APPENDIX E

Geologic Investigations

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HOLDREGE & KULL
CONSULTING ENGINEERS • GEOLOGISTS

Project No. 4289A-01
February 24, 2016

Auburn Area Recreation & Parks District
123 Recreation Drive
Auburn, CA 95603

Attention: Kahl Muscott, District Administrator

Reference: ***Proposed Maidu Bike Park***
APN 055-040-026-000
471 Maidu Drive
Auburn, California

Subject: ***Geologic Evaluation***

Dear Mr. Muscott:

Holdrege & Kull (H&K) prepared this letter to present the results of a geologic evaluation conducted at the proposed Maidu Bike Park site located at 471 Maidu Drive in Auburn, California. H&K performed the geologic evaluation in general accordance with the *Work Plan for Geologic Evaluation, Proposed Maidu Bike Park* (H&K; August 25, 2015).

H&K previously conducted a Phase I Environmental Site Assessment (ESA) of the subject property (H&K, 2014). Findings of the Phase I ESA indicated that naturally occurring asbestos (NOA) was not likely to occur at significant concentrations in the materials to be disturbed during construction and operation of the proposed bike park and associated trails, based on the mapped site geology and the results of asbestos analysis for near-surface soil samples.

INTRODUCTION

Purpose and Scope

The purpose of the investigation was to evaluate geologic conditions with respect to naturally occurring asbestos pursuant to the Asbestos Airborne Toxic Control Measure (ATCM).

The scope of the geologic evaluation is based on H&K's consultation with representatives of the Placer County Air Pollution Control District (APCD) and the Auburn Area Recreation & Parks District (ARD) during a meeting on August 13, 2015, and our review of the following documents.

- *Phase I Environmental Site Assessment, Proposed Maidu Bike Park, APN 055-040-026-000, 471 Maidu Drive, Auburn, California* (H&K, September 3, 2014)
- *Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations* (California Air Resources Control Board (CARB), 2002)
- *Guidelines for Geologic Investigations of Naturally Occurring Asbestos in California* (Special Publication 124; California Department of Conservation, California Geological Survey (CGS), 2002)

Pursuant to the ATCM (CARB, 2002), the scope of H&K's geologic evaluation includes a description of the site and proposed land use, and site characterization including:

1. Surface reconnaissance;
2. Review of existing geological maps and literature pertaining to the site and vicinity;
3. Mapping of site geology;
4. Identification and description of geologic units, rock and soil types, and features that could be related to the presence of ultramafic rocks, serpentine, or asbestos mineralization; and
5. Subsurface investigation (exploratory trenching) to evaluate the nature and extent of geologic materials in the subsurface where vertical excavation is planned.

This report documents the methods of the geologic evaluation and presents findings and conclusions.

Applicable Guidance Documents

ATCM

The ATCM (CARB, 2002) applies to construction operations where any portion of the area to be disturbed is located in a geographic ultramafic rock unit, or has naturally-occurring asbestos, serpentine, or ultramafic rock. Pursuant to ATCM Section 93105(c)(1), the Air Pollution Control Officer may provide an exemption if a registered geologist has conducted a geologic evaluation of the property and determined that no serpentine or ultramafic rock is likely to be found in the area to be disturbed.

Special Publication 124

Special Publication 124 (CGS, 2002) states that 'the primary purpose of geologic mapping in an NOA investigation is to identify asbestos-bearing or potentially asbestos-bearing rock or soil units and to describe their occurrence and distribution on the project site. Emphasis should be placed on identifying and describing those geologic units or features that may host or influence the distribution or transport of NOA at the site. The potential for disturbance of asbestos-bearing units in the mapped tract to impact nearby surface water should also be noted. Site areas containing fill or other imported earth material should be examined to determine if the materials contain asbestos."

Limitations of the Geologic Evaluation

H&K performed the geologic evaluation in accordance with present, regional, generally accepted standards of care. The purpose of the evaluation was to provide geologic information pertaining to the subject property for a regulatory determination. This report does not represent a legal opinion. No warranty, expressed or implied, including any implied warranty of merchantability or fitness for the purpose is made or intended in connection with the work.

H&K prepared and issued this report for the exclusive use of our client and reviewing agencies. The information, conclusions and recommendations presented apply only to the subject property. H&K is not responsible for any other party's interpretations of the reported information.

Changes in the conditions of the property can occur with the passage of time. The changes may be due to natural processes or to the works of man on the project site or adjacent properties. Changes in regulations, interpretations, and/or enforcement policies may occur at any time. Such changes may affect the proposed development and the type and extent of mitigation required.

SITE DESCRIPTION

Site Location

The site is located near the eastern boundary of the City of Auburn in Placer County, California. A location map is presented as Figure 1. Referencing the Auburn, California Quadrangle map (United States Geological Survey (USGS), 1981), the property is located within the eastern half of Section 22, Township 12 North, Range 8 East, based on the Mount Diablo geodetic datum.

Property Description

The site comprises a portion of a single 27.5-acre parcel designated as Placer County Assessor's Parcel Number (APN) 055-040-026-000. The parcel boundary and site boundary are depicted on Figure 2.

The site is generally undeveloped except for a former parking area, a water conveyance canal, former unpaved access roads and unpaved trails. The site is generally vegetated by oaks and grasses.

Site elevations range from approximately 1,280 feet above mean sea level (MSL) at its western boundary to approximately 1,360 feet above MSL at its eastern boundary.

The site slopes moderately towards the east and is located near the top of the steep, east-facing slope of the American River canyon. The site is located approximately 1,900 feet east and 800 feet above the North Fork American River.

Current Land Use

The property is currently leased by ARD and is owned by United States Bureau of Reclamation (USBR).

The Shirland Canal bisects the site from north to south. The canal is operated by the Placer County Water Agency (PCWA).

A previously-graded, paved parking area is located at the southern end of the site, adjacent to Maidu Road. This parking area was reportedly used by the Federal Highway Administration for construction administration of the Foresthill Bridge Project. The parking area is not currently in routine use.

The western portion of the property, outside of the project site, contains a building and paved parking areas. The building serves as an administration building for ARD operations and also functions as a community center for public meetings and classes. The building was reportedly constructed in the 1970s and was previously used for construction administration of the proposed Auburn-Folsom South Unit Dam project.

Proposed Land Use

The site is to be developed as a non-motorized bike park, including unpaved trails and terrain features. A preliminary site layout is depicted on Figure 3.

SITE CHARACTERIZATION

Surface Reconnaissance

An H&K geologist performed a surface reconnaissance on August 8, 2014 as part of the Phase I ESA (H&K, 2014) and on August 26, 2015 as part of the geologic evaluation.

Mehrten formation outcrops were observed in the western portion of the property. Mehrten formation was exposed in cut slopes associated with previous development of the western portion of the property, and the same materials were observed on the surface of fill slopes on the eastern and southern edges of the developed area, near the western boundary of the proposed development site. No outcrops of serpentinite or amphibolite were observed on the property.

A soil stockpile is located centrally within the site, as depicted on Figure 2. The stockpile measures approximately 110 feet long by 35 feet wide by approximately seven feet tall. A segment of metal pipe was observed protruding from the eastern end of the stockpile. This soil stockpile reportedly originated from topsoil and vegetation stripping generated from past development of the western portion of the property. As documented in the Phase I ESA (H&K, 2014), Mr. Emmett Cartier of USBR stated that the stockpiled soil and fill materials originated from the western portion of the property during the construction of the administration building.

Fill was observed in two areas in the southeastern and northeastern portions of the site in former temporary unpaved road alignments. The fill areas are depicted on an old site map provided by USBR. According to the map, the fill areas are 200 to 300 feet long and 25 feet wide. In general the fill was up to approximately two feet deep.

The paved parking area in the southern portion of the site was reportedly used by the Federal Highway Administration for construction administration related to the Foresthill Bridge Project, and also for construction offices associated with the previously-proposed Auburn-Folsom Dam. Utility hookups were observed in multiple locations on the paved pad. Underground utilities associated with these hookups reportedly included electrical, gas, water, and sanitary. The utilities have reportedly been decommissioned. No as-built drawings or other information were available for H&K's review.

Literature Review

H&K reviewed geologic and soil maps pertaining to the site vicinity, as described below.

Regional NOA Mapping

According to the map of Naturally Occurring Asbestos Hazard, South Auburn and Vicinity, California (California Geological Survey, 2008), the subject property is located on the western edge of an area mapped as "most likely to contain NOA." The relative likelihood for the presence of NOA is based on reference to geologic mapping of ultramafic rock and serpentine rock (serpentinite). An excerpt of the map is presented as Figure 4.

Geologic Maps

According to the Geologic Map of the Sacramento Quadrangle (California Division of Mines and Geology Regional Geologic Map, 1979), the majority of the subject property location is mapped as Mehrten Formation andesitic conglomerate, sandstone and breccia. The Mehrten formation is Tertiary in age (66 to 2.58 million years before present). Metavolcanic rocks are mapped in the northeastern portion of the subject property. The metavolcanic rocks are Paleozoic in age (541 to 252 million years before present). An excerpt of the map is presented as Figure 5.

According to the Pre-Cenozoic geology of the south half of the Auburn 15-minute quadrangle, California (United States Geological Survey, 1971), fragmental andesite (Mehrten Formation), serpentinite and amphibolite are mapped directly south of the subject property. The serpentinite and amphibolite geologic units are mapped as trending towards the northeastern portion of the site location. However, these units are not shown at the site location due to the limited extent of the map.

Regional Faulting

According to the Fault Activity Map of California (California Department of Conservation, Division of Mines and Geology (CDMG, 2010), the site location is mapped within the Foothills Fault System. The Foothills Fault System is designated as an areal, Type C seismic source with low seismicity and a low rate of recurrence. The Maidu East Fault is part of the Foothills Fault System and is located approximately 600 feet west of the site.

Soil Survey

According to the Natural Resources Conservation Service web soil survey (http:// websoilsurvey.nrcs.usda.gov) the site location is mapped predominantly as Inks Cobbly Loam and Inks Variant Cobbly Loam. Mapping from the web soil survey is depicted on Figure 2. The Inks series is described as shallow, well drained soil weathered from volcanic rocks. These soils are on undulating to hilly tabular

volcanic ridges and steep side slopes. Typical depth to a lithic contact is 10 to 20 inches.

