site soils have an exposure class of S0 when classified in accordance with Table 4.2.1 of the ACI Design Manual. The results of the testing indicate ASTM Type I Portland Cement is suitable for project concrete in contact with on-site soils. However, if there is no (or minimal) cost differential, use of ASTM Type II Portland Cement is recommended for additional sulfate resistance of construction concrete. Concrete should be designed in accordance with the provisions of the ACI Design Manual, Section 318, Chapter 4.

GENERAL COMMENTS

As the project progresses, we address assumptions by incorporating information provided by the design team, if any. Revised project information that reflects actual conditions important to our services is reflected in the final reports. The design team should collaborate with Terracon to confirm these assumptions and to prepare the final design plans and specifications. This facilitates the incorporation of our opinions related to implementation of our geotechnical recommendations. Any information conveyed prior to the final report is for informational purposes only and should not be considered or used for decision-making purposes.

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in the final report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our scope of services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third party beneficiaries intended. Any third party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client, and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering

requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration Description

The locations of the borings are presented in the **Exploration Plan** and **Boring Location Plan**. The borings were located in the field by measuring with a measuring wheel from property lines and/or existing site features. The latitude and longitude coordinates of the boring locations were obtained by locating the borings on Google Earth and recording the values. The accuracy of the latitude and longitude values is typically about +/- 25 feet when obtaining the values using this method. Elevations at the borings were obtained using a level and referencing the manhole rim on the south side of Main Street north of the site with an assumed elevation of 6182.0 feet. The accuracy of the boring locations and elevations should only be assumed to the level implied by the methods used.

The borings were drilled with CME-55 truck-mounted rotary drill rig with solid-stem or hollow-stem augers. During the drilling operations, lithologic logs of the borings were recorded by the field engineer. Relatively undisturbed samples were obtained at selected intervals utilizing a 2-inch outside diameter standard split-spoon sampler. Bulk samples were obtained from auger cuttings. Penetration resistance values were recorded as the standard penetration test (SPT). This test consists of driving the sampler into the ground with a 140-pound hammer free-falling through a distance of 30 inches. The number of blows required to advance the standard split-spoon sampler 18 inches (final 12-inches are recorded) or the interval indicated, is recorded and can be correlated to the standard penetration resistance value (N-value). The blow count values are indicated on the boring logs at the respective sample depths.

An automatic hammer was used to advance the samplers in the borings performed on this site. A greater efficiency is typically achieved with the automatic hammer compared to the conventional safety hammer operated with a cathead and rope. Published correlations between the SPT values and soil properties are based on the lower efficiency cathead and rope method. This higher efficiency affects the standard penetration resistance blow count value by increasing the penetration per hammer blow over what would be obtained using the cathead and rope method. The effect of the automatic hammer's efficiency has been considered in the interpretation and analysis of the subsurface information for this report.

The standard penetration test provides a reasonable indication of the in-place density of sandy type materials, but only provides an indication of the relative stiffness of cohesive materials since the blow count in these soils may be affected by the soils moisture content. In addition, considerable care should be exercised in interpreting the N-values in gravelly soils, particularly where the size of the gravel particle exceeds the inside diameter of the sampler.

Groundwater measurements were obtained in the borings at the time of drilling. Due to safety concerns, the borings were backfilled with auger cuttings after drilling. Some settlement of the backfill may occur and should be repaired as soon as possible.

Laboratory Testing Description

Samples retrieved during the field exploration were returned to the laboratory for observation by the project geotechnical engineer, and were classified in general accordance with the Unified Soil Classification System presented in Appendix C.

At this time, an applicable laboratory-testing program was formulated to determine engineering properties of the subsurface materials. Following the completion of the laboratory testing, the field descriptions were confirmed or modified as necessary, and the Boring Logs were prepared. The Boring Logs are included in Appendix A.

Laboratory test results are included in Appendix B. These results were used for the geotechnical engineering analyses and the development of foundation, earthwork and pavement recommendations. All laboratory tests were performed in general accordance with the applicable local or other accepted standards.

Selected soil and bedrock samples were tested for the following engineering properties:

- Water content
- Dry density
- Grain size distribution
- Atterberg limits
- Water soluble sulfate content

SITE LOCATION AND EXPLORATION PLANS

SITE LOCATION

Proposed Aspen-Sopris District Office & Work Compound
Carbondale Site ■ Carbondale, Colorado
June 29, 2018 ■ Terracon Project No. 25185026

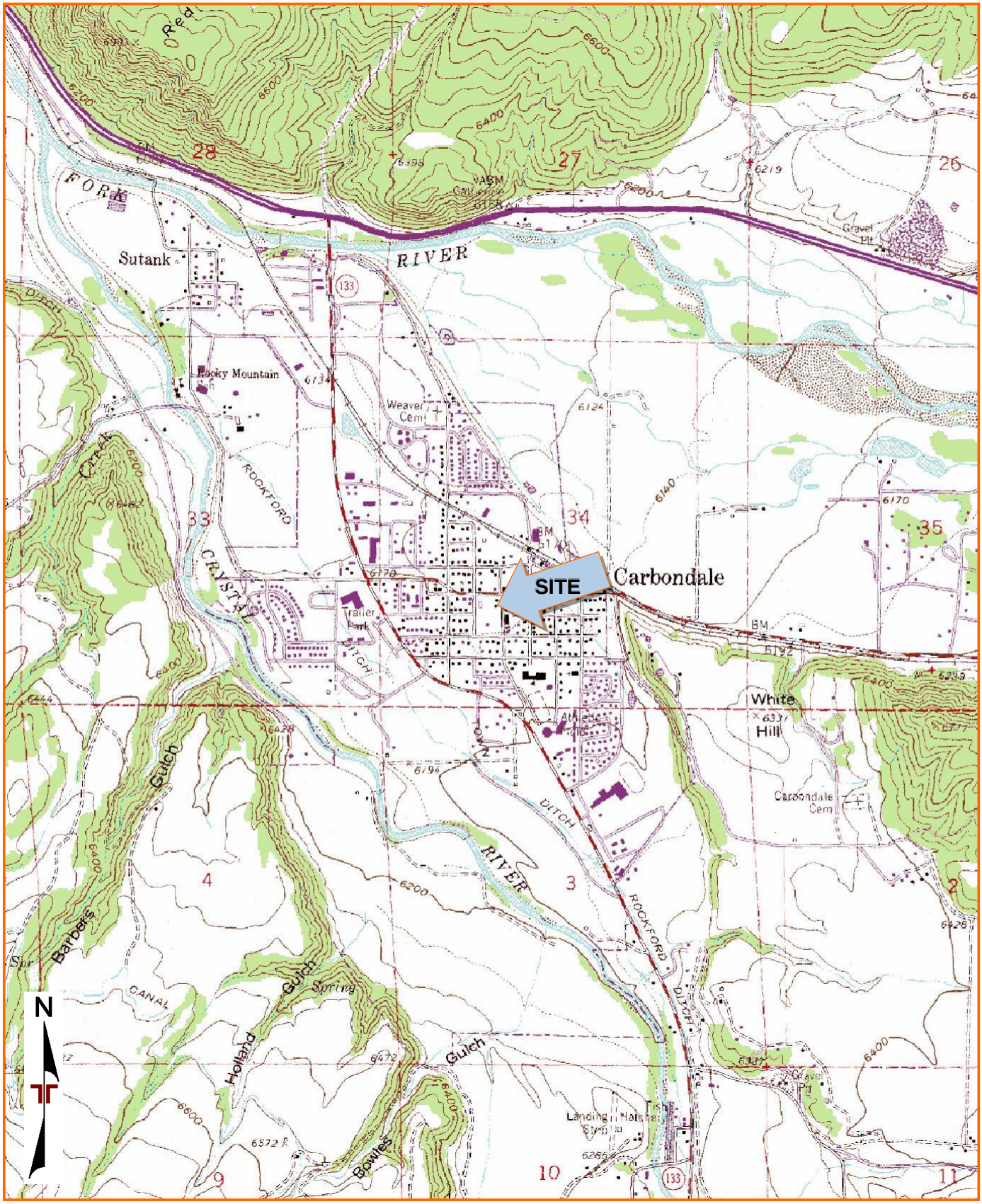


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY
QUADRANGLES INCLUDE: CARBONDALE, CO (1/1/1987).

EXPLORATION PLAN

Proposed Aspen-Sopris District Office & Work Compound
Carbondale Site ■ Carbondale, Colorado
June 29, 2018 ■ Terracon Project No. 25185026

LEGEND

1 Approximate Boring Location

TBM Temporary Benchmark: Manhole rim on south side of Main Street north of site (39.4005º N, 107.2131 º W).
Assigned elevation = 6182.0 feet.

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

EXPLORATION RESULTS

BORING LOG NO. 1

PROJECT: Proposed Aspen-Sopris District Office & Work Compound Site Development

CLIENT: Chamberlin Architects

SITE: 620 Main Street
Carbondale, Colorado

LOCATION See Exploration Plan

Latitude: 39.4004° Longitude: -107.2129°

Approximate Surface Elev: 6184.1 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description
0.5	6183.5+/-	**TOPSOIL**, (about 6 inches)
		FILL - SANDY LEAN CLAY (CL), brown
2.0	6182+/-	**GRAVELLY LEAN CLAY (CL)**, brown, hard
4.0	6180+/-	**SILTY SAND (SM)**, with gravel, fine to coarse grained, light brown, dense to very dense
13.0	6171+/-	**SANDSTONE**, fine grained, pink and gray, very hard
18.0	6166+/-	***Practical drilling refusal on sandstone at 18 Feet***

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	SWELL (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		15-50/7"		7			
		34-50/4"		3			
5							
		17-19-26		4		NP	22
10							
		50/3"					
15							
		50/2"					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
4-inch diameter solid stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and referencing the manhole rim on the south side of Main Street north of the site (39.4005, -107.2131) with an assumed elevation of 6182.0 feet.

WATER LEVEL OBSERVATIONS

None encountered while drilling

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 06-06-2018 | Boring Completed: 06-06-2018

Drill Rig: CME-55 | Driller: Terracon

Project No.: 25185026

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25185026 PROPOSED ASPEN-SO.GPJ TERRACON_DATATEMPLATE.GDT 6/27/18

BORING LOG NO. 2

PROJECT: Proposed Aspen-Sopris District Office & Work Compound Site Development

CLIENT: Chamberlin Architects

SITE: 620 Main Street
Carbondale, Colorado

LOCATION See Exploration Plan

Latitude: 39.4004° Longitude: -107.2133°

Approximate Surface Elev: 6184.2 (Ft.) +/-

DEPTH		ELEVATION (Ft.)
0.5	**TOPSOIL**, (about 6 inches)	6183.5+/-
1.0	**FILL - SANDY LEAN CLAY**, dark brown	6183+/-
	CLAYEY SAND (SC), with gravel and cobbles, varies to sandy gravel, fine to coarse grained, reddish brown, very dense	
12.0		6172+/-
	SANDSTONE, fine grained, very hard	
21.0		6163+/-
	Practical drilling refusal on sandstone at 21 Feet	

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		18-25-46	3	NP	30
5		50/6"			
10		50/2"			
15		50/3"	4		
20		50/2"			
		50/1"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
4-inch diameter solid stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and referencing the manhole rim on the south side of Main Street north of the site (39.4005, -107.2131) with an assumed elevation of 6182.0 feet.

WATER LEVEL OBSERVATIONS

None encountered while drilling

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 06-06-2018 | Boring Completed: 06-06-2018

Drill Rig: CME-55 | Driller: Terracon

Project No.: 25185026

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25185026 PROPOSED ASPEN-SO.GPJ TERRACON_DATATEMPLATE.GDT 6/27/18

BORING LOG NO. 3

PROJECT: Proposed Aspen-Sopris District Office & Work Compound Site Development

CLIENT: Chamberlin Architects

SITE: 620 Main Street
Carbondale, Colorado

LOCATION See Exploration Plan

Latitude: 39.3999° Longitude: -107.2132°

Approximate Surface Elev: 6184.2 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	6184+/-						
APPARENT AGGREGATE BASE COURSE, (about 3 inches)							
SILTY CLAYEY GRAVEL (GC-GM), with sand, fine to coarse grained, light gray, very dense				36-41-42	3	21-15-6	23
3.0	6181+/-						
SILTY SAND (SM), with gravel and cobble, fine to coarse grained, brown to light gray, medium dense to very dense				30-12-14			
		5					
				26-50/4"	2		
		10					
11.0	6173+/-						
SANDSTONE							
15.0	6169+/-	15					
Practical drilling refusal on sandstone at 15 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3-1/4 inch hollow stem auger from 0 to 12.5 feet and 4-inch solid stem auger from 12.5 to 15 feet

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and referencing the manhole rim on the south side of Main Street north of the site (39.4005, -107.2131) with an assumed elevation of 6182.0 feet.

WATER LEVEL OBSERVATIONS

None encountered while drilling

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 06-05-2018 | Boring Completed: 06-05-2018

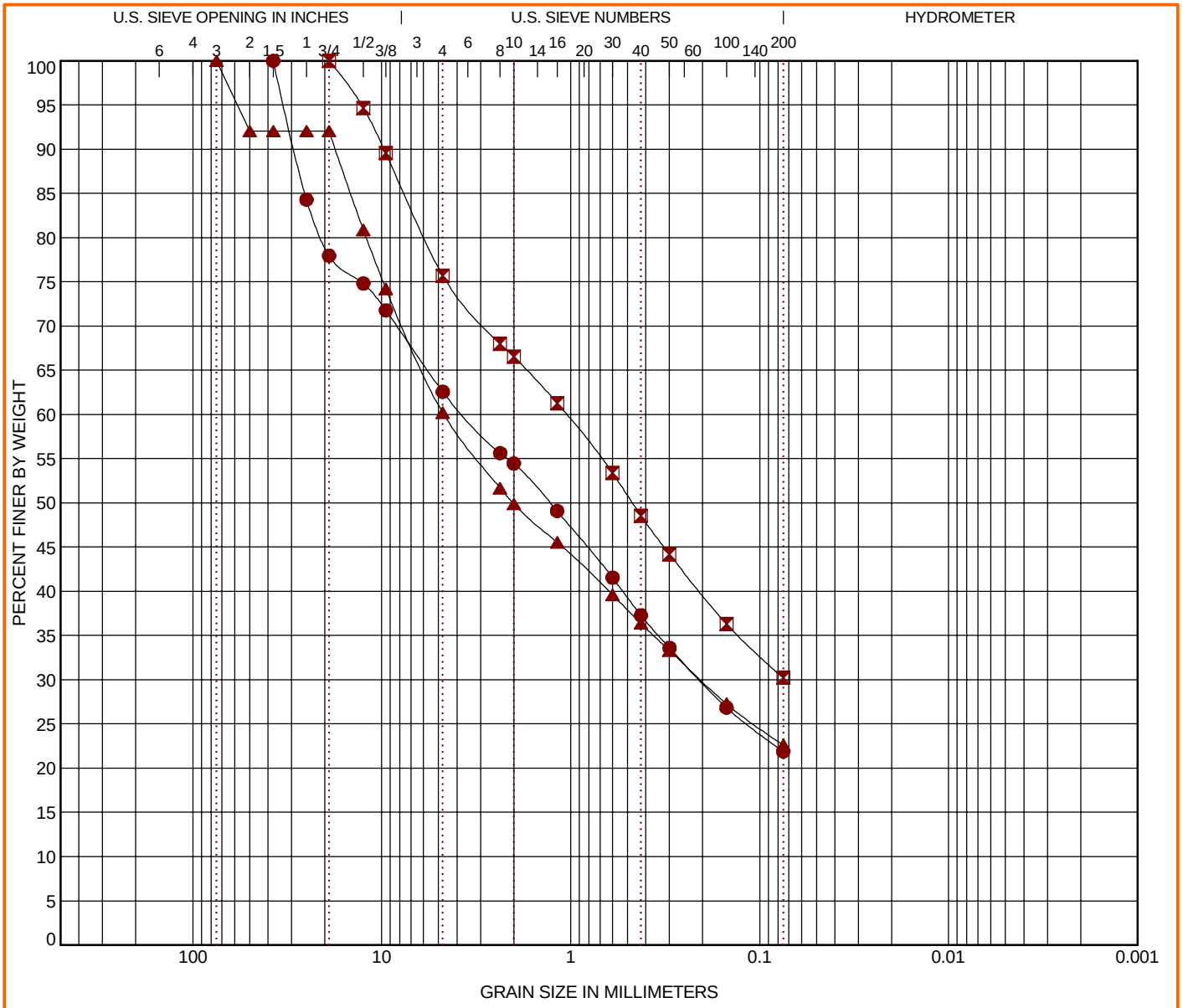
Drill Rig: CME-55 | Driller: Terracon

Project No.: 25185026

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25185026 PROPOSED ASPEN-SO.GPJ TERRACON_DATATEMPLATE.GDT 6/27/18

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring ID	Depth	USCS Classification	AASHTO Classification	WC (%)	LL	PL	PI	Cc	Cu
●	1	9 - 10.5	SILTY SAND with GRAVEL (SM)	A-1-b (0)	4	NP	NP	NP		
⊠	2	0 - 5	SILTY SAND with GRAVEL (SM)	A-2-4 (0)		NP	NP	NP		
▲	3	0 - 5	SILTY, CLAYEY GRAVEL with SAND (GC-GM)	A-1-b (0)		21	15	6		

	Boring ID	Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Gravel	%Sand	%Silt	%Fines	%Clay
●	1	9 - 10.5	37.5	3.666	0.207		37.4	40.7		21.9	
⊠	2	0 - 5	19	1.056			24.3	45.5		30.2	
▲	3	0 - 5	75	4.67	0.205		39.8	37.6		22.6	

PROJECT: Proposed Aspen-Sopris District Office & Work Compound Site Development

SITE: 620 Main Street Carbondale, Colorado

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

PROJECT NUMBER: 25185026

CLIENT: Chamberlin Architects

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS & AASHTO COMBINED 25185026 PROPOSED ASPEN-SO.GPJ TERRACON_DATATEMPLATE.GDT 6/25/18

SUMMARY OF LABORATORY TEST RESULTS

Proposed Aspen-Sopris District Office & Work Compound Site Development - Carbondale, Colorado
Terracon Project No. 25185026

Boring No.	Depth (ft.)	USCS Class.	Initial Water Content (%)	Particle Size Distribution, Percent Passing by Weight						Atterberg Limits		Water Soluble Sulfates (%)	Remarks
				1/2"	3/8"	#4	#10	#40	#200	LL	PI		
1	2	CL	7									<0.10	4
1	4	SM	3										4
1	9	SM	4	75	78	63	54	37	22	NV	NP		4
2	0 - 5	SC		95	90	76	67	49	30	NV	NP		
2	2	SC	3										4
2	14		4										4
3	0 - 5	GC-GM		81	74	60	50	36	23	21	6		
3	2	SM	3									<0.10	4
3	9	SM	2										4

Notes:
Initial Dry Density and Initial Water Content are in-situ values unless otherwise noted.
* = Partially disturbed sample
- = Compression/settlement
NV = no value
NP = non-plastic

Remarks:
1 Remolded Compacted density (about 95% of ASTM D698 maximum density near optimum moisture content)
2 Remolded Compacted density (about 95% of ASTM D1557 maximum density near optimum moisture content)
3 Water added to sample
4 Dry density and/or moisture content determined from one ring of a multi-ring sample
5 Minus #200 Only
6 Moisture-Density Relationship Test Method ASTM D698/AASHTO T99
7 Moisture-Density Relationship Test Method ASTM D1557/AASHTO T180

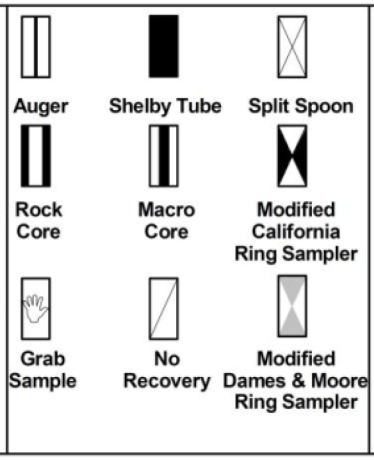
Terracon

SUPPORTING INFORMATION

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING



WATER LEVEL

Water Initially Encountered

Water Level After a Specified Period of Time

Water Level After a Specified Period of Time

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

FIELD TESTS

(HP)	Hand Penetrometer
(T)	Torvane
(b/f)	Standard Penetration Test (blows per foot)
N	N value
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance Includes gravels, sands and silts.			CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance				BEDROCK		
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength, Qu, psf**	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Standard Penetration or N-Value Blows/Ft.**	**Descriptive Term (Consistency)**
Very Loose	0 - 3	0 - 5	Very Soft	less than 500	0 - 1	< 3	< 24	< 20	Soft
Loose	4 - 9	6 - 14	Soft	500 to 1,000	2 - 4	3 - 5	24 - 35	20 - 29	Firm
Medium Dense	10 - 29	15 - 46	Medium-Stiff	1,000 to 2,000	4 - 8	6 - 10	36 - 60	30 - 49	Medium Hard
Dense	30 - 50	47 - 79	Stiff	2,000 to 4,000	8 - 15	11 - 18	61 - 96	50 - 79	Hard
Very Dense	> 50	≥ 80	Very Stiff	4,000 to 8,000	15 - 30	19 - 36	> 96	>79	Very Hard
			Hard	> 8,000	> 30	> 36			

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	Cu ≥ 4 and 1 ≤ Cc ≤ 3 [E]		GW	Well-graded gravel [F]
			Cu < 4 and/or 1 > Cc > 3 [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F,G,H]
			Fines classify as CL or CH		GC	Clayey gravel [F,G,H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	Cu ≥ 6 and 1 ≤ Cc ≤ 3 [E]		SW	Well-graded sand [I]
			Cu < 6 and/or 1 > Cc > 3 [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G,H,I]
			Fines classify as CL or CH		SC	Clayey sand [G,H,I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A" line [J]		CL	Lean clay [K,L,M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K,L,M,N]
			Liquid limit - not dried			Organic silt [K,L,M,O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K,L,M]
			PI plots below "A" line		MH	Elastic Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K,L,M,P]
			Liquid limit - not dried			Organic silt [K,L,M,Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

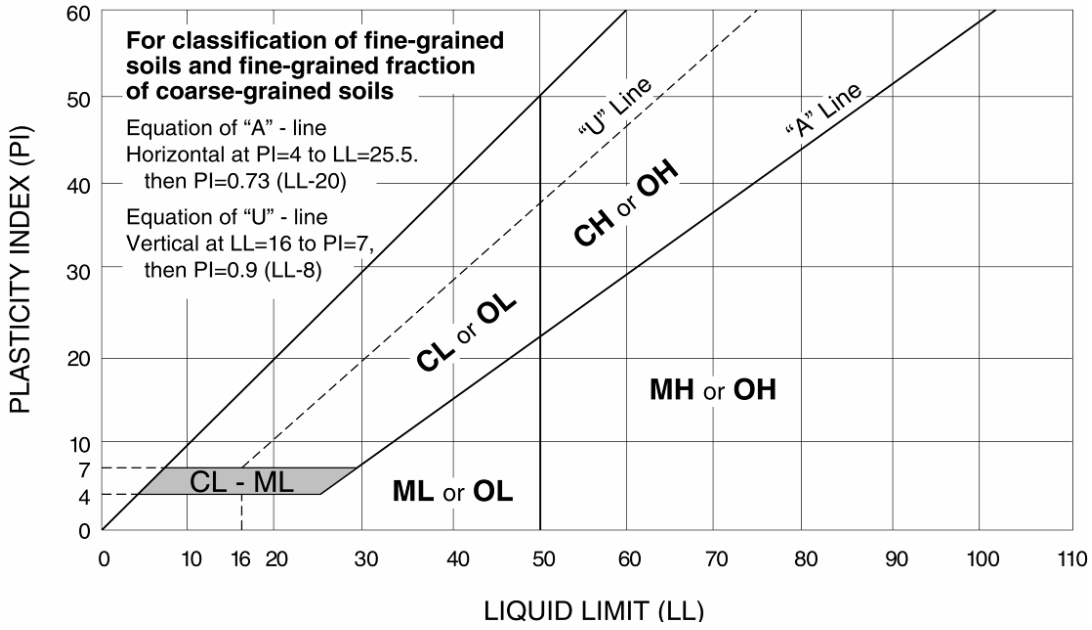
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



APPENDIX B

Geotechnical Clarifications

and

Percolation Tests

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May 28, 2020

Chamberlin Architects
437 Main Street
Grand Junction, Colorado 81501

Attn: Mr. Daniel Gartner
P: 970.272.6804
E: dgartner@chamberlinarchitects.com

Re: Clarification of Geotechnical Recommendations and Percolation Test Results
Proposed Aspen-Sopris District Office & Work Compound – Carbondale Site
620 Main Street
Carbondale, Colorado
Terracon Project No. 25185026

Mr. Gartner:

Terracon Consultants, Inc. (Terracon) performed a geotechnical study for the above-referenced project and presented results in a geotechnical report, dated June 29, 2018 (Terracon Project No. 25185026). We were recently provided with a "Clarification of Requirements/Recommendations from Geotechnical Report" by Martin/Martin Consulting Engineers (M/M) dated April 1, 2020. In addition to clarification questions, the letter also requested percolation testing at two proposed locations at the site. At your request, this letter provides responses to the clarification questions and summarizes results of our additional field exploration and percolation testing performed at the site.

REPORT CLARIFICATION RESPONSES

For convenience, the questions as originally presented in the M/M letter are included, along with our responses.

- Page 3 – Understanding of Infrastructure Project Conditions
  - The Forest Service has indicated there are about 7 light delivery and trash collection vehicles per week that access the site; are the recommended pavement thicknesses still adequate?

Response: Based on the above information we reviewed our pavement thickness design and it is our opinion the pavement thicknesses provided in the original report would remain valid. All areas

accessed by the delivery and trash trucks should use the sections provided for "Main Traffic Corridors".

- Page 7 – Existing Structures – Paragraph 1
  - Do all existing foundations and utilities need to be removed in their entirety from the site or can they be abandoned in place if not under a proposed site structure? If abandon in place is acceptable, please comment on the depth below finish grade that structures should be cut down to.

Response: If the existing structures cannot be removed in their entirety, they will need to removed to a minimum depth of 3 feet below new foundations and at least 2 feet below new pavements or flatwork. Any existing utilities that will remain in place must be properly abandoned by grouting. Any existing fill materials associated with existing foundations or utilities below new buildings should be removed to native soils as discussed in the report. Existing fills below pavements or exterior slabs could be partially removed as discussed in the report, depending on the owner's tolerance for movement.

- Page 10 – Compaction Requirements – Table
  - Should all areas on site be compacted to minimum 98%, or are there different compaction requirements for landscaped areas?

Response: The compaction requirements for general fill placed in landscaped areas can be reduced to 90% of ASTM D698.

- Page 10 – Footnote 4
  - Clarify what additional testing is required for placement of blended materials. Is there a specific test or ASTM that can be listed in the specifications?

