

Property Management Plan



for
Golden State Herb Commercial Cannabis Operations
8550 HWY 175, Kelseyville, CA 95451
APN 01105601

Prepared by:

Eastside Environmental, Inc.
1326 Bidwell Avenue
Chico, CA 95926
530-249-0845

Prepared for:

Lake County Community Development
Planning Department
255 N. Forbes Street
Third Floor, Rm 323
Lakeport, CA 95453

April 2019

CONTENTS

Purpose and Intent of the Property Management Plan	4
Site Plan Set	6
Section 1. Air Quality	8
Section 2. Cultural Resources	14
Section 3. Energy Usage	16
Energy Sources	16
Energy Conservation Measures	17
Section 4. Fertilizer Usage	22
Section 5. Fish and Wildlife Protection	26
Section 6. Operations Manual	33
Section 7. Pest Management	35
Section 8. Security	39
Section 9. Stormwater Management	45
Section 10. Waste Management	51
Solid Waste Management	51
Hazardous Waste Management	52
1) Hazard Analysis	52
2) Management Plan	55
Cannabis Vegetative Material Waste Management	57
Growing Medium Management	58
Section 11. Water Resources	61
Section 12. Water Use	67
Appendix A: Associated Technical Documents	73
Section 1. Air Quality: Lake County Air Quality Management District Air Quality Management Plan	74
Section 2. Cultural Resources: Historical Resources Survey	75
Section 4. Fertilizer Usage: SWRCB Nitrogen Management Plan	76
Section 5. Fish and Wildlife Protection: Stocking Vineyard Biological Resources Assessment	77
Section 9. Stormwater Management: SWRCB Site Management Plan	78

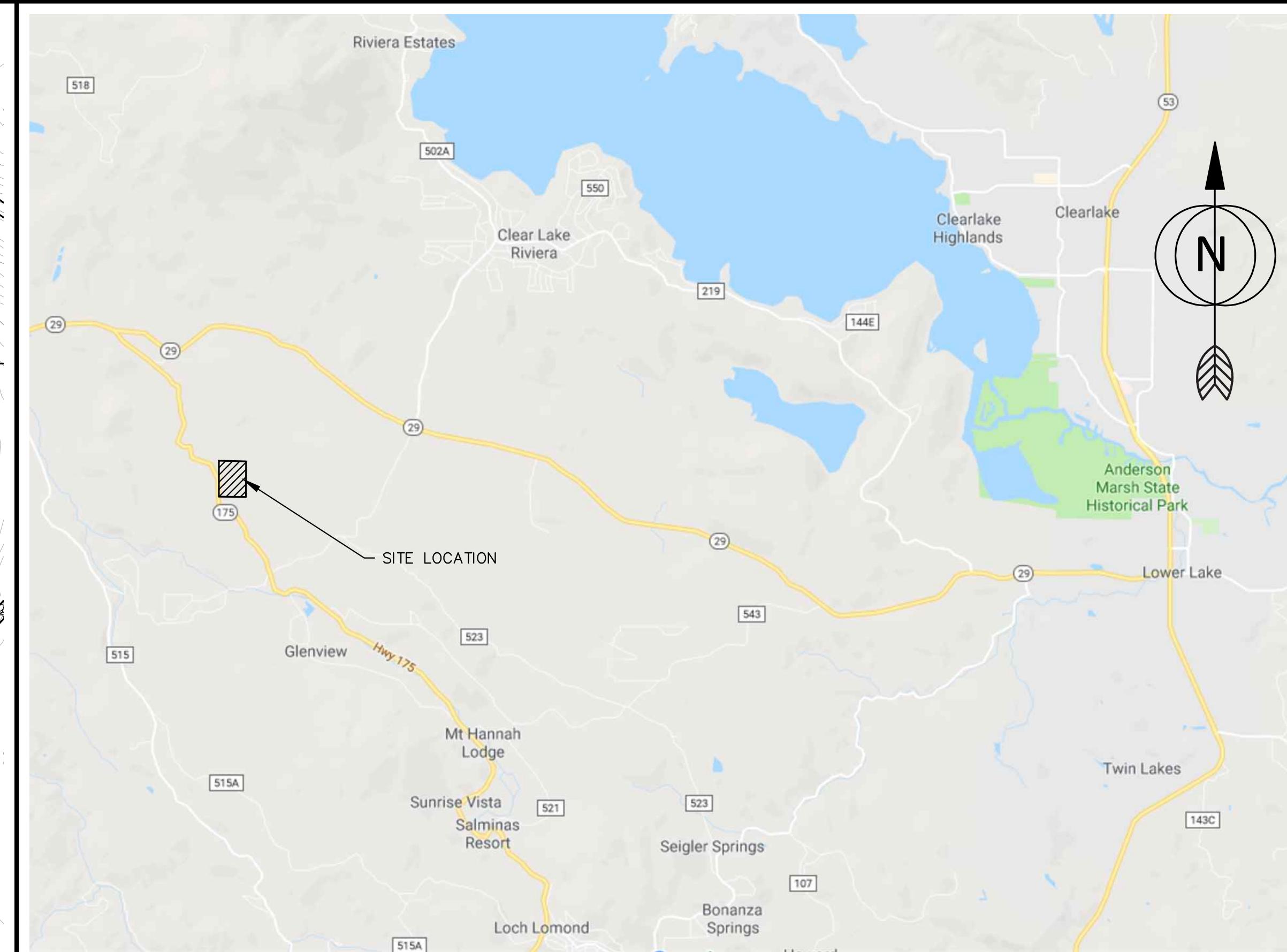
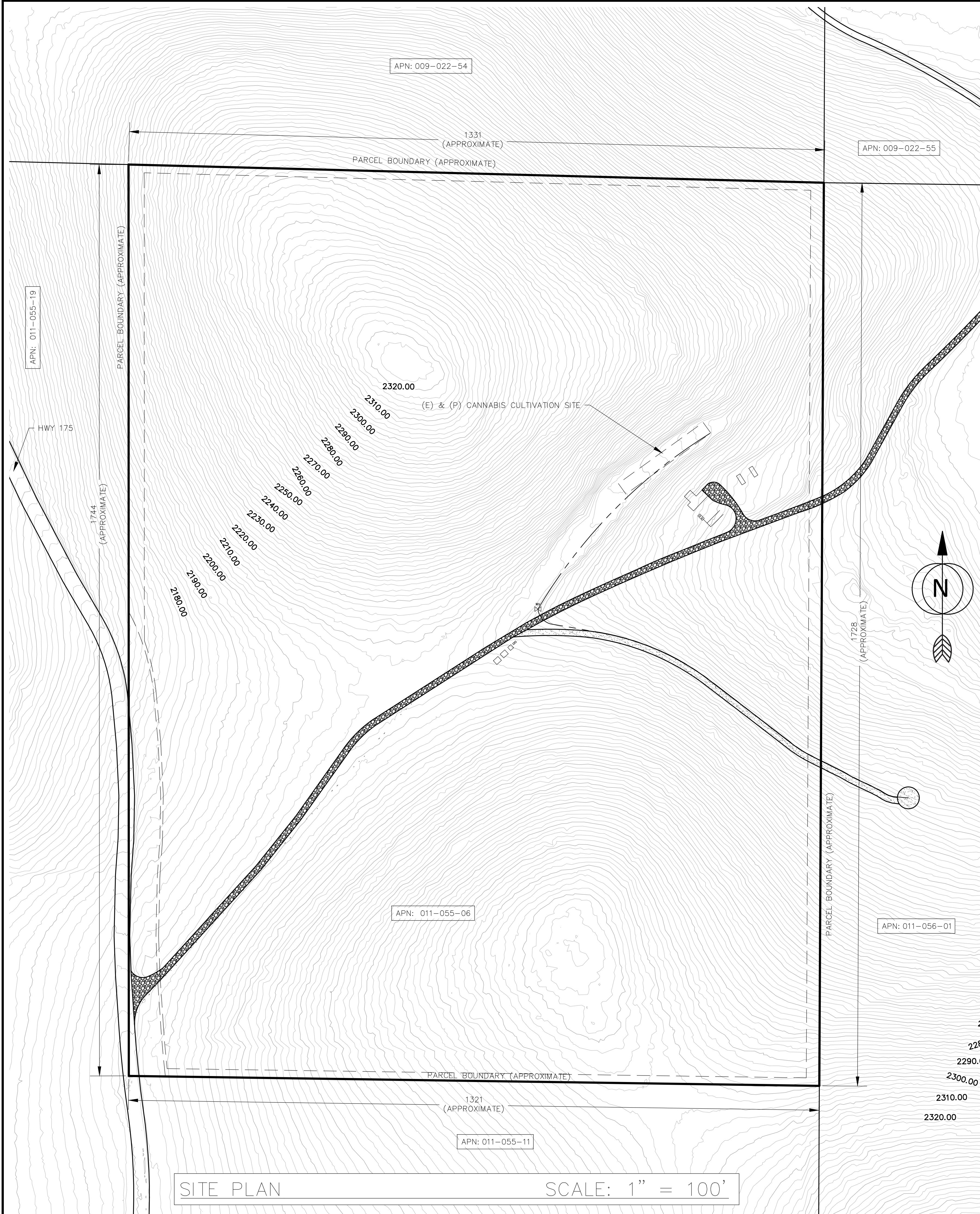
Table of Figures

Figure 1. Authority To Construct Permit 2018-61.....	11
Figure 2. Energy Load Calculations GSH Commercial Cannabis Operations at APN 011-055-06	19
Figure 3. Vicinity Surface and Groundwater Resources vs. Fertilizer Storage Location, APN 011-055-06.	25
Figure 4. Habitat Descriptions of Stocking Vineyard Project	28
Figure 5. Habitat Map of Stocking Vineyard Project.....	29
Figure 6. Hydrologic Unit Classification 12 of Project Property.....	32
Figure 7. Vicinity Surface and Groundwater Resources vs. Pesticide Storage Location, APN 011-055-06	38
Figure 8. CVRWQCB Notice of Applicability, Water Quality Order WQ-2017-0023-DWQ	48
Figure 9. Vicinity Surface and Groundwater Resources, APN 011-055-06	60
Figure 10. Hydrologic Unit Classification (HUC12).....	63
Figure 11. National Hydrography Dataset Map, APN 011-055-06.....	64
Figure 12. National Wetlands Inventory Map, APN 011-055-06	65
Figure 13. Topographic Map of 8550 HWY 175, Kelseyville, CA	66
Figure 14. Well Completion Report for APN 011-056-01	70
Figure 15. Water Demand and Water Availability Analysis, Stocking Erosion Control Plan.....	71
Figure 16. Well-Parcel Landowner Authorization.....	72

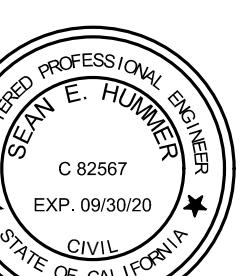
PURPOSE AND INTENT OF THE PROPERTY MANAGEMENT PLAN

The intent of the Property Management Plan is to identify and locate all existing cannabis and non-cannabis related uses on the property, identify and locate all proposed cannabis and non-cannabis related uses on the property, and describe how all cannabis and non-cannabis related uses will be managed in the future. The Property Management Plan shall demonstrate how the operation of the commercial cannabis cultivation site will not harm the public health, safety, and welfare or the natural environment of Lake County.

SITE PLAN SET



COVER SHEET



APPENDIX H: SITE PLAN FOR LAKE COUNTY MAJOR USE PERMIT APPLICATION

APN: 011-055-06
CULTIVATOR: GOLDEN STATE HERB
LAND OWNER: PORTER G3 MCINTIRE LLC.
VACAVILLE, CA 95688

**HUMMER CONSULTING
ENGINEERING**
CIVIL | STRUCTURAL



EASTSIDE ENVIRONMENTAL

PROPERTY OWNER INFORMATION:
NAME: PORTER G3 MCINTIRE LLC.
ADDRESS: 777 ALDRIDGE ROAD
VACAVILLE, CA 95688
PH: 707-249-9642
EMAIL: bryantstocking@gmail.com

APPLICANT INFORMATION:
NAME: GOLDEN STATE HERB
ADDRESS: PO BOX 7605
CHICO, CA 95927
PH: 530-249-0845
EMAIL: goldenstateherb@gmail.com

SITE INFORMATION:
ADDRESS: 8550 HIGHWAY 175
KELSEYVILLE, CA 95451
APN: 011-055-06
AREA: 52.98 ACRES

LEGEND:

- 100— CONTOUR ELEVATION
- PROPOSED FENCE
- EXISTING FENCE
- EXISTING GRAVEL ACCESS ROAD/ PARKING
- EXISTING DIRT ACCESS ROAD
- (E) EXISTING
- (P) PROPOSED
- HWY HIGHWAY

**HUMMER CONSULTING
ENGINEERING**
CIVIL - STRUCTURAL

676 E. 1ST AVENUE, SUITE 8
CHICO, CA 95926 PH: (530) 781-3530

HCE JOB # 17 - 112

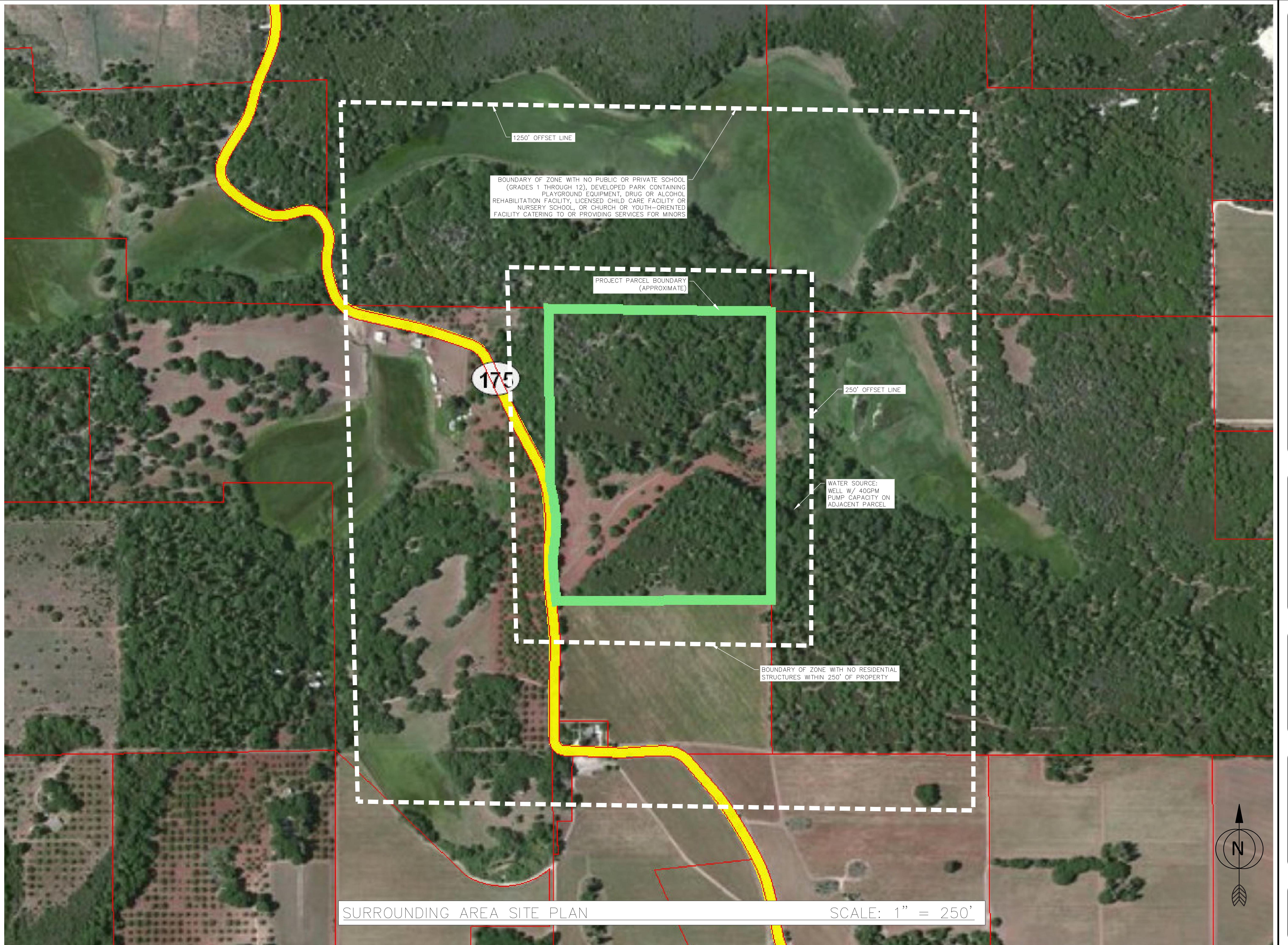
DATE: 04-28-2019
DRAWN BY: SEH
CHECKED BY: SEH

SHEET INDEX

- SHEET 1 – COVER SHEET
- SHEET 2 – SURROUNDAING AREA AERIAL
- SHEET 3 – SITE PLAN, EXISTING OPERATIONS
- SHEET 4 – SITE PLAN, PROPOSED CONDITIONS
- SHEET 5 – CANNABIS CULTIVATION SITE
- SHEET 6 – CANNABIS RELATED BUILDING LAYOUTS
- SHEET 7 – SECURITY

1

HUMMER CONSULTING ENGINEERING DISCLAIMS ANY LIABILITY FOR THE IMPROPER USE OF THESE PLANS. THESE PLANS AND/OR ANY ASSOCIATED SPECIFICATIONS ARE ONLY VALID FOR THE SITE FOR WHICH THEY WERE SPECIFICALLY PREPARED. THEY SHALL NOT BE USED OR MODIFIED FOR ANY OTHER SITE. IF THESE PLANS AND/OR SPECIFICATIONS ARE USED WHOLE OR IN PART AT ANY OTHER SITE, HUMMER CONSULTING ENGINEERING CLAIMS NO RESPONSIBILITY. THESE PLANS ARE NOT VALID UNTIL THEY ARE REVIEWED AND APPROVED BY THE APPROPRIATE GOVERNMENT AGENCIES.



HUMMER CONSULTING ENGINEERING DISCLAIMS ANY LIABILITY FOR THE IMPROPER USE OF THESE LANDS. THESE PLANS AND/OR ANY ASSOCIATED SPECIFICATIONS ARE ONLY VALID FOR THE SITE FOR WHICH THEY WERE SPECIFICALLY PREPARED. THEY SHALL NOT BE USED OR MODIFIED FOR ANY OTHER SITE. IF THESE PLANS AND/OR SPECIFICATIONS ARE USED WHOLE OR IN PART AT ANY OTHER SITE, HUMMER CONSULTING ENGINEERING CLAIMS NO RESPONSIBILITY. THESE PLANS ARE NOT VALID UNTIL THEY ARE REVIEWED AND APPROVED BY THE APPROPRIATE GOVERNMENT AGENCIES.

SURROUNDING AREA AERIAL

APPENDIX H: SITE PLAN FOR LAKE COUNTY MAJOR USE PERMIT APPLICATION

HUMMER CONSULTING ENGINEERING CIVIL - STRUCTURAL

676 E. 1ST AVENUE, SUITE 8
CHICO, CA 95926 PH: (530) 781-3530

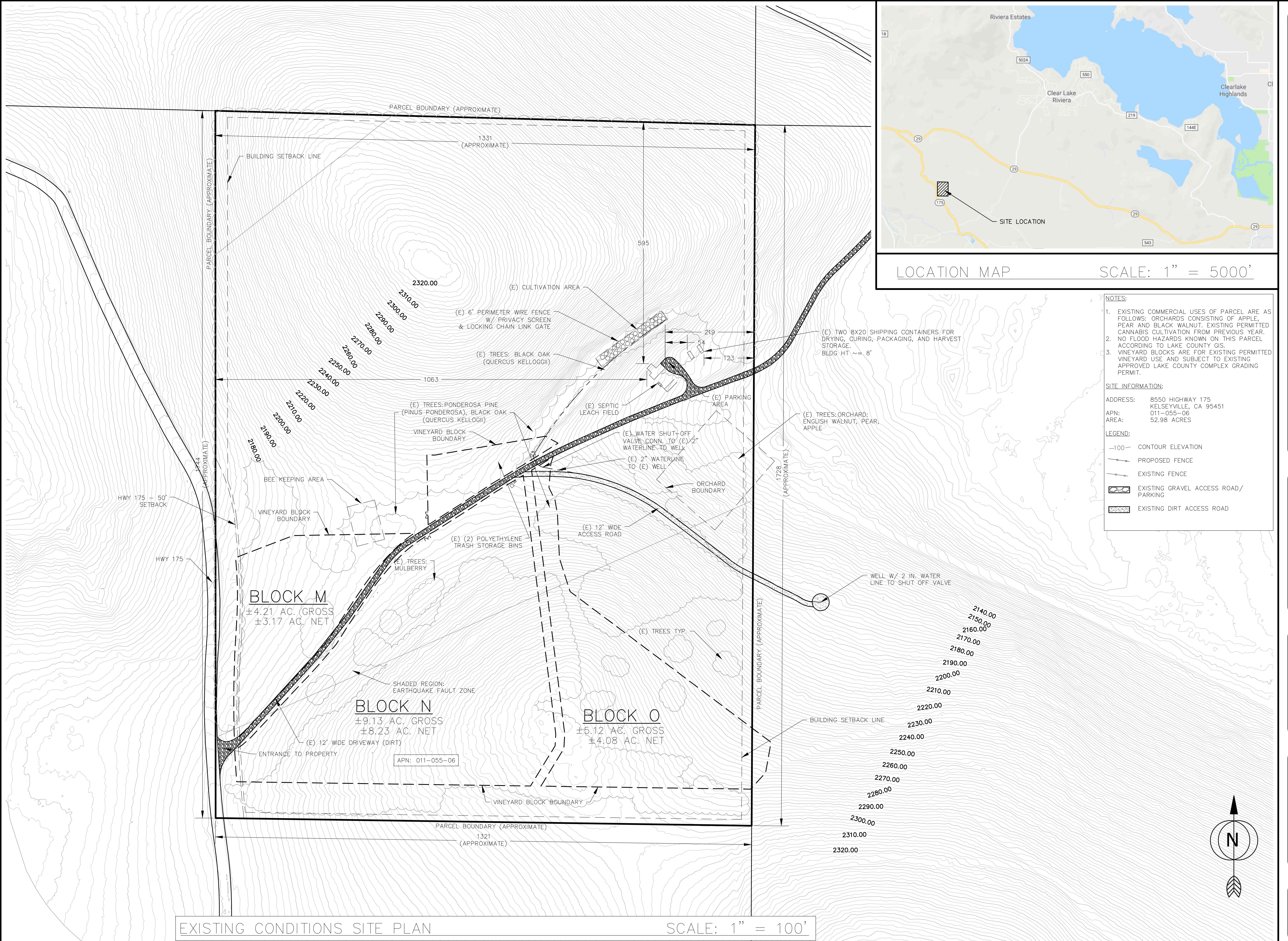


APN: 011-055-06
CULTIVATOR: GOLDEN STATE HERB
LAND OWNER: PORTER G3 MCINTIRE LLC.
VACAVILLE, CA 95688

HCE JOB # 17 - 112
DATE: 04-28-2019
DRAWN BY: SEH
CHECKED BY: SEH

NO.	INITIAL	REVISION/ISSUE	DATE
0			

DRAWING NUMBER



HUMMER CONSULTING ENGINEERING DISCLAIMS ANY
RESPONSIBILITY FOR THE IMPROPER USE OF THESE PLANS.
THESE PLANS AND/OR ANY ASSOCIATED SPECIFICATIONS
ARE ONLY VALID FOR THE SITE FOR WHICH THEY WERE
SPECIFICALLY PREPARED. THEY SHALL NOT BE USED OR
MODIFIED FOR ANY OTHER SITE. IF THESE PLANS AND
SPECIFICATIONS ARE USED WHOLE OR IN PART AT ANY
OTHER SITE, HUMMER CONSULTING ENGINEERING CLAIMS
NO RESPONSIBILITY. THESE PLANS ARE NOT VALID UNTIL
THEY ARE REVIEWED AND APPROVED BY THE
APPROPRIATE GOVERNMENT AGENCIES.

SITE PLAN EXISTING CONDITIONS



**APPENDIX H: SITE PLAN FOR
LAKE COUNTY MAJOR USE PERMIT
APPLICATION**

APN: 011-055-06

CULTIVATOR: GOLDEN STATE HERB
LAND OWNER: PORTER G3 MCINTIRE LLC.

676 E. 1ST AVENUE, SUITE 8
CO, CA 95926 PH: (530) 781-3533

HCE JOB # 17 - 112

DATE: 04-28-2019

MAWN BY: SEH

ECHECKED BY: SEH

SEARCHED BY: SETH

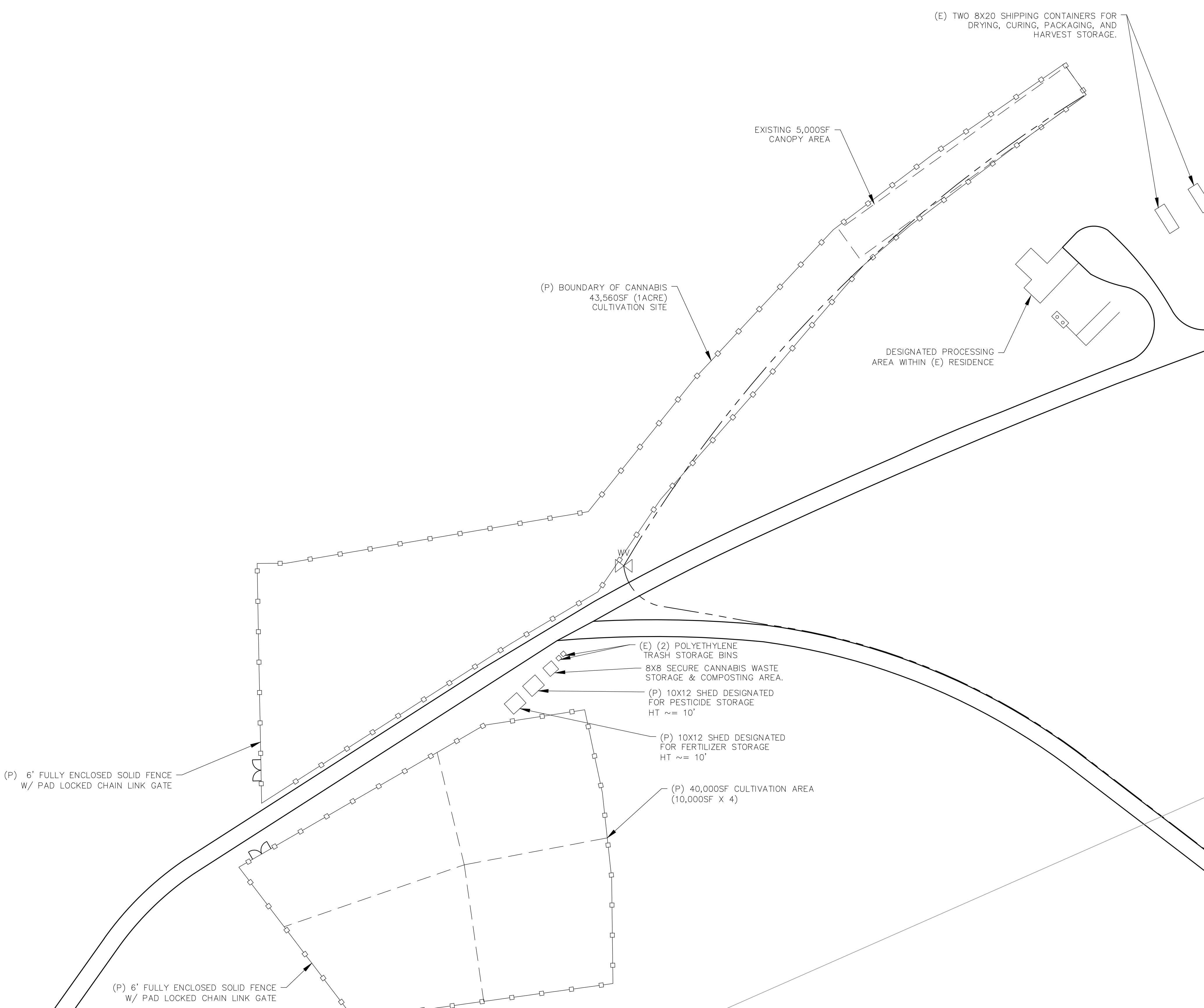
—

INITIAL

DRAWING NUMBER

3





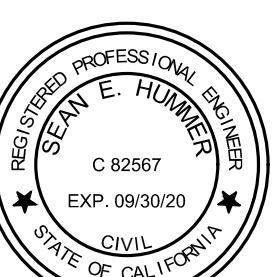
CULTIVATION SITE PLAN

SCALE: 1" = 10'

NOTES:

1. THERE WILL BE NO IMMATURE PLANTS MAINTAINED ON SITE.

CANNABIS CULTIVATION SITE



APPENDIX H: SITE PLAN FOR LAKE COUNTY MAJOR USE PERMIT APPLICATION
APN: 011-055-06
CULTIVATOR: GOLDEN STATE HERB
LAND OWNER: PORTER G3 MINTIRE LLC
VACAVILLE, CA 95688

HUMMER CONSULTING
ENGINEERING
CIVIL - STRUCTURAL
6765 E. 1ST AVENUE, SUITE 8
CHICO, CA 95926 PH: (530) 781-3530

HCE JOB # 17 - 112

DATE: 04-28-2019
DRAWN BY: SEH
CHECKED BY: SEH

0 INITIAL
NO. REVISION/ISSUE DATE

DRAWING NUMBER

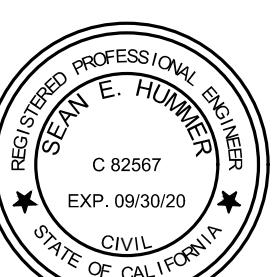
5

HUMMER CONSULTING ENGINEERING DISCLAIMS ANY
RESPONSIBILITY FOR THE INACCURATE USE OF THESE PLANS.
THESE PLANS AND/OR ANY ASSOCIATED SPECIFICATIONS
ARE ONLY VALID FOR THE SITE FOR WHICH THEY WERE
SPECIFICALLY PREPARED. THEY SHALL NOT BE USED OR
MODIFIED FOR ANY OTHER SITE. IF THESE PLANS AND/OR
SPECIFICATIONS ARE USED WHOLE OR IN PART AT ANY
OTHER SITE, HUMMER CONSULTING ENGINEERING CLAIMS
NO RESPONSIBILITY. THESE PLANS ARE NOT VALID UNTIL
THEY ARE REVIEWED AND APPROVED BY THE
APPROPRIATE GOVERNMENT AGENCIES.

NOTES:
1. SEE SHEET 5 FOR BUILDING LOCATIONS.

HUMMER CONSULTING ENGINEERING DISCLAIMS ANY RESPONSIBILITY FOR THE IMPROPER USE OF THESE PLANS. THESE PLANS AND/OR ANY ASSOCIATED SPECIFICATIONS ARE ONLY VALID FOR THE SITE FOR WHICH THEY WERE SPECIFICALLY PREPARED. THEY SHALL NOT BE USED OR MODIFIED FOR ANY OTHER SITE. IF THESE PLANS AND/OR SPECIFICATIONS ARE USED WHOLE OR IN PART AT ANY OTHER SITE, HUMMER CONSULTING ENGINEERING CLAIMS NO RESPONSIBILITY. THESE PLANS ARE NOT VALID UNTIL THEY ARE REVIEWED AND APPROVED BY THE APPROPRIATE GOVERNMENT AGENCIES.

CANNABIS RELATED BUILDING LAYOUTS



APPENDIX H: SITE PLAN FOR LAKE COUNTY MAJOR USE PERMIT APPLICATION
APN: 011-055-06
CULTIVATOR: GOLDEN STATE HERB
LAND OWNER: PORTER G3 MINTIRE LLC.
VACAVILLE, CA 95688

HUMMER CONSULTING ENGINEERING
CIVIL - STRUCTURAL
6765 1ST AVENUE, SUITE 8
CHICO, CA 95926 PH: (530) 781-3530

HCE JOB # 17 - 112

DATE: 04-28-2019

DRAWN BY: SEH

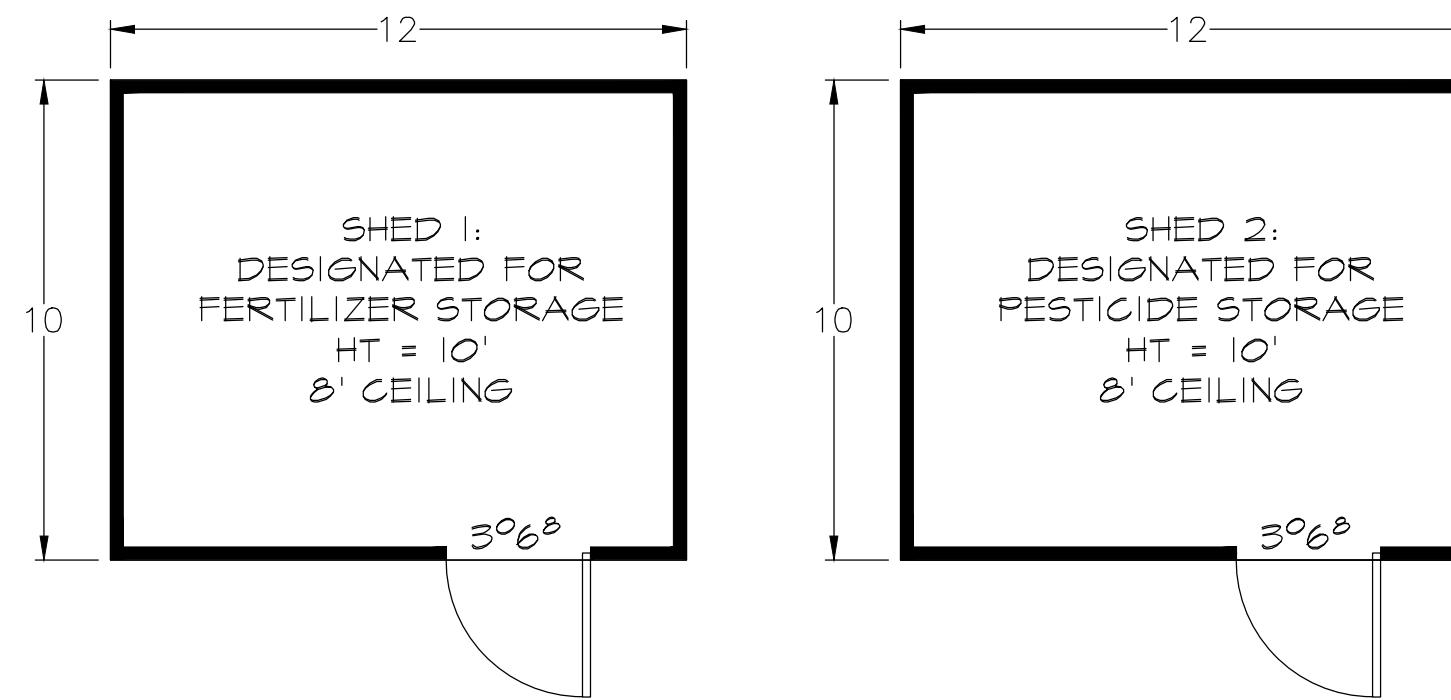
CHECKED BY: SEH

0 INITIAL

NO. REVISION/ISSUE DATE

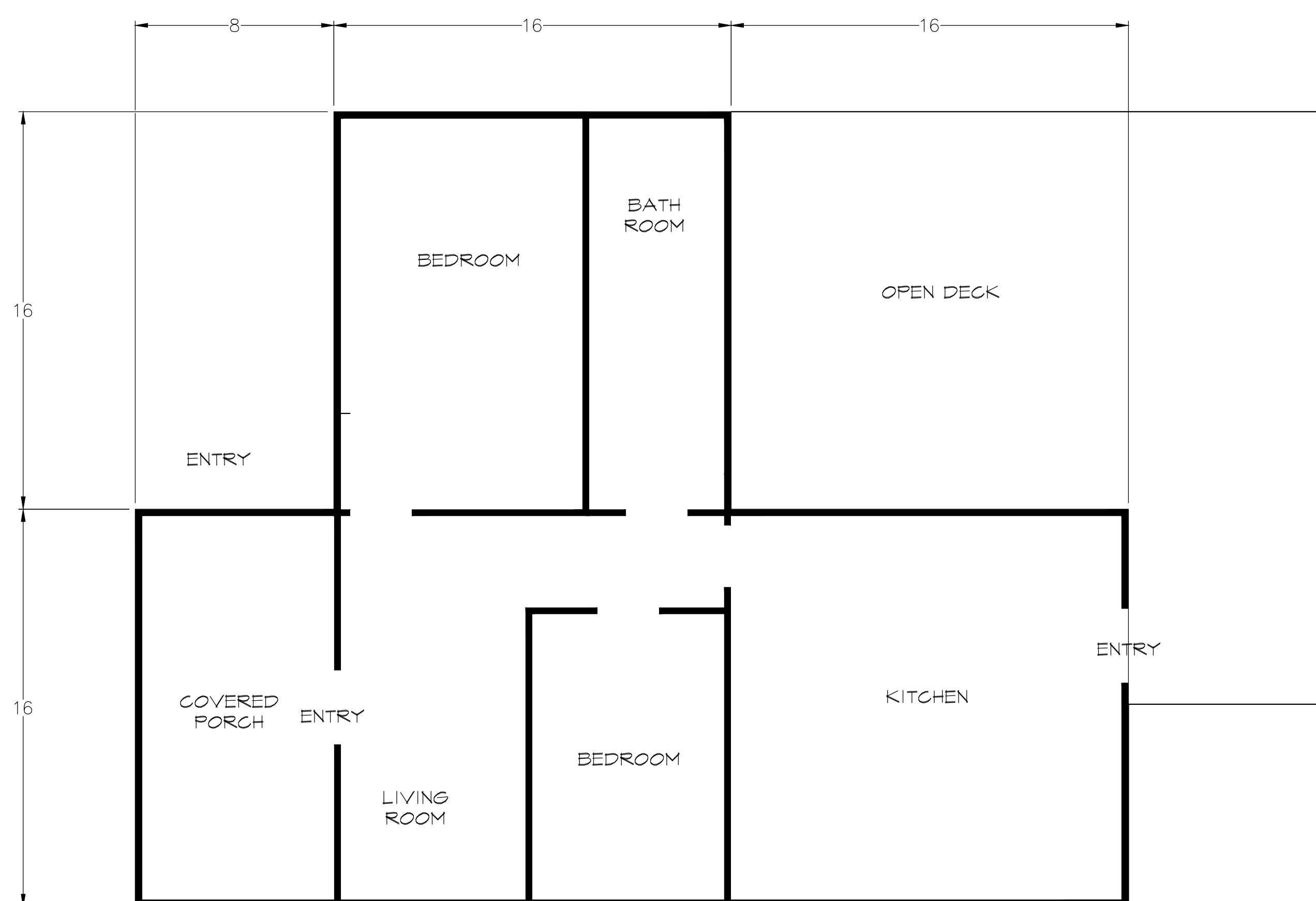
DRAWING NUMBER

6



TOUGH SHED FLOOR PLAN

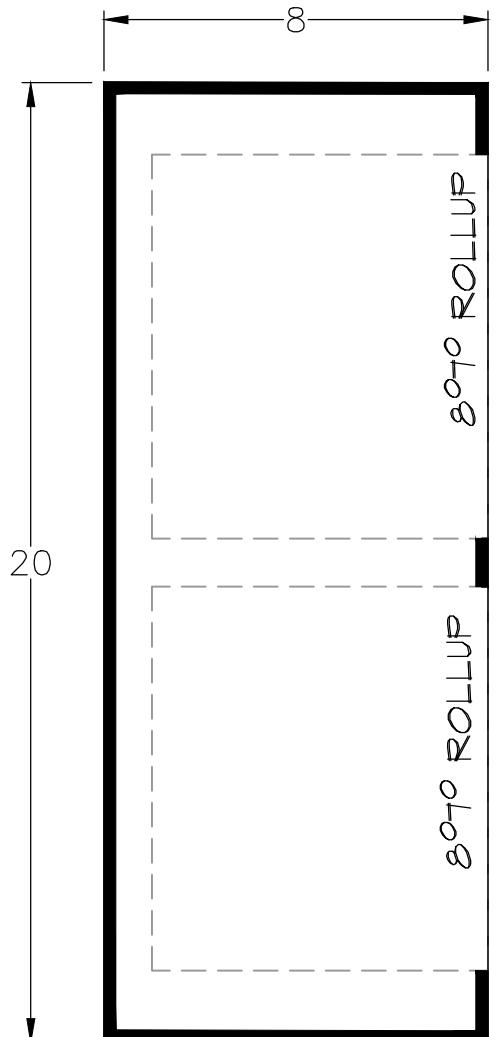
1/4" = 1'-0"



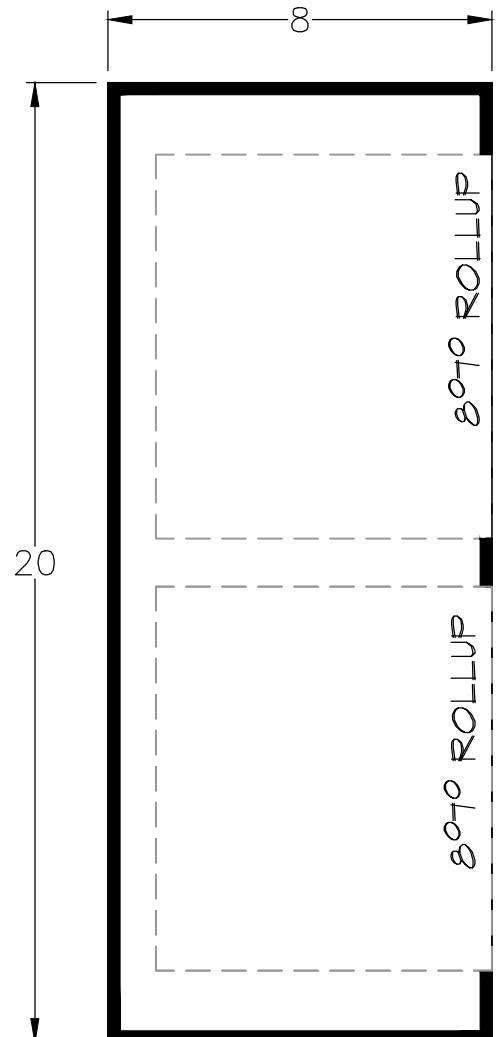
RESIDENCE FLOOR PLAN

1/4" = 1'-0"

SHIPPING CONTAINER 1:
DESIGNATED FOR DRYING, CURING AND
STORAGE.
HT = 8'

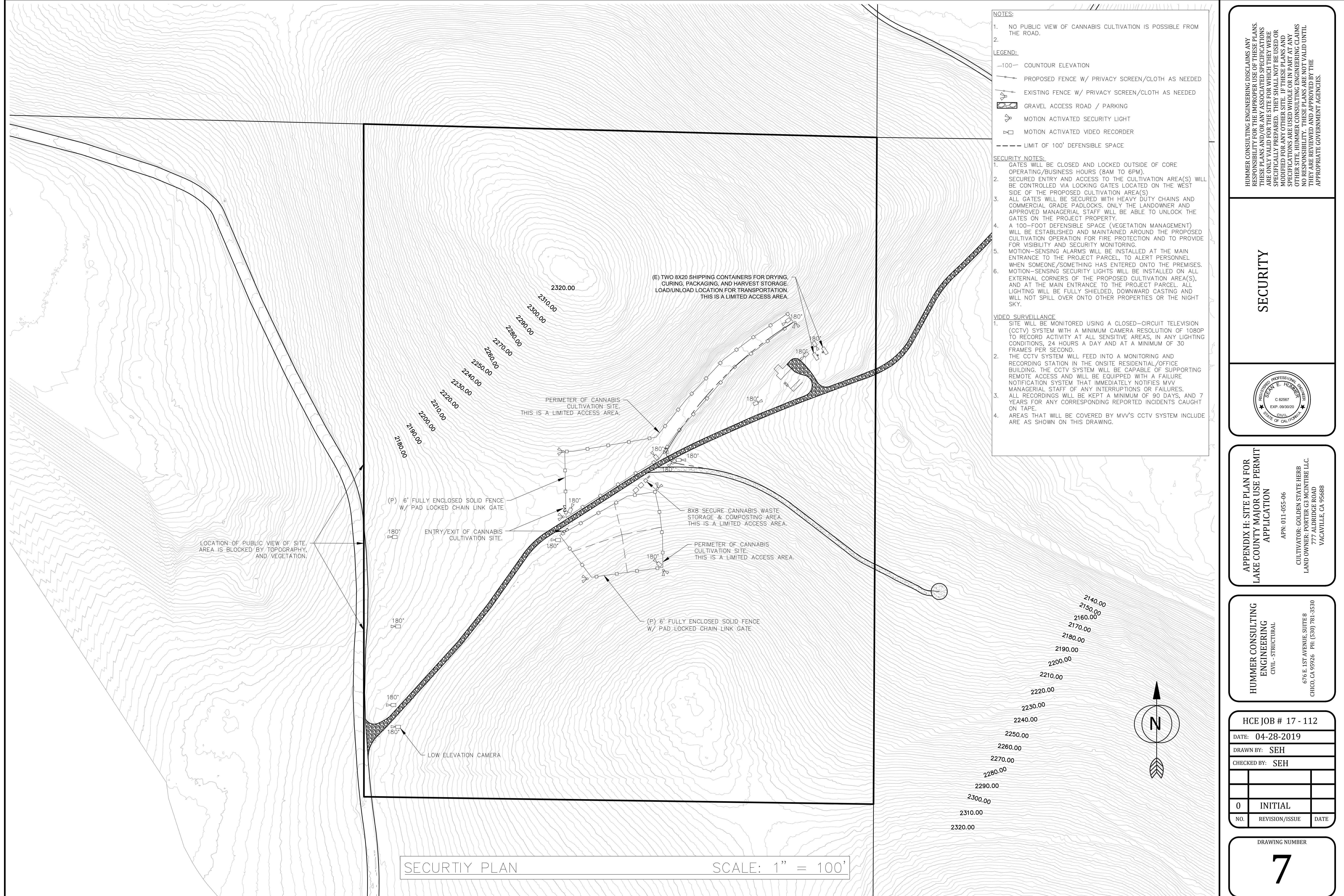


SHIPPING CONTAINER 2:
PACKAGING AND HARVEST STORAGE.
HT = 8'



SHIPPING CONTAINER FLOOR PLAN

1/4" = 1'-0"



SECTION 1. AIR QUALITY

- (a) Intent:** All cannabis permittees shall not degrade the County's air quality as determined by the Lake County Air Quality Management District (LCAQMD).
- b) In this section, permittees shall identify any equipment or activity that which may cause, or potentially cause the issuance of air contaminants including odors, and shall identify measures to be taken to reduce, control or eliminate the issuance of air contaminants, including odors.**

Gasoline and diesel-powered equipment: The proposed cultivation operation will generate small amounts of carbon dioxide from the operation of small gasoline engines (tillers, weed eaters, lawnmowers, etc.), a utility tractor (diesel engine), and from vehicular traffic associated with staff commuting. GSH will properly maintain this equipment to ensure efficient operations. It should also be noted that the generation of carbon dioxide will be offset by the cultivation of plants, which remove carbon dioxide in the air during the photosynthesis process.

Fugitive dust: The proposed cultivation operation may generate small amounts of fugitive dust through ground-disturbing activities, soil or compost piles, and vehicle or truck trips on unpaved roads. Fugitive dust will be controlled by wetting soils with a mobile water tank and hose, by delaying ground disturbing activities until site conditions are not windy, and by properly storing soil stockpiles with adequate tarping and erosion control. Additionally, the driveway, access roads, and parking areas of the Project cultivation operations areas will be graveled and maintained annually.

Odors: No significant odor impacts are anticipated from the proposed cultivation operations, due to the adequate operational setbacks from public roads, property lines, and neighboring residences/outdoor activity areas. Additionally, fragrant flowering and herb plants, such as lavender and rosemary will be planted around the Project cultivation operations to help mask any residual odors emanating from the cultivation operation.

(c) All cannabis permittees shall obtain an Authority to Construct permit pursuant to LCAQMD Rules and Regulations, prior to the construction of the facility described in the Property Management Plan.

(d) All cannabis permittees shall obtain Authority to Construct Permit pursuant to LCAQMD Rules and Regulations, if applicable, to operate any article, machine, equipment or other contrivance which causes or may cause the issuance of an air contaminant.

(e) All permittees shall maintain an Authority to Construct or Permit to Operate for the life of the project, until the operation is closed and equipment is removed.

GSH is currently operating under a temporary LCAQMD Authority to Construct Permit # A/C 2018-61. In addition, GSH has applied for an Annual Authority to Construct Permit, which will be awarded upon approval of this Project through the Use Permit process. GSH will maintain this permit annually. See **Figure 1., Authority To Construct Permit for a copy of A/C 2018-61.**

(f) The applicant shall prepare an odor response program that includes (but is not limited to):

- a. Designating an individual(s) who is/are responsible for responding to odor complaints 24 hours per day/seven (7) days a week, including holidays.**

Andrew Greer, Golden State Herb CEO: 530-570-9327; goldenstateherb@gmail.com

Crystal Keesey, Golden State Herb CFO: 530-249-0845; goldenstateherb@gmail.com

- b. Providing property owners and residents of property within a 1,000-foot radius of the cannabis facility, with the contact information of the individual responsible for responding to odor complaints.**

In addition to sharing the GSH Community Liaison/Emergency Contact information with property owners and residents within a 1000-foot radius of the cannabis facility, GSH will provide the name, cell phone number, and email address of the Community Liaison/Emergency Contact to all interested County Departments, and Law Enforcement Officials. GSH will encourage neighboring residents to contact the Community Liaison/Emergency Contact to resolve any operating problems before contacting County Officials/Staff.

- c. Policies and procedures describing the actions to be taken when an odor complaint is received, including the training provided to the responsible party on how to respond to an odor complaint.**

It should be noted that the odor from the cultivation of Cannabis only occurs during the flowering period of the plant; in an outdoor full-season growing situation, the odor emanating from the growing operations will occur primarily during September and October, and will cease once the plants are harvested and placed into climate-controlled drying and curing facilities.

Odor complaints will be followed up immediately with an assessment of the odor-producing situation; depending on the time of year, different solutions may be employed to remedy the situation including harvesting the odor-causing material, installation of a misting system to increase ambient humidity/reduce offsite odor drift, and/or installation of additional odor control equipment.

The Community Liaison/Emergency Contacts will follow a standard operating procedure that includes: 1. Receipt of the complaint and logging the complaint into the GSH Operations Log; 2. Follow up with the concerned party either in person or via phone/email; 3. Investigation of odor source; 4. Implementation of remediation; 5. Follow up with concerned party to determine if odor nuisance is corrected; 6. Report of remediation recorded into the GSH Operations Log. The two current Community Liaisons/Emergency Contacts are currently trained from prior years' cannabis cultivation operations in multiple licensed locations. Any new Community Liaison/Emergency Contacts be employed by GSH will be trained by the outgoing Community Liaison/Emergency Contacts to follow the Standard Operating Procedures for handling odor complaints as listed above.

- e. Contingency measures to mitigate/curtail odor and other emissions in the event the methods described above are inadequate to fully prevent offsite nuisance conditions.**

In the event the methods above are inadequate to fully prevent offsite nuisance conditions, GSH will harvest the product producing the odors and begin planning to convert the outdoor growing operations to a mixed-light grow operation that contains odor-scrubbing equipment within greenhouses.

Figure 1. Authority To Construct Permit 2018-61



AUTHORITY TO CONSTRUCT

Lake County Air Quality Management District
2617 S. Main Street, Lakeport, CA 95453 (707) 263-7000, Fax (707) 263-0421

Permit # A/C 2018-61

By:

Douglas G. Gearhart, APCO

Type of Issuance: Temporary

Issuance Date: 2/6/2019

Valid through: 8/4/2019

Category: II

Operations under this permit must be conducted in compliance with all specifications and data included with the application under which this permit was issued. Equipment must be properly maintained and kept in good condition at all times. Post this permit or a facsimile (with conditions) in a conspicuous location on or near the equipment.

Contact: Ms. Crystal Keesey
Owner: Golden State Herb, Inc.
Mailing c/o Eastside Environmental, Inc.
Address: 1326 Bidwell Ave.
Chico, CA 95926

Facility: Red Hills Ranch
Location: 8550 Hwy 175
Kelseyville, CA 95451

Name and Equipment Description: Cannabis Cultivation

Cannabis cultivation site and various support equipment.

Permit Conditions

Condition 1: Emissions

- A. All equipment used at this site shall be regularly maintained in good working order pursuant to manufacturer's guidelines and operated in a manner to prevent or minimize air emissions and odor. The Lake County Air Quality Management District (LCAQMD) shall be notified pursuant to Rule 510, regarding equipment breakdown.
- B. The total Reactive Organic Gases (ROG), Particulate Matter less than 10 microns (PM-10), Sulfur Oxides (SOx), and Nitrogen Oxides (NOx) emission rate for this facility shall not exceed 25 tons per 12-month period.
- C. Visible emissions shall not exceed Ringelmann 1 (20% opacity) from any engine exhaust stack, dust from unpaved roads, and cultivation site for more than three (3) minutes in any one (1) hour.
- D. The herein permitted operation shall not cause a nuisance or make a measurable contribution to any Ambient Air Quality Standard (AAQS) exceed. Odors impacting adjacent parcels, residences, or public areas are not allowed.
- E. All transport vehicles and loading facilities shall have ventilation systems installed and equipped with activated carbon (or equivalent) filters and fans capable of maintaining negative pressure.
- F. Dust generation from vehicle traffic shall be minimized to comply with Condition 1C above. Methods to meet this requirement may include but are not limited to: graveling or paving the roads, regular maintenance, reducing amount of travel, 15 mph or lower speed limits, consolidating deliveries, and/or utilizing water trucks.
- G. No burning is allowed at this facility.

(Conditions 1 through 6 are continued on the back of this card)

THIS PERMIT BECOMES VOID UPON CHANGE OF OWNERSHIP OR LOCATION

This permit does not authorize the emission of air contaminants in excess of those allowed by the California Health and Safety Code or the Regulations of the Lake County Air Quality Management District. This permit cannot be considered permission to violate existing laws, ordinances, regulations, or statutes of other government agencies. The provisions of this Permit are severable. If any provision of this Permit is held invalid, the remainder of this Permit shall not be affected thereby.

H. All diesel fueled equipment (e.g. tractors or haul trucks) shall comply with the appropriate State Regulations for mobile equipment and have evidence of compliance on site.

Condition 2: Administrative

A. This permit has been issued and is valid for cultivation operations, including harvesting and transporting offsite to a properly permitted processing facility. No drying or processing is allowed under this permit.

B. Diesel fuel utilized shall be California Low Sulfur Diesel containing less than 15ppmw sulfur.

C. Golden State Herb, Inc. (GSHI) shall comply with the requirements of the Air Toxics "Hot Spots" Information and Assessment Act as specified in Sections 44300 - 44394 of the California Health and Safety Code.

D. This permit is valid for no more than 180 days from issuance, until the County early activation permit expires, or until the LCAQMD A/C permit is issued or denied, whichever is sooner.

E. The issuance of this permit does not establish a precedent for the issuance of additional permits or future permits for this operation.

F. This permit is only valid with a valid Lake County Community Development Department Early Activation Cultivation permit. GSHI shall provide the LCAQMD a copy of the Lake County Early Activation Cultivation permit within 7 days of issuance, and notify the LCAQMD immediately upon the permit being revoked or expiring.

G. GSHI shall use best management practices and follow the odor mitigation plan to prevent offsite odor impacts.

H. GSHI shall notify the LCAQMD within 24 hours of receipt of all complaints received and the response.

I. GSHI shall respond to and investigate all complaints within 12 hours of receipt.

Condition 3: Records and Reporting

A. GSHI shall maintain a log documenting the time and date of all complaints, results of the complaint investigation, and any measures taken to resolve the complaint. A copy of this log shall be submitted to the LCAQMD upon expiration or revocation of this permit and/or by October 31, 2018.

B. GSHI shall maintain a log documenting odor mitigation equipment inspections, activated carbon filter change outs, replacements of and/or repairs made to the ventilation equipment, or measures implemented to prevent odor impacts offsite.

C. GSHI shall report to the LCAQMD annual production, number of plants grown to maturity, and total active cultivation area for the year upon expiration of this permit and by October 31, 2018.

D. GSHI shall notify the LCAQMD in writing within 14 days of any additional residences, medical facilities, schools or daycares that are constructed within 1/2 mile of the cultivation site.

Condition 4: Modification

A. GSHI shall apply for and receive an Authority to Construct permit prior to replacement or modification of the permitted equipment or operations, or the addition of new equipment or operations.

Condition 5: Monitoring

A. The herein permitted facility shall not cause a public nuisance nor make a measurable contribution to any AAQS exceed. Should this facility result in odor or health complaints, the LCAQMD may require under Sections 430 and 670, monitoring, testing, and mitigation by GSHI to abate said condition.

Condition 6: Identification and Access

A. This permit shall be posted at the site and be available for GSHI's reference and LCAQMD staff inspection. GSHI shall provide contact phone numbers for inspection and complaint investigations. If locks or unmanned gates are used to secure the project area, the LCAQMD or its representative will be given free access of entry for the purposes of monitoring or inspecting during normal business hours or periods of use.

SECTION 2. CULTURAL RESOURCES

Intent: All permittees shall protect the cultural, historical, archaeological, and paleontological resources on the lot of record where the permitted activity is located.

Golden State Herb is committed to protect the cultural, historical, archaeological, and paleontological resources on the lot of record where our proposed commercial cannabis cultivation project is located: in addition, the footprint of the proposed cannabis cultivation area is entirely within the existing approved Article 72 cannabis cultivation site and Lake-County approved Stocking Vineyards Vineyard Blocks M and N. No disturbance outside of these areas will occur.

An Historical Resources Survey¹ was conducted in 2016 for the Stocking Vineyard Project and is included as an attachment in the Appendix to this Property Management Plan.

This section shall describe the procedures to be followed if cultural, historical, archaeological, and paleontological resources are found on the property.

Archaeology Historical resources must be protected from harm until such time as they are formally evaluated and determined to be insignificant. Protection measures to be implemented both within the boundaries of each site and within 100 feet of each site identified within the survey area include:

- A. Historical resource boundaries shall be freshly flagged prior to any ground disturbing activities.
- B. All areas within the flagged boundary of each historical resource shall be protected from ground disturbing activities such as tree and brush removal, grading, vineyard preparation/planting.
- C. If gravel/rock is imported to cap roads it shall be from a source that does not possess an archaeological site. Placement of gravel/rock within archaeological site boundaries shall be done on geofabric.
- D. New roads shall not be constructed within the flagged boundaries of any archaeological site.
- E. There shall be no piling or burning of brush/slash within the boundaries of any known historical resource.
- F. Collection of artifacts during land improvement shall not be permitted.

¹ Origer, Thomas M. et al. An Historical Resources Survey for The Stocking Vineyard Project Lake County, California. Tom Origer & Associates. Rohnert Park, CA. Revised 17, 2016.

Additionally, all personnel involved with the commercial cannabis cultivation site development will attend a training session, given by a professional archaeologist, to learn the protocol for archaeological site avoidance and what to do if cultural materials are uncovered (see *Accidental Discovery*).

Accidental Discovery

In keeping with the CEQA guidelines, if archaeological remains are uncovered, work at the place of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5 [f]). Prehistoric archaeological site indicators include: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire-affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

The following actions are promulgated in the CEQA Guidelines Section 15064.5(d) and pertain to the discovery of human remains. If human remains are encountered, excavation or disturbance of the location must be halted in the vicinity of the find, and the county coroner contacted. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. The Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations regarding the treatment of the remains with appropriate dignity.

The Department will consult with appropriate Tribe regarding the potential of such resources being located on the lot of record. Based on that consultation, the Department may require a cultural resource study of the property to determine the extent such resources exist on the lot of record. The applicant will be responsible for paying the cost of such a study.

Based on that study and in consultation with the appropriate Tribe(s), the Department may require its findings and recommendations to be included in this section.

The following Native American organizations were contacted during the permitting of the Stocking Vineyard Project, within which the GSH commercial cannabis project is located:

Native American Contact Efforts Stocking Vineyards, Lake County

Organization	Contact	Letters	Results
Native American Heritage Commission		8/11/16	Response received 8/17/16
Big Valley Rancheria	Anthony Jack	8/11/16	No response received as of the date of this report.

SECTION 3. ENERGY USAGE

Intent: Permittees shall minimize energy usage.

Energy Sources

The existing onsite residence and GSH's outdoor cannabis cultivation operation is/will be connected to the electrical grid serviced by Pacific Gas and Electric. Grid power will serve as the primary energy source to power lights and electrical equipment associated with the commercial cannabis operations.

Gasoline and/or diesel fuel will be used to power some equipment used in the proposed cultivation area(s) and surrounding Project Property (such as weed eaters, lawnmowers, vehicles, and a tractor).

In this section permittees shall:

- a) **Provide energy calculations as required by the California Building Code².**

Appliance	Number in use	Watts per unit	Hours per day	Total watts per day
Computer	1	120	8	960
Security System	1	450	24	10,800
Water Pump	1	3000	4	12,000
Security Lights	8	60	1	480
Printer	1	45	0.5	22.5
Coffee Maker	1	1500	1	1500
Fans	4	70	24	1680
Dehumidifier	2	280	24	6720
Total				34162.50

Total Watts per Day: 34,162.50; KWh/Day: 34.1625; KWh/Month: 1024.875; KWh per 7-month Cultivation Season: 7174.125

All of the above appliances could be in use at the same time; therefore, the Farm Load for GSH's proposed cultivation operation is 5.576 KW (100% Demand Factor).

- b) **Identify energy conservation measures to be taken and maintained including providing proof of compliance with CCR Title 3, Division 8, Chapter 8305 the Renewable Energy Requirements.**

² The load demand calculations are in accordance with Article 220 Branch-Circuit, Feeder, and Service Calculations, Section V. Farm Load Calculations (220.100 – 220.103) of the 2016 CA Electrical Code.

Energy Conservation Measures

- Schedule pumps, motors, and other energy intensive machinery for operation during off-peak use hours
- Design any proposed new construction to meet net zero energy consumption, if possible;
- Turn off lights and unnecessary electronics when possible;
- Reduce “plug” load by removing personal equipment such as desk lamps and space heaters or installing smart power strips;
- Use energy efficiency features in all technology including computers, data storage, or other devices which consume excess energy;
- Replace and recycle old electronics;
- Provide operations personnel with guidelines and suggestions for energy efficient practices and post laminated guidelines in the proposed Office/Security Center;
- Conduct annual employee energy efficiency training to review energy conservation practices.

GSH's proposed outdoor cannabis cultivation operation is not subject to requirements of CCR Title 3, Division 8, Chapter 8305, which only applies to Indoor and Tier 2 Mixed-Light cultivation operations.

c) If alternative energy sources are to be used, describe those sources and the amount of electricity that will be provided.

GSH is exploring the use of solar energy for electrical generation at the Project parcel; however, this concept is in the research stage. No design work or action has been taken.

d) For indoor cannabis cultivation licensees, ensure that electrical power used for commercial cannabis activity shall be provided by any combination of the following:

- 1) On-grid power with 42 percent renewable source.**
- 2) Onsite zero net energy renewable source providing 42 percent of power.**
- 3) Purchase of carbon offsets for any portion of power above 58 percent not from renewable sources.**
- 4) Demonstration that the equipment to be used would be 42 percent more energy efficient than standard equipment, using 2014 as the baseline year for such standard equipment.**

GSH holds an outdoor cultivation license. No indoor cultivation facilities are present on the Project parcel.

e) Describe what parameters will be monitored and the methodology of the monitoring program.

GSH management will review all procedures and energy conservation measures annually to determine if energy conservation goals are being met. GSH will consult with an energy professional to ensure that the proposed cultivation operation is in full compliance with local, state, and federal regulations pertaining to energy usage, conservation, and consumption. GSH will:

- Have a local utility service provider conduct a Project energy assessment in 2020 and every three to five years afterwards;
- Maintain electricity bill information for five years;
- Maintain a log of monthly and annual fuel consumption for Project operations;
- Establish goals for energy conservation (based on the energy assessment's findings);
- Make records and all data available to Lake County officials;
- Adjust strategies as needed to meet GSH's energy conservation goals.

Figure 2. Energy Load Calculations GSH Commercial Cannabis Operations at APN 011-055-06

ELECTRICAL LOAD CALCULATION

PROJECT: Red Hills Ranch
ADDRESS: 8550 hwy 175, Kelseyville, CA

LIGHTING LOAD		
<i>Article 220-03(a)</i>		
Total square footage of living area:	<u>896</u> @ 3 watts/ft ²	= <u>2,688</u> Watts
<i>Article 220-16(a)</i>		
Two small appliance branch circuits @ 1500 watts each:	3,000 Watts	
<i>Article 220-16(a)</i>		
Additional small appliance branch circuits: @ 1500 watts each:	<u>0</u> @ 1500 watts ea	= <u>0</u> Watts
<i>Article 220-16(a)</i>		
Laundry circuits:	<u>0</u> @ 1500 watts ea	= <u>0</u> Watts
	Lighting Load Subtotal =	5,688 Watts
<i>Table 220-11</i>		
First 3000 watts of lighting load:	<u>1</u> @ 100%	= <u>3,000</u> Watts
Remainder from 3001 watts to 120,000 watts:	<u>2688</u> @ 35%	= <u>941</u> Watts
Remainder over 120,000 watts:	<u>0</u> @ 35%	= <u>0</u> Watts
	Lighting Load Total =	9,629 Watts
APPLIANCE LOAD		
<i>Article 220-17</i>		
Computer @ 120 watts each:	<u>1</u> @ 120 watts ea	= <u>120</u> Watts
Security System @ 450 watts each:	<u>1</u> @ 450 watts ea	= <u>1,450</u> Watts
Water Pump @ 3000 watts each:	<u>1</u> @ 3000 watts ea	= <u>3,000</u> Watts
Security Lights @ 60 watts each:	<u>8</u> @ 60 watts ea	= <u>480</u> Watts
Printer @ 45 watts each:	<u>1</u> @ 45 watts ea	= <u>45</u> Watts
Coffee Maker @ 1500 watts each:	<u>1</u> @ 1500 watts ea	= <u>1,500</u> Watts
Fan @ 70 watts each:	<u>4</u> @ 70 watts ea	= <u>280</u> Watts
Dehumidifier @ 280 watts each:	<u>2</u> @ 280 watts ea	= <u>560</u> Watts
Name Rating of Misc. Appliances:		
	<u> </u> @ <u> </u> watts ea	= <u> </u> Watts
	<u> </u> @ <u> </u> watts ea	= <u> </u> Watts
	Appliance Subtotal =	7,435 Watts
Appliance Total:	7435 watts x .75	= 5,576 Watts

ELECTRIC CLOTHES DRYER		
<i>Article 220-18</i> 5000 watts or name plate rating:	Dryer total =	0 Watts
WATER HEATER (if electric)		
<i>Article 220-3(b)</i> @ name plate rating:	Water heater total =	0 Watts
HOUSEHOLD COOKING EQUIPMENT		
<i>Table 220-19</i> Cooking Units - Includes ranges, wall mounted ovens, countertop units, and other household cooking units.		
Number of Units -	ONE unit use 8000 watts TWO units use 11000 watts THREE units use 14000 watts FOUR units use 17000 watts FIVE units use 20000 watts	
	Cooking Total = 8,000 Watts	

TOTAL DEMAND ON SYSTEM		
<i>Article 220-10 Sum of all totals:</i>		
	Lighting Load Total =	9,629 Watts
	Appliance Total =	5,576 Watts
	Dryer total =	0 Watts
	Water heater total =	0 Watts
	Cooking Total =	11,000 Watts
	Space Heating/Air Conditioning Total =	0 Watts
	Pools/spa Total =	0 Watts
	MISC Equip Total =	0 Watts
	Total Load for Dwelling = 26,205 Watts	
	<u>Main Service Sizing:</u>	
	Total load =	26,205 Watts
	Volts =	240 V
	Load/Volts =	109 amps
	Minimum Service Size = 125 amps	

SECTION 4. FERTILIZER USAGE

Intent: To ensure consistency of fertilizer storage and use with other sections of the property Management Plan.

This section shall describe how cultivation and nursery permittees will comply with the following fertilizer application and storage protocols:

a. Complying with all fertilizer label directions;

Application rates and methods for all fertilizers used by GSH will be consistent with product labeling. Fertilizer will be applied during the vegetative and blooming phases of the cannabis plants' life cycle to promote healthy plant growth and development.

b. Storing fertilizers in a secure building or shed;

When not in use, all fertilizers/nutrients will be stored under cover and in compliance with label instructions, within a secure nutrient materials storage shed located adjacent to the proposed cultivation area and more than 100 feet from the nearest surface water body.

Materials Safety Data Sheets (MSDS/SDS) for all fertilizers used by GSH will be stored within fertilizer materials storage area and available for personnel to reference at any time. Personnel will be trained on how to appropriately prepare and apply fertilizers/nutrients before being allowed to use them. When using/preparing fertilizers and other chemicals, personnel will be required to use personal protective equipment (PPE) consistent with the MSDS/SDS recommendations for the product they're using/preparing. PPE to be used by GSH staff include safety goggles, gloves, dust masks, boots, Tyvek suits, pants, and long-sleeved shirts.

c. Containing any fertilizer spills and immediately clean up any spills;

All fertilizers/nutrients will be stored in their manufacturer's original containers/packaging, within secondary containment structures (110% freeboard) to prevent possible exposure to the environment. Absorbent materials designed for spill containment and spill cleanup equipment will be maintained within the fertilizer materials storage area and adjacent to the fertilizers/nutrients mixing/preparation area, for use in the event of an accidental spill. If there is a spill or accidental discharge to any waters of the site, GSH personnel will immediately notify the Office of Emergency Services so that the local health officer can determine if actions are needed to protect public safety – HAZMAT SPILL NOTIFICATIONS 1 (800) 852-7550 or (916) 845-8911.

d. Applying the minimum amount of product necessary;

Nutrient solutions with nitrogen (N), phosphorus (P), and potassium (K) values, will be applied on an "as needed" basis for vegetative growth and overall plant health. GSH will apply irrigation water and nutrients at a rate not more than that which is necessary to satisfy the plants' evapotranspiration requirements and growth needs (Agronomic Rate). The agronomic rate considers allowances for supplemental water (e.g.,

effective precipitation), irrigation distribution uniformity, nutrients present in irrigation water, leaching requirement, and plant available nitrogen.

e. Preventing offsite drift;

All fertilizers/nutrients will be applied in a liquid or solid form directly to the growing medium; GSH does not use foliar (sprayed or atomized) nutrient/fertilizer materials; therefore, there will be no offsite drift potential from GSH operations.

f. Not spraying directly to surface water or allow fertilizer product to drift to surface water. Spray only when wind is blowing away from surface water bodies;

All fertilizers/nutrients will be applied in a liquid or solid form directly to the growing medium; GSH does not use foliar (sprayed or atomized) nutrient/fertilizer materials; therefore, there will be no offsite drift potential from GSH nutrient application operations.

g. Not applying fertilizer when they may reach surface water or groundwater; and

h. Nor using fertilizer within 100 feet of any spring, top of bank of any creek or seasonal stream, edge of lake, delineated wetland or vernal pool. For purposes of determining the edge of Clear Lake, the setback shall be measured from the full lake level of 7.79 feet on the Rumsey Gauge.

All fertilizers/nutrients will be mixed/prepared on an impermeable surface at least 150 feet from surface water resources and neighboring properties and will not be applied or allowed to drift offsite or within riparian setbacks (minimum 100 feet). Fertilizers/nutrients will not be applied at a rate greater than 319 pounds of nitrogen per acre per year (requirement of the State Water Resource Control Board's Cannabis General Order);

This section shall include a map of the parcel where the cultivation site is located showing any spring, top of bank of any creek or seasonal stream, edge of lake, delineated wetland or vernal pool on the lot of record of land or within 100 feet of the lot of record and a 100-foot setback from any identified spring, top of bank or any creek or seasonal stream, edge of lake, delineated wetland or vernal pool. This map shall include the location of where fertilizers will be stored and used.

Please see Figure3., Vicinity Surface and Groundwater Resources vs. Fertilizer Storage Location map attached to this section of the Property Management Plan.

A description what parameters will be monitored and the methodology of the monitoring program shall be included in this section.