Auburn-Sobrante-Rock outcrop complex is mapped near the northeastern edge of the site location, east of Pleasant Avenue and outside of the proposed area of soil disturbance. The Auburn series is described as shallow to moderately deep, well drained soil formed in material weathered from amphibolite schist. The Sobrante series is described as moderately deep, well drained soil weathered from basic igneous and metamorphic rocks.

Soil Sampling and Asbestos Testing

H&K obtained six discrete, near-surface soil samples from the site in 2014 as part of the Phase I ESA. Sample locations are depicted on Figure 2.

Samples were obtained from the upper six inches of soil using a pick and a clean stainless steel scoop. The samples were transferred to new, re-sealable plastic bags. The stainless steel scoop was decontaminated between samples by using moist wipes to remove visible soil and dust. Nitrile gloves used in the handling of samples were removed once the samples were sealed and labeled. A new pair of gloves was donned at each subsequent sample location.

Samples were mailed under chain-of-custody documentation to EMSL Laboratories (ELAP No. 1620) in San Leandro, California. The samples were analyzed for asbestos by CARB Method 435, Level A (reporting limit 0.25%). Asbestos (chrysotile) was detected in one of the six samples (SS-2) at a concentration less than the reporting limit of 0.25%. Sample SS-2 was obtained near the northeastern corner of the site, as depicted on Figure 2. The laboratory report is attached.

Subsurface Investigation

An H&K geologist performed a subsurface investigation on August 26, 2015 and February 2, 2016. The subsurface investigation included the excavation of 23 exploratory trenches. The trenches were excavated to depths ranging from one to seven feet below the ground surface. Trench depths and subsurface conditions are summarized in Table 1. Findings are discussed below.

<u>Fragmental Andesite (Mehrten Formation)</u>

The Mehrten Formation was observed in 10 of the 23 trenches (T-1, T-6, T-7, T-8, T-10, T-11, T-13, T-15, T-18, and T-23), which were generally located in the western, central and southern portions of the site. Exploratory trenches were extended into the Mehrten formation until refusal of the excavator bucket or until

the underlying metavolcanic/ultramafic rock was observed. A typical profile for locations mapped as Mehrten formation is described below.

Horizon	Description
Soil	Silty Sand (SM), dark yellowish brown (10YR 4/4), loose, moist
Weathered Rock	Weathered Mehrten Formation, subangular to angular cobbles up to 1.5 feet in diameter. Excavates as silty sand (SM) with gravel and cobbles, dark yellowish brown (10YR 4/4), loose to medium dense, moist

Ultramafic Rock (Serpentinite)

Serpentinite was observed in 6 of the 23 trenches (T-4, T-9, T-10, T-12, T-14, and T-16), which were located in the central-eastern portion of the site. Trench T-10 contained serpentinite at a shallow depth beneath the Mehrten formation near the geologic contact. A typical profile for areas mapped as ultramafic rock is described below.

Horizon	Description
Soil	Silty Sand (SM), light brownish grey (10YR 6/2), medium dense, moist
Weathered Rock	Highly weathered ultramafic rock (serpentinite), highly foliated, brittle. Excavates as silty sand (SM), olive (5YR 5/5), medium dense, moist

Metavolcanic Rock (Amphibolite)

Amphibolite was observed in 6 of the 23 trenches (T-2, T-17, T-18, T-20, T-21, and T-22), which were located in the northeastern portion of the site. Trench T-18 contained amphibolite rock at a shallow depth beneath the Mehrten formation near the geologic contact. A typical profile for areas mapped as metavolcanic rock is described below.

Horizon	Description
Soil	Silty Sand (SM), light brownish grey (10YR 6/2), loose, moist
Weathered Rock	Moderately weathered metavolcanic rock (amphibolite). Excavates as angular rock fragments up to 4 inches in diameter, bluish grey (GLEY 2 5/1).

Stockpiled and Fill Material

Stockpiled material was observed within 1 of the 23 trenches (T-19) and at the location displayed on Figure 2. Fill Material was observed within 2 of the 23 trenches (T-3 and T-5) at locations down gradient of the ARD office building and parking lot. Typical soil profiles for the fill material are described below:

Horizon	Description
Soil	Silty Sand (SM), dark yellowish brown (10YR 3/4), loose, moist. Angular to subangular clasts derived from the Mehrten formation visible throughout ranging from 1 inch to 6 inches in diameter.

Trench locations and the interpolated geologic contacts are depicted on Figure 6.

FINDINGS AND CONCLUSIONS

The findings and conclusions presented below are based on the results of H&K's literature review, surface reconnaissance, and subsurface investigation.

1. The geologic evaluation was performed in general accordance with the *Work Plan for Geologic Evaluation, Proposed Maidu Bike Park* (H&K; August 25, 2015).
2. Ultramafic rock (serpentinite) and metavolcanic rock (amphibolite) are present within the northeastern portion of the site as depicted on Figure 6. Ultramafic and metavolcanic rocks have the potential to contain NOA. Therefore, soil disturbance proposed in these areas would generally not be considered eligible for an exemption from the ATCM pursuant to Section 93105(c)(1). Earthwork and site development in these areas would typically be subject to:
    a. Additional investigation (e.g., soil sampling and analysis to determine whether NOA is present);
    b. Mitigation (e.g., placement of asbestos-free rock surfacing), if asbestos is present in areas to be disturbed as a result of site development and use; and
    c. Periodic monitoring to verify that asbestos-containing materials are not disturbed during future site use. Monitoring should be performed/overseen by a registered geologist, and should be performed on an annual basis, or whenever a change in land use is proposed in non-exempt areas (such as earthwork, creation of additional trails, re-routing of trails, or disturbance of approved cover within existing trails).
3. The ultramafic and metavolcanic rocks are overlain by Mehrten formation in other portions of the site. The Mehrten formation is not considered likely to contain NOA. These areas may be eligible for an exemption from the ATCM pursuant to Section 93105(c)(1), provided that the soil disturbance will not extend through the Mehrten formation into the underlying ultramafic or metavolcanic rock.
    a. To allow for adequate cover by the Mehrten formation, as well as variability in the interpolated geologic contact, soil disturbance should not be performed without approved mitigation or monitoring measures within 15 feet of the mapped geologic contact location. This location should be marked in the field by a qualified geologist.

b. The proposed site improvements are not considered likely to extend through the Mehrten formation into the underlying ultramafic and metavolcanic rocks. For example, the Mehrten formation extends deeper than three feet below the ground surface in exploratory trenches T-1, T-11, T-13, T-15 and T-23, and no ultramafic or metavolcanic rocks were encountered to the maximum depth explored (57 inches). Therefore, soil disturbance associated with trail building and erosional processes, which is generally not expected to be greater than three feet based on H&K's review of the project grading plan, is not considered likely to expose rock with the potential to contain NOA. Deeper excavation proposed for the upper edge of the jump track location is discussed below.

c. Grading for the proposed site improvements (e.g., the upslope edge of the jump track pad) includes up to approximately five feet of cut. Exploratory trenches at the proposed jump track area (T-7, T-15) did not encounter ultramafic or metavolcanic rock to the maximum depths explored. Exploratory trench T-7 was located at the eastern edge of the proposed jump track pad, where there may be up to five feet of cut. The exploratory trench was excavated to a depth of 3.5 feet below ground surface, and deeper excavation was not possible due to refusal of the excavator in the Mehrten formation. We recommend that cut areas be observed during grading to verify that no ultramafic or metavolcanic rock is exposed.

4. Fill for the jump track will likely include material derived from cut on the western side of the jump track location; soil that is presently stockpiled in the vicinity; and/or clean imported soil. The proposed fill at the northeastern corner of the jump track pad is to be constructed over an area that is mapped as being underlain by ultramafic rock (see Figure 6). Up to approximately seven feet of clean, NOA-free, onsite or imported fill are to be placed at this location. Earthwork at this location should be performed in accordance with an asbestos dust mitigation plan (ADMP) as required by the ATCM. Once the grading is complete, future use of the jump track is not expected to disturb the underlying ultramafic rock and should be monitored periodically pursuant to conclusion 2c above.

5. Stockpiled soil and fill were investigated to depths of five to six feet in exploratory trenches T-3, T-5 and T-19. Fill located at trenches T-3 and T-5 appears to have originated from the grading of the upslope building pad and parking lots. This portion of the property is mapped as Mehrten formation and, based on H&K's site reconnaissance, the cut slopes in the vicinity of the building and parking lot pads did not extend into the underlying ultramafic and metavolcanic rock. The stockpiled material in the vicinity of trench T-19 also

reportedly originated from the building pad. No ultramafic or metavolcanic rock was observed in the stockpiled soil or fill. Soil samples SS-3 and SS-5 were previously obtained from areas of fill and stockpiled material, as depicted on Figure 4, and were analyzed for asbestos by CARB Method 435, Level A. No asbestos was detected. Because the fill and stockpiled soil do not appear to be derived from ultramafic or metavolcanic rock, NOA is not expected to be present in the fill or stockpiled soil.

H&K appreciates the opportunity to provide geologic services for this important community project. Please contact us with any comments or questions regarding the geologic evaluation.