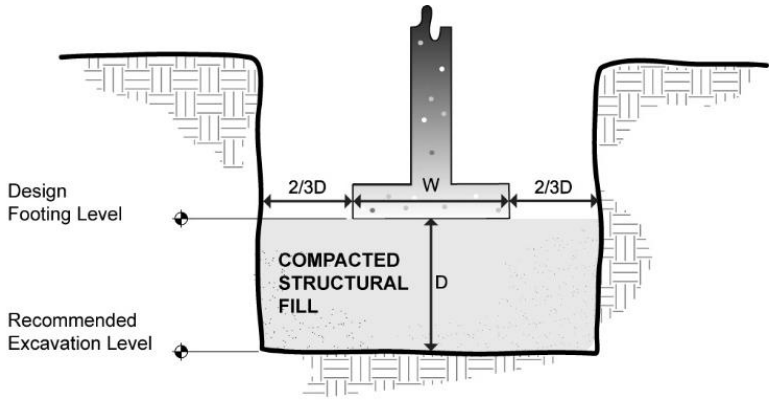
Response: Depending on the amount of demolition material present within the fill, it may be necessary to supplement or replace nuclear density testing with a method-specification (e.g., number of passes of a specific piece of construction equipment over each lift of fill). The method-specification can only be determined during construction because it is dependent on the amount and size of debris in the fill materials.

- Page 11 – Grading and Drainage – Paragraph 2
  - Should any additional measures be taken to mitigate water near the building foundation if a landscaped area cannot meet the minimum required 5% grade for the first 10 feet beyond the building perimeter?

Response: If the minimum slopes presented in the geotechnical report cannot be achieved, the owner must understand and accept that there is a higher risk of settlement, poor foundation performance and increased maintenance costs. All other recommendations presented in the **Grading and Drainage** section of the report should be reviewed and followed.

- Page 13 – Removal of existing fill materials beneath foundations
  - Clarify the lateral extent of removal of existing fill materials relative to the bottom of foundation. If available, provide a detail that graphically depicts the recommended earthwork below and adjacent to foundations.

Response: Overexcavation for removal of existing fill materials below new footings should extend laterally beyond all edges of the footings at least 8 inches per foot of overexcavation depth below footing base elevation. The overexcavation should then be backfilled up to the footing base elevation with approved fill placed in lifts of 8 inches or less in loose thickness (6 inches or less if using hand-guided compaction equipment) and compacted to the criteria in the report. The overexcavation and backfill procedure is described in the following figure.



Overexcavation / Backfill

- Page 16 – Snow Removal
  - Can you comment or advise on the risk associated with placing snow storage within 10-15 feet of the existing Warehouse building?

Response: We do not recommend stockpiling snow adjacent or upgradient of new improvements due to the risk of wetting the subgrade soils from snowmelt. While it is not possible to quantify the risk; qualitatively, the risk of poor foundation and slab performance increases as more snowmelt is allowed to infiltrate foundation and slab subgrade.

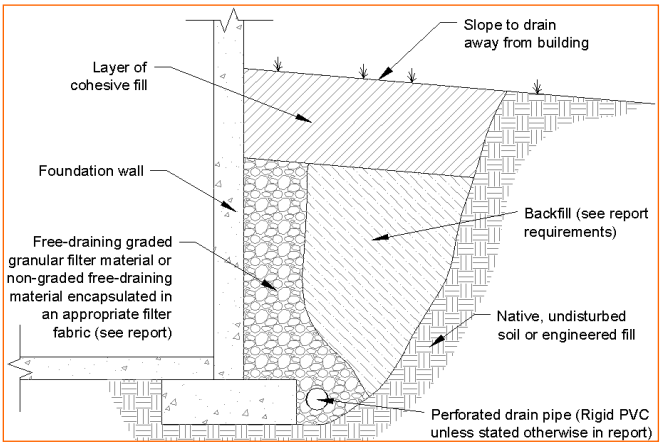
- Page 16 & 19 – Subgrade preparation below exterior slabs and pavements

- The recommendations for exterior slabs and pavement indicate that scarification, moisture conditioning and recompaction are acceptable; however, the first bullet on page i indicates "full removal" of existing fill materials. Please clarify if full removal/over-excavation is recommended or if scarification is acceptable.

Response: As discussed in our report, consideration could be given to partial removal of existing fill below pavement and exterior flatwork areas, provided the owner is willing to accept a higher risk of movement if a portion of the existing fill materials are allowed to remain in place. A lower risk option at this site is full removal and replacement of the existing fill; however, if the owner is willing to tolerate a higher risk of movement, scarification can be performed as described in the report.

- Page 18 – Wall Drains
  - We anticipate an exterior grade differential relative to the finish floor elevation on the order of 18-24 inches on the north side of the building. Would this condition require a wall drain to potential mitigate hydrostatic pressure beneath the SOG?

Response: Based on our understanding of the proposed construction as described in the June 29, 2018 report, it was our understanding no below grade areas were planned for the proposed buildings. For this condition, perimeter drains and/or underdrains are not required. However, plans have changed and we understand a portion of the main building could be below grade as noted above. For this condition, we recommend a perimeter drain be installed for any below grade areas. Conceptually, the drain should consist of a perforated rigid plastic drain line installed behind the base of walls, extending below adjacent grade to prevent hydrostatic loading on the walls. The invert of a drain line around a below-grade building area or exterior retaining wall should be placed near foundation bearing level. The drain line should be sloped to provide positive gravity drainage to daylight or to a sump pit and pump. The drain line should be surrounded by clean, free-draining granular material having less than 5% passing the No. 200 sieve, such as No. 57 aggregate. The free-draining aggregate should be encapsulated in a filter fabric. The granular fill should extend to within 2 feet of final grade, where it should be capped with compacted cohesive fill to reduce infiltration of surface water into the drain system.



As an alternative to free-draining granular fill, a pre-fabricated drainage structure may be used. A pre-fabricated drainage structure is a plastic drainage core or mesh which is covered with filter fabric to prevent soil intrusion, and is fastened to the wall prior to placing backfill.

- Page 20 – Recommended Minimum Pavement Sections and Materials – Table
  - What type of binder should the asphalt be produced with? PG64-22?
  - For the composite asphalt section of 4.5” AC on 8”ABC, please comment on the SX mix being used as a surface course with a 1.5” lift thickness. We’ve heard from other geotechnical engineers that a 1.5” lift is not recommended but this was in a mill/overlay scenario and want to confirm that for new construction this lift thickness is adequate for the SX mix.
  - Is there a minimum recommended thickness for aggregate only to be used for automobile parking areas?

Response: The binder can be PG64-22. Regarding use of an SX mix for a 1-1/2 inch surface course, it is common practice for a lift of asphalt to be no less than twice the thickness of the largest aggregate size. Since the maximum size of an SX mix is 1/2-inch, this would be acceptable.

An aggregate pavement section could be used for automobile parking areas. For limited traffic on aggregate surfaced areas, it is our opinion the design procedures outlined in the 1993 *Guideline for Design of Pavement Structures* by the American Association of State Highway and Transportation Officials (AASHTO) for low volume design are applicable.

Based on the soils used in our original pavement design, we used an assumed resilient modulus (M_R) of 3,400 psi for the pavement subgrade. Based upon an allowable rutting depth of about 1

inch, we calculate an aggregate surfaced roadway of about 6 inches can support up to about 1,000 Equivalent Single Axial Loads (ESAL). Assuming the aggregate-surfaced parking lot is maintained, this allows for the proposed passenger car traffic. If an aggregate surface is planned for main access drives, the thickness should be increased to 8 inches to allow for the assumed traffic loading.

Aggregate for the road surface should have a modulus of at least 30,000 psi. Generally material meeting Colorado Department of Transportation (CDOT) Class 5 or 6 aggregate specifications meets this criteria.

Periodic maintenance of the aggregate-surfaced roadway will be required, particularly during wetter periods of the year, and when snow removal is required. The stability of the subgrade may be affected by excessive precipitation or other factors. If unstable conditions develop during roadway usage, scarifying and drying of the subgrade, or placement of additional gravel material could be required.

- Page 23 – 3rd Party Use of Report
  - Martin/Martin is a subconsultant to Chamberlain Architects and we request clarification if we would fall into the category of 3rd parties.
  - Please confirm that Martin/Martin can use and rely upon the recommendations provided in Terracon's report for this specific project.

Response: While M/M is a third party with respect to the agreement between Terracon and Chamberlin Architects, as a subconsultant to Chamberlin, M/M can use and rely upon the information provided by Terracon.

PERCOLATION TEST RESULTS

Field Exploration

As part of the percolation tests, two profile holes, designated as CPT-1 and CPT-2 were drilled in the approximate locations indicated by M/M. At each profile test hole location, three percolation holes, designated as PT-1A through PT-1C for CPT-1 and PT-2A through PT-2C for CPT-2, where drilled in the vicinity of the profile boring to depths of about 36 inches. Additional details of the test boring locations are presented in the appended Exploration Plans.

The borings were located in the field by overlaying the site plan on Google Earth and locating the borings by site reference features. Boring locations were then recorded to the nearest foot by measuring with a tape measure from existing building corners. The latitude and longitude

coordinates were recorded using a handheld, recreational-grade GPS unit. The accuracy of the latitude and longitude values is typically about +/- 25 feet when obtaining the values using this method. Elevations at the borings were obtained using a level and referencing the finished floor at the north edge of the west entry to the main office building as a temporary benchmark with a reported elevation of 6186.47 feet. The accuracy of the boring locations and elevations should only be assumed to the level implied by the methods used.

The borings were drilled with a CME-55 truck-mounted rotary drill rig with solid-stem and hollow-stem augers. During the drilling operations, lithologic logs of the borings were recorded by the field engineer. Relatively undisturbed samples were obtained at selected intervals utilizing a 2-inch outside diameter standard split spoon sampler and a 2½-inch outside diameter modified California barrel sampler. Bulk samples were obtained from auger cuttings. Penetration resistance values were recorded in a manner similar to the standard penetration test (SPT). This test consists of driving the sampler into the ground with a 140-pound hammer free falling through a distance of 30 inches. The number of blows required to advance the barrel sampler 12 inches (18 inches for standard split-spoon samplers, final 12 inches are recorded) or the interval indicated is recorded and can be correlated to the standard penetration resistance value (N-value). The blow count values are indicated on the boring logs at the respective sample depths, barrel sampler blow counts are not considered N-values.

An automatic hammer was used to advance the samplers in the borings performed on this site. A greater efficiency is typically achieved with the automatic hammer compared to the conventional safety hammer operated with a cathead and rope. Published correlations between the SPT values and soil properties are based on the lower efficiency cathead and rope method. This higher efficiency affects the standard penetration resistance blow count value by increasing the penetration per hammer blow over what would be obtained using the cathead and rope method. The effect of the automatic hammer's efficiency has been considered in the interpretation and analysis of the subsurface information for this report.

The standard penetration test provides a reasonable indication of the in-place density of sandy type materials, but only provides an indication of the relative stiffness of cohesive materials since the blow count in these soils may be affected by the soils' moisture content. In addition, considerable care should be exercised in interpreting the N-values in gravelly soils, particularly where the size of the gravel particle exceeds the inside diameter of the sampler.

Subsurface and Groundwater Conditions

Subsurface conditions encountered in the profile borings can be generalized as follows:

Material Description	Approximate Depth to Bottom of Stratum below Existing Site Grade	Consistency/ Relative Density/ Hardness
Topsoil	About 3 inches, encountered in Boring CPT-1 only	N/A
Asphalt	About 2-3/4 inches, encountered in Boring CPT-2 only	N/A
Fill composed of sand with varying amounts of clay, silt and gravel	About 2 feet	Variable
Native soil consisting of gravel with varying amounts of clay, silt, sand, cobble and possible boulders	About 5 feet, Maximum depth explored in both borings.	Dense to very dense

Stratification boundaries on the boring logs represent the approximate location of changes in soil and material types; in-situ, the transition between materials may be gradual. Further details of the profile borings can be found on the appended boring logs.

Groundwater measurements were obtained in the profile and percolation test borings at the time of excavation and are shown on the logs. Groundwater was not encountered in the profile borings or percolation holes during our exploration. The profile borings were backfilled upon completion. The percolation holes were backfilled the following day and patched with asphalt, where applicable, following completion of the percolation testing. Some settlement of the backfill and patch may occur and should be repaired as soon as possible.

Percolation Test Results

Percolation testing was performed in each of the percolation test holes. The percolation test holes were inundated with water and allowed to pre-soak overnight. Our field engineer returned the following day to conduct the percolation tests, in general accordance with Colorado Department of Public Health and Environment On-site Wastewater Treatment System Regulation 5 CCR 1002-43 criteria.

The table below presents the results of the percolation testing performed:

Percolation Test No.	Approximate Hole Depth (inches)	Percolation rate (min/inch)
PT-1A	36	120
PT-1B	36	30
PT-1C	36	30
Average Percolation Rate (PT-1A to PT-1C)		**60**

Percolation Test No.	Approximate Hole Depth (inches)	Percolation rate (min/inch)
PT-2A	36	240
PT-2B	36	N/A
PT-2C	36	120
Average Percolation Rate (PT-2A and PT-2C, PT-2B excluded)		180

Field Percolation Rate Results are appended.

DISCUSSION

The test results indicated lower infiltration rates than anticipated. Borings performed during our 2018 study encountered fill and native soils consisting of gravelly clays and clayey sands in the upper 3 to 12 feet of the subsurface profile. Based on this, it is possible that there is significantly more sandy clay present between many of the larger gravel and cobble particles that were encountered during this study that were not readily observed.

The base of the excavation should be scarified but not compacted. Material used in the drainage infiltration area should consist of material meeting a CDOT Class 6 material or equivalent. The material should be placed as described in the report and compacted to a minimum of 90 percent of ASTM D698. We should be contacted if improvements are planned above the infiltration area as a higher compaction criterium may be merited. To mitigate water movement from the infiltration area to the adjacent pavement, we recommend construction of an interceptor drain along the east side of the infiltration area. A conceptual detail is appended.

GENERAL COMMENTS

All other recommendations presented in our report dated June 29, 2018 not specifically discussed in this letter should be reviewed and followed. The analysis and recommendations presented in this letter are based upon the data obtained from the borings performed at the indicated locations

and from other information discussed in this report. This report does not reflect variations that may occur between borings or across the site. The nature and extent of such variations may not become evident until during construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

We appreciate the opportunity to provide continued service to you on this project. Please do not hesitate to contact the undersigned if you have any questions regarding this information or if we can be of further service to you.

Sincerely,

TERRACON CONSULTANTS, INC.

William D. Rethamel, P.E.
Senior Project Engineer

Scott B. Myers, P.E.
Regional Senior Consultant

Copies to: Addressee (1 via e-mail)

Attachments:

Exploration Plan with Aerial Image
Exploration Plan with Project Overlay
Boring Logs
Gradation
Laboratory Summary
Percolation Test Results
Interceptor Drain Detail

EXPLORATION PLAN WITH AERIAL IMAGE

Proposed Aspen-Sopris District Office & Work Compound Site Development ■ Carbondale, Colorado
May 28, 2020 ■ Terracon Project No. 25185026

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN WITH PROJECT OVERLAY

Proposed Aspen-Sopris District Office & Work Compound Site Development ■ Carbondale, Colorado

May 28, 2020 ■ Terracon Project No. 25185026

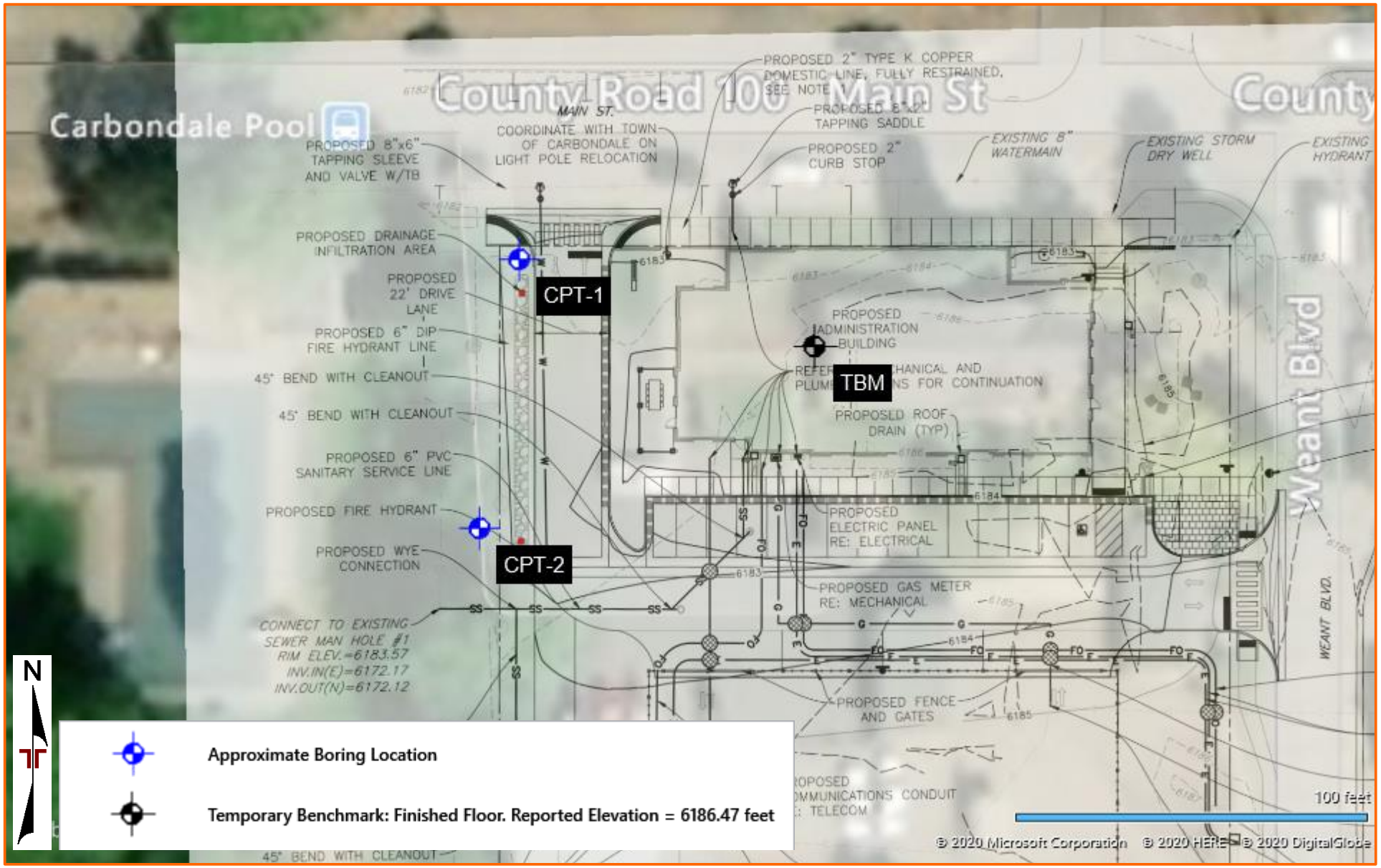


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

BORING LOG NO. CPT-1

PROJECT: Proposed Aspen-Carbondale Site

CLIENT: Chamberlin Architects

SITE: 620 Main Street
Carbondale, Colorado

LOCATION See Exploration Plan

Latitude: 39.4005° Longitude: -107.2135°

Approximate Surface Elev.: 6183.5 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	6183.5+/-								
TOPSOIL, about 3 inches									
FILL - POORLY GRADED SAND (SP), fine to medium grained, brown									
2.0	6181.5+/-								
POORLY GRADED GRAVEL (GP-GM), with silt and sand, varies to clayey sand with gravel and cobbles, fine to coarse grained, light brown to light gray, dense to very dense						16-50/5"	2	NP	5
						50/3"			
5.0	6178.5+/-		5			50/5"			
Boring Terminated at 5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7-inch diameter hollow stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Boring was about 88 feet west and 7 feet north of the northwest corner of the main office building.
Elevation was obtained using a level and referencing the north edge of the finished floor at the west entrance of the main office building (39.4003°, -107.2132°) with a reported elevation of 6186.47 feet.

WATER LEVEL OBSERVATIONS

None encountered while drilling

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 05-14-2020 | Boring Completed: 05-14-2020

Drill Rig: CME-55 | Driller: Terracon

Project No.: 25185026

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25185026 PROPOSED ASPEN-SO.GPJ TERRACON_DATATEMPLATE.GDT 5/28/20

BORING LOG NO. CPT-2

PROJECT: Proposed Aspen-Carbondale Site

CLIENT: Chamberlin Architects

SITE: 620 Main Street
Carbondale, Colorado

LOCATION See Exploration Plan

Latitude: 39.4003° Longitude: -107.2135°

Approximate Surface Elev.: 6183.7 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	0.2 **ASPHALT**, about 2-3/4 inches	6183.5+/-							
	FILL - CLAYEY SAND (SC), with gravel, fine to coarse grained, brown								
	2.0	6181.5+/-							
	POORLY GRADED GRAVEL (GP-GM), with silt and sand, fine to coarse grained, light brown, dense				X	50/8"	3	NP	10
	3.0	6180.5+/-							
	SILTY SAND (SM), with gravel, varies to gravelly lean clay with cobbles, fine to coarse grained, light brown, very dense								
	5.0	6178.5+/-	5		X	50/7"	2	NP	21
	Boring Terminated at 5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
4-inch diameter solid stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings and patched with asphalt upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Boring was about 93 feet west and 40 feet south of the northwest corner of the main office building.
Elevation was obtained using a level and referencing the north edge of the finished floor at the west entrance of the main office building (39.4003°, -107.2132°) with a reported elevation of 6186.47 feet.

WATER LEVEL OBSERVATIONS

None encountered while drilling

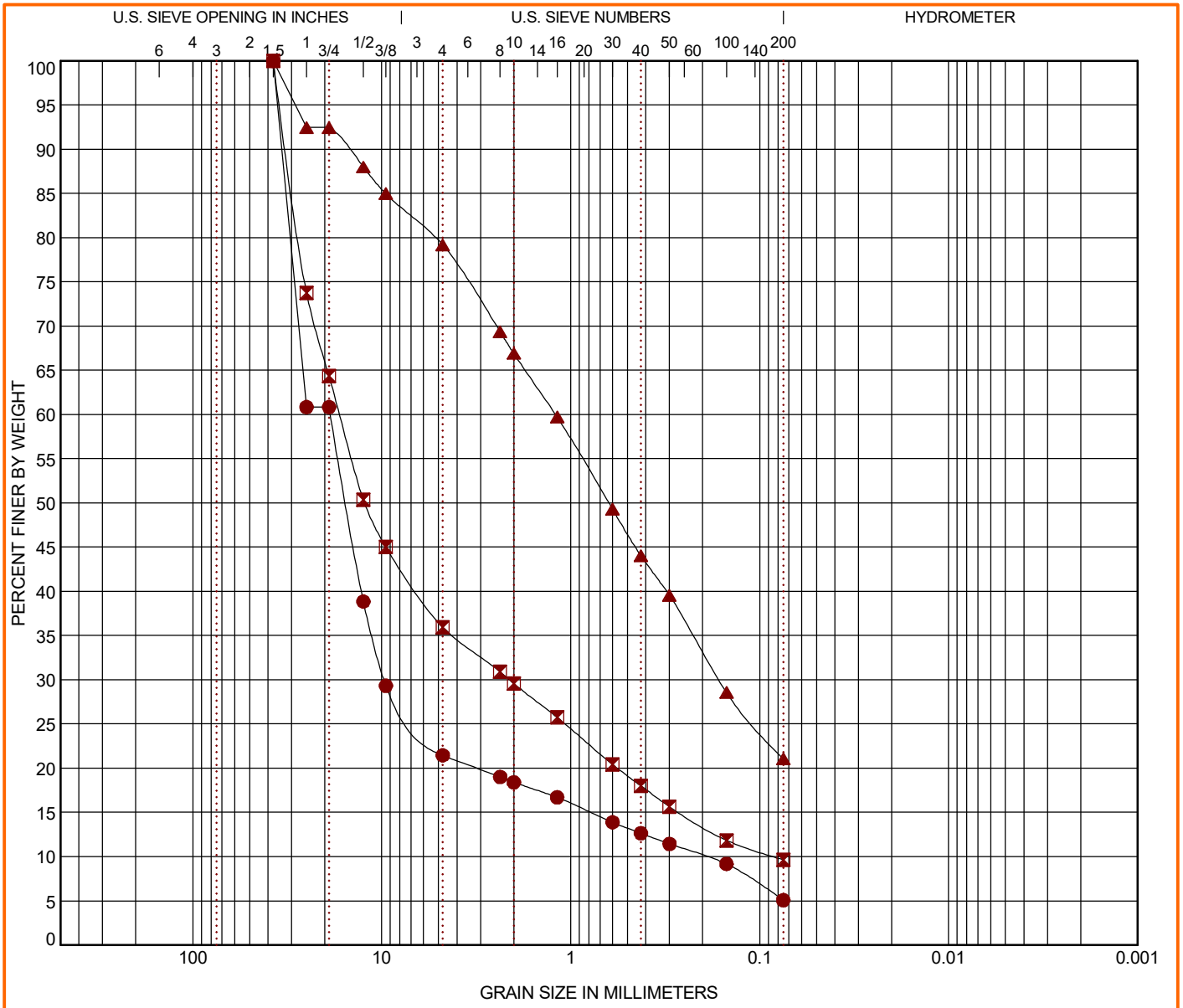
Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 05-15-2020	Boring Completed: 05-15-2020
Drill Rig: CME-55	Driller: Terracon
Project No.: 25185026	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25185026 PROPOSED ASPEN-SO.GPJ TERRACON_DATATEMPLATE.GDT 5/28/20

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring ID	Depth	USCS Classification	AASHTO Classification	WC (%)	LL	PL	PI	Cc	Cu
●	CPT-1	2 - 3	POORLY GRADED GRAVEL with SILT and SAND (GP-GM)	A-1-a (0)	2	NP	NP	NP	25.96	96.73
⊠	CPT-2	2 - 3	POORLY GRADED GRAVEL with SILT and SAND (GP-GM)	A-1-a (0)	3	NP	NP	NP	3.18	198.66
▲	CPT-2	4 - 5	SILTY SAND with GRAVEL (SM)	A-1-b (0)	2	NP	NP	NP		

	Boring ID	Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Gravel	%Sand	%Silt	%Fines	%Clay
●	CPT-1	2 - 3	37.5	18.699	9.688	0.193	78.6	16.4		5.1	
⊠	CPT-2	2 - 3	37.5	16.67	2.11	0.084	64.0	26.3		9.6	
▲	CPT-2	4 - 5	37.5	1.204	0.164		20.8	58.1		21.1	

PROJECT: Proposed Aspen-Carbondale Site

PROJECT NUMBER: 25185026

SITE: 620 Main Street
Carbondale, Colorado

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

CLIENT: Chamberlin Architects

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS & AASHTO DESC COMBINED 25185026 PROPOSED ASPEN-SO.GPJ TERRACON_DATATEMPLATE.GDT 5/26/20

SUMMARY OF LABORATORY TEST RESULTS

Proposed Aspen-Carbondale Site - Carbondale Colorado

Terracon Project No. 25185026

Boring No.	Depth (ft.)	USCS Class.	Initial Water Content (%)	Particle Size Distribution, Percent Passing by Weight							Atterberg Limits		Remarks
				1 1/2"	1"	3/4"	#4	#10	#40	#200	LL	PI	
CPT-1	2	GP-GM	2	100	61	61	21	18	13	5	NV	NP	
CPT-2	2	GP-GM	3	100	74	64	36	30	18	10	NV	NP	
CPT-2	4	SM	2	100	92	92	79	67	44	21	NV	NP	

Notes:
Initial Dry Density and Initial Water Content are in-situ values unless otherwise noted.
* = Partially disturbed sample
- = Compression/settlement
NV = no value
NP = non-plastic

Remarks:
1 Remolded Compacted density (about 95% of ASTM D698 maximum density near optimum moisture content)
2 Remolded Compacted density (about 95% of ASTM D1557 maximum density near optimum moisture content)
3 Water added to sample
4 Dry density and/or moisture content determined from one ring of a multi-ring sample
5 Minus #200 Only
6 Moisture-Density Relationship Test Method ASTM D698/AASHTO T99
7 Moisture-Density Relationship Test Method ASTM D1557/AASHTO T180

Terracon GeoReport

Field Percolation Rate Test

Test Hole PT-1A

Project Name: Aspen-Sopris Carbondale	5/15/2020
Terracon Project No.: 25185026	Hole Diameter (inches): 7
Eng./Tech.: JL	Hole Depth (inches): 36

Time	Length of Interval (min)	Total Time (min)	Beginning Depth to Water Surface (in)	Ending Depth to Water Surface (in)	Water Level Drop (in)	Percolation Rate During Interval (min/in)
10:00				30.63		
10:30	30	30	30.63	31.00	0.38	80.0
11:00	30	60	30.25	32.38	2.13	14.1
11:30	30	90	30.25	31.75	1.50	20.0
12:00	30	120	30.00	32.63	2.63	11.4
12:30	30	150	30.38	31.38	1.00	30.0
13:00	30	180	30.13	31.25	1.13	26.7
13:30	30	210	30.25	31.19	0.94	32.0
14:00	30	240	30.31	30.56	0.25	120.0

REMARKS: A perforated percolation tube was installed in each hole. Beginning depth to water surface was taken from the top of tube and corrected to the ground surface. Test hole was presoaked on 5/14/20 prior to testing. Water added for every increment after 10:30 reading.