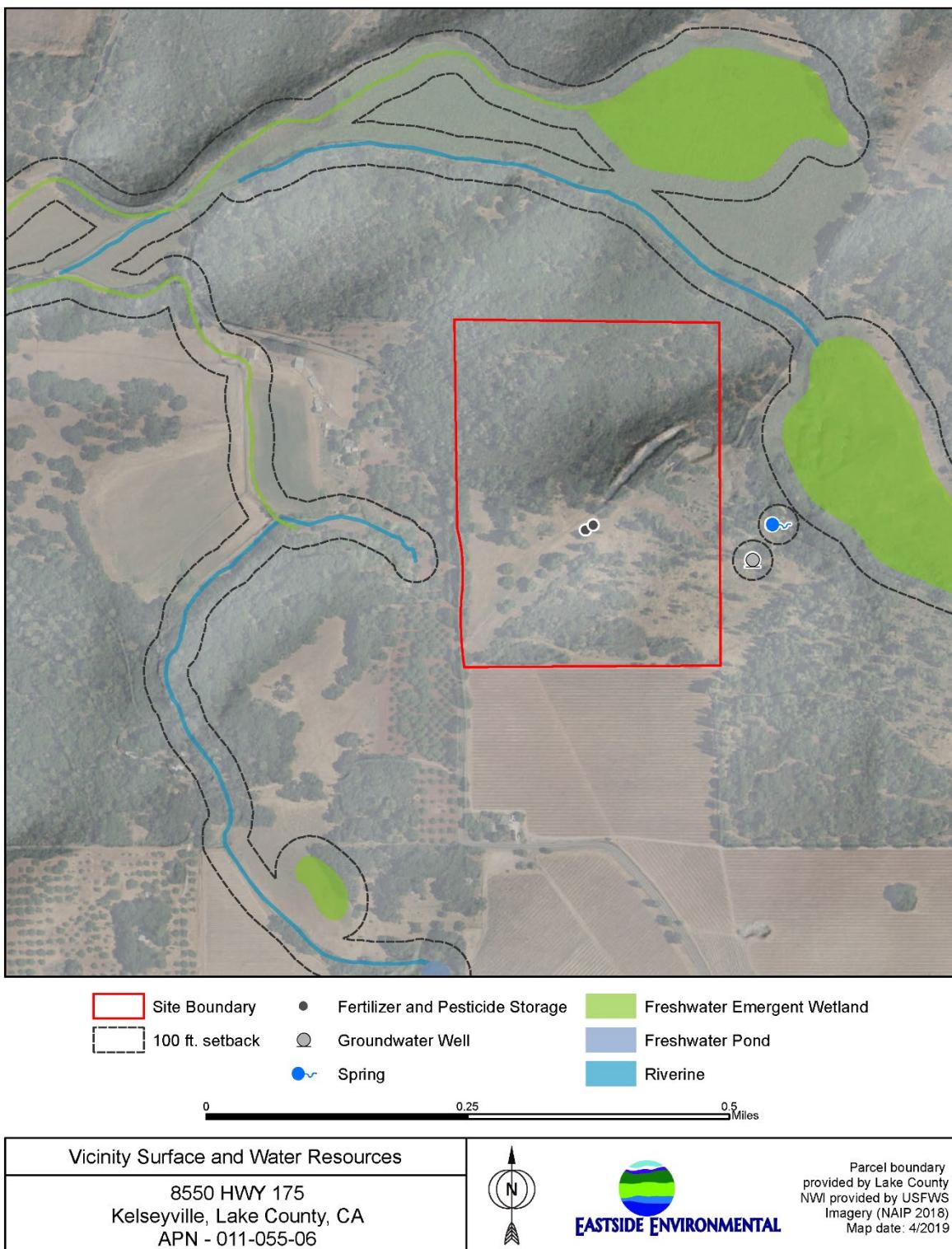
Parameters related to fertilizer usage that will be monitored by GSH personnel include plant health, nutrient uptake, and soil health. GSH will apply irrigation water and nutrients at a rate not more than that which is necessary to satisfy the plants' evapotranspiration requirements and growth needs (Agronomic Rate). The agronomic rate considers allowances for supplemental water (e.g., effective precipitation), irrigation distribution uniformity, nutrients present in irrigation water, leaching requirement, and plant available nitrogen.

GSH will utilize expert ocular observation and agricultural crop and soil testing to monitor plant health, nutrient uptake and soil health.

The State Water Resources Control Board-required Nitrogen Management Plan³ is included in the Appendix of this Property Management Plan.

³ Keesey, Crystal. Nitrogen Management Plan for a California Commercial Medical Cannabis Cultivation Facility. Eastside Environmental, Inc. Chico, CA. May 2018.

Figure 3. Vicinity Surface and Groundwater Resources vs. Fertilizer Storage Location, APN 011-055-06



SECTION 5. FISH AND WILDLIFE PROTECTION

Intent: To minimize adverse impacts on fish and wildlife.

GSH plans to locate the proposed cannabis cultivation operations entirely within the existing footprint of prior Article-72 permitted cultivation operations, and within the Stocking Vineyards vineyard blocks M, N, and O. These vineyard blocks were approved through a Lake County Complex Grading Permit process in October of 2018. The approval process of the vineyard blocks included thorough technical studies about the potential impact of cultivation operation and vineyard site development on fish and wildlife. The information regarding these potential impacts and the avoidance and protection measures to be implemented to reduce impacts to fish and wildlife, are included in the Biological Resources Assessment⁴ for the Stocking Vineyard, which is included in the Appendix of this Property Management Plan.

In this section permittees shall include:

a. A description of the fish and wildlife that are located on or utilize on a seasonal basis the lot of record where the permitted activity is located;

The parcel is utilized by common wildlife such as deer, coyote, fox, squirrels, racoons and other rodents, insects, small reptiles; raptors and passerines with non-sensitive status are likely to nest on the property due to the diverse woodland and forest habitats there, including red-tailed hawks, crows and ravens, Cooper's hawks, northern harriers, woodpeckers, yellow-breasted chats, and yellow warblers. According to the BRA for the Stocking Vineyards, the special status species with potential to occur on the Project parcel include Purple martin (in oak woodlands and pine forest), porcupine (in pine forest), and Pallid bat (in oak woodlands). These species were not located during field surveys, but due to habitat suitability and presence within 5 miles of the Project parcel (as documented California Natural Diversity Database [CNDDB]), these species could potentially utilize the project parcel.

Purple martin (Progne subis):

These migratory passerine (perching) birds prefer open, old growth, multilayered woodland with nearby water. Much is known about habitat preference in this species due to recent research. They are commonly found in riparian habitat, or valley foothill with montane hardwood or montane-hardwood-conifer habitats near water. Up to 70-percent of nests are in fire-killed firs and pines. Most tree nest sites are located in the upper slopes of hilly and mountainous terrain and Northwest Biosurvey staff has found this species in habitat meeting these requirements in the Geysers area of Lake and Napa Counties. There is a potential for purple martins to be present in the forests and remaining oak woodlands on the property, especially where snags remain.

North American porcupine (Erethizon dorsatum):

This species prefers conifer and hardwood forests and woodlands, but is also found in forested wetlands and chaparral. It uses downed logs and debris, as well as snags and tree hollows, as cover. The porcupine

⁴ Zalusky, Steve. Biological Resource Assessment for the Bryant Stocking Vineyard Project Kelseyville, Lake County, CA. Northwest Biosurvey. Kelseyville, CA. December 21, 2017.

breeds from September to November or December, giving birth in the spring. One offspring is reared a year. *E. dorsatum* is herbivorous; its diet consists of many parts of trees and other plants including bark, needles, flowers, roots, berries, leaves, and seeds. It is mostly nocturnal. The large amount of woody debris and other vegetation on the property may provide suitable habitat for porcupines. This species is listed in the CNDDB as “G5” (Global Secure) and “SNR” (Species not Rated-California). It is therefore not a species with sensitive regulatory status although its local accounts are included in the database.

Pallid bat (Antrozous pallidus):

This is a pale bat with a dog-like face. Optimal habitat for these bats consists of open, dry habitats with rocky areas, but the bats are also found in oak savanna grasslands, and in open forest and woodlands with access to riparian and open water for feeding and drinking in northern California. Foraging occurs over open country. These bats prefer the cool summer temperatures of caves, crevices, and mines as roosting sites where they are known to wedge themselves into small spaces; they will also roost in buildings, bridges, and hollow trees. Preferred roosts are high above the ground and inaccessible to terrestrial predators, although they are occasionally found roosting on the ground underneath sacks and other items left by humans.

Pallid bats take a variety of prey, including insects, reptiles, and rodents. Maternity colonies tend to be in the more protected, isolated locations and may consist of more than 100 individuals. The bats have a home range of 1 to 3 miles and are known to roost with other bat species. This species of bat does not migrate long distances between seasons. This species is extremely sensitive to human disturbance of roosting sites. Populations in California have declined due to habitat destruction and use of pesticides. There is a potential for pallid bats or other bat species to roost in the woodlands, especially if there are ponds in the vicinity of the property.

b. A description of the habitats found on the lot of record. These habitats shall be located on a map;

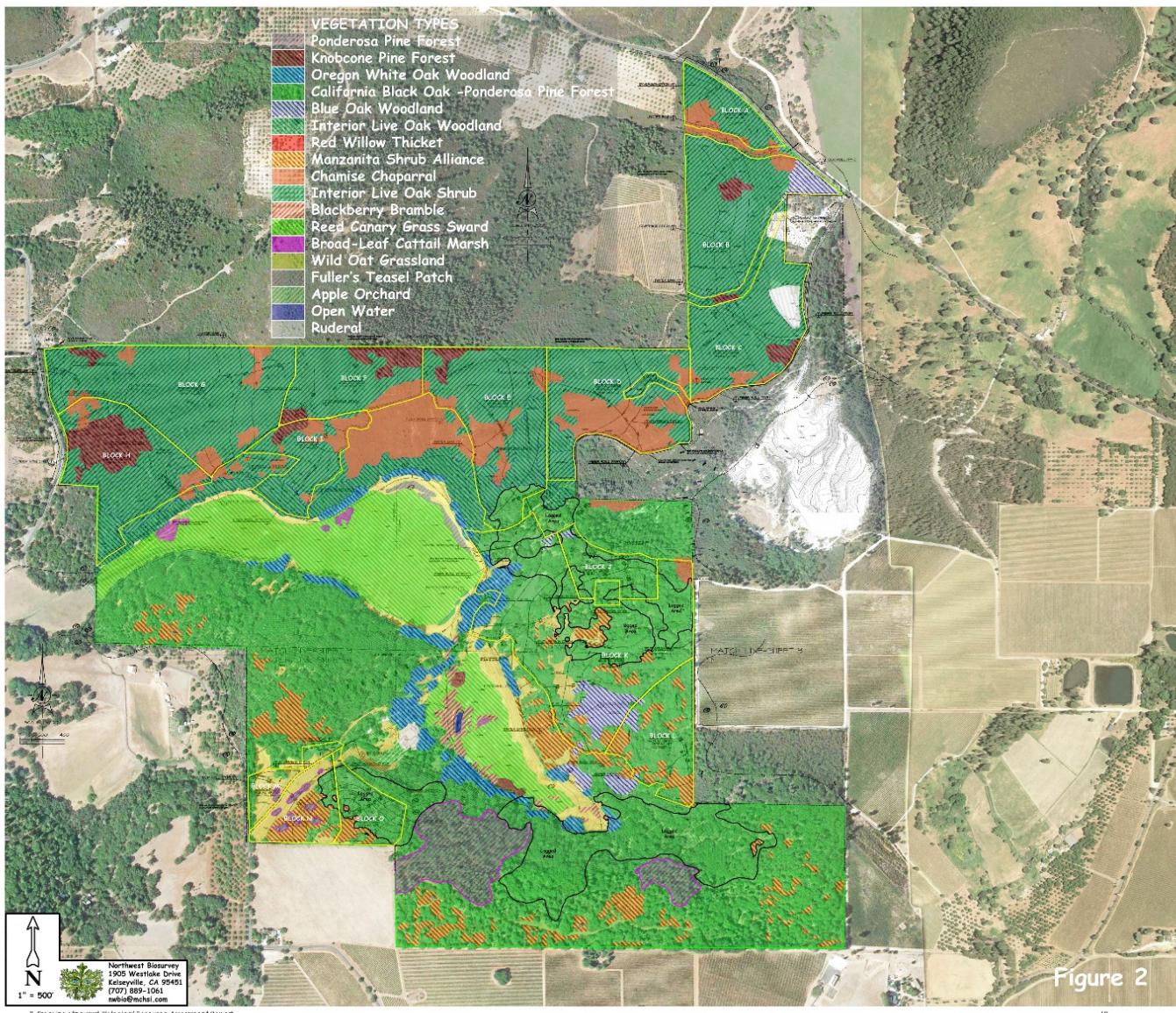
Figure 4. Habitat Descriptions of Stocking Vineyard Project

TABLE 1. VEGETATION TYPES OF THE STOCKING VINEYARD PROJECT

COVER TYPE	Total Acres of Cover Type	Cover Type Percent of Total Property	Acres of Cover Type in Each Block														Acres of Cover Type In all Blocks	Percent of Cover Type In all Blocks	
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		
Ponderosa Pine Forest	19.29	3.02													0.16	0.97		1.13	5.86
Knobcone Pine Forest	13.75	2.16		0.92	1.00			3.02	0.60	6.04	0.76							12.34	89.75
Oregon White Oak Woodland	15.23	2.39											2.15					2.15	14.12
California Black Oak-Ponderosa Pine Forest	186.93	29.31										2.06	22.56	10.26	1.56	1.34	0.62	38.40	20.54
Blue Oak Woodland	8.30	1.30		1.86								0.01	3.73	0.52				6.12	73.73
Interior Live Oak Woodland	24.38	3.82				1.22	6.46			2.16	2.12		0.17					12.13	49.75
Red Willow Thicket	0.76	0.12																0.00	0.00
Manzanita Shrub Alliance	29.67	4.65											3.52	3.49	3.07	1.03		11.11	37.45
Chamise Chaparral	40.76	6.39	1.46	0.62	1.30	9.58	4.61	1.53	3.18	1.65	2.60		0.58					27.11	66.51
Interior Live Oak Shrub	145.13	22.75	6.11	20.59	17.38	15.33	14.70	11.05	33.19	12.59	5.86							136.80	94.26
Blackberry Bramble	3.61	0.57																0.00	0.00
Reed Canary Grass Sward	54.80	8.59																0.00	0.00
Broadleaf Cattail Marsh	1.40	0.22																0.00	0.00
Wild Oat Grassland	26.21	4.11											2.97		2.49	2.78	0.16	8.40	32.05
Fuller's Teasel Patch	1.52	0.24																0.00	0.00
Apple Orchard	0.67	0.11																0.00	0.00
Open Water	0.15	0.02																0.00	0.00
Logged Area	61.78	9.69					2.30					5.40	15.55		0.97	5.57		29.79	48.22
Ruderal (Disturbed Areas)	3.42	0.54			2.18													2.18	63.74
Total Acres of Cover Type	637.76	100.00	7.57	23.99	21.86	26.13	28.07	15.60	36.97	22.44	11.34	7.47	51.23	14.27	4.21	9.13	7.38	287.66	45.10*

* Last cell equals percent of property (all cover types) within vineyard blocks

Figure 5. Habitat Map of Stocking Vineyard Project



Ponderosa Pine Forest:

Ponderosa pine is a subdominant member of the California black oak-ponderosa pine community throughout the southern half of the property. However, on the most densely shaded north-facing slopes ponderosa pine (*Pinus ponderosa*) provides the dominant tree cover. The edges of these pine forests transition into California Black Oak-Ponderosa Pine Forest. The shrub and ground cover layers are the same as those found in the latter community.

California Black Oak-Ponderosa Pine Forest:

North-facing slopes throughout the property support mature Black Oak-Ponderosa Pine Forest. The tree canopy cover is typically 70%. The subcanopy includes Pacific madrone (*Arbutus menziesii*), interior live oak trees (*Quercus wislizeni* var. *wislizeni*), and California bay (*Umbellularia californica*).

The shrub layer within this community is a mix of common and white-leaf common manzanitas (*Arctostaphylos manzanita* ssp. *manzanita*, *A. m.* ssp. *glaucescens*), birch-leaf mountain mahogany (*Cercocarpus betuloides* var. *betuloides*), and coyotebrush (*Baccharis pilularis*), along with dense thickets of poison oak (*Toxicodendron diversilobum*). California fescue (*Festuca californica*), hedgehog dogtail, field hedge parsley (*Torilis arvensis*), and blue wildrye (*Elymus glaucus* ssp. *glaucus*) make up much of the ground cover.

Common Manzanita Shrub:

Several manzanita species occur as the shrub layer throughout the woodland and forest communities on the property; however, in a number of more-exposed locations, or where the tree canopy is open enough to allow it, common manzanita occurs as the dominant member of a distinct shrub community including a mix of other manzanitas and shrubs. These include white-leaf common manzanita, hoary manzanita (*Arctostaphylos canescens* ssp. *canescens*), Stanford manzanita (*Arctostaphylos stanfordiana* ssp. *stanfordiana*), toyon (*Heteromeles arbutifolia*), birch-leaf mountain mahogany, poison oak, and shrubby interior live oak. The canopy is too dense to support a ground cover layer other than leaf litter. Stanford manzanita occurs in the most xeric (dry soil) sites.

Wild Oat Grassland:

Wild Oat Grassland occurs within woodland openings throughout the property. It also provides the dominant ground cover within most woodland and forest habitats. Grasses include (but are not limited to) slender wild oat, hedgehog dogtail, silver European hairgrass, red brome (*Bromus madritensis* ssp. *rubens*), poverty brome (*Bromus sterilis*), California fescue, and blue wild rye. Bowl-tubed iris (*Iris macrosiphon*), blue dicks (*Dichelostemma capitatum* ssp. *capitatum*), and baby blue eyes (*Nemophila menziesii*) are more common forbs beneath forest and woodland canopy.

Logged Areas:

Between 2013 and the present, extensive logging of oaks has occurred primarily within the California Black Oak-Ponderosa Pine Forest community. Within these areas (shown in black outline in Figure 2), all oaks

have been removed while scattered ponderosa pines remain. The logged area within vineyard Blocks N and O encompasses 6.54 acres.

c. A description of the watershed in which the permitted activity is located. A map shall be provided showing the full watershed;

There are no jurisdictional water courses or crossings on the Project parcel. The headwaters of McIntyre Creek, a perennial Class II watercourse, is also located on the parcel to the immediate east of the Project parcel, about 425 feet from the closest portion of the proposed cultivation area on the Project parcel. McIntyre Creek is a tributary of Cache Creek and considered part of the Cole Creek watershed. Please see **Figure 6.**, Hydrologic Unit Classification 12 of Project Property.

d. Describe how the permittee will minimize adverse impacts on the fish and wildlife;

Because the cultivation area footprint is fully located within the existing Article 72-approved cultivation area and also within the Lake County-approved vineyard blocks, impacts to fish and wildlife are minimized by following the conditions of the Complex Grading permit:

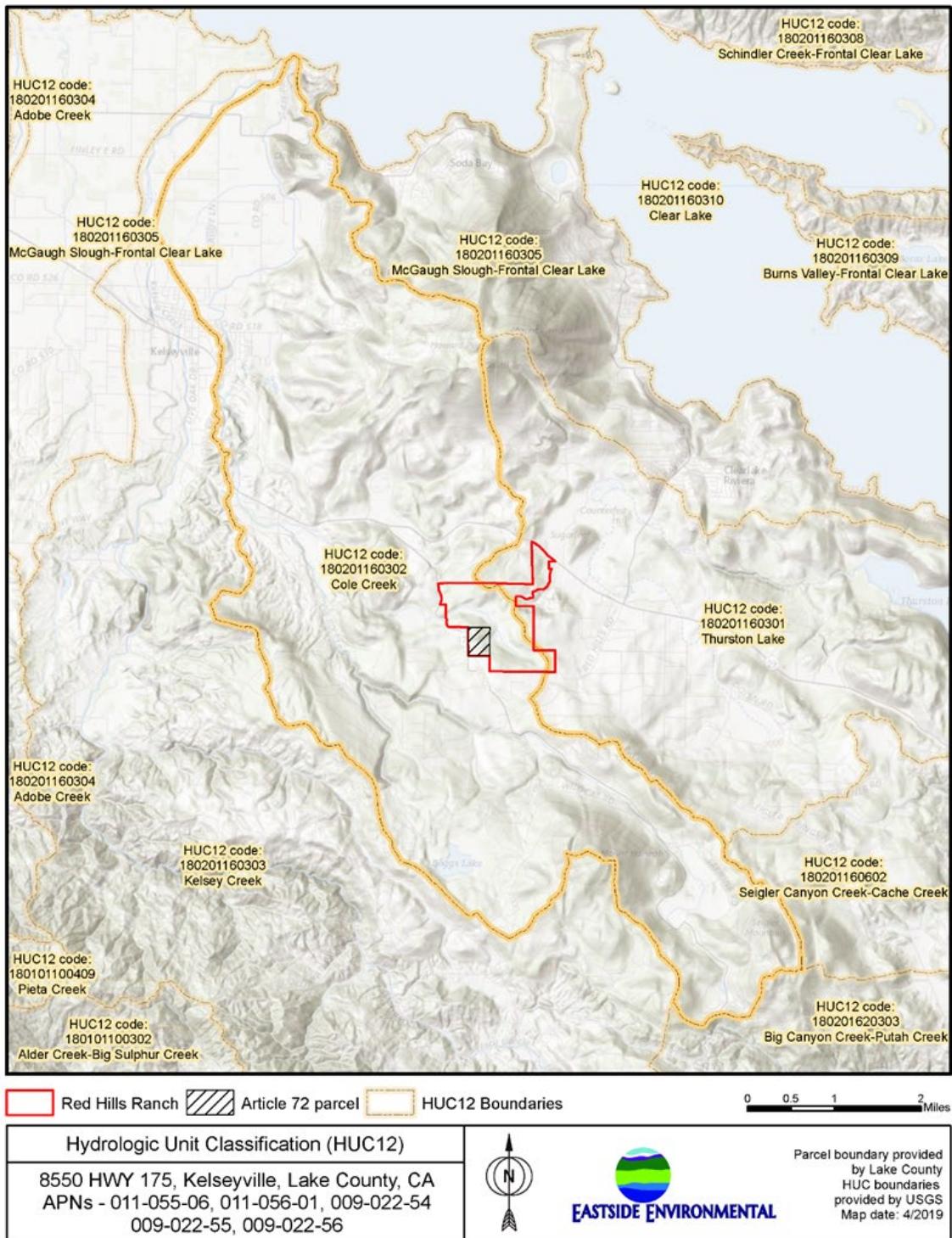
A. Biological Resources Mitigation Measures:

- BIO-1. Any vegetation clearing or grading within 200 feet of woodland habitat between February 15 and August 31 shall be preceded by a survey for nests of purple martin, raptors, and migratory birds conducted by a qualified biologist. In the event that active nests of these species are found, appropriate breeding season construction buffer shall be established and construction within these buffers should be delayed until after August 31, or until fledging is completed as determined by a qualified biologist. As an alternative, trees approved for removal shall be felled outside of the breeding season.
- BIO-2. If work is proposed within woodland habitat during the maternity roosting season (April 1 through September 15), trees with features capable of supporting roosting bats shall be surveyed by a qualified biologist for bat roosts or evidence of bat roosting (guano, urine staining, dead bats) within 14 days of the start of project activities or removal of vegetation. If active roosts are discovered, an exclusion buffer shall be established around the active roost by a qualified bat biologist. Removal of trees and ground-disturbing activities should be performed to the extent possible from September 16 through March 31, outside of the maternity roosting season. Following the felling of any tree or snag, the tree or snag shall be allowed to remain on the ground for 24 hours prior to chipping or removal to allow any bats to escape.
- BIO-3. Use of wildlife exclusion fencing shall be restricted to the planted vineyard areas and sufficient surrounding strip to allow turning of equipment. No fencing should be constructed along roadways or property boundaries. All fencing that is placed around the planted areas shall have gates at either end of the vineyard to allow trapped wildlife to escape.

e. A map showing the location of any conservation easements or wildlife corridors proposed.

No proposed conservation easements or wildlife corridors on the Project parcel.

Figure 6. Hydrologic Unit Classification 12 of Project Property



SECTION 6. OPERATIONS MANUAL

Intent: To describe the operating procedures of the commercial cannabis cultivation site to ensure compliance with all permits, protect the public health, safety and welfare, as well as the natural environment of Lake County.

This section shall include the following:

a. Authorization for the County, its agents, and employees, to see verification of the information contained within the development permit or use permit applications, the Operations Manual, and the Operating Standards at any time before or after development or use permits are issued;

GSH. authorizes the County of Lake, its agents, and employees, to seek verification of the information contained within the Use Permit Applications package, the Operations Manual, and the Operating Standards for the proposed cannabis cultivation operation at 8550 Hwy 175, Kelseyville, CA at any time before or after Use Permits are issued. All information contained in the Use Permit applications package is currently available for viewing; and will remain viewable in a physical and digital format given to the County of Lake and its agents/employees; copies will be maintained at the Project site.

b. A description of the staff screening processes;

All GSH employees must undergo a background check by the Lake County Sheriff's Department before starting employment. GSH will not employ individuals that have convictions of an offense that is substantially related to the qualifications, functions, or duties of the proposed cultivation operation, unless the Lake County Sheriff determines that the individual would not compromise the operation or public safety after a thorough review of the crime, conviction, circumstances, and evidence of rehabilitation. All staff must be a United States citizen or eligible for employment within the US.

c. The hours and days of the week when the facility will be open;

Main operating/business hours for GSH commercial cannabis operations are from 8am to 6pm, with deliveries and pick-ups restricted to 9am to 5pm, Monday through Saturday. At least one member of GSH's staff will be onsite twenty-four (24) hours a day and seven (7) days a week for security purposes throughout the cultivation season, from approximately April through November. GSH's proposed cultivation operation will be closed to the public.

d. Description of measures taken to minimize or offset the carbon footprint from operational activities;

GSH believes that the most sustainable farming of cannabis occurs outdoors with sunlight; plants grown in such a manner sequester carbon naturally. GSH is committed to growing full spectrum cannabis with as little power usage and fossil fuels as possible. Equipment necessary to the farming operations that require grid power or fossil fuels will be regularly maintained to assure efficient energy usage and will adhere to all applicable emissions standards.

e. Description of chemicals stored, used and any effluent discharged as a result of operational activities;

Chemicals stored: nutrients/fertilizers, pesticides, petroleum products. No effluent will be discharged on the Project parcel as a result of commercial cannabis activities.

f. The permittee shall establish and implement written procedures to ensure that the grounds of the premises controlled by the permittee are kept in a condition that prevents the contamination of components and cannabis products. The methods for adequate maintenance of the grounds shall include at minimum:

i. The proper storage of equipment, removal of litter and waste, and cutting of weeds or grass so that the premises shall not constitute an attractant, breeding place, or harborage for pests.

All GSH equipment will be stored in its proper designated area upon completion of the task for which the equipment was needed. GSH personnel will conduct daily scans of the site to ensure that all materials used during the work day have been returned to their designated storage area in an organized manner.

Any refuse created during the work day will be placed in the proper waste disposal receptacle upon completion of the task assigned, or before the end of employee shift. Any refuse which poses a risk for contamination or personal injury shall be disposed of immediately. GSH's site will be mowed and trimmed regularly to ensure safe and sanitary working conditions and minimize areas for pests.

ii. The proper maintenance of roads, yards, and parking lots so that these areas shall not constitute a source of contamination in areas where cannabis products are handled or transported.

Access roads, staging areas and parking areas will have gravel to keep down dust, avoid potential soil-borne contamination, reduce harborage of pests, and maintain the cleanliness of the facility.

iii. The provision of adequate draining areas in order to prevent contamination by seepage, foot-borne filth, or the breeding of pests due to unsanitary conditions.

The Project site does not contain any topographic areas or soils that have drainage issues; the majority of the Project is located on 5-20% slopes; the proposed commercial cannabis cultivation areas utilize existing ranch infrastructure (road, vineyard and pad grading with proper drainage and erosion control).

iv. The provision and maintenance of waste treatment systems so as to prevent contamination in areas where cannabis products may be exposed to such a system's waste or waste by-products.

A portable toilet and handwashing station will be established in reasonable proximity to the proposed cultivation area, will be serviced regularly to maintain sanitary conditions for operations personnel, and will be available at all times during the cultivation season for use. In addition, the residence on the Project parcel contains bathroom facilities and a septic system.

If the lot of record is bordered by grounds outside the applicant's control that are not maintained in the manner described in subsections (i) through (iv) of this section, inspection, extermination, and other reasonable care shall be exercised within the lot of record in order to eliminate any pests, dirt, and/or filth that pose a source of cannabis product contamination.

SECTION 7. PEST MANAGEMENT

Intent: To ensure consistency of pest management with the other sections of the Property Management Plan.

GSH's pest management practices are primarily preventative, via an integrated ecosystem-based approach that uses a combination of techniques such as beneficial insects and beneficial fungi, horticultural oils, intercropping, and the use of pest resistant varieties/strains. GSH conducts daily pest monitoring to prevent pest outbreaks.

This section shall describe how cultivation and nursery permittees will comply with the following pesticide application and storage protocols:

a. Complying with the California Food and Agriculture Code, Division 6 Pest Control Operations and Division 7 Agriculture Chemical; Chapter 1-3.6 and California Code of Regulations, Division 6 Pest Control Operations.

Cannabis cultivators using pesticides in the production of cannabis for commercial purposes must obtain an Operator Identification Number (OID) from their County's Department of Agriculture. GSH Owner Andrew Greer has obtained an OID from Lake County Ag Department (OID# 17-18-1700644) and a State of CA Private Applicator Certificate PA0500568.

Pesticide Use Reports (PURs) must be submitted for any pesticide requiring reporting as determined by the US Department of Agriculture (USDA) and the California Department of Pesticide Regulation (CDPR). PURs are required to be submitted by the 10th day of the month following the month in which the work was performed. PURs can be submitted either electronically through the CalAg Permits website or by using the appropriate paper form.

GSH will only use pesticides approved by the California Department of Food and Agriculture (CDFA) and the California Department of Pesticide Regulation (CDPR) for use on cannabis plants. GSH will only apply pesticides at a rate consistent with pesticide label directions and will adhere to all State and County pesticide use reporting requirements.

GSH personnel who are involved in the application or handling of pesticides must first complete Pesticide Handler safety training as described in 40 Code of Federal Regulations, Section 170.230. Personnel will be trained how to appropriately prepare and apply pesticides before being allowed to use them. Each employee training record will be verified by the employee's signature, and a copy of this record will be maintained on-site.

Personnel will be required to wear personal protective equipment (PPE) consistent with the MSDS requirements for the product being used. Only GSH's trained pesticide applicator(s) will handle, mix, prepare, and apply pesticides at the proposed cultivation operation. PPE will be required (as per label) for GSH's trained pesticide applicators including:

- Dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95;
- Long-sleeved shirt and long pants;
- Waterproof gloves; and
- Shoes plus socks.

- Tyvek suit
- Goggles

b. Complying with all pesticide label directions

All pesticide product labels will be followed, including precautionary statements for protecting human and environmental health, storage and disposal statements, and directions for use. By law, all pesticide applicators must follow these statements. GSH will follow the agricultural use requirements including method of application, restricted entry interval, personal protective equipment, and pre-harvest interval.

c. Storing chemicals in a secure building or shed to prevent access by wildlife;

When not in use, all pesticides will be stored under cover and in compliance with label instructions, within a secure pesticide materials storage shed located adjacent to the proposed cultivation area and more than 100 feet from the nearest surface water body.

d. Containing any chemical leaks and immediately clean up any spills;

All pesticides will be stored in their manufacturer's original containers/packaging, within secondary containment structures (110% freeboard) to prevent possible exposure to the environment. Absorbent materials designed for spill containment and spill cleanup equipment will be maintained within the pesticide materials storage area and adjacent to the pesticide mixing/preparation area, for use in the event of an accidental spill. If there is a spill or accidental discharge to any waters of the site, GSH personnel will immediately notify the Office of Emergency Services so that the local health officer can determine if actions are needed to protect public safety – HAZMAT SPILL NOTIFICATIONS 1 (800) 852-7550 or (916) 845-8911.

e. Preventing offsite drift;

No pesticides will be applied during windy days or within 100 feet of neighboring parcels.

f. Not applying pesticides when pollinators are present;

GSH will only apply pesticides in the evening hours, to protect honey bees and other pollinating/beneficial insects that primarily forage during daylight hours, then return to their hives and/or become less active in the evenings as the sun begins to set.

g. Not allowing drift to flowering plants attractive to pollinators;

Pesticides will not be applied or allowed to drift onto flowering plants and pollinators during periods when pollinators are present around the proposed cultivation area.

h. Not spraying directly to surface water or allow pesticide product to drift to surface water. Spray only when wind is blowing away from surface water bodies;

i. Not applying pesticides when they may reach surface water or groundwater;

All pesticides will be mixed/prepared on an impermeable surface at least 100 feet from surface water resources and neighboring properties and will not be applied or allowed to drift offsite or within riparian setbacks (minimum 100 feet). No pesticides will be applied within 48 hours of a predicted rainfall event

greater than 0.25 inches (requirement of the State Water Resource Control Board's Cannabis General Order).

j. Using only properly labeled pesticides;

GSH will only used pesticides that are properly labeled and authorized by CDFA for use on cannabis.

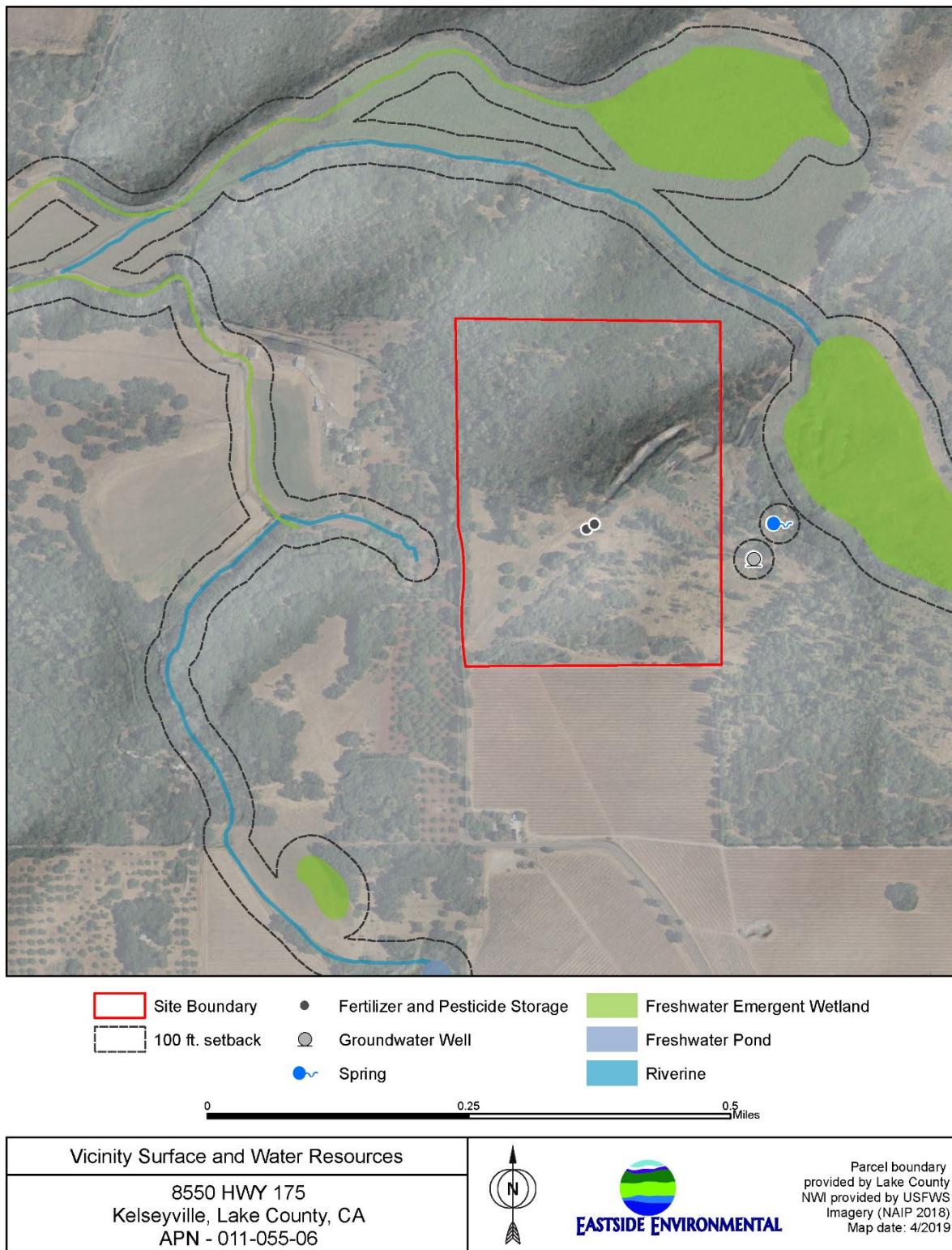
k. Not using pesticides within 100 feet of any spring, top of bank of any creek or seasonal stream, edge of lake, delineated wetland or vernal pool. For purposes of determining the edge of Clear Lake, the setback shall be measured from the full lake level or 7.79 feet on the Rumsey Gauge.

All pesticides will be mixed/prepared on an impermeable surface at least 100 feet from surface water resources and neighboring properties and will not be applied or allowed to drift offsite or within riparian setbacks (minimum 100 feet). No pesticides will be applied within 48 hours of a predicted rainfall event greater than 0.25 inches (requirement of the State Water Resource Control Board's Cannabis General Order).

This section shall include a map of any spring, top of bank of any creek or seasonal stream, edge of lake, delineated wetland or vernal pool on the lot of record of land or within 100 feet of the lot of record and a 100-foot setback from any identified spring, top of bank or any creek or seasonal stream, edge of lake, delineated wetland or vernal pool. This map shall include the location of where pesticides will be stored and used.

Please see **Figure 7.**, Vicinity Surface and Groundwater Resources vs. Pesticide Storage Location map attached to this section of the Property Management Plan.

Figure 7. Vicinity Surface and Groundwater Resources vs. Pesticide Storage Location, APN 011-055-06



SECTION 8. SECURITY

Intent: To minimize criminal activity, provide for safe and secure working environments, protect private property, and to prevent damage to the environment. The Applicant shall provide adequate security on the premises, as approved by the Sheriff and pursuant to this section, including lighting and alarms, to ensure the safety of persons and to protect the premises from theft.

This section shall include at a minimum a description of the security measures to be taken to:

- a. Prevent access to the cultivation site by unauthorized personnel and protect the physical safety of employees. This includes, but is not limited to:

- Description of fences:

Fences around the perimeter of the cultivation areas will be 6' tall fence with wood posts on a maximum of 10-foot centers, wood top rail, wound-wire deer fencing between the posts. The cultivation site will be screened from public view by topographic barriers. Lockable entry gates, large enough to allow farming equipment to pass, will be installed at each distinct cultivation area. In addition, the sides of the cultivation areas closest to the Property access road will be planted with a hedgerow to reduce visibility of the cultivation areas and to reduce any potential dust contamination in the cultivation area as a result of vehicular traffic.

- Establishing physical barriers to secure perimeter access and all points of entry (such as locking primary entrances with commercial-grade, non-residential door locks, or providing fencing around the grounds, driveway, and any secondary entrances including windows, roofs, or ventilation systems);
 - Installing a security alarm system to notify and record incident(s) where physical barriers have been breached;

The main gate to the property will be composed of a steel and will be reinforced with concrete to include posts buried in the ground no less than 3' to absorb most attempts to breach the gate by mechanical means.

The Main gate access from highway will have industrial grade tamper resistant locks. All outer gates locks will be incased in a steel cover so exposure to the lock is limited. The steel cover is in place to prevent impact damage and to limit mechanical tampering. Gate will be constructed to withstand a large vehicle impact.

Large pine trees that were removed from the property for vineyard development will be laid on their side and placed along the HWY 175 property perimeter to prevent motor vehicle access.

Motion-sensing alarms will be installed at the main entrance to the Project Property, to alert personnel when someone/something has entered onto the premises. Motion detectors are to employ dual technology (PIR and Microwave), have tamper detection, and shall report and alarm or trouble if masked. Motion-sensing security lights will be installed on all external corners of the proposed cultivation area, the processing/storage area and at the main entrance to the Project Property. All lighting will be fully shielded, downward casting and will not spill over onto other properties or the night sky.

The entire security system shall be managed by a centralized security station, to be located within the Property residence. This system will be keypad enabled, and capable of having multiple user codes and levels of authority, and capable of accepting a duress code at key pad level. System shall be capable of reporting opening and closing events by individual user ID. The system will be capable of providing text (SMS) or email messages to emergency contacts and include 48 hours of battery backup, have tamper protection and be equipped with a siren and notification ability (complying with any local alarm ordinances) should the system be compromised.

- **Establishing an identification and sign-in/sign-out procedure for authorized personnel, suppliers, and/or visitors;**

GSH already maintains an Activity Log for any personnel, suppliers or visitors to the cultivation premises. This log includes the name, company, purpose, time-in and time-out of the attendance event. GSH personnel have identification badges, and any visitor to the site will wear a Visitor Badge after signing in on the Activity Log.

- **Maintaining the premises such that visibility and security monitoring of the premises is possible;**

A 100-foot defensible space (vegetation management) will be established and maintained around the proposed cultivation operation for fire protection and to provide for visibility and security monitoring.

- **Establishing procedures for the investigation of suspicious activities:**

Upon discovery of suspicious activities, GSH personnel shall immediately notify GSH management. Management will investigate the suspicious activity incident; if it is determined that the suspicious activity cannot be handled administratively or constitutes a violation of any California law, the incident will be referred to the appropriate law enforcement agency for investigation. All investigation documentation will be kept on file for a minimum of 7 years.

b. Prevent theft or loss of cannabis and cannabis products. This includes but is not limited to:

- **Establishing an inventory system to track cannabis material and the personnel responsible for processing it throughout the cultivation process;**

As a state-licensed cultivation operation, GSH is required to participate in the state Track & Trace inventory accounting system. The owners of GSH are responsible for tracking cannabis materials through

the cultivation process. This accounting system will be made available to relevant local and state agencies who wish to review the documentation.

- **Limiting access of personnel within the premises to those areas necessary to complete job duties, and to those time-frames specifically scheduled for completion of job duties;**

Currently GSH only employs the owners of the business; only business owners will have access to the cultivation premises and storage areas. Any vendor that comes on site will be accompanied by a GSH owner for the duration of their duties/deliveries/tasks within the cultivation premises. Access to non-owners will be restricted to standard working hours (8-6 pm, Monday through Sunday).

- **Supervising tasks or processes with high potential for diversion (including the loading and unloading of cannabis transportation vehicles);**

GSH is also holds a state provisional license for distribution; the license originates in the City of Shasta Lake, CA. All wholesale off-site transfers will be handled by GSH Distribution. GSH follows all state and local regulations for distributing cannabis and cannabis products throughout the licensed supply chain. Any on-site harvesting, drying, processing and/or packaging will be supervised by a GSH owner.

- **Providing designated areas in which personnel may store and access personal items.**

Personnel will have a designated storage area within the property residence to store and access personal items.

Identification of emergency contact(s) that is/are available 24 hours/seven (7) days a week including holidays. This section shall include the name, phone number and facsimile number or email address of an individual working on the commercial cultivation premises, to whom notice of problems associated with the operation of the commercial cultivation establishment can be provided.

GSH Community Liaisons/Emergency Contacts:

Crystal Keesey: 530-249-0845, goldenstateherb@gmail.com

Andrew Greer: 530-570-9327; goldenstateherb@gmail.com

Sean Hummer: 530-570-0549; hummerengineering@gmail.com

GSH shall keep emergency contact information current at all times. The applicant shall make every good faith effort to encourage neighborhood residents to call this designated person to resolve operating problems, if any, before any calls or complaints are made to the County.

This section shall include a description of procedures on receiving complaints, responding to the complaints, maintaining records of all complaints and resolution of complaints, and providing a tally and summary of issues the annual Performance Review Report.

GSH's Community Liaison/Emergency Contact information will be made available to Lake County Officials/Staff and the Lake County Sheriff's Office to address any needs or issues that may arise. GSH will provide the name, cell phone number, and email address of the Community Liaison/Emergency Contact to all interested County Departments, Law Enforcement Officials, and neighboring property owners and residents.

If a complaint is received, the GSH Community Liaison/Emergency Contact will document the complainant and the reason for the complaint, then take action to resolve the issue (see the Odor Response Program in the Air Quality section of this Property Management Plan for odor related complaints/issues). The GSH Annual Performance Review Report will include a tally and summary of any complaints received about the cultivation operations, and the outcome/resolution of those complaints.

d. A description of the required video surveillance.

GSH will use a closed-circuit television (CCTV) system with a minimum camera resolution of 1080p to record activity at:

- The perimeter of the cannabis cultivation site;
- Areas where cannabis or cannabis products are weighed, packed, stored, quarantined, loaded and/or unloaded for transportation, prepared, or moved within the premises;
- Areas where cannabis is destroyed;
- Limited-access areas;
- Security rooms;
- Areas containing surveillance-system storage devices, in which case, at least one camera shall record the access points to such an area; and
- The interior and exterior of all entrances and exits to the cannabis cultivation sites and cannabis nursery including all buildings where cannabis or cannabis products are weighed, packed, stored, quarantined, loaded and/or unloaded for transportation, prepared, or moved within the premises.

The video surveillance system will have the capability to record activity in any lighting conditions, 24 hours a day with a minimum of 30 frames per second. The CCTV system will be managed in the proposed Office/Security Center within the Property residence.

The CCTV system will be remotely accessible by GSH management and will be equipped with a failure notification system that immediately notifies management of any interruptions or failures. All recordings will be kept a minimum of 90 days, and 7 years for any corresponding reported incidents recorded by the system.

Proposed camera placements can be found on the Security Site Plan of this Property Management Plan.

e. A description of the required fences.

Fences around the perimeter of the cultivation areas will be 6' tall fence with wood posts on a maximum of 10-foot centers, wood top rail, wound-wire deer fencing between the posts. The cultivation site will be screened from public view by topographic barriers. Lockable entry gates, large enough to allow farming equipment to pass, will be installed at each distinct cultivation area. In addition, the sides of the cultivation areas closest to the Property access road will be planted with a hedgerow to reduce visibility of the cultivation areas and to reduce any potential dust contamination in the cultivation area as a result of vehicular traffic.

SECTION 9. STORMWATER MANAGEMENT

Intent: To protect the water quality of the surface water and the stormwater management systems managed by Lake County and to evaluate the impact on downstream property owners.

This section shall include at a minimum:

- a. Provide written and graphic representation of how storm water runoff will be managed to protect downstream receiving water bodies from water quality degradation.**

The entire cultivation operations are to be located within the existing Article 72 cannabis cultivation site (currently covered under the State Water Resources Control Board's Waste Discharge Permit Program), and within the Lake County-approved vineyard blocks for the Stocking Vineyard Project. A requirement of this complex grading permit is a comprehensive erosion control plan designed to protect downstream receiving water bodies from water quality degradation. The erosion control plan for the Stocking Vineyard and the SWRCB Site Management Plan are included as an attachment to this section of the GSH Property Management Plan; both serve as the management guidelines for storm water runoff management for GSH cultivation operations on the Project property.

- b. Provide written and graphic representation of how the applicant will comply with the California State Water Board, the Central Valley Regional Water Quality Control Board, and the North Coast Region Water Quality Control Board orders, regulations, and procedures as appropriate.**

GSH obtained waste discharge permit coverage from the SWRCB for the cannabis cultivation operations on the Project property on January 25, 2018; Notice of Applicability (NOA) Waste Discharge Identification (WDID) number is 5S17CC400108. See Figure 8., CVRWQCB Notice of Applicability, Water Quality Order WQ-2017-0023-DWQ included in this section of the Property Management Plan; the accompanying Site Management Plan⁵ is included as an attachment in the Appendix of this GSH Property Management Plan.

- c. Provide written and graphic representation showing the outdoor cultivation, including any topsoil, pesticide or fertilizers used for the cultivation cannabis shall not be located within 100 feet of any spring, top of bank of any creek or seasonal stream, edge of lake, delineated wetland or vernal pool.**

Please refer to attached National Hydrography Dataset (NHD) and National Wetlands Inventory (NWI) maps of the Project property; no cultivation operations are located within 100 feet of any spring, top of bank of any creek or seasonal stream, edge of lake, delineated wetland or vernal pool.

- d. Provide written discussion describing how the illicit discharges of irrigation or storm water from the premises, as defined in Title 40 of the Code of Federal Regulations, Section 122.26, which could result in degradation of water quality of any water body will be prevented.**

⁵ Keesey, Crystal. Site Management Plan for a California Commercial Medical Cannabis Cultivation Facility, 8551 HWY 175, Kelseyville, CA 95451. Eastside Environmental, Inc. Chico, CA. April 2018.

By implementing the Best Practicable Treatment and Control (BPTC) measures defined in the SWRCB Site Management Plan for the Project property, there will be no illicit discharges of irrigation or storm water from the premises; the SMP insures that water quality of nearby water bodies will be protected.

e. Identify of any Lake County maintained drainage or conveyance system that the stormwater is discharged into and documentation that the stormwater discharge is in compliance with the design parameters of those structures.

The proposed project does not discharge stormwater into any Lake County maintained drainage or conveyance system.

f. Identify of any public roads and bridges that are downstream of the discharge point and documentation that the stormwater discharge is in compliance with the design parameters of any such bridges.

The proposed project does not have a stormwater discharge point; no downstream roads or bridges will be affected by the cultivation operations.

g. Provide documentation that the discharge of stormwater from the site will not increase the volume of water that historically has flow onto adjacent properties.

No offsite stormwater discharge will occur as a result of the cultivation operations. The BPTCs of the Project Site Management Plan and Erosion Control Plan are designed to ensure that stormwater runoff is managed on-site and will not increase the volume of water that historically has flowed onto adjacent properties.

h. Provide documentation that the discharge of stormwater will not increase flood elevations downstream of the discharge point.

As indicated within the Project SWRCB Site Management Plan and Stocking Vineyard Erosion Control Plan, there is no stormwater discharge point within the Project operations; all stormwater discharge will be contained within the Project parcel.

i. Provide documentation of compliance with the requirements of Chapter 29, Storm Water Management Ordinance of the Lake County Ordinance Code.

The stormwater management measures outlined within the SWRCB Site Management Plan and Vineyard Erosion Control Plan meet and/or exceed the requirements of the Lake County Storm Water Management Ordinance (Chapter 29 of the Lake County Ordinance Code).

j. Describe the proposed grading of the property.

There is no proposed grading for GSH cannabis cultivation operations; all cannabis shall occur within the existing Article 72-compliant cultivation footprint and within the footprint of the Lake County-approved vineyard blocks of the Stocking Vineyard project on the same parcel.

k. Describe the best management practices (BMPs) that will be used during construction and those that will be used post-construction. Post-construction BMPs shall be maintained through the life of the permit; and

All construction and post-construction (maintenance) BMPs (now called BPTCs) are described in the SWRCB Site Management Plan that was produced to obtain coverage under the SWRCB Waste Discharge Permit program; this report is included as an attachment to this Property Management Plan.

The existing Article 72 compliant medicinal cannabis cultivation area (existing cultivation area) was established with minimal disturbance to existing vegetation (no grading was required), and the proposed cultivation area will be located within the Lake-County approved Stocking vineyard blocks that have stormwater runoff BMPs implemented. Established and re-established vegetation within and around the proposed cultivation operation will be maintained/protected as a permanent erosion and sediment control measure. A certified weed-free straw mulch will be applied to all areas of exposed soil prior to November 15th of each year at a rate of two tons per acre, until permanent stabilization has been achieved.

If areas of concentrated stormwater runoff begin to develop, additional erosion and sediment control measures (such as straw wattles) will be implemented to protect those areas and their outfalls. Monitoring inspections conducted during and following the 2018/2019 winter wet weather period, indicate that the erosion and sediment control measures implemented within and around the existing cultivation area were successful at preventing sediment discharges to surface water bodies.

I. Describe what parameters will be monitored and the methodology of the monitoring program.

GSH must comply with the following SWRCB Monitoring and Reporting Requirements for cannabis cultivation operations:

- Winterization Measures Implementation
- Tier Status Confirmation
- Third Party Identification (if applicable)
- Nitrogen Application (Monthly and Total Annual)

An Annual Report shall be submitted to the Central Valley Regional Water Quality Control Board (CVRWQCB) by March 1st of each year. The Annual Report shall include the following:

1. Facility Status, Site Maintenance Status, and Storm Water Runoff Monitoring.
2. The name and contact information of the person responsible for operation, maintenance, and monitoring.
3. A summary of the numbers and severity of waste discharge violations found during the reporting period, and actions taken or planned to correct the violations and prevent future violations.

GSH will follow all monitoring requirements to maintain compliance with SWRCB Statewide General Order for cannabis waste discharge; these monitoring reports will be provided to Lake County officials upon request.

Figure 8. CVRWQCB Notice of Applicability, Water Quality Order WQ-2017-0023-DWQ



Central Valley Regional Water Quality Control Board

25 January 2018

5S17CC400108

Crystal Keesey
Golden State Herb, Inc
1326 Bidwell Avenue
Chico, CA 95926

Porter G3 McIntire, LLC
Bryant Stocking
777 Aldridge Road
Vacaville, CA 95688

NOTICE OF APPLICABILITY, WATER QUALITY ORDER WQ-2017-0023-DWQ, GOLDEN STATE HERB INC, CRYSTAL KEESEY, LAKE COUNTY

Crystal Keesey, for Golden State Herb, Inc (hereafter "Discharger") submitted information through the State Water Resources Control Board's (State Water Board's) online portal on 13 December 2017, for discharges of waste associated with cannabis cultivation related activities. Based on the information provided, the Discharger self-certifies the cannabis cultivation activities are consistent with the requirements of the State Water Board *Cannabis Cultivation Policy- Principles and Guidelines for Cannabis Cultivation* (Policy), and the *General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities*, Order No. WQ-2017-0023-DWQ (General Order). This letter provides notice that the Policy and General Order are applicable to the site as described below. You are hereby assigned waste discharge identification (WDID) number **5S17CC400108**.

The Discharger is responsible for all the applicable requirements in the Policy, General Order, and this Notice of Applicability (NOA).

1. FACILITY AND DISCHARGE DESCRIPTION

The information submitted by the Discharger states the disturbed area is equal to or greater than 1 acre (43,560 square feet), no portion of the disturbed area is within the setback requirements, no portion of the disturbed area is located on a slope greater than 30 percent, and the cannabis cultivation area is greater or equal to 1 acre.

Based on the information submitted by the Discharger, the cannabis cultivation activities are classified as Tier 2, low risk.

2. SITE-SPECIFIC REQUIREMENTS

The Policy and General Order are available on the Internet at <<http://www.waterboards.ca.gov/cannabis>>. The Discharger shall ensure that all site operating personnel know, understand, and comply with the requirements contained in the Policy, General Order, this NOA, and the Monitoring and Reporting Program (MRP, Attachment B of the General Order). Note that the General Order contains standard provisions, general requirements, and prohibitions that apply to all cannabis cultivation activities.

KARL E. LONGLEY ScD, P.E., CHAIR | PAMELA C. CREEDON P.E., BCEE, EXECUTIVE OFFICER

384 Knollcrest Drive, Suite 205, Redding, CA 96002 | www.waterboards.ca.gov/centralvalley

RECYCLED PAPER

Scanned by CamScanner

The application requires the Discharger to self-certify that all applicable Best Practicable Treatment or Control (BPTC) measures are being implemented, or will be implemented by the onset of the winter period (November 15 - April 1), following the enrollment date. Dischargers that cannot implement all applicable BPTC measures by the onset of the winter period, following their enrollment date, shall submit to the appropriate Regional Water Board a *Site Management Plan* that includes a time schedule and scope of work for use by the Regional Water Board in developing a compliance schedule as described in Attachment A of the General Order.

3. TECHNICAL REPORT REQUIREMENTS

The following technical report(s) shall be submitted by the Discharger as described below:

1. A *Site Management Plan*, by **13 March 2018**, consistent with the requirements of General Order Provision C.1.a., and Attachment A, Section 5. Attachment D of the General Order provides guidance on the contents of the *Site Management Plan*.
2. A *Nitrogen Management Plan* must be submitted 13 March 2018 consistent with the requirements of General Order Provision C.1.d., and Attachment A, Section 5. Attachment D of the General Order provides guidance on the contents of the *Nitrogen Management Plan*.
3. A *Site Closure Report* must be submitted 90 days prior to permanently ending cannabis cultivation activities and seeking to rescind coverage under the General Order. The *Site Closure Report* must be consistent with the requirements of General Order Provision C.1.e., and Attachment A, Section 5. Attachment D of the General Order provides guidance on the contents of the *Site Closure Report*.

4. MONITORING AND REPORTING PROGRAM

The Discharger shall comply with the Monitoring and Reporting Program (MRP). Attachment B of the General Order provides guidance on the contents for the annual reporting requirement. Annual reports shall be submitted to the Regional Water Board by March 1 following the year being monitored. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Regional Water Board Executive Officer or the State Water Board Division of Water Quality Deputy Director, or the State Water Board Chief Deputy Director.

5. ANNUAL FEE

According to the information submitted, the discharge is classified as Tier 2, low risk with the current annual fee assessed at \$1,000. The fee is due and payable on an annual basis until coverage under this General Order is formally rescinded. To rescind coverage, the Discharger must submit a Notice of Termination, including a *Site Closure Report* at least 90 days prior to termination of activities and include a final MRP report.

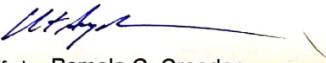
6. TERMINATION OF COVERAGE UNDER THE GENERAL ORDER & REGIONAL WATER BOARD CONTACT INFORMATION

Cannabis cultivators that propose to terminate coverage under the Conditional Waiver or General Order must submit a Notice of Termination (NOT). The NOT must include a *Site Closure Report* (see Technical Report Requirements above), and Dischargers enrolled under the General Order must also submit a final monitoring report. The Regional Water Board reserves the right to inspect the site before approving an NOT. Attachment C includes the NOT

form and Attachment D of the General Order provides guidance on the contents of the *Site Closure Report*.

If the Discharger cannot comply with the General Order, or will be unable to implement an applicable BPTC measure contained in Attachment A by the onset of the winter period each year, the Discharger shall notify the Regional Water Board staff by telephone at (530)-224-3216 so that a site-specific compliance schedule can be developed.

All monitoring reports, submittals, discharge notifications, and questions regarding compliance and enforcement should be directed to Michael Parker, at: michael.parker@waterboards.ca.gov or (530)-224-3216.


(for) Pamela C. Creedon
Executive Officer

MP: ck

cc: Kevin Porzio, State Water Resources Control Board, Sacramento
Mireya G. Turner (For) Lake County Environmental Health Department

Scanned by CamScanner

SECTION 10. WASTE MANAGEMENT

Solid Waste Management

The solid waste management section shall include:

Provide an estimate of the amount of solid waste that will be generated on an annual basis and daily during peak operational seasons, broken down into the following categories:

Solid waste type	Max Daily Generated (MDG)	Annual Amount Generated (AAG)
Paper	< 1 lb	10 lbs
Glass	5 lbs	200 lbs
Metal	< 1 lb	< 1 lb
Electronics	0	0
Plastic	10 lbs	50 lbs
Organics ⁶	0	0
Inerts	<1 lb	< 1 lb
Household hazardous waste	<1 lb	< 5 lb
Special waste	0	0
Mixed residue	< 1 lb	< 1 lb

Describe how the permittee will minimize solid waste generation including working with vendors to minimize packaging.

GSH intends to reduce the amount of packaging material brought onsite through bulk purchasing of farming operation materials (though pesticides and fertilizers have stringent packaging requirements that may preclude bulk purchasing) and prioritize the purchasing of materials in reusable, eco-friendly, compostable, and/or recyclable packaging when possible; reuse and recycle materials as much as possible to divert waste from landfills and designate multiple recyclable materials collection receptacles on the Project property.

Describe the waste collection frequency and method.

Solid waste from the bins will be stored in hauled away by GSH staff to a Lake County Integrated Waste Management facility, at least every seven (7) days/weekly during the cultivation season. The truck used to transport the waste will be equipped with a secure fitting tarp, to prevent solid waste from escaping while in transport.

Describe how solid waste will be temporarily stored prior to transport to a compost, recycling, or final disposal location.

All solid waste will be stored in bins with secure fitting lids, located directly adjacent to work areas.

⁶ All organic material will be composted on-site.

Describe the composting, recycling, or final disposal location for each of the above categories of solid waste.

Paper: composted or recycling facility; glass: recycling facility; metal: recycling facility; electronics: n/a; plastic: depending on type, either recycling facility or landfill; organics: composted on site; inerts: repurposed on site; household hazardous waste: at licensed handling facility; special waste: n/a; mixed residue: n/a.

Hazardous Waste Management

The hazardous waste section shall include:

1) Hazard Analysis

The applicant shall conduct a hazard analysis to identify or evaluate known or reasonably foreseeable hazards for each type of cannabis product produced at their facility in order to determine whether there exist any hazards requiring a preventative control. The hazard analysis shall include:

The identification of potential hazards, including:

i. Biological hazards, including microbiological hazards;

Potential biological hazards for the cannabis flower products produced at the GSH commercial cannabis operation include those molds and bacteria tested for in Phase 3 State of CA cannabis testing assays: *Aspergillus flavus*, *Aspergillus fumigatus*, *Aspergillus niger*, *Aspergillus terreus*, shiga toxin-producing *E. coli*; and *Salmonella* spp.

ii. Chemical hazards, including radiological hazards, pesticide(s) contamination, solvent or other residue, natural toxins, decomposition, unapproved additives, or food allergens; and/or

Potential chemical hazards for the cannabis flower products produced at the GSH commercial cannabis operation include pesticides that may potentially drift from viticulture operations in the vicinity of the Project parcel; GSH only uses CDFA-approved pesticides for the cannabis production operations and potentially hazardous agricultural, processing and equipment fuel/lubricant chemicals that will be stored and used at GSH's cannabis cultivation operation:

- Gasoline – no more than 20 gallons at any given time;
- Diesel Fuel – no more than 20 gallons at any given time; and
- Oils/Lubricants – no more than 2 gallons in total at any given time;
- Isopropyl alcohol – no more than 1 gallon at any given time.

iii. Physical hazards, such as stone, glass, metal fragments, hair or insects.

Physical hazards that may affect the quality of the GSH cannabis product include exposure to unsanitary conditions; exposure to agricultural and processing chemicals; and contamination from foreign materials (insect frass, dust, glass, metal).

The evaluation of the hazards identified in order to assess the severity of any illness or injury that may occur as a result of a given hazard, and the probability that the hazard will occur in the absence of preventative controls.

The probability that any of the above listed hazards will occur in the absence of preventative controls is high. Biological contaminants may cause an immediate illness requiring medical attention; chemical hazards often have long-term health consequences via repeated exposure events; physical hazards range from unsanitary (insect frass, hair) to injurious (glass or metal fragments) and vary in potential threat to human health depending on concentration or substance.

Contamination from the each of the above listed hazards can be prevented by practicing proper safety protocols during the growing, harvesting, drying and processing of cannabis flower and production of pre-roll cigarettes, listed below:

Biological Contamination Avoidance and Protection Measures: To avoid/prevent biological contamination personnel should wear gloves anytime touching living or processed plant material. Hands are required to be washed and gloves changed after using the rest room, running farm equipment, touching pesticides, eating food, touching hair or face, or any other unsanitary conditions. Throughout the cultivation season, a portable toilet and handwashing station will be established adjacent to the cultivation area (more than 100 feet from surface water bodies) and it will be serviced regularly.

Chemical Contamination Avoidance and Protection Measures: Pesticides will be applied in accordance with their Pre-Harvest Interval (PHI) to insure a chemical-free final product. GSH personnel will be trained on how to appropriately and safely use potentially hazardous equipment/machinery (such as lawn mowers, tillers, and tractors) including maintenance and cleaning before using them to avoid/prevent injuries and prevent any contamination of cannabis at the facility.

Physical Contamination Avoidance and Protection Measures: GSH personnel will be required to clean and sanitize the buildings of the cultivation operation on a regular basis. Personal Protective Equipment (PPE) will be available for personnel when cleaning/sanitizing potentially hazardous unsanitary areas.

The hazard evaluation shall consider the effect of the following on the safety of the finished cannabis product for the intended consumer:

i. The sanitation conditions of the manufacturing premises;

Currently there is no GSH manufacturing premises on the Project parcel.

ii. The product formulation process;

Cultivating, harvesting, drying, curing, processing and packaging cannabis flower and pre-roll products can have an effect on the safety of the finished cannabis product, and require the biological, chemical and physical contamination protection and avoidance measures described above.

iii. The design, function and conditions of the manufacturing facility and its equipment;

Currently there is no GSH manufacturing premises on the Project parcel.

iv. The ingredients and components used in a given cannabis product;

GSH cultivated-flower, trim and pre-rolls must undergo rigorous state testing for moisture content, microbiological contaminants, chemical contaminants and heavy metals before they can be sold to licensed retailers for sale to the general public. This testing system insures that the actual GSH product from the Project parcel is safe for human consumption at the retail level.

v. The operation's transportation and transfer practices;

Bulk and packaged flower, trim and pre-roll materials will be packaged in such a way as to facilitate the safe transfer of the products to a licensed distributor in a licensed distribution vehicle. Unsanitary conditions could affect the safety of the finished cannabis product, although adequate packaging will provide a buffer from any potentially unsanitary transportation situations.

vi. The facility's manufacturing and processing procedures;

Unsanitary conditions within the drying/processing facility may present a hazard to the safety of GSH finished product. This can be avoided/prevented by implementing the avoidance and protection measures listed above.

vii. The facility's packaging and labeling activities;

Unsanitary conditions within the drying/processing facility may present a hazard to the safety of GSH finished product. This can be avoided/prevented by implementing the avoidance and protection measures listed above.

viii. The storage of components and/or the finished cannabis product;

Bulk and packaged flower, trim and pre-roll materials will be packaged in such a way as to facilitate the safe transfer of the products to a licensed distributor in a licensed distribution vehicle. Unsanitary conditions could affect the safety of the finished cannabis product, although adequate packaging will provide a buffer from any potentially unsanitary transportation situations. Contamination during storage can be avoided/prevented by implementing the avoidance and protection measures listed above.

ix. The intended or reasonably foreseeable use of the finished cannabis product; and

The intended or reasonably foreseeable use of the finished cannabis product will not affect the safety of GSH cannabis flowers, trim or pre-rolls.

x. Any other relevant factors.

N/A

2) Management Plan

The Management Plans shall:

i. Identify all Resource Conservation and Recovery Act (RCRA), Non-RCRA hazardous waste and Universal wastes and the volume of each;

GSH commercial cannabis operations will not generate hazardous waste, and at no time will GSH maintain onsite more than 55 gallons of liquid, 500 pounds of solid, or 200 cubic feet of compressed gas hazardous material. The production of any Hazardous Waste as part of the cultivation process is prohibited.

ii. Identify all containers and container management;

There will be no containers of hazardous waste stored on the Project parcel as a result of GSH commercial cannabis operations.

iii. Describe storage locations and chemical segregation procedures;

There are no storage locations for hazardous waste on the Project parcel.

iv. Describe hazardous waste manifest and recordkeeping protocol;

GSH commercial cannabis operations will not generate hazardous waste; manifest and recordkeeping are not required.

v. Outline inspection procedures;

GSH commercial cannabis operations will not generate hazardous waste; inspection is not required.

vi. Identify emergency spill response procedures;

The Lake County Division of Environmental Health is the Certified Unified Program Agency (CUPA) for all of Lake County, including the Project property, dealing with hazardous waste and hazardous materials. The Lake County Fire Protection District is most likely to be the first responders in the event of a hazardous materials incident. GSH personnel will contact these agencies in the event of a hazardous material incident.

vii. Describe staff responsibilities;

When GSH personnel discovers a leak, an overfill, a spill, or other signs of an agricultural chemical incident, the following steps should be taken to clean up the release to comply with state laws regarding agricultural chemical incident cleanups:

1. Secure Site

- Secure a perimeter and keep all non-essential people out of the incident area;
- Do not allow smoking in area;
- Alert firefighters and/or other emergency personnel of precautions as advised by material safety data sheets;
- Arrange off-site evacuation if necessary (this should be done through working with the local officials); and,
- If the leak or spill is indoors, ventilate the area as thoroughly as possible.

2. Abatement

- If it can be done safely, stop further leakage from damaged containers; contain above-ground runoff by placing absorbent pillows, clay, other heavy soil, etc., around liquid spills to limit further spread of spilled chemical; and
- Plug or berm underground waterways (storm sewers, sanitary sewers, etc.).

3. Recovery

- Transfer the remaining contents of each leaking container into a clean empty container of the same type and remove the salvaged container from the contaminated area;
- Separate any containers that have not been affected by the spill; and,
- Arrange to remove, hold, or dispose of pooled contaminated water, soil, etc.

4. Remediation

- Determine the extent and degree of contamination;
- Develop steps for the final clean-up of the incident;
- Reuse or dispose of the recovered chemicals and/or contaminated materials;
- Determine the effectiveness of the clean-up through the collection & analysis of samples

viii. Describe the staff training program;

GSH's managerial staff will conduct onsite safety audits, policy writing and staff training on all Occupational Safety and Health Administration (OSHA) workplace safety protocols. Materials Safety Data Sheets (MSDS/SDS) for all agricultural chemicals used by GSH will be stored within the fertilizer and nutrient storage areas, and available for personnel to reference at any time. Any spill is an emergency and should be treated as such to protect the health of GSH employees with the above emergency spill response procedures.

ix. Describe the methodology on how the amount of hazardous materials and waste that is generated on the site, the amount that is recycled, and the amount and where hazardous materials and waste is disposed of, is measured; and

GSH commercial cannabis operations will not generate hazardous waste or hazardous materials. All petroleum products will be stored under cover and in State of California-approved containers with secondary containment within a dedicated petroleum storage container.

All fertilizers and pesticides will be stored within a segregated storage sheds located directly adjacent to the cultivation area. All solids and liquids will be stored undercover in the manufacturer's original packaging, and all liquids will have secondary containment (110% freeboard) to prevent accidental release. Fertilizers and pesticides will be prepared/mixed on an impermeable pad, and absorbent materials designated for spill containment and spill cleanup equipment will be maintained within the fertilizer and pesticide storage areas and preparation/mixing areas. An inventory of all fertilizers, pesticides, and petroleum products are posted on the cabinets where products are stored. Inventory will be checked and inspected weekly.

x. Include a map of any private drinking water well, spring, top of bank of any creek or seasonal stream, edge of lake, delineated wetland or vernal pool on the lot of record or within 100 feet of the lot of record and a 100-foot setback from any identified private drinking water well, spring, top of bank of any creek or seasonal stream, edge of lake, delineated wetland or vernal pool. The maps shall also include any public water supply well on the lot of record or within 200 feet of the lot of record and a 200-foot setback from any public water supply well.

Please see Figure 9., Vicinity Surface and Groundwater Resources map attached to this section of the Property Management Plan.

Pursuant to the California Health and Safety Code, the use of hazardous materials shall be prohibited except for limited quantities of hazardous materials that are below State threshold levels of 55 gallons of liquid, 500 pounds of solid, or 200 cubic feet of compressed gas. The production of any Hazardous Waste as part of the cultivation process is prohibited.

Cannabis Vegetative Material Waste Management

The cannabis vegetative material waste management section shall:

- 1) Provide an estimate of the type and amount of cannabis vegetative waste that will be generated on an annual basis;**

Anticipated cannabis waste generated from the cannabis cultivation operation is limited to cannabis plant stems and sun leaves. It is anticipated that all other parts of cannabis plants cultivated at this site will be transferred to a State of California-licensed Distributor for distribution to State of California-licensed manufacturers and retailers. GSH anticipates that the proposed cannabis cultivation operation will generate approximately 300 pounds of dried cannabis waste each cultivation season (April 1st through November 15th).

- 2) Describe how the permittee will minimize cannabis vegetative waste generation;**

All cannabis waste generated from the cultivation operation will be composted on-site and in compliance with Title 14 of the California Code of Regulations at Division 7, Chapter 3.1. Composted cannabis waste will be incorporated into the soils of the cultivation area(s) as a soil amendment.

- 3) Describe how solid waste will be disposed; and**

All cannabis waste generated from the cultivation operation will be composted on-site and in compliance with Title 14 of the California Code of Regulations at Division 7, Chapter 3.1. Composted cannabis waste will be incorporated into the soils of the cultivation area(s) as a soil amendment.

- 4) Describe the methodology on how the amount of cannabis vegetative waste that is generated on the site, the amount that is recycled, and the amount and where cannabis vegetative waste is disposed of is measured.**

Under video surveillance, cannabis waste will be chipped/chopped up and placed into plastic containers. Once full, the plastic containers will be weighed and recorded, then the chipped cannabis waste will be

deposited into the composting area of the cultivation operation where it will be mixed with other organic/vegetative wastes derived from the Project property.

GSH will maintain accurate and comprehensive records regarding cannabis waste generation that will account for, reconcile, and evidence all activity related to the generation or disposition of cannabis waste. All records will be kept on-site for seven (7) years and will be made available to State and County officials during inspections or when requested.

Growing Medium Management

The growing medium management section shall:

Provide an estimate of the type and amount of new growing medium that will be used and the amount of growing medium that will be disposed of on an annual basis;

The growing medium of the proposed cannabis cultivation area will be the existing soil amended with peat, coco coir, worm castings, compost, ligna peat, pumice, guanos, rock dusts, kelp meal, blood meal, and fish bone meal. 450 yards of on-site soil will be amended with the above-listed materials during the first two years of full production build-out, and afterwards amended to maintain desired nutrient and beneficial microbial levels. GSH does not plan to dispose of any growing medium unless necessary as a result of heavy metals, microbial or chemical contamination.

Prior to each cultivation season, representative soil samples will be collected from the cultivation area(s) and analyzed by an agricultural analytical laboratory. The results of this analysis will be reviewed by GSH's managerial staff and crop advisor to determine the types and volumes of amendments that will need to be added to maintain the desired growing medium/native soil mixture for the upcoming cultivation season.

Describe how the permittee will minimize growing medium waste generation;

GSH does not plan to dispose of any growing medium unless necessary as a result of heavy metals, microbial or chemical contamination.

Describe any non-organic content in the growing medium used (such as vermiculite, silica gel, or other non-organic additives);

GSH will only use organic growing medium content; no non-organic additives will be utilized.

