March 13, 2026

James W. Nakai & Associates
105 East Moreno Avenue, Suite 102
Colorado Springs, Colorado 80903

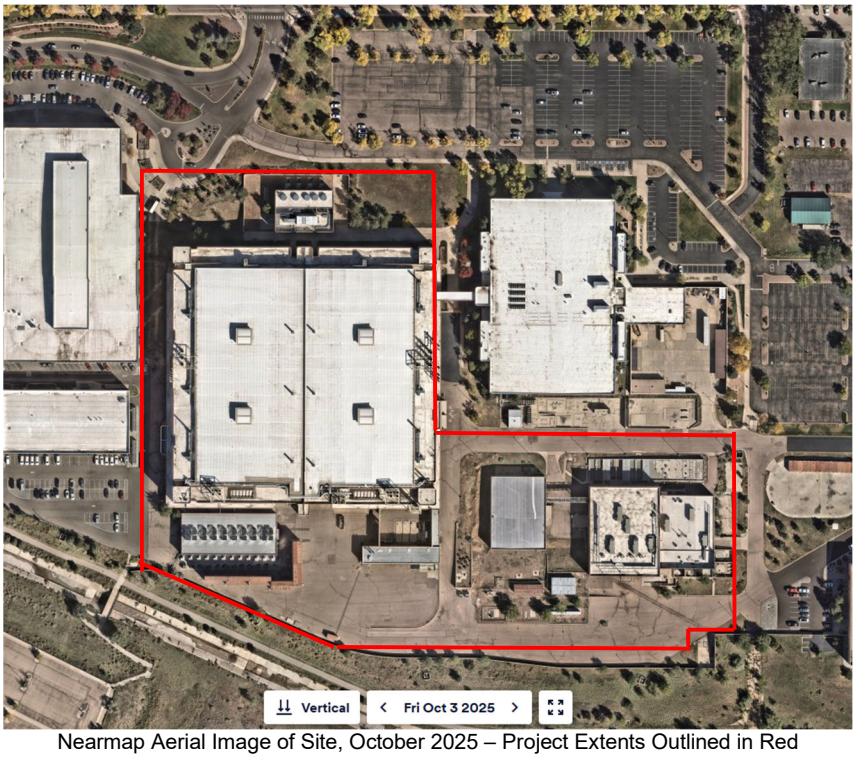
Attention: Jim Nakai, AIA

Subject: Geologic Hazard Evaluation Update
1615 High Tech Way
Colorado Springs, Colorado
Project Number CS20056-105

CTL|Thompson, Inc. (CTL|T) presents this Geologic Hazards Evaluation Update for the property located at 1615 High Tech Way in Colorado Springs, Colorado. The purpose of this letter is to update a previous geologic hazards report prepared by John Himmelreich & Associates that covered the subject project area. This was completed by reviewing existing information, including more recent reports in the immediate vicinity, and published geologic maps and aerial photographs.

Site Conditions and Proposed Construction

The site is currently an existing industrial facility that includes a large building and two smaller buildings as well as associated ancillary structures. The proposed project will include refurbishment of the existing structures and installation/construction of additional ancillary structures including chillers, generators, and associated equipment. The site is shown below.