Field Percolation Rate Test

Test Hole PT-1B

Project Name: Aspen-Sopris Carbondale	5/15/2020
Terracon Project No.: 25185026	Hole Diameter (inches): 7
Eng./Tech.: JL	Hole Depth (inches): 36

Time	Length of Interval (min)	Total Time (min)	Beginning Depth to Water Surface (in)	Ending Depth to Water Surface (in)	Water Level Drop (in)	Percolation Rate During Interval (min/in)
10:14				31.00		
10:44	30	30	31.00	31.00	0.00	N/A
11:14	30	60	31.00	31.50	0.50	60.0
11:44	30	90	31.13	32.19	1.06	28.2
12:14	30	120	31.00	31.50	0.50	60.0
12:44	30	150	31.25	32.25	1.00	30.0
13:14	30	180	31.13	33.00	1.88	16.0
13:44	30	210	31.13	32.13	1.00	30.0
14:14	30	240	31.00	31.00	0.00	N/A

REMARKS: A perforated percolation tube was installed in each hole. Beginning depth to water surface was taken from the top of tube and corrected to the ground surface. Test hole was presoaked on 5/14/20 prior to testing. Water added for every increment after 11:14 reading.

Field Percolation Rate Test

Test Hole PT-1C

Project Name: Aspen-Sopris Carbondale	5/15/2020
Terracon Project No.: 25185026	Hole Diameter (inches): 7
Eng./Tech.: JL	Hole Depth (inches): 36

Time	Length of Interval (min)	Total Time (min)	Beginning Depth to Water Surface (in)	Ending Depth to Water Surface (in)	Water Level Drop (in)	Percolation Rate During Interval (min/in)
10:07				31.25		
10:37	30	30	31.25	32.50	1.25	24.0
11:07	30	60	31.00	32.13	1.13	26.7
11:37	30	90	31.13	33.25	2.13	14.1
12:07	30	120	31.25	31.75	0.50	60.0
12:37	30	150	31.25	33.38	2.13	14.1
13:07	30	180	31.13	33.56	2.44	12.3
13:37	30	210	31.00	31.56	0.56	53.3
14:07	30	240	31.00	32.00	1.00	30.0

REMARKS: A perforated percolation tube was installed in each hole. Beginning depth to water surface was taken from the top of tube and corrected to the ground surface. Test hole was presoaked on 5/14/20 prior to testing. Water added for every increment after 10:37 reading.

Field Percolation Rate Test

Test Hole PT-2A

Project Name: Aspen-Sopris Carbondale	5/15/2020
Terracon Project No.: 25185026	Hole Diameter (inches): 7
Eng./Tech.: JL	Hole Depth (inches): 36

Time	Length of Interval (min)	Total Time (min)	Beginning Depth to Water Surface (in)	Ending Depth to Water Surface (in)	Water Level Drop (in)	Percolation Rate During Interval (min/in)
11:19				32.50		
11:49	30	30	32.50	33.50	1.00	30.0
12:19	30	60	32.44	32.69	0.25	120.0
12:49	30	90	32.50	32.50	0.00	N/A
13:19	30	120	32.50	33.63	1.13	26.7
13:49	30	150	32.56	33.44	0.88	34.3
14:19	30	180	32.50	32.50	0.00	N/A
14:49	30	210	32.50	33.00	0.50	60.0
15:19	30	240	32.56	32.69	0.13	240.0

REMARKS: A perforated percolation tube was installed in each hole. Beginning depth to water surface was taken from the top of tube and corrected to the ground surface. Test hole was presoaked on 5/14/20 prior to testing. Water added after 11:49, 12:49, 13:19, 14:19 and 15:19 readings.

Field Percolation Rate Test

Test Hole PT-2B

Project Name: Aspen-Sopris Carbondale	5/15/2020
Terracon Project No.: 25185026	Hole Diameter (inches): 7
Eng./Tech.: JL	Hole Depth (inches): 36

Time	Length of Interval (min)	Total Time (min)	Beginning Depth to Water Surface (in)	Ending Depth to Water Surface (in)	Water Level Drop (in)	Percolation Rate During Interval (min/in)
11:22				31.50		
11:52	30	30	31.50	31.50	0.00	N/A
12:22	30	60	31.50	31.50	0.00	N/A
12:52	30	90	31.50	31.50	0.00	N/A
13:22	30	120	31.50	31.50	0.00	N/A
13:52	30	150	31.50	31.50	0.00	N/A
14:22	30	180	31.50	31.50	0.00	N/A
14:52	30	210	31.50	31.50	0.00	N/A
15:22	30	240	31.50	31.50	0.00	N/A

REMARKS: A perforated percolation tube was installed in each hole. Beginning depth to water surface was taken from the top of tube and corrected to the ground surface. Test hole was presoaked on 5/14/20 prior to testing.

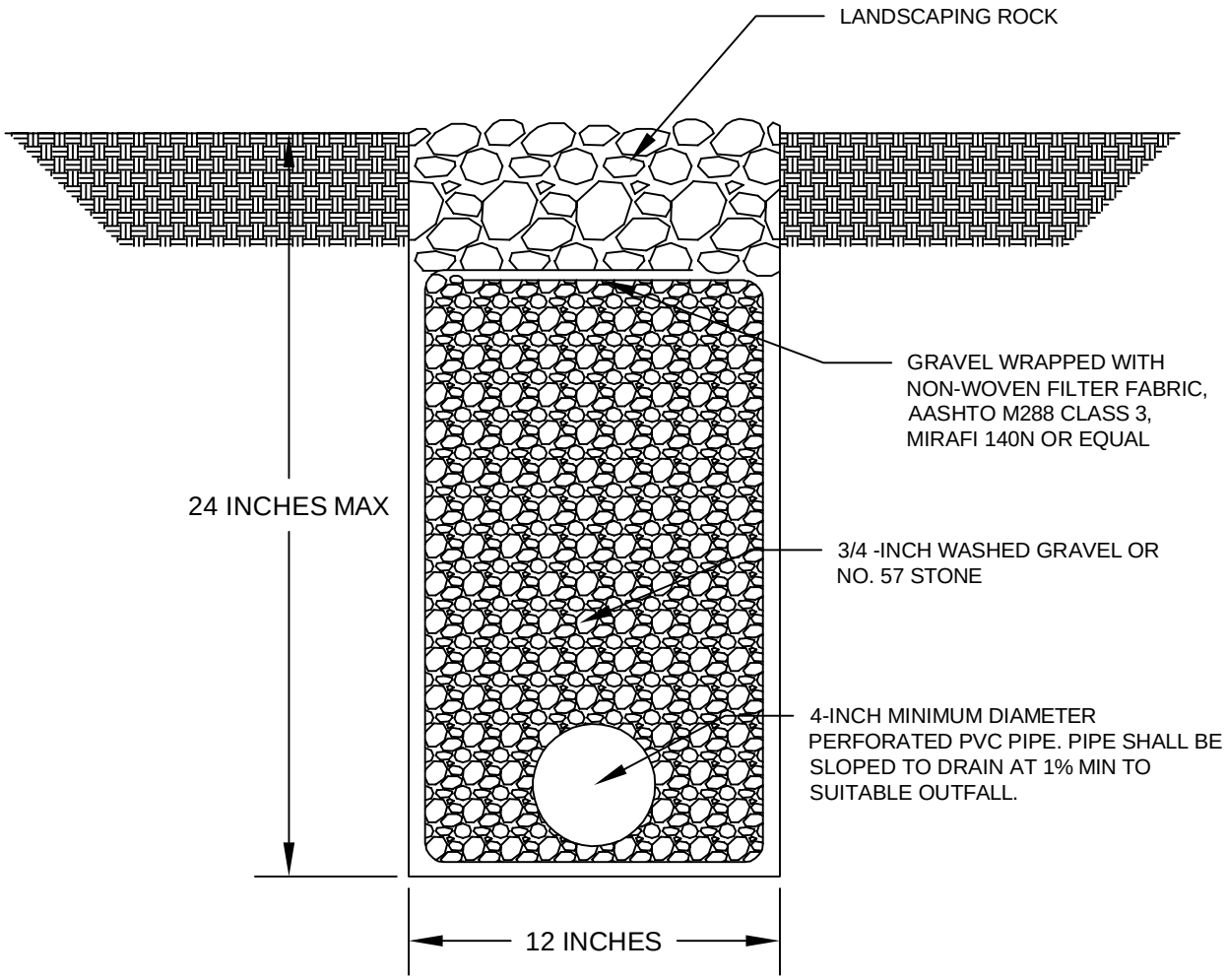
Field Percolation Rate Test

Test Hole PT-2C

Project Name: Aspen-Sopris Carbondale	5/15/2020
Terracon Project No.: 25185026	Hole Diameter (inches): 7
Eng./Tech.: JL	Hole Depth (inches): 36

Time	Length of Interval (min)	Total Time (min)	Beginning Depth to Water Surface (in)	Ending Depth to Water Surface (in)	Water Level Drop (in)	Percolation Rate During Interval (min/in)
11:27				31.44		
11:57	30	30	31.44	31.44	0.00	N/A
12:27	30	60	31.44	31.44	0.00	N/A
12:57	30	90	31.44	31.94	0.50	60.0
13:27	30	120	31.25	31.25	0.00	N/A
13:57	30	150	31.25	31.50	0.25	120.0
14:27	30	180	31.13	31.13	0.00	N/A
14:57	30	210	31.13	31.25	0.13	240.0
15:21	30	240	31.25	31.50	0.25	120.0

REMARKS: A perforated percolation tube was installed in each hole. Beginning depth to water surface was taken from the top of tube and corrected to the ground surface. Test hole was presoaked on 5/14/20 prior to testing. Water added after 12:57 and 13:57 readings.



Project Mngr: WDR Drawn By: PSR Checked By: SBM Approved By: SBM	Project No. 25185026 Scale: NTS File No. 25185026 Date: 05.28.2020	Terracon Consulting Engineers and Scientists 10625 W I-70 FRONTAGE RD N., SUITE 3 WHEAT RIDGE, CO 80033 PH. (303) 423-3300 FAX. (303) 423-3353	SHALLOW INTERCEPTOR DRAIN DETAIL Proposed Aspen-Sopris District Office & Work Compound - Carbondale Site Carbondale, Colorado	EXHIBIT No. 1

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APPENDIX C

Asbestos Inspection Report

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Asbestos Consulting Services

PRE-DEMOLITION
ASBESTOS INSPECTION

WHITE RIVER NATIONAL FOREST
SOPRIS RANGER STATION
620 MAIN STREET
CARBONDALE, COLORADO
81623

PREPARED FOR:

White River National Forest
900 Grand Avenue
Glenwood Springs, Colorado
81602-0948

PROJECT: **SEI18-P074**
PREPARED: **July 21, 2018**

Sunrise Environmental, Inc.
371 Crest View Drive /PO Box 429
Black Hawk, Colorado 80422
Phone: 720-209-5282
www.sunrise-enviro.com

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Appendices

Appendix A - Laboratory Results
Appendix B - Bulk Sample Location Diagrams
Appendix C - Certifications

CERTIFICATION OF RESULTS

This Pre-Demolition Asbestos Inspection was performed on behalf of the White River National Forest, (hereafter referred to as "Client"), subsidiaries, partners, directors and officers, and all successors and assigns, solely for use in evaluation of the presence of asbestos-containing building materials sampled at the White River National Forest Sopris Ranger Station located in Garfield County at 620 Main Street, Carbondale, Colorado 81623 (hereafter referred to as the "Site"). The information herein is only for the specific use of White River National Forest and Sunrise Environmental, Inc. Use by any other parties is unauthorized. Sunrise Environmental, Inc accepts no responsibility for the use, interpretation, or reliance by other parties on the information contained herein, unless written authorization is obtained by Sunrise Environmental, Inc.

Sunrise Environmental, Inc.

_____

Scott D. Sanders
President
CDPHE Building Inspector Certificate #633

1.0 EXECUTIVE SUMMARY

Sunrise Environmental, Inc. has completed a Pre-Demolition Asbestos Inspection of the White River National Forest Sopris Ranger Station located in Garfield County at 620 Main Street, Carbondale, Colorado 81623. The inspection was performed by Mr. Scott D. Sanders and Mary-Jean Sanders of Sunrise Environmental, Inc. June 11th and 12th, 2018. After identifying homogeneous areas of suspect Asbestos Containing Building Materials (ACBM), the inspector collected samples from each homogeneous area. The samples were sent to an independent laboratory where they were analyzed by polarized light microscopy.

Sunrise Environmental, Inc. collected and analyzed a total of one-hundred twenty-one (121) samples from forty-four (44) homogeneous areas for asbestos content, eight (8) of which were found to contain greater than 1% asbestos. Sunrise Environmental, Inc. did not presume any additional Homogeneous Areas as asbestos containing.

The materials found to contain greater than 1% asbestos at the White River National Forest Sopris Ranger Station located in Garfield County at 620 Main Street, Carbondale, Colorado 81623 are listed below:

- **Roll-applied drywall ceiling texture** (Ranger's Office Bldg.) (H.A. #7)
- **Drywall joint compound** (Ranger's Office Bldg.) (H.A #9)
- **Multi-layered sheet vinyl flooring** (Ranger's Office Bldg.) (H.A. #14)
- Tan adhesive (behind green ceramic tiles) (Ranger's Office Bldg.) (H.A. #15)
- **White fibrous duct insulation** (Engineer's Office Bldg.) (H.A. #29)
- **Brown fibrous insulation** (Engineer's Office Bldg.) (H.A. #30)
- **White woven gasket** (Shop Bldg.) (H.A. #36)
- Gray caulking (Warehouse Bldg.) (H.A. 43)

The EPA and CDPHE-AQCC requires all asbestos containing materials listed in **bold** print above be removed prior to demolition of the building. Removal of these materials must be performed by a licensed General Abatement Contractor (GAC) prior to demolition of the building.

The CDPHE-AQCC allows non-friable asbestos-containing adhesives and caulking to remain in a building during demolition of the building provided the materials will remain non-friable during the demolition process. If it is decided that non-friable asbestos-containing materials are to be left in the building during demolition, once demolition has been performed, no amount of the non-friable asbestos-containing materials may remain at the site or in the soil at the site.

Laboratory analysis of the following building materials identified less than 1% asbestos in the samples submitted. These materials are not regulated by EPA or CDPHE-AQCC. However, OSHA regulations require employees to document potential exposure to employees handling these materials and maintain exposure limits below the Permissible Exposure Limit (PEL) of 0.1 fibers/cubic Centimeter (f/cc) over an eight-hour time weighted average (TWA). The materials found to contain 1.0% or less asbestos content are listed below:

- Rough plaster (Ranger's Office Bldg.) (Homogeneous Area #8)

- Trowel-applied textured plaster (Ranger's Office Bldg.) (Homogeneous Area #10)
- Smooth plaster (Ranger's Office Bldg.) (Homogeneous Area #11)
- Rough textured plaster (Ranger's Office Bldg.) (Homogeneous Area #13)
- Spray-applied textured plaster (Ranger's Office Bldg.) (Homogeneous Area #16)
- Vermiculite attic insulation (Ranger's Office Bldg.) (Homogeneous Area #18)
- Rough plaster (Engineer's Office Bldg.) (Homogeneous Area #27)

2.0 SCOPE AND FACILITY INFORMATION

2.1 Inspection Objectives and Scope

The White River National Forest requested Sunrise Environmental, Inc. inspect the White River National Forest Sopris Ranger Station located in Garfield County at 620 Main Street, Carbondale, Colorado 81623 for the presence of asbestos containing building materials (ACBM). Sunrise Environmental, Inc. performed a Pre-Demolition Asbestos Inspection in accordance with the requirements of 40 CFR 61, National Standards for Hazardous Air Pollutants (NESHAP), and Colorado Department of Public Health and Environment Air Quality Control Commission (CDPHE-AQCC) Regulation 8, which require that a structure be thoroughly inspected for the presence of asbestos-containing building materials prior to demolition.

Our scope of services included the following:

- Identify suspect asbestos containing building materials (ACBM) at the White River National Forest Sopris Ranger Station located in Garfield County at 620 Main Street, Carbondale, Colorado 81623.
- Identify suspect asbestos containing materials (ACM) on the surface of the ground surrounding the structures.
- Collect bulk samples of all identified suspect materials in accordance with 40 CFR 763.86 and CDPHE-AQCC Regulation # 8.
- Submit the bulk samples to a NVLAP accredited asbestos laboratory for analysis;
- Specify the condition of the suspect ACBM;
- Compile a final report of findings.

Sunrise Environmental, Inc. made reasonable efforts to locate and identify asbestos containing building materials (ACBM) at the White River National Forest Sopris Ranger Station located in Garfield County at 620 Main Street, Carbondale, Colorado 81623. The inspection was conducted by CDPHE Certified Asbestos Building Inspectors Scott D. Sanders & Mary-Jean Sanders.

2.2 Building Description

Five buildings at the site were inspected:

1. Ranger's Office Building
2. Engineer's Office Building
3. Shop Building
4. Warehouse Building
5. Hazmat Storage Building

1. The Ranger's Office Building is constructed primarily of wood, plaster, drywall, concrete and tar-impregnated composite roofing.

2. The Engineers Office Building is constructed primarily of wood, plaster, concrete and tar-impregnated composite roofing.

3. The Shop Building is constructed primarily of wood, drywall, concrete and tar-impregnated composite roofing.

4. The Warehouse Building is constructed primarily of metal, drywall, and concrete.

5. The Hazmat Storage Building is constructed primarily of concrete.

2.3 Review of Existing Information

No previous asbestos inspection documentation regarding the site was provided for review.

3.0 METHODS AND TECHNIQUES

3.1 Inspection

Sunrise Environmental, Inc. inspected the White River National Forest Sopris Ranger Station located in Garfield County at 620 Main Street, Carbondale, Colorado 81623 to locate and identify friable and non-friable asbestos containing building materials. Mr. Scott D. Sanders and Ms. Mary-Jean Sanders of Sunrise Environmental, Inc. performed the inspection June 11th and 12th, 2018. Mr. Scott D. Sanders and Ms. Mary-Jean Sanders are Colorado Department of Public Health and Environment (CDPHE-AQCC) certified asbestos building inspectors. The inspectors visually inspected the structures to locate and identify suspect ACBM, touched suspect ACBM to determine friability, and determined the extent of homogeneous areas of friable and non-friable suspect ACBM.

3.2 Bulk Sampling

Random bulk samples, representative of the suspect asbestos containing building materials of each homogeneous area, were collected according to guidelines published as Environmental Protection Agency (EPA) Final Rule: Title II of the Toxic Substances Control Act (TSCA), 15 USC, Sections 2641 through 2654 and in compliance with 40 CFR, Part 763 and Colorado Department of Public Health and Environment (CDPHE), Regulation Number 8. Representative sampling is based on the following criteria:

1. The distribution of the suspect material throughout the homogeneous area.
2. The suspect materials physical characteristics and application.
3. Random sampling patterns determined for each homogeneous area.

Suspect materials sampled and analyzed should be considered representative of materials in each homogeneous area if:

1. They exhibit similar physical characteristics.
2. The application of the sampled material can be correlated to the application of un-sampled material.

Suspect materials similar in appearance and application were sampled as homogeneous areas. Suspect materials were divided into three classifications and sampled according to applicable regulations based on classification of each homogeneous material and the quantity of each homogeneous material as listed below:

1. Surfacing Materials - Troweled on or sprayed on material
   - 1,000 square feet requires a minimum of three (3) samples
   - Greater than 1,000 square feet but less than or equal to 5,000 square feet requires a minimum of five (5) samples
   - Greater than 5,000 square feet requires a minimum of seven (7) samples
2. Thermal System Insulation
   - Each system requires three (3) samples

3. Miscellaneous - other suspect materials not classified in the above categories
    - Sufficient samples to adequately characterize the materials with a minimum of two (2) samples

After identifying homogeneous areas of suspect ACBM, representative samples from each homogeneous area were collected. The inspector randomly selected the sample locations and collected samples in a manner to minimize the release of fibers into the air. At each sample location, the inspector collected a small bulk sample of the material using an appropriate tool (e.g, clean knife or chisel), and placed each bulk sample into an unused, uniquely labeled, sealable bag. The inspector documented each Homogeneous Area, sample location, sample number and other pertinent information at the time of the inspection. A total of one-hundred twenty-one (121) samples were collected for analysis from forty-four (44) Homogeneous Areas.

3.3 Sample Analysis

Bulk samples collected were submitted for analysis at Eurofin CEI Labs, 730 SE Maynard Road, Cary, North Carolina 27511 and were analyzed by Polarized Light Microscopy (PLM) for asbestos content. CEI Labs and FRS Geotech, Inc. are accredited by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP). PLM was performed in compliance with guidelines established by the USEPA (EPA 600 Method).

A building material of a given homogeneous area is considered to be ACBM based on a finding that at least one sample collected from the material showed asbestos present in an amount greater than one percent (1%). A building material is not to be considered ACBM only if the results of all samples collected from the material showed asbestos content to be equal to or less than one percent (1%).

The Colorado Department of Public Health & Environment Regulation No. 8, Section III.A.1.c requires that if the asbestos content of a friable asbestos containing material is estimated to be 1% asbestos or less, but greater than 0%, the material must be treated as asbestos-containing or the material must be submitted for the point count analysis technique using Polarized Light Microscopy. If the point count result is different from the result obtained from visual estimation, the point count result must be used. EPA-NESHAP recommends point count analysis for visual estimations from greater than 1% to 10% to disprove false positive results or consider the material to be asbestos containing.

Samples 7-1, 7-2, 7-3, 9-1 and 9-2 were submitted for point count analysis and found to contain greater than 1% asbestos. Samples 8-1, 8-2, 8-3, 8-4, 8-5, 10-1, 10-2, 10-3, 11-1, 11-2, 11-3, 11-4, 11-5, 13-1, 13-2, 13-3, 16-1, 16-2, 16-3, 18-3, 27-1, 27-2, 27-3, 27-4 and 27-5 were submitted for point count analysis and found to contain $\leq 1.0\%$ asbestos. A total of thirty (30) samples were submitted for point count analysis.

The analysis of the bulk samples was performed on June 20, 2018, and the point count analysis was performed June 27 and July 1, 2018 as listed in the Analytical Data Section of this report (See Appendix A). Condition assessments were performed by the accredited inspector at the time of inspection.

4.0 Asbestos Containing Material Descriptions and Recommendations

The following pages include asbestos containing material descriptions and a table listing the asbestos containing building materials identified at the White River National Forest Sopris Ranger Station located in Garfield County at 620 Main Street, Carbondale, Colorado 81623. A Photograph of each asbestos-containing material identified at the Site can be found following the General Recommendations for each Homogeneous Area.

All material quantity estimates are approximations and should be verified in the field by contractors bidding for abatement of the asbestos-containing materials and/or demolition of the structures.

The building materials listed in this section contain concentrations of asbestos greater than 1% by visual estimation when analyzed by Polarized Light Microscopy.

HOMOGENEOUS AREA – 7

Material Description: **Roll-applied drywall ceiling texture**
Type of Material: **Surfacing Material**
Friability: **Friable**
Material Condition: **Good**

Potential for Disturbance
Frequency of Potential Contact: **Low**
Influence of Vibration: **Low**
Potential for Air Erosion: **Low**

Material Location	Material Quantity	AHERA Category
Ranger's Office Building, Basement ceiling Original (older) portion	Approx. (950) sq. ft.	#6 –ACBM with potential for significant damage

Sample No.	Sample Location	Composition
7-1	Ranger's Office Building Basement, west offices Center of ceiling	**2% Chrysotile (PLM)** **2% Chrysotile (Point Count)**
7-2	Ranger's Office Building Basement, boiler room Ceiling, adj. entrance	**2% Chrysotile (PLM)** **2% Chrysotile (Point Count)**
7-3	Ranger's Office Building Basement, Southeast room ceiling, Center	**2% Chrysotile** **2.3% Chrysotile (Point Count)**

General Recommendations

The roll-applied drywall ceiling texture is considered friable. Do not sand, grind, drill or abrade the material. Removal must be performed using proper procedures utilizing personnel trained in asbestos removal techniques and personal protective equipment. Properly maintained asbestos-containing drywall texture poses minimal risk of fiber release. The asbestos-containing roll-applied drywall ceiling texture must be removed by a licensed General Abatement Contractor utilizing personnel trained and certified to remove, transport and dispose of asbestos-containing material prior to demolition of the building.

The asbestos-containing roll-applied drywall ceiling texture was observed on the drywall ceiling in the original (older) portion of the Ranger's Office Building basement.

Photo of Homogeneous Area #7, roll-applied drywall ceiling texture:

HOMOGENEOUS AREA – 9

Material Description: **Drywall joint compound**
Type of Material: **Miscellaneous Material**
Friability: **Friable**
Material Condition: **Good**

Potential for Disturbance
Frequency of Potential Contact: **Low**
Influence of Vibration: **Low**
Potential for Air Erosion: **Low**

Material Location	Material Quantity	AHERA Category
Ranger's Office Building, Basement ceiling, Original (older) basement	Approx. 950 sq. ft.	#6 - ACBM with potential for significant damage

Sample No.	Sample Location	Composition
9-1	Ranger's Office Building, Basement hall ceiling adj. Entrance to boiler room	None Detected (drywall) **2% Chrysotile (compound) (PLM)** **1.3% Chrysotile (compound) (point count)**
9-2	Ranger's Office Building, Basement file room, Ceiling adjacent door	None Detected (drywall) **2% Chrysotile** (compound) **1.8% Chrysotile (compound) (point count)**

General Recommendations

The drywall joint compound is considered friable. Maintain material in undamaged condition. Do not sand, grind, drill or abrade the material. Should the joint compound become damaged or disturbed, removal should be performed using proper procedures utilizing personnel trained in asbestos removal techniques and personal protective equipment. Properly maintained asbestos containing joint compound poses minimal risk of fiber release.

The asbestos-containing drywall joint compound is associated with asbestos-containing texture on the Office Building basement drywall ceiling (original basement) and must be removed by a CDPHE licensed General Abatement Contractor (GAC) using personnel trained and certified to remove, transport and dispose of asbestos containing material prior to demolition of the building or if renovation activities will disturb the material.