Describe how growing medium waste will be disposed; and

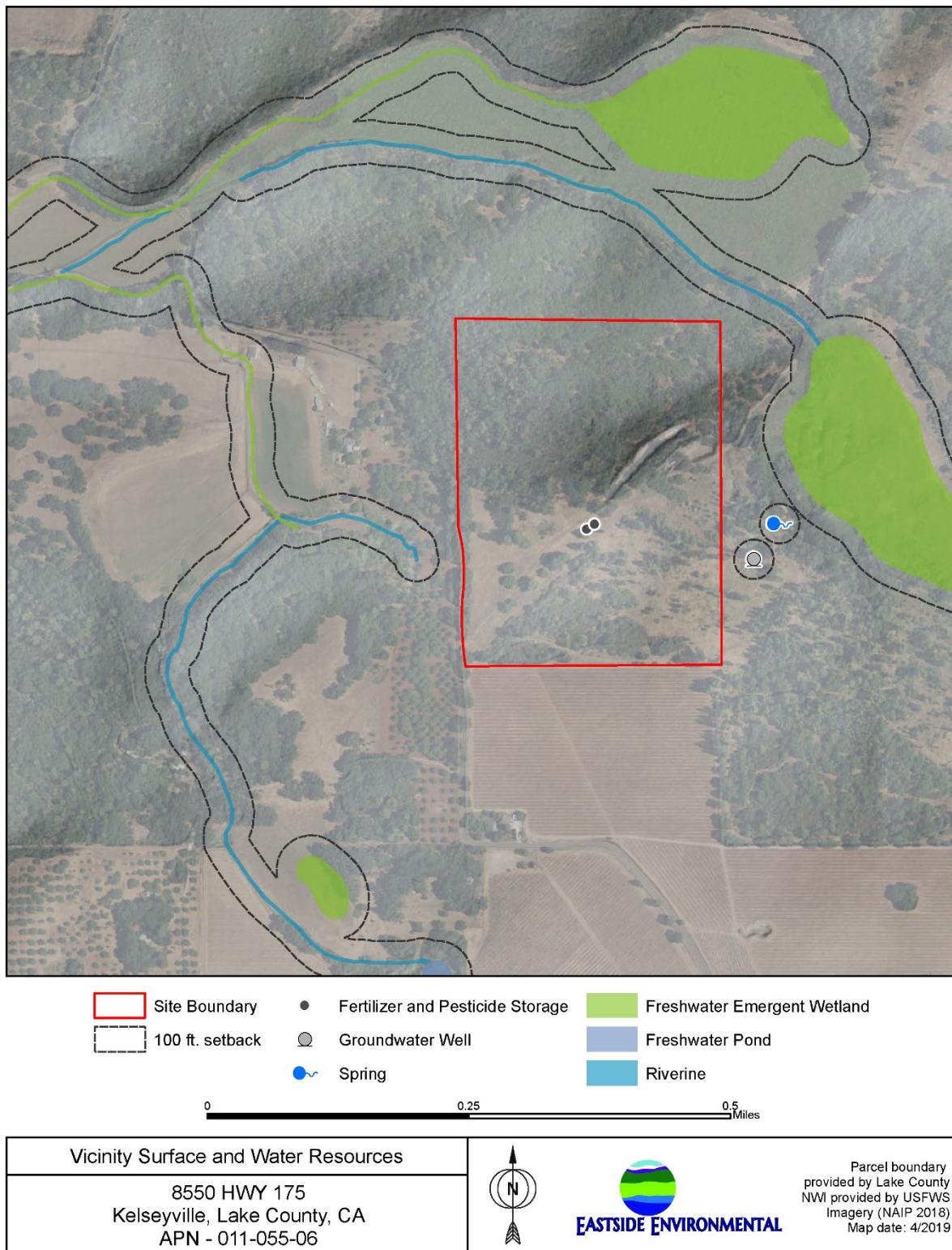
GSH does not plan to dispose of any growing medium unless necessary as a result of pest infestation, heavy metals toxicity, microbial or chemical contamination. In the event of a root and/or soil born pest infestation, the infested soil will be removed from the cultivation area(s), quarantined, treated with either heat or a pesticide that targets the infestation and that is approved for use in cannabis cultivation by the California Department of Food and Agriculture, then incorporated with cannabis waste compost. In the

event of microbial or chemical contamination, the materials will be transferred by tarped truck to the appropriate waste facility in the area designed to handle the particular contaminant.

Describe the methodology on how the amount of growing medium waste that is generated on the site, the amount that is recycled, and the amount and where growing medium waste is disposed of, is measured.

Growing medium will be measured by the cubic yard, as determined by the volume capacity of the tractor or loader bucket GSH is utilizing for production operations.

Figure 9. Vicinity Surface and Groundwater Resources, APN 011-055-06



SECTION 11. WATER RESOURCES

Intent: To minimize adverse impacts on surface and groundwater resources.

This section shall include:

- a. A description of the surface and groundwater resources that are located on the lot of record where the permitted activity is located.**

There are no Waters of the US (WOUS) or Waters of the State located on the lot of record where the permitted activity is located. There is no groundwater well on the lot of record where the permitted activity is located.

- b. A description of the watershed in which the permitted activity is located.**

The permitted activity is located in the Cole Creek sub-basin (HUC12 180201160302) of the Upper Cache Creek watershed (HUC8 code 18020116) approximately 4 miles west of Clear Lake in the Red Hills area of Kelseyville, CA. See Figure 10., Hydrologic Unit Classification (HUC 12) Map

- c. A description of how the permittee will minimize adverse impacts on the surface and groundwater resources.**

The GSH commercial cannabis operations will not disturb any aquatic or riparian habitat. GSH will maintain existing, naturally occurring vegetative cover (e.g., trees, shrubs, and grasses) in areas adjacent to the commercial cannabis operations to the maximum extent possible to minimize off-site waste discharges. Access roads and parking areas are/will be graveled to prevent the generation of fugitive dust, and vegetative ground cover will be preserved and/or re-established as soon as possible throughout the entire site to filter and infiltrate stormwater runoff from the access roads, parking areas, and the proposed commercial cannabis operations.

GSH personnel will regularly inspect their entire water delivery system for leaks and immediately repair any system breaches. GSH will apply weed-free mulch in cultivation areas that do not have ground cover to conserve soil moisture and minimize evaporative loss. GSH will implement water conserving irrigation methods (drip or trickle and microspray irrigation and hand watering). GSH will maintain daily records of all water used for irrigation of cannabis.

The existing and proposed cultivation operation has been enrolled for coverage under the SWRCB General Order for Cannabis Cultivation Activities (WQ-2017-0023-DWQ) since January 25, 2018 (WDID 5S17CC400108). GSH will continue to comply with all requirements of the Cannabis General Order to protect water resources.

d. A description of what parameters will be measured and the methodology of how they will be measured.

<i>Parameters to be measured</i>	<i>Methodology of measurement</i>
Static level of groundwater well	Static level monitoring device will be installed in well casing that provides continuous data logging of groundwater well water elevation.
Groundwater usage and flow	Irrigation flow meter will be installed in the water supply line to the commercial cannabis operations area.
Stormwater events/runoff	Rain gauge and visual inspection/written documentation of Project site after significant weather event (>1/2" rainfall over 24 hours)

e. A map of any spring, top of bank of any creek or seasonal stream, edge of lake, delineated wetland or vernal pool on the lot of record of land or within 200 feet of the lot of record.
See Figure 9., Vicinity Surface and Groundwater Resources Map, Figure 11., National Hydrography Dataset Map, and Figure 12., National Wetlands Inventory Map

f. A topographic map of the parcel
See Figure 13., Topographic map of 8550 HWY 175, Kelseyville, CA.

Figure 10. Hydrologic Unit Classification (HUC12)

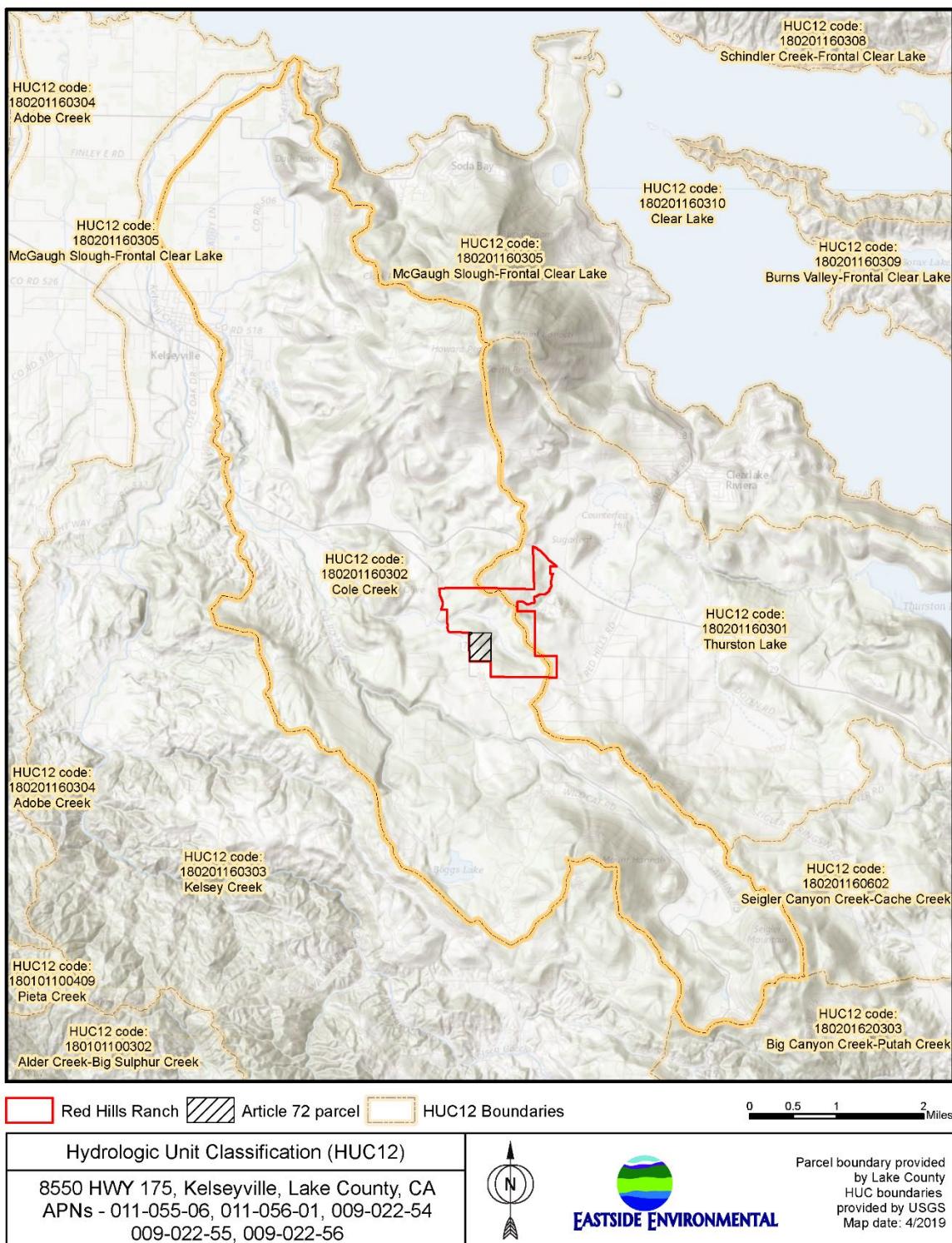
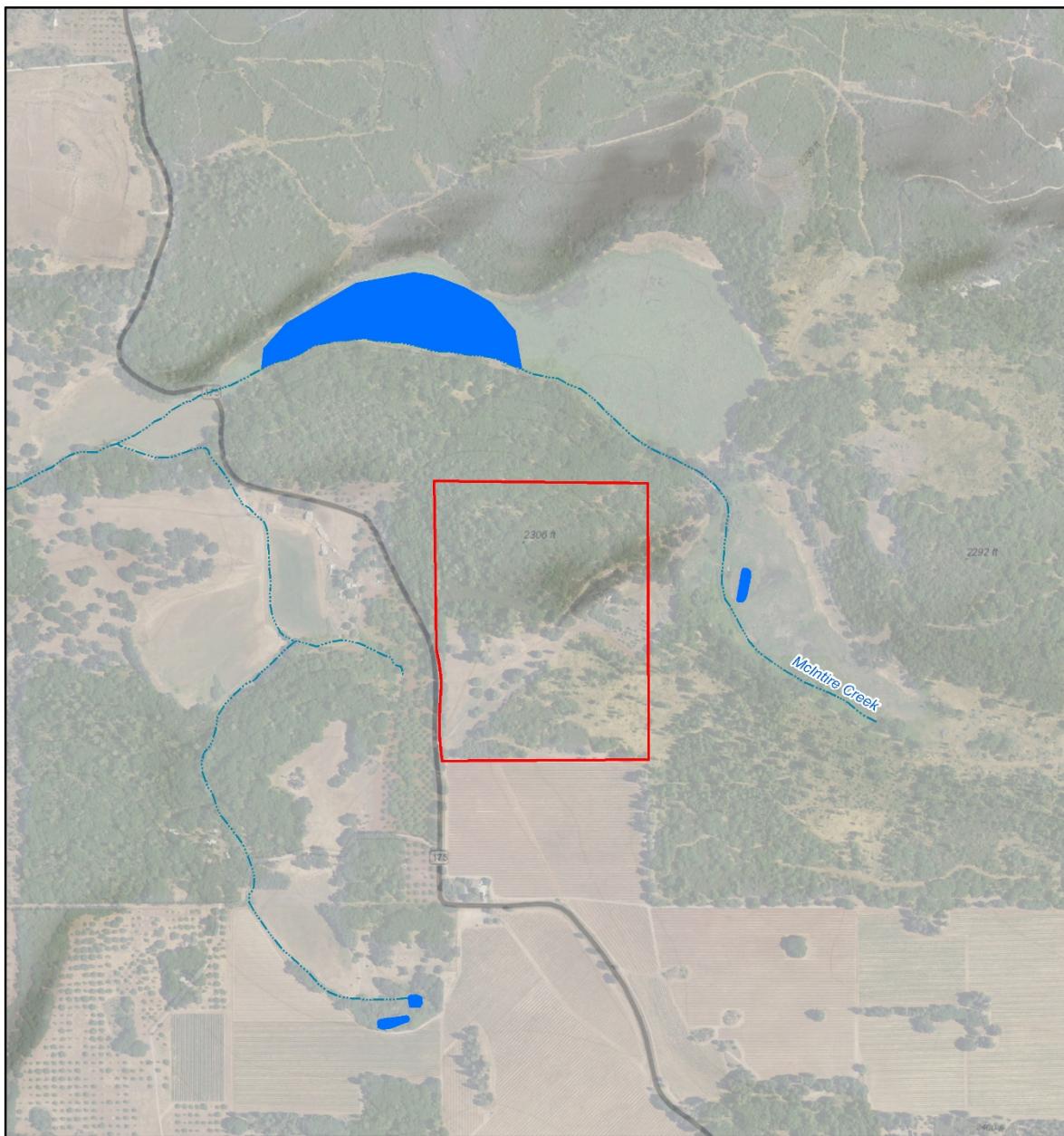


Figure 11. National Hydrography Dataset Map, APN 011-055-06

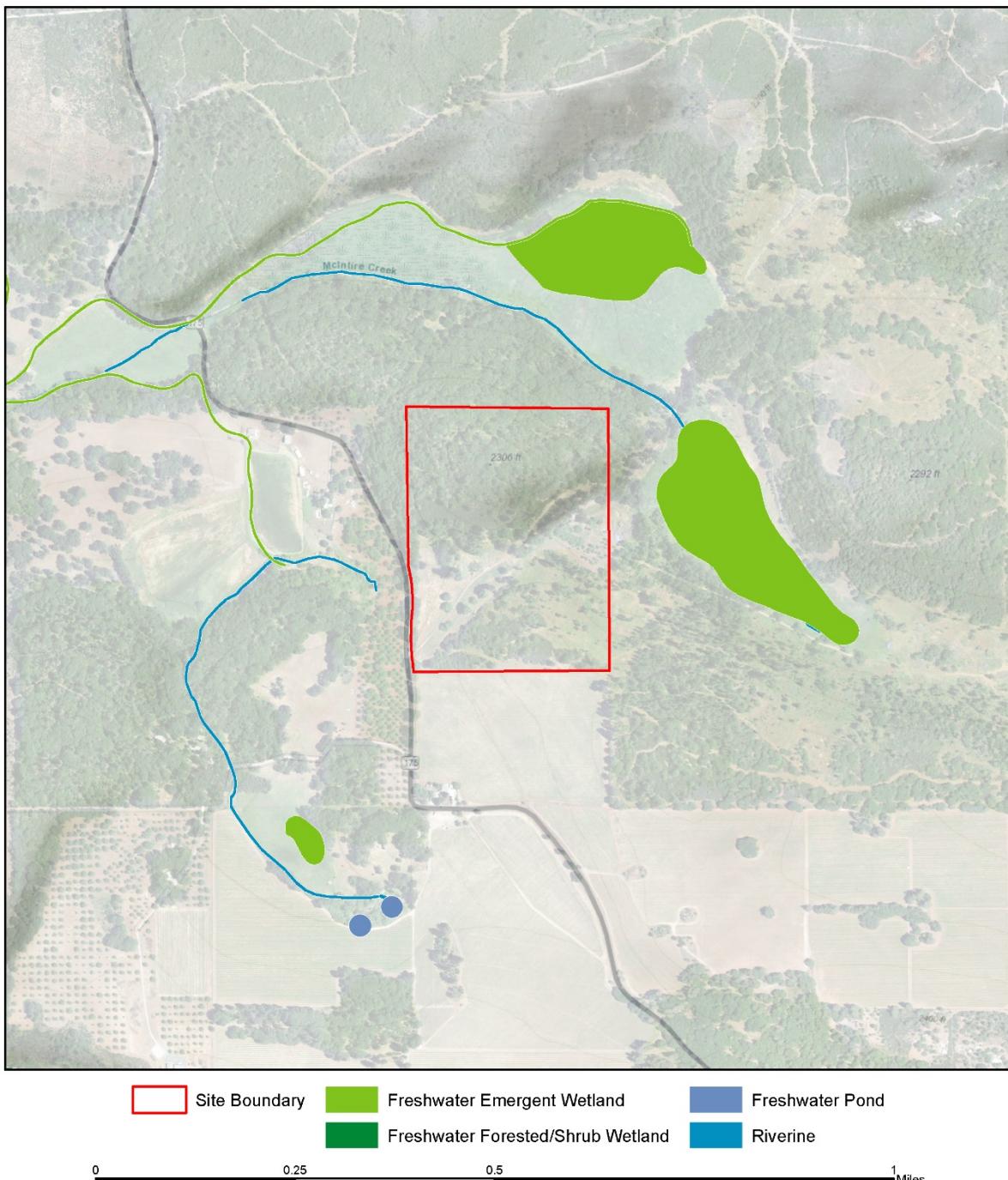


 Site Boundary  Lake/Pond  Stream/River: Hydrographic Category = Intermittent

0 0.25 0.5 1 Miles

National Hydrography Dataset (NHD)		Parcel boundary provided by Lake County Imagery (NAIP 2018)
8550 HWY 175 Kelseyville, Lake County, CA APN - 011-055-06		NHD provided by USGS Map date: 4/2019

Figure 12. National Wetlands Inventory Map, APN 011-055-06



National Wetlands Inventory (NWI)	 	Parcel boundary provided by Lake County NWI provided by USFWS Imagery (NAIP 2016) Map date: 4/2019
8550 HWY 175 Kelseyville, Lake County, CA APN - 011-055-06		

Figure 13. Topographic Map of 8550 HWY 175, Kelseyville, CA



SECTION 12. WATER USE

Intent: To conserve the County's water resources by minimizing the use of water.

This section shall:

- **Identify the source of water, including location, capacity, and documentation that it is a legal source.**

The source of water for GSH commercial cannabis operations is a groundwater well located on an adjacent parcel (APN 01105601) also owned by the Project parcel landowner. Location coordinates of groundwater well are 38°55'19.52" N, -122°46'9.84" W. According to the well driller's log, the well has a capacity of 90 gallons per minute. The following documents are attached to this Property Management Plan: official State of CA-filed Well Completion Report (**Figure 14**); Water Demand and Water Availability Analysis prepared for the Stocking Vineyard Project⁷ (**Figure 15**), and the well-parcel landowner authorization for commercial cannabis operations (**Figure 16**).

- **Describe the proposed irrigation system and methodology.**

All irrigation systems for the commercial cannabis operations are designed to efficiently deliver water via drip tubing and micro-sprinkler materials to minimize water loss due to evaporation. Irrigation water for the proposed commercial cannabis operations will be pumped from the groundwater well to four 2,500-gallon water storage tanks positioned above the two proposed canopy areas via an HDPE water supply line. The water storage tanks will be equipped with a float valve to stop the flow of water from the well when the tanks are full. An HDPE water supply line will be run from the water storage tanks to the irrigation system of the proposed cultivation area, to gravity feed irrigation water to the irrigation system. The water supply lines will be equipped with shutoff valves and inline water meters compliant with California Code of Regulations, Title 23, Division 3, Chapter 2.7. The irrigation system of the proposed cultivation area(s) will be composed of PVC piping, black poly tubing, and drip tapes/lines. Supplemental irrigation may be applied by hand using garden hoses.

- **Describe the amount of water projected to be used on a monthly basis for irrigation and separately for all other uses of water and the amount of water to be withdrawn from each source of water on a monthly basis.**

⁷ Aspren, Drew L. P.E., Stocking Erosion Control Plan Water Demand and Water Availability Analysis. Napa Valley Vineyard Engineering, Inc. St. Helena, CA. May 30, 2018.

Type of Water Use	Projected amount of groundwater use
Crop irrigation	36,000 gallons per month
Domestic	18,000 gallons per month
Firebreak maintenance	18,000 gallons per month
Ranch operations	18,000 gallons per month

- Provide calculations as to the efficiency of the irrigation system using the methodology of the Model Water Efficient Landscape Ordinance (California Code of Regulations, Title 23, Division 2, Chapter 27).

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF) ⁸	Hydrozone Area (HA) ⁹ (ft ²)	PF x HA (ft ²)
Cultivation Area(s)	Moderate/Medium ¹⁰	0.4- 0.6	87,120	34,848 – 52,272
Companion Herbs/Plants ²	Low ¹¹	0-0.3	10,000	0 – 3,000

Quantification	Formula	Equation	Result
Maximum Applied Water Allowance ¹²	MAWA=(ET ₀) (0.62) [(0.7 x LA) + (0.3 x SLA)] ¹³	(49.4) (0.62) [(0.7 x 97,120) + (0.3 x 0)]	2,082,213.952 gallons
Estimated Total Water Use per year ¹⁴	ETWU = (ET ₀) (0.62) [(PF x HA)/IE + SLA)] ¹⁵	ETWU = (49.4) (0.62) [(53,272)/0.88 + 0]	1,854,107.745 gallons

⁸ PF = Plant Factor from Water Use Classification of Landscape Species

⁹ HA = Hydrozone Area (high, medium, and low water use areas);

¹⁰ Hops (*Humulus lupulus*) was used as an analog for Cannabis (Cannabis, Corn, Tomatoes, and Alfalfa are not listed in Water Use Classification of Landscape Species for the Clearlake Region);

¹¹ Lavender (*Lavandula spp.*) was used to represent the fragrant flowering, beneficial insect attracting, and naturally insecticidal companion plants to be grown throughout cultivation operation;

¹² (MAWA), measured in gallons per year;

¹³ ET₀ = Reference Evapotranspiration (inches per year); 0.62 = Conversion Factor (to gallons); 0.7 = ET Adjustment Factor (ETAF); LA = Landscape Area including SLA (square feet); 0.3 = Additional Water Allowance for SLA; SLA = Special Landscape Area (square feet);

¹⁴ ETWU = Estimated total water use (measured in gallons);

¹⁵ PF = Plant Factor from Water Use Classification of Landscape Species; HA = Hydrozone Area [high, medium, and low water use areas] (square feet); SLA = Special Landscape Area (square feet); 0.62 = Conversion Factor to gallons; IE = Irrigation Efficiency (Micro-spray Irrigation System Design Efficiency = 82%, Drip Irrigation System Design Efficiency = 88%)

GSH's proposed cannabis cultivation operation has a Maximum Applied Water Allowance greater than its Estimated Total Water Use.

GSH anticipates that the actual water usage of their proposed cultivation operation will be less than 432,000 gallons per year (based on water usage data from their existing cultivation operation), which is approximately 21 percent of the MAWA for the proposed cultivation operation and 23 percent of its ETWU.

- **Describe the methodology that will be used to measure the amount of water used and the required monitoring:**

Please see the table in Section 11., Water Resources, for the methodology of measuring water consumption and water volume monitoring plan.

Figure 14. Well Completion Report for APN 011-056-01

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.
File Original with DWR

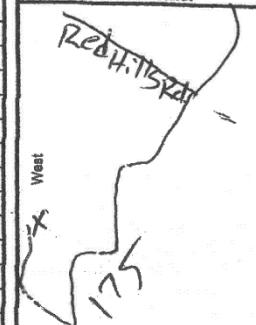
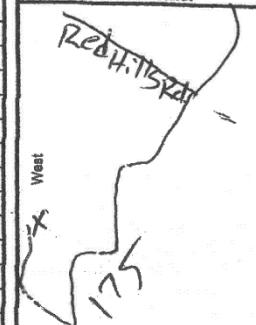
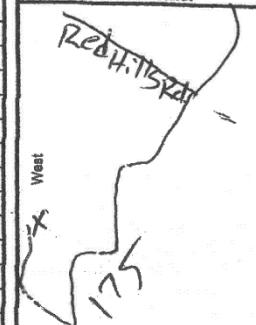
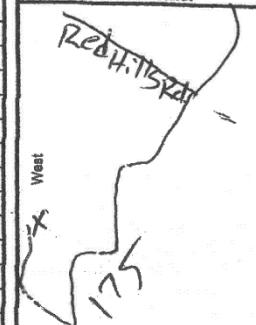
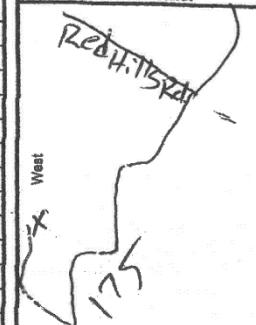
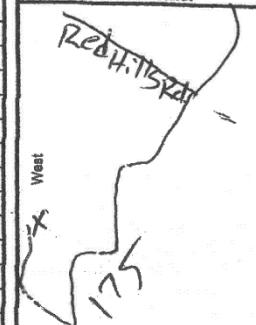
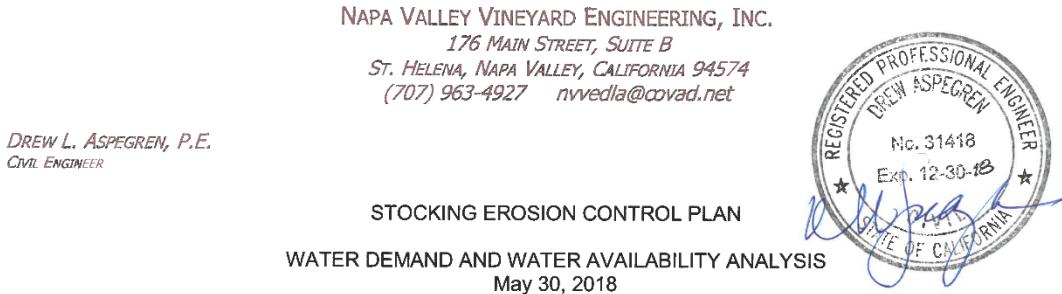
Page <u>1</u> of <u>1</u>		State of California																																																																																																																																																																																																								
Owner's Well Number <u>6-618</u>		Well Completion Report																																																																																																																																																																																																								
Date Work Began <u>6-6-18</u>		Refer to Instruction Pamphlet No. <u>0000000</u>																																																																																																																																																																																																								
Local Permit Agency <u>Lake County Environmental Health</u>		Date Work Ended <u>6-13-18</u>																																																																																																																																																																																																								
Permit Number <u>WE - 5031</u>		Permit Date <u>5-16-18</u>																																																																																																																																																																																																								
<table border="1"> <tr> <td colspan="2">Geologic Log</td> <td colspan="2">DWR Use Only - Do Not Fill In</td> </tr> <tr> <td>Orientation</td> <td><input checked="" type="radio"/> Vertical</td> <td><input type="radio"/> Horizontal</td> <td><input type="radio"/> Angle</td> </tr> <tr> <td>Drilling Method</td> <td colspan="3"><u>Air Rotory/Mud Rotory</u></td> </tr> <tr> <td>Depth from Surface</td> <td>Specify Drilling Fluid</td> <td colspan="2"><u>Bentonite</u></td> </tr> <tr> <td>Feet to Feet</td> <td colspan="3">Description</td> </tr> <tr> <td colspan="4">Describe material, grain size, color, etc.</td> </tr> <tr> <td>0</td> <td>20</td> <td colspan="2">Brown clay</td> </tr> <tr> <td>20</td> <td>35</td> <td colspan="2">Red/Black cinders</td> </tr> <tr> <td>35</td> <td>40</td> <td colspan="2">Multi color volcanics/cinders</td> </tr> <tr> <td>40</td> <td>60</td> <td colspan="2">Burgandy/Yellow/Purple</td> </tr> <tr> <td>60</td> <td>140</td> <td colspan="2">Black/Grey volcanics</td> </tr> <tr> <td colspan="4"> <table border="1"> <tr> <td colspan="2">Well Location</td> </tr> <tr> <td colspan="2">Address <u>8500 Hwy 175</u></td> </tr> <tr> <td colspan="2">City <u>Kelseyville</u></td> </tr> <tr> <td colspan="2">Latitude _____ N Longitude _____</td> </tr> <tr> <td>Datum _____</td> <td>Dec. Min. Sec. _____</td> </tr> <tr> <td>APN Book _____</td> <td>Page _____</td> </tr> <tr> <td>Township _____</td> <td>Range _____</td> </tr> <tr> <td colspan="2">Dec. Min. Sec. _____</td> </tr> <tr> <td colspan="2">Parcel <u>011-056-01</u></td> </tr> <tr> <td colspan="2">Section _____</td> </tr> </table> </td> </tr> <tr> <td colspan="4"> <table border="1"> <tr> <td colspan="2">Location Sketch</td> </tr> <tr> <td colspan="2">(Sketch must be drawn by hand after form is printed.)</td> </tr> <tr> <td colspan="2">North</td> </tr> <tr> <td colspan="2">  </td> </tr> <tr> <td colspan="2"> Sketch or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete. </td> </tr> </table> </td> </tr> <tr> <td colspan="4"> <table border="1"> <tr> <td colspan="2">Activity</td> </tr> <tr> <td><input type="radio"/> New Well</td> <td><input type="radio"/> Modification/Repair</td> </tr> <tr> <td><input type="radio"/> Deepen</td> <td><input type="radio"/> Other _____</td> </tr> <tr> <td><input type="radio"/> Destroy</td> <td><input type="radio"/> Describe procedures and materials under "GEOLIGIC LOG".</td> </tr> <tr> <td colspan="2">Planned Uses</td> </tr> <tr> <td><input type="radio"/> Water Supply</td> <td><input checked="" type="checkbox"/> Domestic</td> <td><input type="checkbox"/> Public</td> </tr> <tr> <td><input type="radio"/> Dewatering</td> <td><input type="checkbox"/> Irrigation</td> <td><input type="checkbox"/> Industrial</td> </tr> <tr> <td><input type="radio"/> Cathodic Protection</td> <td><input type="checkbox"/> Heat Exchange</td> <td></td> </tr> <tr> <td><input type="radio"/> Injection</td> <td><input type="checkbox"/> Monitoring</td> <td></td> </tr> <tr> <td><input type="radio"/> Remediation</td> <td><input type="checkbox"/> Sparging</td> <td></td> </tr> <tr> <td><input type="radio"/> Test Well</td> <td><input type="checkbox"/> Vapor Extraction</td> <td></td> </tr> <tr> <td><input type="radio"/> Other</td> <td></td> <td></td> </tr> </table> </td> </tr> <tr> <td colspan="4"> <table border="1"> <tr> <td colspan="2">Water Level and Yield of Completed Well</td> </tr> <tr> <td colspan="2">Depth to first water <u>60</u> (Feet below surface)</td> </tr> <tr> <td colspan="2">Depth to Static Water Level <u>50</u> (Feet)</td> </tr> <tr> <td colspan="2">Date Measured <u>6-11-18</u></td> </tr> <tr> <td colspan="2">Estimated Yield <u>90</u> (GPM)</td> </tr> <tr> <td colspan="2">Test Type <u>Art. lift</u></td> </tr> <tr> <td colspan="2">Test Length <u>3 Hrs.</u> (Hours)</td> </tr> <tr> <td colspan="2">Total Drawdown <u>0</u> (Feet)</td> </tr> <tr> <td colspan="4"> *May not be representative of a well's long term yield. </td> </tr> </table> </td> </tr> <tr> <td colspan="4"> <table border="1"> <tr> <td colspan="4">Casings</td> </tr> <tr> <td>Depth from Surface</td> <td>Borehole Diameter (Inches)</td> <td>Type</td> <td>Material</td> </tr> <tr> <td>Feet to Feet</td> <td></td> <td></td> <td>Thickness (Inches)</td> </tr> <tr> <td>0</td> <td>90</td> <td>12 1/4</td> <td>Steel</td> </tr> <tr> <td>90</td> <td>130</td> <td>12 1/4</td> <td>Steel</td> </tr> <tr> <td></td> <td>"</td> <td></td> <td></td> </tr> <tr> <td colspan="4"> <table border="1"> <tr> <td colspan="2">Annular Material</td> </tr> <tr> <td>Depth from Surface</td> <td>Fill</td> </tr> <tr> <td>Feet to Feet</td> <td>Description</td> </tr> <tr> <td>0</td> <td>Concrete</td> </tr> <tr> <td>1</td> <td>Bentonite</td> </tr> <tr> <td>20</td> <td>Sea</td> </tr> <tr> <td>20</td> <td>5% Pea Gravel Pack</td> </tr> </table> </td> </tr> </table> </td> </tr> <tr> <td colspan="2"> Attachments </td> <td colspan="2"> Certification Statement </td> </tr> <tr> <td colspan="2"> <input type="checkbox"/> Geologic Log <input type="checkbox"/> Well Construction Diagram <input type="checkbox"/> Geophysical Log(s) <input type="checkbox"/> Soil/Water Chemical Analyses <input type="checkbox"/> Other _____ </td> <td colspan="2"> I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief Name <u>Will Peterson</u> Person, Firm or Corporation <u>4789 Cascade Way</u> Address Signed <u>Will Peterson</u> Date <u>6-12-18</u> C-57 Licensed Water Well Contractor </td> </tr> <tr> <td colspan="2"> Attach additional information, if it exists. </td> <td colspan="2"> Date Signed <u>6-12-18</u> C-57 License Number <u>1009053</u> </td> </tr> </table>				Geologic Log		DWR Use Only - Do Not Fill In		Orientation	<input checked="" type="radio"/> Vertical	<input type="radio"/> Horizontal	<input type="radio"/> Angle	Drilling Method	<u>Air Rotory/Mud Rotory</u>			Depth from Surface	Specify Drilling Fluid	<u>Bentonite</u>		Feet to Feet	Description			Describe material, grain size, color, etc.				0	20	Brown clay		20	35	Red/Black cinders		35	40	Multi color volcanics/cinders		40	60	Burgandy/Yellow/Purple		60	140	Black/Grey volcanics		<table border="1"> <tr> <td colspan="2">Well Location</td> </tr> <tr> <td colspan="2">Address <u>8500 Hwy 175</u></td> </tr> <tr> <td colspan="2">City <u>Kelseyville</u></td> </tr> <tr> <td colspan="2">Latitude _____ N Longitude _____</td> </tr> <tr> <td>Datum _____</td> <td>Dec. Min. Sec. _____</td> </tr> <tr> <td>APN Book _____</td> <td>Page _____</td> </tr> <tr> <td>Township _____</td> <td>Range _____</td> </tr> <tr> <td colspan="2">Dec. Min. Sec. _____</td> </tr> <tr> <td colspan="2">Parcel <u>011-056-01</u></td> </tr> <tr> <td colspan="2">Section _____</td> </tr> </table>				Well Location		Address <u>8500 Hwy 175</u>		City <u>Kelseyville</u>		Latitude _____ N Longitude _____		Datum _____	Dec. Min. Sec. _____	APN Book _____	Page _____	Township _____	Range _____	Dec. Min. Sec. _____		Parcel <u>011-056-01</u>		Section _____		<table border="1"> <tr> <td colspan="2">Location Sketch</td> </tr> <tr> <td colspan="2">(Sketch must be drawn by hand after form is printed.)</td> </tr> <tr> <td colspan="2">North</td> </tr> <tr> <td colspan="2">  </td> </tr> <tr> <td colspan="2"> Sketch or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete. </td> </tr> </table>				Location Sketch		(Sketch must be drawn by hand after form is printed.)		North				Sketch or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.		<table border="1"> <tr> <td colspan="2">Activity</td> </tr> <tr> <td><input type="radio"/> New Well</td> <td><input type="radio"/> Modification/Repair</td> </tr> <tr> <td><input type="radio"/> Deepen</td> <td><input type="radio"/> Other _____</td> </tr> <tr> <td><input type="radio"/> Destroy</td> <td><input type="radio"/> Describe procedures and materials under "GEOLIGIC LOG".</td> </tr> <tr> <td colspan="2">Planned Uses</td> </tr> <tr> <td><input type="radio"/> Water Supply</td> <td><input checked="" type="checkbox"/> Domestic</td> <td><input type="checkbox"/> Public</td> </tr> <tr> <td><input type="radio"/> Dewatering</td> <td><input type="checkbox"/> Irrigation</td> <td><input type="checkbox"/> Industrial</td> </tr> <tr> <td><input type="radio"/> Cathodic Protection</td> <td><input type="checkbox"/> Heat Exchange</td> <td></td> </tr> <tr> <td><input type="radio"/> Injection</td> <td><input type="checkbox"/> Monitoring</td> <td></td> </tr> <tr> <td><input type="radio"/> Remediation</td> <td><input type="checkbox"/> Sparging</td> <td></td> </tr> <tr> <td><input type="radio"/> Test Well</td> <td><input type="checkbox"/> Vapor Extraction</td> <td></td> </tr> <tr> <td><input type="radio"/> Other</td> <td></td> <td></td> </tr> </table>				Activity		<input type="radio"/> New Well	<input type="radio"/> Modification/Repair	<input type="radio"/> Deepen	<input type="radio"/> Other _____	<input type="radio"/> Destroy	<input type="radio"/> Describe procedures and materials under "GEOLIGIC LOG".	Planned Uses		<input type="radio"/> Water Supply	<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Public	<input type="radio"/> Dewatering	<input type="checkbox"/> Irrigation	<input type="checkbox"/> Industrial	<input type="radio"/> Cathodic Protection	<input type="checkbox"/> Heat Exchange		<input type="radio"/> Injection	<input type="checkbox"/> Monitoring		<input type="radio"/> Remediation	<input type="checkbox"/> Sparging		<input type="radio"/> Test Well	<input type="checkbox"/> Vapor Extraction		<input type="radio"/> Other			<table border="1"> <tr> <td colspan="2">Water Level and Yield of Completed Well</td> </tr> <tr> <td colspan="2">Depth to first water <u>60</u> (Feet below surface)</td> </tr> <tr> <td colspan="2">Depth to Static Water Level <u>50</u> (Feet)</td> </tr> <tr> <td colspan="2">Date Measured <u>6-11-18</u></td> </tr> <tr> <td colspan="2">Estimated Yield <u>90</u> (GPM)</td> </tr> <tr> <td colspan="2">Test Type <u>Art. lift</u></td> </tr> <tr> <td colspan="2">Test Length <u>3 Hrs.</u> (Hours)</td> </tr> <tr> <td colspan="2">Total Drawdown <u>0</u> (Feet)</td> </tr> <tr> <td colspan="4"> *May not be representative of a well's long term yield. </td> </tr> </table>				Water Level and Yield of Completed Well		Depth to first water <u>60</u> (Feet below surface)		Depth to Static Water Level <u>50</u> (Feet)		Date Measured <u>6-11-18</u>		Estimated Yield <u>90</u> (GPM)		Test Type <u>Art. lift</u>		Test Length <u>3 Hrs.</u> (Hours)		Total Drawdown <u>0</u> (Feet)		*May not be representative of a well's long term yield.				<table border="1"> <tr> <td colspan="4">Casings</td> </tr> <tr> <td>Depth from Surface</td> <td>Borehole Diameter (Inches)</td> <td>Type</td> <td>Material</td> </tr> <tr> <td>Feet to Feet</td> <td></td> <td></td> <td>Thickness (Inches)</td> </tr> <tr> <td>0</td> <td>90</td> <td>12 1/4</td> <td>Steel</td> </tr> <tr> <td>90</td> <td>130</td> <td>12 1/4</td> <td>Steel</td> </tr> <tr> <td></td> <td>"</td> <td></td> <td></td> </tr> <tr> <td colspan="4"> <table border="1"> <tr> <td colspan="2">Annular Material</td> </tr> <tr> <td>Depth from Surface</td> <td>Fill</td> </tr> <tr> <td>Feet to Feet</td> <td>Description</td> </tr> <tr> <td>0</td> <td>Concrete</td> </tr> <tr> <td>1</td> <td>Bentonite</td> </tr> <tr> <td>20</td> <td>Sea</td> </tr> <tr> <td>20</td> <td>5% Pea Gravel Pack</td> </tr> </table> </td> </tr> </table>				Casings				Depth from Surface	Borehole Diameter (Inches)	Type	Material	Feet to Feet			Thickness (Inches)	0	90	12 1/4	Steel	90	130	12 1/4	Steel		"			<table border="1"> <tr> <td colspan="2">Annular Material</td> </tr> <tr> <td>Depth from Surface</td> <td>Fill</td> </tr> <tr> <td>Feet to Feet</td> <td>Description</td> </tr> <tr> <td>0</td> <td>Concrete</td> </tr> <tr> <td>1</td> <td>Bentonite</td> </tr> <tr> <td>20</td> <td>Sea</td> </tr> <tr> <td>20</td> <td>5% Pea Gravel Pack</td> </tr> </table>				Annular Material		Depth from Surface	Fill	Feet to Feet	Description	0	Concrete	1	Bentonite	20	Sea	20	5% Pea Gravel Pack	Attachments		Certification Statement		<input type="checkbox"/> Geologic Log <input type="checkbox"/> Well Construction Diagram <input type="checkbox"/> Geophysical Log(s) <input type="checkbox"/> Soil/Water Chemical Analyses <input type="checkbox"/> Other _____		I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief Name <u>Will Peterson</u> Person, Firm or Corporation <u>4789 Cascade Way</u> Address Signed <u>Will Peterson</u> Date <u>6-12-18</u> C-57 Licensed Water Well Contractor		Attach additional information, if it exists.		Date Signed <u>6-12-18</u> C-57 License Number <u>1009053</u>	
Geologic Log		DWR Use Only - Do Not Fill In																																																																																																																																																																																																								
Orientation	<input checked="" type="radio"/> Vertical	<input type="radio"/> Horizontal	<input type="radio"/> Angle																																																																																																																																																																																																							
Drilling Method	<u>Air Rotory/Mud Rotory</u>																																																																																																																																																																																																									
Depth from Surface	Specify Drilling Fluid	<u>Bentonite</u>																																																																																																																																																																																																								
Feet to Feet	Description																																																																																																																																																																																																									
Describe material, grain size, color, etc.																																																																																																																																																																																																										
0	20	Brown clay																																																																																																																																																																																																								
20	35	Red/Black cinders																																																																																																																																																																																																								
35	40	Multi color volcanics/cinders																																																																																																																																																																																																								
40	60	Burgandy/Yellow/Purple																																																																																																																																																																																																								
60	140	Black/Grey volcanics																																																																																																																																																																																																								
<table border="1"> <tr> <td colspan="2">Well Location</td> </tr> <tr> <td colspan="2">Address <u>8500 Hwy 175</u></td> </tr> <tr> <td colspan="2">City <u>Kelseyville</u></td> </tr> <tr> <td colspan="2">Latitude _____ N Longitude _____</td> </tr> <tr> <td>Datum _____</td> <td>Dec. Min. Sec. _____</td> </tr> <tr> <td>APN Book _____</td> <td>Page _____</td> </tr> <tr> <td>Township _____</td> <td>Range _____</td> </tr> <tr> <td colspan="2">Dec. Min. Sec. _____</td> </tr> <tr> <td colspan="2">Parcel <u>011-056-01</u></td> </tr> <tr> <td colspan="2">Section _____</td> </tr> </table>				Well Location		Address <u>8500 Hwy 175</u>		City <u>Kelseyville</u>		Latitude _____ N Longitude _____		Datum _____	Dec. Min. Sec. _____	APN Book _____	Page _____	Township _____	Range _____	Dec. Min. Sec. _____		Parcel <u>011-056-01</u>		Section _____																																																																																																																																																																																				
Well Location																																																																																																																																																																																																										
Address <u>8500 Hwy 175</u>																																																																																																																																																																																																										
City <u>Kelseyville</u>																																																																																																																																																																																																										
Latitude _____ N Longitude _____																																																																																																																																																																																																										
Datum _____	Dec. Min. Sec. _____																																																																																																																																																																																																									
APN Book _____	Page _____																																																																																																																																																																																																									
Township _____	Range _____																																																																																																																																																																																																									
Dec. Min. Sec. _____																																																																																																																																																																																																										
Parcel <u>011-056-01</u>																																																																																																																																																																																																										
Section _____																																																																																																																																																																																																										
<table border="1"> <tr> <td colspan="2">Location Sketch</td> </tr> <tr> <td colspan="2">(Sketch must be drawn by hand after form is printed.)</td> </tr> <tr> <td colspan="2">North</td> </tr> <tr> <td colspan="2">  </td> </tr> <tr> <td colspan="2"> Sketch or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete. </td> </tr> </table>				Location Sketch		(Sketch must be drawn by hand after form is printed.)		North				Sketch or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.																																																																																																																																																																																														
Location Sketch																																																																																																																																																																																																										
(Sketch must be drawn by hand after form is printed.)																																																																																																																																																																																																										
North																																																																																																																																																																																																										
																																																																																																																																																																																																										
Sketch or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.																																																																																																																																																																																																										
<table border="1"> <tr> <td colspan="2">Activity</td> </tr> <tr> <td><input type="radio"/> New Well</td> <td><input type="radio"/> Modification/Repair</td> </tr> <tr> <td><input type="radio"/> Deepen</td> <td><input type="radio"/> Other _____</td> </tr> <tr> <td><input type="radio"/> Destroy</td> <td><input type="radio"/> Describe procedures and materials under "GEOLIGIC LOG".</td> </tr> <tr> <td colspan="2">Planned Uses</td> </tr> <tr> <td><input type="radio"/> Water Supply</td> <td><input checked="" type="checkbox"/> Domestic</td> <td><input type="checkbox"/> Public</td> </tr> <tr> <td><input type="radio"/> Dewatering</td> <td><input type="checkbox"/> Irrigation</td> <td><input type="checkbox"/> Industrial</td> </tr> <tr> <td><input type="radio"/> Cathodic Protection</td> <td><input type="checkbox"/> Heat Exchange</td> <td></td> </tr> <tr> <td><input type="radio"/> Injection</td> <td><input type="checkbox"/> Monitoring</td> <td></td> </tr> <tr> <td><input type="radio"/> Remediation</td> <td><input type="checkbox"/> Sparging</td> <td></td> </tr> <tr> <td><input type="radio"/> Test Well</td> <td><input type="checkbox"/> Vapor Extraction</td> <td></td> </tr> <tr> <td><input type="radio"/> Other</td> <td></td> <td></td> </tr> </table>				Activity		<input type="radio"/> New Well	<input type="radio"/> Modification/Repair	<input type="radio"/> Deepen	<input type="radio"/> Other _____	<input type="radio"/> Destroy	<input type="radio"/> Describe procedures and materials under "GEOLIGIC LOG".	Planned Uses		<input type="radio"/> Water Supply	<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Public	<input type="radio"/> Dewatering	<input type="checkbox"/> Irrigation	<input type="checkbox"/> Industrial	<input type="radio"/> Cathodic Protection	<input type="checkbox"/> Heat Exchange		<input type="radio"/> Injection	<input type="checkbox"/> Monitoring		<input type="radio"/> Remediation	<input type="checkbox"/> Sparging		<input type="radio"/> Test Well	<input type="checkbox"/> Vapor Extraction		<input type="radio"/> Other																																																																																																																																																																										
Activity																																																																																																																																																																																																										
<input type="radio"/> New Well	<input type="radio"/> Modification/Repair																																																																																																																																																																																																									
<input type="radio"/> Deepen	<input type="radio"/> Other _____																																																																																																																																																																																																									
<input type="radio"/> Destroy	<input type="radio"/> Describe procedures and materials under "GEOLIGIC LOG".																																																																																																																																																																																																									
Planned Uses																																																																																																																																																																																																										
<input type="radio"/> Water Supply	<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Public																																																																																																																																																																																																								
<input type="radio"/> Dewatering	<input type="checkbox"/> Irrigation	<input type="checkbox"/> Industrial																																																																																																																																																																																																								
<input type="radio"/> Cathodic Protection	<input type="checkbox"/> Heat Exchange																																																																																																																																																																																																									
<input type="radio"/> Injection	<input type="checkbox"/> Monitoring																																																																																																																																																																																																									
<input type="radio"/> Remediation	<input type="checkbox"/> Sparging																																																																																																																																																																																																									
<input type="radio"/> Test Well	<input type="checkbox"/> Vapor Extraction																																																																																																																																																																																																									
<input type="radio"/> Other																																																																																																																																																																																																										
<table border="1"> <tr> <td colspan="2">Water Level and Yield of Completed Well</td> </tr> <tr> <td colspan="2">Depth to first water <u>60</u> (Feet below surface)</td> </tr> <tr> <td colspan="2">Depth to Static Water Level <u>50</u> (Feet)</td> </tr> <tr> <td colspan="2">Date Measured <u>6-11-18</u></td> </tr> <tr> <td colspan="2">Estimated Yield <u>90</u> (GPM)</td> </tr> <tr> <td colspan="2">Test Type <u>Art. lift</u></td> </tr> <tr> <td colspan="2">Test Length <u>3 Hrs.</u> (Hours)</td> </tr> <tr> <td colspan="2">Total Drawdown <u>0</u> (Feet)</td> </tr> <tr> <td colspan="4"> *May not be representative of a well's long term yield. </td> </tr> </table>				Water Level and Yield of Completed Well		Depth to first water <u>60</u> (Feet below surface)		Depth to Static Water Level <u>50</u> (Feet)		Date Measured <u>6-11-18</u>		Estimated Yield <u>90</u> (GPM)		Test Type <u>Art. lift</u>		Test Length <u>3 Hrs.</u> (Hours)		Total Drawdown <u>0</u> (Feet)		*May not be representative of a well's long term yield.																																																																																																																																																																																						
Water Level and Yield of Completed Well																																																																																																																																																																																																										
Depth to first water <u>60</u> (Feet below surface)																																																																																																																																																																																																										
Depth to Static Water Level <u>50</u> (Feet)																																																																																																																																																																																																										
Date Measured <u>6-11-18</u>																																																																																																																																																																																																										
Estimated Yield <u>90</u> (GPM)																																																																																																																																																																																																										
Test Type <u>Art. lift</u>																																																																																																																																																																																																										
Test Length <u>3 Hrs.</u> (Hours)																																																																																																																																																																																																										
Total Drawdown <u>0</u> (Feet)																																																																																																																																																																																																										
*May not be representative of a well's long term yield.																																																																																																																																																																																																										
<table border="1"> <tr> <td colspan="4">Casings</td> </tr> <tr> <td>Depth from Surface</td> <td>Borehole Diameter (Inches)</td> <td>Type</td> <td>Material</td> </tr> <tr> <td>Feet to Feet</td> <td></td> <td></td> <td>Thickness (Inches)</td> </tr> <tr> <td>0</td> <td>90</td> <td>12 1/4</td> <td>Steel</td> </tr> <tr> <td>90</td> <td>130</td> <td>12 1/4</td> <td>Steel</td> </tr> <tr> <td></td> <td>"</td> <td></td> <td></td> </tr> <tr> <td colspan="4"> <table border="1"> <tr> <td colspan="2">Annular Material</td> </tr> <tr> <td>Depth from Surface</td> <td>Fill</td> </tr> <tr> <td>Feet to Feet</td> <td>Description</td> </tr> <tr> <td>0</td> <td>Concrete</td> </tr> <tr> <td>1</td> <td>Bentonite</td> </tr> <tr> <td>20</td> <td>Sea</td> </tr> <tr> <td>20</td> <td>5% Pea Gravel Pack</td> </tr> </table> </td> </tr> </table>				Casings				Depth from Surface	Borehole Diameter (Inches)	Type	Material	Feet to Feet			Thickness (Inches)	0	90	12 1/4	Steel	90	130	12 1/4	Steel		"			<table border="1"> <tr> <td colspan="2">Annular Material</td> </tr> <tr> <td>Depth from Surface</td> <td>Fill</td> </tr> <tr> <td>Feet to Feet</td> <td>Description</td> </tr> <tr> <td>0</td> <td>Concrete</td> </tr> <tr> <td>1</td> <td>Bentonite</td> </tr> <tr> <td>20</td> <td>Sea</td> </tr> <tr> <td>20</td> <td>5% Pea Gravel Pack</td> </tr> </table>				Annular Material		Depth from Surface	Fill	Feet to Feet	Description	0	Concrete	1	Bentonite	20	Sea	20	5% Pea Gravel Pack																																																																																																																																																													
Casings																																																																																																																																																																																																										
Depth from Surface	Borehole Diameter (Inches)	Type	Material																																																																																																																																																																																																							
Feet to Feet			Thickness (Inches)																																																																																																																																																																																																							
0	90	12 1/4	Steel																																																																																																																																																																																																							
90	130	12 1/4	Steel																																																																																																																																																																																																							
	"																																																																																																																																																																																																									
<table border="1"> <tr> <td colspan="2">Annular Material</td> </tr> <tr> <td>Depth from Surface</td> <td>Fill</td> </tr> <tr> <td>Feet to Feet</td> <td>Description</td> </tr> <tr> <td>0</td> <td>Concrete</td> </tr> <tr> <td>1</td> <td>Bentonite</td> </tr> <tr> <td>20</td> <td>Sea</td> </tr> <tr> <td>20</td> <td>5% Pea Gravel Pack</td> </tr> </table>				Annular Material		Depth from Surface	Fill	Feet to Feet	Description	0	Concrete	1	Bentonite	20	Sea	20	5% Pea Gravel Pack																																																																																																																																																																																									
Annular Material																																																																																																																																																																																																										
Depth from Surface	Fill																																																																																																																																																																																																									
Feet to Feet	Description																																																																																																																																																																																																									
0	Concrete																																																																																																																																																																																																									
1	Bentonite																																																																																																																																																																																																									
20	Sea																																																																																																																																																																																																									
20	5% Pea Gravel Pack																																																																																																																																																																																																									
Attachments		Certification Statement																																																																																																																																																																																																								
<input type="checkbox"/> Geologic Log <input type="checkbox"/> Well Construction Diagram <input type="checkbox"/> Geophysical Log(s) <input type="checkbox"/> Soil/Water Chemical Analyses <input type="checkbox"/> Other _____		I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief Name <u>Will Peterson</u> Person, Firm or Corporation <u>4789 Cascade Way</u> Address Signed <u>Will Peterson</u> Date <u>6-12-18</u> C-57 Licensed Water Well Contractor																																																																																																																																																																																																								
Attach additional information, if it exists.		Date Signed <u>6-12-18</u> C-57 License Number <u>1009053</u>																																																																																																																																																																																																								

Figure 15. Water Demand and Water Availability Analysis, Stocking Erosion Control Plan



Water Demand

It is proposed that the new vineyard (259.02 net acres) will be irrigated using groundwater. The average annual water demand is:

$$\begin{aligned}
 (259.02 \text{ vine acres})(1089 \text{ vines/ac}) &= 282,073 \text{ vines} \\
 (282,073 \text{ vines})(100 \text{ gal/vine/yr})/(325,851 \text{ gal/af}) &= 86.6 \text{ afa (acre-feet per annum)}
 \end{aligned}$$

Allowing 0.5 afa for other minor agricultural uses, total average vineyard water use is expected to be ± 87.1 afa

There are no other uses for water on the property.

Water Availability

The soils mapped for the subject property are Aiken-Sobrante Association, Benbridge-Konocti Association, Bottlerock-Glenview-Arrowhead complex and Clear Lake Variant clay, drained, all of which are derived from the underlying volcanic parent material. It has been estimated that about 9-13% of rainfall which falls on these volcanics can percolate into the underlying formation and appear in the deep aquifers (USGS Water Resources Investigation 77-82, Michael Johnson, 1977); the remaining 87-91% flows off site as direct runoff or is held in the topsoils to be evapotransported by surface vegetation.

The five parcels plus easements total some 666.5 acres overlying these volcanic formations, and the average annual rainfall is $\pm 32"$ (USGS Isohyetal Map, Mean Annual Precipitation in the California Region, S.E. Rantz, 1972). On average, the property will receive $\pm 1,777$ af of rainfall ($666.5 \text{ ac} \times 32" = 1,777.33 \text{ af}$). Using a conservative estimate of 10% appearing as annual groundwater recharge, it is expected that the Stocking properties would contribute an average of about 178 af to the groundwater supply annually.

The Isohyetal Rainfall map shows that Ukiah and Stocking Vineyards have approximately the same average annual rainfall (32"). NOAA rainfall records for Ukiah show that 17.11" fell during 2013-14 and 24.73" during 2014-15. We consider 2014-15 to be a "dry year"; ($\pm 77\%$ of average) and 2013-14 to be an "extremely dry year: ($\pm 53\%$ of average). Assuming the same rainfall at Stocking Vineyards, and using the same analysis presented above, it is expected that for 2013-14, ± 950 acre-feet (af) would fall on the 666.5 acre property, and ± 95 af would appear as groundwater. Similarly, for 2014-15, $\pm 1,373$ af would fall on the property and ± 137 af would appear as groundwater.

Conclusions

Total average annual water demand is ± 87.1 afa, or about 49% of the subject properties' average annual groundwater recharge. Further, the 87.1 afa total water demand then would be $\pm 92\%$ (87/95) of the 2013-14 rainfall contribution to groundwater, and $\pm 63\%$ (87/137) during 2014-15. Over the long term, it is expected that using groundwater to support the proposed project will not diminish the underlying aquifer. Even during those back to back dry years, it is expected that vineyard irrigation would not have diminished the underlying aquifer nor impacted other wells.

Figure 16. Well-Parcel Landowner Authorization

DocuSign Envelope ID: A38E7454-B6C5-480A-9591-556DDF0C9D4D

Authorization

We, Porter G3 McIntire, LLC, the landowners of parcel APN 01105601, hereby authorize Golden State Herb to use the water extracted from a groundwater well with coordinates 38°55'19.52"N, 122°46'9.84"W located on said parcel for the commercial cannabis operations licensed at 8550 HWY 175, Kelseyville, CA 95451 (APN 01105506). The parcels are contiguous and both under the ownership of Porter G3 McIntire, LLC. This authorization shall remain in effect for the timeframe that Golden State Herb retains licensed cannabis operations on APN 01105506.



Bryant Stocking
Authorized Representative, Porter G3 McIntire, LLC

4/25/2019

Date

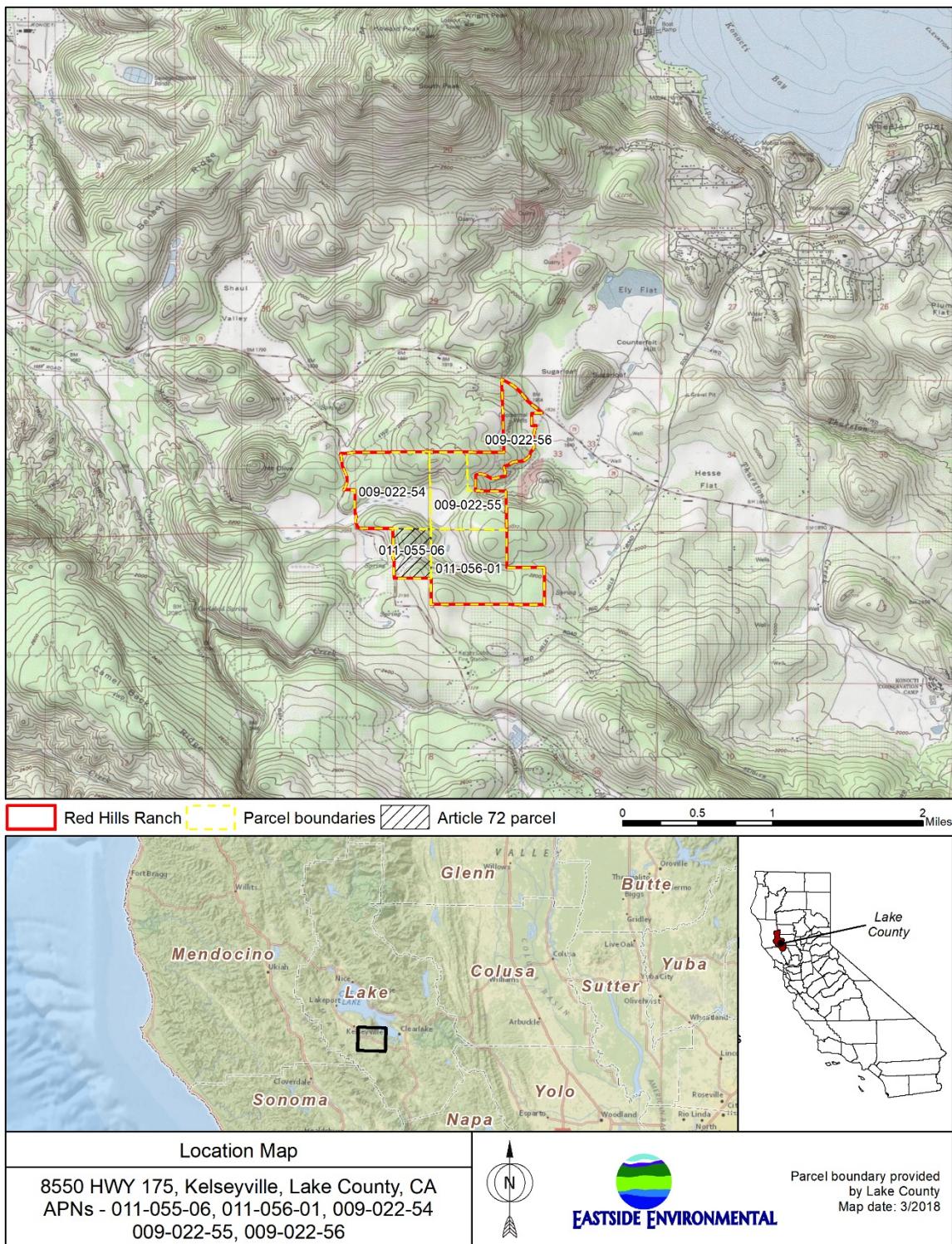
APPENDIX A: ASSOCIATED TECHNICAL DOCUMENTS

SECTION 1. AIR QUALITY: LAKE COUNTY AIR QUALITY MANAGEMENT DISTRICT AIR QUALITY MANAGEMENT PLAN

List & Criteria Part A

1. Name
 - A. Business License Name:
Golden State Herb, Inc.
 - B. Nature of Business:
Commercial cultivation of annual flowers
 - C. Name, address and phone number of person to contact regarding this application:
Crystal Keesey, Eastside Environmental, Inc. 1326 Bidwell Avenue, Chico, CA 95926
 - D. Type of use entitlement:
Lease
 - E. Estimated construction dates and estimated completion dates:
Existing on-going agricultural operations plus infrastructure expansion through Dec 2019
2. Type of Application
 - A. Original Application
 - B. 1. Existing Facility, not previously permitted
3. Description of Facility
 - A. Location
 1. Street address of facility: 8550 HWY 175 Kelseyville, CA : See Figure 1

Figure 1. Location Map



2. Plot plan: See attached sheets.
3. Description of Process (to extent practical as determined by District):

Commercial cultivation of annual herbs

A. General Description of Each Process Line

Cannabis nursery (seeds and vegetative starts “clones”) are raised in an assisted light facility (veg room) and are then moved to either a greenhouse or to the outdoor cultivation facility, depending on the final destination for the vegetative plants. Final destination for vegetative plants will be either:

- Plants for outdoor crop
- Plants for nursery sales
- Plants for seed production

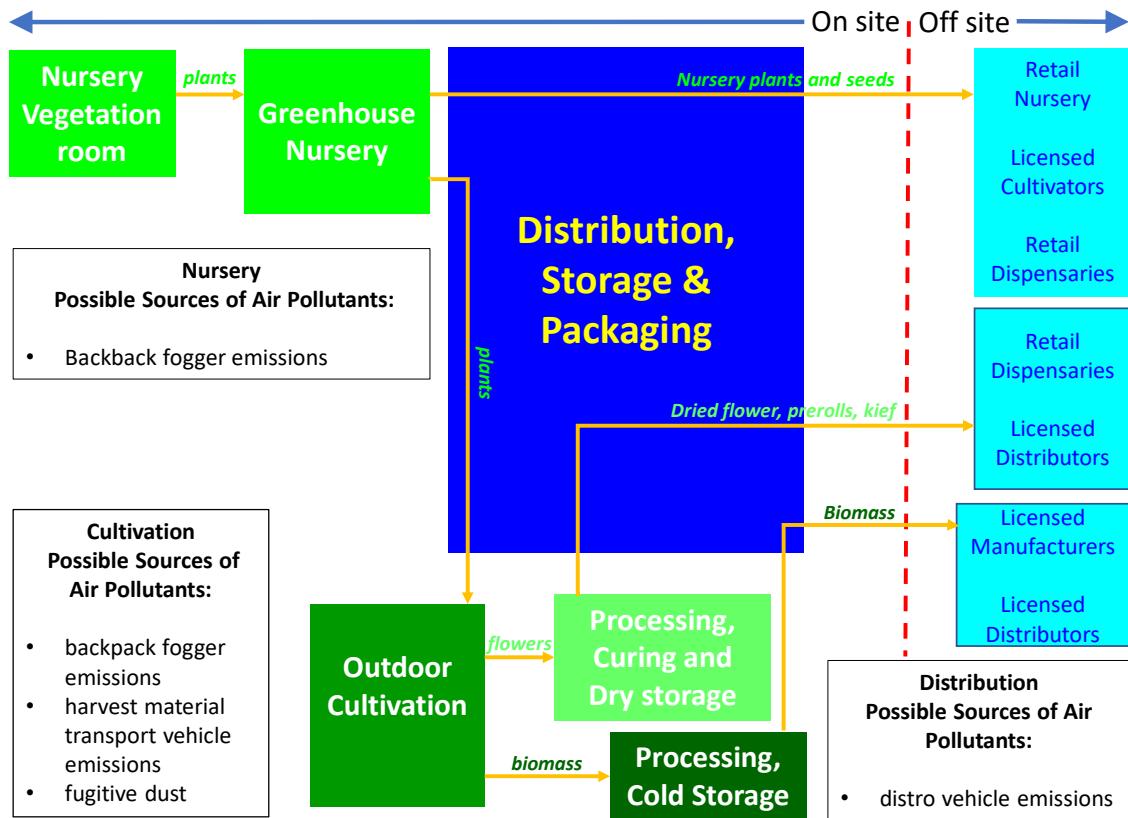
Plants for nursery sales will be moved via distribution to retail outlets, licensed cultivators or other wholesale facilities.

Plants for the outdoor crop will be transferred via distribution to the cultivation area of the Ranch and planted for flower harvesting upon maturity. Mature flowers will be harvested, then dried, cured and processed, or processed and frozen, depending upon the farm cultivation plans for any given year. Final processed product will be moved via distribution to retail outlets, manufacturers, or other wholesale entities.

B. For facilities with more than one process line:

1. Block Flow Diagram; and
2. Submit a drawing which shows the transfer of materials, products and possible sources of air pollutants:

2019 Process Flow Diagram for Nursery & Cultivation Operations Lake APN 01105506



C. Basic and Control Equipment Descriptions:

HVAC Equipment:

Veg Room Lighting & Ventilation
 Nursery/Greenhouse Lighting & Ventilation
 Curing Ventilation Fans & Dehumidification
 Storage Dry & Cold

Farming equipment:

Tractor/Bobcat
 Backpack fogger

Distribution equipment:

Distribution vehicles

D. Operating schedule:
10 hours/day, 7 days/week, 52 days/year

E. Hourly Production rates: N/A
Daily Production rates: N/A
Monthly Production Rates: 500 lbs/month processed
Raw material usage rates: 500 lbs/month (same as monthly production rates)

F. Total Average Annual Production Rates and Raw Material Usage Rates:
1.5 tons per year raw cannabis plant material grown & processed annually

G. Proposed Basic equipment:

- Veg Room Lighting
- Veg Room HVAC
- Nursery/Greenhouse Lighting
- Nursery/Greenhouse HVAC
- Storage HVAC
- Generator
- Backpack fogger
- Flower gin/harvester

H. Control Equipment: N/A except for HVAC control (thermostat)

V. N/A. No gas is used except for backpack fogger application or for generator usage.

VI. Storage Facilities

A. Use of onsite existing in 2019; design of new facility TBD 2019, implemented Q3 2019 -2020.

B. Materials stored: Dried or fresh frozen cannabis flower, nursery plants, seeds, and kief

C. Control Procedures and equipment utilized on storage facilities:

- Thermostat
- Dehumidifier
- HVAC
- Cold Storage
- Security

D. Storage exists under cold storage and freezer conditions

List & Criteria Part B

I. Information required for air quality impact analysis:

- A. N/A: no monitoring stations are proposed for this agricultural project
- B. Sufficient data for impact analysis:

1. Meteorological Data

The climate of the area is Mediterranean, characterized by hot dry summers and wet, moderately-cold winters; average temperatures range from a high of 92 °F to a low of 55°F in the dry summer months to a high of 55 °F degrees and a low of 32 °F in the wet season.

2. Topographical Data

Stocking Vineyard BLOCK M

Topography and Drainage: The Stocking Vineyard property lies at the base of a series of low hills constituting the eastern edge of the Mayacamas Mountains at a point where the terrain again rises along the southern slope of Mount Konocti. The property is dominated by two central wetland basins surrounded by low hills.

Drainage is primarily internal to these basins, which in turn drain via McIntire Creek. This creek flows west to its confluence with Cole Creek which drains north through the Big Valley to Clear Lake. The property extends north via a narrow “panhandle” to State Highway 29. Slopes here drain east to Thurston Creek, which eventually enters the isolated drainage basin of Thurston Lake

3. Air quality Data

Under Lake Air Quality Management District jurisdiction

4. Computer Modeling Data

CalEEMod?

II. Identify all facilities within air basin that are owned or operated by the applicant and the compliance status of each:

No other facilities are owned or operated by the applicant.

III. Power consumption of facility:

A. Total amount of electrical power to be consumed by the new facility

Electrical power load calculations have not been generated as the new greenhouse and processing/curing/storage facilities are currently being designed; details will be provided when plan sets are generated.

Currently the operations utilizes approximately 60 Amps for the temporary processing/curing and storage facilities.

B. Percentage of electrical power provided by offsite generating facilities: 90%
Identify the source of power: PG&E

IV. Cargo Carriers: no cargo carriers other than motor vehicles will be utilized on the Project site

- Soil and Nutrient delivery
- Processed product Distribution
- Waste Disposal

Frequency of Visits:

- Soil delivery: 1x/year
- Nutrient delivery: 2x/year
- Processed product transfer to manufacturer or distributor: 12x/year

Types, sizes:

- Soil delivery: 6-10 yard dump truck, or semi flatbed trailer;
- Nutrient delivery: one-ton pick up;
- Distribution vehicles: Freezer truck, box truck, distribution van;
- Waste Disposal: Average Garbage Truck

Nature of Cargo:

- Farming topsoil
- Processed Products ready for Distribution
- Waste

Conditions for transfer:

- Soil transferred onto soil mixing pad area or pallet storage area;
- Nutrients will be delivered into designated storage facilities;
- Processed product will be transferred via secured storage containers from cold or freezer storage facility to box/refrigerated/freezer truck;
- Waste will be collected via garbage truck from locked waste containers onsite.

V. Trade offs:

Project would like to apply for carbon offsets for the annual canopy of carbon-sequestering plants grown onsite.

VI. Mitigation:

A. No air pollution control equipment will be installed

B. Process operations utilized to reduce emissions:

- Low emission generator
- High efficiency/ low exhaust HVAC
- Solar powered ventilation systems
- Composting rather than municipal waste disposal

C. **Exemption request for ongoing cannabis agricultural operations**

The applicant hereby requests that an agricultural operations exemption should be issued by Lake County Air Quality Management District for the project's existing and proposed agricultural activities, which primarily involve cannabis cultivation and composting of **green** material on-site only.

D. The applicant relies on Health and Safety Code Section 41705, subdivision (a), which reads:

- (a) Section 41700 does not apply to odors emanating from any of the following:
 - (1) Agricultural operations necessary for the growing of crops or the raising of fowl or animals.
 - (2) Operations that produce, manufacture, or handle compost, as defined in Section 40116 of the Public Resources Code, if the odors emanate from the compost facility or operations.
 - (3) Operations that compost **green** material or animal waste products derived from agricultural operations, and that return similar amounts of the compost produced to that same agricultural operations source, or to an agricultural operations source owned or leased by the owner, parent company, or subsidiary conducting the composting operation. The composting operation may produce an incidental amount of compost not exceeding 2,500 cubic yards of compost, which may be given away or sold annually.

The applicant further asserts a general exemption from Lake County AQMD regulations because there is no substantial evidence that a small-scale cannabis cultivation facility operated on this site, both as it currently exists and as proposed, has the potential to generate quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property.

E. More specifically, the applicant refers to Section 430 of the Lake County AQMD rulebook: No person shall discharge, or permit to be discharged from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to cause injury or damage or have natural tendency to cause injury or damage to business or property (Health and Safety Code Section 41700). **This does not apply to odors emanating from agricultural operations in the growing of crops or raising of animals** (Health and Safety Code Section 41705). (emphasis added)

It also bears note that the cultivation site does not represent a new stationary source, nor a

proposed modification of an existing stationary source, that will emit:

- a. More than either twenty (20) pounds per hour or one hundred and fifty (150) pounds per day of nitrogen oxides, organic gases or any air contaminant for which there is a local, state or national ambient air quality standard, except carbon monoxide, or
- b. More than either one hundred and fifty (150) pounds per hour or fifteen hundred (1,500) pounds per day of carbon monoxide; or
- c. More than twenty-seven (27) pounds of lead per day.