Nearmap Aerial Image of Site, October 2025 – Project Extents Outlined in Red

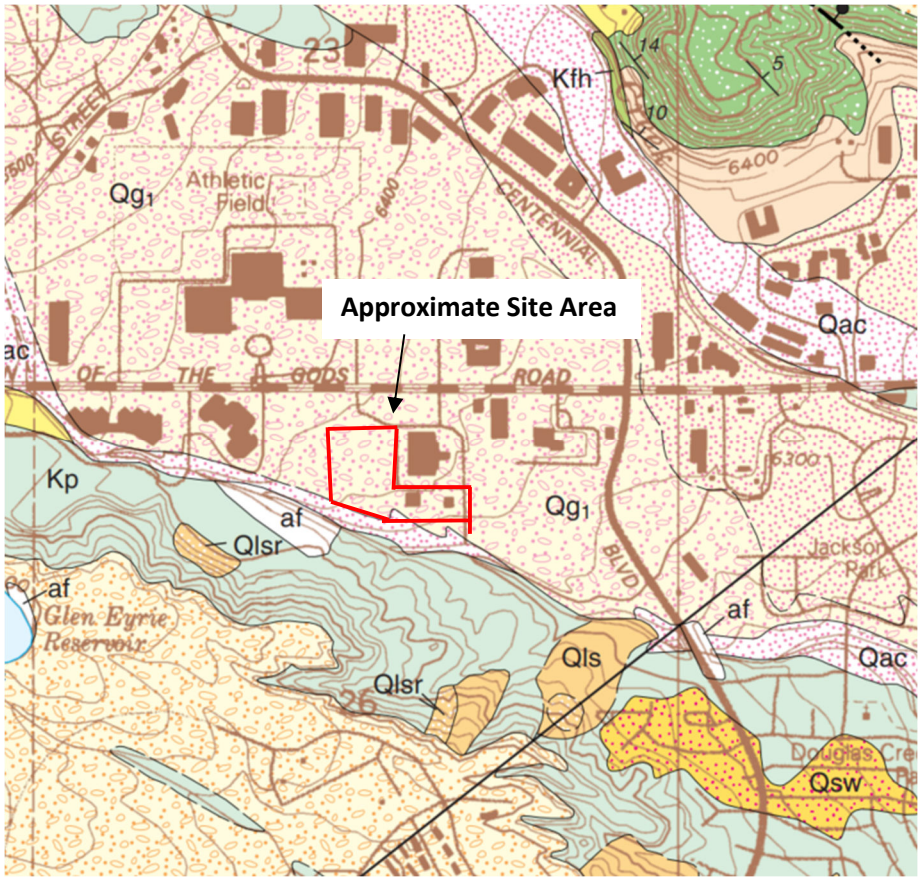
Previous Investigations

John Himmelreich & Associates previously prepared a Summary Report of Geologic Hazards for the Intel Subdivision No. 1 (Project No. 00-132; report dated March 14, 2001). The report covered a larger site, which included the project area.

Our firm was also involved with the project site. We performed a geotechnical investigation for the property at 1615 High Tech Way for a previously proposed refurbishment of the existing buildings (CTL|T Project No. CS19796-125; report dated April 8, 2024). We advanced a total of 13 borings within the southern and eastern portions of the site to depths ranging between 10 and 50 feet below the existing ground surface. We have reviewed these reports as well as other documents listed in the References section.

Site Geology

Geologic conditions were evaluated through the review of published geologic maps, aerial photographs, and previous CTL|T subsurface investigations at the site. Based on geologic mapping by Thorson and Morgan (2001), the site is mapped predominantly as Qg_1, Older gravel one of middle Pleistocene age. The unit is defined as gravel underlying gently sloping topographic surface about 35 to 100 feet above Monument Creek. It generally consists of pebble and cobble gravel in a partly matrix-supported and partly clast-supported sandy, clayey material. A small portion of the southern end of the site, where the site borders a former stream channel, extends into map unit Qac, which consists of Undivided Alluvium and Colluvium of Holocene age. The stream is currently a concrete-lined drainage channel. An excerpt of the geologic map is presented below.



Excerpt of Geologic Map, Thorson and Morgan, 2001

Pierre Shale is mapped as underlying the site at depth. Pierre Shale is an Upper Cretaceous aged marine shale interbedded with bentonite, sandstone, and siltstone beds. This formation typically weathers near the ground surface to materials classified by the engineering terms of clay, weathered claystone, and claystone as well as shale.

Subsurface Conditions

Our previous exploratory borings advanced at the site encountered areas of existing fill material consisting of clayey sand with gravel and slightly silty to silty sand with gravel to depths of up to 12 feet. Where fill was not present, natural clayey to very clayey, gravelly sand was encountered at the surface or beneath the pavement section. Claystone bedrock was encountered in four of our previous borings at depths between 16 and 33 feet. Groundwater was found in two of our borings at depths of 11 and 40 feet.

Potential Geologic Hazards and Engineering Constraints

We did not identify geologic conditions we believe preclude redevelopment of the site as planned. Geologic conditions such as expansive soils and bedrock will impact construction and influence design of the proposed improvements. Regional geologic conditions that may affect the site include seismicity and radioactivity. We believe each of these conditions can be mitigated with engineering design and construction methods commonly employed in this area. The conditions are discussed in greater detail in the following sections.

Expansive Soils

Expansive clay and claystone bedrock were identified in previous borings advanced at the site. The presence of expansive materials at the site constitutes a geologic hazard. There is risk that ground heave will damage slabs-on-grade and possibly foundations. The risks associated with swelling soils can be mitigated, but not eliminated, by careful design, construction and maintenance procedures. This condition should be evaluated at the time of a site-specific geotechnical investigation to determine appropriate recommendations for mitigation.

Seismicity and Faults

According to the USGS, Colorado's Front Range and eastern plains are considered low seismic hazard zones. The earthquake hazard exhibits higher risk in western Colorado compared to other parts of the state. The Denver Metropolitan area has experienced earthquakes within the past 100 years, shown to be related to deep drilling, liquid injection, and oil/gas extraction. Naturally occurring earthquakes along faults due to tectonic shifts are rare in this area.

The soil and bedrock at this site are not expected to respond unusually to seismic activity. The 2021 International Building Code (Section 1613.2.2) defers the estimation of Seismic Site Classification to ASCE 7-16, as outlined in the table below.

Seismic Site Class	$\bar{s}_u$, Average Undrained Shear Strength (lb/ft^2)	$\bar{N}$, Average Standard Penetration Resistance (blows/ft)	$\bar{v}_s$, Average Shear Wave Velocity (ft/s)
A. Hard Rock	N/A	N/A	>5,000
B. Rock	N/A	N/A	2,500 to 5,000
C. Very Dense Soil and Soft Rock	>2,000	>50 blows/ft	1,200 to 2,500
D. Stiff Soil	1,000 to 2,000	15 to 50 blows/ft	600 to 1,200
E. Very Loose Sand or Soft Clay Soil	<1,000	<15 blows/ft	<600
F. Soils requiring Site Response Analysis	See Section 20.3.1	See Section 20.3.1	See Section 20.3.1

Based on the results of our previous investigations at the site and within the immediate vicinity, we judge a Seismic Site Classification of D. The subsurface conditions indicate low susceptibility to liquefaction from a materials and groundwater perspective.