The asbestos-containing drywall joint compound was observed on the drywall ceiling in the original (older) portion of the Ranger's Office Building basement.

Photo of Homogeneous Area #9, drywall joint compound:

HOMOGENEOUS AREA – 14

Material Description: **Multi-layered sheet vinyl flooring**
Type of Material: **Miscellaneous Material**
Friability: **Friable**
Material Condition: **Good**
Frequency of Potential Contact: **High**
Influence of Vibration: **Low**
Potential for Air Erosion: **Low**

Material Location	Material Quantity	AHERA Category
Ranger's Office Building, East Bathroom	Approx. 50 sq. ft.	#6-ACBM with potential for significant damage

Sample No.	Sample Location	Asbestos Composition
14-1	Ranger's Office Building, East Bathroom floor, Northeast corner	**25% Chrysotile**
14-2	Ranger's Office Building, East Bathroom floor Southeast corner Behind toilet	**25% Chrysotile**

The multilayered sheet vinyl flooring was observed in the following areas:

1. Ranger's Office Building, east bathroom floor (approx. 50 sq. ft.)

General Recommendations

The multi-layered sheet vinyl flooring is considered friable. Maintained in good condition the material poses minimal risk of fiber release. Avoid activities such as grinding, sanding, and cutting, which may cause the material to become damaged. Should the materials become damaged, removal should be performed by personnel trained and certified to remove, transport and dispose of asbestos containing material.

The multi-layered sheet vinyl flooring must be removed by personnel trained and certified to remove, transport and dispose of asbestos-containing material prior to demolition of the building, or if renovation activities will disturb the material.

Photo of Homogeneous Area #14, multilayered sheet vinyl flooring:

HOMOGENEOUS AREA – 15

Material Description: **Tan adhesive (behind green ceramic tiles)**
Type of Material: **Miscellaneous Material**
Friability: **Non-Friable**
Material Condition: **Good**
Frequency of Potential Contact: **Low**
Influence of Vibration: **Low**
Potential for Air Erosion: **Low**

Material Location	Material Quantity	AHERA Category
Ranger's Office Building, East bathroom	Approx. 50 sq. ft.	Non-friable ACBM

Sample No.	Sample Location	Asbestos Composition
15-1	Ranger's Office Building, East bathroom, Above SW corner of tub	**2% Chrysotile** (brown adhesive) None Detected (ceramic tile)
15-2	Ranger's Office Building, East bathroom, Above northwest corner of tub	**2% Chrysotile** (brown adhesive) None Detected (ceramic tile)

The tan adhesive (behind ceramic tiles) was observed in the following areas:

1. Ranger's Office Building, east bathroom tub walls (approx. 50 sq. ft.)

General Recommendations

The tan adhesive (behind ceramic tiles) in the Ranger's office building east bathroom is considered non-friable. Maintained in good condition the material poses minimal risk of fiber release. Avoid activities such as grinding, sanding, and cutting, which may cause the material to become damaged. Should the materials become damaged, removal should be performed by personnel trained and certified to remove, transport and dispose of asbestos containing material.

The tan adhesive (behind ceramic tiles) in the Ranger's office building east bathroom must be removed by personnel trained and certified to remove, transport and dispose of asbestos-containing material if renovation activities will impact the material.

The CDPHE allows non-friable asbestos-containing adhesive to remain in a building during demolition of the building provided the material will remain non-friable during the demolition process. No amount of the non-friable adhesive may remain at the site or in the soil after the demolition has been completed. All debris generated during the demolition of the building must leave the site and go to a landfill that will accept demolition debris that contains non-friable asbestos-containing materials.

Photo of Homogeneous Area #15, tan adhesive (behind green ceramic tiles):

HOMOGENEOUS AREA – 29

Material Description: **White fibrous duct insulation**
Type of Material: **Thermal System Insulation**
Friability: **Friable**
Material Condition: **Good**

Potential for Disturbance
Frequency of Potential Contact: **Low**
Influence of Vibration: **Medium**
Potential for Air Erosion: **Medium**

Material Location	Material Quantity	AHERA Category
Engineers Office Building, Basement NW File rm & boiler room	~ 8 sq. ft.	#6 - ACBM with potential for significant damage

Sample No.	Sample Location	Composition
29-1	Engineer's Office Building, Basement, NW file storage Rm. Ceiling, south abandoned duct	**65% Chrysotile**
29-2	Engineer's Office Building, Basement, NW file storage Rm. Ceiling, north abandoned duct	**65% Chrysotile**
29-3	Engineer's Office Building, Basement, NW file storage Rm. Ceiling, south abandoned duct	**65% Chrysotile**

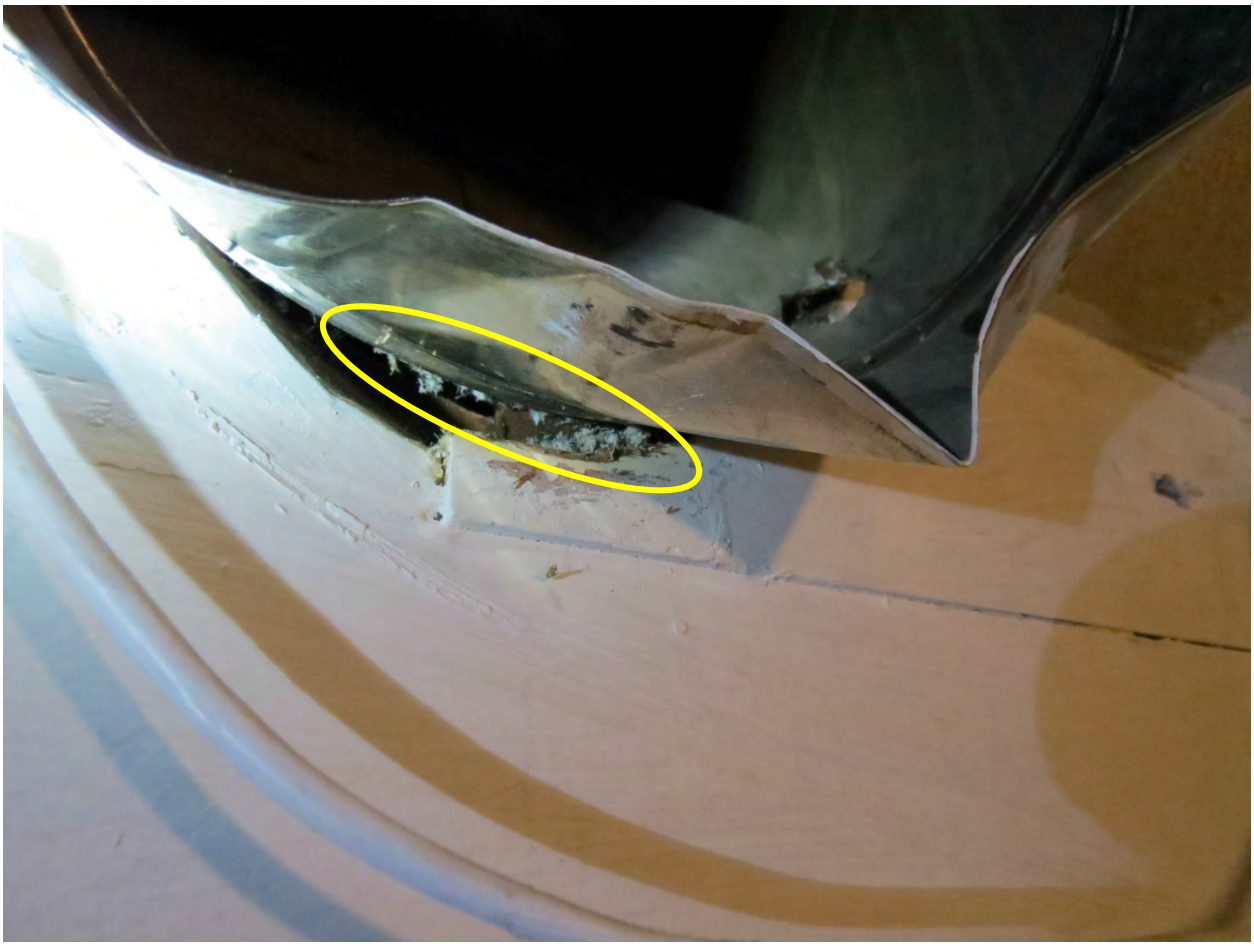
The white fibrous duct insulation was observed concealed above the plaster ceiling on abandoned air vents in the Engineer's Office Building basement northwest file storage room and the basement boiler room. Only a small amount of the white fibrous duct insulation was visible, but approximately 2 square feet of the material is presumed to exist on each of the four (4) abandoned air vents above the plaster ceiling.

General Recommendations

The white fibrous duct insulation is considered friable. Do not sand, grind, drill or abrade the material. Should the material become damaged or disturbed, removal should be performed using proper procedures utilizing personnel trained in asbestos removal techniques and personal protective equipment. Properly maintained asbestos containing duct insulation poses minimal risk of fiber release.

The white fibrous duct insulation must be removed by a licensed General Abatement Contractor utilizing personnel trained and certified to remove, transport and dispose of asbestos-containing material prior to demolition of the building or if the materials will be disturbed during renovation activities.

Photo of Homogeneous Area #29, white fibrous duct insulation:



HOMOGENEOUS AREA – 30

Material Description: **Brown fibrous insulation**
Type of Material: **Thermal System Insulation**
Friability: **Friable**
Material Condition: **Good**

Potential for Disturbance
Frequency of Potential Contact: **Medium**
Influence of Vibration: **Medium**
Potential for Air Erosion: **Medium**

Material Location	Material Quantity	AHERA Category
Engineers Office Building, Basement boiler room	~ 1 sq. ft.	#6 - ACBM with potential for significant damage

Sample No.	Sample Location	Composition
30-1	Engineer's Office Building, Basement, boiler room Lower chimney vent, north side	**20% Chrysotile**
30-1	Engineer's Office Building, Basement, boiler room Upper chimney vent, north side	**20% Chrysotile**
30-3	Engineer's Office Building, Basement, boiler room Lower chimney vent, south side	**20% Chrysotile**

The brown fibrous insulation was observed on the chimney vents in the Engineer's Office Building basement boiler room.

General Recommendations

The brown fibrous insulation is considered friable. Do not sand, grind, drill or abrade the material. Should the material become damaged or disturbed, removal should be performed using proper procedures utilizing personnel trained in asbestos removal techniques and personal protective equipment. Properly maintained asbestos containing fibrous insulation pose minimal risk of fiber release.

The brown fibrous insulation must be removed by a licensed General Abatement Contractor utilizing personnel trained and certified to remove, transport and dispose of asbestos-containing material prior to demolition of the building or if the materials will be disturbed during renovation activities.

Photo of Homogeneous Area #30, brown fibrous insulation:

HOMOGENEOUS AREA – 36

Material Description: **White woven gasket**
Type of Material: **Miscellaneous Material**
Friability: **Non-Friable**
Material Condition: **Good**

Potential for Disturbance
Frequency of Potential Contact: **Low**
Influence of Vibration: **Low**
Potential for Air Erosion: **Low**

Material Location	Material Quantity	AHERA Category
Shop Building, Furnace	1 furnace ~35 ln. ft.	Non-friable ACBM

Sample No.	Sample Location	Composition
36-1	Shop Building, Top of furnace, North center	**90% Chrysotile**
36-2	Shop Building, Top of furnace, Northeast corner	**90% Chrysotile**

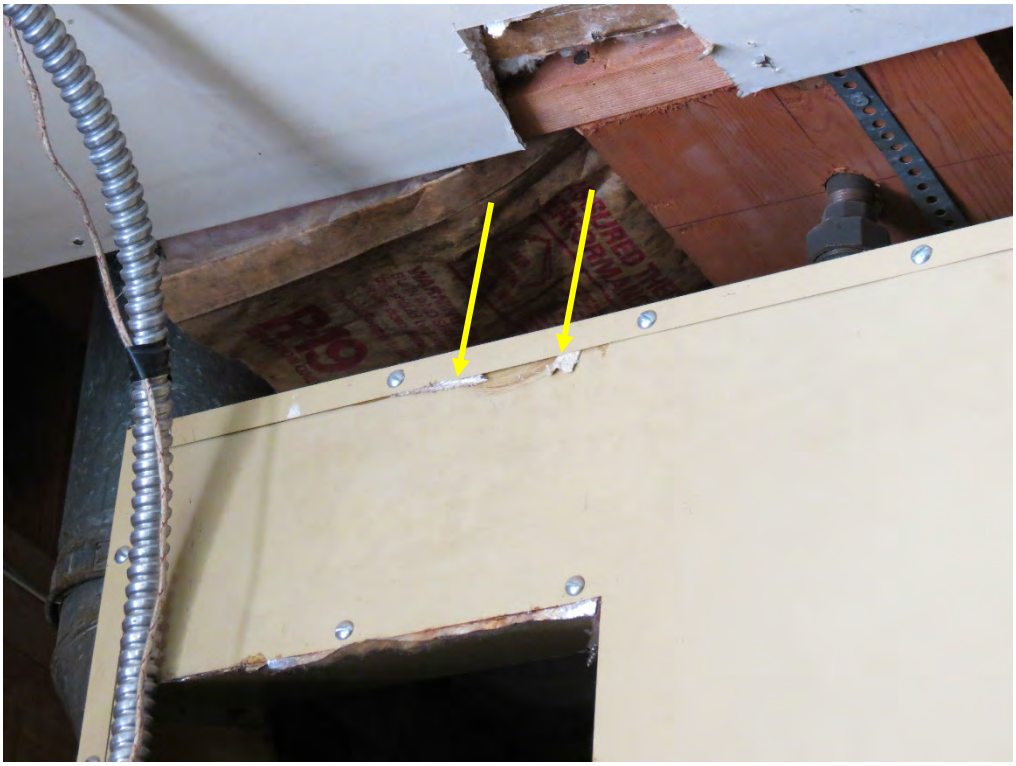
The white woven gasket was observed inside the furnace in the Shop Building (east side garage area).

General Recommendations

The white woven gasket is considered non-friable. Do not sand, grind, drill or abrade the material. Should the material become damaged or disturbed, removal should be performed using proper procedures utilizing personnel trained in asbestos removal techniques and personal protective equipment. Properly maintained asbestos containing woven gaskets pose minimal risk of fiber release.

The white woven gasket may become friable during demolition and the gasket must be removed by a licensed General Abatement Contractor utilizing personnel trained and certified to remove, transport and dispose of asbestos-containing material prior to demolition of the building or if the material will be disturbed during renovation activities.

Photos of Homogeneous Area #36, white woven gasket:



HOMOGENEOUS AREA – 43

Material Description: **Gray Caulk**
Type of Material: **Miscellaneous Material**
Friability: **Non-Friable**
Material Condition: **Good**
Frequency of Potential Contact: **Low**
Influence of Vibration: **Low**
Potential for Air Erosion: **Low**

Material Location	Material Quantity	AHERA Category
Warehouse Building	Approx. 700 ln. ft.	Non-friable ACBM

Sample No.	Sample Location	Asbestos Composition
43-1	Warehouse Building, Roof, East side, Center	**5% Chrysotile**
43-1	Warehouse Building, Roof, East side, South of center	**5% Chrysotile**

The gray caulk was observed in the following areas:

1. Warehouse Building metal roofing seams

General Recommendations

The gray caulk is considered non-friable. Maintained in good condition the material poses minimal risk of fiber release. Avoid activities such as grinding, sanding, and cutting, which may cause the material to become damaged. Should the materials become damaged, removal should be performed by personnel trained and certified to remove, transport and dispose of asbestos containing material.

The gray caulk must be removed by personnel trained and certified to remove, transport and dispose of asbestos-containing material if renovation activities will impact the material.

The CDPHE allows non-friable asbestos-containing caulk to remain in a building during demolition of the building provided the material will remain non-friable during the demolition process. No amount of the non-friable caulk may remain at the site or in the soil after the demolition has been completed. All debris generated during the demolition of the building must leave the site and go to a landfill that will accept demolition debris that contains non-friable asbestos-containing materials.

Photo of Homogeneous Area #43, gray caulk:

5.0 Presumed Asbestos Containing Building Materials

No additional building materials at the site were presumed to contain greater than 1% asbestos.

6.0 Non-Asbestos Containing Building Materials

The following materials were sampled at the White River National Forest Sopris Ranger Station located in Garfield County at 620 Main Street, Carbondale, Colorado 81623 and were found to contain 1% or less asbestos:

Sample #:	Homogeneous Area & Material Description:	Sample Location:
1-1	**Homogeneous Area #1:** Spray-applied drywall texture (Surfacing Material) (Friable) (~4,000 sq. ft.)	Ranger Office Building, West (newer) section, Women's Room, West wall, center
1-2	**Homogeneous Area #1:** Spray-applied drywall texture (Surfacing Material) (Friable) (~4,000 sq. ft.)	Ranger Office Building, West (newer) section, Retail area, north ceiling, center
1-3	**Homogeneous Area #1:** Spray-applied drywall texture (Surfacing Material) (Friable) (~4,000 sq. ft.)	Ranger Office Building, West (newer) section, Conference room, south wall center
1-4	**Homogeneous Area #1:** Spray-applied drywall texture (Surfacing Material) (Friable) (~4,000 sq. ft.)	Ranger Office Building, West (newer) section, Retail area, west wall, center
1-5	**Homogeneous Area #1:** Spray-applied drywall texture (Surfacing Material) (Friable) (~4,000 sq. ft.)	Ranger Office Building, West (newer) section, Men's Bathroom, east wall, center
1-6	**Homogeneous Area #1:** Spray-applied drywall texture (Surfacing Material) (Friable) (~4,000 sq. ft.)	Ranger Office Building, West (newer) section, Basement, east end adj. elec. panel
1-7	**Homogeneous Area #1:** Spray-applied drywall texture (Surfacing Material) (Friable) (~4,000 sq. ft.)	Ranger Office Building, West (newer) section, Basement, south wall, center
2-1	**Homogeneous Area #2:** Multicolored sheet vinyl flooring (Miscellaneous Material) (Friable) (~90 sq. ft.)	Ranger Office Building, West (newer) section, Women's bathroom, NW corner

Sample #:	Homogeneous Area & Material Description:	Sample Location:
2-2	**Homogeneous Area #2:** Multicolored sheet vinyl flooring (Miscellaneous Material) (Friable) (~90 sq. ft.)	Ranger Office Building, West (newer) section, Women's bathroom, NW corner
3-1	**Homogeneous Area 3:** Tan carpet & adhesive (Miscellaneous Material) (Non-Friable) (~950 sq. ft.)	Ranger Office Building, West (newer) section, Conference room, NE corner
3-2	**Homogeneous Area 3:** Tan carpet & adhesive (Miscellaneous Material) (Non-Friable) (~950 sq. ft.)	Ranger Office Building, West (newer) section, Reception area, SW corner
4-1	**Homogeneous Area 4:** Drywall & Joint Compound (Miscellaneous Material) (Friable) (~4,000 sq. ft.)	Ranger Office Building, West (newer) section, Basement, north closet adj. steps, North wall, center
4-2	**Homogeneous Area 4:** Drywall & Joint Compound (Miscellaneous Material) (Friable) (~4,000 sq. ft.)	Ranger Office Building, West (newer) section, Basement, Northwest closet beneath steps, Northwest corner wall
4-3	**Homogeneous Area 4:** Drywall & Joint Compound (Miscellaneous Material) (Friable) (~4,000 sq. ft.)	Ranger Office Building, West (newer) section, Basement, divider wall, NE corner of office area
5-1	**Homogeneous Area 5:** White 2' x 4' ceiling tiles, Medium perpendicular fissures & small perforations (Miscellaneous Material) (Friable) (~520 sq. ft.)	Ranger Office Building, West (newer) section, Basement office area, East center
5-2	**Homogeneous Area 5:** White 2' x 4' ceiling tiles, Medium perpendicular fissures & small perforations (Miscellaneous Material) (Friable) (~520 sq. ft.)	Ranger Office Building, West (newer) section, Basement office area, Northwest corner
5-3	**Homogeneous Area 5:** White 2' x 4' ceiling tiles, Medium perpendicular fissures & small perforations (Miscellaneous Material) (Friable) (~520 sq. ft.)	Ranger Office Building, West (newer) section, Basement office area, Center

Sample #:	Homogeneous Area & Material Description:	Sample Location:
6-1	**Homogeneous Area 6:** Gray sealant (on metal air ducts) (Miscellaneous Material) (Non-Friable) (~50 sq. ft.)	Ranger Office Building, West (newer) section, Basement office area, Northwest corner
6-2	**Homogeneous Area 6:** Gray sealant (on metal air ducts) (Miscellaneous Material) (Non-Friable) (~50 sq. ft.)	Ranger Office Building, West (newer) section, Basement northeast closet
*8-1	**Homogeneous Area #8:** Rough plaster (Surfacing Material) (Friable) (~3,000 sq. ft.)	Ranger Office Building, East (older) section, Basement, Boiler room, north wall, west end
*8-2	**Homogeneous Area #8:** Rough plaster (Surfacing Material) (Friable) (~3,000 sq. ft.)	Ranger Office Building, East (older) section, Basement, west office, West wall, north end
*8-3	**Homogeneous Area #8:** Rough plaster (Surfacing Material) (Friable) (~3,000 sq. ft.)	Ranger Office Building, East (older) section, Basement, southeast room, West wall, center
*8-4	**Homogeneous Area #8:** Rough plaster (Surfacing Material) (Friable) (~3,000 sq. ft.)	Ranger Office Building, East (older) section, Basement, break area, Ceiling, center
*8-5	**Homogeneous Area #8:** Rough plaster (Surfacing Material) (Friable) (~3,000 sq. ft.)	Ranger Office Building, East (older) section, Basement, north center file room, South wall, center
*10-1	**Homogeneous Area #10:** Trowel-applied textured plaster (Surfacing Material) (Friable) (~120 sq. ft.)	Ranger Office Building, East (older) section, Basement, west office, Upper south wall, 2” below ceiling, East center
*10-2	**Homogeneous Area #10:** Trowel-applied textured plaster (Surfacing Material) (Friable) (~120 sq. ft.)	Ranger Office Building, East (older) section, Basement, southeast room, Upper north wall, 2” below ceiling, Center
*10-3	**Homogeneous Area #10:** Trowel-applied textured plaster (Surfacing Material) (Friable) (~120 sq. ft.)	Ranger Office Building, East (older) section, Basement, hallway, Upper south wall, 2” below ceiling, Center

Sample #:	Homogeneous Area & Material Description:	Sample Location:
*11-1	**Homogeneous Area #11:** Smooth Plaster (Surfacing Material) (Friable) (~3,200 sq. ft.)	Ranger Office Building, East (older) section, Main level, east stair landing, Southeast corner wall
*11-2	**Homogeneous Area #11:** Smooth Plaster (Surfacing Material) (Friable) (~3,200 sq. ft.)	Ranger Office Building, East (older) section, Main level, south center office, East wall, north center
*11-3	**Homogeneous Area #11:** Smooth Plaster (Surfacing Material) (Friable) (~3,200 sq. ft.)	Ranger Office Building, East (older) section, Main level, east stair landing, Southwest office, north wall center
*11-4	**Homogeneous Area #11:** Smooth Plaster (Surfacing Material) (Friable) (~3,200 sq. ft.)	Ranger Office Building, East (older) section, Main level, northwest office, South wall adjacent door
*11-5	**Homogeneous Area #11:** Smooth Plaster (Surfacing Material) (Friable) (~3,200 sq. ft.)	Ranger Office Building, East (older) section, Main level, ceiling adj. stairs to loft
12-1	**Homogeneous Area #12:** Rough Drywall Texture (Surfacing Material) (Friable) (~1,200 sq. ft.)	Ranger Office Building, East (older) section, Loft, Northwest corner ceiling
12-2	**Homogeneous Area #12:** Rough Drywall Texture (Surfacing Material) (Friable) (~1,200 sq. ft.)	Ranger Office Building, East (older) section, Loft, South wall center above window
12-3	**Homogeneous Area #12:** Rough Drywall Texture (Surfacing Material) (Friable) (~1,200 sq. ft.)	Ranger Office Building, East (older) section, Main floor, copy room, north wall
12-4	**Homogeneous Area #12:** Rough Drywall Texture (Surfacing Material) (Friable) (~1,200 sq. ft.)	Ranger Office Building, East (older) section, Main floor, Northwest area, Partition wall, east side, center
12-5	**Homogeneous Area #12:** Rough Drywall Texture (Surfacing Material) (Friable) (~1,200 sq. ft.)	Ranger Office Building, East (older) section, Main floor, Northwest area, Partition wall, west side, north end

Sample #:	Homogeneous Area & Material Description:	Sample Location:
*13-1	**Homogeneous Area #13:** Rough Textured Plaster (Surfacing Material) (Friable) (~300 sq. ft.)	Ranger Office Building, East (older) section, Main floor, bathroom, West wall, south center
*13-2	**Homogeneous Area #13:** Rough Textured Plaster (Surfacing Material) (Friable) (~300 sq. ft.)	Ranger Office Building, East (older) section, Main floor, bathroom, South wall, southeast corner
*13-3	**Homogeneous Area #13:** Rough Textured Plaster (Surfacing Material) (Friable) (~300 sq. ft.)	Ranger Office Building, East (older) section, Main floor, bathroom, Ceiling, northeast of center
*16-1	**Homogeneous Area #16:** Spray-Applied Textured Plaster (Surfacing Material) (Friable) (~500 sq. ft.)	Ranger Office Building, East (older) section, Main floor, hallway, North wall, east end
*16-2	**Homogeneous Area #16:** Spray-Applied Textured Plaster (Surfacing Material) (Friable) (~500 sq. ft.)	Ranger Office Building, East (older) section, Main floor, hallway, South wall center, east of SW office
*16-3	**Homogeneous Area #16:** Spray-Applied Textured Plaster (Surfacing Material) (Friable) (~500 sq. ft.)	Ranger Office Building, East (older) section, Main floor, hallway, North wall center, West of bathroom
17-1	**Homogeneous Area 17:** Drywall & Joint Compound (Miscellaneous Material) (Friable) (~1,200 sq. ft.)	Ranger Office Building, East (older) section, Main floor copy room, SE corner
17-2	**Homogeneous Area 17:** Drywall & Joint Compound (Miscellaneous Material) (Friable) (~1,200 sq. ft.)	Ranger Office Building, East (older) section, Loft, north corner adjacent stairs
18-1	**Homogeneous Area #18:** Vermiculite attic insulation (Miscellaneous Material) (Friable) (~900 sq. ft.)	Ranger Office Building, East (older) section, Attic, west end adjacent attic entry
18-2	**Homogeneous Area #18:** Vermiculite attic insulation (Miscellaneous Material) (Friable) (~900 sq. ft.)	Ranger Office Building, East (older) section, Attic, north of chimney