Nor is the district's assignment of cannabis farms to Category VI supported by substantial evidence. A cannabis cultivation site with a maximum canopy of approximately one acre cannot fairly be described as a "major source" akin to a geothermal power plant when it is fully contained on a 52-acre agricultural parcel. The district lacks any ability to measure so-called cannabis "emissions," nor fairly conclude that they rank in the same category as major sources exceeding one hundred (100) tons/year of pollutants. Whatever the merits of the district's position as it pertains to commercial cannabis cultivation in general, the site-specific facts of this application strongly support the granting of an agricultural exemption for the proposed activities.

In making this request for an agricultural exemption, the applicant does not desire to delay timely action on any temporary permit or any Authority to Construct permit covering **greenhouse** construction. The applicant intends to pay all AQMD fees to facilitate review and processing of this application.

However, the applicant does wish to state the relevant facts supporting this exemption request from ongoing AQMD oversight of ongoing cannabis operations, including any annual renewal requirement. Should the Air Pollution Control Officer decline to grant such an exemption, the applicant requests:

- That such determination shall be made in writing and clearly state the reason(s) for denial, and
- That any such denial letter provide detailed information about any district appeals procedure, including any applicable deadlines.

SECTION 2. CULTURAL RESOURCES: HISTORICAL RESOURCES SURVEY

**An Historical Resources Survey for
The Stocking Vineyard Project
Lake County, California**

Taylor Alshuth, B.A.
Jacqueline Farrington, B.A.
Mark Arsenault, M.A., R.P.A.
and
Thomas M. Origer, M.A., R.P.A

September 23, 2016

Revised November 17, 2016



**An Historical Resources Survey for
The Stocking Vineyard Project
Lake County, California**

Prepared by:



Taylor Alshuth, B.A.
Jacqueline Farrington, B.A.
Mark Arsenault, M.A., R.P.A.
and
Thomas M. Origer, M.A., R.P.A.

Tom Origer & Associates
Post Office Box 1531
Rohnert Park, California 94927
(707) 584-8200

Prepared for:

Drew Aspegren
Napa Valley Vineyard Engineering, Inc.
176 Main Street
St Helena, California 94574

September 23, 2016

Revised November 17, 2016

ABSTRACT

Tom Origer & Associates conducted an historical resources survey for the Stocking Vineyard project southeast of the intersection of Highways 175 and 29 in Lake County, California. The study was requested and authorized by Drew Aspegren, Napa Valley Vineyard Engineering, Inc., to meet requirements of the California Environmental Quality Act. The proposed project includes the development of approximately 500 acres of vineyard.

This study included archival research at the Northwest Information Center, Sonoma State University (NWIC File No. 16-0230), examination of the library and files of Tom Origer & Associates, Native American contact, and field inspection of the study area. Multiple historical resources were found within the study area. Documentation pertaining to this study is on file at the offices of Tom Origer & Associates (File No. 2016-091S).

The purpose of this report is to identify historical resources only (see definition of historical resources in the Regulatory Context section). This report will not address Tribal Cultural Resources as defined in Public Resources Code [PRC] 21074 (a)(1)(A)-(B).

This report contains information about the locations of archaeological sites. For the protection of these resources, this report, and such location information, should not be publicly circulated.

Synopsis

Project: Stocking Vineyard Project
Location: Highway 175, Lake County
Quadrangle: Kelseyville 7.5' series
Study Type: Intensive Survey
Scope: Approximately 500 acres
Finds: P-17-000297, Six prehistoric sites, one historic-era cemetery, two isolated prehistoric specimens, one historic-era building pad/foundation, one historic-era stone fence, one historic-era building

Project Personnel

Tom Origer provided project oversight for this study and participated in the field survey. Mr. Origer obtained a Master of Arts degree in Anthropology from San Francisco State University in 1983, after obtaining a Bachelor of Arts degree in Anthropology at Sonoma State University in 1974. He has over forty years of experience in cultural resources management throughout Northern California. His experience includes work that has been completed in compliance with local ordinances, CEQA, NEPA, and Section 106 (NHPA) requirements. Mr. Origer taught archaeological analysis and field archaeology classes at Santa Rosa Junior College from 1979 to 2009. He is affiliated with the Society for California Archaeology (Presidential duties from April 1998 to April 2001), the International Association for Obsidian Studies (charter member and President from 1990-1992), the Archaeological Institute of America (President of the North Coast Society from 1985 to 1987), the Society for American Archaeology, the Society for Historical Archaeology, and the Register of Professional Archaeologists.

Taylor Alshuth participated in the field phase of this study and revised the report. Mr. Alshuth obtained a Bachelor of Arts degree in Anthropology from Humboldt State University in 2014, after obtaining a Associate of Arts degree in Anthropology at Santa Rosa Junior College in 2012. He is affiliated with the Society for California Archaeology, the Archaeological Institute of America, and the Archaeological Conservancy. Mr. Alshuth has been a part of northern California archaeology since 2014.

Mark Arsenault conducted the field survey and coauthored this report. Mr. Arsenault received an M.A. in applied anthropology from Humboldt State University. He has five years of archaeological experience in northern California, and has conducted surveys and excavations on both prehistoric and historic sites across northern California. Mr. Arsenault's professional affiliations include the Society for California Archaeology, the State of Jefferson Historical Society, the Trinity County Historical Society, and the Register of Professional Archaeologists.

Jacqueline Farrington participated in the field survey and coauthored the report for this study. Ms. Farrington received her Bachelor of Arts degrees in Anthropology and Geography from Humboldt State University. She has been working in northern California cultural resources management since 2014, and she is also an active member of the Society for California Archaeology, the California Geographic Society, and the Trinity County Historical Society.

CONTENTS

Abstract	i
Synopsis	i
Project Personnel	ii
Introduction	1
Regulatory Context	1
Resource Definitions	2
Significance Criteria	2
Project Setting	3
Study Area Location and Description	3
Cultural Setting	5
Study Procedures and Results	5
Native American Contact Procedures	5
Native American Contact Results	5
Archival Study Procedures	6
Archival Study Results	6
Field Survey Procedures	7
Field Survey Results - Archaeology	7
Field Survey Results - Built Environment	9
Recommendations	10
Known Resources	10
Archaeology	10
Built Environment	11
Accidental Discovery	11
Summary	11
Materials Consulted	12
Appendix A: Native American Contact	
Appendix B: DPR 523 Forms	

FIGURES

Figure 1. Project vicinity	1
Figure 2. Study location	4

INTRODUCTION

This report describes an historical resources survey for the Stocking Vineyard project southeast of the intersection of Highways 175 and 29 in Lake County, California. The study was requested and authorized by Drew Aspren, Napa Valley Vineyard Engineering, Inc., in compliance with the requirements of the California Environmental Quality Act. The proposed project includes the development of approximately 500 acres of vineyard. Documentation pertaining to this study is on file at Tom Origer & Associates (File No. 2016-091S).

REGULATORY CONTEXT

The California Environmental Quality Act (CEQA) requires that historical resources be considered during the environmental review process. This is accomplished by conducting an inventory of resources within a study area and by assessing the potential that historical resources could be affected by development. The term "Historical Resources" encompasses prehistoric and historical archaeological sites and built environment resources (e.g., buildings, bridges, canals). An additional category of resources is defined in CEQA under the term "Tribal Cultural Resources" (Public Resources Code Section 21074). They are not addressed in this report. Tribal cultural resources are resources that are of specific concern to California Native American tribes, and knowledge of such resources is limited to tribal people. Pursuant to revisions to CEQA enacted in July of 2015, such resources are to be identified by tribal people in direct, confidential consultation with the lead agency (PRC §21080.3.1).

This historical resources survey was designed to satisfy environmental issues specified in the CEQA and its guidelines (Title 14 CCR §15064.5) by: (1) identifying all historical resources within the project area; (2) offering a preliminary significance evaluation of the identified cultural resources; (3)

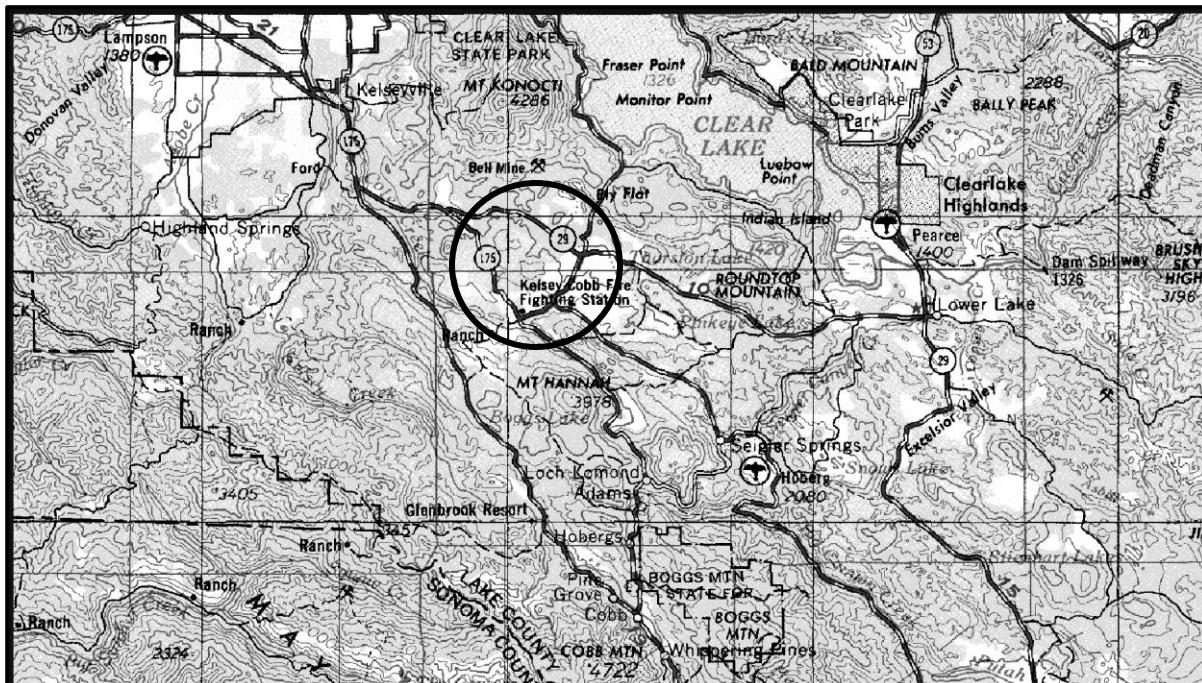


Figure 1. Project vicinity (adapted from the 1980 Santa Rosa 1:250,000-scale USGS map).

assessing resource vulnerability to effects that could arise from project activities; and (4) offering suggestions designed to protect resource integrity, as warranted.

Resource Definitions

Historical resources are classified by the State Office of Historic Preservation (OHP) as sites, buildings, structures, objects and districts, and each is described by OHP (1995) as follows.

Site. A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure.

Building. A building, such as a house, barn, church, hotel, or similar construction, is created principally to shelter any form of human activity. "Building" may also be used to refer to a historically and functionally related unit, such as a courthouse and jail, or a house and barn.

Structure. The term "structure" is used to distinguish from buildings those functional constructions made usually for purposes other than creating human shelter.

Object. The term "object" is used to distinguish from buildings and structures those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object is associated with a specific setting or environment.

District. A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

Significance Criteria

When a project might affect an historical resource, the project proponent is required to conduct an assessment to determine whether the effect may be one that is significant. Consequently, it is necessary to determine the importance of resources that could be affected. The importance of a resource is measured in terms of criteria for inclusion on the California Register of Historical Resources (Title 14 CCR, §4852(a)) as listed below. A resource may be important if it meets any one of the criteria below, or if it is already listed on the California Register of Historical Resources or a local register of historical resources.

An important historical resource is one which:

1. Is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

2. Is associated with the lives of persons important to local, California, or national history.
3. Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of a master or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, eligibility for the California Register requires that a resource retains sufficient integrity to convey a sense of its significance or importance. Seven elements are considered key in considering a property's integrity: location, design, setting, materials, workmanship, feeling, and association.

Additionally, the OHP advocates that all historical resources over 45 years old be recorded for inclusion in the OHP filing system (OHP 1995:2), although the use of professional judgment is urged in determining whether a resource warrants documentation.

PROJECT SETTING

Study Area Location and Description

The study area is located between Highways 175 and 29 in Lake County, California, as shown on the Kelseyville 7.5' USGS topographic map (Figure 2). The study area consists of approximately 500 acres, varying from rugged mountainous land to valley marshland.

Nearby water sources were identified by examining the USGS Kelseyville 7.5' topographic map. The closest intermittent or perennial stream is McIntire Creek, which flows through the study area. However, it should also be noted that there are multiple springs located in the vicinity of the study area. Two of these are located near the southwestern boundary of the project area and one is located near the southeastern boundary.

The geology of the study area consists of Quaternary volcanic rocks and minor pyroclastic deposits (Carlos *et al.* 2010; Koenig 1963). Soils within the study area belong to the Aiken-Sobrante and Bottlerock-Glenview-Arrowhead complex series (Smith and Broderson 1989:Sheet 21). Both soil types are found on hills and mountains and are well drained. Aiken-Sobrante soils support the growth of conifers, hardwoods, and annual grasses. Bottlerock-Glenview-Arrowhead soils are extremely gravelly with either a loam or sand constituent. They support the growth of brush and hardwoods with conifers (Smith and Broderson 1989:29). Historically these soils have been used for timber and firewood production, wildlife habitat, and orchards (Smith and Broderson 1989:19).

The project area and its surroundings include a nearby fresh water source and well-drained soils that could have supported a variety of plants that in turn could have served as food and cover for animals. The presence of these natural attributes suggests that the study area could have been a desirable place for prehistoric people to live and gather resources.

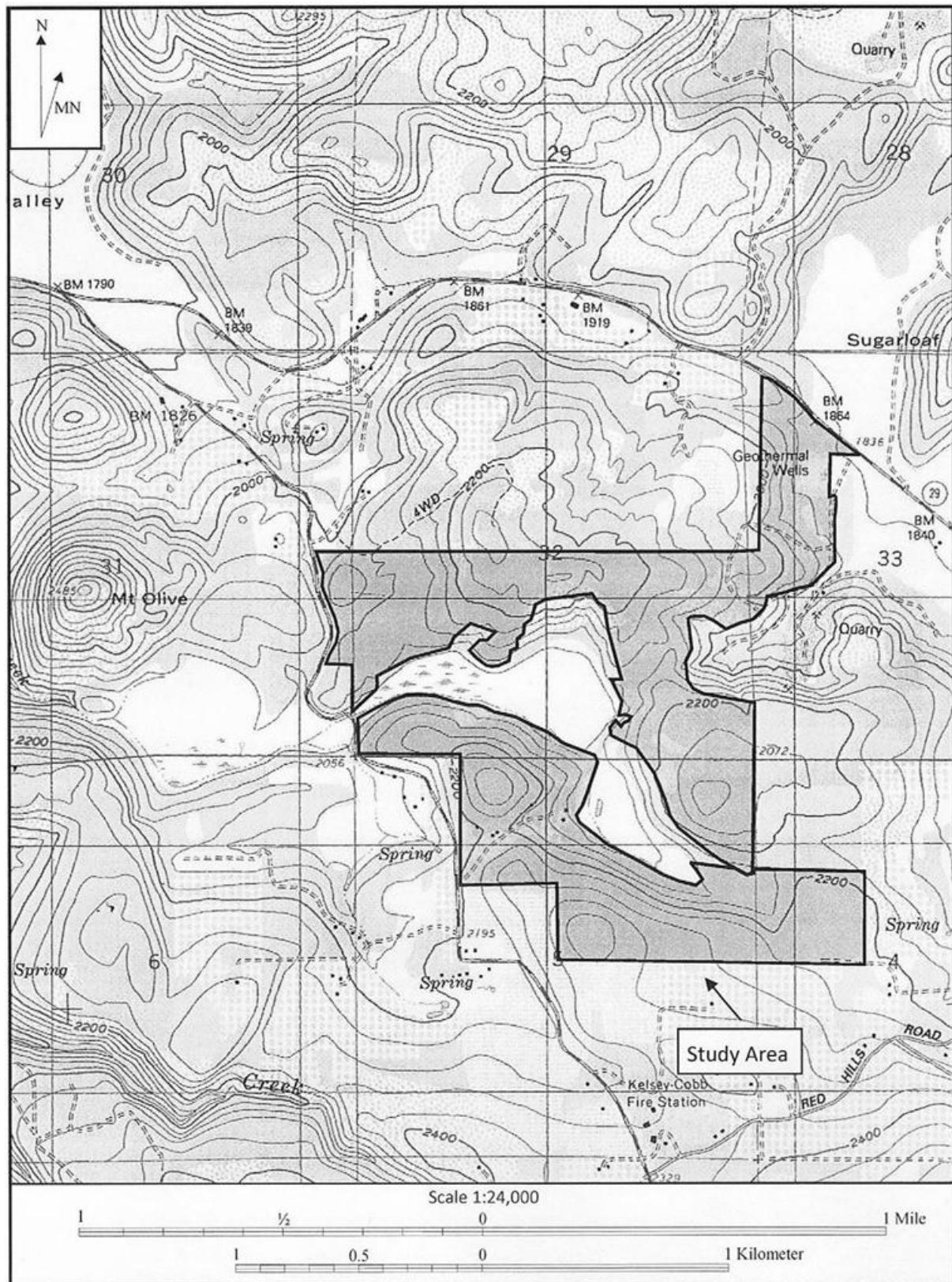


Figure 2. Study area location (adapted from the 1993 USGS Kelseyville 7.5' USGS topographic map).

Cultural Setting

Archaeological evidence indicates that human occupation of California began at least 11,000 years ago (Erlandson *et al.* 2007). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion.

Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

At the time of European settlement, the study area was included in the territory controlled by the Wappo (Barrett 1908:274; Golla 2011:189; Sawyer 1978:256). The Wappo were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures (Barrett 1908; Kroeber 1925). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied continually throughout the year and other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near sources of fresh water and in ecotones where plant life and animal life were diverse and abundant.

The first Euroamericans to settle near the study area would have arrived sometime after 1854 (Sanderson and Carpenter 2005:31). In 1861, the California Governor approved plans to combine parts of Colusa, Mendocino, and Napa Counties to create Lake County (Lake County Department of Development 2016). While early economic activities in this region focused on subsistence and cash agriculture, by the late 19th century the regional mercury mining boom hit Lake County and was one of the primary draws for settlers. Regional mining had mostly subsided by the 20th century, resulting in a switch to recreation as a major economic activity in Lake County (Sanderson and Carpenter 2005:40). Similarly to adjacent Napa County, wine was a major export of early Lake County. Although viticulture suffered greatly during the prohibition era in Lake County, it has since returned in the last forty years to dominate the landscape, taking over from crops previously produced. Other common exports of Lake County include walnuts and pears - both trees which thrive in the Mediterranean climate and volcanic soil native to Lake County (Lake County Historical Society 2015).

STUDY PROCEDURES AND RESULTS

Native American Contact Procedures

The State of California's Native American Heritage Commission and the Big Valley Rancheria of Pomo Indians were contacted in writing. A log of contact efforts is provided at the end of this report (Appendix A). This contact represents notification of the project and an opportunity to comment, and does not constitute formal consultation with tribes.

Native American Contact Results

The Native American Heritage Commission responded stating that a search of their sacred land files found no record of cultural resources within the study area. A list of additional contacts was provided. No other responses have been received as of the date of this report.

Archival Study Procedures

Archival research included examination of the library and project files at Tom Origer & Associates. A review (NWIC File No. 16-0230) was completed of the archaeological site base maps and records, survey reports, and other materials on file at the Northwest Information Center (NWIC), Sonoma State University, Rohnert Park. Sources of information included but were not limited to the current listings of properties on the National Register of Historic Places, California Historical Landmarks, California Register of Historical Resources, and California Points of Historical Interest as listed in the Office of Historic Preservation's *Historic Property Directory* (OHP 2012).

The Office of Historic Preservation has determined that structures in excess of 45 years of age should be considered potentially important historical resources, and former building and structure locations could be potentially important historic archaeological sites. Archival research included an examination of historical maps to gain insight into the nature and extent of historical development in the general vicinity, and especially within the study area. Map resources ranged from hand-drawn maps of the 1800s (e.g., General Land Office) to topographic maps issued by the United States Geological Survey (USGS) and the United States Army Corps of Engineers (USACE).

In addition, ethnographic literature that describes appropriate Native American groups, county histories, and other primary and secondary sources were reviewed. Sources reviewed are listed in the "Materials Consulted" section of this report.

Archival Study Results

Archival research found that the entire study area was surveyed by two previous studies of the property (Fredrickson 1976; Parker 1979) and partially surveyed during another study (Cinek 2016). These studies located a historic mining camp, CA-LAK-784H, CA-LAK-757, a cemetery, and a scatter of sparse lithics. Additionally, one prehistoric village site was recorded within the boundary of the project area (CA-LAK-279). The cemetery was identified as belonging to the Stephens family, who were the former occupants. The cemetery was in use during the 1860s and contains the headstones and footstones of the children of the Stephens family who all reportedly died of smallpox (Crabtree 2015).

Six additional studies were completed within a half-mile of the survey area (Caltrans 2006, 2015, Paullin 2011, Peak 1998, 1999, Tremaine 2008).

There are no reported ethnographic sites within one mile of the survey area (Barrett 1908; Sawyer 1978).

A review of 19th and 20th century maps shows four older buildings within the study area (USACE 1943; USGS 1943; 1959). Land patent letters and plats show that the southern portion of the study area was owned and occupied by Robert Oliver in 1871 (GLO 1871). A portion of the study area was patented to Mary Brooks in 1891, and another portion to Bolter Hiram in 1880. No structures or residences are depicted on GLO Plats as belonging to these individuals (GLO 1880; 1890). The study area land has changed hands numerous times since its depiction on the above listed maps.

Based on the distribution of known cultural resources and their environmental settings, it was anticipated that prehistoric archaeological sites could be found within the study area. Prehistoric

archaeological site indicators expected to be found in the region include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and handstones, and mortars and pestles; bedrock outcrops and boulders with mortar cups; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

Field Survey Procedures

An intensive field survey was completed by Mark Arsenault, Jacqueline Farrington, and Taylor Alshuth from August 18th - 21st, 2016. Two of the report authors (Taylor and Tom) visited selected portions of the project site on November 4, 2016. The portions of the property that were proposed for development were intensively surveyed using approximately 15 meter transects. Ground visibility was poor throughout most of the study area, with vegetation being the primary hindrance. Ground visibility along roadways was good. Hand tools were used to clear grasses, forbs, and duff in order to inspect the soil for archaeological site indicators.

Field Survey Results - Archaeology

Five previously recorded sites (CA-LAK-279, CA-LAK-757, CA-LAK-784H, Tool Shed Site, Stephens Family Cemetery) had been recorded within the current project area, and were visited during the survey. In addition, five sites were newly recorded as a result of this study. Finally, two isolated artifacts were discovered and recorded. CAL FIRE site designations are shown when available. See Appendix B for DPR 523 forms.

Previously Recorded Site P-17-000297/CA-LAK-279

The following description is adapted from Mauldin (1965) and Parker and Thompson (1979a). This site consists of a midden mound, bedrock mortars, and lithic materials. The site measures 100 meters by 55 meters and is located at the southern end of a marshy valley. On-site vegetation includes marsh grasses, scattered oaks, and perennial grasses. Site visit on 8/20/16 confirmed site location through visual inspection.

Previously Recorded Site P-17-000647/CA-LAK-757

The following description is adapted from Damon (1976). This site originally was found on a flat overlooking the wetland area 50 meters southeast of a barn. The site measures 5 meters by 15 meters and is next to a small stream flowing from a spring. One unspecified projectile point was found at this site. Reinvestigation during the survey on August 21, 2016, failed to rediscover the site.

Previously Recorded Site P-17-000672/CA-LAK-784H

The following description is adapted from Parker (1976) and Parker and Thompson (1979b). This site consists of a historic mining camp, and includes historic artifacts and features. The site measures 45 meters by 60 meters and is located in a saddle between the marsh and the S-bar-S Quarry to the east. Site includes rock-lined pit features, stove fragments, ceramic and bottle fragments, and an old fence line. Attempts to locate this resource were unsuccessful on 8/20/16.

During field pre-consultation for the McIntire Nonindustrial Timber Management Plan (NTMP) Registered Professional Forester (RPF) Joe Cinek identified several features, including an old dirt road, several pits, and spoils piles which are presumed to be the same features as indicated on the

original and updated site records (Parker 1979). CAL FIRE archaeologist J. Charles Whatford agreed with Cinek's assessment of the observed features and their relation with CA-LAK-784H.

An endeavor to locate this resource was attempted by Taylor Alshuth and Tom Origer on 11/4/16. A debris scatter that consisted of container glass fragments and crushed aluminum cans was located in the presumed vicinity of the site, but the contents of the scatter appeared unassociated with the site.

Previously Recorded Tool Shed Site (CAL FIRE McIntire NTMP Site 7)

This site was previously identified by RPF Joe Cinek during his field survey (Cinek 2016). This site consists of a sparse scatter of obsidian flakes located on a gentle east facing slope. The site measures approximately 60 meters by 5 meters, and is located 150 meters west of McIntire Creek. The site is bisected by a dirt road intersection. Obsidian was the only cultural material noted. Flake density ranges from three to four flakes per square meter. A mix of interior and exterior flakes was noted within the site. Additionally, two obsidian bifaces and a reduced core were noted within the site. Vegetation consisted of grasses, thistles, and a former pear orchard. Visibility was fair throughout the road intersection. A large woodpile obscures the site. During reinvestigation on 8/21/16, the site was in the same condition as originally observed by Cinek.

Previously Recorded Historic-era Cemetery (CAL FIRE McIntire NTMP Site 2)

This site was previously identified by RPF Joe Cinek during his field survey (Cinek 2016). Additional information regarding the Stephens family cemetery can be found online (Crabtree 2015). The cemetery consists of historic-era headstones and footstones. Although several of the headstones were deteriorated, names and dates were still identifiable. The headstones were from the 1860's and belonged to the children of the James and Avia Stephen. One of the headstones is in excellent condition. In total, three of the headstones are in good enough condition for the names to still be identified. The broken remnants of two or possibly more footstones are also present within the cemetery, but are unable to be read due to their condition. During reinvestigation on 11/4/16, the cemetery was in the same condition as originally observed by Cinek.

Newly Recorded Site #1

This site consists of a sparse scatter of lithics on a north facing slope. The site measures 18 meters by 13 meters, and the site is 450 feet south of a marsh. Flake density ranges from approximately four to five flakes per square meter, and obsidian was the only cultural material present. A mix of interior and exterior flakes was noted within the site. Three reduced cores and a Stage 2 obsidian pre form biface were present as well. On-site vegetation consists mainly of oak (*Quercus*), gray pine (*Pinus sabiniana*), and manzanita (*Arctostaphylos*). The site is covered in a two to three centimeter layer of duff, and soil visibility was poor. The site is bisected by a small game trail.

Newly Recorded Site #2

This site consists of a lithic scatter on a northeast facing slope. The site measures 10 meters by 5 meters, and is 150 meters south of a marsh. Flake density ranges from approximately five to six flakes per square meter. Obsidian was the only cultural material present. A mix of interior thinning and exterior flakes was found. Additionally, one stage-3 pre form biface and several obsidian cores were identified within the site. Exposed basalt bedrock appears intermittently throughout the site. The site is covered by dense brush consisting mostly of manzanita (*Arctostaphylos*), and soil visibility was poor.

Newly Recorded Site #3

This site consists of a sparse lithic tool fragment scatter and a few flakes located at the foot of an east facing slope. The site measures 18 meters by 8 meters. It is 450 meters west of a spring. All cultural materials were obsidian. Three obsidian bifaces were found. The site is bisected by an unimproved dirt road and abuts a vineyard property boundary. On-site vegetation mostly consists of oak (*Quercus*),

gray pine (*Pinus sabiniana*), and abundant manzanita (*Arctostaphylos*). Site condition is fair due to the impact of the dirt road, and ground visibility is excellent within the road.

Newly Recorded Site #4

This site consists of a sparse scatter of lithic flake and tool located in a small valley. The site measures 40 meters by 30 meters, and is located 315 meters east of the McIntire Creek. Flake density ranges from approximately six to seven flakes per square meter. Obsidian was the only cultural material present. A mix of interior and exterior flakes was noted within the site. Several reduced cores and two obsidian bifaces were noted as well. The site is bisected by a small game trail and a dirt road. Recent log movement has disturbed the site and site condition is fair, with visibility being good. Local vegetation mostly consists of native grasses, oak (*Quercus*) and gray pine (*Pinus sabiniana*).

Newly Recorded Site #5

This site consists of a sparse scatter of obsidian flakes located on an open, east-facing slope near the entrance to the property. The site measures approximately 15 meters by 10 meters, and is located 300 meters northeast of a spring. Obsidian was the only cultural material noted. Flake density ranged from approximately three to four flakes per square meter. A mix of interior and exterior flakes was noted within the site. The site is bisected by minor game trails, and is within a clearing on the slope. Visibility is fair, with the main hindrance being grasses. The Historic Foundation Pad (see below) is located approximately 210 feet upslope to the east of the site.

Isolate #1

This isolate consists of a projectile point fragment and was observed within a power line cut on a north facing slope approximately 300 feet south of the marsh. It is the midsection of a petite obsidian projectile point. No other cultural remains were observed in association with this isolate.

Isolate #2

This isolate consists of a mostly-intact obsidian knife that measures approximately 4 centimeters across and 5 centimeters long. It is located on a north-facing slope, approximately 300 meters east of the previously recorded site, CA-LAK-784H. No other cultural remains were observed in association with this isolate.

Field Survey Results - Built Environment

One previously identified, but not recorded, feature had been identified and located during the field survey. In addition, two undocumented historic-era structures were recorded as a result of this study. CAL FIRE site designations are shown when available. See Appendix B for DPR 523 forms.

Newly Recorded Historic-era Foundation Pad (Possibly CAL FIRE NTMP Site 8)

This site consists of the remains of a leveled area on which a house once stood. The foundation pad is in the general vicinity of a building indicated on the Kelseyville 7.5' map. It is possible that the foundation pad is the remains of this building. The pad was constructed from locally sourced rock and dirt fill. It is generally rectangular in shape. Noted within the pad are two disconnected metal water pipes protruding from the retaining walls. Also, there were vertical, metal pipes that appeared to be part of a sink/wash area. Associated with the site are two wooden structures in a severely deteriorated condition. Additionally, a clear glass container, two modern amber glass bottles, and several sheets of corrugated metal siding were observed within the vicinity of the pad. The entire area is covered in a layer of vegetation and duff. Local vegetation mostly consists of oak trees and two large mulberry trees.

Newly Recorded Historic-era Stone Fence (Possibly CAL FIRE MTMP Site 6)

This feature consists of a stacked stone fence constructed from locally sourced stone. The fence stretches for approximately 75 feet and is severely deteriorated. The southern 12 feet is in the best condition. The tallest portion of the fence currently stands at two feet. Portions of a sheep and barbed wire fence run along the east side of the stone fence segment and beyond to the north. The sheep and barbed wire fence is severely deteriorated as well.

Newly Recorded Historic-era House

This house is a cross gabled building on an L plan with gabled and hipped roof wings. The front of the house features a screened porch under a separate gabled roof. The roof is uniformly comprised of standing seam metal sheeting. There is a shed-roof addition at the northeast-facing L intersection of the home, the siding of which is a mix of horizontal boards and shingles. The house is built on a slope, with a storage area constructed underneath a portion of the south side of the home. A rocked foundation is visible on portions of the house. The back entrance looks out onto a deck. The exterior of the house is shingled, and there are three slope chimneys present, with the largest being constructed of brick. Windows are uniformly wooden-framed, with the exception of a larger, single-pane window on the east-facing wall of the addition. The majority of the basement and south-facing wall is constructed of cinderblocks. Vegetation surrounding the house mostly consists of Oak, walnut trees, pear trees, and perennial grasses. Additionally, there are assorted ornamental plants in the front yard of the house, including a dwarf weeping mulberry tree and rose bushes. Approximately 300 feet southeast of the house are two sheds. Both appear to be in poor condition, and are thought to be coeval with the house.

RECOMMENDATIONS

Known Resources

Historical resources were located and recorded; therefore, resource-specific recommendations are warranted. Due to the sensitive nature of the area, caution is advised in the development of this land. The historical resources should be considered potentially eligible for inclusion on the California Register of Historical Resources.

In addition, CAL FIRE previously reviewed many of the sites for significance, and found that all reviewed historical resources were worthy of evaluation (Whatford 2015).

Archaeology

Historical resources must be protected from harm until such time as they are formally evaluated and determined to be insignificant. Because of CAL FIRE's previous involvement with the property, we include here protection measures to be implemented both within the boundaries of each site and within 100 feet of each site identified within the survey area. The following are examples of protection measures that may be applicable.

- A. Historical resource boundaries shall be freshly flagged prior to any ground disturbing activities.
- B. All areas within the flagged boundary of each historical resource shall be protected from ground disturbing activities such as tree and brush removal, grading, vineyard preparation/planting.

- C. If gravel/rock is imported to cap roads it shall be from a source that does not possess an archaeological site. Placement of gravel/rock within archaeological site boundaries shall be done on geofabric.
- D. New roads shall not be constructed within the flagged boundaries of any archaeological site.
- E. There shall be no piling or burning of brush/slash within the boundaries of any known historical resource.
- F. Collection of artifacts during land improvement shall not be permitted.

Additionally, it is recommended that all personnel involved with vineyard preparation, timber harvesting, tree and brush removal, grubbing, ripping, or other ground disturbing activities attend a training session to learn the protocol for archaeological site avoidance and what to do if cultural materials are uncovered (see Accidental Discovery). The training session should be given by a professional archaeologist.

Built Environment

If project plans call for the alteration or removal of the identified structures within the project area then it is recommended that they be evaluated to determine if they meet the requirements for inclusion on the California Register of Historical Resources.

Accidental Discovery

In keeping with the CEQA guidelines, if archaeological remains are uncovered, work at the place of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5 [f]). Prehistoric archaeological site indicators include: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire-affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

The following actions are promulgated in the CEQA Guidelines Section 15064.5(d) and pertain to the discovery of human remains. If human remains are encountered, excavation or disturbance of the location must be halted in the vicinity of the find, and the county coroner contacted. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. The Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations regarding the treatment of the remains with appropriate dignity.

SUMMARY

Tom Origer & Associates completed an historical resources survey for the Stocking Vineyard project southeast of the intersection of Highways 175 and 29 in Lake County, California. The study was requested and authorized by Drew Aspegren, Napa Valley Vineyard Engineering, Inc., in compliance

with requirements of the California Environmental Quality Act. Historical resources were identified within the study area and recommendations have been provided. Documentation pertaining to this study is on file at Tom Origer & Associates (File No. 2016-091S).

MATERIALS CONSULTED

Barrett, S.

1908 *The Ethno-Geography of the Pomo and Neighboring Indians.* University of California Publications in American Archaeology and Ethnology Vol. 6, No. 1. University of California Press, Berkeley.

California Department of Transportation, District 3

2006 *Supplemental Historic Property Survey Report, Lake County, California.* Document S-33467 on file at the Northwest Information Center, Sonoma State University, Rohnert Park California.

2015 *Third Supplemental Historic Property Survey Report, Lake County, California.* Document S-47445 on file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

Carlos, G., W. Bryant, G. Saucedo, C. Wills

2010 Geologic Map of California, Kelseyville Quad (1:24,000-scale). Department of Conservation, Sacramento.

Cinek, J.

2016 Confidential Archaeological Addendum: An Archaeological Survey Report for the McIntire NTMP, Lake County, California. CAL FIRE report designation 1-16NTMP-007 LAK.

The Clorox Company

2016 *Bottle Guide.* <https://www.thecloroxcompany.com/who-we-are/our-heritage/bottle-guide/>. Date accessed November 10, 2016.

Crabtree, A.

2015 McIntire Ranch-The CAGen Web Project
<http://www.cagenweb.com/lake/McIntire%20Ranch.htm>. Date Accessed November 1, 2016.

Damon, L.

1976 Archaeological Site Survey Record for CA-LAK-757. Document P-17-000647 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Erlanson, J. T. Rick, T. Jones, J. Porcasi

2007 One if by Land, Two if by Sea: Who Were the First Californians? In: *California Prehistory: Colonization, Culture, and Complexity.* (pp 53-62) T. Jones and K. Klar, editors. AltaMira Press. Lanham, MD.

Fredrickson, D.

1976 *An Archaeological Survey of a Dow Chemical Company Geothermal Leasehold South of Mount Konocti, Lake County, California.* Document S-394 on file at the Northwest Information Center, Sonoma State University, Rohnert Park California.

1984 The North Coastal Region. In *California Archaeology*, edited by M. Moratto. Academic Press, San Francisco.

General Land Office (GLO)

1871 Plat of Township 12 N Range 8 W. Department of the Interior, Washington, D.C.

1880 Land Patent 1184. Department of the Interior, Washington, D.C.

1885 Plat of Township 13 N Range 8 W. Department of the Interior, Washington, D.C.

1891 Land Patent 16913. Department of the Interior, Washington, D.C.

Golla, V.

2011 *California Indian Languages*. pg. 189. University of California Press, Berkeley.

Hildebrandt, W.

2007 Northwest California: Ancient Lifeways among Forested Mountains, Flowing Rivers, and Rocky Ocean Shores. In *California: Prehistory: Colonization, Culture, and Complexity*. edited by T. Jones and K. Klar, 83-97. Altamira Press: Lanham Maryland.

Hoover, M., H. Rensch, E. Rensch, and W. Abeloe

1966 *Historic Spots in California*. 3rd Edition, Stanford University Press. Stanford.

Hoover, M., H. Rensch, E. Rensch, W. Abeloe, and D. Kyle

1990 *Historic Spots in California*. 4th Edition, Stanford University Press. Stanford.

2002 *Historic Spots in California*. 5th edition, Stanford University Press. Stanford.

King, J.

2004 Surface and Subsurface Archaeological Sensitivity. In: *Landscape Evolution and the Archaeological Record: A Geoarchaeological Study of the Southern Santa Clara Valley and Surrounding Region* (pp 81-94). J. Rosenthal and J. Meyer, Authors. Center for Archaeological Research at Davis, University of California.

Koenig, J. B.

1963 Geologic Map of California, Santa Rosa Sheet (1:250,000-scale). Olaf P. Jenkins edition. Division of Mines and Geology, Williams & Heintz Map Corporation, Washington, D.C.

Kroeber, A.

1925 *Handbook of the Indians of California*. Bureau of American Ethnology, Bulletin 78, Smithsonian Institution, Washington, D.C.

Mauldin, H.

1965 Archaeological Site Record for CA-LAK-279. Document P-17-000297 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Meighan, C.

1955 *Archaeology of the North Coast Ranges, California*. Reports of the University of California Archaeological Survey No. 30. University of California, Berkeley.

Merriam, C.

1907 *Distribution and Classification of the Mewan Stock of California*. American Anthropologist, Vol. 9(2):338-357.

1955 *Studies of California Indians*. University of California Press, Berkeley.

Moratto, M.

1984 *California Archaeology*. Academic Press, San Francisco.

Office of Historic Preservation (OHP)

1995 *Instructions for Recording Historic Resources*. Office of Historic Preservation, Sacramento.

2012 *Historic Property Directory*. Office of Historic Preservation, Sacramento.

Parker, J.

1976 Archaeological Site Survey Record for CA-LAK-784. Document P-17-000672 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

1979 *An Archaeological Evaluation of the Neasham, McLesky, and McLesky Alternate Geothermal Well Sites and Access Road Alignments, Lake County, California*. Document S-1652 on file at the Northwest Information Center, Sonoma State University, Rohnert Park California.

Parker, J. and N. Thompson

1979a Archaeological Site Record Supplement for CA-LAK-279. Document P-17-000297 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

1979b Archaeological Site Survey Record Supplement for CA-LAK-784H. Document P-17-000672 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Paullin, P.

2011 *Field Office Report of Cultural Resources Ground Survey Findings, Lake County, California*. Document S-38583 on file at the Northwest Information Center, Sonoma State University, Rohnert Park California.

Peak & Associates

1998 *Cultural Resources Inventory of Bureau of Land Management Cache Creek, Phase III Land Exchange Parcel 113-L, Lake County, California*. Document S-20749 on file at the Northwest Information Center, Sonoma State University, Rohnert Park California.

1999 *Cultural Resources Assessment of Portions of The Proposed AT&T Dunnigan to Manchester Fiber Optic Cable Alignment, Lake, Napa, Mendocino and Yolo Counties, California*. Document S-22536 on file at the Northwest Information Center, Sonoma State University, Rohnert Park California.

Powers, S.

1877 *Tribes of California*. Contributions to North American Ethnology 3. United States Geographical and Geological Survey of the Rocky Mountain Region. Washington D.C. Reprinted by the University of California Press, Berkeley.

Rice, S.H.

1892 *Official Map of Lake County, California*. Britton & Rey, San Francisco.

Sanderson, M. and M. Carpenter
2005 *Images of America: Lake County*. Arcadia Publishing, San Francisco.

Sawyer, J.
1978 Wappo. In *California*, edited by R. Heizer, pp. 306-323. Handbook of North American Indians, Vol. 8, W. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Smith, D. and W. Broderson
1989 *Soil Survey of Lake County, California*. U.S. Department of Agriculture (SCS and USFS) and the U.S. Department of the Interior (BLM) in cooperation with the University of California Agricultural Experiment Station.

State of California Department of Parks and Recreation
1976 *California Inventory of Historic Resources*. Department of Parks and Recreation, Sacramento.

Tremaine & Associates
2008 *Cultural Resources Constraints Study for The Replacement of 25 Poles on the Clearlake-Eagle Rock 60kV Transmission Line*. Document S-35496 on file at the Northwest Information Center, Sonoma State University, Rohnert Park California.

United State Army Corps of Engineers
1943 Kelseyville, California 7.5' map. Department of the Interior, Washington, D.C.

United States Geological Survey (USGS)
1943 Kelseyville, California 7.5' map. Geological Survey, Washington, D.C.
1959 Kelseyville, California 7.5' map. Geological Survey, Washington, D.C.
1993 Kelseyville, California 7.5' map. Geological Survey, Washington, D.C.

Whatford, J. C.
2015 Memorandum for Pre-Submittal Consultation for Archaeological Issues: Proposed McIntire Nonindustrial Timber Management Plan.

Appendix A
Native American Contact

**Native American Contact Efforts
Stocking Vineyards, Lake County**

Organization	Contact	Letters	Results
Native American Heritage Commission		8/11/16	Response received 8/17/16
Big Valley Rancheria	Anthony Jack	8/11/16	No response received as of the date of this report.

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Stocking Vineyard Historical Study

County: Lake

USGS Quadrangles

Name: Kelseyville

Township 13N, 12N Range 8W Section(s) 31, 32, 33 (T13N) and 4, 5 (T12N) MDBM

Date: August 11, 2016

Company: Tom Origer & Associates

Contact Person: Mark Arsenault

Address: PO Box 1531

City: Rohnert Park

Zip: 94927

Phone: (707) 584-8200

Fax: (707) 584-8300

Email: Mark@origer.com

Project Description:

The project area is approximately 500 acres. The project proponent is proposing to construct a vineyard on the property.

STATE OF CALIFORNIA

Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 Fax



August 17, 2016

Mark Arsenault
Tom Origer & Associates

Sent by: Mark@origer.com
Number of Pages: 2

RE: Stocking Vineyard Historical Study, Lake County

Dear Mr. Arsenault,

Attached is a list of tribes that have cultural and traditional affiliation to the area of potential project effect (APE) referenced above. I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult, as may be required under particular state statutes. If a response has not been received within two weeks of notification, the Native American Heritage Commission (NAHC) requests that you follow-up with a telephone call to ensure that the project information has been received.

The NAHC also recommends that project proponents conduct a record search of the NAHC Sacred Lands File (SLF) at the appropriate regional archaeological Information Center of the California Historic Resources Information System (CHRIS) (http://ohp.parks.ca.gov/?page_id=1068) to determine if any tribal cultural resources are located within the area(s) affected by the proposed action. The SLF, established under Public Resources Code section 5094, are sites submitted for listing to the NAHC by California Native American tribes. The SLF, established under Public Resources Code section 5094, are sites submitted for listing to the NAHC by California Native American tribes. A record search of the SLF was completed for the APE referenced above with negative results. Please note records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of tribal cultural resources. A tribe may be the only source of information regarding the existence of tribal cultural resources.

If you receive notification of change of addresses and phone numbers from any of these tribes, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: frank.lienert@nahc.ca.gov

Sincerely,

A handwritten signature in blue ink, appearing to read "Frank Lienert".

Frank Lienert
Associate Governmental Program Analyst

Native American Heritage Commission
Native American Contact List

8/17/2016

***Big Valley Rancheria of Pomo
Indians***

Anthony Jack, Chairperson
2726 Mission Rancheria Rd. Pomo
Lakeport, , 95453
Phone: (707)263-3924 Ext.103
Fax: (707)263-3977
ajack@big-valley.net

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.99 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Stockton Vineyard Historical Study.

Tom Origer & Associates
Archaeology / Historical Research

August 11, 2016

Anthony Jack
Big Valley Rancheria of Pomo Indians
2726 Mission Rancheria Rd.
Lakeport, CA, 95453

Re: Stocking Vineyard Project, Lake County.

Dear Mr. Jack:

I write to notify you of a proposed project within Lake County, for which our firm is conducting an historical resources study. The Stocking Vineyard Project will develop approximately 500-acres of land, to be used as vineyard. The study area is located in between highway 29 and 175. The Lake County Planning Division will be reviewing the project for CEQA compliance. This letter does not constitute official consultation.

Enclosed is a portion of the Kelseyville, Calif. 7.5' USGS topographic quadrangle showing the project location.

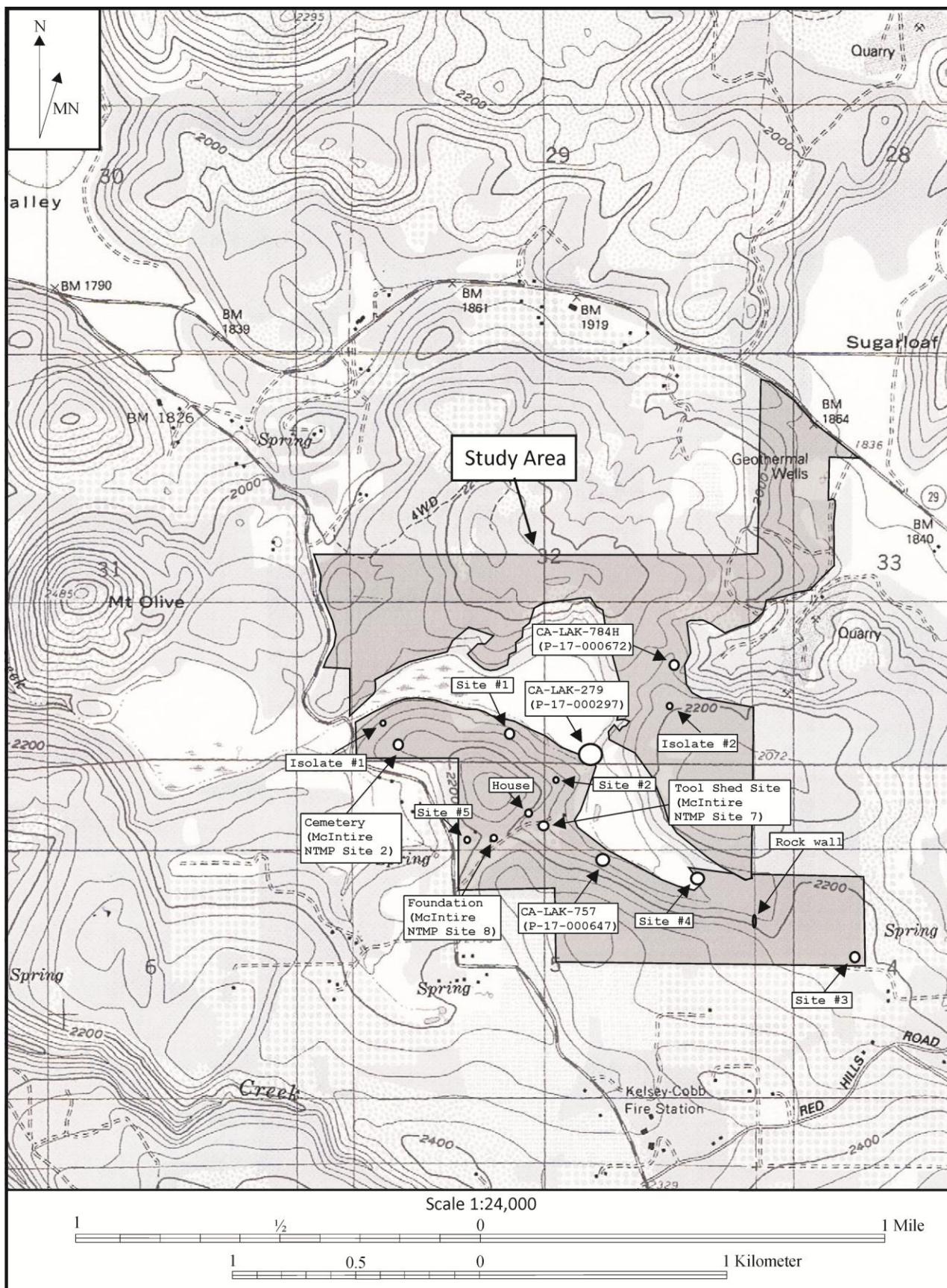
Sincerely,



Mark Arsenault
Associate

Appendix B

DPR 523 Forms



PRIMARY RECORD

Primary #

HRI #

Trinomial

NRHP Status Code

Other
Review Code

Reviewer

Date

Listings

Page 1 of 1 *Resource Name or #: CA-LAK-279 (UPDATE)

P1. Other Identifier: _____

*P2. Location: Not for Publication Unrestricted*a. County Lake and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)*b. USGS 7.5' Quad Kelseyville Date 1993 T 13N; R 8W; SW 1/4 of SE 1/4 of Sec 32; T 12N; R 8W; NW 1/4 of NE 1/4 of Sec 5; Mount Diablo B.M.c. Address _____ City Kelseyville Zip 95451d. UTM: Zone 10S, 520077 mE/ 4308576 mN WGS84

e. Other Locational Data: At the intersection of Red Hill Road and Highway 175 West, turn right onto Highway 175 West and proceed for one mile. There is a private road on the right-hand side behind a locked gate; drive .6 miles down this road, then proceed on foot. Site is located within the road cut, and continues past a gate and bridge located at the southern end of a marsh valley.

*P3a. Description: This site was recorded by J. Parker and N. Thompson (1979) as a multi-component site that included bedrock mortars, lithic debris, artifacts, and midden. The site is located at the southern end of a marsh, and continues along McIntire Creek. Vegetation includes Oak grassland and blackberry bushes. Field visit on 8/19/16 visually located the site and affirmed that the original boundaries have not changed. The dirt roads bisecting site have not been improved and the bedrock mortars have not been moved.



*P3b. Resource Attributes: _____

AP4. Bedrock milling feature, AP2. Lithic scatter, AP15. Habitation debris

*P4. Resources Present: Building
 Structure Object Site District
 Element of District Other (Isolates)

P5b. Description of Photo: _____

*P6. Date Constructed/Age and Source: Historic Prehistoric Both

*P7. Owner and Address: _____

Bryant Stocking

*P8. Recorded by: J. Farrington, M. Arsenault, Tom Origer & Associates
P.O. Box 1531 Rohnert Park, CA 9492*P9. Date Recorded: 8/19/16*P10. Survey Type: Reconnaissance*P11. Report Citation: Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California. November 2016.*Attachments: NONE Location Map Continuation Sheet Building, Structure, and Object Record Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record Artifact Record Photograph Record Other (List): _____

PRIMARY RECORD

Other Listings:

Review Code:

Page 1 of 1

Primary # P-

HRI #

Trinomial: CA-LAK-757 SUPPLEMENT

NRHP Status Code:

Resource Name or #:

P1. Other Identifier: Dead Cow Site

P2. Location: Not for Publication

b. USGS 7.5' Quad: Kelseyville

T 12N/R 8W; NW 1/4 of N 1/4 of Sec. 5; MDBM

c. Address: City: Kelseyville

d. UTM: Zone: mE

e. Other Locational Information:

a. County: Lake

Date: 1993

Zip: 95451

mN

P3a. Description: This site consists of one unspecified point on a flat overlooking the swamp. Reinvestigation of the site failed to locate any archaeological specimens.

P3b. Resource Attributes: AP1. Unknown

P4. Resources Present: Site

P5. Photograph or Drawing: None

P5b. Description of Photo: N/A

--

P6. Date Constructed/Age and Sources:
Prehistoric

P7. Owner and Address:
Bryant Stocking

P8. Recorded by:
Taylor Alshuth
Tom Origer & Associates
P.O. Box 1531
Rohnert Park, CA 94927

P9. Date Recorded:
11/10/16

P10. Type of Survey:
Intensive Pedestrian Survey

P11. Report Citation: Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. *A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California*. November 2016.

P12. Attachments: None

PRIMARY RECORD

Other Listings:

Review Code:

Page 1 of 1

Primary # P-

HRI #

Trinomial: CA-LAK-784H SUPPLEMENT

NRHP Status Code:

Resource Name or #:

P1. Other Identifier:

P2. Location: Not for Publication

b. USGS 7.5' Quad: Kelseyville

T 13N/R 8W; SE 1/4 of SE 1/4 of Sec. 32; MDBM

c. Address: City: Kelseyville

d. UTM: Zone: 10 mE

e. Other Locational Information:

a. County: Lake

Date: 1993

Zip: 95451

mN

P3a. Description: Based on the original site record, this site consists of a historic mining camp, and includes historic artifacts and features. The site measures 45 meters by 60 meters and is located in a saddle between the marsh and the S-bar-S Quarry to the east. Site includes rock-lined pit features, stove fragments, ceramic and bottle fragments, and an old fence line.

An endeavor to locate this resource was attempted by Taylor Alshuth and Tom Origer on November 4, 2016. A debris scatter that consisted of container glass fragments and some aluminum cans was located in the presumed vicinity of the site, but the contents of the scatter appeared modern and unassociated with the site. The site was not identified with certainty.

P3b. Resource Attributes: AH4. Privies/dumps/trash scatters **P4. Resources Present:** Site

P5. Photograph or Drawing: None

P5b. Description of Photo: N/A



P6. Date Constructed/Age and Sources:
Historic

P7. Owner and Address:
Bryant Stocking

P8. Recorded by:
Taylor Alshuth
Tom Origer & Associates
P.O. Box 1531
Rohnert Park, CA 94927

P9. Date Recorded:
11/10/16

P10. Type of Survey:
Intensive pedestrian survey

P11. Report Citation: Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. *A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California*. November 2016.

P12. Attachments: None

State of California & The Resources Agency

DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #

HRI #

Trinomial

NRHP Status Code

Other
Review Code

Reviewer

Listings

Date

Page 1 of 5 *Resource Name or #: Stocking Vineyard Site#6P1. Other Identifier: Tool shed site*P2. Location: Not for Publication Unrestricted*a. County Lake and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)*b. USGS 7.5' Quad Kelseyville Date 1993 T 12N; R 8W; NE 1/4 of NW 1/4 of Sec 5; Mount Diablo B.M.c. Address: City Kelseyville Zip 95451d. UTM: Zone 10S, 519940 mE/ 4308324 mN WGS84

e. Other Locational Data: At the intersection of Red Hill Road and Highway 175 West, turn right onto Highway 175 West and proceed for one mile. There is a private road on the right-hand side behind a locked gate. The site is located approximately 500 meters down the dirt road at an intersection near a dilapidated shed and woodpile.

*P3a. Description: This site is a sparse lithic scatter located on a east facing shallow slope. The site is bisected by a dirt road intersection. Obsidian flake density is between three and four flakes per square meter. A mixture of interior and exterior flakes were noted within the site. A reduced core was also present.

*P3b. Resource Attributes: AP2, Lithic scatter

*P4. Resources Present: Building
 Structure Object Site District
 Element of District Other (Isolates, etc.)

P5b. Description of Photo: Overview of site with orchard and sheds, taken facing south on 8/20/16

*P6. Date Constructed/Age and Source: Historic Prehistoric
 Both

*P7. Owner and Address:
Bryant Stocking

*P8. Recorded by: J. Farrington and M. Arsenault, Tom Origer & Associates PO Box 1531 Rohnert Park CA 94928

*P9. Date Recorded: 8/21/16

*P10. Survey Type: Intensive pedestrian survey

*P11. Report Citation: Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California. November 2016.

*Attachments: NONE Location Map Continuation Sheet Building, Structure, and Object Record

Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record

Artifact Record Photograph Record Other (List): Sketch Map

ARCHAEOLOGICAL SITE RECORD

Page 2 of 5

*Resource Name or #: Stocking Vineyard Site Six

*A1. Dimensions: a. Length: m. (60) x b. Width: m. (5)

Method of Measurement: Paced Taped Visual estimate Other:

Method of Determination: Artifacts Features Soil Vegetation Topography

Cut bank Animal burrow Excavation Property boundary Other (Explain):

Reliability of Determination: High Medium Low Explain: Determination was made by the observation of the surface artifact distribution.

Limitations (Check any that apply): Restricted access Paved/built over Site limits incompletely defined

Disturbances Vegetation Other (Explain): Vegetation and low soil visibility inhibited the surveyor's ability to delineate site boundaries.

A2. Depth: None Unknown Method of Determination:

*A3. Human Remains: Present Absent Possible Unknown (Explain):

*A4. Features: No features were present at this site.

*A5. Cultural Constituents: This site is a sparse obsidian flake scatter located on an east facing shallow slope. The site is bisected by a dirt road intersection. The site's flake density is between three and four flakes per square meter, and a mixture of interior and exterior flakes were noted within the site, as well a singular reduced core.

*A6. Were Specimens Collected? No Yes

*A7. Site Condition: Good Fair Poor (Describe disturbances.): The dirt roads greatly impact the site, as heavy machinery using the road could damage artifacts.

*A8. Nearest Water: Approximately 150 meters east of this site McIntire Creek supplies fresh water.

*A9. Elevation: Approximately 2115 feet

A10. Environmental Setting: Local vegetation mostly consists of Oak (*Quercus*), Gray Pine (*Pinus sabiniana*), and Manzanita (*Arctostaphylos*). The geology of the study area consists of Quaternary volcanic rocks and minor pyroclastic deposits (Carlos et al. 2010; Koenig 1963). Soils within the study area belong to the Aiken-Sobrante association, and are typically found on hills and mountains (Smith and Broderson 1989:Sheet 21). Aiken-Sobrante soils are well-drained and support the growth of conifers, hardwoods, and annual grasses. Historically these soils have been used for timber production, firewood production, wildlife habitat, and orchards (Smith and Broderson 1989:19).

A11. Historical Information: The first Euroamericans to settle near the site would have arrived sometime after 1854 (Sanderson and Carpenter 2005:31). Early economic activities in this region focused on subsistence and cash agriculture. By the late 19th century the regional mercury mining boom had hit Lake County and was the primary draw for settlers in the area. Regional mining had mostly subsided by the 20th century, and orchards became the foremost export (Sanderson and Carpenter 2005:40).

*A12. Age: Prehistoric Protohistoric 1542-1769 1769-1848 1848-1880 1880-1914 1914-1945
 Post 1945 Undetermined Describe position in regional prehistoric chronology or factual historic dates if known:

A13. Interpretations: This site is potentially associated with the village site located 300 meters to the east (CA-LAK-279).

A14. Remarks: None.

A15. References:

Carlos, G., W. Bryant, G. Saucedo, C. Wills

ARCHAEOLOGICAL SITE RECORD

Page 3 of 5

*Resource Name or #: Stocking Vineyard Site Six

2010 Geologic Map of California, Kelseyville Quad (1:24,000-scale). Department of Conservation, Sacramento.

Koenig, J. B.

1963 Geologic Map of California, Santa Rosa Sheet (1:250,000-scale). Olaf P. Jenkins edition. Division of Mines and Geology, Williams & Heintz Map Corporation, Washington, D.C.

Sanderson, M. and M. Carpenter

2005 *Images of America: Lake County*. Arcadia Publishing, San Francisco.

A16. Photographs: See continuation sheet.

Original Media/Negatives Kept: On file at Tom Origer & Associates, Rohnert Park.

*A17. Form Prepared by: Jacqueline Farrington

Date: 8/29/16

Affiliation and Address: Tom Origer & Associates, PO Box 1531 Rohnert Park, CA 94928

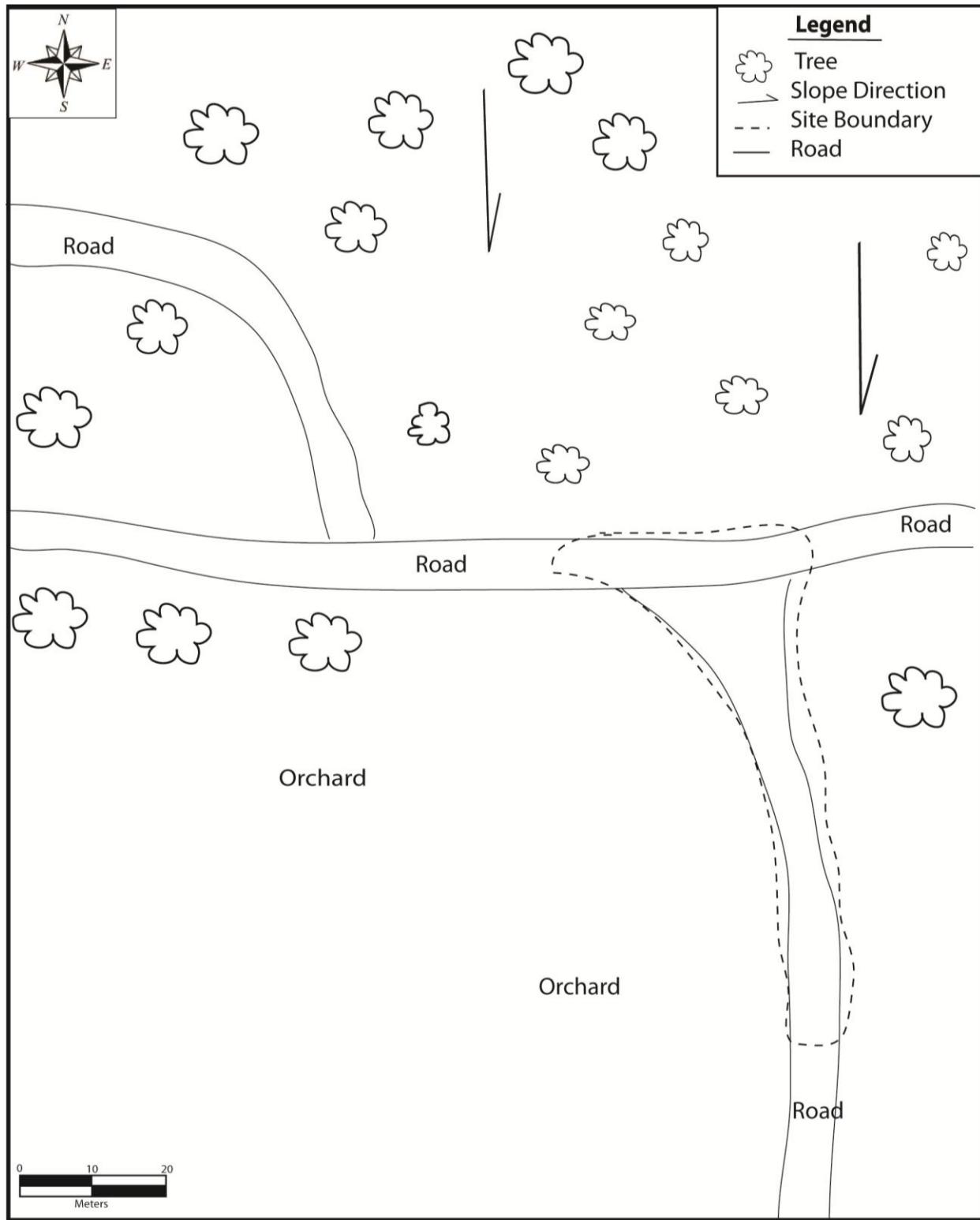
*Required information

State of California & Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #
HRI#
Trinomial

Page 4 of 5 *Resource Name or #: Stocking Vineyard Site #6

*Drawn by: J. Farrington *Date of map: 09/13/2016

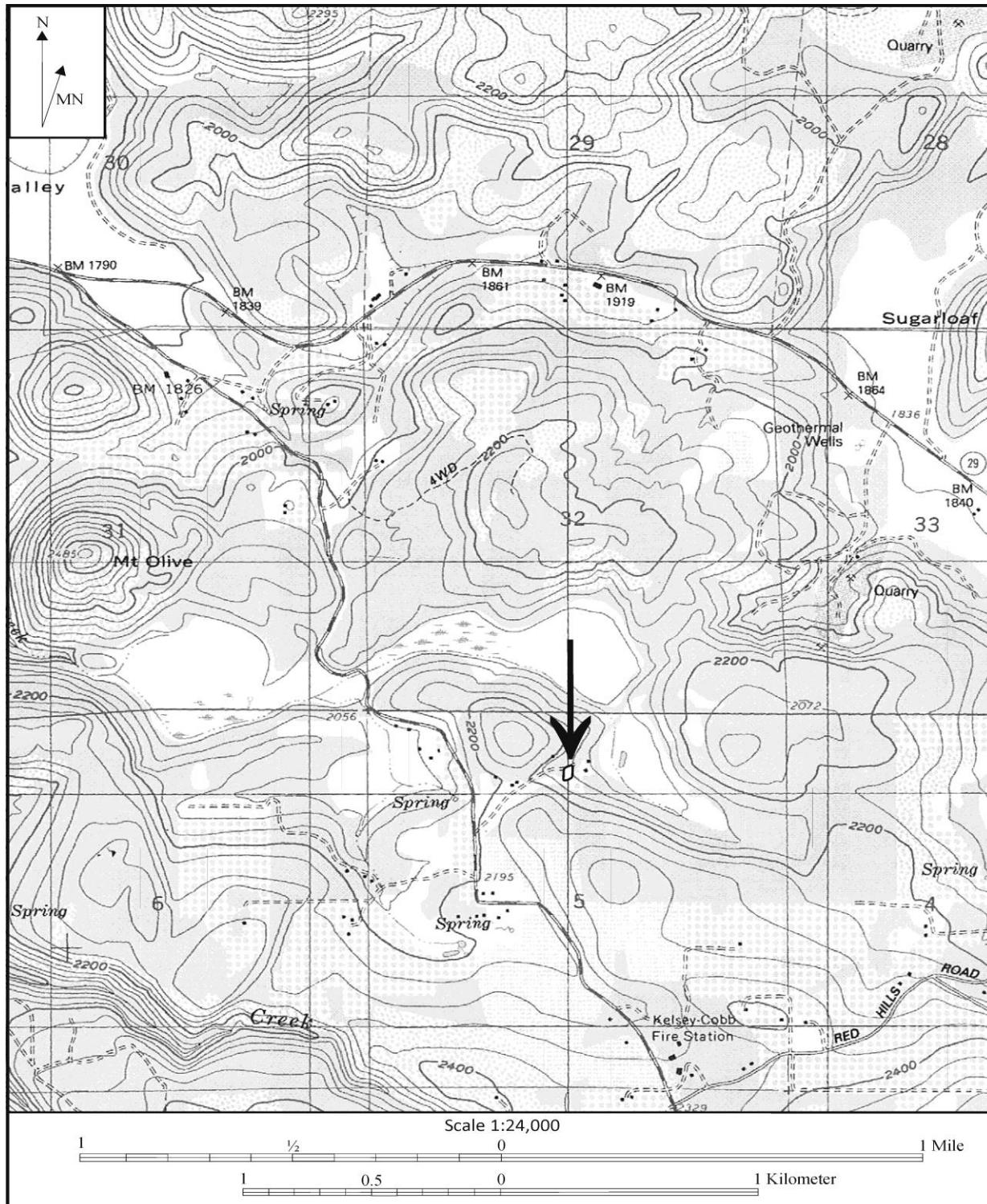


LOCATION MAP

Primary #

HRI#

Trinomial

Page 5 of 5*Resource Name or #: Stocking Vineyard Site Six*Map Name: Kelseyville*Scale: 1:24000*Date of map: 1993

PRIMARY RECORD

Other Listings:

Review Code:

Page 1 of 4

Reviewer:

Date:

Primary # P-

HRI #

Trinomial:

NRHP Status Code:

Resource Name or #: Stephens Cemetery

P1. Other Identifier:

P2. Location: Not for Publication

b. USGS 7.5' Quad: Kelseyville

T 13N/R 8W; SW1/4 of SW1/4 of Sec. 32; MDBM

c. Address: City: Kelseyville

a. County: Lake

Date: 1993

d. UTM: Zone: 10 519420 mE

Zip: 95451

4308420 mN NAD 27

e. Other Locational Information: This site is located atop a knoll and approximately 100 feet southeast of a PG&E power pole at the knoll crest. The site is 650 feet east of Highway 175 and 425 north of the highway. Our UTM coordinates differ slightly from Joe Cinek.

P3a. Description: This site was previously identified by Joe Cinek, RPF, during his field survey. It consists of five historic-period headstones. Although several of the headstones were deteriorated, names and dates were still identifiable. The headstones were from the 1860's and belonged to the children of the James and Avia Stephen. One of the headstones is in excellent condition. In total, three of the headstones are in good enough condition for the names to still be identified. The broken remnants of two or possibly more footstones are also present within the cemetery, but are unable to be read due to their condition. During reinvestigation, the cemetery was in the same condition as originally observed by Cinek.

P3b. Resource Attributes: AH12. Graves/cemetery

P4. Resources Present: Site

P5. Photograph or Drawing: Photograph

P5b. Description of Photo: remains of headstones and footstones



P6. Date Constructed/Age and Sources:

Historic-period; 1860's

P7. Owner and Address:

Bryant Stocking

P8. Recorded by:

Taylor Alshuth
Tom Origer & Associates
P.O. Box 1531
Rohnert Park, CA 94927

P9. Date Recorded:

11/4/16

P10. Type of Survey:

Intensive Pedestrian Survey

P11. Report Citation: Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. *A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California*. November 2016.