Sincerely,

HOLDREGE & KULL

Bryan Botsford
Staff Geologist

Thomas J. Holdrege, C.E.G. 1809
Founding Principal

REGISTERED GEOLOGIST
Thomas J. Holdrege
No. 1809
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Attached:
Figure 1, Location Map
Figure 2, Site Map
Figure 3, Proposed Improvements
Figure 4, Regional NOA Likelihood Map
Figure 5, Geologic Map
Figure 6, Findings of Geologic Evaluation
Table 1, Summary of Exploratory Trenching
Photographs
Laboratory Report

Copies:
PDF to ARD /Attn: Kahl Muscott, KMuscott@auburnrec.com
PDF to Dudek /Attn: Markus Lang, MLang@dudek.com

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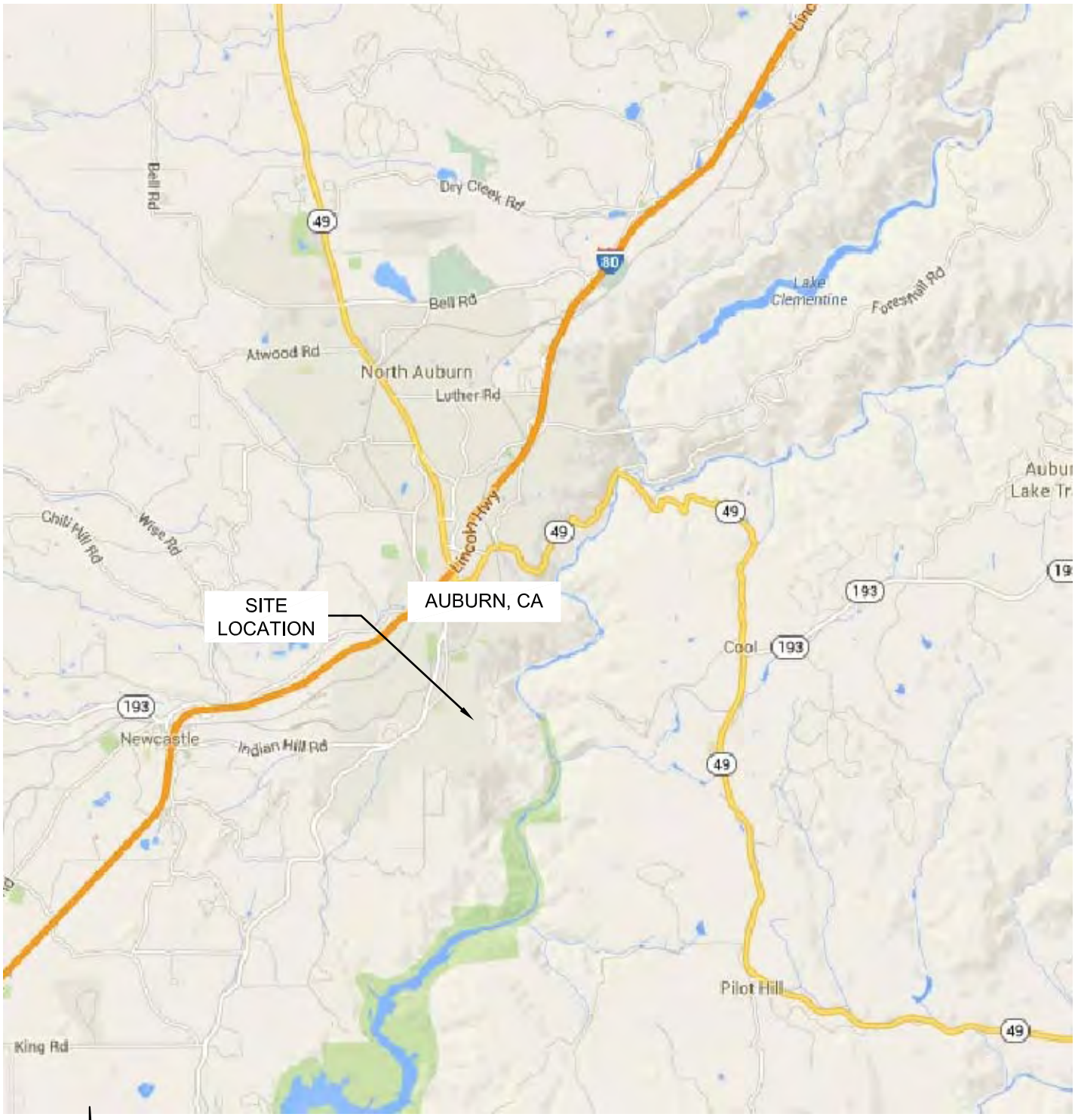
USGS, 1971. Pre-Cenozoic geology of the south half of the Auburn 15-minute quadrangle, California



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NOT TO SCALE

BASE MAP FROM GOOGLE MAPS (2015)

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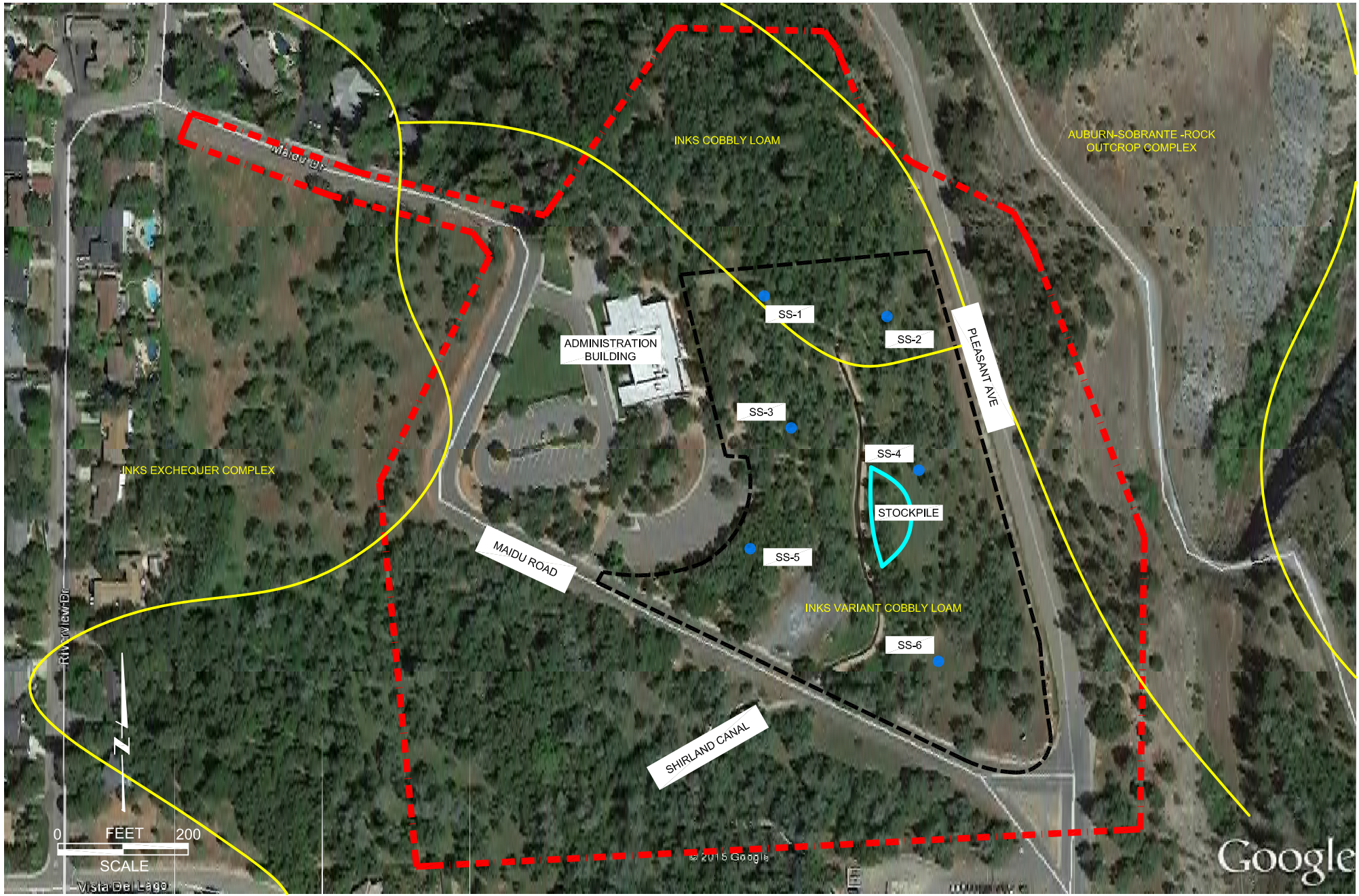
LOCATION MAP

PROPOSED MAIDU BIKE PARK

AUBURN, CALIFORNIA

DRAWN BY:	BOTSFORD
CHECKED BY:	MUIR
H&K PROJECT:	4289-02
DATE:	FEBRUARY 2016

FIGURE 1



APPROXIMATE PARCEL BOUNDARY
APPROXIMATE PROJECT BOUNDARY
USDA SOIL SURVEY BOUNDARY
SS-1 APPROXIMATE SAMPLE LOCATION
STOCKPILE
BASE MAP FROM GOOGLE EARTH IMAGERY DATE APRIL 2015