Sample #:	Homogeneous Area & Material Description:	Sample Location:
*18-3	**Homogeneous Area #18:** Vermiculite attic insulation (Miscellaneous Material) (Friable) (~900 sq. ft.)	Ranger Office Building, East (older) section, Attic, 3 ft. south of chimney
19-1	**Homogeneous Area #19:** Black & tan carpet & tan adhesive (Miscellaneous Material) (Non-Friable) (~800 sq. ft.)	Ranger Office Building, East (older) section, Adjacent front (north) door
19-2	**Homogeneous Area #19:** Black & tan carpet & tan adhesive (Miscellaneous Material) (Non-Friable) (~800 sq. ft.)	Ranger Office Building, East (older) section, Southeast office, northwest corner
20-1	**Homogeneous Area #20:** 12" x 12" white ceiling tile & tan mastic (Miscellaneous Material) (Friable) (~800 sq. ft.)	Ranger Office Building, East (older) section, Copy room ceiling, northeast corner
20-2	**Homogeneous Area #20:** 12" x 12" white ceiling tile & tan mastic (Miscellaneous Material) (Friable) (~800 sq. ft.)	Ranger Office Building, East (older) section, Copy room ceiling, center
21-1	**Homogeneous Area #21:** Exterior Wood Window Glazing (Miscellaneous Material) (Non-Friable) (~720 ln. ft.)	Ranger Office Building, East (older) section, Window adjacent south door
21-2	**Homogeneous Area #21:** Exterior Wood Window Glazing (Miscellaneous Material) (Non-Friable) (~720 ln. ft.)	Ranger Office Building, East (older) section, Northeast office, East center window
21-3	**Homogeneous Area #21:** Exterior Wood Window Glazing (Miscellaneous Material) (Non-Friable) (~720 ln. ft.)	Ranger Office Building, East (older) section, East center office, North window
22-1	**Homogeneous Area #22:** Exterior Wood Window Caulk (Miscellaneous Material) (Non-Friable) (~360 ln. ft.)	Ranger Office Building, East (older) section, South side, east end window
22-2	**Homogeneous Area #22:** Exterior Wood Window Caulk (Miscellaneous Material) (Non-Friable) (~360 ln. ft.)	Ranger Office Building, East (older) section, East side, south end window

Sample #:	Homogeneous Area & Material Description:	Sample Location:
22-3	**Homogeneous Area #22:** Exterior Wood Window Caulk (Miscellaneous Material) (Non-Friable) (~360 ln. ft.)	Ranger Office Building, East (older) section, North side, bathroom window
23-1	**Homogeneous Area #23:** Composite Roofing & Tar Paper (Miscellaneous Material) (Non-Friable) (~2,000 sq. ft.)	Ranger Office Building, West (newer) section, Roof, southwest corner
23-2	**Homogeneous Area #23:** Composite Roofing & Tar Paper (Miscellaneous Material) (Non-Friable) (~2,000 sq. ft.)	Ranger Office Building, West (newer) section, Roof, south side, center
24-1	**Homogeneous Area #23:** Composite Roofing & Tar Paper (Miscellaneous Material) (Non-Friable) (~3,000 sq. ft.)	Ranger Office Building, East (older) section, Roof, south side center
24-2	**Homogeneous Area #23:** Composite Roofing & Tar Paper (Miscellaneous Material) (Non-Friable) (~3,000 sq. ft.)	Ranger Office Building, East (older) section, Roof, southeast corner
25-1	**Homogeneous Area #25:** Black Tar Foundation Coating (Miscellaneous Material) (Non-Friable) (~2,000 sq. ft.)	Ranger Office Building, East (older) section, Foundation, south side, center, West of door to basement
25-2	**Homogeneous Area #25:** Black Tar Foundation Coating (Miscellaneous Material) (Non-Friable) (~2,000 sq. ft.)	Ranger Office Building, East (older) section, Foundation, south side, center, East of door to basement
25-3	**Homogeneous Area #25:** Black Tar Foundation Coating (Miscellaneous Material) (Non-Friable) (~2,000 sq. ft.)	Ranger Office Building, East (older) section, Foundation, south side, center, Adjacent top of stairs to basement
26-1	**Homogeneous Area #26:** White 2’ x 4’ Ceiling Tiles, Large Perpendicular Fissures & Small Perforations (Miscellaneous Material) (Friable) (~465 sq. ft.)	Engineers Office Building, Main level, South center above door to Northeast office

Sample #:	Homogeneous Area & Material Description:	Sample Location:
26-2	**Homogeneous Area #26:** White 2' x 4' Ceiling Tiles, Large Perpendicular Fissures & Small Perforations (Miscellaneous Material) (Friable) (~465 sq. ft.)	Engineers Office Building, Main level, Center
*27-1	**Homogeneous Area #27:** Rough Plaster (Surfacing Material) (Friable) (~2,500 sq. ft.)	Engineers Office Building, Main level, Northeast office, south wall center
*27-2	**Homogeneous Area #27:** Rough Plaster (Surfacing Material) (Friable) (~2,500 sq. ft.)	Engineers Office Building, Main level, Northwest office, Ceiling, center
*27-3	**Homogeneous Area #27:** Rough Plaster (Surfacing Material) (Friable) (~2,500 sq. ft.)	Engineers Office Building, Basement, Closet, North wall center
*27-4	**Homogeneous Area #27:** Rough Plaster (Surfacing Material) (Friable) (~2,500 sq. ft.)	Engineers Office Building, Basement, Boiler room, South wall
*27-5	**Homogeneous Area #27:** Rough Plaster (Surfacing Material) (Friable) (~2,500 sq. ft.)	Engineers Office Building, Basement, Northeast room, Ceiling, SW corner
28-1	**Homogeneous Area #28:** Smooth plaster (Surfacing Material) (Friable) (~325 sq. ft.)	Engineers Office Building, Basement, Bathroom, East wall center
28-2	**Homogeneous Area #28:** Smooth plaster (Surfacing Material) (Friable) (~325 sq. ft.)	Engineers Office Building, Basement, Bathroom, North wall center
28-3	**Homogeneous Area #28:** Smooth plaster (Surfacing Material) (Friable) (~325 sq. ft.)	Engineers Office Building, Basement, Bathroom, Ceiling adjacent door
31-1	**Homogeneous Area #31:** Blown-in attic insulation (Miscellaneous Material) (Friable) (~1,340 sq. ft.)	Engineers Office Building, Attic, East of attic access

Sample #:	Homogeneous Area & Material Description:	Sample Location:
31-2	**Homogeneous Area #31:** Blown-in attic insulation (Miscellaneous Material) (Friable) (~1,340 sq. ft.)	Engineers Office Building, Attic, South of attic access
32-1	**Homogeneous Area #32:** Composite Roofing & Tar Paper (Miscellaneous Material) (Non-Friable) (~1,500 sq. ft.)	Engineers Office Building, Roof, Southwest corner
32-2	**Homogeneous Area #32:** Composite Roofing & Tar Paper (Miscellaneous Material) (Non-Friable) (~1,500 sq. ft.)	Engineers Office Building, Roof, Northeast corner
33-1	**Homogeneous Area #33:** Exterior Wood Window Glazing (Miscellaneous Material) (Non-Friable) (~570 ln. ft.)	Engineers Office Building, South side, West window
33-2	**Homogeneous Area #33:** Exterior Wood Window Glazing (Miscellaneous Material) (Non-Friable) (~570 ln. ft.)	Engineers Office Building, East side, North basement window
33-3	**Homogeneous Area #33:** Exterior Wood Window Glazing (Miscellaneous Material) (Non-Friable) (~570 ln. ft.)	Engineers Office Building, North side, East window
34-1	**Homogeneous Area #34:** Exterior Wood Window Caulk (Miscellaneous Material) (Non-Friable) (~280 ln. ft.)	Engineers Office Building, South side, East window, west side
34-2	**Homogeneous Area #34:** Exterior Wood Window Caulk (Miscellaneous Material) (Non-Friable) (~280 ln. ft.)	Engineers Office Building, North side, East window
35-1	**Homogeneous Area #35:** Drywall panel (Miscellaneous Material) (Friable) (~350 sq. ft.)	Shop Building, Ceiling, Adjacent top of stairs
35-2	**Homogeneous Area #35:** Drywall panel (Miscellaneous Material) (Friable) (~350 sq. ft.)	Shop Building, Garage/workshop, North wall, east of door

Sample #:	Homogeneous Area & Material Description:	Sample Location:
37-1	**Homogeneous Area #37:** Exterior Wood Window Glazing (Miscellaneous Material) (Non-Friable) (~120 ln. ft.)	Shop Building, North window
37-2	**Homogeneous Area #37:** Exterior Wood Window Glazing (Miscellaneous Material) (Non-Friable) (~120 ln. ft.)	Shop Building, South window
37-3	**Homogeneous Area #37:** Exterior Wood Window Glazing (Miscellaneous Material) (Non-Friable) (~120 ln. ft.)	Shop Building, West center window
38-1	**Homogeneous Area #38:** Exterior Wood Window Caulk (Miscellaneous Material) (Non-Friable) (~65 ln. ft.)	Shop Building, North window
38-2	**Homogeneous Area #38:** Exterior Wood Window Caulk (Miscellaneous Material) (Non-Friable) (~65 ln. ft.)	Shop Building, South window
39-1	**Homogeneous Area #39:** Composite Roofing & Tar Paper (Miscellaneous Material) (Non-Friable) (~1,500 sq. ft.)	Shop Building, Roof, Northwest corner
39-2	**Homogeneous Area #39:** Composite Roofing & Tar Paper (Miscellaneous Material) (Non-Friable) (~1,500 sq. ft.)	Shop Building, Roof, West side, center
40-1	**Homogeneous Area #40:** Tar Paper (Miscellaneous Material) (Non-Friable) (~1,200 sq. ft.)	Shop Building, Exterior south wall, east end Behind siding
40-2	**Homogeneous Area 40:** Tar Paper (Miscellaneous Material) (Non-Friable) (~1,200 sq. ft.)	Shop Building, Exterior southwest corner, Behind siding
41-1	**Homogeneous Area 41:** Drywall & Joint Compound (Miscellaneous Material) (Friable) (~2,500 sq. ft.)	Warehouse Building, Southeast corner room ceiling, Center

Sample #:	Homogeneous Area & Material Description:	Sample Location:
41-2	**Homogeneous Area 41:** Drywall & Joint Compound (Miscellaneous Material) (Friable) (~2,500 sq. ft.)	Warehouse Building, Southeast center room, East wall, center
41-3	**Homogeneous Area 41:** Drywall & Joint Compound (Miscellaneous Material) (Friable) (~2,500 sq. ft.)	Warehouse Building, Northwest area, Laundry room, south wall center
42-1	**Homogeneous Area 42:** Exterior Metal Window Caulk (Miscellaneous Material) (Non-Friable) (~60 ln. ft.)	Warehouse Building, South window
42-2	**Homogeneous Area 42:** Exterior Metal Window Caulk (Miscellaneous Material) (Non-Friable) (~60 ln. ft.)	Warehouse Building, West window
44-1	**Homogeneous Area 44:** Brown Caulk (Miscellaneous Material) (Non-Friable) (~20 ln. ft.)	Hazmat Storage Building, North side, Upper vent
44-2	**Homogeneous Area 44:** Brown Caulk (Miscellaneous Material) (Non-Friable) (~20 ln. ft.)	Hazmat Storage Building, North side, Lower vent

* Lab analysis identified ≤ 1.0% asbestos in the sample submitted. This material is not regulated by EPA or CDPHE-AQCC. OSHA regulations require employees to document potential exposure to employees handling these materials and maintain exposure limits below the Permissible Exposure Limit (PEL) of 0.1 fibers/cubic Centimeter (f/cc) over an eight-hour time weighted average (TWA).

7.0 Inspector Comments

Sunrise Environmental, Inc. identified and sampled a total of forty-four (44) Homogeneous Areas, eight (8) of which were found to contain greater than 1% asbestos. Sunrise Environmental, Inc. did not presume any additional building materials to contain greater than 1% asbestos. The CDPHE-AQCC requires the removal of friable materials and non-friable materials that may become friable during demolition activities prior to demolition. This asbestos inspection was performed for the purpose of demolition.

Sunrise Environmental, Inc. made reasonable efforts to locate and identify Asbestos Containing Building Materials (ACBM) at the White River National Forest Sopris Ranger Station located in Garfield County at 620 Main Street, Carbondale, Colorado 81623. Since the buildings were occupied at the time of the inspection, the inspectors did not perform destructive access to access inaccessible areas. The inspection was limited to areas physically accessible to the inspector at the time of the inspection.

The law enforcement officer office was inaccessible to the inspector at the time of the inspection. Inaccessible areas (such as pipe chases, abandoned ducting and areas behind existing walls and ceilings) must be fully investigated if the inaccessible areas will be disturbed by renovation activities, or if the building will be demolished. If unidentified materials are encountered, additional bulk material samples should be collected to determine potential asbestos content.

Sunrise Environmental, Inc. made reasonable efforts to locate and identify asbestos containing building materials. Should hidden unidentified materials be encountered during demolition, additional bulk material samples should be collected to determine potential asbestos content.

All asbestos-containing material quantities listed in Section 4.0 of this report are estimations and should be verified in the field by contractors bidding on asbestos abatement or demolition of the structures. Laboratory results can be found in Appendix A of this report. Bulk sample location diagrams can be found in Appendix B of this report. Inspector certifications can be found in Appendix C of this report.

8.0 Conclusions and Recommendations

The materials found to contain greater than 1% asbestos at the White River National Forest Sopris Ranger Station located in Garfield County at 620 Main Street, Carbondale, Colorado 81623 are listed below:

- **Roll-applied drywall ceiling texture** (Ranger's Office Bldg.) (H.A. #7)
- **Drywall joint compound** (Ranger's Office Bldg.) (H.A #9)
- **Multi-layered sheet vinyl flooring** (Ranger's Office Bldg.) (H.A. #14)
- Tan adhesive (behind green ceramic tiles) (Ranger's Office Bldg.) (H.A. #15)
- **White fibrous duct insulation** (Engineer's Office Bldg.) (H.A. #29)
- **Brown fibrous insulation** (Engineer's Office Bldg.) (H.A. #30)
- **White woven gasket** (Shop Bldg.) (H.A. #36)
- Gray caulking (Warehouse Bldg.) (H.A. 43)

The EPA and CDPHE-AQCC requires all asbestos containing materials listed in **bold** print above be removed prior to demolition of the building. Removal of these materials must be performed by a licensed General Abatement Contractor (GAC) prior to demolition of the building.

The CDPHE-AQCC allows non-friable asbestos-containing adhesives and caulking to remain in a building during demolition of the building provided the materials will remain non-friable during the demolition process. If it is decided that non-friable asbestos-containing materials are to be left in the building during demolition, once demolition has been performed, no amount of the non-friable asbestos-containing materials may remain at the site or in the soil at the site.

Laboratory analysis of the following building materials identified less than 1% asbestos in the samples submitted. These materials are not regulated by EPA or CDPHE-AQCC. However, OSHA regulations require employees to document potential exposure to employees handling these materials and maintain exposure limits below the Permissible Exposure Limit (PEL) of 0.1 fibers/cubic Centimeter (f/cc) over an eight-hour time weighted average (TWA). The materials found to contain 1.0% or less asbestos content are listed below:

- Rough plaster (Ranger's Office Bldg.) (Homogeneous Area #8)
- Trowel-applied textured plaster (Ranger's Office Bldg.) (Homogeneous Area #10)
- Smooth plaster (Ranger's Office Bldg.) (Homogeneous Area #11)
- Rough textured plaster (Ranger's Office Bldg.) (Homogeneous Area #13)
- Spray-applied textured plaster (Ranger's Office Bldg.) (Homogeneous Area #16)
- Vermiculite attic insulation (Ranger's Office Bldg.) (Homogeneous Area #18)
- Rough plaster (Engineer's Office Bldg.) (Homogeneous Area #27)

No asbestos-containing building materials were identified in the Hazmat storage building.

The Occupational Safety and Health Administration (OSHA) requires contractors and workers be notified of the presence and location of asbestos and requires employers to protect employees from exposure to asbestos above the permissible exposure limit of 0.10 f/cc, as determined by personnel monitoring, over an 8-hour time weighted average. Appropriate asbestos training for workers is also required. Contractors are responsible to comply with OSHA 29 CFR 1926.1101 requirements.

Building and/or facility owners are required to notify prospective employers applying or bidding for work that can reasonably be expected to work in or occupy areas containing ACM and/or PACM, of the presence of such materials.

9.0 Limitations

The findings set forth in this report are strictly limited in time and scope to the date of the evaluation(s). The conclusions presented in the report are based solely on the services described therein, and not on scientific tasks or procedures beyond the scope of agreed upon services. Because of the hidden nature of many building components, it may be impossible to determine if all building components have been located and subsequently tested. Destructive testing in some instances is not a viable option. Sunrise Environmental, Inc. does not, therefore, guarantee that all potential ACBM has been located. For the same reasons, estimates of quantities are subject to readily apparent situations. We do warrant, however, that the investigations and methodology reflect Sunrise Environmental, Inc's best efforts based upon prevailing standard of care and due diligence in the environmental field.

The purpose of this report was to assess the physical characteristics of the subject Site with respect to the presence of asbestos containing building materials. No specific attempt was made to check on the compliance of present or past owners or operators of the Site with federal, state or local laws and regulations, environmental or otherwise.

APPENDIX A

LABORATORY RESULTS

June 20, 2018

Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

CLIENT PROJECT: Sopris Administrative Site #300; 620 Main Street Carbondale, CO
CEI LAB CODE: A18-6163

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on June 14, 2018. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

Sunrise Environmental, Inc

CLIENT PROJECT:	Sopris Administrative Site #300; 620 Main Street Carbondale, CO
LAB CODE:	A18-6163
TEST METHOD:	EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020
REPORT DATE:	06/20/18
TOTAL SAMPLES ANALYZED:	121
# SAMPLES >1% ASBESTOS:	17

TEL: 866-481-1412

www.ceilabs.com

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Sopris Administrative Site #300; 620 Main Street Carbondale, CO **LAB CODE:** A18-6163

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1-1		A30153	White	Texture	None Detected
1-2		A30154	White	Texture	None Detected
1-3		A30155	White	Texture	None Detected
1-4		A30156	White	Texture	None Detected
1-5		A30157	White	Texture	None Detected
1-6		A30158	White	Texture	None Detected
1-7		A30159	White	Texture	None Detected
2-1		A30160	Off-white	Sheet Vinyl	None Detected
2-2		A30161	Off-white	Sheet Vinyl	None Detected
3-1	Layer 1	A30162	Cream	Carpet	None Detected
	Layer 2	A30162	Cream	Carpet Adhesive	None Detected
3-2	Layer 1	A30163	Cream	Carpet	None Detected
	Layer 2	A30163	Cream	Carpet Adhesive	None Detected
4-1		A30164	White	Drywall/Joint Compound	None Detected
4-2		A30165	White	Drywall/Joint Compound	None Detected
4-3		A30166	White	Drywall/Joint Compound	None Detected
5-1		A30167	Gray	Ceiling Tile	None Detected
5-2		A30168	Gray	Ceiling Tile	None Detected
5-3		A30169	Gray	Ceiling Tile	None Detected
6-1		A30170	Gray	Sealant	None Detected
6-2		A30171	Gray	Sealant	None Detected
7-1		A30172	Gray	Texture	Chrysotile 2%
7-2		A30173	Gray	Texture	Chrysotile 2%
7-3		A30174	Gray	Texture	Chrysotile 2%
8-1		A30175	Gray	Rough Plaster	Chrysotile <1%
8-2		A30176	Gray	Rough Plaster	Chrysotile <1%
8-3		A30177	Gray	Rough Plaster	Chrysotile <1%
8-4		A30178	Gray	Rough Plaster	Chrysotile <1%
8-5		A30179	Gray	Rough Plaster	Chrysotile <1%
9-1		A30180	White	Drywall/Joint Compound	Chrysotile <1%
9-2		A30181	White	Drywall/Joint Compound	Chrysotile <1%

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Sopris Administrative Site #300; 620 Main Street Carbondale, CO **LAB CODE:** A18-6163

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
10-1		A30182	Gray	Textured Plaster	Chrysotile <1%
10-2		A30183	Gray	Textured Plaster	Chrysotile <1%
10-3		A30184	Gray	Textured Plaster	Chrysotile <1%
11-1	Layer 1	A30185	White	Plaster Skim Coat	None Detected
	Layer 2	A30185	Gray	Plaster Base Coat	Chrysotile <1%
11-2	Layer 1	A30186	White	Plaster Skim Coat	None Detected
	Layer 2	A30186	Gray	Plaster Base Coat	Chrysotile <1%
11-3	Layer 1	A30187	White	Plaster Skim Coat	None Detected
	Layer 2	A30187	Gray	Plaster Base Coat	Chrysotile <1%
11-4	Layer 1	A30188	White	Plaster Skim Coat	None Detected
	Layer 2	A30188	Gray	Plaster Base Coat	Chrysotile <1%
11-5	Layer 1	A30189	White	Plaster Skim Coat	None Detected
	Layer 2	A30189	Gray	Plaster Base Coat	Chrysotile <1%
12-1		A30190	White	Texture	None Detected
12-2		A30191	White	Texture	None Detected
12-3		A30192	White	Texture	None Detected
12-4		A30193	White	Texture	None Detected
12-5		A30194	White	Texture	None Detected
13-1	Layer 1	A30195	White	Textured Plaster Skim Coat	None Detected
	Layer 2	A30195	Gray	Textured Plaster Base Coat	Chrysotile <1%
13-2	Layer 1	A30196	White	Textured Plaster Skim Coat	None Detected
	Layer 2	A30196	Gray	Textured Plaster Base Coat	Chrysotile <1%
13-3	Layer 1	A30197	White	Textured Plaster Skim Coat	None Detected
	Layer 2	A30197	Gray	Textured Plaster Base Coat	Chrysotile <1%
14-1		A30198A	Tan	Sheet Vinyl	Chrysotile 25%
		A30198B	Cream	Sheet Vinyl	None Detected
14-2		A30199A	Tan	Sheet Vinyl	Chrysotile 25%
		A30199B	Cream	Sheet Vinyl	None Detected
15-1		A30200A	Green	Ceramic Tile	None Detected
		A30200B	Tan	Adhesive	Chrysotile 2%
15-2		A30201A	Green	Ceramic Tile	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Sopris Administrative Site #300; 620 Main Street Carbondale, CO **LAB CODE:** A18-6163

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
		A30201B	Tan	Adhesive	Chrysotile 2%
16-1	Layer 1	A30202	White	Textured Plaster Skim Coat	None Detected
	Layer 2	A30202	Gray	Textured Plaster Base Coat	Chrysotile <1%
16-2	Layer 1	A30203	White	Textured Plaster Skim Coat	None Detected
	Layer 2	A30203	Gray	Textured Plaster Base Coat	Chrysotile <1%
16-3	Layer 1	A30204	White	Textured Plaster Skim Coat	None Detected
	Layer 2	A30204	Gray	Textured Plaster Base Coat	Chrysotile <1%
17-1		A30205	White	Drywall/Joint Compound	None Detected
17-2		A30206	White	Drywall/Joint Compound	None Detected
18-1		A30207	Beige	Vermiculite Insulation	None Detected
18-2		A30208	Beige	Vermiculite Insulation	None Detected
18-3		A30209	Beige	Vermiculite Insulation	Tremolite <1%
19-1	Layer 1	A30210	Green	Carpet	None Detected
	Layer 2	A30210	Green	Carpet Adhesive	None Detected
19-2	Layer 1	A30211	Green	Carpet	None Detected
	Layer 2	A30211	Green	Carpet Adhesive	None Detected
20-1	Layer 1	A30212	Gray	Ceiling Tile	None Detected
	Layer 2	A30212	Tan	Ceiling Tile Adhesive	None Detected
20-2	Layer 1	A30213	Gray	Ceiling Tile	None Detected
	Layer 2	A30213	Tan	Ceiling Tile Adhesive	None Detected
21-1		A30214	White	Window Glazing	None Detected
21-2		A30215	White	Window Glazing	None Detected
21-3		A30216	White	Window Glazing	None Detected
22-1		A30217	Brown	Caulking	None Detected
22-2		A30218	Brown	Caulking	None Detected
22-3		A30219	Brown	Caulking	None Detected
23-1	Layer 1	A30220A	Black	Roof Shingle	None Detected
	Layer 2	A30220A	Brown	Roof Shingle	None Detected
		A30220B	Black	Underlayment	None Detected
23-2	Layer 1	A30221A	Black	Roof Shingle	None Detected
	Layer 2	A30221A	Brown	Roof Shingle	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Sopris Administrative Site #300; 620 Main Street Carbondale, CO **LAB CODE:** A18-6163

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
		A30221B	Black	Underlayment	None Detected
24-1	Layer 1	A30222A	Gray	Roof Shingle	None Detected
	Layer 2	A30222A	Brown	Roof Shingle	None Detected
		A30222B	Black	Underlayment	None Detected
24-2	Layer 1	A30223A	Gray	Roof Shingle	None Detected
	Layer 2	A30223A	Brown	Roof Shingle	None Detected
		A30223B	Black	Underlayment	None Detected
25-1		A30224	Black	Black Tar	None Detected
25-2		A30225	Black	Black Tar	None Detected
25-3		A30226	Black	Black Tar	None Detected
26-1		A30227	Off-white	Ceiling Tile	None Detected
26-2		A30228	Off-white	Ceiling Tile	None Detected
27-1		A30229	Gray	Rough Plaster	Chrysotile <1%
27-2		A30230	Gray	Rough Plaster	Chrysotile <1%
27-3		A30231	Gray	Rough Plaster	Chrysotile <1%
27-4		A30232	Gray	Rough Plaster	Chrysotile <1%
27-5		A30233	Gray	Rough Plaster	Chrysotile <1%
28-1	Layer 1	A30234	White	Smooth Plaster Skim Coat	None Detected
	Layer 2	A30234	Gray	Plaster Base Coat	None Detected
28-2	Layer 1	A30235	White	Smooth Plaster Skim Coat	None Detected
	Layer 2	A30235	Gray	Plaster Base Coat	None Detected
28-3	Layer 1	A30236	White	Smooth Plaster Skim Coat	None Detected
	Layer 2	A30236	Gray	Plaster Base Coat	None Detected
29-1	Layer 1	A30237	White	Fibrous Insulation	**Chrysotile 65%**
	Layer 2	A30237	Brown	Fibrous Insulation	None Detected
29-2	Layer 1	A30238	White	Fibrous Insulation	**Chrysotile 65%**
	Layer 2	A30238	Brown	Fibrous Insulation	None Detected
29-3	Layer 1	A30239	White	Fibrous Insulation	**Chrysotile 65%**
	Layer 2	A30239	Brown	Fibrous Insulation	None Detected
30-1		A30240	Brown	Brown Packing	**Chrysotile 20%**
30-2		A30241	Brown	Brown Packing	**Chrysotile 20%**

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Sopris Administrative Site #300; 620 Main Street Carbondale, CO **LAB CODE:** A18-6163

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
30-3		A30242	Brown	Brown Packing	Chrysotile 20%
31-1		A30243	Gray	Attic Insulation	None Detected
31-2		A30244	Gray	Attic Insulation	None Detected
32-1	Layer 1	A30245A	Gray	Roof Shingle	None Detected
	Layer 2	A30245A	Black	Roof Shingle	None Detected
		A30245B	Black	Underlayment	None Detected
32-2	Layer 1	A30246A	Gray	Roof Shingle	None Detected
	Layer 2	A30246A	Black	Roof Shingle	None Detected
		A30246B	Black	Underlayment	None Detected
33-1		A30247	White	Window Glazing	None Detected
33-2		A30248	White	Window Glazing	None Detected
33-3		A30249	White	Window Glazing	None Detected
34-1		A30250	Brown	Caulking	None Detected
34-2		A30251	Brown	Caulking	None Detected
35-1		A30252	White	Drywall Panel	None Detected
35-2		A30253	White	Drywall Panel	None Detected
36-1		A30254	White	Woven Gasket	Chrysotile 90%
36-2		A30255	White	Woven Gasket	Chrysotile 90%
37-1		A30256	White	Window Glazing	None Detected
37-2		A30257	White	Window Glazing	None Detected
37-3		A30258	White	Window Glazing	None Detected
38-1		A30259	Brown	Caulking	None Detected
38-2		A30260	Brown	Caulking	None Detected
39-1	Layer 1	A30261A	Gray	Roof Shingle	None Detected
	Layer 2	A30261A	Black	Roof Shingle	None Detected
		A30261B	Black	Underlayment	None Detected
39-2	Layer 1	A30262A	Gray	Roof Shingle	None Detected
	Layer 2	A30262A	Black	Roof Shingle	None Detected
		A30262B	Black	Underlayment	None Detected
40-1		A30263	Black	Tarpaper	None Detected
40-2		A30264	Black	Tarpaper	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Sopris Administrative Site #300; 620 Main Street Carbondale, CO **LAB CODE:** A18-6163