P12. Attachments: Continuation Sheet, Sketch Map, Location Map

CONTINUATION SHEET

Page 2 of 4

Recorded by: Taylor Alshuth

Primary #:

HRI #:

Trinomial:

Resource Name or #: Stephens Cemetery

Date: 11/10/16



SKETCH MAP

Page 3 of 4

Map Drawn By: Taylor Alshuth

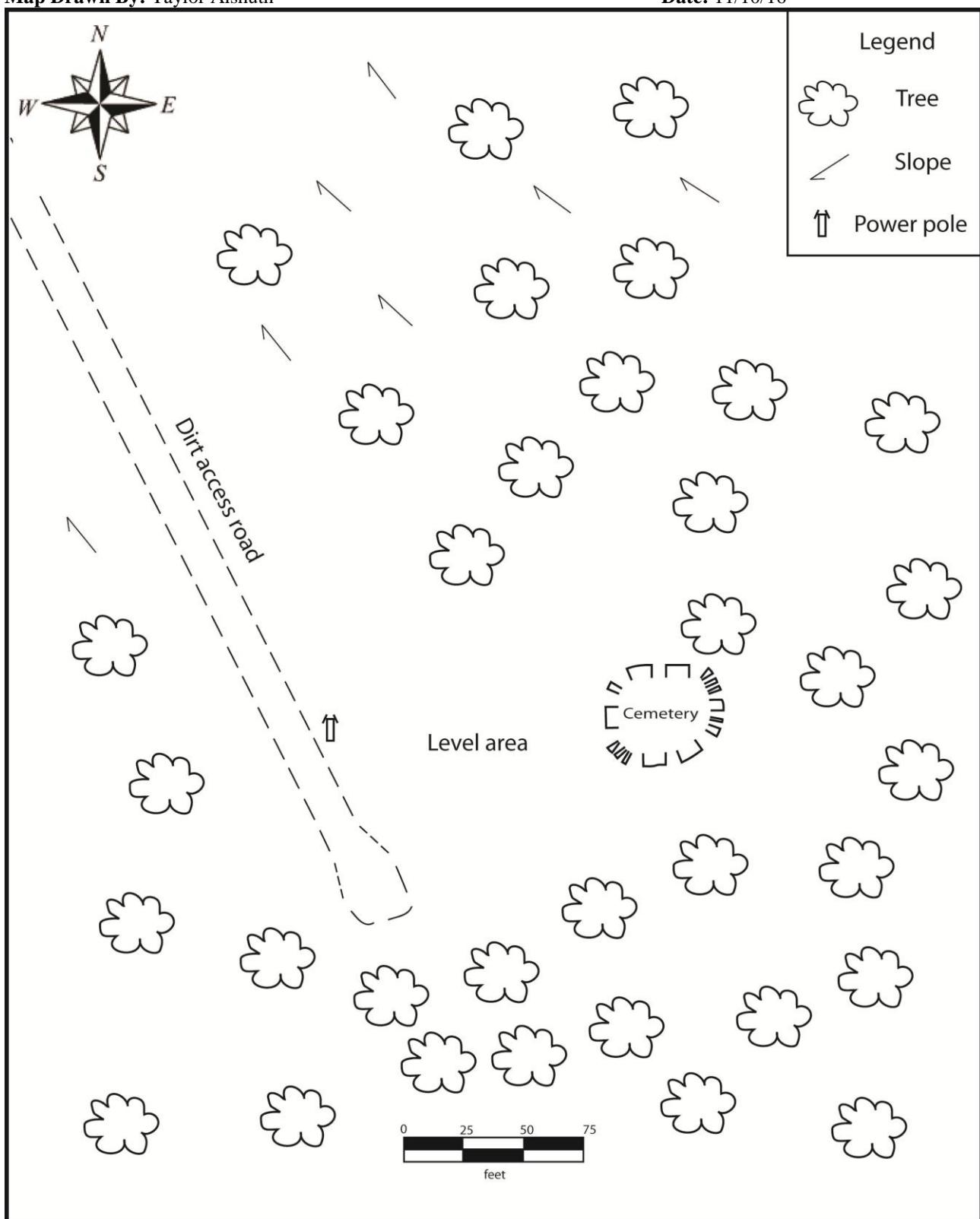
Primary # P-

HRI #

Trinomial: CA-

Resource Name or #: Stephens Cemetery

Date: 11/10/16



LOCATION MAP

Page 4 of 4

Map Name: Kelseyville

Scale: 7.5'

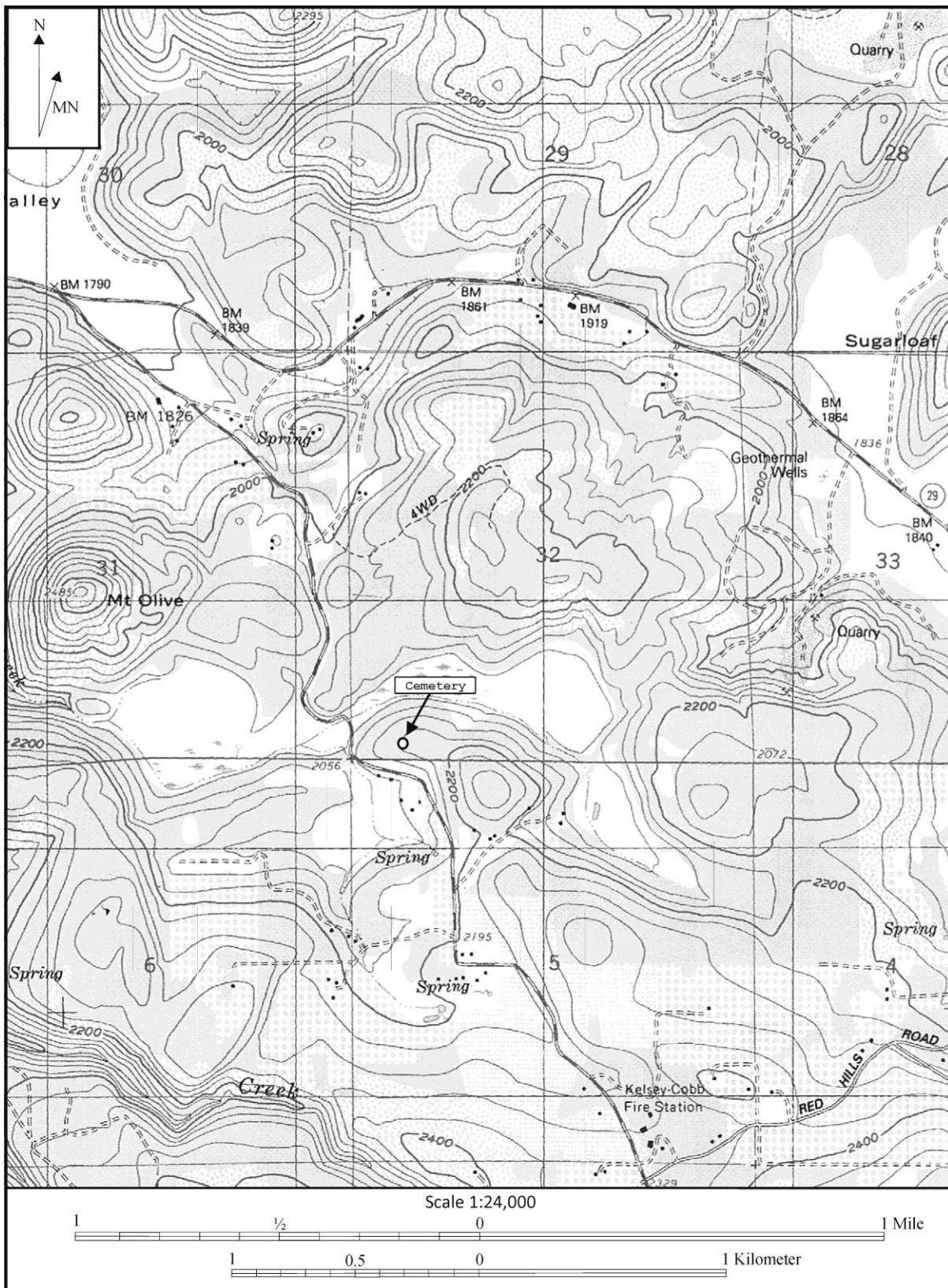
Primary #: P-

HRI #:

Trinomial:

Resource Name or #: Stephens Cemetery

**Resource Name or
Date of Map: 1993**



PRIMARY RECORD

Primary #

HRI #

Trinomial

NRHP Status Code

Other
Review Code

Reviewer

Date

Listings

Page 1 of 5 *Resource Name or #: Stocking Vineyard Site One**P1. Other Identifier:*****P2. Location:** Not for Publication Unrestricted*a. County Lake and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)*b. USGS 7.5' Quad Kelseyville Date 1993 T 13N ; R 8W ; SE 1/4 of SW 1/4 of Sec 32 ;
Mount Diablo B.M.c. Address: City Kelseyville Zip 95451d. UTM: Zone 10S, 519781 mE/ 4308620 mN WGS84

e. Other Locational Data: At the intersection of Red Hill Road and Highway 175 West, turn right onto Highway 175 West and proceed for one mile. There is a private road on the right-hand side behind a locked gate. Follow this road for approximately one mile, keeping to the left at all intersections. Site is located .06 miles south of the road.

P3a. Description:** This site is a sparse lithic scatter located on a north facing slope. The site is bisected by a small game trail and recent tree fall. The site's flake density is between four and five obsidian flakes per square meter. A mixture of interior and exterior flakes were noted within the site, as well as reduced cores. Additionally, a singular Stage 2 obsidian preform biface was found in the site. The site is covered in a two to three centimeter layer of duff. Local vegetation mostly consists of Oak (*Quercus*), Gray Pine (*Pinus sabiniana*), and Manzanita (*Arctostaphylos*).P3b. Resource Attributes:** AP2, Lithic scatter***P4. Resources Present:** Building
 Structure Object Site District Element of District Other (Isolates, etc.)**P5b. Description** of Photo:
Overview of the site with J. Farrington in foreground, photo taken facing northwest 8/18/16***P6. Date Constructed/Age and Source:** Historic Prehistoric
 Both***P7. Owner and Address:**
Bryant Stocking***P8. Recorded by:** J.
Farrington and M.
Arsenault, Tom Origer &
Associates PO Box 1531
Rohnert Park CA 94928***P9. Date Recorded:** 8/18/16***P10. Survey Type:** Intensive
pedestrian survey***P11. Report Citation:** Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. *A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California*. November 2016.***Attachments:** NONE Location Map Continuation Sheet Building, Structure, and Object Record Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record Artifact Record Photograph Record Other (List): Sketch map

ARCHAEOLOGICAL SITE RECORD

Page 2 of 5

*Resource Name or #: Stocking Vineyard Site One

*A1. Dimensions: a. Length: m. (18) x b. Width: m. (13)

Method of Measurement: Paced Taped Visual estimate Other:

Method of Determination: Artifacts Features Soil Vegetation Topography

Cut bank Animal burrow Excavation Property boundary Other (Explain):

Reliability of Determination: High Medium Low Explain: Determination was made by observation of surface artifact distribution.

Limitations (Check any that apply): Restricted access Paved/built over Site limits incompletely defined

Disturbances Vegetation Other (Explain): Vegetation and low soil visibility inhibited the surveyor's ability to determine site boundaries.

A2. Depth: None Unknown Method of Determination:

*A3. Human Remains: Present Absent Possible Unknown (Explain):

*A4. Features: No features were present at this site.

*A5. Cultural Constituents (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.): This site is a sparse obsidian flake scatter located on a north facing slope. Flake density is between four and five flakes per square meter. A mixture of interior and exterior flakes were noted within the site. Reduced cores and a Stage 2 obsidian preform biface were also found within the site.

*A6. Were Specimens Collected? No Yes

*A7. Site Condition: Good Fair Poor : No man-made disturbances were noted (?) Natural disturbances included a minor game trail and a fallen tree (root-throw?).

*A8. Nearest Water: A freshwater marsh is located approximately 450 feet north of the site.

*A9. Elevation: Approximately 2200 feet

A10. Environmental Setting: Local vegetation mostly consists of Oak (*Quercus*), Gray Pine (*Pinus sabiniana*), and Manzanita (*Arctostaphylos*). The geology of the study area consists of Quaternary volcanic rocks and minor pyroclastic deposits (Carlos et al. 2010; Koenig 1963). Soils within the study area belong to the Aiken-Sobrante association, and are typically found on hills and mountains (Smith and Broderson 1989:Sheet 21). Aiken-Sobrante soils are well-drained and support the growth of conifers, hardwoods, and annual grasses. Historically these soils have been used for timber production, firewood production, wildlife habitat, and orchards (Smith and Broderson 1989:19).

A11. Historical Information: The first Euroamericans to settle near the site would have arrived sometime after 1854 (Sanderson and Carpenter 2005:31). Early economic activities in this region focused on subsistence and cash agriculture. By the late 19th century the regional mercury mining boom had hit Lake County and was the primary draw for settlers in the area. Regional mining had mostly subsided by the 20th century, and orchards became the foremost export (Sanderson and Carpenter 2005:40).

*A12. Age: Prehistoric Protohistoric 1542-1769 1769-1848 1848-1880 1880-1914 1914-1945
 Post 1945 Undetermined Describe position in regional prehistoric chronology or factual historic dates if known:

A13. Interpretations (Discuss data potential, function[s], ethnic affiliation, and other interpretations): This site is potentially associated with the village site located 300 meters to the east (CA-LAK-279).

A14. Remarks: None.

A15. References:

Carlos, G., W. Bryant, G. Saucedo, C. Wills
2010 Geologic Map of California, Kelseyville Quad (1:24,000-scale). Department of Conservation, Sacramento.

ARCHAEOLOGICAL SITE RECORD

Page 3 of 5

*Resource Name or #: Stocking Vineyard Site One

Koenig, J. B.

1963 Geologic Map of California, Santa Rosa Sheet (1:250,000-scale). Olaf P. Jenkins edition. Division of Mines and Geology, Williams & Heintz Map Corporation, Washington, D.C.

Sanderson, M. and M. Carpenter

2005 *Images of America: Lake County*. Arcadia Publishing, San Francisco.

A16. Photographs: See continuation page.

Original Media/Negatives: On file at Tom Origer & Associates, Rohnert Park.

***A17. Form Prepared by:** Jacqueline Farrington

Date: 8/29/16

Affiliation and Address: Tom Origer & Associates, PO Box 1531 Rohnert Park, CA 94928

*Required information

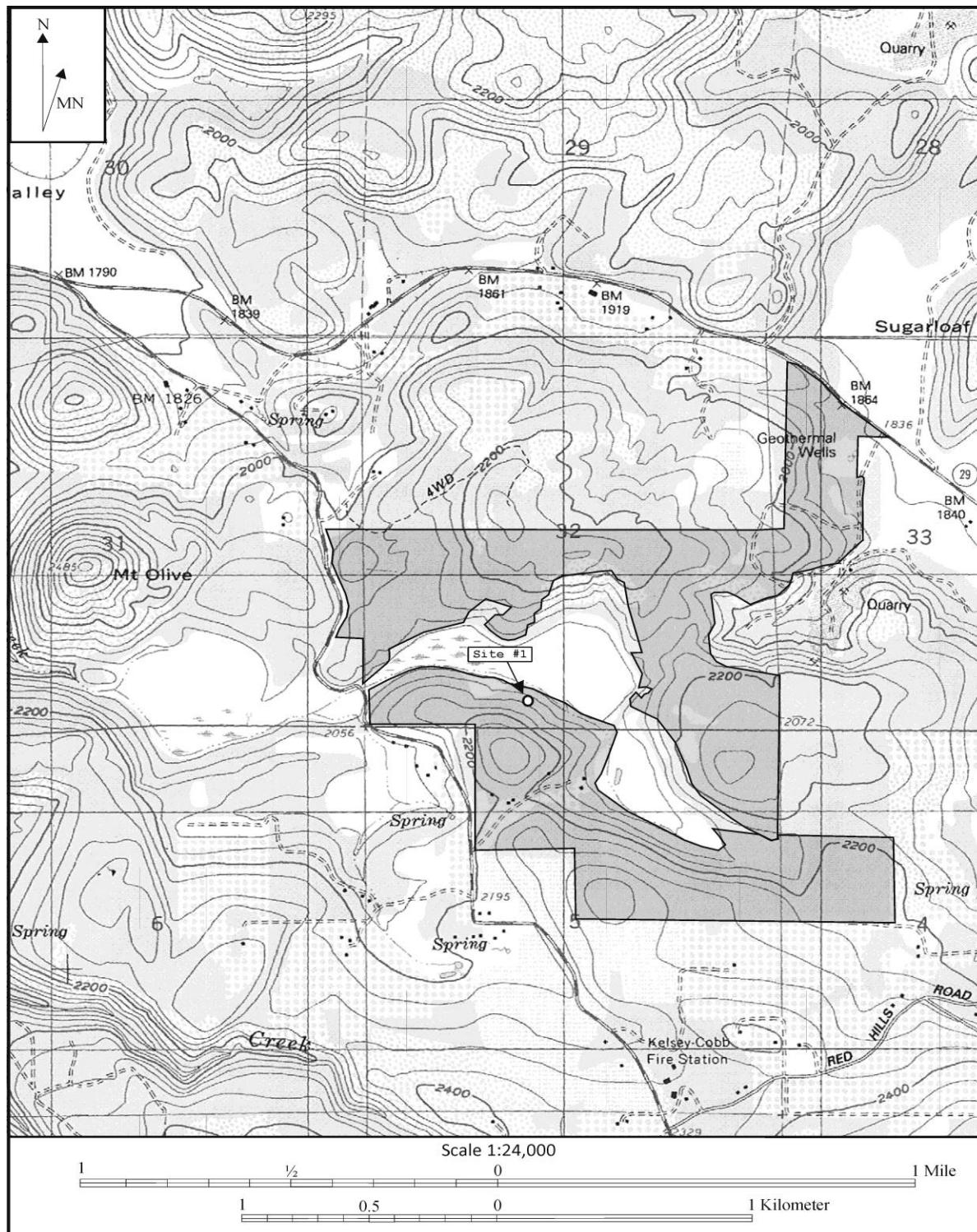
State of California & Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary # _____
HRI# _____
Trinomial

Page 4 of 5

*Resource Name or #: Stocking Vineyard Site One

*Map Name: Kelseyville *Scale: 1:24000 *Date of map: 1993

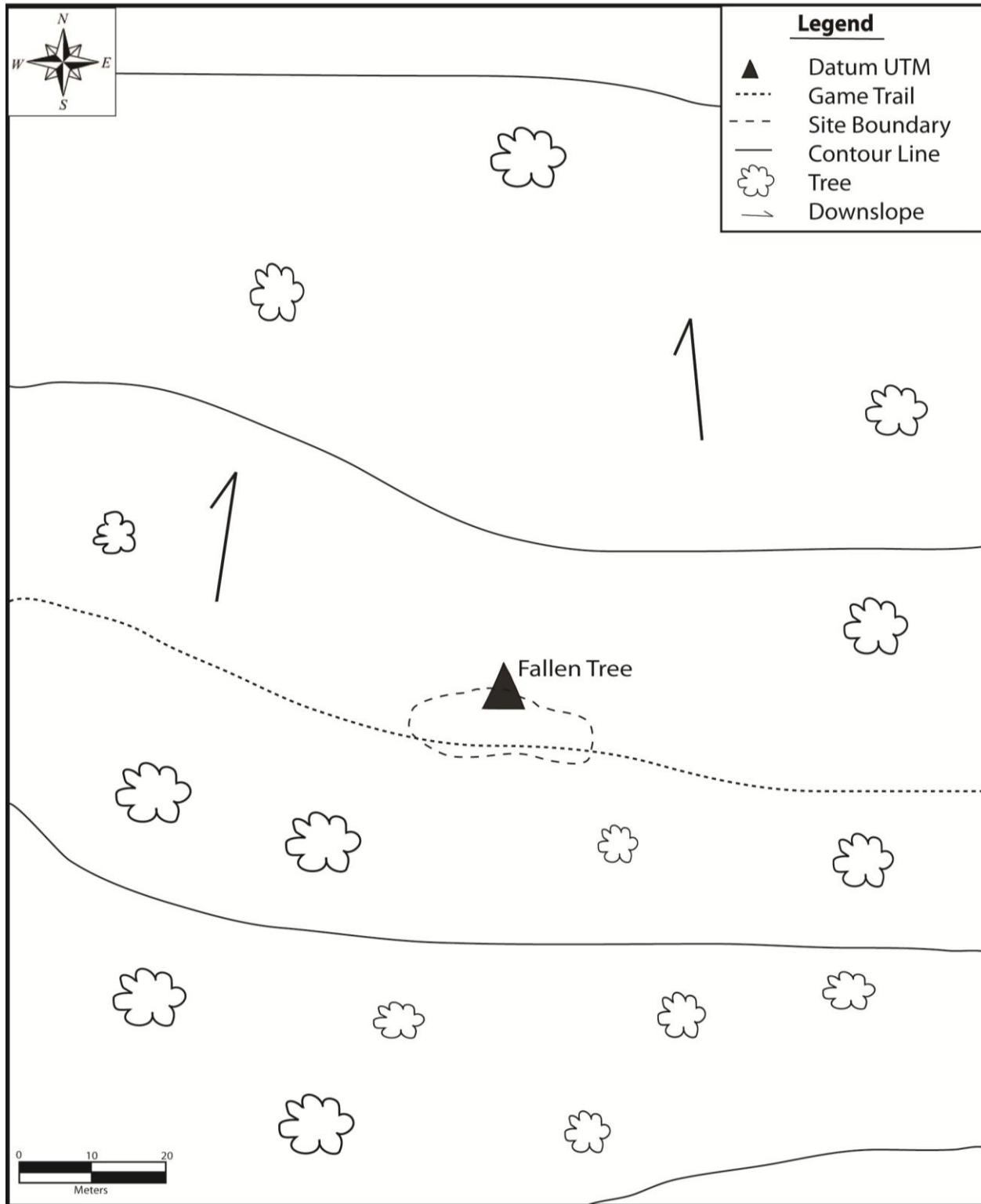


Page 5 of 5

*Resource Name or #: Stocking Site One

*Drawn by: J. Farrington

*Date of map: 09/13/2016



State of California & The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other
Review Code

Reviewer

Date

Listings

Page 1 of 5 *Resource Name or #: Wild Man in the Woods

P1. Other Identifier: Stocking Vineyard Site Two

***P2. Location:** Not for Publication Unrestricted

*a. County Lake and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Kelseyville Date 1993 T 12N; R 8W; NE 1/4 of NW 1/4 of Sec 5; Mount Diablo B.M.

c. Address _____ City Kelseyville Zip 95451

d. UTM: Zone 10S, 519882 mE/ 4308449 mN WGS84

e. Other Locational Data: At the intersection of Red Hill Road and Highway 175 West, turn right onto Highway 175 West and proceed for one mile. There is a private road on the right-hand side behind a locked gate. There is a private road on the right-hand side behind a locked gate. Follow this road for approximately .4 miles, keeping to the left. Site is located .08 miles northwest of the road.

***P3a. Description:** This site is an obsidian lithic scatter located on a north facing slope. The scatter's flake density is between five and six flakes per square meter. A mix of interior thinning and exterior flakes were found at this site. Additionally, one stage 3 pre-form biface and several obsidian cores were identified in the site. The site location is covered by dense brush consisting mostly of Manzanita (*Arctostaphylos*). Exposed basalt bedrock appears intermittently throughout the site.

***P3b. Resource Attributes:** AP2, Lithic scatter



***P4. Resources Present:** Building
 Structure Object Site District Element of District Other (Isolates, etc.)

P5b. Description of Photo: 8/26/16 View of site facing east with M. Arsenault in center

***P6. Date Constructed/Age and Source:** Historic Prehistoric
 Both

***P7. Owner and Address:**
Bryant Stocking

***P8. Recorded by:** J.
Farrington and M.
Arsenault, Tom Origer &
Associates PO Box 1531
Rohnert Park, CA 94928

***P9. Date Recorded:** 8/19/2016

***P10. Survey Type:** Intensive pedestrian survey

***P11. Report Citation:** Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California. November 2016.

***Attachments:** NONE Location Map Continuation Sheet Building, Structure, and Object Record

Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record

Artifact Record Photograph Record Other (List): Sketch Map

ARCHAEOLOGICAL SITE RECORD

Page 2 of 5

*Resource Name or #: Wild Man in the Woods (Stocking Vineyard Site Two)

*A1. Dimensions: a. Length: m. (10) x b. Width: m. (5)

Method of Measurement: Paced Taped Visual estimate Other:

Method of Determination: Artifacts Features Soil Vegetation Topography

Cut bank Animal burrow Excavation Property boundary Other (Explain):

Reliability of Determination: High Medium Low Explain: Determination was made by observation of artifact distribution.

Limitations (Check any that apply): Restricted access Paved/built over Site limits incompletely defined
 Disturbances Vegetation Other (Explain): Dense Manzanita brush made site boundary definition impossible

A2. Depth: None Unknown Method of Determination:

*A3. Human Remains: Present Absent Possible Unknown (Explain):

*A4. Features (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.):
No features were present at this site.

*A5. Cultural Constituents: This site consists of an obsidian lithic scatter located on a north facing slope. The flake density of the scatter is between five and six flakes per square meter. A mix of interior thinning and exterior flakes were noted at this site. Additionally, one stage 3 pre-form biface and two reduced obsidian cores were identified in the site. The site location is covered by dense brush, mostly composed of Manzanita (*Arctostaphylos*). Exposed basalt bedrock appears intermittently throughout the site.

*A6. Were Specimens Collected? No Yes

*A7. Site Condition: Good Fair Poor (Describe disturbances.): Site is located near the crest of a ridge and is subject to normal erosion patterns.

*A8. Nearest Water: Approximately 150 meters north of this site there is a marsh that supplies fresh water.

*A9. Elevation: Approximately 2170 feet

A10. Environmental Setting (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.): Local vegetation mostly consists of Oak (*Quercus*), Gray Pine (*Pinus sabiniana*), and Manzanita (*Arctostaphylos*). The geology of the study area consists of Quaternary volcanic rocks and minor pyroclastic deposits (Carlos et al. 2010; Koenig 1963). Soils within the study area belong to the Aiken-Sobrante association, and are typically found on hills and mountains (Smith and Broderson 1989:Sheet 21). Aiken-Sobrante soils are well-drained and support the growth of conifers, hardwoods, and annual grasses. Historically these soils have been used for timber production, firewood production, wildlife habitat, and orchards (Smith and Broderson 1989:19).

A11. Historical Information: The first Euroamericans to settle near the site would have arrived sometime after 1854 (Sanderson and Carpenter 2005:31). Early economic activities in this region focused on subsistence and cash agriculture. By the late 19th century the regional mercury mining boom had hit Lake County and was the primary draw for settlers in the area. Regional mining had mostly subsided by the 20th century, and orchards became the foremost export (Sanderson and Carpenter 2005:40).

*A12. Age: Prehistoric Protohistoric 1542-1769 1769-1848 1848-1880 1880-1914 1914-1945
 Post 1945 Undetermined Describe position in regional prehistoric chronology or factual historic dates if known:

A13. Interpretations: This site is potentially associated with the village site located 300 meters to the east (CA-LAK-279).

A14. Remarks: None.

ARCHAEOLOGICAL SITE RECORD

Page 3 of 5

*Resource Name or #: Wild Man in the Woods (Stocking Vineyard Site Two)

A15. References:

Carlos, G., W. Bryant, G. Saucedo, C. Wills
2010 Geologic Map of California, Kelseyville Quad (1:24,000-scale). Department of
Conservation, Sacramento.

Koenig, J. B.

1963 Geologic Map of California, Santa Rosa Sheet (1:250,000-scale). Olaf P. Jenkins
edition. Division of Mines and Geology, Williams & Heintz Map Corporation, Washington,
D.C.

Sanderson, M. and M. Carpenter

2005 *Images of America: Lake County*. Arcadia Publishing, San Francisco.

A16. Photographs: See continuation sheet.

Original Media/Negatives: On file at Tom Origer & Associates, Rohnert Park.

*A17. Form Prepared by: Jacqueline Farrington

Date: 8/29/16

Affiliation and Address: Tom Origer & Associates, PO Box 1531 Rohnert Park, CA 94928

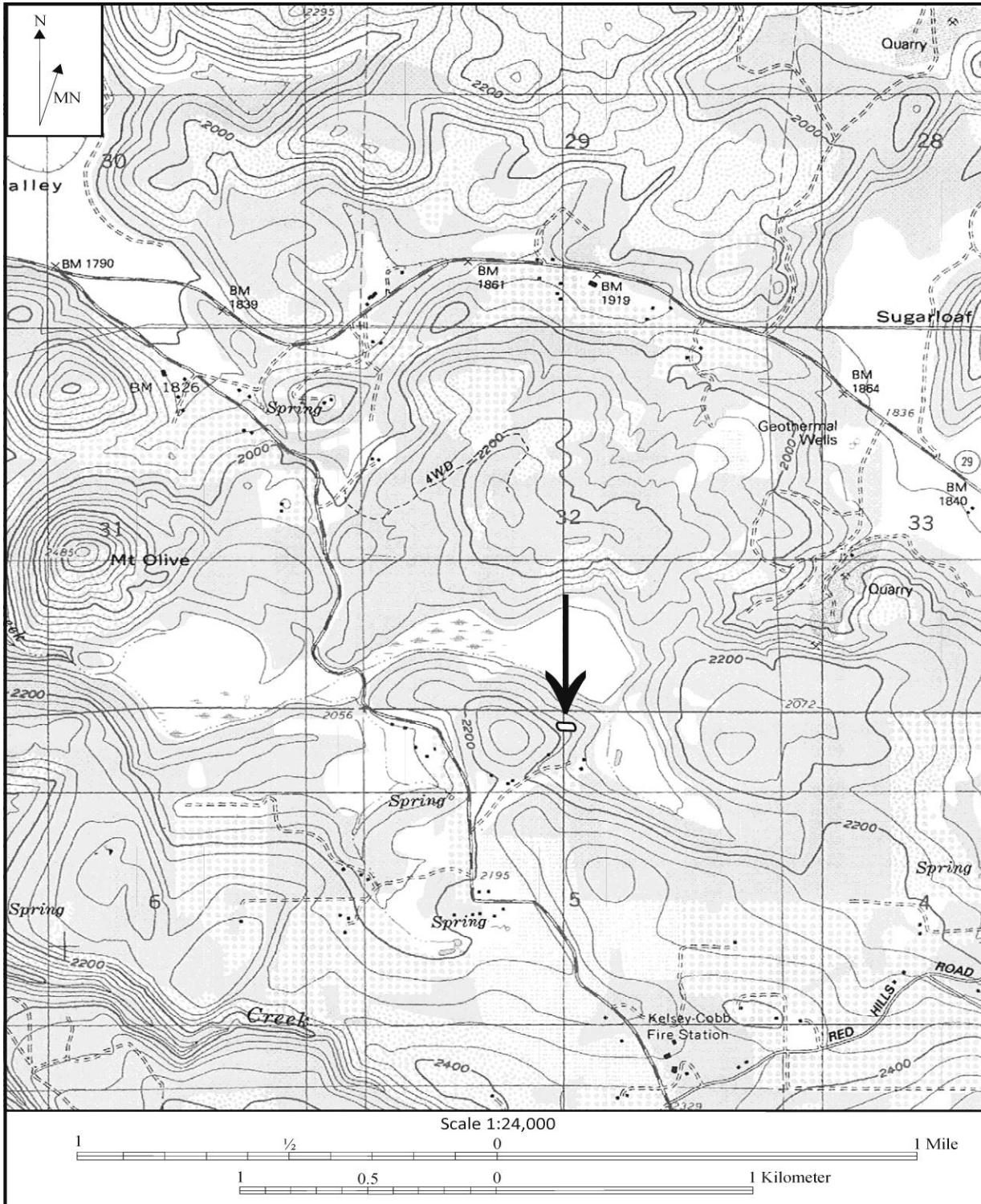
Page 4 of 5

***Resource Name or #:** Stocking Vineyard Site Two

***Map Name:** Kelseyville

***Scale:** 1:24000

*Date of map: 1993



SKETCH MAP

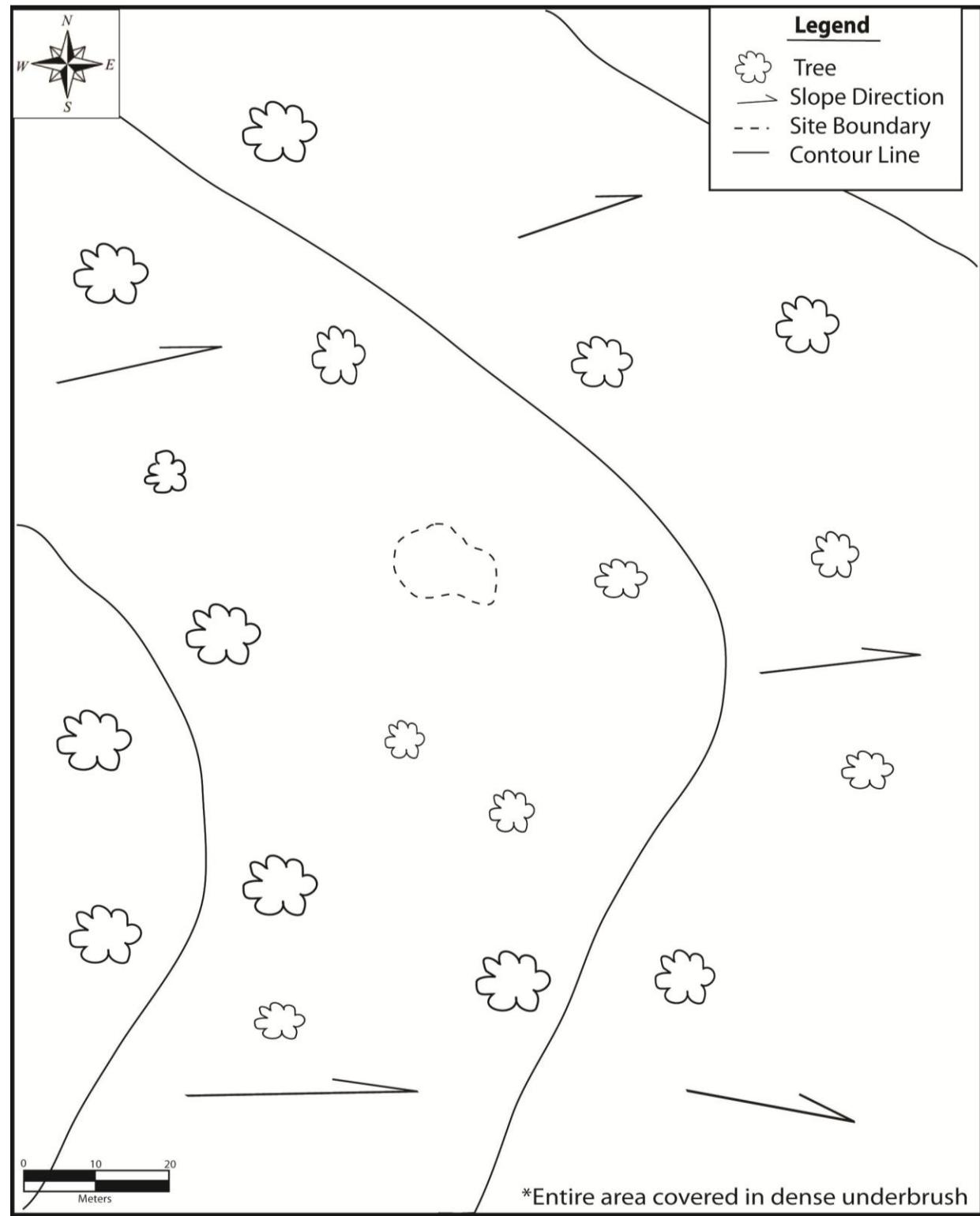
Primary #

HRI#

Trinomial

Page 5 of 5 *Resource Name or #: Wild Man in the Woods

*Drawn by: J. Farrington *Date of map: 09/13/2016



State of California & The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other
Review Code

Reviewer

Date

Listings

Page 1 of 5 *Resource Name or #: Stocking Vineyard Site Three

P1. Other Identifier:

*P2. Location: Not for Publication Unrestricted

*a. County Lake

and

*b. USGS 7.5' Quad Kelseyville Date 1993 T 12N; R 8W; SE 1/4 of NE 1/4 of Sec 5; Mount Diablo B.M.

c. Address _____ City Kelseyville Zip 95451

d. UTM: Zone 10S, 521136 mE/ 4307748 mN WGS84

e. Other Locational Data: At the intersection of Red Hill Road and Highway 175 West, turn right onto Highway 175 West and proceed for one mile. There is a private road on the right-hand side behind a locked gate. Follow this road for approximately .26 miles, and park in the lot adjacent to the house on the left side of the road. Proceed on foot .8 miles southeast to the lower right corner of the property boundary. The site is located within the southeastern-most bend of an unimproved dirt road.

*P3a. Description: This site is a **sparse lithic scatter** located at the foot of an east facing slope. Three obsidian bifaces were found in this location. Minor debitage was also noted in the vicinity. The site location is bisected by an unimproved dirt road and abuts a vineyard property boundary. Local vegetation mostly consists of Oak (*Quercus*), Gray Pine (*Pinus sabiniana*), and abundant Manzanita (*Arctostaphylos*).



*P3b. Resource Attributes: AP2, Lithic scatter

*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)

P5b. Description of Photo: Overview of site facing southwest with J. Farrington in foreground, 8/19/16

*P6. Date Constructed/Age and Source: Historic Prehistoric Both

*P7. Owner and Address: Bryant Stocking

*P8. Recorded by: J. Farrington and M. Arsenault, Tom Origer & Associates PO Box 1531 Rohnert Park CA 94928

*P9. Date Recorded: 8/19/16

*P10. Survey Type: Intensive pedestrian survey

*P11. Report Citation: Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California. November 2016.

*Attachments: NONE Location Map Continuation Sheet Building, Structure, and Object Record

Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record

Artifact Record Photograph Record Other (List): Sketch Map

ARCHAEOLOGICAL SITE RECORD

Page 2 of 5

*Resource Name or #: Stocking Vineyard Site Three

*A1. Dimensions: a. Length: m. (18) x b. Width: m. (8)

Method of Measurement: Paced Taped Visual estimate Other:

Method of Determination: Artifacts Features Soil Vegetation Topography

Cut bank Animal burrow Excavation Property boundary Other (Explain):

Reliability of Determination: High Medium Low Explain: Determination was made by observation of artifact distribution.

Limitations (Check any that apply): Restricted access Paved/built over Site limits incompletely defined

Disturbances Vegetation Other (Explain): Vegetation and soil layer prevented complete definition of site.

A2. Depth: None Unknown Method of Determination:

*A3. Human Remains: Present Absent Possible Unknown (Explain):

*A4. Features: No features were present at this site.

*A5. Cultural Constituents (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.): This site is a sparse lithic scatter located at the foot of an east facing slope. Three obsidian bifaces were found in this location. Sparse debitage was also noted on site. The site is bisected by an unimproved dirt road and abuts a vineyard property boundary. Local vegetation mostly consists of Oak (*Quercus*), Gray Pine (*Pinus sabiniana*), and abundant Manzanita (*Arctostaphylos*).

*A6. Were Specimens Collected? No Yes

*A7. Site Condition: Good Fair Poor (Describe disturbances.): The site is bisected by a dirt road and is subject to impact from vehicles driving over surface materials..

*A8. Nearest Water: There is a spring approximately 450 meters to the east of this site.

*A9. Elevation: Approximately 2240 feet

etc.): Local vegetation mostly consists of Oak (*Quercus*), Gray Pine (*Pinus sabiniana*), and Manzanita (*Arctostaphylos*). The geology of the study area consists of Quaternary volcanic rocks and minor pyroclastic deposits (Carlos et al. 2010; Koenig 1963). Soils within the study area belong to the Aiken-Sobrante association, and are typically found on hills and mountains (Smith and Broderson 1989:Sheet 21). Aiken-Sobrante soils are well-drained and support the growth of conifers, hardwoods, and annual grasses. Historically these soils have been used for timber production, firewood production, wildlife habitat, and orchards (Smith and Broderson 1989:19).

A11. Historical Information: The first Euroamericans to settle near the site would have arrived sometime after 1854 (Sanderson and Carpenter 2005:31). Early economic activities in this region focused on subsistence and cash agriculture. By the late 19th century the regional mercury mining boom had hit Lake County and was the primary draw for settlers in the area. Regional mining had mostly subsided by the 20th century, and orchards became the foremost export (Sanderson and Carpenter 2005:40).

*A12. Age: Prehistoric Protohistoric 1542-1769 1769-1848 1848-1880 1880-1914 1914-1945
 Post 1945 Undetermined Describe position in regional prehistoric chronology or factual historic dates if known:

A13. Interpretations (Discuss data potential, function[s], ethnic affiliation, and other interpretations): None.

A14. Remarks: None.

A15. References:

Carlos, G., W. Bryant, G. Saucedo, C. Wills

2010 Geologic Map of California, Kelseyville Quad (1:24,000-scale). Department of Conservation, Sacramento.

ARCHAEOLOGICAL SITE RECORD

Page 3 of 5

*Resource Name or #: Stocking Vineyard Site Three

Koenig, J. B.

1963 Geologic Map of California, Santa Rosa Sheet (1:250,000-scale). Olaf P. Jenkins edition. Division of Mines and Geology, Williams & Heintz Map Corporation, Washington, D.C.

Sanderson, M. and M. Carpenter

2005 *Images of America: Lake County*. Arcadia Publishing, San Francisco.

A16. Photographs: See continuation sheet.

Original Media/Negatives Kept: On file at Tom Origer & Associates, Rohnert Park.

*A17. Form Prepared by: Jacqueline Farrington

Date: 8/29/16

Affiliation and Address: Tom Origer & Associates, PO Box 1531 Rohnert Park, CA 94928

SKETCH MAP

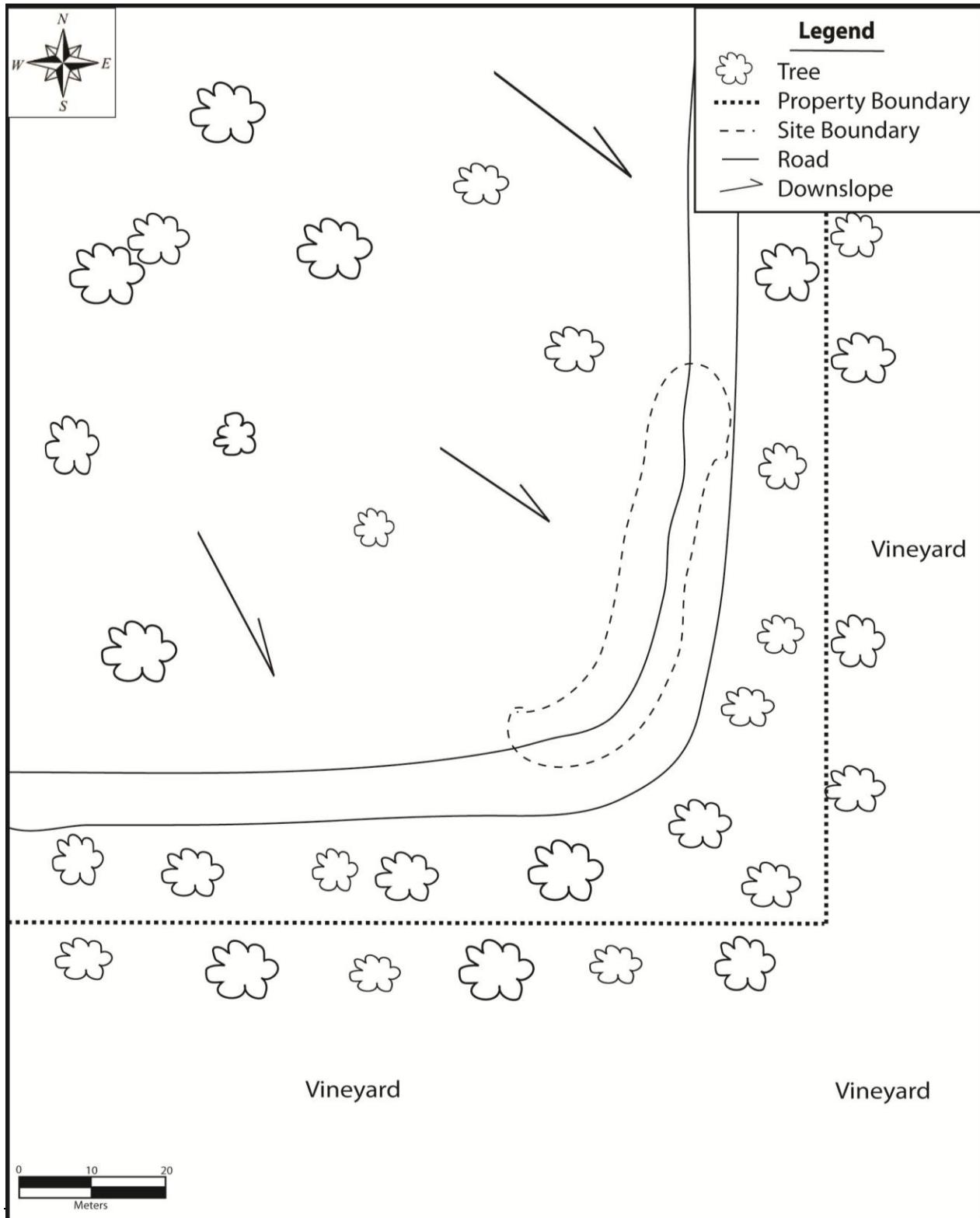
Primary #

HRI#

Trinomial

Page 4 of 5 *Resource Name or #: Stocking Vineyard Site #3

*Drawn by: J. Farrington *Date of map: 09/13/2016



LOCATION MAP

Primary #

HRI#

Trinomial

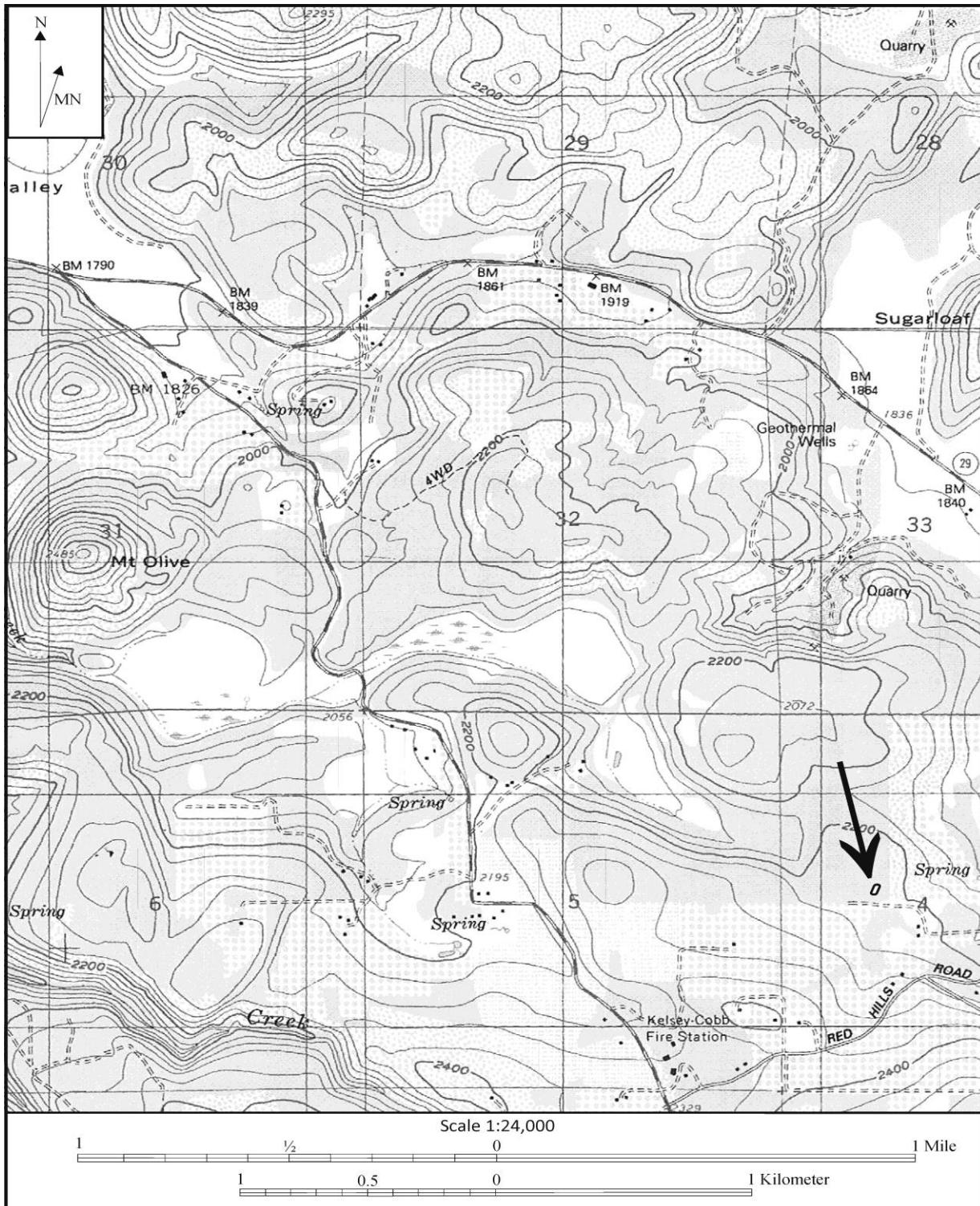
Page 5 of 5

Resource Name or #: Stocking Vineyard Site Three

*Map Name: Kelseyville

*Scale: 1:24000

*Date of map: 1993



PRIMARY RECORD

Primary #

HRI #

Trinomial

NRHP Status Code

Other
Review Code

Reviewer

Listings

Date

Page 1 of 5 *Resource Name or #: Stocking Vineyard Site Four

P1. Other Identifier:*P2. Location: Not for Publication Unrestricted

*a. County Lake and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Kelseyville Date 1993 T 12N ; R 8W; SE 1/4 of NE 1/4 of Sec 5 ; Mount Diablo B.M.

c. Address: City Zip 95451

d. UTM: Zone 10S , 520469 mE/ 4308075 mN WGS84

e. Other Locational Data: At the intersection of Red Hill Road and Highway 175 West, turn right onto Highway 175 West and proceed for one mile. There is a private road on the right-hand side behind a locked gate; follow this road for approximately .26 miles, and park at the lot adjacent to the house on the left side of the road. Proceed on foot southeast for approximately .42 miles; site is located at the southernmost boundary of a large clearing.

*P3a. **Description:** This site is a sparse lithic scatter located in a small valley. The site is bisected by a small game trail and recent log movement. The site's flake density is between six and seven obsidian flakes per square meter. A mixture of interior and exterior flakes were noted within the site, as well as several reduced cores. Additionally, two obsidian bifaces were found in the site. The site is covered by native grasses and bisected by a dirt road. Local vegetation mostly consists of Oak (*Quercus*) and Gray Pine (*Pinus sabiniana*).

*P3b. **Resource Attributes:** AP2, Lithic scatter

*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)

P5b. Description of Photo: (view, date, accession #) Overview of the site, photo taken facing southeast 8/19/16

*P6. Date Constructed/Age and Source: Historic Prehistoric Both

*P7. Owner and Address:
Bryant Stocking

*P8. Recorded by: J. Farrington and M. Arsenault, Tom Origer & Associates PO Box 1531 Rohnert Park CA 94928

*P9. Date Recorded: 8/19/16

*P10. Survey Type: Intensive pedestrian survey

*P11. Report Citation: Alshuth,

T., J. Farrington, M. Arsenault, and T. Origer. A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California. November 2016.

*Attachments: NONE Location Map Continuation Sheet Building, Structure, and Object Record

Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record

Artifact Record Photograph Record Other (List): Sketch Map

ARCHAEOLOGICAL SITE RECORD

Page 2 of 5

*Resource Name or #: Stocking Vineyard Site Four

A1. Dimensions: a. Length: m. (40) x b. Width: m. (30)

Method of Measurement: Paced Taped Visual estimate Other:

Method of Determination: Artifacts Features Soil Vegetation Topography

Cut bank Animal burrow Excavation Property boundary Other (Explain):

Reliability of Determination: High Medium Low Explain: Determination was made by the observation of the surface artifact distribution.

Limitations (Check any that apply): Restricted access Paved/built over Site limits incompletely defined

Disturbances Vegetation Other (Explain): Vegetation and low soil visibility inhibited the surveyor's ability to delimitate site boundaries.

A2. Depth: None Unknown Method of Determination:

*A3. Human Remains: Present Absent Possible Unknown (Explain):

*A4. Features: No features were present at this site.

*A5. Cultural Constituents: This site is a sparse obsidian flake and tool scatter located in a small valley. The site's flake density is between five and six flakes per square meter. A mixture of interior and exterior flakes were noted within the site, as well as several reduced cores. Additionally, two obsidian bifaces were found in the site. The site is covered by native grasses. Local vegetation mostly consists of Oak (*Quercus*) and Gray Pine (*Pinus sabiniana*).

*A6. Were Specimens Collected? No Yes

*A7. Site Condition: Good Fair Poor (Describe disturbances.): Natural disturbances were present, such as minor game trails and stacked logs.

*A8. Nearest Water: There is a perennial creek (McIntire Creek) approximately 315 meters west of this site.

*A9. Elevation: Approximately 2110 feet

A10. Environmental Setting: Local vegetation mostly consists of Oak (*Quercus*), Gray Pine (*Pinus sabiniana*), and Manzanita (*Arctostaphylos*). The geology of the study area consists of Quaternary volcanic rocks and minor pyroclastic deposits (Carlos et al. 2010; Koenig 1963). Soils within the study area belong to the drained Clear Lake Variant Clay series, and are typically found within basins (Smith and Broderson 1989: Sheet 21). Clear Lake Variant soils are poorly-drained and support the growth of annual grasses. Historically these soils have been used for pasture, wildlife habitat, and recreation (Smith and Broderson 1989:169).

A11. Historical Information: The first Euroamericans to settle near the site would have arrived sometime after 1854 (Sanderson and Carpenter 2005:31). Early economic activities in this region focused on subsistence and cash agriculture. By the late 19th century the regional mercury mining boom had hit Lake County and was the primary draw for settlers in the area. Regional mining had mostly subsided by the 20th century, and orchards became the foremost export (Sanderson and Carpenter 2005:40).

*A12. Age: Prehistoric Protohistoric 1542-1769 1769-1848 1848-1880 1880-1914 1914-1945
 Post 1945 Undetermined Describe position in regional prehistoric chronology or factual historic dates if known:

A13. Interpretations (Discuss data potential, function[s], ethnic affiliation, and other interpretations): This site is potentially associated with the village site located 652 meters to the northwest (CA-LAK-279).

A14. Remarks: None.

A15. References:

Carlos, G., W. Bryant, G. Saucedo, C. Wills

ARCHAEOLOGICAL SITE RECORD

Page 3 of 5

*Resource Name or #: Stocking Vineyard Site Four

2010 Geologic Map of California, Kelseyville Quad (1:24,000-scale). Department of Conservation, Sacramento.

Koenig, J. B.

1963 Geologic Map of California, Santa Rosa Sheet (1:250,000-scale). Olaf P. Jenkins edition. Division of Mines and Geology, Williams & Heintz Map Corporation, Washington, D.C.

Sanderson, M. and M. Carpenter

2005 *Images of America: Lake County*. Arcadia Publishing, San Francisco.

A16. Photographs: See continuation sheet.

Original Media/Negatives Kept: On file at Tom Origer & Associates, Rohnert Park.

***A17. Form Prepared by:** Jacqueline Farrington

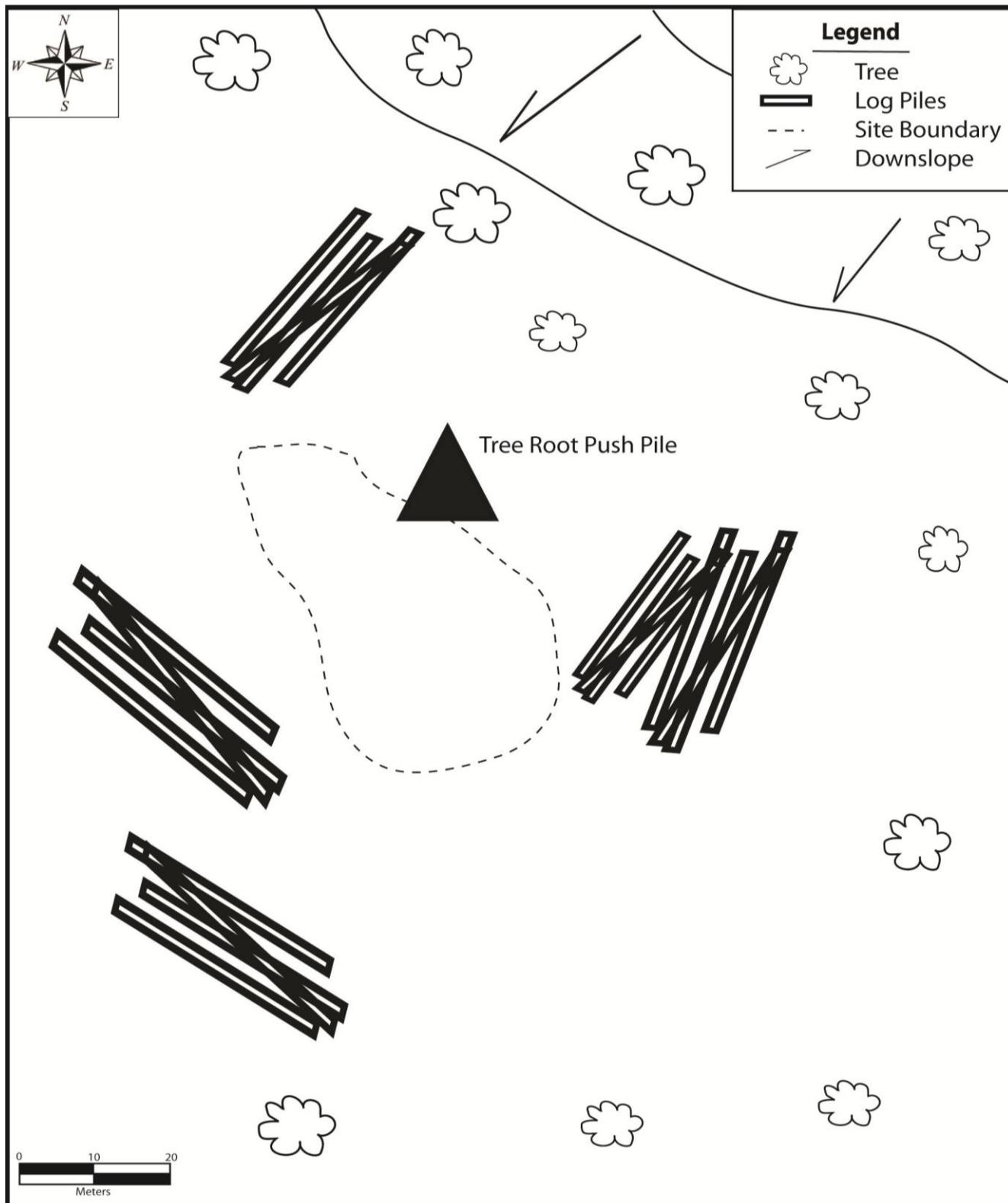
Date: 8/29/16

Affiliation and Address: Tom Origer & Associates, PO Box 1531 Rohnert Park, CA 94928

*Required information

Page 4 of 5 *Resource Name or #: Stocking Vineyard Site #4

*Drawn by: J. Farrington *Date of map: 09/13/2016



LOCATION MAP

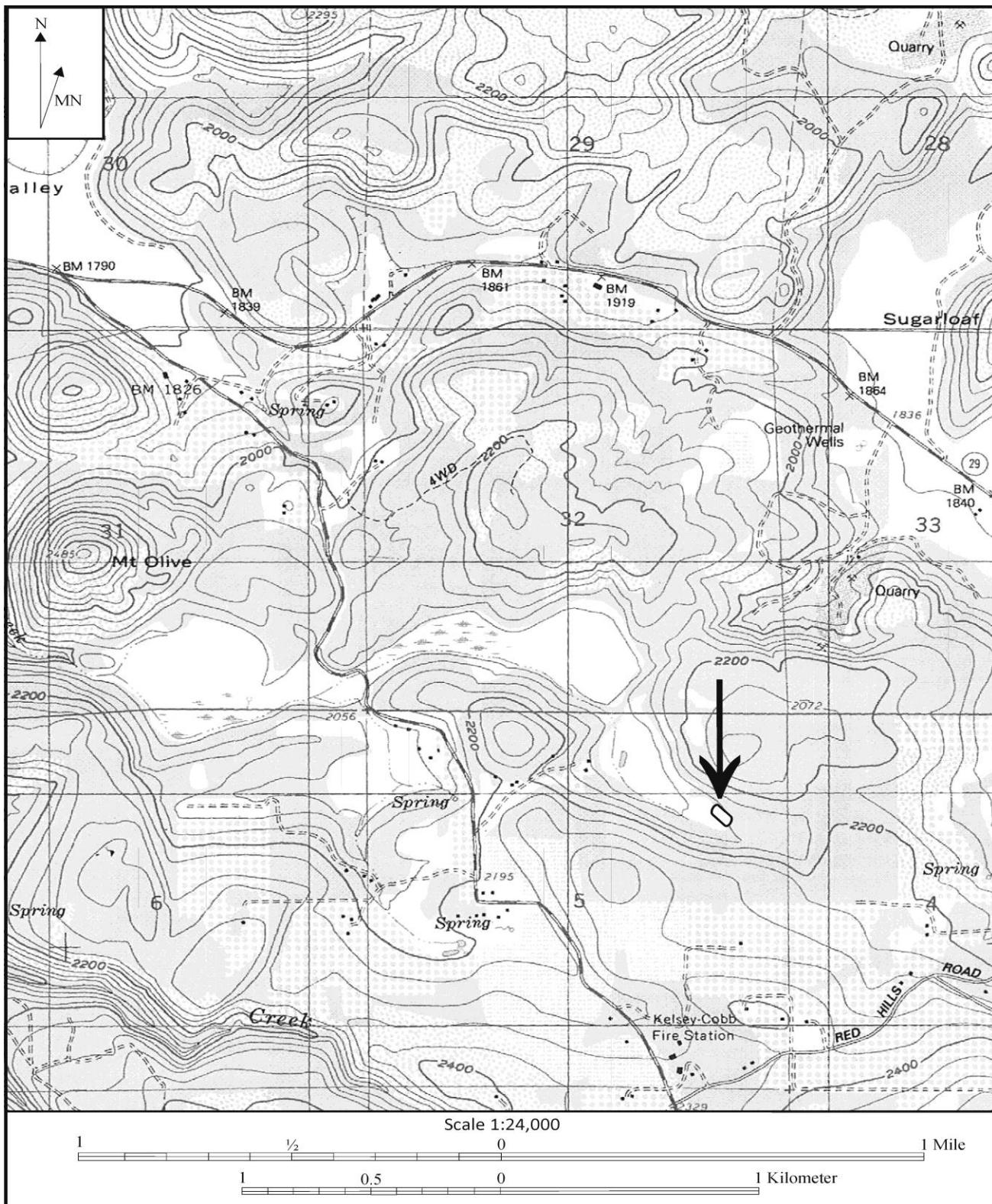
Page 5 of 5

***Resource Name or #:** Stocking Vineyard Site Four

***Map Name:** Kelseyville

***Scale:** 1:24000

*Date of map: 1993



PRIMARY RECORD

Primary #

HRI #

Trinomial

NRHP Status Code

Other
Review Code

Reviewer

Date

Listings

Page 1 of 5 *Resource Name or #: Stocking Vineyard Site #5

P1. Other Identifier:*P2. Location: Not for Publication Unrestricted

*a. County Lake and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Kelseyville Date 1993 T 12N; R 8W; NE 1/4 of NW 1/4 of Sec 5; Mount Diablo B.M.

c. Address: City Kelseyville Zip 95451

d. UTM: Zone 10S, 519559 mE/ 4308245 mN WGS84

e. Other Locational Data: At the intersection of Red Hill Road and Highway 175 West, turn right onto Highway 175 West and proceed for one mile. There is a private road on the right-hand side behind a locked gate. Proceed on foot approximately 200 meters northeast of this gate, the site will be on the hillside in a clearing.

*P3a. Description: This site is a sparse obsidian flake scatter located on an east-facing slope near the entrance of the property. Flake density is between three and four flakes per square meter. A mixture of interior and exterior flakes were noted within the site. Minor game trails are present.

*P3b. Resource Attributes: AP2, Lithic scatter



*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)

P5b. Description of Photo: View of flake from site, scale of photo is 1 square = 1/4' 8/21/16

*P6. Date Constructed/Age and Source: Historic Prehistoric

Both

P7. Owner and Address:

Bryant Stocking

*P8. Recorded by: J. Farrington, Tom Origer & Associates PO Box 1531 Rohnert Park CA 94928

*P9. Date Recorded: 8/21/16

*P10. Survey Type: Intensive pedestrian survey

*P11. Report Citation: Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California. November 2016.

*Attachments: NONE Location Map Continuation Sheet

Building, Structure, and Object Record

Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record

Artifact Record Photograph Record Other (List): Sketch Map

ARCHAEOLOGICAL SITE RECORD

Page 2 of 5

*Resource Name or #: Stocking Vineyard Site Five

*A1. Dimensions: a. Length: m. (15) x b. Width: m. (10)

Method of Measurement: Paced Taped Visual estimate Other:

Method of Determination: Artifacts Features Soil Vegetation Topography
 Cut bank Animal burrow Excavation Property boundary Other (Explain):

Reliability of Determination: High Medium Low Explain: Determination was made by the observation of the surface artifact distribution.

Limitations (Check any that apply): Restricted access Paved/built over Site limits incompletely defined

Disturbances Vegetation Other (Explain): Vegetation and low soil visibility inhibited the surveyor's ability to delimitate site boundaries.

A2. Depth: None Unknown Method of Determination:

*A3. Human Remains: Present Absent Possible Unknown (Explain):

*A4. Features: No features were present at this site.

*A5. Cultural Constituents: This site is a sparse obsidian flake scatter located on an east-facing slope. Flake density is between three and four flakes per square meter. A mixture of interior and exterior flakes was noted within the site.

*A6. Were Specimens Collected? No Yes

*A7. Site Condition: Good Fair Poor (Describe disturbances.): The site is bisected by multiple minor game trails and is subject to impacts from animals and natural hill slope erosion.

*A8. Nearest Water: There is a spring approximately 300 meters southwest of the site.

*A9. Elevation: Approximately 2176 feet

A10. Environmental Setting : Local vegetation mostly consists of Oak (*Quercus*), Gray Pine (*Pinus sabiniana*), and Manzanita (*Arctostaphylos*). The geology of the study area consists of Quaternary volcanic rocks and minor pyroclastic deposits (Carlos et al. 2010; Koenig 1963). Soils within the study area belong to the Aiken-Sobrante association, and are typically found on hills and mountains (Smith and Broderson 1989:Sheet 21). Aiken-Sobrante soils are well-drained and support the growth of conifers, hardwoods, and annual grasses. Historically these soils have been used for timber production, firewood production, wildlife habitat, and orchards (Smith and Broderson 1989:19).

A11. Historical Information: The first Euroamericans to settle near the site would have arrived sometime after 1854 (Sanderson and Carpenter 2005:31). Early economic activities in this region focused on subsistence and cash agriculture. By the late 19th century the regional mercury mining boom had hit Lake County and was the primary draw for settlers in the area. Regional mining had mostly subsided by the 20th century, and orchards became the foremost export (Sanderson and Carpenter 2005:40).

*A12. Age: Prehistoric Protohistoric 1542-1769 1769-1848 1848-1880 1880-1914 1914-1945
 Post 1945 Undetermined Describe position in regional prehistoric chronology or factual historic dates if known:

A13. Interpretations: This site is potentially associated with the prehistoric village site located 650 meters to the northeast (CA-LAK-279).

A14. Remarks: None.

A15. References:

Carlos, G., W. Bryant, G. Saucedo, C. Wills
2010 Geologic Map of California, Kelseyville Quad (1:24,000-scale). Department of Conservation, Sacramento.

Koenig, J. B.

ARCHAEOLOGICAL SITE RECORD

Page 3 of 5

*Resource Name or #: Stocking Vineyard Site Five

1963 Geologic Map of California, Santa Rosa Sheet (1:250,000-scale). Olaf P. Jenkins edition. Division of Mines and Geology, Williams & Heintz Map Corporation, Washington, D.C.

Sanderson, M. and M. Carpenter

2005 *Images of America: Lake County*. Arcadia Publishing, San Francisco.

A16. Photographs: See continuation sheet.

Original Media/Negatives Kept: On file at Tom Origer & Associates, Rohnert Park.

*A17. Form Prepared by: Jacqueline Farrington

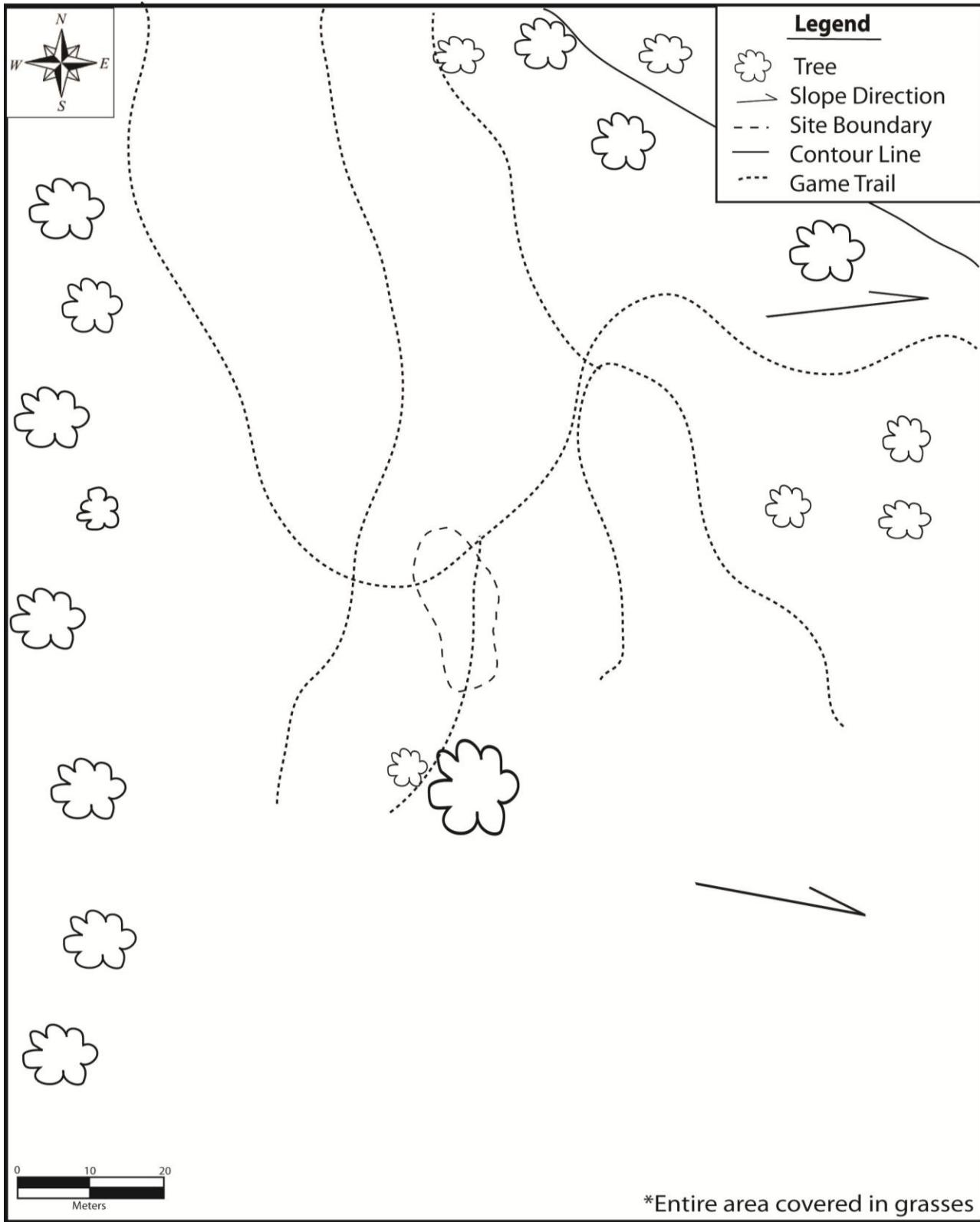
Date: 9/7/16

Affiliation and Address: Tom Origer & Associates, PO Box 1531 Rohnert Park, CA 94928

*Required information

Page 4 of 5 *Resource Name or #: Stocking Vineyard Site #5

*Drawn by: J. Farrington *Date of map: 09/13/2016

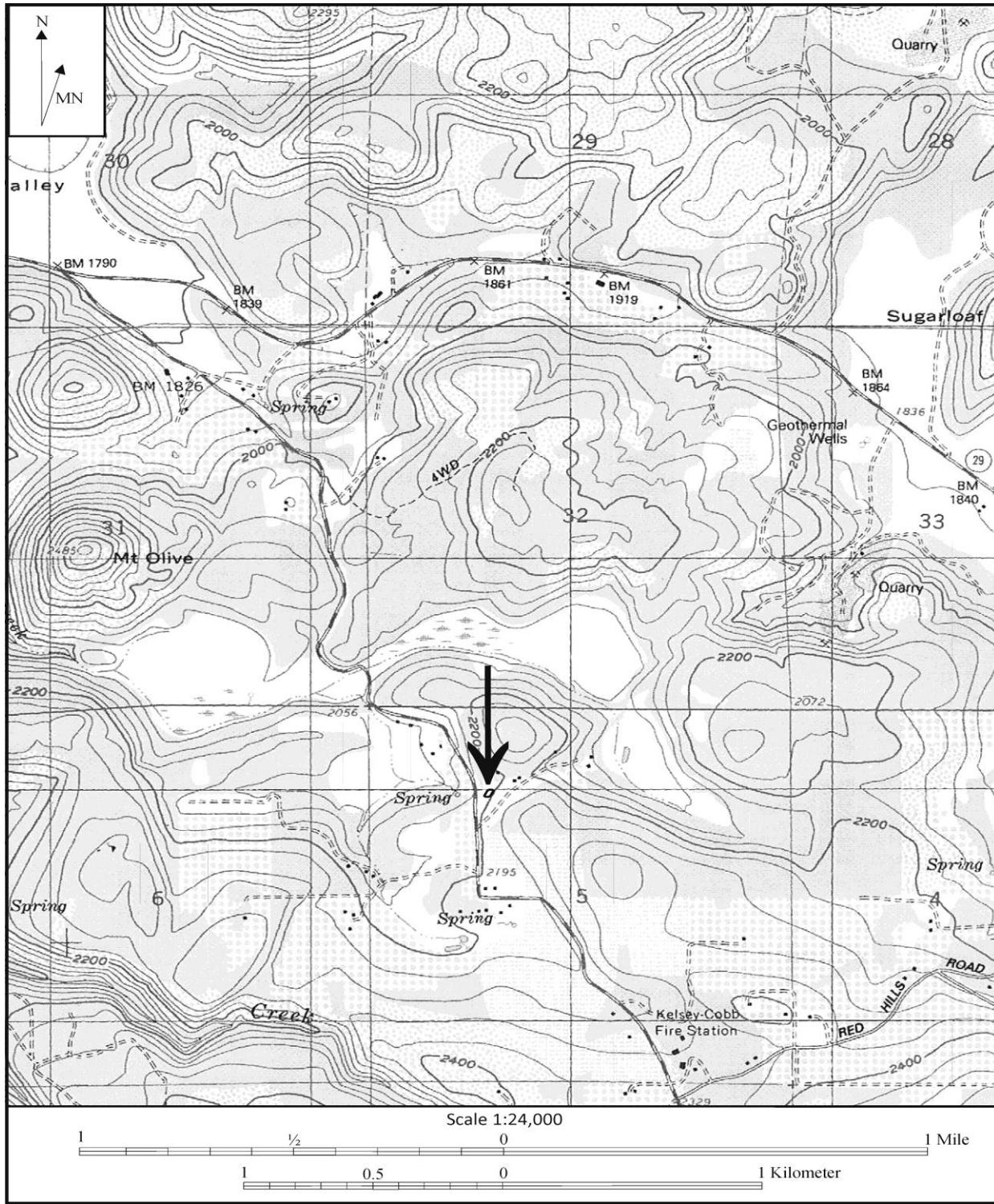


LOCATION MAP

Primary #

HRI#

Trinomial

Page 5 of 5*Resource Name or #: Stocking Vineyard Site Five*Map Name: Kelseyville*Scale: 1:24000*Date of map: 1993

PRIMARY RECORD

Primary #

HRI #

Trinomial

NRHP Status Code

Other
Review Code

Reviewer

Date

Listings

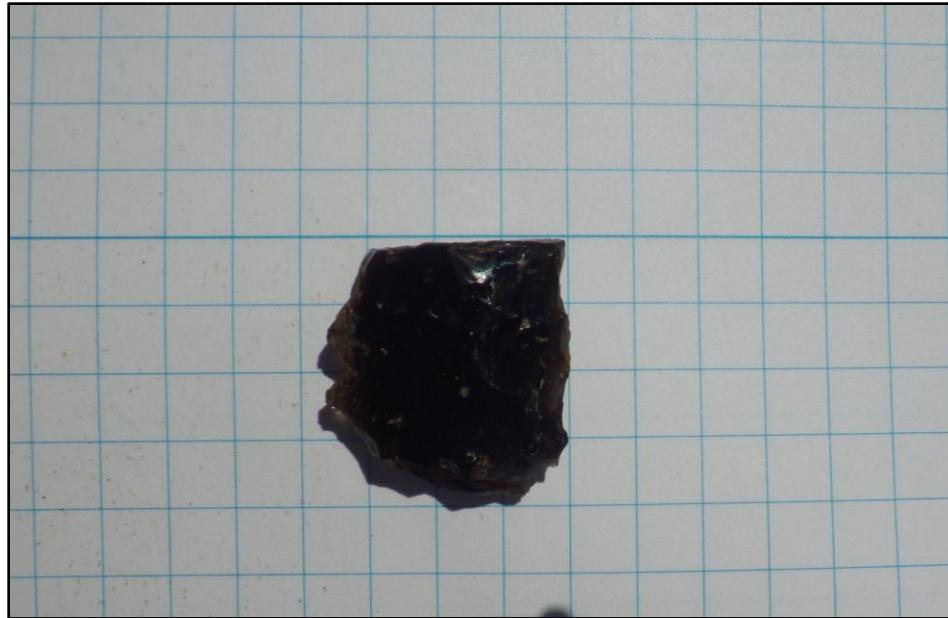
Page 1 of 3 *Resource Name or #: Stocking Vineyard Isolate #1

P1. Other Identifier: _____

*P2. Location: Not for Publication Unrestricted*a. County Lake and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)*b. USGS 7.5' Quad Kelseyville Date 1993 T 13N ; R 8W ; SW 1/4 of SW 1/4 of Sec 32 ; Mount Diablo B.M.c. Address _____ City Kelseyville Zip 95451d. UTM: Zone 10S, 519261 mE/ 4308686 mN WGS84

e. Other Locational Data: At the intersection of Red Hill Road and Highway 175 West, turn right onto Highway 175 West and proceed for one mile. There is a private road on the right-hand side behind a locked gate; drive .14 miles down this road, then proceed on foot approximately 635 meters to the northwest. Isolate is located within a power line cut.