There are no faults mapped at the surface of this site. The nearest mapped fault is the Rampart Range Fault located about 2 miles west of the site.

Shallow Groundwater

Groundwater was encountered in two borings at the time of our previous geotechnical investigation at depths of 11 and 40 feet. The borings were backfilled following drilling, preventing further groundwater measurements. Groundwater levels may rise due to seasonal variations. A seasonal rise of 3 to 5 feet is typical for this area.

Hard Bedrock

The claystone within the Pierre Shale Formation is medium hard to very hard and may require aggressive excavation techniques including rock teeth and rock buckets; however, based on our understanding of the project and the depth to bedrock encountered in our previous borings drilled at the site we do not expect excavation into bedrock.

Steeply Dipping Bedrock

The western portion of the site is located within the area included in the “Map of Areas Susceptible to Differential Heave in Expansive, Steeply Dipping Bedrock, City of Colorado Springs, Colorado” by Himmelreich Jr. and Noe, dated 1999. We have seen instances of foundation movement and damage for structures constructed in areas with steeply dipping expansive bedrock along the Front Range area where sufficient mitigation measures are not taken. This is predominantly due to large vertical differential movements over relatively short horizontal distances. The larger differential movements are caused by changes in the swelling characteristics of the bedrock due to the angle of the bedding planes. We did not identify steeply dipping bedrock in our previous borings advanced during our 2024 Geotechnical Investigation.

Hillside Overlay Zone and Potentially Unstable Slopes

The site is not included within the Hillside Overlay Zone, as shown on zoning layers on the SpringsView webpage, as prepared by the GIS Division of the Planning, Development, and Finance Department of the City of Colorado Springs. The area immediately south of the site, near the existing drainage, is mapped within the Hillside Overlay and is also shown as susceptible to landslides on the Landslide Susceptibility Map by White and Wait (2003).

However, the project site is generally level and slope instability is not a concern, given the distance from the slope.

Flooding and Streamside Overlay Zone

This site lies within Zone X as shown on Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency. Zone X is outside the 500-year flood plain with no base flood determined. There are no streamside overlay zones within the site shown on the Streamside Overlay Map available on the City of Colorado Springs web page.

Rockfall

The project area is within the Rockfall Hazard Susceptibility mapping, and is not within the mapped areas of potentially hazardous rockfall areas. The site does not appear susceptible per our observations.

Debris Flow and Debris Fans

The project is not located within areas with conditions favorable for the generation and deposition of debris flows, especially during extreme precipitation events, as mapped in the Colorado Geological Survey Open-File Report 18-11 “Debris Flow Susceptibility Map of El Paso County, Colorado”, and does not appear susceptible per our observations. The site has been developed, and any surficial evidence of potential debris flows and mudflows (if they had occurred) are no longer present.

Subsurface Mining

The site is not included in the Colorado Springs Subsidence Investigation, State of Colorado, Division of Mined Land Reclamation, prepared by Dames & Moore, dated April 1985. The study was conducted specifically for known or suspected areas of underground coal mining in Colorado Springs. We did not observe evidence of subsurface mining at the site.

Radon

In our opinion, there are no unusual hazards from naturally occurring sources of radioactivity on this site. However, the type of materials found often are associated with the production of radon gas, and concentrations in excess of those currently accepted by the EPA are possible. Buildup of radon gas to unacceptable levels can occur in structures that are sealed to minimize air exchange, although better ventilated structures are less prone to high concentrations. Passive and active mitigation procedures are commonly employed in this region to effectively reduce the buildup of radon gas. Radon levels can be determined after construction of building modifications, if desired.

Limitations

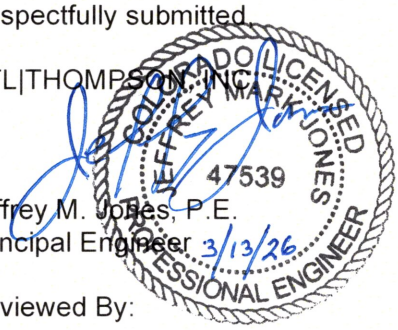
This report has been prepared for the exclusive use of James W. Nakai & Associates and the project team for the purpose of providing a Geologic Hazard Evaluation for the proposed project. The information, conclusions, and recommendations presented herein are based upon consideration of many factors including, but not limited to, the type of development proposed, the geologic setting, subsurface conditions, engineering analysis, and our experience. The conclusions and recommendations contained in this report are not valid for use by others. Standards of practice evolve in the area of geotechnical engineering. The recommendations provided are appropriate for about three years. If the proposed addition is not

constructed within about three years, we should be contacted to determine if we should update this report.

We believe this letter was prepared with that level of skill and care normally exercised by geotechnical engineers and geologists in the Colorado Springs area at this time. No warranty, express or implied, is made. Please contact us if you have any questions.

Respectfully submitted,

CTL|THOMPSON, INC.