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
41-1		A30265	Black	Drywall/Joint Compound	None Detected
41-2		A30266	Black	Drywall/Joint Compound	None Detected
41-3		A30267	Black	Drywall/Joint Compound	None Detected
42-1		A30268	White	Caulking	None Detected
42-2		A30269	White	Caulking	None Detected
43-1		A30270	Gray	Caulking	Chrysotile 5%
43-2		A30271	Gray	Caulking	Chrysotile 5%
44-1		A30272	Gray	Caulking	None Detected
44-2		A30273	Gray	Caulking	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163
Date Received: 06-14-18
Date Analyzed: 06-20-18
Date Reported: 06-20-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
1-1 A30153	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected
1-2 A30154	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected
1-3 A30155	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected
1-4 A30156	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected
1-5 A30157	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected
1-6 A30158	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected
1-7 A30159	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected

ASBESTOS BULK ANALYSIS

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Lab Code: A18-6163
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Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
2-1 A30160	Sheet Vinyl	Heterogeneous Off-white Fibrous Bound	22% 3%	Cellulose Fiberglass	65% 10%	Vinyl Silicates	None Detected
2-2 A30161	Sheet Vinyl	Heterogeneous Off-white Fibrous Bound	22% 3%	Cellulose Fiberglass	65% 10%	Vinyl Silicates	None Detected
3-1 Layer 1 A30162	Carpet	Heterogeneous Cream Fibrous Bound	<1%	Synthetic Fiber	100%	Mastic	None Detected
Layer 2 A30162	Carpet Adhesive	Heterogeneous Cream Fibrous Bound	<1%	Synthetic Fiber	100%	Mastic	None Detected
3-2 Layer 1 A30163	Carpet	Heterogeneous Cream Fibrous Bound	<1%	Synthetic Fiber	100%	Mastic	None Detected
Layer 2 A30163	Carpet Adhesive	Heterogeneous Cream Fibrous Bound	<1%	Synthetic Fiber	100%	Mastic	None Detected
4-1 A30164	Drywall/Joint Compound	Heterogeneous White Fibrous Bound	20%	Cellulose	25% 15% 40%	Silicates Calc Carb Gypsum	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
4-2 A30165	Drywall/Joint Compound	Heterogeneous White Fibrous Bound	20%	Cellulose	25% 15% 40%	Silicates Calc Carb Gypsum	None Detected
4-3 A30166	Drywall/Joint Compound	Heterogeneous White Fibrous Bound	20%	Cellulose	25% 15% 40%	Silicates Calc Carb Gypsum	None Detected
5-1 A30167	Ceiling Tile	Heterogeneous Gray Fibrous Loosely Bound	35% 32%	Cellulose Fiberglass	30% 3%	Perlite Paint	None Detected
5-2 A30168	Ceiling Tile	Heterogeneous Gray Fibrous Loosely Bound	35% 32%	Cellulose Fiberglass	30% 3%	Perlite Paint	None Detected
5-3 A30169	Ceiling Tile	Heterogeneous Gray Fibrous Loosely Bound	35% 32%	Cellulose Fiberglass	30% 3%	Perlite Paint	None Detected
6-1 A30170	Sealant	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	100%	Binder	None Detected
6-2 A30171	Sealant	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	100%	Binder	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
7-1 A30172	Texture	Heterogeneous Gray Fibrous Bound	20%	Cellulose	45% 28% 5%	Silicates Calc Carb Paint	2% Chrysotile
7-2 A30173	Texture	Heterogeneous Gray Fibrous Bound	20%	Cellulose	45% 28% 5%	Silicates Calc Carb Paint	2% Chrysotile
7-3 A30174	Texture	Heterogeneous Gray Fibrous Bound	20%	Cellulose	45% 28% 5%	Silicates Calc Carb Paint	2% Chrysotile
8-1 A30175	Rough Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	75% 25%	Silicates Binder	<1% Chrysotile
8-2 A30176	Rough Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	75% 25%	Silicates Binder	<1% Chrysotile
8-3 A30177	Rough Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	75% 25%	Silicates Binder	<1% Chrysotile
8-4 A30178	Rough Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	75% 25%	Silicates Binder	<1% Chrysotile

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
8-5 A30179	Rough Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	75% 25%	Silicates Binder	<1% Chrysotile
9-1 A30180	Drywall/Joint Compound	Heterogeneous White Fibrous Bound	20%	Cellulose	25% 15% 40%	Silicates Calc Carb Gypsum	<1% Chrysotile
Lab Notes: Joint Compound has 2% Chrysotile. Chrysotile is less than 1% of overall sample.							
9-2 A30181	Drywall/Joint Compound	Heterogeneous White Fibrous Bound	20%	Cellulose	25% 15% 40%	Silicates Calc Carb Gypsum	<1% Chrysotile
Lab Notes: Joint Compound has 2% Chrysotile. Chrysotile is less than 1% of overall sample.							
10-1 A30182	Textured Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	85% 10% 5%	Silicates Binder Paint	<1% Chrysotile
10-2 A30183	Textured Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	85% 10% 5%	Silicates Binder Paint	<1% Chrysotile
10-3 A30184	Textured Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	85% 10% 5%	Silicates Binder Paint	<1% Chrysotile
11-1 Layer 1 A30185	Plaster Skim Coat	Heterogeneous White Fibrous Bound	<1%	Cellulose	25% 72% 3%	Silicates Calc Carb Paint	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

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Layer 2 A30185	Plaster Base Coat	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	85% 10% 5%	Silicates Binder Paint	<1% Chrysotile
11-2 Layer 1 A30186	Plaster Skim Coat	Heterogeneous White Fibrous Bound	<1%	Cellulose	25% 72% 3%	Silicates Calc Carb Paint	None Detected
Layer 2 A30186	Plaster Base Coat	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	85% 10% 5%	Silicates Binder Paint	<1% Chrysotile
11-3 Layer 1 A30187	Plaster Skim Coat	Heterogeneous White Fibrous Bound	<1%	Cellulose	25% 72% 3%	Silicates Calc Carb Paint	None Detected
Layer 2 A30187	Plaster Base Coat	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	85% 10% 5%	Silicates Binder Paint	<1% Chrysotile
11-4 Layer 1 A30188	Plaster Skim Coat	Heterogeneous White Fibrous Bound	<1%	Cellulose	25% 72% 3%	Silicates Calc Carb Paint	None Detected
Layer 2 A30188	Plaster Base Coat	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	85% 10% 5%	Silicates Binder Paint	<1% Chrysotile

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
11-5 Layer 1 A30189	Plaster Skim Coat	Heterogeneous White Fibrous Bound	<1%	Cellulose	25% 72% 3%	Silicates Calc Carb Paint	None Detected
Layer 2 A30189	Plaster Base Coat	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	85% 10% 5%	Silicates Binder Paint	<1% Chrysotile
12-1 A30190	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected
12-2 A30191	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected
12-3 A30192	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected
12-4 A30193	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected
12-5 A30194	Texture	Heterogeneous White Fibrous Bound	30%	Cellulose	45% 20% 5%	Silicates Calc Carb Paint	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
13-1 Layer 1 A30195	Textured Plaster Skim Coat	Heterogeneous White Fibrous Bound	<1%	Cellulose	25% 72% 3%	Silicates Calc Carb Paint	None Detected
Layer 2 A30195	Textured Plaster Base Coat	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	85% 10% 5%	Silicates Binder Paint	<1% Chrysotile
13-2 Layer 1 A30196	Textured Plaster Skim Coat	Heterogeneous White Fibrous Bound	<1%	Cellulose	25% 72% 3%	Silicates Calc Carb Paint	None Detected
Layer 2 A30196	Textured Plaster Base Coat	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	85% 10% 5%	Silicates Binder Paint	<1% Chrysotile
13-3 Layer 1 A30197	Textured Plaster Skim Coat	Heterogeneous White Fibrous Bound	<1%	Cellulose	25% 72% 3%	Silicates Calc Carb Paint	None Detected
Layer 2 A30197	Textured Plaster Base Coat	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	85% 10% 5%	Silicates Binder Paint	<1% Chrysotile
14-1 A30198A	Sheet Vinyl	Heterogeneous Tan Fibrous Bound			3% 72%	Mastic Vinyl	25% Chrysotile

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
A30198B	Sheet Vinyl	Heterogeneous Cream Fibrous Bound	25%	Cellulose	75%	Vinyl	None Detected
14-2 A30199A	Sheet Vinyl	Heterogeneous Tan Fibrous Bound			3% 72%	Mastic Vinyl	**25% Chrysotile**
A30199B	Sheet Vinyl	Heterogeneous Cream Fibrous Bound	25%	Cellulose	75%	Vinyl	None Detected
15-1 A30200A	Ceramic Tile	Heterogeneous Green Non-fibrous Bound			100%	Binder	None Detected
A30200B	Adhesive	Heterogeneous Tan Fibrous Bound			98%	Mastic	**2% Chrysotile**
15-2 A30201A	Ceramic Tile	Heterogeneous Green Non-fibrous Bound			100%	Binder	None Detected
A30201B	Adhesive	Heterogeneous Tan Fibrous Bound			98%	Mastic	**2% Chrysotile**

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
16-1	Textured Plaster Skim Coat	Heterogeneous	<1%	Cellulose	25%	Silicates	None Detected
Layer 1		White			72%	Calc Carb	
A30202		Fibrous			3%	Paint	
		Bound					
Layer 2	Textured Plaster Base Coat	Heterogeneous	<1%	Cellulose	85%	Silicates	<1% Chrysotile
A30202		Gray			10%	Binder	
		Fibrous			5%	Paint	
		Bound					
16-2	Textured Plaster Skim Coat	Heterogeneous	<1%	Cellulose	25%	Silicates	None Detected
Layer 1		White			72%	Calc Carb	
A30203		Fibrous			3%	Paint	
		Bound					
Layer 2	Textured Plaster Base Coat	Heterogeneous	<1%	Cellulose	85%	Silicates	<1% Chrysotile
A30203		Gray			10%	Binder	
		Fibrous			5%	Paint	
		Bound					
16-3	Textured Plaster Skim Coat	Heterogeneous	<1%	Cellulose	25%	Silicates	None Detected
Layer 1		White			72%	Calc Carb	
A30204		Fibrous			3%	Paint	
		Bound					
Layer 2	Textured Plaster Base Coat	Heterogeneous	<1%	Cellulose	85%	Silicates	<1% Chrysotile
A30204		Gray			10%	Binder	
		Fibrous			5%	Paint	
		Bound					
17-1	Drywall/Joint Compound	Heterogeneous	20%	Cellulose	25%	Silicates	None Detected
A30205		White			15%	Calc Carb	
		Fibrous			40%	Gypsum	
		Bound					

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
17-2 A30206	Drywall/Joint Compound	Heterogeneous White Fibrous Bound	20%	Cellulose	25% 15% 40%	Silicates Calc Carb Gypsum	None Detected
18-1 A30207	Vermiculite Insulation	Heterogeneous Beige Fibrous Bound	<1%	Cellulose	100%	Vermiculite	None Detected
18-2 A30208	Vermiculite Insulation	Heterogeneous Beige Fibrous Bound	<1%	Cellulose	100%	Vermiculite	None Detected
18-3 A30209	Vermiculite Insulation	Heterogeneous Beige Fibrous Bound	<1%	Cellulose	100%	Vermiculite	<1% Tremolite
19-1 Layer 1 A30210	Carpet	Heterogeneous Green Fibrous Bound	100%	Synthetic Fiber			None Detected
Layer 2 A30210	Carpet Adhesive	Heterogeneous Green Fibrous Bound	<1%	Synthetic Fiber	100%	Mastic	None Detected
19-2 Layer 1 A30211	Carpet	Heterogeneous Green Fibrous Bound	100%	Synthetic Fiber			None Detected

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Layer 2 A30211	Carpet Adhesive	Heterogeneous Green Fibrous Bound	<1%	Synthetic Fiber	100%	Mastic	None Detected
20-1 Layer 1 A30212	Ceiling Tile	Heterogeneous Gray Fibrous Loosely Bound	35% 30%	Cellulose Fiberglass	32% 3%	Perlite Paint	None Detected
Layer 2 A30212	Ceiling Tile Adhesive	Heterogeneous Tan Fibrous Bound	<1%	Cellulose	100%	Mastic	None Detected
20-2 Layer 1 A30213	Ceiling Tile	Heterogeneous Gray Fibrous Loosely Bound	35% 30%	Cellulose Fiberglass	32% 3%	Perlite Paint	None Detected
Layer 2 A30213	Ceiling Tile Adhesive	Heterogeneous Tan Fibrous Bound	<1%	Cellulose	100%	Mastic	None Detected
21-1 A30214	Window Glazing	Heterogeneous White Fibrous Bound	<1%	Cellulose	3% 97%	Paint Binder	None Detected
21-2 A30215	Window Glazing	Heterogeneous White Fibrous Bound	<1%	Cellulose	3% 97%	Paint Binder	None Detected

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21-3 A30216	Window Glazing	Heterogeneous White Fibrous Bound	<1%	Cellulose	3% 97%	Paint Binder	None Detected
22-1 A30217	Caulking	Heterogeneous Brown Fibrous Bound	<1%	Cellulose	100%	Binder	None Detected
22-2 A30218	Caulking	Heterogeneous Brown Fibrous Bound	<1%	Cellulose	100%	Binder	None Detected
22-3 A30219	Caulking	Heterogeneous Brown Fibrous Bound	<1%	Cellulose	100%	Binder	None Detected
23-1 Layer 1 A30220A	Roof Shingle	Heterogeneous Black Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected
Layer 2 A30220A	Roof Shingle	Heterogeneous Brown Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected
A30220B	Underlayment	Heterogeneous Black Fibrous Bound	75%	Cellulose	25%	Tar	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
23-2 Layer 1 A30221A	Roof Shingle	Heterogeneous Black Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected
Layer 2 A30221A	Roof Shingle	Heterogeneous Brown Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected
A30221B	Underlayment	Heterogeneous Black Fibrous Bound	75%	Cellulose	25%	Tar	None Detected
24-1 Layer 1 A30222A	Roof Shingle	Heterogeneous Gray Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected
Layer 2 A30222A	Roof Shingle	Heterogeneous Brown Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected
A30222B	Underlayment	Heterogeneous Black Fibrous Bound	75%	Cellulose	25%	Tar	None Detected
24-2 Layer 1 A30223A	Roof Shingle	Heterogeneous Gray Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected

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Layer 2 A30223A	Roof Shingle	Heterogeneous Brown Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected
A30223B	Underlayment	Heterogeneous Black Fibrous Bound	75%	Cellulose	25%	Tar	None Detected
25-1 A30224	Black Tar	Heterogeneous Black Fibrous Bound	<1%	Cellulose	100%	Tar	None Detected
25-2 A30225	Black Tar	Heterogeneous Black Fibrous Bound	<1%	Cellulose	100%	Tar	None Detected
25-3 A30226	Black Tar	Heterogeneous Black Fibrous Bound	<1%	Cellulose	100%	Tar	None Detected
26-1 A30227	Ceiling Tile	Heterogeneous Off-white Fibrous Loosely Bound	35% 32%	Cellulose Fiberglass	30% 3%	Perlite Paint	None Detected
26-2 A30228	Ceiling Tile	Heterogeneous Off-white Fibrous Loosely Bound	35% 32%	Cellulose Fiberglass	30% 3%	Perlite Paint	None Detected

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Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
27-1 A30229	Rough Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	3% 75% 22%	Paint Silicates Calc Carb	<1% Chrysotile
27-2 A30230	Rough Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	3% 75% 22%	Paint Silicates Calc Carb	<1% Chrysotile
27-3 A30231	Rough Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	3% 75% 22%	Paint Silicates Calc Carb	<1% Chrysotile
27-4 A30232	Rough Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	3% 75% 22%	Paint Silicates Calc Carb	<1% Chrysotile
27-5 A30233	Rough Plaster	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	3% 75% 22%	Paint Silicates Calc Carb	<1% Chrysotile
28-1 Layer 1 A30234	Smooth Plaster Skim Coat	Heterogeneous White Fibrous Bound	<1%	Cellulose	3% 25% 72%	Paint Silicates Binder	None Detected
Layer 2 A30234	Plaster Base Coat	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	75% 25%	Silicates Binder	None Detected

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Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163
Date Received: 06-14-18
Date Analyzed: 06-20-18
Date Reported: 06-20-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
28-2 Layer 1 A30235	Smooth Plaster Skim Coat	Heterogeneous White Fibrous Bound	<1%	Cellulose	3% 25% 72%	Paint Silicates Binder	None Detected
Layer 2 A30235	Plaster Base Coat	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	75% 25%	Silicates Binder	None Detected
28-3 Layer 1 A30236	Smooth Plaster Skim Coat	Heterogeneous White Fibrous Bound	<1%	Cellulose	3% 25% 72%	Paint Silicates Binder	None Detected
Layer 2 A30236	Plaster Base Coat	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	75% 25%	Silicates Binder	None Detected
29-1 Layer 1 A30237	Fibrous Insulation	Heterogeneous White Fibrous Loosely Bound			35%	Binder	**65% Chrysotile**
Layer 2 A30237	Fibrous Insulation	Heterogeneous Brown Fibrous Loosely Bound	100%	Cellulose			None Detected
29-2 Layer 1 A30238	Fibrous Insulation	Heterogeneous White Fibrous Loosely Bound			35%	Binder	**65% Chrysotile**

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163
Date Received: 06-14-18
Date Analyzed: 06-20-18
Date Reported: 06-20-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous	NON-ASBESTOS COMPONENTS Non-Fibrous	ASBESTOS %
Layer 2 A30238	Fibrous Insulation	Heterogeneous Brown Fibrous Loosely Bound	100% Cellulose		None Detected
29-3 Layer 1 A30239	Fibrous Insulation	Heterogeneous White Fibrous Loosely Bound		35% Binder	**65% Chrysotile**
Layer 2 A30239	Fibrous Insulation	Heterogeneous Brown Fibrous Loosely Bound	100% Cellulose		None Detected
30-1 A30240	Brown Packing	Heterogeneous Brown Fibrous Loosely Bound		77% Binder 3% Paint	**20% Chrysotile**
30-2 A30241	Brown Packing	Heterogeneous Brown Fibrous Loosely Bound		77% Binder 3% Paint	**20% Chrysotile**
30-3 A30242	Brown Packing	Heterogeneous Brown Fibrous Loosely Bound		77% Binder 3% Paint	**20% Chrysotile**
31-1 A30243	Attic Insulation	Heterogeneous Gray Fibrous Loosely Bound	100% Fiberglass		None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163
Date Received: 06-14-18
Date Analyzed: 06-20-18
Date Reported: 06-20-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
31-2 A30244	Attic Insulation	Heterogeneous Gray Fibrous Loosely Bound	100%	Fiberglass			None Detected
32-1 Layer 1 A30245A	Roof Shingle	Heterogeneous Gray Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected
Layer 2 A30245A	Roof Shingle	Heterogeneous Black Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected
A30245B	Underlayment	Heterogeneous Black Fibrous Bound	80%	Cellulose	20%	Tar	None Detected
32-2 Layer 1 A30246A	Roof Shingle	Heterogeneous Gray Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected
Layer 2 A30246A	Roof Shingle	Heterogeneous Black Fibrous Bound	20%	Fiberglass	15% 65%	Gravel Tar	None Detected
A30246B	Underlayment	Heterogeneous Black Fibrous Bound	80%	Cellulose	20%	Tar	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163
Date Received: 06-14-18
Date Analyzed: 06-20-18
Date Reported: 06-20-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous			Non-Fibrous		ASBESTOS %
33-1 A30247	Window Glazing	Heterogeneous White Fibrous Bound				98% 2%	Binder Paint	None Detected
33-2 A30248	Window Glazing	Heterogeneous White Fibrous Bound				98% 2%	Binder Paint	None Detected
33-3 A30249	Window Glazing	Heterogeneous White Fibrous Bound				98% 2%	Binder Paint	None Detected
34-1 A30250	Caulking	Heterogeneous Brown Non-fibrous Bound				100%	Caulk	None Detected
34-2 A30251	Caulking	Heterogeneous Brown Non-fibrous Bound				100%	Caulk	None Detected
35-1 A30252	Drywall Panel	Heterogeneous White Fibrous Bound	25%	Cellulose		75%	Gypsum	None Detected
35-2 A30253	Drywall Panel	Heterogeneous White Fibrous Bound	25%	Cellulose		75%	Gypsum	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163
Date Received: 06-14-18
Date Analyzed: 06-20-18
Date Reported: 06-20-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous	 Non-Fibrous	ASBESTOS %
36-1 A30254	Woven Gasket	Heterogeneous White Fibrous Bound	10%	Binder	**90% Chrysotile**
36-2 A30255	Woven Gasket	Heterogeneous White Fibrous Bound	10%	Binder	**90% Chrysotile**
37-1 A30256	Window Glazing	Heterogeneous White Fibrous Bound	98% 2%	Binder Paint	None Detected
37-2 A30257	Window Glazing	Heterogeneous White Fibrous Bound	98% 2%	Binder Paint	None Detected
37-3 A30258	Window Glazing	Heterogeneous White Fibrous Bound	98% 2%	Binder Paint	None Detected
38-1 A30259	Caulking	Heterogeneous Brown Non-fibrous Bound	100%	Caulk	None Detected
38-2 A30260	Caulking	Heterogeneous Brown Non-fibrous Bound	100%	Caulk	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163
Date Received: 06-14-18
Date Analyzed: 06-20-18
Date Reported: 06-20-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
39-1 Layer 1 A30261A	Roof Shingle	Heterogeneous Gray Non-fibrous Bound	20%	Fiberglass	60% 20%	Tar Gravel	None Detected
Layer 2 A30261A	Roof Shingle	Heterogeneous Black Non-fibrous Bound	20%	Fiberglass	60% 20%	Tar Gravel	None Detected
A30261B	Underlayment	Heterogeneous Black Fibrous Bound	80%	Cellulose	20%	Tar	None Detected
39-2 Layer 1 A30262A	Roof Shingle	Heterogeneous Gray Non-fibrous Bound	20%	Fiberglass	60% 20%	Tar Gravel	None Detected
Layer 2 A30262A	Roof Shingle	Heterogeneous Black Non-fibrous Bound	20%	Fiberglass	60% 20%	Tar Gravel	None Detected
A30262B	Underlayment	Heterogeneous Black Fibrous Bound	80%	Cellulose	20%	Tar	None Detected
40-1 A30263	Tarpaper	Heterogeneous Black Fibrous Bound	80%	Cellulose	20%	Tar	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163
Date Received: 06-14-18
Date Analyzed: 06-20-18
Date Reported: 06-20-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
40-2 A30264	Tarpaper	Heterogeneous Black Fibrous Bound	80%	Cellulose	20%	Tar	None Detected
41-1 A30265	Drywall/Joint Compound	Heterogeneous Black Fibrous Bound	20%	Cellulose	25% 40% 15%	Silicates Gypsum Calc Carb	None Detected
41-2 A30266	Drywall/Joint Compound	Heterogeneous Black Fibrous Bound	20%	Cellulose	25% 40% 15%	Silicates Gypsum Calc Carb	None Detected
41-3 A30267	Drywall/Joint Compound	Heterogeneous Black Fibrous Bound	20%	Cellulose	25% 40% 15%	Silicates Gypsum Calc Carb	None Detected
42-1 A30268	Caulking	Heterogeneous White Non-fibrous Bound			100%	Caulk	None Detected
42-2 A30269	Caulking	Heterogeneous White Non-fibrous Bound			100%	Caulk	None Detected
43-1 A30270	Caulking	Heterogeneous Gray Fibrous Bound			95%	Caulk	**5% Chrysotile**

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163
Date Received: 06-14-18
Date Analyzed: 06-20-18
Date Reported: 06-20-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous	 Non-Fibrous	ASBESTOS %
43-2 A30271	Caulking	Heterogeneous Gray Fibrous Bound	95%	Caulk	**5% Chrysotile**
44-1 A30272	Caulking	Heterogeneous Gray Non-fibrous Bound	100%	Caulk	None Detected
44-2 A30273	Caulking	Heterogeneous Gray Non-fibrous Bound	100%	Caulk	None Detected

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LEGEND:	Non-Anth	= Non-Asbestiform Anthophyllite
	Non-Trem	= Non-Asbestiform Tremolite
	Calc Carb	= Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. Estimated measurement of uncertainty is available on request.