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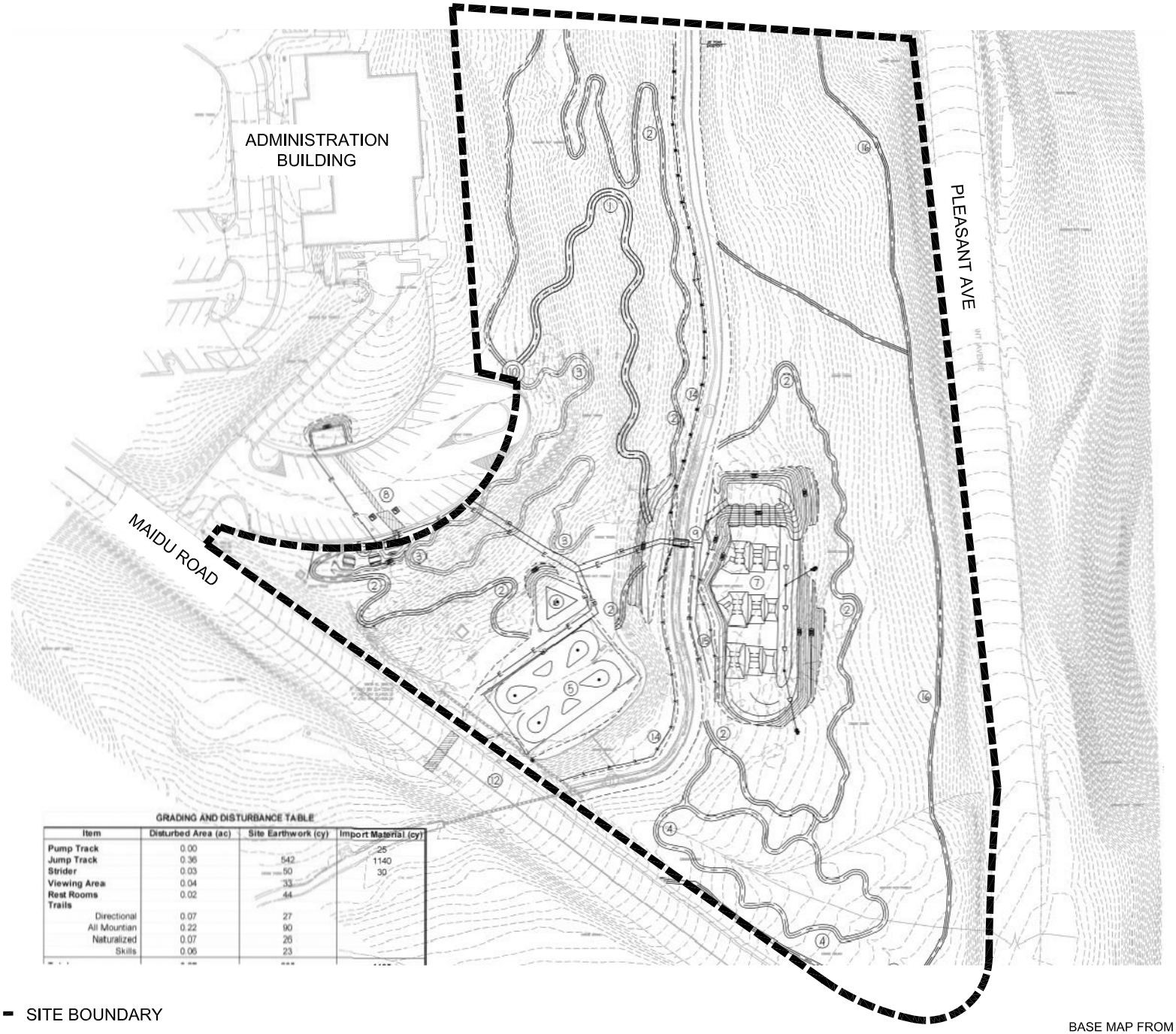
SITE MAP

PROPOSED MAIDU BIKE PARK

AUBURN, CALIFORNIA

DRAWN BY:	BOTSFORD
CHECKED BY:	MUIR
H&K PROJECT:	4289-02
DATE:	FEBRUARY 2016

FIGURE 2



GRADING AND DISTURBANCE TABLE

Item	Disturbed Area (ac)	Site Earthwork (cy)	Import Material (cy)
Pump Track	0.00		25
Jump Track	0.36	542	1140
Strider	0.03	50	30
Viewing Area	0.04	33	
Rest Rooms	0.02	44	
Trails			
Directional	0.07	27	
All Mountian	0.22	90	
Naturalized	0.07	26	
Skills	0.06	23	

N

NOT TO SCALE

SITE BOUNDARY

BASE MAP FROM GUILIANI & KULL, INC., JULY 2015

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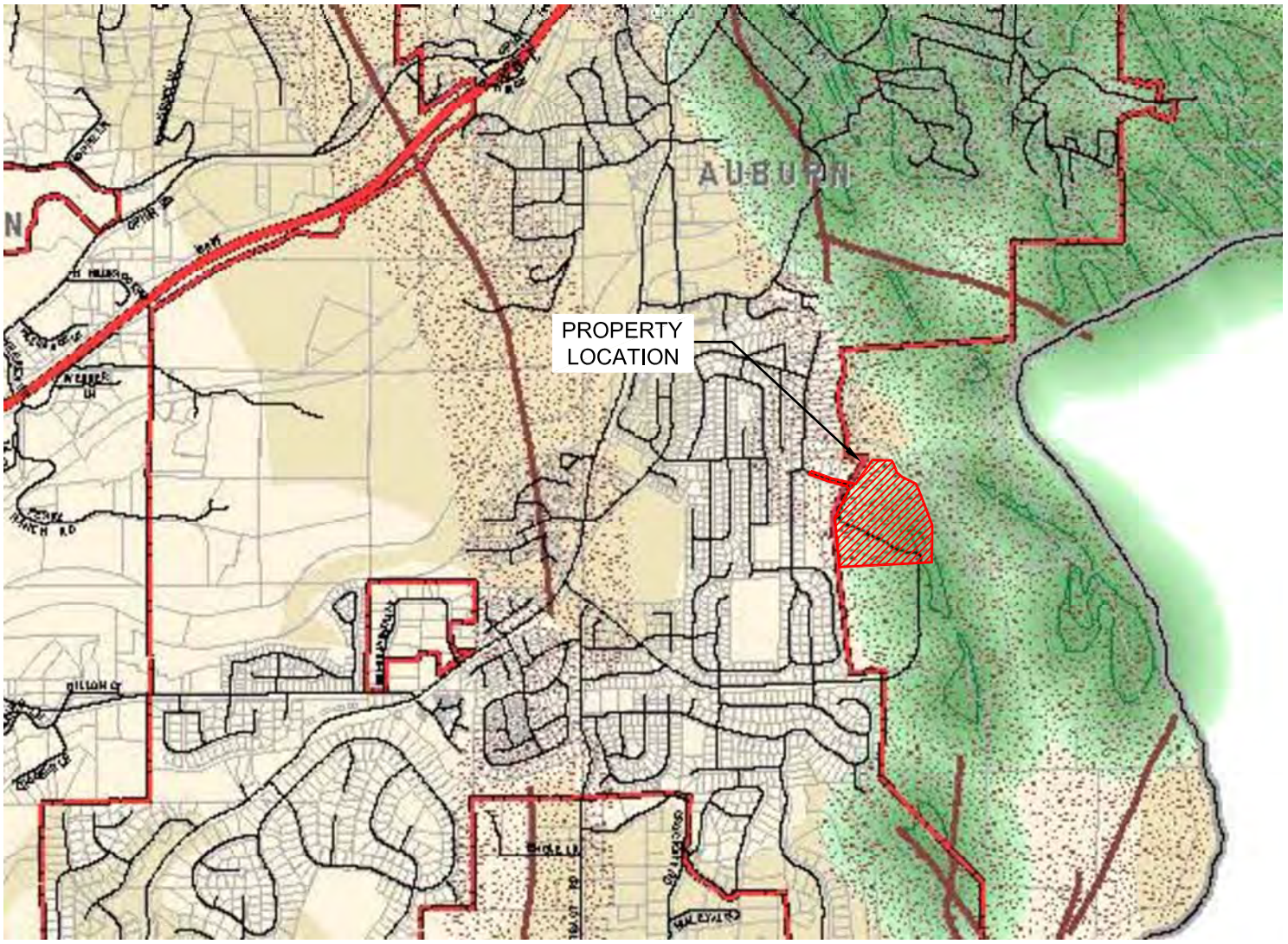
PROPOSED IMPROVEMENTS

PROPOSED MAIDU BIKE PARK

AUBURN, CALIFORNIA

DRAWN BY:	BOTSFORD
CHECKED BY:	HOLDREGE
H&K PROJECT:	4289-02
DATE:	FEBRUARY 2016

FIGURE 3



Area Least Likely to Contain NOA includes those metamorphic, igneous, and sedimentary rocks that are least likely to contain NOA.

Area Moderately Likely to Contain NOA includes those metamorphic and igneous rocks that are moderately likely to contain NOA.

Area Most Likely to Contain NOA includes ultramafic rock and serpentine rock (serpentinite), and associated soils, which are most likely to contain NOA.

Areas of Faulting or Shearing are zones of faulted or sheared rock that may locally increase the likelihood for the presence of NOA where they exist in or adjacent to areas most or moderately likely to contain NOA.

Highway

Roads

Major Streams

City Limits

Placer Boundary

Parcels

N

0 FEET 2000

SCALE

NATURALLY OCCURRING ASBESTOS HAZARD, SOUTH AUBURN AND VICINITY. CALIFORNIA GEOLOGICAL SURVEY, 2008

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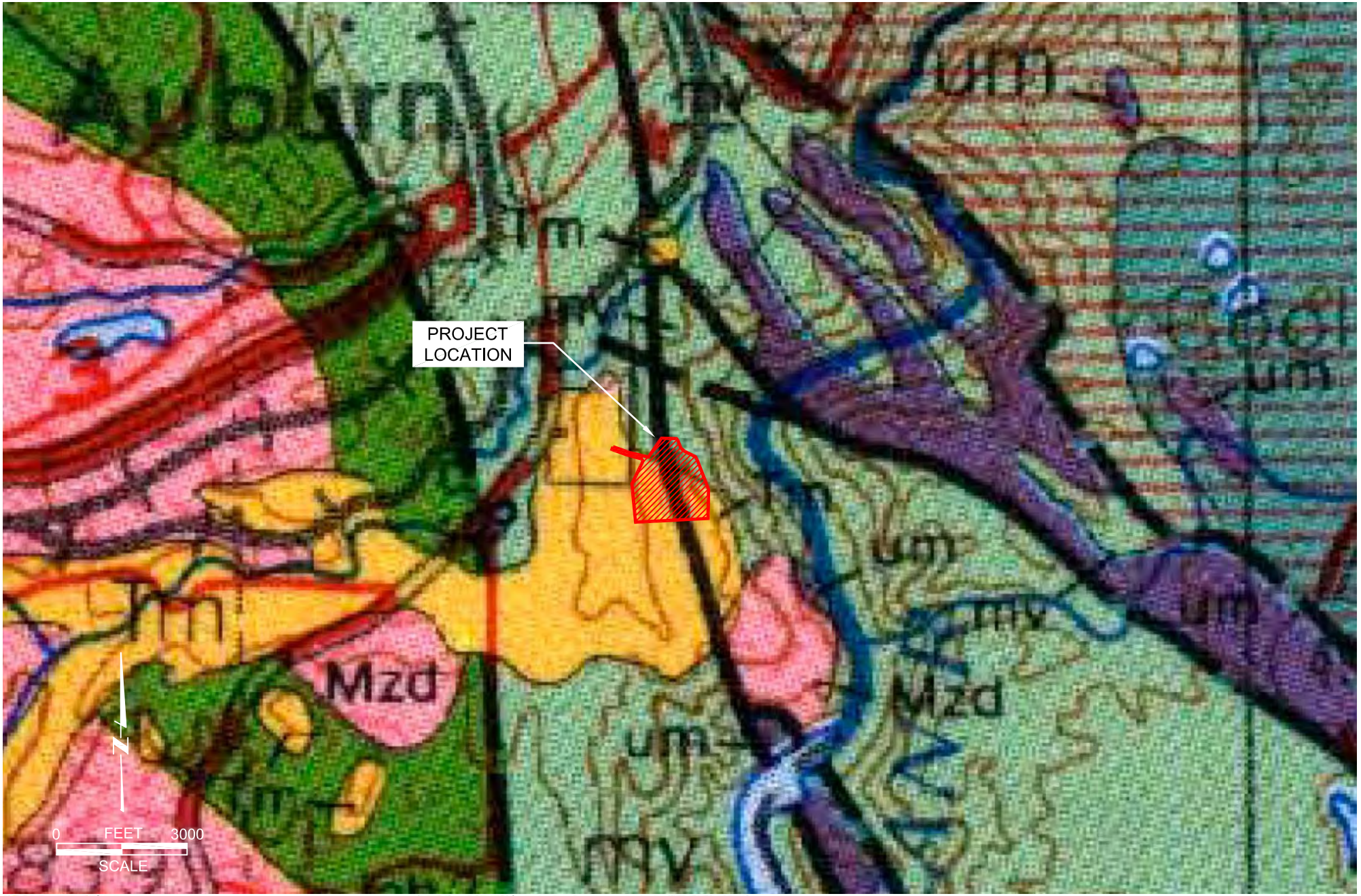
RELATIVEL LIKELIHOOD FOR PRESENCE OF NOA