Jeffrey M. Jones, P.E.
Principal Engineer

Reviewed By:

Timothy A. Mitchell, P.E.
Senior Principal Engineer

JMJ:TAM:cw

Attachments: John Himmelreich & Associates, 2001 Summary Report of Geologic Hazards

Via e-mail: jim@jwnakai.com

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JOHN HIMMELREICH & ASSOCIATES

Post Office Box 7117
Colorado Springs, Colorado 80933

Phone (719) 632-2882, cell (719) 338-3499, FAX (719) 632-2648
Email thehimmelreichs@hotmail.com

March 14, 2001

Kleinfelder, Inc.
1000 W. Fillmore Street
Colorado Springs, CO 80907

Subject: Summary Report of Geologic Hazards
Intel Subdivision No. 1
Colorado Springs, Colorado
Project No. 00-132

Dear Mr. Barreire:

The following presents a summary report of a geologic hazard study performed at the above referenced site. This summary is based on: research and review of reasonably ascertainable documents including geologic maps, zoning maps; a site reconnaissance; a review of test boring logs by Kleinfelder, Inc and others; and my experience in the area. A partial list of the references reviewed is attached. Figure 1 is a site vicinity map. Figure 2 is a Surficial Geologic Map of the south part of the site.

This report was written for the client with client input. Limitations of both time and cost were considered in the scope of the study. Reliance by other parties on information contained in this report is at their own risk. Reproduction of any portion of this report in any form is not allowed except with expressed written consent of **JOHN HIMMELREICH & ASSOCIATES**.

Proposed Development

We understand that the site is to be used for construction of a manufacturing facility, warehouse, and parking lots to serve the Intel facilities. Disturbed portions of the site are to be paved and/or landscaped. A pedestrian bridge has been constructed over Douglas Creek to connect the south parking lot. Grading has been accomplished on the site (see Reference 42) and consisted of relatively shallow cuts and fills in the south parking lot area. In the north part of the site, deeper cuts have been mitigated with retaining walls and/or foundation walls.

Site Conditions

The site was developed (grading and initial infrastructure installation occurred) in the early to mid-1980s (Reference 40 and 41). The City approved the drainage report and plan (Reference 41) in 1984.

At the time of our recent site reconnaissance the site was under construction and several structures existed. The south parking lot had been graded, paved, and drainage facilities installed. The slope of the north part of the site (north of Douglas Creek) was gentle. In the south parking lot area (prior to recent grading and paving), the slope of the site was steep around the north, east and south perimeter, with a gently sloping pad area comprising the majority of the site (see Figure 2). Recent grading on the south parking lot area was relatively minor with minimal cuts and fills. Virtually the entire site has been disturbed by past grading activities. Douglas Creek channel borders the north part of the south parking lot.

The site is served by central water and wastewater systems. Main line responsibility along with channel maintenance is believed to be by the City of Colorado Springs.

Numerous geotechnical and soil investigations have been conducted for the property and sites in close proximity (References 40 and 43); however, we were only able to obtain copies and review some of these documents at this time. Numerous borings have been drilled within and near the subdivision.

Geologic Conditions

The bedrock underlying the region is the Pierre Shale consisting of marine deposited clay shale with some interbedded sandstone, bentonite, and limestone layers. In the subdivision area, discreet bentonite layers up to about 8 inches thick have been observed in excavations. Structural measurements on the Pierre Shale in the subdivision area and geologic maps (Reference 12) indicate that the site is underlain by steeply dipping bedrock. No exposures of the bedrock were fobserved on the site.

Based on observations of exposures in the area and review of test boring logs, the 'formational' (in-place) shale is moderately to highly fractured, jointed, and weathered. The shale is brown to gray, typically becoming more gray as the amount of weathering and fracturing decreases. Deep weathering is typical in this geologic setting.

The bedrock is overlain by surficial deposits consisting of man-placed fill soils, alluvium, colluvium, and landslides (adjacent to the extreme south of the site). Alluvial deposits overlie the Pierre Shale in the area north of Douglas Creek. Fill soils have been placed over the natural deposits in various areas of the site.

South of Douglas Creek, in the slope area south of the site, colluvial (slopewash) deposits consisting of a mixture of clay, silt, sand, and gravel overlie the Pierre Shale and other surficial deposits. It is possible these overburden colluvial soils are also old landslide deposits.

Older landslides were mapped along the slope adjacent to the south boundary of the site (see Figure 2). Recent landslides have occurred on the site and adjacent site to the west. The recent landslides that occurred on the site in the spring of 1999 appear to be 'skin failures' associated with failure of the upper 1 to 3 feet of the fill slope surface (see attached Figure 3). Some of these failures slumped into the Douglas Creek channel.

The slope failure on the adjacent site to the west appears to be a rotational failure involving failure of a cut slope in alluvium/colluvium. Previous cutting of the slope along the south boundary of the site may have 'daylighted' adverse geologic conditions, thus increasing the potential for slope instabilities in this area.

Overlying the natural soils and bedrock are man-placed fill soils. References reviewed and observations in the area indicate these consist of a jumbled mixture of soils and/or bedrock (claystone) fragments from the local area. These fill were reportedly placed under 'controlled conditions' although we were not provided records of fill placement or cut slope observations for our review. Fill is suspect from a structural support stand point, unless records are available which can verify it was placed in compliance with engineering specifications.