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

ANALYST: Saithya Painkal

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

ASBESTOS CHAIN OF CUSTODY

CEI LABS
730 SE Maynard Road, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:	
CEI Lab Code:	A18-01103 (121)
CEI Lab I.D. Range:	A30153 - A30273

COMPANY INFORMATION		PROJECT INFORMATION	
CEI CLIENT #:		Job Contact:	Scott Sanders
Company:	Sunrise Environmental, Inc	Email / Tel:	720-209-5282
Address:	P.O. Box 429	Project Name:	Sopris Administrative Site #300
	Black Hawk, CO 80422	Project ID#:	620 Main Street
Email:	Scott@sunrise-enviro.com	PO #:	Carbondale, CO
Tel:	Fax:	STATE SAMPLES COLLECTED IN:	Colorado

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	24 HR	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	☐	☐	☐	☐	☐	☑
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐
PLM BULK	CARB 435		☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐
TEM AIR	EPA AHERA	☐	☐	☐	☐	☐	☐
TEM AIR	NIOSH 7402	☐	☐	☐	☐	☐	☐
TEM AIR	ISO 10312	☐	☐	☐	☐	☐	☐
TEM AIR	ASTM 6281-09	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☐
TEM DUST WIPE	ASTM D6480-05	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-09	☐	☐	☐	☐	☐	☐
TEM SOIL	ASTM D7521-13			☐	☐	☐	☐
TEM VERMICULITE	CINCINNATI METHOD			☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐

REMARKS / SPECIAL INSTRUCTIONS: Please Provide Composite Results for Drywall + Joint Compound Samples # 4-1, 4-2, 4-3, 9-1, 9-2, 17-1, 17-2, 41-1, 41-2, 41-3

☑ Accept Samples
☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
Scott Sanders	06/13/18 Dropped off @ FedEx 1340	MS	6/14/18 8:50

Samples will be disposed of 30 days after analysis

CEI LABS Accept Samples

A18-41163

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Sunrise Environmental, Inc	Job Contact: Scott Sanders
Project Name: Sopris Administrative site #300	Carbondale, Colorado
Project ID #: 620 Main STREET	Tel: 720 209-5282

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
1-1	TEXTURE		PLM ☑	TEM ☐
1-2	↓		PLM ☐	TEM ☐
1-3	↓		PLM ☐	TEM ☐
1-4	↓		PLM ☐	TEM ☐
1-5	↓		PLM ☐	TEM ☐
1-6	↓		PLM ☐	TEM ☐
1-7	↓		PLM ☐	TEM ☐
2-1	Sheet vinyl		PLM ☐	TEM ☐
2-2	↓		PLM ☐	TEM ☐
3-1	Carpet + adhesive		PLM ☐	TEM ☐
3-2	↓ ↓		PLM ☐	TEM ☐
4-1	Drywall + Joint Compound		PLM ☐	TEM ☐
4-2	↓ ↓ ↓		PLM ☐	TEM ☐
4-3	↓ ↓ ↓		PLM ☐	TEM ☐
5-1	Ceiling Tile		PLM ☐	TEM ☐
5-2	↓ ↓		PLM ☐	TEM ☐
5-3	↓ ↓		PLM ☐	TEM ☐
6-1	Gray sealant		PLM ☐	TEM ☐
6-2	↓ ↓		PLM ☐	TEM ☐
7-1	TEXTURE		PLM ☐	TEM ☐
7-2	↓		PLM ☐	TEM ☐
7-3	↓		PLM ☐	TEM ☐
8-1	Rough Plaster		PLM ☐	TEM ☐
8-2	↓ ↓		PLM ☐	TEM ☐
8-3	↓ ↓		PLM ☐	TEM ☐
8-4	↓ ↓		PLM ☐	TEM ☐
8-5	↓ ↓		PLM ☐	TEM ☐
9-1	Drywall + Joint Compound		PLM ☑	TEM ☐

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A18-4162

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Sunrise Environmental, Inc	Job Contact: Scott Sanders
Project Name: Sopris Administrative site #300, Carbondale, CO	
Project ID #: 620 Main Street,	Tel: 720-209-5282

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
9-2	Drywall + Joint Compound		PLM ☑	TEM ☐
10-1	Textured plaster		PLM ☐	TEM ☐
10-2	↓		PLM ☐	TEM ☐
10-3	↓		PLM ☐	TEM ☐
11-1	Smooth Plaster		PLM ☐	TEM ☐
11-2	↓		PLM ☐	TEM ☐
11-3	↓		PLM ☐	TEM ☐
11-4	↓		PLM ☐	TEM ☐
11-5	↓		PLM ☐	TEM ☐
12-1	Texture		PLM ☐	TEM ☐
12-2	↓		PLM ☐	TEM ☐
12-3	↓		PLM ☐	TEM ☐
12-4	↓		PLM ☐	TEM ☐
12-5	↓		PLM ☐	TEM ☐
13-1	Textured Plaster		PLM ☐	TEM ☐
13-2	↓		PLM ☐	TEM ☐
13-3	↓		PLM ☐	TEM ☐
14-1	multilayered Sheet Vinyl		PLM ☐	TEM ☐
14-2	↓		PLM ☐	TEM ☐
15-1	Ceramic Tile / adhesive		PLM ☐	TEM ☐
15-2	↓		PLM ☐	TEM ☐
16-1	Textured plaster		PLM ☐	TEM ☐
16-2	↓		PLM ☐	TEM ☐
16-3	↓		PLM ☐	TEM ☐
17-1	Drywall + Joint Compound		PLM ☐	TEM ☐
17-2	↓		PLM ☐	TEM ☐
18-1	vermiculite		PLM ☐	TEM ☐
18-2	↓		PLM ☐	TEM ☐

SG

A18-01163

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Sunrise Environmental, Inc	Job Contact:
Project Name: Sopris Administrative Site #300 → Carbondale, CO	
Project ID #: 620 Main Street,	Tel: 720-209-5282

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
18-3	Vermiculite		PLM ☐	TEM ☐
19-1	Carpet / Adhesive		PLM ☐	TEM ☐
19-2	↓ ↓		PLM ☐	TEM ☐
20-1	ceiling Tile / non asbestos		PLM ☐	TEM ☐
20-2	↓ ↓		PLM ☐	TEM ☐
21-1	window glazing		PLM ☐	TEM ☐
21-2	↓ ↓		PLM ☐	TEM ☐
21-3	↓ ↓		PLM ☐	TEM ☐
22-1	Caulking		PLM ☐	TEM ☐
22-2	↓		PLM ☐	TEM ☐
22-3	↓		PLM ☐	TEM ☐
23-1	roof shingles / Underlayment		PLM ☐	TEM ☐
23-2	↓ ↓		PLM ☐	TEM ☐
~~24-1~~ 24-1	Roof Shingles Underlayment		PLM ☐	TEM ☐
~~24-2~~ 24-2	↓ ↓ ↓		PLM ☐	TEM ☐
~~24-2~~ 25-1	Black Tar		PLM ☐	TEM ☐
25-2	↓ ↓		PLM ☐	TEM ☐
25-3	↓ ↓		PLM ☐	TEM ☐
26-1	ceiling Tile		PLM ☐	TEM ☐
26-2	↓ ↓		PLM ☐	TEM ☐
27-1	Rough Plaster		PLM ☐	TEM ☐
27-2	↓ ↓		PLM ☐	TEM ☐
27-3	↓ ↓		PLM ☐	TEM ☐
27-4	↓ ↓		PLM ☐	TEM ☐
27-5	↓ ↓		PLM ☐	TEM ☐
28-1	Smooth Plaster		PLM ☐	TEM ☐
28-2	↓ ↓		PLM ☐	TEM ☐
28-3	↓ ↓		PLM ☐	TEM ☐

BA

A18-41163

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Sunrise Environmental, LLC	Job Contact: Scott Sanders
Project Name: Sopris Administrative site #300	
Project ID #: 620 Main Street Carbondale, CO	

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
29-1	White Fibrous insulation		PLM ☑	TEM ☐
29-2	↓		PLM ☐	TEM ☐
29-3	↓		PLM ☐	TEM ☐
30-1	Brown packing		PLM ☐	TEM ☐
30-2	↓		PLM ☐	TEM ☐
30-3	↓		PLM ☐	TEM ☐
31-1	Attic Insulation		PLM ☐	TEM ☐
31-2	↓		PLM ☐	TEM ☐
32-1	Roofing Shingles/ underlayment		PLM ☐	TEM ☐
32-2	↓		PLM ☐	TEM ☐
33-1	window glazing		PLM ☐	TEM ☐
33-2	↓		PLM ☐	TEM ☐
33-3	↓		PLM ☐	TEM ☐
34-1	Caulking		PLM ☐	TEM ☐
34-2	↓		PLM ☐	TEM ☐
35-1	Drywall Panel		PLM ☐	TEM ☐
35-2	↓		PLM ☐	TEM ☐
36-1	woven gasket		PLM ☐	TEM ☐
36-2	↓		PLM ☐	TEM ☐
37-1	window glazing		PLM ☐	TEM ☐
37-2	↓		PLM ☐	TEM ☐
37-3	↓		PLM ☐	TEM ☐
38-1	Caulking		PLM ☐	TEM ☐
38-2	↓		PLM ☐	TEM ☐
39-1	Roofing Shingles/underlayment		PLM ☐	TEM ☐
39-2	↓		PLM ☐	TEM ☐
40-1	TAR paper		PLM ☐	TEM ☐
40-2	↓		PLM ☐	TEM ☐

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ASBESTOS A18-6163
SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Sunrise Environmental, Inc.	Job Contact: Scott Sanders
Project Name: Sopris Administrative site #300	
Project ID #: 620 Main Street, Carbondale, CO	

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
41-1	Drywall + Joint Compound		PLM ✓	TEM
41-2	↓		PLM ↓	TEM
41-3	↓		PLM ↓	TEM
42-1	caulking		PLM ↓	TEM
42-2	↓		PLM ↓	TEM
43-1	Caulking		PLM ↓	TEM
43-2	↓		PLM ↓	TEM
44-1	caulking		PLM ↓	TEM
44-2	↓		PLM ↓	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
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			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM

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June 27, 2018

Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

CLIENT PROJECT: Sopris Administrative Site #300; 620 Main Street Carbondale, CO
CEI LAB CODE: A18-6163.1

Dear Customer:

Enclosed are asbestos analysis results for PLM bulk samples received at our laboratory on June 21, 2018. The samples were analyzed for asbestos using polarized light microscopy (PLM) point count per the EPA 600 Method.

Sample results containing > 1% asbestos are considered asbestos-containing materials (ACMs) per the EPA regulatory requirements. The detection limit for the EPA 600 method is 0.25% for 400 point counts, or 0.1% for 1,000 point counts.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP® TESTING
NVLAP LAB CODE 101768-0

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

Sunrise Environmental, Inc

CLIENT PROJECT:	Sopris Administrative Site #300; 620 Main Street Carbondale, CO
LAB CODE:	A18-6163.1
TEST METHOD:	PLM Point Count EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020
REPORT DATE:	06/27/18

TEL: 866-481-1412

www.ceilabs.com

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163.1
Date Received: 06-21-18
Date Analyzed: 06-27-18
Date Reported: 06-27-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS POINT COUNT PLM, EPA 600 METHOD

Client ID	Lab ID	Material Description	POINTS Total	POINTS Asbestos	ASBESTOS %	
8-1	A30175	Rough Plaster	400	0	**<0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						
8-2	A30176	Rough Plaster	400	2	**0.5%**	**Chrysotile**
8-3	A30177	Rough Plaster	400	1	**0.25%**	**Chrysotile**
8-4	A30178	Rough Plaster	400	0	**<0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						
8-5	A30179	Rough Plaster	400	2	**0.5%**	**Chrysotile**
10-1	A30182	Textured Plaster	400	2	**0.5%**	**Chrysotile**
10-2	A30183	Textured Plaster	400	1	**0.25%**	**Chrysotile**
10-3	A30184	Textured Plaster	400	0	**<0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						
11-1	A30185	Plaster Base Coat	400	1	**0.25%**	**Chrysotile**
11-2	A30186	Plaster Base Coat	400	0	**<0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						
11-3	A30187	Plaster Base Coat	400	2	**0.5%**	**Chrysotile**
11-4	A30188	Plaster Base Coat	400	0	**<0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						
11-5	A30189	Plaster Base Coat	400	1	**0.25%**	**Chrysotile**
13-1	A30195	Textrued Plaster Base Coat	400	1	**0.25%**	**Chrysotile**
13-2	A30196	Textrued Plaster Base Coat	400	0	**<0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						
13-3	A30197	Textrued Plaster Base Coat	400	1	**0.25%**	**Chrysotile**
16-1	A30202	Textrued Plaster Base Coat	400	0	**<0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163.1
Date Received: 06-21-18
Date Analyzed: 06-27-18
Date Reported: 06-27-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS POINT COUNT PLM, EPA 600 METHOD

Client ID	Lab ID	Material Description	POINTS Total	POINTS Asbestos	ASBESTOS %	
16-2	A30203	Textrued Plaster Base Coat	400	0	**<0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						
16-3	A30204	Textrued Plaster Base Coat	400	1	**0.25%**	**Chrysotile**
18-3	A30209	Vermiculite Insulation	400	0	**<0.25%**	**Tremolite**
Lab Notes: Tremolite detected below the limit of quantitation.						
27-1	A30229	Rough Plaster	400	0	**<0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						
27-2	A30230	Rough Plaster	400	0	**<0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						
27-3	A30231	Rough Plaster	400	1	**0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						
27-4	A30232	Rough Plaster	400	0	**<0.25%**	**Chrysotile**
Lab Notes: Chrysotile detected below the limit of quantitation.						
27-5	A30233	Rough Plaster	400	1	**0.25%**	**Chrysotile**

LEGEND: None

METHOD: EPA 600 / M4 / 82 / 020 (40 CFR Part 763, Sub. E, App. E)

REPORTING LIMIT: 0.25% by 400 points or 0.1% by 1,000 points

REGULATORY LIMIT: >1% by weight

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. Estimated measurement of uncertainty is available on request. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

ANALYST: Saithya Painkal

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

SP

Kassidy Harris

From: Scott Sanders <scott@sunrise-enviro.com>
Sent: Wednesday, June 20, 2018 9:39 PM
To: Kassidy Harris
Subject: Re: Laboratory Report for Sopris Administrative Site #300; 620 Main Street Carbondale, CO (A18-6163)

EXTERNAL EMAIL*

Please point count the following 25 samples with a 5-day turnaround:
8-1, 8-2, 8-3, 8-4, 8-5, 10-1, 10-2, 10-3, 11-1, 11-2, 11-3, 11-4, 11-5, 13-1, 13-2, 13-3, 16-1, 16-2, 16-3, 18-3, 27-1, 27-2, 27-3, 27-4, 27-5

Thank You

Scott Sanders
President
720-209-5282

Sunrise Environmental, Inc.
PO BOX 429 - 371 Crest View Drive
Black Hawk, Colorado 80422

www.sunrise-enviro.com

This e-mail may contain confidential and/or privileged information. If you are not the intended recipient or have received this e-mail in error, please notify the sender immediately and destroy and delete all copies of this e-mail and any attachments. Any unauthorized copying, disclosure or distribution of the material in this e-mail is strictly forbidden.

From: "KassidyHarris@eurofinsUS.com" <KassidyHarris@eurofinsUS.com>
To: "scott@sunrise-enviro.com" <scott@sunrise-enviro.com>
Sent: Wednesday, June 20, 2018 3:26 PM
Subject: Laboratory Report for Sopris Administrative Site #300; 620 Main Street Carbondale, CO (A18-6163)

Attached is the laboratory report for your recently submitted samples. Please print out a copy for your records.

We appreciate your business,

eurofins | CEI

July 1, 2018

Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

CLIENT PROJECT: Sopris Administrative Site #300; 620 Main Street Carbondale, CO
CEI LAB CODE: A18-6163.2

Dear Customer:

Enclosed are asbestos analysis results for PLM bulk samples received at our laboratory on June 25, 2018. The samples were analyzed for asbestos using polarized light microscopy (PLM) point count per the EPA 600 Method.

Sample results containing > 1% asbestos are considered asbestos-containing materials (ACMs) per the EPA regulatory requirements. The detection limit for the EPA 600 method is 0.25% for 400 point counts, or 0.1% for 1,000 point counts.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP® TESTING
NVLAP LAB CODE 101768-0

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

Sunrise Environmental, Inc

CLIENT PROJECT:	Sopris Administrative Site #300; 620 Main Street Carbondale, CO
LAB CODE:	A18-6163.2
TEST METHOD:	PLM Point Count EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020
REPORT DATE:	07/01/18

TEL: 866-481-1412

www.ceilabs.com

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Sunrise Environmental, Inc
PO BOX 429
Black Hawk, CO 80422

Lab Code: A18-6163.2
Date Received: 06-25-18
Date Analyzed: 07-01-18
Date Reported: 07-01-18

Project: Sopris Administrative Site #300; 620 Main Street Carbondale, CO

ASBESTOS POINT COUNT PLM, EPA 600 METHOD

Client ID	Lab ID	Material Description	POINTS Total	POINTS Asbestos	ASBESTOS %	
7-1	A30172	Texture	400	8	**2%**	**Chrysotile**
7-2	A30173	Texture	400	8	**2%**	**Chrysotile**
7-3	A30174	Texture	400	9	**2.3%**	**Chrysotile**
9-1	A30180	Joint Compound	400	5	**1.3%**	**Chrysotile**
	A30180	Drywall/Joint Compound (Composite Result from Point Count)			**0.13%**	**Chrysotile**
Lab Notes: Joint Compound is 10% of overall sample.						
9-2	A30181	Joint Compound	400	7	**1.8%**	**Chrysotile**
	A30181	Drywall/Joint Compound (Composite Result from Point Count)			**0.18%**	**Chrysotile**
Lab Notes: Joint Compound is 10% of overall sample.						

LEGEND: None

METHOD: EPA 600 / M4 / 82 / 020 (40 CFR Part 763, Sub. E, App. E)

REPORTING LIMIT: 0.25% by 400 points or 0.1% by 1,000 points

REGULATORY LIMIT: >1% by weight

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ANALYST: Saithya Painkal

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

Kassidy Harris

From: Scott Sanders <scott@sunrise-enviro.com>
Sent: Sunday, June 24, 2018 6:23 PM
To: Kassidy Harris
Subject: Re: Laboratory Report for Sopris Administrative Site #300; 620 Main Street Carbondale, CO (A18-6163)

EXTERNAL EMAIL*

Please point count these additional 5 samples as well with a 5-day turnaround:

Samples: 7-1, 7-2, 7-3, 9-1, 9-2

Thank you

Scott Sanders
President
720-209-5282

Sunrise Environmental, Inc.
PO BOX 429 - 371 Crest View Drive
Black Hawk, Colorado 80422

www.sunrise-enviro.com

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From: "KassidyHarris@eurofinsUS.com" <KassidyHarris@eurofinsUS.com>
To: "scott@sunrise-enviro.com" <scott@sunrise-enviro.com>
Sent: Wednesday, June 20, 2018 3:26 PM
Subject: Laboratory Report for Sopris Administrative Site #300; 620 Main Street Carbondale, CO (A18-6163)

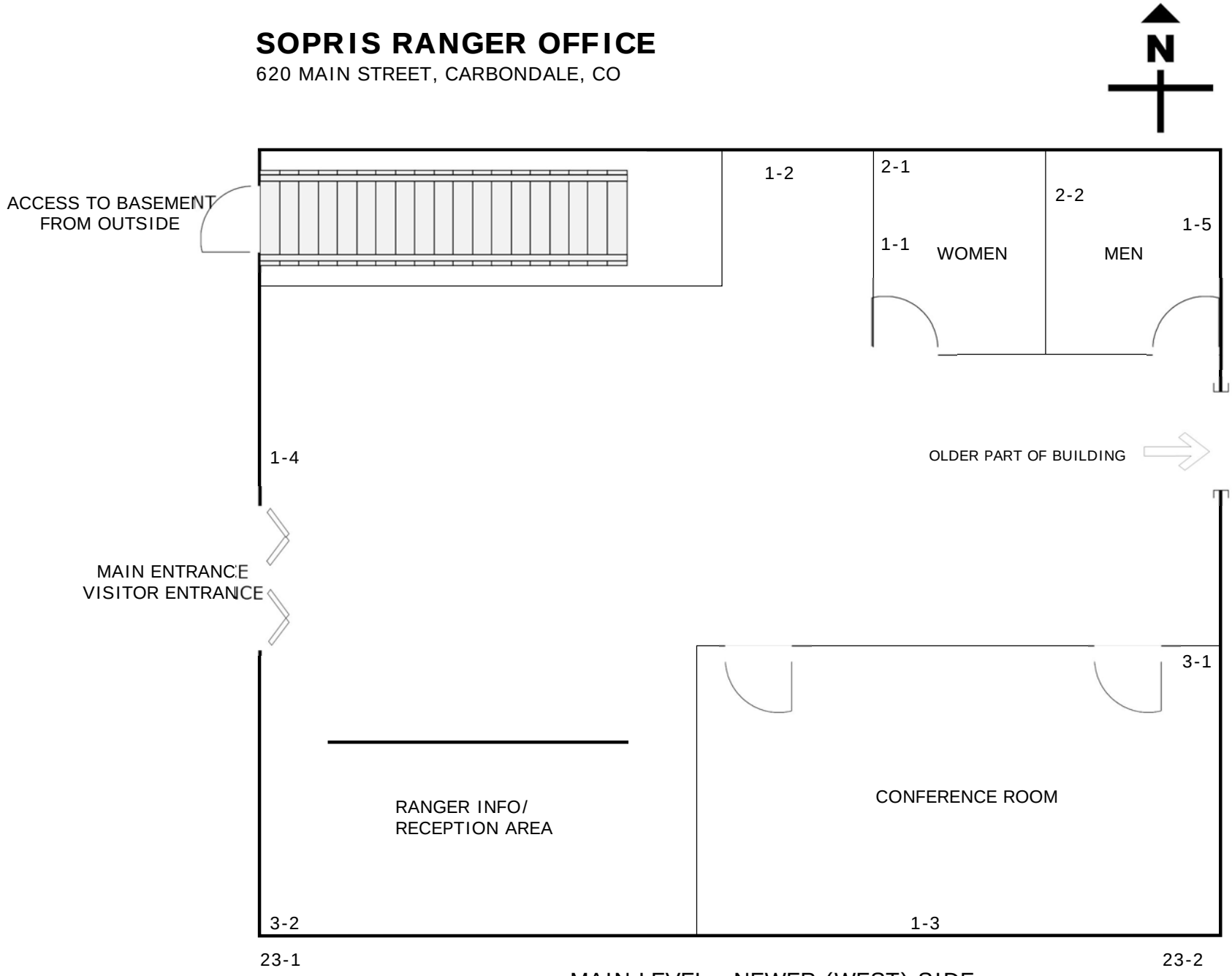
Attached is the laboratory report for your recently submitted samples. Please print out a copy for your records.