PROPOSED MAIDU BIKE PARK

AUBURN, CALIFORNIA

DRAWN BY:	BOTSFORD
CHECKED BY:	MUIR
H&K PROJECT:	4289-02
DATE:	FEBRUARY 2016

FIGURE 4



Tm Mehrten Formation | mv Metavolcanic rocks | Mzd Mesozoic dioritic rocks | um Ultramafic rocks

GEOLOGIC MAP OF THE SACRAMENTO QUADRANGLE
CALIFORNIA GEOLOGICAL SURVEY, 1:250,000 SCALE, 1981

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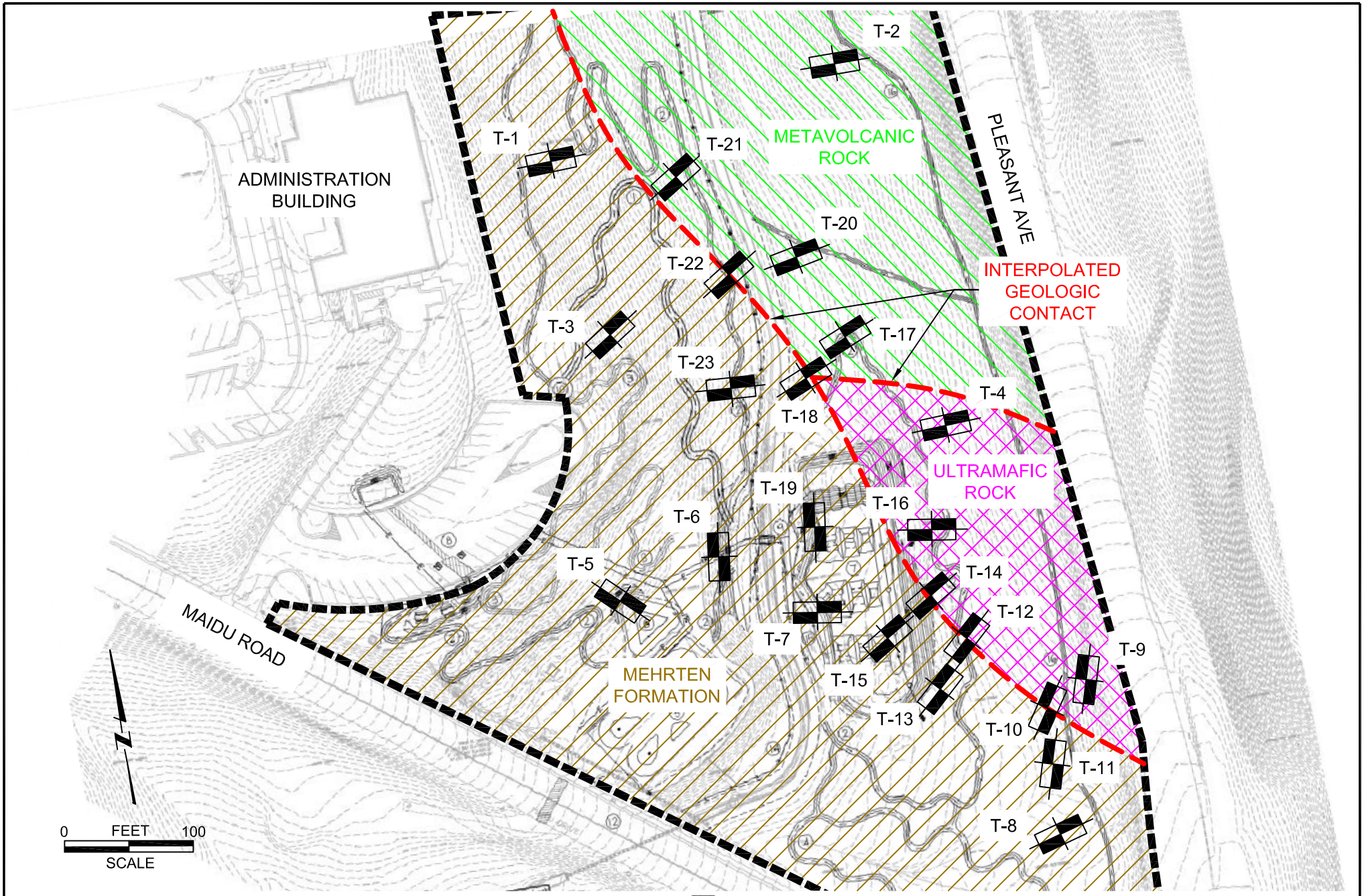
GEOLOGIC MAP
PROPOSED MAIDU BIKE PARK
AUBURN, CALIFORNIA

DRAWN BY:	BOTSFORD
CHECKED BY:	MUIR
H&K PROJECT:	4289-02
DATE:	FEBRUARY 2016

FIGURE
5



BASE MAP FROM GUILIANI & KULL, INC., JULY 2015

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FINDINGS OF GEOLOGIC EVALUATION

PROPOSED MAIDU BIKE PARK

AUBURN, CALIFORNIA

DRAWN BY:	BOTSFORD
CHECKED BY:	HOLDREGE
H&K PROJECT:	4289-02
DATE:	FEBRUARY 2016

FIGURE 6

Table 1 - Summary of Exploratory Trenching

471 Maidu Drive

Auburn, California

			Subsurface Description					
Trench No.	**Excavation Date**	**Total Depth** (inches)	**First Horizon**	**First Horizon Depth** (inches)	**Second Horizon**	**Second Horizon Depth** (inches)	**Third Horizon**	**Third Horizon Depth** (inches)
T-1	02/02/16	36	Soil	0-12	Mehrten Formation	12-36	--	--
T-2	08/26/15	42	Soil	0-8	Amphibolite	8-42	--	--
T-3	02/02/16	72	Soil (fill)	0-72	--	--	--	--
T-4	08/26/15	57	Soil	0-12	Serpentinite	12-57	--	--
T-5	02/02/16	72	Soil (fill)	0-72	--	--	--	--
T-6	02/02/16	36	Soil	0-6	Mehrten Formation	6-36	--	--
T-7	08/26/15	42	Soil	0-10	Mehrten Formation	10-42	--	--
T-8	08/26/15	12	Soil	0-6	Mehrten Formation	6-12	--	--
T-9	02/02/16	24	Soil	0-6	Serpentinite	12-24	--	--
T-10	02/02/16	42	Soil	0-6	Mehrten Formation	6-12	Serpentinite	12-42
T-11	02/02/16	54	Soil	0-18	Mehrten Formation	18-54	--	--
T-12	02/02/16	36	Soil	0-12	Serpentinite	12-36	--	--
T-13	02/02/16	42	Soil	0-12	Mehrten Formation	12-42	--	--
T-14	02/02/16	24	Soil	0-6	Serpentinite	6-12	--	--
T-15	02/02/16	36	Soil	0-12	Mehrten Formation	12-36	--	--
T-16	02/02/16	36	Soil	0-12	Serpentinite	12-36	--	--
T-17	02/02/16	42	Soil	0-12	Amphibolite	12-42	--	--
T-18	02/02/16	36	Soil	0-6	Mehrten Formation	6-12	Amphibolite	12-36
T-19	02/02/16	60	Soil (stockpile)	0-60	--	--	--	--
T-20	02/02/16	48	Soil	0-18	Amphibolite	18-48	--	--
T-21	02/02/16	48	Soil	0-6	Amphibolite	6-48	--	--
T-22	02/02/16	36	Soil	0-6	Amphibolite	6-36	--	--
T-23	02/02/16	36	Soil	0-12	Mehrten Formation	12-36	--	--

Photo 1 – Typical soil profile for Mehrten Formation, trench T-11.

Photo 2 Typical soil profile for ultramafic rock, trench T-2.

Photo 3 Amphibolite, trench T-17.

Photo 4 – Fill exposed in exploratory trench T-3.

Photo 5 – Geologic contact between Mehrten formation and ultramafic rock, trenches T-12 and T-13.

Photo 6 – Mehrten Formation throughout cut slope downgradient of ARD office building.