Surface and Subsurface Drainage

Surface drainage conditions consist largely of sheet flow to the Douglas Creek channel. Most drainage facilities had been constructed at the time of our most recent site reconnaissance. Drainage also enters the south part of the site from the slopes and drainageways along the south boundary. We understand that a golf course has recently been constructed on top of the mesa to the south of the site. Long-term wetting of the slope and the appearance of additional seeps or springs may occur due to the golf course development. During our initial site reconnaissance, a spring or seep (or possibly poor surface drainage) was observed on the site along the toe of the cut slope in the south-central portion of the site. Ground water may also be 'perched' where the water is contained in the surficial soil materials perched on top of the lower permeability bedrock materials below, and 'hidden' by the fill soils.

Groundwater is contained in the Douglas Creek valley within the alluvial deposits.

Geologic Hazards

Geologic hazards recognized on site include: 1) potentially unstable slopes, 2) expansive bedrock, 3) corrosive soils, 4) erodible soils, 5) settlement-prone soils 6) seismicity, and 7) the potential for radon gas. Each of the identified conditions is discussed in the following sections.

Slope Stability

Regional geologic studies of the area include reports published by: the U. S. Geological Survey (USGS) in 1973 and 1979 (References 23 and 7); Resource Planning Associates, Inc. (RPA) in 1974 (Reference 18); C. S. Robinson and Associates, Inc. in 1977 (Reference 11); and the University of Colorado at Colorado Springs (Reference 13).

Reference 13 maps the south parking lot area as a potential landslide area. Reference 18 (1974) maps this area as "U-steep slopes unstable" where (p. B34) "Some of these materials may fail in a matter of days after excavation, while for others several months may pass before collapse occurs. In either case, eventual failure can be expected." "Steep cuts in materials classified as (U) should not be left exposed for long periods of time unless it is certain that a sudden collapse of the cut will bring no resultant harm to people or to property." On page B39 it states "In this region, landslides have occurred and can be expected to occur in the following settings: .... along the edges of some

of the pediment deposits at the east edge of the mountain front" and recommends (p. B41) "It is recommended that building and road construction be prohibited in landslide hazard areas."

Reference 11 (1977) maps the south parking lot area as *"4-A potentially unstable colluvium and bedrock on moderate to steep slopes (12%-24%). Includes expansive and potentially expansive soils and bedrock. Emphasis on slope stability, swelling characteristics, bedrock structure and surface and subsurface drainage."* and recommends, *"Detailed geologic investigation and mapping to define the limits and extent of unstable slopes and hazardous conditions, and a detailed soils engineering investigation to provide data for engineering of remedial work and mitigation of hazardous conditions."* Under Potential Geologic Hazards it states *"Slopes in shale no steeper than 5 degrees may slide if saturated and toe of slope is removed. Beds at edge of terraces and adjacent to streams are commonly unstable when saturated. Exposed slopes erode readily."*

The geologic structure in the region, which relates to potential landslide hazard, indicates that the dip of the Pierre Shale in the site area is very steep. Reference 23 (1973), referring to the Pierre Shale indicates: *"Slope stability poor; vertical cuts may collapse. Shale in slopes no steeper than 5 degrees may slide, if the toe of the slope is removed."*

The entire slope adjacent to the south boundary of the site has been mapped in an area designated as potentially unstable. Observations made during the site reconnaissance and stereoscopic analysis of aerial photographs (1966) did not reveal geomorphology (land-shapes) suggestive of recent (active) gross slope instabilities (landslides), except for the 'skin failures' on the fill slopes. To my knowledge no detailed analysis of gross stability has been done on the hillside (or the fill slopes).

Dozens of landslides have occurred in similar geologic settings around the City and this geologic setting is well known for its potential for instability (see References 13, 15, 18, and 35).

Several shallow 'skin failures' have occurred on the fill slopes south of Douglas Creek. The potential for additional skin failures has been mitigated (reduced) by the construction of the curb and gutter and drainage facilities for the south parking lot. The slope along the east part of the parking lot has also been flattened and re-vegetated.

It should be emphasized that there is some risk involved in the construction in geologic hazard areas, especially potential landslide areas. The owner must be willing to accept that risk.

Expansive Soil and Bedrock

The site is underlain by expansive bedrock/soils. Excavations have been made in the south part of the site and have encountered expansive bedrock and soils. Pavement and foundation design parameters have been provided by Kleinfelder, Inc. Heaving bedrock due to steeply dipping bedrock may affect the extreme southwest part of the site (south parking lot), thus requiring increased maintenance.

Corrosive and Erodible Soils

The site is underlain by materials that contain corrosive minerals. Corrosive minerals can have detrimental affects on concrete and buried metals if not identified prior to design and properly mitigated. The potential for corrosive minerals on concrete is addressed in the soil study.

The soils that underlie the site are erosive. These concerns have been addressed in an erosion control plan and landscape plan. Since the site is to be paved and/or landscaped, the potential for erosion should be mitigated by these improvements.

Off-site drainage and sedimentation from the south has impacted the site (see Figure 4). It appears that during storm events, erosion is occurring in the drainageways to the south of the site. Off-site erosion control measures should be designed and implemented to prevent impacts to the site. Periodic maintenance of storm generated sediment should be expected.

Settlement-Prone Soils

The fill soils and natural soils that underlie the site may be to be prone to settlement, consolidation, and/or hydrocompaction. Mitigation for these hazards is addressed in the soils study.