*P3a. Description: This isolate was noted on a north-facing slope within a north-south trending power line cut. It is a portion of a petite obsidian projectile point, missing both the point and base sections. It is upslope from a marsh. No other cultural remains could be located in the vicinity.

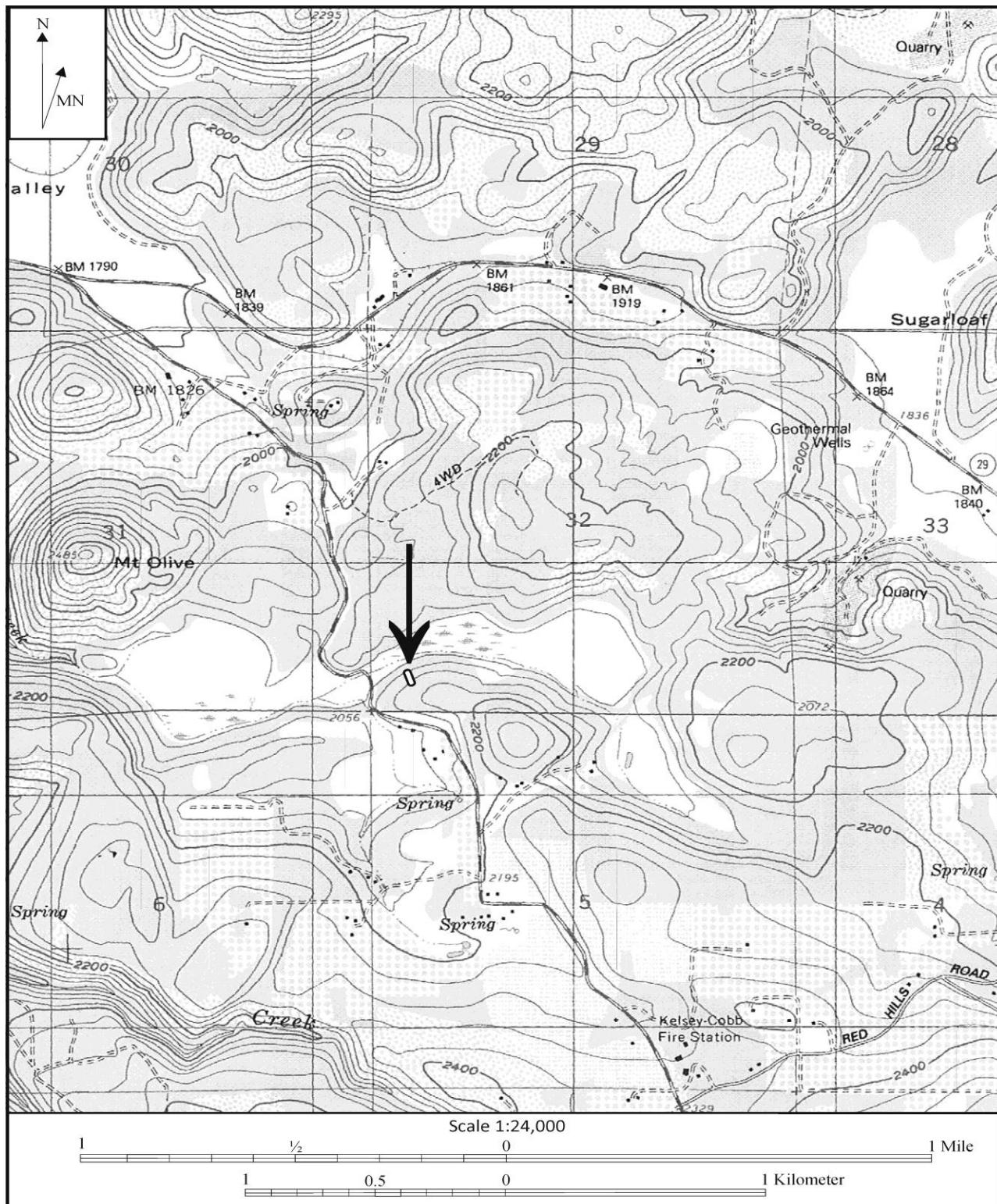
*P3b. Resource Attributes: AP16,
Other _____*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates)P5b. Description of Photo: Portion of point. Photo scale is 1 square = 1/4'*P6. Date Constructed/Age and Source: Historic Prehistoric
 Both*P7. Owner and Address:
Brian Stocking*P8. Recorded by: J. Farrington, M. Arsenault
Tom Origer & Associates PO
Box 1531 Rohnert Park CA
94927*P9. Date Recorded: 8/18/16*P10. Survey Type: Intensive pedestrian survey*P11. Report Citation: Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California. November 2016.*Attachments: NONE Location Map Continuation Sheet Building, Structure, and Object Record Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record Artifact Record Photograph Record Other (List): _____

LOCATION MAP

Primary #

HRI#

Trinomial

Page 2 of 3*Resource Name or #: Stocking Vineyard Isolate #1*Map Name: Kelseyville*Scale: 1:24000*Date of map: 1993

CONTINUATION SHEET

Property Name: Stocking Vineyard Isolate #1
Page 3 of 3

*Figure 1. Back of fragment, scale is
1 square = 1/4'*



*Figure 2. Width of fragment, scale is
1 square = 1/4'*



PRIMARY RECORD

Primary #

HRI #

Trinomial

NRHP Status Code

Other
Review Code

Reviewer

Date

Listings

Page 1 of 3 *Resource Name or #: Stocking Vineyard Isolate #2

P1. Other Identifier: _____

*P2. Location: Not for Publication Unrestricted*a. County Lake and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)*b. USGS 7.5' Quad Kelseyville Date 1993 T 13N ; R 8W ; SW 1/4 of SW 1/4 of Sec 32; Mount Diablo B.M.c. Address _____ City Kelseyville Zip 95451d. UTM: Zone 10S, 520507 mE/ 4308704 mN WGS84

e. Other Locational Data: At the intersection of Red Hill Road and Highway 175 West, turn right onto Highway 175 West and proceed for one mile. There is a private road on the right-hand side behind a locked gate; drive down this road and park at the bridge crossing approximately .6 miles down the road. Proceed on foot approximately 480 meters east. Isolate is located at the base of a burned-out tree stump.

*P3a. Description: This isolate was noted on a north-facing slope, just northeast of the previously recorded site of CA-LAK-784H. This isolate was a mostly-intact obsidian knife, and was unassociated with any other cultural remains.

*P3b. Resource Attributes: AP16, Other*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolate)P5b. Description of Photo: Photo of artifact with scale bar*P6. Date Constructed/Age and Source: Historic Prehistoric Both

*P7. Owner and Address:

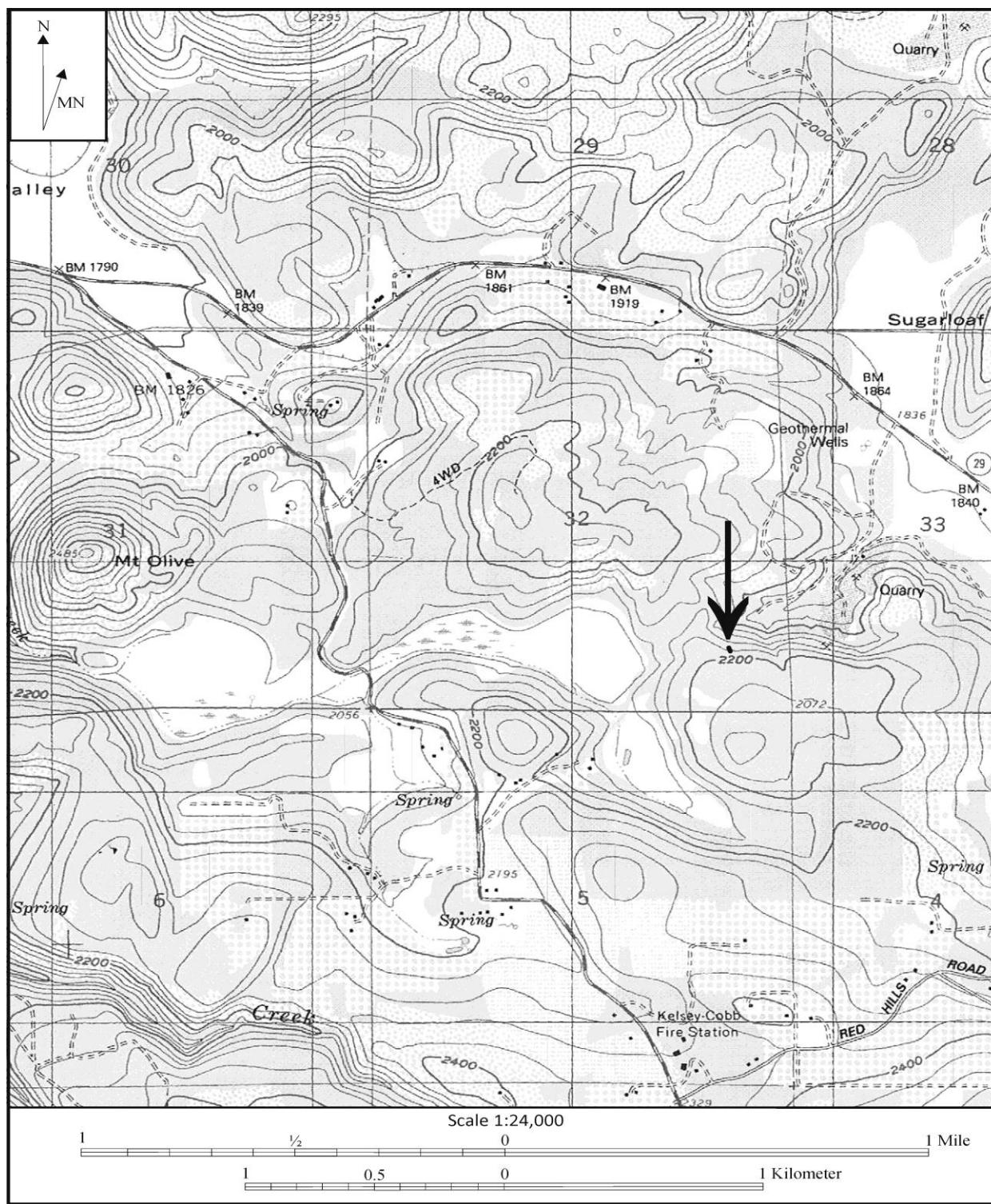
Brian Stocking*P8. Recorded by: J. Farrington, Tom Origer & Associates PO Box 1531 Rohnert Park CA 9492*P9. Date Recorded: 8/20/16*P10. Survey Type: Intensive pedestrian survey*P11. Report Citation: Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California. November 2016.*Attachments: NONE Location Map Continuation Sheet Building, Structure, and Object Record Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record Artifact Record Photograph Record Other (List): _____

LOCATION MAP

Primary #

HRI#

Trinomial

Page 2 of 3*Resource Name or #: Stocking Vineyard Isolate #2*Map Name: Kelseyville*Scale: 1:24000*Date of map: 1993

CONTINUATION SHEET

Property Name: Stocking Vineyard Isolate #2
Page 3 of 3



Figure 1. Back of obsidian knife

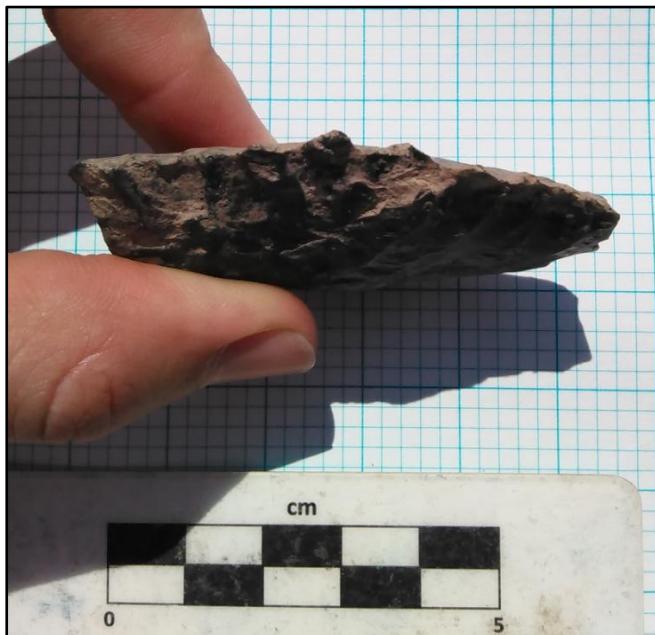


Figure 2. Side of fragment



Figure 3. detailed view of knife serration

PRIMARY RECORD

Primary #

HRI #

Trinomial

NRHP Status Code

Other
Review Code

Reviewer

Date

Listings

Page 1 of 4 *Resource Name or #: The Leaky Pipe Foundation

P1. Other Identifier:

*P2. Location: Not for Publication Unrestricted

*a. County Lake

*b. USGS 7.5' Quad Kelseyville Date 1993 T 12N; R 8W; NE 1/4 of NW 1/4 of Sec 5; Mount Diablo B.M.

c. Address City Kelseyville Zip 95451

d. UTM: Zone 10S, 519629 mE/ 4308248 mN WGS84

e. Other Locational Data: At the intersection of Red Hill Road and Highway 175 West, turn right onto Highway 175 West for one mile. The private road this foundation is located on is on the right hand side of Highway 175 West, and is behind a locked gate. Foundation is on the left approximately .15 miles down the private road.

*P3a. Description: This site consists of the remains of a foundation for a house. The foundation was constructed from locally sourced rock, and is generally rectangular in shape. Noted within the foundation are two disconnected metal water pipes protruding from the walls. Associated with the site are two sheds in a severely deteriorated condition (see continuation page). Additionally, a clear glass container, two modern amber glass bottles, and several sheets of corrugated metal were observed within the vicinity of the foundation. The entire area is covered in a layer of vegetation and duff. Local vegetation mostly consists of Oak, although two large mulberry trees mark where a front yard was once located.

*P3b. Resource Attributes: AH2 Foundations/structure pads, AH3 Landscaping



*P4. Resources Present: Building
 Structure Object Site District
 Element of District Other
 P5b. Description of Photo:
 North-facing view of foundation and protruding water pipe on 8/21/16

*P6. Date Constructed/Age and Source: Historic Prehistoric Both
 House location appears on 1943 Kelseyville USGS 15' Map

*P7. Owner and Address: Bryant Stocking

*P8. Recorded by: T. Alshuth and M. Arsenault
 Tom Origer & Associates, P.O. Box 1531 Rohnert Park, CA 94927

*P9. Date Recorded: 8/21/16

*P10. Survey Type: Intensive pedestrian Survey

*P11. Report Citation: Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California. November 2016.

*Attachments: NONE Location Map Continuation Sheet Building, Structure, and Object Record

Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record

Artifact Record Photograph Record Other (List): Sketch Map

LOCATION MAP

Primary #

HRI#

Trinomial

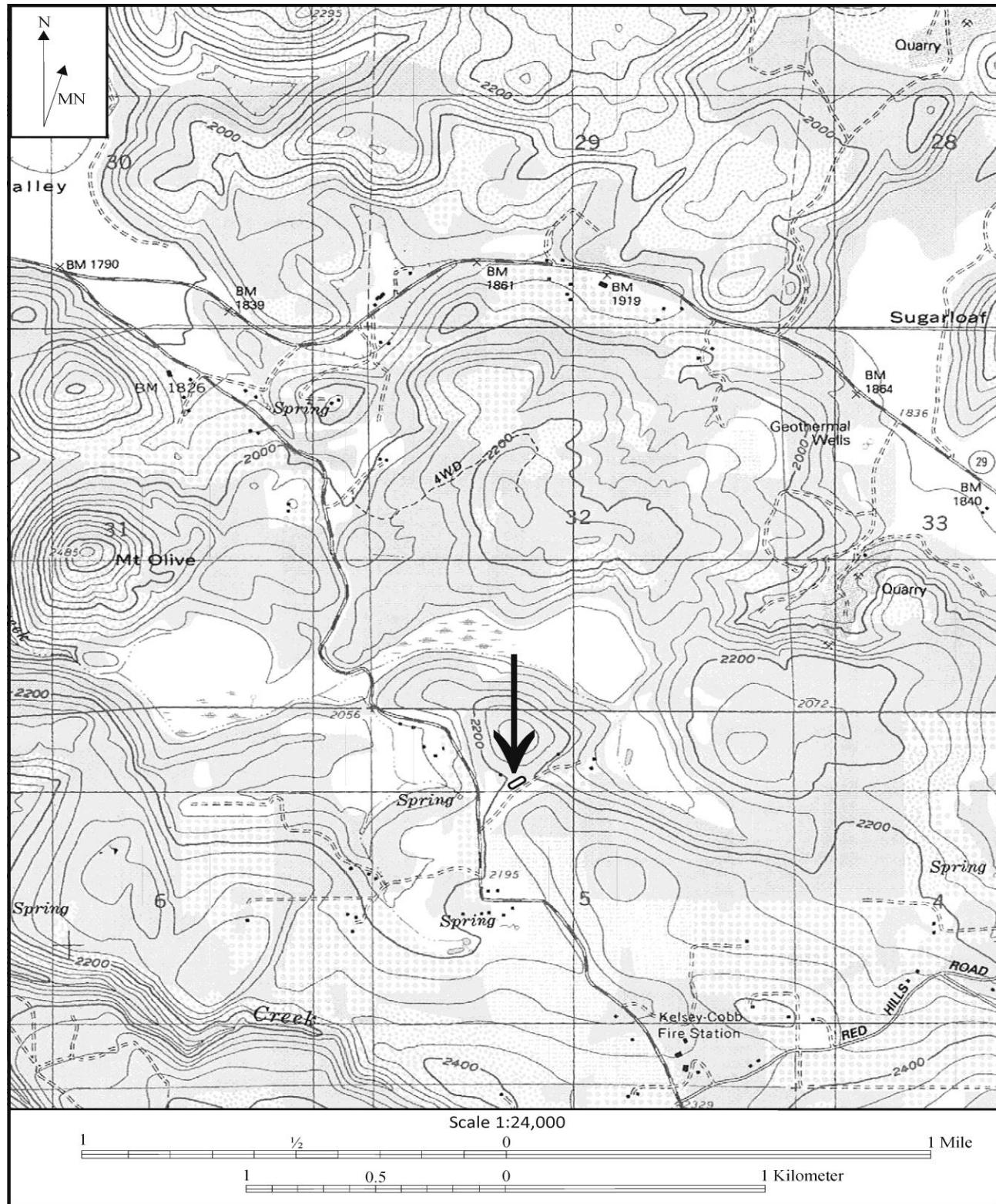
Page 2 of 4

*Resource Name or #: Leaky Pipe Foundation

*Map Name: Kelseyville

*Scale: 1:24000

*Date of map: 1993



SKETCH MAP

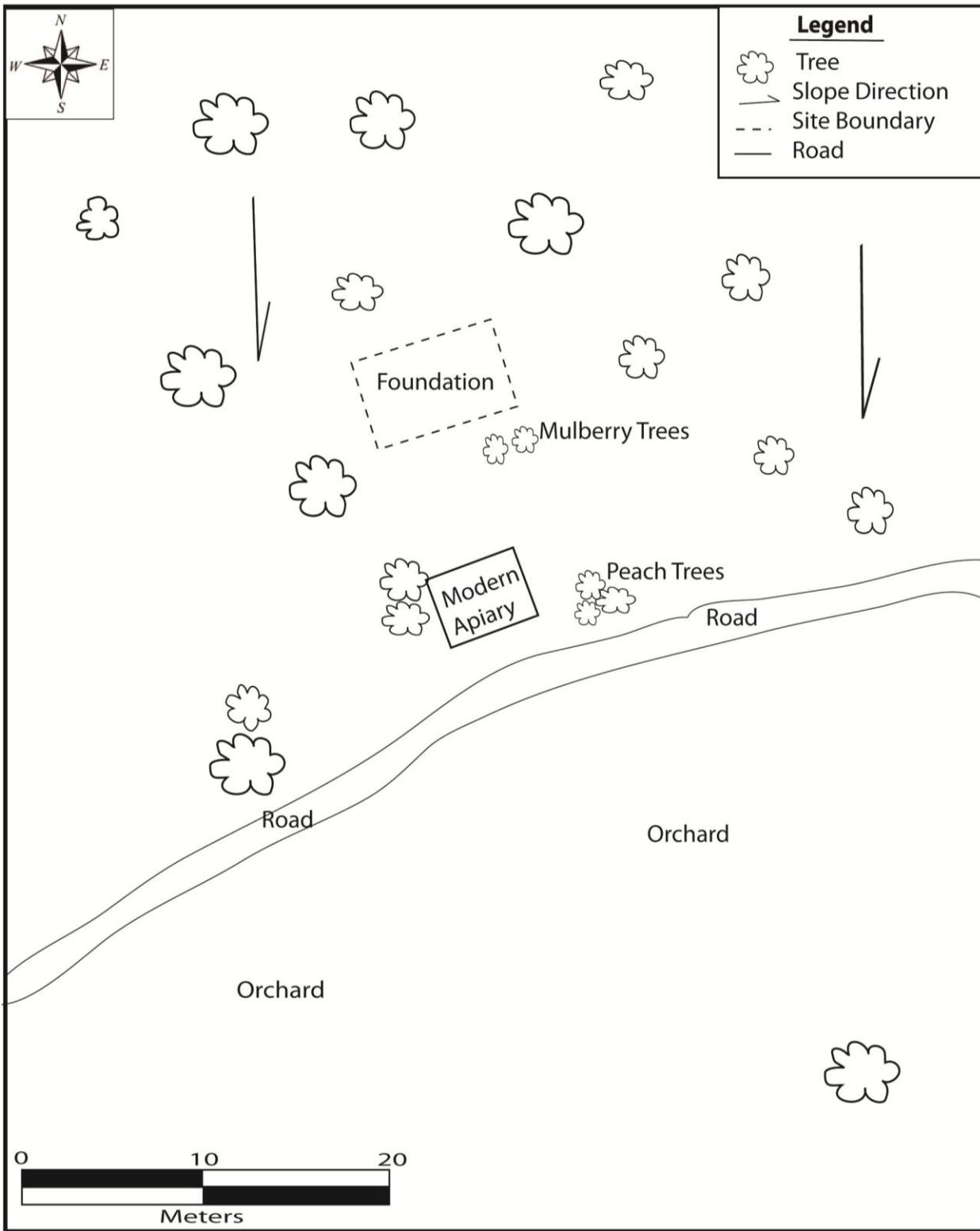
Primary #

HRI#

Trinomial

Page 3 of 4 *Resource Name or #: Stocking Vineyard Leaky Pipe Foundation

*Drawn by: J. Farrington *Date of map: 09/13/2016



CONTINUATION SHEET

Property Name: The Leaky Pipe Foundation
Page 4 of 4

Figure 1. southwest corner of foundation



Figure 2. remains of shed #1



Figure 3. remains of shed #2



Figure 4. one of two pipes within wall of south-facing foundation



PRIMARY RECORD

Other Listings:

Review Code:

Page 1 of 3

Primary # P-

HRI #

Trinomial:

NRHP Status Code:

Resource Name or #: Stone Fence

P1. Other Identifier:

P2. Location: Not for Publication

b. USGS 7.5' Quad: Kelseyville

T 12 N/R 8 W; SW 1/4 of SE 1/4 of Sec. 5; MDBM

c. Address: City: Kelseyville

d. UTM: Zone: 10 520850 mE

e. Other Locational Information:

a. County: Lake

Date: 1993

Zip: 95451

4307680 (south), 4307760 (north) mN NAD 27

P3a. Description: This feature consists of a stacked stone fence constructed from locally sourced stone. The fence stretches for approximately 75 feet and is severely deteriorated at the northernmost section. The southern segment is in the best condition. The tallest portion of the fence currently stands two feet tall. Portions of a barbwire and sheep fence run directly east the stone fence. The barbwire and sheep fence is severely deteriorated as well.

P3b. Resource Attributes: AH11. Walls/fences

P4. Resources Present: Structure

P5. Photograph or Drawing: Photograph

P5b. Description of Photo: Midsection of stone fence, camera facing east



P11. Report Citation: Alshuth, T., J. Farrington, M. Arsenault, and T. Origer. *A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California*. November 2016.

P12. Attachments: Sketch Map, Location Map

P6. Date Constructed/Age and Sources:

Historic

P7. Owner and Address:
Bryant Stocking

P8. Recorded by:
Taylor Alshuth
Tom Origer & Associates
P.O. Box 1531
Rohnert Park, CA 94927

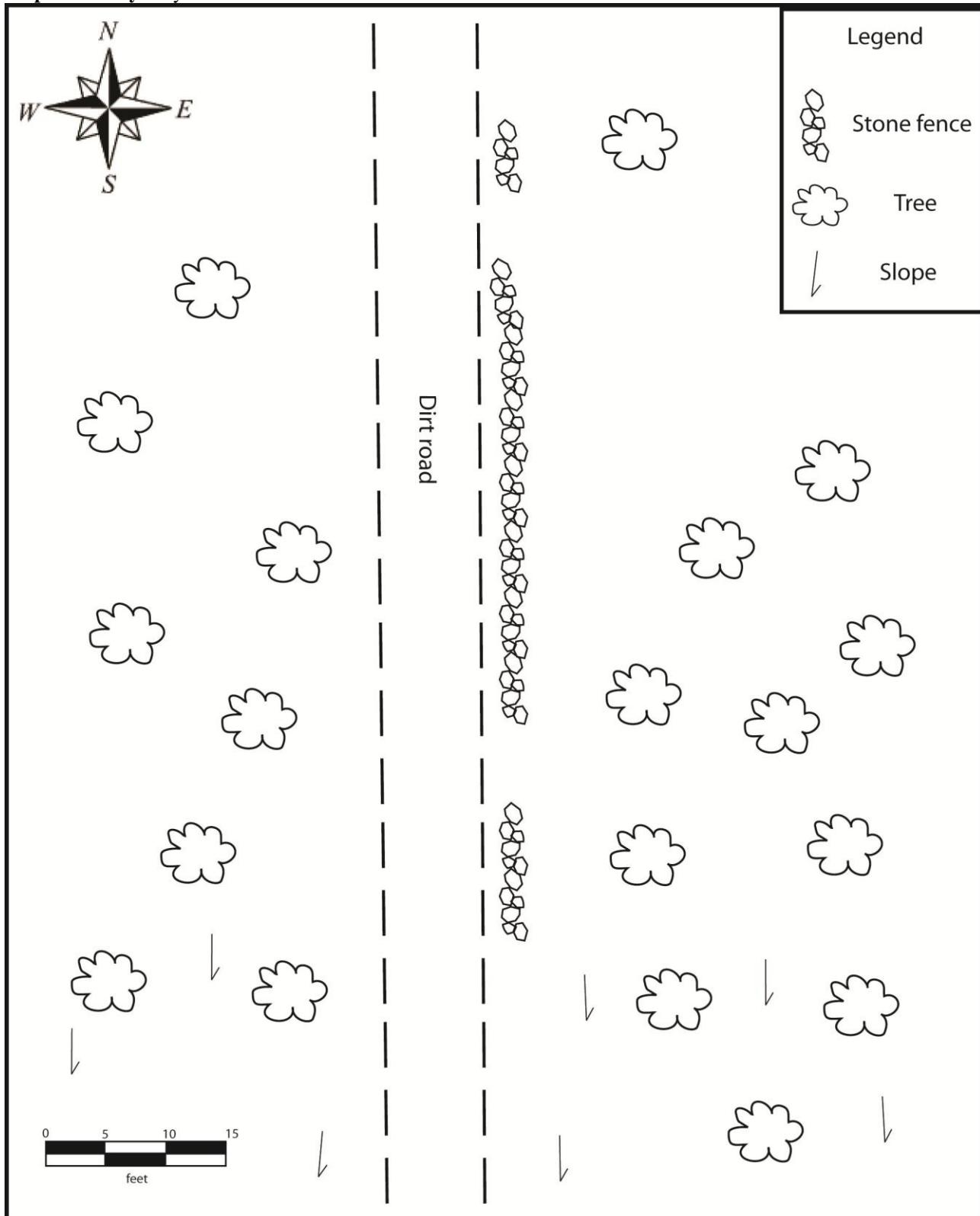
P9. Date Recorded:
11/10/16

P10. Type of Survey:
Intensive Pedestrian Survey

SKETCH MAP

Page 2 of 3
Map Drawn By: Taylor Alshuth

Primary # P-
HRI #
Trinomial: CA-
Resource Name or #: Stone Fence
Date: 11/10/16



LOCATION MAP

Page 3 of 3

Map Name: Kelseyville

Scale: 7.5'

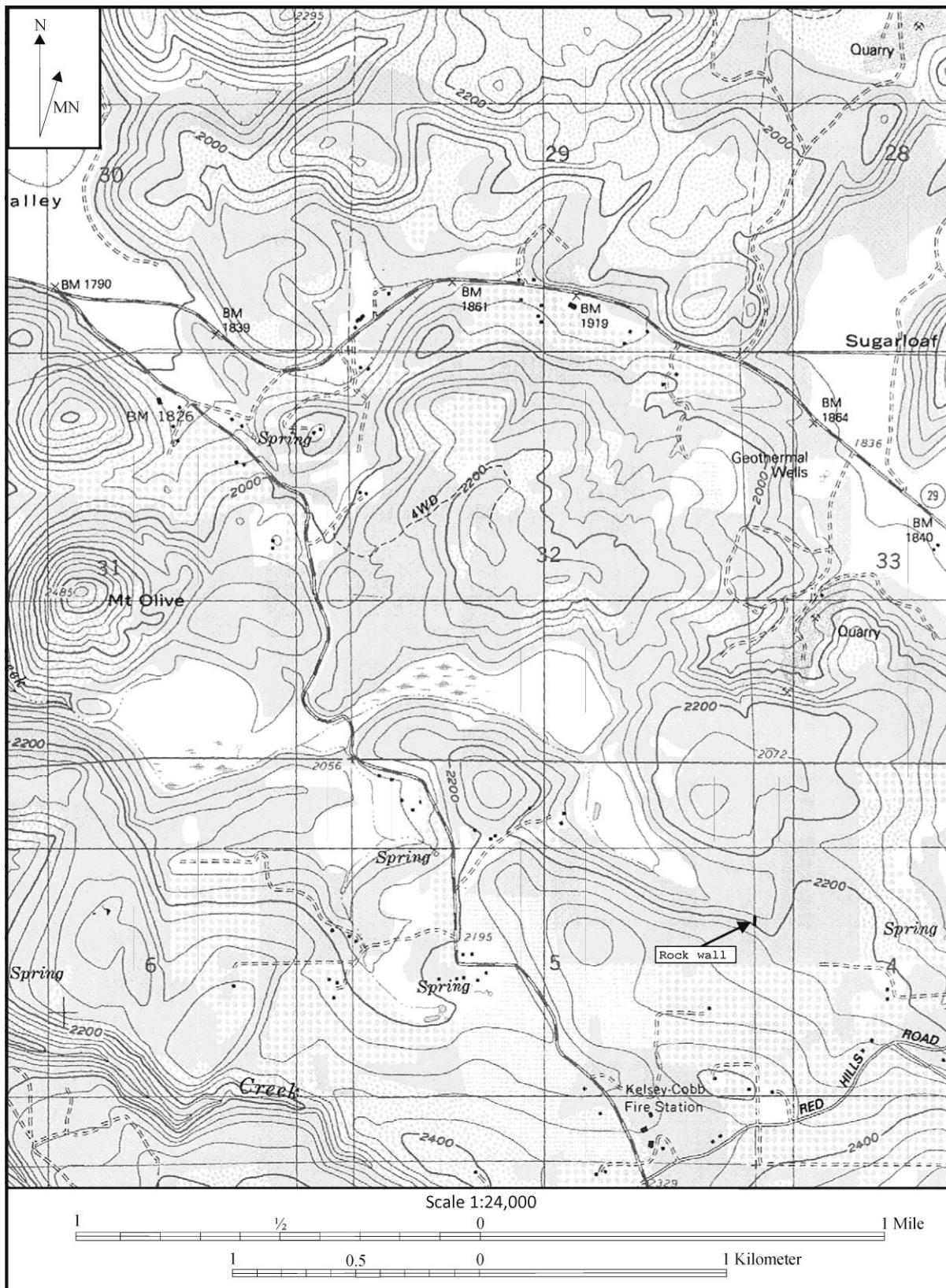
Primary #: P-

HRI #:

Trinomial:

Resource Name or #: Stone Fence

Date of Map: 1993



PRIMARY RECORD

Primary #

HRI #

Trinomial

NRHP Status Code

Other
Review Code

Reviewer

Date

Listings

Page 1 of 5 *Resource Name or #: Stocking Vineyard Hodgepodge House

P1. Other Identifier: Stocking Vineyard House #1

*P2. Location: Not for Publication Unrestricted

*a. County Lake

*b. USGS 7.5' Quad Kelseyville Date 1993 T 12 N ; R 8 W, NE 1/4 of NW 1/4 of Sec 5; Mount Diablo B.M.

c. Address: City Kelseyville Zip 95451

d. UTM: Zone 10S, 519864 mE/ 4308329 mN WGS84

e. Other Locational Data: At the intersection of Red Hill Road and Highway 175 West, turn right onto Highway 175 West for one mile. The private road this building is located on is on the right hand side, and is behind a locked gate. House is approximately .29 miles down the private road.

*P3a. Description: This house is a cross gabled building on an L plan with gabled and hipped roof wings.

The front of the house features a screened porch under a gabled roof. The roof is uniformly comprised of standing seam metal sheeting. There is a shed-roof addition at the northeast-facing L intersection of the home, the siding of which is a mix of horizontal boards and shingles. The house is built on a slope, with a storage area constructed underneath a portion of the south side of the home. A rocked foundation is visible on portions of the house. The back entrance looks out onto a deck. The exterior of the house is shingled. Windows are uniformly wooden-framed, with the exception of a larger, single-pane window on the east-facing wall of the addition. The majority of the basement and south-facing wall is constructed of cinderblocks. Vegetation surrounding the house mostly consists of oak, walnut trees, pear trees, and grasses. Additionally, there are some ornamental plants in the front yard area of the house, including a dwarf weeping mulberry tree and rose bushes. Approximately 300 feet southeast of the house are two sheds. Both appear to be in poor condition, and are coeval with the house, as well as the pear and walnut orchards across the road from the house.

*P3b. Resource Attributes: HP2 Single Family Home, HP4 Sheds, HP33 Farm/Ranch, AH3 Orchard



Arsenault, and T. Origer. A Historical Resources Survey for the Stocking Vineyard Project, Lake County, California. November 2016.

*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)

P5b. Description of Photo: View of West-facing house entrance on 8/20/16

*P6. Date Constructed/Age and Source: Historic Prehistoric Both

*P7. Owner and Address: Bryant Stocking

*P8. Recorded by: J. Farrington and M. Arsenault, Tom Origer & Associates PO Box 1531 Rohnert Park CA 94928

*P9. Date Recorded: 8/19/16

*P10. Survey Type: Intensive pedestrian survey

*P11. Report Citation: Alshuth, T., J. Farrington, M.

*Attachments: NONE Location Map Continuation Sheet Building, Structure, and Object Record

Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record

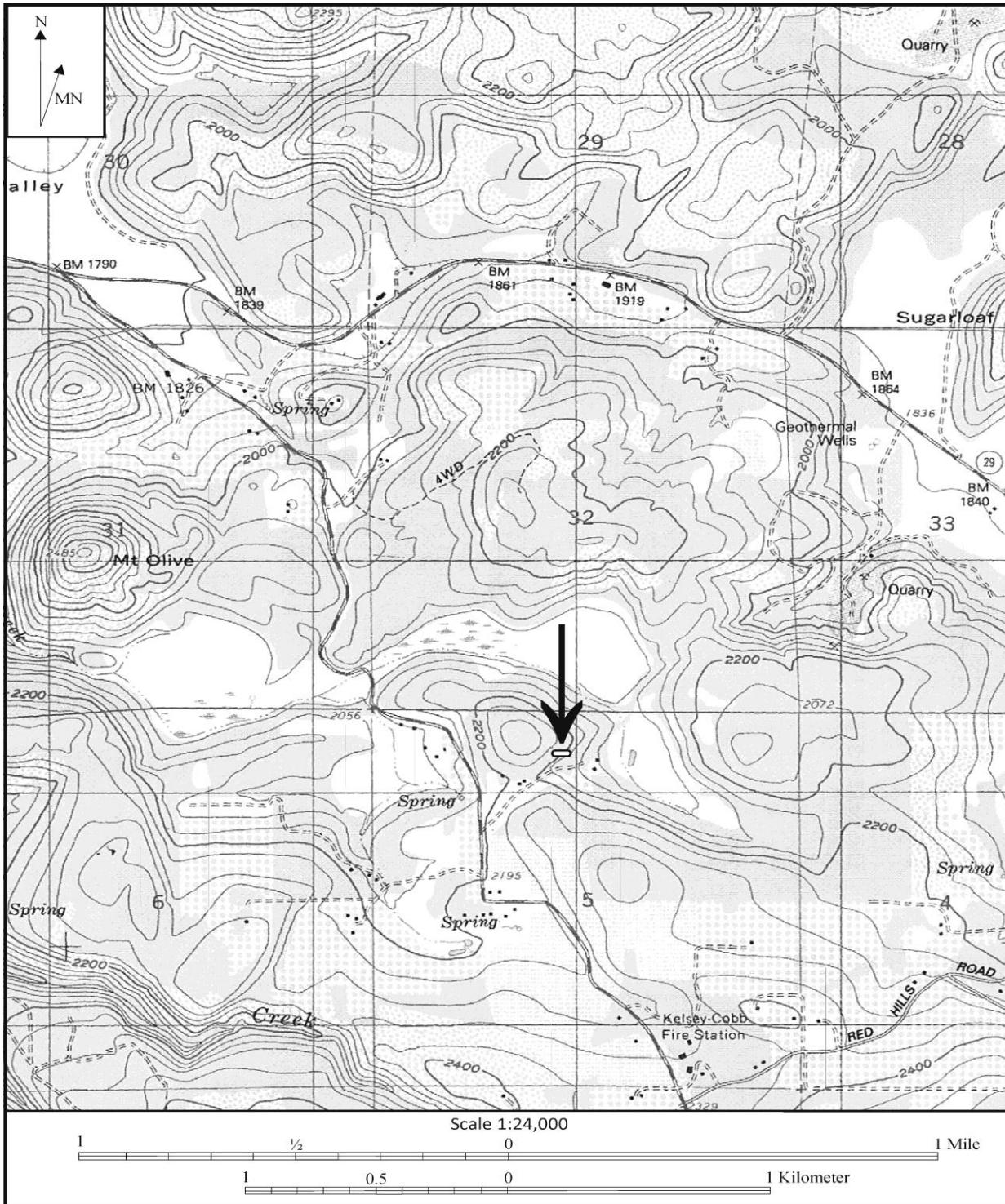
Artifact Record Photograph Record Other: Sketch Map

Page 2 of 5
***Map Name:** Kelseyvi

***Resource Name or #:** Stocking Vineyard Hodgepodge House

Scale: 1:24000

***Date of map:** 1993



SKETCH MAP

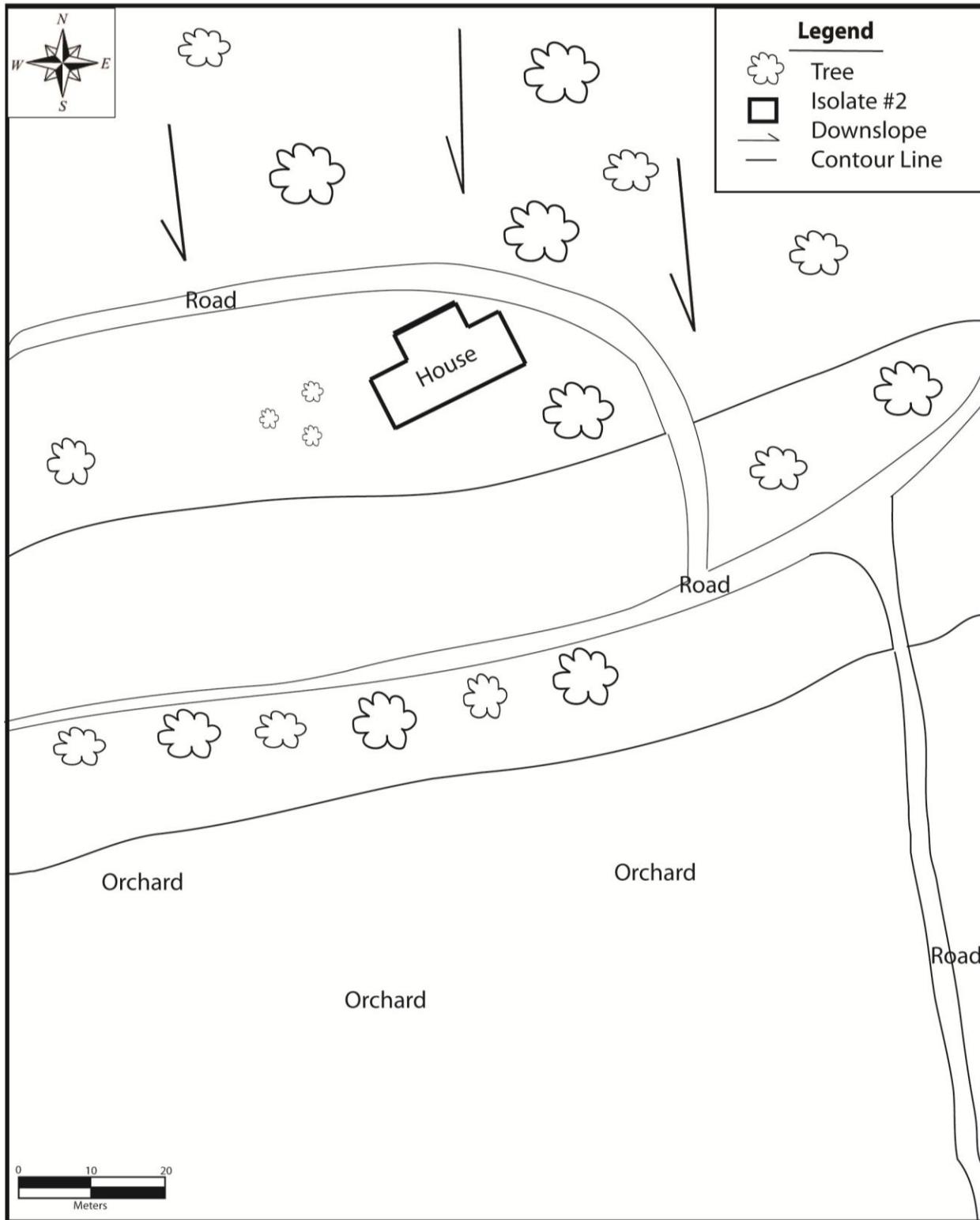
Primary #

HRI#

Trinomial

Page 3 of 5 *Resource Name or #: Stocking Vineyard Hedgepodge House

Drawn by: J. Farrington *Date of map: 09/13/2016



CONTINUATION SHEET

Property Name: Stocking Vineyard Hodgepodge House
Page 4 of 5

Figure 1. southwest-facing elevation



Figure 2. northeast-facing elevation



Figure 3. east-facing corner of house

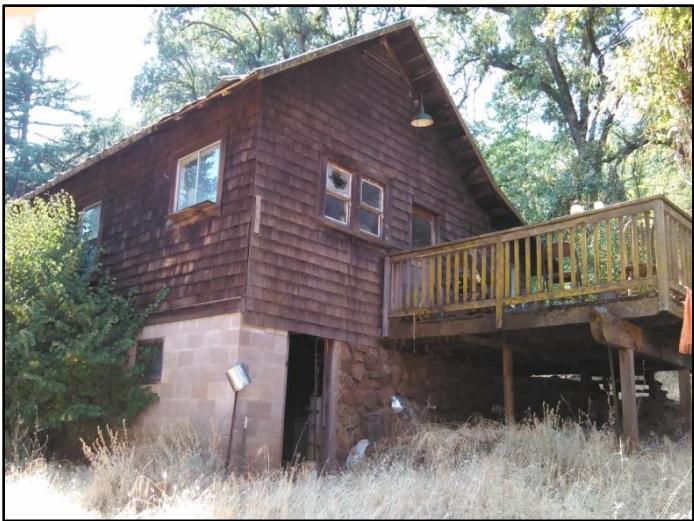


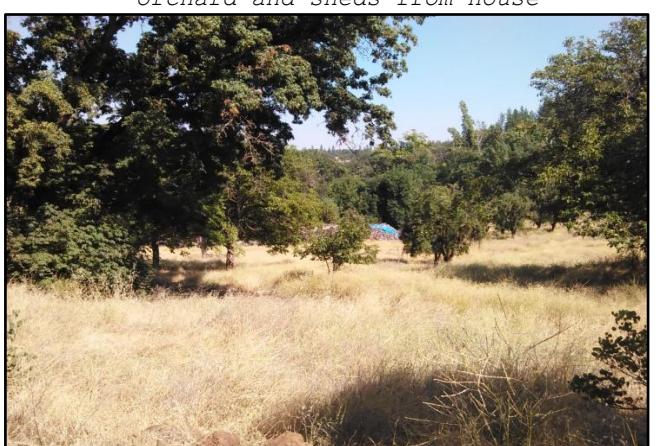
Figure 4. north-facing elevation



Figure 5. north-facing windows



Figure 6. southeastern-facing view of orchard and sheds from house



CONTINUATION SHEET

Property Name: Stocking Vineyard Hodgepodge House
Page 5 of 5

Figure 7. west-facing elevation of shed #1



Figure 8. north-facing elevation of shed #1



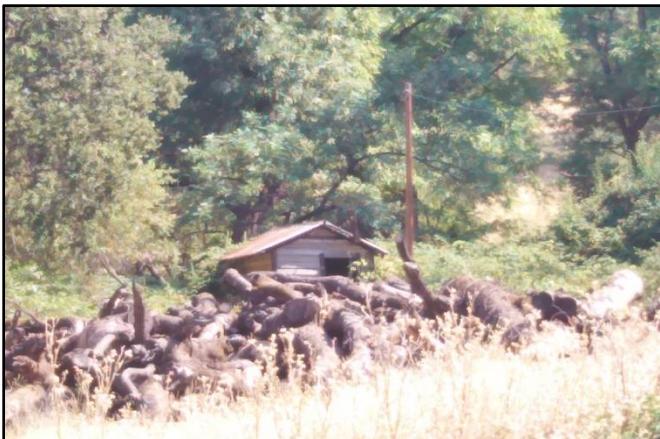
Figure 9. northeastern corner of shed #1



Figure 10. roof of shed #1



Figure 11. southeast view of shed #2 from shed #1



SECTION 4. FERTILIZER USAGE: SWRCB NITROGEN MANAGEMENT PLAN

Nitrogen Management Plan



for a

California Commercial Medical Cannabis Cultivation Facility

8551 HWY 175, Kelseyville, CA 95451

Lake County APNs 01105506,00902254,00902255,00902256 & 01105601

WDID #5S17CC400108

Submitted to:

California Regional Water Quality Control Board – Central Valley Region

364 Knollcrest Drive, Suite 205

Redding, CA 96002

Prepared by:

Eastside Environmental, Inc.
315 Wall Street, Suite 14
Chico, CA 95928

Prepared for:

Golden State Herb, Inc.
PO Box 7605
Chico, CA 95927A

May 2018

Table of Contents

1	Facility Description	3
1.1	Location and Configuration	3
1.1.1	Site Description and Growing Methods	3
1.1.2	Canopy Area Acreage (at plant maturity)	3
1.1.3	Site Location Map	3
1.1.4	Facility Plan	3
2	Sources of Nitrogen.....	7
2.1	Bulk Materials.....	7
2.2	Dry Fertilizers	7
2.3	Liquid Fertilizers.....	7
3	Nitrogen Storage, Use, and Disposal Practices.....	8
3.1	Nitrogen Materials Delivery.....	8
3.2	Bulk, dry, and liquid fertilizer storage.....	8
3.3	Mixing and processing area description.....	8
3.4	Spent media management.....	9
3.5	Growing media amendment process.....	9
4	Nitrogen Application Rate	10
4.1	Monthly Applied Nitrogen.....	10
5	Contact Information.....	11
6	Appendix A: Material Safety Data Sheets & Lab Analyses.....	12

Table of Figures

Figure 1. Location Map.....	4
Figure 2. Facility Plan.....	5
Figure 3. Site Plan.....	6
Table 1. Nitrogen-containing materials identification and delivery schedule.....	8
Table 2. Nitrogen Management Worksheet.....	10

1 FACILITY DESCRIPTION

1.1 Location and Configuration

1.1.1 Site Description and Growing Methods

The site is a proposed commercial medical cannabis cultivation facility located at 8550 HWY 175, Kelseyville, California in Lake County (APNs 011-055-06, 009-022-54,009-022-55,009-022-56, and 011-056-01). The 643-acre, five-parcel property is accessed via a gravel driveway off of HWY 175 (Figure 1).

The Project will be built out in phases over the next three to five years, as State of California and local regulations are refined and the legal cannabis market stabilizes. Project design will be based on projected needs over this development period: Phase 1 development (on parcel 011-055-06) will occur in 2018 and is the subject of this Nitrogen Management Plan.

Currently there is a small less than 1,000 ft² fenced personal medicinal cannabis cultivation area on APN 011-055-06 with 4 cloth sacks (“Smart Pots”) that contain an above grade organic soil mixture. This cultivation area is in compliance with Article 72 of the Lake County Code, which currently regulates medical collective cannabis cultivation in Lake County’s unincorporated areas. The Project proponent plans to establish a commercial cultivation operation that occupies and/or disturbs approximately 5,000 ft² at the same location as the Article 72 medical collective cultivation area for 2018 (Phase 1).

For Phase 1, cannabis plants will be grown above grade in 600-gallon grow bags (“smart pots”) with imported organic soil and organic bulk soil amendments such as earthworm castings and volcanic gravel.

1.1.2 Canopy Area Acreage (at plant maturity)

In 5000 sf cultivation area, 48 plants @ 5'x5' area = 1200 sf canopy area acreage

1.1.3 Site Location Map

See **Figure 1. Location Map**

1.1.4 Facility Plan

See **Figure 2. Facility Plan** and **Figure 3. Site Plan**

Figure 1. Location Map

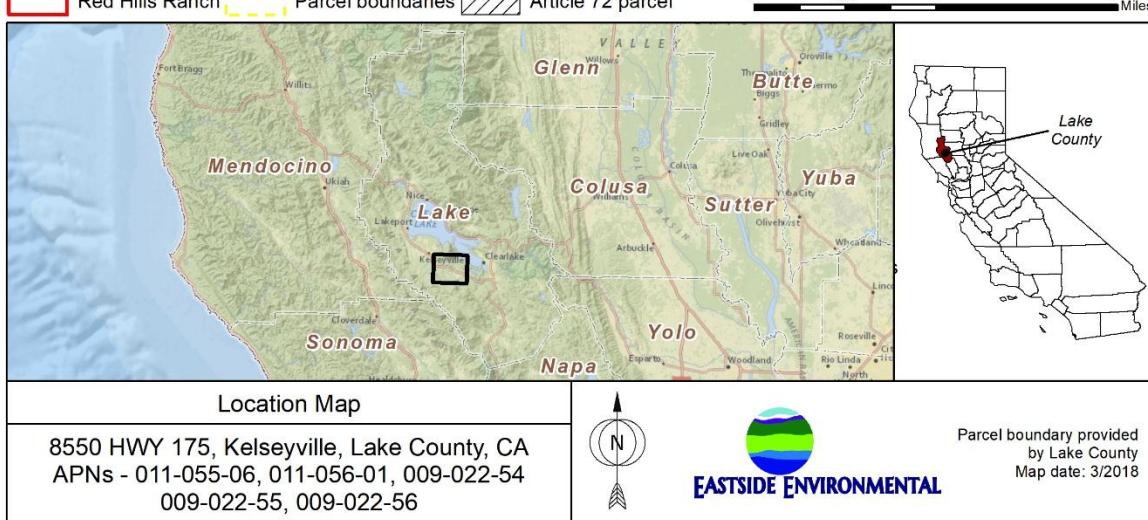
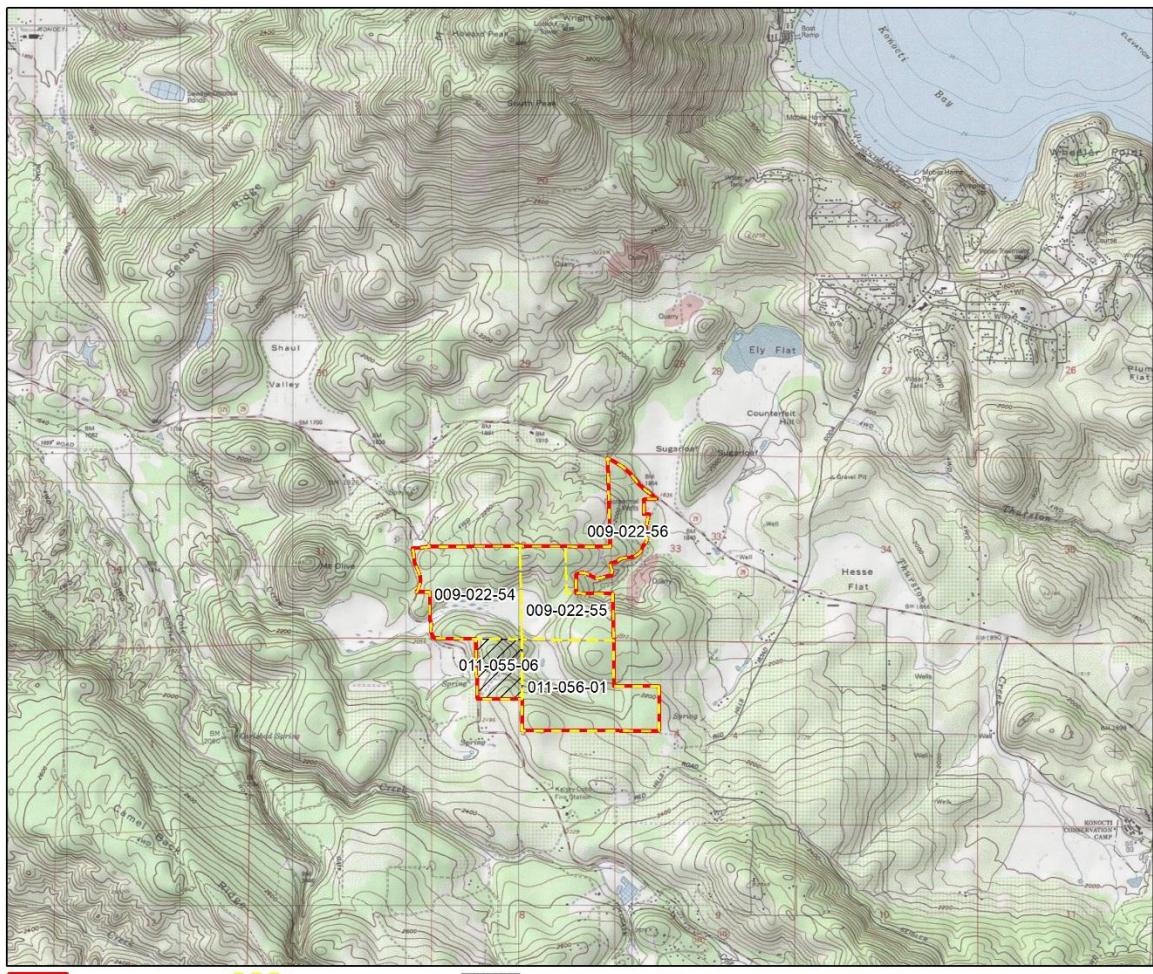


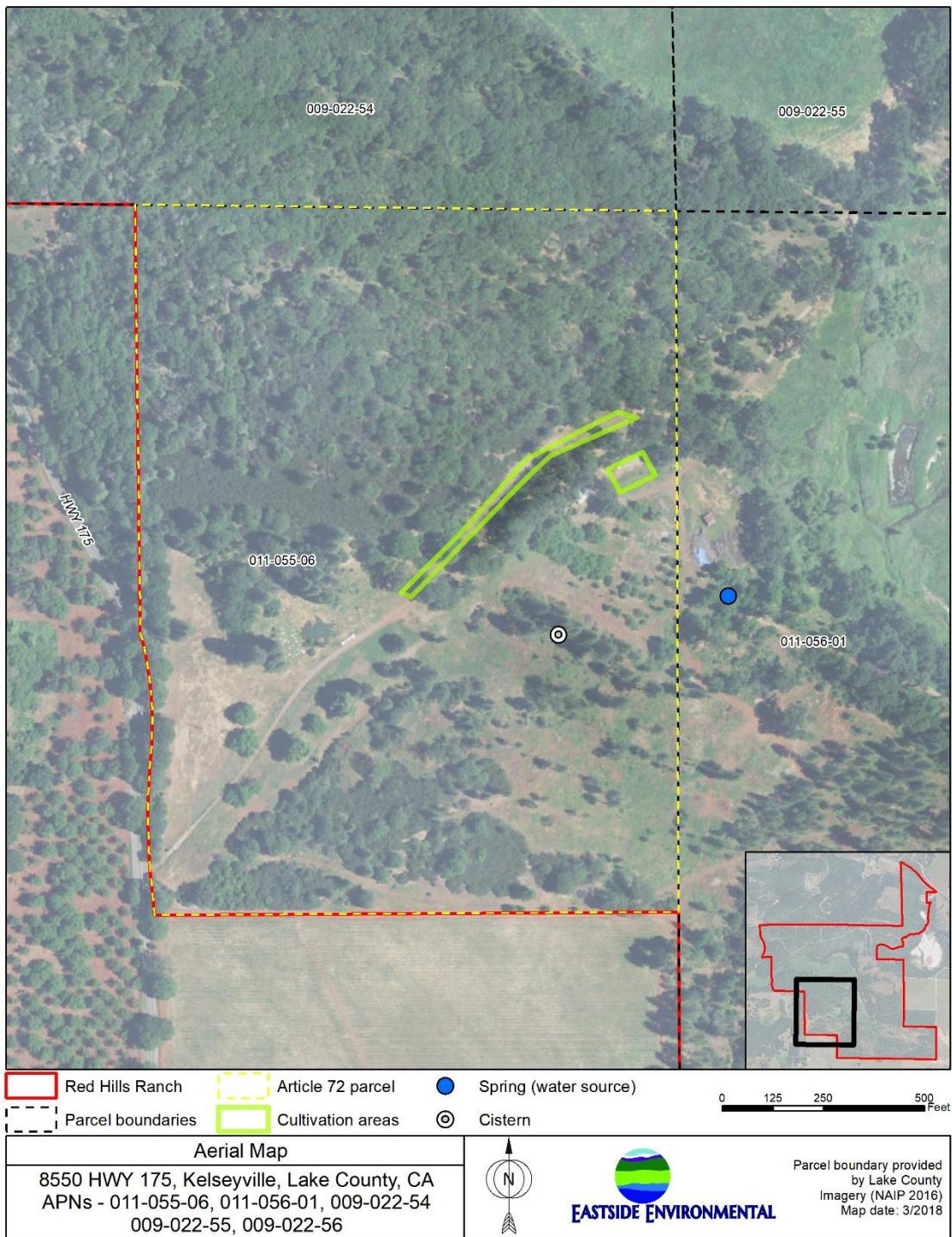
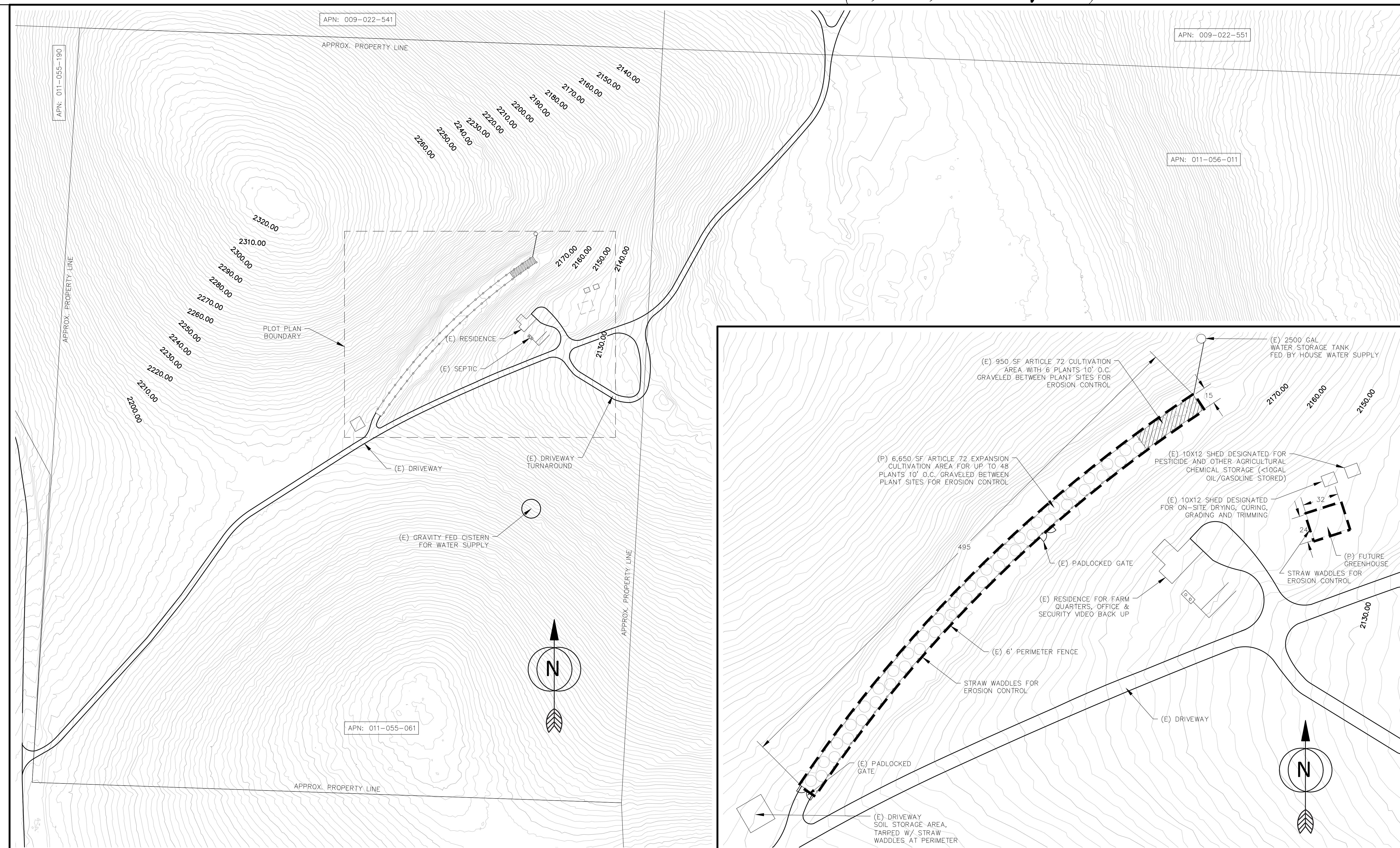
Figure 2. Facility Plan

Figure 3. Site Plan

OUTDOOR CULTIVATION SITE PLAN FOR GOLDEN STATE HERB, INC.

8550 STATE HWY 175, KELSEYVILLE, CA 95451

APN: 011-055-061 LOT: 52.98 ACRES (2,307,808 SQ FT)



HUMMER CONSULTING ENGINEERING DISCLAIMS ANY RESPONSIBILITY FOR THE IMPROPER USE OF THESE PLANS. THESE PLANS AND/OR ANY ASSOCIATED SPECIFICATIONS ARE ONLY VALID FOR THE SITE FOR WHICH THEY WERE SPECIFICALLY PREPARED. THEY SHALL NOT BE USED OR MODIFIED FOR ANY OTHER SITE. IF THESE PLANS AND/OR SPECIFICATIONS ARE USED WHOLE OR IN PART AT ANY OTHER SITE, HUMMER CONSULTING ENGINEERING CLAIMS NO RESPONSIBILITY. THESE PLANS ARE NOT VALID UNTIL THEY ARE REVIEWED AND APPROVED BY THE APPROPRIATE GOVERNMENT AGENCIES.

SITE PLAN & PLOT PLAN



ARTICLE 72 OUTDOOR CANNABIS CULTIVATION

APN: 011-055-061
OWNER: PORTER G3 MCKINIRE LLC
CULTIVATOR: GOLDEN STATE HERB, INC.
777 ALDRIDGE ROAD
YACAVILLE, CA 95688

HUMMER CONSULTING ENGINEERING CIVIL - STRUCTURAL

CHICO, CA 95926 PH: (530) 781-3530

HCE JOB # 17 - 112

DATE: 04-30-2018
DRAWN BY: SEH
CHECKED BY: SEH

0 INITIAL
NO. REVISION/ISSUE DATE

DRAWING NUMBER

C1

2 SOURCES OF NITROGEN

2.1 Bulk Materials

115.2 yards Gwyn's Mix gardening soil by Durham Worm Farm, Durham, CA (see Appendix A. MSDS & Lab Tests for info on soil NPK analysis) and 28.8 yards earthworm castings.

2.2 Dry Fertilizers

Verde Fire Products: See **Appendix A** for Material Safety Data Sheets

2.3 Liquid Fertilizers

Not applicable.

3 NITROGEN STORAGE, USE, AND DISPOSAL PRACTICES

3.1 Nitrogen Materials Delivery

Table 1. Nitrogen-containing materials identification and delivery schedule

Agricultural Chemical/Product	Quantity of Use	Frequency of Use
Fertilizers		
Earth Juice Verde Fire Grow 4-7-2	3.5 lbs per application	Bi-weekly, June - August
Soils/Amendments		
Imported soil: Gwyn's Mix (Durham Worm Farm) 1.73-1.05-1.83	115.2 yards per 5000 sf	Base grow medium utilized from June-Nov, imported to site during cultivation area creation and amended in successive seasons
Earthworm castings 1-0-0	28.8 yards per 5000 sf	Added to grow mix during cultivation area creation and added as amendment in successive seasons as lab analysis dictates

3.2 Bulk, dry, and liquid fertilizer storage

Fertilizers and pesticides on site are located within the roofed and ventilated basement of the property residence, and will be transferred to fully roofed and ventilated storage sheds in Summer 2018. All solids and liquids are stored undercover in the manufacturer's original packaging, and all liquids have secondary containment to prevent accidental release. Any fertilizers or pesticides that are not used during the cultivation season are stored in the manor outlined above throughout the Winter Wet Weather Period. There are no herbicides or rodenticides stored or used at this cultivation operation.

3.3 Mixing and processing area description

Fertilizers and pesticides will be prepared/mixed on an impermeable shed floor and applied by hand. Empty containers are disposed of to a local municipal solid waste disposal facility. Only food-safe organic

pest management and integrated pest management practices are used at this cultivation operation. Agronomic irrigation and fertilization regimes are implemented, and no fertilizers or are applied within 48 hours of a predicted rainfall event greater than 0.25 inches. The amended soils of the cultivation area will remain contained within the cloth sack “smart pots” throughout the Winter Wet Weather Period.

Absorbent materials designated for spill containment and spill cleanup equipment are to be maintained on-site, for use in the event of an accidental spill of fertilizers and/or pesticides. The Site Manager will immediately notify the California Office of Emergency Services at 1-800-853-7550 and immediately initiate cleanup activities, in the event of a spill that could enter a surface waterbody or degrade groundwater.

3.4 Spent media management

Growing medium will be continuously amended, season-to-season, by cover cropping with nitrogen-fixing plants, organic compost and additional earthworm castings as needed.

3.5 Growing media amendment process

Amendments are hand turned and mulched into the existing grow bags in autumn (compost/earthworm castings) or spring (nitrogen-fixing plants) to weather/mellow in preparation for the following growing season.

4 NITROGEN APPLICATION RATE

4.1 Monthly Applied Nitrogen

Table 2. Nitrogen Management Worksheet

	Bulk	Dry	Liquid	Rate Applied
Month	<i>Nitrogen applied as pounds/canopy acre</i>			
January	0	0	0	n/a
February	0	0	0	n/a
March	0	0	0	n/a
April	0	0	0	n/a
May	4561.92 (garden soil and castings)	0	0	At outset of first growing season
June	0	50.82	0	Bi-weekly
July	0	50.82	0	Bi-weekly
August	0	50.82	0	Bi-weekly
September	0	0	0	n/a
October	0	0	0	n/a
November	0	0	0	n/a
December	0	0	0	n/a

5 CONTACT INFORMATION

Legally Responsible Person: Andrew Greer
Title: Cultivator

Signature:  Date: 5/11/2018 8:58:49 AM PDT
EE162202D10A42E...

Site Management Plan prepared by: Crystal Keesey, Eastside Environmental, Inc.

Signature:  Date: 5/11/2018 8:50:12 AM PDT
9961393AC08C47F...

6 APPENDIX A: MATERIAL SAFETY DATA SHEETS & LAB ANALYSES

A & L WESTERN AGRICULTURAL LABORATORIES

1311 WOODLAND AVE #1 • MODESTO, CALIFORNIA 95351 • (209) 529-4080 • FAX (209) 529-4736

REPORT NUMBER: 17-226-097

CLIENT NO: 9999-D

SEND TO: OLD DURHAM WOOD INC

8616 DURNEL DR

DURHAM, CA 95938-

SUBMITTED BY:

CUSTOMER:

Compsr

ORGANIC FERTILIZER REPORT

PAGE: 2

SAMPLE ID	REPORT OF ANALYSIS IN PERCENT										REPORT OF ANALYSIS IN PARTS PER MILLION						
	Nitrogen N	Phosphorus P	Phosphate P ₂ O ₅	Potassium K	Potash K ₂ O	Sulfur S	Magnesium Mg	Calcium Ca	Sodium Na	Iron Fe	Aluminum Al	Manganese Mn	Copper Cu	Zinc Zn	B		
SECTION D	1.73	0.32	0.73	0.830	1.000	0.190	0.420	2.260	0.050	6711	2402	381	60	197	23.0		

SAMPLE ID	POUNDS OF NUTRIENTS / TON														
	Nitrogen N	Phosphorus P	Phosphate P ₂ O ₅	Potassium K	Potash K ₂ O	Sulfur S	Magnesium Mg	Calcium Ca	Sodium Na	Iron Fe	Aluminum Al	Manganese Mn	Copper Cu	Zinc Zn	B
SECTION D	34.6	6.4	14.7	16.6	20.0	3.8	8.4	45.2	1.0	13.4	4.8	0.8	0.1	0.4	<0.1

Reported on an as-received basis **Moisture =** **pH = 7.6**
 Reported on a dry basis **Moisture =** **C:N Ratio = 12:1**
Moisture = 38.77% **Soluble Salts = 3.4 dS/m**
Organic Matter = 36.46 %

Remarks: To convert to pounds of nutrients/ton as received, multiply pounds of nutrients/ton as reported by (100 - moisture %)/100.

This report applies only to the sample(s) tested. Samples are retained a maximum of thirty days after testing.



Robert Butterfield



A & L WESTERN LABORATORIES, INC.

Earth Juice®
Rainbow Mix Bloom™ Original Blend

HYDRO-ORGANICS WHOLESALE, INC.
MATERIAL DATA SAFETY SHEET

REVISED 03/05/13

SECTION I: GENERAL INFORMATION

PRODUCT NUMBER: J50001-J50101

PRODUCT NAME: RAINBOW MIX BLOOM™ (WITH MYCORRHIZAE/HUMIC ACID) ORIGINAL BLEND, Earth Juice®

PRODUCT CLASS: PLANT NUTRIENT

CHEMICAL NAME AND SYNONYMS: ORGANIC GRANULAR/POWDER NPK FERTILIZER

PRECAUTIONS: Avoid contact with eyes and clothing. Avoid inhaling dust.