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EMSL Order:	091413078
CustomerID:	HOLD62
CustomerPO:	4289-01
ProjectID:	

Attn: **Bryan Botsford**
Holdrege and Kull
792 Searls Avenue
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Phone:	(530) 478-1305
Fax:	(530) 478-1019
Received:	08/19/14 11:30 AM
Analysis Date:	8/26/2014
Collected:	8/18/2014

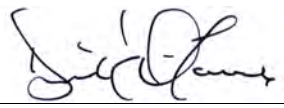
Project: **4289-01/MAIDU DR**

Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
SS-1 *091413078-0001*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
SS-2 *091413078-0002*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**
SS-3 *091413078-0003*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
SS-4 *091413078-0004*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
SS-5 *091413078-0005*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
SS-6 *091413078-0006*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

Amber Albon (6)



Derrick Tanner, Laboratory Manager
or other approved signatory

Initial report from 08/26/2014 13:18:01

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30 YEARS

Project No. E15253.000
7 March 2016

Placer County Air Pollution Control District
110 Maple Street
Auburn, CA 95603

Attention: Mr. Todd Nishikawa, Deputy Air Pollution Control Officer

Subject: **PROPOSED MAIDU BIKE PARK, 471 MAIDU DRIVE, AUBURN**
Geologic Evaluation
Report Review Letter

References:
1) Contracted Services Agreement, Services to review the Auburn Bike site geologic evaluation report and findings, executed 28 August 2015.
2) Geologic Evaluation, Proposed Maidu Bike Park, prepared by Holdrege & Kull, Project No. 4289A-01, dated 24 February 2016.

Dear Mr. Nishikawa:

At your request and pursuant to our contract with the Placer County Air Pollution Control District (Contract No. CN000808) dated 28 August 2015 (Reference No. 1), Youngdahl Consulting Group, Inc. (Youngdahl) has reviewed a Geologic Evaluation for the Proposed Maidu Bike Park prepared by Holdrege & Kull (H&K) (Reference No. 2). Youngdahl's scope is as follows:

1) Review mapping of geologic units/rock types;
2) Review sampling techniques, locations, and frequency;
3) Review final geologic map;
4) Review the findings relative to California Air Resources Board (CARB) regulations and Placer County Air District NOA regulations as applicable; and
5) Preparation of this review letter.

Introduction
H&K prepared a geologic evaluation report for the Propose Maidu Bike Park, dated 24 February 2016, for the Auburn Area Recreation & Parks District. In this report, they described the following;

1) They completed a Phase I Environmental Site Assessment for the site in 2014 that included the collection of near surface soil samples that were tested for naturally occurring asbestos (NOA);
2) They met with representatives of the Placer County Air Pollution Control district (APCD) and the Auburn Area Recreation & Parks District (ARD);
3) Performed a surface reconnaissance;
4) Reviewed existing geological maps and literature pertaining to the site and vicinity;
5) Mapping of site geology;
6) Identification and description of geologic units, rock and soil types; and features that could be related to the presence of ultramafic rocks, serpentinite, or asbestos mineralization; and

7) Performed a subsurface investigation (exploratory trenching) to evaluate the nature and extent of geologic materials in the subsurface where vertical excavation is planned.

H&K described the California Code of Regulators (CCR) Section 93105 Air Toxics Control Measure and California Geological Survey Special Publication 124 as being relevant guidance documents.

Mapping of Geologic Units and Rock Types

In H&K's surface reconnaissance work in August 2014 and August 2015, they reported Mehrten formation outcrops and exposures in the western portion of the property. No exposures of serpentinite or amphibolite were observed. The Mehrten formation is composed of Miocene to Pliocene age volcanic flows and stream channels generated by volcanism in the Sierra Nevada. The Mehrten formation caps many former erosional surfaces in the Sierra Nevada Foothills, and so commonly covers the older metamorphic and granitic rock that formed the ancient landscape. H&K also reported a large soil stockpile in the central portion of the site that reportedly originated from topsoil and vegetation stripping in the western part of the property.

H&K reviewed geologic and soil maps pertaining to the site vicinity including regional NOA mapping performed by the California Geological Survey in 2008, the Geologic Map of the Sacramento Quadrangle prepared by the California Division of Mines and Geology in 1979, the Pre-Cenozoic geology of the south half of the Auburn 15-minute quadrangle prepared by the United States Geological Survey in 1971, the Fault Activity Map of the California Geological Survey in 2010, and soil maps obtained from the Natural Resources Conservation Service web soil survey.

The maps produced by H&K includes two geologic maps. One map is a regional geology map based on the 1981 Geologic Map of the Sacramento Quadrangle produced by the California Geological Survey, presented at a scale of 1 inch = 3,000 feet (bar scale). The second map is a site geology map at a scale of 1 inch = 100 feet. The site geology map shows the project area to be underlain by the Mehrten formation, ultramafic rock, and metavolcanic rock.

H&K indicated that the Natural Resources Conservations Service web soil survey shows the site to be underlain by Inks Cobbly Loam, Inks Variant Cobbly Loam and the Auburn-Sobrante-Rock outcrop complex. No soil maps were provided in the report.

Sampling for NOA

H&K reported that they obtained six discrete, near-surface soil samples from the site in 2014 as part of the Phase I ESA. The sample locations depicted on Figure 2 of their report appear to be roughly in a stratified grid pattern, which is commonly used when sampling for NOA. H&K indicated that they collected the samples from the upper 6-inches using a pick and clean stainless scoop. The samples were placed into resealable plastic bags with the sampling equipment decontaminated between samples using moist wipes. Samples were sent to EMSL Laboratories in San Leandro, California to be analyzed using California Air Resources Board (CARB) Test Method 435 at a 0.25% quantification limit. Chrysotile asbestos was detected in one sample below the quantification limit.

H&K characterized the geology of the site by digging 23 trenches to depths of from three feet to six feet. Ten test pits exposed Mehrten formation, six pits reached the amphibolite, six test pits penetrated to serpentinite, and three test pits were in fill or the soil stockpile. No samples were reported to have been collected from the test pits for analysis for NOA.

Final Geologic Map

The Final geologic map (Figure 6 of the H&K report) is essentially a bedrock map based on the findings of the subsurface investigation. According to the H&K report (page 5), the surface reconnaissance of the site identified only Mehrten formation exposures, a soil stockpile, and fill.

Findings and Conclusions

H&K completed their report with a Findings and Conclusions section. They reported that serpentinite and amphibolite with the potential to contain NOA are present within the northeastern portion of the site as depicted on Figure 6 of their report. H&K indicated that these areas would generally not be considered eligible for an exemption from the ATCM pursuant to Section 93105(c)(1). Earthwork would generally be subject to additional investigation for NOA, mitigation if asbestos is present and periodic monitoring to verify that asbestos-containing materials are not disturbed during future site use. H&K recommended that monitoring should be performed/overseen by a registered geologist, and should be performed on an annual basis, or whenever a change in land use is proposed in non-exempt areas (such as earthwork, creation of additional trails, re-routing of trails, or disturbance of approved cover within existing trails).

H&K reported that the ultramafic rocks (serpentinite) and metavolcanic rocks (amphibolite) are overlain by Mehrten formation in portions of the site; these areas may be eligible for an exemption from the ATCM pursuant to Section 93105(c)(1), provided that soil disturbance doesn't extend into underlying ultramafic or metavolcanic rock. They recommended that soil disturbance should not be performed without approved mitigation or monitoring measures within 15 feet of the mapped geologic contact location.

The report indicates that H&K reviewed the proposed grading plans. They stated that the trail building is generally not expected to have disturbance exceeding three feet and is not considered likely to expose rock with the potential to contain NOA. One area is expected to have up to five feet of cut but is in an area where test pits did not encounter ultramafic or metavolcanic rock to the maximum depths explored (3½ feet) due to digging refusal in the Mehrten formation. They recommended that cut areas be observed during grading to verify that no ultramafic or metavolcanic rock is exposed.

H&K indicated that fill for a jump track will likely include material from cut on the western side of the jump track location; soil that is presently stockpiled in the vicinity; and/or clean imported soil. Part of the jump track pad will be constructed over an area mapped as being underlain by ultramafic rock. They recommended that earthwork at this location should be performed in accordance with an asbestos dust mitigation plan (ADMP) as required by the ATCM.

H&K reported that one soil sample collected from a stockpile of soil and one soil sample collected from an area of fill did not contain detectable asbestos. They also indicated that the soil stockpile and fill did not appear to be derived from ultramafic or volcanic

rock. They provided an opinion that NOA is not expected to be present in the fill of stockpiled soil.

Review Summary and Findings

H&K observed surface conditions and subsurface geology at the proposed Auburn Bike Park. They collected near six surface soil samples which analyzed for NOA, with one sample reported to have less than 0.25% of chrysotile asbestos. Subsurface exploration identified metavolcanic and ultramafic rock in the northeastern portion of the site to the depths explored. Exploration in the remainder of the site identified only Mehrten formation, which is not considered to be likely to contain NOA. H&K provided an opinion that planned improvements are not likely to disturb materials containing NOA with a possible exception of a few areas of deeper cuts.

H&K indicated that the areas of the project site underlain by metavolcanic rock and ultramafic rock would generally not be considered eligible for exemption from the ATCM. This is generally correct, especially since no samples of the bedrock materials were collected and analyzed for NOA. Until proven otherwise, these materials (especially the ultramafic rock) must be assumed to contain NOA. It would still be possible to collect samples of the metavolcanic rock to assess for NOA. With sufficient samples and if no NOA is found, it would then be possible to "test out" of needing special dust mitigation and capping. The statement by H&K might be construed to imply that the ATCM did not apply to the rest of the site. The ATCM clearly states that it is applicable when any portion of the areas to be disturbed is located in a geographic ultramafic rock unit. Also, in practice, when a significant portion of a grading project is impacted by NOA, it can be difficult to separate out the non-NOA portion due to the logistics of grading and earthwork construction.

The H&K report recommended that earthwork at the location of the jump track should be performed in accordance with an asbestos dust mitigation plan (ADMP) as required by the ATCM. The ATCM and the document "Asbestos Dust Mitigation Plan (ADMP) Guidance for Naturally Occurring Asbestos", prepared by the Placer County Air Pollution Control District (the later not provided in the document review list or references by H&K) indicate that an ADMP is only required to be filed for projects one acre or larger. However, smaller projects, while not having to file an ADMP, are still required to follow the elements of dust control and site mitigation outlined in the ATCM. Figure 3 of the H&K report shows that planned disturbed area will be less than one acre. If construction activities disturb less than one acre, then an ADMP may not be required by the Placer County Air Pollution Control District.