Seismicity

The Colorado Geological Survey considers this area to be in Seismic Risk Zone 2. This zone could be subject to moderate earthquakes and associated ground shaking. The U. S. Geological Survey (1996) also considers this area of Colorado to be in a similar zone with a maximum moment magnitude of 6.5. The City of Colorado Springs has adopted the 1997 Uniform Building Code (UBC) which considers this area to be in Seismic Risk Zone 1 (a lower hazard zone). Wind loading in the Colorado Springs area may govern structural design; however, an earthquake may trigger slope failures. Seismic forces should be included in the design for critical facilities and slope stability analyses.

Radioactivity

The references reviewed indicate that the formation of radon gas in accumulations exceeding those currently considered to be acceptable by the Environmental Protection Agency occurs in some residential structures constructed on the same geologic formations as underlie the site. Radon is less likely to develop in industrial and commercial facilities because of the air exchanges that are typically included in the design of ventilation.

Zoning Map Review

The site is not within the Hillside Overlay Zone.

Wildfire

Review of Wildfire Hazard Maps (Reference 6) indicates the area to the south of the site is within a mapped wildfire hazard.

Flooding

Review of FIRM maps indicates that Douglas Creek is a mapped flood hazard.

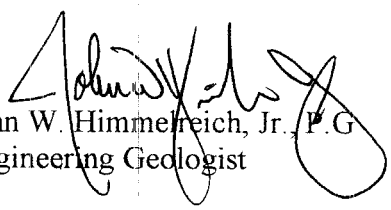
Recommendations

- Information should be obtained from the previous owner and developer or City regarding: 1) design and construction of the structures and surface drainage facilities on and adjacent to the site, and 2) records of the previous studies conducted on the site, placement of the fill and observation of the grading operations.
- Information should be obtained regarding the responsibility for maintaining surface drainage facilities and associated slopes.
- Visual monitoring of the slopes, vegetation protection, and drainage facilities should be conducted on a regular basis to ensure that they are properly maintained.

We believe this provides you with the information required at the present time. Please contact me if you have any questions or require additional information.

Respectfully,

JOHN HIMMELREICH & ASSOCIATES



John W. Himmelreich, Jr., P.G.
Engineering Geologist

JWH
7 copies sent

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GEOLOGIC HAZARD STUDY STATEMENT
INTEL SUBDIVISION NO. 1
COLORADO SPRINGS, COLORADO

GEOLOGIST'S STATEMENT

I hereby attest that I am qualified to prepare a Geologic Hazard Study in accordance with the provisions of Section 504 of the Geologic Hazards Ordinance of Colorado Springs. I am qualified as a Professional Geologist as defined by CRS 34-1-201(3).

Submitted by: _____ 3-14-01
John W. Himmelreich Jr., P.G. **Date**

This Geologic Hazard Study is filed in accordance with Chapter 14.1, Article 3, Part 5 of the Code of the City of Colorado Springs, 1980, as amended.

_____ 4/6/01 _____ 4/6/01
City Engineer **Date** **Manager of Development Services** **Date**

El Paso County Geographic Information System

NAVIGATION
Comments
County Home Page
Organization Chart
Service Index
Assessor Home Page
Appeals Process
Assessor FAQ's
Parcel Red Search

Parcel Highlighted (in red) is:

5114002001

Click Parcel Number for Property Information

Located on Assessor's MapSheet:
51140

Enter Parcel to Find:

Find

Click on Map to:

- Identify Parcel
- Zoom In
- Zoom Out
- Full County

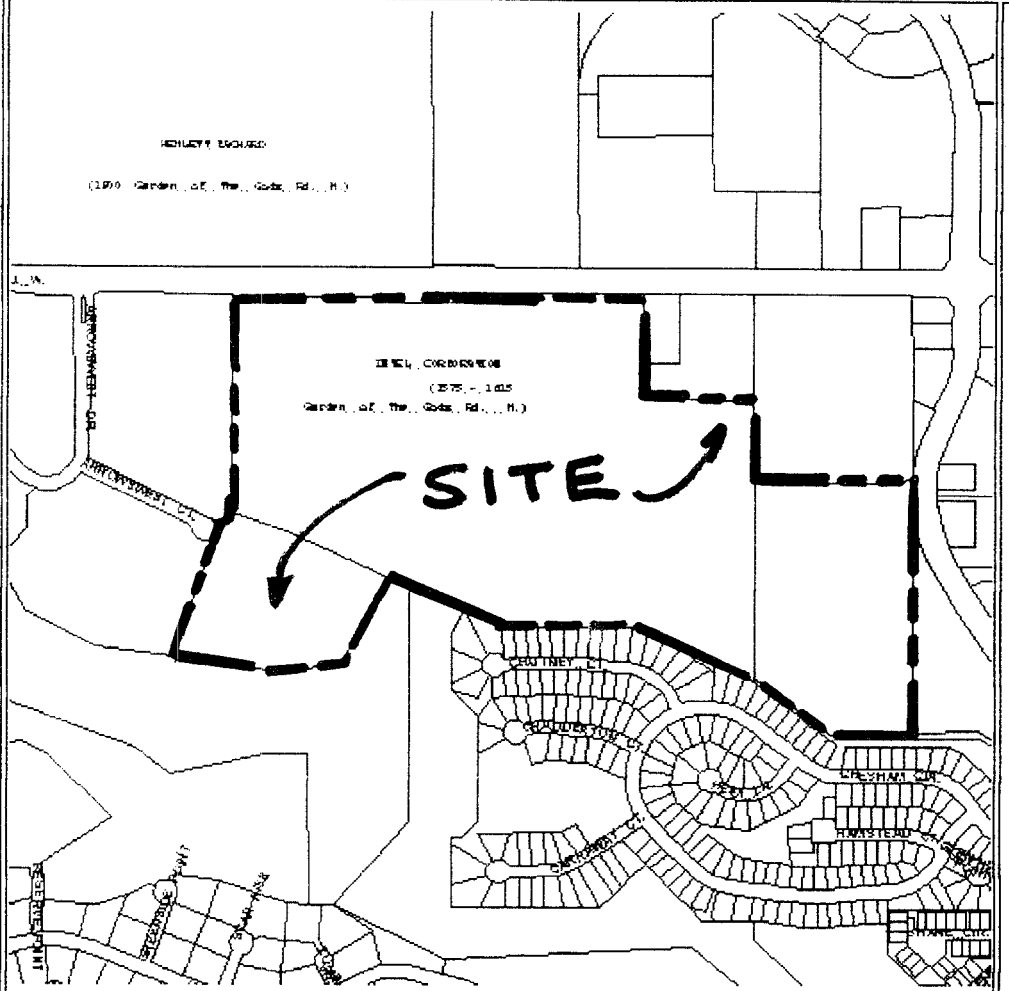

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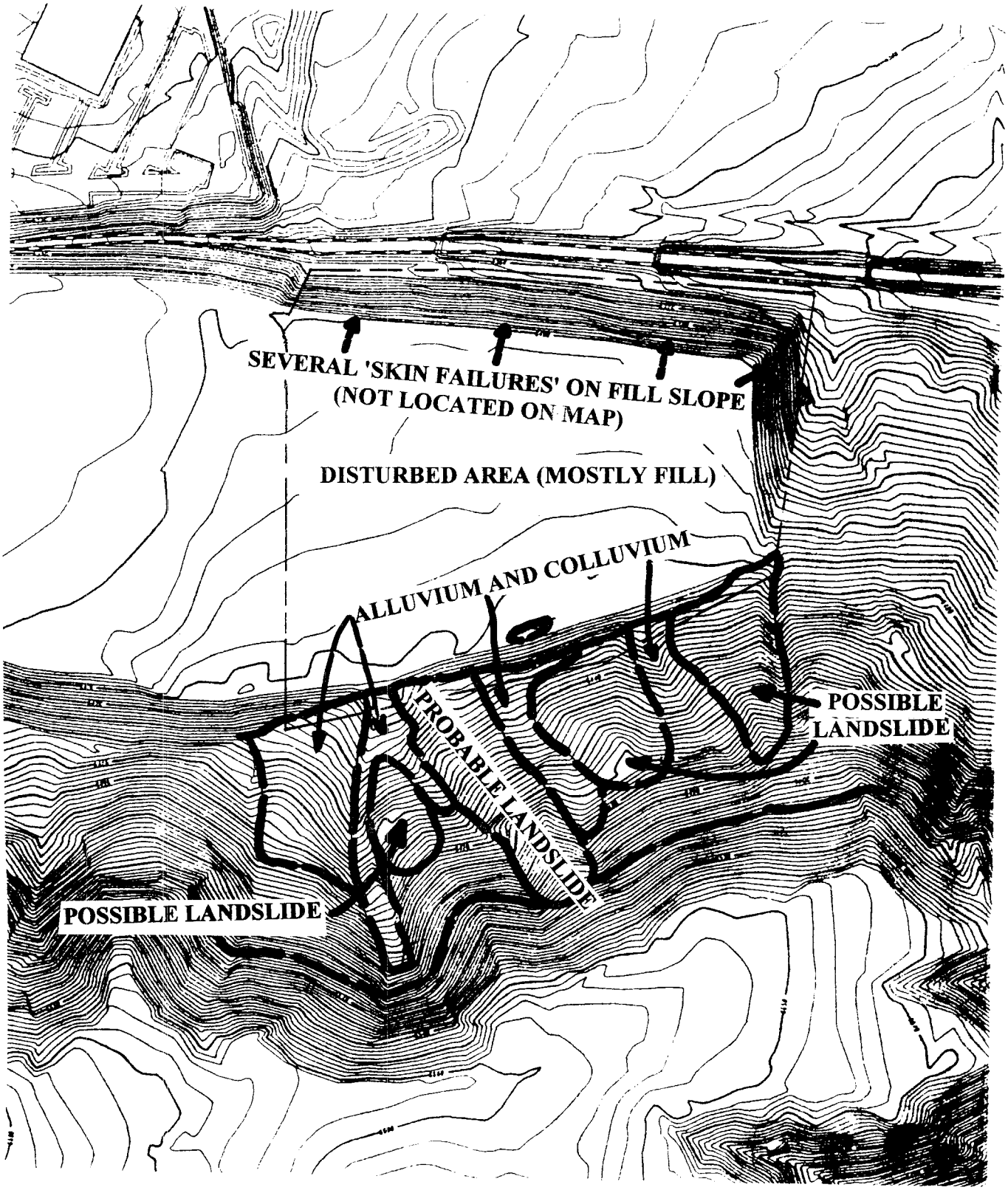
FIGURE 1