SECTION II: HAZARDOUS INGREDIENTS

Not Applicable

SECTION III: PHYSICAL/CHEMICAL DATA

BOILING POINT: N/A

% VOLATILE BY WEIGHT: N/A

VAPOR DENSITY: Not Determined

VAPOR PRESSURE (MM HG): Not Determined

SOLUBILITY IN WATER: Insoluble

SPECIFIC GRAVITY (H2O-1): Not Determined

pH: 5 - 7

APPEARANCE AND ODOR: Light brown powder, slightly organic smell

SECTION IV: FIRE AND EXPLOSION DATA

FLASH POINT: N/A

EXPLOSIVE LIMITS: Not determined

EXTINGUISHING MEDIA: Dry Chemical, Carbon Dioxide, Foam, Water Class BC, ABC Fire Extinguisher

UNUSUAL FIRE EXPLOSION HAZARDS: None

SECTION V: REACTIVITY DATA

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

HAZARDOUS DECOMPOSITION PRODUCTS: None

INCOMPATIBILITY: unknown

SECTION VI: HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE/ EMERGENCY AND FIRST AID PROCEDURES:

EYES: Avoid contact with eyes. Flush eyes with water.

SKIN: Wash off skin with water

INHALATION: If dust causes irritation or distress, move to fresh air.

INGESTION: If swallowed, consult a physician immediately.

RESPIRATORY PROTECTION: For those that are sensitive to dust, wear a mask or respirator.

SECTION VII: SPILL, LEAK, AND DISPOSAL PROCEDURES

Contain spills. Product is non toxic

SECTION VIII: SPECIAL PRECAUTIONS

Store in a dry location.

Wash thoroughly after handling. If ingested, call a physician.

Dusty.

DO NOT USE AS FEED FOR RUMINANTS.

NEITHER THIS DATA SHEET NOR ANY STATEMENT CONTAINED HEREIN GRANTS OR EXTENDS ANY LICENSE, EXPRESSED OR IMPLIED, IN CONNECTION WITH PATENTS ISSUED OR PENDING WHICH MAY BE THE PROPERTY OF THE MANUFACTURER OR OTHERS. THE INFORMATION IN THIS SHEET HAS BEEN ASSEMBLED BY THE MANUFACTURER BASED ON ITS OWN STUDIES AND ON THE WORK OF OTHERS. THE MANUFACTURER MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, OR ADEQUACY OF THE INFORMATION CONTAINED HEREIN. THE MANUFACTURER SHALL NOT BE LIABLE TO THE VENDEE, THE VENDEE'S EMPLOYEES, OR ANYONE FOR ANY DIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE ACCURACY, COMPLETENESS, ADEQUACY, OR FURNISHING OF SUCH INFORMATION.

SECTION 5. FISH AND WILDLIFE PROTECTION: STOCKING VINEYARD BIOLOGICAL RESOURCES ASSESSMENT

BIOLOGICAL RESOURCE ASSESSMENT
for the
BRYANT STOCKING VINEYARD PROJECT
KELSEYVILLE, LAKE COUNTY, CALIFORNIA

December 21, 2017

Prepared by
Northwest Biosurvey



**BIOLOGICAL RESOURCE ASSESSMENT
for the
BRYANT STOCKING VINEYARD PROJECT
KELSEYVILLE, LAKE COUNTY, CALIFORNIA**

December 21, 2017

Prepared for: Scott Butler
Environmental Resource Management
7000 Leicester Ct.
Castle Pines, CO 80108

Tom Porter
Porter G3 LLC

Prepared by: Northwest Biosurvey
1905 Westlake Drive
Kelseyville, CA 95451
(707) 889-1061

CONTENTS

<u>Section</u>		<u>Page</u>
1.0 PROJECT DESCRIPTION		1
1.1 Proposed Project		1
1.2 Location		1
2.0 ASSESSMENT METHODOLOGY		3
2.1 Survey Methods		4
2.2 Survey Dates		4
2.3 Biological Resource Assessment Staff		4
3.0 SITE CHARACTERISTICS		5
3.1 Topography and Drainage		5
3.2 Soils		5
3.3 Plant Communities		6
4.0 PRE-SURVEY RESEARCH RESULTS		13
4.1 CNPS Electronic Inventory Analysis		13
4.2 California Natural Diversity Database		13
4.3 Wildlife Habitat Analysis Results.....		25
4.4 Wildlife Assessment		25
5.0 FIELD SURVEY RESULTS		21
6.0 SUMMARY AND RECOMMENDATIONS		31
6.1 Summary		31
6.2 Recommendations		32
7.0 BIBLIOGRAPHY		37

FIGURES AND TABLES

Figure 1 Location Map	2
Figure 2 Vegetation Map	12
Table 1 Areas of Vegetation Types	11
Table 2 Selected CNPS Plants	14
Table 3 CNDB Sensitive Plant Species	21
Table 4 Additional Plant Species Identified	30

APPENDIX A CNDB 9-Quad Species List

APPENDIX B WHR Results

1.0 PROJECT DESCRIPTION

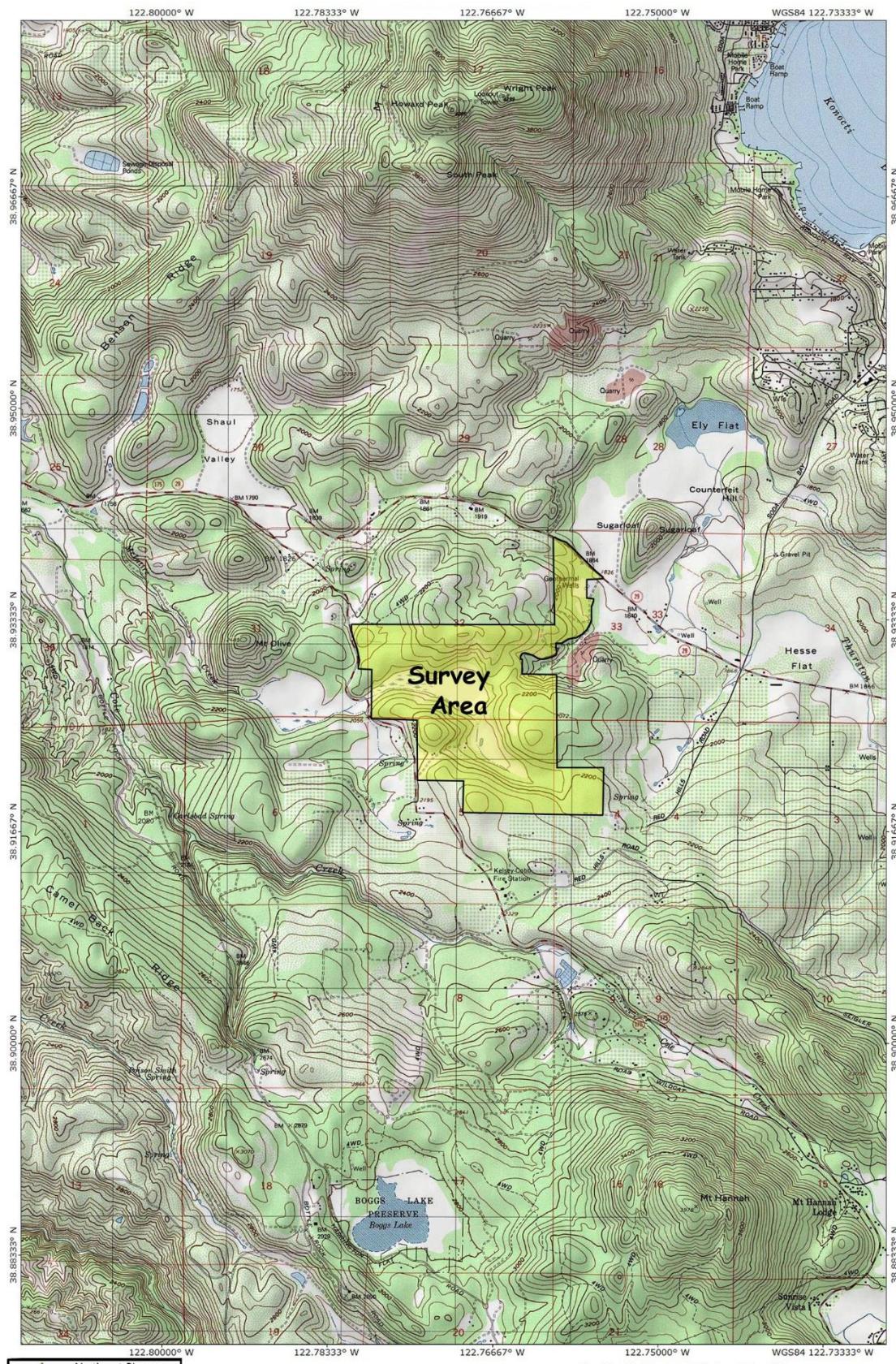
1.1 Proposed Project: This biological resource assessment covers five parcels totaling 638 acres, portions of which are proposed for vineyard development. The local permitting agency is requesting completion of an assessment of biological resources on the property as part of the California Environmental Quality Act (CEQA) review required for development of a vineyard.

The initial phase of this assessment evaluated the potential of the property to contain sensitive plant and wildlife habitat using databases discussed below. The second phase consisted of field surveys for vegetation mapping and habitat analysis. The purpose of the biological resource assessment is to determine whether the property contains sensitive plants or potentially contains sensitive wildlife requiring mitigation under the California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA). As used here, the terms sensitive plant or wildlife includes all state or federal rare, threatened, or endangered species and all species listed in the California Natural Diversity Database (CNDDB) list of "Special Status Plants, Animals, and Natural Communities".

In-season botanical surveys for this property were conducted in 2015 and 2016 by another consultant¹, and additional botanical surveys were not requested and are not included in this report. Field botany conducted by Northwest Biosurvey staff was conducted outside of the botanical survey season and was limited to plant identifications required for accurate vegetation mapping. A list of incidental plants identified by us but not included in the original botanical survey is included in this report. Additionally, at the request of the client, a delineation of waters of the U.S. was not conducted.

1.2 Location: The project site is located between Highways 29 and 175 on APNs 09-022-54, 55 & 56, 011-056-01 & 06, Kelseyville, California (T12N R8W Sec. 4 & 5, T13N R8W Sec. 31, 32 & 33; Kelseyville, Calif. 7½' Topographic Map). A location map is provided in **Figure 1.**

¹ Darcie Mahoney, Licensed Forester #2397, Botanical Report 15, June 2015.



Northwest Biosurvey
1905 Westlake Drive
Kelseyville, CA 96451
(707) 889-1061
nwbio@mchsi.com

0 1000 0 1000 2000 3000 4000 5000
MILES FEET
1 5 0 0 1
KILOMETERS METERS

LOCATION MAP

Figure 1

TN / MN
15°
12/20/17

2.0 ASSESSMENT METHODOLOGY

The basis of the biological resource assessment is a comparison of existing habitat conditions within the project boundaries to the geographic range and habitat requirements of sensitive plants and wildlife. It includes all sensitive species that occupy habitats similar to those found in the project area and whose known geographic ranges encompass it. The approach is conservative in that it tends to over-estimate the actual number of sensitive species potentially present.

The analysis includes the following site characteristics:

- Location of the project area with regard to the geographic range of sensitive plant and wildlife species
- Location(s) of known populations of sensitive plant and wildlife species as mapped in the California Natural Diversity Database (CNDDB)
- Soils of the project area
- Elevation
- Presence or absence of special habitat features such as vernal pools and serpentine soils

In addition to knowledge of the local plants and wildlife, the following computer databases were used to analyze the suitability of the site for sensitive species:

- California Department of Fish and Wildlife (CDFW), *California Natural Diversity Database (CNDDB)*; RareFind 5, 2017
- California Native Plant Society's (CNPS) *Electronic Inventory of Rare and Endangered Vascular Plants of California*, 2017
- California Department of Fish and Wildlife, *California Wildlife Habitat Relationships System (CWHR)*, Version 9.0

The CNDDB and RareFind 5 databases consist of maps and records of all known populations of sensitive plants and wildlife in California. This data is continually updated by the CDFW with new sensitive species population data.

The CNPS database produces a list of sensitive plants potentially occurring at a site based on the various site characteristics listed above. While use of the CNPS inventory does not in itself eliminate the need for an in-season botanical survey, it can, when used in conjunction with other information, provide a very good indication of the suitability of a site as habitat for sensitive plant species.

The CWHR database operates on the same basis as the CNPS inventory. Input includes geographic area, plant community (including development stage), soil structure, and

special features such as presence of water, snags, cover, and food (fruit, seeds, insects, etc.).

2.1 Survey Methods: A survey of vegetation types was conducted for the project site. In-season botanical surveys had previously been conducted for the project in 2015 and 2016 by a different consultant, and additional botanical surveys were not requested of Northwest Biosurvey. The CNDB report and overlay map for the Kelseyville quadrangle were referenced prior to the survey. Vegetation communities were identified based on the nomenclature of *A Manual of California Vegetation* (Sawyer et al. 2009) as modified by the California Native Plant Society (CNPS), and mapped on a 1"=500' aerial photo. Vegetation community names are based on an assessment of dominant cover species.

Plants occurring on the site were identified using *The Jepson Manual of Higher Plants of California*. Where necessary, species names were updated based on the 6th edition, *CNPS Inventory of Rare and Endangered Plants of California*. A map of the plant communities is provided in **Figure 2**.

2.2 Survey Dates: Site visits for vegetation mapping were made on December 8 and 14, 2017.

2.4 Biological Assessment Staff: The field surveys, plant taxonomy, and vegetation mapping were conducted by Steve Zalusky, Northwest Biosurvey principal biologist. Mr. Zalusky has a Master of Science Degree in Biology from the California State University at Northridge and a Bachelor of Science Degree in Zoology from the University of California at Santa Barbara. Mr. Zalusky has over 30 years of experience as a biologist in the government and private sectors. He completed his wetland delineation training under Terry Huffman of Huffman & Associates, Inc.

Field surveys, database review, and report preparation were conducted with the assistance of Danielle Zalusky, Northwest Biosurvey principal planner. Ms. Zalusky has over 20 years of experience as a planner in local government and the private sector. She has a Bachelor of Arts Degree and has completed all course work toward an M.A. Degree in Rural and Town Planning from Chico State University. Prior to joining Northwest Biosurvey in 2002, Ms. Zalusky served as a senior planner for the Lake County Community Development Department.

3.0 SITE CHARACTERISTICS

3.1 Topography and Drainage: The Stocking Vineyard property lies at the base of a series of low hills constituting the eastern edge of the Mayacamas Mountains at a point where the terrain again rises along the southern slope of Mount Konocti. The property is dominated by two central wetland basins surrounded by low hills. Drainage is primarily internal to these basins, which in turn drain via McIntire Creek. This creek flows west to its confluence with Cole Creek which drains north through the Big Valley to Clear Lake. The property extends north via a narrow “panhandle” to State Highway 29. Slopes here drain east to Thurston Creek, which eventually enters the isolated drainage basin of Thurston Lake. The topography is shown in **Figure 1**.

3.2 Soils: The property contains four soil types, described as follows:

- **Aiken-Sobrante Association, 5-15% slopes (soil unit 101):**
- **Aiken-Sobrante Association, 15-30% slopes (soil unit 102):**

These map units are on hills and mountains. They contain Aiken loam (on north- and east-facing slopes) and Sobrante loam (on south- and west-facing slopes). The Aiken soil is very deep and well drained; it formed in material weathered from basalt. Permeability is relatively slow; surface runoff is medium and the hazard of erosion is moderate. The Sobrante loam is moderately deep and well drained. It formed in material weathered from basalt. Permeability is moderate. Surface runoff is medium, and the hazard of erosion is moderate. These soil units are on the southwestern portions of the property

- **Bottlerock-Glenview-Arrowhead complex, 5-30% slopes (soil unit 117):**

This map unit is on volcanic hills. Vegetation is mainly brush, including manzanita and ceanothus, with scattered conifers. The complex consists of about 50% Bottlerock extremely gravelly loam, 20% Glenview very gravelly loam, and 15% Arrowhead extremely gravelly sandy loam. All soils are deep and well drained and formed in material weathered from obsidian. Permeability ranges from slow to moderately slow, runoff is rapid, and the hazard of erosion is moderate to severe. This soil complex is located on the north and northeastern parts of the property.

- **Clear Lake Variant clay, drained (soil unit 122):**

This very deep soil is in basins. It occurs in the lower wet meadow in the center of the property. It formed under poorly drained conditions; however, drainage has been improved as a result of entrenchment of stream channels. The soil formed in lacustrine deposits derived from mixed rock sources. The soil consists of clay or clay loam to more than 72 inches in depth. Permeability of this soil is slow. Surface runoff is slow and the hazard of erosion is slight. The soil is subject to rare periods of flooding and

ponding during prolonged storms. The shrink-swell potential is high. Natural vegetation includes annual grasses, forbs, and scattered oaks.

3.3 Plant Communities: This project contains fifteen plant communities or vegetation types based on or derived from the "Standardized Classification" scheme described in the California Native Plant Society (CNPS) *A Manual of California Vegetation*. These vegetation types and four other cover types are listed below in **Table 1**. They are described below and shown in the vegetation map provided in **Figure 2**.

- **Ponderosa Pine Forest:**

Ponderosa pine is a subdominant member of the California black oak-ponderosa pine community throughout the southern half of the property. However, on the most densely shaded north-facing slopes ponderosa pine (*Pinus ponderosa*) provides the dominant tree cover. The edges of these pine forests transition into California Black Oak-Ponderosa Pine Forest. The shrub and ground cover layers are the same as those found in the latter community.

- **Knobcone Pine Forest:**

Knobcone pine (*Pinus attenuata*) occurs as small, dense copses of even-aged trees along ridgetops in the northern quarter of the property. The shrub and ground cover layers are suppressed within the community due to dense canopy cover, but community edges support the shrub and ground cover layer of the surrounding Chamise Chaparral and Interior Live Oak Shrub species.

- **Oregon White Oak Woodland:**

This community consists of a relatively narrow band of mature Oregon white oaks (*Quercus garryanna* var. *garryanna*) surrounding the two large central wetlands in the middle of the property. It is generally not more than 2-3 canopy widths wide. The shrub layer is a continuation of the more mesic (moist soil) shrubs from adjacent plant communities. Common snowberry (*Symphoricarpos albus* var. *laevigatus*) is prevalent.

The ground cover layer includes hedgehog dogtail (*Cynosurus echinatus*) and bracken fern (*Pteridium aquilinum* var. *pubescens*). It transitions into sedges, Pacific bog rush (*Juncus effusus* var. *pacificus*), and fuller's teasel (*Dipsacus fullonum*) along the wetland edge. Fremont cottonwood (*Populus fremontii* var. *fremontii*) joins the canopy at this edge. The adjacent north slopes transition into Black Oak-Ponderosa Pine Forest; on the south slopes (north of the central wetlands) the community transitions into Interior Live Oak Woodland.

- **California Black Oak-Ponderosa Pine Forest:**

North-facing slopes throughout the property support mature Black Oak-Ponderosa Pine Forest. The tree canopy cover is typically 70%. The subcanopy includes Pacific madrone (*Arbutus menziesii*), interior live oak trees (*Quercus wislizeni* var. *wislizeni*), and California bay (*Umbellularia californica*).

The shrub layer within this community is a mix of common and white-leaf common manzanitas (*Arctostaphylos manzanita* ssp. *manzanita*, *A. m.* ssp. *glaucescens*), birch-leaf mountain mahogany (*Cercocarpus betuloides* var. *betuloides*), and coyotebrush (*Baccharis pilularis*), along with dense thickets of poison oak (*Toxicodendron diversilobum*). California fescue (*Festuca californica*), hedgehog dogtail, field hedge parsley (*Torilis arvensis*), and blue wildrye (*Elymus glaucus* ssp. *glaucus*) make up much of the ground cover.

- **Blue Oak Woodland:**

This comparatively open woodland community occupies a ridgetop in the northern quarter of the property and a south-facing slope in to the south. Blue oak (*Quercus douglasii*) provides a widely dispersed but homogenous tree canopy within a matrix of wild oat grassland. It lacks a true shrub layer but scattered common manzanita and interior live oak shrubs (*Quercus wislizeni* var. *frutescens*) occur among the denser stands of trees. The ground cover is Wild Oat Grassland but also includes scattered woodland grasses and forbs, including slender wild oat (*Avena barbata*), blue wildrye, hedgehog dogtail, and field hedge parsley.

- **Interior Live Oak Woodland:**

Interior live oak occurs primarily as a shrub community² (described below) along the broad, south-facing slope in the northern half of the property. However, the community is developed as a moderate height (20-50 feet) woodland along the northern edge of the reed canary grass wetland and on a shaded slope to the east. This community varies from dense, homogenous stands to transitional mixes of interior live oak, manzanita, birch-leaf mountain mahogany and other shrubs found within the more heterogeneous interior live oak shrub community. The canopy cover is too dense to support shrub or ground cover layers other than leaf litter.

- **Red Willow Thicket:**

Red Willow (*Salix laevigata*) occurs as dense thickets along excavated channels within the southern wetland. This community consists of a homogenous tree canopy

² The distinction between interior live oak trees (*Quercus wislizeni* var. *wislizeni*) and shrubs (*Q. wislizeni* var. *frutescens*) appears to be subjective, at least in field and lab identifications not involving genetic testing. Differences in plant height appear to be far more dependent on soil depth, soil moisture, aspect, and fire history than on genetic variation. The taxonomic distinction is no longer used in Northwest Biosurvey reports. We base the distinction between shrubland and woodland on community structure.

of shrubby red willow, typically surrounded by a dense shrub layer of Himalayan blackberry (*Rubus armeniacus*).

- **Common Manzanita Shrub:**

Several manzanita species occur as the shrub layer throughout the woodland and forest communities on the property; however, in a number of more-exposed locations, or where the tree canopy is open enough to allow it, common manzanita occurs as the dominant member of a distinct shrub community including a mix of other manzanitas and shrubs. These include white-leaf common manzanita, hoary manzanita (*Arctostaphylos canescens* ssp. *canescens*), Stanford manzanita (*Arctostaphylos stanfordiana* ssp. *stanfordiana*), toyon (*Heteromeles arbutifolia*), birch-leaf mountain mahogany, poison oak, and shrubby interior live oak. The canopy is too dense to support a ground cover layer other than leaf litter. Stanford manzanita occurs in the most xeric (dry soil) sites.

- **Chamise Chaparral:**

This nearly-homogenous community of chamise (*Adenostoma fasciculatum*) occupies south-facing slopes throughout the property. Canopy cover is 100%. Included in this community are Stanford and common manzanitas and occasional ghost pines (*Pinus sabiniana*). The canopy is too dense to support a ground cover other than leaf litter.

- **Interior Live Oak Shrub:**

This heterogenous shrub community³ is typically transitional between Chamise Chaparral on the more exposed slopes to Interior Live Oak Woodland on the more shaded slopes. The community consists of a co-dominant mix of shrubby interior live oaks, Stanford and hoary manzanitas, scrub oak (*Quercus berberidifolia*), coyotebrush, chamise, California bay, buck-brush (*Ceanothus cuneatus* var. *cuneatus*), and wavy-leaf ceanothus (*Ceanothus foliosus* var. *foliosus*). The shrub layer is generally too dense to support a ground cover layer. However, openings and community edges support grasses and forbs including nitgrass (*Gastridium phleoides*), silver European hairgrass (*Aira caryophyllea*), desert fescue (*Festuca microstachys*), and goldwire (*Hypericum concinnum*).

- **Blackberry Bramble:**

Dense, homogenous patches of Himalayan blackberry occur along the western edge of the southern reed canary grass wetland. These are too dense to support a ground cover layer. They transition into reed canary grass within the wetlands and to Oregon white oak woodland along their upland edges.

³ ibid footnote 1.

- **Reed Canary Grass Sward:**

The central valley portions of the property consist of saturated wetland basins supporting hydrophytic grasses and forbs. They are surrounded by excavated drainage channels that may have been cut early in the past century. These basins support a broad and homogenous sward of reed canary grass (*Phalaris arundinaceae*). The excavated channels along its edges of these basins support Pacific bog rush, dense green-sheathed sedge (*Carex feta*), white alder (*Alnus rhombifolia*), red willow, and Himalayan blackberry.

- **Broadleaf Cattail Marsh:**

Broadleaf cattail (*Typha latifolia*) occurs within the most mesic areas of the central wetland basins. They occupy sites that are at least perennially saturated if not inundated. These homogenous communities abruptly give way to reed canary grass along wetland edges and into wild oat grassland along their upland edges.

- **Wild Oat Grassland:**

Wild Oat Grassland occurs along the upland edges of the central wetland basins and within woodland openings throughout the property. It also provides the dominant ground cover within most woodland and forest habitats. Grasses include (but are not limited to) slender wild oat, hedgehog dogtail, silver European hairgrass, red brome (*Bromus madritensis* ssp. *rubens*), poverty brome (*Bromus sterilis*), California fescue, and blue wild rye. Bowl-tubed iris (*Iris macrosiphon*), blue dicks (*Dichelostemma capitatum* ssp. *capitatum*), and baby blue eyes (*Nemophila menziesii*) are more common forbs beneath forest and woodland canopy.

- **Fuller's Teasel Patch:**

Fuller's teasel occurs within the more mesic sites along the central wetland basins. Along the northeast shore of the northern wetland, it forms nearly homogenous patches transitional between the reed canary grass sward and wild oat grasslands of the adjacent uplands.

- **Apple Orchard:**

An abandoned apple orchard of decadent trees occurs along the western property entrance and is associated with an abandoned residence.

- **Open Water:**

Perennial open water is limited to an excavated pond in the southern wetland basin. It is surrounded by broadleaf cattail and Himalayan blackberry.

- **Ruderal:**

This term refers to areas disturbed by human activity such as roadways, structures, and parking areas. Within this property it includes two clearings associated with an active quarry along the northeastern tip of the property.

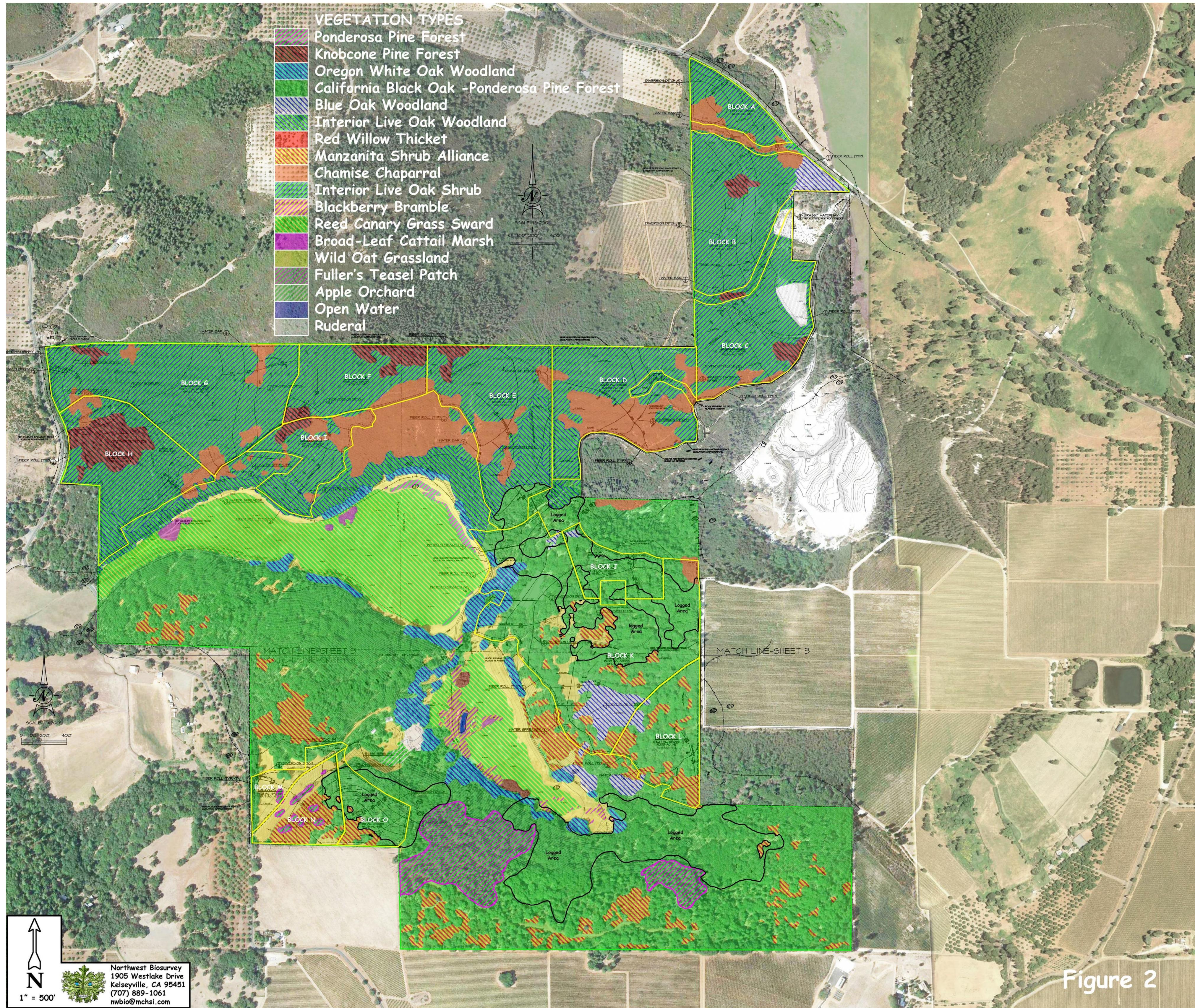
- **Logged Areas:**

Between 2013 and the present, extensive logging of oaks has occurred primarily within the California Black Oak-Ponderosa Pine Forest community. Within these areas (shown in black outline in Figure 2), all oaks have been removed while scattered ponderosa pines remain. The logged area encompasses 61.78 acres, 60.90 acres of which were black oak forest and 0.88 acres of which were Oregon white oak woodland. This acreage was not included in area estimates for these communities on the property.

TABLE 1. VEGETATION TYPES OF THE STOCKING VINEYARD PROJECT

COVER TYPE	Total Acres of Cover Type	Cover Type Percent of Total Property	Acres of Cover Type in Each Block															Acres of Cover Type In all Blocks	Percent of Cover Type In all Blocks
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		
Ponderosa Pine Forest	19.29	3.02													0.16	0.97		1.13	5.86
Knobcone Pine Forest	13.75	2.16		0.92	1.00			3.02	0.60	6.04	0.76							12.34	89.75
Oregon White Oak Woodland	15.23	2.39											2.15					2.15	14.12
California Black Oak-Ponderosa Pine Forest	186.93	29.31										2.06	22.56	10.26	1.56	1.34	0.62	38.40	20.54
Blue Oak Woodland	8.30	1.30		1.86								0.01	3.73	0.52				6.12	73.73
Interior Live Oak Woodland	24.38	3.82			1.22	6.46			2.16	2.12		0.17						12.13	49.75
Red Willow Thicket	0.76	0.12																0.00	0.00
Manzanita Shrub Alliance	29.67	4.65										3.52	3.49		3.07	1.03		11.11	37.45
Chamise Chaparral	40.76	6.39	1.46	0.62	1.30	9.58	4.61	1.53	3.18	1.65	2.60		0.58					27.11	66.51
Interior Live Oak Shrub	145.13	22.75	6.11	20.59	17.38	15.33	14.70	11.05	33.19	12.59	5.86							136.80	94.26
Blackberry Bramble	3.61	0.57																0.00	0.00
Reed Canary Grass Sward	54.80	8.59																0.00	0.00
Broadleaf Cattail Marsh	1.40	0.22																0.00	0.00
Wild Oat Grassland	26.21	4.11											2.97		2.49	2.78	0.16	8.40	32.05
Fuller's Teasel Patch	1.52	0.24																0.00	0.00
Apple Orchard	0.67	0.11																0.00	0.00
Open Water	0.15	0.02																0.00	0.00
Logged Area	61.78	9.69				2.30					5.40	15.55			0.97	5.57		29.79	48.22
Ruderal (Disturbed Areas)	3.42	0.54			2.18													2.18	63.74
Total Acres of Cover Type	637.76	100.00	7.57	23.99	21.86	26.13	28.07	15.60	36.97	22.44	11.34	7.47	51.23	14.27	4.21	9.13	7.38	287.66	45.10*

* Last cell equals percent of property (all cover types) within vineyard blocks



4.0 PRE-SURVEY RESEARCH RESULTS

4.1 CNPS Electronic Inventory Analysis: A California Native Plant Society (CNPS) analysis was conducted for all plants with federal and state regulatory status, and all non-status plants on the CNPS Lists 1B through 4. The query included all plants within this area of Lake County occurring within the plant communities identified on the project site. The inventory lists species potentially occurring at the site; these are listed in Table 2. These species were included in the list of potentially sensitive species specifically searched for during field surveys. It is important to note that this list includes species for which appropriate habitat is not present on the parcel (including serpentine and vernal pool species). The CNPS database search does not allow fine-tuning for specific soil types and many specific habitats.

4.2 California Natural Diversity Database: The California Natural Diversity Database (CNDDDB) and CDFW RareFind 5 data and maps for the Kelseyville 7½' quadrangle were reviewed for this project. Table 3 presents a list of sensitive plant and wildlife species known to occur within this quadrangle. In addition to listing the species present within the quadrangle, the table provides a brief descriptor of the habitat requirements and blooming season, along with an assessment of whether the project area contains the necessary habitat requirements for each species. Appendix A at the end of this report lists the species within the nine quadrangles in the vicinity of this property.

TABLE 2. CALIFORNIA NATIVE PLANT SOCIETY'S INVENTORY OF RARE AND ENDANGERED PLANTS

Selected CNPS Plants by Scientific Name

B. Stocking Vineyard Project

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	None	None	Mar-Jun	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland
<i>Antirrhinum subcordatum</i>	dimorphic snapdragon	Plantaginaceae	annual herb	4.3	None	None	Apr-Jul	Chaparral, Lower montane coniferous forest
<i>Antirrhinum virga</i>	twig-like snapdragon	Plantaginaceae	perennial herb	4.3	None	None	Jun-Jul	Chaparral, Lower montane coniferous forest
<i>Arabis blepharophylla</i>	coast rockcress	Brassicaceae	perennial herb	4.3	None	None	Feb-May	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub
<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	Ericaceae	perennial evergreen shrub	1B.3	None	None	(Jan)Mar-May(Jul)	Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Raiche's manzanita	Ericaceae	perennial evergreen shrub	1B.1	None	None	Feb-Apr	Chaparral, Lower montane coniferous forest (openings)
<i>Asclepias solanoana</i>	serpentine milkweed	Apocynaceae	perennial herb	4.2	None	None	May-Jul(Aug)	Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Astragalus breweri</i>	Brewer's milk-vetch	Fabaceae	annual herb	4.2	None	None	Apr-Jun	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland (open, often gravelly)
<i>Astragalus clevelandii</i>	Cleveland's milk-vetch	Fabaceae	perennial herb	4.3	None	None	Jun-Sep	Chaparral, Cismontane woodland, Riparian forest
<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	Jepson's milk-vetch	Fabaceae	annual herb	1B.2	None	None	Mar-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
<i>Azolla microphylla</i>	Mexican mosquito fern	Azollaceae	annual / perennial herb	4.2	None	None	Aug	Marshes and swamps (ponds, slow water)
<i>Brasenia schreberi</i>	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	2B.3	None	None	Jun-Sep	Marshes and swamps (freshwater)
<i>Brodiaea rosea</i>	Indian Valley brodiaea	Themidaceae	perennial bulbiferous herb	1B.1	CE	None	May-Jun	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Calamagrostis ophitidis</i>	serpentine reed grass	Poaceae	perennial herb	4.3	None	None	Apr-Jul	Chaparral (open, often north-facing slopes), Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland
<i>Calochortus uniflorus</i>	pink star-tulip	Liliaceae	perennial bulbiferous herb	4.2	None	None	Apr-Jun	Coastal prairie, Coastal scrub, Meadows and seeps, North Coast coniferous forest
<i>Calycadenia micrantha</i>	small-flowered calycadenia	Asteraceae	annual herb	1B.2	None	None	Jun-Sep	Chaparral, Meadows and seeps (volcanic), Valley and foothill grassland
<i>Calyptidium quadripetalum</i>	four-petaled pussypaws	Montiaceae	annual herb	4.3	None	None	Apr-Jun	Chaparral, Lower montane coniferous forest
<i>Calystegia collina</i> ssp. <i>oxyphylla</i>	Mt. Saint Helena morning-glory	Convolvulaceae	perennial rhizomatous herb	4.2	None	None	Apr-Jun	Chaparral, Lower montane coniferous forest, Valley and foothill grassland
<i>Calystegia collina</i> ssp. <i>tridactylosa</i>	three-fingered morning-glory	Convolvulaceae	perennial rhizomatous herb	1B.2	None	None	Apr-Jun	Chaparral, Cismontane woodland
<i>Carex praticola</i>	northern meadow sedge	Cyperaceae	perennial herb	2B.2	None	None	May-Jul	Meadows and seeps (mesic)
<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	Rhamnaceae	perennial evergreen shrub	1B.1	None	None	Feb-Jun	Closed-cone coniferous forest, Chaparral, Cismontane woodland
<i>Ceanothus divergens</i>	Calistoga ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2	None	None	Feb-Apr	Chaparral (serpentinite or volcanic, rocky)

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
<i>Chlorogalum pomeridianum</i> var. <i>minus</i>	dwarf soaproot	Agavaceae	perennial bulbiferous herb	1B.2	None	None	May-Aug	Chaparral (serpentinite)
<i>Clarkia gracilis</i> ssp. <i>tracyi</i>	Tracy's clarkia	Onagraceae	annual herb	4.2	None	None	Apr-Jul	Chaparral (openings, usually serpentinite)
<i>Collomia diversifolia</i>	serpentine collomia	Polemoniaceae	annual herb	4.3	None	None	May-Jun	Chaparral, Cismontane woodland
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i>	serpentine bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	4.3	None	None	Jul-Aug	Closed-cone coniferous forest, Chaparral, Cismontane woodland
<i>Cryptantha dissita</i>	serpentine cryptantha	Boraginaceae	annual herb	1B.2	None	None	Apr-Jun	Chaparral (serpentinite)
<i>Delphinium uliginosum</i>	swamp larkspur	Ranunculaceae	perennial herb	4.2	None	None	May-Jun	Chaparral, Valley and foothill grassland
<i>Eriastrum brandegeei</i>	Brandegee's eriastrum	Polemoniaceae	annual herb	1B.1	None	None	Apr-Aug	Chaparral, Cismontane woodland
<i>Erigeron greenei</i>	Greene's narrow-leaved daisy	Asteraceae	perennial herb	1B.2	None	None	May-Sep	Chaparral (serpentinite or volcanic)
<i>Eriogonum nervulosum</i>	Snow Mountain buckwheat	Polygonaceae	perennial rhizomatous herb	1B.2	None	None	Jun-Sep	Chaparral (serpentinite)
<i>Eryngium constancei</i>	Loch Lomond button-celery	Apiaceae	annual / perennial herb	1B.1	CE	FE	Apr-Jun	Vernal pools
<i>Fritillaria purdyi</i>	Purdy's fritillary	Liliaceae	perennial bulbiferous herb	4.3	None	None	Mar-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	1B.2	CE	None	Apr-Aug	Marshes and swamps (lake margins), Vernal pools
<i>Grimmia torenii</i>	Toren's grimmia	Grimmiaceae	moss	1B.3	None	None		Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Hesperolinon adenophyllum</i>	glandular western flax	Linaceae	annual herb	1B.2	None	None	May-Aug	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Hesperolinon bicarpellatum</i>	two-carpellate western flax	Linaceae	annual herb	1B.2	None	None	May-Jul	Chaparral (serpentinite)

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
<i>Hesperolinon didymocarpum</i>	Lake County western flax	Linaceae	annual herb	1B.2	CE	None	May-Jul	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Horkelia bolanderi</i>	Bolander's horkelia	Rosaceae	perennial herb	1B.2	None	None	(May)Jun-Aug	Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland
<i>Imperata brevifolia</i>	California satintail	Poaceae	perennial rhizomatous herb	2B.1	None	None	Sep-May	Chaparral, Coastal scrub, Mojavean desert scrub, Meadows and seeps (often alkali), Riparian scrub
<i>Lasthenia burkei</i>	Burke's goldfields	Asteraceae	annual herb	1B.1	CE	FE	Apr-Jun	Meadows and seeps (mesic), Vernal pools
<i>Layia septentrionalis</i>	Colusa layia	Asteraceae	annual herb	1B.2	None	None	Apr-May	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Legenere limosa</i>	legenere	Campanulaceae	annual herb	1B.1	None	None	Apr-Jun	Vernal pools
<i>Leptosiphon acicularis</i>	bristly leptosiphon	Polemoniaceae	annual herb	4.2	None	None	Apr-Jul	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland
<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	Polemoniaceae	annual herb	1B.2	None	None	Mar-May	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Limnanthes floccosa</i> ssp. <i>floccosa</i>	woolly meadowfoam	Limnanthaceae	annual herb	4.2	None	None	Mar-May(Jun)	Chaparral, Cismontane woodland, Valley and foothill grassland, Vernal pools
<i>Lupinus sericatus</i>	Cobb Mountain lupine	Fabaceae	perennial herb	1B.2	None	None	Mar-Jun	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Micropus amphibolus</i>	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	None	None	Mar-May	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Mielichhoferia elongata</i>	elongate copper moss	Mielichhoferiaceae	moss	4.3	None	None		Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Subalpine coniferous forest
<i>Myosurus minimus</i> ssp. <i>apus</i>	little mousetail	Ranunculaceae	annual herb	3.1	None	None	Mar-Jun	Valley and foothill grassland, Vernal pools (alkaline)

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	Polemoniaceae	annual herb	1B.1	None	None	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	few-flowered navarretia	Polemoniaceae	annual herb	1B.1	CT	FE	May-Jun	Vernal pools (volcanic ash flow)
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	many-flowered navarretia	Polemoniaceae	annual herb	1B.2	CE	FE	May-Jun	Vernal pools (volcanic ash flow)
<i>Orcuttia tenuis</i>	slender Orcutt grass	Poaceae	annual herb	1B.1	CE	FT	May-Sep(Oct)	Vernal pools
<i>Penstemon newberryi</i> var. <i>sonomensis</i>	Sonoma beardtongue	Plantaginaceae	perennial herb	1B.3	None	None	Apr-Aug	Chaparral (rocky)
<i>Potamogeton zosteriformis</i>	eel-grass pondweed	Potamogetonaceae	annual herb (aquatic)	2B.2	None	None	Jun-Jul	Marshes and swamps (assorted freshwater)
<i>Sedella leiocarpa</i>	Lake County stonecrop	Crassulaceae	annual herb	1B.1	CE	FE	Apr-May	Cismontane woodland, Valley and foothill grassland, Vernal pools
<i>Sidalcea oregana</i> ssp. <i>hydrophila</i>	marsh checkerbloom	Malvaceae	perennial herb	1B.2	None	None	(Jun)Jul-Aug	Meadows and seeps, Riparian forest
<i>Streptanthus barbiger</i>	bearded jewelflower	Brassicaceae	annual herb	4.2	None	None	May-Jul	Chaparral (serpentinite)
<i>Streptanthus brachiatus</i> ssp. <i>hoffmannii</i>	Freed's jewelflower	Brassicaceae	perennial herb	1B.2	None	None	May-Jul	Chaparral, Cismontane woodland
<i>Streptanthus glandulosus</i> ssp. <i>hoffmannii</i>	Hoffman's bristly jewelflower	Brassicaceae	annual herb	1B.3	None	None	Mar-Jul	Chaparral, Cismontane woodland, Valley and foothill grassland (often serpentinite)
<i>Streptanthus hesperidis</i>	green jewelflower	Brassicaceae	annual herb	1B.2	None	None	May-Jul	Chaparral (openings), Cismontane woodland
<i>Streptanthus morrisonii</i> ssp. <i>kruckebergii</i>	Kruckeberg's jewelflower	Brassicaceae	perennial herb	1B.2	None	None	Apr-Jul	Cismontane woodland (serpentinite)

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
<i>Toxicoscordion fontanum</i>	marsh zigadenus	Melanthiaceae	perennial bulbiferous herb	4.2	None	None	Apr-Jul	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps
<i>Tracyina rostrata</i>	beaked tracyina	Asteraceae	annual herb	1B.2	None	None	May-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Trichostema ruygtii</i>	Napa bluecurls	Lamiaceae	annual herb	1B.2	None	None	Jun-Oct	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland, Vernal pools
<i>Viburnum ellipticum</i>	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	None	None	May-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest

TABLE 2 KEY:

CNPS Rare Plant-Threat Rank Definitions:

CRPR= California Rare Plant Rank

1B.1 = *Rare, threatened, or endangered in California and elsewhere; seriously threatened in California*

1B.2 = *Rare, threatened, or endangered in California and elsewhere; fairly threatened in California*

1B.3 = *Rare, threatened, or endangered in California and elsewhere; not very threatened in California*

2A = *Presumed extinct in California, but extant elsewhere*

2B.1 = *Rare, threatened, or endangered in Calif., but more common elsewhere; seriously threatened in Calif.*

2B.2 = *Rare, threatened, or endangered in Calif., but more common elsewhere; fairly threatened in Calif.*

2B.3 = *Rare, threatened, or endangered in Calif., but more common elsewhere; not very threatened in Calif.*

3 = *Plants about which we need more information (Review List)*

3.1 = *Plants about which we need more information (Review List); seriously threatened in California*

3.2 = *Plants about which we need more information (Review List); fairly threatened in California*

3.3 = *Plants about which we need more information (Review List); not very threatened in California*

4.2 = *Plants of limited distribution (watch list); fairly threatened in California*

4.3 = *Plants of limited distribution (watch list); not very threatened in California*

State and Federal Status:

CESA = *California Endangered Species Act*

FESA = *Federal Endangered Species Act*

CT = *California Threatened*

FE = *Federal Endangered*

TABLE 3. CNDB SENSITIVE PLANT AND WILDLIFE SPECIES WITHIN THE KELSEYVILLE, CALIF. 7½' QUAD.

Habitat Type	Habitat Present
<i>Clear Lake Drainage Cyprinid/Catostomid Stream</i>	no
<i>Clear Lake Drainage Resident Trout Stream</i>	no
<i>Clear Lake Drainage Seasonal Lakefish Spawning Stream</i>	no
<i>Northern Volcanic Ash Vernal Pool</i>	no

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	Chaparral, cismontane woodland, lower montane conif. forest/volcanic; --/-/1B.3	March-May everg. shrub	Habitat present
<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Raiche's manzanita	Chaparral, lower montane coniferous forest/rocky, often; --/-/1B.1	Feb.-April ann. herb	Habitat present
<i>Astragalus breweri</i>	Brewer's milk-vetch	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland (open, often gravelly)/often serpentinite, volcanic; --/-/4.2	April-June ann. herb	Habitat present
<i>Azolla microphylla</i>	Mexican mosquito-fern	Marshes and swamps (ponds, slow water); --/-/4.2	August ann./per. herb	Habitat present
<i>Brasenia schreberi</i>	watershield	Marshes & swamps/freshwater; --/-/2.3	June-Sept. rhizom. herb, aquatic	Habitat present
<i>Calyptidium quadripetalum</i>	four-petaled pussypaws	Chaparral, lower montane coniferous forest/sandy or gravelly, usually serpentinite; --/-/4.3	April-June ann. herb	Moderate habitat present
<i>Clarkia gracilis</i> ssp. <i>tracyi</i>	Tracy's clarkia	Chaparral (openings, usually serpentinite); --/-/4.2	April-June ann. herb	Poor to moderate habitat
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i>	serpentine bird's-beak	Closed-cone coniferous forest, chaparral, cismontane woodland/usually serpentinite; --/-/4.3	July-Aug. ann. herb	Poor to moderate habitat

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
<i>Eriastrum brandegeae</i>	Brandegee's eriastrum	Chaparral, cismontane woodland, valley & foothill grassland/often serpentinite; --/--/1B.1	April-Aug. ann. herb	Poor to moderate habitat
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	Freshwater marsh, marsh & swamp, vernal pool, wetland; --/SE/1B.2	April-Aug. ann. herb	moderate
<i>Hesperolinon adenophyllum</i>	glandular western flax	Chaparral, cismontane woodland, valley & foothill grassland/serpentinite; --/--/1B.2	May-Aug. ann. herb	Habitat not present
<i>Horkelia bolanderi</i>	Bolander's horkelia	Cismontane woodland, lower montane conif. forest, meadows & seeps, valley & foothill grassland/edges; --/ --/1B.2	June-Aug. per. herb	Habitat present
<i>Lasthenia burkei</i>	Burke's goldfields	Meadows and seeps, vernal pools, wetland; FE/SE/1B.1	April-June ann. herb	Habitat not present
<i>Layia septentrionalis</i>	Colusa layia	Chaparral, cismontane woodland, valley & foothill grassland/sandy, serpent.; --/--/1B.2	April-May, ann. herb	Habitat not present
<i>Legenere limosa</i>	legenere	Vernal pools; --/--/1B.1	April-June ann. herb	Habitat not present
<i>Leptosiphon acicularis</i>	bristly leptisiphon	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; --/--/4.2	April-July ann. herb	Habitat present
<i>Limnanthes floccosa</i> ssp. <i>floccosa</i>	woolly meadowfoam	Chaparral, cismontane woodland, valley & foothill grassland, vernal pools/vernally mesic; --/--/4.2	March-May (June) ann. herb	Poor habitat
<i>Micropus amphibolus</i>	Mt. Diablo cottonweed	Broadleaved upland forest, chaparral, cismontane woodland, valley & foothill grassland /rocky; --/--/3.2	March-May ann. herb	Habitat present
<i>Monardella viridis</i>	green monardella	Broadleaved upland forest, chaparral, cismontane woodland; --/--/4.3	June-Sept. rhizom. herb	Habitat present
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	few-flowered navarretia	Volcanic ash flow vernal pools, wetlands; FE/ST/1B.1	May-June ann. herb	Habitat not present
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	many-flowered navarretia	Volcanic ash flow vernal pools, wetlands; FE/SE/1B.2	May-June ann. herb	Habitat not present
<i>Orcuttia tenuis</i>	slender orcutt grass	Vernal pools; FT/SE/1B.1	May-Oct. ann. herb	Habitat not present

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
<i>Potamogeton zosteriformis</i>	eel-grass pondweed	Marshes & swamps, wetlands; --/2B.2	June-July ann. herb aquatic	Habitat present
<i>Streptanthus barbiger</i>	bearded jewel flower	Chaparral/serpentine; --/4.2	May-July ann. herb	Habitat not present
<i>Trichostema ruygtii</i>	Napa bluecurls	Chaparral, cismontane woodland, lower montane conif. forest, valley & foothill grassland, vernal pools; --/1B.2	June-Oct. ann. herb	Habitat present

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat Present
<i>Calasellus californica</i>	an isopod	Aquatic: freshwater wells & springs. One occurrence from Kelseyville in 1931; G2/S2	year-round	Poor
<i>Bombus caliginosus</i>	obscure bumble bee	A black and yellow bee found in California, Oregon, Washington; G3G4/CA-SNR	year-round	Potential habitat present
<i>Hydrochara rickseckeri</i>	Ricksecker's water scavenger beetle	Aquatic beetle that lives in slow-flowing streams, shallow open water, springs, stagnant ponds, & vernal pools; G2/S2	year-round	Habitat not present
<i>Lavinia exilicauda chi</i>	Clear Lake hitch	Riparian/aquatic: partly-shaded, shallow streams & riffles with a rocky substrate in variety of habitats; SSC/ST/G4/S1	year-round	Habitat not present
<i>Rana boylii</i>	foothill yellow-legged frog	Riparian/aquatic: partly-shaded, shallow streams & riffles with a rocky substrate in variety of habitats; SSC/SCT/G3/S2S3	year-round	Habitat present
<i>Taricha rivularis</i>	red-bellied newt	Occurs near high to moderate gradient streams and rivers, riffles, pools. Burrows in soil or debris near water, emerges during fall rains to water to breed; G4/SNR	year-round	Habitat not present
<i>Emys marmorata</i>	western pond turtle	Aquatic turtle found in ponds, lakes, rivers, creeks, marshes & irrigation ditches with abundant vegetation and rocky or muddy bottoms; In woodland, forest, & grasslands; SSC/G3G4/S3	year-round	Habitat present

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat Present
<i>Pandion haliaetus</i>	osprey	Large, fish-bearing waters usually in mixed conifer habitats; WL/G5/S4	sometimes migratory	Nesting habitat not present
<i>Progne subis</i>	purple martin	Open woodland near water; SSC/G5/S3	migratory in winter	Habitat present
<i>Erethizon dorsatum</i>	North American porcupine	Conifer and hardwood forests are preferred, uses fallen and standing dead trees as cover; G5/SNR	year-round	Habitat present

*See CNPS Table 2 list for key

TABLE 3 KEY:

SE/ST/SD=State Endangered/Threatened/Delisted

SC/SCDSCT=State Candidate for Listing/Delisting/Threatened

SSC=CDFW Species of Special Concern

SFP=CDFW Fully Protected

WL=CDFW Watch List

FE/FT/FD=Federal Endangered/Threatened/Delisted

FPE/FPT/FPD/FP=Federal Proposed Endangered/Threatened/Delisting

FC=Federal Candidate

NatureServe Conservation Status:

G1/S1 = Global/State Critically Imperiled

G2/S2 = Global/State Imperiled

G3/S3 = Global/State Vulnerable

G4/S4 = Global/State Apparently Secure

G5/S5 = Global/State Secure

SNR=Not rated

4.3 Wildlife Habitat Analysis Results: The California Wildlife Habitat Relationships analysis lists a large number of species with sensitive and non-sensitive status as potentially occurring on the site based on the geographic location and wildlife habitats present. This list is included as **Appendix B**.

4.4 Wildlife Assessment: Based on the pre-survey research conducted for this study, ten sensitive wildlife species need to be accounted for within the project area based on their identification as present within the Kelseyville quadrangle by the CNDDDB. Additional species are added based on the results of the CWHR, the presence of appropriate habitat, and their occurrence in the region. Accepted protocol requires that all CNDDDB species in the surrounding U.S.G.S. quadrangle be discussed even though suitable habitat may not occur on the site.

- ***Calasellus californicus* (a freshwater isopod):**

Found in freshwater habitats; the known collections are from a freshwater well and two springs in 1933. Habitat for this crustacean is poor on this property.

- ***Obscure bumble bee (Bombus oliginosus):***

This bumblebee is native to the west coast; in the Coast Range it inhabits meadows. It is similar in appearance and co-exists with the common *Bombus vosnesenskii* and may be mistaken for this bee. *B. oliginosus* is threatened by climate change and loss of habitat, and does not thrive in developed urban or agricultural areas. Potential habitat for this species may occur in the wetlands on the property.

- ***Ricksecker's water scavenger beetle (Hydrochara rickseckeri):***

This species is known from accounts in the San Francisco Bay Area. It occupies ponds and shallow waters of streams, lakes, or marshes. This species is listed here because it was identified near Boggs Lake in Lake County. There is no suitable habitat for this beetle within the project area.

- ***Clear Lake hitch (Lavinia exilicauda chi):***

Clear Lake hitch are a California Species of Concern and currently have State Threatened Species status. Hitch are fish of lakes and slow-moving streams. There are no perennial streams in the project area and the site is far from Clear Lake.

- ***Foothill yellow-legged frog (Rana boylei):***

These frogs are relatively common along the shaded banks of perennial headwater streams. They are heavily dependent on the presence of perennial water and are seldom far from pools where they can seek shelter from predation. The larvae require three to four months to mature, making most ephemeral (seasonal) streams unsuitable as breeding sites.

Foothill yellow-legged frogs are found throughout Kelsey Creek and its tributaries, and have been identified along Highway 175. McIntire Creek runs through the low area on the property and although it appears to have been altered, it may support this species as long as flows are high enough.

- **Red-bellied newt (*Taricha rivularis*):**

This species is often found under rocks, logs, soil or duff, or in rodent burrows in coastal woodlands and redwood forests. Newts occur near high-to-moderate gradient streams and rivers, in riffles, and pools. They usually breed in flowing water. These animals burrow in soil or debris near water, and emerge to water during fall rains to breed; they may migrate up to a mile or more between terrestrial habitat and stream breeding sites. They have been identified in the Cobb Mountain area along Bottle Rock Road. Appropriate habitat does not occur on the project site.

- **Western pond turtle (*Actinemys marmorata*):**

These turtles prefer slow or ponded water with sheltering vegetation but will range widely through less suitable habitat in search of these sites. Eggs are laid on land in sheltered nests. Young overwinter in the nest and emerge the following spring in Northern California. When present, pond turtles are readily observed basking along shorelines or on logs in shallow water. McIntire Creek may provide a suitable movement corridor for turtles and they may occur within the small pond on the property.

- **Osprey (*Pandion haliaetus*):**

This species occurs near large, fish-bearing waters in ponderosa pine or mixed conifer habitats where it feeds on open waters for fish, although it also takes small birds and mammals. It hunts over wide expanses of open water and usually nests in the tops of large isolated trees near shorelines. Nests are made on platforms of sticks on top of large snags, dead-topped trees, or man-made structures, usually within close proximity of large fish-producing water bodies. The stick nests constructed by this species are readily apparent when present. This site lacks suitable nesting habitat for the osprey. This species' sensitive status pertains to nesting pairs. This species no longer has sensitive status, but is protected under the Migratory Bird Treaty Act and California Department of Fish and Game code.

- **Purple martin (*Progne subis*):**

These migratory passerine (perching) birds prefer open, old growth, multilayered woodland with nearby water. Much is known about habitat preference in this species due to recent research. They are commonly found in riparian habitat, or valley foothill with montane hardwood or montane-hardwood-conifer habitats near water. Up to

70-percent of nests are in fire-killed firs and pines. Most tree nest sites are located in the upper slopes of hilly and mountainous terrain and Northwest Biosurvey staff has found this species in habitat meeting these requirements in the Geysers area of Lake and Napa Counties. There is a potential for purple martins to be present in the forests and remaining oak woodlands on the property, especially where snags remain.

- **North American porcupine (*Erethizon dorsatum*):**

This species prefers conifer and hardwood forests and woodlands, but is also found in forested wetlands and chaparral. It uses downed logs and debris, as well as snags and tree hollows, as cover. The porcupine breeds from September to November or December, giving birth in the spring. One offspring is reared a year. *E. dorsatum* is herbivorous; its diet consists of many parts of trees and other plants including bark, needles, flowers, roots, berries, leaves, and seeds. It is mostly nocturnal. The large amount of woody debris and other vegetation on the property may provide suitable habitat for porcupines. This species is listed in the CNDD as "G5" (Global Secure) and "SNR" (Species not Rated-California). It is therefore not a species with sensitive regulatory status although its local accounts are included in the database.

- **Pallid bat (*Antrozous pallidus*):**

This is a pale bat with a dog-like face. Optimal habitat for these bats consists of open, dry habitats with rocky areas, but the bats are also found in oak savanna grasslands, and in open forest and woodlands with access to riparian and open water for feeding and drinking in northern California. Foraging occurs over open country. These bats prefer the cool summer temperatures of caves, crevices, and mines as roosting sites where they are known to wedge themselves into small spaces; they will also roost in buildings, bridges, and hollow trees. Preferred roosts are high above the ground and inaccessible to terrestrial predators, although they are occasionally found roosting on the ground underneath sacks and other items left by humans.

Pallid bats take a variety of prey, including insects, reptiles, and rodents. Maternity colonies tend to be in the more protected, isolated locations and may consist of more than 100 individuals. The bats have a home range of 1 to 3 miles and are known to roost with other bat species. This species of bat does not migrate long distances between seasons. This species is extremely sensitive to human disturbance of roosting sites. Populations in California have declined due to habitat destruction and use of pesticides. There is a potential for pallid bats or other bat species to roost in the woodlands, especially if there are ponds in the vicinity of the property.

Raptors and passerines with non-sensitive status are likely to nest on the property due to the diverse woodland and forest habitats there. These would include: red-tailed hawks (heard during surveys), crows and ravens, Cooper's hawks, northern harriers, tri-colored

blackbirds (potentially in the cattails within the wetland), woodpeckers, yellow-breasted chats, and yellow warblers. Much of the original oak woodland has been removed in the past few years, leaving open pine forest in many locations, but downed wood, snags, and large trees remain in many parts of the property and may be used by a wide variety of wildlife.

No wildlife surveys were conducted as part of this assessment. All nesting raptors are protected under the Migratory Bird Treaty Act and Fish and Game Code.

5.0 FIELD SURVEY RESULTS

In-season floristic-level botanical surveys were conducted for this project in 2015 and 2016 by Darcie Mahoney, Licensed Forester #2397, Botanical Report 15, June 2015 & 23 June 2016. No additional in-season botanical surveys were conducted. However, some additional plants were identifiable during our December surveys; these are listed below.

Ms. Mahoney identified an individual plant to the level of genus *Piperia*. Of the six species of this genus found in this region, three are CNPS Rank 4. Rank 4 is a watch list of species about which not enough is known to list as sensitive. The location is described as "adjacent a side road in the forested habitat". We were unable to contact Ms. Mahoney to get a more detailed description of the location.

TABLE 4. ADDITIONAL PLANT SPECIES IDENTIFIED, OR CLARIFIED SPECIES NAMES
BRYANT STOCKING VINEYARD PROPERTY

Habit	Species	Common Name	Family	Origin
fern	<i>Pteridium aquilinum</i> var. <i>pubescens</i>	bracken fern	Dennstaedtiaceae	N
forb	<i>Dipsacus fullonum</i>	fuller's teasel	Dipsacaceae	A
forb	<i>Juncus effusus</i> var. <i>pacificus</i>	Pacific bog rush	Juncaceae	N
grass	<i>Elymus glaucus</i> ssp. <i>glaucus</i>	blue wildrye	Poaceae	N
grass	<i>Festuca microstachys</i>	desert fescue, small fescue	Poaceae	N
grass	<i>Gastridium phleoides</i>	nitgrass	Poaceae	A
shrub	<i>Arctostaphylos manzanita</i> ssp. <i>glaucescens</i>	white-leaf common manzanita	Ericaceae	N
shrub	<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	common manzanita	Ericaceae	N
shrub	<i>Quercus wislizeni</i> var. <i>frutescens</i>	interior live oak	Fagaceae	N
shrub	<i>Rubus armeniacus</i>	Himalayan blackberry	Rosaceae	A
tree	<i>Arbutus menziesii</i>	Pacific madrone	Ericaceae	N
tree	<i>Quercus garryanna</i> var. <i>garryanna</i>	Oregon white oak	Fagaceae	N
tree	<i>Quercus wislizeni</i> var. <i>wislizeni</i>	interior live oak	Fagaceae	N
tree	<i>Pinus sabiniana</i>	ghost pine, foothill pine	Pinaceae	N
tree	<i>Populus fremontii</i> var. <i>fremontii</i>	Fremont cottonwood	Salicaceae	N
tree	<i>Salix laevigata</i>	red willow	Salicaceae	N

Origin: N = Native, A = Alien

6.0 SUMMARY AND RECOMMENDATIONS

6.1 Summary: This biological resource assessment involved the following analyses for sensitive plants and wildlife potentially occurring in the vicinity of the project:

- Review of current California Natural Diversity Database (CNDDB) mapping of known sensitive plant and wildlife populations within the region
- An analysis of the suitability of the site for sensitive plants and wildlife using the California Native Plant Society *On-line Inventory of Rare and Endangered Vascular Plants of California*, and the California Department of Fish and Wildlife's *Wildlife Habitat Relations System*
- Vegetation mapping

Sensitive Plants: The 2015 and 2016 botanical surveys conducted by Darcie Mahoney identified an individual plant to the level of genus *Piperia*. Of the six species of this genus found in this region, three are CNPS Rank 4. Rank 4 is a watch list of species about which not enough is known to list as sensitive. The location is described as "adjacent a side road in the forested habitat". We were unable to contact Ms. Mahoney to get a more detailed description of the location.

Sensitive Wildlife: A total of eleven sensitive wildlife species were assessed for potential occurrence at the site because of inclusion in the CNDDB database for the Kelseyville quadrangle, the CWHR database, the presence of appropriate habitat, and their occurrence in the region. Five of these have a potential to occur on the property. These are:

- Obscure bumble bee: wetland habitat
- Foothill yellow-legged frog: McIntire Creek, wetland, small pond
- Western pond turtle: McIntire Creek, small pond
- Purple martin: Oak woodlands and pine forest
- Porcupine: Pine forest
- Pallid bat: Oak woodlands

Sensitive Habitat: The property contains two central wetland basins which have been excluded from the proposed vineyard block design.

Possible Waters of the U.S.: At the request of the client, a delineation of waters of the U.S. was not conducted for this project. Waterways contiguous with McIntire Creek, including the two central wetland basins are likely to qualify as Waters of the U.S.

6.2 Recommendations:

1. Sensitive Wildlife:

➤ **Obscure Bumblebee, Foothill Yellow-legged Frog, Western Pond Turtle:**

Potential Impacts: Any vineyard construction activity resulting in the loss of wetland habitat in the central basins of the property or resulting in direct impacts to McIntire Creek or the small pond has a potential to result in an incidental take of these state species of special concern. However, the proposed vineyard block design has specifically excluded the central wetland basins, McIntire Creek, and the pond.

Proposed Mitigation: The project design reviewed in this study⁴ avoids impacts to McIntire Creek, the central wetland basins, and the small pond as shown in Figure 2 of this report. This plan should not be modified in a manner that would impact these resources.

➤ **Purple Martin, Raptors, Migratory Birds:**

Potential Impacts: Clearing or grading within woodland or forest habitat during the breeding season (February 15 through August 31) has a potential to result in an incidental take of these special status species.

Proposed Mitigation: Any vegetation clearing or grading within 200 feet of woodland habitat between February 15 and August 31 should be preceded by a survey for nests of purple martin, raptors, and migratory birds conducted by a qualified biologist. In the event that active nests of these species are found, appropriate breeding season construction buffer shall be established and construction within these buffers should be delayed until after August 31, or until fledging is completed as determined by a qualified biologist. As an alternative, trees approved for removal shall be felled outside of the breeding season.

⁴ "Stoking Vineyards 7765 State Hwy 29 Erosion Control Plan for New Vineyard" by Napa Valley Vineyard Engineering, Inc. May 12, 2017.

➤ **Pallid bat:**

Potential Impacts: Removal of trees providing bat habitat during the maternity roosting season (April 1 through September 15) has the potential to result in an incidental take of pallid bats.

Proposed Mitigation: If work is proposed within woodland habitat during the maternity roosting season (April 1 through September 15), trees with features capable of supporting roosting bats shall be surveyed by a qualified biologist for bat roosts or evidence of bat roosting (guano, urine staining, dead bats) within 14 days of the start of project activities or removal of vegetation. If active roosts are discovered, an exclusion buffer would be established around the active roost by a qualified bat biologist.

Removal of trees and ground-disturbing activities should be performed to the extent possible from September 16 through March 31, outside of the maternity roosting season. Following the felling of any tree or snag, the tree or snag should be allowed to remain on the ground for 24 hours prior to chipping or removal to allow any bats to escape.

2. Sensitive Plant Populations:

➤ ***Piperia* genus:**

Botanical surveys conducted in 2015 and 2016 by Registered Forester Darcie Mahoney identified a single individual of the genus *Piperia*. However, the plant was not keyed to species. Of the six species of this genus that occur in this region, three have a CNPS Rank of 4. Rank 4 is a watch list of plants about which not enough is known to list them as sensitive taxa. The location description was described as “adjacent to a roadway in a forested area”. Efforts to contact the forester for additional information were not successful.

Potential Impacts: If this plant is sensitive, its removal would qualify as an incidental take. However, it is questionable that if it is a Rank 4 species, the loss of a single individual would qualify as a significant impact within the context of the CEQA Guidelines. It remains possible, or likely, however, that this plant is part of a larger population that was not located during the botanical surveys.

Proposed Mitigation: If it is determined by regulatory reviewers that an incidental take of this individual or population has the potential to be significant within the context of the CEQA Guidelines, it is recommended that the location of this plant be accurately identified. If the plant is keyable at the time its location is identified a determination can be made regarding its regulatory status. If the plant is not keyable, or is determined to be a Rank 4 taxon, the plant or population can be protected with an appropriate construction buffer. If such a buffer is not practical based on its location relative to proposed vineyard blocks, alternative mitigation may consist of locating and protecting a population of this taxa elsewhere on the property if available.

3. Woodlands and Forest

Potential Impacts: **Table 1** provides a list of the acreage of all vegetation types on the Stocking Vineyard property along with the acreage and percentage of each of these plant communities within the proposed vineyard blocks. The property contains a total of 267.88 acres of woodland and forest distributed among six different plant communities. The proposed vineyard blocks contain a combined total of 72.27 acres (27%) of the remaining woodland and forest on the property.

Consistent with the Oak Woodlands Conservation Act, the lead agency will need to determine whether loss of this woodland acreage constitutes a significant adverse impact on the environment as defined within the CEQA Guidelines.

Proposed Mitigation: If it is determined that project-related impacts to woodlands are significant within the context of the CEQA Guidelines, one or more of the following mitigations is recommended.

- a) **Avoidance and Minimization:** The vegetation map provided in Figure 2 can be used as a planning tool in the modification of the vineyard block design to reduce impacts to woodland and forest. Vineyard block design would reduce impacts to these resources by emphasizing use of chamise chaparral, interior live oak shrub, and existing clear-cut woodland (as mapped in Figure 2).
- b) **Establishment of Woodland Conservation Areas:** Oak woodlands outside of the proposed vineyard blocks should be considered as woodland conservation areas. These conservation areas should be

permanently excluded from future development through permit conditions, recorded easements, or other methods consistent with local land use regulations.

4. Habitat Fragmentation

Potential Impacts: Vineyard development that transects woodlands and waterways has a potential to restrict wildlife movement and disrupt continuity with surrounding habitats. With the exception of extensive clear-cut areas, the property supports a belt of continuous black oak and ponderosa pine forest along its southern perimeter. All of this similar habitat has been removed from adjacent properties for vineyard development.

The principal wildlife movement corridor in the area is provided by the open wetland habitats and adjacent woodland and McIntire Creek riparian habitat of the central basins (mapped as Reed Canary Grass Sward and Wild Oat Grassland in Figure 2). Based on the current vineyard development plan⁵, this habitat will remain intact.

Proposed Mitigation: It is recommended that the remaining belt of black oak and ponderosa pine forest along the property's southern perimeter remain intact. Vineyard development here should emphasize use of existing clear-cut areas.

No modifications should occur in the proposed vineyard development plan that would result in direct impacts to the central woodland basins, McIntire Creek, and the adjacent band of woodland habitat.

Fencing should be restricted to vineyard blocks. Fencing along roadways or other linear features such as property boundaries should be avoided if not directly associated with vineyard blocks.

5. Waterways:

Potential Impacts: A wetland delineation was not conducted as part of this biological resource assessment. Prior to project approval, waterways should be appropriately identified and avoided or mitigated if impacted.

⁵ ibid footnote 4.

Proposed Mitigation: The local, state, and federal permitting agencies will require setbacks from waterways. Proposed impacts to waterways will require permits from the following agencies:

- U.S. Army Corps of Engineers
- Regional Water Quality Control Board
- California Department of Fish and Wildlife
- Lake County Community Development Department

8.0 BIBLIOGRAPHY

Animal Diversity Web, University of Michigan Museum of Zoology. Internet site - <http://animaldiversity.ummz.umich.edu>.

Baldwin, Bruce G. et al. 2012. *The Jepson Manual, Higher Plants of California*. University of California Press, 2nd Edition.

Bennett, Andrew F. *Linkages in the Landscape: The Role of Corridors and Connectivity in Wildlife Conservation*. IUCN Forest Conservation Programme, 2003.

The Birds of North America Online. Cornell Lab of Ornithology. Internet site – www.bna.birds.cornell.edu.

Calflora Database. 2017. Internet site - www.calflora.org.

California Native Plant Society. 2001. *California Native Plant Society's Inventory of Rare and Endangered Plants of California*. (6th Edition Updated).

California Native Plant Society. 2017. Internet site – “Inventory of Rare and Endangered Plants (online edition, 8th Edition)”, Sacramento, CA; <http://www.cnps.org/inventory>.

California Department of Fish and Wildlife. 2013. California Interagency Wildlife Task Group. CWHR Version 9.0 personal computer program. Sacramento, CA.

California Department of Fish and Wildlife. 2017. *California Natural Diversity Database*, RareFind 5, Internet site - <https://map.dfg.ca.gov/rarefind>.

Clark, William S. et al. 2001. *Hawks of North America*. Peterson Field Guide Series.

Crampton, Beecher. 1974. *Grasses in California*. Berkeley, California. University of California Press.

Elrich, Paul R. et al. 1988. *The Birder's Handbook: A Field Guide to the Natural History of North American Birds*. Simon and Shuster, New York, New York, 785 pp.

Fiedler, Peggy L. 1996. *Common Wetland Plants of Central California*. Army Corps of Engineers.

Google Earth 2017. Aerial photos of Lake County.

Grillos, Steve L. 1996. *Ferns and Fern Allies*. University of California Press.

Hilty, Jodi A., William Z. Lidecker Jr., Adina M. Merenlender. 2006. *Corridor Ecology: The Science and Practice of Linking Landscapes for Biodiversity Conservation*. Island Press.

Mason, Herbert L. 1957. *A Flora of the Marshes of California*. University of California Press.

McMinn, Howard E. 1939. *An Illustrated Manual of California Shrubs*. University of California Press.

Moyle, Peter B. 1976; Revised 2002. *Inland Fishes of California*, University of California Press.

Morey, S. 2002. *California Wildlife Habitat Relations, Version 7.0*.

Munz, Philip A. & David D. Keck. 1968. *A California Flora and Supplement*. University of California Press.

NatureServe Explorer. Internet site - <http://explorer.natureserve.org>.

Northern California Bats (NorCalBats). Internet site – www.norcalbats.org.

Sawyer, John O., Keeler-Wolf, Todd, Evans, Julie M. 2009. *A Manual of California Vegetation, Second Edition*. California Native Plant Society Press.

Shuford, W. David and Gardali, Thomas, Editors. Feb. 2008. *Studies of Western Birds No. 1: California Bird Species of Special Concern*. Western Field Ornithologists and California Department of Fish and Game.