The report indicated that earthwork would generally be subject to additional investigation for NOA, mitigation if asbestos is present and periodic monitoring to verify that asbestos-containing materials are not disturbed during future site use. H&K recommended that monitoring should be performed/overseen by a registered geologist, and should be performed on an annual basis, or whenever a change in land use is proposed in non-exempt areas. Youngdahl concurs that geologic observation should be periodically performed during earthwork to monitor for changing conditions that might be indicative of the presence of NOA. Any surfacing material derived from the metavolcanic or ultramafic rock should be tested when final grades are reached during construction to verify that NOA concentrations are less than 0.25%.

Annual monitoring is not typically required for completed earthwork in NOA areas. The California Department of Toxic Substances Control requires this for schools where NOA has been mitigated. There are special cases (i.e. the Calaveras Dam Replacement Project in Alameda County, California) where this might be required by local agencies, but Youngdahl is unaware of any statutory requirement for this for non-school grading projects. H&K made a recommendation for annual monitoring, but unless required by a lead agency (i.e. Placer County Air Pollution Control District), this would not be mandatory.

In general, H&K tested the near surface soils finding only a trace of asbestos in one sample, characterized the subsurface (bedrock) geology, and concluded that the planned grading was unlikely to disturb material thought to be likely to contain asbestos. Based upon our review the H&K report, Youngdahl concurs with these findings of the H&K report.

Limitations

This review has been performed in accordance with present, regional, and generally accepted standards of care. The purpose of this report is a review of work performed by others. This report does not represent a legal opinion. No warranty, expressed or implied, including any implied warranty of merchantability or fitness for the purpose is made or intended in connection with the work. If there are any questions regarding this review, please do not hesitate to contact us.

Very truly your,
Youngdahl Consulting Group, Inc.

David C. Sederquist, C.E.G., C.HG.
Senior Engineering Geologist/Hydrogeologist

Distribution: One (1) copy electronically to Placer County Air Quality Management District

HOLDREGE & KULL
CONSULTING ENGINEERS • GEOLOGISTS

Project No. 4289A-02
April 29, 2016

Auburn Area Recreation & Parks District
123 Recreation Drive
Auburn, CA 95603

Attention: Kahl Muscott, District Administrator

Reference: ***Proposed Maidu Bike Park***
APN 055-040-026-000
471 Maidu Drive
Auburn, California

Subject: ***Summary of Soil Sampling and Analysis***

Dear Mr. Muscott:

Holdrege & Kull (H&K) prepared this letter to present the results of soil sampling and asbestos analysis at the proposed Maidu Bike Park (the Site) located at 471 Maidu Drive in Auburn, California. Soil samples were obtained along the alignment of a proposed trail segment that overlies geology with the potential for naturally occurring asbestos (NOA). Prior to conducting the soil sampling and analysis, H&K confirmed our sampling approach with the Placer County Air Pollution Control District (APCD) via e-mail on March 22, 2016.

INTRODUCTION

Purpose and Scope

The purpose of the soil sampling and analysis was to evaluate shallow subsurface soil and rock conditions within the alignment of a proposed trail segment that overlies geology with the potential for naturally occurring asbestos (NOA). The investigation included excavation of seven exploratory trenches to depths of approximately two feet below the ground surface, and collection of surface and subsurface soil samples for laboratory asbestos testing.

Background

H&K previously conducted a Phase I Environmental Site Assessment (ESA) of the subject property (H&K, 2014). Findings of the Phase I ESA indicated that naturally occurring asbestos (NOA) was not likely to occur at significant concentrations in the materials to be disturbed during construction and operation of the proposed bike park and associated trails.

In 2014, H&K obtained six discrete, near-surface soil samples from the property. Samples were obtained from the upper six inches of soil. The samples were analyzed for asbestos by California Air Resources Control Board (CARB) Method 435, Level A (reporting limit 0.25%). Asbestos (chrysotile) was detected in one of the six samples (SS-2) in the northeastern portion of the property below the reporting limit of 0.25%.

In 2015 and 2016, H&K conducted a Geologic Evaluation of the subject property (H&K, 2016). Findings of the Geologic Evaluation indicated ultramafic rock (serpentinite) and metavolcanic rock (amphibolite) are present within the northeastern portion of the site. Youngdahl Consulting Group, Inc. was retained to review the Geologic Evaluation, and concurred with the findings of the Geologic Evaluation in a letter dated March 7, 2016.

Limitations

H&K performed the soil sampling and analysis in accordance with present, regional, generally accepted standards of care. The purpose of the investigation was to provide information pertaining to the subject property for a regulatory determination. This report does not represent a legal opinion. No warranty, expressed or implied, including any implied warranty of merchantability or fitness for the purpose is made or intended in connection with the work.

H&K prepared and issued this letter for the exclusive use of our client and reviewing agencies. The information, conclusions and recommendations presented apply only to the subject property. H&K is not responsible for any other party's interpretations of the reported information.

Changes in the conditions of the property can occur with the passage of time. The changes may be due to natural processes or to the works of man on the project site or adjacent properties. Changes in regulations, interpretations, and/or

enforcement policies may occur at any time. Such changes may affect the proposed development and the type and extent of mitigation required.

SITE DESCRIPTION

Site Location

The site is located near the eastern boundary of the City of Auburn in Placer County, California. A location map is presented as Figure 1. Referencing the Auburn, California quadrangle map (United States Geological Survey (USGS), 1981), the property is located within the eastern half of Section 22, Township 12 North, Range 8 East, based on the Mount Diablo geodetic datum.

Property Description

The site comprises a portion of a single 27.5-acre parcel designated as Placer County Assessor's Parcel Number (APN) 055-040-026-000. The parcel boundary and site boundary are depicted on Figure 2.

The site is generally undeveloped except for a former parking area, a water conveyance canal, former unpaved access roads and unpaved trails. The site is generally vegetated by oak trees and grasses.

Site elevations range from approximately 1,280 feet above mean sea level (MSL) at its western boundary to approximately 1,360 feet above MSL at its eastern boundary.

The site slopes moderately towards the east and is located near the top of the steep, east-facing slope of the American River canyon. The site is located approximately 1,900 feet east and 800 feet above the North Fork American River.

Regional NOA Mapping

According to the map of Naturally Occurring Asbestos Hazard, South Auburn and Vicinity, California (California Geological Survey, 2008), the subject property is located on the western edge of an area mapped as "most likely to contain NOA." The relative likelihood for the presence of NOA is based on reference to geologic mapping of ultramafic rock and serpentine rock (serpentinite).

Geology

According to the Geologic Map of the Sacramento Quadrangle (California Division of Mines and Geology Regional Geologic Map, 1979), the majority of the subject property location is mapped as Mehrten Formation andesitic conglomerate, sandstone and breccia. The Mehrten formation is Tertiary in age (66 to 2.58 million years before present). Metavolcanic rocks are mapped in the northeastern portion of the subject property. The metavolcanic rocks are Paleozoic in age (541 to 252 million years before present).

According to the Pre-Cenozoic geology of the south half of the Auburn 15-minute quadrangle, California (United States Geological Survey, 1971), fragmental andesite (Mehrten Formation), serpentinite and amphibolite are mapped directly south of the subject property. The serpentinite and amphibolite geologic units are mapped as trending towards the northeastern portion of the site location. However, these units are not shown at the site location due to the limited extent of the map.

According to the Fault Activity Map of California (California Department of Conservation, Division of Mines and Geology (CDMG, 2010), the site location is mapped within the Foothills Fault System. The Foothills Fault System is designated as an areal, Type C seismic source with low seismicity and a low rate of recurrence. The Maidu East Fault is part of the Foothills Fault System and is located approximately 600 feet west of the site.

Soil Conditions

According to the Natural Resources Conservation Service web soil survey (http://websoilsurvey.nrcs.usda.gov) the site location is mapped predominantly as Inks Cobbly Loam and Inks Variant Cobbly Loam. The Inks series is described as shallow, well-drained soil weathered from volcanic rocks. These soils are on undulating to hilly tabular volcanic ridges and steep side slopes. Typical depth to a lithic contact is 10 to 20 inches.

Auburn-Sobrante-Rock outcrop complex is mapped near the northeastern edge of the site location, east of Pleasant Avenue and outside of the proposed area of soil disturbance. The Auburn series is described as shallow to moderately deep, well-drained soil formed in material weathered from amphibolite schist. The Sobrante series is described as moderately deep, well-drained soil weathered from basic igneous and metamorphic rocks.

Current Land Use

The property is currently leased by the Auburn Recreation District (ARD) and is owned by the United States Bureau of Reclamation (USBR).

The Shirland Canal bisects the site from north to south. The canal is operated by the Placer County Water Agency (PCWA).

A previously-graded, paved parking area is located at the southern end of the site, adjacent to Maidu Road. This parking area was reportedly used by the Federal Highway Administration for construction administration of the Foresthill Bridge Project. The parking area is not currently in routine use.

The western portion of the property, outside of the project site, contains a building and paved parking areas. The building serves as an administration building for ARD operations and also functions as a community center for public meetings and classes. The building was reportedly constructed in the 1970s and was previously used for construction administration of the proposed Auburn-Folsom South Unit Dam project.

Proposed Land Use

The site is to be developed as a non-motorized bike park, including unpaved trails and terrain features. A preliminary site layout for the central portion of the site is depicted on Figure 2.

SOIL SAMPLING

An H&K geologist and field technician performed soil sampling and analysis on April 5, 2016 along the alignment of the approximately 500-foot proposed trail segment. The alignment of the proposed trail segment was marked by a representative of Giuliani & Kull prior to H&K's arrival. Sample locations are depicted on Figure 2

Seven soil sample locations (SS-7 through SS-13) were selected at approximately 60-foot intervals along the segment. One sample location was positioned at the northern endpoint of the trail segment at the geologic contact and adjacent to the canal, and one sample location was positioned at the southern endpoint of the trail segment 15 feet beyond the geologic contact.

Soil samples were obtained from 0-6 inches and 15-21 inches below ground surface (bgs) at six of the seven sample locations (SS-7, SS-8, SS-9, SS-10, SS-11, and SS-13). Soil samples were obtained from 0-4 inches and 6-12 inches bgs at sample location SS-12. Soil depth was 4 inches and excavation refusal was encountered at the base of sample location SS-12.