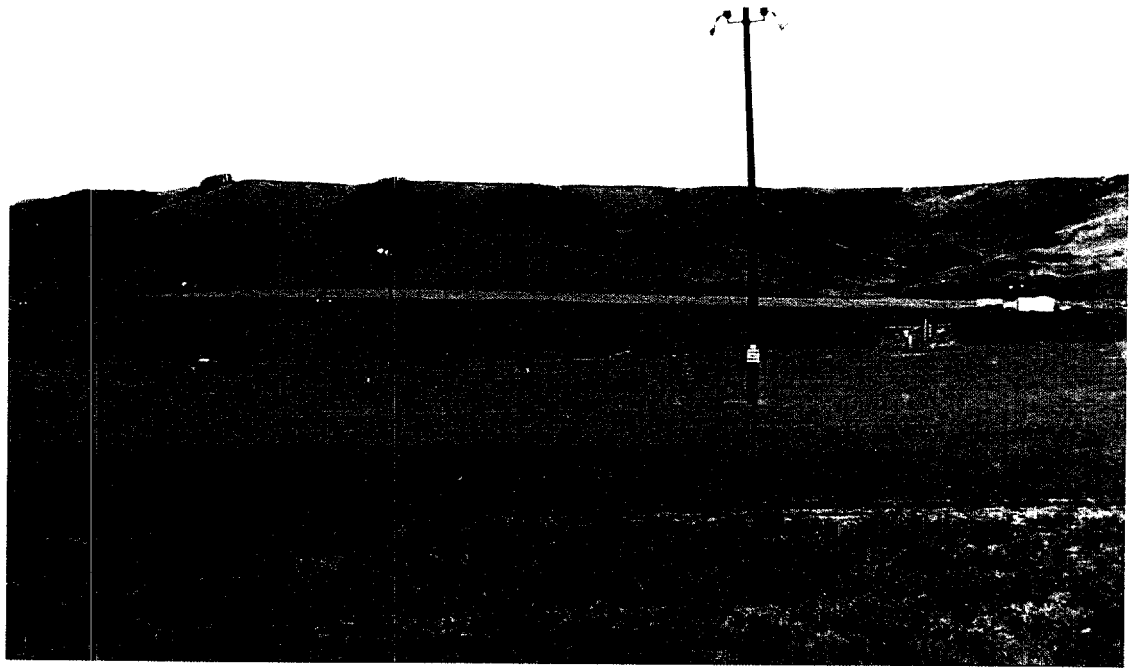
Last updated 3/14/01

email: webmaster@co.el-paso.co.us



1"= 200'

SURFICIAL GEOLOGIC MAP FIGURE 2



Photos of 'skin failures' after 1999 storms.

FIGURE 3

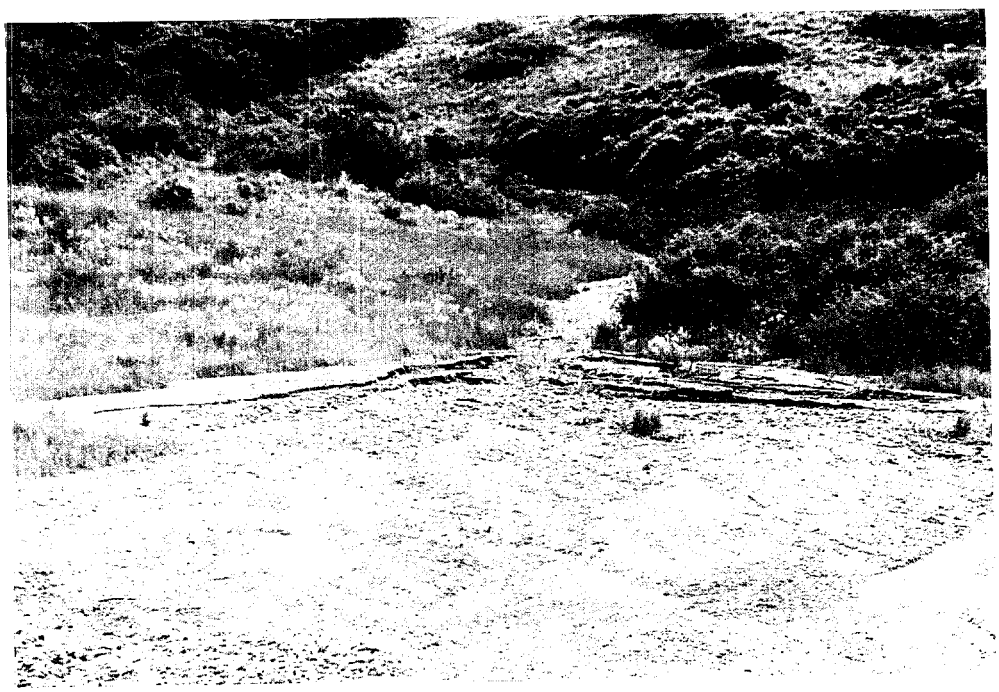


Photo of sediment deposition near the southwest corner of the site (from 1999 storms).

FIGURE 4