Sibley, David A. 2000. *The Sibley Guide to Birds*. National Audubon Society. Alfred A. Knopf, New York, 545 pp.

Stebbins, Robert C. 2003. *Peterson Field Guides: Reptiles and Amphibians, Third Edition*. The Peterson Field Guide Series. Houghton Mifflin Company.

U.S. Army Corps of Engineers. 1987. *Corps of Engineers Wetlands Delineation Manual. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Ver. 2.0, 2008*.

U.S. Department of Agriculture, Natural Resources Conservation Service.
Soil Survey for Lake County, California.

Western Bat Working Group. Internet site – www.wbwg.org.

APPENDIX A

**CNDB SENSITIVE PLANT AND WILDLIFE SPECIES
WITHIN THE
SURROUNDING CALIF. 7½' QUADS.**

Surrounding 9-Quad List: Kelseyville Quadrangle

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Asti	<i>Dicamptodon ensatus</i>	California giant salamander	None	None	SSC	-
Asti	<i>Rana boylii</i>	foothill yellow-legged frog	None	SCT	SSC	-
Asti	<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	-
Asti	<i>Ardea herodias</i>	great blue heron	None	None	-	-
Asti	<i>Lavinia symmetricus</i> ssp. 4	Clear Lake - Russian River roach	None	None	SSC	-
Asti	<i>Hysterocarpus traski</i> pomo	Russian River tule perch	None	None	SSC	-
Asti	<i>Oncorhynchus mykiss</i> irideus	steelhead - central California coast DPS	Thrt	None	-	-
Asti	<i>Oncorhynchus tshawytscha</i>	chinook salmon - California coastal ESU	Thrt	None	-	-
Asti	<i>Bombus caliginosus</i>	obscure bumble bee	None	None	-	-
Asti	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Asti	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-
Asti	<i>Lasiurus blossevillii</i>	western red bat	None	None	SSC	-
Asti	<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	-
Asti	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Asti	<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	None	None	-	1B.3
Asti	<i>Cypripedium montanum</i>	mountain lady's-slipper	None	None	-	4.2
Clearlake Highlands	<i>Rana boylii</i>	foothill yellow-legged frog	None	SCT	SSC	-
Clearlake Highlands	<i>Rana draytonii</i>	California red-legged frog	Thrt	None	SSC	-
Clearlake Highlands	<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	End	FP	-
Clearlake Highlands	<i>Ardea alba</i>	great egret	None	None	-	-
Clearlake Highlands	<i>Ardea herodias</i>	great blue heron	None	None	-	-
Clearlake Highlands	<i>Coccyzus americanus</i> occidentalis	western yellow-billed cuckoo	Thrt	End	-	-
Clearlake Highlands	<i>Strix occidentalis</i> caurina	northern spotted owl	Thrt	Thrt	SSC	-
Clearlake Highlands	<i>Archoplites interruptus</i>	Sacramento perch	None	None	SSC	-
Clearlake Highlands	<i>Lavinia exilicauda</i> chi	Clear Lake hitch	None	Thrt	-	-
Clearlake Highlands	<i>Hedychridium milleri</i>	Borax Lake cuckoo wasp	None	None	-	-
Clearlake Highlands	<i>Dubiraphia brunneascens</i>	brownish dubiraphian riffle beetle	None	None	-	-
Clearlake Highlands	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Clearlake Highlands	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-
Clearlake Highlands	<i>Myotis lucifugus</i>	little brown bat	None	None	-	-
Clearlake Highlands	<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	-
Clearlake Highlands	<i>Pyrgulopsis ventricosa</i>	Clear Lake pyrg	None	None	-	-
Clearlake Highlands	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Clearlake Highlands	Clear Lake Drainage Resident Trout Stm	Clear Lake Drainage Resident Trout Stm	None	None	-	-
Clearlake Highlands	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	-	-
Clearlake Highlands	Northern Basalt Flow Vernal Pool	Northern Basalt Flow Vernal Pool	None	None	-	-
Clearlake Highlands	Northern Volcanic Ash Vernal Pool	Northern Volcanic Ash Vernal Pool	None	None	-	-
Clearlake Highlands	<i>Eryngium</i> <i>constancei</i>	Loch Lomond button-celery	End	End	-	1B.1

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Clearlake Highlands	<i>Harmonia hallii</i>	Hall's harmonia	None	None	-	1B.2
Clearlake Highlands	<i>Hemizonia congesta</i> ssp. <i>calyculata</i>	Mendocino tarplant	None	None	-	4.3
Clearlake Highlands	<i>Lasthenia burkei</i>	Burke's goldfields	End	End	-	1B.1
Clearlake Highlands	<i>Viburnum ellipticum</i>	oval-leaved viburnum	None	None	-	2B.3
Clearlake Highlands	<i>Sedella leiocarpa</i>	Lake County stonecrop	End	End	-	1B.1
Clearlake Highlands	<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	None	None	-	1B.3
Clearlake Highlands	<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Raiche's manzanita	None	None	-	1B.1
Clearlake Highlands	<i>Calochortus uniflorus</i>	pink star-tulip	None	None	-	4.2
Clearlake Highlands	<i>Limnanthes floccosa</i> ssp. <i>floccosa</i>	woolly meadowfoam	None	None	-	4.2
Clearlake Highlands	<i>Hesperolinon bicarpellatum</i>	two-carpellate western flax	None	None	-	1B.2
Clearlake Highlands	<i>Sidalcea oregana</i> ssp. <i>hydrophila</i>	marsh checkerbloom	None	None	-	1B.2
Clearlake Highlands	<i>Toxicoscordion fontanum</i>	marsh zigadenus	None	None	-	4.2
Clearlake Highlands	<i>Calyptidium quadripetalum</i>	four-petaled pussypaws	None	None	-	4.3
Clearlake Highlands	<i>Piperia michaelii</i>	Michael's rein orchid	None	None	-	4.2
Clearlake Highlands	<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i>	serpentine bird's-beak	None	None	-	4.3
Clearlake Highlands	<i>Antirrhinum virga</i>	twig-like snapdragon	None	None	-	4.3
Clearlake Highlands	<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	None	End	-	1B.2
Clearlake Highlands	<i>Imperata brevifolia</i>	California satintail	None	None	-	2B.1
Clearlake Highlands	<i>Eriastrum brandegeae</i>	Brandegee's eriastrum	None	None	-	1B.1
Clearlake Highlands	<i>Leptosiphon acicularis</i>	bristly leptosiphon	None	None	-	4.2
Clearlake Highlands	<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	None	None	-	1B.1
Clearlake Highlands	<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	few-flowered navarretia	End	Thrt	-	1B.1
Clearlake Highlands	<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	many-flowered navarretia	End	End	-	1B.2
Clearlake Highlands	<i>Potamogeton zosteriformis</i>	eel-grass pondweed	None	None	-	2B.2
Clearlake Highlands	<i>Myosurus minimus</i> ssp. <i>apus</i>	little mousetail	None	None	-	3.1
Clearlake Highlands	<i>Horkelia bolanderi</i>	Bolander's horkelia	None	None	-	1B.2
Clearlake Oaks	<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	End	FP	-
Clearlake Oaks	<i>Pandion haliaetus</i>	osprey	None	None	WL	-
Clearlake Oaks	<i>Archoplites interruptus</i>	Sacramento perch	None	None	SSC	-
Clearlake Oaks	<i>Lavinia exilicauda</i> chi	Clear Lake hitch	None	Thrt	-	-
Clearlake Oaks	<i>Dubiraphia brunneascens</i>	brownish dubiraphian riffle beetle	None	None	-	-
Clearlake Oaks	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Clearlake Oaks	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-
Clearlake Oaks	<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	-
Clearlake Oaks	<i>Gonidea angulata</i>	western ridged mussel	None	None	-	-
Clearlake Oaks	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Clearlake Oaks	Great Valley Mixed Riparian Forest	Great Valley Mixed Riparian Forest	None	None	-	-
Clearlake Oaks	<i>Hemizonia congesta</i> ssp. <i>calyculata</i>	Mendocino tarplant	None	None	-	4.3
Clearlake Oaks	<i>Layia septentrionalis</i>	Colusa layia	None	None	-	1B.2
Clearlake Oaks	<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	None	None	-	1B.3

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Clearlake Oaks	<i>Erythronium helenae</i>	St. Helena fawn lily	None	None	-	4.2
Clearlake Oaks	<i>Calyptidium quadripetalum</i>	four-petaled pussypaws	None	None	-	4.3
Clearlake Oaks	<i>Potamogeton zosteriformis</i>	eel-grass pondweed	None	None	-	2B.2
Highland Springs	<i>Rana boylii</i>	foothill yellow-legged frog	None	SCT	SSC	-
Highland Springs	<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	-
Highland Springs	<i>Aquila chrysaetos</i>	golden eagle	None	None	FP ; WL	-
Highland Springs	<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	None	None	WL	-
Highland Springs	<i>Agelaius tricolor</i>	tricolored blackbird	None	Cand End	SSC	-
Highland Springs	<i>Lavinia exilicauda chi</i>	Clear Lake hitch	None	Thrt	-	-
Highland Springs	<i>Oncorhynchus mykiss irideus</i>	steelhead - central California coast DPS	Thrt	None	-	-
Highland Springs	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Highland Springs	<i>Calycadenia micrantha</i>	small-flowered calycadenia	None	None	-	1B.2
Highland Springs	<i> Layia septentrionalis</i>	Colusa layia	None	None	-	1B.2
Highland Springs	<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	None	None	-	1B.2
Highland Springs	<i>Cryptantha dissita</i>	serpentine cryptantha	None	None	-	1B.2
Highland Springs	<i>Calystegia collina ssp. oxyphylla</i>	Mt. Saint Helena morning-glory	None	None	-	4.2
Highland Springs	<i>Arctostaphylos manzanita ssp. elegans</i>	Konocti manzanita	None	None	-	1B.3
Highland Springs	<i>Arctostaphylos stanfordiana ssp. raichei</i>	Raiche's manzanita	None	None	-	1B.1
Highland Springs	<i>Astragalus breweri</i>	Brewer's milk-vetch	None	None	-	4.2
Highland Springs	<i>Trichostema ruygtii</i>	Napa bluecurls	None	None	-	1B.2
Highland Springs	<i>Fritillaria purdyi</i>	Purdy's fritillary	None	None	-	4.3
Highland Springs	<i>Hesperolinon adenophyllum</i>	glandular western flax	None	None	-	1B.2
Highland Springs	<i>Calyptidium quadripetalum</i>	four-petaled pussypaws	None	None	-	4.3
Highland Springs	<i>Clarkia gracilis ssp. tracyi</i>	Tracy's clarkia	None	None	-	4.2
Highland Springs	<i>Antirrhinum subcordatum</i>	dimorphic snapdragon	None	None	-	4.3
Highland Springs	<i>Horkelia bolanderi</i>	Bolander's horkelia	None	None	-	1B.2
Kelseyville	<i>Rana boylii</i>	foothill yellow-legged frog	None	SCT	SSC	-
Kelseyville	<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	-
Kelseyville	<i>Pandion haliaetus</i>	osprey	None	None	WL	-
Kelseyville	<i>Progne subis</i>	purple martin	None	None	SSC	-
Kelseyville	<i>Calasellus californicus</i>	An isopod	None	None	-	-
Kelseyville	<i>Linderiella occidentalis</i>	California linderiella	None	None	-	-
Kelseyville	<i>Lavinia exilicauda chi</i>	Clear Lake hitch	None	Thrt	-	-
Kelseyville	<i>Bombus caliginosus</i>	obscure bumble bee	None	None	-	-
Kelseyville	<i>Hydrochara rickseckeri</i>	Ricksecker's water scavenger beetle	None	None	-	-
Kelseyville	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Kelseyville	Clear Lake Drainage Cyprinid/Catostomid Stm	Clear Lake Drainage Cyprinid/Catostomid Stm	None	None	-	-
Kelseyville	Clear Lake Drainage Resident Trout Stm	Clear Lake Drainage Resident Trout Stm	None	None	-	-
Kelseyville	Clear Lake Drg Seasonal Lakefish Spawn Stm	Clear Lake Drg Seasonal Lakefish Spawn Stm	None	None	-	-
Kelseyville	Northern Volcanic Ash Vernal Pool	Northern Volcanic Ash Vernal Pool	None	None	-	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Kelseyville	<i>Lasthenia burkei</i>	Burke's goldfields	End	End	-	1B.1
Kelseyville	<i>Layia septentrionalis</i>	<i>Colusa layia</i>	None	None	-	1B.2
Kelseyville	<i>Micropus amphibolus</i>	Mt. Diablo cottonweed	None	None	-	3.2
Kelseyville	<i>Azolla microphylla</i>	Mexican mosquito fern	None	None	-	4.2
Kelseyville	<i>Streptanthus barbiger</i>	bearded jewelflower	None	None	-	4.2
Kelseyville	<i>Brasenia schreberi</i>	watershield	None	None	-	2B.3
Kelseyville	<i>Legenere limosa</i>	legenere	None	None	-	1B.1
Kelseyville	<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	None	None	-	1B.3
Kelseyville	<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Raiche's manzanita	None	None	-	1B.1
Kelseyville	<i>Astragalus breweri</i>	Brewer's milk-vetch	None	None	-	4.2
Kelseyville	<i>Monardella viridis</i>	green monardella	None	None	-	4.3
Kelseyville	<i>Trichostema ruygtii</i>	Napa bluecurls	None	None	-	1B.2
Kelseyville	<i>Limnanthes floccosa</i> ssp. <i>floccosa</i>	woolly meadowfoam	None	None	-	4.2
Kelseyville	<i>Hesperolinon adenophyllum</i>	glandular western flax	None	None	-	1B.2
Kelseyville	<i>Sidalcea oregana</i> ssp. <i>hydrophila</i>	marsh checkerbloom	None	None	-	1B.2
Kelseyville	<i>Calyptidium quadripetalum</i>	four-petaled pussypaws	None	None	-	4.3
Kelseyville	<i>Clarkia gracilis</i> ssp. <i>tracyi</i>	Tracy's clarkia	None	None	-	4.2
Kelseyville	<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i>	serpentine bird's-beak	None	None	-	4.3
Kelseyville	<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	None	End	-	1B.2
Kelseyville	<i>Orcuttia tenuis</i>	slender Orcutt grass	Thrt	End	-	1B.1
Kelseyville	<i>Eriastrum brandegeae</i>	Brandegee's eriastrum	None	None	-	1B.1
Kelseyville	<i>Leptosiphon acicularis</i>	bristly leptosiphon	None	None	-	4.2
Kelseyville	<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	few-flowered navarretia	End	Thrt	-	1B.1
Kelseyville	<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	many-flowered navarretia	End	End	-	1B.2
Kelseyville	<i>Potamogeton zosteriformis</i>	eel-grass pondweed	None	None	-	2B.2
Kelseyville	<i>Horkelia bolanderi</i>	Bolander's horkelia	None	None	-	1B.2
Lakeport	<i>Elanus leucurus</i>	white-tailed kite	None	None	FP	-
Lakeport	<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	End	FP	-
Lakeport	<i>Pandion haliaetus</i>	osprey	None	None	WL	-
Lakeport	<i>Ardea alba</i>	great egret	None	None	-	-
Lakeport	<i>Ardea herodias</i>	great blue heron	None	None	-	-
Lakeport	<i>Egretta thula</i>	snowy egret	None	None	-	-
Lakeport	<i>Nycticorax nycticorax</i>	black-crowned night heron	None	None	-	-
Lakeport	<i>Agelaius tricolor</i>	tricolored blackbird	None	Cand End	SSC	-
Lakeport	<i>Phalacrocorax auritus</i>	double-crested cormorant	None	None	WL	-
Lakeport	<i>Archoplites interruptus</i>	Sacramento perch	None	None	SSC	-
Lakeport	<i>Lavinia exilicauda chi</i>	Clear Lake hitch	None	Thrt	-	-
Lakeport	<i>Andrena blennospermatis</i>	Blennosperma vernal pool andrenid bee	None	None	-	-
Lakeport	<i>Bombus occidentalis</i>	western bumble bee	None	None	-	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Lakeport	<i>Dubiraphia brunneascens</i>	brownish dubiraphian riffle beetle	None	None	-	-
Lakeport	<i>Pekania pennanti</i>	fisher - West Coast DPS	Prop Thrt	Cand Thrt	SSC	-
Lakeport	<i>Taxidea taxus</i>	American badger	None	None	SSC	-
Lakeport	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Lakeport	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	-	-
Lakeport	<i>Layia septentrionalis</i>	<i>Colusa layia</i>	None	None	-	1B.2
Lakeport	<i>Tracyina rostrata</i>	beaked tracyina	None	None	-	1B.2
Lakeport	<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	None	None	-	1B.2
Lakeport	<i>Cryptantha dissita</i>	serpentine cryptantha	None	None	-	1B.2
Lakeport	<i>Plagiobothrys lithocaryus</i>	Mayacamas popcornflower	None	None	-	1A
Lakeport	<i>Brasenia schreberi</i>	watershield	None	None	-	2B.3
Lakeport	<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	None	None	-	1B.3
Lakeport	<i>Astragalus breweri</i>	Brewer's milk-vetch	None	None	-	4.2
Lakeport	<i>Fritillaria purdyi</i>	Purdy's fritillary	None	None	-	4.3
Lakeport	<i>Hesperolinon adenophyllum</i>	glandular western flax	None	None	-	1B.2
Lakeport	<i>Clarkia gracilis</i> ssp. <i>tracyi</i>	Tracy's clarkia	None	None	-	4.2
Lakeport	<i>Antirrhinum virga</i>	twig-like snapdragon	None	None	-	4.3
Lakeport	<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	None	None	-	4.2
Lucerne	<i>Rana draytonii</i>	California red-legged frog	Thrt	None	SSC	-
Lucerne	<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	-
Lucerne	<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	End	FP	-
Lucerne	<i>Pandion haliaetus</i>	osprey	None	None	WL	-
Lucerne	<i>Ardea alba</i>	great egret	None	None	-	-
Lucerne	<i>Ardea herodias</i>	great blue heron	None	None	-	-
Lucerne	<i>Falco mexicanus</i>	prairie falcon	None	None	WL	-
Lucerne	<i>Phalacrocorax auritus</i>	double-crested cormorant	None	None	WL	-
Lucerne	<i>Archoplites interruptus</i>	Sacramento perch	None	None	SSC	-
Lucerne	<i>Lavinia exilicauda chi</i>	Clear Lake hitch	None	Thrt	-	-
Lucerne	<i>Dubiraphia brunneascens</i>	brownish dubiraphian riffle beetle	None	None	-	-
Lucerne	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-
Lucerne	<i>Lasionycteris noctivagans</i>	silver-haired bat	None	None	-	-
Lucerne	<i>Margaritifera falcata</i>	western pearlshell	None	None	-	-
Lucerne	<i>Anodonta oregonensis</i>	Oregon floater	None	None	-	-
Lucerne	<i>Gonidea angulata</i>	western ridged mussel	None	None	-	-
Lucerne	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Lucerne	Clear Lake Drainage Cyprinid/Catostomid Stm	Clear Lake Drainage Cyprinid/Catostomid Stm	None	None	-	-
Lucerne	Clear Lake Drg Seasonal Lakefish Spawn Stm	Clear Lake Drg Seasonal Lakefish Spawn Stm	None	None	-	-
Lucerne	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	-	-
Lucerne	<i>Layia septentrionalis</i>	<i>Colusa layia</i>	None	None	-	1B.2
Lucerne	<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	None	None	-	1B.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Lucerne	<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	None	None	-	1B.3
Lucerne	<i>Lupinus antoninus</i>	Anthony Peak lupine	None	None	-	1B.3
Lucerne	<i>Hesperolinon adenophyllum</i>	glandular western flax	None	None	-	1B.2
Lucerne	<i>Hesperolinon bicarpellatum</i>	two-carpellate western flax	None	None	-	1B.2
Lucerne	<i>Potamogeton zosteriformis</i>	eel-grass pondweed	None	None	-	2B.2
Lucerne	<i>Ceanothus divergens</i>	Calistoga ceanothus	None	None	-	1B.2
The Geysers	<i>Dicamptodon ensatus</i>	California giant salamander	None	None	SSC	-
The Geysers	<i>Rana boylii</i>	foothill yellow-legged frog	None	SCT	SSC	-
The Geysers	<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	-
The Geysers	<i>Progne subis</i>	purple martin	None	None	SSC	-
The Geysers	<i>Lavinia symmetricus</i> ssp. 4	Clear Lake - Russian River roach	None	None	SSC	-
The Geysers	<i>Hysteroecarpus traski</i> pomo	Russian River tule perch	None	None	SSC	-
The Geysers	<i>Oncorhynchus mykiss</i> irideus	steelhead - central California coast DPS	Thrt	None	-	-
The Geysers	<i>Bombus occidentalis</i>	western bumble bee	None	None	-	-
The Geysers	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
The Geysers	Clear Lake Drainage Resident Trout Stm	Clear Lake Drainage Resident Trout Stm	None	None	-	-
The Geysers	<i>Asclepias solanoana</i>	serpentine milkweed	None	None	-	4.2
The Geysers	<i>Layia septentrionalis</i>	Colusa layia	None	None	-	1B.2
The Geysers	<i>Cryptantha dissita</i>	serpentine cryptantha	None	None	-	1B.2
The Geysers	<i>Streptanthus barbiger</i>	bearded jewelflower	None	None	-	4.2
The Geysers	<i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i>	Socrates Mine jewelflower	None	None	-	1B.2
The Geysers	<i>Streptanthus glandulosus</i> ssp. <i>hoffmannii</i>	Hoffman's bristly jewelflower	None	None	-	1B.3
The Geysers	<i>Calystegia collina</i> ssp. <i>oxyphylla</i>	Mt. Saint Helena morning-glory	None	None	-	4.2
The Geysers	<i>Calystegia collina</i> ssp. <i>tridactylosa</i>	three-fingered morning-glory	None	None	-	1B.2
The Geysers	<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	None	None	-	1B.3
The Geysers	<i>Astragalus breweri</i>	Brewer's milk-vetch	None	None	-	4.2
The Geysers	<i>Astragalus clevelandii</i>	Cleveland's milk-vetch	None	None	-	4.3
The Geysers	<i>Lupinus sericatus</i>	Cobb Mountain lupine	None	None	-	1B.2
The Geysers	<i>Erythronium helenae</i>	St. Helena fawn lily	None	None	-	4.2
The Geysers	<i>Fritillaria purdyi</i>	Purdy's fritillary	None	None	-	4.3
The Geysers	<i>Hesperolinon adenophyllum</i>	glandular western flax	None	None	-	1B.2
The Geysers	<i>Sidalcea oregana</i> ssp. <i>hydrophila</i>	marsh checkerbloom	None	None	-	1B.2
The Geysers	<i>Calyptidium quadripetalum</i>	four-petaled pussypaws	None	None	-	4.3
The Geysers	<i>Clarkia gracilis</i> ssp. <i>tracyi</i>	Tracy's clarkia	None	None	-	4.2
The Geysers	<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i>	serpentine bird's-beak	None	None	-	4.3
The Geysers	<i>Antirrhinum virga</i>	twig-like snapdragon	None	None	-	4.3
The Geysers	<i>Calamagrostis ophitidis</i>	serpentine reed grass	None	None	-	4.3
The Geysers	<i>Panicum acuminatum</i> var. <i>thermale</i>	Geysers panicum	None	End	-	1B.2
The Geysers	<i>Collomia diversifolia</i>	serpentine collomia	None	None	-	4.3
The Geysers	<i>Eriastrum brandegeae</i>	Brandegee's eriastrum	None	None	-	1B.1

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
The Geysers	<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	few-flowered navarretia	End	Thrt	-	1B.1
The Geysers	<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	None	None	-	1B.1
Whispering Pines	<i>Dicamptodon ensatus</i>	California giant salamander	None	None	SSC	-
Whispering Pines	<i>Rana boylii</i>	foothill yellow-legged frog	None	SCT	SSC	-
Whispering Pines	<i>Rana draytonii</i>	California red-legged frog	Thrt	None	SSC	-
Whispering Pines	<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	-
Whispering Pines	<i>Progne subis</i>	purple martin	None	None	SSC	-
Whispering Pines	<i>Bombus occidentalis</i>	western bumble bee	None	None	-	-
Whispering Pines	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Whispering Pines	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-
Whispering Pines	<i>Lasiusurus blossevillii</i>	western red bat	None	None	SSC	-
Whispering Pines	<i>Lasiusurus cinereus</i>	hoary bat	None	None	-	-
Whispering Pines	<i>Myotis evotis</i>	long-eared myotis	None	None	-	-
Whispering Pines	<i>Myotis thysanodes</i>	fringed myotis	None	None	-	-
Whispering Pines	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Whispering Pines	<i>Sceloporus graciosus graciosus</i>	northern sagebrush lizard	None	None	-	-
Whispering Pines	Central Valley Drg Rainbow Trout/Cyprinid Stm	Central Valley Drg Rainbow Trout/Cyprinid Stm	None	None	-	-
Whispering Pines	Clear Lake Drainage Resident Trout Stm	Clear Lake Drainage Resident Trout Stm	None	None	-	-
Whispering Pines	<i>Grimmia torenii</i>	Toren's grimmia	None	None	-	1B.3
Whispering Pines	<i>Mielichhoferia elongata</i>	elongate copper moss	None	None	-	4.3
Whispering Pines	<i>Chlorogalum pomeridianum</i> var. <i>minus</i>	dwarf soaproot	None	None	-	1B.2
Whispering Pines	<i>Eryngium constancei</i>	Loch Lomond button-celery	End	End	-	1B.1
Whispering Pines	<i>Asclepias solanoana</i>	serpentine milkweed	None	None	-	4.2
Whispering Pines	<i>Erigeron greenei</i>	Greene's narrow-leaved daisy	None	None	-	1B.2
Whispering Pines	<i>Helianthus exilis</i>	serpentine sunflower	None	None	-	4.2
Whispering Pines	<i>Layia septentrionalis</i>	Colusa layia	None	None	-	1B.2
Whispering Pines	<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	None	None	-	1B.2
Whispering Pines	<i>Cryptantha dissita</i>	serpentine cryptantha	None	None	-	1B.2
Whispering Pines	<i>Arabis blepharophylla</i>	coast rockcress	None	None	-	4.3
Whispering Pines	<i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i>	Socrates Mine jewelflower	None	None	-	1B.2
Whispering Pines	<i>Streptanthus brachiatus</i> ssp. <i>hoffmannii</i>	Freed's jewelflower	None	None	-	1B.2
Whispering Pines	<i>Streptanthus hesperidis</i>	green jewelflower	None	None	-	1B.2
Whispering Pines	<i>Legenere limosa</i>	legenere	None	None	-	1B.1
Whispering Pines	<i>Calystegia collina</i> ssp. <i>oxyphylla</i>	Mt. Saint Helena morning-glory	None	None	-	4.2
Whispering Pines	<i>Sedella leiocarpa</i>	Lake County stonecrop	End	End	-	1B.1
Whispering Pines	<i>Carex praticola</i>	northern meadow sedge	None	None	-	2B.2
Whispering Pines	<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	None	None	-	1B.3
Whispering Pines	<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Raiche's manzanita	None	None	-	1B.1
Whispering Pines	<i>Astragalus breweri</i>	Brewer's milk-vetch	None	None	-	4.2
Whispering Pines	<i>Astragalus clevelandii</i>	Cleveland's milk-vetch	None	None	-	4.3

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Whispering Pines	<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	Jepson's milk-vetch	None	None	-	1B.2
Whispering Pines	<i>Lupinus sericatus</i>	Cobb Mountain lupine	None	None	-	1B.2
Whispering Pines	<i>Erythronium helenae</i>	St. Helena fawn lily	None	None	-	4.2
Whispering Pines	<i>Fritillaria purdyi</i>	Purdy's fritillary	None	None	-	4.3
Whispering Pines	<i>Hesperolinon adenophyllum</i>	glandular western flax	None	None	-	1B.2
Whispering Pines	<i>Hesperolinon bicarpellatum</i>	two-carpellate western flax	None	None	-	1B.2
Whispering Pines	<i>Sidalcea oregana</i> ssp. <i>hydropithila</i>	marsh checkerbloom	None	None	-	1B.2
Whispering Pines	<i>Calyptidium quadripetalum</i>	four-petaled pussypaws	None	None	-	4.3
Whispering Pines	<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i>	serpentine bird's-beak	None	None	-	4.3
Whispering Pines	<i>Antirrhinum subcordatum</i>	dimorphic snapdragon	None	None	-	4.3
Whispering Pines	<i>Antirrhinum virga</i>	twig-like snapdragon	None	None	-	4.3
Whispering Pines	<i>Penstemon newberryi</i> var. <i>sonomensis</i>	Sonoma beardtongue	None	None	-	1B.3
Whispering Pines	<i>Calamagrostis ophitidis</i>	serpentine reed grass	None	None	-	4.3
Whispering Pines	<i>Imperata brevifolia</i>	California satintail	None	None	-	2B.1
Whispering Pines	<i>Panicum acuminatum</i> var. <i>thermale</i>	Geysers panicum	None	End	-	1B.2
Whispering Pines	<i>Collomia diversifolia</i>	serpentine collomia	None	None	-	4.3
Whispering Pines	<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	None	None	-	1B.2
Whispering Pines	<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	None	None	-	1B.1
Whispering Pines	<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	few-flowered navarretia	End	Thrt	-	1B.1
Whispering Pines	<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	many-flowered navarretia	End	End	-	1B.2
Whispering Pines	<i>Eriogonum nervulosum</i>	Snow Mountain buckwheat	None	None	-	1B.2
Whispering Pines	<i>Delphinium uliginosum</i>	swamp larkspur	None	None	-	4.2
Whispering Pines	<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	None	None	-	1B.1
Whispering Pines	<i>Ceanothus divergens</i>	Calistoga ceanothus	None	None	-	1B.2
Whispering Pines	<i>Horkelia bolanderi</i>	Bolander's horkelia	None	None	-	1B.2

KEY:

1B.1 = Rare, threatened, or endangered in California and elsewhere; seriously threatened in California
 1B.2 = Rare, threatened, or endangered in California and elsewhere; fairly threatened in California
 1B.3 = Rare, threatened, or endangered in California and elsewhere; not very threatened in California
 2A = Presumed extinct in California, but extant elsewhere
 2B.1 = Rare, threatened, or endangered in Calif., but more common elsewhere; seriously threatened in Calif.
 2B.2 = Rare, threatened, or endangered in Calif., but more common elsewhere; fairly threatened in Calif.
 2B.3 = Rare, threatened, or endangered in Calif., but more common elsewhere; not very threatened in Calif.
 3 = Plants about which we need more information (Review List)
 3.1 = Plants about which we need more information (Review List); seriously threatened in California
 3.2 = Plants about which we need more information (Review List); fairly threatened in California
 3.3 = Plants about which we need more information (Review List); not very threatened in California
 4.2 = Plants of limited distribution (watch list); fairly threatened in California
 4.3 = Plants of limited distribution (watch list); not very threatened in California

KEY (cont.):

SE/ST/SD=State Endangered/Threatened/Delisted

SC/SCD=State Candidate for Listing/Delisting

SSC=CDFW Species of Special Concern

SFP=State Fully Protected

WL=CDFW Watch List

FE/FT/FD=Federal Endangered/Threatened/Delisted

FPE/FPT/FPD/FP=Federal Proposed Endangered/Threatened/Delisting

FC=Federal Candidate

Thrt=Threatened

End=Endangered

Cand=Candidate

Prop=Proposed

APPENDIX B

WILDLIFE HABITAT RELATIONSHIPS SYSTEM RESULTS



CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS SYSTEM
 supported by the
CALIFORNIA INTERAGENCY WILDLIFE TASK GROUP
 and maintained by the
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
 Database Version: 9.0

SPECIES SUMMARY REPORT

FE = Federal Endangered CF = California Fully Protected PT = Federally-Proposed Threatened CD = CDF Sensitive
 FT = Federal Threatened CP = California Protected FC = Federal Candidate HA = Harvest
 CE = California Endangered SC = California Species of Special Concern BL = BLM Sensitive
 CT = California Threatened PE = Federally-Proposed Endangered FS = USFS Sensitive
 Note: Any given status code for a species may apply to the full species or to only one or more subspecies or distinct population segments.

ID	Species Name	Status			Native/Introduced
A007	CALIFORNIA NEWT		SC		NATIVE
A014	CALIFORNIA SLENDER SALAMANDER				NATIVE
A020	SPECKLED BLACK SALAMANDER				NATIVE
B049	AMERICAN BITTERN				NATIVE
B050	LEAST BITTERN		SC		NATIVE
B051	GREAT BLUE HERON			CD	NATIVE
B052	GREAT EGRET			CD	NATIVE
B053	SNOWY EGRET				NATIVE
B058	GREEN HERON				NATIVE
B059	BLACK-CROWNED NIGHT HERON				NATIVE
B108	TURKEY VULTURE				NATIVE
B110	OSPREY			CD	NATIVE
B111	WHITE-TAILED KITE	CF	BL		NATIVE
B113	BALD EAGLE	CE	CF	BL FS CD	NATIVE
B114	NORTHERN HARRIER		SC		NATIVE
B115	SHARP-SHINNED HAWK				NATIVE
B116	COOPER'S HAWK				NATIVE
B117	NORTHERN GOSHAWK		SC	BL FS CD	NATIVE
B119	RED-SHOULDERED HAWK				NATIVE
B123	RED-TAILED HAWK				NATIVE
B124	FERRUGINOUS HAWK				NATIVE
B125	ROUGH-LEGGED HAWK				NATIVE
B126	GOLDEN EAGLE	CF	BL	CD	NATIVE
B127	AMERICAN KESTREL				NATIVE
B128	MERLIN				NATIVE
B131	PRAIRIE FALCON				NATIVE
B140	CALIFORNIA QUAIL		SC	HA	NATIVE
B141	MOUNTAIN QUAIL			HA	NATIVE
B145	VIRGINIA RAIL				NATIVE
B146	SORA				NATIVE
B148	COMMON GALLINULE			HA	NATIVE

B149	AMERICAN COOT		HA	NATIVE
B251	BAND-TAILED PIGEON		HA	NATIVE
B255	MOURNING DOVE		HA	NATIVE
B260	GREATER ROADRUNNER			NATIVE
B262	BARN OWL			NATIVE
B263	FLAMMULATED OWL			NATIVE
B264	WESTERN SCREECH OWL			NATIVE
B265	GREAT HORNED OWL			NATIVE
B267	NORTHERN PYGMY OWL			NATIVE
B269	BURROWING OWL	SC	BL	NATIVE
B270	SPOTTED OWL	FT	SC	BL FS CD
B272	LONG-EARED OWL		SC	NATIVE
B273	SHORT-EARED OWL		SC	NATIVE
B274	NORTHERN SAW-WHET OWL			NATIVE
B277	COMMON POORWILL			NATIVE
B287	ANNA'S HUMMINGBIRD			NATIVE
B291	RUFOUS HUMMINGBIRD			NATIVE
B292	ALLEN'S HUMMINGBIRD			NATIVE
B294	LEWIS' S WOODPECKER			NATIVE
B296	ACORN WOODPECKER			NATIVE
B299	RED-BREASTED SAPSUCKER			NATIVE
B302	NUTTALL'S WOODPECKER			NATIVE
B303	DOWNY WOODPECKER			NATIVE
B304	HAIRY WOODPECKER			NATIVE
B305	WHITE-HEADED WOODPECKER			NATIVE
B307	NORTHERN FLICKER			NATIVE
B311	WESTERN WOOD-PEWEE			NATIVE
B317	HAMMOND'S FLYCATCHER			NATIVE
B318	DUSKY FLYCATCHER			NATIVE
B320	PACIFIC-SLOPE FLYCATCHER			NATIVE
B323	SAY'S PHOEBE			NATIVE
B326	ASH-THROATED FLYCATCHER			NATIVE
B333	WESTERN KINGBIRD			NATIVE
B337	HORNED LARK			NATIVE
B338	PURPLE MARTIN	SC		NATIVE
B339	TREE SWALLOW			NATIVE
B340	VIOLET-GREEN SWALLOW			NATIVE
B341	NORTHERN ROUGH-WINGED SWALLOW			NATIVE
B343	CLIFF SWALLOW			NATIVE
B346	steller's JAY			NATIVE
B348	WESTERN SCRUB-JAY			NATIVE
B352	YELLOW-BILLED MAGPIE			NATIVE
B353	AMERICAN CROW		HA	NATIVE

B354	COMMON RAVEN			NATIVE
B356	MOUNTAIN CHICKADEE			NATIVE
B358	OAK TITMOUSE			NATIVE
B360	BUSHTIT			NATIVE
B361	RED-BREASTED NUTHATCH			NATIVE
B362	WHITE-BREASTED NUTHATCH			NATIVE
B363	PYGMY NUTHATCH			NATIVE
B364	BROWN CREEPER			NATIVE
B368	BEWICK'S WREN	SC		NATIVE
B369	HOUSE WREN			NATIVE
B375	GOLDEN-CROWNED KINGLET			NATIVE
B376	RUBY-CROWNED KINGLET			NATIVE
B377	BLUE-GRAY GNATCATCHER			NATIVE
B380	WESTERN BLUEBIRD			NATIVE
B381	MOUNTAIN BLUEBIRD			NATIVE
B386	HERMIT THRUSH			NATIVE
B389	AMERICAN ROBIN			NATIVE
B390	VARIED THRUSH			NATIVE
B391	WRENTIT			NATIVE
B393	NORTHERN MOCKINGBIRD			NATIVE
B398	CALIFORNIA THRASHER			NATIVE
B407	CEDAR WAXWING			NATIVE
B408	PHAINOPEPLA			NATIVE
B410	LOGGERHEAD SHRIKE	FE	SC	NATIVE
B415	CASSIN'S VIREO			NATIVE
B417	HUTTON'S VIREO	SC		NATIVE
B418	WARBLING VIREO			NATIVE
B425	ORANGE-CROWNED WARBLER			NATIVE
B426	NASHVILLE WARBLER			NATIVE
B430	YELLOW WARBLER	SC		NATIVE
B435	YELLOW-RUMPED WARBLER			NATIVE
B436	BLACK-THROATED GRAY WARBLER			NATIVE
B437	TOWNSEND'S WARBLER			NATIVE
B438	HERMIT WARBLER			NATIVE
B461	COMMON YELLOWTHROAT	SC		NATIVE
B463	WILSON'S WARBLER			NATIVE
B471	WESTERN TANAGER			NATIVE
B475	BLACK-HEADED GROSBEAK			NATIVE
B477	LAZULI BUNTING			NATIVE
B482	GREEN-TAILED TOWHEE			NATIVE
B483	SPOTTED TOWHEE	SC		NATIVE
B484	CALIFORNIA TOWHEE	FT CE		NATIVE
B489	CHIPPING SPARROW			NATIVE

B493	BLACK-CHINNED SPARROW			NATIVE
B495	LARK SPARROW			NATIVE
B497	BELL'S SPARROW	FT	SC	NATIVE
B499	SAVANNAH SPARROW	CE	SC	NATIVE
B504	FOX SPARROW			NATIVE
B505	SONG SPARROW		SC	NATIVE
B509	GOLDEN-CROWNED SPARROW			NATIVE
B510	WHITE-CROWNED SPARROW			NATIVE
B512	DARK-EYED JUNCO			NATIVE
B519	RED-WINGED BLACKBIRD		SC	NATIVE
B520	TRICOLORED BLACKBIRD		SC BL	NATIVE
B521	WESTERN MEADOWLARK			NATIVE
B522	YELLOW-HEADED BLACKBIRD		SC	NATIVE
B528	BROWN-HEADED COWBIRD			NATIVE
B532	BULLOCK'S ORIOLE			NATIVE
B536	PURPLE FINCH			NATIVE
B538	HOUSE FINCH			NATIVE
B539	RED CROSSBILL			NATIVE
B542	PINE SISKIN			NATIVE
B543	LESSER GOLDFINCH			NATIVE
B544	LAWRENCE'S GOLDFINCH			NATIVE
B548	CLARK'S GREBE			NATIVE
B554	PLUMBEOUS VIREO			NATIVE
B699	BARRED OWL			NATIVE
M006	ORNATE SHREW	FE	SC	NATIVE
M012	TROWBRIDGE'S SHREW			NATIVE
M023	YUMA MYOTIS		BL	NATIVE
M025	LONG-EARED MYOTIS		BL	NATIVE
M027	LONG-LEGGED MYOTIS			NATIVE
M030	SILVER-HAIRED BAT			NATIVE
M032	BIG BROWN BAT			NATIVE
M034	HOARY BAT			NATIVE
M038	PALLID BAT		SC BL FS	NATIVE
M045	BRUSH RABBIT	FE CE		HA NATIVE
M047	AUDUBON'S COTTONTAIL			HA NATIVE
M051	BLACK-TAILED JACKRABBIT		SC	HA NATIVE
M055	YELLOW-PINE CHIPMUNK			NATIVE
M059	SONOMA CHIPMUNK			NATIVE
M077	WESTERN GRAY SQUIRREL			HA NATIVE
M079	DOUGLAS' SQUIRREL			HA NATIVE
M080	NORTHERN FLYING SQUIRREL		SC FS	NATIVE
M084	MAZAMA POCKET GOPHER			NATIVE
M117	DEER MOUSE		SC	NATIVE

M119	BRUSH MOUSE				NATIVE
M120	PINYON MOUSE				NATIVE
M127	DUSKY-FOOTED WOODRAT	FE	SC		NATIVE
M139	COMMON MUSKRAT			HA	NATIVE
M146	COYOTE			HA	NATIVE
M149	GRAY FOX			HA	NATIVE
M151	BLACK BEAR			HA	NATIVE
M152	RINGTAIL	CF			NATIVE
M153	RACCOON			HA	NATIVE
M155	FISHER	SC	FC BL FS		NATIVE
M156	ERMINE			HA	NATIVE
M157	LONG-TAILED WEASEL			HA	NATIVE
M160	AMERICAN BADGER	SC		HA	NATIVE
M165	MOUNTAIN LION	SC			NATIVE
M166	BOBCAT			HA	NATIVE
M181	MULE DEER			HA	NATIVE
R022	WESTERN FENCE LIZARD				NATIVE
R040	SOUTHERN ALLIGATOR LIZARD				NATIVE
R042	NORTHERN ALLIGATOR LIZARD				NATIVE
R046	NORTHERN RUBBER BOA	CT	FS		NATIVE
R051	NORTH AMERICAN RACER				NATIVE
R057	GOPHERSNAKE	SC			NATIVE
R058	EASTERN KINGSNAKE				NATIVE
R061	COMMON GARTERSNAKE	FE	CE	CF SC	NATIVE
R062	TERRESTRIAL GARTERSNAKE				NATIVE
R076	WESTERN RATTLESNAKE				NATIVE
R078	AQUATIC GARTERSNAKE				NATIVE

Total Number of Species: 187

Query Parameters

Included Locations

Lake Co

Included Location Seasons

Migrant, Summer, Winter, Yearlong

Included Habitats & (Stages)

Blue Oak Woodland, Chamise-redshank Chaparral, Fresh Emergent Wetland, Montane Hardwood, Ponderosa Pine, Valley Oak Woodland, Wet Meadow

Habitat Suitability Threshold

Reproduction - High, Cover - High, Feeding - High

Included Habitat Seasons

Migrant, Summer, Winter, Yearlong

Excluded Elements

Algae, Bank, Barren, Campground, Cave, Cliff, Dump, Grain, Grass/agriculture, Jetty, Kelp, Lakes, Lithic, Mine, Mud Flats, Nest Box, Nest Island, Nest Platform, Pack Stations, Ponds, Riparian Inclusion, Rivers, Rock, Salt Ponds, Sand Dune, Shrub/agriculture, Soil - Aerated, Soil - Saline, Springs, Springs - Hot, Springs - Mineral, Streams - Permanent, Talus, Tidepools, Tree/agriculture, Trees - Fir, Vernal Pools, Water - Created Body, Water - Fast, Water/agriculture, Wharf

Included Species All Species Included

Included Special Statuses

Native

SECTION 9. STORMWATER MANAGEMENT: SWRCB SITE MANAGEMENT PLAN

Site Management Plan



for a
California Commercial Medical Cannabis Cultivation Facility
8551 HWY 175, Kelseyville, CA 95451
Lake County APNs 01105506,00902254,00902255,00902256 & 01105601
WDID #5S17CC400108

Submitted to:

California Regional Water Quality Control Board – Central Valley Region
364 Knollcrest Drive, Suite 205
Redding, CA 96002

Prepared by:

Eastside Environmental, Inc.
315 Wall Street, Suite 14
Chico, CA 95928

Prepared for:

Golden State Herb, Inc.
PO Box 7605
Chico, CA 95927A

April 2018

CONTENTS

Introduction	3
Project Location and Description.....	3
Purpose and Scope of the Site Management Plan.....	5
Regulatory Setting.....	6
Methodology.....	9
Preliminary Data Collection and Research.....	9
Field Surveys	9
Mapping.....	9
Engineering Design	10
Results.....	11
Site Conditions and Applicable BPTC Measures	11
Applicable Design Drawings.....	16
Monitoring and Reporting Plan	17
Plan Review and Revision	17
Contact Information.....	19
Site Photographs.....	20

TABLE OF FIGURES

Figure 1. Project Location Map	7
Figure 2. Project Parcel Map	8
Table 1. Fertilizers and Pesticides	13
Table 2. Petroleum Products	14

INTRODUCTION

Project Location and Description

Eastside Environmental prepared this Site Management Plan (SMP) for a proposed commercial medical cannabis cultivation facility located at 8550 HWY 175, Kelseyville, California in Lake County (APNs 011-055-06, 009-022-54,009-022-55,009-022-56, and 011-056-01). The 643-acre, five-parcel property is accessed via a gravel driveway off of HWY 175 (Figure 1). The Project will be built out in phases over the next five years, as state and local regulations are refined and the legal cannabis market stabilizes. Project design will be based on projected needs over this development period: Phase 1 development (on parcel 011-055-06) will occur in 2018 and is the subject of this Site Management Plan.

Currently there is a small less than 1,000 ft² fenced personal medicinal cannabis cultivation area on APN 011-055-06 with 4 cloth sacks (“Smart Pots”) that contain an above grade organic soil mixture. This cultivation area is in compliance with Article 72 of the Lake County Code, which currently regulates medical collective cannabis cultivation in Lake County’s unincorporated areas. The Project Proponent plans to establish a commercial cultivation operation that occupies and/or disturbs approximately 5,000 ft² at the same location as the Article 72 medical collective cultivation area for 2018 (Phase 1).

Current and past land uses for Project property and the proposed cultivation area are/was agriculture (beekeeping, walnut orchard, row crops) and residential housing. Little land clearing or earthwork will be needed to establish the proposed Phase 1 cultivation area/operation and additional ancillary facilities, as the cultivation area was already cleared in the past for a firebreak/powerline access, for an equipment staging area and for chicken coops. Current ancillary facilities include an existing residence, and an existing spring-fed concrete cistern (with a capacity of approximately 10,000 gallons) that serves as the water supply for the residence. The spring that feeds the cistern does not flow from the ranch property, but is located on an adjacent parcel to the Project. An Initial Statement of Water Diversion and Use and Special Use Attachment (for Cannabis Cultivation) was filed with the State Water Resources Control Board’s Division of Water Rights for the existing surface water diversion that may be used for cannabis cultivation, prior to 1 July 2017.

A new residential well (6” diameter casing) is planned for Spring 2018 to accommodate the cannabis cultivation operations and provide a groundwater supply source for the existing residence.

The growing medium for the proposed cannabis cultivation operation will be an imported organic soil mixture in raised cultivation beds on top of native grade in fabric pots (“smart pots”). Water for the proposed cultivation operation will be supplied by the existing water supply diversion from the spring and proposed well, via a drip irrigation system.

There are no jurisdictional water courses or crossings on the Phase 1 Project parcel. The spring that serves as water supply for the existing residence on the Project parcel is located on the adjacent parcel to the east (011-056-01). The headwaters of McIntyre Creek, a perennial Class II watercourse, is also located on

the parcel to the immediate east of the Project parcel, about 425 feet from the closest portion of the proposed cultivation area on the Project parcel. McIntyre Creek is a tributary of Cache Creek and considered part of the Cache Creek watershed. Appropriate buffers/setbacks have been established around all watercourses on the adjacent parcel, and no disturbance is planned within the buffered/setback areas.

Purpose and Scope of the Site Management Plan

On Dec 8, 2017, the CA State Water Resources Control Board passed ***ORDER WQ 2017-0023-DWQ: GENERAL WASTE DISCHARGE REQUIREMENTS AND WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES OF WASTE ASSOCIATED WITH CANNABIS CULTIVATION ACTIVITIES*** regulating waste discharges from commercial cannabis cultivation activities. The purpose of this order is to “to ensure that the diversion of water and discharge of waste associated with cannabis cultivation does not have a negative impact on water quality, aquatic habitat, riparian habitat, wetlands, and springs.”

This SMP addresses the following controllable water quality factors at the project site:

- maintenance of developed areas and drainage features;
- stream crossing maintenance and improvement;
- activities within and adjacent to wetlands and riparian zones;
- spoil storage and disposal;
- water diversion, storage, and use;
- irrigation runoff;
- fertilizer, soil amendment, petroleum product, biodiesel, and pesticide/herbicide/rodenticide storage, use, and waste disposal;
- agricultural production waste handling and disposal;
- household refuse, human waste and domestic wastewater; and
- site remediation/cleanup/restoration activities.

Regulatory Setting

State Water Resources Control Board ORDER WQ 2017-0023-DWQ protects receiving water bodies from water-quality impacts associated with cannabis cultivation using a combination of Best Practical Treatment and Control (BPTC), buffer zones, sediment and erosion controls, site management plans, inspections and reporting, and the following regulatory oversight:

Lake County Ordinance 3073

<http://www.lakecountyca.gov/Assets/Departments/CDD/Marijuana+Cultivation+Ordinance/Cannabis+Policy/Cultivation+Ordinance+Adopted+20180320.pdf>

Lake County Article 72 (Chapter 21 of the Ordinance Code of the County of Lake)

<http://www.co.lake.ca.us/Assets/Departments/CDD/ZoningOrd/Zoning+Article+72.pdf>

CA Water Code Section 13260(a)

<http://codes.findlaw.com/ca/water-code/wat-sect-13269.html>

Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan)

http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

CA Fish and Game Code (1601-1607)

<https://www.wildlife.ca.gov/conservation/lسا>

2009-009-DWQ Construction General Permit

http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Clean Water Act 303(d), 401, 404

<https://www3.epa.gov/npdes/pubs/cwatxt.txt>

Section 10 Rivers and Harbors Act

<http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/materials/rhsec10.pdf>

Figure 1. Project Location Map

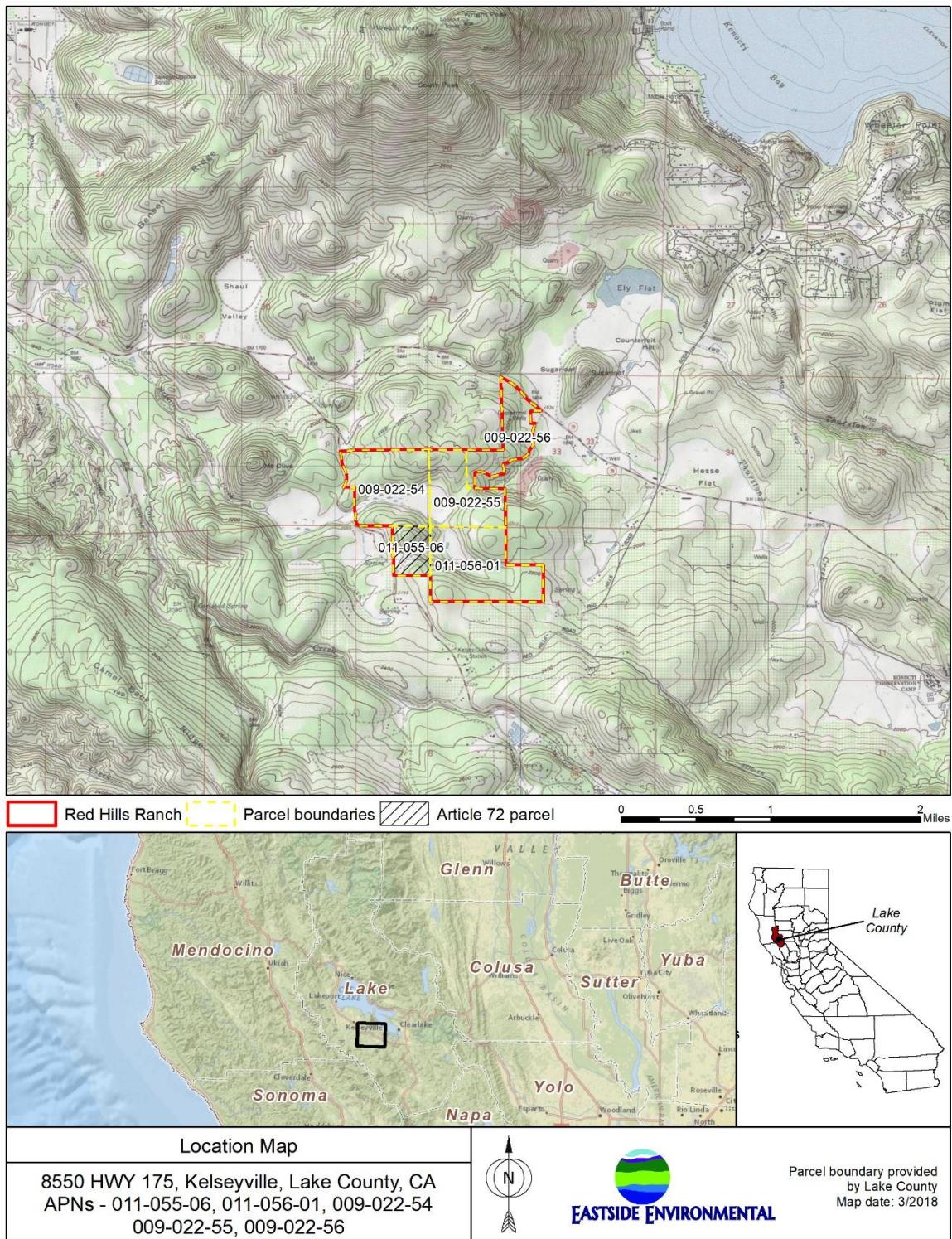
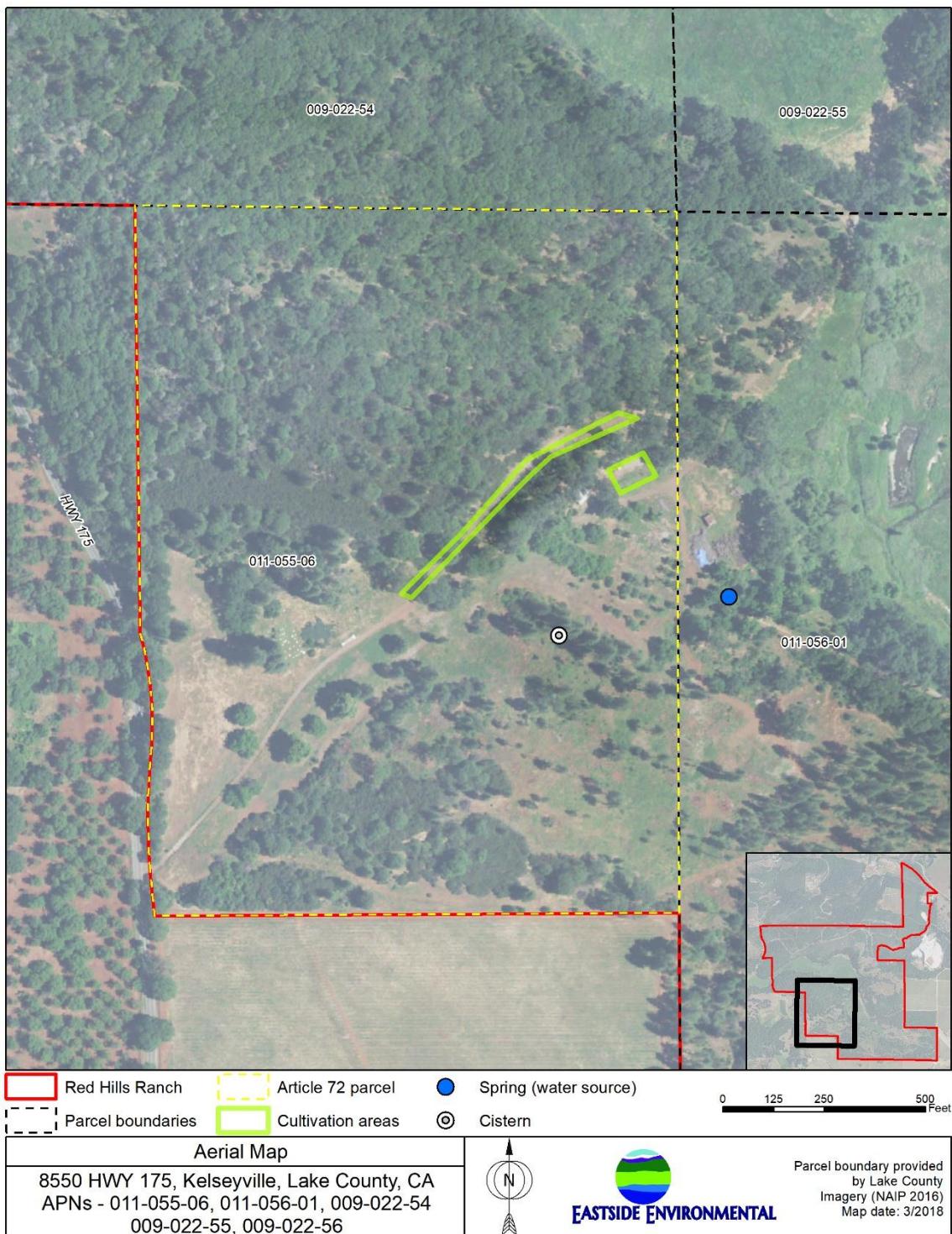


Figure 2. Project Parcel Map



METHODOLOGY

Preliminary Data Collection and Research

Prior to conducting field surveys, the following information sources were reviewed:

- any readily-available previous studies pertaining to the project site or vicinity;
- United States Geologic Service (USGS) 7.5 degree-minute topographic quadrangles of the project site and vicinity;
- Aerial photography of the project site and vicinity;
- National Hydrography Dataset (NHD) and National Wetlands Inventory (NWI) maps;
- Historic aerial photography from the USGS archives; and
- USGS Soil Surveys.

Field Surveys

On February 6, 11, 22 & 23, 2018, Crystal Keesey of Eastside Environmental conducted general site surveys of the existing and proposed Project areas. These surveys were conducted to identify current cultivation activity locations, potential presence of Waters of the US (WOUS), building and property line setbacks, evidence of cultivation-based erosion, information regarding desired property improvements, and necessary cultivation site design based on client needs and regulatory guidelines. This information was recorded in field notebooks, on data sheets, and in photographs.

Mapping

A CA licensed engineer created a site/plot plan for the Project containing a delineation of project area and parcel, with all salient site development features noted. Site features include dwellings, outbuildings, easements, fencing, potentially jurisdictional waters and any other information salient to cultivation activities.

The boundaries of potentially jurisdictional water resources within the project site were identified and measured in the field. Topographic analyses were performed using geographical information system software (ARCGIS 10.3). Informal wetland delineation methods consisted of an abbreviated, visual assessment of the three requisite wetland parameters (hydrophytic vegetation, hydric soils, hydrologic regime) defined in the US Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987).

Engineering Design

After literature review, topographic/hydrologic analysis, field survey and field observations, a site/plot plan with prescribed erosion control was created by California Professional Engineer to mitigate any identified or potential discharges from the project site, using the BPTC guidelines outlined in Order WQ 2017-0023-DWQ and Lake County land development regulations as a guide.

RESULTS

Site Conditions and Applicable BPTC Measures

Sediment Discharge BPTC Measures

Site Characteristics

The existing residence, parking areas, and proposed cultivation areas are accessed via a flat graveled access road off of HWY 175. The existing graveled access road will be extended to and will encircle the proposed cultivation area. The existing access road is approximately 0.17 miles long and the proposed cultivation area will add an additional 0.13 miles of graveled surface. The existing access road and proposed extension is/will be flat and graveled, allowing stormwater runoff from the road's surface to dissipate and infiltrate in surrounding vegetated areas. The existing access road and proposed extension is/will be maintained in accordance with the Handbook for Forest, Ranch, & Rural Roads. The existing access road and proposed extension is/will be used daily by cultivation site/operation personnel and the property's residents. There are existing parking areas beside the residence for this property's residents, cultivation site/operation personnel and visitors.

There are no jurisdictional water courses or crossings on the Phase 1 Project parcel. The spring that serves as water supply for the existing residence on the Project parcel is located on the adjacent parcel to the east (011-056-01). The headwaters of McIntyre Creek, a perennial Class II watercourse, is also located on the parcel to the immediate east of the Project parcel, about 425 feet from the closest portion of the proposed cultivation area on the Project parcel. McIntyre Creek is a tributary of Cache Creek and considered part of the Cache Creek watershed. Appropriate buffers/setbacks have been established around all watercourses on the adjacent parcel, and no disturbance is planned within the buffered/setback areas.

Erosion Prevention and Sediment Capture

The proposed cultivation area will be established with minimal land disturbance (limited grading/earthwork). Established and re-established vegetation within and around the proposed cultivation operation will be maintained/protected as a permanent erosion and sediment control BPTC measure. The area surrounding the long, narrow Phase 1 cultivation site (old fire road) is completely vegetated. Straw mulch will be applied to all areas of exposed soil prior to November 15th of each year, and straw wattles will be installed in accordance with this Site's erosion control plan, until permanent stabilization has been achieved. If areas of concentrated storm water runoff begin to develop, additional BPTC measures will be implemented to protect those areas and their outfalls. This project's Site Manager will conduct monthly monitoring inspections to confirm that this operation is in compliance California Water Code and Order WQ 2017-0023-DWQ.

Fertilizer, Pesticide, Herbicide, and Rodenticide BPTC Measures

Fertilizers and pesticides on site are located within the roofed and ventilated basement of the property's residence, but will be transferred to fully roofed and ventilated storage sheds in Summer 2018. All solids and liquids are stored undercover and in the manufacturer's original packaging, and all liquids have secondary containment to prevent accidental release. Any fertilizers or pesticides that are not used during the cultivation season, are stored in the manor outlined above throughout the Winter Wet Weather Period. There are no herbicides or rodenticides stored or used at this cultivation operation.

Fertilizers and pesticides will be prepared/mixed on an impermeable shed floor and applied by hand. Empty containers are disposed of to a local municipal solid waste disposal facility. Only food-safe organic pest management and integrated pest management practices are used at this cultivation operation. Agronomic irrigation and fertilization regimes are implemented, and no fertilizers or are applied within 48 hours of a predicted rainfall event greater than 0.25 inches. The amended soils of the cultivation area will remain contained within the cloth sack "smart pots" throughout the Winter Wet Weather Period.

Absorbent materials designated for spill containment and spill cleanup equipment are to be maintained on-site, for use in the event of an accidental spill of fertilizers and/or pesticides. The Site Manager will immediately notify the California Office of Emergency Services at 1-800-853-7550 and immediately initiate cleanup activities, in the event of a spill that could enter a surface waterbody or degrade groundwater.

Table 1. Fertilizers and Pesticides

Agricultural Chemical/Product	Quantity of Use	Frequency of Use
Fertilizers		
Earth Juice Verde Fire Grow 4-7-2	3.5 lbs per application	Bi-weekly, June - August
Earth Juice Fire Bloom 0-09-03	5 lbs per application	Bi-weekly, Sept - Oct
Pesticides		
Sierra Natural Science 209	30 liters per two-week cycle	Cycle: Daily for two weeks, rest for two weeks, June-Sept
Monterey B.t. (Bacillus thuringiensis)	200ml per application	2-3x per season, Sept only
Marrone Bio Innovations Grandevo	150 ml per application	Weekly, June-Oct
Marrone Bio Innovations Venerate	600 ml per application	Bi-weekly, June-Oct
Marrone Bio Innovations Regalia	300ml per application	Bi-weekly, Aug-Sept
Central Coast Garden Products Green Cleaner	300ml per application	One 6-day application cycle annually in Sept

Petroleum Product BPTC Measures

All petroleum products on-site are stored in State of California-approved containers with secondary containment, within an established metal roofed agricultural building. All petroleum products that are not used during the cultivation season, are stored in the manor outlined above throughout the Winter Wet Weather Period.

Absorbent materials designated for spill containment and spill cleanup equipment are to be maintained on-site, for use in the event of an accidental spill of petroleum products. The Site Manager will immediately notify the California Office of Emergency Services at 1-800-853-7550 and immediately initiate cleanup activities, in the event of a spill that could enter a surface waterbody or degrade groundwater.

Table 2. Petroleum Products

Petroleum Product	Quantity of Use ^a	Frequency of Use
Petroleum Products		
Gasoline	< 5-Gallons	Daily to weekly
Motor Oil	1-Pint	Monthly to yearly

Trash/Refuse, and Domestic Wastewater BPTC Measures

Trash/Refuse

The types of trash/refuse generated at this site include: gardening materials and wastes (such as used plastic seedling pots and spent plastic fertilizer/pesticide bags and bottles), general litter from site personnel, and unusable plant wastes. The organic soil mixture used for cannabis cultivation will be amended and re-used annually, and all unusable plant waste will be composted on site then added to the organic soil mixture as an amendment. All trash/refuse and residual wastes will be put into bins on the property, and hauled away to a local solid waste disposal facility regularly.

Domestic Wastewater

There is a residential building with full washrooms/restrooms located on the Project property, and all domestic wastewater is discharged to a legal Lake County-permitted septic system. The washrooms/restrooms are used daily by this property's residents and will be available to cultivation site/operation personnel. A portable restroom facility will be established adjacent to the cultivation area (but more than 150 feet from all surface water bodies) for cultivation site/operation personnel and will be serviced by the facility provider bi-weekly.

Winterization BPTC Measures

Prior to November 1st of each year, the Site Manager will:

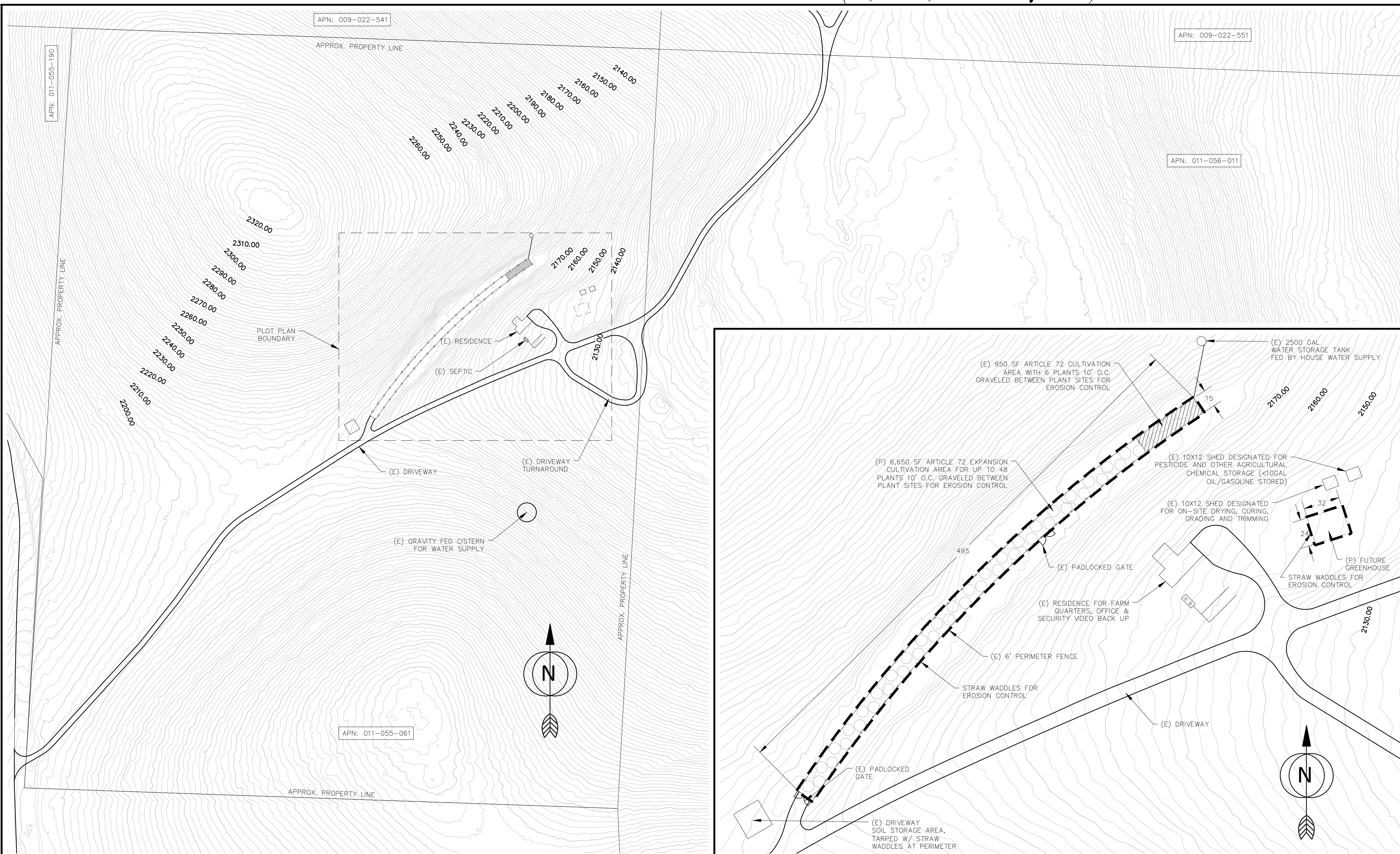
- Make sure that all cultivation and domestic wastes have been removed from the property and disposed of to the local municipal solid waste disposal facility;
- Cover and berm all stockpiled construction materials, unused soil, and spoils;
- Apply a weed free straw mulch to all areas of exposed soil associated with the cultivation operation, and apply a nitrogen fixing seed mixture to any exposed cultivation beds;
- Make sure that all straw wattles are installed correctly and functioning (per Erosion Control Plan specifications); and
- Make sure that all road drainage features have been installed correctly and are functioning.

Applicable Design Drawings

OUTDOOR CULTIVATION SITE PLAN FOR GOLDEN STATE HERB, INC.

8550 STATE HWY 175, KELSEYVILLE, CA 95451

APN: 011-055-061 LOT: 52.98 ACRES (2,307,808 SQ FT)



HUMMER CONSULTING ENGINEERING DISCLAIMS ANY RESPONSIBILITY FOR THE IMPROPER USE OF THESE PLANS. THESE PLANS AND/OR ANY ASSOCIATED SPECIFICATIONS ARE ONLY VALID FOR THE SITE FOR WHICH THEY WERE SPECIFICALLY PREPARED. THEY SHALL NOT BE USED OR MODIFIED FOR ANY OTHER SITE. IF THESE PLANS AND/OR SPECIFICATIONS ARE USED WHOLE OR IN PART AT ANY OTHER SITE, HUMMER CONSULTING ENGINEERING CLAIMS LIABILITY. THESE PLANS ARE NOT VALID UNTIL THEY ARE REVIEWED AND APPROVED BY THE APPROPRIATE GOVERNMENT AGENCIES.

SITE PLAN & PLOT PLAN



ARTICLE 72 OUTDOOR CANNABIS CULTIVATION

APN: 011-055-061
OWNER: PORTER G3 MCKINIRE LLC
CULTIVATOR: GOLDEN STATE HERB, INC.
777 ALDRIDGE ROAD
YACAVILLE, CA 95688

HUMMER CONSULTING ENGINEERING CIVIL - STRUCTURAL

CHICO, 368 E. 1ST AVENUE
CHICO, CA 95926 PH: (530) 781-3530

HCE JOB # 17 - 112

DATE: 04-30-2018
DRAWN BY: SEH
CHECKED BY: SEH

0 INITIAL
NO. REVISION/ISSUE DATE

DRAWING NUMBER

C1

MONITORING AND REPORTING PLAN

The following Monitoring Requirements are for a Tier 2 Low Risk Cannabis Cultivation Operation:

- Winterization Measures Implementation
- Tier Status Confirmation
- Third Party Identification (if applicable)
- Nitrogen Application (Monthly and Total Annual)

An Annual Report shall be submitted to the Central Valley Regional Water Quality Control Board by March 1st of each year, starting in 2019 for monitoring conducted in 2018. The Annual Report shall include the following:

1. Facility Status, Site Maintenance Status, and Storm Water Runoff Monitoring;
2. The name and contact information of the person responsible for operation, maintenance, and monitoring.

A letter transmitting the annual report shall accompany each report. The letter shall summarize the numbers and severity of violations found during the reporting period, and actions taken or planned to correct the violations and prevent future violations. The transmittal letter shall contain the following penalty of perjury statement and shall be signed by the Discharger or the Discharger's authorized agent:

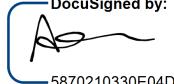
“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

PLAN REVIEW AND REVISION

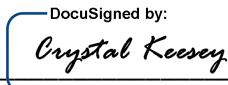
This plan should be periodically revised to update site conditions, cultivation operations, site layout, and to document changes to BPTC Measures and the inspection program. Site Management Plans should be written and revised by a qualified professional.

CONTACT INFORMATION

Legally Responsible Person: Andrew Greer
Title: Cultivator

Signature:  5870210330E04DA... Date: 5/1/2018

Site Management Plan prepared by: Crystal Keesey, Eastside Environmental, Inc.

Signature:  9961393AC08C47F... Date: 5/1/2018

SITE PHOTOGRAPHS



Existing Article 72 cultivation area



Proposed future greenhouse commercial cultivation area



Proposed future outdoor cultivation area with current Article 72 cultivation area in background



Proposed future outdoor cultivation area access road



Proposed future greenhouse development area with existing spring diversion in background



Residence at cultivation parcel