Samples were obtained using hand tools. Equipment was decontaminated with moist wipes between sample locations to remove visible soil and dust. Nitrile gloves were used during sampling and discarded when the cleanliness of the gloves was compromised. Soil samples were transferred to new, resealable plastic bags and were transported under chain of custody documentation to EMSL Laboratories of San Leandro, California (ELAP Certification 1620).

SOIL PROFILES

Excavation depths and subsurface conditions are summarized in Table 1. As listed in Table 1, depth to rock recorded in the seven exploratory trench locations ranged from six to 24 inches. Photographs are attached. Descriptions of soil and rock conditions encountered within the excavations are summarized below.

Fragmental Andesite (Mehrten Formation)

The Mehrten Formation was observed at sample location SS-7. The profile for sample location SS-7 is described below.

Horizon	Description
Soil	Silty Sand (SM), dark brown (7.5YR 3/4), loose, moist
Weathered Rock	Weathered Mehrten Formation, subangular to angular cobbles up to 1.5 feet in diameter. Excavates as silty sand (SM) with gravel and cobbles, dark yellowish brown (10YR 4/4), loose to medium dense, moist

Ultramafic Rock (Serpentinite)

Serpentinite was observed at sample locations SS-8, SS-9, SS-10, and SS-11. The typical profile for these sample locations is described below.

Horizon	Description
Soil	Silty Sand (SM), light brownish grey (10YR 6/2), medium dense, moist
Weathered Rock	Highly weathered ultramafic rock (serpentinite), highly foliated, brittle. Excavates as silty sand (SM), olive (5YR 5/5), medium dense, moist

Metavolcanic Rock (Amphibolite)

Amphibolite was observed at sample location SS-12. The profile for sample location SS-12 is described below.

Horizon	Description
Soil	Silty Sand (SM), light brownish grey (10YR 6/2), loose, moist
Weathered Rock	Moderately weathered metavolcanic rock (amphibolite). Excavates as angular rock fragments up to 4 inches in diameter, bluish grey (GLEY 2 5/1).

Fill Material

Fill material likely originating from canal excavation was observed at sample location SS-13. The profile for sample location SS-13 is described below.

Horizon	Description
Soil	Silty Sand (SM), strong brown (7.5YR 4/6), loose, moist.

LABORATORY RESULTS

The 14 soil samples were analyzed for asbestos by Polarized Light Microscopy (PLM) California Air Resources Board (CARB) 435-A with a reporting limit of 0.25%. Laboratory results indicated that the 14 soil samples were composed of 100% non-fibrous material and did not contain asbestos above the reporting limit of 0.25%.

FINDINGS AND CONCLUSIONS

The findings and conclusions presented below are based on the results of H&K's soil sampling and analysis.

1. The soil sampling and analysis was performed in general accordance with our *Proposal for Soil Sampling and Analysis, Proposed Maidu Bike Park* (H&K; March 28, 2016).
2. Ultramafic rock (serpentinite) and metavolcanic rock (amphibolite) are present beneath the proposed trail segment. However, soil samples obtained along the proposed trail segment and at each end of the trail segment from depth intervals of 0-6 inches and 15-21 inches did not contain asbestos above the reporting limit of 0.25%.

H&K appreciates the opportunity to provide environmental engineering services for this important community project. Please contact us with any comments or questions regarding the geologic evaluation.

Sincerely,

HOLDREGE & KULL

Bryan Botsford
Staff Geologist

Jason Muir, C.E. 60167
Principal Engineer

Attached:
Figure 1, Location Map
Figure 2, Sample Location Map
Table 1, Summary of Exploratory Excavations
Table 2, Asbestos in Soil Samples
Photographs
Laboratory Report

Copies:
PDF to ARD /Attn: Kahl Muscott, KMuscott@auburnrec.com
PDF to ARD /Attn: Pamela Vann, PVann@auburnrec.com
PDF to Dudek /Attn: Markus Lang, MLang@dudek.com

F:\1 Projects\4289 471 Maidu Drive Proposed Bike Park\4289A-02 Soil Sampling and Analysis\01 Report\4289A-02 Summary of Soil Sampling and Analysis, 471 Maidu Drive.docx

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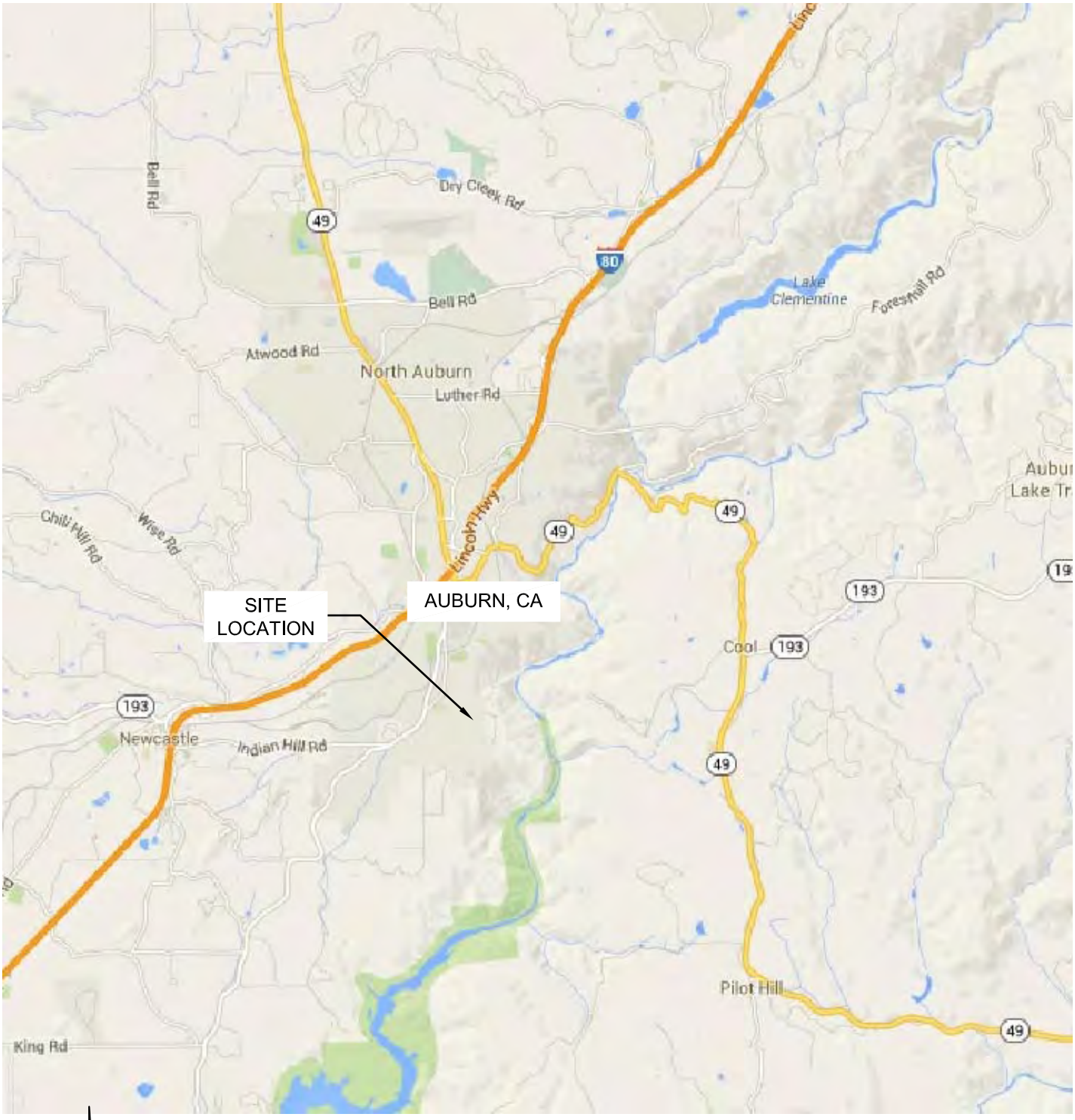

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NOT TO SCALE

BASE MAP FROM GOOGLE MAPS (2015)

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LOCATION MAP

PROPOSED MAIDU BIKE PARK

AUBURN, CALIFORNIA

DRAWN BY:	BOTSFORD
CHECKED BY:	MUIR
H&K PROJECT:	4289-02
DATE:	APRIL 2016

FIGURE 1

Table 1 - Summary of Exploratory Excavations, April 5, 2016
471 Maidu Drive
Auburn, California

			Subsurface Description			
Excavation No.	**Excavation Date**	**Total Depth** (inches)	**First Horizon**	**First Horizon Depth** (inches)	**Second Horizon**	**Second Horizon Depth** (inches)
SS-7	04/05/16	21	Soil	0-6	Mehrten Formation	6-21
SS-8	04/05/16	21	Soil	0-13	Ultramafic Rock	13-21
SS-9	04/05/16	21	Soil	0-14	Ultramafic Rock	14-21
SS-10	04/05/16	21	Soil	0-9	Ultramafic Rock	9-21
SS-11	04/05/16	21	Soil	0-7	Ultramafic Rock	7-21
SS-12	04/05/16	12	Soil	0-4	Metavolcanic Rock	4-12
SS-13	04/05/16	24	Soil (Fill)	0-24	--	--

Table 2. Asbestos in Soil Samples, April 5, 2016
471 Maidu Drive
Auburn, California

Sample No.	Depth (inches)	Reporting Limit	Method	Results		
				Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
SS-7A	0-6	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-7B	15-21	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-8A	0-6	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-8B	15-21	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-9A	0-6	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-9B	15-21	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-10A	0-6	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-10B	15-21	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-11A	0-6	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-11B	15-21	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-12A	0-4	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-12B	6-12	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-13A	0-6	0.25%	CARB 435	--	100% Non-fibrous	ND
SS-13B	15-21	0.25%	CARB 435	--	100% Non-fibrous	ND

Notes:
CARB = California Air Resources Board
EPA = Environmental Protection Agency
ND = Not Detected above listed reporting limit

Photo 1 – Sample location SS-7.

Photo 2 Sample location SS-8.