We appreciate your business,

APPENDIX B
SAMPLE LOCATION DIAGRAMS

SOPRIS RANGER OFFICE

620 MAIN STREET, CARBONDALE, CO

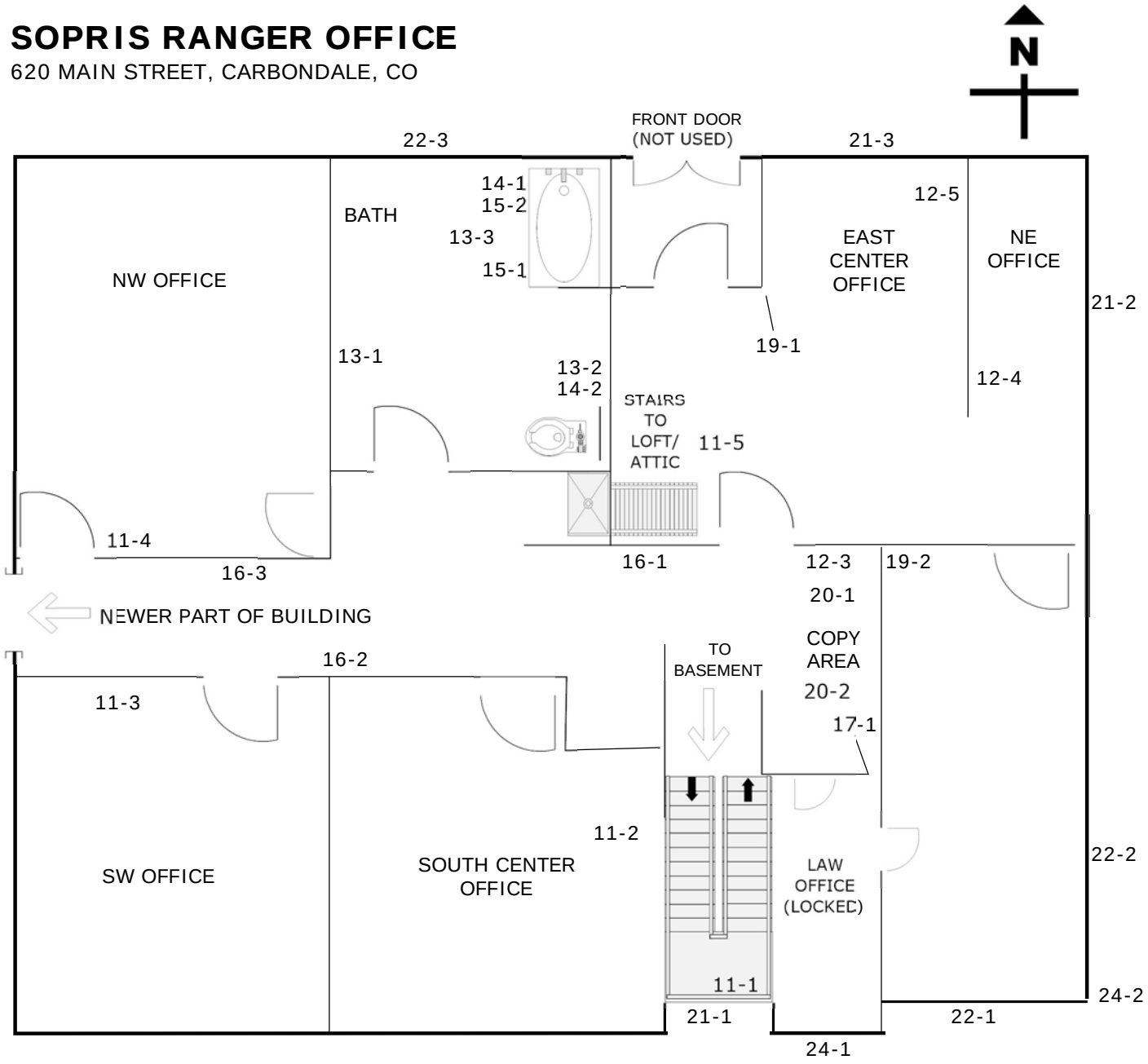


MAIN LEVEL - NEWER (WEST) SIDE

SAMPLE LOCATION DIAGRAM - APPROXIMATE, NOT TO SCALE

SOPRIS RANGER OFFICE

620 MAIN STREET, CARBONDALE, CO

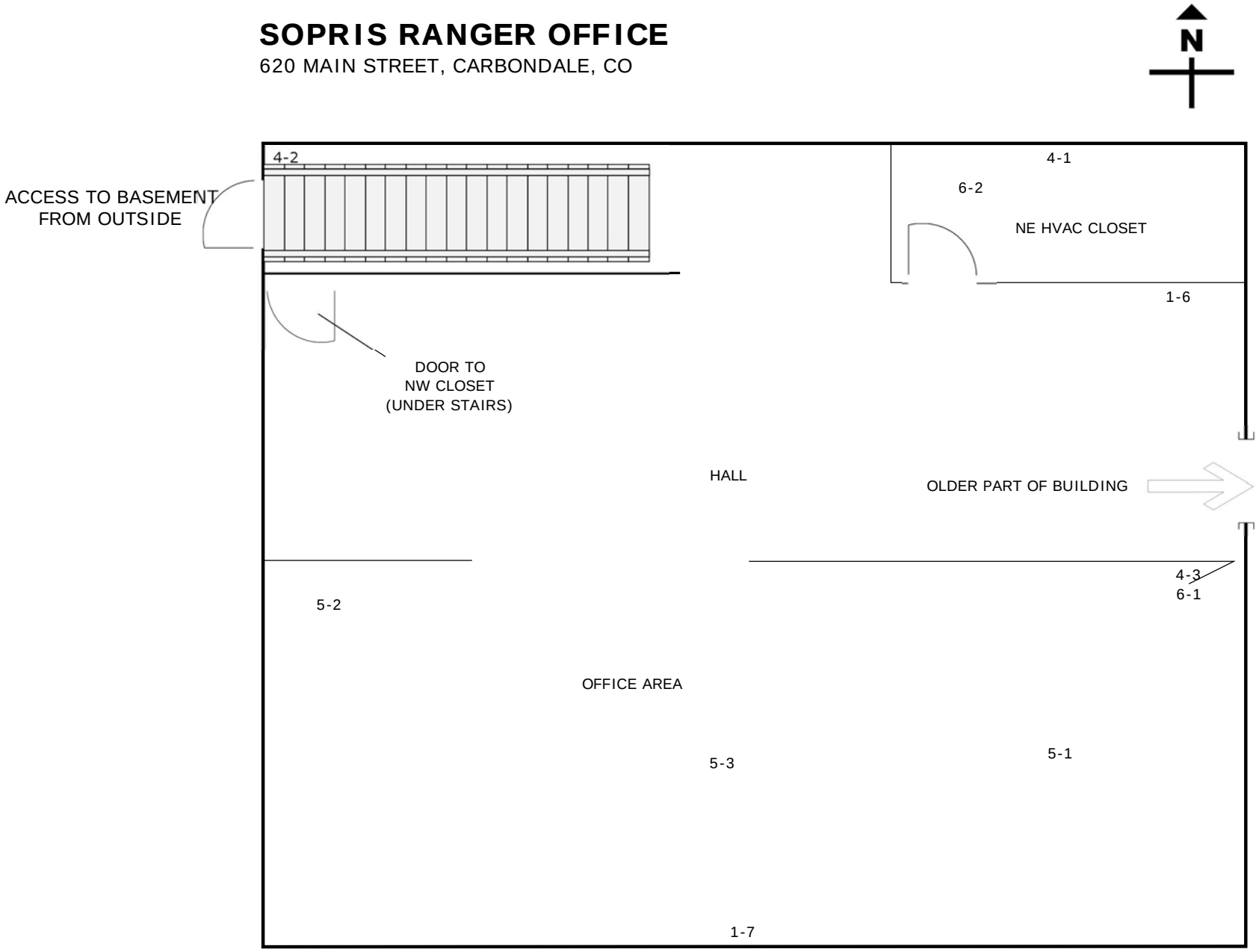


MAIN LEVEL - OLDER (EAST) SIDE

SAMPLE LOCATION DIAGRAM - APPROXIMATE, NOT TO SCALE

SOPRIS RANGER OFFICE

620 MAIN STREET, CARBONDALE, CO

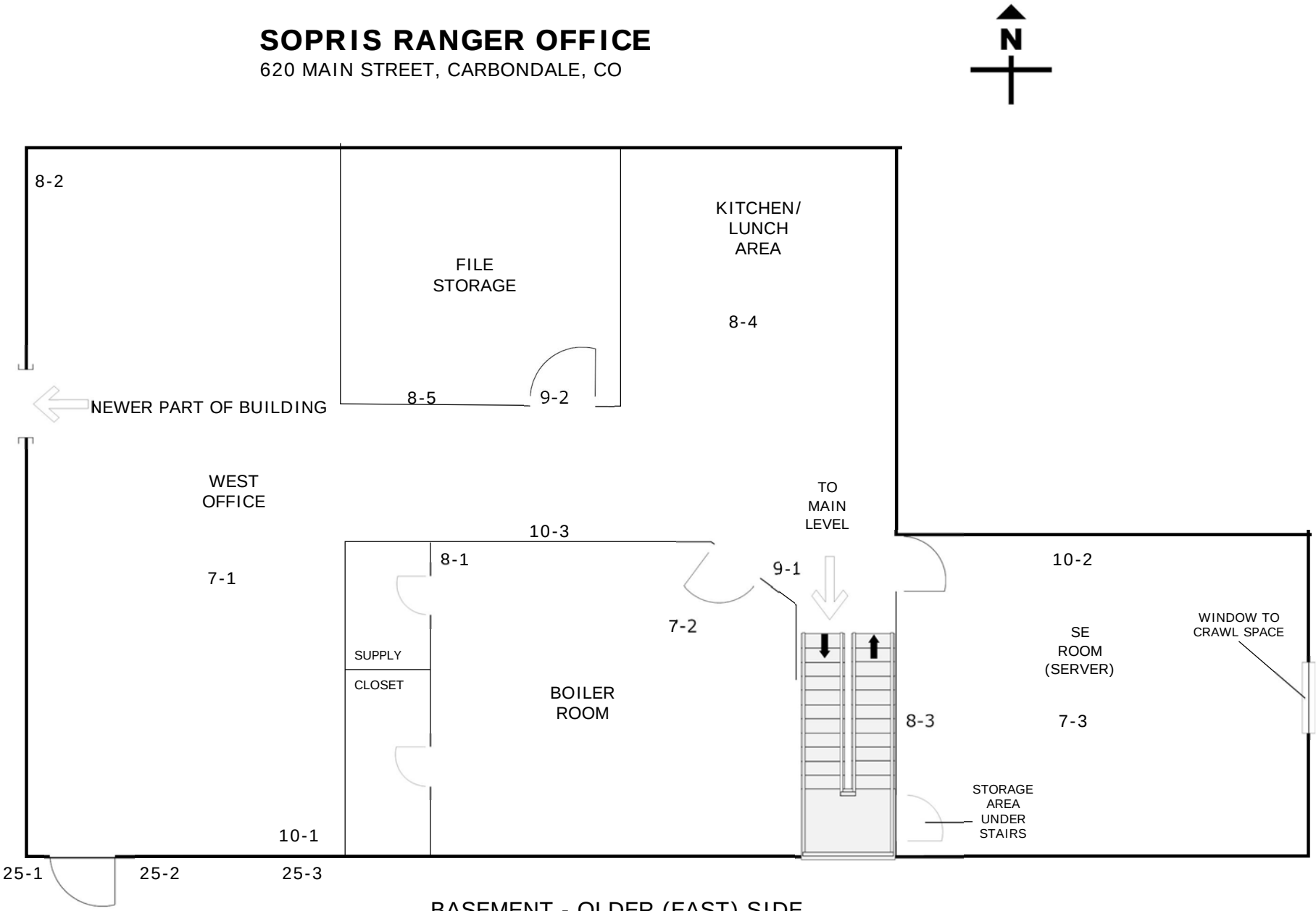


BASEMENT - NEWER (WEST) SIDE

SAMPLE LOCATION DIAGRAM - APPROXIMATE, NOT TO SCALE

SOPRIS RANGER OFFICE

620 MAIN STREET, CARBONDALE, CO

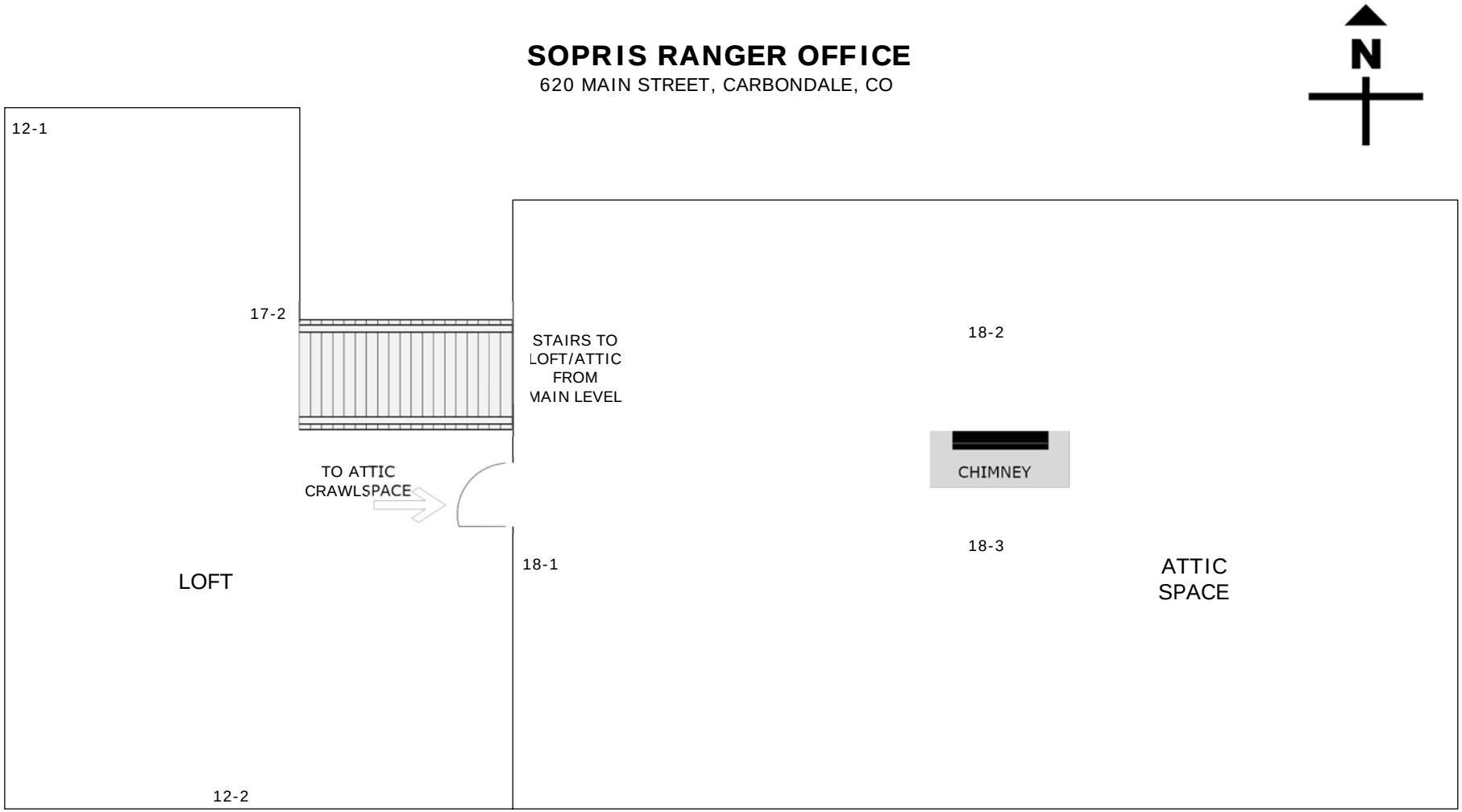


BASEMENT - OLDER (EAST) SIDE

SAMPLE LOCATION DIAGRAM - APPROXIMATE, NOT TO SCALE

SOPRIS RANGER OFFICE

620 MAIN STREET, CARBONDALE, CO

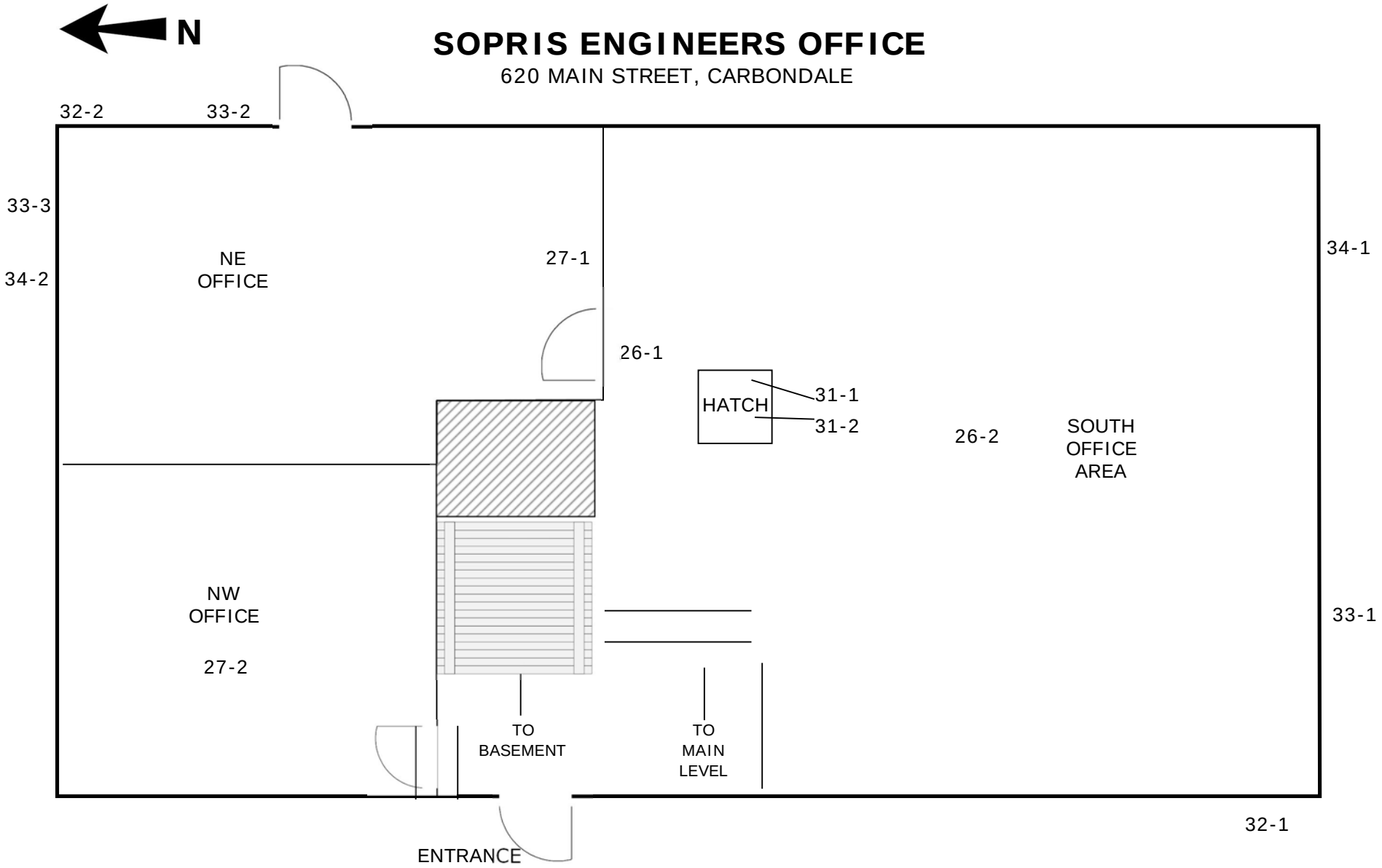


LOFT - OLDER (EAST) SIDE

SAMPLE LOCATION DIAGRAM - APPROXIMATE, NOT TO SCALE

SOPRIS ENGINEERS OFFICE

620 MAIN STREET, CARBONDALE



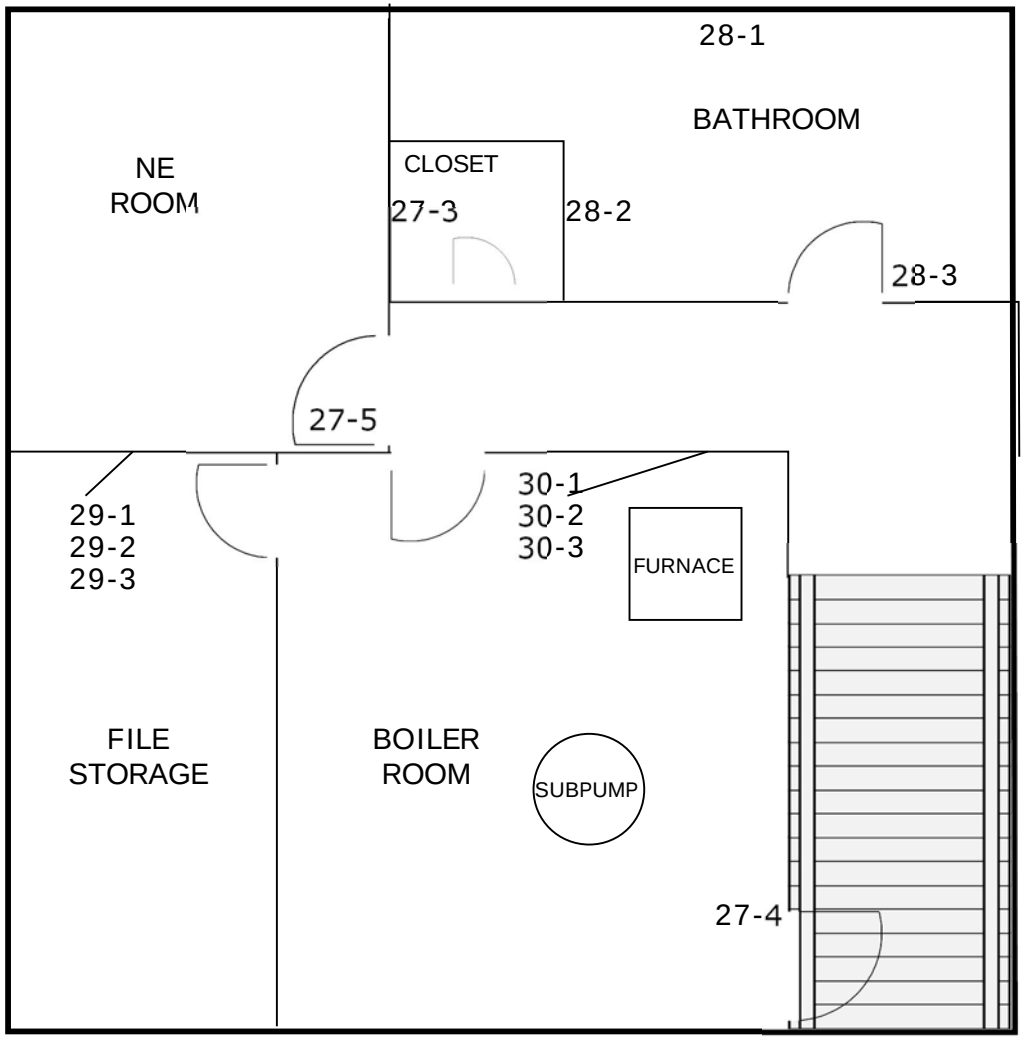
MAIN LEVEL

SAMPLE LOCATION DIAGRAM - APPROXIMATE, NOT TO SCALE

SOPRIS ENGINEERS OFFICE

620 MAIN STREET, CARBONDALE

N

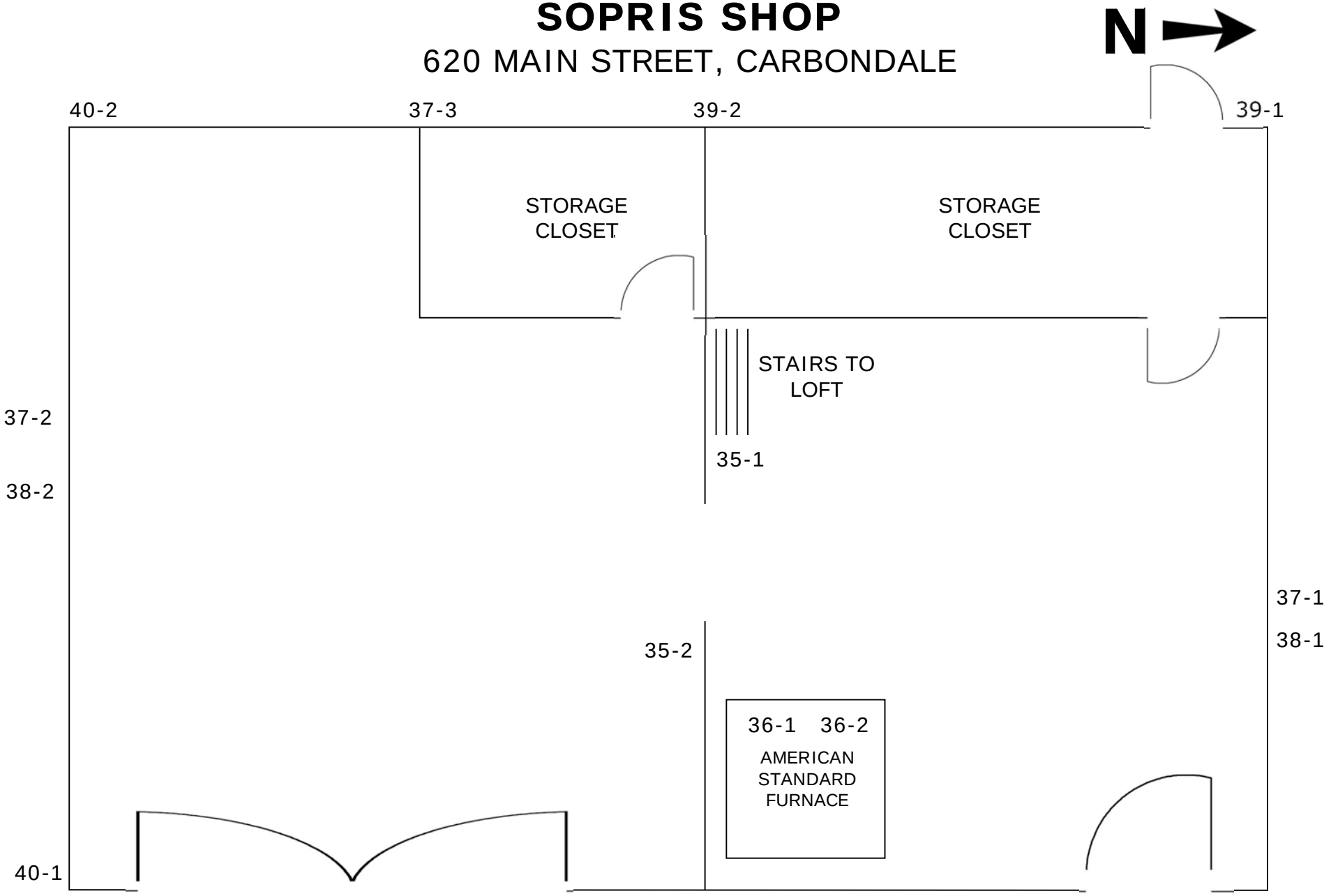


BASEMENT

SAMPLE LOCATION DIAGRAM - APPROXIMATE, NOT TO SCALE

SOPRIS SHOP

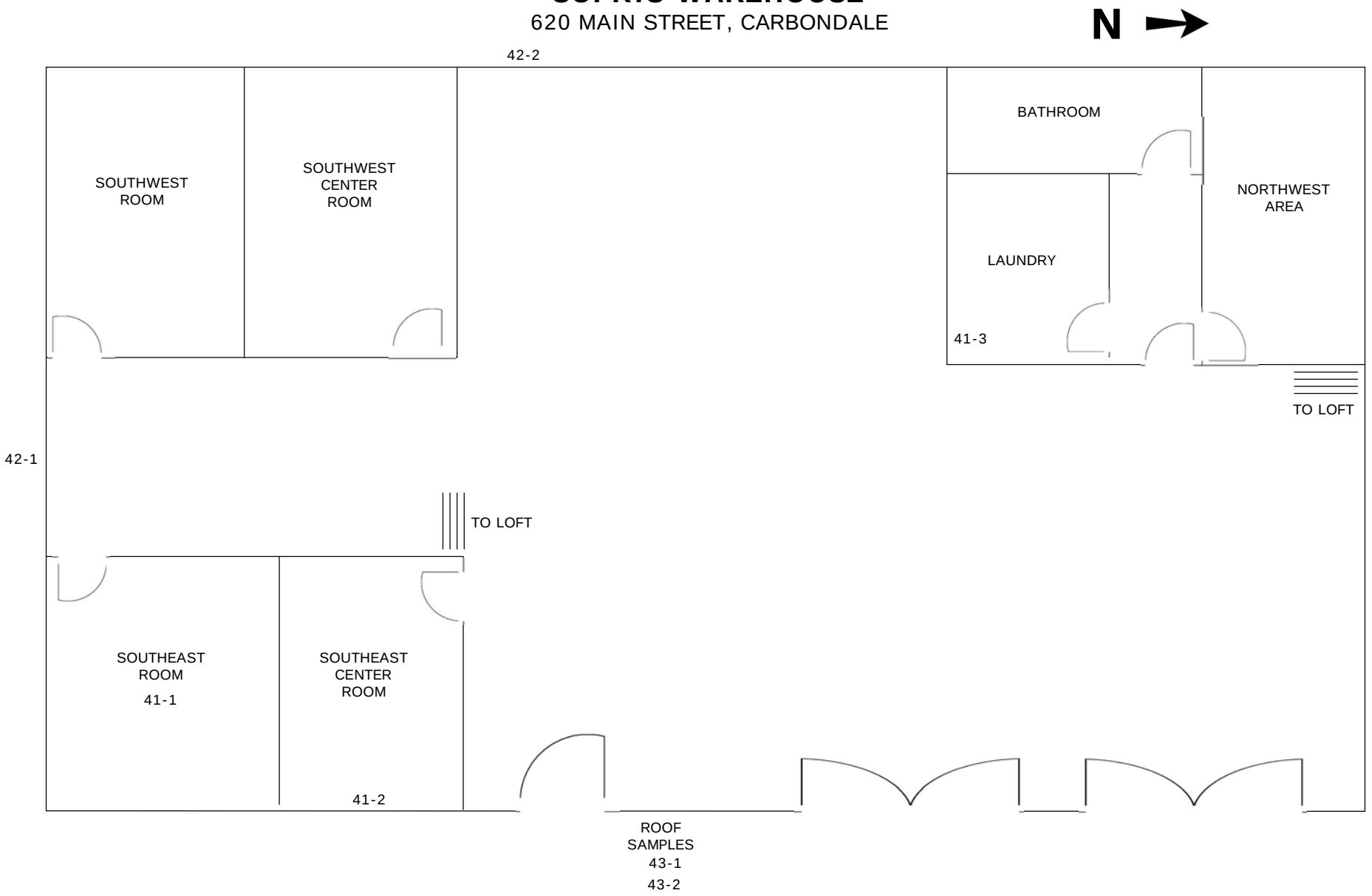
620 MAIN STREET, CARBONDALE



SAMPLE LOCATION DIAGRAM - APPROXIMATE, NOT TO SCALE

SOPRIS WAREHOUSE

620 MAIN STREET, CARBONDALE



SAMPLE LOCATION DIAGRAM - APPROXIMATE, NOT TO SCALE

APPENDIX C
CERTIFICATIONS

Colorado Department
of Public Health
and Environment

ASBESTOS CERTIFICATION*

This certifies that

Scott Sanders

Certification No.: 633

has met the requirements of 25-7-507, C.R.S. and Air Quality Control Commission Regulation No. 8, Part B, and is hereby certified by the state of Colorado in the following discipline:

Building Inspector*

Issued: **March 21, 2018**

Expires: **April 23, 2019**

**** This certificate is valid only with the possession of a current Division-approved training course certification in the discipline specified above.***

Authorized APCD Representative

SEAL

CHC TRAINING

1775 West 55th Avenue
Denver, CO 80221
303.410.4941
trainingchc.com

CHC TRAINING, LLC 2015

Certifies that

Scott D. Sanders

633

Has Successfully Completed the EPA- Approved Annual Asbestos Refresher Training Course Under Section 206 of the Toxic Substance Control Act (TSCA), Title II.

BUILDING INSPECTOR

Course Date: September 20, 2017
Certificate No.: R17-1660-AI-CO
No. of Hours: 4
Expiration Date: September 20, 2018

Certification not valid without watermark

Frank Hulce

Frank Hulce - Instructor

Danaya Benedetto

Danaya Benedetto- Training Program Manager

© 2016 Great Papers

Colorado Department
of Public Health
and Environment

ASBESTOS CERTIFICATION*

This certifies that

Mary Jean Sanders

Certification No.: 14968

has met the requirements of 25-7-507, C.R.S. and Air Quality Control Commission Regulation No. 8, Part B, and is hereby certified by the state of Colorado in the following discipline:

Building Inspector*

Issued: **April 13, 2018**

Expires: **April 25, 2019**

**** This certificate is valid only with the possession of a current Division-approved training course certification in the discipline specified above.***

Jacquie Barela
Authorized APCD Representative

SEAL

ACCLAIM ENVIRONMENTAL
SERVICES INC

7959 Ulster Court, Thornton, Colorado 80602
Tel: 303.424.4647
Fax: 303.432.8669

CERTIFIES THAT

MARY-JEAN SANDERS

Has successfully completed

The **EPA-Approved AHERA Annual Refresher Course** for **INSPECTOR**. This course is EPA-approved under Section 206 of the Toxic Substances Control Act (TSCA) and meets the requirements of Colorado Regulation No. 8.

Course Date:	02/07/18
Exam Date:	N/A
Certificate No.:	AE18-010-BI-R-06
Expiration Date:	02/07/19

K. Jay Gale, President

Colorado Department
of Public Health
and Environment

ASBESTOS CONSULTING FIRM

This certifies that

Sunrise Environmental, Inc.

Registration No.: ACF - 14909

has met the registration requirements of 25-7-507, C.R.S. and the Air Quality Control Commission Regulation No. 8, Part B, and is hereby authorized to perform asbestos consulting activities as required under Regulation No 8, Part B, in the state of Colorado.

Issued: January 12, 2018
Expires: January 30, 2019

Authorized APCD Representative

SEAL

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